Ministry of Justice of Ukraine

Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations

Yaroslav Mudryi National Law University

INDEX COPERNICUS INTERNATIONAL

DOI: https://doi.org/10.32353/khrife.2.2019

THEORY AND PRACTICE OF FORENSIC SCIENCE AND CRIMINALISTICS

Collection of Scientific Papers

Biannual Edition

Founded in 2001

Anniversary Issue

20

Kharkiv
"Pravo"
2019

DOI: https://doi.org/10.32353/khrife.2.2019 ISSN 1993—0917
UDC 343.98
T33

Included in the list of Scientific Publishers of Ukraine where results of PhD and Doctoral dissertations can be published (Order No. 820 of Ministry of Education and Science of Ukraine dated on 11.07.2016)

Recommended for publication by the Academic Council of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations
(Minutes No. 11 on Tuesday, December 24, 2019)
Certificate of State Registration of printed mass media
№ КВ № 23467–13307ПР dated on 06.08.2018

T33 **Theory and Practice of Forensic Science and Criminalistics:** Collection of Scientific Papers: /Editorial Board: O. M. Kliuiev, V. Yu. Shepitko and others. Kharkiv, "Pravo", 2019. 20th Issue. — 642 p.

Founders: Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations; Yaroslav Mudryi National Law University.

While forming 20th anniversary edition of Collection of Scientific Papers: Theory and Practice of Forensic Science and Criminalistics the Editorial Board adhered to traditional headline system. This collection provides the content regarding coverage of contemporary forensic science issues, solving common forensic theory problems, organization and regulation of forensic activities; as well as sections formed from research papers revealing theoretical and practical issues according to separate classes, kinds, species and subspecies of forensic science. Collection of scientific paper readers will find congratulations to anniversaries, news of scientific life of forensic science institutions of Ukraine and abroad, information about training for advanced degree staff. Representatives of forensic institutions participated in the preparation of the articles for the collection, higher education institutions, law enforcement agencies not only in Ukraine but also in foreign countries.

We are grateful to all the contributors who submitted the content for publication, as well as the experts participated in the publication. We invite scientists and practitioners to prepare articles in the next issue.

The papers were reviewed internally and externally

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The collection is included in the rating of publications that have bibliometric profiles in Google Scholar according to the project: Bibliometrics of Ukrainian science.

Access to the edition articles at Google Scholar: https: //surl.li/fps.

An electronic copy of the publication is available for free on the website of the edition (https://khrife-journal.org/index. php/journal/issue/archive), on Web site of V. I. Vernadskyi National Library of Ukraine of the NAS (National Academy of Science) of Ukraine in the section: *Scientific Periodicals of Ukraine* (http://surl.li/fpt), in the repository of the Hon. Prof. M. S. Bokarius Research Institute of Forensic Examinations.

The editorial board of the Collection of Scientific Papers cooperates with *Crossref* Agency; all published content is provided with DOI identifier.

For more information on the Collection of Scientific Papers: *Theory and Practice of Forensic Science and Criminalistics,* visit the publication Web site at: https://khrife-journal.org/index.php/journal.

Authors are responsible for scientific content reliability, professional formulation, actual data, quotations, proper names, place names, disclosure of information that is not subject to exposed printing.

Authors' opinions may not coincide with Editorial Board opinion.

In case of reprinting the reference to the Theory and Practice of Forensic Science and Criminalistics Collection of Scientific Papers is obligatory.

WELCOME WORD FROM EDITORIAL BOARD



Dear colleagues!

The anniversary issue of 20th professional edition of the Theory and Practice of Forensic Science and Criminalistics Collection of Scientific Papers was published. It seems as though twenty issues is not a big number; all the issues take not much space in my office and library stock. I take the first issue that is not the big one, a little more than three hundred pages dedicated to the 55th anniversary of the publication of Serhii Mykhailovych Potapov's research paper: Introduction to Criminalistics. This paper laid the groundwork for development of the theory of forensic identification. The concept of criminalistics identification by Professor Potapov, Doctor of Law who received his degree in 1949, besides without the defense of his dissertation was that the main task and purpose of all methods of criminalistics is to obtain forensic evidence of identity as a result of research called identification. Later, the foundations of identification theory were criticized, supplemented but its principles currently remain the same. Scientists from Azerbaijan, Armenia, Kazakhstan participated in the formation of the scientific materials for the collection. Twelve Doctors, thirty-two PhDs, other leading experts are included in the group of authors of this book. By the way, we do not diminish but improve the quality determined by our Editorial Board members Mykhailo Leonidovych Tsymbal, Ella Borysivna Simakova-Yefremian, Larysa Mykolaivna Derecha and others at that time.

In the next second issue, twice as many articles have already been published: one hundred and sixteen articles, the authors 29 Doctors, 74 PhDs. 43 authors from Lithuania, Kazakhstan, Azerbaijan, Armenia

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and the United States of America had published their articles in the collection. The number of sections had increased. Well-known scientists, Professors: M. I. Panov, V. Yu. Shepitko, V. O. Konovalova, M. V. Saltevskyi, H. A. Matusovskyi, V. A. Zhuravel; V. O. Tatarenko, Doctor of Medicine and others join the editorial board. Each name is a model of scientific thought in Ukraine. The collection of scientific papers was first published in collaboration with the scientists of Yaroslav the Wise National Law Academy of Ukraine (currently, Yaroslav Mudryi National Law University).

Thirty members of the editorial board including foreign scientists were involved in the editing of the issue you are holding, among them there are foreign scientists: Vidmantas Egidijus Kurapka, Doctor of Law, Professor of the Mykolas Romeris University (Republic of Lithuania); Giedrius Mozuraitis, Forensic Science Centre of Lithuania, Doctor of Law, (Republic of Lithuania); Hendryk Malevski, Doctor of Law, Professor of the Mykolas Romeris University (Republic of Lithuania); Gabrielė Juodkaitė-Granskienė, Member of the Supreme Court of the Republic of Lithuania, Doctor of Law, Docent (Republic of Lithuania); Aleksandar Ivanović, Director of Forensic Expert Center (Montenegro), Doctor of Law, Professor, (Republic of Montenegro); Patvakan Voskanian, Deputy Director of the National Bureau of Expertise (Republic of Armenia), PhD in Chemistry, Senior Researcher; Olga Cataraga, Director of Centrul Naţional de Expertize Judiciare de pe lângă Ministreul Justiţiei al Republicii Moldova. I am tempted to say that many domestic scientists who are the members of the Editorial Board are outstanding experts in the field of forensic science and criminalistics.

At this time, the authors' scientific interest in the publication has significantly increased; modern problems of criminology, general provisions of forensic science, history of its development, forensic practice, methodological approaches to solving problems, etc. are studied. None of forensic science species performed today in the system of forensic institutions of Ukraine and more than ninety of them have escaped the attention of scientists. The number of headings in the collection reaches two dozen.

The pages of our collection are open not only to well-known specialists in forensics and forensics. Each issue contains a number of articles by young scientists, experts, who see their own ways to

solve certain professional problems, the implementation of new ideas in forensic and expert practice. The experience and curiosity of young scientists are the levers with which our publication is replenished with quality content. I will say more: its popularity has grown so much that the Ministry of Justice of Ukraine has supported our proposal to increase the number of issues; from 2019 the collection is published twice a year without reducing the volume.

In just two decades, more than 1,700 scientific articles have been published, authored by more than 350 Doctors and more than 800 PhDs, 350 scientists are from abroad. We are happy not only with quantitative indicators; they are followed by high quality articles that have been scientifically reviewed. Our collection is included in the Index Copernicus International online database. An electronic copy of the publication is available for free on the website of the edition (https://khrife-journal.org/index. php/journal/issue/archive), on Web site of V. I. Vernadskyi National Library of Ukraine of the NAS (National Academy of Science) of Ukraine in the section: Scientific Periodicals of Ukraine (http://surl.li/fpt), in the repository of the Hon. Prof. M. S. Bokarius Research Institute of Forensic Examinations. The Editorial Board of the Collection of Scientific Papers cooperates with Crossref Agency; all published content is provided with DOI identifier. Taking into account high level of publications in the collection, positive reviews of the scientific community of the country and abroad, the publication is included in the list of scientific professional publications of Ukraine that can publish the results of dissertations for doctoral and candidate of sciences (Doctor of Philosophy).

Scientists are interested in one of our regular headings: Scientific News covering events held under the auspices of the European Network of Forensic Science Institutes (ENFSI), as well as conferences, workshops, etc. in our country and abroad. At each scientific and communicative event, the presentation of the Theory and Practice of Forensic Science and Criminalistics collection is highly praised and expands the range of our authors. This is facilitated by the parallel publication of this collection. Thanks to the English version of our collection, we disseminate the latest knowledge on the study of scientific and methodological and information support of forensic science, Criminalistics tasks and trends at the present stage of development of EU member states, history, theory and methodology of forensic science,

legal support of forensic science. activities in Europe and the post-Soviet space, modern methods and technologies of forensic science, expert didactics, ways of development and improvement of science and education in the field of forensic science and criminalistics, etc.

Faithfully serving the truth is the slogan of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations that is fully consistent with the spirit of our professional Collection of Scientific Papers: Theory and Practice of Forensic Science and Criminalistics. I congratulate all of those who take care of the publication, participate in content preparation for publication. I wish everybody new creative and professional achievements.

Editorial Board Chairman of the
Theory and Practice of Forensic Science and Criminalistics
Collection of Scientific Papers
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DOI: https://doi.org/10.32353/khrife.2.2019.01
UDC 343.98

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PROBLEMS OF USE OF SCIENTIFIC AND TECHNICAL MEANS AND INNOVATIVE PRODUCTS IN THE ACTIVITY OF LAW ENFORCEMENT AGENCIES

Innovative development of Ukraine is associated with the active introduction of digital (information) technologies, it necessitates the use of new scientific and technical means and innovative products in the work of law enforcement agencies.

The article defines the essence and significance of scientific and technical means and innovative products in the activities of pre-trial investigation bodies, highlights the problems of innovation development and their implementation in practice, suggests ways to overcome obstacles to innovation in the fight against crime.

Essence and significance of scientific and technical means, innovations and innovative products in the activities of pre-trial investigation bodies are considered, definitions of these terms are given. Based on the results of the analysis of materials from the questionnaire of investigators and generalization of criminal proceedings, a low level of provision of pre-trial investigation bodies with modern scientific and technical means and innovative products was established, the reasons for these phenomena were determined. The review and analysis of modern innovative products used in the activities of law enforcement agencies is carried out.

An algorithm for developing innovations for the needs of law enforcement agencies is proposed. The problems arising at certain stages of the innovation development process are highlighted, the ways to overcome them are proposed. The reasons for the emergence of obstacles to the introduction of innovations into the practice of combating crime are identified the role of objective and subjective

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factors that impede innovation in forensic science and pre-trial investigation bodies has been determined.

Trends in the development of innovative potential in the field of forensic science are analyzed. The necessity of state support for innovative activities in the bodies of pre-trial investigation and the introduction of innovations into educational processes at all levels of education are substantiated.

Keywords: scientific and technical means, innovations, innovative products, innovative activity, pre-trial investigation bodies, information technologies, crime investigation.

Formulation of Research Problem. Not only financial success, but also security and sovereignty of a state, its competitiveness in the modern world are connected with the development of innovative potential. According to the Bloomberg Innovation Index 2018, Ukraine ranked 53rd among the 60 countries surveyed. Meanwhile, our country was ranked 58th in terms of technological capabilities, and 54th in terms of expenditures for research and developments in gross domestic product. The volume of financing of innovative activity in Ukraine is decreasing every year, and the main source of its support are the developments of innovative products [1].

According to the Bloomberg data published for the World Economic Forum (WEF), held in Davos in 2019, Ukraine lost 5 positions in the innovation ranking and was eliminated of the top-50 list of most innovative countries in the world [2]. At the same time, in recent years, scientific and technological development has been rapidly increasing in the field of information and telecommunication technologies both in Ukraine and worldwide.

Amidst the background of scientific and technological progress, the number of new types of crimes is increasing. In particular, in 2018, 10 times more cybercrimes were reported in Ukraine in comparison with 2017 [3]. This trend will continue to be observed because cybercriminals first use certain innovative products to commit offenses, and only then will the development of countermeasures, appropriate mechanisms for their prevention and disclosure. That is, conditional offenders always go "one step further" towards the persons who oppose them.

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[1] E.g., Стратегія розвитку сфери інноваційної діяльності на період до 2030 року: розпорядження Кабінету Міністрів України від 10 липня 2019 р. № 526-р. Київ. URL: https://zakon.rada.gov.ua/laws/show/526–2019-%D1%80 (Date accessed: 20.09.2019).

[2] Перепадя О. То вниз, то вгору: чому Україна ніяк не закріпиться в ТОП інноваційних країн. Deutsche Welle, DW, Українська редакція. 24.01.2019. URL: https://p.dw.com/p/3C3rZ (Date accessed: 10.09.2019).

[3] Игорь Серов. Криминальная статистика 2018 года: стало больше убийств и атак хакеров. Сегодня. 14 января. URL: https://www.segodnya.ua/ukraine/kriminalnaya-statistika–2018-goda-stalo-bolshe-ubiystv-i-atak-hakerov–1205078.html (Date accessed: 08.09.2019).

At present law enforcement officers are in need of high speed of obtaining the necessary information, its accumulation and evaluation with the use of various innovative products. The relevance of this publication is due to the need for a comprehensive scientific study of innovative activities in law enforcement agencies that will improve the quality and effectiveness of crime counteraction.

Analysis of Recent Researches and Publications. A number of scientific publications, public discussions, scientific-practical conferences and other events are devoted to the problems of research and development of the sphere of innovative activity in Ukraine. Researchers indicate an extremely low level of innovation in all spheres of Ukraine [1]. For the proper development of our country's innovation potential, the Cabinet of Ministers of Ukraine approved the Strategy for the Development of Innovative Activities for the Period up to 2030 where the problems that need to be solved with the help of public policy instruments are analyzed in detail. In particular, the document states that at the stage of innovation creation there is insufficient budget financing and the lack of well-established communications between the scientists-developers and representatives of the customer of innovative products [2]. Such problems also impede innovation activity in forensic science and pre-trial investigation bodies.

In recent years, forensic scientists and law enforcement officers have been pointing to the low level of equipping law enforcement agencies with new scientific and technological tools and innovative products [3]. At the same time, there is an increase in the number of serious and especially serious crimes of certain categories. In particular, in 2018 there were over 418 murders in Ukraine, more than in 2017, 49 abductions and 100 more corruption offenses [4].

In forensic science, scientific means are "instruments, devices, and materials used to gather, investigate, and use evidence, or to create conditions that complicate crime, are designed to address the needs of crime detection

[1] Проблеми та перспективи розвитку інноваційної діяльності в Україні: матеріали XI Міжнародного бізнес-форуму (Київ, 22 березня 2018 р.)/відп. ред. А. А. Мазаракі. Київ: Київ. нац. торг.-екон. ун-т, 2018. 200 с.

[2] E.g., Стратегія розвитку сфери інноваційної діяльності на період до 2030 року. Розпорядження Кабінету Міністрів України від 10 липня 2019 р. № 526-р. Київ. URL: https://zakon.rada.gov.ua/laws/show/526–2019-%D1%80 (Date accessed: 19.09.2019).

[3] Інноваційні засади техніко-криміналістичного забезпечення діяльності органів кримінальної юстиції: монографія/кол. авт.: В. Ю. Шепітько, В. А. Журавель, Г. К. Авдєєва та ін.; за заг. ред. В. Ю. Шепітька, В. А. Журавля. Харків: Апостіль, 2017. 238 с.

[4] Про зареєстровані кримінальні правопорушення та результати їх досудового розслідування. Статистична інформація 2018 рік. Генеральна прокуратура України. Офіційний сайт. URL: https://www.gp.gov.ua/ ua/statinfo.html (Date accessed: 11.09.2019).

and investigation" [1]. Such means are instruments, apparatus, equipment, tools, materials, specialized sets of technical and forensic means, etc.

The innovation term was first used by Joseph Alois Schumpeter, Austrian economist and defined as changes in order to introduce and use new types of consumer goods, new manufacturing and transportation vehicles, markets and forms of organization in industry [2]. Later, this definition was supplemented by signs of mandatory acquisition of new intellectual product (invention or any information) of economic content due to the achievement of positive results after its implementation on the market [3].

According to the Law of Ukraine: On Innovation Activity, innovations should be understood as "newly created (applied) and/or improved competitive technologies, products or services, as well as organizational and technical decisions of production, administrative, commercial or other nature that significantly improve the structure and the quality of production and (or) social field" [4]. An innovative product is a new or upgraded device, technology and/or method ready to be implemented and used. The main feature of such a product is the lack of facts of prior use of the proposed for the use product in the branch selected by its developers.

The meaning of the term: *innovation in criminalistics* is somewhat different from the essence of the concept of scientific and technical means in criminalistics and is much broader. Innovations in criminology are "developed and put into practice new modern methods, techniques, technologies, technical means, devices, equipment, tools, the purpose of which is to optimize the investigation of crimes (trial), improve the quality and efficiency of law enforcement and reduce errors" [5]. Innovations in criminology and pre-trial investigation are both newly created results of research and (or) research and development work, specially designed for the needs of law enforcement officers, and already known, but used for other purposes and (or) in other areas of human activity and (or) improved forensic tools, as well as organizational and technical solutions of methodological, scientific or other nature, which significantly improve the

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[1] Криміналістика: підручник: у 2 т. Т. 1/В. Ю. Шепітько, В. А. Журавель, В. О. Коновалова та ін.; за ред. В. Ю. Шепітька. Харків: Право, 2019. С. 38.

[2] Шумпетер Й. А. Теория экономического развития. Москва: Прогресс, 1982. С. 169–172.

[3] E.g., Твисс Б. Управление научно-техническими нововведениями. Москва: Экономика, 1989. 456 с.

[4] Про інноваційну діяльність: Закон України від 04.07.2002 р. № 40-IV URL: https://zakon.rada.gov.ua/laws/show/40–15 (Date accessed: 20.09.2019).

[5] Шепітько В. Ю., Авдєєва Г. К. Інновації в криміналістиці. Велика українська енциклопедія: у 20 т. Т. 20: Криміналістика, судова експертиза, юридична психологія/ редкол.: В. Ю. Шепітько (голова) та ін.; Нац. акад. прав. наук України; Ін-т держави і права ім. В. М. Корецького НАН України; Нац. юрид. ун-т ім. Ярослава Мудрого. Харків: Право, 2018. С. 337–338.

quality of criminal investigation and reduce the time of pre-trial investigation[1]. Such products are developed and used in the field of forensic techniques, tactics and methods of crime investigation.

The directions of introduction of scientific and technological means and innovative products in investigative activity are as follows: 1) the development and use of new scientific and technical means for identification, collection, preliminary research and fixation of evidence; 2) offering the latest information technologies and their use in the work of the investigator; 3) creation (development) and proposing to the application of new techniques, methods, methods of conducting individual investigative actions and investigation of crimes in general[2]. P. V. Bernaz, having identified the three main directions of innovation in criminalistics (techno-forensic, tactical-forensic and direction of providing a methodology for investigating certain types of crimes), rightly believes that technologically-innovative direction is developing most rapidly [3]. However, the analysis of numerous publications on innovations in criminalistics showed that the problems of the direct development and implementation of scientific and technological means and innovative products in the activities of law enforcement agencies are not sufficiently covered in scientific publications. Most of publications in this field are devoted to the coverage of positive experience in the use of scientific and technical means in investigative activities. These publications rarely contain detailed descriptions of specific newest technical equipment and innovative products, methods of their practical application. There is also no analysis of the probability of errors in the use of devices in the measurement of individual indicators. That is, scientists pay insufficient attention to experimental work and the development of real innovative products for use in law enforcement.

The Article Purpose is to analyze the essence and importance of scientific and technological means and innovative products in the activity of law enforcement agencies, to review modern innovative products in criminalistics and law enforcement agencies, to identify problems of innovation development and to put them into practice, to identify ways to overcome obstacles on the way to innovative activity while countering crime.

[1] Інноваційні засади техніко-криміналістичного забезпечення діяльності органів кримінальної юстиції: монографія/кол. авт.: В. Ю. Шепітько, В. А. Журавель, Г. К. Авдєєва та ін.; за заг. ред. В. Ю. Шепітька, В. А. Журавля. Харків: Апостіль, 2017 D. S.. 238– 23.

[2] Шепитько В. Ю. Проблемы разработки, внедрения и использования инноваций в следственной деятельности. *Использование современных информационных технологий в правоохранительной деятельности и региональные проблемы информационной безопасности:* сб. материалов междунар. науч.-практ. конф. Вып. VII (ч. 1). Калининград: Калинингр. юрид. ин-т МВД России, 2006. С. 126.

[3] E.g., Берназ П. В. Інновації — основа криміналістичного забезпечення діяльності з розслідування злочинів. Південноукраїнський правничий часопис. № 4. 2015. С. 49.

Main Content Presentation. Despite the fact, that media periodically reports of police receiving new equipment [1], results of a survey of 295 pre-trial investigators revealed that, according to 95 % of respondents, the level of their equipment with scientific and technical means and innovative products is low. At the same time, most investigators consider it necessary to use scientific and technical means during the conduct of investigative (search) actions (56 % of respondents).

While summing up the survey materials of 295 investigators it was found that, according to 9.6 % of respondents, the available technical and forensic facilities are not perfect and compact. This prevents investigators from identifying traces and microparticles (32.7 %), removing them (16.9 %) and fixing them (10.3 %). Respondents expressed the following wishes to improve the characteristics of technical and forensic means of domestic production: upgrading to the level of foreign (2.7 %), reducing overall dimensions and weight (3.7 %), improving the efficiency and accuracy of measurements (1.7 %), opportunities computer processing of evidentiary information (3.2 %), increase of speed of action (0.7 %), creation of specialized sets of scientific and technical means for various departments (76.2 %), etc.[2]

Thus, the lack of updating of technical and forensic facilities was established; the loss of the professional core of the staff of the investigative apparatus and operational divisions of law enforcement agencies; the lack of available tactical means of conducting investigative activities in modern conditions; difficulties in attracting specialists of different expert specialties to participate in investigative (search) actions; presence of problems of interaction of the investigator with expert witnesses; lack of information about the investigated event due to investigators' overload and lack of time; lack of reliable sources of information; the presence of counteraction to the investigation by interested parties and others. The study found that the low level of use of scientific and technological tools and innovative products in the pre-trial investigation leads to a low level of crime detection, and the introduction of innovation as the final stage of innovation helps to optimize the investigation of crimes.

The concept innovative activity is narrower than the concept innovative process, which may additionally cover not directly related to the creation of an innovative product actions, in particular, the creation of innovative infrastructure and ensuring its proper functioning [3]. The innovation process in criminalistics

[1] E.g., Поліція та підрозділи ДСНС отримали нову техніку. Прес-центр МВС. URL: https://mvs.gov.ua/ua/news/12946_Policiya_ta_pidrozdili_DSNS_ otrimali_novu_tehniku_FOTO_.htm (Date accessed: 21.09.2019).

[2] Шепітько В. Ю., Журавель В. А., Авдєєва Г. К. Інновації в криміналістиці та їх впровадження в діяльність органів досудового слідства. *Питання боротьби зі злочинністю*: зб. наук. праць/редкол.: В. І. Борисов та ін. Харків: Право, 2011. Вип. 21. С. 39—46.

[3] Некрасов В. Н. Классификация преступлений в области инновационной деятельности (по критерию «область применения инновации»). Научно-практический журнал Вологодского институт права и экономики ФСИН России *«Вестник*

and practice of pre-trial investigation bodies lasts for a certain period of time which starts from the birth of innovative idea within the criminalistics field and ends with introduction of a ready-to-use innovative product into the practice of combating crime. This process involves gradual, purposeful steps that differ in nature of action, but united with one goal: the creation of an innovative product and its implementation into practice.

We have identified the following key interdependent stages of innovation in pre-trial investigation bodies: 1) study and analysis of the current state and possible ways of introducing innovations in the practice of combating crime; 2) highlighting the most promising areas of innovation, taking into account the needs of investigative practice and the achievements of natural and technical sciences; 3) idea generation and filtering; 4) research planning (SRW — Scientific Research Work); 5) the development of innovations in accordance with the SRW — Scientific Research Work plan; 7) validation of research results; 8) introduction of innovations into the practical activity of pre-trial investigation bodies and evaluation of their effective use 1.

Modern innovative products in the form of investigative techniques for new crimes and tactical recommendations and operations are created on the basis of forensic algorithms, which are systems of sequentially enforced legal provisions and developed by forensic orders in the form of recommendations aimed at effectively solving the problems of disclosure, investigation. According to the results of a total of 75 criminal proceedings and the survey of 295 investigators of the Prosecutor's Office and the Security Service of Ukraine, it was established that the criminalistics algorithm has a certain specificity, based on the presence of a relatively stable standard structure, which allows investigators to freely search for the optimal course of an action. The criminalistics algorithm, written in a programming language, presupposes its functioning with the help of computer technologies in an interactive (dialogue) mode that helps to increase the efficiency of its use [2].

The basic principles for the use of innovative products while countering crime are as follows: 1) principles of legality and ethnicity of its use; 2) principle of scientific nature; 3) principle of safety; 4) principle of invariance of objects of research; 5) principle of efficiency. The use of innovative products in the work

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института: преступление, наказание, исправление». 2018. С. 43—48.

[1] Авдеева Г. К. Инновационная деятельность в судебной экспертизе: проблемы и перспективы. *Криміналістика XXI століття:* матеріали міжнар. наук.-практ. конф. Харків: Право, 2010. С. 566.

[2] Шепитько В. Ю., Авдєєва Г. К. Проблемы формирования «криминалистических алгоритмов» и возможности их практической реализации. *Использование современных информационных технологий и проблемы информационной безопасности в деятельности правоохранительных органов:* сб. науч. тр. Калинингр. юрид. ин-та МВД России. Калининград, 2009. С. 6—18 ; Шепітько В. Ю., Авдєєва Г. К. Проблеми алгоритмізації слідчої діяльності. Актуальні проблеми держави і права. Одеса: ОНЮА, 2008. С. 46—49.

of pre-trial investigation bodies is permissible provided that the legitimate rights and interests of citizens, moral and ethical standards are respected [1].

Unmanned aerial vehicles (UAVs) comply with these principles. Today, there are 2.5 thousand UAVs in service with the National Police of Ukraine [2]. They are used by the police to prevent crime, to capture illegal activities, to create photographs, maps and charts while inspecting the scene, when conducting other investigative (search) actions (for example, when conducting an investigative experiment to determine the circumstances of a traffic accident) etc. There are several unresolved issues regarding the effective use of UAVs in the activities of pre-trial investigation bodies: the lack of regulatory regulation of the use of UAV information; lack of safety requirements for certain UAV classes; lack of techniques for the use of UAVs in certain investigative situations; lack of user training, etc.

When implementing an innovative product into the practical activities of law enforcement agencies, the relevance of human resources plays an important role. D. V. Shvets rightly believes that the success of innovations in pre-trial investigation activities depends on employees' ability to overcome their inertia and learn to work in new conditions [3]. Therefore, for the selection of employees to work in pre-trial investigation bodies, during personnel and official inspections, as well as to obtain indicative information in the construction of investigative versions used instrumental detection of persons using polygraph: a kind of special psychophysiological technical means dynamics of at least five independent psychophysiological processes in the human body (thoracic and diaphragmatic respiration, cardiovascular activity, electrical conductivity of the skin, motor activity) [4]. Such processes occur as a result of asking a person questions by a special technique or demonstration of certain images and objects. Such processes arise from the questioning of a person by a special technique or the demonstration of certain images and objects. Because the results of a person's

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[1] Шепітько В. Ю., Журавель В. А., Авдєєва Г. К. та ін. Інновації в судовій експертизі. Інноваційні засади техніко-криміналістичного забезпечення діяльності органів кримінальної юстиції: монографія; за заг. ред. В. Ю. Шепітька, В. А. Журавля. Харків: Апостіль, 2017. С. 122—137.

[2] Поліція у роботі використовує безпілотники — має їх уже 2,5 тисячі. *Молодий буковинець:* Новини України. URL: https://molbuk.ua/ukraine/143170-policiya-u-roboti-vykorystovuye-bezpilotnymy-maye-yikh-uzhe–25-tysyach.html (Date accessed: 19.09.2019).

[3] Швець Д. В. Готовність до інноваційної діяльності в контексті професійної підготовки слідчих. Матеріали Всеукраїнської науково-практичної конференції *«Актуальні питання досудового розслідування та тенденції розвитку криміналістичної методики»* (м. Харків, 21 листопада 2018 р.). URL: http://univd.edu.ua/uk/dir/1956 (Date accessed: 18.09.2019).

[4] Інструкція про поліграф в нацполіції. Чи все однозначно? Всеукраїнська асоціація поліграфологів. URL: https://polygraph.ua/instrukcija-pro-poligraf-v-nacpolicii-chi-vse-odnoznachno/ (Date accessed: 22.09.2019).

poll using a polygraph depend on the quality of the software of the device, on the psychological state and health of the respondent, on a certain sequence of questions that may lead to manipulation by a specialist and other factors, to use the results of the device to obtain evidence information without scientifically grounded methods is too early.

Currently expert units of the Ministry of Internal Affairs of Ukraine are equipped with laser scanners FARO®Laser Scanner Focus3D made in the USA with special software [1], used for fixing the progress and the results of the inspection of the scene [2]. Such devices have high resolution and accuracy of measurements, allow to get the image of a scene in three-dimensional form with the possibility to change the viewing angle of individual areas and objects. Laser 3D scanners scan a scene from multiple positions and determine the distances between individual objects. Forensic scientists from other countries propose to use 3-D scanners to determine the trajectory of the bullet, in identifying the weapon in its wake, to build a scheme of location of blood spots at the scene and for other purposes [3].

In recent years, the use of smartphones [4] in the work of law enforcement agencies has been increasingly suggested in the literary sources of forensic science. Modern smartphones, except mobile communications, perform many other functions and can be completely replaced by a large number of scientific and technological means. Modern smartphones, except mobile communications, perform many other functions and can be completely replaced by a large number of scientific and technological means. With the help of software applications, they make high quality photos and videos (including panoramic and large scale), sound recording, document scanning, measuring the size of objects and determining distances between them, access the Internet to find information, hold correspondence and send messages, use a compass and calculator, translate texts from foreign languages, view and edit texts and tables, accumulation and storage of documents and photos and more.

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[1] Центр САПР. Офіційний представник FARO Technologies Inc. в Україні. URL: http:// www.faro.in.ua/focus3d.html (Date accessed: 19.09.2019).

[2] E.g., Дуфенюк О. М., Ковальська М. Ю. Новітні технології у практиці досудового розслідування на прикладі 3D-сканерів та смартфонів під час огляду місця події. *Порівняльно-аналітичне право.* № 2. 2014. С. 302—305; Данець С. В. Дослідження обставин дорожньо-транспортних пригод за допомогою новітніх технологій лазерного сканування. *Актуальні проблеми застосування нового кримінального процесуального законодавства України та тенденції розвитку криміналістики на сучасному етапі*: матер. Всеукр. наук.-практ. конф (Харків, 5 жовтня 2012 р.) МВС України; Харк. нац. ун-т внутр, справ; Кримінологічна асоціація України. Харків: ХНУВС, 2012. С. 231—243.

[3] Raneri Domenic. Enhancing forensic investigation through the use of modern three-dimensional (3D) imaging technologies for crime scene reconstruction. Australian journal of forensic sciences. Vol. 50. № 6, 2018. Pp. 697—707.

[4] Smartphone (translated from English: “smart” phone.)

In the context of global informatization law enforcement agencies require the use of information technology, automated databases, information and information retrieval systems to search, accumulate, analyze and use large amounts of information in digital form. In order to optimize the work with considerable amounts of information, a number of automated workplaces of investigator, prosecutor, judge, court expert, etc. were developed. In particular, the «Інсайт» [1] Investigator workstation is intended for the use in practical activities of investigators, judges, lawyers, in pedagogical and scientific activities in the field of criminalistics and forensic expertise, to improve the qualification of practitioners of law enforcement agencies of Ukraine. The workstation contains the following sections: Legislation, Procedural documents, Investigative actions, Forensic methods, Forensic examinations, Scientific and technical means, Investigative practice, Bibliography, Glossary, Training, Law enforcement agencies and forensic science institutions, Reference useful information.

To improve the quality and efficiency of the processes of planning the investigation of a crime, choosing the optimal system of tactics, building investigative versions, special forensic databases (DB) and information retrieval systems are used. Their examples are the «Практика слідчого» [2] and the «Слідчий прецедент» [3] that received a positive assessment of practitioners during their testing in law enforcement agencies. The Investigator's Practice database is a set of several thousand separate reports on the processes and results of investigation in Ukraine and the former CIS of crimes of various categories (over the past 70 years), on the peculiarities of the use of forensic tools and special knowledge in criminal proceedings. The texts in the database are systematized by types of crimes in accordance with the Criminal Code of Ukraine and the nature of forensic tools used by investigators during the investigation of crimes. The Investigative Precedent database is an electronic information retrieval system that contains more than two thousand materials of criminal proceedings for serious and especially serious crimes. Both databases are intended for use by law enforcement officers to build investigative (judicial) versions, plan and most effectively conduct investigative (judicial) actions, etc. They are also used by scientists and teachers of the Department of Criminology directly in practical classes on criminology courses, methods of crime investigation and forensic science as an interactive guide.

Computer systems "SketchCop Facette Face Design System Software", "Identi-Kit 2000", "FACES", "E-FIT" and "PortraitPad" are most often used to

[1] Шепітько В. Ю., Авдєєва Г. К. Автоматизоване робоче місце слідчого «Інсайт». Свідоцтво № 22566 про реєстрацію авторського права на твір від 6 листопада 2007 р.

[2] Шепітько В. Ю., Авдєєва Г. К. База даних «Практика слідчого». Свідоцтво № 49389 про реєстрацію авторського права на твір від 30 травня 2013 р.

[3] Шепітько В. Ю., Авдєєва Г. К. База даних « traces». Свідоцтво № 60084 про реєстрацію авторського права на твір від 30 травня 2013 р.

build a photo of a wanted person in law enforcement agencies of other countries. An example of such a domestic system is «RAIPS-портрет» [1] that is an automated system for building a photo robot based on a computer database of portraits. When constructing a computer photo robot, the operator manages the database in a dialog mode according to the course of the conversation with the eyewitness about the features of the person being installed. The main characteristics of the proposed method of compiling a photo work are as follows: the database covers a file of 300 people of different sexes, nationalities and ages; short duration of the session — up to 30—40 minutes; the ability to graphically edit the portrait at any stage of work; the similarity of the subjective portrait with the wanted person (according to eyewitnesses) is 80—85 %.

Recently, forensic scientists have paid considerable attention to providing information to support decision-making by law enforcement officers using automated information systems (AIS). Such systems help in drawing up an investigation plan, selecting a system of tactics, determining the optimal set of forensic examinations and scientific and technical means. One of such AIS is the information system: «Профіль вбивці» [2] that is designed to build a typical model of the identity of the killer and the motives of the crime and consists of two parts. The first part of the system is an independent pre-created database, which contains the results of summarizing the materials of 1100 criminal proceedings and 200 court verdicts for murder, and the second part is dependent on the first part and is designed to automatically build a socio-psychological profile of the probable murderer in each criminal case.

There are a number of obstacles and barriers to innovations in crime prevention, such as a lack of knowledge of investigative staff in the industry and the inability to obtain them, professional deformation or misconduct about everything new, advanced, etc.[3] It hinders the introduction of innovation into investigative activities and the fact that in all countries there are problems with the recognition of digital evidence by the court [4].

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[1] E.g., Шепітько В. Ю., Фурса В. І. Спосіб формування суб'єктивного портрету «RAIPS-портрет» (комп'ютерного фотороботу). Патент на корисну модель № 69248 від 24 квітня 2012 р.

[2] Шепітько В. Ю., Журавель В. А., Авдєєва Г. К., Стороженко С. В. «Науково-практичний твір «Профіль вбивці». Свідоцтво № 67454 про реєстрацію авторського права на твір від 26.08.2016 р.

[3] Шепітько В. Ю., Журавель В. А., Авдєєва Г. К. Інновації в криміналістиці. Інноваційні засади техніко-криміналістичного забезпечення діяльності органів кримінальної юстиції: монографія/за заг. ред. В. Ю. Шепітька, В. А. Журавля. Харків: Апостіль, 2017. С. 18.

[4] E.g., Arshad Humaira, Bin Jantan Aman, Abiodun Oludare Isaac. Digital Forensics: *Review of Issues in Scientific Validation of Digital Evidence.* Journal Of Information Processing Systems. Volume 14, № 2 (2018), pp. 346—376. URL: http://xml.jips-k.org/full-text/view?doi=10.3745/JIPS.03.0095 (Date accessed:19.09.2019).

Conclusions. There is a gradual decline in innovation potential due to the existence of a number of obstacles to the development and implementation of scientific and technological tools and innovative products in all areas of human activity, including the activities of law enforcement agencies in Ukraine. The main obstacles to innovation are the low level of research funding and the lack of staff training.

According to the results of the investigators questioning and summarizing the materials of criminal proceedings, it is established that at present the bodies of pre-trial investigation are insufficiently equipped with scientific and technical means and innovative products, and therefore their development is one of the priority tasks of forensic science at the present stage.

The article defines scientific and technological means and innovative products, identifies problems of their development and implementation in the activity of law enforcement agencies, substantiates the need for further research on the procedural regulation of the use of the latest scientific and technological tools in criminal proceedings and fixing the results of their application and development that arise from innovative activity.

According to the authors, overcoming the existing problems of the development and implementation of innovative products in the practice of crime counteraction is possible by introducing innovations into the educational process at all levels of education and with systematic state support, which requires close cooperation of developers and users of innovative products and public funding of the development and implementation of innovations in the practice of crime counteraction.

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В. Ю. Шепітько, Г. К. Авдєєва

ПРОБЛЕМИ ЗАСТОСУВАННЯ НАУКОВО-ТЕХНІЧНИХ ЗАСОБІВ ТА ІННОВАЦІЙНИХ ПРОДУКТІВ У ДІЯЛЬНОСТІ ОРГАНІВ ПРАВОПОРЯДКУ

Розглянуто сутність та значення науково-технічних засобів, інновацій та інноваційних продуктів у діяльності органів правопорядку, запропоновано визначення даних термінів. За результатами аналізу матеріалів анкетування слідчих і узагальнення кримінальних проваджень встановлено низький рівень забезпечення органів правопорядку сучасними науково-технічними засобами та інноваційними продуктами, визначено причини цих явищ. Проведено огляд та здійснено аналіз сучасних інноваційних продуктів, які використовуються в діяльності органів правопорядку.

Запропоновано алгоритм розроблення інновацій для потреб правоохоронних органів.

Ключові слова: науково-технічні засоби, інновації, інноваційні продукти, інноваційна діяльність, органи правопорядку, інформаційні технології, розслідування злочинів.

В. Ю. Шепитько, Г. К. Авдеева

ПРОБЛЕМЫ ИСПОЛЬЗОВАНИЯ НАУЧНО-ТЕХНИЧЕСКИХ СРЕДСТВ И ИННОВАЦИОННЫХ ПРОДУКТОВ В ДЕЯТЕЛЬНОСТИ ОРГАНОВ ПРАВОПОРЯДКА

Инновационное развитие Украины связано с активным внедрением цифровых (информационных) технологий, оно обусловливает необходимостьиспользования новых научно-технических средств и инновационных продуктов в работе органов правопорядка.

В статье определена сущность и значение научно-технических средств и инновационных продуктов в деятельности органов досудебного расследования, выделены проблемы разработки инноваций и внедрения их в практическую деятельность, предложены пути преодоления препятствий на пути инновационной деятельности в борьбе с преступностью.

Рассмотрены сущность и значение научно-технических средств, инноваций и инновационных продуктов в деятельности органов досудебного расследования, даны определения данных терминов. По результатам анализа материалов анкетирования следователей и обобщения уголовных производств установлен низкий уровень обеспечения органов досудебного расследования современными научно-техническими средствами и инновационными продуктами, определены причины этих явлений. Осуществлен обзор и анализ современных инновационных продуктов, используемых в деятельности органов правопорядка.

Предложен алгоритм разработки инноваций для нужд органов правопорядка. Выделены проблемы, возникающие на отдельных этапах процесса разработки инноваций, предложены пути их преодоления. Выявлены

причины возникновения препятствий на пути внедрения инноваций в практику борьбы с преступностью. Определена роль объективных и субъективных факторов, препятствующих инновационной деятельности в криминалистике и органах досудебного расследования.

Проанализированы тенденции развития инновационного потенциала в области криминалистики. Обосновывается необходимость государственной поддержки инновационной деятельности в органах досудебного расследования и внедрение инноваций в учебные процессы всех уровней образования.

Ключевые слова: научно-технические средства, инновации, инновационные продукты, инновационная деятельность, органы досудебного расследования, информационные технологии, расследование преступлений.
Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.02
UDC 348.98

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Review article

TACTICAL AND CRIMINALISTICS COMPLEXES IN THEORY OF CRIMINALISTICS AND PRACTICE OF CRIME COUNTERACTION: PROBLEMS, DISCUSSIONS, INNOVATIONS

The problems of tactical and criminalistics complexes in the theory of forensic science and the practice of countering modern crime are investigated. A critical analysis of scientific approaches and controversial points of view of individual scientists regarding the problem under study is carried out, the author's vision of solving the problems under consideration is proposed. It is substantiated that a tactical operation together with a tactical combination are varieties of tactical and forensic complexes, these are relatively new, specific activity categories that reveal the functional side of complex means of forensic tactics and are used by the investigator (judge) in the process of criminal proceedings.

Scientific approaches to understanding tactical operations and tactical combinations are considered, criteria for their differentiation are determined. It is noted that tactical combination and tactical operation are dynamic categories, the essence of which is manifested in the system of procedural and non-procedural actions (measures) that are in interaction and mutual influence. Despite some external similarity, they are independent tactical means, and their differentiation is based on certain criteria, the list and content of which are proposed for consideration.

It is proved that a tactical operation should be considered as a special type of tactical and forensic complexes for the investigation of crimes and judicial review of materials of criminal proceedings and as an independent category of criminalistics. It is substantiated that in modern conditions of reforming criminal procedural legislation, criminal justice bodies, studies of the problems of the complex use of tactical means are relevant and are due to the needs of practice. Prospective directions of research of further scientific developments of the considered problems are proposed.

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Keywords: tactical and criminalistics complex, tactical operation, tactical combination, special operation, operational and tactical operation, complex use of tactical means, concept of tactical operations.

Formulation of Research Problem. One of the defining trends in the modern development of criminalistics and crime counteraction practice is the comprehensive implementation of investigative (investigative), covert investigative (investigative) actions, operational-investigative, providing organizational, technical and other measures to address certain intermediate tactical tasks, intelligence which is otherwise ineffective or impossible. Today, there is a growing trend in the development of forensic tactics to develop a set of procedural and non-procedural actions (measures) to achieve goals and address tactical challenges that arise in the process of pre-trial investigation and trial. In this regard, B. V. Shchur quite rightly notes that it is time to move from separate methodological recommendations on the tactical feasibility of individual investigative (search) actions to the appropriate integrated approach, establishing certain relationships with the intermediate (tactical) task of the investigation [1]. It should be borne in mind that tactical and forensic complexes in the investigation of crimes (techniques, combinations, operations) are certain tools for collecting and verifying evidence. They are considered as a procedural and organizational-tactical form of implementation of optimal, acceptable methods of action, line of conduct in the process of solving intermediate tactical tasks, which is implemented to achieve the objectives of the crime investigation [2].

It should be noted that in the specialized literature it has been repeatedly noted that single investigative actions and individual tactical techniques are ineffective in all cases. They usually achieve their goals, usually only when they are combined with other investigative actions and other activities, and in combination with other tactical techniques. On this basis, the formulation of the problem of the complex use of forensic tactics is correct and timely. Such conclusions are confirmed by the results of our interviewing and interviewing of the investigating prosecutor's office, the Ministry of Internal Affairs (police) and the SBU regarding their opinion on how investigators (search), unspoken investigative (search) actions and operational-search, organizational and technical and other measures, in particular, 68.85 % of respondents indicated the complex nature of their implementation, 28.28 % said that they were carried out in isolation, 2.85%; other answers. Therefore, in the current conditions of updating the criminal procedural legislation, reforming the criminal justice study of the problems of integrated use of

[1] Щур Б. В. Теоретичні основи формування та застосування криміналістичних методик: монографія. Харків: Харків юрид., 2010. С. 185.

[2] Якушин С. Ю. Криминалистическая тактика: вопросы теории и практики: учеб. пособ. Казань: Казан. ун-т, 2010. С. 50.

tactical means is an urgent, conditioned by the needs of investigative and forensic practice.

Analysis of Recent Researches and Publications. The scientific basis of this research is the work of well-known forensic scientists who considered the general theoretical problems of forensics and turned to the development of some of its controversial issues related to the analysis of the state, tendencies of formation of the modern concept of tactical-forensic complexes and perspective directions of such researches: Yu. P. Alenin, V. P. Bakhin, R. S. Belkin, O. Yu. Golovin, A. V. Dulov, V. N. Isaenko, V. A. Zhuravel, I. M. Komarov, V. O. Konovalova, G. A. Matusovskij, M. V. Saltevskij, V. I. Perkin, S. B. Rossinskij, V. V. Tishchenko, V. Yu. Shepitko, V. I. Shikanov, B. V. Shchur, S. Yu. Yakushin and others [1].

At the same time, at present there is a range of theoretical and practical problems that remain unresolved in the criminalistics field or are debatable. Currently, a number of issues that are decisive in the development of problems of tactical and criminalistics complexes and the possibilities of their application in investigative and judicial practice, in particular, the essence and concepts of tactical and criminalistics complexes, their varieties, scientific approaches to understanding tactical operations and tactical issues, defining and the criteria for their division, the "innovations" of individual scholars regarding the author's vision of some "new" means of forensic tactics

[1] E.g., Головин А. Ю. Криминалистическая систематика/под ред. Н. П. Яблокова. Москва: ЛексЭкст, 2002; Журавель В. А. Системи слідчих дій та тактичні операції в структурі окремої криміналістичної методики розслідування злочинів. *Вісн. Акад. прав. наук України.* 2009. № 2 (57). С. 197—208; Исаенко В. Н. Проблемы теории и практики использования тактических комплексов в расследовании убийств. *«Черные дыры» в российском законодательстве.* 2004. № 1. С. 269—276; Комаров И. М. Основы частной теории криминалистических операций досудебного производства: монография. Москва: Юрлитинформ, 2010; Криміналістика: підручник: у 2 т. Т. 2/В. Ю. Шепітько, В. О. Коновалова, В. А. Журавель, В. М. Шевчук та ін.: за ред. В. Ю. Шепітька. Харків: Право, 2019. С. 233—237; Перкін В. І. Тактичні комплекси та їх роль у розслідуванні вбивств, пов'язаних із заволодінням матеріальними цінностями. *Наук. вісник Нац. акад. внутр. справ.* 2003. № 1. С. 174—178; Россинский С. Б. Обыск в форме специальной операции: учеб. пособие/под ред. В.Н. Григорьева. Москва: ЮНИТИ-ДАНА, 2003; Салтевський М. В. Криміналістика: підручник: у 2 ч. Ч. 2. Харків: Консум, 2001. С. 78—84; Шиканов В. И. Теоретические основы тактических операций в расследовании преступлений. Иркутск: Изд-во Иркут. гос. ун-та, 1983; Шепітько В. Ю., Журавель В. А. Організаційно-тактичні засоби: поняття та значення. *Питання боротьби із злочинністю:* зб. наук. пр./ редкол.: В. І. Борисов та ін. Харків: Право, 2009. Вип. 18. С. 185—192; Щур Б. В. Теоретичні основи формування та застосування криміналістичних методик: монографія. Харків: Харків юрид., 2010; Якушин С. Ю. Актуальные проблемы тактико-криминалистического обеспечения уголовного судопроизводства в современных условиях. *Криміналістика XXI століття*: матеріали міжнар. наук.-практ. конф., 25—26 листоп. 2010 р. Харків: Право, 2010. С. 556—560, etc.

and varieties of tactical and forensic systems and so on remain unexplored. Therefore, research, development and analysis of the concept of tactical and forensic complexes in modern conditions, its theoretical and methodological problems are relevant and necessary. These and other circumstances necessitate a comprehensive approach to the study of this issue and require fundamental developments and further research.

The Article Purpose is to consider the problems of tactical and forensic complexes and their application in investigative and judicial practice, to establish the role and place of tactical operations and tactical operations in the system of means of forensic tactics, to determine the criteria for their differentiation. The analysis of the most actual debatable problems of tactical-criminological complexes, definition of directions of their improvement, research is provided. Conclusions and results of the research are aimed at the development and improvement of certain provisions of the criminalistics theory of tactical operations, the specifics of formation of tactical and criminalistics complexes and the practice of their implementation in criminal proceedings.

Main Content Presentation. Various terms are used to denote complex tactical means in the special literature and practice of criminal proceedings. They are often called tactical complex [1], criminalistics complex [2], tactical and criminalistics complex, tactical (criminalistics) complex [3], organizational and tactical complex [4] etc. There are often different approaches to the interpretation of these concepts, some discussions about their essence and content. In this regard, O. Yu. Golovin rightly notes that there is no established understanding

[1] Селиванов Н. А. Советская криминалистика: система понятий. Москва: Юрид. лит., 1982. С. 92; Головин А. Ю. Криминалистическая систематика/под ред. Н. П. Яблокова. Москва: ЛексЭкст, 2002. С. 216—221; Перкін В. І. Тактичні комплекси та їх роль у розслідуванні вбивств, пов'язаних із заволодінням матеріальними цінностями. *Наук. вісник Нац. акад. внутр. справ.* 2003. № 1. С. 174—178; Исаенко В. Н. Проблемы теории и практики использования тактических комплексов в расследовании убийств. *«Черные дыры» в российском законодательстве.* 2004. № 1. С. 368—382; Шмонин А. В. Методология криминалистической методики: монография. Москва: Юрлитинформ, 2010. С. 321—333 etc.

[2] Матусовский Г. А. Экономические преступления: криминалистический анализ. Харьков: Консум, 1999. С.155; Савельева М. В., Смушкина М. В. Криминалистика: учебник. Москва: Дашков и К, 2008. С. 312.

[3] Асташкина Е. Н., Марочкин Н. А., Михальчук А. Е. Расследование преступлений. Криминалистические комплексы: учеб.-практ. пособ. Москва: Приор-издат, 2003. С. 5.

[4] Шмонин А. В. Методика расследования преступлений: учеб. пособ. Москва: Юстицинформ, 2006. С. 331—343; Шепітько В. Ю., Журавель В. А. Організаційно-тактичні засоби: поняття та значення. Питання боротьби із злочинністю: зб. наук. пр./редкол.: В. І. Борисов та ін. Харків: Право, 2009. Вип. 18. С. 185—192.

of the essence of these actions, measures and techniques, just as there is no single direction of their systematization [1].

Based on the above, one of the urgent tasks of theoretical development of the complex use of tactical tools is to solve the problem of the conceptual apparatus. After all, at the beginning of any scientific research it is necessary to determine the meaning, place and relationship of the studied phenomenon (category), to understand the general theoretical provisions, to formulate the initial concepts and only then to proceed directly to the scientific development of the problem. Ignoring this rule leads only to confusion, and sometimes forces to "reject" already existing experience of theoretical and applied researches and to begin consideration of these or those questions literally from the beginning, from the first principles [2]. In this aspect, of course, significant in-depth scientific and practical interest is an in-depth study of the concept of tactical forensic complex, its structure, the ratio of the components that combine in it, their impact on each other and so on.

The formulation of the concept of tactical and forensic complex requires first of all a careful analysis and clarification of the essence of the term: *complex*, which means (English complex <Latin complexus: plexus, combination, connection) a set of objects, concepts or associations that make up one piece [3]. In dictionaries, the term complex is interpreted as a set, combination of phenomena and properties[4] or a set of objects, devices, programs, phenomena, actions, properties that form a whole, operating in a single system and have a common purpose, in a complex — together, together without disconnecting from anything[5]. In the conceptual apparatus of the science of criminology, the term tactical arose as a result of the attempt of scientists to unite under “one roof” all existing organizational and tactical tools[6]. In this sense, O. Yu. Golovin rightly notes that the task of building a clear and logical system of concepts in modern criminology necessitates the introduction of a special term in science,

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[1] Головин А. Ю. Криминалистическая систематика/под ред. Н. П. Яблокова. Москва: ЛексЭкст, 2002. С. 215.

[2] Асташкина Е. Н., Марочкин Н. А., Михальчук А. Е. Расследование преступлений. Криминалистические комплексы. С. 3.

[3] Большой словарь иностранных слов/сост. А. Ю. Москвин. Москва: Полюс, 2001. С. 299.

[4] E.g.,Толковый словарь русского языка/под ред. Д. Н. Ушакова. Т. 1. Москва: «Астрель», «АСТ», 2000. С. 428.

[5] Великий тлумачний словник сучасної української мови/уклад. і голов. ред. В. Т. Бусел. Київ; Ірпінь: ВТФ «Перун», 2002. С. 445.

[6] Колдин В. Я. Логико-информационная структура следственного действия и тактической комбинации. Криминалистика: учебник для вузов: отв. ред. Н. П. Яблоков. Москва, 1996. С. 369.

denoting different, united by the need to solve certain problems of investigation, sets of actions of the investigator [1].

However, in the theory of criminalistics, the question of the concept of tactical (criminalistics) complex remains controversial. In particular, M. O. Selivanov understands a tactical complex as a combination of tactical methods within one procedural action [2]. V. I. Sorokotyagin and O. A. Schmidt, on the contrary, believe that the forensic complex is a combination of many investigative, organizational and verification, control and audit measures, as well as actions using special knowledge conducted by the investigator and other participants. criminal proceedings in order to timely perform certain significant tasks [3].

According to E. G. Dzhakishev, the concept of tactical and criminalistics complex combines two categories: tactical operation and tactical combination. This approach, as the scientist notes, to the designation of different sets of investigative actions is optimal, because both the tactical operation and the tactical combination complement each other "and can be used simultaneously to characterize the entire system of the set of investigative measures" [4]. Some scientists believe that the tactical and forensic complex is a set of investigative actions, operational and investigative, control and audit, technical and other measures, as well as a set of tactics that are implemented as part of a separate investigative action. These complexes are used to solve specific problems that have arisen at certain stages of the investigation of crimes in certain investigative situations [5].

In turn, S. Yu. Yakushin in the system of tactical and forensic complexes distinguishes between individual tactics and complex tactical means - tactical combinations and tactical operations [6]. At the same time, the scientist emphasizes that the concept of tactical and forensic complex should not be identified with

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[1] Головин А. Ю. Криминалистическая систематика. С. 216—217.

[2] Селиванов Н. А. Советская криминалистика: система понятий. Москва: Юрид. лит., 1982. С. 92.

[3] Сорокотягин И. Н., Шмидт А. А. Использование специальных познаний в криминалистическом комплексе «установление неопознанного трупа или его частей». Свердловск: Изд-во Свердлов. юрид. ин-та, 1986. С. 98.

[4] Джакишев Е. Г. Проблемы совершенствования криминалистических приемов и средств борьбы с хищениями и иными корыстными преступлениями в сфере экономики: автореф. дисс. … д-ра юрид. наук: 12.00.09. Алматы, 1994. С. 25.

[5] Асташкина Е. Н., Марочкин Н. А., Михальчук А. Е. Расследование преступлений. Криминалистические комплексы: учеб.-практ. пособ. Москва: Приор-издат, 2003. С. 5.

[6] Якушин С. Ю. Актуальные проблемы тактико-криминалистического обеспечения уголовного судопроизводства в современных условиях. Криміналістика XXI століття: матеріали міжнар. наук.-практ. конф., 25—26 листоп. 2010 р. Харків: Право, 2010. С. 556—560.

the concept of forensic complex, which is broader in its content [1]. According to O. Yu. Golovin, tactical complexes are multilevel systems of investigative, operative-search and organizational actions, receptions directed on the decision of the set tasks at investigation of criminal case [2].

Investigating these problems, A. V. Shmonin notes that the term: *tactical complex* is an organizationally organized set (system) of tactics and procedural actions and operational and investigative and other measures aimed at solving the problems of preliminary investigation or due to this task and the investigator. situation. In his opinion, tactical complexes may include the following elements: tactical techniques; investigative actions; other procedural actions; organizational activities; technical measures; operational and investigative measures; audits and documentary audits (tax audits); measures to study documentary information; measures for the use of mass media and Internet technologies in the process of crime investigation; measures related to the use of public assistance (public organizations, other associations of citizens, etc.) [3].

A. V. Shmonin's stated position was criticized in the pages of forensic publications. In particular, B. V. Schur believes that it is difficult to imagine a combination of different means of forensic tactics: systems of tactics (or individual tactics) and procedural (investigative) actions or other measures, because tactics do not exist in themselves, they are used within investigative action. Therefore, investigative actions and other (procedural or non-procedural) measures can be combined. Another thing is that there are types of tactical operations: 1) the system of investigative actions; 2) set of investigative actions and operational and investigative measures; 3) set of investigative actions and organizational and technical measures, etc. Such combinations could be attributed to tactical complexes used as an element of separate forensic methods [4].

V. M. Isayenko expresses a different and rather original position on this issue, noting that the tactical complex is a system of investigative, other procedural, operational and investigative and other ancillary actions aimed at obtaining evidence that is important for solving a relatively localized the specific task of the pre-trial investigation, subordinated to its general purpose, that is local investigation methods[5]. He proposes to distinguish the content

[1] Якушин С. Ю. Тактические задачи и средства их решения при расследовании преступлений. *Криміналіст першодрукований.* 2011. № 3. С. 63—66.

[2] Головин А. Ю. Вказана праця. С. 216.

[3] Шмонин А. В. Методология криминалистической методики: монография. Москва: Юрлитинформ, 2010. С. 346.

[4] Щур Б. В. Теоретичні основи формування та застосування криміналістичних методик: монографія. Харків: Харків юрид., 2010. С. 188—189.

[5] Исаенко В. Н. Проблемы теории и практики использования тактических комплексов в расследовании убийств. *«Черные дыры» в российском законодательстве.* 2004. № 1. С. 269—276.

of the tactical complex in the narrow and broad sense. A tactical complex in the narrow sense is a system of tactics used in the performance of any one investigative action (for example, interrogation). The tactical complex in a broad sense is a system of several types of actions: investigative, operational and investigative, other (or only investigative) aimed at solving a particular task of investigation[1].

According to this researcher, the terms: tactical complex and tactical operation (combination) are related concepts, as they have a single nature of origin and are aimed at achieving the overall purpose of the investigation. But at the same time these concepts are not identical. For a tactical operation (tactical combination) is characterized by a subordinate role in relation to the tactical complex, the role of one of the tools of its implementation, one of its constituent elements. Tactical operation (combination) has a certain complex construction, but at a lower level of complexity and focus. In addition, they have different content and structure, and their main difference is the different meaning of the results obtained through their use. By their nature, they are all complexes with different meanings. In particular, the tactical operation is more associated with the concept of the method of operational and investigative work. The scope and nature of actions to be carried out in a tactical operation are much narrower than in a tactical complex. Tactical operation is carried out in a shorter period of time. One of the differences is also that the tactical complex is always focused on obtaining a specific local result by conducting a certain set of investigative actions, which are in a rigid relationship and interdependence. Each investigative action included in it has a specific purpose and cannot be replaced by another investigative action [2].

Some provisions set out by V. M. Isayenko are objectionable. First, we do not share the author's position on the expediency, along with tactical operation and tactical combination to distinguish: tactical and criminalistics complex as a construction of a higher level of complexity and focus, especially presented in such a form as local investigation. Secondly, we cannot agree with the controversial statement that investigative actions are usually not included in the system of elements of a tactical operation, and if they are included in it, they are aimed not at achieving the goal of obtaining evidence, but mainly at creating conditions for receiving. This provision contradicts the views established in forensic doctrine on the concept, nature, purpose of tactical operations.

In the forensic literature regarding the integrated use of tactical and forensic means of crime investigation, different positions of scientists have

[1] Исаенко В. Н. Тактические комплексы в расследовании убийств с использованием сведений о материальных ценностях, похищенных преступниками у потерпевших: дис... канд. юрид. наук: 12.00.09. Москва, 1990. С. 77.

[2] Исаенко В. Н. Проблемы теории и практики использования тактических комплексов в расследовании убийств. С. 269—276.

been expressed. Thus, some forensic scientists [1] propose to consider the tactical combination as the most general collective concept of the whole set of combinational tactical actions in criminology, i.e. they essentially identify such concepts as tactical combination and tactical and criminalistics complex. An active supporter of this position was R. S. Belkin, who first proposed the term: *tactical combination* to denote those tactical methods of interrogation, which were called "psychological traps" or "investigative tricks" and later, expanding the concept of tactical combination, included a combination not only tactics, but also investigative actions. In his opinion, "a tactical combination is a certain combination of tactics or investigative actions that aims to solve a specific task of the investigation and is determined by this purpose and the investigative situation" [2]. The scientist divided all tactical combinations into simple (consisting of a system of tactics used within one investigative action) and complex (systems of investigative actions and other measures) [3].

The peculiarity of this concept is that one term: tactical combination refers to two different concepts: a system of tactics used in the course of a single investigative action, and a set of investigative, operational and investigative and other actions aimed at solving individual tactical tasks. Regarding the stated position, critical remarks were made against its supporters in the forensic literature. In particular, M. P. Malyutin considers that the considered concepts are different in the volume and to unite them in one definition hardly it is expedient [4].

Other scholars[5] argue for the most common idea in forensic science, according to which separate organizational and tactical means of investigation are a tactical operation and a tactical combination. In view of this, the terms: tactical combination and tactical operation reflect certain types of tactical complexes. S. Yu. Yakushin emphasizes: "Tactical combination and tactical operation are a kind of tactical complexes or a complex tactical tool" [6].

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[1] Аверьянова Т. В. Криминалистика: учеб. для вузов/под ред. Р. С. Белкина. Москва: НОРМА–ИНФРА-М, 1999. С. 507—514.

[2] Белкин Р. С. Криминалистика: проблемы, тенденции, перспективы. От теории к практике. Москва: Юрид. лит., 1988. С. 140.

[3] Белкин Р. С. Курс криминалистики: в 3 т. Т. 3: Криминалистические средства, приемы и рекомендации. Москва: Юристъ, 1997. С. 213.

[4] Малютин М. П. Тактические приемы в расследовании преступлений. Москва: Юрлитинформ, 2009. С. 25— 31.

[5] Асташкина Е. Н., Марочкин Н. А., Михальчук А. Е. Расследование преступлений. Криминалистические комплексы: учеб.-практ. пособ. Москва: Приор-издат, 2003. С. 44; Дулов А. В. Тактические операции при расследовании преступлений. Минск: Изд. БГУ, 1979. С. 45; Шиканов В. И. Теоретические основы тактических операций в расследовании преступлений. Иркутск: Изд-во Иркут. гос. ун-та, 1983. С. 18—19 та ін.

[6] Якушин С. Ю. Криминалистическая тактика: вопросы теории и практики: учеб. пособ. Казань: Казан. ун-т, 2010. С. 137—138.

At the same time, various, far from unambiguous views on the understanding and correlation of the concepts of tactical operation and tactical combination are expressed in criminology. In their research, scholars consider these categories either as independent, or, conversely, identify, mix, seeing the difference only in terminology. Thus, E. G. Dzhakishev combines the concepts of tactical combination and tactical operation into one and proposes to call such sets of actions tactical combination operation noting that in fact in this form, these concepts "... do not contradict each other one, on the contrary, complement each other and can be used simultaneously to characterize the entire system of combining investigative actions, operational and investigative and other measures" [1]. V. I. Shikanov also believed that the combination is an attribute of the theory and practice of Crime detection and investigation and in criminalistics, the term: *tactical combination* is used only when emphasizing that the tactical operation is associated with particularly complex, "multi-step" calculations, based on the capabilities of reflexive analysis and involves extensive use of operational capabilities of the body of inquiry [2]. In other words, he considered a tactical combination a kind of tactical operation.

In addition, the vast majority of forensic scientists consider tactical operations and tactical combinations as independent means and offer their own criteria for their differentiation. Thus, A. V. Shmonin supports the position on the delimitation of these complexes and their independent status. This conclusion, in his opinion, is considered important in methodological terms and mainly affects the results of the study of the problem[3]. Some scholars also believe that a tactical operation and a tactical combination are independent forensic categories.

According to M. V Saltevskyi, operation and combination are specific systems of cognitive means of forensic tactics that have a targeted order to solve problems that arise in the investigation. In addition, the tactical operation and the tactical combination are characterized by the same property of integrity, i.e. the full achievement of the goal is possible only when implementing the functions of all elements of the system[4]. However, he notes that a tactical operation is a set of diverse tactical tools: investigative, operational and organizational, united by a single goal to solve a tactical task. The difference between these tools is the complexity of the elements. In a tactical operation, the elements are investigative actions, operational and investigative procedures, organizational measures, i.e. various tactical means. The structure of the tactical combination

[1] Джакишев Е. Г. Проблемы совершенствования криминалистических приемов и средств борьбы с хищениями и иными корыстными преступлениями в сфере экономики: автореф. дис. … д-ра юрид. наук: 12.00.09. Алматы, 1994. С. 25—26.

[2] Шиканов В.И. Теоретические основы тактических операций в расследовании преступлений. Иркутск: Изд-во Иркут. гос. ун-та, 1983. С. 18—19.

[3] Шмонин А. В. Методика расследования преступлений: учеб. пособ. Москва: Юстицинформ, 2006. С. 331—343.

[4] Салтевський М. В. Криміналістика: підручник: у 2 ч. Ч. 2. Харків: Консум, 2001. С. 78—84.

includes a system of single-order measures, mainly techniques of forensic and operational tactics. In this regard, a tactical or operational combination is implemented in a single investigative action or operational action [1].

The position of V. Yu. Shepitko deserves a certain scientific interest, who believes that the organizational and tactical means of investigation, as one of the types of means of forensic tactics, include systems of tactics (tactical combination) and tactical operation as its independent elements[2]. In his view, the definition of tactical combination including a combination of investigative actions is objectionable. Moreover, he is convinced that it is inexpedient to combine in one concept two independent categories: combination of tactics (system of techniques) and combination of investigative (or other) actions (tactical operation). The combination of tactics and investigative actions have different purposes and are not equivalent. In the etymological sense, the term combination is identical to the term: *system of techniques for achieving something*. A tactical combination is possible only within one investigative (forensic) action and does not involve a combination with tactical techniques of another procedural action, so it should be considered as a synonym for tactical techniques. The tactical operation involves a combination of the same and different investigative actions, operational and investigative, organizational and other measures aimed at fulfilling the intermediate task of the investigation in a particular investigative situation [3].

Some scientists offer as complexes technical and criminalistics, tactical and criminalistics and methodological and criminalistics operations. Thus, G. A. Matusovskyi believes that the methodological and forensic operation should be considered as an independent criminalistics complex. In his opinion, the system of forensic complexes of actions of the investigator looks as follows: 1) tactical and criminalistics combination (tactical combination) of methods of carrying out a certain investigative action; 2) tactical and criminalistics operation (tactical operation): solving investigative tasks within the stage (its individual periods, episodes) of the investigation; 3) methodological and forensic operation: solving general, main, main (strategic) tasks of crime investigation[4].

Supporting the idea of G. A. Matusovskyi, I. M. Komarov also proposes tactical and criminalistics, technical and criminalistics and methodological and criminalistics operations as independent complexes; the latter are systems of procedural and other legally regulated actions by investigative bodies and

[1] Салтевський М. В. Криміналістика (у сучасному викладі): підручник. Київ: Кондор, 2005. С. 305—308.

[2] Шепітько В. Ю. Вибрані твори/Избранные труды. Харків: Апостіль, 2010. С. 187.

[3] Криміналістика: підручник: у 2 т. Т. 1/В. Ю. Шепітько, В. О. Коновалова, В. А. Журавель, В. М. Шевчук та ін.: за ред. В. Ю. Шепітька. Харків: Право, 2019. С. 232.

[4] Матусовский Г. А. Экономические преступления: криминалистический анализ: монография. Харьков: Консум, 1999. С. 154—155.

inquiries aimed at solving problems that require clarification of the issues that fall within the circumstances which are to be proved [1].

Somewhat in the updated interpretation, S. B. Rossinskyi considers a tactical operation and a tactical combination. In his opinion, a tactical combination is a certain set of tactics, investigative and judicial actions aiming to solve a specific task of preliminary investigation or trial and is determined by this purpose and the investigative situation. The inclusion of judicial actions in the number of elements that make up the tactical combination, the scientist motivates the following reasons: a) procedural distinction between investigative and judicial actions, which cause their forensic differentiation; b) expansion of the range of subjects of the tactical combination, which include the court and the judge; c) possibility of its implementation not only in the pre-trial investigation, but also in court [2].

In our opinion, expanding the scope of tactical combinations and operations, introducing the court among the subjects of their implementation, we can talk about tactical combinations and operations in court proceedings. A vivid illustration of support for this position is the statement of S. Yu. Yakushin that the stage of judicial investigation as an example of practical implementation of a complex tactical combination may be the choice by the court (and parties) of optimal tactics and lines of conduct with participants in a conflict situation (for example, refusal from giving testimony, with false testimony, self-incrimination, etc.). The solution of such situations may be the application of a system of judicial, organizational and technical actions and measures, including: a) initial judicial interrogation of persons who give consistent and truthful evidence; b) departure of the court to the scene; c) conducting a judicial review; d) presentation of material evidence for examination; e) recognition in court; g) application (if necessary) of disciplinary measures to violators of order in the courtroom, etc.[3] Therefore, in our opinion, the proposal to expand the scope of tactical combinations and operations for court proceedings in court is one of the promising areas of tactical operations theory needs additional in-depth research and understanding.

In our opinion, the proposals of V. M. Grigoriev and S. B. Rossinskyi on the introduction of the term: *special operation* in criminalistics are debatable. Thus, V. M. Grigoriev believes that a special operation is a set of intelligence and operational-search actions, regime and force measures and investigative actions carried out by law enforcement agencies together with interacting bodies under the leadership of the chief of the operational staff under a single

[1] Комаров И. М. Основы частной теории криминалистических операций досудебного производства: монография. Москва: Юрлитинформ, 2010. С. 94—146.

[2] Россинский С. Б. Обыск в форме специальной операции: учеб. пособ. для вузов/под ред. В. Н. Григорьева. Москва: ЮНИТИ-ДАНА, Закон и право, 2003. С. 19—20.

[3] Якушин С. Ю. Криминалистическая тактика: вопросы теории и практики: учеб. пособ. Казань: Казан. ун-т, 2010. С. 50.

plan in in one or more settlements or in a separate locality for the purpose of capturing or, in exceptional cases, destroying armed criminals [1]. According to S. B. Rossinskyi, a special operation should be understood as an organizational form of investigative action, which is characterized by a larger number of subjects and is combined with the collection and research on a large area of objects that contain important information. It has certain features: 1) a special operation in the conduct of an investigative action; this is not a tactical technique and not a procedural type, but an organizational form of investigative action, which differs in the peculiarities of organization and planning; 2) a special operation is to collect and study many objects that contain forensic information and are located in a fairly wide area; 3) when conducting a special operation, a large number of employees is always involved: investigators, operatives, specialists, law enforcement officers and other participants; 4) the conduct of a special operation is connected with the counteraction of persons who are not interested in the proper implementation of the investigative action[2]. Regarding the arguments presented by S. B. Rossinskyi, we consider it possible to join the point of view of V. M. Isayenko, who notes that they are not convincing enough. In particular, it is hardly possible to attribute to new organizational forms of investigative action of carrying out operatively-search actions both before its beginning, and in the course of implementation. We do not see significant differences between the special operation in the given structure and the tactical operation. The only difference is the scope of the investigative actions included in them, but this fact is not of fundamental importance for establishing a distinction between them. Both are tactical operations of various volumes [3].

In our opinion, the development of problems in the use of tactical operations and tactical combinations is absolutely necessary to further improve the scientific basis of the investigation process in order to optimize it. However, we fully agree with R. S. Belkin, who warned against the admiration for the desire to create new terms and neglect a balanced approach to their development. He rightly emphasized that the replacement of an existing term is fully justified only if the new term denotes a new definition of a concept whose meaning has been changed or substantially clarified. If the concept denoted by the term, although changed, but has not lost its essential features, i.e. if the changes affected, for example, only its scope, the term, given the strength of the linguistic tradition, it is advisable to keep [4].

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[1] Григорьев В. Н. Расследование преступлений в чрезвычайных условиях. Правовое обеспечение, организация, методика. Москва: Акад. МВД России, 1994. С. 110.

[2] Россинский С. Б. Обыск в форме специальной операции. С. 10—13.

[3] Исаенко В. Н. Проблемы теории и практики использования тактических комплексов в расследовании убийств. С. 269—276.

[4] Белкин Р. С. Ленинская теория отражения и методологические проблемы советской криминалистики. Москва: Высш. шк. МВД СССР, 1970. С. 63—64.

Thus, given the analysis, it can be argued that the categories tactical combination and tactical operation reflect certain types of tactical and forensic systems. They are relatively new, specific activity categories that reveal the functional side of the complex means of forensic tactics used by the investigator (prosecutor, court) in the criminal proceedings. Tactical combination and tactical operation are dynamic categories, the essence of which is a system of procedural and non-procedural actions (measures), interaction and influence. Despite the purely external similarity, they are independent tactical means, and their distinction is based on the following criteria: a) essence and content; b) system of goals and objectives; c) complexity of structure components; d) functional purpose; e) scale and duration of the proceedings; g) complexity of the organization; g) subjective composition of the participants.

However, despite certain criteria for distinguishing these complexes, it is necessary to agree with V. A. Zhuravel noting that proposed tools should not be considered as competing forensic categories, but on the contrary, as complementary together creating a single, the most effective mechanism for obtaining information necessary for the detection, investigation and prevention of criminal acts [1].

Conclusions. Thus, doctrinal approaches to the definition of tactical and criminalistics complex should be based on a differentiated understanding of such organizational and tactical means as tactical operation and tactical combination. In our opinion, in this case the most successful term to denote a set of procedural and non-procedural actions and measures aimed at solving certain (intermediate) tactical tasks is still a tactical operation, as the term reveals the essence and content of this forensic tool. In order to unify the concepts, the term: *tactical operation* should be used only when it refers to a system of investigative (investigative), covert investigative (investigative) actions, operational-investigative, organizational-technical and other measures (in court proceedings; the system of judicial actions and organizational, technical and other measures) and the term: *tactical combination* only in relation to the system of tactics in the framework of a separate investigative or judicial action.

In turn, tactical operation should be viewed as an independent category of criminalistics and as a special kind of tactical and forensic complexes of investigation and legal proceedings of crimes. The set of actions included in the structure of tactical operation does not replace the tactics of investigative or judicial actions, but forms a more complex structure, the content of which is not limited to tactical techniques, and also includes investigative (search) actions, confidential investigative (search) actions, Investigative (criminal investigation measures) and other measures contributing to their implementation [2], and in legal proceedings:

[1] Журавель В. А. Системи слідчих дій та тактичні операції в структурі окремої криміналістичної методики розслідування злочинів. *Вісн. Акад. прав. наук України.* 2009. № 2 (57). С. 197—208.

[2] Шиканов, В. И. Теоретические основы тактических операций в расследовании преступлений. Иркутск: Изд-во Иркут. гос. ун-та, 1983. С. 16—17.

court actions, organizational-technical, and other measures geared towards solving individual (intermediate) tactical tasks. Compared to tactical techniques and combinations, tactical operations differ in scale and duration of action, a wider range of participants and a high degree of organization of their activities.

All this leads to the need for further active development of the problem of tactical-forensic complexes, which has not only theoretical, but also practical significance, enabling to include in the tactical arsenal of the investigator (prosecutor, judge) scientific recommendations, manage to accomplish a significant role in improving the efficiency of criminal proceedings, after all, in establishing truth. A clear understanding of the essence of tactical operation and its correlation with other tactical-forensic complexes serves to further develop the theory of criminalistics, to improve the investigative and judicial practice. Therefore, further development of these issues is one of the promising directions in modern forensics, which requires additional in-depth research and reflection.

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В. М. Шевчук

ТАКТИКО-КРИМІНАЛІСТИЧНІ КОМПЛЕКСИ В ТЕОРІЇ КРИМІНАЛІСТИКИ ТА ПРАКТИЦІ ПРОТИДІЇ ЗЛОЧИННОСТІ: ПРОБЛЕМИ, ДИСКУСІЇ, НОВАЦІЇ

Досліджуються проблеми тактико-криміналістичних комплексів у теорії криміналістики та практиці протидії сучасній злочинності. Розглянуто наукові підходи стосовно розуміння тактичних операцій та тактичних комбінацій, визначено критерії їх розмежування. Зазначається, що тактична комбінація і тактична операція є динамічними категоріями, сутністю яких є система процесуальних і непроцесуальних дій (заходів), взаємодія та вплив. Незважаючи на деяку зовнішню схожість, вони є самостійними тактичними засобами, а їх розмежування відбувається на основі певних критеріїв, перелік та зміст яких запропоновано та розглянуто.

Запропоновано перспективні напрямки подальших наукових розробок окресленої проблематики.

Ключові слова: тактико-криміналістичний комплекс, тактична операція, тактична комбінація, спеціальна операція, оперативно-тактична операція, комплексне використання тактичних засобів, концепція тактичних операцій.

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ТАКТИКО-КРИМИНАЛИСТИЧЕСКИЕ КОМПЛЕКСЫ В ТЕОРИИ КРИМИНАЛИСТИКИ И ПРАКТИКЕ ПРОТИВОДЕЙСТВИЯ ПРЕСТУПНОСТИ: ПРОБЛЕМЫ, ДИСКУССИИ, НОВАЦИИ

Исследуются проблемы тактико-криминалистических комплексов в теории криминалистики и практике противодействия современной преступности. Проведен критический анализ научных подходов и дискуссионных

точек зрения отдельных ученых относительно исследуемой проблематики, предложено авторское видение решения рассматриваемых проблем. Обосновывается, что тактическая операция вместе с тактической комбинацией являются разновидностями тактико-криминалистических комплексов, это относительно новые, специфические деятельностные категории, раскрывающие функциональную сторону комплексных средств криминалистической тактики и применяемые следователем (судьей) в процессе уголовного производства.

Рассмотрены научные подходы к пониманию тактических операций и тактических комбинаций, определены критерии их разграничения. Отмечается, что тактическая комбинация и тактическая операция являются динамическими категориями, сущность которых проявляется в системе процессуальных и непроцессуальных действий (мероприятий), находящихся во взаимодействии и взаимном влиянии. Несмотря на некоторую внешнюю схожесть, они являются самостоятельными тактическими средствами, а их разграничение происходит на основе определенных критериев, перечень и содержание которых предлагаются к рассмотрению.

Доказывается, что тактическую операцию следует рассматривать как особый вид тактико-криминалистических комплексов расследования преступлений и судебного рассмотрения материалов уголовного производства и как самостоятельную категорию криминалистики. Обосновывается, что в современных условиях реформирования уголовного процессуального законодательства, органов уголовной юстиции исследования проблем комплексного использования тактических средств являются актуальными и обусловлены потребностями практики. Предложены перспективные направления исследования дальнейших научных разработок рассматриваемой проблематики.

Ключевые слова: тактико-криминалистический комплекс, тактическая операция, тактическая комбинация, специальная операция, оперативно-тактическая операция, комплексное использование тактических средств, концепция тактических операций.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.03
UDC 343.98

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FEATURES OF TACTICAL DECISION-MAKING WHILE INVESTIGATION OF MURDER SPECIFIC TYPES

The main provisions of the methodology for investigating murders associated with the dismemberment of a corpse and methods for investigating murders without a corpse in the context of the use of tactical decisions in the investigation are considered.

The purpose of this article is to determine the peculiarities of making tactical decisions in the investigation of these murders.

While considering the peculiarities of making tactical decisions in the investigation of these murders, methods of analysis and synthesis are used.

The article focuses on the peculiarities of making tactical decisions at the initial stage of the investigation of these murders. It is noted that the adoption of tactical decisions is due to factors associated with the initial situation of the investigation and which require an individual approach from the investigator to use the available information about the crime. The features of making tactical decisions when carrying out certain investigative (search) actions are called.

Keywords: tactical decision, murders with dismemberment of a corpse, murders without a corpse.

Formulation of Research Problem. Tactical decision is one of the most important elements of the tactical content of investigative activities in criminal proceedings. Making the right tactical decision depends to some extent on how well the investigator is aware of the methodology of investigation of a particular type of crime and is able to apply it. The use of new ways of committing and concealing crimes by criminals requires a rapid response to the investigative situation or its components. This necessitates the use of tactical solutions for effective detection and investigation of the crime. Making tactical decisions in the investigation of certain types of crimes has its own characteristics, due to the information available at the beginning of the investigation and the type of crime. Tactical decisions are important in the investigation of murders involving the

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dismemberment of a corpse and murders in the absence of a corpse, which led to their consideration in the investigation of these crimes.

Analysis of Recent Researches and Publications. The consideration of certain issues connected with the application of tactical decisions while investigating particular types of crimes may be traced in papers of R. S. Belkin, I. V. Borysenko, O. Yu. Bululukov, A. V. Dulov, V. P. Kolmakov, Yu. I. Novik, G. N. Mudyugin, S. Yu. Yakushin and others [1].

The Article Purpose is to determine the peculiarities of tactical decision-making during the investigation of murders related to the dismemberment of a corpse and murders without a body. The goal is achieved by analyzing and synthesizing scientific articles, the results of generalizations of criminal cases (criminal proceedings), and the results of questioning practitioners on the subject.

Main Content Presentation. The factual basis for tactical decision-making is the investigative situation. According to I. O. Kopylov, the content of all the activities of the investigator depends on the specific investigative situation from the moment of making a tactical decision to the stage of evaluation of the obtained results after its implementation [2]. While assessing an investigative situation, the investigator determines which investigative tasks have to be addressed and which tactical decisions contribute to their resolution. The existing dependence of the tactical decision on the characteristics of the investigative situation can be explained by the fact that decisions are always formed on the information that characterizes the investigative situation. In addition, these decisions are

[1] E.g., Белкин Р. С. Курс советской криминалистики: в 3 т. Т. 3. Криминалистические средства, приемы и рекомендации. Москва: Акад. МВД СССР, 1979. С. 91; Белкин Р. С. Криминалистика: проблемы, тенденции, перспективы. От теории — к практике. Москва: Юрид. лит., 1988. С. 104—136; Белкин Р. С. Курс криминалистики: в 3 т. Т. 3 Криминалистические средства, приемы и рекомендации. Москва: Юристъ, 1997. С. 156—201; Борисенко І. В. Методика розслідування вбивств з розчленуванням трупа : дис. … канд. юрид. наук. Харків, 1999. 202 с.; Булулуков О. Ю. Методика расследования убийств при отсутствии трупа : дис. … канд. юрид. наук. Харків, 1996. 188 с.; Дулов А. В., Новик Ю. В. Понятие и структура тактического решения, принимаемого следователем при производстве следственного действия. Теоретические проблемы криминалистической тактики. Свердловск, 1981. С. 39—47; Колмаков В. П. Методика расследования дел об убийствах с расчленением трупа : дис. … канд. юрид. наук. Харьков, 1941. 312 с.; Новик Ю. И. Научные основы принятия тактический решений при производстве следственных действий : автореф. дис. …канд. юрид. наук. Минск. 1979. С. 3—20; Мудьюгин Г. Н. Расследование убийств по делам, возбуждаемым в связи с исчезновением потерпевшего. Москва: ВИПИПиРМПП, 1967. 138 с.; Якушин С. Ю. Тактические решения следователя и средства их реализации при расследовании преступлений: исходные положения частной криминалистической теории. Ученые записки Казанского гос. ун-та, 2008. Т. 150. Кн. 5. С. 237—244, etc.

[2] Копылов И. А. Следственная ситуация и тактическое решение. Волгоград: ВСШ МВД, 1988. С. 19.

aimed at expanding information about the crime, and therefore — to change the investigative situation.

Let us reveal the peculiarities of tactical decision-making in the investigation of murders related to the dismemberment of a corpse.

The need for tactical decisions in investigating homicides with the dismemberment of the victim's corpse arises during: 1) planning the murder investigation process; 2) construction of typical investigative versions, depending on the current investigative situation; 3) development of an appropriate algorithm for conducting individual investigative (search) actions and silent investigative (search) actions; 4) organization and development of tactics for conducting a separate investigative (search) action (inspection of the scene, involvement of experts and forensic examination, presentation of parts of the corpse for identification, search and seizure , etc.).

Tactical decision making in investigating the murders is influenced by the investigative situation at the beginning of the pre-trial investigation. The analysis and synthesis of criminal proceedings in this category of crimes makes it possible to identify the most typical investigative situations that occur at the initial stage of the investigation.

1. The victim's identity has not been identified and no information is available about the suspect. This situation may be subdivided into: a) available indicative data are not sufficient to identify the victim; b) identity of the victim is unknown, but there are separate identification features: special features; papillary patterns suitable for identification, etc.
2. The identity of the victim has been identified but no information is available regarding the identity of the suspect.
3. The investigator has information about the identity of the suspect at his disposal, but there is no information about the victim (identity of the latter is not established).
4. The identity of the victim has been established and the investigator has sufficiently complete information about the identity of the suspect.

The analysis and generalization of the investigative practice of investigating homicides with the dismemberment of a corpse shows that the great number of such murders are domestic murders (78 % of cases), which are mostly committed by persons who are close to the victim indoors. But at the same time, it should be noted that in general, some part of the corpse-dismemberment murders is committed today by persons unfamiliar with the victim (15 %) in the open area (mostly sexually-sadistic and ritual murders accompanied by the dismemberment of the body) [1].

[1] The data were obtained during a survey of more than 200 practitioners and an analysis of more than 100 criminal cases (criminal proceedings) on murders with dismemberment of the corpse, which were considered by the courts of Ukraine during 1976-2018.

The mentioned circumstances should be taken into account at the initial stage of investigating such murders when making tactical decisions, planning and reviewing advanced investigative leads. It should be noted that investigative versions play an essential role in choosing the most appropriate direction of investigation when assessing and analyzing a particular investigative situation. They help to clarify the issues that need to be addressed and allow the development of the most optimal set of investigative (investigative) actions for their verification. After analyzing all the information received and confirming the version that the murder and dismemberment of the corpse took place, typical versions may be issued regarding the nature of the crime.

Typical versions play a key role in planning an investigation until a separate version is available during the investigation. Such versions, as a result of scientific generalization of practice, reflect the peculiarities of the methodology of investigation of certain types of crimes [1] and allow the investigator, given the specific investigative situation, to probably explain the nature of the event, choose the right tactics, determine their content and sequence [2], make the right tactical decision. their further verification. The construction of such versions allows the investigator to explain the event of the crime in the presence of minimal initial data.

While investigation of these murders, the typical versions are: 1) domestic murder; 2) sexual murder; 3) sadistic murder; 4) sexual and sadistic murder; 5) ritual murder; 6) killings for the purpose of transplantation of human organs (tissues); 7) murders for the purpose of cannibalism; 8) murder for the purpose of using organs or tissues of the human body for other purposes to meet their own needs[3].

The proposed list of standard versions is not exhaustive, as the process of constructing versions is based on an assessment of the specific circumstances of the detection of parts of the corpse in the current investigative situation, taking into account its possible changes in the future. In other words, the nature and construction of the investigative versions fully depends on the investigative situation that arose at the initial stage of the pre-trial investigation.

Form a version of the suspect in a situation where the identity of the deceased is unknown, usually seems problematic. Therefore, in such a situation, the investigator's knowledge of typical ways of committing and concealing this type of murder, which can be implemented in the situation under study, becomes important. Nomination of separate versions on a way of commission of concrete murder allows to create model of the probable criminal, to come to a conclusion concerning his individual, physical and psychophysiological signs.

[1] Колесниченко А. Н., Матусовский Г. А. О системе версий и методике их построения. Криминалистика и судебная экспертиза. Киев, 1970. Вып. 7. С. 10.

[2] Антипов В. П. Планирование расследования в проблемных ситуациях. Вопросы борьбы с преступностью. Москва, 1981. Вып. 34. С. 75.

[3] Ibid.

Establishment and analysis of traces formed as a result of the implementation of one or another method of murder and dismemberment of the victim's body can provide information about the anatomical features of the offender (weight, height, physical defects); regarding its functional features (strength, skills); regarding his mental state and character traits (mental disorders, audacity, cruelty, etc.) [1]. Such modeling of the killer's face may not indicate specific ways to establish it, but together it can significantly narrow the range of persons among whom the suspect should be sought [2]. Individual versions put forward regarding the possible place of the murder are systematized by the investigator, and then, during their verification, are specified by versions about a specific person. Based on the analysis of the traces found during the inspection of the scene, some versions help to clarify certain elements of the mechanism of the murder. Based on their construction and positive results of the inspection, it is often possible to determine the general direction of the investigation viz. reasonable and correct [3].

Depending on the investigative situation, it is advisable to construct the versions in two main directions: 1) regarding the person of the deceased; 2) regarding the suspect's identity and possible ways of searching for the suspect.

During the study of criminal proceedings, it was established that most often these murders are committed on the premises of a person who is in a close relationship with the victim. This affects the preparation and adoption of tactical decisions during the interrogation of persons close to the victim. Accordingly, the investigative version of the investigation can be formulated as follows: "If a dismembered corpse is found, the murder was probably committed on the premises by a relative or other person who is well acquainted with the victim." However, the use of such a version does not rule out other possible versions. The same facts may contain different explanations of the crime. Therefore, the investigator should know that when there is a basis for nomination of one investigative version, on the same basis nomination of other competitive versions is possible [4].

The peculiarity of making tactical decisions in the investigation of these murders is influenced by the investigator's awareness of: 1) typical investigative situations that arise during criminal proceedings; 2) features of designing typical investigative versions in such situations; 3) organization and verification of

[1] Самойлов Ю. М. Некоторые проблемы построения ситуационных моделей для выдвижения версий по делам об умышленным убийствах. Актуальные направления развития криминалистической методики и тактики расследования. Москва, 1978. С. 53.

[2] Бахін В. П., Кириченко О. А. Як розкриваються злочини. Криміналістика у запитаннях і прикладах: навч. посібник. Дніпропетровськ: ДДУ, 1995. С. 21.

[3] Левков В. М. Криміналістичні версії: текст лекції. Харків: Харк. юрид. ін-т, 1990. С. 15.

[4] Ларин А. М. От следственной версии к истине. Москва: Юрид. лит. 1976. С. 107.

standard investigative versions by conducting separate investigative (search) actions; 4) specifics and situational conditionality of initial and subsequent investigative (investigative) and covert investigative (investigative) actions.

While criminal proceedings, complex tactical tasks arise to establish the identity of the deceased, the place of murder and dismemberment of the corpse, to identify the person who committed the crime, to identify the instruments of the crime, and others. Solving such tasks by conducting individual investigative (search) actions is usually quite difficult or sometimes impossible. In this regard, there is an urgent need for certain investigative (search) actions in combination with covert investigative (search) actions and organizational, technical and other measures. Given that these tasks arise in such conditions, it is possible to typify the actions of the investigator and, depending on the investigative situation, to determine the appropriate set of such actions, which in criminology is called: tactical operation. Conducting and organizing a tactical operation is one of the main ways to implement tactical tasks during criminal proceedings [1]. For the practical implementation of a tactical operation, the investigator makes tactical decisions, which is a necessary tool for its implementation and achievement of the purpose of the investigation.

For criminal proceedings on these crimes, typical tactical operations are: collection of primary information; Identification of unidentified corpse (attribution of a corpse) [2]; Establishing the place of the murder and dismemberment of the corpse; Search for missing parts of the corpse; Checking the victim's connections; Criminal search. Each of these tactical operations has its own characteristics that affect the determination of the content of tactical decisions, their type and features of the time and place of their adoption.

While investigation of these crimes, tactical decisions on the coordination of the activities of the investigator and the activities of specialists, experts, employees of the inquiry body become important. The types and forms of interaction of the investigator should be indicated in the investigation plan, and therefore during its development should be taken into account its subordination to the investigative versions, the nomination of which is an important prerequisite for a successful murder investigation[3]. The number and complexity of methods

[1] Шевчук В. М. Теоретичні засади формування тактичних операцій у криміналістиці. Право і суспільство. 2014. № 1. С. 223—229. URL: http://nbuv.gov.ua/UJRN/Pis_2014_1_43 (Date accessed: 19/03/2019); Шевчук В. М. Функції тактичних операцій у кримінальному провадженні. Право України. 2014. № 1. С. 266—273. URL: http://dspace.nlu.edu.ua/bitstream/123456789/ 6079/1/SHevchuk_266—273.pdf (Date accessed:19/03/2019).

[2] Шиканов В. И. Информация к тактической операции «Атрибуция трупа»: учеб. пособ. Иркутск: Изд-во Иркут. госуд. университет им. А. А. Жданова,1975. С. 54.

[3] Дубровицкая Л. П., Лузгин И. М. Планирование расследования : учеб. пособ. Москва: Высшая школа МВД СССР, 1972. С. 15.

of concealment used by criminals (in particular, the movement of parts (parts) of the corpse over a considerable distance), necessitates the need to pay much attention to the interaction of the investigator with the authorities. The practice of investigating murders with dismemberment of the victim's body shows that the urgent need for interaction of the investigator with the staff of operational units most often arises during: a) conducting tactical operations; b) identification and study of the deceased; c) work on expanding possible witnesses in criminal proceedings; d) checks of advanced versions; e) search for the criminal and his detention.

Analysis of the practice of investigating murders with dismemberment of the corpse allowed us to conclude that the features of tactical decisions at the initial stage of the investigation are produced by the specifics of the primary investigative (search) actions, such as: inspection of the scene; involvement of an expert in conducting a forensic examination; presenting the corpse (its parts) for identification. Accordingly, the tactical decisions made in their implementation are similar in content to the typical ones made in a situation where there is sufficient evidentiary information to make the right decisions in the murder investigation.

Thus, the peculiarity of making tactical decisions regarding the tactics of conducting an inspection of the scene is the activity of the investigator, aimed at determining: a) the area or premises where the event is localized; b) parts (parts) of the dismembered corpse; c) traces of murder and dismemberment of the body of the deceased; d) traces of stay at the scene of the offender or other persons; e) traces of motor vehicles and other means used by the offender to transport parts of the corpse; e) things and objects that the offender has abandoned or accidentally forgotten; g) packaging material, rope, assemblies, etc.; h) micro-objects that could get into the environment, packaging and parts of the corpse.

Making a tactical decision to conduct a search in a particular location also has certain peculiarities because of the specifics of this investigative (search) action. The specificity of this investigative (search) action is that the search is conducted at the place of the probable place of murder and dismemberment of the corpse, that is, the investigator on the basis of available indicative information suggests that the murder may have been committed at a specific place [1]. In this regard, it is important to identify the main forensically relevant objects that capture the typical traits of committing and concealing a murder and need to be found during search and seizure. Such objects can be: 1) tools and objects that may have been used in the killing and dismemberment of a corpse; 2) clothing, headgear, shoes, as well as other items of the alleged killer who were reportedly present at the time of the murder and where he was at the scene; 3) parts (part) of the dismembered corpse that have not previously been identified; 4) things,

[1] Баев О. Я., Одинцов А. С. Расследование отдельных видов преступлений : учеб. пособ. Воронеж: Изд-во Воронеж. ун-та, 1986. С. 70.

money, valuables, documents belonging to the victim; 5) traces of the murder and dismemberment of the corpse (such as blood stains, pieces of muscle and bone, etc.); 6) objects with traces of blood or other secretions of the person, or objects used to wash away blood or other traces (e.g., cloths, brushes, etc.); 7) documents, letters, notebooks, photographs and other data explaining the nature of the victim's relationship with the suspect; 8) binding and packaging materials used to pack parts of the corpse; 9) vehicles that were used to transport the dismembered corpse parts.

Tactical decisions on the tactics of questioning witnesses are aimed at establishing the circumstances of the murder. The following may be questioned as witnesses: 1) persons who have declared the victim missing; 2) persons who were the first to identify parts of the corpse and report it; 3) citizens who saw the victim shortly before the murder; 4) eyewitnesses to the murder and dismemberment of the corpse; 5) relatives, friends, neighbors, colleagues, etc. During the interrogation of these persons, the distinctive features of each of these groups of witnesses, which are manifested in the subject, tasks and tactics of obtaining information from, should be taken into account and clarified.

An analysis of the practice of investigating these murders reveals two of the most typical situations that determine the content of the tactics of obtaining witness statements. These are situations when investigation begins from the moment of: 1) receiving a statement on the disappearance of a person; 2) identification of parts of a dismembered corpse.

The results of a survey of criminal proceedings showed that in 19 % of cases of investigations into murders related to the disappearance of the victim, criminals used dismemberment as a way to hide the corpse. At the same time, more than 20 % of the killers were applicants and had previously been questioned as witnesses during the pre-trial investigation[1]. These statistics necessitate the selection and consideration of a situation where the investigation begins from the moment of filing a report on the disappearance of a person. In this part the peculiar intersection of separate methods of investigation of murders with dismemberment of a corpse and murders in the absence of a corpse is clearly traced.

For the successful solution of the tactical tasks of the murder investigation, the experience and skills of the investigator in involving an expert and conducting a forensic examination are becoming important. Forensic examination of dismembered corpses is characterized by difficulties in finding expert information, the difficulty of assessing the identified damage and changes, low efficiency of the vast majority of laboratory methods[2]. The study of investigative practice and the results of surveys of practitioners and forensic experts allowed to identify

[1] Data were obtained during a survey and interview of more than 200 practitioners in the period 1996-2010.

[2] Попов В. Л. Судебно-медицинская экспертиза: справочник. Санкт-Петербург: Специальная литература, 1997. С. 291.

the most common mistakes that occur during the appointment of examinations for this category of crimes. These include: 1) incorrect wording of the questions posed to the expert; 2) ignoring issues that are essential in criminal proceedings, in particular, to establish the identity of the offender, the identification of instruments of murder and dismemberment; 3) certain issues contained in the decisions on the involvement of an expert and forensic examination are beyond the competence of the forensic expert [1].

Murders with dismemberment of the corpse cover different types of crimes at the interspecies level, and therefore the range of expert research is quite wide. At the same time, among the forensic examinations conducted during the investigation of these murders, one can single out the most typical complex, which allows to clarify the specific circumstances of this type of crime. The complex of examinations includes a number of forensic examinations: examination of footprints and shoes, identification of the whole in parts, examination of knots and loops, etc.); forensic portrait (portrait forensic); genotypic. During the investigation of this category of murders, there is often a need for commodity, biological and soil examinations; examination of materials and substances. An explosive (pyrotechnic) examination may also be appointed. Forensic psychiatric and forensic psychological examinations must be included among the traditional ones in such criminal proceedings.

Thus, the peculiarities of tactical decision-making in investigating the murders are a careful assessment of the available evidence and an analysis of their logical links with: the location of the parts of the dismembered corpse; the place of the murder and the perpetrator. This approach allows the investigator to choose the most optimal direction for the implementation of relevant tactical tasks by making the right tactical decisions.

The activity of making tactical decisions in the investigation of murders in the absence of the victim's corpse has certain features. These murders in forensics are also called murders “without a corpse”, based on the absence of the victim's corpse at the initial stage of the investigation. Peculiarities of tactical decision-making in the investigation of these murders are related to the initial situation of the investigation. The main feature of this situation is the lack of information at the beginning of the pre-trial investigation on the location of the corpse, the place and method of murder and other circumstances of the crime[2]. Unavailability of the victim’s corpse requires significant mental activity of the investigator, aimed at establishing traces of the murder, the location of the corpse and the suspect. In the process of such activity, a person's volitional activity is formed, which leads to decisions that contribute to the establishment of information about the crime.

[1] За результатами анкетування й інтерв’ювання понад 200 практичних працівників різних регіонів України, а також 75 судово-медичних експертів 1995—2010 рр.

[2] Мудьюгин Г. Н. Расследование убийств по делам, возбуждаемым в связи с исчезновением потерпевшего. Москва: ВИПИПиРМПП, 1967. С. 6.

Due to the fact that most murders without a corpse are committed by persons who have a close relationship with the victim [1], tactical decisions are important among the investigator's decisions in the investigation.

While investigating these murders, tactical decisions aimed at obtaining evidentiary information about the place of the murder and the place of its concealment are crucial. This is due to the fact that information about the murder of the victim exists only theoretically, and it is not known for sure whether a person is alive or dead. This fact leaves an imprint of uncertainty on the situation of the investigation, which characterizes the information about the crime and the offender as fragmentary, incomplete, contradictory. The peculiarity of tactical decision-making in such a situation is the use of typical algorithms of the system of investigative (search) actions with certain changes depending on the information obtained. Tactical decisions are aimed at establishing in the implementation of this system of individual circumstances, facts, which in their comparison and analysis suggest and explain the mechanism of the murder and the location of the victim's corpse. Evidence obtained during the initial investigative (search) actions and used during the interrogation of the suspect has a psychological effect on him, helping to obtain true testimony. Properly constructed tactics using tactical decisions in such a situation is the basis for the disclosure of these crimes. In this tactic, a special place is occupied by tactical decisions about the time of use of available information, which can sometimes be the only possible option for the detection of murder and identification of the victim's corpse. Accuracy in determining the moment of application of tactical influence aimed at the realization of available information is the key to the disclosure of murders without a corpse.

The direction of tactical decisions in the investigation of murders without a corpse is reflected in the tasks facing the investigator. The tasks of the investigator at the initial stage of the investigation of these murders are to establish: a) the circumstances of the disappearance of the person; b) psychological portrait of the victim; c) connections of the victim; d) the presence of the victim's diseases; e) the presence of conflict relations; f) the interest of individuals in the death of the victim; g) negative circumstances in the behavior and actions of relatives and other persons; h) negative circumstances-traces; i) traces of murder; j) a suspect in the murder of the victim; l) the corpse of the victim; m) the person who died when the corpse was found. A separate task is to establish the location of the missing person when checking the versions of “victim alive” and “victim died as a result of a non-criminal event.” The identified tasks are typical in the investigation of these crimes, and therefore, the tactical decisions made to solve them also have signs of typicality. However, it is necessary to consider some facts that affect the peculiarities of their adoption. Such facts include: a) the place of disappearance; b) the time of leaving the place for the victim according to the

[1] Ibid. p. 8.

testimony of relatives and other persons; c) the reasons for leaving the place on the testimony of relatives and other persons; d) features of psychological characteristics of persons who had a close relationship with the victim. When inspecting the file of missing persons, it was established that in 90 percent of cases, according to the testimony of relatives and friends of the victim, he "left home and did not return" [1]. That is, if a pre-trial investigation is initiated, in most cases the investigator has the victim's last whereabouts, the approximate time of his departure, and the missing persons who have close ties to him. Of course, tactical decisions in such a situation are conditioned by the primary information about the disappearance of the person, received from relatives and friends of the victim, and the information obtained during the inspection of the scene and the search.

The existence of close ties between the murderer and the victim of the crime, the lack of information about the death of the latter do not allow to treat the relatives of the victim as suspects. According to them, he went missing under certain circumstances, which does not indicate a crime. Tactical decisions in such a situation should be aimed at detailing information about the life of the victim, persons with whom he was in conflict, and the circumstances of the disappearance. The peculiarity of making tactical decisions in the investigation is their focus on obtaining information that characterizes the victim from various sources. This approach allows you to establish the smallest circumstances of its disappearance. In addition, this tactic allows you to identify a person or persons who conceal some facts, given conflicting information or allow reservations when testifying, and others. Externally, omissions or allegations, as well as conflicting information about the circumstances of the victim's disappearance, do not indicate that a person was involved in his or her murder. However, the analysis of the information obtained on the traces of the murder and concealment of the murder, as well as objects and documents found at the place of residence that contradict the version of the victim's voluntary departure from the place of disappearance, allows them to be used during interrogation.

In the forensic literature it is noted that in the investigation of murders without a corpse, investigative (search) actions are aimed primarily at establishing the circumstances of a person's disappearance[2]. Achieving this goal is facilitated by interrogations of relatives and friends of the missing person, who can provide explanations about the details of his disappearance. The basis of the interrogation of these persons is to ask clarifying questions aimed at clarifying in detail all the circumstances of a person's life, relationships with people around him and establishing the time and reason for leaving a certain place.

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[1] Data were taken during the study of 400 registration cards for missing persons who were wanted in the Kharkiv region in May 1996.

[2] Колмаков В. П. Расследование убийств. Избранные труды по криминалистике. Одесса: Юридическая литература, 2008. С. 44.

The peculiarity of tactical decisions by investigators during the interrogation of these persons is the focus on the selection and implementation of forensic tactics. The individual approach to the interrogation is formed at the stage of its preparation and consists in determining the evidence, time and sequence of their presentation (announcement) to expose the interrogee in giving false testimony and encourage him to cooperate with the investigation.

Due to the fact that the interrogated persons can only theoretically be involved in the disappearance and murder of the missing person, the interrogation tactics are based on the use of methods of psychological influence on the interrogated person. A variety of such techniques are tactics of emotional influence, which allow to use the believer's beliefs in the falsity of his position and appeal to his moral qualities: conscience, honor, nobility, decency. Tactical decisions on the application of these tactics are based on the use of a trusting relationship with the respondent. Confidential relations, which are based on the investigator's wish to establish the whereabouts of the missing person as soon as possible, require the interrogated person to have the same attitude to resolving this issue. Any deviations from this position by the respondent require some explanation. In such a situation, the use of tactics of emotional influence can help to obtain truthful information from.

If these methods failed to persuade the respondent to give complete and truthful information about the disappearance of the person, the investigator makes tactical decisions on the use of tactics of logical influence. The essence of the tactics of logical influence is the presentation of evidentiary information available to the investigator. While investigating murders without a corpse, such information can include: 1) negative circumstances, that can include: a) actions of the interrogated after the disappearance of the person; b) non-declaration of disappearance of the victim; c) features of the statements of the interrogated regarding the disappearance of the person; d) letters, telephone calls and SMS messages (messages on social networks: Telegram, WhatsApp, Viber; Facebook, Twitter, Instagram) on behalf of the missing person, made by another person; e) documents, clothing and other items of the missing person in the place of residence and which must be with him in case of voluntary departure from the place of residence; 2) testimony of other persons; 3) detected traces of blood, etc.

An effective approach to interrogation tactics is to build a logical sequence in the presentation (announcement) of available information. An important recommendation is to establish in advance the significance of the information that can be presented (announced) and the options for combining it during interrogation. In addition, it is tactically correct to make tactical decisions on clarification and control questions after receiving the respondent's answer to the information provided. The presentation of available evidence should be divided

in time, which will allow the respondent to comprehend his erroneous position and subsequently change it. Dosed presentation of available information will help to weaken the position of the respondent and overcome his reluctance to give truthful testimony.

During the interrogation, a positive result can be obtained as a result of making tactical decisions to create an exaggerated notion in the interrogated about the investigator's awareness of the life of the missing person, his relationship with the interrogated, other persons. The investigator's awareness of certain facts logically extends to the interrogated and the circumstances of the crime committed by him, giving the impression that the investigator is just as well aware of him and everything else [1]. If it is necessary to assist the interviewee in recalling certain events, he may be asked questions that promote recollection, aimed at breaking the interviewee's associative connections entailing memories [2].

The search for the home or the last whereabouts of the missing person also helps to establish the person who committed the murder and the location of the corpse. First of all, the documents and clothes of the victim that remained after his departure are subject to inspection. The emphasis is on identifying the components of clothing in which, according to relatives or others, the victim disappeared. Tactical decisions made by investigators are aimed at establishing traces of murder and concealment of murder in the room, possible hiding places of the corpse in the territories of homestead and country plots, in the garage, in the basement, in outbuildings, etc. The landmark of the traces of the murder are: fresh renovation of the premises; moving furniture; replacement of carpets and curtains; construction and earthworks on the plot and in the garage, etc. Based on the results of the inspection, the investigator may draw conclusions about the place of the murder and the person who committed it [3].

Based on the results of the inspection of the place of residence or last whereabouts of the missing person, it may be reasonably assumed that the place of inspection contains traces of murder. In this case, a tactical decision is made to conduct a search of the inspection site for an in-depth search for traces of the murder and the corpse of the victim. Directions for searching for traces of murder and hiding place of the victim's corpse are established by modeling the actions of the offender to cause death to the victim and hiding his corpse, taking into account the traces found during the inspection of the scene. Properly constructed search tactics involve making tactical decisions regarding

[1] Порубов Н. И. Научные основы допроса на предварительном следствии. Минск: Вышейш. шк., 1978. С. 79.

[2] Коновалова В. Е. Правовая психология: учеб. пособ. Харьков: Основа, 1990. С. 97.

[3] Руководство для следователей/под ред. Н. А. Селиванова. Ч. 2. Москва: Юрид. лит., 1982. С. 277.

the use of tactics. The latter make it possible to diagnose the behavior of those present during the search of persons and to establish the location of traces of murder and the corpse of the victim.

While investigation of murders without a corpse, it is important to examine the victim's mobile phone (if any) and the telephone numbers of persons who may be involved in its disappearance. Making tactical decisions on the detection and inspection of mobile phones of these persons and their geolocation allows to identify persons who have been in contact with the victim, as well as the time and route of their movement.

Conclusions. The specifics of tactical decisions in the investigation of murders related to the dismemberment of a corpse and murders without a corpse are due to factors similar to these crimes. Such factors include: 1) the presence of close ties between the victim and the offender; 2) the presence (absence) of a statement on the disappearance of the victim; 3) a typical explanation for the disappearance of a person; 4) lack of data on the place of the murder; 5) lack of data on traces of murder; 6) lack of data on the motive for the murder; 7) the absence of the corpse (parts of the corpse) at the initial stage of the investigation. These factors require the investigator to pay special attention to the available information about the crime. Analysis of this information and its use in making tactical decisions allows you to build the optimal tactical line in the investigation. An individual approach to their adoption, taking into account the investigative situation, helps to obtain the necessary information about the circumstances of the murder and the identity of the offender.

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ОСОБЛИВОСТІ ПРИЙНЯТТЯ ТАКТИЧНИХ РІШЕНЬ ПРИ РОЗСЛІДУВАННІ ОКРЕМИХ ВИДІВ УБИВСТВ

Розглянуто основні положення методики розслідування вбивств, пов'язаних із розчленуванням трупа, та методики розслідування вбивств без трупа у контексті використання тактичних рішень у розслідуванні.

Метою даної статті є визначення особливостей прийняття тактичних рішень під час розслідування вбивств, пов'язаних із розчленуванням трупа, та вбивств без трупа.

При розгляді особливостей прийняття тактичних рішень при розслідуванні зазначених вбивств використовуються методи аналізу та синтезу.

Наголошено на особливостях прийняття тактичних рішень на початковому етапі розслідування зазначених вбивств. Підкреслено, що прийняття тактичних рішень обумовлено факторами, що пов'язані із початковою ситуацією розслідування та які вимагають від слідчого індивідуального підходу до використання інформації про злочин. Окреслено особливості прийняття тактичних рішень при проведенні окремих слідчих (розшукових) дій.

Ключові слова: тактичне рішення, вбивства із розчленуванням трупа, вбивства без трупа.

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ОСОБЕННОСТИ ПРИНЯТИЯ ТАКТИЧЕСКИХ РЕШЕНИЙ ПРИ РАССЛЕДОВАНИИ ОТДЕЛЬНЫХ ВИДОВ УБИЙСТВ

Рассмотрены основные положения методики расследования убийств, связанных с расчленением трупа, и методики расследования убийств без трупа в контексте использования тактических решений в расследовании.

Целью данной статьи является определение особенностей принятия тактических решений при расследовании указанных убийств.

При рассмотрении особенностей принятия тактических решений при расследовании указанных убийств используются методы анализа и синтеза.

В статье акцентируется внимание на особенностях принятия тактических решений на первоначальном этапе расследования указанных

убийств. Отмечается, что принятие тактических решений обусловлено факторами, связанными с начальной ситуацией расследования и которые требуют от следователя индивидуального подхода к использованию имеющейся информации о преступлении. Называются особенности принятия тактических решений при проведении отдельных следственных (розыскных) действий.

Ключевые слова: тактическое решение, убийства с расчленением трупа, убийства без трупа.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.04
UDC 343.9. 018:331.461 (477)

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TYPICAL INVESTIGATIVE SITUATIONS AND VERSIONS WHILE INVESTIGATION OF VIOLATION OF SAFETY REGULATIONS DURING CARRYING OUT HIGH-RISK WORKS

The article proposes a system of typical investigative versions in the process of investigating violations of safety rules during work with increased danger.

Depending on the content, as well as taking into account the source from which this information was obtained (that is, the peculiarities of the opening of criminal proceedings), we consider it appropriate to distinguish three groups of typical investigative situations of violation of security rules at the initial stage of the investigation: 1) the fact and method of violation of security rules , as well as the person who committed the violation has been identified, reports of violations were received in the manner of a scheduled inspection; 2) the fact and method of violation of safety rules has been established, information about the identity of the offender is absent, the report of violations was received in the course of an accident investigation; 3) the fact and person of the violation of safety rules has been established, there is no information on the method of violation of safety rules, proceedings on violation of safety rules begin on the basis of an application from the victim or his relatives.

It is noted that each of these situations is realized through programs for conducting investigative (search) and other procedural actions, developed taking into account the practice of investigating criminal violations of safety rules during work with increased danger, since violation of safety rules is situational in nature.

Keywords: typical investigative situations; standard versions; the investigator's program of action; violation of safety rules during work with increased danger; investigation methodology, forensic characterization of crimes, organization and planning of investigation.

Formulation of Research Problem. First of all, it should be noted that the process of investigating security violations is situational in nature, as the development of versions, selection of optimal behavior of participants in the investigation process, algorithm of investigative (investigative) and covert investigative (investigative) actions are the foundation of investigating security violations. It should be borne in mind that the process of formation of the investigative situation is influenced by the specifics of the violation, which is manifested in the need for

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departmental investigation, in the reference nature of the disposition of Art. 272 of the Criminal code of Ukraine that complicates a possibility of typification of investigative situations and process of investigation as a whole.

Analysis of Recent Researches and Publications. Such domestic scholars as V. A. Zhuravel, V. O. Konovalova, V. Yu. Shepitko [1], as well as foreign scientists M. P Yablokov, I. A. Vozgrinand and others [2]. Some aspects of the investigation of criminal violations of occupational safety rules were considered in the works of L. G. Bordyugov, I. O. Kucherkov [3]. Research papers of O. V. Taran and others [4]. are also devoted to the outlined problems. From the point of view of criminal law questions of criminal violations of rules of labor safety were considered in works of G. S. Krainik [5].

Nevertheless, the problem of typical investigative situations and versions in the investigation of the specified category of crime remained outside the attention of scientists, and therefore requires further scientific development.

The Article Purpose is to investigate typical investigative situations and versions while investigating violations of safety rules when carrying out high-risk works.

Main Content Presentation. It should be noted that there is no consensus among forensic scientists on the classification of investigative situations. R. S. Belkin distinguishes initial, intermediate and final situations by the time of occurrence in the course of investigation. Its classification reflects the dynamism and variability of the latter. As for the possibility of achieving

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[1] E.g., Журавель В. А. Криміналістичні методики: сучасні наукові концепції: монографія. Харків: Апостіль, 2012. 304 с.; Коновалова В. Е. Допрос: тактика и психология: монографія. Харьков, 2006. 176 с.; Шепітько В. Ю. Допит потерпілого: тактико-психологічний підхід. *Питання боротьби зі злочинністю:* зб. наук. пр. Харків: Кроссроуд, 2008. Вип. 15. С. 256—265.

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[4] Таран О. В. Криміналістичне забезпечення розслідування злочинів, пов'язаних з порушенням вимог законодавства про охорону праці: автореф. дис. ... ступ. д-ра юрид. наук., 2013. 34 с.

[5] Крайник Г. С. Кримінальна відповідальність за порушення правил безпеки під час виконання робіт з підвищеною небезпекою: дис. … канд. юрид. наук: 12.00.08. Харків, 2011. 187 с.; Крайник Г. С. Питання кваліфікації порушень правил безпеки під час виконання робіт з підвищеною небезпекою при настанні наслідків, передбачених ч.1 ст. 272 КК України. Форум права. 2010. № 3. С. 216—221.

the goal of the investigation, the scientist divides them into favorable and unfavorable. Any actions of the investigator aimed at achieving certain goals should be carried out after such an assessment of the investigative situation as favorable or unfavorable to achieve this goal [1].

The most detailed classification system of investigative situations was proposed by L. Ya. Drapkin, who divided them into simple (initial, intermediate, final) and complex (problem, conflict, tactical risk, organizationally disordered, combined), divided into initial, intermediate and final situations [2].

While analyzing the existing theoretical developments in the field of investigation of violations of safety rules, there is a tendency to lag behind their theoretical developments from the practice of application. The introduction of effective investigative techniques is closely linked to the establishment of typical investigative situations of such violations, as science is not able to cover all possible variations of investigative situations. Today, the question of the possibility of typification of investigative situations and the choice of criteria for their study remains controversial.

In this regard, we consider it possible in the formation of typical investigative situations of security violations to join those scientists who note that the forensic category has certain features: 1) a typical investigative situation — a scientific abstraction, a kind of information-cognitive model that formed on the basis of a priori knowledge, which is the result of generalization and analysis of significant empirical material and which reflects the most common features that characterize the course and state of the investigation at a certain stage (initial, subsequent); 2) for the implementation of typification of all components that are part of the structure of the investigative situation, it is advisable to leave first of all components of an informational nature; 3) the information base of typical investigative situations is the frequency of occurrence of specific situations, which necessitates the analysis and evaluation of significant empirical material; 4) the information structure of typical investigative situations is the subject of evidence, outlined by the characteristics of the crime under investigation, and Art. 91 of the Criminal Procedural Code of Ukraine, as well as information included in its forensic characteristics; 5) one of the essential criteria for classifying a specific situation as typical should be the degree of its influence on the process of forming strategic and tactical tasks of investigation and determining the optimal sequence of investigative actions or tactical operations aimed at solving these tasks; 6) each typical investigative situation has its own set of features (the course and state of the investigation), the system of which allows to individualize it in relation to a certain stage of the investigation;

[1] Белкин Р. С.Криминалистика: учебник для вузов. Москва: НОРМА, 2001. С. 125.

[2] Драпкин Л. Я. Основы криминалистической теории следственных ситуаций: автореф. дис. ... д-ра юрид. наук. Москва, 1987. С. 9—11.

7) it is expedient to organize investigative situations on the basis of situational modeling [1].

Along with typical situations, attention should also be paid to the problem of standard versions in the structure of the methodology for investigating security violations. Addressing the issue of standard versions is primarily due to the fact that there is a close logical connection between situations and versions, in other words, each typical investigative situation has its "own" list of standard versions that are specific to this situation and subject to verification. Therefore, the typification of situations and versions should be considered as part of the overall process of streamlining the elements of pre-trial investigation. It should be noted that in the forensic literature, which is devoted to the methodology of investigation of violations of safety rules, as a rule, the issue of outlining typical investigative situations was not given sufficient attention or they were not considered at all[2]. According to V. K. Lysychenko, this category of crimes is characterized by such situations. The first investigative situation is characterized by the presence of fairly complete information about the event, its causes and consequences, the range of responsible persons. This is the most common situation. It usually occurs after the investigator is provided with the materials of the investigation conducted by the enterprise, or a special investigation of the accident.

The second typical investigative situation of the initial stage is characterized by the presence of concise information about large-scale accidents, accidents, consequences, which consist in the death of a significant number of people. It arises in the event of criminal proceedings on the notice that the employer, in the event of a fatal accident or group death, is obliged to immediately transfer by means of communication in the prescribed form to the appropriate prosecutor's office at the scene of the accident. The situation at the scene may be completely preserved or undergo minor changes. There is often no information about the probable culprits. The primary information about the nature and circumstances of the event in such cases is information about the external picture of the event, and criminal proceedings are opened immediately.

The third typical investigative situation is characterized by the presence of data on the fact of the event at the enterprise, its consequences and a certain range of persons involved. This situation is characterized by a lack of clear understanding of the mechanism of the event, its immediate causes and violations, the behavior of the victim and others. The situation arises when the case is initiated on the application of the victim or his relatives, on the materials of the press, supplemented by information obtained in the order of preliminary verification of these applications and reports. A considerable period of time

[1] Журавель В. А. Криміналістичні методики: сучасні наукові концепції: монографія. Харків: Апостиль, 2012. С. 202, 203.

[2] Григорьева М. А. Методика расследования нарушения правил безопасности при ведении строительных работ: дис. … канд. юрид. наук. Псков, 2011. 269 с.

usually passes from the moment of the event. The situation at the scene in such cases is not preserved [1].

In our opinion, the typical investigative situations proposed by V. K. Lysychenko are of a general nature and do not fully reflect all possible variations of security breach situations. First of all, in the specified typification of investigative situations the source of an origin of information as the basis for opening of criminal proceedings is taken as a basis. This reasoning is debatable, with which we can agree in part. We believe that it should be supplemented with more significant information sources: 1) information about the fact of violation of safety rules; 2) information on the method of violating safety rules; 3) information about the person: the subject of violation of security rules. The presence or absence of information about these elements determines the vector of action of the investigator in the investigation of violations of safety rules while performing high-risk work.

Depending on the information content of the above elements, as well as taking into account the source from which the information was obtained (i.e. the peculiarities of criminal proceedings), we consider it appropriate to identify three groups of typical investigative situations of security violations at the initial stage of investigation: 1) security, as well as the identification of the person who committed this violation; the notification of the offense was received in the order of the scheduled inspection; 2) the fact and method of violating safety rules have been established, information about the identity of the offender is missing, the report of the offense was received in the course of the accident investigation; 3) the fact and the person of violation of safety rules are established, the information on a way of violation of safety rules is absent, proceedings concerning violation of safety rules begin on the basis of the statement of the victim or his relatives.

This differentiation is related to the peculiarities of the departmental investigation of security violations, because when receiving information, in the order of inspections by officials of the State Labor Service of Ukraine, the amount of information they provide increases; there is usually a long period of time between the departmental and criminal investigation, which complicates the process of investigating the crime. In this regard, it should be noted that if from the moment of violations to the moment of receipt of information about the crime there is a long period of time, the content and sequence of actions of the investigator change. In this situation, the priority is a careful analysis of the received materials, acquaintance with the nature of the enterprise, technological processes and features of production, the study of labor protection rules in force in this field of production [2].

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[1] Волобуєв А. Ф. Криміналістика: навч. посіб. Київ: КНТ, 2011. С. 504.

[2] Яблоков Н. П. Методика расследования уголовных дел о нарушениях правил техники безопасности: лекция. Москва: ВЮЗИ, 1958. С. 65.

At the initial stage of investigation of security violations, the most typical situation is when the fact and manner of violation of security rules, as well as the person who committed this violation, is established, and criminal proceedings are initiated on the basis of documentation obtained during the scheduled inspection. This situation is characterized by the available array of source information received from specialists of the State Labor Service of Ukraine, who have already conducted a departmental investigation and issued relevant documentation, which reflects a significant amount of information on violations of safety rules, regulations, and identified the perpetrator. violation of safety rules. In addition, this situation is characterized by the absence of real negative consequences, which also affects the program of action of the investigator, especially those related to the need for a forensic examination.

In the event of this situation, the investigator must make every effort to record the existing information, as well as provide it with probative value, in the manner prescribed by the Criminal Procedural Code of Ukraine. The complexity of the situation is the existence of a significant period of time between the violation of security rules and the beginning of the investigation which can lead to the loss of certain evidence.

The following typical versions are inherent in this situation: a) security breaches did occur; b) there has been a violation of labor protection rules; c) another event took place; d) high risk work has taken place, but there are no breaches of safety rules.

A typical investigation program in this investigative situation at the initial stage of the investigation covers a set of the following investigative (search) actions: 1) review of materials in accordance with Art. 237 of the CPC of Ukraine, received after the inspection and determination of the fact of inclusion of works in the list of increased danger, acquaintance with the relevant regulations governing the features of these works; 2) initiating temporary access to things and documents by seizing the constituent documents of the enterprise, orders and instructions on hiring persons, on carrying out high-risk work, permits, contracts, instructions; 3) review by the investigator, prosecutor of the seized documents, comparison of the information provided by the departmental investigation with the available documentation; review of documentation with the involvement of specialists; 4) inspection of the scene and premises in order to confirm the information provided by the relevant representatives of the State Service of Ukraine for Labor and fixation of the circumstances of the investigated event; 5) interrogation of witnesses - persons who inspected compliance with the requirements of the legislation in the field of labor protection, representatives of legal entities where the violation occurred, officials of the enterprise; 6) appointment and conduct of examinations (in cases of victims, forensic examination; it is mandatory to conduct forensic engineering examination of occupational safety).

The second typical situation of violation of safety rules: the fact and method of violation of safety rules is established, there is no information, the

report on offense was received by way of investigation of accident. It should be emphasized that this situation is more favorable in organizational terms when receiving information from the accident investigation, as it allows for a parallel investigation and facilitates the involvement of specialists in the procedural investigation than situations in which information comes from other sources (victims' reports, media). The vector of the investigator's actions should be aimed at the immediate collection of the maximum amount of information to establish the identity of the offender.

Typical versions of the identity of the offender in such a situation are: a) violation of safety rules committed by the supervisor, engineer; b) business entity; c) official of an enterprise, institution, organization; d) ordinary worker.

In this situation, the investigator, first of all, must implement a program of action, which consists in: 1) initiating temporary access to things and documents by seizing them, because the main body of information about the person responsible for the safety of high-risk work; on the organizational structure of the enterprise, the peculiarities of its internal organization, the distribution of functions among employees, the orders, instructions, instructions and journals provides an opportunity to identify the person responsible for violating safety rules. And first of all the organizational structure of the enterprise is found out, and then the orders on assignment of duties on observance of safety rules are got acquainted; 2) in the review of these documents with the involvement of a specialist in the field of labor protection, acquaintance with regulations governing the features of high-risk work, as well as the establishment of mandatory requirements for liability to persons holding certain positions (e.g. foreman, chief engineer etc.); 3) in the review of the scene. Undoubtedly, the views of forensic scientists are right, who say that such an inspection in case of safety violations should be conducted with the participation of several specialists, usually a representative of the authorized central executive body that implements state policy in the field of industrial safety, labor protection, occupational health, implementation of state mining supervision, as well as on supervision and control over compliance with labor legislation; and a specialist in the field of production in which the accident occurred, in order to understand the mechanism of work and the features associated with[1]; 4) in the interrogation of witnesses to the crime to obtain information about the presence of responsible persons at the scene during the work and in the absence of witnesses , interrogation of representatives of the enterprise, institution or organization where the accident occurred; 5) in the appointment and conduct of examinations.

The investigative situation, in which the fact and the person of violation of safety rules is established, there is no information on the method of violation of safety rules and proceedings on violation of safety rules are initiated on the basis

[1] Махов В. Н., Образцов В. А., Чернова К. Т. Расследование преступных нарушений правил при производстве строительных работ. Москва: ВНИИПП, 1979. 124 с.

of the statement of the victim or his relatives. The investigator, the prosecutor, makes certain adjustments to the program of the investigation and highlights the need to interrogate the applicants.

In such a situation, the version of the method of violation of safety rules, namely the admission of workers to perform work with high risk, without undergoing proper training in safety, shall be subject to verification; without adequate personal protective equipment; by means of mechanisms, equipment and/or vehicles that are in an improper or emergency condition; in the absence or non-appointment of persons responsible for carrying out such work.

Therefore, at the initial stage of the investigation, in a situation like this, it is advisable to carry out the following actions: 1) inspection of the scene; 2) interrogation of witnesses; 3) initiating temporary access to things and documents by seizing them; 4) conducting an investigative experiment carried out to verify and clarify the information relevant for establishing the circumstances of the criminal offense.

Conclusions. Thus, it can be summarized that the breach of security rules is situational, conditioned by the available information on the main information sources, as well as by the peculiarities of its receipt, which influences the procedure and direction of investigation and promotion of possible versions of the circumstances of the crime.

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К. О. Спасенко

ТИПОВІ СЛІДЧІ СИТУАЦІЇ ТА ВЕРСІЇ ПРИ РОЗСЛІДУВАННІ ПОРУШЕНЬ ПРАВИЛ БЕЗПЕКИ ПІД ЧАС ВИКОНАННЯ РОБІТ З ПІДВИЩЕНОЮ НЕБЕЗПЕКОЮ

У статті запропоновано систему типових слідчих версій у процесі розслідування порушень правил безпеки під час виконання робіт з підвищеною небезпекою. Розкрито програму дій слідчого щодо перевірки запропонованих версій. Встановлено, що існує тісний логічний зв'язок між ситуаціями і версіями, кожній типовій слідчій ситуації притаманний перелік типових версій, які є характерним для цієї ситуації і підлягають перевірці. Наголошено, що кожна із зазначених ситуацій реалізується за рахунок програм проведення слідчих (розшукових) та інших процесуальних дій, розроблених з урахуванням практики розслідування злочинних порушень правил безпеки під час виконання робіт з підвищеною небезпекою.

Ключові слова: типові слідчі ситуації, типові версії, програма дій слідчого, порушення правил безпеки під час виконання робіт з підвищеною небезпекою, методика розслідування, криміналістична характеристика злочинів, організація і планування розслідування.

К. А. Спасенко

ТИПОВЫЕ СЛЕДСТВЕННЫЕ СИТУАЦИИ И ВЕРСИИ ПРИ РАССЛЕДОВАНИИ НАРУШЕНИЙ ПРАВИЛ БЕЗОПАСНОСТИ ПРИ ПРОИЗВОДСТВЕ РАБОТ С ПОВЫШЕННОЙ ОПАСНОСТЬЮ

В статье предложена система типовых следственных версий в процессе расследования нарушений правил безопасности во время выполнения работ с повышенной опасностью.

В зависимости от информационного наполнения, а также с учетом источника, из которого получена указанная информация (то есть особенностей открытия уголовного производства), считаем целесообразным выделить три группы типичных следственных ситуаций нарушения правил безопасности на начальном этапе расследования:1) факт и способ нарушения правил безопасности, а также лицо, совершившее нарушение, установлены, сообщения о правонарушениях поступило в порядке проведения плановой проверки; 2) факт и способ нарушения правил безопасности установлены, информация о личности преступника — отсутствует, сообщение о правонарушениях поступило в порядке расследования несчастного случая; 3) факт и лицо нарушения правил безопасности установлены, информация о способе нарушения правил безопасности — отсутствует, производство о нарушении правил безопасности начинается на основании заявления потерпевшего или его родственников.

Отмечено, что каждая из указанных ситуаций реализуется за счет программ проведения следственных (розыскных) и других процессуальных действий, разработанных с учетом практики расследования преступных нарушений правил безопасности во время выполнения работ с повышенной опасностью, поскольку нарушение правил безопасности имеет ситуационный характер.

Ключевые слова: типовые следственные ситуации; типовые версии; программа действий следователя; нарушение правил безопасности во время выполнения работ с повышенной опасностью; методика расследования, криминалистическая характеристика преступлений, организация и планирование расследования.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.05
UDC 343.98

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Review article

INVECTIGATION OF FALSIFICATION AND TURNOVER OF FALSIFIED MEDICATIONS: INVESTIGATOR INTERACTION PROBLEMS

The article investigates the problems of interaction of the investigator in the investigation of falsification and circulation of counterfeit medicines. A detailed analysis of the views of scientists on the definition of «interaction» as a scientific category, its principles and meanings, which are debatable in forensic science, is carried out. Special attention is paid to the criminalistic essence and forms of interaction in the investigation of the crime under investigation. It is substantiated that the systematization of the forms of interaction of the investigator in the investigation of this type of crime must be carried out according to the criterion of the subject, taking into account the peculiarities of their legal regulation. Based on the results of the generalization of the materials of the forensic practice, it was determined that the main subjects of interaction with the investigator in the investigation of falsification and circulation of counterfeit medicines are employees of operational divisions and specialists. In addition, the interaction of the investigator with the State Service of Ukraine for Medicines and Drug Control is becoming essential, the current forms of interaction with which, among other things, are the identification of signs of falsification or activities related to falsification and the prevention of these crimes. Based on the specifics of this category of crimes, it has been proved that it is necessary to increase the level of interaction of the investigator, which will greatly contribute to the effectiveness of investigative (search) actions, saving time and effort at the initial stages of criminal proceedings, which is a necessary condition for a successful investigation as a whole.

Keywords: falsification and circulation of counterfeit drugs, interaction of an investigator in the investigation of falsification and circulation of counterfeit drugs, principles of interaction in the investigation of crimes, forms of interaction in the investigation of crimes, subjects of interaction in the investigation of crimes.

Formulation of Research Problem. Ensuring a prompt, complete and impartial investigation into the falsification and circulation of falsified medicines

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largely depends on the proper application of procedural and organizational measures, the effective implementation of which is ensured through clear interaction of the investigator with other authorities in investigating the crime under investigation. In modern conditions, ensuring reliable control over the circulation of drugs, preventing the circulation of counterfeit drugs, timeliness of detection, detection and investigation of such crimes is impossible without well-coordinated coordination not only law enforcement agencies but also other participants in criminal proceedings, each endowed with own powers and uses various means and methods in its activity.

Neglect of these requirements by investigators leads to the loss of evidence, the need to repeat the investigative (search) actions, contributes to the emergence of problematic investigative situations. In this regard, the interaction of the investigator with other participants in criminal proceedings during the detection and investigation of counterfeiting and trafficking of counterfeit drugs, as well as a correct understanding of the structure and characteristics of participants in such interaction is the basis for effective investigation of the crime.

Analysis of Recent Researches and Publications. The problems of the investigator's interaction in the investigation of certain types of crimes was given enough attention in the forensic literature, in particular, A. F. Volobuev, L. Ya. Gordin, V. V. Ivanov, O. V. Kerevich, V. M. Malyuga studied this issue., I. V Ozersky, L. I Shcherbina, V. V. Pivovarov, S. V. Slinko, V. Yu. Shepitko [1].

[1] E.g., Волобуєв А. Ф. Взаємодія слідчого з оперативними підрозділами при розслідуванні економічних злочинів. *Форум права.* 2006. № 5; Керевич О. В. Процесуальні та психологічні основи взаємодії слідчого та органу дізнання в ході розкриття і розслідування злочинів: автореф. дис. ... канд. юрид. наук: 12.00.09. Київ, 2001. С. 16—19; Гордін Л. Я. Кримінально-процесуальні проблеми створення та діяльності слідчо-оперативних груп: автореф. дис. … канд. юрид. наук: 12.00.09. Нац. юрид. акад. України ім. Ярослава Мудрого. Харків, 2008. 16 с.; Іванов В. В. Взаємодія оперативних підрозділів органів внутрішніх справ і слідчого на досудових стадіях кримінального процесу: автореф. дис. … канд. юрид. наук: 21.00.06. Київ, 1998. 20 с.; Керевич О. В. Процесуальні та психологічні основи взаємодії слідчого та органу дізнання в ході розкриття і розслідування злочинів: автореф. дис. ... канд. юрид. наук: 12.00.09. Київ, 2001. 19 с.; Малюга В. М. Взаємодія слідчого з оперативними підрозділами та іншими суб'єктами в системі методики розслідування злочинів: автореф. дис. … канд. юрид. наук: 12.00.09. Львів, 2016. 18 с.; Озерський І. В. Взаємодія слідчого з органом дізнання (організаційно-правовий та психологічний аналіз): монографія. Київ: МАУП, 2004. С. 179—200; Пивоваров В. В., Щербина Л. І. Взаємодія органів досудового слідства та дізнання при розслідуванні кримінальних справ : монографія. Харків: Право, 2006. 176 с.; Слинько С. В. Сущность, формы и правовые основы взаимодействия следователя с органом дознания: автореф. дис. … канд. юрид. наук: 12.00.09. Харьков, 1991. 26 с.; Шепітько В. Ю. Види і форми взаємодіїї у розкритті й розслідуванні злочинів. Криміналістика: підручник: у 2 т. Т. 2 [В. Ю. Шепітько, В. О. Коновалова В. А. Журавель]; за ред. В. Ю. Шепітька. Харків: Право, 2019. С. 16.

However, today, both in the theory of criminology and in practice, there are a number of pressing issues related to the interaction of the investigator in the investigation of certain types of crimes. It should be noted that in the modern forensic literature in the formation of methods for investigating the falsification and circulation of counterfeit drugs, the problems of the investigator's interaction during the investigation are considered in fragments, usually within the interaction with operational units. The above confirms the relevance of this topic and the need for further research on this issue.

The Article Purpose is to study the criminalistics essence of the principles of formation and importance of interaction in the investigation of certain types of crimes as a scientific category of criminology, to determine the features and criteria of systematization of forms of interaction of investigators in the investigation of falsification as well as further areas of development of this issue.

Main Content Presentation. Before proceeding to a detailed study of the peculiarities of the investigator's interaction in the investigation of falsification and trafficking in falsified drugs, it is first necessary to clarify the definition of investigator's interaction in the investigation of crimes as a scientific category of criminalistics its principles and meanings, that are debatable in the forensic literature.

Agreeing with the position of scholars who point to a certain regulatory inconsistency caused by the absence in the current Criminal Procedural Code of Ukraine of the interaction term simultaneously used in other regulations, it should be noted that in the theory of criminal procedure and criminology today there are different views to understand the interaction in the investigation of crimes as a scientific category. Thus, according to V. Yu. Shepitko, the interaction of law enforcement and other state bodies and officials during the detection and investigation of crimes should be understood as a coordinated activity of various departments and agencies; its necessary criterion is to increase the efficiency of law enforcement agencies, i.e. it is a process of direct or indirect influence of objects (subjects) on each other that generates their interdependence and connection[1] or as a coordinated activity of various parts of one or more organized systems. to achieve a common goal with the least expenditure of effort, resources and time[2]. According to V. A. Zhuravel, cooperation in the investigation of crimes is a joint activity of all bodies and officials in the process of detection, investigation and prevention of crimes,

[1] Шепітько В. Ю. Криміналістика: енцикл. слов (укр.-рос. і рос.-укр.). 1500 термінів, за ред. В. Я. Тація; Акад. прав. наук України. Харків: Право, 2001. С. 42.

[2] Шепітько В. Ю. Види і форми взаємодії у розкритті й розслідуванні злочинів. Криміналістика: підручник: у 2 т. Т. 2 [В. Ю. Шепітько, В. О. Коновалова, В. А. Журавель]; за ред. В. Ю. Шепітька. Харків: Право, 2019. С. 16.

based on the requirements of law and bylaws, agreed on the purpose, time and place. is carried out due to the most rational combination of methods and means inherent in the activities of each of these subjects of interaction [1].

The interaction essence according to O. A. Samoilenko, is the coordinated activities of different components of one or more systems, in particular, a combination of investigator and inquiry bodies, enterprises, institutions, the public and the media, aimed at achieving a common goal of investigating a particular crime. Everyone at the same time acts within the limits of the powers, methods and means. The researcher rightly notes that the leading role in the interaction belongs to the investigator as a coordinator of activities [2]. Defining interaction as a scientific category, D. D. Zayets points out that it is a coordinated joint activity of authorized entities (bodies and officials), which consists in the use of tools, techniques and methods of collecting, researching, evaluating and using evidence to detection, investigation, trial and prevention of crimes [3].

We should also pay attention to the presence in the forensic literature of the separation of essential features of interaction as a scientific category. In particular, according to V. M Malyuga, the investigator interaction with operational units and other entities in criminal proceedings is: 1) provided by law, departmental regulations or recommended by forensic science joint functioning externally (neither legally, nor organizationally, nor professionally) non-subordinate subjects of interaction; 2) a holistic and comprehensive system, which is characterized by the internal subordinate activities of each performer; 3) joint functioning of these entities, which is determined by the time, place, forms, means and methods of implementation; 4) joint activities within the pre-trial investigation or in connection with [4].

In its turn, V. S. Sukhodubov emphasizes the presence in the forensic literature of the following signs of interaction in the investigation of crimes: 1) interaction is one of the forms of elimination (neutralization) of counteraction to the investigation; 2) the interaction must be specific, based on current legislation and the right combination of forms and methods of work and be

[1] Журавель В. А. Велика українська юридична енциклопедія: у 20 т. Т. 20: Криміналістика, судова експертиза, юридична психологія, редкол.: В. Ю. Шепітько та ін. Харків: Право, 2018. С. 82.

[2] Самойленко О. А. Початок кримінального провадження (з позицій криміналістичної науки). Право і суспільство. 2019. № 2. С. 229.

[3] Заяць Д. Д. Поняття взаємодії у боротьбі зі злочинністю: криміналістичний підхід. Вісник Харківського національного університету внутрішніх справ. 2006. № 32. С. 8.

[4] Малюга В. М. Взаємодія слідчого з оперативними підрозділами та іншими суб'єктами в системі методики розслідування злочинів: автореф. дис. … канд. юрид. наук: 12.00.09. Львів, 2016. С. 14.

carried out in accordance with the relevant principles; 3) dynamic interaction, which is due to the investigative situation; the need for the participants to plan and observe their competence; 4) the main purpose of the interaction is to detect, investigate and prevent the crime and to identify the perpetrators; 5) the interaction is aimed at finding out the circumstances of the event and obtaining the evidence base of the person's guilt; 6) the interaction is aimed at the effective execution of the tasks of pre-trial investigation; 7) the need for joint activity (interaction) is determined by the investigator and is his procedural decision; 8) interaction is based on assistance and cooperation, mutual responsibility, not rivalry; 9) independence of the subjects of interaction; 10) is a coordinated and coordinated system of specific actions of the investigator and other operational and search units according to the purpose, tasks, place and time of conducting; 11) the interaction is temporary; 12) the results of the interaction must be reflected in the criminal proceedings; 13) interaction may occur before the reporting to the Unified Register of Pre-Trial Investigations; 14) interaction implies the presence of at least two subjects [1].

O. O. Yukhno identifies the following general features of the investigator's interaction during the investigation: 1) joint coordinated activities of two or more participants involved in the sphere of criminal proceedings; 2) the legal basis for the implementation of interaction, i.e. it must be carried out in accordance with the requirements of laws and regulations governing both joint activities and the functioning of each participant separately; 3) ensuring the integrated use of forces, means and methods in the detection and investigation of criminal offenses.

Therefore, the interaction of the investigator with other persons in the investigation of crimes should be defined as coordinated in purpose, tasks, place and time of interconnected and interdependent activities of the investigator and others aimed at performing pre-trial investigation with the least effort, time and effort. The following features of interaction should be considered essential: 1) essence of the activity is to take specific measures by each subject of this activity within its powers aimed at collecting, researching, evaluating and using evidence in criminal proceedings; 2) interaction is carried out solely on the basis of relevant principles; 3) interaction is situational in nature; 4) leading role in the interaction belongs to the investigator as a coordinator of activities; 5) main purpose of cooperation is to increase the efficiency of achieving the goals and objectives of the crime investigation. All other signs of interaction contained in the special literature, in our opinion, are a reflection of certain aspects of the above features.

[1] Суходубов В. С. Основи методики розслідування вбивств, поєднаних з відчуженням житла громадян: автореф. дис. ... канд. юрид. наук. Харків, 2019. С. 13.

A more detailed study requires the definition of the principles of interaction. Thus, A. D. Marushev to the principles of interaction includes: legality; observance of constitutional rights and freedoms of citizens; observance by each participant of division of interaction strictly within the competence; the complexity of the use of funds by the investigator, operative; procedural independence and organizing role of the investigator in decision-making; personal responsibility; consistency of planning and execution of investigative (search) actions and operative-search measures; continuity of interaction; non-disclosure of data on procedural, operational and investigative and other activities [1]. V. D. Pcholkin among the principles notes the following: a clear idea of the purpose and objectives; procedural independence of the investigator and operative; strict observance on the basis of the current legislation of competence of participants of such interaction; integrated use of forces, means and methods at the disposal of these persons; non-disclosure by the participants of these procedural actions; continuous exchange of information between participants, organizers and leaders of interaction [2]. O. O. Volobueva among the principles of interaction calls the following: distribution of competence and job responsibilities; sole leadership and organizing role of the investigator; independence of participants in the choice of means and methods of their activity; integrated use of tools and methods; independence of expert witnesses [3].

It should also be noted that there are bylaws on the basic principles of interaction of pre-trial investigation bodies with other police bodies and units, in particular: 1) prompt, complete and impartial investigation of criminal offenses; 2) the independence of the investigator in procedural activities and the prohibition of interference in it by persons who do not have the legal authority to do so; 3) optimal use of the available capabilities of pre-trial investigation bodies and operational units of the National Police of Ukraine in the prevention, detection and investigation of criminal offenses; 4) observance of the general principles of criminal proceedings; 5) ensuring non-disclosure of pre-trial investigation data [4].

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[1] Марушев А. Д. Принципи взаємодії слідчого з учасниками досудового слідства. *Теорія та практика судової експертизи і криміналістики.* Харків, 2011. Вип. 11. С. 134.

[2] Пчолкін В. Д. Взаємодія слідчих та оперативних підрозділів під час розкриття та розслідування злочинів. *Досудове розслідування: актуальні проблеми та шляхи їх вирішення:* матеріали постійно діюч. наук.-практ. семінару (23 жовт. 2009 р.). Харків, 2009. Вип. 1. С. 193.

[3] Волобуєва О. О. Поняття і принципи взаємодії слідчого зі спеціалістами під час збору інформації про особу підозрюваного. *Вісник Луганської академії внутрішніх справ МВС імені 10-річчя незалежності України.* 2004. Вип. 2. С. 243.

[4] Про затвердження Інструкції з організації взаємодії органів досудового

Traditional in the scientific literature is the division of forms of interaction of the investigator depending on the legal regulations on procedural and non-procedural forms of interaction. In view of this, the issue of classification of forms of interaction between the investigator and the specialist remains debatable, in connection with which the position of V. O. Yaremchuk should be supported, who emphasizes that taking into account the provisions of Part 1 of Art. 71 of the Criminal Procedural Code of Ukraine of Ukraine, the consulting assistance of a specialist is recognized as a procedural type of interaction and therefore in characterizing the forms of interaction between the investigator and expert it is necessary to distinguish: 1) organizational and technical interaction ; 2) search interaction ; 3) advisory interaction; 4) informative interaction 5) analytical interaction ; 6) in the form of providing expert conclusion[1].

The forensic literature also pays some attention to the interaction in the investigation of counterfeiting and trafficking in counterfeit medicines. Thus, M. A. Gurkin, considering the interaction of the investigator with operatives as an element of the system of counteraction to organized criminal activity on the falsification and circulation of counterfeit drugs, identifies the following forms of interaction: 1) joint work as part of the investigative task force; 2) implementation of joint planning of the investigation of criminal proceedings and the necessary operational and investigative measures; 3) information exchange between the investigator and employees of operational and investigative units; 4) operative support of the conducted investigation of criminal proceedings; 5) the use of information obtained as a result of operational and investigative activities and other results for the formation of the evidence base, as well as in making any decisions in order to achieve other tasks of the investigation; 6) execution of the investigator's instructions by the inquiry bodies; 7) participation of employees of operative-search divisions in separate investigative actions on behalf of the investigator [2].

In turn, V. D. Larichev and A. V. Kuleshov distinguish the following forms of interaction between law enforcement, control and other state bodies in the investigation of counterfeiting and trafficking of counterfeit medicines:

розслідування з іншими органами та підрозділами Національної поліції України в запобіганні кримінальним правопорушенням, їх виявленні та розслідуванні: наказ МВС України від 07.07.2017 № 575. URL: https://zakon.rada.gov.ua/laws/show/z0937-17 (Date accessed: 22.07.2019).

[1] Яремчук В. О. Організація і тактика залучення спеціаліста при проведенні слідчих (розшукових): монографія. Харків: Апостіль, 2015. 227 с.

[2] Гуркин М. А. Противодействие организованной преступной деятельности в сфере обращения фальсифицированных недоброкачественных и незарегистрированных лекарственных средств: криминалистические аспекты: автореф. дис. ... канд. юридич. наук. Калининград, 2017. С 15.

1) joint analysis and study of the state of offenses in a particular field;
2) assisting one side to the other on a reasoned request or on its own initiative;
3) joint conducting of inspection or operative-search measures aimed at identifying the causes and conditions of crime, signs of crime, obtaining evidence of criminal activity;
4) preparation of proposals to eliminate the causes and conditions of crime [1].

The analysis of the specified literature sources testifies that the maintenance of interaction mainly between the investigator and the operative is revealed. This allows us to conclude that the study of interaction in the investigation of counterfeiting and trafficking in counterfeit drugs is selective.

The commission of falsification and circulation of falsified medicines has certain features that determine the specific forms of interaction that are inherent in the investigation of the crime under investigation. Differentiation of such forms can be carried out on the basis of various criteria, in particular, depending on the entity with which the investigator acts, their departmental subordination, the regulation of their activities by law, time of implementation and other factors. In our opinion, the division of forms of interaction of the investigator during the investigation of falsification and circulation of falsified medicines should be carried out according to the criteria of the subject with which the investigator interacts: 1) interaction with operational units; 2) interaction with a specialist; 3) interaction with employees of the State Service of Ukraine for Medicines and Drug Control.

The interaction of the investigator with the operational units of the Ministry of Internal Affairs of Ukraine may take the following forms: 1) joint work as part of the investigative task force; 2) implementation of joint planning of the investigation of criminal proceedings and the necessary operational and investigative measures; 3) information exchange between the investigator and employees of operational and investigative units; 4) use by the investigator of the information obtained as a result of operational and investigative activities and other results in making any decisions in order to achieve the objectives of the investigation, as well as for the formation of the evidence base; 5) execution by operational units of the investigator's instructions regarding the conduct of investigative (investigative) and covert investigative (investigative) actions, as well as other procedural actions (measures to ensure the proceedings).

[1] Ларичев В. Д., Кулешова А. В. Противодействие преступлениям против здоровья населения, совершаемые с использованием поддельной медицинской продукции: монография. Москва: Юрлитинформ, 2019. С. 81.

The need for procedural interaction of the investigator with operational units within the investigative task force is due to the following factors: 1) investigative actions and operational search activities of team members have the same goal, aimed at rapid detection and investigation of crimes; 2) all actions of the members of the investigative task force must be agreed upon during the development of a single plan; 3) each of the members of the investigative task force acts within its powers and retains its functional independence; 4) work as a member of the investigative task force gives the investigator the opportunity to use the data obtained operatively as soon as possible, and operatives — the information obtained during the investigative actions [1].

In addition, the participation of investigator and operational units in joint activities within the investigative and operational groups is clearly regulated by bylaws [2]. The task of operatives during the activities of the investigative task force is to identify, record, seize, pack and preserve traces of a criminal offense, physical evidence, identify witnesses and victims, clarify the circumstances of a criminal offense that are relevant to a comprehensive, complete and impartial their research and identification of the perpetrators.

Pre-developed and agreed investigation plans that reflect the joint activities, their executors, deadlines, forms of control by the investigator are the basis of organizational and tactical cooperation in the investigation of crimes. It is the investigation plan that should determine the scope and order of the entire interaction process. In this case, it can be the same for all performers, and separate. A separate plan is made when it is necessary to decipher the specific content of operational and investigative measures, the reflection of which in the general plan is impractical. The plan helps interacting persons to take into account different situations and use their opportunities effectively in the performance of their functions. Interaction in the planning of operational and investigative measures and investigative actions in the process of investigating crimes avoids their mutual duplication, promotes the correct choice of areas of joint concerted action [3].

[1] Топчій В. В. Взаємодія органів досудового розслідування та оперативних підрозділів у складі слідчо-оперативних груп. *Юридичний вісник.* 2014. № 4 (33). С. 138—143.

[2] Про затвердження Інструкції з організації взаємодії органів досудового розслідування з іншими органами та підрозділами Національної поліції України в запобіганні кримінальним правопорушенням, їх виявленні та розслідуванні: наказ МВС України від 07.07.2017 № 575. URL: https://zakon.rada.gov.ua/laws/show/z0937-17 (Date accessed:22.07.2019).

[3] Лисин Н. С. Планирование как форма взаимодействия следователя с органами, осуществляющую оперативно-розыскную деятельность при расследовании преступлений, составляющих молодежную организованную преступность. *Российский*

The organization of interaction between the investigator and operational units is impossible without information support. The parties collect, accumulate, analyze, store incoming information, which is then used through the adoption of important procedural decisions in specific criminal proceedings. Interacting with each other, the investigator and the staff of operational units constantly monitor the situation and the state of crime, try to predict their changes, determine and predict the dynamics of growth and decline of criminal acts.

The reciprocity of the exchange of information is that the investigator must be informed in a timely manner of forensic information that appeared in the officer of the operational unit and that about data obtained by the investigator in the investigation of criminal proceedings. Given the need for information exchange for the success of criminal investigations, it is important to comply with certain rules and requirements for both the information itself and its exchange between the investigator and operatives, in particular: 1) information must be presented in a certain form; 2) it should be relevant and if possible, as reliable and accurate as possible; 3) it is expedient to use the presented information taking into account opinion of participants of interaction, namely employees of operational divisions; 4) results of the use of the information should be taking into account with the opinion of the employee of the operational unit whence it came [1].

The interaction of the investigator and operational units may be manifested in the procedural form of execution by the operational units of the investigator's instructions to conduct investigative (investigative), covert investigative (investigative) actions, as well as other procedural actions (measures to ensure proceedings). Regarding the falsification and circulation of falsified medicines, such investigators (investigative) may be an inspection of the scene, review of documents, review of material evidence (medicines), search, investigative experiment. As for other procedural actions, first of all, it is a question of application of measures of maintenance of criminal proceedings; such as the cause of the suspect, the witness, the search for the suspect.

Results of staff activities of the operational units (information obtained in this way) can be used by the investigator: a) as evidentiary information (evidence); b) as a basis for making procedural decisions or proposing versions; c) as indicative information.

While investigating the forms of interaction between the investigator and the specialist during the investigation of counterfeiting and trafficking

следователь. Москва: Юрист, 2013. № 2. С. 9—11.

[1] Максимов В. С. Тактика взаимодействия участников уголовного судопроизводства. *Вестник ОмГУ.* Серия. Право. 2009. № 4. С. 222—226.

of counterfeit medicines, it is necessary to point out their obligatory participation conditioned by the need to establish the fact and circumstances of counterfeiting of medicines enquiring specific expertise in the field of pharmaceutical activity as well as in the whole necessity of obligatory participation of the specialist in carrying out separate investigative (search) actions (for example, inspection of industrial premises, production raw materials, equipment and etc.).

Therefore, in connection with the above, in the investigation of falsification and circulation of counterfeit medicines, the following forms of interaction of the investigator with the specialist can be distinguished: 1) carrying out organizational and technical support during the conduct of investigative (search) and silent investigative (search) actions; 2) providing consulting, information and analytical assistance in conducting investigative (search) and unspoken investigative (search) actions; 3) providing expert opinion.

Organizational and technical support and consulting and analytical assistance of a specialist is most appropriate when conducting investigative, as well as covert investigative actions, which are associated with the direct perception of the trace picture of the crime under investigation. Thus, during the inspection of the scene, specialists can draw the investigator's attention to some special facts of falsification and circulation of falsified medicines, in particular, possible traces of mechanisms, machines, help to clarify the method of falsification, features of the technological process, the essence of violations of rules and regulations. licensing conditions for the production of medicines, as well as advice on terminologically correct description of the circumstances of the event in procedural documents. In our opinion, it is expedient to involve a specialist during the interrogation. Consultations on asking questions, clarifying certain aspects of the organization of the circulation of medicines, forming in the investigator an idea of the mode and technology of production are important prerequisites for a successful interrogation of investigators.

Obtaining expert conclusion is first and foremost: 1) providing advice on regulatory documentation that regulates the production and marketing of medicines; 2) in finding out the peculiarities of production technology, in the organization of control at the enterprise where medicines are manufactured or sold; 3) in determining the list of documents that are necessary in the course of pharmaceutical activity of an enterprise, institution or organization, the procedure and features of the document flow; 4) recommendations for technical, scientific and methodological literature; 5) in clarifying the need for expertise and the content of the questions to be asked by the expert.

Extremely important in the investigation of counterfeiting and trafficking in counterfeit medicines is the cooperation of the investigator with the State Service of Ukraine for Medicines and Drug Control as a unit of the central executive body that implements policies on quality control and safety of medicines, which can take various forms. Officially, the main areas of cooperation between the service and the National Police are: 1) coordination of efforts to combat the circulation of unregistered, imported into Ukraine in violation of customs regulations, low-quality and counterfeit medicines; 2) identification and elimination of the causes and conditions that contribute to the illicit trafficking of unregistered, imported into Ukraine in violation of customs regulations, low-quality and counterfeit medicines [1].

Based on practical activities, the following forms of interaction of the investigator with the State Service of Ukraine for Medicines and Drug Control in the investigation of counterfeiting and trafficking in counterfeit medicines: 1) notification of detection of counterfeit medicines and signs of activities related to counterfeiting; 2) information and consulting; 3) expert; 4) preventive.

In addition to information-consulting and expert forms of interaction, which have already been considered in detail, one of the important areas of interaction of the investigator with the State Service for Medicines and Drug Control is joint activities to identify signs of counterfeiting and trafficking in counterfeit medicines. Indeed, in 2018 alone, the State Service for Medicines and Drug Control sent 82 letters to law enforcement agencies regarding the facts of falsification or circulation of falsified medicines[2]. However, in our opinion, the interaction on the detection of criminal manifestations should not be limited to the passive perception of investigators of information about the possible commission of crimes in this category.

In this context, it should be noted that at present, reports of falsification or circulation of falsified medicines are sent by the State Service for Medicines and Drug Control, usually as a result of scheduled or unscheduled inspections. At the same time, the investigator, as the coordinator of cooperation in the investigation, as well as operational units on his behalf are not deprived of the opportunity to independently analyze and detect signs of falsification on the basis of information obtained in cooperation with the State Service for Medicines and Drug

[1] Меморандум про співпрацю між Державною службою України з лікарських засобів та контролю за наркотиками та Національною поліцією України від 03.07.2017. URL: https://zakon.rada.gov.ua/rada/main/o1223 (Date accessed: 22.06.2019).

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Control, in particular, expiration, revocation or suspension of licenses for the production of medicines, wholesale and retail trade in medicines, import of medicines; lack of state registration of legal entities, natural persons-entrepreneurs engaged in the production or sale of medicines.

Conclusions. Thus, the interaction of the investigator in the investigation of counterfeiting and trafficking in counterfeit drugs is a multicomponent process, the complexity of which is due to the specifics of the pharmaceutical industry, the circumstances to be proved, When investigating this category of crimes, it is advisable to increase the level of interaction between the investigator and specialists of the State Service for Medicines and Drug Control and other specialists in the pharmaceutical field, as such interaction increases the effectiveness of investigative (search) actions and saves energy and time. criminal proceedings, which is a necessary prerequisite for a successful investigation.

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І. В. Парфило

РОЗСЛІДУВАННЯ ФАЛЬСИФІКАЦІЇ ТА ОБІГУ ФАЛЬСИФІКОВАНИХ ЛІКАРСЬКИХ ЗАСОБІВ: ПРОБЛЕМИ ВЗАЄМОДІЇ СЛІДЧОГО

Розглянуто проблеми взаємодії слідчого при розслідуванні фальсифікації та обігу фальсифікованих лікарських засобів. Проведено детальний аналіз поглядів вчених щодо визначення «взаємодії» як наукової категорії, її принципів та значення, що є дискусійними у криміналістиці. Обґрунтовано, що систематизацію форм взаємодії слідчого при розслідуванні вказаного виду злочинів слід здійснювати за критерієм суб'єкта з урахуванням особливостей їх правової регламентації. Визначено, що основними суб'єктами взаємодії зі слідчим при розслідуванні фальсифікації та обігу фальсифікованих лікарських засобів є співробітники оперативних підрозділів та спеціалісти. Крім того, істотного значення набуває взаємодія слідчого з Державною службою України з лікарських засобів та контролю за наркотиками. Доведено необхідність підвищення рівня взаємодії слідчого, що значною мірою сприятиме ефективності проведення слідчих (розшукових) дій.

Ключові слова: фальсифікація та обіг фальсифікованих лікарських засобів, взаємодія слідчого при розслідуванні фальсифікації та обігу фальсифікованих лікарських засобів, принципи взаємодії при розслідуванні злочинів, форми взаємодії при розслідуванні злочинів, суб'єкти взаємодії при розслідуванні злочинів.

И. В. Парфило

РАССЛЕДОВАНИЕ ФАЛЬСИФИКАЦИИ И ОБОРОТА ФАЛЬСИФИЦИРОВАННЫХ ЛЕКАРСТВЕННЫХ СРЕДСТВ: ПРОБЛЕМЫ ВЗАИМОДЕЙСТВИЯ СЛЕДОВАТЕЛЯ

В статье исследованы проблемы взаимодействия следователя при расследовании фальсификации и оборота фальсифицированных лекарственных средств. Осуществлен подробный анализ взглядов ученых на определение «взаимодействия» как научной категории, ее принципов и значения, которые являются дискуссионными в криминалистике. Особое вни-

мание уделено криминалистической сущности и формам взаимодействия при расследовании исследуемого преступления. Обосновано, что систематизацию форм взаимодействия следователя при расследовании указанного вида преступлений необходимо осуществлять по критерию субъекта с учетом особенностей их правовой регламентации. По результатам обобщения материалов судебно-следственной практики определено, что основными субъектами взаимодействия со следователем при расследовании фальсификации и оборота фальсифицированных лекарственных средств являются сотрудники оперативных подразделений и специалисты. Кроме того, существенное значение приобретает взаимодействие следователя с Государственной службой Украины по лекарственным средствам и контролю наркотиков, актуальными формами взаимодействия с которой, среди прочего, являются выявление признаков фальсификации или деятельности, связанной с фальсификацией и предупреждение указанных преступлений. Исходя из специфики этой категории преступлений, доказана необходимость повышения уровня взаимодействия следователя, что в значительной мере будет способствовать эффективности проведения следственных (розыскных) действий, экономии сил и времени на начальных стадиях уголовного производства, что является необходимым условием успешного расследования в целом.

Ключевые слова: фальсификация и оборот фальсифицированных лекарственных средств, взаимодействие следователя при расследовании фальсификации и оборота фальсифицированных лекарственных средств, принципы взаимодействия при расследовании преступлений, формы взаимодействия при расследовании преступлений, субъекты взаимодействия при расследовании преступлений.

Received by Editorial Board:12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.06
UDC 343.985:351.746.1

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Review article

SEPARATE VIEWS REGARDING THE RATIO OF SPECIAL TECHNIQUES OF LAW ENFORCEMENT AUTHORITIES AND CRIMINAL TECHNIQUE

The ratio of forensic technique and detective technique between each other and with special equipment of law enforcement agencies has been investigated. It is shown that the constant growth of the technical equipment of the law enforcement agencies of Ukraine and the presence of law enforcement structures have led to the emergence of independent groups of technical means. It is emphasized that the forensic technique has a special character in its purpose which is manifested in the service mainly of the criminal procedure to obtain procedural information. It has been proved that operational technology, as a section of the theory of operational-search activity and a component of the more general scientific concept of special technique of law enforcement agencies has its own system and is related to forensic technology as equivalent categories of legal science. It shows the emergence of a very important means of collecting, accumulating, storing, processing, searching and providing the necessary information - automated information retrieval systems, automated specialized systems and intelligent systems, which make up a separate group of special equipment. It has been proved that the methodological basis of special equipment is scientifically grounded tactics, methods and information technologies. The special technique of law enforcement agencies as an interdisciplinary branch of legal science is a system of scientific provisions and recommendations that create conditions for the development of technical means (forensic, operational, organizational, security), as well as scientifically based methods, techniques and information technologies in order to counter crime by law enforcement agencies. The system of special equipment of law enforcement agencies consists of elements that include general provisions and branches of special equipment of law enforcement agencies. The branches of special equipment of law enforcement agencies consist of the main directions of its use in law enforcement, namely: concerning investigative activity; forensic technique, Crime detection and investigation - detective technique, administrative activity; organizational technique. It has been proven that the special equipment of law enforcement agencies and forensic equipment are treated as general and specific, respectively.

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Keywords: forensic technique, correlation, system, detective technique, information technology, intelligent systems, special technique of law enforcement agencies.

Formulation of Research Problem. The use of scientific and technical means is so essential in the prevention, detection and investigation of crimes that today without it, law enforcement activities have become impossible in most cases. This primarily concerns the collection and consolidation of evidence, obtaining operational information, conducting expert research, carrying out preventive, procedural and operational-investigative actions, which require detailed audiovisual documentation of events, as well as identifying traces of illegal activities inaccessible to ordinary human beings. perception. In these cases, the use of scientific and technical means plays a crucial role, becoming the main tool for crime counteraction.

Advanced scientific and technical achievements are constantly implemented and used in all fields of law enforcement activity. Therefore, the constant growth of technical equipment of law enforcement agencies of Ukraine, the presence of law enforcement agencies that systematically use the achievements of science, have led to the emergence of independent groups of technical means. They are grouped according to the main activities of law enforcement agencies (investigative, operational and investigative, administrative and legal, security)[1] and are united, we believe, by the general concept of special technique of law enforcement agencies.

However, in criminology there are certain approaches to the classification of equipment by the subjects of its use in law enforcement, namely, technical means of operational and investigative purposes are divided into operational equipment, special equipment, special means [2]. Researchers rightly call the main difference between forensic equipment and operational, which is not in the qualitative characteristics of technical means, but in the procedural and methodological aspects of its use. An investigator, prosecutor or court shall use tools, means and methods, which are achievements of natural and technical sciences, forensic and operative techniques, to collect and study evidentiary information. In this context, operational and forensic techniques[3] are considered as separate sections of legal science.

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We will try to find out the connections between forensic and operational techniques and between special technique of law enforcement agencies.

Analysis of Recent Researches and Publications. The use of scientific and technical means in the detection and investigation of crimes investigated P. P. Artemenko, R. S. Belkin, V. V. Biriukov, D. D. Biehov, O. G. Volevodz, A. F. Volobuyev, V. I. Goncharenko, L. I. Gromovenko, V. I. Dekshne, O. F. Dolzhenkov, P. A. Yermakov, Yu. F. Zharikov, I. O. Iierusalimov, A. V. Ishchenko, I. P. Kozachenko, Ye. D. Lukianchykov, S. S. Ovchynskyi, Yu. Yu. Orlov, V. L. Ortynskyi, Yu. O. Piliukov, O. O. Punda, M. V. Saltevskyi, E. F. Tolmachev, I. R. Shynkarenko and many other scientists [1]. However, the conceptual and structural certaintyregarding the special equipment of law enforcement agencies remains unclear and its relationship with forensic equipment needs to be clarified.

The Article Purpose is to outline the place of special equipment of law enforcement agencies in the system of legal sciences, to determine its system and general classification and relationship with forensic technique.

Main Content Presentation. At the beginning of our consideration, we must clearly understand that the means as a legal category are tools to ensure any activity and have a general scientific, intersectoral nature [2]. Therefore, technical means used in law enforcement as a separate type

підручник: у 2 т. Т. 1; за заг. ред. А. Ф. Волобуєва, Р. Л. Степанюка, В. О. Малярової. Харків, 2018. С. 113.

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of means should also be considered from these positions and belong to different branches of legal science.

To achieve the goal of our work, it is necessary to define the scientific concept of criminal investigation technique as the most researched category, which gave impetus to the development of technical disciplines in other branches of legal science. In particular, the generalization of literature sources indicates that today more than 150 definitions of the concept of criminology and forensic technology, about 70 versions of the system and structural structure of criminalistics [1].

R. S. Belkin considers forensic technology as a branch of forensics including a system of scientific provisions and developed on their basis techniques, techniques and methods designed to collect, study and use evidence and other measures to detect and prevent crimes[2]. R.S. Belkin emphasizes the information approach and believes that it is not only the collection of evidence, but also the accumulation and processing of information about the event under investigation, as well as technical means and methods of detecting and preventing crimes.

Other authors at the present stage of development of scientific and technical support of law enforcement determine that criminal investigation technique is a branch of criminalistics that is a system of theoretical provisions formed by studying the mechanisms of crime and their traces developing techniques, and methods aimed at detection, fixation, retrieval and investigation of these traces in order to detect, investigate and prevent crimes [3].

Development of criminalistics has improved the concept of criminal investigation technique. On the one hand, this concept means a section of the science of criminology and on the other hand is a set of technical means used in criminal proceedings. As a branch of science, forensic science is a system of scientific provisions and recommendations that ensure the development of technical means (devices, tools, devices and materials), as well as techniques and methods of their use to investigate and prevent criminal offenses[4]. In addition, forensic science is a separate section of the Criminalistics discipline.

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As part of criminalistics, the criminal investigation technique consists not only of individual elements, i.e. forensic theories, techniques, methods, techniques, teachings, etc., but also of individual areas of knowledge that form their own system[1]. The system of criminal investigation technique includes general provisions and individual areas (forensic photography and video recording, trace evidence analysis, research on weapons, composite drawing, etc.), that are ambiguously defined by scientists.

Analyzing the scientific sources and positions of a number of authoritative researchers, we can say that forensic science is a separate, independent part of forensics with its own system of scientific and technical provisions, principles and based on them technical means, techniques and methods used for collection, processing, research and provision of forensic information in order to investigate, detect and prevent crimes. It has a special nature for its purpose, which is manifested in the service of mainly criminal proceedings and is the main "provider" of procedural information.

Another tool having a special purpose, we can determine as detective technique. In our previous research[2] we have shown that the detective technique category, as an independent section of the theory of crime detection and investigation (hereinafter referred to as CDI), has several meanings, such as: section science; the type of activity of respective subjects in the use of detective and technical means for solving the problems of the CDI and criminal procedure; section of the discipline: LEA Special technique.

Detective technique as a section of crime detection and investigation theory and a component of a more general scientific concept of special technique of law enforcement agencies has its own system including general provisions and areas of operational equipment (means of public information measures means of criminal investigation measures).

We believe that the opinion of P. P. Artemenko is correct, defining the concepts of detective technique and detective and technical means emphasized that these means by their direct purpose, purpose, design data, tactical features of use, personal regulations received a "special" nature of use in the fight against crime. Their set includes specially designed or adapted to the specific needs of crime detection and investigation activities

[1] Маркусь В. О. Криміналістика: навчальний посібник Київ: Кондор, 2007. С. 53.

[2] Хараберюш І. Ф. Оперативна техніка як теоретико-прикладна категорія оперативно-розшукової науки. *Вісник Маріупольського державного університету.* Серія: Право. 2017. Вип. 13. С. 77—82.

forensic, radio, chemical, optical, photo technical, sound recording and other scientific and technical means[1].

We can state that forensic technology and operational technology have a special purpose and are correlated as equivalent independent parts of such sciences as forensic science and crime detection and investigation activities, accordingly.

Further, the concept scope of special technique of law enforcement agencies needs to be clarified. Tin this purpose first conduct a semantic analysis of the essence and meaning of the term: *special technique*. It includes two components. Turning to dictionaries, you can find out that the term: *special means special*, exclusively intended for something, and also refers to a particular area of something, inherent in any specialization[2]. The technique term means a set of tools, tools with which to create something, secondly, directly the machines, tools, devices and, thirdly, a set of knowledge, tools, methods, techniques used in any case[3].

Thus, technique, on the one hand, is a set of means of activity created to carry out the processes of production and service of non-productive needs of society; on the other, the aggregate characteristic used to achieve the goal of skills, techniques and methods.

Contextual analysis of the essence and meaning of the special technique term makes it incorrect to use it out of context, without defining the scope of this technique. In this case, belonging to the "special" can be determined by the special design, technical capabilities and purpose of the device, device or device, and special (specific) tactics for the use of certain technical means, which was also emphasized by the above authors. In some cases, both the technical means and the tactics of its application can be special.

With regard to special law enforcement technique in its most general form, it refers to a set of special techniques, tactics and methods of their effective lawful use in law enforcement activities.

The concept of special technique began to take shape in the second half of the twentieth century. and associated with the development of police science. Considering the use of technical means in law enforcement activities within the existing technical and legal support at that time, we see that the authors approached the definition of the concept of special

[1] Артеменко П.П. Специальные оперативно-технические средства: учеб. пособ. Київ, 1988. С. 4.

[2] Ожегов С. И. Словарь русского языка: 70000 слов; под ред. Н. Ю. Шведовой. Москва: Рус. яз., 1990. С. 753.

[3] Ibid. p. 795.

technique in different ways. Some scientists have narrowed it to technical means only detective and investigative purposes[1], others, recognizing this concept generic, limited to technical means[2] not taking into account the methods and tactics of their use, some of them, defining special equipment, took into account its components, but not enough opinion, outlined the directions and forms of its use[3] or did not take into account the structural changes that took place in law enforcement agencies[4].

Not the best position on the definition of special equipment used in law enforcement, and in recent works by scientists of Ukraine and other countries.

R. V. Mukoida and A. A. Shelekhov define special equipment as a system of technical means and appropriate tactics used by law enforcement agencies under the condition of strict observance of law in the fight against crime, public order and other functions assigned to them. In this case, the technical means they include: seven main classes: means of communication; signaling and industrial television facilities; operational and technical means (means of covert photography and video recording, means of covert sound recording, search devices; night surveillance devices; special chemicals); means of intelligence and technical protection of information; forensic technique; information systems; personal protective equipment and active defense[5]. We believe that the definition does not take into account the latest advances in science and vaguely defines the classification of special technique in the areas of law enforcement.

Some authors are not limited to law enforcement agencies but consider special technique for law enforcement agencies in general. They understand the special equipment of law enforcement agencies as devices, devices, equipment, mechanisms, chemicals and other man-made objects (as well as methods of their application) that can be lawfully and effectively used in operational and investigative measures, investigative

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[1] Біленчук П. Д., Дубовий О. П., Салтевський М. В., Тимошенко П. Ю. Криміналістика: підручник для слухачів, ад'юнктів, викладачів вузів системи МВС України. Київ: АТІКА, 1998. 416 с.

[2] Левков А. И., Ануфриев П. М. Использование средств специальной техники в работе уголовного розыска: науч.-практ. пособие. Омск, 1979. 96 с.

[3] Декшне В. И., Романов А. П., Чекмарев Ю. В. Технические средства и системы управления в органах внутренних дел. Ч. 1. Оперативная техника: учеб. пособ. Москва, 1986. 82 с.

[4] Артеменко П. П., Воронин Б. П., Воскресенский Г. М. и др. Специальная техника и ее применение: учеб. пособ. Москва, 1982. 348 с.

[5] Мукоіда Р. В., Шелехов А. О. Спеціальна техніка в органах внутрішніх справ: навч. посіб; за заг. ред. С. В. Кузніченка. Одеса: ОДУВС, 2013. С. 5.

actions, support of the regime in correctional facilities, law enforcement in order to prevent crime and solve crimes in cities and other settlements [1].

E. N. Bystryakov, M. V. Savelyeva, A. B. Smushkin argue that special technique is a set of technical means and scientifically substantiated methods of their lawful use by authorized by law enforcement officers for the purpose of prevention and disclosure of crimes, other offenses the search for criminals, the detention of convicted persons, as well as persons suspected and accused of committing crimes [2].

We see that authors taking into account the basic elements of the concept of special equipment of law enforcement agencies overload it with the functional properties of these tools and do not disclose promising areas for improvement associated with the emergence of new types of crime. The emergence of new types of crimes in the field of information and communication (IT field) and practical experience in combating these crimes has allowed us to include software and software in the means of special technique of counteraction [3] that are fundamentally different from traditional means of special means.

Considering the information support of crime counteraction, one cannot ignore the emergence of a very important means of collecting, accumulating, storing, processing, searching and providing the necessary information: automated information retrieval systems and automated specialized systems [4].They are specific software and hardware complexes, that are in our opinion, a separate group of special technique under the general term: automated systems.

Based on the generalization of research results in the field of intelligence and intelligent systems [5]; we argue that this is a promising process of providing information systems used to combat crime, the

[1] Специальная техника правоохранительных органов: учеб. пособ./сост.: Е. Р. Пудаков, Р. Р. Яппаров. Уфа: Изд-во БИСТ (филиал) ОУП ВО «АТиСО», 2017. С. 5; Леонов С. Н. Попов В. Г. Специальная техника правоохранительных органов. Курс лекций. Томск: Кузбасский институт ФСИН, 2010. С. 6.

[2] Быстряков Е. Н., Савельева М. В., Смушкин А. Б. Специальная техника: учеб. пособ. 2-е изд., стер. Москва: ЮСТИЦИЯ, 2018. С. 10.

[3] Хараберюш І. Ф., Мацюк В. Я., Некрасов В. А., Хараберюш О. І. Використання оперативно-технічних засобів у протидії злочинам, що вчиняються у сфері нових інформаційних технологій: монографія. Київ: КНТ, 2007. С. 55—56.

[4] Хараберюш І.Ф. Спеціальна техніка як чинник впливу на стан оперативної обстановки території обслуговування підрозділами карного розшуку. *Вісник Луганського державного університету внутрішніх справ імені Е. О. Дідоренка.* Спеціальний випуск № 2. Частина 1. 2011. № 2. С 150—151.

[5] Ibid.. Інтелектуальні системи в правоохоронній діяльності. *Вісник Маріупольського державного університету.* Серія: Право. 2018. Вип. 16. С. 39—45.

properties of intelligence: communication skills; analytical capabilities; ability to self-study; adaptability; ability to self-esteem; creativity. Undoubtedly, intelligent systems are a more advanced level of automated systems, which should also be a separate group of special equipment that can significantly increase the efficiency of law enforcement.

Having paid attention to the hardware of the concept of special law enforcement technique, let us consider in more detail its methodological component in which to determine the place of modern information technologies.

Considering the technology term in a broad sense, we mean a set of knowledge that can be used to produce goods and services from economic resources. In the narrow sense, it is a set of ways to convert matter, energy, information in the process of manufacturing, processing and processing of materials, assembly of finished products, quality control, management [1]. The concept of technology includes methods, techniques, techniques, modes of operation, sequence of operations and procedures, it is closely related to the means, equipment, tools, materials used.

Any technology involves:

- topic of work (subject of technological influence, technological object),
- means of work (technological means),
- carrier of technological functions (employee, team, etc.),
- level of technological development of society.

The term: *informational* means related to information [2]. Therefore, information technology is a technology that is designed and related to information. The subject of information technology is information and information resources. The means of labor in our case are the means of computer technology and telecommunications, and in the long run — the means of information processing and communication that correspond to the level of technological development of society. Carriers of technological functions can be computer and telecommunications, automated information systems or law enforcement officers.

Thus, information technology is a set of methods, techniques, techniques for processing, processing or transmission of information and information resources by computer and telecommunications, automated information systems or directly by employees to obtain the necessary information product, control or manage certain processes.

[1] Великий тлумачний словник сучасної української мови/уклад. і гол. ред. В. Т. Бусел. Київ; Ірпінь: Перун, 2001. С. 1245.

[2] Нечволод Л. І. Сучасний словник іншомовних слів. Харків: ТОРСІНГ ПЛЮС, 2007. С. 270.

Information resources (objects of accounting) of information systems of law enforcement agencies are an objectively combined set of information directly related to persons, events (criminal and administrative offenses), emergencies, which accumulates in the course of official activities of law enforcement agencies in the volume, structure and order, determined by the tasks assigned to them in accordance with applicable law.

Based on the above, we will try to formulate a definition of the term: *special technique of law enforcement agencies*. Special technique of law enforcement agencies is a set of means of special equipment and methods of their lawful use in order to perform the tasks assigned to law enforcement agencies. Means of special equipment in accordance with this definition are — hardware, software and hardware, special devices, substances, automated and intelligent systems. The methodological basis of special equipment consists of scientifically sound tactics, methods and information technology.

Next, let's consider the system of special equipment of law enforcement agencies as a scientific concept. Special technique as a field of knowledge is a set of knowledge that is in a certain sequence in terms of their significance, relationship and relationship.

The system of any science is determined not by the arbitrary assignment of certain issues to one discipline, but by uniting them on the basis of internal unity and objective connections. Like any science, special law enforcement equipment has its own system that has been formed over time and needs to be clearly defined, taking into account the requirements of the present time.

Thus, the concept of special technique has a general meaning and is used in laws and regulations governing the activities of many ministries and agencies. Similarly, the term: *special technique of law enforcement agencies* includes all technical means that are used in the activities of law enforcement agencies and are studied by individual scientific disciplines. In our previous research papers [1] and some scientists in their researches[2] we used the professional orientation of its use as the basis for the interdisciplinary division of special technique: Investigative measures, administrative, legal. This is due to the fact that, firstly, there is a legal regulation of the use of technical means in each of these areas of law enforcement. Secondly, a scientific basis for the theory and practice of using scientific and technical means has been created. Third, extensive

[1] Хараберюш І. Ф. Зазнач. твір. С. 37—41.

[2] Артеменко П. П., Воронин Б. П., Воскресенский Г. М. и др. Зазнач. твір. С. 15-16.

practical experience in the use of technology, which allowed to create a methodological basis for the use of these tools in each of the above areas of law enforcement.

The concept of special technique of law enforcement agencies by analogy with criminal investigation technique[1] and detective technique [2], first, means the section of such sciences as forensics, operational and investigative and administrative activities; secondly: as a set of special equipment and methods of their use in law enforcement; thirdly: as a discipline: Special technique of law enforcement agencies. Special technique of law enforcement agencies as an interdisciplinary branch of legal science is a system of scientific provisions and recommendations that create conditions for the development of technical means (forensic, detective, technical, organizational, security), as well as scientifically sound methods, techniques and information technology to combat crime law enforcement agencies.

In our opinion, the system of special technique of law enforcement agencies should consist of elements that include general provisions and areas of special technique of law enforcement agencies. General provisions should define the basic concepts, system, principles of use, tasks of special equipment, general characteristics of special equipment, techniques and methods of their application, legal regulation in solving problems of law enforcement.

Branches of special technique of law enforcement agencies, as we have already defined, should consist of the main directions of its use in law enforcement. According to the areas of use, it can be considered in relation to crime detection and investigation: forensic technique, crime detection and investigation activities: detective technique, administrative activities: organizational technology.

In turn, special technique, we believe, can be classified according to three criteria: areas of application; sources of origin; appointment.

According to the directions of application, the means of special equipment can be divided into the means of forensic, operational, organizational and security technique.

Regarding the sources of origin, special equipment used in law enforcement can be divided into three major groups: general use (adapted),

[1] Пясковський В. В., Чорноус Ю. М., Іщенко А. В. та ін. Зазнач. твір. С. 64; Чаплинський К. О., Лускатов О. В., Пиріг І. В. та ін. Криміналістика: підруч. для студ. вищ. навч. закл. 2-е вид, перероб. і доп. Дніпро: Ліра-ЛТД, 2017. С. 41—42.

[2] Хараберюш І. Ф. Оперативна техніка як теоретико-прикладна категорія оперативно-розшукової науки. *Вісник Маріупольського державного університету.* Серія: Право. 2017. Вип. 13. С. 77—82.

general use with minor improvements (modified) and specially designed (unique).

By purpose, special equipment can be considered, taking into account their technical capabilities, which are used to implement forms of law enforcement, namely: forensic; pre-trial investigation; criminal investigation measures; reconnaissance; counterintelligence; control and supervision; administrative, security. By purpose, we believe, they are divided into: means of recording information; means of organization of management (means of communication, language enhancement, systems of collecting, accumulating and analyzing information, etc.); technical means of protection; search equipment; means of observation and control; special chemicals; special means of protection; means and systems of covert obtaining of information and traces of illegal activity, etc.

Conclusions. In summary, we can say that the special equipment of law enforcement agencies is a set of tools of special equipment and methods of their lawful use in order to perform the tasks assigned to law enforcement agencies.

Special law enforcement equipment is an interdisciplinary legal science which components are studied by such sciences as criminal procedure and criminology, operational and investigative activities, administrative law and process. Its system consists of general provisions and individual industries.

Branches of special technique of law enforcement agencies consist of the main directions of its use in law enforcement activities and are divided into forensic equipment, operational equipment and organizational technique.

Special technique of law enforcement agencies and detective technique are correlated as general and partial. Forensic science and operational technology - as equivalent independent parts of such sciences as forensics and operational and investigative activities, respectively.

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І. Ф. Харабєрюш

ОКРЕМІ ПОГЛЯДИ ЩОДО СПІВВІДНОШЕННЯ СПЕЦІАЛЬНОЇ ТЕХНІКИ ПРАВООХОРОННИХ ОРГАНІВ ТА КРИМІНАЛІСТИЧНОЇ ТЕХНІКИ

Досліджено співвідношення криміналістичної та оперативної техніки між собою та зі спеціальною технікою правоохоронних органів. Показано, що постійне зростання технічної оснащеності правоохоронних органів України і наявність правоохоронних структур призвели до виникнення самостійних груп технічних засобів. Підкреслено, що криміналістична техніка має спеціальний характер за своїм призначенням, що виявляється в обслуговуванні в основному кримінального процесу для отримання процесуальної інформації. Оперативна техніка, як розділ теорії оперативно-розшукової діяльності та складова більш загального наукового поняття «спеціальна техніка правоохоронних органів», має свою систему і співвідноситься з криміналістичною технікою як рівнозначні категорії юридичної науки. Доведено, що спеціальна техніка правоохоронних органів як міждисциплінарна галузь юридичної науки являє собою систему наукових положень та рекомендацій, що створюють умови для розробки технічних засобів (криміналістичних, оперативних, організаційних, охоронних), а також науково обґрунтованих способів, прийомів та інформаційних технологій з метою протидії злочинності правоохоронними органами. Доведено, що спеціальна техніка правоохоронних органів і криміналістична техніка відносяться як загальне і часткове відповідно.

Ключові слова: криміналістична техніка, співвідношення, система, оперативна техніка, інформаційні технології, інтелектуальні системи, спеціальна техніка правоохоронних органів.

И. Ф. Харабєрюш

ОТДЕЛЬНЫЕ ВЗГЛЯДЫ НА СООТНОШЕНИЕ СПЕЦИАЛЬНОЙ ТЕХНИКИ ПРАВООХРАНИТЕЛЬНЫХ ОРГАНОВ И КРИМИНАЛИСТИЧЕСКОЙ ТЕХНИКИ

Исследовано соотношение криминалистической техники и оперативной техники между собой и со специальной техникой правоохранительных органов. Показано, что постоянный рост технической оснащенности правоохранительных органов Украины и наличие правоохранительных структур привели к возникновению самостоятельных групп технических средств. Подчеркнуто, что криминалистическая техника имеет специальный характер по своему назначению, проявляющееся в обслуживании в основном уголовного процесса для получения процессуальной информации.

Доказано, что оперативная техника, как раздел теории оперативно-розыскной деятельности и составляющая более общего научного понятия «специальная техника правоохранительных органов», имеет свою систему и соотносится с криминалистической техникой как равнозначные категории юридической науки. Показано появление очень важного средства сбора, накопления, хранения, обработки, поиска и предоставления необходимой информации - автоматизированных информационно-поисковых систем, автоматизированных специализированных систем и интеллектуальных систем, которые составляют отдельную группу средств специальной техники. Доказано, что методическую основу специальной техники составляют научно обоснованные тактические приемы, способы и информационные технологии. Специальная техника правоохранительных органов как междисциплинарная отрасль юридической науки представляет собой систему научных положений и рекомендаций, создают условия для разработки технических средств (криминалистических, оперативных, организационных, охранных), а также научно обоснованных способов, приемов и информационных технологий с целью противодействия преступности правоохранительными органами. Систему специальной техники правоохранительных органов составляют элементы, включающие общие положения и отрасли специальной техники правоохранительных органов. Отрасли специальной техники правоохранительных органов состоят из основных направлений ее использования в правоохранительной деятельности, а именно: относительно следственной деятельности — криминалистическая техника, оперативно-розыскной деятельности — оперативная техника, административной деятельности — организационная техника. Доказано, что специальная техника правоохранительных органов и криминалистическая техника относятся как общее и частное соответственно.

Ключевые слова: криминалистическая техника, соотношение, система, оперативная техника, информационные технологии, интеллектуальные системы, специальная техника правоохранительных органов.

Received by Editorial Board: 28.05.2019

DOI: https://doi.org/10.32353/khrife.2.2019.07
UDC 343.98

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ROLE OF VIDEO RECORDING DURING THE INTERROGATION OF JUVENILE SUSPECTS

The article reflects the problems of obtaining truthful testimony during interrogation with the participation of underage suspects. The reasons for the reporting by this category of persons of false testimony are considered. Attention is focused on the verbal and non-verbal signs of lies in the testimony of minors being interrogated: changes in the speed and volume of speech, muttering, changing the tone of the voice, averting eyes, touching hands to face, hiding hands, etc.

The expediency of the obligatory use of video recording during the interrogation of juvenile suspects is argued, since this form of recording allows to achieve not only high accuracy and completeness of recording the testimony, it helps the interrogator to track the features of facial expressions, gestures in the aggregate of their manifestations with the transfer of the content of testimony, intonation features, emotional coloring, etc. Video recording helps to improve the results of this investigative (search) action, to increase the tactical capabilities of its implementation. In addition, it makes it possible to more objectively assess the results of the interrogation of juvenile suspects.

It was proposed to make appropriate changes to the norms of the Criminal Procedure Code of Ukraine, namely: paragraph 5 of Art. 224 should be stated as follows: "During interrogation, photography, audio and/or video recording may be used. Interrogation with the participation of a minor suspect is carried out with the obligatory use of video recording." Article 490 should be supplemented with the following requirement: "During interrogation, the use of video recording is mandatory".

Keywords: interrogation, use of video recording, non-verbal reactions, underage suspect, lying in testimony.

Formulation of Research Problem. Every year in Ukraine, many juveniles come into the view of law enforcement agencies and become participants in criminal proceedings.

Investigative (search) actions aimed at obtaining verbally forensic information is one of the main elements of building a system of evidence in criminal proceedings [1]. Interrogation is one of the important investigative

[1] Кочнева И. П. Технико-криминалистическое обеспечение производства

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(search) actions, the complexity of which, first of all, lies in the intertwining of elements of psychology and logic, which ultimately determine the choice of a particular tactic. The interrogation is a unity of logical and psychological analysis, is a process of awareness and evaluation of the testimony and at the same time a process of determining the tactical line of its proceedings [1].

The main purpose of interrogation is to obtain from the interrogated juvenile the necessary information about the event of the crime, the nature and causes of the crime, as well as the conditions and methods of its commission. Minors are special subjects of criminal procedure. Interrogation of minors is traditionally associated with various difficulties, both procedural and psychological [2].

In this regard, it is of particular importance to develop recommendations aimed at improving the effectiveness of the interrogation of juveniles who have been involved in criminal proceedings and to obtain truthful statements from them.

Analysis of Recent Researches and Publications. The problem of interrogation of minors was reflected in the works of V. O. Konovalova, D. M. Loseva, I. A. Makarenko, Yu. P. Mikhalchuk, O. M. Protsyuk, O. V. Streltsova, S. V. Tetyueva, V. Yu. Shepitko[3] and other researchers. The scientific research of these scientists was aimed at optimizing the implementation of this investigative (search) action with the participation of minors, but the existence of an urgent need to improve investigative activities requires the development of new recommendations.

The Article Purpose is to highlight the problematic issues raised during the interrogation of juvenile suspects concerning the reporting of false testimony and to provide suggestions for their resolution.

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[3] E.g., Коновалова В. Е. Допрос: тактика и психология. Харьков: Консум, 1999. 157 с.; Лосев Д. М. Тактика допроса несовершеннолетних обвиняемых и подозреваемых: автореф. дис. … канд. юрид. наук: 19.00.09. Москва, 1982. 17 с.; Макаренко И. А. Тактика допроса несовершеннолетнего обвиняемого: монография. Уфа, 2001. 140 с.; Михальчук Ю. П. Допрос несовершеннолетнего обвиняемого на предварительном следствии: автореф. дис. … канд. юрид. наук: 19.00.09. Краснодар, 2005. 22 с.; Процюк О. М. Кримінальна процесуальна регламентація й тактика допиту неповнолітнього підозрюваного: автореф. дис. ... канд. юрид. наук: 12.00.09. Київ, 2017. 20 с.; Стрельцова Е. В. Тактические и психологические основы допроса несовершеннолетних подозреваемых, обвиняемых: автореф. дис. … канд. юрид. наук: 19.00.09. Саратов, 2007. 26 с.; Тетюев С. В. Использование педагогических и психологических знаний в производстве по уголовным делам с участием несовершеннолетних: монографія. Москва: Юрлитинформ, 2009. 336 с.; Шепитько В. Ю. Допрос несовершеннолетних: психология и тактика: автореф. дис. … канд. юрид. наук: 19.00.09. Харьков, 1991. 24 с.

Main Content Presentation. According to the Office of the Prosecutor General of Ukraine during the period of 2017, 1396 crimes were committed by minors or with their participation that highest rates were in the following categories: 1039 — against property; 127 — against the life and health of a person; 113 — against traffic safety and transport operation; 39 — in the field of trafficking in narcotic drugs, psychotropic substances, their analogues or precursors and other crimes against public health; 34 — against public order and morality. In 2018, there is a decrease in indicators. Thus, 1058 crimes were committed by minors: 697 — crimes against property; 159 — crimes against life and health of a person; 101 — crimes against traffic safety and transport operation; 42 — crimes in the field of trafficking in narcotic drugs, psychotropic substances, their analogues or precursors and other crimes against public health; 34 — crimes against public order and morality. For five months of the current year 764 crimes were registered, from them: 109 — crimes against life and health of the person; 522 — crimes against property; 63 - crimes against traffic safety and operation of transport; 25 — crimes in the field of trafficking in narcotic drugs, psychotropic substances, their analogues or precursors and other crimes of morality[1]. Based on the above information, "traditional" crimes committed with the participation of minors are crimes against property; a significant number of cases are also related to crimes against life and health.

It should be noted that juveniles who commit mercenary and violent crimes are characterized by affectivity, i.e. long and lasting emotional experiences, which result in appropriate behaviors - increased vulnerability, stubbornness, negativism, isolation, emotional instability. Persons in this category have their own system of norms: distorted notions of freedom, friendship, nobility. They base their claims and preferences on the usefulness of how other minors successfully obtain survival, alcohol or drugs: friendship and nobility are valued according to the degree of generosity in the distribution of these benefits[2]. Thus, such features of the psyche may be the reason for informing juvenile suspects during the interrogation of false testimony in the form of self-denunciation or slander of others. The motives for reporting false information, which can result in self-slander, are: misunderstanding of a sense of camaraderie; motives that arose under the influence of friends' requests; maintaining their authority among peers, etc.[3] It is possible that attempts to slander themselves may be dictated by selfish motives. In addition, the suspect has a pronounced protective dominant, a setting

[1] Статистичні дані. Офіційний сайт Генеральної прокуратури України. URL: https://www.gp.gov.ua/ua/stst2011.html?dir_id=113897&libid=100820&c=edit&_c=fo (Date accessed: 16.06.2019).

[2] Рудик М. М. Психологічні особливості формування особистості та поведінки неповнолітнього корисливого злочинця. *Юридична психологія.* 2015. № 2. С. 234—235.

[3] Закатов А. А. Ложь и борьба с нею. Волгоград: Ниж.-Волж. кн. изд-во, 1984. 192 с.

to conceal objective information. He treats the investigator with prejudice and caution. In order to avoid criminal liability or reduce his guilt in an illegal act, the juvenile suspect deliberately tries to mislead law enforcement agencies, using various methods of giving false testimony: denial of involvement in the crime; non-recognition of obvious facts; jugglery; use of a false alibi, etc.

Both verbal and nonverbal reactions can be signs of untruth in the testimony of juvenile respondents. Verbal ones include noticeable changes in the speed and volume of speech, muttering, changes in tone and quality of breathing, excessive willingness to communicate or emphasized respect for the person of the interrogator; statements that the minor feels "sick", etc. The verbal content of the answers to the questions should be considered together with the observation of the non-verbal behavior of the minor. The main thing is the perception of the content of the answer — instead of explaining the details, the minor makes general remarks (“I did not understand”); the respondent tries to use answers such as ("You probably won't believe me, but ..."); trying to avoid answers ("I don't remember"); the minor interrupts the question before it is completed; the respondent repeats the question, trying to gain time for reflection. Observing the non-verbal behavior of the interviewee, you can find a group of signs that indicate the truth or falsity of the explanations: physiological reactions, postures, gestures, facial expressions, pantomime, articulation, visual contact signals. However, verbal and nonverbal behavior should be considered only in the aggregate of its manifestations [1].

The main gestures used in deception are: averting the eyes to the side, touching the hands to the face, as well as hiding the hands. The gesture of covering the mouth with the hands may indicate that the minor is lying. With age, this gesture becomes more and more veiled, it is reduced only to touching the lips with a finger, i.e. the adult brain sends impulses to cover the mouth in an attempt to restrain lies, as a teenager does, but at the last moment the hand deviates from the mouth and another gesture of touching to the nose is born. Such a gesture is nothing more than an improved adult version of the same gesture of covering the mouth with the hand that was present in adolescence. The next gesture is when a minor tries to hide his hands somewhere. It is the opposite of a gesture when the person's palms are open, which speaks of sincerity in communication. This is one of the least noticeable and at the same time the most significant non-verbal signals [2]. Of course, these non-verbal signs can be purely indicative and not always reliable, especially in cases of observation during the interrogation of juvenile suspects, because for this age group characteristic signs of behavior,

[1] Стрельцова Е. В. Тактические и психологические основы допроса несовершеннолетних подозреваемых, обвиняемых: автореф. дис. … канд. юрид. наук: 12.00.09. Саратов, 2007. С. 22—23.

[2] Бабій М. Ф. Генезис невербальних проявів обману у неповнолітніх. *Психологія: реальність і перспективи:* зб. наук. праць РДГУ, 2016. Вип. 7. С. 22.

for example, are stooping and avoidance of eye contact, which, in turn, can be interpreted as a sign of fraud [1].

The above indicates the expediency of using video during the interrogation of a juvenile suspect to record and further analyze not only verbal information but also non-verbal behavior of the interrogated. This form of fixation allows to achieve not only high accuracy and completeness of fixation of indications, it helps the interrogator to trace features of facial expressions, gestures in a set of their displays with transfer of the maintenance of indications, intonation features, emotional coloring etc. The video helps to improve the results of this investigative (search) action, increase the tactical capabilities of its conduct. It also allows for a more objective assessment of the results of the interrogation of juvenile suspects [2].

Conclusions. In our opinion, there is a need for mandatory video recording of interrogations involving minors. In the context of adversarial criminal proceedings, the possibility of reviewing the results of the video recording by the parties to the criminal proceedings is an integral part of the further assessment of information coming not only from the juvenile suspect himself, but also about the nature and conditions of interrogation. In this regard, we propose to enshrine in law the mandatory use of video recording during the interrogation of juvenile suspects and make appropriate changes in the wording of the articles of the Criminal Procedural Code of Ukraine. Paragraph 5 of Article 224 shall read as follows: "Photographs, audio and/or video recordings may be used during interrogation. The interrogation with the participation of a minor suspect is carried out with the obligatory use of video recording." Article 490 should be supplemented with the following provision: "During the interrogation, the use of a video recording is mandatory".

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[2] Стрельцова Е. В. Op. cit. p. 24.

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РОЛЬ ВІДЕОФІКСАЦІЇ ПІД ЧАС ДОПИТУ ЗА УЧАСТЮ НЕПОВНОЛІТНІХ ПІДОЗРЮВАНИХ

У статті висвітлено проблеми отримання правдивих показань під час допиту за участю неповнолітніх підозрюваних. Розглянуто причини повідомлення цією категорією осіб неправдивих показань. Акцентовано увагу на вербальних та невербальних ознаках неправди в показаннях неповнолітніх допитуваних. Аргументовано доцільність обов'язкового застосування відеофіксації під час допитів неповнолітніх підозрюваних та внесення відповідних змін до норм КПК України, а саме: запропоновано пункт 5 ст.

224 викласти у такій редакції: «Під час допиту може застосовуватися фотозйомка, аудіо-та/або відеозапис. Допит за участю неповнолітнього підозрюваного здійснюється з обов'язковим застосуванням відеозапису». Статтю 490 запропоновано доповнити вимогою такого змісту: «Під час допиту застосування відеозапису є обов'язковим».

Ключові слова: допит, застосування відеозапису, невербальні реакції, неповнолітній підозрюваний, неправда в показаннях.

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РОЛЬ ВИДЕОФИКСАЦИИ ВО ВРЕМЯ ДОПРОСА С УЧАСТИЕМ НЕСОВЕРШЕННОЛЕТНЕГО ПОДОЗРЕВАЕМОГО

В статье отражены проблемы получения правдивых показаний в ходе допроса с участием несовершеннолетних подозреваемых. Рассмотрены причины сообщения этой категорией лиц ложных показаний. Акцентировано внимание на вербальных и невербальных признаках лжи в показаниях несовершеннолетних допрашиваемых: изменения скорости и громкости речи, бормотание, изменение тональности голоса, отведение глаз в сторону, прикосновение рук к лицу, прятанье рук и т. п.

Аргументирована целесообразность обязательного применения видеофиксации во время допроса несовершеннолетних подозреваемых, поскольку данная форма фиксации позволяет достичь не только высокой точности и полноты фиксации показаний, она помогает допрашивающему отслеживать особенности мимики, жестикуляции в совокупности их проявлений с передачей содержания показаний, интонационных особенностей, эмоциональной окраски и т. п. Видеозапись способствует улучшению результатов данного следственного (розыскного) действия, повышению тактических возможностей его проведения. Кроме того, дает возможность более объективно оценить результаты допроса несовершеннолетних подозреваемых.

Предложено внести соответствующие изменения в нормы УПК Украины, а именно: предлагается пункт 5 ст. 224 изложить в следующей редакции: «Во время допроса может применяться фотосъемка, аудио- и/или видеозапись. Допрос с участием несовершеннолетнего подозреваемого осуществляется с обязательным применением видеозаписи». Статью 490 необходимо дополнить требованием следующего содержания: «Во время допроса применение видеозаписи является обязательным».

Ключевые слова: допрос, применение видеозаписи, невербальные реакции, несовершеннолетний подозреваемый, ложь в показаниях.

Received by the Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.07
UDC 343.98

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ON THE ISSUE OF INTRODUCTION OF THE CONCEPT OF SPECIALIST'S CONCLUSION INTO CRIMINAL PROCEDURAL LEGISLATION

The issue of the introduction of the concept of "specialist's conclusion" into the criminal process of Ukraine is investigated. Based on the analysis of special literature and the relevant legislative norms, an argument is made about the inexpediency of introducing this concept into the criminal process, since the Criminal Procedural Code of Ukraine does not contain either its interpretation, nor its content, nor the rules for its registration but only indicates that the conclusion of a specialist meet the requirements for expert's opinion. It raises doubts about the need to introduce into the criminal process such a source of evidence as the "specialist' conclusion" because, in fact, it is no different from the expert's opinion, since the legislator provides the same requirements for it, only in relation to establishing the facts and circumstances of a criminal offense, and not a crime.

At its core, the performed research using specific expertise to establish the factual data and circumstances of a criminal offense will not differ in any way from a study conducted using special knowledge to establish the factual data and circumstances of the crime, since the methodology will be used the same and the document will be drawn up like this the same. However, the legislator, taking into account the need for a simplified procedure for pre-trial investigation of criminal offenses, introduces another name for the document, which is drawn up based on the results of such a study. The question arises: why not immediately involve an expert? Indeed, the expert's opinion, in contrast to the expert's opinion, has clear requirements and procedures for its implementation. Taking into account the need to simplify the procedures for the pre-trial investigation of criminal offenses, the appropriate time limits can be established in the procedural law and bylaws.

Relevant conclusions were made and specific proposals were made to amend the Criminal Procedural Code of Ukraine.

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Keywords: criminal offense, criminal offense, crime, specialist's conclusion, expert's opinion, forensic science, improvement of Ukrainian legislation.

Formulation of Research Problem. According the Law of Ukraine № 2617 On Amendments to Certain Legislative Acts of Ukraine on Simplification of Pre-trial Investigation of Certain Categories of Criminal Offenses dated on 22.11.2018 that should come into force on 01.01.2020, it is proposed to introduce the concept of expert opinion ». In our opinion, such a novella is not justified from the point of view of the essence of the study conducted by an informed person to establish the facts and circumstances of the criminal offense. In this regard, it is considered appropriate to analyze the special literature and norms of the Criminal Procedural Code of Ukraine on the essence of the concept of expert opinion and on this basis to provide specific proposals for appropriate changes in procedural law.

Analysis of Recent Researches and Publications. A review of the special literature on the essence of the concept of specialist's conclusion as a source of evidence in criminal proceedings has not been discussed by Ukrainian scientists, as this rule appeared recently in the domestic legislation of Ukraine should come into force on 01.01.2020[1]. The Law of Ukraine dated on December 3, 2019 321-IX entry into force postponed to July 1, 2020 [2]. The main idea of the legislator is to "simplify" the pre-trial investigation of certain categories of criminal offenses (misdemeanors).

The concept of specialist conclusion previously (until 01.06.2009) existed in the departmental Instruction on the appointment and conduct of forensic examinations and expert studies, approved by the order of the Ministry of Justice of Ukraine from 08.10.98 № 53/5 (hereinafter referred to as Instruction) (as amended) Ministry of Justice of Ukraine dated 30.12.2004 № 144/5 and previous editions). Thus, according to subclause 1.3. paragraph 1 of part 1 of the Instruction established that on behalf of law enforcement agencies (including to resolve the issue of administrative or criminal proceedings), officials of the State Tax Administration of Ukraine, the State Customs Service of Ukraine, the State Executive Service, at the request of lawyers, defenders and individuals , who independently defend their interests, and their representatives, notaries, as well as other legal entities and individuals, may perform expert research that requires special knowledge and the use of methods of criminalistics and forensic science.

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[1] Про внесення змін до деяких законодавчих актів України щодо спрощення досудового розслідування окремих категорій кримінальних правопорушень: Закон України від 22.11.2018 № 2617-VIII. URL: https://zakon.rada.gov.ua/laws/show/2617—19 (Date accessed: 25.09.2019).

[2] Про внесення зміни до розділу II «Прикінцевих та перехідних положень» Закону України «Про внесення змін до деяких законодавчих актів України щодо спрощення досудового розслідування деяких окремих категорій кримінальних проваджень»: Закон України від 03.12.2019 №321-XI. URL: https://zakon.rada.gov.ua/laws/show/2617-19 (Date accessed:05.12.2019).

The results of expert research are set out in the written opinions of specialists [1]. As we can see, the specialist's conclusion was used outside the proceedings and did not have the status of a source of evidence in the case. Based on the fact that in accordance with the requirements of the current procedural legislation of Ukraine, the functions of specialist were reduced to providing technical assistance during the proceedings; according to the order of the Ministry of Justice of Ukraine dated 01.06.2009 № 965/5 On amendments to the order of the Ministry of Justice of Ukraine dated on 08.10.1998 № 53/5 the concept of specialist's conclusion in the system of expert institutions of the Ministry of Justice was excluded from circulation, namely, the specialist's conclusion term is replaced by forensic research conclusion [2]. Thus, until 2020, the notion of a specialist's conclusion as a source of evidence is not provided in the current criminal procedure legislation of Ukraine. As for other types of proceedings, the Civil Procedural Code of Ukraine (paragraph 9 of the second part of Article 250) and the Commercial and Procedural Code of Ukraine (part one of Article 215) contain the specialist's conclusion term: but do not provide its interpretation or content. The problems of the ratio of the conclusions of the expert and the specialist as a means of proof in civil proceedings were paid attention by scientists of Ukraine [3]. However, from the content of the above norms and the analysis of scientific publications it follows that the conclusion of a specialist in civil or commercial proceedings is not a source of evidence.

The concept of specialist's opinion is used in the Criminal Procedure Code of the Russian Federation. According to the second part of Article 74 of the Criminal Procedure Code of the Russian Federation as evidence the conclusion and testimony of a specialist are allowed, and according to the third part of Article 80 of the said Code[4]. Thus, opinions of the Russian scientists and practitioners on the specified question are reduced to such basic conclusions: the conclusion of the expert differs from the conclusion of the expert on volume and character

[1] Інструкція про призначення та проведення судових експертиз та експертних досліджень, затв. наказом М-ва юстиції України 08.10.1998 № 53/5 (зі змінами та допов., у ред. наказу М-ва юстиції України від 30.12.2004). URL: https: //zakon.rada.gov.ua/laws/show/z0061–05 (Date accessed: 20.09.2019).

[2] Про внесення змін до наказу Міністерства юстиції від 08.10.98 № 53/5: URL: https: //zakon.rada.gov.ua/laws/show/z0061–05 (Date accessed: 20.09.019).

[3] E.g., Кучер Т. М. Співвідношення висновків експерта та спеціаліста як засобів доказування в цивільному процесі: питання теорії та практики. *Вісник Вищої ради юстиції.* 2012. № 2 (10). С. 31—40; Штефан А. Висновок експерта у цивільному судочинстві. URL: http:// www.inprojournal.org/wp-content/uploads/2018/2_2018/4.pdf (Date accessed: 12.08.2019); Кіреєва Н. О., Скорич О. О. Співвідношення висновків, що надаються експертом, спеціалістом, органами державної влади та місцевого самоврядування у цивільному процесі України. *Науковий вісник Ужгородського національного університету.* Серія: Право. 2016. Вип. 37 (2). С. 10—15 etc.

[4] Уголовно-процессуальный кодекс Российской Федерации от 18.12.2001 № 174-ФЗ, в ред. от 06.07.2016. URL: http://upkodeksrf.ru/ (Date accessed: 20.09.2019).

of research; the specialist does not use laboratory equipment, he is limited to the simplest technical means and observes the signs without in-depth analysis of the object, and most importantly, unlike the expert, the tasks of the specialist are clearly consultative. On the other hand, there are opinions about the impossibility of forming a judgment about the object without its in-depth study, as well as the impossibility of distinguishing criteria that will distinguish complex research from simple as a basis for examination or expert opinion. The literature also draws attention to the fact that obtaining a specialist's opinion in the future should be used by non-proprietors of criminal proceedings, primarily defense counsel, and also states that the specialist's opinion is intended to raise reasonable doubts about the correctness of the expert's opinion and seek its review in accordance with procedural law [1]. As you can see, the opinions of Russian experts on the conclusion of the specialist are debatable, and among scientists and practitioners there is no single position on this issue. At least, the specialist's conclusion in the procedural legislation of the Russian Federation is not a concept similar in content to the expert's opinion, and its interpretation as a judgment on the issues raised by the specialist by the parties is vague. The above analysis of literature sources prompts us to consider the validity and feasibility of introducing into the criminal process of Ukraine the concept of specialist's opinion.

[1] E.g., Нестеренко А. Отличия заключения эксперта от заключения специалиста. URL: http://ormvd.ru/pubs/102/differences-of-expert-opinion-from-the-opinion-of-a-specialist (дата звернення 20.09.2019); Стельмах В. Ю. Заключение специалиста в уголовном судопроизводстве: правовая природа и перспективы использования в доказывании. URL: https: //cyberleninka.ru/article/n/zaklyuchenie-spetsialista-v-ugolovnom-sudoproizvodstve-pravovaya-priroda-i-perspektivy-ispolzovaniya-v-dokazyvanii (дата звернення 20.09.2019); Захохов З. Б. Формы использования специальных познаний при формировании заключения и показаний специалиста в уголовном судопроизводстве. *Бизнес в законе.* Экономико-юрид. журн. 2011. № 2. С. 117–118; Лазарева Л. В. Некоторые вопросы заключения и показаний специалиста. *Вестн. Владимирского юрид. ин-та.* 2007. № 1. С. 242; Когосов А. П. Получение заключений и показаний специалиста как одна из форм использования специальных знаний в уголовном судопроизводстве. *Вестн. Южно-Уральского гос. ун-та.* Сер.: Право. 2011. № 6. С. 47; Петрухина А. Н. Заключение и показания эксперта и специалиста как доказательства в современном уголовном судопроизводстве России: дис. ... канд. юрид. наук. Москва, 2009. С. 8; Божкова Н. Р. Заключение специалиста. *Актуальные проблемы рос. права.* 2008. № 4. С. 311–312; Бельский А. И. Заключение и показания специалиста как доказательства в уголовном процессе России: дис. ... канд. юрид. наук. Москва, 2006. С. 10; Овсянников И. Дискуссиям о заключении специалиста 10 лет. Законность. 2015. № 2; Дьяконова О. Г. Заключения и показания эксперта и специалиста. *Бизнес в законе.* Экономико-юрид. журн. 2008. № 1. С. 115; Иванов В. В. Использование защитником заключения специалиста в доказывании. *Вестн. Самарской гуманитар. академии.* Сер.: Право. 2007. № 1. С. 127–128; Селина Е. В. Заключение и показания специалиста в уголовном процессе. Журн. рос. права. 2015. № 12. С. 119; Зайцева Е. А., Чипура Д. П. Использование специальных экономических знаний в досудебном производстве по уголовным делам: монография. Волгоград, 2007. С. 86 etc.

Article Purpose. Based on the analysis of scientific sources and norms of the legislation of Ukraine to outline the essence of the concept of specialist's conclusion and to formulate specific proposals for making appropriate changes to the procedural legislation.

Main Content Presentation. Given the goal, consider the provisions of the Law № 2617-VIII, dated on 22.11.2018 introducing the concept of specialist's conclusion in criminal proceedings in cases where at the stage of inquiry it is necessary to establish the facts and circumstances of a criminal offense by using specific expertise.

Thus, the said Law, Part Four of Article 71 of the Criminal Procedural Code of Ukraine is supplemented by a new rule on the right of a specialist: "… 7) to provide opinions on issues within the scope of his knowledge during the pre-trial investigation of criminal offenses, including in the cases provided for in part three of Article 214 of this Code"[1].

Part three of Article 214 of the CPC is set out in a new wording, according to which a specialist's conclusion may be obtained to clarify the circumstances of committing a criminal offense before entering information into the Unified Register of Pre-trial Investigations[2].

Parts one and two of Article 219 are replaced by four new parts and in accordance with paragraphs "1)", "2)", "3)" of part three from the date of notification of the person of suspicion the pre-trial investigation must be completed:

"1) within seventy-two hours - in the case of notification of a person on suspicion of committing a criminal offense or detention of a person in the manner prescribed by part four of Article 29822 of this Code;
2) within twenty days – in case of notification to the person of the suspicion of committing a criminal offense in cases where the suspect does not admit guilt or the need to carry out additional investigative (investigative) actions, or committing a criminal offense to a minor;
3) within one month - in the case of notification to a person of suspicion of committing a criminal offense, if the person has filed a request for examination in the case provided for in part two of Article 29844 of this Code.

According to requirements of paragraph "1)" of the fourth part of Article 219 pre-trial period, the investigation may be extended in the manner prescribed by paragraph 4 of Chapter 24 of this Code. In this case, the total period of pre-trial investigation may not exceed one month from the date of notification to the

[1] Про внесення змін до деяких законодавчих актів України щодо спрощення досудового розслідування окремих категорій кримінальних правопорушень: Закон України від 22.11.2018 № 2617-VIII. URL: https://zakon.rada.gov.ua/laws/show/2617–19 (Date accessed: 25.09.2019).

[2] Ibid.

person of suspicion of committing a criminal offense in the cases provided for in paragraphs 1 and 2 of part three of this article [1].

In addition, the Criminal Procedural Code of Ukraine is supplemented by new articles 2981-2984.Thus, according to requirements of Article 2981, the specialist's conclusion is recognized as a procedural source of evidence in criminal proceedings on criminal offenses. However, such a procedural source of evidence may not be used in criminal proceedings, except on the basis of a decision of the investigating judge, which is decided at the request of the prosecutor [2].

Article 2984 establishes the rules on the peculiarities of the notice of suspicion, according to which at the same time as the notice of suspicion is served, the person is informed about the results of the expert's opinion, if any. In case of disagreement with the expert's opinion, the person has the right to apply to the coroner or prosecutor for an examination within forty-eight hours. In this case, the coroner or prosecutor has the right to apply to an expert for an examination in compliance with the rules provided for in this Code. If the person does not apply for an examination within the established period, the relevant application may be filed only during the trial." [3].

The new wording also contains Article 300 of the Criminal Procedural Code of Ukraine, in particular, this norm stipulates that for pre-trial investigation of criminal offenses it is allowed to perform all investigative (search) actions provided by this Code and covert investigative (search) actions provided for in part two of Article 264 and Article 268. of this Code, as well as to obtain the specialist's conclusion that should meet the requirements for expert's conclusion [4].

The above norms of the Criminal Procedural Code of Ukraine entered into force in 2020, in terms of introduction into the criminal process of the expert opinion, in our opinion, are characterized by certain shortcomings and their introduction is not justified, because the Criminal Procedural Code of Ukraine does not contain a clear concept of specialist's conclusion structure, and indicates only that the conclusion of the specialist must meet the requirements for the opinion of the expert (emphasized by the author). That is, in essence, the study itself introduced by the legislator the specialist's conclusion term is the same expert's conclusion that an expert witness should make at the stage of inquiry in the appropriate time, based on the terms of inquiry.

That is why the need to enter into the criminal proceedings such a source of evidence as the expert's opinion raises doubts, because it is essentially

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1 Ibid.

2 Про внесення змін до деяких законодавчих актів України щодо спрощення досудового розслідування окремих категорій кримінальних правопорушень: Закон України від 22.11.2018 № 2617-VIII. URL: https://zakon.rada.gov.ua/laws/show/2617–19 (Date accessed: 25.09.2019).

3 Ibid.

4 Ibid.

no different from the expert's opinion, since the legislator sets the same requirements, only regarding the establishment of facts and circumstances of a criminal offense, not crime.

By its nature, a study conducted with the use of special knowledge to establish the facts and circumstances of a criminal offense will be no different from a study conducted with the use of special knowledge to establish the facts and circumstances of a crime, since the methodology will be used the same and the document will be drawn up. similarly, but considering the need for a simplified procedure for pre-trial investigation of criminal offenses, the legislator introduces a different name for the document that is based on the results of such research.

It is unjustified to draw up a specialist's opinion during the investigation of a criminal offense also because in accordance with the requirements of Article 2984 (Peculiarities of a report of suspicion), in case of disagreement with the specialist's opinion, a person has the right to request an examination or prosecutor. In this case, the coroner or prosecutor has the right to apply to an expert for examination in compliance with the rules provided by the Criminal Procedural Code of Ukraine. The question arises: why not involve an expert immediately? After all, the expert's opinion, in contrast to the expert's opinion, has clear requirements and procedures for its implementation. Given the fact that in the interests of simplification of procedures and limitation of pre-trial investigation of criminal offenses there is a need to reduce the time of research that requires the use of special knowledge, the relevant deadlines can be set in procedural law and bylaws.

Another reason that indicates the inexpediency of the study, the results of which are the conclusion of a specialist, is related to the specifics of a large number of techniques that provide for the use of destructive methods. After all, as a result of such research, you can lose an object, damage it or change its properties (signs). For example, when testing substances for drugs, psychotropic substances or their analogues, according to the method should be used part of the test substance. At the same time, the quantity (weight, weight) of such a substance plays an important role in the qualification of an offense related to illicit trafficking in narcotic drugs and other illicit drugs. In the case when the amount of substance has a maximum size for the qualification of the offense as a crime, used part of it in the process of drawing up a specialist will inevitably lead to a dead end during the qualification of the crime in the future, because in accordance with the new rules of Art. 2981, such a procedural source of evidence as an expert's opinion may not be used in criminal proceedings for a crime, except on the basis of a decision of the investigating judge, which is made at the request of the prosecutor. We believe that it makes no sense in such cases to first obtain the opinion of a specialist and then ask the prosecutor to apply to the investigating judge for a decision on the use of such a conclusion as a source of evidence of a crime.

Thus, given the above on the conduct of research that requires the use of special knowledge in the pre-trial investigation of criminal offenses, the Criminal Procedural Code of Ukraine should be amended accordingly, providing for the stage of inquiry examination, which is drawn up by expert opinion and not expert opinion. We consider it expedient to establish the only source of evidence obtained as a result of the study with the use of specific expertise: the expert's opinion.

Our proposals are as follows: to the norms of the law of Ukraine No. 2617-VIII "On Amendments to Certain Legislative Acts of Ukraine on Simplifying Pre-trial Investigation of Certain Categories of Criminal Offenses" dated on 22/11/2018 entering into force on 01.01.2020 and which introduces the concept of Specialist's opinion, it is necessary to make the following changes.

In subparagraph 5) of paragraph 3 of Part I of the Law (concerning amendments to Article 71 of the Criminal Procedural Code of Ukraine), delete the second and third paragraphs, stating this subparagraph in the following wording:

"5) in Article 71: paragraph 1 of part five after the word: Investigator add the word combination: Investigating officer.

In subparagraph "17)" of paragraph 3 of Part I of the Law (concerning amendments to Article 214 of the Criminal Procedural Code of Ukraine) in paragraph ninth after the number 3 with a bracket and the words: "conclusion is received" the specialist word replaces by the expert word.

In subparagraph "21)" of paragraph 3 of part I of the Law (concerning amendments to sections 1 and 2 of Article 219), the ninth paragraph shall be read as follows:

"3) within one month - in the case of notification of a person suspected of committing a criminal offense, if the coroner or prosecutor turned to the expert for examination in accordance with the rules of this Code, or the person filed a request for examination in the case provided for in part two of 2984 of this Code".

In sub-clause (27) of clause 3 of part I of the Law (concerning the amendment of the Criminal Procedural Code of Ukraine by Article 2981) in the third paragraph to delete the words "specialist' conclusion".

In sub-clause "(27)" of clause 3 of part I of the Law (concerning the amendment of the Criminal Procedural Code of Ukraine by Article 2984), the thirtieth paragraph shall be worded as follows:

"… 2. Simultaneously with the delivery of the notice of suspicion, the person is informed about the results of the medical examination, if any. In case of disagreement with the results of the medical examination, the person has the right to apply to the coroner or the prosecutor for an examination within forty-eight hours. In this case, the coroner or prosecutor has the right to apply to an expert for an examination in compliance with the rules provided for in this Code…".

In subparagraph 29) of paragraph 3 of Part I of the Law (concerning Article 300 of the Criminal Procedural Code of Ukraine) in the second paragraph, after the words "conduct medical examination, receive" replace the words "specialist's conclusion" with the words "expert's conclusion" and after these words and comma exclude the words "having meet the expert's opinion".

Conclusions. Summarizing the results of the above study, we can draw the following conclusions. The introduction of the concept of specialist conclusion into the criminal process will create certain conflicts in the work of forensic institutions during its application, which will negatively affect the effectiveness of expert provision of justice in Ukraine. During the pre-trial investigation of criminal offenses, the Criminal Procedural Code of Ukraine should make the appropriate changes proposed by us, providing for the examination at the stage of inquiry, which is made out by expert's conclusion and not specialist's conclusion. In view of the simplification of procedures and limitation of pre-trial investigation of criminal offenses, the term of such investigations must meet the requirements of paragraph "3)" of the third part of Article 219 of the Criminal Procedural Code of Ukraine in our proposed wording.

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Е. Б. Сімакова-Єфремян

ДО ПИТАННЯ ПРО ВВЕДЕННЯ У КРИМІНАЛЬНЕ ПРОЦЕСУАЛЬНЕ ЗАКОНОДАВСТВО ПОНЯТТЯ «ВИСНОВОК СПЕЦІАЛІСТА»

Досліджено проблемні питання щодо пропозіції введення у кримінальне процесуальне законодавство України поняття «висновок спеціаліста». На підставі аналізу спеціальної літератури та відповідних норм законодавства наведено аргументи про недоцільність введення у кримінальний процес цього поняття.

За своєю сутністю дослідження, проведене із застосуванням спеціальних знань для встановлення фактичних даних та обставин кримінальних проступків під час їх досудового розслідування, нічим не буде відрізнятися від дослідження, проведеного із застосуванням спеціальних знань для встановлення фактичних даних та обставин злочину.

Сформульовано висновки та надано відповідні пропозиції про внесення змін до Кримінального процесуального кодексу України.

Ключові слова: кримінальне правопорушення, кримінальний проступок, злочин, висновок спеціаліста, висновок експерта, судова експертиза, удосконалення законодавства України.

Э. Б. Симакова-Ефремян

К ВОПРОСУ О ВВЕДЕНИИ В УГОЛОВНОЕ ПРОЦЕССУАЛЬНОЕ ЗАКОНОДАТЕЛЬСТВО ПОНЯТИЯ «ЗАКЛЮЧЕНИЕ СПЕЦИАЛИСТА»

Исследован вопрос о введении в уголовный процесс Украины понятия «заключение специалиста». На основании анализа специальной литературы

и соответствующих норм законодательства приводится аргументация о нецелесообразности введения в уголовный процесс этого понятия, поскольку УПК не содержит ни его толкования, ни его содержания, ни правил его оформления, а лишь указывает на то, что заключение специалиста должно соответствовать требованиям к заключению эксперта. Вызывает сомнение необходимость введения в уголовный процесс такого источника доказательств, как «заключение специалиста», ведь оно, по сути, ничем не отличается от заключения эксперта, поскольку относительно него законодателем предусмотрены те же требования, только в отношении установления фактов и обстоятельств уголовного проступка, а не преступления.

По своей сути исследование, проведенное с применением специальных знаний для установления фактических данных и обстоятельств уголовного проступка, ничем не будет отличаться от исследования, проведенного с применением специальных знаний для установления фактических данных и обстоятельств преступления, поскольку методика будет использоваться та же и оформляться документ будет так же. Однако законодатель, с учетом необходимости упрощенного порядка досудебного расследования уголовных проступков, вводит другое наименование документа, который составляется по результатам такого исследования. Возникает вопрос: почему сразу же не привлечь эксперта? Ведь к заключению эксперта, в отличие от заключения специалиста, установлены четкие требования и процедуры его выполнения.

С учетом необходимости упрощения процедур досудебного расследования уголовных проступков соответствующие сроки можно установить в процессуальном законе и подзаконных нормативных актах.

Сделаны соответствующие выводы и даны конкретные предложения о внесении изменений в Уголовный процессуальный кодекс Украины.

Ключевые слова: уголовное правонарушение, уголовный проступок, преступление, заключение специалиста, заключение эксперта, судебная экспертиза, совершенствование законодательства Украины.

Received by the Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.09
UDC 35.076:347.948.2

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FEATURES OF PUBLIC ADMINISTRATION IN THE FIELD FORENSIC EXPERT ACTIVITIES (USING MINISTRY OF JUSTICE OF UKRAINE AS AN EXAMPLE)

Based on the analysis of regulatory legal acts, scientific publications, statistical data, the author highlighted the main forms of functions of the Ministry of Justice of Ukraine in the implementation of management in the field of forensic expertise (general and special) and differentiated the directions for improving the expert provision of justice. One of the most important areas for improving forensic expertise is increasing the efficiency of public administration. The multidimensionality and scale of this problem determined the need for its comprehensive study, taking into account the multidirectional nature of scientific research. Assessing the effectiveness of public administration in Ukraine and identifying areas for improving it is an urgent scientific problem that needs to be resolved. It is important to improve the organization of this type of activity to solve the problems of optimizing the scientific organization and managing the infrastructure of forensic expert activity, ensuring the practical implementation of its legal and methodological foundations. In order to solve these problems, it seems necessary: optimization of organizational forms of management by state bodies of forensic institutions and non-state expert structures; unification of the scientific, methodological and information base of forensic institutions, organization and coordination of research work in the field of forensic expertise; improving the methodology and procedure for certification of professional forensic experts; organization of basic training for specialists in the field of forensic activity of humanitarian and natural-technical profiles; improving the methodological and preventive work of forensic institutions and optimizing the use of forensic examinations by investigators and courts.

Keywords: public administration in the field of forensic science activity, normative legal act, forensic science expert support of justice, management efficiency, organizing forensic expert activity.

Formulation of Research Problem. Since Ukrainian independence, considerable attention has been paid to reforming the mechanisms of state management of forensic science which has led to the adoption of certain regulations of programmatic and conceptual nature recognizing the field of

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forensic science as an important independent and autonomous institution. The tasks facing forensic experts in the context of reform require finding and identifying ways to improve the efficiency of state regulation of forensic science activities (FEA), optimization of organizational and regulatory framework, improving mechanisms for state regulation of this activity in Ukraine.

The multidimensionality and scale of this problem determined the need for comprehensive study of it, taking into account the multidimensional nature of scientific search.

Analysis of Recent Researches and Publications. The theoretical and methodological basis of the research were the scientific developments of domestic scientists on the functioning of mechanisms of public administration: V. Averyanov, Y. Bytyak, V. Galunko, P. Dikhtievsky, P. Kuzmenko, S. Stetsenko [1] and many other scientists.

Some aspects of management issues in the field of forensic activity are reflected in research papers of domestic scientists, in particular L. M. Golovchenko, V. G. Goncharenko, O. M. Kliuiev, N. I. Klimenko, A. I. Lozov, O. Oliynyk, P. I. Repeshko, M. Ya. Segai, E. B. Simakova-Yefremian, V. Yu. Shepitko, M. G. Shcherbakovskyi [2] and others.

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[1] Аверянов В. Б. Адміністративне право. Том 2. Особлива частина. Київ: Юридична думка, 2009. 600 с.; Битяк Ю. П, Адміністративне право України. Підручник. Київ: Юрінком Інтер, 2007. 544 с.; Галунько В., Діхтієвський П., Кузьменко О., Стеценко С. та ін. Адміністративне право України. Повний курс: підручник. Херсон: ОЛДІ-ПЛЮС, 2018. 446 с.

[2] E.g., Основи судової експертизи: навч. посіб. для фахівців, які мають намір отримати або підтвердити кваліфікацію судового експерта/авт.-уклад.: Л. М. Головченко, А. І. Лозовий, Е. Б. Сімакова-Єфремян та ін. Харків: Право, 2016. 928 с.; Експертизи у судочинстві України: посібник/за заг. ред. В. Г. Гончаренка, І. В. Гори. Київ: Юрінком Інтер, 2015. 504 с.; Клюєв О. М. Правове регулювання судової експертизи у справах про адміністративні правопорушення: сучасний стан і перспективи розвитку. *Теорія та практика судової експертизи і криміналістики:* збірн. наук. праць. Вип.16. Харків: Право, 2016. С. 142–148; Клюєв О. М. До питання міжнародного співробітництва в галузі судової експертизи. *Теорія та практика судової експертизи і криміналістики*: збірн. наук. праць. Вип.18. Харків: Право, 2018. С. 154–162; Клименко Н. І. Судова експертологія. Київ: Ін Юре, 2007. 528 с.; Лозовий А. І., Сімакова-Єфремян Е. Б. Актуальні питання реформування законодавства у сфері судово-експертної діяльності в Україні. *Теорія та практика судової експертизи і криміналістики.* 2014. Вип. 14. С. 157–166; Олійник О. О. Зарубіжний досвід адміністративно-правового регулювання судово-експертної діяльності. *Митна справа.* 2013. № 4 (2). С. 270–274; Олійник О. О. Адміністративно-правове регулювання судово-експертної діяльності: деякі теоретичні аспекти. *Форум права.* 2012. № 2. С. 519–523; Олійник О. О. Сучасний теоретичний вимір принципів адміністративно-правового регулювання судово-експертної діяльності. *Науковий вісник публічного та приватного права.* 2015. Вип. 1. С. 101–107 ; Репешко П. І. Щодо сутності судово-експертної діяльності як об'єкта державного регулювання. *Криминалистика и судебная экспертиза.* 2013. Вып. 58 (1). С. 45–52; Репешко П. І. До питання ка-

At the same time, the analysis of these and other scientific works demonstrates the need to return to consideration of these issues in order to develop the concept of managing the FSA in the context of the current stage of legal reform.

The Article Purpose of the is theoretical and methodological substantiation and development of scientific and practical recommendations for improving the mechanisms of public administration in the FEA field.

Main Content Presentation. Public administration functions are the main directions of activity of state bodies in ensuring the fulfillment of public administration tasks. The most common in the domestic literature is the classification of public administration functions into general, special and auxiliary ones.

Let's consider the general and special functions of the Ministry of Justice of Ukraine (hereinafter referred to as Minjust of Ukraine) in the implementation of management in the field of FEA. The Ministry of Justice of Ukraine uses general management functions that have an objectively necessary influence on certain processes that take place in the FSA. These functions are basic, inherent in any management, regardless of the level and in which areas they are performed. The general functions of public administration are organization, forecasting, planning, regulation,

дрового забезпечення державних судово-експертних установ. *Наукові праці Чорноморського державного університету імені Петра Могили.* Сер.: Політологія. 2010. Т. 131. Вип. 118. С. 136–139; Репешко П. І. Щодо сутності судово-експертної діяльності як об'єкта державного регулювання. *Криминалистика и судебная экспертиза.* 2013. Вып. 58 (1). С. 45–52; Репешко П. І. Стан нормативно-правового забезпечення державного регулювання розвитку судово-експертної діяльності в Україні. *Теорія та практика судової експертизи і криміналістики.* 2011. Вип. 11. С. 233–242; Репешко П. І. Реалізація спеціальних принципів державного управління в організації судово-експертної діяльності. *Теорія та практика державного управління.* 2011. Вип. 1. С. 152–158; Репешко П. І. Окремі питання управління судово-експертними установами в умовах їх реформування. *Наукові праці Чорноморського державного університету імені Петра Могили*. Сер.: Державне управління. 2010. Т. 147. Вип. 135. С. 66–70; Сегай М. Я. Судебная экспертология: объект, предмет, природа и система науки. *Теорія та практика судової експертизи і криміналістики.* Харків: Право, 2003. Вип. 3. С. 25–32 ; Сімакова-Єфремян Е. Б. До питання про нормативно-правове регулювання судової експертизи в умовах судової реформи в Україні: зб. матер. круглого столу нагоди 100-річчя від дня народження професора М. В. Салтевського (Харків, 30 жовт. 2017 р.). Харків: Право, 2017. С. 68–70; Шепітько В. Ю. Проблеми використання спеціальних знань крізь призму сучасного кримінального судочинства в Україні. *Судов. експертиза.* 2014. № 1. С. 11–18; Щербаковський М. Г. Проведення та використання судових експертиз у кримінальному провадженні: монографія. Харків: В деле, 2015. 560 с.

coordination. This classification is based on the internal technology of management.

At the same time, the Ministry of Justice of Ukraine in its activities expresses the power-organizing influence on the object of management of special functions. Special functions characterize the characteristics of a particular subject or object of management. The special powers of the Ministry of Justice of Ukraine in the field of FEA are related to the subordinate research institutions of forensic examinations, for which ensuring the implementation of the state policy on expert support of justice is one of the purposes. Thus, in accordance with Art. 8 of the Law of Ukraine: On Judicial Examination, the organization of scientific and methodological support of FSA and organizational and managerial principles of state specialized institutions are entrusted to ministries and other central executive bodies, the management of which includes state specialized institutions carrying out FEA [1]. The Regulation on the Ministry of Justice of Ukraine, approved by the resolution of the Cabinet of Ministers of Ukraine dated 02.07.2014 № 228 [2], and other regulations on forensic examination of the Ministry of Justice of Ukraine entrusts expert support of justice carried out in three areas, in particular:

- organizing activities of FSI (forensic science institutions) of the Ministry of Justice;
- organizing activities of forensic experts who are not employees of state specialized institutions (private forensic experts);
- scientific and methodological support and interagency coordination of FEA.

Execution of these functions in the Ministry of Justice of Ukraine is entrusted to the Department of Expert Support of Justice (hereinafter referred to as Department), includes the section of organizational and managerial support of FSI, the Department of scientific and methodological support qualification commission at the Ministry of Justice of Ukraine. (hereinafter referred to as Offices).

In accordance with the functions of the Ministry of Justice of Ukraine, the Office is charged with the following tasks:

- the organization of a legally determined expert providing justice and conducting research in the field of forensic examination;
- ensuring work organizing of the Central Expert Qualification Commission at the Ministry of Justice of Ukraine (hereinafter referred to as CEQC)

[1] Про судову експертизу: Закон України від 25.02.1994 № 4038-XII (зі змінами та доповненнями). *Відомості Верховної Ради України.* 1994. № 28. Ст. 232.

[2] Про затвердження Положення про Міністерство юстиції України: Постанова Кабінету Міністрів України від 02.07.2014 № 228 (зі змінами та доповненнями). *Офіційний вісник України.* 2014. № 54. Стор. 884. Ст. 1455.

and the Scientific Advisory and Methodological Council on Forensic Science Issues at the Ministry of Justice of Ukraine (hereinafter referred to as the AMCFSI at the Ministry of Justice of Ukraine);

- assigning the qualification of a court expert to specialists who are not employees of state specialized institutions, issuing a certificate of the established model and exercising control over their activity;
- suspension or revocation of a certificate of qualification of a forensic expert;
- maintenance of the State Register of Certified Forensic Experts and the Register of Methods of Conducting Forensic examinations;
- coordination and control of the activities of research institutions that conduct judicial expertise and are within the sphere of management of the Ministry of Justice of Ukraine, implementation of regulatory and methodological support of their activities;
- coordination of the activities of ministries and other central executive bodies on the development of judicial expertise;
- ensuring the organization of the work of the Coordination Council on Forensic Problems at the Ministry of Justice of Ukraine [1].

The Department ensures the organization of the work of the CEQC of the Ministry of Justice of Ukraine formed on the basis of Art. 17 of the Law of Ukraine: On Judicial Examination and operates in accordance with the Regulations on expert qualification commissions and certification of forensic experts, approved by the order of the Ministry of Justice dated on 03.03.2015 № 301/5 [2]. Certification of state forensic experts in accordance with the above provisions of the legislation is carried out by expert qualification commissions operating in FSI.

To consider the most important issues of forensic science development having interdepartmental nature, the Coordination Council operates at the Ministry of Justice of Ukraine which provisions were approved by the Cabinet of Ministers of Ukraine dated on 16.11.1994 № 778. The Coordinating Council is a permanent advisory body approaches to the organization of FEA and the decision of the most important questions of development of judicial examination having interdepartmental nature [3]. Among others, this council considers the issue of state registration of methods of forensic examinations. To date, the Coordinating Council has considered a significant number of

[1] Ibid.

[2] Про затвердження Положення про експертно-кваліфікаційні комісії та атестацію судових експертів: наказ Міністерства юстиції України від 03.03.2015 р. № 301/5 (зі змінами та доповненнями). *Офіційний вісник України.* 2015. № 17. Стор. 278. Ст. 468.

[3] Про затвердження Положення про Координаційну раду. URL: https://zakon.rada.gov.ua/laws/show/z0460–12 (Date accessed: 17.10.2019).

issues related to the development and improvement of forensic science and has made appropriate decisions that have been embodied in the activities of FEA entities and have generally had a positive impact on the state of justice.

In order to properly organize scientific and methodological support at the Ministry of Justice of Ukraine, the AMCFSI was established, which operates in accordance with the Regulations on it, approved by the order of the Ministry of Justice of Ukraine dated March 27, 2012 № 470/5. According to the said Regulation, the AMCFSI is responsible for determining the priority areas of FI research in the field of forensic examination and providing proposals on the forms and methods of their implementation and implementation in expert practice; assessment of prospects for the development of scientific research in the field of forensic science, their relevance and novelty; providing a unified methodological approach in addressing the theory and practice of forensic science; improvement of scientific work; consideration of controversial issues of expert practice; consideration and acceptance of the results of completed research works; solving the issue of their further approbation (publication) and introduction into expert practice [1].

According to the results of the CEQC, the most complex problematic issues arising during the re-examination, consideration of the planned scientific developments and their results (scientific reports, methodologies, methodological recommendations) and in general the development of forensics are solved.

The Ministry of Justice of Ukraine in accordance with Art. 9 of the Law of Ukraine: On Judicial Examination is responsible for maintaining the State Register of Certified Judicial Experts (hereinafter referred to as the Register) including certified in accordance with this Law forensic experts [2]. The procedure for forming and maintaining the Register is determined by the Procedure for maintaining the State Register of Certified Judicial Experts, approved by the order of the Ministry of Justice of Ukraine dated on March 29, 2012 № 492/5 [3].

Part one of Article 7 of the Law of Ukraine: On Judicial Examination defines the range of subjects of forensic activity that carry out forensic activities on a professional basis, namely state specialized institutions, and in cases and under the conditions specified by this Law, forensic experts

[1] Про затвердження Положення про науково-консультативну та методичну раду з проблем судової експертизи при Міністерстві юстиції України. URL: https: // zakon.rada.gov.ua/laws/show/z0460–12 (Date accessed: 17.10.2019).

[2] Про судову експертизу: Закон України від 25.02.1994 № 4038-XII (as amended and supplemented). *Відомості Верховної Ради України.* 1994. № 28. Ст. 232.

[3] Про затвердження Порядку ведення державного Реєстру атестованих судових експертів: наказ Міністерства юстиції України від 29.03.2012 № 492/5 (зі змінами та доповненнями). *Офіційний вісник України.* 2012. № 27. Стор. 18. Ст. 1017.

who are not employees of these institutions. Experts of state specialized institutions and specialists who are not employees of these institutions have the same legal status as procedural persons, and have equal rights to obtain the qualification of a forensic expert and to conduct FEA in accordance with the law. The second part of Article 7 of this Law defines an exhaustive list of state specialized institutions that are subordinated to the relevant central executive bodies.

In fact, the Office organizes the work of seven FSIs, which were created by the governing acts of the Cabinet of Ministers of Ukraine of Ukraine and operate on the basis of statutes approved by the Minjust of Ukraine, and their eighteen branches (Crimean Research Institute of Forensic Examinations ceased its activities in connection with the occupation of the Autonomous Republic of Crimea).

According to the statutory objectives, the main purpose of FSI (is to provide law enforcement and judicial authorities with independent, qualified and objective expertise focused on the maximum use of scientific and technical achievements, which is to carry out scientific work and conduct forensic examinations. According to the plan of the Ministry of Justice of Ukraine in 2019, research institutions are performing 94 scientific topics, which the largest number performed by KhRIFE. This institute is the only one in the system of FI of all ministries and departments of Ukraine and has a license to train highly qualified scientific personnel, namely: doctors of philosophy in the field of law (according to the forensic profile); it has postgraduate and doctoral programs, as well as a specialized academic council for the defense of dissertations.

Organizing forensic examinations and researches in state specialized institutions of the Ministry of Justice is regulated by the Instruction on appointment and conduct of forensic examinations and Scientific and methodological recommendations on preparation and appointment of forensic examinations and expert examinations, approved by the Ministry of Justice of Ukraine dated 08.10.1998 № 53/5 [1]. During the first half of the year, 56,715 forensic examinations and expert examinations were performed.

A characteristic feature of the state specialized institutions of the Ministry of Justice is their scientific activities aimed at improving the effectiveness of scientific research in the field of forensic science, development of the most advanced methods and techniques of forensic examination to maximize its capabilities in criminal investigations, criminal, civil, economic, administrative cases and cases of administrative offenses. To this end, the expert institutions

[1] Про затвердження Інструкції про призначення та проведення судових експертиз та експертних досліджень та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз та експертних досліджень: наказ М-ва юстиції України від 08.10.1998. № 53/5 (as amended and supplemented). *Офіційний вісник України.* 1998. № 46. Стор. 172. Ст. 1715.

of the Ministry of Justice conduct research, study the achievements of world science, theory and practice of forensic science in Ukraine and abroad, as well as conduct testing and implement in expert practice the results of researches.

In accordance with the functions assigned to it, the Ministry of Justice constantly takes measures to expand the network of expert institutions (creation of new institutions and their branches), staffing of the management of expert institutions and development of their material and technical base (provision of premises, equipment, etc.).

In view of the above, the organizational and managerial functions of state bodies in relation to FEA entities are determined by the relevant legal acts (charters, regulations), taking into account the specifics of the institutions approved by the bodies to which they belong.

According to Art. 7 of the Law of Ukraine: On Judicial Examination, FEA is also carried out in cases and under the conditions specified by this Law, forensic experts who are not employees of these institutions[1]. Peculiarities of FSA implementation by certified forensic experts who do not work in state specialized expert institutions, as well as the procedure for monitoring compliance by these experts with the requirements of regulations governing FSA issues, are determined by the Instruction on peculiarities of FSA implementation by certified forensic experts not working in state specialized expert institutions, which was approved by the order of the Ministry of Justice of Ukraine dated 12.12.2011 № 3505/5 (hereinafter referred to as Instruction № 3505/5)[2]. According to the State Register of Certified Forensic Experts, as of April 1, 2019, the number of forensic experts who are not employees of state specialized institutions is 565 specialists.

The formation of preconditions for overcoming the crisis and further development of economic, political, social spheres of functioning and development of Ukrainian society is possible with the approval of the principle of using all reserves to increase the efficiency of social institutions, structures and mechanisms. The content of this principle is the need to find and implement any opportunities to improve and optimize the processes of socio-economic development and management. One of the most important areas of this improvement is to increase the efficiency of public administration in Ukraine, as the long-term prospects for the development of the Ukrainian state (sovereignty, national security, international competitiveness, etc.), systemic

[1] Про судову експертизу: Закон України від 25.02.1994 № 4038-XII (as amended and supplemented). *Відомості Верховної Ради України.* 1994. № 28. Ст. 232.

[2] Про затвердження Інструкції про особливості здійснення судово-експертної діяльності атестованими судовими експертами, що не працюють у державних спеціалізованих експертних установах: наказ М-ва юстиції України від 12.12.2011. № 3505/5 (as amended and supplemented). *Офіційний вісник України.* 2011. № 98. Стор. 134. Ст. 3591.

characteristics of society, ability to self-organization, depend on the influence of government on public life. initiatives, the prospect of public consent, etc.), short-term guidelines (implementation of reforms, improvement of quality of life, etc.). With this in mind, assessing the effectiveness of public administration in Ukraine and identifying areas for improvement is a pressing scientific problem [1].

According to L. Prykhodchenko, in most foreign countries the basis for assessing the socio-economic performance of the public sector are indicators of efficiency and effectiveness, and efficiency is proposed to understand the relationship between product and resources that went to its creation in terms of results, and performance the degree of achievement of the declared goals, and in comparison, with the resources used for this in the process of activity [2].

As N. Odintsova rightly points out, a common feature of most of the existing approaches to determining the effectiveness of public administration is the allocation of two main groups of goals: external, focused on the influence of public administration on the object of government; and internal, which characterize the process of functioning of a particular body of government as an organization [3]. However, highlighting the two relevant groups of criteria for the effectiveness of public administration, the author focuses on the second approach, proposing to increase efficiency through the management of organizations in government [4]. A similar position is held by V. Dzyundziuk, according to whom the effectiveness of public organizations should be considered in inseparable connection with the tools of their activities, which include: beliefs, financial resources, rules and organizational structure. In addition, models for public organizations should contain elements that reflect the "social results", i.e. the impact of the organization on society, so it is advisable to include elements that determine satisfaction with both the final product and the social result [5].

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[1] Фомін В. В. Теоретичні підходи до трактування поняття «ефективність державного управління». *Державне управління: удосконалення та розвиток. 2011.* № 11. URL: http://www.dy.nayka.com.ua/?op=1&z=615 (Date accessed: 17.10.2019).

[2] Приходченко Л. М. Щодо складності застосування показників оцінювання ефективності державного управління: теорія і практика. *Державне будівництво.* 2009. № 1. URL: http://www.kbuapa.kharkov.ua/e-book/db/2009–1/doc/1/07.pdf (Date accessed:17.10.2019); Приходченко Л. Щодо сутності поняття «ефективність» в системі демократичного врядування. *Актуальні проблеми державного управління:* зб. наук. праць ОРІДУ. Вип. 3 (31) Одеса: ОРІДУ НАДУ, 2007. С. 57–65.

[3] Одинцова Н. А. Государственное управление экономикой: обоснование системы менеджмента. *Ефективна економіка.* 2010. № 9. URL: http: www.economy.nayka.мcom.ua (Date accessed: 17.10.2019).

[4] Ibid.

[5] Дзюндзюк В. Б. Ефективність діяльності публічних організацій: монографія. Харків: ХарРІ УАДУ «Магістр», 2003. 236 с.

V. Kobzanenko proposes to assess the effectiveness of public administration through the assessment of the effectiveness of public administration decisions, which, in his opinion, are a set of models and methods for studying and measuring the actual results of public administration or implementation of public programs. The author identifies two components of measuring the effectiveness of public administration: technical and economic efficiency. The first determines the degree of achievement of the goals of the state taking into account the goals of society, the second is the ratio of the cost of services provided and the cost of resources involved in the provision of these services [1].

It should be noted that the above definitions in the instrumental aspect mainly lead to the need to measure the effectiveness of individual public authorities and their structural units at the regional level. In our opinion, such a microeconomic approach does not give an idea of the entire system of public administration, as it does not allow to take into account the effect of interaction of all public administration bodies, to assess the consequences of state intervention in the whole set of social processes. In addition, there is almost no single methodological approach to assessing the effectiveness of the functioning of public authorities or its structural unit. Existing domestic scientific and methodological developments[2], cannot yet meet the need for an objective assessment of the functioning of the public administration system.

Another approach is presented in the activities of international organizations, in particular, the World Bank, which implements the Worldwide Governance Indicators, a long-term research project covering the following indicators:

- taking into account the opinion of the population and accountability of public authorities (Voice and Accountability) – reflects the extent to which citizens are able to participate in forming a government, freedom of expression, association, free media;
- Political Stability and Absence of Violence – reflects the likelihood of destabilization or overthrow of the government by unconstitutional or violent means, including as a result of politically motivated violence or terrorism;
- Government Effectiveness reflects the perception of the quality of public sector services, the quality and accessibility of public services;

[1] Козбаненко В. А. Государственное управление: основы теории и организации. Учебник. Том 1. Москва: Статут, 2002. 257 с.

[2] Лесечко М., Рудницька Р. Методичні підходи до оцінки державного врядування в Україні. *Науковий вісник.* 2010. Вип. 5. «Демократичне врядування». URL: http://archive.nbuv.gov.ua/e-journals/DeVr/20105/fail/Lesech.pdf (Date accessed: 17.10.2019); Кулинич О. Методика оцінки підсумків організаторської роботи районних державних адміністрацій (виконкомів рад міст обласного значення). *Вісник УАДУ.* 2001. № 2. С. 214–223; Чемерис А., Чемерис О., Лесечко М., Рудніцька Р. Аудит адміністративної діяльності: навч. посіб. Львів: ЛРІДУ УАДУ, 2003. 212 с.

- Regulatory Quality reflects the government ability to formulate and openly implement policies and regulatory measures that enable the private sector to develop;
- Rule of Law reflects the perceptions of the faith and observance of public rules by entities, including, in particular, the conclusion of contracts, the protection of property rights, the police, the courts, and the likelihood of violence and crime;
- Control of Corruption reflects the extent to which public authority is guided by one's private interests, including the spread of "small" and "large" forms of corruption, "capture" of the state by elites and private interests [1].

European analysts have a similar view on assessing the effectiveness of public administration, associating it with quality and proposing to take into account factors that may affect national competitiveness in terms of increasing employment, creating added value and encouraging competition. Among them are: general government (efficiency of government); tools for modernizing public administration (e.g. e-government, strategic human resource management, use of experience-based tools); administrative burden on business (time and cost of starting a business, time required to obtain licenses, tax burden); efficiency of the civil law system; corruption (including irregular payments and bribes, embezzlement of public funds)[2]. Given the definition of quality as the degree of value, suitability (application) of a thing or property for its intended use, the set of characteristics of a product (good or service) in relation to its ability to meet established and anticipated norms and requirements, it should be noted that the quality of public administration reflects that part expressed in the general effect of the functioning of the public administration system receiving public sector services by the population under conditions of increasing pressure on the state budget.

Thus, the interpretation of the concept of "efficiency of public administration" should take into account the following substantive aspects:

- the specific effect of public administration is to provide certain services to the population;
- general effect of public administration is to purposefully change the intensity, nature and diversity of certain social processes, aimed at ensuring competitiveness, economic growth, well-being of the population, security and integrity of society;
- efficiency of the functioning of the public administration system is expressed in the quality of the services it provides, the degree of achievement of the overall effect of its functioning and in the indicators

[1] The Worldwide Governance Indicators (WGI) project. URL: http://info.worldbank.org/governance/wgi/index.asp (Date accessed: 17.10.2019).

[2] Zak M. Quality of governance. *Working Paper CES UEM*. 2005. № 4. 28 p.

of the use of resources for quality assurance and overall effect by each public authority and their totality as a whole.

Efficiency of public administration is a multifaceted concept that reflects the degree of achievement of the general objectives of public administration and the quality of services to the population in relation to the resource provision of the relevant government activities. The methodological approach to assessing the effectiveness of public administration should take into account such components as:

1) expert evaluation of the results of the influence of state bodies on state sovereignty, competitiveness, economic growth, social agreement, etc.;
2) assessment of factors and tools for ensuring the quality of public service delivery (use of tools and technologies that increase the effectiveness of managerial influence, create conditions for transparency of the public, including the ruling, the environment, the rationality of the legislative field, the absence of corruption, etc.);
3) effectiveness of the implementation of certain regulatory elements (for example, the use of budgetary funds, management of government debt, etc.) and the activities of individual state authorities as organizations.

Reforms in economic, social, political and legal fields of the Ukrainian state cause changes in the organizational and legal framework of public administration of the FEA. The tasks facing forensic institutions, services and departments in the new environment, require finding and identifying ways to improve the efficiency of the existing system of organization of FEA, optimization of its organization and legal support. Today, courts and law enforcement agencies put forward qualitatively new requirements to the FSA, which is one of the important factors that necessitate the improvement of the organizational and legal framework of public administration of the FSA. However, in resolving these issues it should be borne in mind that, under paragraph 14 of Part 1 of Art. 92 of the Constitution of Ukraine, the determination of the principles of forensic examination should be carried out exclusively by the laws of Ukraine. It follows that the legislator appreciates the role and importance of forensic science in the administration of justice, and this necessitates a balanced approach to the development, implementation and reform of the organizational and legal framework of the FSA and its management.

Changes in the state and in society place new demands on institutions, services and subdivisions of state executive bodies functionally authorized to conduct FEA. This is application of the latest advances in science and technology, standardization and certification of common scientifically based methods of forensic research, solving non-traditional expert tasks, reducing the time of examinations, improving their objectivity, quality and probative value. At the same time, FI has accumulated a large number of problems related to changes in both political courses and economic standards of public

life, which has significantly changed the overall picture of internal factors that are effective in the internal systems of institutions. In addition, there are signs of deepening interdepartmental confrontations, some attempts to commercialize FEA, attempts to redistribute spheres of influence and areas of activity. Practical problems of public administration of FEA, as rightly noted by S. M. Novikov require their solution by identifying and eliminating various contradictions, inconsistencies, gaps in the organization of expert institutions and in their management, especially since management is one of the system-forming factors of the forensic system [1].

State regulation of the FEA cannot but take into account the changes that are taking place as a result of the reforms being carried out in the country. Important in the direction of improving the organization of this type of activity are the problems of optimization of the scientific organization and management of the infrastructure of FSA ensuring practical implementation of its legal and methodological foundations. Such problems include:

a) optimization of organizational forms of management of state SFIs and non-state expert structures;
b) unification of the scientific-methodological and information base of the FI, organization and coordination of research in the field of forensic expertise;
c) improving the methodology and procedures for the certification of professional forensic experts;
d) organization of basic training of specialists in the field of FEA of humanitarian and natural-technical profiles;
e) improving the methodological and preventive work of the FI optimizing the use of judicial expertise by investigators and courts.

Such a systematic approach to improving the state regulation of FEA seems relevant and deserves to be taken into account in the further study of these issues. Awareness of the need to improve the legal framework for state regulation of the development of FEA contributes at different stages of development of the independent state of Ukraine to the adoption of certain regulations of programmatic and conceptual nature, directly or indirectly aimed at reforming the FEA.

Conclusions. The Ministry of Justice of Ukraine uses general and special functions in the management of FSA. One of the most important areas of improving FSA is to increase the efficiency of public administration. Assessing the effectiveness of public administration in Ukraine and identifying ways to improve it is an urgent scientific problem. Important in the direction of improving the organization of this type of activity are the solution

[1] Новиков С. Н. Организационно-правовые основы экспертно-криминалистической деятельности в органах внутрених дел: дис. … канд. юрид. наук: 12.00.11. Рязань, 2005. 229 с.

of problems of optimization of the scientific organization and management of the infrastructure of FSA providing practical realization of its legal and methodological bases. In order to solve these problems, the following steps are needed: optimization of organizational forms of management of state FSAs and non-state expert structures; unification of scientific-methodical and information base of FEA, organization and coordination of research work in the field of forensic examination; improvement of methods and procedures for certification of professional forensic experts; organization of basic training of specialists in the field of FEA of humanitarian and natural-technical profiles; improvement of methodical and preventive work of FEA and optimization of use by investigators and courts of possibilities of forensic examinations.

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ОСОБЛИВОСТІ ДЕРЖАВНОГО УПРАВЛІННЯ В СФЕРІ СУДОВО-ЕКСПЕРТНОЇ ДІЯЛЬНОСТІ (НА ПРИКЛАДІ МІНІСТЕРСТВА ЮСТИЦІЇ УКРАЇНИ)

У статті досліджено особливості державного управління в сфері судово-експертної діяльності. На основі аналізу нормативно-правових актів, наукових публікацій, статистичних даних встановлено основні функціональні форми повноважень Міністерства юстиції України при здійсненні управління в сфері судово-експертної діяльності (загальні і спеціальні). Під час тлумачення терміна «ефективність державного управління» виявлено основні змістовні аспекти цього поняття. Вивчено зарубіжний досвід у сфері управління та контролю за діяльністю судових експертів і зроблено відповідні висновки щодо запозичення позитивних тенденцій. Виокремлено та диференційовано напрямки вдосконалення експертного забезпечення правосуддя в Україні.

Ключові слова: державне управління в сфері судово-експертної діяльності, нормативно-правовий акт, експертне забезпечення правосуддя, ефективність управління, організація судово-експертної діяльності.

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ОСОБЕННОСТИ ГОСУДАРСТВЕННОГО УПРАВЛЕНИЯ В СФЕРЕ СУДЕБНО-ЭКСПЕРТНОЙ ДЕЯТЕЛЬНОСТИ (НА ПРИМЕРЕ МИНИСТЕРСТВА ЮСТИЦИИ УКРАИНЫ)

На основе анализа нормативно-правовых актов, научных публикаций, статистических данных автором выделены основные формы функций Министерства юстиции Украины при осуществлении управления в сфере судебно-экспертной деятельности (общие и специальные) и дифференцированы направления совершенствования экспертного обеспечения правосудия. Одним из важнейших направлений совершенствования судебно-экспертной деятельности является повышение эффективности государственного управления. Многоаспектность и масштабность этой проблемы определили необходимость комплексного ее изучения с учетом разновекторности научного поиска. Оценка эффективности государственного управления в Украине и выявление направлений ее повышения является актуальной научной проблемой, требующей разрешения. Важным в совершенствовании организации этого вида деятельности является решение проблем оптимизации научной организации и управления инфраструктурой судебно-экспертной деятельности, обеспечивающих практическую реализацию ее правовых и методологических основ. С целью решения этих проблем необходимым представляется: оптимизация организационных форм управления государственными органами судебно-экспертных учреждений и негосударственными экспертными структурами; унификация научно-методической и информационной базы судебно-экспертных учреждений, организация и координация научно-исследовательской работы в области судебной экспертизы; совершенствование методики и процедуры аттестации профессиональных судебных экспертов; организация базового обучения специалистов в области судебно-экспертной деятельности гуманитарного и естественно-технического профилей; совершенствование методической и профилактической работы судебно-экспертных учреждений и оптимизация использования следователями и судами возможностей судебных экспертиз.

Ключевые слова: государственное управление в сфере судебно-экспертной деятельности, нормативно-правовой акт, экспертное обеспечение правосудия, эффективность управления, организация судебно-экспертной деятельности.

Received by Editorial Board: 12.12.2019

DOI: https://doi.org/10.32353/khrife.2.2019.10
UDC [343. 12; 343. 148; 343. 16] (477)

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Review article

PLACE OF AN EXPERT IN THE SYSTEM OF SUBJECTS OF FORENSIC EXPERT ACTIVITY

The article draws attention to the fact that one of the most important forms of using special knowledge in legal proceedings is to attract an expert and conduct a forensic examination. It is stated that forensic activity can be considered as a formed and relatively independent type of activity that closely interacts with law enforcement in general and with criminal procedure in particular to ensure the needs of justice. It is emphasized that forensic and criminal procedural activities are closely interrelated, sometimes intertwined, taking into account the peculiarities of the professional expert activity. As a result of the analysis of different approaches to assessing the properties of the professional activity of an expert as a subject of forensic expert activity, it was determined that they can be divided into general and particular. It is also emphasized that the qualities of an expert, without which it is impossible to carry out their professional activities, include the knowledge, skills and abilities obtained during training and implementation of practical activities.

Keywords: forensic expert, forensic expert activity, criminal proceedings, functions, properties, forensic science.

Formulation of Research Problem. One of the important forms of using special knowledge in court proceedings is to involve an expert and conduct a forensic examination. The result of the trend of differentiation and integration of scientific knowledge can be considered the emergence and formation of various classes, types and genera of forensic examinations. Forensic examination has long gone beyond the criminal process, as it is used in all types of proceedings. This is due to the fact that it is a complex, multifaceted and multifaceted activity, which is implemented in expert institutions by qualified professionals. N. I. Klimenko emphasizes that the theory allows to

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know the general patterns that characterize the substantive nature of forensic science, which should be taken into account when addressing various issues related to the development and rational use of science and technology in expert research, and determines the creation special science: forensic expertology [1]. However, changes in legislation require constant attention of scholars regarding the place of forensic expert in the system of forensic expert activity.

Analysis of Recent Researches and Publications. As V. D. Yurchyshyn noted, within the forensic examination for the first time the expediency of separating forensic examination in criminology was noted by Yu. M. Kubytsky and O. R. Shlyakhov, later systematized the knowledge of the examination of A. I. Vinberg and N. T. Malakhovskaya. However, only at the peak of scientific research in this area by the efforts of scientists were formulated the conceptual foundations of the general theory of forensic science, its structure and functions [2]. Forensic examination as a science includes the concept of this science, its system and structure, as well as some teachings: about objects, subjects, methods of general theory of forensic science, processes and relations of communication in forensic science, prevention and forecasting etc.[3] Scientists have proved that from the point of view of forensic expertise as a science, forensic activity is its object of knowledge. However, not enough attention is paid to the characteristics of the place of the expert in the system of subjects of forensic expert activity.

The Article Purpose is to determine the place of the expert in the system of subjects of forensic expert activity.

Main Content Presentation. Among other types of human activity, forensic activity is distinguished by the special nature of the expert's functions, the special purpose of the research he conducts, as well as the legal regulation of the grounds for the appointment of examinations and the procedure for their conduct. This is a reason to define it as a professional activity. In this regard, Ya. V. Komissarova notes that public relations that arise in connection with the need of some people to obtain information on issues that require the use of knowledge that they themselves do not have in full or necessary, and the ability of others to provide information according to the results of research, are implemented with the help of a generalized type of socially useful activity viz. expert activity, which in relation to the field of justice is denoted by the term: *forensic expert activity* [4]. Thus, forensic expert

[1] Клименко Н. І. Судова експертологія: курс лекцій. Київ: Ін Юре, 2007. С. 66.

[2] Юрчишин В. Д. Генезис ідеї науки про судову експертизу. *Правова держава.* 2012. № 12. С. 399.

[3] Сегай М. Я. Судова експертологія — наука про судово-експертну діяльність. *Вісник академії правових наук України.* 2003. № 2 (33); № 3 (34). С. 761–762.

[4] Комиссарова Я. В. Концептуальные основы профессиональной деятель-

activities (hereinafter referred to as FEA) can be considered as a formed and relatively autonomous type of socially useful activity that works closely with law enforcement in general and criminal procedure, in particular to meet the needs of legal proceedings.

At the legislative level, the term: *forensic expert activities* were enshrined in the Law of Ukraine: On Judicial Examination dated on 25.02.1994. However, so far this regulation does not contain a clear definition of this concept, and its content is revealed by the analysis of some norms that establish:

- subjects (individuals and legal entities) who directly carry out judicial examinations by professionally certified experts, requirements for education and special training, as well as the procedure for carrying out their certification;
- a range of public authorities providing scientific, methodological, organizational, managerial and financial support to FEA [1].

The Law of Ukraine: On Judicial Examination defines and regulates the professional activities of experts, specialized expert institutions, refers to this activity expert practice as a type of scientific and practical activity, as well as establishes legal, organizational, scientific and methodological and international legal support of FEA. According to Yu. B. Foris, the Law of Ukraine: On Judicial Examination should be called the Law of Ukraine "On Forensic Expert Activities", as it sets out the basics of training, certification and qualification of professional experts, methodological support, funding, international cooperation in areas of forensic science, etc.[2] We can agree with this in part, because the quality and effectiveness of forensic science is directly related to the level of its theoretical understanding, the degree of development of methodological, legal, organizational principles of its implementation, ensuring scientific and technological progress, improving the quality of selection, training and retraining , which in this Law are prescribed in fragments and require additional study by scientists.

It should be borne in mind that in legal science there are various approaches to understanding the essence of forensic science. Analyzing different approaches to defining the structure of forensic expertise as a science of forensic science, scholars in the field of jurisprudence pay almost no attention to the fact that this activity is a professional activity of forensic institutions in

ности эксперта в уголовном судопроизводстве: дисс. ... д-ра юрид. наук: 12.00.09. Москва, 2013. С. 54–55.

1 Експертизи у судовій практиці : наук.-практ. посіб./за заг. ред. В. Г. Гончаренка. Київ: Юрінком Інтер, 2010. С. 3.

2 Форис Ю. Б. О формировании судебно-эксперного права: постановка проблемы. *Теорія та практика судової експертизи і криміналістики.* Харків: Право, 2003. Вип. 3. С.48.

general and the expert in particular. In his works, F. M. Dzhavadov substantiates the position on the need for professionalization of FEA in its theoretical support by systematically generalizing the already accumulated individual theories and their structuring into a general theory of forensic science [1]. We can agree with this, because the quality and effectiveness of expert work are directly related to the professional level of its theoretical understanding, the degree of development of methodological, legal, organizational principles of its implementation, improving the quality of selection, training and retraining of experts and more.

Scholars suggest that forensic activity should be understood as professional and legal activity of public authorities, legal entities and individuals, which consists in legal, organizational and managerial, scientific and methodological, financial and international legal support of justice in Ukraine by independent, qualified and objective expertise. with a focus on maximizing the achievements of science and technology [2].

It is also necessary to pay attention to the research of FEA subjects, as their role and importance in conducting forensic examinations is extremely important and is conditioned by participation in court proceedings. In addition, the development of FEA contributed to the change and further improvement of legal and procedural relations to improve their legal status. In this case, the subjects, with the exception of general ones, have their own specific tasks and within their solution act independently, interacting only in solving general tasks of expert activity.

While examining the system of FEA subjects, it is worth noting that the legislator provides a list of them. Yes, in accordance with Art. 7 of the Law of Ukraine: On Judicial Examination, forensic activities are carried out by state specialized institutions, as well as in cases and under the conditions specified by this Law, forensic experts who are not employees of these institutions [3]. In part 2 of Art. 7 of the Law states that the state specialized institutions include: research institutions of forensic examinations of the Ministry of Justice of Ukraine; research institutions of forensic examinations, forensic and forensic psychiatric institutions of the Ministry of Healthcare of Ukraine; expert services of the Ministry of Internal Affairs of Ukraine, the Ministry of Defense of Ukraine, the Security Service of Ukraine and the State Border Guard Service of Ukraine.

1 Джавадов Ф. М. Концептуальные основы развития судебной экспертизы в современных условиях: автореф. дис... д-ра юрид. наук: 12.00.09. Баку, 2000. С. 5.

2 Дудіч А. В. Експерт, як учасник кримінального провадження: дис. ... канд. юрид. наук: 12.00.09. Одеса, 2016. С. 31.

3 Про судову експертизу: Закон України від 25 лютого 1994 р. № 4038-XII. URL: http://zakon2.rada.gov.ua/laws/show/4038–12 (Date accessed: 11.06.2019).

The professional activity of an expert is a connecting link in the interaction of law enforcement, criminal procedure and forensic activity. During the examination, the entity involved as an expert focuses on the task of the examination, independently plans and implements actions and operations aimed at obtaining information necessary to establish the truth, and provides the results of its work in the form of an expert opinion[1]. It should be noted that the high performance of the expert is determined by the success of his professional activity. Scholars emphasize that the full implementation of the activities of a forensic expert depends on both his qualifications and personal qualities, the degree of their development and management [2]. However, scholars in the field of legal science usually study the peculiarities of forensic activity without taking into account the peculiarities of the professional expert activity[3]. At the same time, forensic and criminal proceedings are closely interrelated, sometimes intertwined with the specifics of the expert professional activities. This is due to the fact that in some cases, for example, conducting an expert examination, he acts as a subject of expert activity, and in case of his involvement in the criminal process, for example, appointment and examination becomes a party in criminal proceedings.

It should also be borne in mind that the professional activity of the expert is characterized by both the properties of any human activity and special, which characterize the work of the expert as a variety that is associated with examinations, investigative actions and operational and investigative measures, i.e. as sub subject of forensic activity. Only a set of certain properties, their specific combination gives the work of an expert a special character [4].

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[1] Комиссарова Я. В. Концептуальные основы профессиональной деятельности эксперта в уголовном судопроизводстве: дисс. ... д-ра юрид. наук: 12.00.09. Москва, 2013. С. 102.

[2] Джавадов Ф. М. Концептуальные основы развития судебной экспертизы в современных условиях: дис. …д-ра. юрид. наук: 12.00.09. Баку, 2000. С. 222.

[3] Джавадов Ф. М. Концептуальні основи розвитку судової експертизи в сучасних умовах: автореф. дис. ... д-ра юрид. наук: 12.00.09. Київ, 2000. С. 14; Жеребко О. І. Судово-експертна діяльність: сутність, принципи, організаційні основи: дис. ... канд. юрид. наук: 12.00.09. Запоріжжя, 2010. С. 54; Шепітько В. Ю. Психологічні закономірності в судово-експертній діяльності. *Актуальні питання судової експертизи та криміналістики*: зб. матеріалів засідання «круглого столу», присвяченого 85-річчю створення Харківського науково-дослідного інституту судових експертиз ім. засл. проф. М. С. Бокаріуса (11–12 листопада 2008 р.). Харків, 2008. С. 24–26.

[4] Кофанов А. В. Теоретичні та практичні аспекти діяльності судових експертів. *Актуальні проблеми експертології*: зб. матеріалів круглого столу. Київ: Навчально-науковий інститут підготовки слідчих і криміналістів Національної академії внутрішніх справ, 2012. С.79–80.

As a result of the analysis of different approaches to the evaluation of the properties of the professional activity of the expert as a subject of expert activity, it was determined that they can be divided into general and special. Characterizing the general characteristics of the professional activity of a forensic expert, it should be emphasized that they should include:

- social nature of the professional activity of the expert, which is that it is a kind of state activity aimed at strengthening law and order through the needs of the judiciary. The social nature of the professional expert activity makes it possible to use the achievements of science and technology both for the development of special methods of research and evaluation of evidence, and for the scientific organization of work and management of the expert's activities. All this obliges the expert to be able to research and evaluate new tools, methods, methods and techniques of working with evidence, to implement them in the practice of their work;
- purposefulness of professional expert activity, that while conducting research according to a specific method allows to reveal new evidence by applying to the object of study the expert's special knowledge, which in turn contributes to a fair trial of criminal proceedings. In other words, after the purpose of the expert activities is clearly thought out, identified ways and means to achieve it, he makes a decision aimed at implementing the schedule;
- expert activity planning is one of the conditions for conducting expert research, which includes planning the content of all the activity, during which prospective and operational planning and planning of specific expert research is carried out, by which the expert determines the set of actions and the sequence of their implementation;
- the systematic conduct of the professional activity of the expert, as it is carried out systematically, in a legally prescribed manner, and is associated with the continuous emergence and termination of various relationships with a wide range of participants in criminal proceedings.

The special features of an expert's professional activity include the following:

- legal nature of the professional activity of the expert, which is expressed in the following: first, the criminal procedural legislation determines the procedural forms and the mode of use in the implementation of scientific and technical means and methods; secondly, all actions that make up an expert's activity are directly regulated by the law or, based on it, their basic features are determined; thirdly, the main purpose of the expert's activity is to find evidence as a result of the expert's knowledge of the expert being applied to the object; fourth, the probative value of the expert's opinion is evaluated not only from the point of view of its content, but also from the point of view of strict adherence to the procedural procedure for the

appointment and examination, the violation of which deprives the expert of the expert's value; fifth, the expert should only be guided in the course of the expert inquiry by the circumstances relating to: the subject matter of the examination, the circumstances of the criminal proceedings and the capabilities of his specific expertise;

- relative independence of the expert in determining and choosing the types and methods of research, technical means and special techniques for examinations. The expert chooses the methods of research and methods of conducting it independently in a certain field of knowledge, focusing on the approved expert methods and methodological recommendations;
- research nature with a focus on the latest advances in science and technology is also a feature of the professional activities of the expert. Conducting research by an expert in the process of performing each examination, even at the scene, is an independent study of problems, knowledge of the truth. That is why the activity of the expert has common features with research activities, because along with the algorithmic components in it a significant place is occupied by heuristics;
- expert activity verification, which is due to the fact that acting as evidence, the expert conclusion and testimony are subject to assessment by the investigator, prosecutor, investigating judge, court on their inner conviction, based on a comprehensive, complete and impartial investigation of all criminal circumstance proceedings. They are guided by the law in terms of their relevance, admissibility, reliability, and the totality of the evidence gathered in terms of sufficiency and interrelationship for the relevant procedural decision. At the same time, verification significantly affects the definition of criteria for evaluating the work of experts and expert institutions, taking into account quantitative and qualitative indicators;
- initiative, because in carrying out his professional activity, the expert in the process of conducting the research must take the initiative and can go beyond the tasks assigned to him by the initiator of the examination, namely: to resolve issues that were not raised in the appointment of the examination, if they are important for criminal proceedings;
- constructiveness, which is always associated with the fact that the professional activity of the expert is constructive. This is due to the fact that the subject of expert knowledge during the study of the objects of examination are traces that are causally related to the event that reproduces the crime pattern;
- The relationship between individuality and collegiality in the professional work of the expert is manifested in the fact that the expert, working in

a team united by common tasks, solves their own problems (conducting expert research) and thus achieves their own goals, making their own efforts. The individuality of expert work is also characterized by the personal responsibility of the expert for the research results;

- special social and psychological atmosphere, which is inherent in the professional activity of the expert and due to the interest in the results of his activity.

Summarizing the above, it should be emphasized that the considered properties of the professional activity of the expert should be taken into account both in creating a typical model of the expert and in the description of the psychological structure of his activity. It should also be noted that not the least place in creating an expert model designed to assess the degree of readiness of the expert for practical activities, is the study of a set of social, ethical, psychophysiological and professional qualities of the person, their relationship and interaction. The solution of these issues will certainly contribute to the training of highly qualified specialists, namely: forensic experts, increase the efficiency and effectiveness of the functioning of forensic institutions in general.

In addition, it is necessary to dwell on the question of examining the identity of the expert in terms of his procedural status. Traditionally, the subject of expert research is the person who directly carries it out, presents its results and is responsible for it. However, in legal science there are opinions on this issue, which are fundamentally different from the above definition of an expert as a subject of forensic research. Thus, Yu. G. Korukhov stated that there are two types of subjects of forensic activity, persons who:

- make power-willed decisions on the appointment of the examination and its organization, namely: the court, the investigating judge, the investigator, the prosecutor and the official or body in whose proceedings the case is conducted;
- carry out expert research, which includes experts who carry out expert research, as well as forensic institutions that organize the examination and ensure its conducting[1].

In turn, A. V. Dulov, in addition to the above two groups of subjects of forensic activity, cites another group viz. a group of interested participants in criminal proceedings[2].

Such a comprehensive understanding of the subject of forensic expertise needs to be clarified in relation to clarifying the definition of an expert. This is due to the fact that the investigator, judge (court), as well as other participants

[1] Основы судебной экспертизы. Часть 1. Общая теория. Под ред. Ю. Г. Корухова. Москва: РФЦСЭ, 1997. С. 170.

[2] Дулов А. В. Права и обязанности участников судебной экспертизы. Минск: Изд-во М-ва высш., сред. спец. и проф. образования БССР, 1962. С. 110.

in criminal proceedings may not be the subject of expert research. The appointment of a forensic examination is the legal basis for its conduct, but such an appointment may not in any way affect the very essence of expert research, the choice of expert methodology, application and use of certain methods, formulation of conclusions and so on. This problem also stems from the fact that the terminological apparatus of forensic activity, which determines the procedure for appointing and conducting forensic examination in the Law of Ukraine: On Judicial Examination, the Criminal Procedural Code of Ukraine and other departmental acts, which operating with different terms to denote the procedure its purpose: appeal, assignment, appointment, involvement order[1].

At the same time, as pointed out by T. V. Averyanov, in the case when the investigator, judge or other participants in criminal proceedings as subjects of forensic activity by their decision only stipulate the examination and cannot influence the process of its conduct, they cannot be considered as subjects of expert research. The subject of any study, including expert, is only the direct executor who conducts this study, in this case it is only an expert[2].

It should also be emphasized that the qualities of an expert, without which it is impossible to carry out his professional activities, include the knowledge, skills and abilities acquired by him during training and professional activities. In this case, a person may perform the functions of an expert in criminal proceedings in the presence of the following conditions:

- special: availability of the necessary knowledge, skills and practical skills necessary for solving expert tasks in science, technology and other fields;
- procedural: disinterest in the results of the case.

Thus, forensic activities include a number of entities that make up its system, including:

- persons who make procedural (willful) decisions (on behalf of an investigating judge or court) or at the request of a party to criminal proceedings by the defense or prosecution to appoint an examination and conduct it. The first type of subjects of forensic activity includes the investigating judge, court, investigator, head of the pre-trial investigation body, prosecutor, as well as the victim, his representative and legal representative in cases specified by the Criminal Procedural Code of Ukraine. On the part of the defense: the suspect, accused (defendant),

1 Бондар В. С. Гармонізація інституту використання спеціальних знань у кримінальному судочинстві. *Актуальні проблеми застосування нового кримінального процесуального законодавства України та тенденції розвитку криміналістики на сучасному етапі*: м-ли Всеукр. наук.-практ. конф. (Харків, 5 жовт. 2012 р.) Харків: ХНУВС, 2012. С. 178–180.

2 Аверьянова Т. В. Субъекты экспертной деятельности. *Вестник криминалистики*. Москва: Спарк, 2001. Вып. 2. С. 36.

convicted, acquitted, a person in respect of whom the application of coercive measures of a medical or educational nature is envisaged or the issue of their application has been resolved, their defenders and legal representatives;

- persons and institutions involved in the organization and provision of examinations. These include: state specialized forensic institutions, non-state expert institutions and heads of these institutions;
- persons who directly carry out expert research and draw up their results. These subjects of forensic activity include forensic experts who are employees of state specialized forensic institutions (state), certified experts who are not employees of state specialized forensic institutions (private), as well as persons involved in examination in the order of international legal assistance (foreign experts and experts of international organizations).

Conclusions. Summarizing the above, it can be noted that the expert is a person disinterested in the results of the proceedings, who on a professional basis has the special knowledge, skills and practical skills necessary to solve forensic tasks assigned to the expert in the manner prescribed by law. objects of examination in order to conduct research and provide an opinion on issues that arose during the proceedings and relating to the scope of its knowledge. This definition fully reflects all the professional characteristics of the expert and his elements of procedural status and differs significantly from the definitions proposed and enshrined in the procedural codes, including the Criminal Procedural Code of Ukraine.

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Оглядова стаття

МІСЦЕ ЕКСПЕРТА В СИСТЕМІ СУБ'ЄКТІВ СУДОВО-ЕКСПЕРТНОЇ ДІЯЛЬНОСТІ

У статті наголошено, що однією із важливих форм використання спеціальних знань у судочинстві є залучення експерта та проведення судової експертизи. Констатовано, що судово-експертна діяльність

може розглядатись як сформований та відносно автономний вид соціально корисної діяльності, який тісно взаємодіє із правоохоронною діяльністю взагалі та кримінально-процесуальною, зокрема, для забезпечення потреб судочинства. Підкреслено, що судово-експертна та кримінально-процесуальна діяльність тісно взаємопов'язані, іноді переплітаються із урахуванням особливостей професійної діяльності експерта. У результаті аналізу різних підходів оцінки властивостей професійної діяльності експерта як суб'єкта експертної діяльності визначено, що їх можна поділити на загальні та особливі. Також зазначено, що до якостей експерта, без яких неможливе здійснення його професійної діяльності, належать знання, уміння та навички, отримані ним під час навчання та здійснення професійної діяльності.

Ключові слова: судовий експерт, судово-експертна діяльність, кримінальне провадження, функції, властивості, судова експертиза.

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Обзорная статья

МЕСТО ЭКСПЕРТА В СИСТЕМЕ СУБЪЕКТОВ СУДЕБНО-ЭКСПЕРТНОЙ ДЕЯТЕЛЬНОСТИ

В статье обращается внимание на то, что одной из наиболее важных форм использования специальных знаний в судопроизводстве является привлечение эксперта и проведение судебной экспертизы. Констатировано, что судебно-экспертная деятельность может рассматриваться как сформированный и относительно самостоятельный вид деятельности, который тесно взаимодействует с правоохранительной деятельностью вообще и с уголовно-процессуальной в частности для обеспечения потребностей правосудия. Подчеркивается, что судебно-экспертная и уголовно-процессуальная деятельность тесно взаимосвязаны, иногда переплетаются с учетом особенностей профессиональной деятельности эксперта. В результате анализа разных подходов к оценке свойств профессиональной деятельности эксперта как субъекта судебно-экспертной деятельности было определено, что их можно разделить на общие и частные. Также подчеркивается, что к качествам эксперта, без которых невозможно осуществление их профессиональной деятельности, относят знания, умения и навыки, которые получены во время обучения и реализации практической деятельности.

Ключевые слова: судебный эксперт, судебно-экспертна ядеятельность, уголовное производство, функции, свойства, судебная экспертиза.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.11
UDC 343. 85

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THEORETICAL FUNDAMENTALS OF EXPERT PREVENTION: CONCEPTS AND TASKS

The article analyzes the conceptual foundations, views and ideas about the essence of expert prevention. The ratio of the contiguous concepts of «prevention» and "prevention" has been investigated, because one of the main problems of forensic research of the phenomenon of expert prevention is the ambiguity of both scientific understanding and practical application of the corresponding conceptual and categorical apparatus. It is emphasized that the essence of expert prevention lies in the impact of the relevant subjects on crime through the use of special professional knowledge. That is, the subject of forensic examination should include studies of the circumstances on the basis of which scientific, organizational and technical measures of a preventive nature can and should be developed. It is proved that among the tasks of a preventive nature that can be solved by employees of forensic institutions, an important place should be occupied by developments aimed at predicting in the forensic aspects of the circumstances conducive to the commission of crimes, taking into account the possibilities of certain types of expert research.

It has been proved that the preventive activities of forensic institutions of Ukraine should be carried out: in the production of expert examinations on specific criminal, administrative or civil cases; by summarizing expert, as well as forensic practice; in the process of scientific research on the problems of expert prevention; by providing, on the basis of special knowledge, scientific and practical assistance to state bodies and public organizations in identifying circumstances conducive to the commission of crimes.

In order to improve the quality of conducting expert preventive measures, employees of forensic institutions of Ukraine should pay maximum attention to

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popularizing preventive activities among representatives of law enforcement and law enforcement agencies.

The author's definition of expert prevention is given: this is the activity of a forensic expert based on laws and by-laws, aimed at identifying the circumstances that contributed to the commission of a crime, and developing measures to eliminate them using specific expertise.

Keywords: expert prevention, prevention, forensic examination, forensic institutions, main activity tasks.

Formulation of Research Problem. Improving the effectiveness of counteracting offenses and crimes requires a significant improvement in the organization of this work in all parts of the law enforcement and law enforcement agencies, especially in the system of judicial and expert institutions, in which the issue of expert prevention with the use of specific expertise occupies an important place in multifaceted activities. The experience gained by forensic science institutions in this field urgently requires the establishment of an effective system of preventive activity and the elimination of a number of significant gaps in this activity.

The work on crime prevention belongs to the sphere of interests of different bodies. Preventive activity is an important state-political task. It is carried out by political, ideological, economic and legal measures. Therefore, the development of tools and methods for crime prevention can be relevant to the subject of various jurisprudence, including legal. In turn, measures of a legal nature can be criminal, criminal, administrative and criminalistics.

Criminalistics and forensic science in the field of crime prevention solves the following tasks:

- improvement of scientific and technical means, tactical techniques and methods that contribute to improving the level and quality of crime investigations;
- developing methods and techniques for detecting crimes and circumstances that contribute to their commission;
- separation of the limits of preventive study and impact;
- identifying and investigating the features of typical investigative situations of a preventive nature and identifying appropriate complexes of the most effective preventive means;
- the development of precautionary measures against a crime that has begun or is being prepared;
- development of special preventive measures for protection of various objects from criminal attacks[1].

Analysis of Recent Researches and Publications. Problems of crime prevention have been subjected to scientific analysis in the theory of criminology, criminology and other related branches of law. The works of Soviet scientists,

[1] Профилактика правонарушений: учеб.-метод. пособ. Казань: Казан. ун-т, 1989. С. 128–137.

modern domestic scientists and specialists of foreign schools were devoted to this. Among them: I. A. Aliyev, Y. M. Antonyan, O. M. Bandurka, R. S. Belkin, V. V. Golina, I. M. Danshin, O. M. Dzhuzha, A. F. Zelinsky , V. Yu. Kvashis, V. P. Kolmakov, G. M. Minkovsky, O. G. Mikhailyants, P. P. Mikhailenko, V. V. Sabadash, I. Ya. Friedman, F. P. Fursova, O. W. Shesler, G. A. Han [1] and others. The results of the works of these scientists have undoubted theoretical and practical significance. However, despite the significant contribution of their work to the knowledge and study of the nature and content of crime prevention, the scientific works of these experts have not exhausted this problem, but, on the contrary, raised a number of new issues that need to be addressed. After all, the regulatory framework governing these activities has changed significantly and the experience of forensic institutions in Ukraine has received new approaches and visions. In addition, in the special literature there is still no clear distinction between crime prevention measures related to the subjects of different branches of legal sciences. Therefore, in the professional literature there are statements about the inclusion in the subject of the theory of criminology or all issues of crime prevention, or the development of special technical means of this activity.

The Article Purpose is to analyze the conceptual principles, views and ideas for understanding the essence of expert crime prevention, defining concepts, tasks and fundamental principles of activity.

Main Content Presentation. An exceptional place in the system of subjects of preventive activity is occupied by forensic institutions of Ukraine, which play the role of guarantor of legal rights and freedoms of persons, strict observance of the rule of law. Characterizing the role of forensic institutions in the process of preventive activities, it should be noted that this process requires further regulation in order to increase efficiency. Analysis of the application of preventive activities of forensic institutions of Ukraine shows close contact with the concepts and principles of legality, observance of human and civil rights and freedoms, professional activity and professional ethics of experts, which seems relevant.

[1] E.g., Алиев И. А. Особенности профилактической деятельности специалистов судебно-экспертных учреждений на современном этапе. *Вопросы судебной єкспертизы.* Вып. 28, 1988. С. 3–24; Антонян Ю. М. Криминология. Избранные лекции. Логос, 2004. С. 448–141; Бандурка А. М. Преступность в Украине: причины и противодействие. Основа, 2003. 368 с.; Белкин Р. С. Криминалистическая энциклопедия. Мегатрон, 2000. 333 с.; Гуріна Д. П. Завдання експертної профілактики. *Актуальні проблеми держави і права*, 2008. Вип. 44. С. 233–236; Даньшин І. М., Голіна В. В., Валуйська М. Ю. Кримінологія: Загальна та Особлива частини. Харків: Право, 2009. С. 288; Колмаков В. П. Некоторые вопросы криминалистической профилактики преступлений. *Советское государство и право.* 1961, № 12. С. 106–109; Фридман И. Я. О круге профилактических задач, решаемых в судебно-экспертных учреждениях. *Криминалистика и судебная экспертиза,* 1991. Вып. 43. С. 50–54; Хань Г. А. Профілактика злочинів: криміналістичний аспект. *Криміналістичний вісник*: наук.-практ. зб., 2006. № 2 (6). 182 с., etc.

As we have already emphasized, one of the main problems that cannot be avoided in the forensic study of the phenomenon of expert prevention is the ambiguity of both scientific understanding and elaboration, and the practical application of the relevant conceptual and categorical apparatus. This thesis is confirmed by research. In particular, A. I. Dolgova [1] notes that the streamlining of the conceptual apparatus and theoretical provisions is an integral part of the development of the concept of combating crime, has not only scientific but also important practical significance.

We believe that this problem is not so much conceptual as terminological in nature, due to the conceptual similarity of the concepts used by specialists, although described by them in different terms.

In the general, theoretical sense, crime prevention is a set of various activities and government measures aimed at improving social relations in order to eliminate negative phenomena and processes that give rise to or contribute to crime, as well as prevent crime at various stages of criminal behavior.

Studying the preventive activities carried out by state law enforcement and law enforcement agencies, V. M. Burlakov and M. M. Kropachev define crime prevention as the activity of state and public bodies and organizations against crime in order to keep it at a socially acceptable level by eliminating and neutralizing the reasons that give rise to [2]. Analyzing these issues, Yu. F. Ivanov and O. M. Dzhuzha point out that crime prevention is a multilevel system of state and public targeted measures to identify, eliminate, neutralize the causes and conditions of crime [3]. A similar opinion is held by O. M. Bandurka and L. M. Davydenko [4], who understand the fight against crime as the activities of state bodies, public organizations, officials and citizens to identify, eliminate, weaken and neutralize the factors that determine crime.

Under crime prevention V. V. Golina understands a set of various activities and measures in the state aimed at improving social relations in order to eliminate negative phenomena and processes that give rise to or contribute to crime, as well as to prevent crime at various stages of criminal behavior [5]. Yu. M. Antonyan, studying the preventive activities of state bodies, believes that this is primarily an impact on its causes, detection of criminals and preventive measures aimed at correcting them [6].

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[1] Криминология/под общ. ред. А. И. Долговой. Москва: НОРМА, 2007. С. 912.

[2] Криминология/под ред. В. Н. Бурлакова, Н. М. Кропачева. Санкт- Петербург, 2002. С. 432.

[3] Іванов Ю. Ф., Джужа О. М. Кримінологія. Харків: ПАЛИВОДА А. В., 2006. С. 264.

[4] Бандурка А. М. Преступность в Украине: причины и противодействие. Харьков: Основа, 2003. С. 368.

[5] Даньшин І. М., Голіна В. В., Валуйська М. Ю. Кримінологія: Загальна та Особлива частини. Харків: Право, 2009. С. 288–253.

[6] Антонян Ю. М. Криминология. Избранные лекции. Харків: Логос, 2004. С.448–441.

In accordance with the definition of crime prevention in the theory of legal sciences, we can say that G. Alexandrov was the first among the representatives of the forensic community to raise the issue of developing methods of crime prevention [1]. He believed that its subject included all methods of crime prevention. Contrary to this view, M. V. Terziev refers to the subject of criminology exclusively special measures to prevent crimes [2]; O. I. Vinberg — the development of preventive measures in the form of protective means that prevent the commission of crimes or complicate their commission [3].

Well-known Ukrainian scientist, forensic expert and criminalist V. P. Kolmakov believes that the subject of forensic prevention can include only scientific, technical and operational tactics and tools based on the data of this science, aimed at identifying, researching and eliminating the causes and conditions conducive to crime, as well as the prevention of impending crimes and the cessation of crimes that have already begun [4].

Common features of all these concepts are an indication of the subjective composition of such activities and its purpose. Accordingly, it is possible to single out, first, such a general feature of preventive activities as the implementation of appropriate measures not only by the state in the face of its bodies and officials, but also by other institutions, as well as individual citizens. At the same time, [5] some scientists are expanding the range of subjects of preventive activities, including all individuals and legal entities. Thus, S. O. Shotkin [6] believes that the range of subjects of preventive activities should be significantly expanded, up to employees of labor collectives.

Among the various subsystems of forensic prevention and the variety of entities that implement certain areas of preventive activities, there is expert prevention, which means a complex system of education, based on the activities of experts based on their special knowledge to identify circumstances that contributed to crime. The detection of such circumstances can be carried out as the main expert task, for the solution of which the examination was appointed, or it can be an accompanying "product" of expert activity which "appear" in solving other expert tasks that did not aim to identify criminogenic factors. It is also permissible to identify criminogenic factors and circumstances that contribute to

[1] Александров Г. Совершенствование методов расследования — в центре внимания советской криминалистики. *Соц. законность,* 1948. № 2. С. 7–8.

[2] Терзиев Н. В. К вопросу о системе науки советской криминалистики. Правоведение, 1950. С. 6–8.

[3] Винберг А. И. Введение в криминалистику. Предмет, метод, система курса и история советской криминалистики. Москва: РИО ВЮА, 1950. С. 77–79.

[4] Колмаков В. П. Некоторые вопросы криминалистической профилактики преступлений. *Советское государство и право.* 1961, № 12. С. 106–109.

[5] Криминология/под общ. ред. А. И. Долговой. Москва: НОРМА, 2007. С. 912.

[6] Гуріна Д. П. Завдання експертної профілактики. А*ктуальні проблеми держави і права.* 2008. Вип. 44. С. 233–236.

the commission of crimes, in the process of generalization of expert practice in a particular forensic institution during its accumulation, or in the case of preparation of relevant reviews, reports, analytical reports. Similar information can also be obtained in the case of generalization of forensic activities in the whole ministry. In all such cases, the detection of criminogenic factors is the basis for the development of preventive recommendations aimed at eliminating or minimizing them. A characteristic feature of these recommendations is their specificity, because they are obtained when the expert uses the special knowledge and skills that make up the content of this particular examination (species of examination).

In this regard, V. P. Kolmakov understands forensic prevention as a set of circumstances that contribute to the commission of crimes that have been identified and investigated in a particular case by an expert using the techniques and methods of forensic science. Having analyzed this definition, we want to note that, in our opinion, expert prevention, first of all, cannot be a set of circumstances. After all, this is exclusively the activity of an expert to identify these circumstances. Secondly, in this definition, in our opinion, the possibilities of the expert are significantly narrowed, because there is an indication of one specific case in which the expert is engaged. As we mentioned earlier, forensic experts have the opportunity, and sometimes have to analyze more than one case, and make generalizations based on special knowledge in a number of examinations that make up the content of this type or type of researches.

Thus, expert prevention is a forensic expert activity based on laws and by-laws, aimed at identifying the circumstances that contributed to the commission of a crime, and developing measures to eliminate them using specific expertise.

Another important feature of expert prevention is the definition of its essence as a certain "system of measures", "activity" or according to I. M. Danshin, V. V. Golina, M. Yu. Valuyskaya and others, "combination of various activities and events in the state"[1].

Expert prevention creates conditions that complicate the commission of crimes, promotes the timely cessation of criminal encroachments, i.e. is a deterrent, and also provides favorable conditions for the emergence of evidence [2].

This raises an important question: what is the content of this category - theoretical developments, regulations or their practical implementation? The answer to this question can be obtained by analyzing such a term as impact on crime because in fact it is the content of any expert crime prevention. At the present stage of state formation, any practical preventive activity, especially the preventive work of forensic experts or forensic experts, cannot be considered separately from its scientific-theoretical and regulatory support, elaboration of the basic principles of activity. The unity of the scientific and legal basis of expert prevention with its practical implementation is noted

[1] Даньшин І. М., Голіна В. В., Валуйська М. Ю. С. 288–256.

[2] Хань Г. А. Профілактика злочинів (криміналістичний аспект). *Криміналістичний вісник:* наук.-практ. зб. Київ: КНУВС, 2006. № 2(6). С. 182–169.

by many experts [1]. Summarizing the views of scientists, we can say that the essence of expert prevention is the influence of relevant actors on crime through the use of special professional knowledge. That is, the subject of forensic examination of each genus and species should include a study of the circumstances on the basis of which can and should be developed scientific, organizational and technical measures of a preventive nature [2].

In the framework of our article it is necessary to study the issue of prognostic functions of expert prevention, because in order to effectively combat crimes, it is necessary to study them in forensic terms, taking into account the methods of predicting new types of crimes[3].

The main tasks of forensic prevention are:

1. Development of methods for identifying the causes and conditions of crimes and minimizing their negative impact, taking into account their features.
2. Identification and investigation of the features of typical results of expert research, providing on their basis recommendations on crime prevention.
3. Identify a set of preventive measures to protect various objects from criminal assault, most effective in each of the selected situations.
4. Development of measures for prevention of certain specific types of crimes.

It is the set of these tasks that can be solved by specific expert methods and means that determines the subject matter of the crime prevention expert activity.

Among the preventive tasks that can be solved by forensic experts, an important place should be occupied by developments aimed at forecasting in the criminological and forensic aspects of the circumstances that contribute to the commission of crimes, taking into account the capabilities of certain types of expert research, and means and methods of their correction[4]. Forensic forecasting of possible offenses, which should be a continuation of criminological forecasts, has its own specifics in the activities of expert units. The basis for forecasting is the data of expert practice, information about new tools, the results of experiments, which provide an opportunity to identify legitimate links between the established circumstances and possible criminal encroachment. These data suggest that if the circumstances remain unchanged, then in the future there may be crimes using a similar or other method of committing them. Implementation and introduction into other areas of human activity of new devices, means of accounting, methods of obtaining copies, places of storage of material valuesforces criminals who

[1] Кудрявцев В. Н., Эминов В. Е. Криминология. Москва: Юрист, 1997. С. 512.

[2] Гуріна Д. П. Op. cit.. С.235.

[3] Журавель В. А. Криміналістична профілактика економічних злочинів. Харків: Харків юридичний, 2006. С. 168–169.

[4] Фридман И. Я. О круге профилактических задач, решаемых в судебно-экспертных учреждениях. Криминалистика и судебная экспертиза, 1991. Вып. 43. С. 50–54.

use shortcomings, imperfection of technological processes, methods of work, separate organizational measures and means of accounting to adapt to them [1].

To solve preventive tasks, it is sometimes necessary to conduct identification research, for example, to establish the fact of execution of signatures on behalf of different recipients of money by one person. In most cases, research based on forensic diagnostics is needed. The general preventive task can be divided into a number of tasks, in the process of which it is necessary to identify the features of the object under study, indicating its lack of protection from criminal encroachment, find and recommend ways to improve the protection of similar objects, if possible, check them and select the most rational[2].

In order to increase the effectiveness of expert prevention and address urgent issues of forensic institutions, it is necessary to take measures aimed at achieving the promotion of special, professional knowledge. These measures are quite diverse. They can be conducted both jointly with law enforcement agencies and independently. Among the main forms of preventive activities of a forensic expert are the following: popularization of special knowledge among detectives of the National Anti-Corruption Bureau, investigators of the Ministry of Internal Affairs, prosecutor's office, military prosecutor's office, Security Service of Ukraine, customs authorities, state executive service to assist them in combating crime, in particular, in identifying criminogenic factors using special knowledge. For example, in order to deepen the applied orientation of the educational process of investigators of the relevant units of the Security Service of Ukraine on February 19, 2019 on the basis of KhRIFE held a lecture-discussion on the topic: Problems of appointment and conducting of forensic examinations in criminal proceedings. The best specialists are involved as lecturers, namely: scientists and forensic experts of KhRIFE.

On April 12, 2019, representatives of the KhRIFE took part in the workshop: Peculiarities of consideration of cases related to crimes related to violation of traffic rules. The event was held in accordance with the program of periodic training of judges of district general courts. The workshop was conducted by the Kharkiv Regional Branch of the National School of Judges of Ukraine together with the Kharkiv Court of Appeal. The purpose of the seminar was to raise the level of qualification of representatives of the judiciary, law enforcement agencies, state forensic institutions on the specifics of consideration of cases related to crimes related to violations of traffic rules. The event was held in the form of interactive lectures using presentation material and mini-lectures.

[1] Фридман И. Я. Судебная экспертиза и вопросы предупреждения преступлений: автореф. дис. ...д-ра юрид. наук,1974. С. 26.

[2] Фридман И. Я. О круге профилактических задач, решаемых в судебно-экспертных учреждениях. С. 52.

A great deal of work has been done to prevent crime and offenses, and the results achieved are not yet a limit to the use of specialized knowledge for expert prevention.

Conclusions. Summarizing the results of this article, we believe that:

1. Expert prevention is the activity of a forensic expert based on laws and by-laws, aimed at identifying the circumstances that contributed to the commission of a crime, and developing measures to eliminate them using specific expertise.
2. Preventive activities of forensic institutions of Ukraine should be carried out:
   - while carrying out forensic examination in specific criminal, administrative or civil cases;
   - by generalizing expert and forensic practice;
   - in the process of scientific research on problems of expert prevention;
   - by providing, on the basis of specialized knowledge, scientific and practical assistance to state bodies and public organizations in identifying circumstances contributing to the commission of crimes, etc.
3. In order to improve the quality of expert and preventive measures, the staff of judicial and expert institutions of Ukraine should pay the utmost attention to the promotion of preventive activities among representatives of law enforcement and law enforcement agencies.

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Kudryavtsev, V. N., Éminov, V. E. *Kriminologiia* (1997). Yurist [in Russian].
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ТЕОРЕТИЧНІ ОСНОВИ ЕКСПЕРТНОЇ ПРОФІЛАКТИКИ: ПОНЯТТЯ ТА ЗАВДАННЯ

В статті зроблено аналіз концептуальних засад, поглядів та ідей щодо розуміння сутності експертної профілактики, досліджено співвідношення дотичних між собою понять «профілактика» та «запобігання», адже однією з головних проблем, яку не можна оминути в рамках криміналістичного дослідження феномену експертної профілактики, є неоднозначність як наукового розуміння й опрацювання, так і практичного застосування відповідного понятійно-категоріального апарату. Сутність експертної профілактики полягає у впливі відповідних суб'єктів на злочинність за допомогою використання спеціальних фахових знань.

Ключові слова: експертна профілактика, превенція, судова експертиза, судово-експертні установи, основні завдання діяльності.

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ТЕОРЕТИЧЕСКИЕ ОСНОВЫ ЭКСПЕРТНОЙ ПРОФИЛАКТИКИ: ПОНЯТИЕ И ЗАДАЧИ

В статье выполнен анализ концептуальных основ, взглядов и идей о сущности экспертной профилактики. Исследовано соотношение соприкасающихся между собой понятий «профилактика» и «предотвращение», ведь одной из главных проблем криминалистического исследования феномена экспертной профилактики, является неоднозначность как научного понимания, так и практического применения соответствующего понятийно-категориального аппарата. Подчеркнуто, что сущность экспертной профилактики заключается в воздействии соответствующих субъектов на преступность с помощью использования специальных профессиональных знаний. То есть, к предмету судебной экспертизы, следует относить исследования обстоятельств, на основе которых могут и должны быть разработаны научные, организационно-технические мероприятия профилактического характера. Доказано, что среди задач профилактического

характера, которые могут быть решены сотрудниками судебно-экспертных учреждений, важное место должны занимать разработки, направленные на прогнозирование в криминалистическом аспектах обстоятельств, способствующих совершению преступлений, с учетом возможностей отдельных видов экспертных исследований.

Доказано, что профилактическая деятельность судебно-экспертных учреждений Украины должна осуществляться: при производстве экспертиз по конкретным уголовным, административным или гражданским делам; путем обобщения экспертной, а так же судебно-следственной практики; в процессе научных исследований по проблемам экспертной профилактики; путем оказания на основе специальных знаний научно-практической помощи государственным органам и общественным организациям в выявлении обстоятельств, способствующих совершению преступлений.

С целью повышения качества проведения экспертно-профилактических мероприятий сотрудники судебно-экспертных учреждений Украины должны уделять максимум внимания популяризации превентивной деятельности среди представителей правоохранительных и правоприменительных органов.

Дано авторское определение экспертной профилактики: это основанная на законах и подзаконных нормативно-правовых актах деятельность судебного эксперта, направленная на выявление обстоятельств, способствовавших совершению преступления, и разработка мероприятий по их устранению с использованием специальных знаний.

Ключевые слова: экспертная профилактика, превенция, судебная экспертиза, судебно-экспертные учреждения, основные задачи деятельности.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.12
UDC 006

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ON THE ISSUE OF CONDUCTING INTERLABORATORY COMPARISONS DURING FORENSIC EXPERT ACTIVITIES

The foundation for increasing the effectiveness of forensic examinations is the creation of scientifically based expert methods, improving the system of training experts and improving their qualifications, as well as effective management. In this regard, it is important to form a well-functioning system that allows maintaining research competence at the proper level. Due to the continuous improvement of the regulatory framework, the demand for laboratories providing testing services is growing. The relevance of the topic lies in the transition of laboratories to the new version of the ISO/ IEC 17025-2017 standard: General requirements for the competence of testing and calibration laboratories.

The article discusses the procedure for the implementation by the accreditation body of experimental verification of the technical competence of the laboratory in the form of interlaboratory comparative tests.

The purpose of the article is to develop approaches to organizing and conducting interlaboratory comparisons in forensic science.

On the basis of the research carried out, the basic principles for conducting interlaboratory comparisons during forensic expert activities have been developed.

Keywords: accreditation, standardization, competence, analysis, of interlaboratory comparisons, provider.

Formulation of Research Problem. The globalization of the world market has necessitated the solution of the problem of mutual recognition of the results of conformity assessment of products and services. Ukraine's accession to the World Trade Organization, signing the Association Agreement with the EU requires a number of requirements, including bringing the national system of technical regulation in line with the

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European one. This also applies to forensic activities. The Law of Ukraine: On Judicial Examination [1] sets the task to provide the justice of Ukraine with an independent, qualified and objective examination focused on the maximum use of the achievements of science and technology. The principle of competition of experts in modern litigation brings this problem to the forefront, as it requires special treatment to determine their competence, confirmation of its compliance with a particular expert specialty, the reliability of the methods used, and hence the reliability and objectivity of the results.

In international practice, in order to increase the reliability of the results of forensic examinations and reduce judicial errors, the accreditation of forensic laboratories in accordance with the international standard: ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories is actively carried out [2]. According to the recommendations of the Board of Directors of the European Forensic Network (ENFSI), all EU forensic laboratories are required to follow the above standard.

Forensic science involves conducting researches based on specific expertise in the field of science, technology, art, craft, etc. of objects, phenomena and processes in order to provide an opinion on issues that are or will be the subject of litigation[3]. In forensic research, it is often necessary to determine the characteristics of material objects in order to provide an opinion. Therefore, such studies can be considered as tests. According to DSTU ISO/IEC 17000[4], the test is to determine one or more characteristics of the conformity assessment object according to the procedure. Therefore, according to the recognition of research conducted by the laboratories of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations (KhRIFE), corresponding to the concept of testing; it was decided by the leadership of KhRIFE to pass the accreditation procedure as a conformity assessment body, namely a testing laboratory, in the National Accreditation Agency of Ukraine. The purpose of this decision is to ensure confidence in

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[2] ДСТУ ISO/IEC 17000: 2007. Оцінювання відповідності. Словник термінів і загальні принципи (ISO/IEC 17000: 2004, IDT). URL: http://online.budstandart.com/ru/catalog/doc-page?id_doc=56166 (Date accessed: 12.06.2019).

[3] ISO/IEC 17025: 2017 General requirements for the competence of testing and calibration laboratories (Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій). URL: https: //www.iso.org/standard/66912.html (Date accessed: 12.06.2019)

[4] ДСТУ ISO/IEC 17025: 2017. Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій. URL: https: //naau.org.ua/wp-content/uploads/2018/09/ISO-IEC17025_revision_2.pdf (Date accessed: 12.06.2019).

the results of forensic research conducted at the institute. According to the results of the inspection by the National Accreditation Agency of Ukraine, KhRIFE received a certificate of accreditation dated January 23, 2018 for № 2H1633. This certificate confirms the competence of KhRIFE in the following areas of activity:

- research on of narcotic drugs of psychotropic substances, their analogues and precursors;
- investigation of firearms and ammunition, explosive devices and explosive traces;
- exploration of tools, aggregates, tools and their traces;
- research on footwear and its footprints;
- research on cold arms and products similar to them;
- research on technical condition of vehicles;
- fingerprinting researches;
- questioned document examination (QDE);
- research on information on digital media, video, sound recording.

Thus, at present KhRIFE meets the international requirements for testing laboratories. At the international level, the requirements for testing laboratories are defined in the standard ISO/IEC 17025 [1] implemented in Ukraine as a national standard [2]. KhRIFE was accredited according to the previous standard version (2005) [3], so the urgent task of transition to the new version. And this involves analyzing the requirements of the standard [4] and identifying current issues to ensure compliance with these requirements.

Analysis of Recent Researches and Publications. A number of scientists have considered the problem of organizing and evaluating interlaboratory comparisons, among which are such as O. Gorin, S. Trubin, V. Nefedovand others [5]. In their research papers largely studied the general

[1] ISO/IEC 17025: 2017 General requirements for the competence of testing and calibration laboratories (Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій). URL: https://www.iso.org/standard/66912.html (Date accessed: 12.06.2019).

[2] ISO/IEC 17025: 2017 General requirements for the competence of testing and calibration laboratories (Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій). URL: https://www.iso.org/standard/66912.html (Date accessed: 12.06.2019).

[3] ДСТУ ISO/IEC 17025: 2017. Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій. URL: https://naau.org.ua/wp-content/uploads/2018/09/ISO-IEC17025_revision_2.pdf (Date accessed: 12.06.2019).

[4] ISO/IEC 17025: 2017 General requirements for the competence of testing and calibration laboratories (Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій). URL: https://www.iso.org/standard/66912.html (Date accessed: 12.06.2019).

[5] Горін О., Трубіна С. Порівняльний аналіз вимог ДСТУ ISO/IEC 17025:

principles of interlaboratory comparisons, but not considered in plane of forensic activity.

The Article Purpose is to develop approaches to the organization and conduct of interlaboratory comparisons in forensic science.

Main Content Presentation. ISO/IEC 17025[1] contains requirements for testing laboratories that can demonstrate that they work competently and are able to obtain reliable results. Obtaining reliable results during any activity is a basic requirement at both international and domestic levels. Ensuring the reliability of the results is based on constant monitoring of the results obtained by the laboratory. Such monitoring should be planned and continuously analyzed in order to review the measures taken and may include:

- use of standard samples or materials for quality control;
- use of alternative equipment, which must be calibrated to ensure traceability of results;
- verification (s) of functioning of measuring and testing equipment;
- intermediate checks of measuring equipment;
- duplication of the test using the same or different methods;
- retesting of stored samples;
- correlation of results of different sample characteristics;
- analysis of the results obtained;
- in-laboratory comparisons;
- blind test (tests).

Monitoring data should be analyzed, used to control and improve laboratory performance. However, this monitoring is carried out by the laboratory itself. It is also important to prove at the international or national level the laboratory's ability to provide reliable results. To do this, the laboratory monitors its results in comparison with the results of other laboratories. Such monitoring should be planned and reviewed. It can include:

- participation in the testing of qualifications of laboratory staff;

2006 і ДСТУ 3412–96 до компетентності випробувальних лабораторій у рамках проведення акредитації. Стандартизація. Сертифікація. Якість, 2011 № 4. С. 31–33. URL: http://nbuv.gov.ua/UJRN/ssia_2011_4_10 (дата звернення 12.06.2019 р.); Метрология, стандартизация и сертификация: учебник/Нефедов В.И. и др. Москва: Форум, 2012. 336 с. URL: https://zavtrasessia.com/ index.pl?act=PRODUCT&id=2779 (Date accessed: 12.06.2019).

[1] ISO/IEC 17025: 2017 General requirements for the competence of testing and calibration laboratories (Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій). URL: https: //www.iso.org/standard/66912.html (Date accessed:12.06.2019).

- participation in interlaboratory comparisons other than proficiency checks.

Participation in the qualification tests of laboratory specialists is carried out in order to assess the performance characteristics of the participant according to pre-established criteria using interlaboratory comparisons. Such inspections are carried out by providers who are accredited by National Accreditation Agency of Ukraine (NAAU) according to DSTU ISO/IEC 17043 [1]. At present, such providers are not present in forensic activities. However, proficiency tests are based on interlaboratory comparisons. Therefore, at this time it is important to consider the possibility and basis of interlaboratory comparisons among organizations engaged in forensic activities.

Interlaboratory comparisons are actively conducted at the international level and are widely used to solve a number of problems, and therefore are increasingly used. We are convinced that the typical tasks of interlaboratory comparisons are:

1) assessing the performance of laboratories for conducting specific tests or performing measurements and constantly monitoring them;
2) identification of problems in laboratories related to, for example, the use of improper measurement or testing procedures, inadequate training and personnel management or improper calibration of equipment, and their elimination;
3) establishing the efficiency and comparability of test or measurement methods;
4) ensuring additional confidence in the laboratory customers;
5) identification of differences between laboratories;
6) training of laboratories based on results of reconciliations;
7) confirmation of the declared uncertainty;
8) evaluation of the characteristics of the method (often described as joint tests);
9) assigning values to standard samples and assessing their suitability for use in certain measurement or testing procedures;
10) support for establishing equivalence of measurements performed by national metrology institutes through key and supplementary reports conducted on behalf of the International Bureau of Weights and Measures (BIPM) and by cooperating regional metrology organizations.

[1] ДСТУ ENISO\IEC17043: 2017. Оцінка відповідності. Загальні вимоги до перевірки професійного рівня (ENISO/IEC 17043: 2010; ISO/IEC 17043: 2010, IDT). URL: http://online.budstandart.com/ua/catalog/doc-page.html?id_doc=72072 (Date accessed: 12.06.2019).

With regard to forensic activities, it is relevant to conduct interlaboratory comparisons by the following criteria from the above points:

- under item 1) monitoring the results of activity of forensic laboratories of different organizations in order to ensure control over their activity;
- under item 2) due to the fact that the research is carried out solely by standardized methods (methods entered in the Register of Methods of Forensic Expertise of the Ministry of Justice of Ukraine) to eliminate problems related to insufficient effectiveness of training and personnel management or incorrect the use of equipment;
- under item 4) ensuring additional confidence in the clients of the forensic examination on the basis of positive results of inter-laboratory comparisons with the issuance of the relevant certificate of participation and positive results;
- under item 5) and 6) to ensure the reliability of the results of the forensic expert examinations and on the basis of the positive results of the submission of proposals for upgrading the status of the forensic expert.

In turn, interlaboratory trials in forensic activities should be conducted in the form of studies that include:

- tests, which are any technical operation intended to determine or control one or more characteristics or parameters of an object of examination by the established method;
- measurements, which are a technical operation intended to display the physical quantity being measured, their values by experiment and computations by established methods.

Interlaboratory comparisons involve the organization of experimental studies to determine the characteristics or parameters or measurements of a physical quantity relating to one or more identical objects in two or more laboratories and to evaluate the quality of test or measurement results in accordance with the established program.

Thus, for conducting interlaboratory comparisons in forensic expert activities, it is necessary to have a program for conducting experimental research of specific samples or objects. The authors argue that such a program should include:

- purpose of conducting interlaboratory comparisons according to the above-mentioned positions;
- description of the objects or samples provided for the research and their number;
- scheme of interlaboratory comparisons with the determination of how the object for transfer will be transferred: radially or in a circle between the participants of these comparisons;

- task for conducting, namely, what parameters in the object or sample of the study should be determined;
- measurement values or characteristics of the study objects, a detailed description of what needs to be determined, measured during the experimental studies;
- description of the range of values or characteristics, or both and those expected in the samples provided for the study. Performance and metrological traceability of measurement results;
- detailed description of carrying out of experimental researches: terms of conduction, number of independent observations during measurements, characteristics of accuracy of providing of results of measurements, procedure of processing of received results, etc.;
- potential major sources of error that may arise from experimental studies of a sample or object;
- requirements for the handling of samples or objects provided, storage and distribution of samples for multiple measurements;
- necessary precautions to prevent the collusion between participants or falsification of results;
- description of information to be provided by the participants and a schedule of work;
- any information about the methods and procedures that are required by participants to prepare samples or objects for research;
- forms of reports (protocols) on the work performed;
- if necessary, detailed description of the statistical analysis method to be applied;
- requirements for confidentiality of results obtained by participants and conclusions based on research results;
- actions to be taken in case of destruction or damage of samples or objects provided for research;
- term of providing research results to the organizer of interlaboratory comparisons.

As mentioned above, a coordinator should be identified for interlaboratory comparisons, who should perform the following functions:

- planning and organization of conducting interlaboratory comparisons among organizations conducting forensic examination;
- forming an expert group and appointing its head;
- approval of the program of inter-laboratory comparisons;
- informing the organization of forensic expertise on conducting inter-laboratory comparisons;
- drawing up, on the basis of the received applications, the list of laboratories that will participate in interlaboratory comparisons;

- defining the technical requirements for the samples or objects and resolving the issue of using the available samples, or purchasing the necessary samples (objects), or developing them (manufacturing);
- determination of the methodology to be applied during laboratory comparisons;
- approval of the scheme of conducting interlaboratory comparisons;
- determining the cost of interlaboratory comparisons in general and for one laboratory;
- conclusion of agreements for participation in interlaboratory comparisons;
- determining the pay queue for experts;
- providing samples or objects for research to laboratories participating in interlaboratory tests;

While organizing and preparing interlaboratory comparisons, it is necessary to take into account the characteristics of samples and objects in order to determine the criteria for the correctness of the research results.

Accuracy measurements should be established in the case of research measurements, because many of the methods registered in the registry of the Ministry of Justice of Ukraine are not defined. In order to establish the accuracy characteristics, it is necessary to take into account that accuracy is the closeness between the measured value of the value and the true value of the measured value. The notion of measurement accuracy is not a quantity and is therefore not given as a numerical value. Measurement is more accurate when it has less measurement error.

In some cases, a more accurate measurement or sufficient measurement result with less accuracy may be required. That is, accuracy is a qualitative indicator that can be expressed in quantitative terms by other quantitative indicators.

In the case of non-measurement studies, the concept of accuracy is also used. In this case, the accuracy is characterized by the precision property or the established tolerance for the test result. An accurate feature of such studies may be the tolerance to the value of the relevant parameter of the sample or study object, which ensures the accuracy of the result.

As a result of the conducted research it was established that the accuracy is quantitatively characterized by the following indicators:

- measurement error – normalized maximum permissible error; attributed error at confidence probability 0, 95;
- uncertainty of measurements – target (set maximum permissible value); laboratory definitive (own) measurement uncertainty;
- correctness is systematic error, bias from the reference value;
- precision is a random error, repeatability and reproducibility.

For practical use in forensic activities, it is advisable to use such characteristics of the results of interlaboratory comparisons, such as the margin of tolerance of the results of two measurements carried out in parallel or in rapid succession, in terms of repetition and reproducibility, as stipulated in the applicable standards[1]. To determine these characteristics, it is necessary to carry out experimental studies, namely, independent observations. On the basis of the obtained values, determine the experimental mean-square deviation of the mean by the formula:

$$\sigma = \sqrt{\frac{\sum_{i=1}^{n}(x_i - x_{cp})^2}{n(n-1)}}, \quad (1)$$

where x_i are the results of independent observations; x_{cp} is arithmetic mean of independent observations.

It should be noted that according to the results of experimental studies and a definite experimental mean square deviation one can determine:

- standard uncertainty of measurements by type A by the formula (1);
- random component of measurement error according to the formula (1);
- limit of the permissible deviation of the results of two measurements carried out in parallel or carried out quickly in a consistent manner, in the conditions of repetition by the formula:

  $r = 2{,}77\ \sigma$, (2)

Where σ is the experimental mean square deviation of the mean value determined by the formula (1).

The coefficient 2.8 can be used instead of the coefficient 2.77. The notion for measurements taken in rapid succession under repeatability conditions is interpreted as the time during which the measured value will not change compared to its state during the first measurement.

It should be noted that in the program of interlaboratory comparisons, it is important to establish requirements for samples and objects provided for research. How swatches and objects can be used:

- standard samples of the composition and properties of substances and materials;
- identified samples and research objects whose parameters must be determined;
- materials or substances with established level of controlled indicator (indicators).

1 ДСТУ ГОСТ ИСО 5725–6. Точність (правильність та претензійність) методів та результатів вимірювань. Частина 6. Використання значень точності на практиці. URL: http://online.budstandart.com/ru/catalog/doc-page?id_doc=72104 (Date accessed: 12.06.2019).

When designing an interlaboratory comparison program that provides for measurements, it is advisable to use as a precision assessment the precision of measurements according to DSTU GOST ISO 5725-2 [1].

According to the program used in the main method, samples (samples) from the batches of materials representing different levels of the measured characteristic are sent to the laboratory, each of which, in terms of repeatability, at each of the levels receives the required number of parallel definitions. An experiment of this type is called a balanced experiment with homogeneous the level.

We emphasize that the measurements must be organized in compliance with the following requirements:

- any pre-inspection of the equipment must comply with the requirements of the standardized measurement procedure;
- each measurement group relating to the same level shall be carried out under the conditions of repeatability, that is, within a short time interval and by the same operator and without any intermediate adjustment of the apparatus, unless this is not capacitive part of measurement performance;
- it is necessary that the group of measurements under repeatability conditions be performed independently as if they were measurements on different materials. However, as a rule, the operator knows that he is examining identical material, and therefore the instructions should emphasize that the main purpose of the experiment is to determine the differences (differences) in the results that may occur in real tests. If there is reason to fear that, despite this caveat, previous results may affect subsequent measurement results and, consequently, the variance of repeatability, it should be decided whether to include in the number at each level several samples (samples) from other levels, so that the operator does not know which of them are repetitions for this level (modifying the main method by such mixing). Such a technique, however, could create difficulties in providing repeatability conditions between measurements, because in this case it is necessary that all groups of measurements were carried out within a short period of time;
- measurements at all levels must be carried out by the same operator and, at the same time, measurements at that level must be carried out using the same equipment;

[1] ДСТУ ГОСТ ИСО 5725–2. Точність (правильність та претензійність) методів та результатів вимірювань. Частина 2. Основний метод визначення повторюваності та відтворюваності стандартного метода вимірювань. URL: http://online.budstandart.com/ru/catalog/doc-page?id_doc=72104 (Date accessed: 12.06.2019).

- the time interval of the measurements must be specified, that is, the time between the date of receipt of the samples (samples) and the date of completion of all measurements;
- all samples (samples) must be clearly marked with the name of the sample, time and date of measurement.

Laboratories participating in interlaboratory comparisons carry out tests and measurements using the obtained control samples in accordance with the requirements of the Program of interlaboratory comparisons and the normative document for the method of tests or measurements and the results are sent to the coordinator in the form of test reports (measurements).

After receiving the results of tests (measurements) from the laboratory-participant of interlaboratory comparisons, the coordinator processes them in accordance with the approved program of these studies. Based on the processing of the results of interlaboratory comparisons, the coordinator prepares a report (conclusion) for each laboratory participating in the experiment, which reflects the conclusions on the results of the participation of the testing laboratory in these researches.

While researches that do not measure or are not the primary means of obtaining the result, determining the criteria for the reliability of the results is an important task.

Conclusions. On the basis of the conducted researches the basic principles of carrying out interlaboratory comparisons during judicial expert activity are developed. The necessity of interlaboratory comparisons, which is determined by the application of the European approach in Ukraine in order to ensure confidence in the reliability of the results of examinations, is proved.

At present, there are no NAAU accredited organizations in accordance with DSTU ISO/IEC 17043 with provider organizations that can act as coordinator for interlaboratory comparisons in the field of forensic activities, and there is an urgent need for such organizations to be established for coordination, control and legitimacy of inter-laboratory comparisons in the field of forensic expert activities in Ukraine.

Organizing such comparisons requires the development of organizational arrangements, such as those related to the manufacture and transportation of samples (research objects), including dangerous ones, such as samples of drugs, weapons, ammunition, explosive devices, etc.

Undoubtedly, the issues covered in this article need further elaboration as they are promising for forensic activities, namely to confirm (ensure) the high competence of forensic experts.

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DSTU GOST ISO 5725-2 Tochnist (pravylnisn ta pretenziinist) metodiv ta rezultativ vymiriuvan. Chastyna 2. Osnovnyi metod vyznachennia povtoriuvanosti ta vidtvorjuvanosti standartnogo metoda vymiriuvan. URL: http://online.budstandart.com/ua/catalog/doc-page?id_doc=72104 (data zvernennia: 12.06.2019) [in Ukrainian].

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ЩОДО ПИТАННЯ ПРОВЕДЕННЯ МІЖЛАБОРАТОРНИХ ПОРІВНЯНЬ ПІД ЧАС СУДОВО-ЕКСПЕРТНОЇ ДІЯЛЬНОСТІ

Фундаментом підвищення результативності судових експертиз є створення науково обґрунтованих експертних методик, вдосконалення системи підготовки експертів і підвищення їх кваліфікації, а також

ефективне управління. У цьому плані важливе формування налагодженої системи, що дозволяє підтримувати на належному рівні дослідницьку компетентність. У зв'язку з безперервним вдосконаленням нормативно-правової бази зростає вимога до лабораторій, які надають послуги у сфері проведення випробувань.

Метою статті є розробка підходів до організації і проведення міжлабораторних порівнянь у судово-експертній діяльності.

Ключові слова: акредитація, стандартизація, компетенція, аналіз, міжлабораторні порівняння, провайдер.

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К ВОПРОСУ ПРОВЕДЕНИЯ МЕЖЛАБОРАТОРНЫХ СРАВНЕНИЙ В СУДЕБНО-ЭКСПЕРТНОЙ ДЕЯТЕЛЬНОСТИ

Фундаментом повышения результативности судебных экспертиз является создание научно обоснованных экспертных методик, совершенствование системы подготовки экспертов и повышения их квалификации, а также эффективное управление. В этом плане важно формирование отлаженной системы, позволяющей поддерживать на должном уровне исследовательскую компетентность. В связи с непрерывным совершенствованием нормативно-правовой базы растет требование к лабораториям, предоставляющим услуги в области проведения испытаний. Актуальность темы заключается в переходе лабораторий на новую версию стандарта ISO/IEC 17025–2017 «Общие требования к компетентности испытательных и калибровочных лабораторий».

В статье рассмотрен порядок реализации органом по аккредитации экспериментальной проверки технической компетентности лаборатории в форме межлабораторных сравнительных испытаний.

Целью статьи является разработка подходов к организации и проведению межлабораторных сравнений в судебно-экспертной деятельности.

На основании проведенных исследований разработаны основные принципы проведения межлабораторных сравнений во время судебной экспертной деятельности.

Ключевые слова: аккредитация, стандартизация, компетенция, анализ, межлабораторные сравнения, провайдер.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.13
UDC 343.98:05

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PLACE OF ADMINISTRATIVE AND LEGAL NORMS IN THE LEGAL REGULATION OF HUMAN RESOURCES OF FORENSIC SCIENCE INSTITUTIONS OF UKRAINE

The correct selection and placement of personnel directly affect the effectiveness of forensic expert activities and are impossible without taking into account all the factors related to their staffing, in particular, the administrative and legal framework of staffing. The key role in the forensic examination process is played by state specialized institutions and expert services, which, by law, are necessary for the conduct of forensic medical examination. Legal regulation of the staffing of judicial and expert institutions is carried out in accordance with the norms of international and European law, the Constitution of Ukraine, the codes of Ukraine, laws and by-laws. Analyzed the administrative and legal basis for the training of qualified personnel for the implementation of forensic expertise. It is noted that the Law of Ukraine «On forensic examination» regulates the training of specialists for state specialized institutions conducting forensic examinations, which is carried out by higher educational institutions. Specialization and advanced training are carried out at courses and in special institutions of the relevant ministries and other central executive bodies. The features of the training of forensic experts in the systems of the Ministry of Health of Ukraine, the Ministry of Internal Affairs of Ukraine and the Ministry of Justice of Ukraine are considered. The place of administrative and legal norms in the legal regulation of the staffing of these institutions is characterized. It was stated that the above-analyzed normative legal acts, which comprehensively regulate the staffing of forensic institutions of Ukraine should be distributed according to the scope of action (general, special).

Keywords: forensic science institutions, staffing, administrative and legal norms, regulation, activities.

Formulation of Research Problem. The development and improvement of forensic science is impossible without the legislative work that is currently being carried out intensively in Ukraine. Changes in the legislation are aimed at forming an effective forensic activity, which largely depends on the human resources of forensic institutions. One of the

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important components of ensuring high-quality staff of forensic institutions is legal regulation, which is not without its shortcomings. This is due to the fact that the correct selection and placement of personnel directly affect the effectiveness of forensic activities. Accordingly, the organization and functioning of forensic institutions in the context of their reform is impossible without taking into account all factors related to their staffing, including the administrative and legal principles of staffing. That is why proper administrative and legal support of forensic activities, in particular in the field of personnel, is the key to the efficiency of justice, democracy of society and the state as a whole. These and other aspects determine the relevance of the study of administrative and legal norms in the legal regulation of staffing of forensic science institutions of Ukraine.

Analysis of Recent Researches and Publications. Some aspects of administrative and legal regulation of staffing of forensic institutions were studied by O. M. Bandurka, L. M. Golovchenko, N. I. Klimenko, A. M. Klochko, O. M. Kliuiev, V. O. Komaha, O. M. Muzychuk, N. M. Tkachenko, I. A Petrova, I. V Pyrih, E. B. Simakova-Yefremian, S. O. Shatrava, M. G. Shcherbakovskyi [1] and others. However, a comprehensive study of the place of administrative and legal norms in the legal regulation of staffing of forensic institutions has not been conducted, so far this issue is covered in fragments. There is also an urgent need to identify areas for improvement of administrative legislation governing the staffing of forensic institutions in Ukraine.

The Article Purpose is to highlight the place of administrative and legal norms in the legal regulation of personnel support of forensic science institutions of Ukraine.

Main Content Presentation. Legal regulation of staffing of forensic institutions is carried out in accordance with the norms of international and European law, the Constitution of Ukraine, codes of Ukraine, laws and bylaws. According to the Constitution of Ukraine, which proclaims the basic principles of activity of all public authorities, the recognition of a person as the highest social value simultaneously imposes certain responsibilities on the state. In particular, according to part 2 of Art. 3 of the Constitution of

[1] E.g., Бандурка О. М. Управління в органах внутрішніх справ України: підручник. Харків: Унів. внутр. справ, 1998. 480 с.; Кагановська Т. Є. Кадрове забезпечення державного управління в Україні: монографія. Харків: ХНУ імені В. Н. Каразіна, 2010. 330 с.; Клочко А. М. Кадрове забезпечення органів внутрішніх справ України: порядок та основні елементи. *Форум права.* 2014. № 4. С. 175–180. URL: http://nbuv.gov.ua/UJRN/FP_index.htm_2014_4_32 (Date accessed: 23.05.2019); Шатрава С. О. Стан та правове регулювання кадрового забезпечення органів Національної поліції на сучасному етапі розвитку. *Підприємництво, господарство і право.* 2018. № 1. С. 83–87, etc.

Ukraine [1] ; the state is responsible to the person for its activities, where the proclamation and protection of human rights and freedoms is the main duty of the state, and Article 92 of the Constitution of Ukraine determines the legality of forensic institutions.

This is emphasized by the fact that all forensic activities have a clearly defined focus through the performance of functions assigned to the state, focused on ensuring human rights and freedoms. In addition, it necessitates the provision of such activities with adequate resources, including human resources. That is why the issue of staffing, in terms of creating an effective and highly efficient state apparatus that is able to perform certain functions of the state in accordance with modern conditions, has always been relevant in legal science including the theory of administrative and labor law, management theory, etc.[2]

The constitution of state activity cannot but affect how, how and with what resources its respective duties and functions are performed. V. B. Averyanov notes that in the newly created civil society with its market mechanisms, standards of democratic and open state power, the place and role of the state are undergoing a general transformation[3]. Regarding the understanding of the essence of the state, emphasis is placed on the fact that it is a relatively independent organization that does not coincide with society. This is a special kind of organization that answers the question: who and why does it serve, what are its goals and objectives? [4]

A key role in the process of conducting forensic examinations is played by state specialized institutions and expert service that are entrusted by law with the implementation of forensic activities. The State Register of Certified Judicial Experts, maintained by the Ministry of Justice of Ukraine, has about 3,500 forensic experts from state and non-state institutions. According to the requirements of the Law of Ukraine: On Judicial Examination, more than 500 specialists of non-governmental organizations were awarded the qualification of forensic experts in various expert specialties, in particular: construction, technical, commodity, economic, etc. by the Central Expert Qualification Commission of the Ministry of Justice of Ukraine. In recent

[1] Конституція України від 28.06.1996 р. № 254к/96-ВР. *Відомості Верховної Ради України.* 1996. № 30. Ст. 141.

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[3] Авер'янов В. Б. Ще раз про зміст і співвідношення понять «державне управління» і «виконавча влада»: полемічні нотатки. *Право України.* 2004. № 5. С. 114.

[4] Черданцев А. Ф. Теория государства и права: учеб. Москва: Юрайт, 2000. С. 84–85.

years, the number and quality of forensic experts of forensic institutions of the Ministry of Justice of Ukraine and research forensic institutions of the Ministry of Internal Affairs of Ukraine has increased.

Regarding the training of qualified personnel for the implementation of forensic activities, it should be noted that higher education institutions train not only qualified specialists, but also conduct a number of modern scientific research in the field of forensic science. Thus, at the National Academy of Internal Affairs of Ukraine, a faculty for training investigators and criminologists for internal affairs bodies has been opened; there is a faculty of advanced training of forensic experts. At the Departments of Criminalistics and Forensic Examinations of Yaroslav Mudryi National Law University, National University named after Taras Shevchenko, Lviv University named after Ivan Franko, National Academy of Internal Affairs of Ukraine, Kharkiv National University of Internal Affairs, Odessa, Dnipropetrovsk, Donetsk universities and other law academies higher education of legal orientation, scientific developments are carried out in the following areas: forensic diagnostics and prognosis; forensic informatics; computer psychophysiological diagnostics of a person; modern information technologies; automation of expert research; forensic odorology; forensic holography; application of microscopy, radioactive isotopes; research in infrared beams; application of lasers in criminology, etc. Along with this, developments are underway to implement modern electromagnetic, radioscopic, holographic and thermal methods to solve a number of criminalistics tasks[1].

However, it should be noted that the organization of scientific and methodological support of forensic activities and organizational and managerial principles of state specialized institutions are entrusted to ministries and other central executive bodies, the management of which includes state specialized institutions carrying out forensic activities [2], as this is how the subordination of the staffing of forensic institutions by Art. 8 of the Law of Ukraine "On forensic examination". That is, the Law stipulates that the Ministry of Justice of Ukraine, the Ministry of Health of Ukraine, the Ministry of Internal Affairs of Ukraine, the Ministry of Defense of Ukraine, the Security Service of Ukraine and the State Border Guard Service of Ukraine provide staffing of forensic institutions.

This Law defines the necessary requirements for concluding an employment contract and outlines the conditions for appointment to the

[1] Головченко Л. М. Правове регулювання судової експертизи: перспективи та розвиток. Право України. 2003. № 12. С. 100–103.

[2] Про судову експертизу: Закон України від 25.02.1994 р. № 4038-XII (as amended and supplemented). *Відомості Верховної Ради України*. 1994. № 28. Ст. 232.

position of a forensic expert. In particular, it is noted that forensic experts of state specialized institutions may be specialists who have the appropriate higher education, educational qualification level not lower than a specialist, have been trained and qualified as a forensic expert in a particular specialty. Pursuant to Articles 10–11 of this Law, a person declared incapable in accordance with the procedure established by law, as well as one who has not removed or expunged a criminal record, or for whom during the last year may not be involved in conducting a forensic examination and performing the duties of a forensic expert. an administrative penalty was imposed for committing a corruption offense or a disciplinary sanction in the form of deprivation of the qualification of forensic expert[1].

In addition, the Law of Ukraine: On Judicial Examination stipulates that the training of specialists for state specialized institutions conducting forensic examinations is carried out by higher education institutions; specialization and advanced training are conducted on courses and in special institutions of the relevant ministries and other central executive bodies. Specialists who are not employees of state specialized institutions and intend to carry out forensic activities are trained in the relevant expert specialty in state specialized institutions of the Ministry of Justice of Ukraine, subject to the restrictions provided by law in Article 21. This article defines two aspects of judicial staffing -expert activities: the first concerns the training of specialists for state specialized forensic institutions, and the second determines the procedure for ensuring the appropriate professional level of specialists who are not employees of state specialized forensic institutions and aim to carry out forensic expert activities.

The first part of the article repeats the disposition of Article 10 on the mandatory presence of a candidate for the position of forensic expert of a state specialized forensic science institutions (hereinafter referred to as SFSI) of higher basic education (at the educational qualification level not lower than a specialist), but with significant addition: and advanced training of a specialist as a forensic expert of the relevant profile and specialty at state departmental courses or in special institutions. In practice, these provisions of the law are implemented by the relevant ministries and agencies, the scope of management of which includes SFSI in different ways [2].

It should be emphasized that the most advanced system, from basic education to further specialization has been introduced by the Ministry of Healthcare of Ukraine for forensic and forensic psychiatric experts.

[1] Ibid.

[2] Гаспарян С. Г. Адміністративно-правові засади кадрового забезпечення судово-експертних установ України: дис. … канд. юрид. наук: 12.00.07. Харків: ХНДІСЕ, 2019. С. 81.

Applicants for the position of professional medical expert in the last year of study in a medical institution of higher education undergo a one-year internship at the departments of forensic medicine, after which they receive a certificate of a specialist in forensic medicine. The specific specialization of a specialist as a forensic expert of general profile or forensic expert, histologist, cytologist, toxicologist or immunologist is determined during practical work in the bureau of forensic examination with subsequent certification of applicants by Expert Qualification Commissions (hereinafter referred to as EQC), which operate at the Main and regional bureaus of forensic examination. However, it should be noted that there are no specialists in the departments of forensic medicine, as well as in the relevant EQC, who would teach or test the knowledge of applicants in the field of procedural law, expertise and criminology, although this requirement is indirectly contained in Article 17 of the Law. EQC specialists in the field of law. Personnel in the field of forensic medicine for the Center of Forensic Examinations of the Ministry of Defense of Ukraine is trained by the Ukrainian Military Medical Academy as a postgraduate education institution.

Another procedure for training professional experts has been introduced in the system of forensic services of the Ministry of Internal Affairs of Ukraine. At some higher education institutions of this ministry, faculties of expert training or specialized research and educational institutes have been established, which, according to an extended program, train forensic specialists and forensic experts. The composition of the state examination commission of these institutions includes members of the EQC of the State Research Forensic Center as a leading institution of the forensic service of the Ministry of Internal Affairs of Ukraine. Such a "joint" commission simultaneously issues a graduate certificate of higher legal education (at specialist level) and a special "admission" (certificate) for the right to conduct a wide range of forensic examinations (handwriting, technical examination of documents, trace evidence, ballistics, etc.). At the same time, there is no separate stage of attestation of a forensic specialist as a forensic expert of a certain specialty, directly provided for in Article 21 of the Law is missing [1].

Forensic research institutions of the Ministry of Justice of Ukraine train personnel in another way. As multidisciplinary SFSIs in the field of criminalistics, forensic, engineering, forensic biological, forensic psychological and some other areas of forensic evidence, they "recruit" the right professionals with higher basic education in the humanities, natural sciences or technical sciences after a long internship (from 3 to 6 months) and accumulation of practical experience conduct certification of a specialist

[1] Ibid. C. 82.

as a forensic expert in a particular specialty, in accordance with the basic education of the applicant, for 16 main types of forensic examinations that include 75 areas of specialization[1].

It should be emphasized that the procedure and conditions of training and internship of specialists who intend to obtain or confirm the qualification of a forensic expert are determined by the Regulation (Order of the Ministry of Justice of 03.03.2015 № 301/5 On approval of the Regulation on expert qualification commissions and certification of forensic experts)[2].

In addition to those conducted exclusively by specialized state institutions (namely, forensic, forensic and forensic psychiatrists), forensic experts who are not employees of these institutions may also be involved in the forensic examination, provided that they have an appropriate higher education. education, educational qualification level not lower than a specialist, have undergone appropriate training in state specialized institutions of the Ministry of Justice of Ukraine, have been certified and received the qualification of a court expert in a certain specialization[3].

To ensure the proper professional level of forensic experts, specialists who are not employees of state specialized institutions and have obtained the qualification of forensic expert in the relevant specialty, except for those with a scientific degree, must undergo an internship in state specialized institutions of the Ministry of Justice of Ukraine. to the specialty and confirm the level of their professional knowledge. Such specialists must first be trained in the relevant expert specialty (subject to the restrictions provided for in Article 7 of the Law) in research institutions of forensic science of the Ministry of Justice of Ukraine, and then - once every three years in the same institutions to undergo internship in the specialization forensic expert and confirm the level of their professional knowledge during the EQC exam, except for specialists who have a scientific degree [4].

According to Art. 21 of the Law of Ukraine: On Judicial Examination, forensic research on the needs for specialization, training, training of forensic

[1] Сегай М. Я., Форіс Ю. Б. Науково-практичний коментар до Закону України «Про судову експертизу». Експертизи у судовій практиці : наук.-практ. посібник/ КНДІСЕ, Акад. адвокатури; за заг. ред. В. Г. Гончаренка. 2-вид., перероб. і доп. Київ: Юрінком Інтер, 2010. С. 381.

[2] Про затвердження Положення про експертно-кваліфікаційні комісії та атестацію судових експертів: наказ Міністерства юстиції України від 03.03.2015 р. № 301/5. URL: http://zakon.rada.gov.ua/laws/show/z0249–15 (Date accessed: 23.06.2019).

[3] Про судову експертизу: Закон України від 25.02.1994 р. № 4038-XII (as amended and supplemented). Відомості Верховної Ради України. 1994. № 28. Ст. 232.

[4] Гаспарян С. Г. Адміністративно-правові засади кадрового забезпечення судово-експертних установ України: дис. … канд. юрид. наук. С. 83.

experts is carried out by ministries and other authorized central executive bodies. In the Ministry of Health of Ukraine and the Ministry of Internal Affairs of Ukraine such functions are assigned to the main institutions headed by forensic services of these ministries (Main Bureau of Forensic Medicine and the State Research Forensic Center, respectively), in the Ministry of Justice of Ukraine to the Office of Expert Support of Justice receiving and implements personnel applications of forensic research institutions [1].

Such attention to the training of forensic experts is directly related to the need to ensure the proper staffing of qualified professionals of the forensic experts of the Ministry of Justice and requires the establishment of special requirements for persons who may hold positions of forensic experts and heads of different levels in the research institutions of forensic examinations. (hereinafter – NDUSE) of the Ministry of Justice of Ukraine.

Another legal act governing the provision of judicial and expert institutions is the Labor Code of Ukraine. According to this:

- recruitment of specialists to forensic science institutions is carried out;
- procedure for concluding and terminating an employment contract with them is implemented;
- limits of working hours and rest of employees are regulated;
- minimum wage is guaranteed.

Thus, in accordance with Part 4 of Art. 95 of the Labor Code of Ukraine, the minimum wage is a state social guarantee, mandatory throughout Ukraine for enterprises, institutions, organizations of all forms of ownership and management and individuals who use the labor of employees, under any system of remuneration[2].

SFSI employees enjoy guarantees and compensation, in particular, they are entitled to reimbursement of expenses and other compensation in connection with business trips. Employees of SFSI, who are sent on a business trip, are paid: per diem for the duration of the business trip, the cost of travel to the destination and back, the cost of renting accommodation in the manner and amount established by Art. 122 of this Code. Thus, the Labor Code of Ukraine establishes the general procedure for staffing SFSI.

Along with the Labor Code, the Law of Ukraine On Remuneration of Labor defines the general requirements of the process of organizing the remuneration of employees of SFSI. Remuneration of SFSI employees is

[1] Сегай М. Я., Форіс Ю. Б. Науково-практичний коментар до Закону України «Про судову експертизу». Експертизи у судовій практиці: наук.-практ. посібник/ КНДІСЕ, Акад. адвокатури; за заг. ред. В. Г. Гончаренка. 2-вид., перероб. і доп. Київ : Юрінком Інтер, 2010. С. 381.

[2] Кодекс законів про працю України: затв. Законом УРСР від 10.12.1971 р. (зі змінами і доповненнями). *Відомості Верховної Ради УРСР*. 1971. № 50. Ст. 375.

carried out on the basis of legislative and other regulations, general agreement at the national level, sectoral (intersectoral), territorial agreements, collective agreements, employment agreements, grants. This law determines the rules and guarantees of payroll, its types, systems [1].

In the process of carrying out forensic activities to provide FSI (forensic science institutions) with highly qualified personnel, in accordance with paragraph 25 of the Resolution of the Cabinet of Ministers of Ukraine On approval of the Regulation on the Ministry of Justice of Ukraine dated on July 2, 2014 № 228, the Ministry of Justice provides proposals for: training legal staff; submits to the relevant education management bodies proposals for improving the work related to the study of law in higher education institutions, vocational and general education institutions, as well as in-service training and retraining institutions [2].

For the purpose of high quality and proper selection of personnel, raising the professional level of forensic experts, assistance in training qualified forensic experts, providing methodological assistance, dissemination of high moral principles among experts and on the basis of the above legislation the Ministry of Justice of Ukraine № 611/5 approved the Handbook of qualification characteristics of FSI employees of the Ministry of Justice of Ukraine [3], agreed with the Ministry of Social Policy of Ukraine and the Ministry of Education and Science of Ukraine. According to the title of this document, it is based on a job description, as the qualification requirements for FSI employees are determined by their job responsibilities, which, in turn, determine the title of the position.

In the order of the Ministry of Justice of Ukraine dated 03.03.2015 № 301/5 On approval of the Regulations on expert qualification commissions and certification of forensic experts for assignment[4] (confirmation) of the qualification of a forensic expert FSI specialists of the Ministry of Justice of Ukraine should:

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[1] Про оплату праці: Закон України від 24.03.1995 № 108/95-ВР (as amended and supplemented). *Відомості Верховної Ради України.* 1995. № 17. Ст. 121.

[2] Про затвердження Положення про Міністерство юстиції України: постанова Кабінету Міністрів України від 2 липня 2014 р. № 228. URL: http://zakon.rada.gov.ua/laws/show/228–2014-п?find=1&text=%EA%E0% E4%F0 (Date accessed: 23.06.2019).

[3] Про затвердження Довідника кваліфікаційних характеристик посад працівників науково-дослідних установ судових експертиз Міністерства юстиції України: наказ Міністерства юстиції України від 19.04.2012 р. № 611/5. URL: http://zakon3.rada.gov.ua/laws/show/v0611323–12/paran14№n14 (Date accessed:23.06.2019).

[4] Про затвердження Положення про експертно-кваліфікаційні комісії та атестацію судових експертів: наказ Міністерства юстиції України від 03.03.2015 р. №301/5. URL: http://zakon.rada.gov.ua/laws/show/z0249–15 (Date accessed: 23.06.2019).

- have relevant higher education, educational qualification level not lower than specialist;
- to undergo training (internship);
- know the theoretical, organizational and procedural issues of forensic examination and methodological provisions and practice of their application in the relevant expert specialty.

According to paragraph 2 of the Law of Ukraine: On Higher Education, there are the following degrees of higher education: 1) junior bachelor; 2) bachelor; 3) master's degree; 4) Doctor of philosophy/Doctor of art; 5) Doctor[1]. In the current Law of Ukraine: On Higher Education such a degree of higher education as a specialist in accordance with current regulations does not exist. However, a significant number of specialists with higher education today have a degree of higher education: a specialist. Therefore, in order to harmonize the legislation of Ukraine, it is proposed to amend Art. 1 of Section V: Regulations on expert qualification commissions and attestation of forensic experts and to state it in the following wording: "To assign (confirm) the qualification of a forensic expert FSI employees and specialists who are not employees of state specialized institutions must have higher education not lower than a specialist (master), to undergo training (internship), to know the theoretical, organizational and procedural issues of forensic examination and methodological provisions and practice of their application in the relevant expert specialty".

Not only the course but also the results of the reforms taking place in Ukraine depend on the correct selection and placement of the SFSI leadership. Management of forensic institutions and expert services in the conditions of their reform is impossible without taking into account all factors and careful planning of the decision of all calculated and anticipated possible administrative risks. Under such conditions, it seems appropriate to train individuals from among the experienced researchers of SFSI, who have demonstrated ability to work, trained according to specialization Master of Public Administration majoring in forensic expert activities with their subsequent enrollment in the management personnel reserve and appointment after passing competitive selection for senior positions in SFSI in the systems of the Ministry of Justice of Ukraine and the Ministry of Health of Ukraine, as well as in the relevant systems of forensic services of the Ministry of Internal Affairs of Ukraine, Ministry of Defense of Ukraine, Security Service of Ukraine and State Border Guard Service of Ukraine [2].

[1] Про вищу освіту: Закон України від 1 липня 2014 року № 1556-VII (as amended and supplemented). *Голос України.* 2014. № 148.

[2] Репешко П. І. Механізми кадрового забезпечення судово-експертної діяльності в Україні. *Економіка та держава.* 2011. № 8. С. 140.

We state that forensic experts of Ukraine, who are specialists in various fields of knowledge, annually conduct more than a million forensic examinations to establish the truth in the case and make a fair decision in court. With the exception of forensic, forensic and forensic psychiatric examinations, forensic experts who are not employees of state specialized institutions may also carry out forensic activities. The types, objects and tasks of such research are very diverse.

Along with that, society and the state need to prepare the next generation and skills of the FSI forensic experts without delay, resolving specific issues, namely:

- effectively change scientific approaches to managing and enhancing the professional competence of forensic experts;
- to improve the procedural legislation and the sphere of professional training of forensic experts to ensure the implementation of state policy in the field of resolving the issues of expert examination by judicial experts of non-governmental institutions;
- ensure a high level of provision of public services by forensic experts [1].

The outlined requirements are due to the fact that the purpose of forensic activity is to provide justice with independent, qualified and objective expertise. At the same time, justice, in turn, is the prerogative of the judiciary, which, according to the doctrine of separation of powers, is a sphere of public and a kind of state power.

It should be noted that the above-analyzed regulations, which comprehensively regulate the staffing of forensic institutions of Ukraine, should be divided according to the scope of action (general, special). Therefore, it is proposed to classify the regulations governing the staffing of forensic institutions of Ukraine as follows:

1) general (Constitution of Ukraine, Labor Code of Ukraine, Law of Ukraine On Remuneration of Labor);
2) special: Law of Ukraine: On Judicial Examination, Resolution of the Cabinet of Ministers of Ukraine of July 2, 2014 № 228 On approval of the Regulation on the Ministry of Justice of Ukraine, order of the Ministry of Justice of Ukraine of 03.03.2015 № 301/5 On approval of the Regulations on expert-qualification commissions and attestation of forensic experts, etc.).

Conclusions. Thus, in the legal regulation of staffing of forensic institutions an important place is occupied by administrative legislation. This is due to the fact that certain actions or decisions of the subjects of

[1] Гаспарян С. Г. Передумови недержавної правоохоронної діяльності в Україні: теоретичний аспект. *Науковий вісник публічного та приватного права.* 2016. Вип. 4. С. 96–102.

staffing of forensic institutions are mostly determined by the rules of administrative law. This legislation regulates the internal organizational, executive, administrative and managerial component in the activities of forensic institutions; provides interaction between the subjects of staffing of these institutions. In addition, in the interaction of FSI with other bodies, organizations, institutions and citizens there are administrative and legal relations.

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Pro sudovu ekspertyzu: zakon Ukrainy vid 25.02.1994 r. № 4038-XII. (zi zminamy ta dopovnenniamy). *Vidomosti Verkhovnoi Rady Ukrainy.* 1994. № 28. St. 232 [in Ukrainian].

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С. Г. Гаспарян

МІСЦЕ АДМІНІСТРАТИВНО-ПРАВОВИХ НОРМ ПРАВОВОМУ РЕГУЛЮВАННІ КАДРОВОГО ЗАБЕЗПЕЧЕННЯ СУДОВО-ЕКСПЕРТНИХ УСТАНОВ УКРАЇНИ

Правильний добір і розстановка кадрів безпосередньо впливають на результативність судово-експертної діяльності та неможливі без урахування усіх чинників, пов'язаних із їх кадровим забезпеченням, зокрема адміністративно-правовими нормами кадрового забезпечення. Проаналізовано адміністративно-правові засади підготовки кваліфікованих кадрів для здійснення судово-експертної діяльності. Охарактеризовано місце адміністративно-правових норм у правовому регулюванні кадрового забезпечення цих установ. Констатовано, що проаналізовані у статті нормативно-правові акти, які всебічно регулюють кадрове забезпечення судово-експертних установ України, доцільно розподілити за обсягом їх дії на загальні та спеціальні.

Ключові слова: судово-експертні установи, кадрове забезпечення, адміністративно-правові норми, регулювання, діяльність.

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МЕСТО АДМИНИСТРАТИВНО-ПРАВОВЫХ НОРМ В ПРАВОВОМ РЕГУЛИРОВАНИИ КАДРОВОГО ОБЕСПЕЧЕНИЯ СУДЕБНО-ЭКСПЕРТНЫХ УЧРЕЖДЕНИЙ УКРАИНЫ

Правильный подбор и расстановка кадров непосредственно влияют на результативность судебно-экспертной деятельности и невозможны без учета всех факторов, связанных с их кадровым обеспечением, в частности, административно-правовыми основами кадрового обеспечения. Ключевую роль в процессе судебной экспертизы играют государственные

специализированные учреждения и экспертные службы, которые, по закону, необходимы для проведения судебно-медицинской экспертизы. Правовое регулирование кадрового обеспечения судебных и экспертных учреждений осуществляется в соответствии с нормами международного и европейского права, Конституции Украины, кодексов Украины, законов и подзаконных актов. Проанализированы административно-правовые основы подготовки квалифицированных кадров для осуществления судебно-экспертной деятельности. Отмечено, что Закон Украины «О судебной экспертизе» регламентирует подготовку специалистов для государственных специализированных учреждений, проводящих судебные экспертизы, которая осуществляется высшими учебными заведениями. Специализация и повышение квалификации проводятся на курсах и в специальных учреждениях соответствующих министерств и других центральных органов исполнительной власти. Рассмотрены особености подготовки судебных экспертов в системах Министерства здравоохранения Украины, Министерства внутренних дел Украины и Министерства юстиции Украины. Охарактеризовано место административно-правовых норм в правовом регулировании кадрового обеспечения этих учреждений. Констатировано, что проанализированные выше нормативно-правовые акты, которые всесторонне регулируют кадровое обеспечение судебно-экспертных учреждений Украины, целесообразно распределить по объему действия (общие, специальные).

Ключевые слова: судебно-экспертные учреждения, кадровое обеспечение, административно-правовые нормы, регулирование, деятельность.
Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.14
UDC 343.148 (477)

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PROBLEMS OF APPOINTMENT AND CONDUCTING OF FORENSIC EXAMINATION IN COMMERCIAL PROCEEDINGS

One of the main conditions for the construction and functioning of the rule of law is the legal regulation of all spheres of human activity, the creation of a reliable effective legal mechanism of state protection of all natural and acquired rights of people, in accordance with their legal status. The rapid growth of the needs of modern society in the use of knowledge from various fields of science, technology, art, crafts does not bypass such a public sphere as the sphere of legal proceedings, and understanding the importance of special knowledge for establishing the truth in an economic case gives grounds to consider forensic examination as an independent institution for the protection of rights and the legitimate interests of citizens, legal entities and the interests of the state in general. Any branch of law has its own branch institutions. In cases where a particular institution combines the norms of two or more branches of law, it is considered to be intersectoral. A separate legal institution is a set of norms regulating a certain group of legal relations, which are personified due to their specificity. Integration of the achievements of various sciences into the practice of proving is a natural and traditionally studied phenomenon for economic legal proceedings.

But the constant development of all social processes and relations determines dynamic processes in the sphere of their legal regulation, which are reflected in the changes in the relevant regulatory legal acts. As a result of the intensification of legislative activity in Ukraine, which has manifested itself in recent years, there is not only inconsistency of the provisions of certain regulatory legal acts with each other, but also a contradiction with constitutional principles, and in some cases with the laws of scientific development of certain branches of knowledge. Unfortunately, such processes are inherent in such an important state institution as justice, and its individual institutions, in particular, forensic activities.

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In connection with the above, there is a need to analyze the problematic issues of the appointment and conduct of forensic examination in commercial proceedings.

Keywords: forensic science in commercial proceedings; specific expertise; expert conclusion; research on impressions of seals and stamps in the questioned document examination (QDE); forensic science in the field of intellectual property.

Formulation of Research Problem. Forensic examination is an independent scientific field, within which a general theory has been developed and its place in the system of scientific knowledge has been determined. Today, it is one of the main means of proving the circumstances in commercial disputes, because in the process of administering justice, the court is faced with the need to establish the circumstances, the data of which require special research and knowledge.

In practice, more and more often in the economic process there are cases when the establishment of relevant circumstances or facts becomes key in the process of proof. In this regard, the conclusion of the forensic examination is important and, accordingly, the issues related to their appointment and conduct require in-depth study.

The article draws attention to the problem of substantiation of the petition for the appointment of expertise, the correct formulation of questions to the expert, the discussion of the appointment and holding of some types of judicial expertise, such as: technical examination of documents, research of prints and stamps in the technical examination of documents, expertise in the field of expertise, forensic evaluation and construction examination in commercial cases.

In addition, practical recommendations for solving the problems are provided. For example, the problem of the use of expertise in the field of intellectual property, namely where the boundary between the issues raised by the expert's decision and those that are legal and do not require the appointment of expertise and are resolved by qualified judges.

This article also analyzes the case law and clarifies the current legislation governing the institution of forensic expertise in Ukraine.

Analysis of basic research and publications. Problematic aspects of the application of the institute of forensic science in the analyzed category of disputes are insufficiently covered in the works of domestic scholars, but are of considerable interest to practitioners in the field of forensic science. The use of special knowledge is widely practiced to resolve disputes in the field of economic activity and to establish the facts or circumstances necessary for the case. V. Yu. Shepitko in his scientific works studies the problems of using special knowledge through the prism of modern criminal justice in Ukraine, explains such a concept as specific expertise [1] and O. O. Eisman explores the conclusions of

[1] Шепітько В. Ю. Проблеми використання спеціальних знань крізь призму су-

a forensic expert; their logical structure, meaning and scientific justification[1]. Some elements of the procedural form of the Commercial Procedural Code of Ukraine and their improvement in the use of forensic examination, namely the issue of its appointment and conduct, are considered in the works of V. Belyanevych, M. Melnyk, H. Solomchak, V. Romaniv, A. Osetinsky, D. Prityky, T. Varfolomeeva, V. Goncharenko, V. Boyarova, S. Goncharenko, V. Popelyushko and others [2].

The Article Purpose is to reveal the importance of forensic examination in the economic process, to clarify the concept of specific expertise; the problems of substantiation of the request for examination, analysis of judicial practice, as well as to cover problematic issues of appointment and conduct of certain types of examinations. seals and stamps in the technical examination of documents, etc.

Main Content Presentation. Forensic examination is an independent scientific field within a general theory has been developed and its place in the system of scientific knowledge has been determined. The process of introducing science and technology into production, consumption and everyday life inevitably affects such a specific area of human activity as litigation, as the trial is mainly a process of proof, which takes place on the basis of deeper insight into the essence of things. It is clear that since the evidence in the proceedings is aimed at establishing the facts of the past, information about which comes in the form of information that requires special identification, recording, research and interpretation, the establishment of these facts is virtually impossible without the use of natural and technical sciences [3]. Forensic examination significantly increases the reliability and probative value of the materials collected in the case, and the conclusions of experts, as a source of evidence, ensure the establishment of objective truth. Forensics is one of the unique ways to obtain valuable evidence, and its findings are an important source of evidence to help establish the truth in a case. This type of research significantly expands the cognitive capabilities of the court, allows you to use during the pre-trial and trial proceedings the whole arsenal of modern possibilities of science. In addition, the appointment and conduct of the examination is regulated in some detail by the current rules of the Commercial Procedural Code of Ukraine that is an important guarantee of compliance with the rights of the parties to commercial proceedings.

The Constitution of Ukraine stipulates that the principles of forensic examination are determined exclusively by the laws of Ukraine (paragraph 14 of Article 92) [4]. Legislation on forensic examination in commercial litigation

часного кримінального судочинства в Україні. *Судова експертиза.* 2014, № 1. С. 11–18.

[1] Ейсман А.А. (1967). Заключение эксперта (структура и научное обоснование). Москва: Юрид. лит. 1967. 152 с.

[2] E.g., Варфоломєєва Т. В., Гончаренко В. Г., Бояров В. І., Гончаренко С. В., Попелюшко В. А. Криміналістика. Академічний курс: підручник. Київ: Юринком Інтер, 2011. С. 344.

[3] Ibid. p. 344

[4] Конституція України URL: https: //zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80№n4537 (Date accessed: 26.06.2019).

consists of the Law of Ukraine: On Judicial Examination of February 25, 1994 № 4038-XII (hereinafter referred to as Law of Ukraine: On Judicial Examination) its provisions apply to all types of courts that exist in Ukraine. The Law on Forensic Science defines the rights, duties and responsibilities of forensic experts, the procedure for their certification, issues of remuneration and social protection of forensic experts, as well as issues of international cooperation in the field of forensic science [1].

Besides, the system of normative legal acts on forensic examination in commercial litigation is the Commercial Procedural Code of Ukraine of 06.11.1991 in a new edition (hereinafter referred to as Commercial Procedural Code) [2], as well as bylaws and regulations: Instructions on the appointment and conduct of forensic examinations and expert research, approved by the order of the Ministry of Justice of Ukraine dated on 08.10.1998 № 53/5 (hereinafter referred to as Instruction) [3], Research guidelines concerning preparation and appointment of forensic examinations and researches [4], approved by the said order of the Ministry of Justice of Ukraine; Regulations on expert qualification commissions and attestation of forensic experts, approved by the order of the Ministry of Justice dated on 03.03.2015 № 301-5 [5] and other regulations governing the legal, organizational and financial bases of forensic activities, the procedure for appointing forensic examinations, organization of examinations and registration of their results, rights, duties and responsibilities of forensic expert.

Given the current trends in the development of forensic science as a science and long debate in academia on the appointment of forensic science in the economic process, a single definition and specification of concepts used in this area, there is a need for terminological definition of the basic Law on Forensic Science3. Article 1 of the Law stipulates that "forensic examination is a study based on special knowledge in the field of science, technology, art, craft, etc., objects, phenomena and processes in order to provide an opinion on issues that

[1] Про судову експертизу: Закон України від 25 лютого 1994 р. № 4038-XII. URL: https://zakon.rada.gov.ua/laws/show/4038–12 (Date accessed: 26.06.2019).

[2] Господарський процесуальний кодекс України від 06.11.1991 р. № 1799-XII. URL: https: //zakon.rada.gov.ua/laws/show/1798–12 (Date accessed: 26.06.2019).

[3] Інструкція про призначення та проведення судових експертиз та експертних досліджень, затверджена наказом Міністерства юстиції України від 08.10.98 р. № 53/5. URL: https://zakon4.rada.gov.ua/laws/show/z0705–98 (Date accessed: 26.06.2019).

[4] Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень. URL: https://zakon4.rada.gov.ua/laws/show/z0705–98 (Date accessed: 26.06.2019).

[5] Положення про експертно-кваліфікаційні комісії та атестацію судових експертів, затверджене наказом Міністерства юстиції від 03.03.2015 р. № 301–5. URL: https://zakon4.rada.gov.ua/laws/show/z0249–15 (Date accessed: 26.06.2019).

are or will be the subject of judicial review" [1]. Thus, forensic examination should be understood as a study conducted by a forensic expert using special knowledge to perform the tasks of the parties to the process, the court and is important for the proper resolution of civil, commercial, administrative cases, administrative offenses and criminal investigations.

The academic explanatory dictionary of the Ukrainian language explains the interpretation of the word knowledge as: "awareness of something, the availability of information about someone or something, a set of information from any field acquired in the process of learning, research, cognition of reality in its individual manifestations and in general, science, with knowledge of the case skillfully, having experience in something" [2].

Article 69, paragraph 1 of the Commercial and Procedural Code of Ukraine stipulates that an expert may be a person who has the special knowledge necessary to clarify the relevant circumstances of the case. Thus, when conducting research by an expert, the term: *specific expertise* is used. There is no common understanding of the definition among scholars who have studied this question.

For example, V. D. Arsenyev defines that special knowledge is a system of information obtained as a result of scientific and practical activities in certain fields (medicine, accounting, automotive, etc.) and recorded in the scientific literature, manuals, guidelines, instructions [3]. V. Yu. Shepitko, in turn, explains that special knowledge is a system of scientific data (information) or skills of an objective nature, obtained as a result of higher professional training, scientific activity, practical work experience, corresponding to the modern level [4]. O. O. Eisman interprets the term as follows: special knowledge is knowledge that is not well-known, not publicly available, that does not have a mass distribution, it is knowledge that is possessed by a limited number of specialists [5].

In paragraph 10 of Article 1 of the draft Law of Ukraine: On forensic expert activities in Ukraine dated on 30. 03. 2017 № 6264 provides the following definition of specific expertise: "specific expertise is professional knowledge and skills possessed by specialists in a particular field of science, techniques,

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[1] Про судову експертизу: Закон України від 25 лютого 1994 р. № 4038-XII. URL: https://zakon.rada.gov.ua/laws/show/4038–12 (Date accessed: 26.06.2019).

[2] Великий тлумачний словник сучасної української мови/уклад. і голов. ред. В. Т. Бусел. Київ; Ірпінь: ВТФ «Перун», 2002.

[3] E.g., Арсеньев В. Д. Использование специальных знаний при установлении фактических обстоятельств уголовного дела. Красноярск: Изд-во Красн. ун-та, 1986. 43 с.

[4] Шепітько В. Ю. Проблеми використання спеціальних знань крізь призму сучасного кримінального судочинства в Україні. *Судова експертиза.* 2014. № 1. С. 11–18.

[5] Эйсман А. А. Заключение эксперта (структура и научное обоснование). Москва: Юрид. лит., 1967. 152 с

arts, crafts, etc., obtained in the process of training and practical activities in a particular specialty (specialty) and necessary to address issues that arise in the process of pre-trial, legal proceedings, enforcement proceedings [1].

Based on the above, we can conclude that specific expertise is a set of information from any field, acquired in the process of training and practical experience, which has a limited number of specialists who are used to obtain the evidence needed to establish the truth in business pending trial. Thus, forensic examinations are appointed in cases when specific expertise is required to resolve issues in the case.

In accordance with paragraph 4 of the Information Letter of the Supreme Commercial Court of Ukraine: On some issues of appointment of forensic examinations from 27.11.2006 № 01-8/2651 [2] on the appointment of forensic examination, a decision is made in addition to information provided by Article 100 of the Commercial and Procedural Code of Ukraine indicate: the circumstances of the case that are relevant to the forensic examination; grounds for appointment of forensic examination, in particular, additional or repeated; the organization or person entrusted with the forensic examination; a list of issues that need to be clarified; location of objects and documents to be investigated.

In practice, in the economic process, the following examinations are most often assigned: handwriting and vehicle merchandising, technical examination of documents, construction, technical, appraisal, construction, land, accounting and tax accounting, financial and economic activity, financial and credit operations, commodity operations (machinery, equipment, raw materials and consumer goods; auto-goods; transport-goods), expertise in the field of intellectual property (trademarks, industrial designs, wines di, utility model, trademark, trade names, etc.).

According to the provisions of the Commercial Procedural Code of Ukraine, the examination may be appointed on the initiative of the court or at the request of one of the parties to the case. As defined in Part 2 of Article 110 of the Commercial and Procedural Code of Ukraine, the appointment of an expert in the economic process is a way to provide evidence relevant to the case [3]. At

[1] Проект Закону України «Про судово-експертну діяльність в Україні» від 30.03.2017 року № 6264. URL: http://w1.c1.rada.gov.ua/pls/ zweb2/ webproc4_1?id=&pf3511=61469 Про судову експертизу: Закон України від 25 лютого 1994 р. № 4038-XII. URL: https://zakon.rada.gov.ua/ laws/show/4038–12 (Date accessed: 26.06.2019).

2 Інформаційний лист Вищого Господарського суду України «Про деякі питання призначення судових експертиз» від 27.11.2006 р. № 01–8/2651. URL: https://zakon.rada.gov.ua/laws/show/v2651600–06 (Date accessed: 26.06.2019).

[3] Господарський процесуальний кодекс України від 06.11.1991 р. № 1799-XII. URL: https://zakon.rada.gov.ua/laws/show/1798–12 (Date accessed: 26.06.2019).

the same time, the decision of the Plenum of the Supreme Commercial Court of Ukraine: On some issues of the practice of forensic examination № 4 dated on March 23, 2012 [1] states that forensic examination is appointed only when there is a real need for specific expertise to establish the facts when the expert's opinion cannot replace other means of proof.

While drawing up a request for the appointment of an examination, special attention should be paid to the justification of the need for examination. The justification for the appointment and conduct of the examination should indicate what circumstances or facts can be confirmed by the examination, because in practice the court often refuses to grant a request for an examination because of its inexpediency. For example, as stated in the decision of the North-Western Commercial Court of Appeal in case № 903/236/19 of 08.08.2019, "the panel of judges does not see that to clarify the circumstances relevant to the case № 903/236/18, specific expertise is required in the field other than law without it is impossible to establish the relevant circumstances and therefore refuses to grant the request for the appointment of forensic construction engineering [2].

While appointing forensic examination by a court, the expert or forensic science institution is elected by the parties by mutual consent, and if such an agreement is not reached within the period established by the court, the expert or expert institution is independently determined by the court. The Commercial Court entrusts forensic examination to state specialized institutions or directly to persons who meet the requirements established by the Law of Ukraine: On Judicial Examination and defined in Articles 7, 9, 10 of this Law. As a general rule, forensic examination can be entrusted only to those persons who are certified in accordance with the Law of Ukraine: On Judicial Examination and included in the State Register of Certified Forensic Experts, which is entrusted to the Ministry of Justice of Ukraine (Article 9 of the Law). A person conducting a forensic examination (hereinafter referred to as forensic expert) must not only have special knowledge, but also be a highly qualified specialist, an authority in a particular field of science, technology, art and craft.

The issues to be examined by the court shall be determined by the court. According to Part 5 of Article 99 of the Commercial and Procedural Code of Ukraine, the parties have the right to propose to the court issues, the explanation of which, in their opinion, requires an expert opinion. In case of rejection or

[1] Про деякі питання практики призначення судової експертизи: Постанова Пленуму Вищого господарського суду України № 4 від 23 березня 2012 року. URL: https://zakon.rada.gov.ua/laws/show/v0004600–12 (Date accessed: 26.06.2019).

[2] Постанова Північно-західного апеляційного господарського суду у справі № 903/236/19 від 08.08.2019. URL: http://reyestr.court.gov.ua/ Review/83591568 (Date accessed: 26.06.2019).

change of the issues proposed by the parties to the case, the court is obliged to motivate such rejection or change. The questions posed to the expert and his conclusion from them may not go beyond the expert specific expertise. The correct wording of the issues submitted for examination is important when submitting a request for an examination.

The tasks performed by the examination and the indicative list of questions that are mainly asked by the expert during the appointment of forensic examination are established by the Scientific and Methodological Recommendation on the preparation and appointment of forensic examinations and expert research, approved by the Ministry of Justice of Ukraine № 53/5.

As for the expert conclusion, according to Article 98 of the Commercial and Procedural Code of Ukraine, it is a detailed description of the research conducted by the expert; the conclusions made as a result of them and the substantiated answers to the questions put to the expert, made in the order determined by the legislation. Also, the article explicitly states that the subject of expert conclusion cannot be issues of law.

While assessing the expert conclusion, the court must remember that it does not have a predetermined force and advantage over other sources of evidence for the court, is subject to verification and evaluation by the court internal conviction, which should be based on a comprehensive, complete and objective consideration of all circumstances in total. Therefore, cases when courts illegally consider expert opinions as sources of evidence that take precedence over other evidence, without proper examination and evaluation, or overestimate the probative value of probable conclusions, are erroneous practice, which the Supreme Court of Ukraine drew attention to, in particular in the Plenum ruling: On forensic examination in criminal and civil cases dated on 30.12.1997 № 8 [1].

Therefore, the information provided in the expert conclusion has more guarantees of reliability, which can be explained by a number of objective factors: the procedural procedure for the appointment, holding and evaluation of the expert's opinion provided by law; statutory requirements for the identity of the expert; the lack of interest and objectivity of the expert; scientific nature of the information contained in the conclusion; reflection in the conclusion of the course of the study and formulation of conclusions; possibility of clarification of his/her opinion by an expert in court in cases of doubt in his/her correctness; possibility to check the results of the initial examination through the appointment of forensic re-examination, etc.

Let’s consider the problematic aspects of the application/implementation of certain types of forensic examinations in commercial proceedings.

[1] Про судову експертизу в кримінальних і цивільних справах: постанова Пленуму Верховного Суду України від 30.05.1997 року № 8. URL: http://zakon0.rada.gov.ua/laws/show/v0008700–97 (Date accessed: 26.06.2019).

Recently, fraudsters are increasingly resorting to various tricks in order to prevent the research on fingerprints and stamps in the technical examination of documents. It solves two main groups of tasks: diagnostic (for example, setting the method of application (reproduction) of prints; method of making a printing plate (stamp) on its prints; time of printing, etc.) and identification (for example, establishing: whether prints are applied in several documents by one whether the imprints of the seal in the document are stamped, the provided samples, etc.) [1].

It is important in the research to establish the method of making a seal (stamp), regardless of whether the study is provided directly with the printed form or its imprint in the document. Establishing a method of manufacturing a certified printed form contributes to the correctness of the assessment of features in solving further identification problems.

However, along with the development of the latest technologies for the manufacture of seals and stamps, the diagnosis of methods of their manufacture causes significant difficulties due to insufficient information and methodological support in this area of knowledge. Experience demonstrates that the greatest difficulties arise in the study of prints of seals (stamps) made by new technologies, because such prints often reveal only part of the set of features characteristic of a particular method of making a printing plate (stamp), which does not form a sufficient to conclude about one of the ways to make a cliché. Technologies such as laser rubber engraving, photopolymer, vulcanization and flash technology are now used to make seals [2].

It should be noted that modern technologies allow for a small cost to make a large number of copies of seals (stamps) of high quality from one original while the copies reproduce the general and individual features of the original seal (stamp), which greatly complicates the identification of identification tasks. Under these conditions, the developed methodological sources for technical examination of imprints of seals and stamps are outdated and not suitable for solving identification and diagnostic issues regarding imprints of seals and stamps made using modern equipment.

Currently, significant problems also remain the lack of uniform rules for the manufacture of seals (stamps), their content and fonts, as well as the imperfection of the legal framework for regulating the production of seals and stamps.

In addition to these controversial issues, there are shortcomings of a practical nature: often when appointing examinations, the expert is provided with free samples of prints (stamps) which date is not specified on the documents

[1] Методика встановлення послідовності виконання штрихів, утворених електрофотографічним способом та пастами для кулькових ручок, за відсутністю ділянок їх взаємного перетину/Мінюст України, ХНДІСЕ. Київ, 2016.

[2] Методика технічної експертизи відбитків печаток та штампів/уклад.: К. М. Ковальов, В. В. Коваленко. Київ: ДНДЕКЦ МВС України, 2009. 19 с.

(documents are not dated), or which raise objective doubts of experts on the date of prints. This makes it impossible to resolve the issue of establishing the time of imprinting the seal (stamp) in the document under study, and in some cases may lead to erroneous conclusions of the expert in resolving issues of identification. Also added are the facts of bringing to the decision of expert questions of a legal nature (for example, on the definition of forgery of documents or imprints of seals on them) [1].

The above problems can be eliminated, firstly, by developing and providing experts with methodological recommendations for establishing a method of making cliché seals (stamps) by their prints in documents, which, in particular, should include a classification of the features stipulated by the method of making cliché seals and stamps according to new ones. technologies and mechanisms of imprinting; secondly, by improving the capacity of the interaction of expert units with judicial review bodies, the development and implementation of a set of administrative measures aimed at informing the latter of the quality requirements of the comparative study material and the list of issues that can be addressed in the during forensic researches.

While considering litigation on trademark rights to clarify the circumstances relevant to the case, there is a need to study and compare the properties of the disputed designations, which, in turn, requires the use of specific expertise, and therefore, involvement as one of the means of proof expert opinion, i. e. the use of expertise in the field of intellectual property. The obligatory circumstance, which is included in the subject of proof in cases of contestation of trademark rights due to non-compliance with the conditions of legal protection, is the establishment of its belonging to the designations covered by one of the grounds for refusal of legal protection on the date of application. An examination is ordered or ordered to clarify this circumstance.

The issue of determining the similarity of designations is so complex that they can be confused in trademark infringement or invalidation cases because of the similarity of a registered mark with various intellectual property objects (trademarks, trade names, geographical names, etc.) it is made for the decision of the examination of intellectual property objects, which are ordered by the parties or appointed by the court in trademark rights cases.

In cases of early termination of trademark rights, establishing the circumstance of conversion of the designation into common use, as the designation of goods and services of a certain type, after the date of application requires special knowledge, but the fact of non-use of the mark by its owner and good reasons for such non-use and electronic evidence. However, even in such cases, in order to establish whether the defendant used the mark for goods and

[1] Современные способы изготовления печатей и штампов: информ. пособ./В. В. Назаров, К. Н. Ковалев, Ю. В. Иванов, В. Г. Пелюшок. Киев: ДНИЭКЦ МВД Украины, 2003.

services in the form of a registered mark, as well as in a form that differs from the registered mark only in certain elements, if this does not change the mark as a whole, courts sometimes. Thus, in the process of considering the case № 910/20770/14 on the termination of the international registration for the sign "LR" (combined) to establish such a circumstance, the court appointed a forensic examination[1].

Since with the establishment of the High Court of Intellectual Property all cases in disputes over trademark rights are considered in commercial litigation (Part 4 of Article 3 of Commercial and Procedural Code of Ukraine), there are discussions about the future fate of forensic intellectual property after the establishment of the High Court on intellectual property issues, as some lawyers believe, most of the issues referred to the expert are bordering on legal and do not require the application of special knowledge, and therefore qualified judges will be able to establish the circumstances of the case without the appointment of an expert. This is especially true of examinations related to the study of trademarks, trade names and geographical indications.

Indeed, the peculiarity of the examination in the field of intellectual property, in particular trademarks, is that the basis of the methodological framework for the study of intellectual property is the regulations governing relations in the field of intellectual property. Thus, the properties and characteristics of trademarks, compliance with the criteria for acquiring legal protection, defined by the Civil Code of Ukraine, the Law of Ukraine: On Protection of Rights to Trademarks for Goods and Services and bylaws, including the Rules of preparation, submission and consideration of applications for a Ukrainian certificate for goods and services. For example, the question: "Does the mark for goods and services meet the conditions for the provision of legal protection?" is a matter of law and is decided by the court. However, the main task in resolving the question: "Is the mark such that it did not have a distinctive character on the date of application for the mark?" is to determine the properties of the mark for goods and services. Therefore, it does not belong to the issues of law, but to the competence of the expert. A positive answer to it is the basis for establishing the circumstances regarding the non-compliance of the mark with the conditions of granting legal protection.

Often examinations, in particular repeated ones, in cases concerning trademark rights are appointed without appropriate grounds and substantiation of the reasons for their appointment only at the request of one of the parties. For example, case № 5011-59/13633–2012 where the Supreme Commercial Court of Ukraine pointed out the lack of motives in the decisions of lower

[1] Рішення Господарського суду міста Києва № 52140979 від 05.10.2015. URL: https: //youcontrol.com.ua/catalog/court-document/52140979/ (Date accessed: 26.06.2019).

courts for the appointment of forensic re-examination: "The conclusion of the commercial courts on the unfoundedness of the claims is based entirely on the conclusion of the re-commission forensic examination that is quite the opposite of the conclusion of the initial forensic examination on the same issues. At the same time, the court decisions do not specify what are the contradictions in the conclusion of the forensic examination and what violations in its preparation caused the court to doubt its correctness and became the basis for the appointment of a re-forensic examination. The court did not specify in the specified decision and what legislation could not be applied at preparation of the conclusion. The absence, in the opinion of the court, of an opinion on one of the issues is also not a ground for the appointment of a re-examination of all issues before the expert" [1].

Forensic re-examination is also appointed in the presence of a significant violation of procedural rules governing the appointment and conduct of forensic examination[2]. The significance of such violations is determined based on the circumstances of a particular case and their impact on the correctness and validity of the expert's conclusions. Such violations may be an examination by a person subject to removal on the grounds provided for in Art. 35, 37 of the Commercial and Procedural Code of Ukraine. However, when the conclusion of the initial examination was not confirmed during the re-examination, it does not always indicate that the primary examination was incorrect and should not be taken into account by the court. Depending on the grounds on which the appointment of forensic re-examination is justified, there is a need or expediency to compare the results of primary and re-examination.

Thus, if the expert conclusion was found unfounded, the court rejects it, appoints a re-examination and in the further consideration of the case the conclusion of the initial examination cannot be taken into account at all. If the expert conclusion was found to contradict other materials of the case and forensic re-examination corresponds to them, the decision is made taking into account the conclusions of the forensic re-examination. However, the establishment of contradictions between the expert's opinion and other case materials also does not always indicate the inaccuracy of the conclusion. Contradictory evidence is subject to re-evaluation for its reliability and sufficiency. If the expert's opinion raises doubts about its correctness, even if there are discrepancies between the conclusions of the initial and forensic re-examinations, the court must evaluate each conclusion, compare them with each other and with other case files.

[1] Постанова Вищого господарського суду № 5011–59/13633–2012 від 27.05.2012 р. URL: http://reyestr.court.gov.ua/Review/38926952 (Date accessed: 26.06.2019).

[2] Про судову експертизу в кримінальних і цивільних справах: постанова Пленуму Верховного Суду України від 30.05.1997 року № 8. URL: http://zakon0.rada.gov.ua/laws/show/v0008700–97 (Date accessed: 26.06.2019).

For example, in case № 922/2017/17 dated on 30.05.2018, the Supreme Court in the panel of judges of the Commercial Court of Cassation stated that, assessing the conclusion of the forensic examination in the field of intellectual property as appropriate and admissible evidence in the case, the courts of previous instances note that the forensic examination was performed by the same person who drew up the conclusion of the expert examination at the request of the plaintiff and who (the conclusion of the expert examination) was attached to the statement of claim to confirm the circumstances set out therein. These circumstances cast doubt on the correctness of the forensic examination[1]. However, such a ground does not indicate that in such circumstances the expert conclusion is unfounded or incorrect, and it may also be the basis of a court decision.

Therefore, not all of the grounds for re-examination indicate impossibility of taking into account the results of the initial examination, in particular, when the conclusions of the primary and forensic re-examination differ. And the worst case is the appointment of forensic re-examination without proper grounds and reasonable reasons for such an appointment.

Conclusions. Based on the above, it can be argued that forensic examination, in particular its appointment and conduct, plays an important role in the economic process in proving the circumstances of persons involved in the case, in order to substantiate their claims and objections. While initiating the appointment of a forensic examination, special attention should be paid to justifying the need for appropriate forensic examination, as well as the issues that will be asked to the expert. The expert's opinion is not final and binding, but is examined by the court together with other evidence in the case. We believe that the criterion for the truthfulness of the result obtained by the expert is the absence of facts or circumstances that would contradict the conclusion made by the expert or question it.

In our opinion, reducing the purpose of forensic examination to provide an opinion, the legislator reduces the research process in the framework of forensic examination to perform mechanical work. Research (which is essentially a forensic examination as a type of practical activity) is a cognitive activity which ultimate goal cannot be a conclusion: the purpose of any cognitive activity is to obtain information, factual data. Defining the scope of forensic competence "specific expertise in the field of science, technology, art, craft, etc.", we believe that the legislator creates conditions of legal uncertainty of the legal act, violating the rule of law, laying the conditions for discretion. Such constructions of norms not only blur the boundaries of the subject of forensic examination (as a type of practical activity), but also complicate the achievement of the general goal of the Law: providing justice of Ukraine with independent, qualified and objective

[1] Постанова Верховного Суду у складі колегії суддів Касаційного господарського суду від 30.05.18 року у справі № 922/2017/17. URL: http://reyestr.court.gov.ua/Review/74378115 (Date accessed: 26.06.2019).

examination focused on maximum use of science and technology. As for the legislator logic regarding the definition of objects of forensic examination as "research on objects, phenomena and processes" and not "material objects, phenomena and processes" (previous version of the Law), it needs a reasonable interpretation, as it contradicts the modern theoretical position of forensic expertise on the nature of the objects of forensic examination[1].

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ПРОБЛЕМНІ ПИТАННЯ ПРИЗНАЧЕННЯ ТА ПРОВЕДЕННЯ СУДОВОЇ ЕКСПЕРТИЗИ В ГОСПОДАРСЬКОМУ СУДОЧИНСТВІ

Стрімке зростання потреб сучасного суспільства у використанні знань з різноманітних галузей науки, техніки, мистецтва, ремесел не обходить такої суспільної сфери, як сфера судочинства, а розуміння значущості спеціальних знань для встановлення істини у господарській справі дає підстави розглядати судову експертизу як самостійний інститут захисту прав і законних інтересів громадян, юридичних осіб та інтересів держави загалом. В той же час спостерігається не лише неузгодженість положень окремих нормативно-правових актів між собою, але й протиріччя конституційним принципам, а в деяких випадках — законам наукового розвитку певних галузей знань.

У зв'язку з цим нагальною є потреба в аналізі проблемних питань призначення та проведення судової експертизи у господарському судочинстві.

Ключові слова: судова експертиза в господарському судочинстві. спеціальні знання, висновок експерта, дослідження відбитків печаток і штампів у технічній експертизі документів, експертиза у сфері інтелектуальної власності.

И. Н. Попович, А. А. Свидерский

ПРОБЛЕМНЫЕ ВОПРОСЫ НАЗНАЧЕНИЯ И ПРОВЕДЕНИЯ СУДЕБНОЙ ЭКСПЕРТИЗЫ В ХОЗЯЙСТВЕННОМ СУДОПРОИЗВОДСТВЕ

Одним из главных условий построения и функционирования правового государства является правовое регулирование всех сфер человеческой деятельности, создания надежного действенного правового механизма государственной защиты всех естественных и приобретенных прав людей, в соответствии с их правовым статусом. Стремительный рост потребностей современного общества в использовании знаний из различных областей науки, техники, искусства, ремесел не обходит такую общественную сферу, как сфера судопроизводства, а понимание значимости специальных знаний для установления истины в хозяйственном деле дает основания рассматривать судебную экспертизу как самостоятельный институт защиты прав и законных интересов граждан, юридических лиц и интересов государства в целом. В любой отрасли права существуют свои отраслевые институты. В тех случаях, когда определенный институт объединяет нормы двух или более отраслей права, он считается межотраслевым. Отдельный правовой институт представляет собой совокупность норм, регулирующих определенную группу правоотношений, которые олицетворяются в силу своей специфики. Интеграция достижений различных наук в практику доказывания —

закономерное и традиционно изучаемое явление для хозяйственного судопроизводства. Но постоянное развитие всех общественных процессов и отношений обусловливает динамические процессы в сфере их правового регулирования, которые отражаются в изменениях соответствующих нормативно-правовых актов. Вследствие интенсификации законотворческой деятельности в Украине, которая проявляется в последние годы, наблюдается не только несогласованность положений отдельных нормативно-правовых актов между собой, но и противоречие конституционным принципам, а в некоторых случаях — законам научного развития определенных отраслей знаний. К сожалению, подобные процессы присущи и такому важному государственному институту, как правосудие, и его отдельным институтам, в частности — судебно-экспертной деятельности.

В связи с приведенным выше появляется потребность в анализе проблемных вопросов назначения и проведения судебной экспертизы в хозяйственном судопроизводстве.

Ключевые слова: судебная экспертиза в хозяйственном судопроизводстве; специальные знания; заключение эксперта; исследования оттисков печатей и штампов в технической экспертизе документов; экспертиза в сфере интеллектуальной собственности.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.15
UDC 343.985: 351.746.1

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CONTENT AND FEATURES OF THE EXPERT AUTHORITIES AS SUBJECTS OF INTERACTION WITH LAW ENFORCEMENT AUTHORITIES

The article defines the content and features of the powers of experts as subjects of interaction with law enforcement agencies. It has been proved that when interacting with law enforcement agencies, experts are endowed with a certain amount of powers, which to a greater extent relate to their participation in criminal proceedings and are defined in sufficient detail in the current legislation. It has been established that today the powers of experts in the field of interaction with law enforcement agencies require detailed study, identification of gaps in their legal regulation and determination of ways to eliminate them. All the rights of an expert in the field of interaction with law enforcement agencies are proposed to be grouped depending on the purpose of their implementation: 1) rights exercised in order to conduct a full, comprehensive and objective research; 2) security rights. It is proposed to systematize these responsibilities into two groups: 1) related to the conduct of an expert study; 2) related to participation in criminal proceedings. It has been established that it is advisable to consider all the rights and obligations in the investigated area through their division into those that are necessary for them to conduct a full, comprehensive and objective research, and those that determine their capabilities while participating in criminal proceedings.

Keywords: powers, interaction, expert institutions, experts, law enforcement agencies.

Formulation of Research Problem. Effective and qualified law enforcement activities require law enforcement officers to apply a range of knowledge on a daily basis, including in special areas owned by experts. It is the interaction of expert institutions with law enforcement agencies that is designed to ensure a full and objective consideration of cases, prompt and qualified resolution of issues, the solution of which requires the application of specific expertise.

Administrative and legal bases of such interaction are called to provide a proper condition of legal and organizational realization by the specified subjects of joint actions in the field of law enforcement activity, to define

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the basic forms and methods of performance of joint tasks and their proper performance. In today's conditions, such administrative and legal principles need to be revised and improved, including taking into account national and foreign experience in organizing the interaction of expert institutions with law enforcement agencies. In addition, they need to study in detail and further improve the powers of experts in the field of cooperation with law enforcement agencies.

Analysis of Recent Researches and Publications. Research papers of M. L. Tsymbal, O. M. Kliuiev, O. P. Uhrovetskyi, E. B. Simakova-Yefremian, V. V. Khosha, M. G. Shcherbakovskyi, V. O. Yaremchuk, A. M. Lazebny [1], P. I. Repeshko, V, M. Petrovsky, O. V. Rynkova, V. M. Sherstyuk and others are devoted to the solution of problematic issues of expert activity. However, despite the significant number of works on the researched issues, there is still no comprehensive study of the powers of experts as subjects of interaction with law enforcement agencies in modern legal science.

This Article Purpose is to research on powers of experts as subjects of interaction with law enforcement agencies. To achieve this goal, it is necessary to solve the following tasks: to analyze the content and features of the powers of experts; determine the powers of experts in cooperation with law enforcement agencies; to identify gaps in the legal regulation of the powers of experts in the field of interaction with law enforcement agencies and provide reasonable proposals for their elimination.

Main Content Presentation. According to the classical concept of the content of competence, its structural elements are subjects of competence and authority.

The first element is understood as "legal indicator of territorial boundaries and subject specifics of those social relations to which the power activities of the body are directed"[2]. That is, it is the scope of the expert's realization of

[1] E.g., Цимбал М. Експертне забезпечення правосуддя в Україні — важливий аспект розвитку правової держави. Право України. 2001. № 6. С. 93; Столітній шлях судової експертизи в Україні (1918–2018 рр.): монографія/авт.-уклад.: О. М. Клюєв, О. П. Угровецький, Е. Б. Сімакова-Єфремян та ін.; за ред. О. М. Клюєва. Харків: Золоті сторінки, 2018. С. 7; Клюєв О. Розмежування запобіжної і профілактичної діяльності органів внутрішніх справ. *Право України.* 2005. № 3. С. 100; Щербаковський М. Г. Консультаційна функція спеціаліста у кримінальному провадженні. *Криминалистика и судеб. экспертиза.* 2017. Вып. 62. С. 47; Щербаковський М. Г. Проведення та використання судових експертиз у кримінальному провадженні: монографія. Харків: В деле, 2015. С. 125; Щербаковський М. Г. Призначення та проведення судових експертиз. Харків: Фактор, 2011. С. 182–183; Яремчук В. О. Проблеми залучення спеціалістів до проведення огляду місця події (організація і тактика). *Теорія і практика правознавства.* 2015. Вип. 2 (8); Лазебний А. М. Залучення спеціаліста для проведення окремих слідчих дій. *Наук. вісн. Нац. ун-ту ДПС України*, 2014. № 2. С. 187–193.

[2] Серьогіна С. Г. Теоретично-правові та організаційні засади функціонування

his rights and responsibilities. It is defined in the legislation and has its limits, violation of which will entail the application of measures of responsibility.

The subjects of expert expertise are the fields of science, technology, arts, crafts, etc., objects, phenomena and processes that require research using specialized knowledge. It is the subjects of jurisdiction that determine the scope of powers of the expert, including in interaction with law enforcement agencies.

Powers characterize the ability of the subject to implement the tasks assigned to him. I. P. Golosnichenko and D. I. Golosnichenko believe that authority as a social phenomenon - is the possession of the rights and responsibilities of members (members) of society, transferred to the subject of relations in the manner and in the manner prescribed by social rules and regulations, with for the purpose of realization in personal or common interests of the person of the delegate; and which may include the right to dispose of its values, the right to involve on a mandatory basis in the implementation of public orders and apply in cases provided by the rules of public life, coercive measures [1].

According to S. S. Shoptenko, powers are characterized by the following features: enshrined in the legislation governing such activities; implemented in a clearly defined area; are used in the established procedures; should be aimed at fulfilling the tasks set before it; there is a responsibility for power abuse [2].

In its essence, powers are a set of interrelated and interdependent rights and responsibilities. Rights in the legal sense are defined as provided and guaranteed by the state, as well as enshrined in administrative law measures of possible (permitted) behavior in legal relations provided by the corresponding obligation of another subject of legal relations [3].

According to the Law of Ukraine: On Judicial Examination, a forensic expert has the right to: 1) file a request for additional materials, if the examination is appointed by a court or pre-trial investigation body or review the case materials relating to the subject of forensic examination; 2) indicate in the expert's opinion the facts revealed during the forensic examination that are relevant to the case and about which he was not asked questions; 3) with the permission of the person or body that appointed the forensic examination, to be present during the investigative or judicial actions and to file motions concerning the subject of the forensic examination; 4) file complaints against the actions of the person in whose proceedings the case is pending, if these

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інституту президентства в Україні. Харків: Ксілон, 2001. 278 с.

[1] Голосніченко І. П., Голосніченко Д. І. Теорія повноважень, їх легітимність та врахування потреб і інтересів при встановленні на законодавчому рівні. *Вісник НТУУ «КПІ»*. Політологія. Соціологія. Право: зб. наук. праць. 2011. № 1 (9). С. 148.

[2] Шоптенко С. С. Адміністративно-юрисдикційна діяльність правоохоронних органів в Україні/за заг. ред. О. М. Музичука. Харків: Константа, 2018. 436 с.

[3] Державне управління: проблеми адміністративно-правової теорії та практики/за заг. ред. В. Б. Авер'янова. Київ: Факт, 2003. С. 113–114.

actions violate the rights of a forensic expert; 5) receive remuneration for conducting a forensic examination, if its implementation is not an official task; 6) to conduct on a contractual basis expert research on issues of interest to legal entities and individuals, taking into account the restrictions provided by law [1].

Article 69 of the Criminal Procedure Code of Ukraine enshrines the following rights of an expert: 1) to get acquainted with the materials of criminal proceedings relating to the subject of research; 2) apply for additional materials and samples and perform other actions related to the examination; 3) be present during the performance of procedural actions related to the subjects and objects of research; 4) state in the conclusion of the examination the information revealed during its conduct, which is relevant for the criminal proceedings and about which he was not asked questions; 5) ask questions related to the subject and objects of research to persons involved in criminal proceedings; 6) receive remuneration for the work performed and reimbursement of expenses related to the examination and a call for explanations or testimony, if the examination is not the duty of the person involved as an expert; 7) apply for security in cases provided by law; 8) enjoy other rights provided by the Law of Ukraine: On Judicial Examination [2].

Besides, in the legislation it is defined that the expert has the right: to get acquainted with case materials concerning a subject of examination; in accordance with the procedural legislation to apply for additional materials and samples and perform other actions related to the examination; in case of doubt as to the content and scope of the power of attorney, immediately request the body (person) who appointed the expertise (involved) the expert (s) to clarify the questions posed to the expert; with the permission of the body (person) that appointed the expertise (involved the expert), to be present during the procedural, executive actions and to ask questions to the participants of the process concerning the subject or object of the expertise, and to conduct separate studies in their presence; indicate in the expert's opinion the facts revealed during the examination, which are relevant to the case, but in respect of which he was not asked questions, and the circumstances that contributed (could have contributed) to the commission of the offense; in case of disagreement with other members of the expert commission to make a separate conclusion; state in writing the answers to the questions asked to him during the provision of explanations or testimony; to appeal in accordance with the procedure established by law the actions and decisions of the body (person) that appointed the expertise (involved) the expert (s), violating the rights of the expert or the procedure for conducting the examination; to ensure security

[1] Про судову експертизу: Закон України від 25.02.1994 № 4038-XII. *Відомості Верховної Ради України.* 1994. № 28. Ст. 232.

[2] Кримінальний процесуальний кодекс України від 13.04.2012 № 4651-VI. *Відомості Верховної Ради України,* 2013. № 9–10, № 11–12, № 13. Ст. 88.

if there are appropriate grounds; receive remuneration for the examination and, in accordance with the law, compensation (reimbursement) for the costs of work performed and the costs associated with the call for explanations or testimony, if it is not his duty. An expert may refuse to conduct an examination if the materials provided to him are insufficient to perform his duties, and the required additional materials are not provided, or if the questions asked are beyond his specific expertise. The notice of refusal must be motivated [1].

It is advisable to group all the rights of the expert in the sphere of cooperation with law enforcement bodies depending on the purpose of their realization:

1) rights exercised for the purpose of conducting a full, comprehensive and objective research:
   - get acquainted with the materials of criminal proceedings concerning the subject of investigation;
   - make a request for additional materials and samples, as well as clarification of the questions raised;
   - be present during the conduct of proceedings, to ask questions of its participants concerning the subject of research;
   - point out the facts that were relevant to the case, which he had not been asked during the forensic examination revealed during the forensic examination in the expert conclusion;
   - draw a separate conclusion in case of disagreement with other experts;
   - refuse to give a conclusion if the materials submitted to him are not sufficient to fulfill his duties or if the questions posed are beyond his competence;
2) law of obligations:
   - right to remuneration and reimbursement of expenses incurred in carrying out the examination if its performance is not a duty;
   - ensure security if there are appropriate grounds;
   - appeal against the procedure prescribed by law and the decision of the subject of the examination, which violate the rights of the expert or the procedure of examination.

The term: *obligations* is interpreted as something that must be unconditionally observed, that must be performed without fail in accordance with the requirements of society or on the basis of one's own conscience; a certain amount of work, a set of cases, the limits of responsibility, etc., determined by the relevant title, position, marital status, etc.[2]

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[1] Про затвердження Інструкції про призначення та проведення судових експертиз та експертних досліджень та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз та експертних досліджень: наказ Міністерства юстиції України від 08.10.98 № 53/5. URL: http://zakon.rada.gov.ua/laws/show/z0705–98 (Date accessed: 25.07.2019).

[2] Великий тлумачний словник сучасної української мови (з дод., допов. та СД) / уклад. і гол. ред. В.Т. Бусел. Київ ; Ірпінь: Перун, 2009. С. 813.

According to the Law of Ukraine: On Judicial Examination, a forensic expert is obliged to: 1) conduct a full investigation and give a reasoned and objective written opinion; 2) at the request of the person or body that involved the expert, judge, court to clarify the conclusion given by him; 3) to declare self-recusal in the presence of the bases provided by the legislation which exclude his participation in the case[1].

Article 69 of the Criminal Procedure Code of Ukraine enshrines the following rights of an expert: 1) to personally conduct a full investigation and give a reasoned and objective written opinion on the questions asked to him, and if necessary - to explain it; 2) come to the investigator, prosecutor, court and answer questions during the interrogation; 3) ensure the preservation of the object of examination. If the research involves the complete or partial destruction of the object of examination or a change in its properties, the expert must obtain permission from the person who involved the expert; 4) not to disclose without the permission of the party to the criminal proceedings that involved him or the court information that became known to him in connection with the performance of duties, or not to inform anyone except the person who involved him or the court about the progress examination and its results; 5) resign in the presence of circumstances provided by the Criminal Procedural Code. The expert should immediately inform the person who involved him or the court that commissioned the examination of the impossibility of conducting the examination due to lack of necessary knowledge or without the involvement of other experts.

The expert has the following responsibilities: to resign in the presence of circumstances provided by law; accept for execution the examination entrusted to him; personally conduct a full research, present a reasoned and objective written conclusion on the issues and if necessary explain it; inform in writing the body (person) that appointed the expertise (involved) the expert (expert), about the impossibility of its conduct and return the provided case materials and other documents, if the question is beyond the competence of the expert or if provided he did not have enough materials to address the issue, and the required additional materials were not provided; appear at the call of the body (person) that appointed the forensic examination (involved) an expert, to provide explanations, testimony or additions about the examination or the reasons for notification of the impossibility of its conduct; ensure the preservation of the object of examination. If the study involves the complete or partial destruction of the object of examination or a change in its properties, the expert must obtain permission from the body (person) that appointed the examination (involved the expert); not to disclose without the permission of the body (person) that appointed the expertise (involved) the expert (s), information that became

[1] Про судову експертизу : Закон України від 25.02.1994 № 4038-XII. *Відомості Верховної Ради України*. 1994. № 28. Ст. 232.

known to him in connection with the performance of duties, or not to inform anyone except the body (person) that appointed the examination (involved the expert), or the court on the progress of the examination and its results.

These responsibilities should be organized into two groups:

1) related to forensic research:
   - conduct a full research and present a reasoned and objective written conclusion to the questions raised;
   - ensure that the objects of examination are preserved;
   - in cases specified by law, declare recusal;
   - to inform in writing of the impossibility of conducting an examination and to return the submitted case files and other documents if the question posed is beyond the competence of the expert or if the materials provided to him are insufficient to resolve the question;
2) related to participation in criminal proceedings:
   - appear to investigator, prosecutor, court and answer questions during interrogation;
   - not to disclose without the permission of the competent subject information that he became aware in connection with the examination;
   - to accept the execution of the commissioned examination.

Conclusions. Summarizing the above, it should be noted that when interacting with law enforcement agencies, experts are endowed with a certain amount of powers, which are more related to their participation in criminal proceedings and are defined in detail in the current legislation. All rights and responsibilities in the field of research should be considered through their division into those that are necessary for them to conduct a full, comprehensive and objective investigation, and those that determine their capabilities in criminal proceedings. At the same time, in order to improve the competence of the expert in cooperation with law enforcement agencies, certain powers need to be clarified. Thus, the right to request additional materials and samples, as well as to be present during the proceedings, it is advisable to fix only those cases that are directly related to the subject of their forensic research.

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ЗМІСТ ТА ОСОБЛИВОСТІ ПОВНОВАЖЕНЬ ЕКСПЕРТІВ ЯК СУБ'ЄКТІВ ВЗАЄМОДІЇ З ПРАВООХОРОННИМИ ОРГАНАМИ

У статті визначено зміст та особливості повноважень експертів як суб'єктів взаємодії з правоохоронними органами. Встановлено, що повноваження експертів у сфері взаємодії з правоохоронними органами потребують детального вивчення шляхів усунення недоліків. Всі права експерта у сфері

взаємодії з правоохоронними органами запропоновано згрупувати залежно від мети їх реалізації: 1) права, що реалізуються з метою проведення повного, всебічного та об'єктивного дослідження; 2) забезпечувальні права. Вказані обов'язки систематизовано в дві групи: 1) пов'язані з проведенням експертного дослідження; 2) пов'язані з участю в кримінальному провадженні. Встановлено, що усі права та обов'язки доцільно розглядати так, щоб визначити їх можливість при участі в кримінальному провадженні.

Ключові слова: повноваження, взаємодія, експертні установи, експерти, правоохоронні органи.

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СОДЕРЖАНИЕ И ОСОБЕННОСТИ ПОЛНОМОЧИЙ ЭКСПЕРТОВ КАК СУБЪЕКТОВ ВЗАИМОДЕЙСТВИЯ С ПРАВООХРАНИТЕЛЬНЫМИ ОРГАНАМИ

В статье определены содержание и особенности полномочий экспертов как субъектов взаимодействия с правоохранительными органами. Доказано, что при взаимодействии с правоохранительными органами эксперты наделяются определенным объемом полномочий, которые в большей степени касаются их участия в уголовном производстве и достаточно подробно определены в действующем законодательстве. Установлено, что на сегодняшний день полномочия экспертов в сфере взаимодействия с правоохранительными органами требуют детального изучения, выявления пробелов в их нормативно-правовом регулировании и определения путей их устранения. Все права эксперта в сфере взаимодействия с правоохранительными органами предложено сгруппировать в зависимости от цели их реализации: 1) права, реализуемых с целью проведения полного, всестороннего и объективного исследования; 2) обеспечительные права. Указанные обязанности предложено систематизировать в две группы: 1) связанные с проведением экспертного исследования; 2) связанные с участием в уголовном производстве. Установлено, что все права и обязанности в исследуемой сфере целесообразно рассматривать через их разделение на те, которые необходимы им для проведения полного, всестороннего и объективного исследования, и те, которые определяют их возможности при участии в уголовном производстве.

Ключевые слова: полномочия, взаимодействие, экспертные учреждения, эксперты, правоохранительные органы.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.16
UDC 343.98

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BASIC PRINCIPLES FOR DETERMINING EFFICIENCY OF LEGAL EXPERT ACTIVITIES: ADMINISTRATIVE AND LEGAL ASPECT

One of the most significant indicators in law is the effectiveness of administrative and legal regulation. The development of the sphere of forensic activity and its stable functioning are directly related to the level of efficiency of its administrative and legal regulation.

For a long time in Ukraine, work has been carried out to adapt national legislation to the legislation of the European Union. This process is complicated, first of all, by the fact that today there are no clear criteria according to which Ukraine should bring its legislation in line with the requirements of the European Union. At the present stage of development of our state, the problem of assessing the effectiveness of law is becoming increasingly important. The Europeanization of Ukraine requires a new understanding of the problems of interaction between the legal system and the individual, the search for new approaches to the concept of the effectiveness of administrative law, including in the field of forensic science.

One of the most significant indicators in law is the effectiveness of administrative and legal regulation. For an objective reflection of the trends in the development of public life and an effective solution to existing problems, administrative law in Ukraine requires a reorientation to a person-centered ideology, the purpose of which is to ensure human rights and freedoms.

To date, the assessment of the effectiveness of the normative legal acts regulating forensic activity in Ukraine is not provided with a sufficiently universal scientific doctrine and practical recommendations for its implementation.

The article analyzes the concepts of "effect", "efficiency". The conditions and factors that may affect the effectiveness of legal norms are considered. The scientific basis for determining the effectiveness of administrative and legal regulation of forensic expert activity has been investigated.

Keywords: effect, efficiency, rule of law, administrative and legal regulation, forensic expert activity.

Formulation of Research Problem. The development of the field of forensic expertise and its stable functioning are directly related to the level of effectiveness of its administrative and legal regulation.

The Europeanisation of Ukraine aims to rethink the quests of the legal system and the individual, to find new ways to define the concept of the

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effectiveness of administrative law, including in terms of the effectiveness of forensic science. Unfortunately, the problem of the effectiveness of law has been ignored by scholars. At the present stage of state development, the problem of the effectiveness of law is becoming increasingly important and requires detailed scientific study and consideration not in terms of interests and policies of the state, but from the standpoint of the rule of law as a social regulator from the standpoint of personal perception of law.

Analysis of Recent Researches and Publications. In general, the problem of efficiency is not new for domestic jurisprudence, as it began to be studied in Soviet times. Given the existing needs for the formation of a methodology for assessing the consequences of the implementation of legal reform in Ukraine, this issue remains relevant to this day.

The following issues are devoted to the issue of reforming forensic activity in Ukraine: E. B. Simakova-Yefremian on reforming the legislation in the field of forensic activity, one of which is the need to harmonize the basic law with current legislation on the appointment and conduct of forensic examination in all types of litigation[1]; Yu. M. Groshevoy and AA Selivanov who developed issues of legal expertise[2]; M. L Tsymbal considered issues related to reforming the system of forensic institutions [3]; A. A. Kravchenko; attention was paid to improving the methodological support of forensic activities [4], V. M. Baranyak covered the problems in the training of forensic experts in higher educational institutions of Ukraine [5] etc. However, despite a fairly wide range of research on this issue, some issues still remain unresolved [6].

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Thus, recognizing the significant contribution of the scientific community to the development of these issues, it should be noted that there is a lack of comprehensive research on the effectiveness of administrative and legal regulation of forensic activity in Ukraine.

The Article Purpose is to review scientific considerations to determine the conditions and factors that affect the effectiveness of legal rules to further determine approaches to its assessment.

Main Content Presentation. One of the most significant indicators in law is the effectiveness of administrative and legal regulation.

Important for the establishment of the rule of law, achieving maximum efficiency of legal regulation, building the democratic functioning of civil society institutions, strengthening responsibility for decision-making without respecting the basic constitutional principles governing the rights and freedoms of every person and citizen, are procedural issues of lawmaking. According to paragraph 14 of Article 92 of the Constitution of Ukraine only the laws of Ukraine determine the principles of forensic science [1]. The preamble of the Law of Ukraine: On Judicial Examination dated on 25.02.1994 № 4038-XII (hereinafter referred to as the Basic Law) states that it determines the legal, organizational and financial basis of forensic expert activity [2]. In recent years, Ukraine has made many statements about the need to reform forensic science and improve the basic law, and the parliament has even registered several bills related to forensic science. All this indicates the ineffectiveness of the basic law.

As rightly suggested in the methodological recommendations of the Ministry of Justice of Ukraine, it is necessary to introduce a legal examination of an existing legal act on the basis of materials on its practical application. The analysis of practice will allow to determine the effectiveness of the normative legal act, to identify gaps in the legal regulation, legal conflicts that have not been noticed before and to answer the question: whether the goal of legal regulation has been achieved. The conclusion of such examination may be the basis for the possible introduction of the subject of law-making changes to the legal act [3]. Unfortunately, the methodology does not contain detailed references to what factors and criteria it is necessary to conduct such a legal examination.

народ. наук.-практ. конф (м. Харків, 18–19 квіт. 2019 р.). Харків, 2019. С. 143–145.

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In order to determine the effectiveness of a particular activity, process, institute, regulatory act, etc., it is necessary to first define the effect concept.

According to the dictionary definition of effect (Latin effectus: performance, action, derived from efficio: action, perform) the result, consequence of any causes, measures, actions; Efficiency: result, consequence of any causes, forces, actions [1].

Scientists in various fields of science have repeatedly tried to define the concept of effect. For example, in T. A Sinitsyna's [2] research paper the effect is considered as a result, a consequence of any reasons, actions, economic measures (introduction of new equipment and investment projects, commercial agreements, implementation of any economic decisions, etc.). I. V. Petrova defines the effect as a useful result, expressed in valuation [3]. Yu. P. Surmin formulates the effect as a result, a consequence of any action [4]. O. G. Zagorodniy reveals the concept of effect as an achieved result in a certain form — material, monetary, social and economic[5]. Despite the different approaches, all authors summarize that the effect is the result that arises as a result of certain actions. Thus, the understanding of the term: *efficiency* is associated with actions that lead to the desired consequences, i.e. we can say that the concept of efficiency is synonymous with the concept of effective. It follows that efficiency is the effectiveness, the result, the consequence of certain causes, forces, actions [6]. Thus, the legal category of efficiency is dynamic and varies depending on indicators and indicators that reflect the level of development of a particular area (field) of public life.

The development of the field of forensic activity and its stable functioning are directly related to the level of efficiency of its administrative and legal regulation[7]. In general, the problem of the effectiveness of law and

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[1] E.g., Словник іншомовних слів/за редакцією О. С. Мельничука. Київ: Головна редакція Української радянської енциклопедії Академії наук Української РСР, 1987. 865 с.

[2] Синицына Т. А. Оценка эффективности системы управления промышленным предприятием — целевой поход: дис. …канд. экон. наук: 08.06.01. Одесса: ОГЭУ, 2004. 187 с.

[3] E.g., Ячменьова В. М., Височина М. В., Сулима О. Й. Ефективність управління діяльністю промислового підприємства та діагностика загроз: монографія. Сімферополь: ВД АРІАЛ, 2010. 472 с.

[4] E.g., Рац О. М. Визначення сутності поняття «ефективність функціонування підприємства». *Економічний простір:* зб. наук. праць. 2008. № 15. Дніпропетровськ: ПДАБА, 2008. С. 275–285.

[5] E.g., Загородній А. Г., Возюк Г. Л., Смовженко Т. С. Фінансовий словник. Львів: Знання, 2002. 567 с.

[6] Эффективность и качество управленческой деятельности: государственно-правовой аспект. Киев: Наукова думка, 1980. 350 с.

[7] Овсянникова І. М. Соціальний аудит судово-експертної діяльності

legal regulation is one of the most controversial and theoretically saturated. In the legal literature, the effectiveness of administrative and legal regulation is considered from different points of view. Thus, according to V. G. Afanasyev, efficiency is one of the principles of scientific management, the essence of which is to ensure the solution of tasks in the shortest possible time, at the lowest cost of labor, material and financial resources[1]. According to V. V. Tsvetkov, efficiency is a complex phenomenon determined by the ratio of human, organizational, time, scientific and technical, material resources and obtained results[2]. In such circumstances, it can be assumed that efficiency in administrative law is the characteristic feature that reflects the combination of all vital indicators that are effective mechanisms for achieving the most favorable result. At the same time, it should be noted that in determining the effectiveness of forensic science, not all effects and costs are subject to measurement in numerical terms for a relatively short period of time, so such approaches to assess the effectiveness of administrative regulation of forensic science should be modified. V. P. Tugarinova, in turn, defines efficiency as the property of someone or something to act in such a way as to achieve the planned consequences. In addition, by efficiency the author understands the degree of realization of the social value of legal incentives and legal restrictions, in other words, the difference between how they satisfy the interests of people and how to regulate social relations. Here, social value, or rather, its use and effectiveness are correlated as a process and a result. Efficiency is a kind of labor productivity of social value, legal incentives and legal restrictions, their efficiency factor[3]. Another view of the problem of the effectiveness of administrative and legal regulation has prevailed in the literature, according to which the effectiveness of law is its effectiveness, the degree of achievement through legal regulation of social goals formulated by the rule of law[4]. Thus, efficiency is an indicator of the quality of tasks performed by the public administration, which are set before the state in a particular area of public

в Україні. *Публічне адміністрування в умовах змін та перетворень: проблеми організації та правового забезпечення:* зб. наук. праць за матеріалами ІІІ міжнарод. наук.-практ. конф (м. Харків, 11–12 квіт. 2019 р.). Харків, 2019. С. 481–484.

1 Афанасьев В. Г. Научное управление обществом (Опыт системного исследования). Изд. 2-е, доп. Москва: Политиздат, 1973. 390 с.

2 Цвєтков В. В. Підвищення ефективності державного управління —важлива мета його реформування. *Реформування державного управління в Україні: проблеми і перспективи*. Київ, 1998. С. 128–153.

3 E.g., Тугаринов В. П. Избранные философские труды. Ленинград: Изд-во ЛГУ, 1988. 343 с.

4 E.g., Никитинский В.И. Эффективность норм трудового права. Москва: Юридическая литература, 1971. 247 с.; Гилинский Я. И., Ловчикова Е. Н., Могилевский Р. С. Эффективность действия правовых норм/отв. ред. Фомин Э. А., Явич Л. С. Ленинград: Изд-во Ленинград. ун-та, 1977. 134 с.

relations. According to P. M. Rabinovych, "effectiveness of legal regulation is characterized by the ratio of the actual results of the implementation of this regulation with its purpose. If such a goal (M) and such results (P) are expressed in the same type, meaningfully comparable indicators that can be empirically identified, recorded and calculated, then the effectiveness of legal regulation (E) can be quantified" [1]. Thus, in general, the effectiveness of administrative and legal regulation can be characterized as the relationship between the actual results of such regulation and the social goals that are trying to achieve.

Thus, summarizing the above, it can be argued that the effectiveness of administrative and legal regulation of forensic activities in a broad sense should be considered as a result of purposeful and systematic activities of public administration bodies aimed at fulfilling the tasks and functions of the state in forensic science. At the same time, in the narrow sense, the effectiveness of administrative and legal regulation of forensic activities is a set of possible quantitative and qualitative indicators that reflect the real state of public administration tasks aimed at meeting social needs.

According to T. G Andrusyak, the factors that ensure the effectiveness of legal regulation are: compliance with the requirements of law to the level of socio-economic development of society; the level of perfection of legislation; level of legal culture of citizens [2]. M. M. Pogrebnyak believes that "the basis of administrative and legal regulation is the state of regulatory and legal regulation of the industry, i.e. the legislation of the state, the rules of which are embodied in specific life situations" [3]. According to O. O Oliynyk, V. V Galunko, O. M. Yeschuk, administrative and legal regulation of forensic activity plays a leading role in regulating public relations through the rules of administrative law and is a system that outlines the range of public relations that are determined by a set of different legal means [4].

It should be noted that there are different approaches to defining the concept of effectiveness of legal norms. The reason for this difference in scientific approaches to understanding the effectiveness of law is the division of opinions of the authors on this issue into sociological and legal-dogmatic.

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[1] Рабінович П. М. Основи загальної теорії права та держави: навч. посіб. 5-те вид., зі змінами. Київ: Атіка, 2001. 176 с.

[2] E.g., Андрусяк Т. Г. Теорія держави і права. Львів: Право для України, 1997. 200 с.

[3] Погребняк М. М. Ефективність адміністративно-правового регулювання галузі ветеринарної медицини. *Науковий вісник публічного та приватного права,* 2018. № 6. Т. 2. С. 94–97.

[4] E.g., Олійник О. О., Галунько В. В., Єщук О. М. Адміністративно-правове регулювання судово-експертної діяльності: монографія. Херсон: Грінь Д. С., 2015. 224 с.

Thus, some authors understand the effectiveness of the rule of law as their ability to influence public relations in a given direction, to promote the desired goal or to ensure the achievement of socially useful and objectively justified goals or the proper administration of justice [1]. Others note that the effectiveness of law from a purely legal, special legal point of view is characterized by trouble-free and clear operation of all components of the legal system, all mechanisms of legal regulation, coherence, effectiveness of the entire interconnected chain of means [2].

Mostly, effectiveness of the law is seen as the ratio of the goal set by the state in their adoption, and the results achieved in the process of their application (target concept of the effectiveness of the law). Having positive aspects in its content and supporters in the theory of law, the target concept of the effectiveness of legal norms is at the same time severely criticized as one that does not quite meet the needs of today. Thus, according to V. V. Lapaeva, Professor, the purpose of law is to reconcile social interests. The author believes that it would be wrong to continue to interpret the effectiveness of the law as the relationship between the result of the norm and the non-legal (economic, political, ideological, etc.) goals attributed to it. She also notes that the effectiveness of the rule of law should be understood as the extent of its contribution to strengthening the legal foundations of state and public life, in the formation and development of elements of freedom in public relations [3]. However, as Yu. V. Orlov clarifies, it is not a question of external ideological, political, economic or other goals in relation to law, but of an imminent legal goal, which is to reconcile social interests on the basis of law-making interest and thus ensure maximum possible general measure of freedom for the development of the relevant sphere of public life [4]. A. P. Zakalyuk expresses the same opinion, pointing out that "the standard for assessing the social effectiveness of a legal norm is usually compliance with this norm, not the behavior itself (what is its legal effectiveness), but more distant social consequences of its implementation" [5]. As rightly noted by V. A. Fedosova

[1] E.g., Кудрявцев В. Н., Никитинский В. И., Самощенко И. С., Глазырин В. В. Эффективность правовых норм: монографія. Москва: Юридическая литература, 1980. 280 с.

[2] E.g., Алексеев С. С. Общая теория права: в 2 т. Москва: Юридическая литература, 1981. Т. 2. 361 с.

[3] E.g., Лапаева В. В. Эффективность закона и методы ее изучения. Эффективность закона: методология и конкретные исследования. Москва: Институт законодательства и сравнительного правоведения при Правительстве Российской Федерации, 1997. С. 28–43.

[4] E.g., Орлов Ю. В. Кримінологічна неефективність нормативно-правових актів: поняття та критерії. Форум права. 2011. № 3. С. 570–576. URL: http://nbuv.gov.ua/UJRN/FP_index.htm_2011_3_94 (Date accessed:22.06.2019).

[5] Закалюк А. П. Курс сучасної української кримінології: теорія і практика:

the rule of law gets its real existence in the process of implementation and interaction with real social relations, and outside of social practice, the scientist believes, the effectiveness of the rule of law is not detected [1].

According to V. A. Kozlov, both in relation to a particular legal norm, and in relation to the law as a whole, we can distinguish between legal and social efficiency. The legal effectiveness of a legal norm should be understood as its ability to ensure the use of the provided rights (opportunities) and the exact use of the obligations established by the norm. Legal efficiency is an essential component of the social effectiveness of law and a separate legal norm. Identification of social efficiency is associated with a systematic, comprehensive approach to the rule of law, aimed at studying all (economic, social, political, moral, etc.) consequences of the implementation of the rule of law. Social efficiency is a general concept that expresses a complete, complete description of the legal norm. Social efficiency includes as its components the cost-effectiveness of the norm, the social usefulness of the result, the morality and optimality of the legal remedies chosen. Under the social effectiveness of a legal norm, the author defines its ability to ensure the achievement of a socially useful and objectively justified goal of this norm with the help of morally acceptable optimal means and at minimal social costs.

At the same time, V. A. Kozlov identifies the general criteria that characterize the social effectiveness of the legal norm:

1. The purpose of the rule of law. It serves as a criterion only if it meets the objective requirements of life, correctly reflects not only the real social relations, but also the objective trend of their development.
2. Social utility of the result. Under social utility, the author understands the objective necessity of the result of the legal norm in terms of the needs of social relations, the moment of social utility is inherent in the correct setting of the goal, so social utility should also characterize the outcome of the rule.
3. Achieving the maximum result with minimal social costs. We are talking about the need to take into account all social costs, because society does not care at the cost of which social costs can be achieved maximization of a particular legal impact.
4. Optimum behavior in relation to values. The possibility of using different ways to achieve the goal involves determining the optimal remedy and the optimal behavior provided by.
5. Compliance with the requirements of legal norms of the level of legal awareness. The requirements of legal norms are met voluntarily,

у 3 кн. Київ: Ін Юре, 2007. Кн. 3. 317 с.

[1] Федосова В. А. Эффективность действия норм советского государственного права. Воронеж: Изд-во Воронежского гос. ун-та, 1984. 156 с.

especially when they meet the needs, interests, beliefs, attitudes, values of an individual, a particular social group.

6. Correspondence of the variant of behavior specified in the legal norm to the formed (typical) patterns of behavior. Typical behavior can be considered, for example, as one that is determined in the process of specific production activities (which seems to be the specifics of the production regime), which must be taken into account when establishing legal regulations for labor regulations.

At the same time, V. A. Kozlov emphasizes that none of the above criteria has absolute meaning, they should be considered together [1].

S. A. Zhinkin, according to the factors (economic, social, legal, etc.) that influence the achievement of the effect planned by the legislator, gives a broader classification of the types of effectiveness of law:

1. Social efficiency. It follows from the compliance of legal requirements with social needs. This is the need for social development in general, and the needs of individual social groups.
2. Political efficiency. It depends on the extent to which the rules of law contribute to the achievement of goals and objectives of the state, ensure the performance of their functions.
3. Special legal efficiency. Special legal factors that affect the effectiveness of the rules mean the real provision of the relevant regulations with sanctions or incentives, and the correct choice of the subject of regulation and compliance with the requirements of legal techniques in lawmaking and law enforcement.
4. Formal efficiency. The effectiveness of the law also depends on what form they are dressed in, in what source of law they are expressed.
5. Procedural efficiency. This type of efficiency can be considered in two aspects. First, it implies compliance with the procedures for the preparation and adoption of legal norms. These procedures become an obstacle to law-making errors, improve the quality of adopted regulations and, consequently, their effectiveness. Secondly, the adopted norms must be provided with procedures for monitoring their observance, procedures for their implementation and protection.
6. Material and organizational efficiency. The highest quality regulations, which remain only on paper, will not cause changes in the relevant social relations, if they are not provided with material resources and human resources.

[1] Козлов В. А. Вопросы теории эффективности правовой нормы: автореф. дис. …канд. юрид. наук: спец. 12.00.01 Ленинград: Ленинградский государственный університет им. А. Жданова, 1972. 26 с. URL: http://www.law.edu.ru/book/book.asp?bookID=119 (Date accessed: 23.06.2019).

S. A. Zhinkin also notes that the effectiveness of legal norms can be divided into types depending on the spread of the effect in space, time and in the circle of persons. By type of legal regulation, the effectiveness can be permissive and prohibited, you can also distinguish between the effectiveness of permits, prohibitions, obligations [1].

A similar opinion of V. A. Kozlov is held by Y. I. Birchenko, who argues that the effectiveness of legal norms depends on certain objective and subjective conditions, which can be attributed to both the law and to the scope of its implementation. Any norm is created and operates in a real set of social relations on the basis of existing social existence and social consciousness. The nature of the relationship of the rule of law with various aspects of public life and determines the conditions that ultimately ensure the effectiveness of its action. These conditions can be considered from different points of view, analyzed in different aspects. From a social point of view, the main condition for the effectiveness of the legal norm must be considered its compliance with existing social relations, the social structure of society, its ideology and culture. We can also highlight a narrower (organizational) aspect of the effectiveness of law. Organizational conditions of efficiency are revealed in the course of functioning of system of law-making, law enforcement and law enforcement bodies. The quality of adopted laws and other legal acts, as well as the level of practice of their application and other forms of implementation, including the degree of observance of guarantees of subjective rights and legitimate interests of citizens enshrined in legal norms, depend on how perfect the activity of these bodies. The effect of a legal norm cannot be considered in isolation from the mechanisms that create it, and then implement it in reality. That is why the organizational aspect of the effectiveness of the rule is of great scientific and practical importance. This aspect is directly related to the social: in the case of full compliance of the norm with the existing social relations in content, but in the absence of the necessary organizational conditions for its implementation, the effectiveness of such a rule may be low. That is why in determining the conditions of effectiveness of the law it is necessary to use a systematic approach, i.e. keep in mind that efficiency depends on all elements of a complex social system: the legal superstructure as a whole (including legal institutions, legal awareness, etc.), public relations non-legal nature, from the culture of society, its traditions, customs, historical heritage, from the activities of state institutions, public organizations, etc. Each element of the social system has one or another significance for the

[1] E.g., Жинкин А. В. Некоторые проблемы классификации видов эффективности норм права. *Пробелы в российском законодательстве.* Юридический журнал. 2008. № 1. С. 64–67. URL: https://cyberleninka.ru/article/v/nekotorye-problemy-klassifikatsii-vidov-effektivnosti-norm-prava (Date accessed: 23.06.2019).

normal functioning of law and can also act as a certain condition for the effectiveness of law. However, of course, the degree of significance of each element is unequal: among them may be more important and less important for the development of certain social relations and a certain legal norm [1].

Conclusions. Based on the generalization of scholars' opinions in determining the effectiveness of the implementation of administrative law, especially in the transition of Ukraine to European standards, it is necessary to take into account whether the existing social need for administrative and legal regulation of certain social relations, including and those related to forensic activities. Provided that the permissible degree of the goal is achieved, it is possible to conclude that certain legal norms are acceptable in general, and in the future to solve a complex question about their effectiveness.

Given the definition of a system of criteria for assessing the effectiveness of legal norms, the conclusion of the legal examination of the existing legal act could be just the tool that will assess the effectiveness of administrative and legal regulation of forensic science in Ukraine. In this case, legal expertise, in our opinion, should be an integral part of the system of legal monitoring of lawmaking and law enforcement. Thus, the effectiveness of administrative and legal norms (including those governing judicial and expert activities in Ukraine), their relationship with various aspects of public life can be explored through legal monitoring, at different stages of which the assessment of the effectiveness of regulations; legal acts is possible using the methodology of statistical research on the basis of a systematic approach.

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[1] E.g., Бірченко Ю. І. Деякі критерії оцінки якості та ефективності нормативно-правових актів. Журнал Національного університету «Києво-Могилянська академія». *Наукові записки.* 2004. Т. 26. С. 9–14.

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Konstytuciia Ukrayiny vid 28.06.1996 № 254k/96-VR. URL: http://zakon3.rada.gov.ua/ laws/show/254 % D0 % BA/96- % D0 % B2 % D1 % 80 (data zvernennia: 12.07.2019) [in Ukrainian].

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І. М. Овсянникова

ОСНОВНІ ЗАСАДИ ВИЗНАЧЕННЯ ЕФЕКТИВНОСТІ СУДОВО-ЕКСПЕРТНОЇ ДІЯЛЬНОСТІ: АДМІНІСТРАТИВНО-ПРАВОВИЙ АСПЕКТ

Європеїзація України має на меті переосмислення квестій правової системи та індивіда, пошуку нових шляхів визначення поняття ефективності адміністративного права та її оцінки. Відсутність комплексного дослідження ефективності адміністративно-правового регулювання судово-експертної діяльності в Україні є окремою проблемою, яка вимагає свого наукового вирішення.

У статті проаналізовано поняття «ефект», «ефективність». Розглянуто умови та фактори, які можуть мати вплив на ефективність правових норм. Досліджено наукові засади визначення ефективності адміністративно-правового регулювання судово-експертної діяльності.

Ключові слова: ефект, ефективність, норма права, адміністративно-правове регулювання, судово-експертна діяльність.

И. М. Овсянникова

ОСНОВНЫЕ ПРИНЦИПЫ ОПРЕДЕЛЕНИЯ ЭФФЕКТИВНОСТИ СУДЕБНО-ЭКСПЕРТНОЙ ДЕЯТЕЛЬНОСТИ: АДМИНИСТРАТИВНО-ПРАВОВОЙ АСПЕКТ

Одним из наиболее значимых показателей в праве является эффективность административно-правового регулирования. Развитие сферы судебно-экспертной деятельности и ее стабильное функционирование напрямую связаны с уровнем эффективности ее административно-правового регулирования.

В Украине уже долгое время ведется работа по адаптации национального законодательства к законодательству Европейского Союза. Данный процесс осложняется, прежде всего, тем, что на сегодня не существует четких критериев, по которым Украина должна привести свое законодательство в соответствие с требованиями Европейского Союза. На современном этапе развития нашего государства проблема оценки эффективности права приобретает все большую актуальность.

Европеизация Украины требует нового осмысления проблем взаимодействия правовой системы и личности, поиска новых подходов к понятию эффективности административного права, в том числе, и в области судебной экспертизы.

Одним из наиболее значимых показателей в праве является эффективность административно-правового регулирования. Для объективного отражения тенденций развития общественной жизни и эффективного решения существующих проблем административное право в Украине требует переориентации на человекоцентристскую идеологию, целью которой является обеспечение прав и свобод человека.

На сегодняшний день, оценка эффективности действия нормативно-правовых актов, регулирующих судебно-экспертную деятельность в Украине, не обеспечена достаточно универсальным научным учением и практическими рекомендациями по его реализации.

В статье проанализированы понятия «эффект», «эффективность». Рассмотрены условия и факторы, которые могут влиять на эффективность правовых норм. Исследованы научные основы для определения эффективности административно-правового регулирования судебно-экспертной деятельности.

Ключевые слова: эффект, эффективность, норма права, административно-правовое регулирование, судебно-экспертная деятельность.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.17
UDC 378, 2

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FEATURES OF PROFESSIONAL STAFF TRAINING OF STATE SCIENTIFIC RESEARCH FORENSIC CENTER OF THE MINISTRY OF INTERNAL AFFAIRS OF UKRAINE

Features of professional training of employees of SSRF of the Ministry of Internal Affairs of Ukraine are considered.

The purpose of the article is to focus on the patterns of scientific and methodological training of experts and the quality of their duties.

The forensic activities of state and non-state institutions in Ukraine and international practice in this area are analyzed. To improve the quality of forensic expertise, it is necessary to create conditions to ensure a high level of professional training of experts. The Expert Service of the Ministry of Internal Affairs of Ukraine is a system of state specialized institutions of forensic examination, which constantly expands the range of types of forensic examinations that it conducts. Professional training of experts of the above-mentioned service is carried out through training in educational institutions, professional training centers of the Ministry of Internal Affairs personnel management and on-the-job training, as well as within the framework of additional professional training internship in positions, etc. At the same time, new types of expertise require scientific and methodical processing and, accordingly, providing materials for further use during examinations. Changes in the field of forensic expertise in the Republic of Belarus are analyzed, where the State Committee for Forensic Expertise, created in 2013, is entrusted with the implementation of a unified state policy in the field of forensic expertise. One of the main indicators of the effectiveness of expert activities is the introduction of scientific achievements into expert practice, innovative technologies, distance learning opportunities, etc.

Promising solutions and ways are offered, which allow to carry out more fully and objectively the training of the expert, which plays an important role and has a positive effect on efficiency and effectiveness during the work.

Keywords: forensic expert, forensic examination, forensic activity, expert service, professional training, forensic institutions, international practice.

Formulation of Research Problem. In conditions of continuous improvement of the judiciary in Ukraine, more and more important for the administration of justice becomes forensic expert activity: scientific-methodical

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and production activity of state and non-state forensic expert institutions, experts from the number of experienced persons, which is necessary for conducting judicial examination on behalf of an authorized person or the body that appointed it.

SSRFC of the Ministry of Internal Affairs of Ukraine is a system of state specialized institutions of forensic examination, the activities of which are directed and coordinated by the Ministry of Internal Affairs of Ukraine. As you know, the competence of a forensic expert is a set of knowledge on the theory, methods and practice of forensic examination of a particular genus, species. Expert competence is a subjective category in relation to the competence of each expert, or the degree of mastery by an individual expert of the entire system of theoretical knowledge[1]. The purpose of professional training of the expert is realized in achievement of the maximum conformity of competence of the expert to its competence[2]. This necessitates a comprehensive targeted study of this issue.

Analysis of Recent Researches and Publications. Research on training of experts, in its various manifestations, attention was paid to such scientists as: I. A. Lapina, A. I. Shved, O. R. Rossinskaya, I. A. Moroz, D. S. Anisimova, V. M. Sherstyuk, P. I. Repeshko, V. M. Baranyak [3].

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According to V. M. Sherstyuk, research on professional activity of the expert is done by creating his professiogram. The purpose of creating a professional profile is to develop an ideal model in which there should be a complete qualification description of the forensic expert from the standpoint of the requirements for his professional knowledge, skills, abilities, personal characteristics.

V. M. Baranyak argues that the criteria by which to assess the competence of the expert is the education of the expert and the experience of his professional activity in the field of science or practice, which are necessary for the examination. A necessary and decisive condition for the training of forensic experts in higher education institutions is to amend the legislation governing forensic expertise in Ukraine.

As I. A. Moroz notes in one of his scientific works, experience shows that a centralized system of state bodies with their own educational institution is effective in terms of organizing the training of expert staff. The possibility of wide coverage of expert specialties cannot be created only by the efforts of individual institutes. Significant assistance in the organization of training is provided by the central body of forensic expert activity.

In spite of the fact that in Ukraine there are a large number of scientific publications devoted to their criminal-procedural issues of forensic activity, at the same time there are few publications in the contemporary domestic forensic literature on the problems of formation and realization of professional training of experts in accordance with new needs in the conditions law enforcement reform.

Article Purpose. To improve the quality of this type of activity requires not only the optimal organization of experts and forensic institutions, ensuring a continuous process of implementation of modern scientific and technical means and methods, but also creating conditions to ensure a high level of professional training, development of measures to optimize forensic activities by improving its legal, methodological and organizational aspects[1]. Regardless of where this type of training takes place, it is determined by its specificity, accompanied by a great responsibility of the mentor or teacher in obtaining the skills of a professional forensic expert.

Main Content Presentation. Special attention has always been paid to the professional training of experts of state forensic institutions. According to Article 10 of the Law of Ukraine: On Judicial Examination dated on February 25, 1994, forensic experts of state specialized institutions may be specialists

spivvidnoshennya-protsesualnogo-statusu-ta-pofesiynoyi-diyalnosti/ (Date accessed: 12.07.2019); Бараняк В. М. Проблеми підготовки судових експертів у вищих навчальних закладах України. *Вісник Національного університету» Львівська політехніка».* 2014. № 801. Юридичні науки. С. 229–233.

[1] Абрамова В. М. Експертні помилки: сутність, генезис, шляхи подолання: автореф. дис. …канд. юрид. наук: спец. 12.00.09 Київ, 2005. С. 19.

who have the appropriate higher education, educational qualification level not lower than a specialist, trained and qualified as a forensic expert in a particular specialization[1]. Special professional training is carried out in accordance with departmental orders of the Ministry of Internal Affairs, the Ministry of Justice, the Security Service and other departments of Ukraine. Training is conducted in educational institutions, vocational training centers of the Ministry of Internal Affairs and on-the-job training, as well as in the framework of additional professional training internships, etc. Departmental instructions regulate all forms and types of training. The management of the Expert Service is constantly concerned with the problems of improving the training system, strengthens the requirements for the professional level of employees, introduces the practice of attestation of forensic experts in order to confirm qualifications. As already mentioned, the training of experts is carried out in different departments, and each of them has its own approaches to training. Differences in the organization and methods of training do not contribute to the quality of examinations in general and the interaction of experts with each other in particular. Moreover, in the expert institutions of each system there is a practice of training experts, which involves the development of related specialties. However, this applies to specialties at the level of one or more at the intrastructural level. As for more in-depth training and mutual acquisition of knowledge at the interstructural level (for example, forensic scientists and forensic doctors), there is no such synthesis of training. Close cooperation of experts in different areas is useful for developing common approaches not only in the process of training experts, but also during joint multidisciplinary examinations.

Given the realities of today, when there are various manifestations of crime, new forms of crime, the emergence of new objects of study, the Expert Service of the Ministry of Internal Affairs of Ukraine is expanding the range of types of forensic examinations that it conducts. Accordingly, the above service is replenished by graduates not only of educational institutions of the Ministry of Internal Affairs, but also of civilian universities (specialists in engineering, chemistry, physics, economics, art, etc.). Training of expert staff in higher educational institutions is a special didactic process. Methods and organizational forms of teaching the basics of forensic science as a whole and its individual areas differ from the teaching of other disciplines in their specificity, which has a number of components. At the same time, there is a high scientific and methodological potential of faculties of training of experts and departments of law universities, which allows to bring to students, cadets and students the material taught at the appropriate scientific level and achieve practical skills and abilities that meet the requirements of forensic departments.

[1] Про судову експертизу: Закон України від 25 лютого 1994 р.: із змінами від 9 вересня 2004 р. *Відомості Верховної РадиУкраїни.* 1994. № 28. Ст. 232; 2003. № 27. Ст. 209. URL: http//zakon.rada.gov.ua/go/4038–12 (Date accessed: 12.07.2019).

At the same time, new types of examinations require scientific and methodological processing and, accordingly, the provision of materials for further use during their conduct. It is necessary to increase the level of educational and methodological support of the training process in new areas on the basis of research forensic centers of the Ministry of Internal Affairs, to successfully pass the exam to the relevant expert qualification commission and issue certificates to forensic experts. Therefore, for trainee experts who have obtained higher education in a certain field, it is necessary to conduct several-month courses of additional professional education on the basis of the Higher Education Institution of the Ministry of Internal Affairs of Ukraine. It is important to establish a Center for Advanced Training of the Expert Service of the Ministry of Internal Affairs of Ukraine with the involvement of leading practitioners of the State Research Forensic Center of the Ministry of Internal Affairs of Ukraine, research forensic centers of the Ministry of Internal Affairs of Ukraine. At the same time, due to the need for professional training of experts, changes in the legal status and scientific and technical capabilities of forensic science, it is necessary to implement, as noted by O. R. Rossinskaya[1], the principle of equal ratio of technical, natural sciences and humanities during training. Courses must be integrated and consist of basic and special training. It is necessary to work out the issue of sending trainees to study in the Forensic Science specialization at the master's level. As a result of training by employees who have a higher education in a non-expert specialty, a master's degree in Forensic Science will be obtained.

However, there is an opposite opinion on the feasibility of mastering the educational specialization of forensic expert. Thus, in particular, according to P. I. Repeshko[2], a person acquires the status of a forensic expert after appointing him in the manner prescribed by the relevant procedural legislation, forensic examination to perform. At the same time, there are doubts about the expediency of introducing a separate educational specialization of forensic expert. Obtaining a person at the same time as higher education or after obtaining special training for the proper performance of the duties of a forensic expert should not change the educational specialization. The person receives the status of a forensic expert in the manner prescribed by applicable procedural law. Outside of criminal, civil, commercial and administrative proceedings, the person himself may be involved in the performance of certain functional tasks, which involve the use of special knowledge, but not as a forensic expert, but as a specialist. It is not necessary

[1] Россинская Е. Р. Теоретические и прикладные проблемы судебной экспертизы. С. 10.

[2] Репешко П. І. Судовий експерт: співвідношення процесуального статусу та професійної діяльності: матер. Міжнар. наук.-практ. інтернет-конференції *«Сучасна наука в мережі Інтернет»* 25–27 лютого 2010 р. : http://intkonf.org/repeshko-pi-sudoviyekspert-spivvidnoshennya-protsesualnogo-statusu-ta-pofesiynoyi-diyalnosti/ (Date accessed: 12.07.2019).

to confuse the notion of procedural status of a forensic expert with the notion of profession, specialty or position of forensic expert. After all, the position of forensic expert cannot be the same as there can be no such professions, specialties or positions as witness, victim, suspect, accused, etc.

The analysis of international practice draws attention to the changes in the field of forensic science in the Republic of Belarus that have taken place in recent years. The State Committee of Forensic Examinations of the Republic of Belarus, established in 2013, is responsible for implementing a unified state policy in the field of forensic science. In 2015, this organization started retraining in all expert specialties, including forensic, forensic biological and forensic chemical research, on the basis of national educational standards in accordance with a single approach to the formation of professional competencies of forensic experts. For this purpose, the teaching staff of the Institute of Advanced Training and Retraining of the State Committee is provided with relevant specialists, new structural subdivisions have been opened in, educational standards, curricula have been developed and a methodological base has been prepared [1]. Considerable attention is paid to the development of new types of expert research in the Republic of Belarus, designed to meet the modern needs of law enforcement agencies and courts, as well as citizens and organizations. This is facilitated by the scientific developments of the Scientific and Practical Center of the State Committee of Forensic Science of the Republic of Belarus and the high level of training and retraining of experts at the Institute for Advanced Training and Retraining of the State Committee [2].

One of the main indicators of the effectiveness of expert activity is the introduction of scientific achievements into expert practice. In the didactic process, such implementation at the modern level is achieved through the use of innovative technologies. Before using such technologies, the leader must master them well to convey relevant information to students in an accessible and understandable form. The head must not only know new expert techniques, modern technical means, but also have the instrument base, which will allow him to properly navigate in the presentation of a material and show what results can be obtained. Thus, the mentor or teacher, improving their knowledge, increases the potential of the learning process.

The possibilities of distance learning using the Internet and video conferencing with the receipt of information through the interactive interaction of the employee and the mentor in the online mode, which has a number of advantages: individual training, accessibility, mobility, cost-effectiveness, etc.

[1] Лапина И. А. Подготовка судебных экспертов как одна из основных задач государственного комитета судебных экспертиз. С. 7.

[2] Швед А. И. Судебно-экспертная деятельность в Беларуси: от создания ведомства к новациям сегодняшнего дня. С. 12.

should be used more widely. According to D. S. Anisimova [1] such training is conducted using several innovative methods:

- use of text messages for communication during the development of material with intermediate control using video communication;
- counseling the mentor during online interviews regarding training issues;
- video conferencing with a mentor with several employees who are at the same level of training, etc.

According to the Criminal Procedural Code of Ukraine, both state and non-state experts are procedurally equivalent. Therefore, it is also necessary to learn from the system of professional training of forensic experts of non-governmental forensic organizations, in which a high level of training is provided by involving highly qualified and leading practitioners in professional development courses and training, and experts learn the latest techniques. and for some special types of forensic examinations (dendrochronology, religious studies), etc.

Conclusions. Based on the analysis of professional training of forensic experts, it was found that it is necessary to constantly and methodically improve the process of training experts, because there are many opportunities for this. It is necessary to pay attention to the advantages of training experts by government agencies (scientific and methodological support of the educational process, the availability of dedicated training facilities, training laboratories) and the system of training forensic experts in NGOs (possibility of rapid introduction of new types of forensic examinations) training of highly qualified practitioners). Taking into account the analysis of the international practice of the Republic of Belarus, it is expedient to create a single non-departmental body of forensic activity for more effective examinations and quality training with relevant diplomas and certificates of forensic expert.

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О. В. Соловей

ОСОБЛИВОСТІ ПРОФЕСІЙНОЇ ПІДГОТОВКИ ПРАЦІВНИКІВ ЕКСПЕРТНОЇ СЛУЖБИ МІНІСТЕРСТВА ВНУТРІШНІХ СПРАВ УКРАЇНИ

Розглянуто особливості професійної підготовки працівників експертної служби Міністерства внутрішніх справ України. Метою статті є висвітлення закономірностей науково-методичної підготовки експертів та якісного виконання ними обов'язків. Проаналізовано судово-експертну діяльність державних і недержавних установ в Україні та міжнародну практику в цій сфері. Запропоновано перспективні рішення та шляхи, що

дозволяють більш повно й об'єктивно проводити підготовку експерта, яка відіграє важливу роль та позитивно відбивається на ефективності й результативності під час роботи.

Ключові слова: судовий експерт, судова експертиза, судово-експертна діяльність, експертна служба, професійна підготовка, судово-експертні установи, міжнародна практика.

О. В. Соловей

ОСОБЕННОСТИ ПРОФЕССИОНАЛЬНОЙ ПОДГОТОВКИ РАБОТНИКОВ ЭКСПЕРТНОЙ СЛУЖБЫ МИНИСТЕРСТВА ВНУТРЕННИХ ДЕЛ УКРАИНЫ

Рассмотрены особенности профессиональной подготовки сотрудников экспертной службы Министерства внутренних дел Украины. Целью статьи является акцентирование внимания на закономерности научно-методической подготовки экспертов и качественного выполнения ими обязанностей.

Проанализирована судебно-экспертная деятельность государственных и негосударственных учреждений в Украине и международная практика в этой сфере. Для повышения качества судебно-экспертной деятельности необходимо создание условий для обеспечения высокого уровня профессиональной подготовки экспертов. Экспертная служба Министерства внутренних дел Украины является системой государственных специализированных учреждений судебной экспертизы, которая постоянно расширяет круг видов судебных экспертиз, которые она проводит. Профессиональная подготовка экспертов выше упомянутой службы проводится путем обучения в образовательных учреждениях, центрах профессиональной подготовки управления кадров МВД и обучения по месту работы, а также в рамках дополнительного профессионального обучения — стажировка в должности и т. д. В то же время новые виды экспертиз требуют научно-методической обработки и, соответственно, обеспечения материалами, для дальнейшего использования при проведении экспертиз. Проанализированы изменения в сфере судебно-экспертной деятельности в Республике Беларусь, где на созданный в 2013 году Государственный комитет судебных экспертиз возложена реализация единой государственной политики в области судебно-экспертной деятельности. Одним из основных показателей результативности экспертной деятельности является внедрение достижений науки в экспертную практику, инновационных технологий, возможностей дистанционного обучения и т. д.

Предложены перспективные решения и пути, позволяющие более полно и объективно проводить подготовку эксперта, которая играет важную роль и положительно отражается на эффективности и результативности во время работы.

Ключевые слова: судебный эксперт, судебная экспертиза, судебно-экспертная деятельность, экспертная служба, профессиональная подготовка, судебно-экспертные учреждения, международная практика.

Received by Editorial Board: 12.10.2019

HANDWRITING ANALYSIS, FORENSIC LINGUISTICS, FORENSIC VIDEO AND AUDIO ANALYSIS

DOI: https://doi.org/10.32353/khrife.2.2019.18
UDC 343.98

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ON ISSUE OF RESEARCH OF SIGNATURES PERFORMED BY PERSONS OF THE ELDERLY AND OLD AGE PEOPLE

Human handwriting changes throughout life, undergoing natural changes. Handwriting undergoes significant changes during the transition from mature to old and senile age. Aging is a natural, natural process of changes in the body at the physiological, psychological, social levels. Over the past 50 years, the aging process of the nation on a global scale has been developing rapidly.

This article discusses the topical issue of research of signatures made by elderly and senile persons, first of all, an attempt is made to determine the age limits of such concepts as «elderly» and «old age», and also features characteristic of signatures made by elderly or old age, and the signs that the signature artist is trying to reproduce with imitation.

The problematic aspects of the experts in carrying out posthumous handwriting examinations of signatures, the main of which is the quality and quantity of free samples of signatures and handwriting of the deceased, are revealed. This is due to the fact that it is no longer possible to take experimental samples of signatures and handwriting from a deceased person, and free samples of a person, due to the peculiarity of the life of the deceased, may be in a very limited amount and do not correspond to the time of drawing up the document under research.

Finally, the authors come to the conclusion that the methodology for the forensic study of signatures made on behalf of elderly and senile persons,

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developed in 1983, remains effective and relevant to this day, it makes it possible to successfully detect the fact of the execution of signatures by this category of persons, but needs to be improved, experimental research, constant monitoring of modern trends in the physiological and psychological development of a person.

Keywords: signature, elderly and old age people, handwriting analysis, writing and motor skills, posthumous handwriting analysis.

Formulation of Research Problem. The current state of forensic expertise allows us to address a wide range of issues of identification and diagnostic nature, as the limits of scientific knowledge about the patterns of writing and handwriting and the methods of their forensic research have expanded significantly.

Handwriting changes throughout life, undergoing natural changes. The handwriting undergoes significant changes in the process of transition from adulthood to old age and old age. Aging is natural, regular process of change in the body at the physiological, psychological, social levels.

Over the past 50 years, the aging process of the nation has been developing at a rapid pace worldwide. In 2017, the world population reached about 7.45 billion people1, and the age of every tenth earthling reached 60 years or more. According to UN forecasts, by 2025 the world's population will triple compared to 1950, and the number of elderly people in 6 times while the number of elderly people (over 80 years) will increase 10 times.

However, at what point in life does the elderly begin, at what age can a person be considered an elderly person? According to the age classification of the World Health Organization: 25—44 years — young age; 44—59 years — average age; 60—74 years — old age; 75—90 years — old age; persons who have reached 90 years of age are long-lived. Of course, all these divisions are conditional, the exact boundaries of different periods of human life cannot be established, because it is a continuous development, and age-related changes that occur in the body are numerous and varied.

In Ukraine, as in many developed countries, the share of older people has increased significantly in recent decades [2].

In the current criminogenic situation in the country, where persons of this category often become victims of fraudulent offenses committed through abuse of trust; when, under the guise of social workers, employees of the pension fund and other various public and state institutions and organizations, they are offered to participate in the exchange of funds, etc., the problem of such research is quite urgent.

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[1] Вікіпедія. URL: https: //uk.wikipedia.org/wiki/... (Date accessed: 23.09.2019).

[2] Населення України. Імперативи демографічного старіння. Київ: АДЕФ Україна, 2014. 288 с.

Analysis of Recent Researches and Publications. Some areas of problematic issues of signature research were devoted to their work by forensic scientists and practitioners: L. E. Arotsker, V. F. Berzyn, M. Ye. Bondar, O. V. Vorobey, M. A. Hryha, L. Yu. Elyseev, Y. O. Ivakín, K. M. Kovalev, N. O. Komissarova, V. V. Lipovskiy, Z. S. Melenevs'k, V. F. Orlova, S. M. Potapov, Y. Y. Svoboda, T. O. Sukmanova, Y. Ya. Frydman, S. A. Tsypenyuk, N. G. Shpakovich and others1. At the same time, issues of research on signatures made on behalf of the elderly and old age need constant attention given the current trends in human physiological development which is the purpose of this article.

Main content presentation. Due to the limited range of activities of the elderly and senile, handwriting research usually includes certain types of documents: notarial (wills, powers of attorney, loan agreements, gifts, lifetime maintenance agreements, etc.), bank (expense and income orders,

[1] E.g., Ароцкер Л. Е., Бродская А. Б., Можар И. М., Рожкова Г. В. Теоретические проблемы оценки экспертом признаков почерка. Харьков: ХНИИСЭ. 1963; Берзин В. Ф., Ковальчук З. А., Меленевская З. С. Оценка признаков, противоречащих выводу на заключительной стадии идентификационного исследования. *Криминалистика и судебная экспертиза.* Вып. 37. Киев, 1988; Бондар М. Є., Драпей Н. Г., Сукманова Т. О. Вирішення почеркознавчих задач стосовно підписів, виконаних за допомогою технічних прийомів: методичні рекомендації. Київ: КНДІСЕ, 2004. 60 с.; Воробей О. В., Меленевська З. С. Криміналістичне дослідження підписів: посібник. Київ: 2006; Грига М. А. Дослідження підписів, виконаних за допомогою технічних прийомів, у системі завдань судової експертизи. *Криміналістичний вісник.* № 1(21). 2014; Елисеев А. А. Подпись как почерковое начертание. *Теория и практика криминалистической экспертизы*. Сб. 3. Москва, 1958; Івакін Е. О. Теоретичні та методичні питання неідентифікаційних досліджень в судовому почеркознавстві: автореф. дис. ... канд. юрид. наук: спец. 12.00.09. Київ, 2003. 18 с.; Методика дослідження підписів ІДНДЕКЦ МВС України/уклад. К . М. Ковальов, З. С. Меленевська, Н. Г. Шпакович. Київ, 2009; Комиссарова Н. О. Криміналістичне дослідження підписів, виконаних в умовах обмеженого зорового контролю: автореф. дис. ... канд. юрид. наук. Київ, 2003. 16 с.; Липовский В. В. Установление условий выполнения подписей от имени лиц пожилого и старческого возраста: метод. пособ. Судебно-почерковедческая экспертиза малообъемных почерковых объектов. Киев, 1989; Липовский В. В. Криминалистическое исследование подписей, выполненных от имени лиц пожилого и старческого возраста: метод. пособ. для экспертов. Москва, 1983. Липовский В. В. Особенности методики исследования подписей, выполненных от имени лиц пожилого и старческого возраста. *Криминалистика и судебная экспертиза.* Вып 28. Київ, 1984; Меленевська З. С., Свобода Є. Ю., Шаботенко А. І. Судово-почеркознавча експертиза: навч.-метод. посіб. Київ, 2007; Орлова В. Ф. Теория судебно-почерковедческой идентификации. *Труды ВНИИСЭ.* Вып. 6. 1969; Потапов С. М. Введение в криминалистику: монография. Москва: Б. м. 1946. 10 с.; Фридман И. Я., Ципенюк С. А. Исследование умышленно измененных подписей. Криминалистика и судебная экспертиза. Киев,1967. Вып. 4. С. 296–299.

accounts with a testamentary disposition), postal (notifications of money transfers, parcels, information on the payment of pensions).

In general, while examining signatures on behalf of the elderly and elderly, the expert is guided by the traditional method of research, taking into account the specific characteristics characteristic of such age, which are caused by:

- peculiarities of changes of general and individual signs of signatures as a result of physiological aging and in the presence of pathological diseases of motor functions;
- signature execution under the influence of various confounding factors: unusual posture, unusual typewriter, unusual document position, unusual substrate, assistance of another person;
- features of execution of the signature with imitation.

In view of the above, a special method of forensic examination of such signatures has been developed for the purpose of studying this category of signatures. This technique is based on the results of generalization of theoretical and experimental data on the patterns of change of signatures associated with physiological and pathological processes occurring in the human body in connection with aging. The method developed in a qualitative and descriptive format contains a detailed description of diagnostic signs and the mechanism of their manifestations, the possibilities of their differentiation from the manifestation of signs during imitation and imitation of signatures of elderly and elderly people.

The peculiarity of the method of studying the signatures of the elderly and senile is that the expert must distinguish between changes in characteristics that have been acquired over time, from those that occur when intentionally distorting, imitating or executing signatures in unusual conditions. Thus, in signatures made with imitation or distortion of their own characteristics, as well as in the signatures of the elderly, the pace of movement slows down. But in the latter case, there are signs of natural rather than artificial deceleration - uniform or uniform slowness in all elements and strokes of the signature. In the signatures of the elderly with some change in transcription there are underpainting, inequality1.

The following diagnostic features are informative to form a version of a possible signature for an elderly or elderly person:

- impaired coordination of the first group in the form of broken lines (usually in oval elements, in places of change of direction of movements;

[1] Судебно-почерковедческая экспертиза (пособие для экспертов-почерковедов и судебно-следственных работников)/отв. ред.: А. И. Манцветова, В. Ф. Орлова, Ю. Ю. Доброславская. Москва, 1971.

in elements made by extending movements), sometimes in the form of tortuosity and trembling;
- reducing the coordination of the second group in the form of a significant discrepancy in size, acceleration, slope;
- presence of repetitive strokes, housekeeping, memos;
- the presence of reflex strokes in the final parts of the letters with a significant violation of coordination of movements as a result of difficult transfer of the writing device to the place of the beginning of the next letter;
- lack of connection or inconsistency between the degree of connection and the pace of signature;
- repeating the same letters or skipping them;
- instability of line direction and letter form.

The following changes are most noticeable:
- structure of movements according to the degree of complexity (during the execution of letter, non-letter strokes and strokes is simplified by the loss of parts and elements of strokes);
- form of movements (the main signs are manifested in the distortion of rectilinear and arc motions in the angular and polygonal, especially when performing the basic, oval, connecting and upper-case elements of upper and lower letters);
- the length of movements when executing the lowercase, uppercase and lowercase elements of uppercase and lowercase letters, as well as strokes and additional elements (their increase or decrease is observed);
- location of the starting points of movements and relative placement of the signature elements (their localization has a significant identification value).

These features vary depending on the degree of development of the handwriting of the signature. Thus, the change in the transcription of signatures made in unusual conditions (on a limited area of paper) is manifested in persons with highly developed movements in reducing the number of homogeneous letters less strokes, and in signatures made by movements of low degree of production - in not writing the last letters of the signature. In the signatures of elderly people, performed by movements of low or medium degree of production, often do not write individual letters or elements of letters located in the middle of the signature.

While evaluating the results of the comparison, it should be borne in mind that if the expert does not have samples close in time to the time of the study signature (with a positive identification conclusion), the expert may observe differences not only in individual features but also in letter designs.

This is due to the fact that the destruction of writing skills leads to a loss of variety of movements, and the handwriting of the artist remains a limited number of the simplest (for him) and stable habitual movements, which later displace the structures characteristic of the writer at a younger age.

Establishing the executor of a signature made with imitation is one of the difficult tasks in the study of signatures made on behalf of the elderly and senile. This is due to the fact that the person who performs such a signature, tries to reproduce not just the signs of the signature of another person, but the elderly or senile, thus deautomatizing their own handwriting and setting a set of reduced performance and coordination. At the same time there is a significant distortion and change of the general and separate signs of a handwriting of the executor.

The complexity of researching such signatures is due to the fact that the volume of handwriting material is reduced to the number of characters made by the artist's unchanged handwriting.

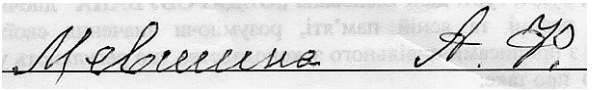
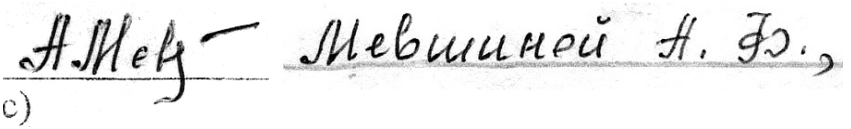


Fig. 1. An investigated signature made with imitation of a true signature of an old age person



c)

Fig. 2, 3. Free specimens of signature of the person, executed 11 years earlier for the investigated signature

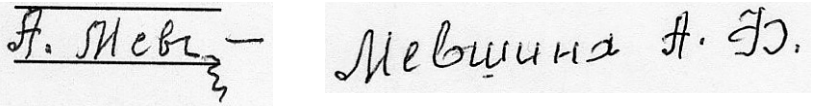


Fig. 4, 5. Experimental signature samples of the same person were made 1 year after the signature being tested

According to images of signatures it is observed that the studied signature is made of highly developed handwriting, but has pronounced diagnostic features: angularity in semi-oval elements, tortuosity and angularity of rectilinear and arc strokes, unreasonable stops of the typewriter, undifferentiated pressure in some areas. There are no diagnostic signs in the free samples of the signature and handwriting of the person. Experimental samples also have signs of decreased coordination of movements of the first group and a slow pace, but their nature and location differ from the

diagnostic signs traced in the studied signature. When evaluating the results of the comparative study, it was found that the differences in general and individual features of handwriting are stable, significant, go beyond the variation of the signature of the person on whose behalf the signature was made, and, taking into account diagnostic features, give grounds to make a categorical conclusion. not by the specified person, but by another person in imitation of his real signature.

It should also be noted that in recent years the number of postmortem forensic examinations of signatures made by the elderly or elderly has increased significantly.

According to A. O. Babkov, the main problematic aspect of posthumous studies of signatures and handwritten texts are lifetime free samples of signatures and handwriting of the deceased person, since from the deceased person it is no longer possible to select experimental samples of signatures and handwriting, and free specimens of personality in connection with the life of the deceased may be in very limited numbers and may not correspond to the time of preparation of the study document [1].

Although the parties to the process are personally responsible for the number, quality and accuracy of the free lifetime specimens of the signature and the handwriting of the deceased person, the expert must make sure, during the preliminary examination at the stage of preliminary examination of the samples submitted for examination, that all submitted for life examination specimens of the deceased person, made by him, and to exclude such a negative moment when the person who executed the signature on behalf of the deceased produced unreliable specimens that are similar test signature, located in the disputed document.

To do this, the expert must first of all pay attention to the documents with free samples of the person who do not cause any doubt about their authenticity: notarized documents in the form of a will, the contract of sale, power of attorney, attested in the village council, documents related to the issuance of a passport citizen of Ukraine, including foreign, stored in the territorial units of the migration service of the Ministry of Internal Affairs of Ukraine, etc.

In the absence of such documents, the expert must, in accordance with the law, submit to the court a request for the provision of additional free samples of the deceased person who are in the pension business and

[1] Бабков А. О. Проблемні аспекти посмертних почеркознавчих досліджень підписів, виконаних в основних та додаткових договорах оренди землі. *Криміналістика і судова експертиза*: міжвідом. наук.-метод. зб., присвяч. 105-річчю заснування судової експертизи в Україні/Київський НДІ судових експертиз; редкол.: О. Г. Рувін (голов. ред.) та ін. Київ: Ліра-К, 2018. Вип. 63, ч. 1. С. 290–302.

stored in the pension fund; a personal case that has remained in the last and previous places of work; financial documents; information on the receipt of a pension and salary; banking institutions, etc., where controlling authority or controlling entity must first ascertain the identity by identifying it with an identity document (passport, military ID, etc.) before affixing his or her personal signature to the accounting document.

Expert should be critical of those specimens made in utility bills, contracts of energy supply companies, information on receipt of postal messages, etc., While examining free specimens of a person's signatures, because these documents may contain signatures made not by the deceased but by the deceased. family members, relatives or persons living with the deceased. In some cases, the signatures of relatives, usually those with the same surname, are very similar in the first letters of surnames or names, and may at the initial stage of the preliminary study of samples be incorrectly grouped by an expert, which can lead to erroneous conclusions.

One of the most important steps in conducting a post-mortem handwriting examination of signatures is to verify free specimens of a person's signatures for comparison with the signature made in the study document, as aging, severe cerebrovascular disease, visual impairment, and partial blindness can progress rapidly. which significantly reduces the writing and motor skills of the person and initiates the emergence of diagnostic signs that significantly distort one or another manifestation of a particular sign of the signature. Therefore, in order to accurately assess the identified diagnostic, general and individual features (convergent, divergent), the signature of the expert, it is necessary to read the materials that indicate the state of health of the person.

To do this, an expert should submit to the court a request for a claim at the medical institution where the deceased person was treated, the medical card of the patient, to get acquainted with the state of health of the sick person and to determine the presence or absence of diseases that could affect the coordination of movements. An essential point is to establish the fact of signing the document during direct treatment at a medical institution, or before or after treatment.

The medical record of a patient fully shows the dynamics of his health and the result of the impact of treatment on the improvement of the person's condition, and in severe cases - deterioration. Also, from the medical record of the patient it is possible to establish in what condition he was discharged from hospital and whether his consciousness and state of health allowed to sign any documents further as at the diseases connected with vessels of a brain (stroke), memory weakens, reduced intelligence, comes a weak mind and so on.

In the practice of the authors there was a case when four testaments were given for posthumous handwriting research, the first of which was made three years before death (Fig. 6), the second - two years (Fig. 7), the third — one year and nine years. three months (Fig. 8), the fourth — sixteen days before the death of the testator (Fig. 9, 10). At the time of his death, the testator was 87 years old.

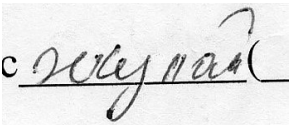


Fig. 6. Tested signature made by a person three years before death

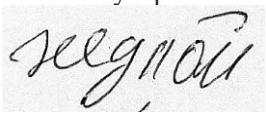


Fig. 7. Tested signature made by the same person two years before death

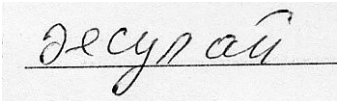


Fig. 8. Tested signature made by the same person one year and nine months before death



Fig. 9, 10. Tested signatures made by the same person in two copies of testaments sixteen days before death

From the images of the signatures it is observed that the studied signatures in the last will are made in handwriting of a lower degree of elaboration than the previous three, at a slow pace, there are signs of impaired coordination of movements of the first and second groups. However, when comparing the studied signatures, similarities were found in general and individual features of handwriting, forming an individual (unique) population, which is sufficient for a categorical conclusion about the implementation of the studied signatures by one person. The presence of the last two signatures of the diagnostic complex of signs, which are absent in the previous three, was explained by the expert influence on the writing and motor skills of the performer temporary confounding factors such as pain, writing fatigue, physical (muscle) fatigue, limited visual control, which is confirmed by a copy of the extract from the medical card of the inpatient.

Conclusions. Finally, it should be noted that the methodology of forensic investigation of signatures made on behalf of the elderly and elderly to date, developed in 1983, remains effective and relevant, allows to successfully detect the fact of execution of signatures by the specified category of persons, but needs improvement, conducting experimental studies continuous monitoring of current trends in physiological and psychological development of a person, caused, in particular, by significant changes in living conditions, medical services, active social the elderly and the "rejuvenation" of certain diseases.

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ДО ПИТАННЯ ДОСЛІДЖЕННЯ ПІДПИСІВ, ВИКОНАНИХ ОСОБАМИ ПОХИЛОГО ТА СТАРЕЧОГО ВІКУ

У статті зроблено спробу визначити вікові межі таких понять, як «похилий» та «старечий», досліджено ознаки, характерні для підписів, які виконані особами похилого або старечого віку, та ознаки, які намагається відтворити виконавець підпису з наслідуванням. Розглянуто проблемні аспекти, що виникають у експертів при проведенні посмертних почеркознавчих експертиз підписів, зокрема, пов'язаних з обмеженою кількістю або відсутністю вільних зразків підпису ймовірного виконавця за умови неможливості отримання експериментальних зразків.

Ключові слова: підпис, особи похилого і старечого віку, почеркознавче дослідження, письмово-руховий навик, посмертна судово-почеркознавча експертиза.

А. В. Забуга, Ю. Ю. Лилова

К ВОПРОСУ ИССЛЕДОВАНИЯ ПОДПИСЕЙ, ВЫПОЛНЕННЫХ ЛИЦАМИ ПОЖИЛОГО И СТАРЧЕСКОГО ВОЗРАСТА

Почерк человека меняется в течение всей жизни, подвергаясь природным изменениям. Существенных изменений почерк претерпевает в процессе перехода от зрелого до преклонного и старческого возраста. Старение — естественный, закономерный процесс изменения организма на физиологическом, психологическом, социальном уровнях. За последние 50 лет процесс старения нации в мировом масштабе развивается с большой скоростью. В данной статье рассмотрен актуальный вопрос исследования подписей, выполненных лицами пожилого и старческого возраста, в первую очередь, сделана попытка определить возрастные границы таких понятий, как «преклонный» и «старческий», а также приведены признаки, характерные для подписей, выполненных лицами пожилого или старческого возраста, и признаки, которые пытается воспроизвести исполнитель подписи с подражанием.

Раскрыты проблемные аспекты, возникающие у экспертов при проведении посмертных почерковедческих экспертиз подписей, главным из которых является качество и количество прижизненных свободных образцов подписей и почерка умершего. Обусловлено это тем, что от умершего человека уже невозможно отобрать экспериментальные образцы подписей и почерка, а свободные образцы лица, в связи с особенностью жизни умершего, могут быть в очень ограниченном количестве и не отвечать времени составления исследуемого документа.

Напоследок авторы приходят к выводу, что разработанная в 1983 году методика криминалистического исследования подписей, выполненных от имени лиц пожилого и старческого возраста, до настоящего времени остается действенной и актуальной, позволяет успешно обнаруживать факт выполнения подписей указанной категорией лиц, но нуждается в усовершенствовании, проведении экспериментальных исследований, постоянного мониторинга современных тенденций физиологического и психологического развития человека.

Ключевые слова: подпись, лица пожилого и старческого возраста, почерковедческое исследование, письменно-двигательный навык, посмертная судебно-почерковедческая экспертиза.

Received by Editorial Board: 10.07.2019

DOI: https://doi.org/10.32353/khrife.2.2019.19
UDC 343.982.32

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DETECTION OF DIGITAL IMAGE EDITING FOR THE ADDITIONAL METHOD OF STEGANOGRAPHIC ANALYSIS NOISE

Issues of authentication and research of editing of digital images' urgent questions of examination of video, sound recording.

The main purpose of the study using the method of steganographic analysis of image noise is to determine the reliability of digital photographs, to identify signs of changes in the "content" of such images.

The paper discusses the possibilities of a technique for studying digital images using the steganographic noise analysis method to identify signs of editing digital photographs (images) in order to increase the efficiency, quality and evidentiary significance of forensic photography examinations. A new methodological approach to solving problems in the study of editing digital images, as well as establishing their reliability (authenticity) is proposed. It can be used both on local computers and using powerful server equipment in remote access mode via a web interface, including using low-power mobile user terminals (smartphones, tablets, etc.), which will greatly facilitate the work of specialists during research installation of digital images and determination of their reliability.

The software developed within the framework of the methodology for studying the features of digital image editing based on the analysis of the entropy of noise makes it possible to conduct research in order to identify the features of editing based on the analysis of the entropy of noise in digital images with the maximization of a complex criterion that takes into account the entropy and variance of the image.

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Keywords: forensic photography examination, digital images, method of steganographic analysis of noise, noise entropy.

Formulation of Research Problem. Traditionally, the subject of forensic examination of video and sound recording were positives, negatives, various technical means for their production, which were procedurally enshrined in the case file. In today's world, digital technology has almost supplanted analog, and pre-trial and trial materials use physical evidence in the form of electronic documents or their images, photographs, videos, scanned copies, which have a digital nature of education. Given the relative ease of creation, modification, distribution of digital images, logically there are questions of their authenticity (authenticity), namely the identification of signs of change in the content of such images.

Pictures taken with digital cameras, as well as videos taken with digital video cameras, are appendices to the protocols of investigative actions, site inspections, as well as searches, investigative experiments, on-site testimonies, etc. Digital images are now widely used in investigative actions, expert research, search operations and more. Thus, with the help of video surveillance cameras, photography and video recordings from mobile devices of citizens, etc., investigative bodies have the opportunity to more fully perceive and reflect events, to carry out procedural actions that are important in criminal proceedings.

Significant advances in photography, video, telecommunication technologies expand the capabilities of traditional photo, video, and new (mobile, network, specialized, space) fixation capabilities with new data formats, requiring constant updating of specific expertise in digital photography research.

Analysis of Recent Researches and Publications. Over the last 30 years, with the development of digital data transmission systems, much research has emerged in the field of digital steganography. Digital steganography is the concealment of information in data streams (digital signals).

Despite the development of new algorithms and methods of data concealment, there are no commercially successful exclusively steganographic software products. Therefore, in information security technologies, steganography is an auxiliary, secondary tool that is rarely used. Steganography-derived methods of data concealment are also being actively developed: digital watermarks, marking, and to a lesser extent draft protocols for covert data transmission based on the exchange of multimedia media, most often photographs. Characteristically, the number of scientific papers on steganographic analysis is significantly less than the number of papers on steganographic concealment algorithms.

V. O. Khoroshko, G. F. Konakhovych, M. E. Shelest, V. K. Zadirak, N. V. Koshkina, A. V. Agranovsky, V. G. Gribunin I. V. Babych,

S. A. Palamarchuk, N. A. Palamarchuk, V. V. Ovsyannikov and others [1]. made a significant contribution to the development of steganography in their research papers. The contribution of these studies is to develop and improve methods of hiding data in images, but in these works, the authors developed methods of steganographic information protection took place without taking into account the relationship between the requirements of secrecy and robustness. Research paper of R. M. Shtonda, Yu. O. Protsyuk, O. M. Makovetsky and I. R. Maltseva [2]. is devoted to the problem of robustness and secrecy. I. V. Shvidchenko's research paper is devoted to the problem of detecting steganographic concealment in BMP and JPEG files.

The Article Purpose is to review the method of steganographic analysis of noise to determine the authenticity and identify signs of digital image editing. In Ukraine, of the registered methods of forensic examinations, the closest to the research of digital photographs today is "Methods of research of digital photographs and technical means of their manufacture" (registration code 6.1.05)[3] This paper lays down the general foundations of a methodological approach to forensic examination of digital photographs and technical means of their production, provides ways in which individual research can be conducted. In general, the technique meets the objectives of forensic examination of digital images. It details the general scheme of research, the order of actions of the expert in the previous study, actions during the visual analysis and analysis of metadata within the analytical research.

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[2] E.g., Штонда Р. М., Процюк Ю. О., Маковецький О. М., Мальцева І. Р. Аналіз методів цифрової стеганографії зображень. *Сучасні інформаційні технології у сфері безпеки та оборони.* № 3(21)/2014. Київ: Військовий інститут телекомунікацій та інформатизації Державного університету телекомунікацій. С. 78–81; Швідченко І. В. Методи стеганоаналізу для графічних файлів. Київ, 2010. № 4; Тимко Є. В. Розробка методики досліджень цифрових фотозображень та технічних засобів їх виготовлення. Звіт про НДР: КНДІСЕ, 2013. 121 с.; Чорний С. В. та ін. Розробка методики дослідження ознак монтажу цифрових зображень на основі аналізу ентропії шумів. Звіт про НДР: ХНДІСЕ, 2017. 110 с.

[3] Тимко Є. В. та ін. Розробка методики досліджень цифрових фотозображень та технічних засобів їх виготовлення: звіт про НДР. Київ: КНДІСЕ, 2013. 121 с.

Due to the fact that most of the existing registered methods of photographic examination, which were created more than 27 years ago, do not take into account the current capabilities of digital imaging and processing, the staff of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations [1]. developed a method for studying the features of the editing of digital images based on the analysis of noise entropy. In our opinion, the main attention of scientists should be paid to the development of methods and specialized software for advanced image analysis using modern methods of image processing.

Main Content Presentation. To begin with, consider a digital image (graphic file) as an object of study in relation to its metadata. In general, metadata can be divided into information about the file (name, size, type, date of creation and last change, etc.) and information about the image (format, width, height, number of pixels per inch, number of bits per pixel, color model and other characteristics and comments). In addition, the digital image as an object can be studied by estimating the change in noise background of the image itself.

Real photos are full of noise that comes from the camera matrix or photo scanner, from compression algorithms, and from common natural causes. Graphic editors do not create this noise, their tools often "smear" the noise of the original image. In addition, the two images often have different degrees of noise. Image retouching has become widespread in the practice of image processing. Retouching mostly distorts the background noise of the image and therefore can be detected by noise analysis. Given this fact, the method of image research to establish signs of changes in the content of photographic images by editing is based on the phenomenon of damage (distortion) of the natural noise background of the image, inherent in it due to the noise of sensitive elements of digital cameras. Noise background distortion occurs in certain cases (photomontage, retouching, etc.), in the relevant areas of the image in the case of digital editing. In many cases, the noise component of the image can be used as a source of image editing information, as the original images usually have a uniform background noise that can be disturbed during editing [2].

The authors of the developed method studied the dependence of noise on the brightness of the background on the example of the Canon-A400 camera by photographing homogeneous samples with different grayscale in the range from black to white. The number of samples was 13. The noise level was calculated as the standard deviation of the brightness from the mean value of the brightness of the sample image (see Figure 1).

[1] Чорний С. В. та ін. Розробка методики дослідження ознак монтажу цифрових зображень на основі аналізу ентропії шумів: Звіт про НДР. Харків: ХНДІСЕ, 2017. 110 с.

[2] Бобрицкий С. М., Черный С. В. Методические аспекты комплексного исследования с целью выявления признаков монтажа в цифровой фотографии. *Теорія та практика судової експертизи і криміналістики.* 2010. Вип. 10. С. 633–639.

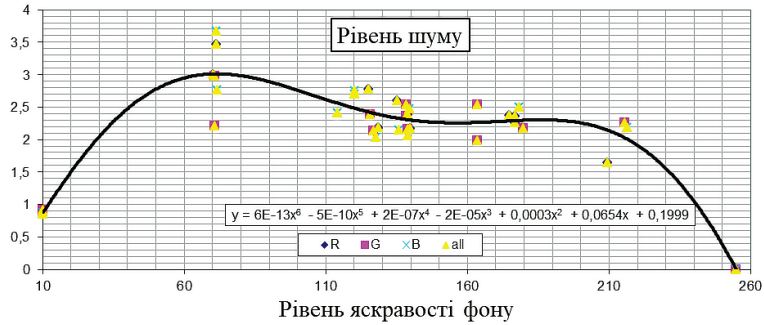


Fig. 1. Dependence of image noise on the background brightness for the camera Canon–400 and its approximation

Extracting noise from the image signal is generally an incorrect task, as it is necessary to divide the total signal into two components, neither of which is exactly known. Existing methods of solving this problem use different a priori information about these components.

The research (Fig. 1) demonstrates that the noise picture is not homogeneous. Approximately the same noise level is observed in the range of 60-220 gradations of brightness. The lowest noise levels are in the ranges 0-60 and 220-250 gradations of brightness. Therefore, noise analysis can only be performed in certain image brightness ranges, which depend on the characteristics of the camera and the nature of the image and require mandatory expert examination.

Methods for detecting interference in the context of digital photography are divided into active (embedding certain service information in the image when it is created, including "watermarks") and passive, with the isolation and analysis of natural noise components. In last case, most characteristic of forensic analysis, the following existing approaches and technologies can be distinguished:

- pixel-oriented (cloning, resampling, splicing and statistics);
- format-oriented (jpeg quantization and jpeg blocking);
- camera-oriented (selection of sensors, lenses, electronic elements, color aberrations);
- detection of physical inconsistencies of the image (violation of perspective and object geometry).

Approaches to noise estimation are divided into three main categories: block-based noise estimation, gradient-based noise estimation, and anti-aliasing noise estimation [1]. Analysis of known methods for detecting counterfeits based on noise and their features are shown in table 1.

[1] Fan J., Cao H., Kot A. C. Estimating EXIF Parameters Based on Noise Features for Image Manipulation Detection. *IEEE Transactions on Information Forensics and*

Analysis of fake detection methods based on noise emission

Source	Methodology	Features
1 [1]	Color digital image analysis method based on noise entropy analysis	Does not allow to analyze images in grayscale
2 [2]	A method for the steganographic analysis of digital images by three sets of noise	Does not give the exact volume and location of the modified snippet
3 [3]	Noise mismatch detection method based on estimation of noise variation in overlapping blocks	The disadvantage of this method is that the original image is known and in practice this is not true
4 [4]	A method of detecting fakes based on clustering blocks with different noise variations	The disadvantage is the use of the known properties of the original
5 [5]	Method for detecting the correlation between image noise characteristics and EXIF data	Disable for formats with missing EXIF data
6 [6]	Photo montage detection method used in various operations such as splicing, retouching, recompression, resizing, etc.	It is not selective because it is not targeted at any particular operation
7 [7]	It splits the image into different homogeneous segments based on the wavelet transform noise; it is a kind of gradient method	Not capable of detecting disturbed areas in the case of small changes, requires visual interpretation

Security. 2013. Vol. 8. Issue 4. P. 608–618.

[1] Savita Walia et al. International Journal of Computer Science and Information Technologies (IJCSIT). 2014. Vol. 5 (6). P. 7618–7622.

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[6] Emir D. A., Memon N. Image Tamper Detection Based on Demosaicing Artifacts. *Proceedings of the 16th IEEE International Conference on Image Processing (ICIP).* 2009. P. 1497–1500.

[7] Brice C., Fennema C. Scene analysis using regions. *Computer Methods in*

Source	Methodology	Features
8 [1]	Method for estimating noise in HSV color space	Blur should be used to improve

The image noise selection method based on entropy analysis, the noise classification method, the noise background inhomogeneity estimation method (implemented in IFG_1.0. Exe) are only applicable to color digital images.

The general disadvantage of the considered methods, in the opinion of the authors of the method, is the need to split the image into blocks with a certain number of pixels, the dependence of the results of noise isolation on the size of the blocks and the inability when the block size is equal to a pixel. This disadvantage is not inherent in the method of steganographic analysis, which focuses on the selection of the least significant bits of the pixels of the image (LSB-detector) [2].

This method allows pixel-by-pixel division of the image into a number of layers (usually 8) for further analysis. By default, this method uses only the last digital layer, which may contain steganographic inclusion. The authors of the method suggest the use of such an approach to identify signs of image editing. To do this, it is advisable to use several layers at once. In this case, layers 5–8 (see Figure 2) contain various noise components and image elements. It should be noted that this separation is not optimal, because the individual image layers contain components of the useful signal along with the noise. However, this approach allows us to determine (see Figure 2) that the right half of the image has been retouched, because its layers 5–8 contain violations of the homogeneity of the background noise that are easily detected visually.

Thus, the method proposed by the developers of the method allows to visually determine the areas of editing (retouching) of the image on the images of the created digital layers of the studied image. This method is included by the authors of the methodology in the general software product created within the developed methods [3] and is available for free access [4].

Images Analysis. 1970. Vol. 1. Issue 3–4. P. 205–226.

[1] Ke1 Y., Zhang Q., Min W., Zhang S. Detecting Image Forgery Based on Noise Estimation. *International Journal of Multimedia and Ubiquitous Engineering.* 2014. Vol. 9. Issue 1. P. 325–336.

[2] Метод стеганографічного аналізу, що орієнтований на виділення молодших бітів пікселів зображення. URL: http://dde.binghamton.edu/download/structural_lsb_detectors/ (Date accessed: 10.03.2019).

[3] Чорний С. В. та ін. Розробка методики дослідження ознак монтажу цифрових зображень на основі аналізу ентропії шумів. Звіт про НДР: ХНДІСЕ, 2017. 110 с.

[4] Програмний продукт. URL: http://5.189.182.106/tec (Date accessed: 17.04.2019).

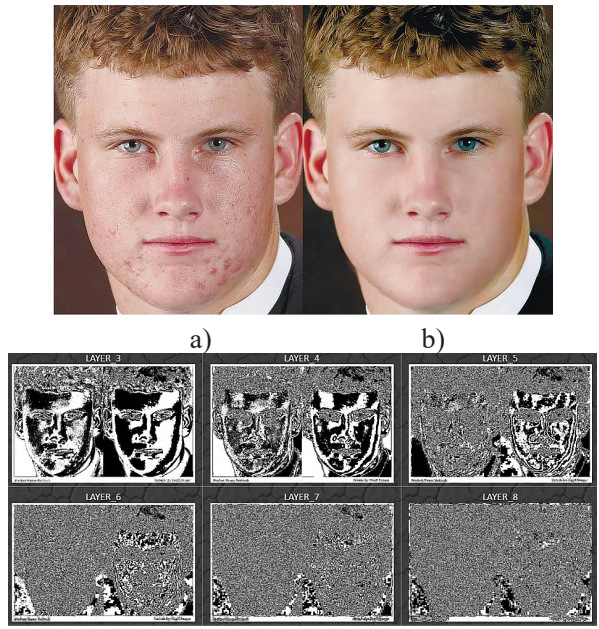


Fig. 2. The results of dividing the image into layers in the plane of brightness: a) the original image under study; b) retouched image; c) noise layers (LAYER_3 – LAYER_8) of the original and retouched images in the brightness plane

Conclusions. In the framework of the developed methods by research paper authors:

- method for the research on mounting characteristics based on the analysis of the entropy of noise of digital images with the maximization of a complex criterion, taking into account the entropy and dispersion of the image;
- methods of investigation of mounting characteristics was developed based on the proposed method;
- image processing software using the proposed method and methods has been developed;
- researches have been carried out and examples of use of methodology and software developed for typical photo fakes – retouching and photo editing;
- software for computer-based comparative studies by known and modified authors of image quality assessment methods (local focusing quality – 33 methods, noise characteristics – 17, DCT/CFA methods – 15 methods, image entropy analysis – 14 methods);

- example web dialog interface is developed to implement benchmarking methods on a remote access server.

Thus, the software developed as part of the research method of digital image montage based on noise entropy analysis allows to conduct research to identify montage features based on digital image noise entropy analysis with maximization of a complex criterion that takes into account image entropy and variance. It can be used both on local computers and with the use of powerful server equipment in the mode of remote access via the web interface, including the use of low-power mobile user terminals (smartphones, tablets, etc.), which will greatly facilitate the work of experts with research of editing of digital images or at establishment of their reliability (authenticity).

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ВИЯВЛЕННЯ ОЗНАК РЕДАГУВАННЯ ЦИФРОВИХ ЗОБРАЖЕНЬ ЗА ДОПОМОГОЮ МЕТОДУ СТЕГАНОГРАФІЧНОГО АНАЛІЗУ ШУМІВ

Сьогодні питання визначення автентичності та дослідження монтажу цифрових зображень є нагальним для фототехнічної експертизи.

Основна мета дослідження з використанням методики стеганографічного аналізу шумів зображення — визначення автентичності цифрових фотографій, виявлення ознак зміни «змісту» у зображеннях. Розглянуті можливості та запропоновано новий методичний підхід щодо підвищення ефективності, якості та доказової значимості таких експертиз. Розроблене у межах цієї методики програмне забезпечення проводить дослідження на основі аналізу ентропії шумів і дисперсії зображення для визначення автентичності та виявлення ознак монтажу цифрових зображень.

Ключові слова: судова фототехнічна експертиза, цифрові зображення, метод стеганографічного аналізу шумів, ентропія шумів.

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ВЫЯВЛЕНИЯЕ ПРИЗНАКОВ РЕДАКТИРОВАНИЯ ЦИФРОВЫХ ФОТОГРАФИЙ С ИСПОЛЬЗОВАНИЕМ МЕТОДА СТЕГАНОГРАФИЧЕСКОГО АНАЛИЗА ШУМОВ

Вопросы определения подлинности и исследования монтажа цифровых изображений — насущные вопросы экспертизы видео-, звукозаписи.

Основной целью исследования с использованием методики стеганографического анализа шумов изображения является определение достоверности цифровых фотографий, выявление признаков изменения «содержания» таких изображений.

Рассмотрены возможности методики исследования цифровых изображений с помощью метода стеганографического анализа шумов для выявления признаков редактирования цифровых фотографий (изображений) с целью повышения эффективности, качества и доказательной значимости фототехнических экспертиз. Предложен новый методический подход к решению задач по исследованию монтажа цифровых изображений, а также установлению их достоверности (подлинности). Он может использоваться как на локальных компьютерах, так и с использованием мощного серверного оборудования в режиме удаленного доступа через веб-интерфейс, в том числе с использованием маломощных мобильных терминалов пользователя (смартфонов, планшетов и пр.), что значительно облегчит работу специалистов во время исследования установки цифровых изображений и определение их достоверности.

Разработанное в рамках методики исследования признаков монтажа цифровых изображений на основе анализа энтропии шумов программное обеспечение, позволяет проводить исследования с целью выявления признаков монтажа на основе анализа энтропии шумов цифровых изображений с максимизацией комплексного критерия, учитывающего энтропию и дисперсию изображения.

Ключевые слова: судебная фототехническая экспертиза, цифровые изображения, метод стеганографического анализа шумов, энтропия шумов.

Received by Editorial Board: 11.07.2019

DOI: https://doi.org/10.32353/khrife.2.2019.20
UDC 343.98:331. 45

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FEATURES OF FORENSIC RESEARCH ON CASES OF ARTILLERY SHOOTING

Attention is focused on the interdependence of the relevance of the publication with the lack of scientific and methodological support of forensic expert research related to the facts of the implementation of artillery shelling. The views of international organizations on the use of explosive weapons are stated. It has been determined that the use of explosive weapons in populated areas poses the risk of humanitarian problems, which include immediate and long-term consequences for the life and health of civilians, as well as affect civilian infrastructure and the operation of life support services.

Attention is drawn to the dependence of the possibility of access for the military, who plan to conduct hostilities (operations) in settlements, to information about the location and nature of the activities of critical infrastructure facilities and basic life support services of the population on the specific conditions of the situation.

The mass use of high-explosive fragmentation ammunition in the course of modern armed conflicts was noted. The development trend of this type of ammunition is highlighted. The main damaging factors of fragmentation and

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high-explosive ammunition are determined and their characteristics are given. The mechanism of formation of signs of the direction of an artillery shot, which is subject to documentation at the scene is considered.

he main methodological approaches to the study of the issues put for resolution in the appointed forensic military examinations related to the facts of artillery shelling are shown. A list of basic terms and the most typical sources of information about the circumstances of the shelling is given. The main approaches to the procedure for recording the facts of the use of explosive weapons in populated areas, as well as in checking and analyzing the relevant data and information regarding the determination of the types of weapons used during shelling, have been determined. A list of basic initial data required for the research is provided.

Attention is drawn to the inevitability of inconsistencies in the results of documentation, as well as approaches to their elimination.

Keywords: artillery shelling, explosive weapons, fact fixation, forensic research.

Formulation of Research Problem. Ongoing armed conflict in eastern Ukraine has given rise to many practical tasks for forensic military experts. A significant place among them is occupied by expert research on the facts of shelling from the territory temporarily out of the control of the Ukrainian authorities. The analysis of the armed conflict in some regions of Donetsk and Luhansk oblasts showed that in comparison with the practical experience of the past, there were tendencies to expand the form and method of its course. A feature characteristic of positional combat operations is the widespread use of various fire means, mainly: multiple rocket launchers (MLR) and artillery systems of various calibers carrying out fire damage from closed firing positions. In other words, the use of explosive weapons.

An analysis of KhRIFE expert practice of the demonstrates that number of forensic military examinations (FMEs) related to the shelling of our territory has significantly increased recently. It should be noted that this trend is progressive. It should be noted that in the scientific literature, due to the recent lack of such forensic examinations as FMEs, the study of methodological framework (MF) of forensic activities in the military sphere is at an early stage. Another problem is the lack of MF forensic research related to the artillery shelling of our facilities. Thus, the need for forensic research on the facts of the shelling of our territory and the lack of necessary to address these issues of scientific and methodological developments cause the problem and relevance of this publication.

Analysis of Recent Researches and Publications. Issues of forensic research methods at one time were reflected in detail by such scientists as L. Yu. Arocker, O. M. Zinin, N. P. Mylis and many others[1]. In the works of

[1] Ароцкер Л. Е. Совершенствование планирования научных исследований

O. R. Shlyakhov, A. I. Vinberg, T. V. Averyanova, O. R. Rossinskaya and some other authors, the problems of developing forensic methods were identified [1]. Also, in the development of guidelines for forensic research and participated Ukrainian scientists' employees o Kyiv Scientific Research Institute of Forensic Expertise: M. Ya. Segai and G. M. Nadhornyi [2]. In 2014, the issue of improving the methods of expert research was substantiated by G. B. Dergay [3]. P. P. Ishchenko substantiates the position on the conformity of the use of semantic networks in investigative and legal practice that serve as an information model of the event [4].

However, it should be noted that there is a lack of contemporary work specifically devoted to the methodology, structure and organization of research in the field of forensic science, and speaking of FME, such work until recently was absent at all.

In 2011, the International Committee of the Red Cross (ICRC) made the statement that, despite the lack of a clear legal ban on the use of certain

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weapons [1] should be avoided having a high impact range in densely populated areas, as there is a high probability its indiscriminate effect.

On February 24–25, 2015, the ICRC convened an expert meeting on the topic: Use of Explosive Weapons: Humanitarian, Legal, Technical and Military Aspects [2]. The meeting was attended by government experts from 17 countries [3], 11 personal experts, including armaments experts, as well as representatives of United Nations agencies[4] and non-governmental organizations (NGOs). Unfortunately, representatives of Ukrainian experts did not take part in this meeting.

The urgency of the above problem stems from the peculiarities of contemporary armed conflicts. In the last century, armed conflicts have increasingly been waged in settlements, leading to an increased risk of civilians in the area of war, such as the risk of death, injury or the need to leave their homes.

While increasing urbanization, this trend is likely to continue. This is further complicated by the fact that the warring parties and, in particular, non-state armed groups (NSAGs) often avoid open confrontation with the enemy and, at the same time, mix with the civilian population. It should be noted that modern armed conflicts continue to be carried out with the use of weapons systems designed for open combat operations. As a rule, when such weapons are used in the open, there is no cause for concern, but when they are used against military targets (objects) located in settlements, their action is often indiscriminate and leads to negative (destructive) consequences among civilians. people.

It should be noted that today in world practice there is no consensus on whether the existing rules of international humanitarian law (IHL) sufficiently regulate the use of explosive weapons in human settlements: there is also an opinion on the need to clarify their interpretation or develop new rules and standards. This state of study of this topic clearly indicates the need to

1 Міжнародне гуманітарне право і виклики сучасних збройних конфліктів: доповідь для XXXI Міжнародної конференції Червоного Хреста і Червоного Півмісяця 28 листопада — 1 грудня 2011 р. С. 40–42 URL: https: //www.icrc.org/eng/assets/files/red-cross-crescent-movement/31st-international-conference/31int-conference-ihl-challenges-report–11–5–1-2-en.pdf (Date accessed: 14.05.2019).

2 Застосування зброї вибухової дії в населених пунктах: гуманітарні, правові, технічні та військові аспекти. Нарада експертів, Шаванн-де-Божі, 24–25 лютого 2015 р.

3 Австрія, Афганістан, Великобританія, Ізраїль, Китай, Колумбія, Ліван, Мексика, Нігерія, Нідерланди, Норвегія, Російська Федерація, Сербія, Сполучені Штати Америки, Уганда, Філіппіни, Швейцарія.

4 Управління ООН з координації гуманітарних питань (УКГП) і Управління ООН з питань роззброєння (НВР) United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and United Nations Office for Disarmament Affairs.

develop appropriate scientific and methodological support related to forensic investigation of the use of explosive weapons in settlements.

The Article Purpose is to identify the main features of forensic research related to shelling with the use of various types of artillery and ammunition.

Main Content Presentation. The use of explosive weapons in populated areas poses a risk of humanitarian problems, which include immediate and long-term consequences for the life and health of civilians, as well as the impact on civilian infrastructure and life support services: medical care, water and energy, waste processing. The consequences for human health are not limited to the risk of death, injury and long-term disability; they also include long-term effects on people's mental health. The functionality of health facilities and services and their ability to provide adequate medical care to the wounded among the civilian population are also significantly reduced. The vulnerability of critical infrastructure and the interdependence of basic services mean that the initial consequences of the use of explosive weapons in human settlements can have humanitarian consequences, affecting a much larger group of people than the population of areas near the area where the weapons are used. Such effects are particularly pronounced in the case of long-term use of explosive weapons in populated areas, leading to a reduction in the activities of basic services over time and a serious risk to human health. As for the military, which plans to conduct hostilities (operations) in settlements, their ability to access information on the location and nature of the activities of critical infrastructure and basic life support services may be different and depend on the specific situation.

There are methodological difficulties in recording the facts of the use of explosive weapons in settlements, as well as in checking and analyzing relevant data and information, especially with regard to determining the types of weapons used in shelling and determining accidental losses among the civilian population. This indicates the need to improve the quality of research on these issues on the ground. The military also faces difficulties in studying the side effects of the use of explosive weapons in human settlements, including long-term consequences, and the application of lessons learned and conclusions when planning future actions (operations).

The nature and extent of the side effects of explosive weapons in a particular locality are determined by a number of factors related to the situation around the target (object), the degree of vulnerability of the population and the technical characteristics of the weapons used. Although the specific consequences of the use of explosive weapons depend on the circumstances, the military can operate on a number of parameters related to the selection or use of a particular type of weapon to avoid (minimize) accidental civilian casualties and damage to civilian objects. These parameters include the type and size of the warhead, the type of detonator, the delivery system, the distance

from which the fire is conducted, as well as the installation for firing and the time of firing. Even taking into account such parameters and taking all necessary precautions, it is likely that the use of certain types of weapons in human settlements (due to their design features) will affect not only the target, but also the objects around it. Such consequences are not necessarily illegal; their legality depends on the specific circumstances.

Explosive weapons, when used in populated areas, can have a large enough area of influence due to the large radii of damage by the blast wave and the scattering of fragments of individual ammunition, inaccuracy of delivery system and (or) weapons systems designed to simultaneously hit targets in large areas. These categories of weapons may include missiles and rockets, unguided means of indirect fire, such as artillery, mortars and MLR. Improving the accuracy of certain weapons systems can reduce the area of destruction, but the use of high-power warheads can nullify their accuracy when used in populated areas due to the large radii of the blast wave and the scattering of fragments. Despite technical progress, most artillery and mortar systems are inaccurate. Regarding to MLR that are designed to simultaneously hit group targets with rockets, they are generally characterized by a low degree of accuracy and a large scattering area. Appropriate training in the selection and application of artillery systems and methods of warfare in human settlements, including taking into account the technical capabilities of the types and types of weapons used, is necessary to prevent or minimize accidental damage to the civilian population.

In order to avoid or minimize accidental costs among the civilian population, the armed forces of some states choose weapons that have the minimum necessary impact, but at the same time provide an opportunity to perform a combat mission. For armed groups with a limited arsenal of weapons, this can be difficult, but at the same time they can reduce the consequences of hostilities in settlements by choosing the most rational (humane) methods and means of combat operations.

The forensic experts of the institute majoring in 16.1 Military researches have developed certain methodological approaches to resolve the issues raised in the ordinances for FME appointment related to the facts of artillery shelling in our territory.

The main content of these issues is to determine the possibility, based on the results of the inspection of the scene and the materials of criminal proceedings, to provide a reasoned conclusion about the direction (indicating the territory, location) from which the ammunition was fired; exclusion of other areas of artillery fire.

In general, the solution of this type of FME, first of all, involves the implementation of a certain approach to documenting the fact of artillery

shelling. These are actions performed by the investigation authorities. The procedure of documenting the event with signs of artillery shelling includes selection and systematization of eyewitness explanations, production of various photo and video materials, topographic maps, diagrams, plans, as well as a preliminary study of the area and collection of material traces of the event. From the standpoint of criminology, today formed a certain system of basic concepts to describe the circumstances of artillery fire. The main requirements for the following designations are highlighted: unambiguity, publicity, objectivity. When using special terminology based on the principle of minimum sufficiency [1]. The term: event refers to a set of phenomena and processes associated with artillery fire and changes in the field. Traces of the event are understood as any different sources of information about the circumstances of the shelling. In events of this type are distinguished and determined: 1) the place of detonation of ammunition; 2) type of ammunition; 3) damage to the environment; 4) the type of system and its tactical and technical characteristics (TTC), 5) the probable location of the firing position.

The term: artillery projectile means an explosive device delivered to the place of detonation by a shot from an artillery installation (cannon, mortar, jet installation, etc.). The term: explosion is used to denote the phenomenon of an artillery shell at the scene. The semantics of this concept emphasizes the presence of external control influence on the beginning of the process of explosive destruction of an artillery projectile. A special device that detonates an artillery projectile at a given time is an artillery fuze that means a structural element of the shell[2].

Based on the experience of forensic investigations of artillery shelling gained at KhRIFE, it should be noted that the most widely used high-explosive fragmentation munitions. The trend of development of high-explosive fragmentation munitions in the direction of the transition to directed fragmentation streams, more precisely, to the flows of preformed fragments (PF), is now quite obvious. It is known that the configuration of the fragmentation field distinguishes three main classes of shrapnel munitions (SM): with circular fields; with axial fields; with radially directed fields.

Shrapnel munitions with circular fields are the most common. Their main advantages are the highest energy utilization factor of the explosive (explosive), the ability to locate the warhead in any place of the projectile and hit the target on any side of the miss. The main disadvantage of circular fragmentation munitions with more or less wide fields required for reliable coverage of the target is the low density of the fragmentation field. According

[1] Губаева Т. В. Язык и право. Искусство владения словом в профессиональной юридической деятельности: монография. Москва, 2014.

[2] Артиллерия/под общ. ред. М. Н. Чистякова. Москва, 1953.

to the magnitude of the meridional angle of fragmentation, there are: narrow fields (angle less than 30 °); wide fields (angle more than 90 °). The angle of spread is determined mainly by the shape of the shell and the initiation scheme. For cylindrical shells with elongation 1, 5 ... 25 with point initiation at the end and in the center of the charge, the angle of spread of 80% of the finished striking elements is 15 ° and 25 °, respectively. Small angles of spread (5–10 °) (fragmentary fields of the "cutting disk" type) are realized by means of a shell with a concave surface, two-point initiation at the charge ends, multi-point synchronous initiation along the charge axis, creating a detonation wave that diverges in different directions. close to cylindrical. Large spread angles are usually achieved by giving the fragmentation warhead (FW) barrel-shaped or, in extreme cases, spherical shape.

The most obvious shortcomings of circular fields are manifested when firing at ground targets with a shock gap at angles of incidence of less than 90 ° (Fig. 1), which is characteristic of the most popular ammunition - artillery shells and MLRS rockets. The bulk of the fragments of these shells scatter in a plane perpendicular to the axis of the projectile. In this case, almost half of the fragments go into the air, the other half - into the soil, and only a small part of the fragments that creep along the earth's surface is used to hit targets.

This disadvantage is particularly striking in the case of surface firing, which is characteristic, for example, of tank guns.

The depth of penetration into the soil of an average density of 122 mm fragmentation shells of the D-30 howitzer during firing at full charge for a distance of 10 km is about 1,6 m.

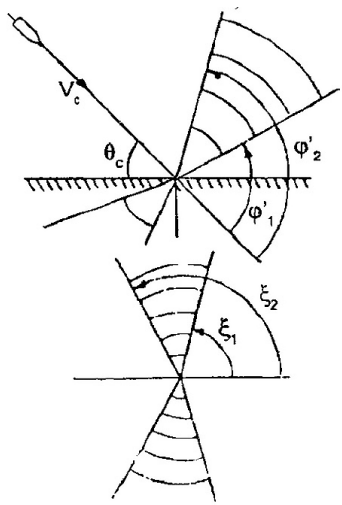


Fig. 1. The formation of sectors of damage on the surface when the projectile falls at an angle Qc

In addition to these factors, the depth of penetration of the projectile can be affected by the conditions of its encounter with the obstacle, the time of the detonator, the strength of the projectile body and other factors. Thus, at angles of encounter with an obstacle of more than 50º, the trajectory of the projectile becomes curved in it, and the projectile tries to get out of the obstacle and at angles of incidence Q_c less than 30º there is a ricochet. At angles of incidence less than 10º, the projectile ricochets, does not sink into the ground, leaving a mark on the ground in the form of a gutter (Fig. 2).

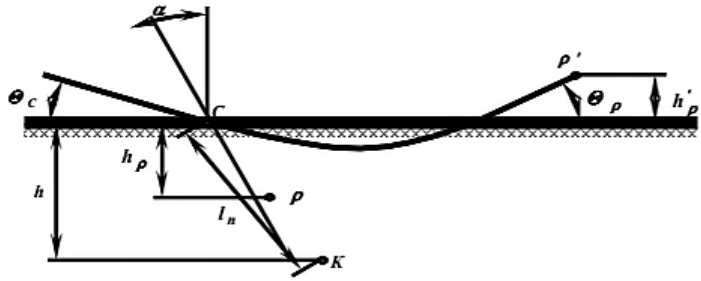


Fig. 2. The movement of the projectile in the obstacle

The fragmentation action of the projectile is characterized by the number of lethal fragments, the lethal interval Руб and the area size the affected area Syp.

The striking factors of fragmentation and high-explosive action are the shock wave and the products of the explosion propagating in the environment on all sides from the point of explosion. The scheme and nature of the spread of artillery projectile fragments is shown in Fig. 3. Artillery projectiles give a certain number of fragments weighing from 1 g., namely: caliber 120 mm — 1600—2350, and 152 mm — 2700—3500, respectively. The smaller the fragments, the greater the ratio of their surface area to mass.

It should be noted that during the detonation of amatol and hexogen, a number of chemical compounds are formed, namely: carbon monoxide (CO), carbon dioxide CO_2), water vapor (H_2O), brown gas (NO), nitrous oxide (N_2O), nitrogen dioxide (NO_2), formaldehyde (CH_2O), cyanic acid vapor (HCN), nitrogen (N_2) and a large number of identified and unidentified toxic organics; the surrounding soils, wood, turf, structures are oxidized.

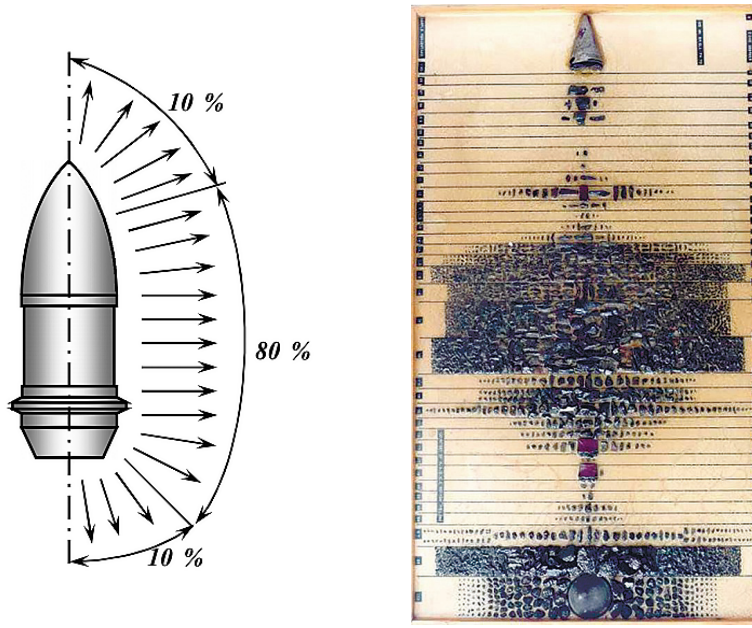


Fig. 3. The scheme and nature of the fragments
of artillery projectile fragments

When strongly compressed and heated explosion products expand, they propagate towards the least resistance of the medium to the obstacle surface. As a result, the soil is ejected to the surface with the formation of a cone-shaped funnel, which size is characterized by depth hв and radius r. At $r = h_в$ the funnel is called normal, at $r < h_в$: shallow and at $r > h_в$: deep.

Three zones are distinguished around the point of rupture of the projectile in the soil (Fig. 4):

I – compression sphere with radius Rст equal to several caliber shells, in this zone the soil is displaced and compacted;

II – destruction sphere o with radius Rp where a strong shock wave propagates, which causes a break in the bond between particles of soil and leads to the formation of cracks in it and to the destruction of defense structures;

III – concussion sphere with radius r, in which the weakened shock wave causes only oscillatory motion of soil parts without the destruction of solid structures.

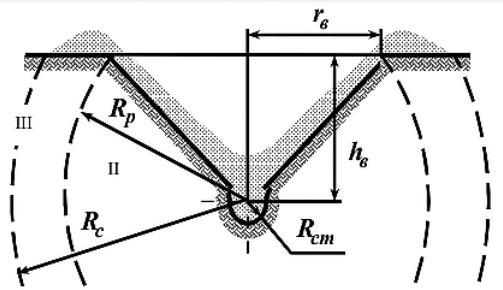


Fig. 4. Scheme of action of high-explosive shells

The ratio of the geometric dimensions of the funnels from artillery shells of different calibers is shown in Fig. 5

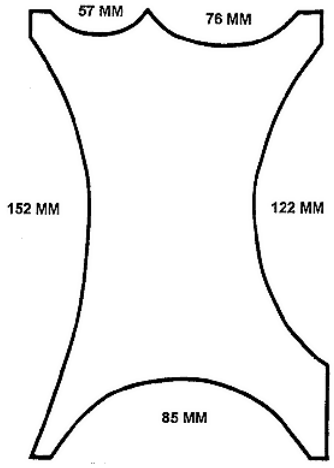


Fig. 5. Geometric dimensions of the funnels from artillery projectiles of different calibers

From many characteristics of the trajectory of the artillery shell, only the direction stands out, because other parameters, such as steepness of the trajectory, angle of incidence contain an element of uncertainty in terms of studying the situation at the scene. Traces formed as a result of the impact of an artillery shell are divided into a ricochet trail and traces of projectile blasting. Traces of artillery shell detonation, in turn, consist of two types. The first type includes fragments and details of an exploded artillery shell. The term: fragments refers to fragments of the body of an artillery projectile, and parts are its structural elements (structural elements of the stabilizer, detonator parts, etc.). The second type of artillery blast

is damage to the surrounding area caused by shrapnel. It is advisable to abstract from the impact of the blast wave on the environment, because to record its results requires the involvement of a certain number of explosives experts that is not always possible.

Let's consider the mechanism of formation of signs of the direction of the artillery shot, to be documented at the scene. Let's assume that the artillery shell is stabilized relative to its trajectory at the time of detonation, i.e. its longitudinal axis coincides with the direction of the artillery shot. Then the parameter that determines the process of trace formation is only the location of the artillery shell at the time of detonation relative to the surface on which this trace is displayed (Fig. 6). The fragments move away from the trajectory of the projectile.

Artillery fuze (a structural element located in the main part of the projectile) as a result of the detonation of the projectile moves forward relative to the longitudinal axis of the projectile. As a result of the projectile detonation, an explosive funnel is formed on the ground. In the case of a flat shape of the soil surface, the explosive funnel acquires an oblong shape with a smooth depth profile. The maximum depth of the explosive funnel is located in the area of the predominant impact of fragments and other factors of the explosion, i.e. in its front part (in the direction of movement of the projectile). It should be noted that due to the action of the explosion energy on loose soil, the soil rises in front of the funnel (in the direction of movement of the projectile). At the moment of projectile detonation, if it occurred on the ground surface or at a certain depth, the detonator detaches from the projectile and moves forward in the direction of its longitudinal axis. If the blast occurs in loose soil, the movement of the detonator detached from the projectile in the forward direction forms a channel or furrow oriented in the direction of movement of the projectile.

Generalized features of the direction of movement of the artillery projectile are: a) the shape and relief of the explosive funnel; b) axis of symmetry of the explosive funnel; c) axis of symmetry of the area of damage of explosive and fragmentary character; d) location of the section of the boundary of the explosive funnel on which the soil was raised; e) the direction of the channel (furrow) in the soil formed by the movement of the blast after the projectile has exploded.

It should be noted that there are inevitable contradictions in the documentation results. Some of them are caused by differences in perception of different subjects, the use of different measuring

instruments, differences in the technical characteristics of photo and video recorders, etc. These contradictions are called imaginary because they reflect the real circumstances of the event, but only with varying degrees of accuracy. Contradictions of another type are caused by the deliberate distortion of traces of a documented event. These are real contradictions, because they reflect significant differences in the information contained in the various traces of one event. In criminology, special knowledge is used to eliminate contradictions of various kinds. They can also be used to identify inconsistencies in the documentation of events related to artillery shelling. Focusing on the possibilities of applying special knowledge to the study of contradictions in the trace picture of the event, we propose to apply diagnostic special studies of a comparative nature [1]. Their implementation involves the presence of an established sample, a comparison with which will analyze the identified contradictions. We believe that as such a standard it is possible to use the results of a special study of the scene, conducted with the participation of a forensic specialist. When reviewing the arrays of documented data, we studied and summarized more than 150 materials collected on the facts of our military forensic examinations of artillery shelling of settlements in the area of War in Donbass and subsequently, Joint Forces Operation, it is established that in many materials the results of the special researches issued as conclusions of experts on forensic research of a scene and artillerymen are presented.

If necessary, information is provided on the location of objects (such as the boundary of the roadway, transmission line pylons and other visible structures). Topographic maps of the study area are attached, which clearly show the essential features, in particular, the direction of the artillery shot, the location of the explosive funnel and the area of damage to the explosive fragment and other objects. In the end, the objectification of the data is achieved. The results of such studies can serve as a benchmark in the comparative analysis of traces in order to eliminate the contradictions in the documentation. In our opinion, the results of special studies contribute not only to the optimization of the trace picture, but also to fill the gaps while documenting the event.

KhRIFE forensic experts investigate the circumstances of situations described in criminal proceedings using information modeling and comparative and situational analysis with a comparison of factual

[1] Корухов Ю. Г. Криминалистическая диагностика при расследовании преступлений: науч.-практ. пособ. Москва, 1998.

data contained in the documents submitted for investigation on the circumstances of the event under investigation. The subject of research in this case is the actual data on the conditions and circumstances of artillery fire. The object of the study are materialized media from the materials submitted for research.

Situational analysis of criminal proceedings materials provided, taking into account the background data and principles outlined in the sources of scientific, technical and military information regarding the use of a particular artillery system pertaining to the investigated situation, provides an opportunity to build an information model using which to conduct forensic research to resolve issues.

It should also be borne in mind that information on the activities of any military formations is restricted information. Therefore, forensic experts (specialists) involved in the conduct of FME should have appropriate access to such information.

Conclusions. When recording the facts of the use of explosive weapons in settlements to determine the types of artillery weapons used in shelling, there are difficulties of a methodological nature, which necessitates the improvement of the quality of these field investigations.

The research content of these issues is to determine the possibility of providing a reasoned opinion on the direction (indicating the territory, settlement), from which (which) the ammunition was fired and the exclusion of other areas of artillery fire.

In order to eliminate the various contradictions that arise in the process of documentation, it is advisable to use diagnostic special studies of comparative nature with the use of established samples, comparison with which allows to analyze the identified contradictions.

Forensic examination of cases of artillery firing should be carried out on the basis of building an information model of the event.

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ОСОБЛИВОСТІ СУДОВО-ЕКСПЕРТНИХ ДОСЛІДЖЕНЬ ВИПАДКІВ АРТИЛЕРІЙСЬКИХ ОБСТРІЛІВ

Зазначено, що актуальність даної публікації обумовлена дефіцитом науково-методичного забезпечення судово-експертних досліджень, пов'язаних з фактами здійснення артилерійських обстрілів. Наведено погляди міжнародних організацій щодо застосування зброї вибухової дії. Визначені основні підходи до порядку фіксування фактів застосування зброї вибухової дії в населених пунктах, а також при перевірці й аналізі відповідних даних та інформації, що стосується визначення використаних при обстрілах видів зброї. Відмічені основні методичні прийоми, які доцільно використовувати під час вирішення питань судових експертиз щодо судово-експертного дослідження випадків артилерійських обстрілів.

Ключові слова: артилерійський обстріл, зброя вибухової дії, фіксування фактів, судово-експертне дослідження.

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ОСОБЕННОСТИ СУДЕБНО-ЭКСПЕРТНЫХ ИССЛЕДОВАНИЙ СЛУЧАЕВ АРТИЛЛЕРИЙСКИХ ОБСТРЕЛОВ

Акцентировано внимание на взаимозависимости актуальности публикации с дефицитом научно-методического обеспечения судебно-экспертных исследований, связанных с фактами осуществления артиллерийских обстрелов. Изложено взгляды международных организаций на применение оружия взрывного действия. Определено, что применение оружия взрывного действия в населенных пунктах создает опасность возникновения гуманитарных проблем, которые включают в себя непосредственные и долгосрочные последствия для жизни и здоровья гражданских лиц, а также оказывают влияние на гражданскую инфраструктуру и работу служб жизнеобеспечения населения.

Обращено внимание на зависимость возможности доступа у военных, которые планируют проведение боевых действий (операций) в населенных пунктах, к информации о местонахождении и характере деятельности объектов критической инфраструктуры и основных служб жизнеобеспечения населения от конкретных условий обстановки.

Отмечено массовое применение в ходе современных вооруженных конфликтов боеприпасов осколочно-фугасного действия. Освещена тенденция развития данного вида боеприпасов. Определены основные поражающие факторы боеприпасов осколочного и фугасного действия и приведены их характеристики. Рассмотрен механизм образования признаков направления артиллерийского выстрела, подлежащего документированию на месте

происшествия. Показаны основные методические подходы к исследованию вопросов, поставленных на разрешение в назначенных судебных военных экспертизах, связанных с фактами артиллерийских обстрелов. Приведен перечень основных терминов и наиболее характерных источников информации об обстоятельствах обстрела. Определены основные подходы к порядку фиксирования фактов применения оружия взрывного действия в населенных пунктах, а также при проверке и анализе соответствующих данных и информации, касающейся определения использованных при обстрелах видов оружия. Приведен перечень основных исходных данных, необходимых для проведения исследования.

Обращено внимание на неизбежность наличия противоречий в результатах документирования, а также указаны подходы по их устранению.

Ключевые слова: артиллерийский обстрел, оружие взрывного действия, фиксирование фактов, судебно-экспертное исследование.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.21
UDC 343.932:343.982. 353:343.982. 354:572.087

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ESTABLISHMENT OF ANTHROPOLOGICAL DATA ACCORDING TO FOOTPRINTS (SHOES) TAKING INTO ACCOUNT CURRENT TRENDS IN HUMAN PHYSICAL DEVELOPMENT

A detailed study of the footprints (feet) revealed during the inspection of the scene of the incident allows you to get an idea of the anatomical features of the offender, which are further important for establishing the circumstances of the crime. To date, the methods for determining the growth of a face in its tracks are outdated and need to be improved, given the current trends in human development, which depend on sociological and environmental factors.

The purpose of the article is to review the established methods that are used in modern practice to establish the approximate growth of a face, based on its footprints (feet), analyze the results obtained and substantiate the most effective method.

To test the effectiveness of the most common methods for determining human height, we conducted an experiment in which 1080 people aged 17 to 35 years took part. Height, length and width of the foot, thigh girth, thigh length, and leg length were measured for each participant in the experiment. The physical development of a person and the impact on physical development of social and environmental factors were also taken into account (measurements were carried out twice, in 2017–2018, and the difference in changes during the year was analyzed).

It has been established that the most effective method for calculating the approximate height of a person from the tracks of bare feet is the ratio of leg length (from foot to thigh), lower leg length and thigh circumference. On average, the length of the leg (from the foot to the thigh) is 3.1 times the length of the foot; shin length equal to 4-foot width; the average hip volume is 53 cm. A new formula was also derived with the probability of establishing a person's height by footprints (within ± 3 cm) of 67%.

Keywords: trace evidence analysis, footprints, footwear evidence, growth, height ratio, physique, anthropometry.

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Formulation of Research Problem. The footprints of a person are among the most common footprints found during an inspection of a scene, and their detailed study, in addition to establishing the situation at the time of the crime, the direction of movement and the nature of the offender's (running or walking) where he or she stopped. was and its individual features also allow one to make sense of the anatomical features of the offender (physique, walking style, physical disabilities).

Analysis of Recent Researches and Publications A. S. Zheleznyak, E.A. Razumov, M. P. Moliboga, D. N. Balashov, N. M. Balashov, S. V. Malikov, A. V. Kofanov, O. H. Voloshyn, O. V. Litvinova and other scientists [1].

The Article Purpose is to review the established methods that are used in modern practice to determine the approximate height of a person in his footsteps, to analyze the results obtained and to substantiate the most effective method.

Main Content Presentation. Constitution is the — size, shape, proportions and features of body parts, as well as features of bone, fat and muscle tissue.

The sizes and shapes of each person's body are genetically programmed. This inherited program is realized in the course of ontogeny, that is, in the course of successive morphological, physiological and biochemical transformations of the organism from its inception to the end of life.

Human physique changes during his life, while the somatotype is genetically determined and is a constant characteristic of him from birth to death. Age changes, various diseases, increased physical activity change the size, shape of the body, but not the somatotype[2].

The set of various environmental factors that affect the body are exogenous factors: natural and socio-economic. Among the exogenous factors a special place is occupied by the daily routine and diet, exercise, emotional stress.

Physical development of people lies in a number of factors in the social-economic, medical and biological and ecological character, a lot of them are in the warehousing process. It allows respecting the physical development of an active indicator of the sanitary and epidemiological well-being of the population. The main regularities and regional features of

[1] E.g.,.: Кофанов А. В., Волошин О. Г., Літвінова О. В. Трасологічні дослідження К.: Київ. нац. ун-т внутр. справ, 2010; Железняк А. С. Основы криминалистической техники. Москва: МГИУ, 2007; Разумов Э. А., Молибога Н. П. Осмотр места происшествия: методика и тактика. Киев: РИО МВД Украины, 1994; Балашов Д. Н., Балашов Н. М., Маликов С. В. Криминалистика. Москва, 2005.

[2] Статура. URL: http://znaimo.com.ua/ (Date accessed: 15.11.2018).

the physical development of a growing generation are actively developed, complex programs for the prevention of ill health are developed, and you can enter from protecting the health of the population of a young adult.

It is well known from the recommendations of the WHO for the development of the special features of the physical development of people in the early stages of ontogenesis. It will be 50% healthy to stay in the way of life, to 20% to improve the middle age, to 20% — to the genotype, if it is 10% less to lie in the development of medical service. In order to reappear about the health of a healthy generation, an important criterion is needed, namely: physical development.

The constitution of man is a complex of individual anatomical and physiological features that are formed in certain natural and social conditions and find their influence in his reactions to various influences.

The definition of constitutional characteristics, peculiarities of a person, including those of a young age, is of considerable theoretical and important practical importance, which has to date been reflected in the work of scientists both theoretical and clinical.

Somatotype is a generalized phenotypic manifestation of genetic constitutional organism, which is realized for the additional neuroendocrine regulation of folding biochemical processes on individual cells, tissues, organ and organ structure, which makes homeostatic Among the great number of morphological and functional characteristics of children, there is a fairly high genetic summation of the somatotype reflecting the constitution particularity. Somatotype is an indicator of decay polymorphism and servant as an objective criterion of functional response to organism. The development of the somatotype for the group to see the development of that particular disease has become possible due to the information content and the availability of somatotype techniques, as well as the knowledge of modern medicine.

The interest in studies of anthropometric and somatology features is constantly increasing as they allow us to relate the intrinsic peculiarities of structure, function, metabolism to the external parameters of the human normal and pathological.

To date, it is necessary to carefully study the physical development of different contingents of people in order to make generalized classifications of anthropometric features.

Physical development is traditionally assessed with the help of various indices, which allow to establish the level of development by the ratio of individual anthropometric parameters (Quetelet, Rohrer, Broca indices, proportionality index, etc.). The dimensions of the body relative to each

other should change proportionally but some of the indices, even those oriented in the same plane, may change unevenly [1].

So, as a rule, when the competent authorities send footwear for research, the question is: "What is the approximate height of the person leaving the footprint?".

Examination of shoe traces is relevant and significant in terms of obtaining primary (operational) and evidentiary information for the successful detection and investigation of crimes. The objects of her research are traces of shoes that are removed at the scene. In other words, to obtain data useful for the detection of the crime and the identification of the offender.

At the scene following the footprints can be installed:

1) in what direction did the criminals move;
2) what subjects they approached;
3) how many people participated in the crime;
4) what actions the perpetrators carried out;
5) what kind of shoes are left behind;
6) whether left footprints while walking, running, jumping, kicking;
7) at what speed did the offender move where he stopped.

Traces of human shoes record information about the various circumstances of the event that occurred, as well as the characteristics of the person who left them. However, as the analysis of practice shows, in some cases there is a forensic underestimation of these traces. Thus, in the total volume of all objects removed from the scene, footprints do not exceed 5-6%. The vast majority of the removed traces are single. In some cases, it is possible to fix and study the track of shoe tracks, which is much more informative than a single track. In view of these circumstances, criminalists unreasonably narrow the range of their tasks during its detection: all the work is reduced mainly to the fixation and removal of individual, the most clearly expressed traces in it. The whole set of tracks of footprints, as a rule, is not detected and recorded, while on the basis of this set of signs it is possible, on the one hand, to significantly narrow the circle of suspects, on the other hand, to make a possible portrait of the wanted criminal. In this case, most often in the inspection report of the scene are covered only some of the results of measurements of the track traces, which is almost impossible to judge even approximately the characteristics of the person who left the track footprints. Thus, the opportunity to provide invaluable assistance in the nomination and verification of operational and investigative versions,

[1] Андрійчук В. М. Закономірності формування показників фізичного розвитку юнаків під час навчання у вищих навчальних закладах: дисертація. Вінниця, 2017. URL : https://www.vnmu.edu.ua/downloads/other/ diser_Andriichuk.pdf (Date accessed: 14.05.2019).

the search for a criminal on the hot trail, the planning of urgent operational and investigative measures is lost [1].

The establishment of anthropological characteristics of the offender's footprints (footwear) is made on the basis of previously correlated relationships (this relationship is characterized by the fact that there is no complete correspondence between factor and resultant characteristics, but only a certain relation) between the quantitative characteristics of the trace or set. traces and the determining element of the offender's personality (constitution, physical disabilities, etc.), taking into account the average proportions of the body[2].

The proportions of the body mean the ratio of the sizes of individual parts of the body (torso, limbs and their segments). Usually the sizes of separate parts of a body are considered in relation to length of a body or are expressed as percent of length of a trunk or length of the case. To characterize the proportions of the body, the relative values of leg length and shoulder width are of the greatest importance. The proportions of the body are determined by the ratio of the size of the torso, limbs and their segments.

Since the proportions of the body indicate the ratio of the sizes of its various parts, then, of course, for their characteristics are not absolute, but the relative dimensions of the torso, limbs, etc. because one size (smaller) is determined as a percentage of another (larger) size. The most common method of characterizing the proportions of the body is to calculate the ratio of limb length and shoulder width to total body length[3].

When identifying anthropological characteristics of a person, it is important to determine the sex of the shoe, because gender differences are partly related to the difference in body length of men and women, but they are mainly a specific manifestation of sexual dimorphism. The sex of the person who left the footprints is determined by examining the footprint track, based on the analysis of the length of the steps, the magnitude of the angle of rotation of the foot, as well as the type of footwear reflected in the footprints. Thus, the stride length of a man of average height when walking is on average 70-85 cm. In women, this figure is less by 20—25 cm. With increasing pace, the length of the steps increases. In particular, the length of steps in men at slow running reaches 85—100 cm, and at fast 150 cm and more. This value must be obtained when studying the track of traces of limited length (consisting of individual, not consistently located

[1] Кофанов А. В., Волошин О. Г., Літвінова О. В. Трасологічні дослідження: курс лекцій. Київ. нац. ун-т внутр. справ, 2010. 304 с.

[2] Исследование следов ног и обуви на осмотре места происшествия URL: http://www.abckrim.ru/rabota/omp_nog.htm (Date accessed: 14.05.2019).

[3] Статура. URL: http://znaimo.com.ua/ (Date accessed: 15.11.2018).

footprints) and unlimited in length. The angle of rotation of men feet in is on average 18—25°, women feet: 0°.

The type of footwear is divided into men's, women's and children. It is judged by the design, shape, size and pattern of the sole and its individual parts reflected in the trace[1].

The following methods are proposed to determine human height in modern literature: a table with quantitative coefficients of the ratio of foot length to human height, or a formula for the quantitative or percentage ratio of foot length to human height.

A. S. Zheleznyak in the manual: Fundamentals of criminal investigation technique [2], to determine the approximate growth of a person in the footprints (shoes) proposes to use the following table (table 1).

Table 1

Shoe trail length (in mm)	The number by which the length of the track should be multiplied
to 219	7, 17
220– 229	6, 87
230– 239	6, 61
240– 249	6, 55
250– 259	6, 40
260– 269	6, 32
270– 279	6, 25
280– 289	6, 12
290– 299	6, 00

This table uses the quantitative proportions between the length of the bottom of the shoe and the height of the person. A possible conclusion about the height of a person on the footprint (barefoot) is made using the same table, adding to the length of the shoe footprint 20 mm. For example, the length of the trace is 275 mm, add 20 mm to it and get 295 mm. The number 295 falls on the last row of the table (290—299). Therefore, the approximate height of a person is 295 × 6.08 = 179 cm. It should be borne in mind that the above ratios of height and length of the

1 Кофанов А. В., Волошин О. Г., Літвінова О. В. Трасологічні дослідження. С. 44.

2 Железняк А. С. Основы криминалистической техники: учеб. пособ. Москва: МГИУ, 2007. С. 21.

foot are derived as average. However, in this table it was not taken into account that in shoes with elongated socks the excess of the length of the sole over the length of the foot can reach 3—4 cm. In other cases, this excess is in the range from 1 to 2.5 cm and depends on.

Another method of determining a person's height is the percentage of foot length to a person's height. Thus, men length of the foot sole is equal to 15.8% of its growth, women: 15.5%. To determine a person's height on the trail, it is necessary to divide the length of the barefoot trail by a percentage and multiply by 100[1].

E. A. Razumov, N. P. Molyboga in the textbook: Crime scene examination[2] suggest establishing the approximate height of a person along the length of his foot in the following ratios:

$$\text{P man} = \frac{Д - 2.9}{0.14}$$

$$\text{P woman} = \frac{Д - 2.2}{0.14}$$

where ***P*** – height, ***Д*** – length of foot in cm.

When displaying part of the sole, it is possible to approximately calculate the length of the foot in fragmentary tracks, using the following dependencies:

- "Large" width (front of the sole of the foot) is 40% of the length of the foot;
- The "small" width (heel) is 27.5% of the length of the foot.

In the textbook D. N. Balashov, N. M. Balashov, S. V. Malikov: Criminalistics[3], the authors propose to establish an approximate growth by the following formula:

$$V = 3{,}1\ Dп + 4Sп + 53,$$

where V: height, Dп: length of sole (foot) in cm; Sп: width of sole (foot) in cm.

To test the effectiveness of the above methods of determining human height, we conducted an experiment involving 1,080 people aged 17 to 35 years. Each participant in the experiment was measured for height, length

[1] Кофанов А. В., Волошин О.Г., Літвінова О. В. Трасологічні дослідження. С. 44.

[2] Разумов Э. А., Молибога Н. П. Осмотр места происшествия: методика и тактика. Киев: РИО МВД Украины, 1994. С. 594.

[3] Балашов Д. Н., Балашов Н. М., Маликов С. В. Криминалистика: учебник. Москва: ИНФРА-М, 2005. С. 83.

and width of the foot, hip girth, thigh length, and shin length. The physical development of a person and the impact on the physical development of social and environmental factors were also taken into account (measurements were carried out twice, in 2017–2018 and the difference in changes during the year was analyzed). Subsequently, we calculated the error that occurs when determining a person's height by the above methods.

When checking the method for establishing human height according to table 1, it was found that out of 1080 people were matched to true growth only in 18 cases (within ± 3 cm error). That is, the probability of establishing a person's height by this method is 1.7 %.

When examining the method for determining human growth by a percentage coefficient, we found that out of 1080 people were consistent with true growth in 30 cases (within ± 3 cm error. In other words, the probability of establishing a person's height by this method is 2.8 %).

When checking the method for establishing human growth proposed by the authors E. A. Razumov, N. P. Molybog: Crime scene examination found that out of 1080 people were consistent with true growth in 42 cases (within the margin of error ± 3 cm. That is, the probability of establishing a person's height by this method is 3.8 %).

When checking the method for establishing human growth proposed in the textbook: Criminalistics (D. N. Balashov, N. M. Balashov, S. V. Malikov, p. 83) found that out of 1,080 people were consistent with true growth in 366 cases (within ± 3 cm error. In other words, probability of establishing a person's height by this method is 33 %).

So, the research results demonstrated that by far the most effective method of establishing human growth is the formula:

$V = 3, 1 Dп + 4Sп + 53.$

This formula uses an index of the ratio of the size of the legs (leg length from thigh to foot, leg length and thigh girth) to total body length. That is, the length of the leg (from thigh to foot) is 3.1 feet, the length of the shin is 4 widths of the foot, and the coefficient 53 is the average hip circumference in cm. it is taken into account that when determining the foot length, it is necessary to take into account that in shoes with elongated socks the excess of the length of the sole over the length of the foot can reach 3—4 cm. In other cases, the excess is in the range from 1 to 2.5 cm method of attaching the sole to the top of the shoe. For example, for men's shoes with a sewn-on method of fastening the sole, this excess is 1.2—1.3 cm, with adhesive of 0.75-0.35 cm, with screw or stud-nail fastening 1—1.1 cm [1] In addition,

[1] Кофанов А. В., Волошин О.Г., Літвінова О. В. Трасологічні дослідження. С. 44.

on the toe and heel sections of the sole, as a rule, there are rises on average stretch at an angle of 35-40° by 10 mm, which in the process of tracing affects the reflection of the trail, so to establish the probable height 3.1 and 4 should be added to 0.1. Also, among 1080 participants in the experiment was determined by the average hip circumference that is equal to 54 cm.

As a result, to determine the probable height of a person following the footwear, we propose the formula V = 3,2 Dп + 4, 1Sп + 54, where V is the height, Dп is the length of the sole (foot) in cm; Sп is the width of the sole (foot) in cm.

When testing this method, it was found that out of 1080 people there was compliance with the true growth in 714 cases (within an error of ± 3 cm). That is, the probability of establishing a person's height by this method is 67%. The average error in the difference in height was 5.9 cm. The largest error in establishing height was in people who are overweight since childhood, people with physical disabilities, as well as people who regularly engage in professional sports (due to significant physical activity).

Conclusions. The above results showed that the most effective method of determining the probable growth in the footprints of bare feet is the formula: V = 3.1 Dп + 4Sп + 53, and the method of determining the probable growth in the footsteps of shoes is our proposed formula: V = 3,2 Dп + 4, 1Sп + 54 where V is the height, Dп is the length of the sole (foot) in cm; Sп — the width of the sole (foot) in cm. It should also be noted that the results obtained in the process of establishing human growth in its footsteps are likely due to the fact that anthropological indicators of people are individual due to physical development, which are significantly influenced by environmental and social factors and can have a significant difference with the average anthropometric indicators, resulting in a possible error that may exceed ± 3 cm.

But in any case, these methods will help police officers in the course of the investigation of crimes to create a conditional portrait of the perpetrator and deprive the possibility of expelling suspects who may have committed the crime.

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О. В. Солоний

ВСТАНОВЛЕННЯ АНТРОПОЛОГІЧНИХ ДАНИХ ОСОБИ ЗА ЇЇ СЛІДАМИ НІГ (ВЗУТТЯ), ВРАХОВУЮЧИ СУЧАСНІ ТЕНДЕНЦІЇ ФІЗИЧНОГО РОЗВИТКУ ЛЮДИНИ

Детальне вивчення слідів взуття (ніг), виявлених під час огляду місця події, дозволяє скласти уявлення про анатомічні ознаки злочинця, які в подальшому мають значення для встановлення обставин злочину. На сьогоднішній день методи встановлення зросту особи за її слідами є застарілими та потребують вдосконалення, враховуючи сучасні тенденції розвитку людини, які залежать від соціологічних та екологічних факторів.

Метою статті є огляд сформованих методів, які застосовуються в сучасній практиці для встановлення приблизного зросту особи за її слідами взуття (ніг), аналіз отриманих результатів та обґрунтування найбільш ефективного методу.

Ключові слова: трасологічне дослідження, сліди ніг, сліди взуття, встановлення зросту, співвідношення зросту, статура, антропометрія.

А. В. Солоный

ОПРЕДЕЛЕНИЕ АНТРОПОЛОГИЧЕСКИХ ДАНЫХ ЧЕЛОВЕКА ПО ЕГО СЛЕДАМ НОГ (ОБУВИ), УЧИТЫВАЯ СОВРЕМЕННЫЕ ТЕНДЕНЦИИ РАЗВИТИЯ ЧЕЛОВЕКА

Детальное изучение следов обуви (ног), выявленных при осмотре места происшествия позволяет составить представление об анатомических признаках преступника, которые в дальнейшем имеют значение для установления обстоятельств преступления. На сегодняшний день методы установления роста лица по его следам устарели и нуждаются в совершенствовании, учитывая современные тенденции развития человека, которые зависят от социологических и экологических факторов.

Целью статьи является обзор сложившихся методов, которые применяются в современной практике для установления приблизительного ро-

ста лица, по ее следам обуви (ног), анализ полученных результатов и обоснование наиболее эффективного метода.

Для проверки эффективности наиболее распространенных методов установления роста человека нами был проведен эксперимент, в котором приняли участие 1080 человек в возрасте от 17 до 35 лет. У каждого участника эксперимента измерялись рост, длина и ширина стопы, обхват бедра, длина бедра, длина голени. Также учитывались физическое развитие человека и влияние на физическое развитие социальных и экологических факторов (замеры проводились дважды, в 2017–2018 годах и анализировалась разница изменений в течение года).

Установлено, что наиболее эффективным методом для вычисления приблизительного роста человека по следам босых ног является соотношение длины ноги (от ступни до бедра), длины голени и охвата бедра. В среднем длина ноги (от ступни до бедра) равна 3, 1 длины стопы; длина голени равна 4 ширины стопы; среднестатистический объем бедра составляет 53 см. Также была выведена новая формула с вероятностью установления роста человека по следам обуви (в пределах погрешности ± 3 см) 67 % .

Ключевые слова: трасологическое исследование, следы ног, следы обуви, установление роста, соотношение роста, телосложение, антропометрия.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.22
UDC 343.982. 356

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PECULIARITIES OF EXPERT RESEARCH ON THE TRACKS OF THE OPTIONS OF PICKLOCKS ON INTERNAL SURFACES OF CYLINDER MECHANISMS OF LOCKS

The features of the expert study of traces of the impact of foreign objects on the inner surfaces of the cylinder lock mechanisms are considered. During trace evidence analysis of locks, most experts, after examining the external and internal surfaces of the cylinder mechanisms of locks opened by various types of master keys, forged or matched keys, are ambiguously aware of the mechanism of their trace formation, which can sometimes lead to a false conclusion.

The aim of this rese4arch paper is to present the results of a study of the mechanism of trace formation and localization of signs of the effect of foreign objects (master keys, a matched or fake key) on the inner surfaces of the cylinder mechanisms of locks and recommendations to forensic experts when formulating conclusions during trace evidence analyses.

The mechanism of trace formation is considered, the characteristics and classification of traces of the influence of foreign objects (master keys, a picked up or fake key) are presented. The groups of master keys, which are most often encountered in the commission of criminal offenses, have been identified for their further study. A number of experimental studies have been carried out to study and analyze the mechanism of trace formation, as well as to localize the signs of the impact of certain groups of master keys on the inner surfaces of the lock cylinder mechanisms. The progress of the experimental research is described step by step. The article presents the research results of unlocking

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cylinder locks mechanisms with different types of master keys depending on their design features. The illustrations explain the conditions for the localization of traces on the corresponding parts of the cylinder mechanisms of the locks from the influence of the corresponding groups of master keys.

The results of the experimental study are generalized and conclusions about the possible conditions of the mechanism of trace formation are formulated. Recommendations are offered to forensic experts on the formulation of conclusions in the course of trace evidence analyses of cylinder locks mechanisms.

Keywords: trace evidence analysis, cylinder lock mechanism, unlocking, foreign objects, picklocks.

Formulation of Research Problem. One of the most common devices that perform the protective functions of residential and non-residential premises are locks of various structural types. Today there are many modifications of locks, differing in design and complexity. At the same time, in parallel with improving the quality of lock structures, criminal methods of unlocking or breaking them were also improved. At the moment of unlocking or breaking the lock, traces of criminal influence may remain on it, and it itself becomes a carrier of information that is important for the detection and investigation of crimes [1].

The most common traces of criminal unlocking and breakage are traces left by the action of foreign objects. Such items can be, directly locksmiths, selected and counterfeit keys, hacksaws, drills, crowbars, etc. [2]

Scratches, abrasions and other inconspicuous changes are the traces characteristic of criminal influence on internal surfaces of the cylinder mechanism of the lock. At the place of penetration may remain traces relating directly to the objects with which the unlocking was carried out: elements of the workpieces, parts of the unlocks, molding material, etc. allowing to characterize the method used by the attacker when unlocking [3].

While trace evidence analysis of locks, most experts after examining the outer and inner surfaces of the cylinder mechanisms of locks, unlocked by various types of locks, forged or selected keys, are ambiguously aware of the mechanism of their formation that can sometimes lead to a false conclusion.

Thus, the relevance of the article is due to insufficient information, including illustrative, contained in the modern forensic literature on the features that characterize the criminal impact on the castle, which can lead to erroneous expert opinion. Taking into account the expert practice, knowledge of the set

[1] Сухарев А. Г., Калякин А. В., Егоров А. Г., Головченко А. И. Трасология и трасологическая экспертиза: учебник. Саратов: Саратовский юридический институт МВД России, 2010. С. 164.

[2] Ibid. p. 190.

[3] Трасология и трасологическая экспертиза: учебник/И. В. Кантор и др. Москва: ВА ИМЦ ГУК МВД России, 2002. С.176.

of features that have arisen as a result of various criminal influences on the castle, will expand the expert's special knowledge in the study of cylinder mechanisms of locks during trace evidence analysis.

Analysis of Recent Researches and Publications. Problems of trace evidence analysis of closing technical means were investigated in research papers of such criminalists as I. V. Kantor, V. A. Yarmak, N. Yu. Zhigalov, P. P. Smolyakov [1]. In the work of these authors the general theoretical provisions of trace evidence and trace evidence analysis, the topics most important for practice of expert divisions of law enforcement bodies, including expert research of locks are opened. The principle of operation, classification of locks, methods of unlocking and breaking, research of traces of unlocking at the scene and methods of trace evidence analysis of locks are considered.

G. V. Pavlychenko, R. I Zakharov, K. O. Sevastyanova paid attention to the problem of trace evidence analysis of castles [2]. They presented ways to solve typical problems in the trace evidence analysis of locks and locking mechanisms. Also, on concrete examples the logic of actions of the expert conducting research, on the basis of the revealed trace information is considered and the photos which visually illustrate process of carrying out forensic examination are given.

The problem of research on cylinder locks for the purpose of establishment of the fact of their criminal unlocking is paid attention in scientific researches of E. V. Kitaev, A. G. Monin, A. V. Kondakov, S. V. Nikonov, D. Yu. Dontsov [3]. The issues of unlocking locks using the bump method are investigated in the work. The possibility of unlocking the locks with the help of bump keys is substantiated and confirmed, as well as recommendations for experts on establishing the fact of unlocking the cylinder lock using the bump method are developed.

In the work of R. F. Adyezalov, M. M. Yatusevich [4] the methods of unlocking cylinder locks are described using various mechanisms, electrical mechanisms and locks, both simple and multicomponent.

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[1] Ibid.

[2] Павличенко Г. В., Захаров Р. И., Севастьянова Е. А. Судебно-трасологическая экспертиза замков и запирающих механизмов: учеб. пособ. для студентов, обучающихся по специальности «Судебная экспертиза» (40.05.03). Нижегородский государственный университет, 2019. 151 с.

[3] Китаев Е. В. Криминалистическое исследование замков, открытых с использованием бамп-метода. *Судебная экспертиза:* науч.-практ. журнал. Волгоград, 2013. № 1 (33). С. 106−115; Монин А. Г., Кондаков А. В., Никонов С. В., Донцов Д. Ю. Некоторые аспекты совершенствования методики криминалистического исследования цилиндровых механизмов секретности замка. *Судебная экспертиза*: науч.-практ. журнал. Волгоград, 2018. № 4 (56). С. 68−76.

[4] Адыгезалов Р. Ф., Ятусевич М. М. Актуальные аспекты, проблемы криминалистического исследования отпирания цилиндровых штифтовых замков. *Вест-*

However, in these works, the mechanism of trace formation from the action of different types of locks on the inner surfaces of the cylinder mechanisms of the locks remains insufficiently studied. In addition, the answers to the question: "what exactly are the traces left by contact with the key, selected or forged key"? remain insufficiently substantiated.

The Article Purpose is to publish the results of the study of the mechanism of trace formation and localization of signs of influence of foreign objects (locks, selected or forged key) on the inner surfaces of the cylinder mechanisms of the locks. Providing advice to forensic experts in formulating conclusions while conducting trace evidence analysis of these objects with an illustrated explanation.

Main Content Presentation. The tasks that are solved during the examination of the cylinder mechanism of the lock, in most cases, are diagnostic in nature. Identification tasks are performed in the presence of traces-reflections on the parts of the lock, which can be used to establish the identity of keys, keys, hacking tools or tools that left them and the presence of the alleged tools of criminal influence[1].

Traces of a foreign object (key, selected or counterfeit key) are traces that lie outside the contact surfaces of the complete key. In addition, they differ in nature (direction of action, characteristic luster, location, etc.) from the traces formed by the action of the complete key and traces of a production nature. However, the vast majority of traces of foreign objects, especially a selected or counterfeit key, lie within the contact surfaces of the complete key. These traces are similar in shape and dimensional characteristics to the traces of the complete key making it difficult to distinguish them, especially in the absence of a specific foreign object during the research.

In addition, traces may be attributed to a separate group, which accidentally occurred during the manufacture of the cylinder mechanism and are not due to the technical process of its manufacture (deformation in the broach, accidental contact of the cutting edges of the tool with the parts of the cylinder mechanism, traces formed during assembly) that is possibly mistaken to consider traces of the action of foreign objects.

Generalizing the expert practice of studying the cylinder mechanisms of the locks when deciding whether there are traces of the action of foreign objects (keyhole, hand-picked or fake key) on their internal surfaces, the traces can be classified as follows:

- traces of production (broaching, drilling, other);

ник Полоцкого государственного университета. Криминалистическая и оперативно-розыскная деятельность. 2011. № 13. С. 193–197.

[1] Сухарев А. Г., Калякин А. В., Егоров А. Г., Головченко А. И. Трасология и трасологическая экспертиза: учеб. Москва: ВА ИМЦ ГУК МВД России, 2002. С. 176.

- traces of mounting of the cylinder mechanism (contact with the surfaces of objects surrounding the cylinder mechanism and the tool);
- traces of operation (traces of the action of a complete key, duplicate key or accidental key, incorrectly entered into the keyhole, traces of other objects that were not used for the criminal unlocking of the lock);
- traces of a picklock, a matched, fake key.

In order to study and analyze the mechanism of trace formation and localization of the effects of the effects of foreign objects (locks, selected or forged key) on the working surfaces of the cylinder mechanisms of the locks, KhRIFE staff conducted a number of experimental researches.

The process of the experimental studies consisted of the following consecutive stages.

At the first stage, the dismantling of new cylinder mechanisms of locks and preliminary study of their mechanisms and visible internal surfaces was carried out. At the initial stage, the complete key rods were not inserted into the keyholes. Disassembly was carried out as follows: first, with the help of an angular grinding tool, the lower parts of the bodies of the cylinder mechanisms with plugs for opening the channels were cut, in order to remove pairs of pins with springs. Subsequently, the locking washers, leash, bushings, cams and cylinders were removed. The surfaces of the working pins and the visible surfaces of the cylinders were examined in order to detect defects and damage, and the established data were recorded. After that, all the parts of the cylinder mechanisms returned to their places, the lower parts of the housings with caps were fixed with plasticine.

The results of the research in the first stage indicate the following: on working surfaces of the pins, traces were found that arose during the manufacture of the cylinder mechanism and were not conditioned by the technical process of its production (Fig. 1).



Fig. 1. Traces found on the surfaces of the working pins of new cylinder lock mechanisms

Detected traces are generally not identifiable due to the end of the identification period and the inability to examine the equipment on which the cylinder mechanism was manufactured.

In the second stage, complete keys were inserted into the key wells of the cylinder mechanisms, including with acceleration and not at right angles to assess their interaction with the parts of the cylinder mechanism of the lock. Subsequently, the cylinder mechanisms of the locks were disassembled again and the working surfaces of the cylinder pins were studied after their interaction with the complete keys. The purpose of the research is to identify and analyze on the working surfaces of the pin traces-reflections from the contact surfaces of the key.

The results of the studies indicate the following:

1. When using new complete keys or new duplicate keys, manufacturing defects in the form of burrs and scratches may remain on their surfaces. During initial operation, they may leave marks on the pins and cylinder that can be mistaken for traces of a foreign object. These defects on the keys during operation are eliminated (burrs are broken, scratches are smoothed) and in the future complete keys do not form such traces.
2. While microscopic examination of the contact surfaces of complete keys it is revealed that one of the keys has a manufacturing defect in the form of burrs (Fig. 2). The arrow shows the manufacturing defect on the part of the beard of the complete.

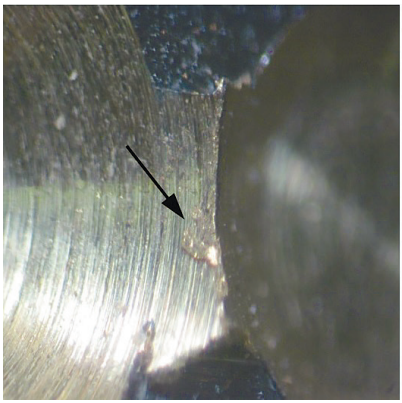


Fig. 2. The defect of manufacture on the part of the beard of the complete key

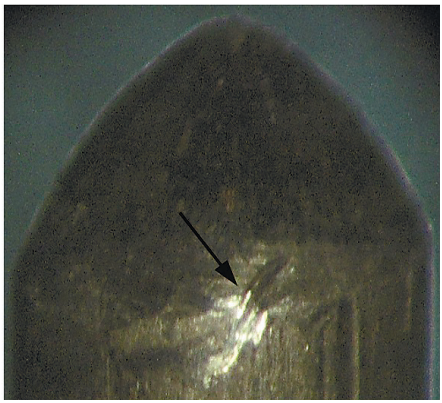


Fig. 3. The trace on the conical surface of the working pin is left out of contact with the complete key

3. After the expert experiment, the surfaces of the working pins of the cylinders were investigated after contact interactions with a complete key

that has a defect. As a result, a trace was found in the form of a scratch (Fig. 3). The arrow shows the trace on the working pin left from contact with the key having a manufacturing defect.

4. While microscopic examination of the surfaces of the working pins of the cylinders, after the accelerated introduction of complete keys into the key gap of the cylinder's traces were found, which in some cases can be mistakenly attributed to traces from foreign objects (Fig. 4).

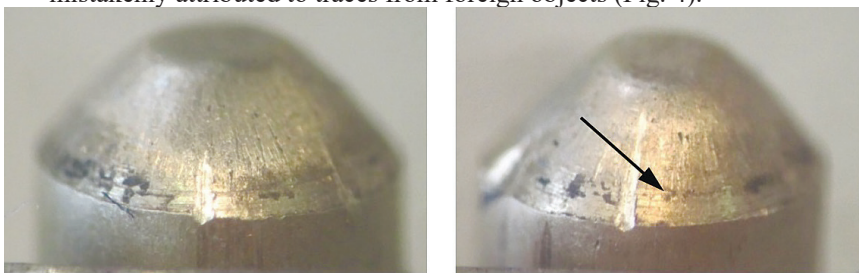


Fig. 4. Trace localization after accelerated key insertion (arrows show traces on working pins surfaces)

5. While microscopic examination of the working pins and inner surfaces of the cylinders, after inserting the complete keys into the keyhole not at right angles revealed traces that can be mistaken for traces of foreign objects (Fig. 5). The arrows show the marks on the working pins and the visible inner surface of the cylinder, which are left from contact with the key when inserted into the keyhole not at right angles.

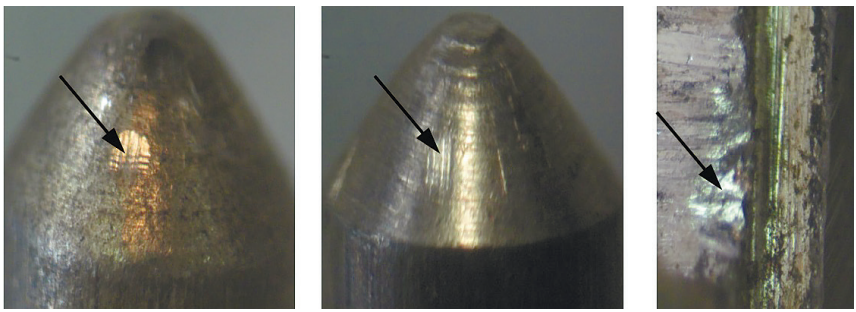


Fig. 5. Localization of traces from contact with the key when entered in the key gap is not at right angles

At the third stage, the corresponding parts of the locks were introduced into the key wells of the cylinder mechanisms and their structurally conditioned interaction was carried out. Subsequently, the cylinder mechanisms of the locks were disassembled, the cylinders were sprayed along the centerline to study the working surfaces of the pins and the inner surfaces of the key holes of the cylinders. The purpose of this stage is to identify trace reflections of the contact parts of foreign objects that affected the surface of the cylinder mechanisms of

the locks, their fixation and analysis. The analysis of expert practice allowed to allocate groups of keys for their further research that are most common in the commission of criminal offenses. The results of experimental studies of unlocking the cylinder mechanisms of locks by different types of locks are divided into appropriate groups depending on the design features of the cylinder mechanisms of locks and unlocks:

1. Unlocking with the use of a set of locks: lockpick with foil (Fig. 6), the principle of action is based on the impressive method of selecting the height difference of the working pins.



Fig. 6. Set of picklocks

During microscopic examination of the working surfaces of the pins and the inner surfaces of the cylinder revealed:

- on the conical part of the fourth working pin, static-dynamic traces in the form of plugs and tracks of linear and arcuate shape, which are left from the front of the keyhole rod when it is introduced into the key hole (mark 1, 2, 3 Fig. 7);
- on the safety protrusion of the lower surface of the key hole by the channel of pins dynamic traces in the form of linear parallel runs up to 1, 5 mm, which are left from the lateral surface of the keyhole rod when it is structurally conditioned rocking about the axis of the rod (mark 1 Fig. 8);
- on the upper surface of the keyhole dynamic traces in the form of linear parallel paths up to 1, 5 mm, which are left from the lateral surface of the keyhole core during its structurally conditioned rocking around the axis of the core (mark 2 Fig. 8).

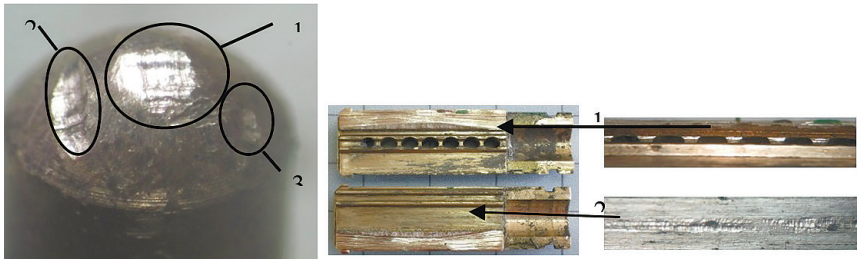


Fig. 7—8

2. Unlocking with the use of a lock type: fast runner (Fig. 9), when the coupling design allows the rotation of the lever without rotating the cylinder.

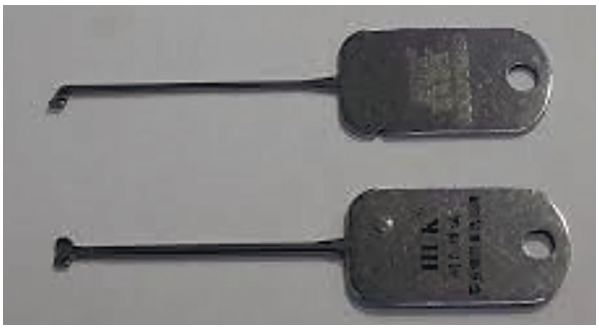


Fig. 9. Samples of keychains of the fast runner type

Microscopic examination of the working surfaces of pins, internal surfaces of the cylinder and other parts of the mechanism revealed:

- in the deepening of the coupling, the presence of dynamic traces in the form of a chaotic overlay of the tracks left behind by the hooks of the keyhole during rotation (Fig. 10). The arrows indicate the localization of the traces left by the working surfaces of the lock;

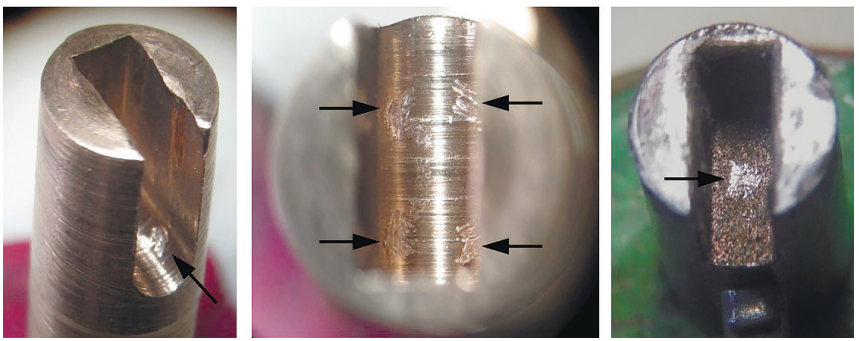


Fig. 10. Localization of traces on the coupling surface

- on the upper surface of the keyhole, dynamic traces were detected in the form of linear parallel paths up to 1,5 mm that are left behind by the lateral

surface of the keyhole core during rotation (Fig. 11). The arrows indicate the localization of the traces left by the working surfaces.

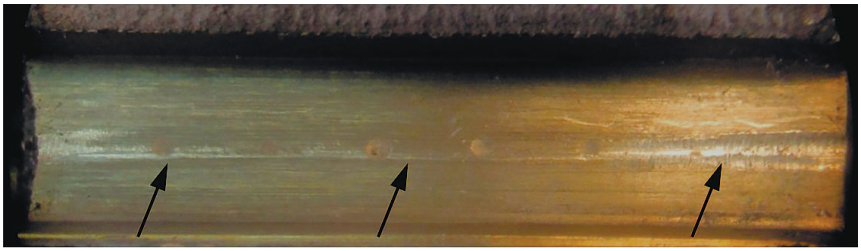


Fig. 11. Localization of traces on the upper surface of the keyhole

3. Unlocking using a comb type lock (Fig. 12).



Fig. 12. Samples of keychains of the fast runner type

Microscopic examination of the working surfaces of the pins and internal surfaces of the cylinder revealed:

- on the conical part of the first and fourth working pins dynamic traces in the form of chaotic overlays of linear and arcuate tracks up to 3 mm long, which are left from the beards of the keyhole, with reciprocating movements (Fig. 13). The arrows mark the location of traces left by the working surfaces of the key.

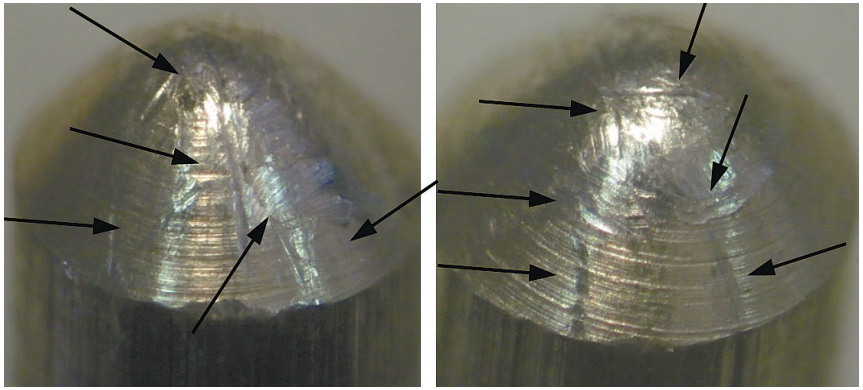


Fig. 13. Localization of traces on the surfaces
of the working pins of the cylinder

- on the safety protrusion of the left surface of the key hole from the side of the pins of the pins revealed dynamic traces in the form of chaotic linear paths, which are left from the beards of the key during the reciprocal movements (Fig. 14). The arrows mark the location of traces left by the working surfaces of the key.

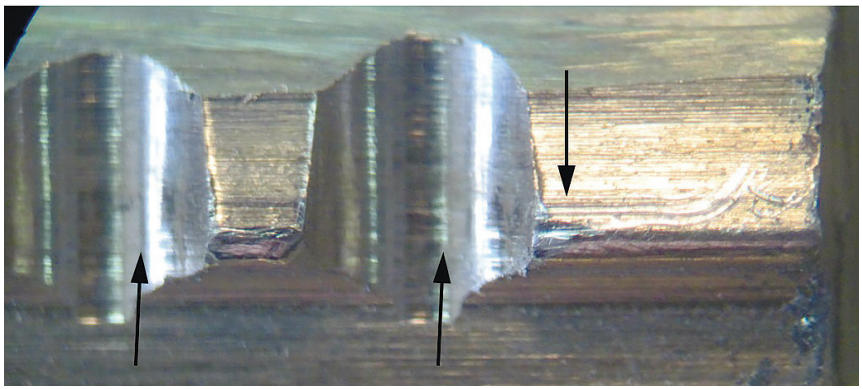


Fig. 14. Localization of traces
on the safety protrusion of the left surface of the key hole
by the channels of pins

4. Unlocking with the use of a keyhole, the action of which is aimed at alternately adjusting the height of the location of the working pins (Fig. 15).

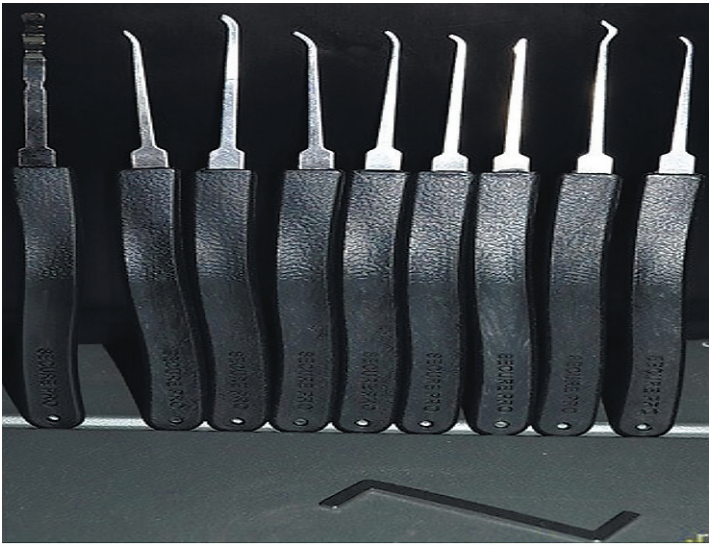


Fig. 15. Samples of picklocks

Microscopic examination of the working surfaces of the pins and the inner surfaces of the cylinder revealed:

- on the conical part of the first and third working pins dynamic traces in the form of chaotic overlays of linear and arcuate tracks up to 3 mm long, which are left from the beards of the key, when pressing on the conical parts of the working pins (Fig. 16). The arrows mark the location of traces left by the working surfaces of the key.

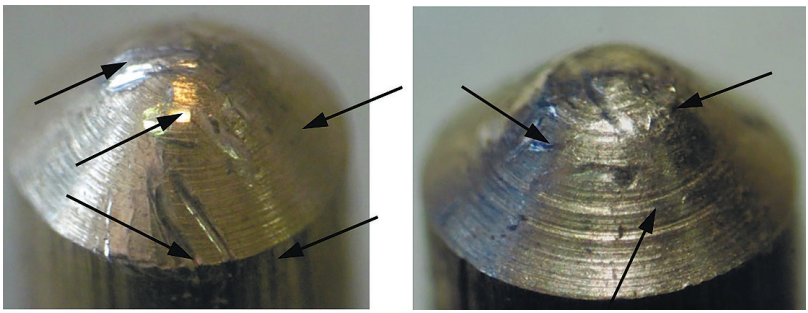


Fig. 16. Localization of traces on the conical part of the first and third working pins

5. Unlocking with the use of bump keys (Fig. 17), the action of which is aimed at selecting the height of the working pins by striking or vibrating the key.



Fig. 17. Samples of bumps for different types of cylinder lock mechanisms

Microscopic examination of the working surfaces of the pins and the inner surfaces of the cylinder revealed: on the conical part of the second and fifth working pins static-dynamic traces in the form of dents measuring 0,5x0,5 – 1x2 mm and individual linear tracks up to 1 mm long, which are left from the beards of the key while striking the head bump-key (marks 1, 2 Fig. 18).

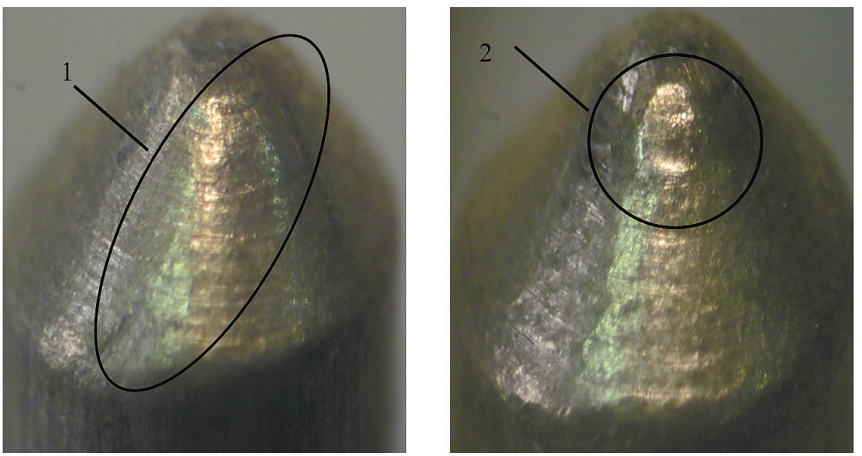


Fig. 18. Localization of traces on the surfaces
of the working pins

Summarizing the results of the experimental study, we can conclude that most of the traces of the action of the locksmiths lie within the contact surfaces of the complete key with the parts of the cylinder mechanism. In addition, the corresponding traces may appear in the form of bumps,

scratches, dents, which are similar in shape and size characteristics to the traces of the complete key, and in some cases may be close to traces of the production origin of the cylinder locks. Often traces of foreign objects are of low identification weight (small number or incomplete display of tracks, etc.). It is rather difficult to separate them from traces of action of a complete key therefore in such cases it is expedient to make the conclusion of the expert in not categorical form. These traces can be separated from the traces of the complete key only in a comparative study with a specific foreign object.

It should also be borne in mind that the expert cannot count on having comprehensive information about the types, design features of all existing keys. This is due to the fact that these items are often made by criminals themselves, according to personal skills. Industrial keys are often improved, the number of manufacturers is probably unknown.

Therefore, it is possible to draw a categorical conclusion about the presence of traces of a foreign object on the inner surfaces of the cylinder mechanism of the lock only after identification of the lock or other foreign object used for criminal unlocking of the lock with the corresponding traces. In addition, the conclusion in categorical form is also possible in the presence of a set of group signs of a particular type of key, selected or counterfeit keys, and the detection of foreign objects (parts of keys, fragments of foil or polymeric materials, adhesives).

Conclusions. The paper summarizes the results of the experimental study and formulates conclusions about the possible conditions of the mechanism of trace formation. In addition, illustrative explanations of the conditions of localization of traces on the relevant parts of the cylinder mechanisms of the locks from the action of foreign objects and complete keys are provided.

According to the results of the research, recommendations for forensic experts on the formulation of conclusions during trace evidence analyses of the cylinder mechanisms of the locks are proposed which are as follows:

1. When detecting single traces or a set of single traces in different parts of the mechanism, which cannot be attributed to traces and which on group grounds correspond to traces left by a specific type of key, as well as in case of impossibility to classify them as traces of production and operation, it is expedient to draw the following conclusion: On the inner surfaces of the cylinder mechanism of the lock provided for research, there are traces that could remain from contact with foreign objects (key, picked up or forged keys) or during manufacture and operation. Separate some traces from others, as well as answer the question: “Are there

traces of foreign objects on the inner surfaces of the cylinder mechanism of the lock?" possible only in a comparative research with a specific trace evidence object".

2. In case of detection on the inner surfaces of the cylinder mechanism of the lock only traces that can be unequivocally attributed to production and operational traces, it is advisable to conclude the following content: "On the inner surfaces of the cylinder mechanism of the lock not found. However, in the case of a single use of foreign objects (keys, selected or counterfeit keys), the working parts of which are similar in shape and size to the working part of the complete key, the characteristic traces on the parts of the mechanism may not remain".

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ОСОБЛИВОСТІ ЕКСПЕРТНОГО ДОСЛІДЖЕННЯ СЛІДІВ ДІЇ ВІДМИЧОК НА ВНУТРІШНІХ ПОВЕРХНЯХ ЦИЛІНДРОВИХ МЕХАНІЗМІВ ЗАМКІВ

Розглядаються особливості експертного дослідження слідів дії сторонніх предметів на внутрішніх поверхнях циліндрових механізмів замків.

Метою роботи є оприлюднення результатів дослідження механізму слідоутворення та локалізації ознак впливу сторонніх предметів на внутрішніх поверхнях циліндрових механізмів замків та на-

дання рекомендації судовим експертам при формулюванні висновків під час проведення трасологічних досліджень.

Надані результати експериментальних досліджень циліндрових механізмів замків. Ілюстрації пояснюють умови локалізації слідів на відповідних частинах циліндрових механізмів замків від дії сторонніх предметів та комплектних ключів. Запропоновано рекомендації судовим експертам щодо формулювання висновків при дослідженні циліндрових механізмів замків.

Ключові слова: трасологічна експертиза, циліндровий механізм замку, відмикання, сторонні предмети, відмички.

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ОСОБЕННОСТИ ЭКСПЕРТНОГО ИССЛЕДОВАНИЯ СЛЕДОВ ДЕЙСТВИЯ ОТМЫЧЕК НА ВНУТРЕННИХ ПОВЕРХНОСТЯХ ЦИЛИНДРОВЫХ МЕХАНИЗМОВ ЗАМКОВ

Рассматриваются особенности экспертного исследования следов воздействия посторонних предметов на внутренних поверхностях цилиндровых механизмов замков. При трасологической экспертизе замков большинство экспертов после исследования внешних и внутренних поверхностей цилиндровых механизмов замков, открытых разного вида отмычками, подделанными или подобранными ключами, неоднозначно осознают механизм их следообразования, что иногда может привести к ложному выводу.

Целью работы является представление результатов исследования механизма следообразования и локализации признаков воздействия посторонних предметов (отмычек, подобранного или поддельного ключа) на внутренних поверхностях цилиндровых механизмов замков и рекомендаций судебным экспертам при формулировании выводов в ходе проведения трасологических исследований.

Рассмотрен механизм следообразования, представлена характеристика и классификация следов воздействия посторонних предметов (отмычек, подобранного или поддельного ключа). Определены группы отмычек, которые чаще всего встречаются при совершении криминальных правонарушений, для их дальнейшего исследования. Проведен ряд экспериментальных исследований с целью изучения и анализа механизма следообразования, а также локализации признаков воздействия определенных групп отмычек на внутренние поверхности цилиндровых механизмов замка. Поэтапно описан ход проведения экспериментальных исследований. Представлены результаты исследований отпирания цилиндровых механизмов замков разными

видами отмычек в зависимости от их конструктивных особенностей. Иллюстрации поясняют условия локализации следов на соответствующих частях цилиндровых механизмов замков от воздействия соответствующих групп отмычек.

Обобщены результаты экспериментального исследования и сформулированы выводы о возможных условиях механизма следообразования. Предложены рекомендации судебным экспертам по формулированию выводов в ходе проведения трасологических исследований цилиндровых механизмов замков.

Ключевые слова: трасологическая экспертиза, цилиндровый механизм замка, отпирание, посторонние предметы, отмычки.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.23
UDC 343.98; 340.67

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RESEARCH ON HIGHLY HAZARDOUS CHEMICALS BY THE METHOD OF THIN-LAYER CHROMATOGRAPHY USING CLONIDINE AND ATRACURIUM BESYLATE AS AN EXAMPLE

Solvent systems for thin layer chromatography for research of toxic drugs: - clonidine and atracurium besylate, as well as selected the most sensitive reagents that allow to differentiate and identify these drugs. The research was carried out by the method of thin-layer chromatography, the systems of organic solvents were selected and the chromatographic characteristics were obtained.

Among crimes against the person, the greatest danger is represented by crimes committed with the help of potent or poisonous drugs. Currently, there is a tendency to increase the number of crimes committed, which always affects the state of social protection of citizens, increases tensions in society, undermines the authority of the state. The peculiarities of the detection of these crimes are associated with significant difficulties and a very large amount of work, which suggests that these crimes belong to the category of increased complexity.

Psychoactive substances used in this type of crime can change the victim's condition and orientation, ability to make decisions, as well as short-term memory loss. Such substances can make the victim vulnerable and unable to resist the attacker. In addition, they can be used to sedate the victim, to make it easier for the offender to transport.

Thus, clonidine has chemical and toxicological significance. At the same time, so far, the forensic examination of deaths and non-deaths does not have enough information about the study of clonidine poisoning. Represents certain difficulties in establishing the fact of poisoning, the lack of specific clinical signs of poisoning, the lack of effective methods for determining clonidine.

Methods of identification, as well as a set of results of qualitative and quantitative determination of highly hazardous chemical: clonidine and atracurium besylate, thin layer chromatography can be used in pharmaceutical analysis of dosage forms of clonidine and muscle relaxants (atracurium besylate), as well as in research in expert chemical laboratories.

Keywords: cannabinoids, atracurium besylate, clonidine, thin layer chromatography, highly hazardous chemicals, solvent system.

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Formulation of Research Problem. Among crimes against the person, the most dangerous are crimes committed with the help of potent or poisonous drugs. Currently, there is a tendency towards an increase in the number of crimes committed, which always affects the state of social protection of citizens, increases tension in society, and undermines the authority of the state.

The features of the disclosure of these crimes are associated with significant difficulties and a very large amount of work, which suggests that these crimes are classified as high complexity.

There are a large number of tasks in investigative practice that may arise in any case involving the use of drugs, potent and toxic drugs in order to facilitate the commission of a crime.

With the help of drugs, potent and poisonous drugs, rape and other violent acts of a sexual nature are committed, robbery, robbery, extortion of money.

These crimes involve the use of drugs by introducing a substance into the human body without his consent, with the intention of violating his normal behavior, perception or ability to make decisions, after he voluntarily took a substance that deprives him of the ability to act independently.

The modern Ukrainian market is flooded with counterfeit drugs intended not only for people, but also for animals. However, it should not be forgotten that counterfeit medicines can cause people death.

In recent years, one of the features of chemical and toxicological analysis in Ukraine is a significant increase in the number of accidental and deliberate poisoning with clonidine. Often, passengers of railway trains become victims of robberies using clonidine or poisonous drugs.

As a rule, potent or poisonous drugs, primarily clonidine (clonidine), are secretly poured into glasses of alcoholic beverages to a crime victim. As evidenced by the forensic practice, after the use of clonidine (after 10-40 minutes), the victims note the presence of weakness, lethargy, drowsiness, nausea, heaviness in the head[1].

Clonidine poisoning is caused by an overdose, individual hypersensitivity. The psychoactive substances used can alter the victim's state and orientation in space, the ability to make decisions, as well as short term memory loss. Such substances can render the victim vulnerable and unable to resist the attacker.

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They can also be used to sedate the victim so that it is easier for the offender to transport.

Analysis of Recent Researches and Publications. Clonidine has chemical and toxicological significance. However, to date, the forensic examination of fatal and non-fatal cases does not have enough information about the study of clonidine poisoning. There are certain difficulties associated with both the establishment of the fact of poisoning and the absence of specific clinical signs of poisoning, the lack of effective methods for the determination of clonidine by thin layer chromatography, as well as instrumental methods [1].

A. B. Melentev, S. A. Savchuk, S. K. Eremin, B. N. Izotov, S. N. Borisevich, V. V. Bolotov studied this problem. Currently, there are data in the literature on the study of the extraction of clonidine from biological objects, as well as its detection in them, the use of clonidine in the treatment of eye diseases, studies of clonidine in the blood of biological objects, there are no data on methods for the study of potent and poisonous drugs, methods are insufficiently developed detection and quantification of clonidine and atracurium besylate, suitable for the purposes of chemical and toxicological analysis.

Given the widespread use in medicine, the presence of poisoning, including fatal cases, as well as the lack of guidelines for the study of potent and toxic substances clonidine and atracurium besylate; it should be considered that the development of methods for the detection, qualitative and quantitative determination of these drugs in departmental expert organizations is one of the urgent problems of modern chemical toxicological analysis.

The aim of the study is to select the most sensitive reagents that would allow differentiating and identifying the indicated potent and poisonous drugs, to develop solvent systems for research by the method of color qualitative reactions and the method of thin-layer chromatography, and to select the most sensitive reagents for the manifestation of potent and highly hazardous chemicals.

To achieve this goal, it was necessary to solve the following main tasks:

- develop methods for the identification of clonidine and atracurium besylate using various chromatographic and chemical methods;
- develop sensitive methods for the quantitative determination of clonidine (clonidine) and atracurium besylate using gas-liquid (GC) chromatography;
- study the suitability of the developed methods of detection and quantification for the analysis of clonidine and atracurium besylate.
- to conduct a comparative assessment of methods for the isolation of clonidine from objects of biological origin.

[1] Борисевич С. Н. Клофелин. Методы фармацевтического и химико-токсикологического исследования. *Здоровье и окружающая среда:* сб. науч. тр. Вып. 10/М-во здравоохранения Респ. Беларусь. Минск: науч. практ. центр гигиены, 2007. С. 690–694.

Main Content Presentation. For research, clonidine comes in the form of Clonidine tablets and in the form of a liquid, transparent ampoules for injections. When conducting forensic examinations of clonidine, several problems arise. The first is related to the lack of research schemes.

- highly hazardous chemicals that can cause serious harm to human health when used without a doctor's prescription. These include drugs for anesthetic, sedative, hypnotic effect (clonidine, butorphanol, tetracaine, muscle relaxants), as well as:
- salts of these substances, when the existence of such salts is possible;
- isomers of these substances;
- esters are complex and simple, listed in the list;
- all dosage forms, no matter what brand (trade) names they are not designated, which include the substances listed in the list in combination with pharmacological inactive components;
- all mixtures and solutions containing the listed substances, regardless of their concentration.

Poisons, when exposed to the body, cause a sharp disruption of normal life, poisoning and death. For example, they include: snake venom, its derivatives, purified bee venom, clonidine, etc.

We investigated the indicated drugs by the method of qualitative chemical reactions when they were revealed with Marquis reagent (1 part of a 40% formalin solution + 9 parts of concentrated sulfuric acid), Wagner (2 g of potassium iodide is dissolved in 10-15 ml of water. 1 g is added to this solution iodine After dissolving iodine add water (50 ml) Nessler (50 g of potassium iodide is dissolved in 50 ml of water). A saturated solution of mercury chloride (6 g of mercury chloride (1) in 10 ml of water) is added to this solution with constant stirring until a stable precipitate of mercury iodide appears. Then add 20 ml of 6N potassium hydroxide solution and water to 500 ml. This reagent is stored in a dark place, Dragendorff's reagent (8 g of basic bismuth nitrate is dissolved in 10 ml of glacial acetic acid). The resulting solution is poured into a solution containing 27.2 g of potassium iodide in 30 ml of water. After a few days, the liquid is filtered and diluted with water to 10 ml and with iodine-platinum, by thin layer chromatography. According to the research results, the most sensitive solvent systems are proposed. The chromatographic mobility of clonidine-base and muscle relaxant; atracurium besylate in 14 solvent systems was studied. The determination of the zones of chromatographic mobility of clonidine and atracurium was also carried out in UV light.

Thin layer chromatography is a relatively inexpensive but no less accurate method of research. Sorbfil plates, the most common chromatographic systems, and known solvents for the development of staining zones were used for thin layer chromatography.

Suggested Solvent Systems:

- Chloroform methanol (9:1);

- Benzene ethanol diethylamine (9:1:1);
- Methanol – 25% ammonia solution (100:1.5);
- Hexane-acetone-ammonia (2:2:0,1);
- Benzene methanol (9:1);
- Chloroform acetone ethanol – 25% ammonia solution (20:20:3:1);
- Chloroform methanol (9.7:0.3);
- Chloroform benzene ethanol (45:15:5);
- Chloroform n-butanol – 25% ammonia solution (70:40:5);
- Chloroform acetone (1:9);
- Chloroform methanol-acetone (7:2:1);
- Hexane acetone (2:1);
- Hexane methanol (1:2);
- Toluene acetone ethanol – 25% ammonia solution (4.5:4.5:0,75: 0.25).

Table 1

The characteristic color obtained by conducting high-quality chemical reactions of toxic and potent drugs

№	Reagent Substance	Marquis	Cobalt(II) Thiocyanate	Nessler	Dragendorf's modifications According to Mounier	Iodo-platinum	Wagner
1	Atracurium besylate	from pale pink to pale purple-brown	blue	light yellow	orange	blue-violet	orange
2	Clonidine	—	—	—	—	—	—

As can be seen from the table, for the qualitative determination of clonidine and atracurium, all the reagents under study make it possible to differentiate atracurium at the stage of qualitative reactions. The same cannot be said for clonidine. As a result of the study of clonidine, color did not appear in any case. However, it should be noted that the use of these chemical reactions is not the final result. For further research, it is necessary to use the method of thin layer chromatography and instrumental methods. The results obtained are shown in Tables 2-8.

Table 2

Thin layer ascending chromatography study, Rf

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	0,63	0,78	0,48	0,45	-	0,68	-	0,62	0,88	0,45	0,57	0,13	0,43	0,55
Clonidine	-	0,69	-	0,76	-	0,70	-	0,59	0,82	-	-	-	-	0,61

Table 3

TLC reagent manifestation

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	brown	brown-red-green	brown	pale pink purple	-	brown	-	pale purple	brown	pink blue	brown	pale purple	-	brown
Clonidine	-	-	-	-	-	pale pink brown	-	pale pink brown	-	-	-	-	-	-

Table 4

TLC manifestation of Cobalt (II) thiocyanate

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	blue	blue	blue	blue	-	blue	-	blue	blue	blue green	blue green	blue green	blue green	blue
Clonidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5

TLC manifestation of iodoplatinate reagent

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	full blue	full blue	full blue	full blue	-	full blue	-	full blue	full blue	purple	purple	purple	purple	purple
Clonidine	-	-	-	light brown	-	-	-	-	full blue	-	-	-	-	-

Table 6

TLC manifestation with Dragendorf's reagent (Mounier modification)

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	orange	orange	orange	orange	-	orange	-	orange	orange	orange	orange	orange	orange	orange
Clonidine	-	-	-	-	-	orange	-	orange	orange	-	-	-	-	-

Table 7

TLC Wagner reagent manifestation

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	brown	light yellow	brown	brown	-	brown	-	brown	brown	brown	brown	brown	brown	brown
Clonidine	-	yellowy-brown	-	-	-	-	-	yellowy-brown	yellowy-brown	-	-	-	-	brown

Table 8

TLC manifestation of Nessler's reagent

System №	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Atracurium besylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clonidine	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Conclusions. Analyzing the results of the chromatographic mobility of clonidine and atracurium besylate, we can conclude that the most positive result of the separation characteristics was obtained using systems 2, 4, 14.

Identification techniques, as well as a set of results of qualitative and quantitative determination of highly hazardous chemicals: atracurium besylate, thin layer chromatography can be used in the pharmaceutical analysis of dosage forms of clonidine and muscle relaxants (atracurium besylate), as well as in expert studies chemical laboratories of units of the Ministry of Internal Affairs of Ukraine, Ministry of Justice of Ukraine.

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ДОСЛІДЖЕННЯ МЕТОДОМ ТОНКОШАРОВОЇ ХРОМАТОГРАФІЇ СИЛЬНОДІЮЧИИХ ТА ОТРУЙНИХ РЕЧОВИН НА ПРИКЛАДІ КЛОНІДИНА І АТРАКУРІЯ

Розглянуто системи розчинників для тонкошарової хроматографії з дослідження отруйних лікарських засобів — клонідину і атракурію, а також підібрані найбільш чутливі реактиви, які дозволяють диференціювати і ідентифікувати зазначені лікарські засоби. Проведено дослідження методом тонкошарової хроматографії, підібрано системи органічних розчинників і отримано хроматографічні характеристики.

Серед злочинів проти особи найбільшу небезпеку представляють злочини, що здійснюються за допомогою сильнодіючих або отруйних лікарських засобів. Нині спостерігається тенденція до збільшення

кількості скоюваних злочинів, що завжди позначається на стані соціальної захищеності громадян, посилює напруженість у суспільстві, підриває авторитет держави. Особливості розкриття цих злочинів пов'язані зі значними труднощами і дуже великим обсягом роботи, що дозволяє говорити про те, що ці злочини належать до категорії підвищеної складності.

Уживані у рамках цього роду злочинів психоактивні речовини можуть змінювати стани жертви і орієнтацію, здатність приймати рішення, а також короткочасну втрату пам'яті. Подібні речовини можуть зробити жертву уразливою і нездатною чинити опір нападаючому. Крім того, вони можуть використовуватися в цілях чинення седативної дії на жертву, для того, щоб злочинцеві було легше її транспортувати.

Таким чином, клонидин (клофелін) має хіміко-токсикологічне значення. В той же час, дотепер судово-медична експертиза смертельних і несмертельних випадків не має достатньо інформації про дослідження отруєнь клофеліном. Представляє певні труднощі встановлення факту отруєння, відсутність специфічних клінічних ознак отруєння, відсутність ефективних методик визначення клофеліну.

Методики ідентифікації, а також комплекс отриманих результатів якісного і кількісного визначення клофеліна і атракурія — сильнодіючих і отруйних лікарських засобів, хроматографії в тонких шарах можуть бути використані у фармацевтичному аналізі лікарських форм клонідина (клофеліна) і міорелаксантів (атракурія), а також при дослідженні в експертних хімічних лабораторіях.

Ключові слова: канабіноїди, атракурій, клофелін, клонідин, тонкошарова хроматографія, отруйні, сильнодіючі лікарські засоби, система розчинників.

Н. Н. Космина

ИССЛЕДОВАНИЕ МЕТОДОМ ТОНКОСЛОЙНОЙ ХРОМАТОГРАФИИИ СИЛЬНОДЕЙСТВУЮЩИХ И ЯДОВИТЫХ ВЕЩЕСТВ НА ПРИМЕРЕ КЛОФЕЛИНА И АТРАКУРИЯ

Рассмотрено фармакологическое действие сильнодействующих ядовитых лекарственных средств. Проанализированы преступления, которые совершаются с их применением. В настоящее время проводятся работы по исследованию этих веществ в биологических объектах, поэтому возникает необходимость изучения сильнодействующих и ядовитых лекарственных средств. В статье рассмотрены системы растворителей для тонкослойной хроматографии по исследованию

сильнодействующих и ядовитых лекарственных средств на примере клонидина (клофелина) и атракурия, а также подобраны наиболее чувствительные реактивы, которые позволяют дифференцировать и идентифицировать указанные лекарственные средства.

Ключевые слова: каннабиноиды, атракурий, клофелин, клонидин, тонкослойная хроматография, ядовитые, сильнодействцющие лекарственные средства, система растворителей.

Received by Editorial Board: 20.09.2019

DOI: https://doi.org/10.32353/khrife.2.2019.24
UDC 656.08

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MODELING MECHANISM OF AVEHICLE TURNOVER WHILE MOTOR VEHICLE COLLISION (MVC)

The development of mathematical models of vehicle overturning is given considerable attention by many researchers due to the need to obtain reliable information about the circumstances of motor vehicle collision (MVC). Research on motor vehicle collision involving vehicle overturning is associated with the difficulty of establishing a mechanism of overturning, as expert calculation methods do not always use the prepared mathematical models. Most techniques focus on determining the minimum (critical) speed of vehicles that causes it to overturn. However, the actual speed of vehicles before overturning can be much higher. This research paper presents a mathematical model of the process of overturning vehicles after hitting a stationary side obstacle. In this case, the vehicle is subject to an overturning moment due to inertial forces and a moment of gravity, which keeps the vehicle from overturning. It should be noted that the torque arm from the force of gravity varies from a maximum value to 0 during the overturning of the vehicle. The mathematical model is based on the basic equation of dynamics for rotational motion. The developed mathematical model is a nonlinear homogeneous differential equation of the second order. The solution of this equation is obtained allowing to determine the conditions of vehicle overturning and studying the main parameters of vehicle movement while overturning from the beginning of rise of vehicle mass center to the moment of its maximum rise. The results of calculating the critical speed of vehicles with the results obtained on the basis of the law of conservation of energy are compared. The results are fully consistent. The results obtained using a mathematical model for a specific vehicle are analyzed.

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Keywords: motor vehicle collision, vehicle, side obstacle, overturning, modeling.

Formulation of Research Problem. The number of motor vehicle collision (MVC) involving overturning is small in percentage (up to 9 %) but the severity of their consequences is significant, as injuries to people and significant damage to vehicles in this case are inevitable. The study of such accidents is associated with difficulties in establishing the mechanism of overturning, as expert methods of calculation do not always use prepared mathematical models. Vehicle overturning can occur while (lateral) stability is lost on a curvilinear trajectory, on negative slopes due to a collision or collision with an obstacle. Naturally, for researches of such types of vehicle overturns it is necessary to compile and use different mathematical models and calculation methods.

Analysis of Recent Researches and Publications. For many years, one of the main guidelines for the analysis of accidents was the work of the general editorship of Professor V. A. Illarionov [1]. In this research paper greatest attention is paid to the loss of course stability on curved sections of the road and to the determination of the critical speed of the vehicle.

A more modern methodological manual for the investigation and examination of road accidents is the handbook of S. A. Yevtyukov and Ya. V. Vasiliev [2] considering the classification of causes and objectives of the research related to the overturning of vehicles. A common disadvantage of the known expert methods of MVC reconstruction related to overturning of vehicles is the lack of ready-made mathematical models that describe the mechanism of overturning vehicles. If the vehicle overturning took place in the mode of its braking; the task of modeling the mechanism of the accident is sharply complicated, as it is necessary to take into account a number of additional factors influencing the assessment of vehicle [3] parameters and determine the initial speed before braking [4].

Article Purpose. The research purpose is to developing and analyzing a mathematical model of the mechanism of overturning of road vehicles, as well as to improving the estimation accuracy of the parameters of the traffic of vehicles while motor vehicle collision.

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Main Content Presentation. Depending on the traffic situation, the main reasons for overturning vehicles can be identified:

- While turning or performing a maneuver under the influence of centrifugal force;
- after collision with another vehicle;
- when an obstacle occurs when the center of mass of the vehicle goes beyond the point of application;
- result of a side impact on an obstacle, such as a curb or track;
- while leaving the section of the road with a side slope;
- if several of the above factors are available.

Mathematical model of vehicle overturning. Let's consider the case of a vehicle overturning due to a lateral impact on an obstacle, such as a curb or track (Fig. 1).

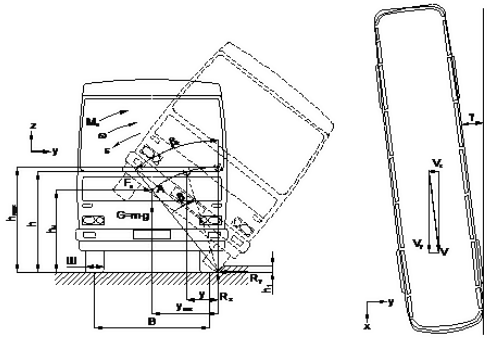


Fig. 1. Scheme of external forces and moments acting on the vehicle while overturning after hitting a fixed obstacle

In fig. 1: γ is the angle of onset of a fixed lateral obstacle; F_u is the lateral force of inertia that arises when a wheel hits a stationary lateral obstacle; M_u is the moment of inertia forces while vehicle overturning; G is the gravitational pull of the vehicle; т is the vehicle mass kg; R_y, R_z are respectively transverse and vertical reactions in the spot of contact of the wheel with the support surface (overturning point); ω and ε are the angular velocity and the acceleration (deceleration) of the center of mass of the vehicle at overturning; h is the height of the center of vehicle mass while overturning that varies from the value of h_u to h_{max}; h_l is obstacle height; B is vehicle axle track; $Ш$ is the width of the wheel tire profile; β is the angle of rotation of the vehicle while overturning that varies from 0 to the value of β_k, which can be determined by the formula:

$$\beta_k = 90^0 - arctg\left(\frac{2 \cdot h_u}{B + Ш}\right). \quad (1)$$

While overturning, the moment of inertia forces resulting from the deceleration of the vehicle and $m \cdot g \cdot y$ moment created by the force of gravity around the point of overturning act on the vehicle. Moreover, the arm of gravity varies from the value of y_{max} to 0 when the mass center of the vehicle reaches the extreme upper position.

The minimum vehicle speed when it will overturn can be found on the basis of the law of conservation of energy. According to the law of conservation of energy, the total energy of the vehicle before the overturning is equal to the total energy of the vehicle at the time of overturning.

$$\frac{m\cdot(V\cos\gamma)^2}{2}+\frac{m\cdot(V\sin\gamma)^2}{2}+m\cdot g\cdot h_ц=\frac{m\cdot(V\cos\gamma)^2}{2}+m\cdot g\cdot h_{max}+E_{деф.1}+E_{деф.2}, \quad (2)$$

where V is the linear driving speed of the vehicle before moving, m/s;

$E_{деф.}$ 1 is energy absorbed by the elastic deformation of the vehicle body (frame), *J.*;

2 — energy absorbed by the elastic deformation of vehicle tires, *J.*

Maximum lift height of the center of the vehicle mass

$$h_{max}=\sqrt{\left(\frac{B+H}{2}\right)^2+(h_ц)^2}. \quad (3)$$

The energy expended on the elastic deformation of vehicle elements can be neglected. Thus, in expression (2) it is determined by the speed of the vehicle (critical speed) when overturn may occur while the wheel hits a stationary lateral obstacle.

$$V_{кр}=\frac{\sqrt{2\cdot g\cdot(h_{max}-h_ц)}}{\sin\gamma}. \quad (4)$$

According to expression (4), the critical speed when the vehicle overturns after impacting the lateral non-moving obstacle will be the lower the track and width of the vehicle wheel and the greater the angle between the translational motion of the vehicle and the lateral fixed obstacle.

The real vehicle speed before overturning can significantly exceed the critical speed (4) required for overturning. For further study overturning mechanism, let's consider the vehicle overturning mechanism from the separation moment of vehicle wheels to the moment when the center of gravity of the vehicle will be at the height hmax.

If you write down the equation of dynamics for the rotational motion of the vehicle with respect to the tipping point, one can obtain a mathematical model of vehicle overturning:

$$V_{кр}=\frac{\sqrt{2\cdot g\cdot(h_{max}-h_ц)}}{\sin\gamma}, \quad (5)$$

where J is the inertia moment of the vehicle with respect to the tipping point, which can be expressed through Jц is the moment of inertia of the vehicle with respect to the longitudinal axis passing through its center of mass:

$$J=J_ц+m\cdot h_{max}^2. \quad (6)$$

Let's represent differential equation (5) as

$$\frac{d^2\beta}{dt^2} + k \cdot \sin(\beta_k - \beta) = 0, \quad (7)$$

where $k = \frac{m \cdot g \cdot h_{max}}{J}$.

By solving equation (7) under initial conditions: $d\beta/dt(t=0)=\omega 0$ and $\beta(t=0)=0$, we can obtain expressions to determine the angular velocity as a function of the angle of rotation as:

$$\frac{d\beta}{dt} = \sqrt{\omega_0^2 + 2 \cdot k \cdot (\cos\beta_k - \cos(\beta_k - \beta))} = \omega \quad (8)$$

Expression (8) allows to determine the change in angular speed while vehicle overturning.

The initial angular speed of vehicle overturning can be expressed by the vehicle speed on the basis of the law of conservation of energy, considering the moment of transition from the translational motion of the vehicle mass center to the vehicle rotating movement *K* around the overturning point. Since there is no change in the position of the mass center, potential energy of the vehicle does not change, and the kinetic energy

$$\frac{m \cdot (V \sin\gamma)^2}{2} = \frac{J \cdot \omega_0^2}{2} \quad (9)$$

Hence the initial angular speed of the vehicle overturning

$$\omega_0 = V \sin\gamma \sqrt{\frac{m}{J}} \quad (10)$$

Solving equation (7) allows to determine the time of the vehicle overturning as a function of the angle of rotation:

$$t = \int_0^{\beta} \frac{d\beta}{\sqrt{\omega_0^2 + 2 \cdot k \cdot (\cos\beta_k - \cos(\beta_k - \beta))}} \quad (11)$$

Determining the integral in the right-hand side of expression (11) analytically leads to a significant complication of the solution, so let us determine it numerically by applying a piecewise constant approximation of the functions of time1.

$$t_n = \sum_{i=0}^{n} \frac{\Delta\beta}{\sqrt{\omega_0^2 + 2 \cdot k \cdot (\cos\beta_k - \cos(\beta_k - i \cdot \Delta\beta))}}, \quad (12)$$

where $\Delta\beta$ is the sampling step by angle of rotation, $n=0. . N$, $N= \beta_k/\Delta\beta$.

Expression (12) allows to determine the time of vehicle overturning.

In addition to the research problems in direct formulation, such as determining the change in angular velocity during the overturning of the vehicle

[1] Янютин Е. Г., Янчевский И. В. Импульсные воздействия на упругодеформируемые элементы конструкций. Харьков: Изд-во ХАДИ, 2001. 184 с.

(8) and the time during which the vehicle will be overturned (12), a mathematical model allows solving inverse problems:

Determine the minimum (critical) value of the vehicle speed of that will lead to overturning.

For this purpose, it is necessary to consider the case of shaky equilibrium in which the height of vehicle center mass $h=h_{max}$. In this case, $\beta = \beta_k$, $\omega=0$. As a result of expression (8) we obtain the initial angular speed while vehicle overturning:

$$\omega_0 = \sqrt{2 \cdot k \cdot (1 - \cos \beta_k)}. \quad (13)$$

Hence, given (9), the critical vehicle speed at the moment when overturning starts

$$V_{кр} = \frac{\sqrt{2 \cdot k \cdot (1 - \cos \beta_k)}}{\sin \gamma} \sqrt{\frac{J}{m}} = \frac{\sqrt{2 \cdot g \cdot h_{max} \cdot (1 - \cos \beta_k)}}{\sin \gamma}. \quad (14)$$

Given that $k=m \cdot g \cdot h_{max}/J$, $h_{max} cos\ \beta k = h_ц$, we obtain the identical equality of expression (14) and (4), which confirms the reliability of the results obtained by different methods.

Taking into account the time of the vehicle overturning, determine its real speed to the overturn on the basis of expressions (12) and (9).

As an example to analyze the mathematical model of the process of rolling over the vehicle, consider a bus with the following main technical characteristics: height of the vehicle center mass of the is $h_ц$ =0,06 m; vehicle track is B =2 m; profile width of the tire $Ш$ =0,2 m; vehicle weight in an equipped state m =18000 kg; inertia moment the vehicle with respect to the longitudinal axis passing through its center of mass $J_ц$ =13478·m^2. The angle of impact on a fixed side obstacle is assumed to be γ =100.

As a result of numerical simulation, we obtained graphs of the change of the angular speed from the angle of rotation β while vehicle overturning (Fig. 2). Graphs are constructed at the initial vehicle speed 10, 15, 20 and 25 m/s.

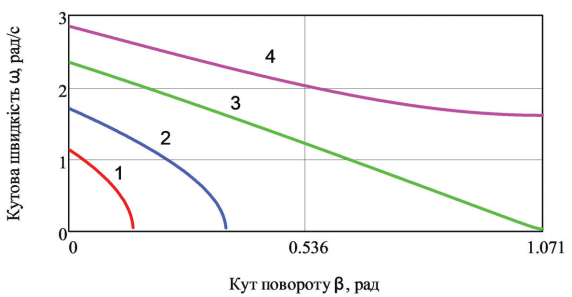


Fig. 2. Changing the angular vehicle speed while overturning

As can be seen from Fig. 2, with increasing rotation angle β the angular vehicle speed decreases from the initial value $\omega 0$ to 0 c^{-1}. In this case, during reduction of the angular speed to 0 c^{-1} vehicle returns to a different angle β. If

its value does not exceed the value of β_k=1,071 rad, where vehicle mass center occupies the uppermost position, the vehicle will return to its original position and the rollover will not occur (curves 1 and 2). If during the vehicle rotation at an angle $\beta=\beta_k$ the angular speed has not decreased to 0, the vehicle will overturn (curve 4). The speed at which the angular velocity decreased to 0 during the rotation of the vehicle by the angle $\beta=\beta_k$ is the critical speed of vehicle overturning (curve 3).

This mathematical model also allows to determine the time of vehicle overturning (the time at which the of vehicle mass center moves from the initial position to the extreme upper position) as a function of the speed of the vehicle (Fig. 3).

When the longitudinal speed increases at the moment of beginning of the vehicle overturning from 0 to the value of the critical overturning speed (Fig. 5), the overturning time has no real values (the values of the integral (11) are in the complex plane). Physically, this means that the vehicle did not tip over. After exceeding the longitudinal speed of the vehicle value corresponding to the critical speed of the vehicle overturning, the overturning time decreases with increasing longitudinal vehicle speed.

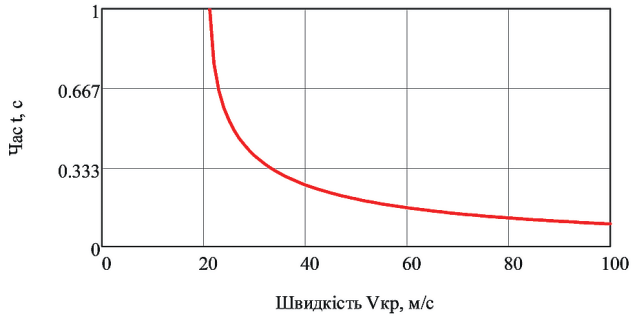


Fig. 3. Time of vehicle overturning

Fig. 4 demonstrates how the critical vehicle speed that leads to its overturning, depends on the magnitude of the impact angle on the lateral obstacle.

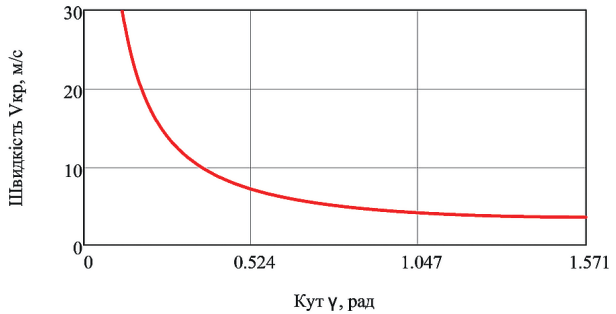


Fig. 4. Critical vehicle speed while overturning

As can be seen from Fig. 4 with the increase of the angle of onset of the side obstacle from 0 to 1,571 rads, corresponding to the range from 0 to 900, the minimum vehicle speed, that leads to its overturning, decreases.

Conclusions. We have developed a mathematical model that allows to determine the conditions of overturning of vehicles and to investigate the main parameters of vehicle movement in the overturning process from the moment of the beginning of the rise of the center of mass of the vehicle to the moment of its maximum rise. Comparison of calculation results of critical speed of vehicles with the results obtained on the basis of the law of conservation of energy, showed that the results are fully consistent. The numerical results obtained when using the mathematical model for a specific vehicle are fully consistent with the physics of the process of overturning vehicles.

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МОДЕЛЮВАННЯ МЕХАНІЗМУ ПЕРЕКИДАННЯ ТРАНСПОРТНОГО ЗАСОБУ В ПРОЦЕСІ РОЗВИТКУ ДОРОЖНЬО-ТРАНСПОРТНОЇ ПРИГОДИ

Розроблено математичну модель перекидання транспортного засобу внаслідок наїзду на бічну нерухому перешкоду на основі основного рівняння динаміки для обертового руху у вигляді диференційного рівняння другого порядку. Отримано розв'язок цього рівняння, визначено умови перекидання транспортного засобу та досліджено основні параметри руху транспортного засобу в процесі перекидання.

Ключові слова: дорожньо-транспортна пригода, транспортний засіб, бічна перешкода, перекидання, моделювання.

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МОДЕЛИРОВАНИЕ МЕХАНИЗМА ОПРОКИДЫВАНИЯ ТРАНСПОРТНОГО СРЕДСТВА В ПРОЦЕССЕ РАЗВИТИЯ ДОРОЖНО-ТРАНСПОРТНОГО ПРОИСШЕСТВИЯ

Разработке математических моделей опрокидывания транспортных средств уделяется значительное внимание многими исследователями вследствие необходимости получения достоверной информации обстоятельств дорожно-транспортных происшествий. Исследование дорожно-транспортных происшествий с опрокидыванием транспортных средств связано с трудностью установления механизма опрокидывания, поскольку экспертные методики расчета не всегда используют подготовленные математические модели. Большинство методик фокусируются на определении минимальной (критической) скорости транспортных средств, которая приводит к его опрокидыванию. Однако реальная скорость транспортных средств перед опрокидыванием может быть значительно выше. В данной работе приведена математическая модель процесса опрокидывания транспортных средств после наезда на недвижимое боковое препятствие. При этом на транспортное средство действует опрокидывающий момент, обусловленный инерционными силами, и момент от силы тяжести, который удерживает транспортное средство от опрокидывания. Необходимо отметить, что плечо момента от силы тяжести изменяется от максимального значения до 0 в процессе опрокидывания транспортного средства. Математическая модель базируется на основном уравнении динамики для вращательного движения. Разработанная математическая модель есть нелинейным однородным дифференциальным уравнением второго порядка. Получено решение этого уравнения, которое позволяет определить условия опрокидывания транспортных средств и исследовать основные параметры движения транспортных средств в процессе опрокидывания от момента начала подъема центра масс транспортного средства до момента его максимального подъема. Проведено сопоставление результатов расчета критической скорости транспортных средств с результатами, полученными на основе закона сохранения энергии. Результаты полностью согласовываются. Проанализированы результаты, полученные при использовании математической модели для конкретного транспортного средства.

Ключевые слова: дорожно-транспортное происшествие, транспортное средство, боковое препятствие, опрокидывание, моделирование.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.25
UDC 343.983

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ROLE OF FORENSIC ENGINEERING, ENVIRONMENTAL FORENSICS IN DETERMINING THE SIGNIFICANCE OF ENVIRONMENTAL DAMAGE WHILE GREEN SPACE DESTRUCTION

The peculiarities of the expert study of significant damage is to take into account the variety of factual circumstances of the occurrence of the event of felling of greenery and substantiation of signs of materiality of damage. Forensic engineering and environmental expertise to study the significance of damage to the environment is appointed during the investigation by the legislature to compensate for the damage caused by the destruction of greenery. The essence of forensic engineering and environmental expertise is based on three aggregate features that are inherent in the nature of the expert's special knowledge: the subject, object and method of expert research. The main task of forensic engineering and environmental examination in the study of determining the significance of damage as a result of destruction of greenery is to confirm the fact of significant damage as a result of destruction of greenery by the legislature and recorded in the documentation of inspections, the correctness of these bodies. Detailed consideration of the features of the significance of the damage leads to a comprehensive application of knowledge in the field of engineering ecology, economics, forestry, phytopathology, biology. In expert practice, it may be necessary to solve individual versions of the expert task, in relation to any set of main subtasks, their components or modifications, which are determined by the

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body that appointed a forensic environmental examination to investigate the significance of damage resulting from destruction of greenery.

Keywords: forensic engineering and ecological expertise, ecology, research, significant damage, greenery, environmental damage.

Formulation of Research Problem. The relevance of the topic is that today the concept of materiality of the damage is contained in the Criminal Code of Ukraine, but it is used in many fields and has a different meaning, which requires a better definition in the case of research on the materiality of damage when conducting expert research on environmental ecological examination of greenbelt destruction.

In recent years, the number of unauthorized deforestations in various regions of Ukraine has increased, leading to the initiation of criminal proceedings and the subsequent designation of environmental engineering (expert studies) to determine the validity of the materiality of the damage. The purpose of forensic research on the damage significance is to conduct a full, detailed study and provide a reasonable and correct conclusion.

Consideration of the task of materiality of damage depends on different features, taking into account the interconnected in each case the individual value, ecological value (for example, entering a tree in the Red Book of Ukraine), the number of illegally harvested green spaces, the amount of damage caused by the environment (due to the disappearance of certain species animals, birds, insects, plants, climate change, the state of the air basin, the hydrological regime of water bodies, etc.).

Analysis of Recent Researches and Publications. Theoretical and methodological foundations of forensic engineering and environmental forensics are in a state of formation. Insufficient theoretical elaboration, but great practical significance for the study of the significance of damage to law enforcement agencies to detect and investigate crimes related to violations of environmental legislation, require the development and improvement of the general theory of forensic engineering and environmental forensic and necessitate research in this area.

Some general problems on this topic are set out in the works of R. I. Lemekh, E. O. Pismensky, R. L. Maksimovich and others [1] are to solve problems of research of the general definition and components of significant

[1] Лемеха Р. І. Істотна шкода як ознака, передбачена загальною частиною кримінального кодексу України. *Наше право.* 2016. № 2. С. 132–136 ; Лемеха Р. І. Обсяг поняття істотної шкоди. *Європейські перспективи.* 2016. Вип. 2. С. 63–69 ; Письменський Є. О. Кримінальне та міжнародне право: основні елементи взаємодії. *Вісник Луганського державного університету внутрішніх справ імені Е. О. Дідоренка.* 2010. Вип. 2. С. 278–286 ; Максимович Р. Л. Поняття службової особи у кримінальному праві: монографія. Львів, 2008. 304 с. etc.

damage, consideration of terminology and the concept of materiality of damage, order the impact of felling of greenery on the general state of the environment, responsibility for the task of significant damage, which allows to consider in more detail the features of the study of the significance of damage as a result of greenery destruction while engineering and environmental examinations.

Article Purpose. Determination of peculiarities of forensic research on materiality of damage while forensic engineering and environmental examinations as a result of unauthorized felling of plantations.

Main Content Presentation. Forensic engineering and environmental examination on significance of environmental damage due to the destruction of greenery is appointed during the investigation of law enforcement agencies violations of environmental legislation, in court cases on claims of the State Ecological Inspectorate of Ukraine, forestlands of Ukraine, local councils or other due to greenery destruction.

Forensic research is a creative process where the expert ability to establish on the basis of scientific knowledge in various fields and logical analysis, using modern highly effective methods of research of causes and conditions that contributed to the event with negative consequences. The essence of forensic examination is based on three aggregate features that are inherent in the nature of the expert's specific expertise: the topic object and methods of forensic research.

The topic of forensic engineering and environmental examination while research on materiality of damage due to the destruction of green spaces is the factual data on the circumstances of the identified logging associated with landing, the delineation of green space in the appropriate category, established on the basis of expert knowledge, by research on objects provided the body that appointed the examination.

The main task of forensic engineering and environmental examination while determining the significance of damage due to destruction of green areas is to confirm the fact of significant damage as a result of destruction of green areas, established by State Ecological Inspectorate of Ukraine or State Forest Protection and recorded in the documentation of inspections, the correctness of these bodies. The amount of damages and confirmation of the data determined by the State Ecological Inspectorate of Ukraine or the State Forest Guard to calculate the amount (amount) of damages is arithmetically confirmed by a forensic economic examination.

In forensic practice, it may be necessary to address specific issues of the expert task, with respect to any set of major sub-tasks, their constituents or modifications, which are determined by the body that has appointed the

forensic engineering and environmental examination to investigate the materiality of the damage caused by the destruction of the green space.

The object of forensic engineering and environmental examinations in investigating the materiality of the damage caused by the destruction of the green space is the documentary material where facts of the case are recorded.

Research objects include:

- act of inspection of the State Forest Service or the State Forest Protection on compliance with the requirements of environmental legislation on the protection, protection, use and reproduction of forests;
- act of inspection of the place of the offense of forest legislation;
- calculation of the amount of damage caused to the state due to felling of green spaces (with annexes);
- field list of logged trees with indication of tree species, tree diameters, state of trees at the time of felling with calculations;
- certificate of the State Forest Resources Agency of Ukraine;
- inspection protocol of a scene with the corresponding photo tables or video;
- permission to carry out the felling of green space, taking into account, accordingly, the permit, the number and breed of green space;
- report on an administrative offense;
- documents where the order of green space cutting of is substantiated;
- plan-scheme for green space cutting off etc.

Let's consider some features of a forensic research on determining materiality of damage to the environment (state) due to green space destruction.

It should be noted that in Art. 246 of the Criminal code of Ukraine the following is specified: "… Note. 1. In this Article, significant damage is considered to be such damage that is twenty or more times higher than the non-taxable minimum income of citizens, or other significant damage caused to the environment in terms of effective protection, proper protection, rational use and reproduction of forests…".

Therefore, in view of the above, the determination of the materiality of the damage is decided on a case-by-case basis, taking into account all the circumstances of the case, applying:

1. Material Approach.

Determining the materiality of the damage, namely in part:

"… Significant damage is considered to be such damage that is twenty or more times higher than the tax-free minimum income of citizens…" decided by the investigator (court) by involving relevant forestry specialists

or State Ecological Inspectorate of Ukraine and further comparing the calculation of the amount of damage due to destruction of greenery with tax-free minimum incomes of citizens.

2. Environmental Approach.

The caused ecological damage can be estimated not only in material and monetary equivalent, but also from the standpoint of negative impact on the environment. Such an impact cannot have an objective material assessment.

The significant damage caused to the environment in terms of ensuring the effective protection, proper protection, rational use and restoration of forests from an environmental point of view is explained in the resolution of the Plenum of the Supreme Court of Ukraine No. 17 of December 10, 2004: *On case law on crimes and other environmental offenses: "... damage is recognized as material when: certain species of trees have been destroyed in a particular locality; deteriorated species composition, quality, protective, water and other environmental properties of the forest; difficulties were encountered in reproduction of afforestation in a particular locality; decreased air quality; changed the landscape of the area, the river bed; soil erosion, etc., occurred... "* taking into account materials provided for research.

While examination, the forensic ecologist must investigate the impact (or lack thereof) on the environment due to the destruction of greenery. According to regulatory requirements in a special source "State building codes of Ukraine. Designing. Composition and content of environmental impact assessment (EIA) materials in the design and construction of enterprises, buildings and structures. Building code: A. 2. 2-1–2003", Appendix A (mandatory), the following definitions are established:

"– The natural environment is a set of natural factors and objects of the environment that have a natural origin or development."

Based on forensic experience of KhRIFE experts, the following algorithm of carrying out forensic engineering and environmental expertise is proposed as a result of the destruction (felling) of the green space.

About destruction of certain species of trees in a particular locality.

Determination of the species of trees is determined by the application of special knowledge in the field of forestry and is decided by the investigating authorities independently during the inspection of the place where the felling of green plantations was carried out with the involvement of appropriate specialists.

Regarding deterioration of the species composition, quality, protective, water protection and other ecological properties of green spaces.

Determination of the deterioration of the breed composition of quality, protective, water protection and other ecological properties of green spaces is determined with the use of specific expertise and is resolved by the investigative bodies through the involvement of relevant specialists.

It should be noted that greenery performs an important function of consolidation and protection of soils. They prevent washing away and erosion of the soil, preserve and improve its properties, fix moving sands, prevent the formation of drifts, stop the formation of ravines and so on. Developed root systems of trees and shrubs bring to the surface from the deep layers of soil mineral nutrients that help maintain and increase soil fertility. On the slopes of greenery absorb liquid and retain solid runoff from higher areas.

In the highlands, green spaces have a sliding function.

In the steppe zone, green spaces delay surface runoff, reduce wind speed in the surface layer, and delay the evaporation of soil moisture, protect the fields from drought and dust storms.

Located on ravines and beams, forests strengthen the roots of the slopes. Greenery is of great importance as a climatological factor. They soften the climate, increase the humidity.

Green plantings dampen the force of the wind and improve the microclimate. Bare and devoid of stands, the land on a summer day is very hot and dry. The less greenery, the more snow blows into the gullies, ravines, floodplains of rivers and valleys, the greater the depth of the ground freezes. Greenery plays an important role in agriculture. They protect the fields from sand and black storms, dry winds, improve the water regime of the territory, increase crop yields.

Water conservation and water management features of green spaces are integral to soil protection features that are manifested in soil anchoring.

Green plantings dampen the force of the wind and improve the microclimate. Bare and devoid of stands, the land on a summer day is very hot and dry. The less greenery, the more snow blows into the gullies, ravines, floodplains of rivers and valleys, the greater the depth of the ground freezes. Greenery plays an important role in agriculture. They protect the fields from sand and black storms, dry winds, improve the water regime of the territory, increase crop yields.

Forest biogeocenosises affect the environment as a biological system, releasing matter and energy into the environment in the process of photosynthesis, respiration, transpiration, etc. In addition, forest phytocenoses are physical bodies that occupy a certain place and have a mass with its specific properties. They reflect and absorb solar radiation, trap some of the precipitation, condense water vapor, trap dust and so on.

Determining the possibility of deterioration of species composition, quality, protective, waterproofing and other environmental properties of green areas is decided by the investigating authorities independently at the time of the inspection of the place where the green areas were cut down, with the involvement of relevant specialists in forestry, geomorphology, geology, biology, phytopathology. etc. Information on the presence (absence) of the fact of deterioration of the rock composition, quality, protective, waterproofing and other ecological properties of green areas is provided in the materials of criminal proceedings or at the request of an expert.

About possible difficulty in reproduction of afforestation.

As a result of the destruction of green areas, it is most likely that there will be some difficulties in reforestation in the above area, which require additional material costs and human resources and time for this reforestation. For expert analysis of material costs for reforestation in the above area should obtain an appropriate calculation for this type of work, which should be formed by specialists of the State Forest Protection.

On the effect of green space destruction on atmospheric air quality.

According to Art. 1 of the Law of Ukraine: On Air Protection:

"... Air is a vital component of the environment, which is a natural mixture of gases located outside residential, industrial and other premises ...".

Air quality is a set of its properties that determines the degree of influence of physical, chemical and biological factors on people, flora and fauna. Atmospheric air quality can be considered satisfactory if the content of impurities in it does not exceed the maximum allowable concentrations[1].

Gases that are part of the atmosphere are of biogenic origin. In the lower atmosphere, the composition of the air ensures the viability of plant organisms, including greenery. It can stimulate its development and, conversely, inhibit, depending on the presence of harmful impurities in the air. Green plantations constantly interact with the Earth's atmosphere, allocating to it the products of their activities and removing certain components of the air.

It should be noted that the study of the quality of the atmospheric air (its chemical and physical properties) and the assessment of the impact of the destruction of the green space on its quality requires long-term monitoring and can be performed only by specialized research institutions.

Regarding the changing landscape of the terrain, the riverbed.

Landscape (in German: Landschaft — the form of space, landscape, locality) — a specific territory, homogeneous in origin and history of development, indivisible in zonal and azoleal features, having a unique

[1] URL: http://ecology-lectures. ru/dzherela-zabrudnennya-i-jxnij-vpliv-na-navkolishnye-prirodne-seredovishhe/normuvannya-yakosti-atmosfernogo-povitrya/ (Date accessed: 24.06.2019).

geological base, uniform terrain, common climate, similar terrain, similar terrain Soils, biocenoses and certain structure [1].

The landscape is an integral part of the Earth geographical shell, formed as a result of complex and long-term interaction of all components of the planet (climate, rocks, topography, water, air, biota, etc.) in certain environmental conditions, and as a result — acquired a characteristic appearance in space. Thus, if in the general sense, a landscape is any space with a characteristic appearance, then in a geographical sense it is a space with a characteristic appearance within the landscape of the Earth.

Landscapes have different sizes: from small local formations (river floodplains and terraces, erosion ravines and beams, glacial valleys and hills, etc.) to geocomplexes of the regional (plain and mountain expanses, continents and oceans, etc.) and global (geographical envelope of the Earth) level.

Landscapes are divided into territorial (on land) and aquatic (in the aquatic environment), by origin -— into natural and anthropogenic and a number of others. There is a term: cultural landscape that meaningfully broader than the anthropogenic landscape.

There are direct and indirect changes in the landscape. During the functioning or dynamics of landscape development, reversible and irreversible changes, progressive and regressive changes in the landscape, targeted and side, spontaneous (associated with endogenous factors) and external (due to exogenous factors), in general or changes in individual components of the landscape[2].

Determining changes in the landscape of the riverbed is decided by the investigative bodies independently at the time of the inspection of the site of the area where the greenery was cut down, with the involvement of relevant specialists in the field of geomorphology. Information on the presence (absence) of the fact of change in the landscape of the area where the green areas were cut down is provided in the materials of the criminal proceedings or at the request of the expert.

Concerning soil erosion due to felling of trees.

Soil erosion is the process of destruction of the upper most fertile layer of soil and subsoil under the influence of natural and anthropogenic factors. Depending on the factors of soil destruction, there are water, wind, anthropogenic erosion[3].

By the degree of manifestation of soil erosion is divided into normal and accelerated.

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[1] Ibid.

[2] URL: https://uk. wikipedia.org/wiki/Ландшафт (Date accessed: 22.06.2019)

[3] URL: http://www.eco-live.com.ua/eco-term/zm-na-landshaftu (Date accessed: 22.06.2019).

Normal or geological erosion occurs under natural conditions (without human intervention) and is slower than the formation of the soil profile during soil formation processes. It is observed in virgin lands, forests, meadows and usually does not lead to the formation of eroded soils.

Accelerated or anthropogenic erosion arises as a result of irrational economic activity of a person and occurs more intensively than the processes of soil formation. It leads to the formation of eroded soils.

Water erosion is manifested in the flushing of the topsoil or the erosion of it in depth under the influence of melt, rain and irrigation (irrigation) water. The development of water erosion is closely related to the terrain.

Wind erosion, or deflation, occurs when strong winds blow the soil. The intensity of soil blowing largely depends on its particle size distribution and humus content. In particular, on soils of sandy particle size distribution wind erosion begins to appear at wind speeds of 3—4 m/s, on light loam: 4—6 m/s, on heavy loam: 5—7 m/s and on clay: 7—8 m/s. Sand (0.05—0.10 mm) moves at a wind speed of 3—3.5 m/s at a height of 15 cm. Soil particles measuring 0.25 mm are carried by the wind in the air. If the wind force increases, the intensity of wind erosion increases.

Wind erosion is common where there are no obstacles to strong winds, and where there is no natural vegetation that protects the surface layers of soil plowed over large areas. Local wind erosion is also observed on unstructured sandy soils. Particularly dangerous are the sands near lakes and on the shores of the seas, where strong winds often blow.

Soil erosion: destruction and wear of surface, most fertile horizons and their underlying rocks by wind (wind erosion) or water flows (water erosion). Lands that have been destroyed by erosion are called eroded. Erosion negatively affects the condition of the soil cover, and in many cases destroys it completely [1].

Determining changes in the landscape of the riverbed is decided by the investigative bodies independently at the time of the inspection of the site of the area where the greenery was cut down, with the involvement of relevant specialists in the field of geomorphology. Information on the presence (absence) of the fact of change in the landscape of the area where the green areas were cut down is provided in the materials of the criminal proceedings or at the request of the expert.

Conclusions. The analysis of the peculiarities of the materiality of the damage caused by the destruction of the green space gives grounds to state that the forensic expert-ecologist during the forensic engineering-ecological

[1] URL: https: //uk.wikipedia.org/wikiЕрозія (Date accessed: 23.06.2019).

examination should investigate the impact (or lack thereof) of the set of natural factors on the environment due to the destruction of the green space.

Based on the expert experience of KhRIFE experts, the above algorithm for conducting forensic engineering and environmental examinations of the study of environmental impact due to the destruction (greening) of green areas, which requires the use of a sufficiently significant list of components of determining the materiality of the damage is sufficient.

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РОЛЬ ІНЖЕНЕРНО-ЕКОЛОГІЧНИХ ЕКСПЕРТИЗ У ВИЗНАЧЕННІ ІСТОСТНОСТІ ШКОДИ ДОВКІЛЛЮ ПРИ ЗНИЩЕННІ ЗЕЛЕНИХ НАСАДЖЕНЬ

Особливості експертного дослідження істотності шкоди полягає у врахуванні різноманітності фактичних обставин настання події порубок зелених насаджень та обґрунтування ознак істотності шкоди.

Детальний розгляд особливостей істотності шкоди зумовлює проведення комплексного застосування знань у галузях інженерної екології, економіки, лісознавства, фітопатології, біології.

Ключові слова: судова інженерно-екологічна експертиза, екологія, дослідження, істотна шкода, зелені насадження, шкода довкіллю.

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РОЛЬ ИНЖЕНЕРНО-ЭКОЛОГИЧЕСКИХ ЭКСПЕРТИЗ В ОПРЕДЕЛЕНИИ СУЩЕСТВЕННОСТИ УЩЕРБА ОКРУЖАЮЩЕЙ СРЕДЕ ПРИ УНИЧТОЖЕНИЯ ЗЕЛЕНЫХ НАСАЖДЕНИЙ

Особенности экспертного исследования существенного вреда заключается в учете разнообразия фактических обстоятельств наступления события порубок зеленых насаждений и обоснование признаков существенности ущерба. Судебная инженерно-экологическая экспертиза по исследованию существенности ущерба окружающей среде назначается при расследовании законодательными органами по возмещению ущерба, причиненных в результате уничтожения зеленых насаждений. Сущность судебной инженерно-экологической экспертизы базируется на трех совокупных признаках, которые присущи природе специальных знаний эксперта: предмете, объекте и методике

экспертного исследования. Главная задача судебной инженерно-экологической экспертизы при исследовании определения существенности ущерба в результате уничтожения зеленых насаждений заключается в подтверждении факта нанесения существенного ущерба в результате уничтожения зеленых насаждений законодательными органами и зафиксированной в документации проверок, правильности определения этими органами размера и характеристик причиненного существенного ущерба. Детальное рассмотрение особенностей существенности ущерба обусловливает проведение комплексного применения знаний в области инженерной экологии, экономики, лесоведения, фитопатологии, биологии. В экспертной практике может возникать необходимость в решении отдельных вариантов экспертного задания, в отношении любой совокупности главных подзадач, их составных частей или модификаций, которые определяются органом, который назначил проведение судебной инженерно-экологической экспертизы по исследованию существенности ущерба в результате уничтожения зеленых насаждений.

Ключевые слова: судебная инженерно-экологическая экспертиза, экология, исследования, существенный вред, зеленые насаждения, ущерб окружающей среде.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.26
UDC 343.148.6: 656.082

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RESEARCH CASES OF MOVEMENTS OF ROLLING STOCK WITH RATES, BY MATHEMATICAL MODELING

This article purpose is to analyze the need for the use of mathematical modeling methods when performing examinations of rolling stock derailment.

Describing the dynamic behavior of rolling stock when driving on a rail track is a rather complex, time-consuming process that requires a highly skilled expert and a significant amount of time. Availability of detailed mathematical models of the constituent units of rolling stock would greatly facilitate the study of cases of their derailment. At present, several research papers are devoted to the study of the dynamics of rolling stock motion with the help of mathematical models.

At the Lviv Research Institute of Forensic Examinations, research on such railway accidents as the derailment of rolling stock is performed by experts according to the methods developed by E. N. Sokol, which allows to take into account a certain number of parameters of the running gear of cars. Currently, while studying the cases of derailment of rolling stock from the rails, there is a need to develop new techniques that would take into account more parameters of the running gear of cars, such as: parameters of vibration damping, spring suspension, bolsters, dowel-center bowl, etc. There are also cases of railway accidents, which may be caused by defects on the rolling surface of the wheels of rolling stock.

In this regard, the experts of the Lviv Institute of Forensic Examinations to take into account the above parameters of the running gear and identify the most significant for the circumstances of the derailment of rolling stock is developing object-oriented programming in the Maple computing environment. At present, a mathematical model of the passenger car of the ДПКр–2 diesel train and an improved mathematical model of the freight car have been developed.

The authors of the article came to the conclusion that the use of mathematical models and their computer solution can facilitate the process of investigating cases of rolling stock derailment, since it automates and accelerates the process of studying

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dynamic indicators of rolling stock, facilitates the process of establishing limit values for the parameters of its technical condition and assesses the consequences changes in these parameters in certain working conditions.

Keywords: modeling, railway accident, rolling stock, technique, freight car, software package, diesel train.

Formulation of Research Problem. The description of the dynamic behavior of rolling stock when driving on a track is a rather complicated, time-consuming process, which requires a high level of expertise, considerable time, and establishing the reasons for the loss of stability of such a system requires detailed research with the use of modern scientific tools.

The use of mathematical models allows to automate and accelerate the process of studying the dynamic performance of rolling stock. The possibility of applying the method of subsystems in mathematical modeling greatly simplifies this procedure. If the movement of a train consisting of a locomotive and a certain number of identical wagons is simulated, then data entry into the computer model is required only for the locomotive and one wagon. This saves time and avoids a significant number of errors [1].

Analysis of Recent Researches and Publications. A significant amount of scientific work is devoted to the study of the process of dynamic interaction of rolling stock and rail track with the help of mathematical models. Among such works we should highlight the work of Yu. S. Romain: On the movement of the railway crew in curved sections of track [2] reflecting the results of the study of the process of dynamic entry of rolling stock in the curves of the track of variable radius using computers. In order to simplify the mathematical model, the author assumed that the pressure force of the ridge acts parallel to the longitudinal axis of the wheel pair, and the force of friction of the ridge on the rail head is absent. These simplifications have given scientists reason to doubt the full adequacy of this model to describe the actual process of interaction of the wheel crest with the rail [3].

The problem of fitting the rolling stock into the curves of the track section was also studied in detail in the research paper of I. V. Biryukov: Research on causes of increased wear of the ridges of the wheel pairs of EP 22 electric trains and means for its reduction [4] providing a mathematical description of the rail crew

[1] Дьомін Р. Ю. Розвиток методів і засобів досліджень з убезпечення технічної експлуатації залізничного рухомого складу: дис. ... д-ра техн. наук: 05.22.07. Східноукр. нац. ун-т ім. Володимира Даля : Сєвєродонецьк, 2018. 475 с.

[2] Ромен Ю. С. О движении железнодорожного экипажа в кривых участках пути. Вестник Всесоюзн. научно-исслед. ин-та ж.-д. транспорта. *Дніпро,* 1964. № 6.

[3] Трофимович В. В. Динамика ЭПС: Определение сил взаимодействия колес электровозов ЭП1 с рельсами при движении в переходных и круговых кривых малого радиуса: учеб. пособ. Хабаровск : Изд-во ДВГУПС, 2004. 90 с.

[4] Бирюков И. В. Исследование причин повышенного износа гребней бандажей колесных пар электропоезда ЭР 22 и способов его уменьшения. Труды МИИТа, 1971. № 374.

on the transition curve. theory of relative motion. However, the disadvantage of this work is not taking into account the running point of contact of the ridge with the rail and not specifying the kinematics of the wheel fit into the transition curve.

Yong He's research paper Object-Oriented Modeling and Simulation of Railway Vehicle Systems [1], deserves special attention. It proposes an object-oriented modeling method that can be used to predict some aspects of dynamic rolling stock behavior. When modeling the behavior of each object, a virtual prototype of rolling stock was formed, and the simulation result made it possible to determine the critical speed and forces that occur during the interaction of the wheel pair with the rail track. However, the proposed method of modeling did not allow to take into account the influence of the random nature of rail track irregularities on the dynamic performance of rolling stock.

In the research paper of Sawada Sadeha, Amina Khajehdezvulli and Morteza Esmaeli: Investigation of rail irregularity effects on wheel/rail dynamic force in slab track: Comparison of two- and three-dimensional models[2] the influence of rail track irregularities on dynamic forces in wheel-rail contact is established by means of developed two-dimensional and three-dimensional numerical models that describe the process of interaction of rolling stock with the railway track. The main disadvantage of this work is the inability to obtain accurate results using these models while increasing the difference between the inequalities of the right and left rails.

In the research paper of Jerry Ausiello: Determination of wheel/rail contact points in the simulation of a railway vehicle dynamics[3] was developed an effective calculation model that describes a three-dimensional model of dynamic behavior of rolling stock using Matlab-Simulink and Adams Rail programs. The model of rolling stock developed by the authors made it possible to evaluate local deformations in the area of wheel-rail contact.

In the work Estimation of Wheel/Rail Contact Forces Based on an Inverse Technique[4] a team of authors Tao Zu, Sean Hiao, Jungwu Yang and Mingment Wang of the traction energy laboratory of Southwestern Jiaotong University (China) proposed a method of inversion in time domain for the study of vertical

[1] He Y. Object-Oriented Modeling and Simulation of Railway Vehicle Systems. *Applied Mechanics and Materials.* 2010, Vol. 26–28, pp. 900–904.

[2] Sadeghi J., Khajehdezfuly A., Esmaeili M. Investigation of rail irregularity effects on wheel/rail dynamic force in slab track: Comparison of two and three dimensional models. *J Sound Vibration,* 2016, Vol. 374, pp. 228–244.

[3] Auciello J. Determination of wheel/rail contact points in the simulation of a railway vehicle dynamics.*WIT Transactions on Engineering Sciences,* 2010, Vol. 62, pp. 261–270.

[4] Zhu T., Xiao S., Yang G., Wang M. Estimation of Wheel/Rail Contact Forces Based on an Inverse Technique. 13th International Conference on Fracture June 16–21, 2013, Beijing, China.

and horizontal forces in the wheel-rail contact. It was found that the proposed mathematical model gives high accuracy of results in comparison with the results obtained during simulation in the software package Simpack.

Therefore, as can be seen from the analysis of the above literary sources, the research on motion dynamics of rolling stock should be performed precisely by methods of mathematical modeling, which allows to increase the accuracy of the obtained results, to shorten the time for their analysis and processing.

Article Purpose. Investigate the need to develop mathematical models of components of rolling stock to investigate cases of their descent from the track.

Main Content Presentation. One of the main directions of scientific and technological progress for several decades is the development of methods and tools of informatics and computer technology. The use of methods of mathematical modeling and computer solution of problems has significantly increased the efficiency of scientists, and the use of various methods of mathematical modeling has led to an expansion of the practical base of computer mathematics in the study of complex systems.

In turn, application of mathematical modeling methods while performing railroad transport examinations of rolling stock east allows the expert to establish the basic dynamic indicators of rolling stock, the necessary and sufficient conditions of its descent from the track.

At present, many programs and software packages have been developed for computer experiments to study the dynamics of rolling stock allowing for a realistic simulation of the behavior of railway transport crews when moving on the track. Examples of foreign software packages are: ADAMS/ Rail, Medyna, Nucars, Simpack and Vampire. For research by the method of mathematical modeling of dynamic loading of cars the domestic software complex "Dynamics of Rail Vehicles" (“DYNRAIL”) is also available.

At Lviv Research Institute of Forensic Examinations, research on the dynamics of rolling stock in the event of such railway accidents as rolling stock derailed is performed by experts according to methods developed by Doctor of Technical Sciences E. M. Sokol. In his monographs: *Derailments and Rolling Collisions* [1] and *Railway Train Crashes* [2], the problem of derailment when rolling a wheel crest on the rail head was solved using a mathematical model consisting of a system of differential equations of wheel pair motion. In these works, the solution of such a system allowed to obtain analytical expressions of the necessary and sufficient conditions for rolling the wheel crest on the rail head.

[1] Сокол Э. Н. Сходы с рельсов и столкновения подвижного состава (Судебная экспертиза. Элементы теории и практики). Киев, 2004. Транспорт України, 368 с.

[2] Сокол Э. Н. Крушения железнодорожных поездов (Судебная экспертиза. Элементы теории и практики). Киев : Феникс, 2007. 355 с.

Testing on the practices of E. M. Sokol confirmed the possibility of their application in cases of rolling from the rails of rolling stock for the following reasons: the presence of wagon wheel pairs of significant differences in wheel diameters, fine ridges, abnormal distance between the inner faces of the wheels, significant longitudinal the side frame of the trolley and the axle.

However, there is now a need to develop new techniques that take into account more parameters of the undercarriages of the wagons, including the parameters of the damping system, spring suspension, the hub bearing, the carriage beams, etc. There are also cases when it is necessary to take into account the impact on the dynamic behavior of the rolling stock of the presence of defects on the rolling surface of its wheels.

In order to take into account many of the above parameters and to identify the most important for the circumstances of the rolling stock from the rails, object-oriented programming in the Maple computer environment is being developed, namely: a spatial mechanical and mathematical model of a passenger car diesel ДПКр–2 trains and an improved mathematical model of a freight wagon.

The spatial design scheme of the ДПКр–2 diesel train passenger train is constructed from 7 solids (body, two trolleys, four-wheel pairs) interconnected by elastically dissipative links (Fig. 1). The body and carts have 6 degrees of freedom, and wheelsets — 5, because when they move the process of galloping does not occur.

On the basis of the constructed calculation scheme of the passenger car of the ДПКр–2 diesel train its mathematical model was made. This mathematical model of the car consists of 30 differential equations of the second order which are described in detail and given in the works of A. Ya. Kuzyshyn and A. V. Baih: Construction of a mechanical model of a ДПКр–2 diesel train and its features [1], Mathematical model of the car of ДПКр–2 diesel train [2].

The integration of the differential equations of motion of a diesel train car was performed by the Runge–Kutta numerical method in the Maple computer environment. At any time, with the help of this model, you can determine the values of all generalized coordinates, which is necessary to calculate the safety criteria for rolling stock.

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[1] Кузишин А. Я., Батіг А. В. Побудова механічної моделі вагона дизель-поїзда ДПКр–2 та її особливості. Вісн. Дніпропетр. нац. ун-ту залізн. трансп. ім. акад. В. Лазаряна, 2017, № 6 (72). С. 20–30.

[2] Кострица С. А., Кузишин А. Я., Батіг А. В., Соболевська Ю. Г. Математична модель вагона дизель-поїзда ДПКр–2. *Вісн. Дніпропетр. нац. ун-ту залізн. трансп. ім. акад. В. Лазаряна,* 2018, № 1 (73). С. 15–25.

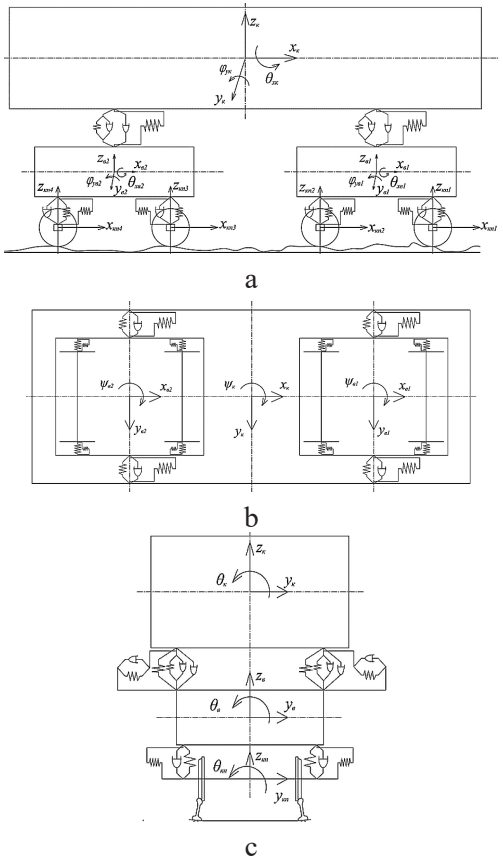


Fig. 1. Calculation scheme of the passenger car of the ДПКр–2 diesel train in the plane *ZX, YX, ZY* (a, b, c): z_k, y_k, x_k, φ_k, ψ_k, θ_k — generalized coordinates of the body (*i=1–2*); $z_{вi}$, $y_{вi}$, $x_{вi}$, $\varphi_{вi}$, $\psi_{вi}$, $\theta_{вi}$ — generalized coordinates of the trolley (trolley number); $z_{кпj}$, $y_{кпj}$, $x_{кпj}$, $\psi_{кпj}$, $\theta_{кпj}$ —generalized coordinates of wheel pairs (*j=1–4* wheel pair number)

While checking for adequacy, the mathematical model of the diesel train wagon developed allowed to obtain results that had slight differences with the experimental data obtained during the research of the said diesel train by the dynamics and strength laboratory of the rolling stock of Dnipro National University of Railway Transport named after academician V. Lazaryan (DIIT).

The diesel train passenger car model developed by the Lviv Research Institute of Forensic examinations employees allows to take into account a certain number of its parameters and can be refined if necessary, to take into account the influence of changes in thermodynamic processes that take place in the pneumatic springs of cars during their movement along the rail track.

For research of dynamic characteristics of freight cars, the model which was developed in the Moscow State University of Railway Engineering [1].

This spatial calculation scheme of a freight wagon consists of 11 solids (body, four side frames, four-wheel pairs, two slot beams) (Fig. 2), and the mathematical model — of 30 second order differential equations, which are detailed in Chan Fu Tkhan dissertation: Dynamics of freight wagon with nonlinear connections of the body with the trucks.

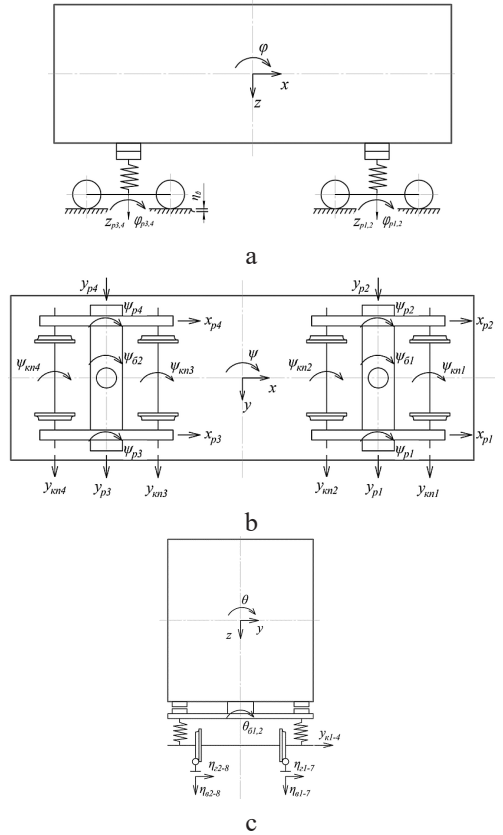


Fig. 2. Calculation scheme of a freight wagon in the plane *ZX, YX, ZY* (a, b, c): *z, y, x, φ, ψ, θ* — generalized body coordinates; z_{pi}, y_{pi}, x_{pi}, φ_{pi}, ψ_{pi}, θ_{pi} — generalized coordinates of the trolley frame (*i=1–2* trolley frame number); $y_{кпj}$, $\psi_{кпj}$ – generalized coordinates of wheel pairs (*j=1–4* wheel pair number), $\theta_{бk}$, $\psi_{бk}$ — coordinates of the spacer beams (*k=1,2* number of the beam); $\eta_{вl}$, $\eta_{сl}$ — vertical and horizontal irregularities under the wheelset of a freight wagon (*l=1–8* wheel pair number)

[1] Чан Фу Тхан. Динамика грузового вагона при нелинейных связях кузова с тележками : дис. ... д-ра техн. наук : 05.22.07. Москва: МИИТ, 2010. 287 с.

Chan Fu Tkhan proposed freight wagon model differs from the ДПКр–2 diesel train model developed by Lviv Research Institute of Forensic Examinations employees, which makes it possible to take into account the effect of the change of gaps between the elements of the wagon structure on its dynamic characteristics, including the movement performance.

In addition, the use of this model of a freight wagon makes it possible to take into account the influence on the dynamics of its movement, the presence of defects on the rolling surface of the wheels, the suspension of the springs of the spring sets of the wagon trolley, gaps in the slides, wear in the longitudinal and transverse knots and so on.

At the same time, the freight wagon model is intended to establish only their basic dynamic performance and needs to be improved to investigate the descent of freight wagons from the rails.

As a significant contribution to the problem research of rolling stock stability, its east from the rail track belong to E. M. Sokol, the staff of the Lviv Scientific Research Institute of Forensic Examinations considers the possibility of improving the model of a freight wagon with the help of his research papers: Steps from rails and collisions of rolling stock (Forensic science. theory and practice)"9 and Train crashes (Forensic science. Elements of theory and practice).

Conclusions. Rolling stock simulation helps the researcher understand the dynamic behavior of his major systems (undercarriages, brakes), evaluate the effects of changing their parameters and behavior under certain operating conditions.

The mathematical model of the passenger train of the ДПКр–2 diesel train and the mathematical model of the freight wagon developed by the employees of the Lviv Scientific Research Institute of Forensic Examinations will allow not only to investigate the causes of the rolling stock from the rails, but also to set the boundary values of the parameters of its technical state, translating the formation of the system into the plane of evidential dynamics.

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ДОСЛІДЖЕННЯ ВИПАДКІВ СХОДУ РУХОМОГО СКЛАДУ З РЕЙОК ЗА ДОПОМОГОЮ МАТЕМАТИЧНОГО МОДЕЛЮВАННЯ

Опис динамічної поведінки рухомого складу при русі рейковою колією є досить складним, трудомістким процесом, який вимагає високої кваліфікації експерта та значних витрат часу.

Наявність математичних моделей складових одиниць рухомого складу значно б полегшило дослідження випадків їх сходу з колії.

У зв'язку з цим експертами Львівського НДІСЕ розроблена математична модель пасажирського вагона дизель-поїзда та удосконалена модель вантажного вагона. Це дозволило прискорити процес дослідження їх динамічних показників, полегшити процес встановлення граничних значень параметрів технічного стану та оцінити наслідки зміни цих параметрів у визначених умовах роботи.

Ключові слова: моделювання, залізнично-транспортна пригода, рухомий склад, методика, вантажний вагон, програмний комплекс, дизель-поїзд.

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ИССЛЕДОВАНИЕ СЛУЧАЕВ СХОДА ПОДВИЖНОГО СОСТАВА С РЕЛЬСОВ С ПОМОЩЬЮ МАТЕМАТИЧЕСКОГО МОДЕЛИРОВАНИЯ

Целью данной статьи является анализ необходимости применения методов математического моделирования при выполнении экспертиз схода подвижного состава с рельсов.

Описание динамического поведения подвижного состава при движении по рельсовому пути является достаточно сложным, трудоемким процессом, который требует высокой квалификации эксперта и значительных затрат времени. Наличие детализированных математических моделей составляющих единиц подвижного состава значительно облегчило бы исследования случаев их схода с рельсового пути.

В настоящее время исследованию динамики движения подвижного состава с помощью математических моделей посвящено значительное количество научных работ.

Во Львовском НИИСЭ исследование таких железнодорожно-транспортных происшествий, как сход подвижного состава с рельсов, выполняется экспертами по методикам, разработанным Э. Н. Соколом, позволяющим учитывать определенное количество параметров ходовых частей вагонов.

В настоящее время при исследовании случаев схода подвижного состава с рельсов есть необходимость в разработке новых методик, которые позволили бы учитывать больше параметров ходовых частей вагонов, таких как: параметры системы гашения колебаний, рессорного подвешивания, надрессорных балок, узла пятник-подпятник и т. п. Также встречаются случаи железнодорожно-транспортных происшествий, причиной которых может быть наличие дефектов на поверхности качения колес подвижного состава.

В связи с этим экспертами Львовского НИИСЭ для учета вышеупомянутых параметров ходовых частей и выявления из них наиболее значимых для обстоятельств схода подвижного состава с рельсов разрабатывается объектно-ориентированное программирование в компьютерной среде Maple.

В настоящее время разработана математическая модель пассажирского вагона дизель-поезда ДПКр–2 и усовершенствованная математическая модель грузового вагона.

Авторы статьи пришли к выводу, что применение математических моделей и их компьютерное решение может облегчить процесс выполнения исследования случаев схода подвижного состава с рельсов, поскольку позволяет автоматизировать и ускорить процесс исследования динамических показателей подвижного состава, облегчить процесс установления предельных значений параметров его технического состояния и оценить последствия изменения этих параметров в определенных условиях работы.

Ключевые слова: моделирование, железнодорожно-транспортное происшествие, подвижной состав, методика, грузовой вагон, программный комплекс, дизель-поезд.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.27
UDC 336.279

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COMPARATIVE ANALYSIS OF METHODS FOR DETERMINING A COMPANY INSOLVENCY WHILE FORENSIC FINANCIAL AND ECONOMIC EXAMINATIONS

The article considers the methods of determining company insolvency during financial and economic examinations in the Baltic States, the Republic of Armenia, Ukraine, the Republic of Belarus, the Russian Federation and the Republic of Kazakhstan. The article presents the signs of insolvency regulated by the legislation of the countries and the international requirements for the validation of expert methods. The authors present the results of a comparative analysis of the considered insolvency assessment methods and the results of testing methods based on the data of the annual focus group reports of five bankrupt Latvian enterprises. The article presents the results of the author's version of the validation of the considered methods of determining insolvency in the framework of financial and economic research.

The research demonstrates that the expert methods of all eight countries are based on a normative approach — a comparison of the calculated financial ratios with their normative value. In Ukraine, the Republic of Belarus, the Russian Federation and the Republic of Kazakhstan, financial ratios and their normative values are approved at the legislative level of these countries. In the Baltic States and the Republic of Armenia, these coefficients and their values are developed in approved expert methods. The net assets method is also used to assess the solvency of large companies.

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Research results demonstrated that the methods of these countries are applicable in practice and give a similar assessment of the solvency of companies as a whole. More similar results are presented by the methods of the Baltic States, Ukraine and the Republic of Belarus. Results of the methods of the Republic of Armenia, the Republic of Kazakhstan and the Russian Federation are more similar to each other but slightly different from the previously listed group of countries.

Authors demonstrated the possibility of validating expert methods, which is necessary for the use of expert opinion when assessing insolvency as evidence in another country.

Keywords: insolvency, forensic financial and economic examination, expert method, validation.

Formulation of Research Problem. At the present stage of development, the goal of the bankruptcy institution is to, on the one hand, help viable companies overcome the financial crisis, and on the other, to exclude unpromising production and services from the economic system.

Unfortunately, this process does not always operate with the concepts of the moral principles of the classical economy, harming one of the main participants in ensuring organizational life cycle of the company — investors and/or its creditors due to the inability to pay off the debt. As a result, potentially deceived creditors seek help from law enforcement agencies in order to return lost deposits.

One of the essential evidences of the company potential insolvency: an economically sound situation of financial collapse or a deliberate act on the part of management or third parties is the conclusion of a specialist, namely: forensic expert-economist. In order to use such a conclusion as indisputable evidence in court proceedings, in addition to the competence of the specialist himself, it is also necessary to ensure the reliability of the method used by the expert in assessing the insolvency of the company.

The reliability of expert opinions based on the selected methods can be guaranteed by testing them using internationally recommended or scientifically based methods.

In connection with the cross-border activity of economic entities (companies) and the possibility of litigation outside the jurisdiction of the entities, the question arises of the applicability of the opinion of a foreign specialist, updating the importance of international validation of expert methods.

Analysis of Recent Researches and Publications. According to the research performed by Polish scientist B. Prusak in 2018 [1], even though the institution of

[1] Prusak B. Review of research into enterprise bankruptcy prediction in selected Central and Eastern European countries. *International Journal of Financial Studies.* 2018, 6 (60), p. 1–28.

bankruptcy was introduced in Central and Eastern Europe relatively recently, in terms of research in the field of bankruptcy of enterprises, the Baltic countries and the countries of the Eurasian Economic Community adhere to generally accepted methods of financial analysis initiated by the United States in the early 20th century.

After creating a generalized approach to the analysis of financial ratios in the form of a linear multivariate discriminant analysis model [1] developed by Altman in 1968, attempts were made to develop national models. To date, models for predicting insolvency of various classes have been developed — scoring models, discriminant models, probabilistic models of the logit/probit class, models based on decision trees, models created using artificial neural networks, etc.

Of the countries considered in the article, the most famous national models were developed in Latvia (Shorin/Voronova, 1998 [2]), Lithuania (Grigarevicius, 2003 [3]), Estonia (Lucason, since 2006 and others. [4]), Republic of Belarus (Savitskaya, 2009 [5]), Ukraine (Tereshchenko, 2000 and others. [6]), Russian Federation (Belikov, 1998 [7] and others).

To assess the value of large companies whose shares are listed on the stock exchange, when distributing profits between founders, when selling a company or liquidating it, other types of expert evaluations are used: cash flow forecasting, calculation of estimated costs, definition of net assets that are well-known practices of Western countries [8] Such approaches involve not only the analysis of the financial documentation of the company but also a market analysis tool.

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[1] Altman E. I. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*. 1968, 23 (4), p. 589–609.

[2] Šorins R., Voronova I. Uzņēmuma maksātnespējas novērtējums: Ekonomiskās problēmas uzņēmējdarbībā. Rīga : Rīgas Tehniskā universitāte, 1998, lp. 125–131.

[3] Grigaravičius S. Įmonių nemokumo diagnostika: patikimumas i rpraktinė reikšmė: Organizacijų vadyba: sisteminiai tyrimai. Kaunas: Vytauto Didžiojo universiteto leidykla, 2003, 28, p. 29–42.

[4] Eesti Teadusinfosüsteem URL: https: //www.etis.ee/Portal/Projects/Display/3657971f–6e5f–4b59-aed8–953fc9205e73?-tabId=tab_Additional (date of access 19.06.2019.).

[5] Савицкая Г. В. Анализ хозяйственной деятельности предприятия. Москва : Инфра-М, 2009. 536 с.

[6] Терещенко О. О. Фінансова санація та банкрутство підприємств: навч. посібник. Київ : КНЕУ, 2000. 412 с.

[7] Давыдова Г. В., Беликов А. Ю. Методика количественной оценки риска банкротства предприятий. Управление риском. 1999, № 3. С. 13–20.

[8] Business valuation: Statements on Management Accounting at 2009, № 7. Institute of Management Accountants, 2009. Available from: https://www.imanet.org/search?ssopc=1#hawktabfield=it&it=content&contenttype=Statement%20on%20Management%20Accounting&pg=3 (date of access 20.06.2019).

According to B. Prusak, about the level of development of methods for assessing insolvency out of 4 possible points, Estonia and Russia are rated at 3 points, Lithuania and Ukraine — at 2.5, Latvia - at 2, Belarus — at 1.5. Of the countries of Central and Eastern Europe, the highest score is 4, according to B. Prusak, Poland and the Czech Republic, 3.5 points — Slovakia. Armenia and Kazakhstan were not included in the study and, accordingly were not evaluated.

The developed national models on the territory of the countries under consideration are theoretical rather than practical, and today they are not recognized as an instrument for determining insolvency in legal proceedings. This fact is due to the fact that in many countries of the Eurasian Economic Community and observer countries the methods for detecting signs of insolvency are regulated at the legislative level, and in the Baltic countries and the Republic of Armenia they are defined in the methods of expert institutions.

The tendency, in the practice of research in many countries, is to verify the accuracy of classical models of bankruptcy forecasting by the example of large volumes of financial reporting data using the database AMADEUS (EU), СПАРК (Russia), etc. The research using AMADEUS includes assessing the accuracy of models from the Altman family [1] (the number of observations - 2602.5 thousand), a number of studies by M. Karas [2] (Baltic countries, the Czech Republic: 2.9 thousand enterprises), O. Lukason [3] (Estonia: 67 thousand observations), a study by B. Demeshev and A. Tikhonova [4] (Russia: million observations).

Despite the national requirements for the approval of expert methods, including the determination of insolvency, general rules on the international recognition of forensic methods have been adopted in the European Community.

Accreditation of the applied methods, including the method of conducting financial and economic expertise, is carried out according to international quality standards developed by the International Organization for Standardization (ISO). The importance of method validation was considered in the framework

[1] Altman E., Iwanicz-Drozdowska M., Laitinen E., Suvas A. Distressed firm and bankruptcy prediction in an international context: a review and empirical analysis of Altman's Z-score model: *Journal of International Financial Management & Accounting*. 2017, 28 (2). P. 131–171.

[2] Karas M., Režňáková, M. To what degree is the accuracy of a bankruptcy prediction model affected by the environment? The case of the Baltic States and the Czech Republic: in Procedia Social and Behavioural Sciences. *Procedia Social and Behavioural Sciences.* Elsevier, 2014. P. 564–568.

[3] Süsi V., Lukason O. Corporate governance and failure risk: evidence from Estonian SME population: *Management Research Review.* 2019, 42 (6), p.703–720.

[4] Демешев Б., Тихонова Ф. Прогнозирование банкротства Российских компаний: межотраслевое сравнение: Количественный анализ в экономике, редактор В. Бессонов. Москва: Высшая школа экономики, 2014. 26 с.

of the European project by a group of Baltic expert economists [1]. The standard: ISO / IEC 17025 General rules for the competence of testing and calibration laboratories [2] according to which many expert centers of various countries are accredited, requires validation of the methods used by statistical testing of the results and assessing the convenience of their application. Another standard: ISO / IEC 17020 General criteria for the operation of various types of regulatory [3] bodies involves the monitoring of results based on the professional competence of an expert. The standard does not require a mandatory validation process, but does not prohibit its implementation.

According to the requirements of European Network of Forensic Science Institutes (ENFSI) assessing the likelihood of the results of any forensic report of a forensic expert implies evaluating the expert conclusions, expressed on a probability scale from 0 to 1[4] that is affected by the chosen research method. A similar assessment of the likelihood of an inadequate conclusion is stipulated in the international audit standards (ISA [5]), which is a direct relative of the financial and economic expertise. Summarizing the aforementioned requirements, a group of experts in one of the articles also proposed a formula for calculating the likelihood of assessing the judgment of a forensic expert.

Article Purpose. The purpose of this article is a comparative analysis of methods for assessing the insolvency of companies in the Baltic countries, Armenia, Belarus, Ukraine, Kazakhstan and the Russian Federation, recommended for use in financial and economic examinations. The research topic is a method for determining the insolvency of the company while forensic examinations.

The article describes the insolvency methods of countries used in financial and economic examinations, and international requirements for the process of validation of expert methods. Results of both a comparative analysis

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[1] Лиодорова Ю., Янсоне А., Зелтите А. Бухгалтерская экспертиза по определению неплатежеспособности; валидация процедуры и результаты: Eskpertinio tyrimo metodai. Вильнюс: Vilniaus panda, 2013. С. 134–157.

[2] General requirements for the competence of testing and calibration laboratories: ISO standardat 2017, November, ISO/IEC 17025: 2017, 3rd ed. ISO, 2017. P. 30 (corrected version at 2018, April).

[3] Conformity assessment–requirement for the operation of various types of bodies performing inspection: ISO standard at 2012, Mart, ISO/IEC 17020: 2012, 2nd ed. ISO, 2012. P. 18 (corrected version at 2013, April).

[4] ENFSI guideline for evaluative reporting forensic science: publication of ENFSI at 08.03.2015., version 3.0. ENFSI, 2015: http://enfsi.eu/wp-content/uploads/2016/09/m1_guideline.pdf (date of access 19.06.2019).

[5] 2018 Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements: IAASB handbook at 17.12.2018 in 3 volumes. IFAC, 2019. URL: http://www.ifac.org/publications-re-sources/2018-handbook-international-quality-control-auditing-review-other-assurance (date of access 19.06.2019).

of the considered methods for assessing insolvency (based on the focus group [1] of Latvian bankrupt enterprises are testing the methods) and the author's version of the validation of the methods under consideration to identify signs of insolvency in the framework of financial and economic examinations are presented.

Main Content Presentation. After analyzing the legislative acts of the countries considered in the article, the authors noted that the following general financial criteria for initiating the initiation of a company insolvency process are:

- inability to repay their obligations on time;
- excess of debt over company assets.

The main differences between the signs of insolvency established in the legislative acts of eight countries relate to the amount and term of non-payment of debt (see table. 1). The definition and verification of these criteria during the forensic examination is identical, and therefore differences in the laws of the countries cannot affect the process of conducting research and expert opinion. Therefore, such an expert assessment can be considered standardized, which allows you to use the opinion of a foreign expert without conducting a subsequent research.

Table 1

General criteria for initiating insolvency proceedings *

Country	Criterion № 1	Criterion № 2
Latvia [2], [3]	debt> 4268 euros; 3 weeks after notification of non-payment of debt	losses ≥ ½ share capital
Lithuania [4]	the amount is not specified; 30 days after notice	obligations> ½ asset value
Estonia [5]	the amount is not specified; 1 month after due date + 10 days after notification	liabilities> assets

[1] Liodorova J., Voronova I. Use of models for forecasting fraudulent bankruptcy in forensic examination: myth or reality? История и современность судебно-экспертного образования: материалы конференции. Минск: ГУО «Институт повышения квалификации и переподготовки кадров Государственного комитета судебных экспертиз Республики Беларусь», 2018. С. 18–21.

[2] Maksātnespējas likums: Latvijas Republikas likums no 26.07.2010. Saeima, 2010 (ar izmaiņām uz 19.06.2019.).

[3] Komerclikums: Latvijas Republikas likums no 13.04.2000. Saeima, 2000 (ar izmaiņām uz 19.06.2019).

[4] Įmoniu bankroto įstatymo: Lietuvos Respulbikos įstatymo 20.03.2001 Nr.IX–216. Seimas, 2001.

[5] Pankrotiseadus: Eesti Vabariigi seadus 22.01.2003. Riigikogu, 2003 (19.03.2019).

Country	Criterion № 1	Criterion № 2
Armenia [1]	debt> 1000 minimum wages; term — 60 days from the date of delay	liabilities> assets (> 1000 minimum wages)
Ukraine [2], [3]	debt> 300 minimum wages; 3 months after the due date	liabilities> assets
Belarus [4]	indebtedness> 100 basic units	liabilities> assets
Russia [5]	the amount is not specified; 3 months after the due date	liabilities> assets
Kazakhstan [6]	debt> 300 monthly calculation indices; 3 months from the date of delay	liabilities> assets

*— compiled by the authors on the basis of legislative acts of countries.

For performing forensic financial and economic examination to determine the insolvency of a company, experts use the established set of specific economic indicators (ratios) and their assessment criteria (norms). Therefore, a normative approach is used, which consists in comparing the calculated financial indicator (coefficient) with its normative value, approved either by law or on the basis of rating analysis methods [7].

[1] О неплатежеспособности (банкротстве): закон Республики Армения от 22.01.2007 № ЗР–51.

[2] Про відновлення платоспроможності боржника або визнання його банкрутом : Закон України від 14.05.1992 № 2343-XII URL: https://zakon.rada.gov.ua/laws/show/2343-12 (Date accessed: 10.08.2019).

[3] Методичні рекомендації щодо виявлення ознак неплатоспроможності підприємства і ознак дій з приховування банкрутства, фіктивного банкрутства або доведення до банкрутства: наказ Міністерства економіки України від 19.01.2006, № 14 URL: http://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=111503bd-ca7f-4dee-b07c-c66c2aa28e03&title=MetodichniRekomendatsiiSchodoViiavlenniaOznakNeplatospromozhnost&isSpecial=true (Date accessed: 10.08.2019).

[4] Об экономической несостоятельности (банкротстве) : Закон Республики Беларусь от 13.07.2012 № 415–З. Принят Палатой представителей, 2012 URL: http://www.pravo.by/document/?guid=3871&p0=H11200415 (Date accessed: 10.08.2019).

[5] О несостоятельности (банкротстве): Федеральный закон Российской Федерации от 26.10.2002 № 127-ФЗ. Принят Государственной Думой, 2002 URL: http://www.consultant.ru/document/cons_doc_LAW_39331/ (Date accessed: 10.08.2019).

[6] О реабилитации и банкротстве: Закон Республики Казахстан от 07.03.2014 № 176-V URL: https://online.zakon.kz/Document/?doc_id=31518958 (Date accessed: 10.08.2019).

[7] Федотова Е. А., Тимофеев Я. В. Нормативы финансовой устойчивости Российских предприятий: отраслевые особенности: Корпоративные финансы. 2015, № 1 (33). С. 38–47.

In the Republic of Belarus (BY), ratios and their normative values by industry, intended for use by insolvency process managers and also used in conducting financial and economic examinations, are regulated by legislative acts. In the Russian Federation (RU), the main ratios (over 10) and their permissible boundaries are regulated by various regulations designed for administrators of insolvency proceedings and in other situations (for example, to participate in the implementation of significant projects with the involvement of the budget allocation). In Ukraine (UA) and the Republic of Kazakhstan (KZ), similar situation was observed: the coefficients and their normative values are approved in the legislation of the countries.

In the Baltic countries (EU) and Armenia (AM), a set of financial ratios and their comparative standards used in conducting forensic examinations have been developed in approved expert methods.

To identify the insolvency of large companies, regulations of many countries involve the use of the method of net assets determining (K8) that is directly identified with the concept of the company's own capital, although the economic essence of this approach is much wider. According to the provisions of the International Accounting Standard (ISA) No. 32 [1]: The net assets of the organization are those assets that remain after deducting all other requirements in relation to its assets. The application of net assets method is implicitly present in the Commercial Law of the Republic of Latvia, in the regulatory document on tax legislation of the Republic of Armenia [2]. The procedure for calculating net assets is defined in the regulatory acts of the Russian Federation [3] and the Republic of Belarus [4].

In assessing insolvency, experts use not only indicators characterizing the solvency and liquidity of the company, but also other groups of financial analysis: profitability and activity of companies. A summary of the use of basic ratios in their marginal rates to determine the insolvency of companies used in financial and economic examinations of various countries is given in table 2.

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[1] Financial instruments: presentetion: ISA standardat 1991, September, № 32. IFAC, 1991 (reissued at 2003).

[2] Налоговый кодекс Республики Армения : закон Республики Армения от 04.10.2016 URL: http://www.translation-centre.am/pdf/Trans_ru/HH_Codes/ Harkayin_orensgirq_ru.pdf (Date accessed: 10.08.2019).

[3] Об утверждении Порядка определения стоимости чистых активов: приказ Минфина России от 28.08.2014 № 84-Н URL: http://www.consultant.ru/document/cons_doc_LAW_169895/ (Date accessed: 10.08.2019).

[4] О Порядке расчёта стоимости чистых активов: постановление Министерства финансов Республики Беларусь от 11.06.2012 № 35 (as amended on: 11.06.2012).

Table 2

Key ratios used to determine insolvency ***

№	Criterion/Country	EU	AM	UA	BY	KZ	RU
	Origin reference	[1]	[2]			[3]	
K_1	$\frac{\textit{Short term assets}}{\textit{Short term liabilities}}$	≥ 1,2	≥ 2	>1,5	≥ 1*	≥ 1	≥ 1,0*
K_2	$\frac{\textit{Short term assets — stocks}}{\textit{Short term liabilities}}$	≥ 0,5		0,6÷0, 8			
K_3	$\frac{\textit{Realizable short term assets}}{\textit{Short term liabilities}}$	**	≥ 1	0,25÷0,3	≥ 0,2	≥ 0,5	≥ 0,2*
K_4	$\frac{\text{Equity}}{\text{Total accounts payable}}$	≥ 0,5	≥ 1	> 0,5		**	≥ 0,5*
K_5	$\frac{\left(\begin{array}{c}\text{Equity}\\ \text{+ Long term liabilities}\\ \text{– Long terms assets}\end{array}\right)}{\text{Short terms assets}}$		≥ 0,1		≥ 0,05*		≥ 0,1*
K_6	$\frac{\left(\begin{array}{c}\text{Short terms liabilities}\\ \text{+ Long terms liabilities}\end{array}\right)}{\text{Total assets}}$	**			≤ 0,85	**	
K_7	$\frac{\left(\begin{array}{c}\text{Equity}\\ \text{– Fixed assets}\end{array}\right)}{\text{Equity}}$						≥ 0,2*
K_8	*net assets*			> 0			

* — the smallest values of indicators are selected;

** — the norm is not defined,

*** — is made by authors on the basis of the specified sources.

A comparative analysis of the methods of eight countries shows that when determining the insolvency of a company during financial and economic examinations, experts use a normative approach, in the conclusions of the conclusions based on the competence of the expert himself. The combination of different coefficients and the use of standards are classification models whose applicability and accuracy can be assessed.

[1] Spiečiutė A., Barkauskas M., Kuncevič (Department of Economical Examinations of Forensic Science Centre of Lithania), Jansone A., Zeltite A., Liodorova J (Forensic Service Department of the State Police of Latvia), Kangro I., Liivamae I (Estonian Forencis Science Institute). The economic expertise best practice guide for investigation of the crimes related to bunkruptcy and for completion of the experimental insolvency research in the Baltic countries: Eskpertinio tyrimo metodai. Vilnius : Vilniaus panda, 2013. P. 62–122

[2] According to internal unpublished methods.

[3] Об утверждении типовой формы заключения временного управляющего о финансовом положении должника: приказ Заместителя Премьер-Министра Республики Казахстан от 12.05.2014 № 218 (в редакции от 12.05.2014).

It should be borne in mind that each research conducted and the objects considered in the examination are essentially unique, therefore, the above coefficients, their combination and limit standards are not the only tool in the final assessment of the expert.

Author validation of insolvency assessment methods.

Based on the analysis of the methods for determining insolvency used in the eight mentioned countries, their author validation is proposed.

To this end, methods were tested on the basis of data from the annual reports of the focus group of randomly selected 5 Latvian bankrupt companies (C№) a year before the recognition of their insolvency.

All the main coefficients used in the methods of the countries in question are calculated to determine the signs of insolvency (see Table 2) for subsequent testing of the methods. Calculated coefficients are presented in table 3.

Table 3

Results of the calculation of the main ratios for assessing insolvency*

Company coefficient	K_1	K_2	K_3	K_4	K_5	K_6	K_7	K_8 (EURO)
C_1	0.62	0.61	0.36	0.33	–0.40	0.75	–1.22	79238
C_2	0.03	0.03	0	–0.16	–0.97	1.19	6.32	–1958273
C_3	1.00	0.65	0.33	0.02	0	0.97	–3.36	12133
C_4	1.15	0.55	0.24	0.21	0.15	0.83	0.67	2018860
C_5	0.09	0.09	0.09	–0.50	–0.91	2.02	1.88	–19448

*— compiled by the authors based on table data 2.

Based on the calculated ratios, they were compared with the established standards, after which the solvency of the analyzed companies was evaluated. The insolvent state of the company, as well as the value of the coefficient that does not correspond to the established norm in a particular method, are indicated in the table by the D symbol (distress). The uncertain state of the company and the value of the coefficient, which is located at the limit of the norm and cannot be accurately estimated, is indicated by the G symbol (grey zona). The stable state of the company, as well as a satisfactory value of the coefficient is indicated by the S symbol (stable). The test results of the methods are presented in table 4.

Table 4

Testing Results insolvency **

Company coefficient	C_1	C_2	C_3	C_4	C_5	Company coefficient	C_1	C_2	C_3	C_4	C_5
EU	**G**	**D**	**G**	**S**	**D**	**AM**	**D**	**D**	**D**	**G**	**D**
K_1	D	D	D	S	D	K_1	D	D	D	D	D

Company coefficient	C_1	C_2	C_3	C_4	C_5	Company coefficient	C_1	C_2	C_3	C_4	C_5
K_2	S	D	S	S	S	K_3	D	D	D	D	D
K_3	S	D	S	S	D	K_4	D	D	D	D	D
K_4	D	D	D	D	D	K_5	D	D	D	S	D
K_6	G	D	D	G	D	K_8	S	D	S	S	D
UA	**G**	**D**	**G**	**D**	**D**	**RU**	**D**	**D**	**G**	**G**	**D**
K_1	D	D	D	D	D	K_1	D	D	S	S	D
K_2	S	D	S	G	D	K_3	S	D	S	S	D
K_3	S	D	S	G	D	K_4	D	D	D	D	D
K_4	D	D	D	D	D	K_5	D	D	D	S	D
						K_7	D	S	D	S	S
BY	**G**	**D**	**G**	**S**	**D**	**KZ**	**D**	**D**	**D**	**D**	**D**
K_1	D	D	S	S	D	K_1	D	D	S	S	D
K_3	S	D	S	S	D	K_3	D	D	D	D	D
K_5	D	D	D	S	D	K_4	D*	D	D*	D	D
K_6	S	D	D	S	D	K_6	D*	D	D*	D	D

*— according to the authors

** — compiled by the authors based on the data in tables 2 and 3.

Based on the test results, the authors concluded that the methods of all the countries under consideration are applicable in practice and, in general, give a similar assessment of the solvency of companies. It was noted that more similar results among themselves show the methods of the Baltic countries, Ukraine and the Republic of Belarus. The results of the methods of the Republic of Armenia, Kazakhstan and the Russian Federation are more similar to each other but slightly differ from the previously listed group of countries.

Based on the results of the testing process, based on a critical analysis, the applicability of these methods by the user was evaluated using five criteria using a 5-point rating scale. The results of the author validation of the methods are shown in table 5.

Table 5

Results of author validation of insolvency assessment methods*

Criterion/Country	EU	AM	UA	BY	KZ	RU
User understanding	4	2	3	5	3	3
Unambiguity of comparative norms	4	3	4	5	3	3
Comparability with methods of other countries	4	2	4	3	2	3
Use of new scientific developments	3	2	3	2	2	3
Assessment by the results of testing methods	3	5	4	3	4	4
TOTAL	3.6	2.8	3.6	3.6	2.8	3.2

*— compiled by the authors.

As a result of author validation of methods for determining the insolvency of companies in eight countries, out of the maximum possible 5 points, 3, 6 points, the authors assigned methods to the Baltic countries, Ukraine and the Republic of Belarus; the method of the Russian Federation is estimated at 3, 2 points; Methods of the Republic of Armenia and Kazakhstan were assigned 2, 8 points. The authors emphasize the fact that the validation is a test, in connection with which the validation results are informative and have no legal force.

Conclusions. In conclusion, based on the results of the study, we can formulate the following two conclusions:

Methods for assessing the insolvency of eight countries are similar to each other, are normative and generally give similar results.

To apply the expert conclusion on insolvency assessment as an evidence base in another country, validation method is required.

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ПОРІВНЛЬНИЙ АНАЛІЗ МЕТОДІВ ЩОДО ВИЗНАЧЕННЯ НЕПЛАТОСПРОМОЖНОСТІ ПІДПРИЄМСТВА ПРИ ПРОВЕДЕННІ ФІНАНСОВО-ЕКОНОМІЧНИХ ЕКСПЕРТИЗ

У статті розглядаються методи визначення неплатоспроможності компанії при проведенні фінансово-економічних експертиз в країнах Прибалтики, Республіці Вірменія, в Україні, Республіці Білорусь, Російської Федерації та в Республіці Казахстан. У статті представлені ознаки неспроможності, врегульовані законодавством країн, і міжнародні вимоги до валідації експертних методів. Автори представляють результати порівняльного аналізу розглянутих методів оцінки неспроможності і результати методів тестування на основі даних річних звітів фокус-групи п'яти збанкрутілих підприємств Латвії. У статті представлені результати авторської версії валідації розглянутих методів визначення неспроможності в рамках фінансово-економічних досліджень.

З дослідження вбачається, що експертні методи всіх восьми країн засновані на нормативному підході — порівняння розрахованих фінансових коефіцієнтів з їх нормативним значенням. В Україні, Республіці Білорусь, Російській Федерації та Республіці Казахстан фінансові коефіцієнти і їх нормативні значення затверджені на законодавчому рівні цих країн. У країнах Балтії і Республіці Вірменія ці коефіцієнти і їх значення розроблені в затверджених експертних методиках. Метод «чистих активів» також використовується для оцінки платоспроможності великих компаній.

Результати дослідження показали, що методи розглянутих країн, застосовні на практиці і дають аналогічну оцінку платоспроможності компаній в цілому. Більш подібні результати представляють методи країн Балтії, України і Республіки Білорусь. Результати методів Республіки Вірменія, Республіки Казахстан і Російської Федерації більш схожі один з одним, але незначно відрізняються від раніше перерахованої групи країн.

Автори продемонстрували можливість валідації експертних методів, що необхідно для використання експертного висновку під час оцінки неспроможності в якості доказової бази в іншій країні.

Ключові слова: неплатоспроможність, фінансово-економічна експертиза, експертний метод, валідація.

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ МЕТОДОВ ПО ОПРЕДЕЛЕНИЮ НЕПЛАТЕЖЕСПОСОБНОСТИ КОМПАНИИ ПРИ ПРОВЕДЕНИИ ФИНАНСОВО-ЭКОНОМИЧЕСКИХ ЭКСПЕРТИЗ

В статье рассматриваются методы определения неплатежеспособности компании при проведении финансово-экономических экспертиз в странах Прибалтики, Республике Армения, в Украине, Республике Беларусь, Российской Федерации и в Республике Казахстан. В статье представлены признаки несостоятельности, регулируемые законодательством стран, и международные требования к валидации экспертных методов. Даны результаты сравнительного анализа рассмотренных методов оценки несостоятельности и результаты методов тестирования на основе данных годовых отчетов фокус-группы пяти обанкротившихся предприятий Латвии, а также представлены результаты авторской версии валидации рассмотренных методов определения несостоятельности в рамках финансово-экономических исследований.

Ключевые слова: неплатёжеспособность, финансово-экономическая экспертиза, экспертный метод, валидация.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.28
UDC 343.98:33

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LOSSES AS A SUBJECT TO LEGAL ECONOMIC EXAMINATION IN CRIMINAL PROCEEDINGS

In criminal proceedings, in the process of investigation or judicial consideration of cases of theft and misappropriation of property, economic crimes, a forensic economic examination is appointed, during which conflict situations in the financial and economic activities of enterprises are investigated, the results of which resulted in losses, loss of inventory and cash funds. That is, forensic economic examination is one of the forms of using special knowledge in criminal proceedings.

Researches within the limits of economic examination are based on studying of economic activity of the enterprise, processes of formation of financial indicators on the carried-out operations and correctness of their reflection in the account.

According to paragraph 1 of Art. 242 of the Criminal Procedural Code of Ukraine and paragraph 2. 3 Instructions on the appointment and conduct of forensic examinations and expert studies, "Methods for resolving forensic and economic examination of issues of causing material damage", the issue of establishing losses in their legal sense goes beyond the limits established by law the use of specialized knowledge by a forensic economist.

The issue of unlawful conduct of a person, in connection with its legal nature, cannot be resolved in the course of a forensic-economic examination. The resolution of such a matter is the exclusive competence of the investigator or court.

While deciding on the determination of material damage (losses), the expert economist, within his competence, determines only the economic

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side of the losses inflicted on the victim, regardless of the grounds for their occurrence.

Key words: losses, constituent elements of losses, methods of damage assessment and its size, competence, competence.

Formulation of Research Problem. One of the investigative actions carried out in the process of investigation or trial of cases of theft and misappropriation of property, other mercenary economic crimes is a forensic economic examination, during which the conflict situations in the financial and economic activities of enterprises of various forms of ownership that led to losses, loss of inventory (hereinafter referred to as LO) and cash, as well as other negative economic phenomena, which are investigated by law enforcement agencies in order to punish those guilty of crimes and prevent them in the future. In other words, forensic economics is one of the forms of using special knowledge in criminal proceedings.

Possible consequences of unlawful actions are causing pecuniary damage (losses), so the most common questions posed by forensic economic expertise are the issue of determining damages.

Analysis of Recent Researches and Publications. Research papers of S. M Prystupa, V. M Kossak, A. I. Krasko, D. V. Primak, and others are devoted to the study of the problem of determining the term and essence of losses in the legal and economic sense. According to T. E Krysan, losses are understood as those negative consequences that occurred in the property sphere of the victim as a result of the offense committed against him, but at the time of compensation, they represent a monetary expression of the negative consequences [1]. According to I. V. Podkolzin, losses in the legal and economic sense in legal science are not considered identical, but are interrelated [2]. Problems of determining losses during forensic economic examinations were considered by T. M Rybkina, O. V. Khomutenko [3], N. L. Chumachenko, I. O. Savchenko, I. V. Streletskaya [4] and others. However, at present, the

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[3] Рибкіна Т. М., Хомутенко О. В. Місце судово-економічної експертизи в процесі встановлення шкоди та збитків. *Теорія та практика судової експертизи і криміналістики:* зб. наук. праць Харківського науково-дослідного інституту судових експертиз ім. Засл. проф. М. С. Бокаріуса. Харків: Право, 2008. Вип. 8.

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issue of distinguishing between the economic and legal nature of losses in conducting forensic economic examinations is not regulated by law, so the study in this area is an important scientific and practical problem.

Article Purpose. According to the amendments of Article 242 of the Criminal Procedural Code of Ukraine of Ukraine, dated May 13, 2014, No. 1261-VII [1] the investigator or the prosecutor is obliged to consult an expert for an examination to determine the amount of material damage.

The most typical damages in criminal proceedings for which judicial economic expertise is assigned are:

- revenue shortfall: sale of goods (services) at prices below market, sale of goods (services) at prices below purchase prices, sale of goods (services) at prices below cost;
- irreversible loss of assets: payment for the cost of actually performed work (non-rendered services), purchase of goods (services) at higher than market prices, theft (shortage, damage) of LOs, rent reduction, accounts receivable (including current);
- damage caused by environmental damage: contamination of land, use of subsoil without special permits, unauthorized seizure of land, cutting down plantations without special permits, etc.

A limited number of loss determination techniques have been legislated.

All of this undoubtedly requires a thorough scientific analysis of the following issues: the concept of losses, the constituent elements of losses, methods of estimating the size of losses.

The research of an expert economist is complicated by the fact that legislation does not always contain an unambiguous understanding of the concept of damages, the procedure and conditions of their recovery. In the scientific literature it is noted that the losses are dual in nature, because they are an economic and legal category [2]. In the legal sense, damages are negative consequences for the victim in the property sphere, which are the result of illegal actions of another person. In the economic sense, a loss is a decrease in the value of the property of a legal or natural person as a result of the excess of the costs of this person over the income received by him in one time period.

In the legal sense, there are signs of material harm (loss):

[1] Про внесення змін до деяких законодавчих актів України у сфері державної антикорупційної політики у зв'язку з виконанням Плану дій щодо лібералізації Європейським Союзом візового режиму для України № 1261-VII (as subsequently amended): Закон України від 13.05.2014. *Відомості Верховної Ради України.* 2014. № 28. Ст. 937.

[2] Внутрішньогосподарський контроль. URL : https: //pidruchniki.com/1623042861805/ekonomika/zbitki_moralna_shkoda (Date accessed: 07.08.2019).

- availability of irreversible loss of assets or the presence of deferred income;
- availability of the fact of violation of the legislation by the officials of the business entity;
- availability of a causal link between the violation of the law, the loss of assets and the actions (or inaction) of the officials.

The essence of an economic loss is that the entity suffers additional property losses and (or) receives no income compared to the costs and revenues incurred and obtained in the optimal development of the business operation. There may be losses in the form of additional costs and in the form of unearned income.

As defined in paragraph 3 of National Accounting Standard 1, "General Requirements for Financial Reporting[1]:

- "income: an increase in economic benefits in the form of an inflow of assets or a decrease in liabilities that lead to an increase in equity (excluding capital growth through the contribution of owners);
- expenses: a decrease in economic benefits in the form of a disposal of assets or an increase in liabilities that result in a decrease in equity (except for a reduction in capital due to its removal or distribution by owners);
- loss: exceeding the amount of expenses over the amount of income for which those expenses were incurred".

This is consistent with Art. 1 of the Law of Ukraine: On Accounting and Financial Reporting in Ukraine [2] stating that economic transaction is an act or event that causes changes in the structure of assets and liabilities, the company's own capital, and economic benefit is a potential opportunity for an enterprise to receive cash from the use of assets.

Components of judicial economic expertise as a procedural action are: the subject of expertise; the subject matter and tasks of the examination; object of forensic examination.

Subjects of forensic activity are defined in Art. 7 of the Law of Ukraine: On Judicial Examination[3]. In Ukraine, in accordance with the Regulations

[1] Національне Положення (Стандарт) бухгалтерського обліку 1 «Загальні вимоги до фінансової звітності» : наказ Міністерства фінансів України від 07.02.2013 № 73 URL: https: //zakon.rada.gov.ua/laws/show/z0336–13 (Date accessed: 07.08.2019).

[2] Про бухгалтерський облік та фінансову звітність в Україні: Закон України (as subsequently amended) від 16.07.1999 № 996-XIV URL: https://zakon.rada.gov.ua/laws/show/996–14 (Date accessed: 22.07.2019).

[3] Про судову експертизу: Закон України від 25.02.1994 року № 4038-XII (as subsequently amended). *Відомості Верховної Ради України.* 1994. № 28. Ст. 232.

on expert-qualification commissions and attestation of forensic experts[1]; forensic economic examinations are conducted in the following forensic areas of specializations:

- research of accounting, tax accounting and reporting documents;
- research on documents on economic activity of enterprises and organizations;
- research on documents of financial and credit operations.

The subjective component of the forensic examination also includes the competence and competence of the forensic expert entrusted with the examination. The competence of a forensic economist is determined by the presence of his special knowledge in the field of economics, accounting, tax, statistical accounting, as well as the specialty assigned to him. The competence of a forensic economist is due to the presence of a certain person of the appropriate level of various knowledge, skills, abilities.

Exit beyond the competence of the expert-economist may be observed in the decision of the expert matters that are other than the economy of the fields of knowledge, or the performance of functions that fall within the competence of the investigator or court:

- solving legal issues relevant to the subjective side of the crime by the expert;
- independent investigation and collection of evidence by taking evidence from the accused and witnesses;
- evaluation of the information contained in the minutes of the interrogation of witnesses and accused;
- providing legal evaluation of concluded contracts, accounting and tax records;
- resolve issues that fall within the competence of specialists in other fields of knowledge: commodity experts, technologists, builders, chemists, etc.

The subject of a particular judicial economic examination is determined by the tasks (questions) that are put to the expert's decision, which are specified in the decision of the investigating judge or the court's decision on the appointment of the examination and cannot go beyond the subject of class, kind, type of examination.

Based on the main tasks of judicial economic expertise, in the process of research expert-economist establishes compliance (non-compliance) with the requirements of the current legislation and documentary confirmation (not confirmation) displayed by economic entities, individuals or financial institutions in tax and accounting transactions, conducted transactions

[1] Положення про експертно-кваліфікаційні комісії та атестацію судових експертів: затв. наказом Міністерства юстиції України 03.03.2015 № 301/5. URL: https://zakon.rada.gov.ua/laws/show/z0249–15 (Date accessed: 22.07.2019).

connection with realization of financial and economic activity. Research within the forensic economics is based on the study of economic activity of the enterprise, the processes of formation of financial indicators of operations and the correctness of their reflection in accounting.

An indicative list of issues that can be raised to resolve forensic economic examinations is given in the Forensic Economics Section III. Scientific and methodological recommendations on the preparation, appointment of forensic examinations and expert researches[1].

In addition, according to this section of the recommendations, the tasks of economic examination do not include:

- carrying out of audit actions (determination by economic experts of any economic indicators without prior documentary checks of financial and economic activity by the subject of control);
- resolving issues related to documentary substantiation of losses by financial statements of an enterprise / organization for a certain period (recognition of current receivables as bad);
- resolving issues related to compliance with the requirements of the legislation governing the procurement of goods (works, services) for public funds by the competitive bidding committees;
- resolving issues regarding the establishment in the actions of officials of a legal entity violation of the requirements of legislative and regulatory acts when concluding business contracts, as well as the legal evaluation of the concluded contracts and the documents drawn up for their execution;
- resolution of other legal issues, including: establishment of damage (material damage, damage in its legal sense); the degree of guilt and responsibility of officials and other persons, as well as the legal qualification of their actions (inaction);
- providing an assessment of the legality of carrying out the procedures regulated by regulations;
- making calculations that do not require the expertise of an expert in the field of economics and accounting;
- renewal of accounting and tax accounting, conducting of surveys, inventories, control measurements, inspections of subjects of business activity;
- establishment of validity, correctness of drafting and reality of implementation of business plans of business entities;

[1] Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень: затв. наказом Міністерства юстиції України від 08 жовтня 1998 року № 53/5 (as subsequently amended). Офіційний вісник України від 03.12.1998. № 46. Стор. 172.

- establishment of separate facts on accounting documents, circumstances that do not require special knowledge in accounting and economics for their identification and determination;
- systematization and streamlining of accounting and financial documents removed during investigative actions;
- clarification of other circumstances and facts not provided for by the regulatory legal acts governing the procedure for the appointment and conduct of judicial examinations and expert investigations.

The subjects of research in judicial economic expertise are:

- primary documents (bills of lading, acceptance and transfer acts, cash and bank documents, customs declarations, inventory descriptions, payroll details, etc.);
- accounting registers (cash registers, warehouse accounting cards, tax invoice registers, analytical accounting information, warrants, general ledgers);
- accounting, financial and tax reporting (reports of financially responsible persons, cash reports, reports on the use of funds presented under the balance sheet, balance sheets and financial statements, tax returns and reports).

As objects (certificates, conclusions of specialists), acts of audit of documentary audits of activity of enterprises are investigated as sources of information.

In addition, other sources of information may be used in the study:

- interrogation records, testimony of accused (accused) and witnesses;
- experts from other specialties.

The acts (certificates, conclusions of specialists) of the documentary audit play a double role when conducting judicial economic examinations:

- first, when conducting the examination, the expert checks the validity of the audit findings;
- second, they are the source of obtaining the expert's data that he uses when drawing his conclusion.

Factual data, the establishment of which does not require the application of special knowledge in the field of accounting and tax accounting, are subject to analysis by the investigator (court). Testimony of witnesses, victims, suspects, accused, expert opinions, physical evidence, protocols of investigative and judicial actions and other documents may be used during forensic economic examinations only if the issues raised are due to the use of information contained therein. as source data. Examination by an expert-economist of other case materials that do not belong to the documents of accounting and tax accounting is limited by his special knowledge and subject of examination. The expert takes them into account only in cases when they are accepted by the investigator or the court as evidence, if the

issues to be resolved provide for the conditions for the use of the information contained in them as source data.

The right of an expert to examine and use such materials does not mean that he may be included in the assessment of the sources or means of proof themselves. Thus, the expert is not entitled to assess as evidence in criminal proceedings the organization of the audit and the competence of the persons conducting it, the truth or falsity of the testimony of witnesses, accused, victims, the correctness of other experts, audit reports or certificates drawn up by experts involved. The answers to such questions are beyond the competence of the forensic economist.

Thus, the basic concepts of forensic economic expertise for determining damages consist of the following elements:

- forensic examination topic: establishing the documentary validity of the economic component of the calculation of losses, carried out by the appropriate controlling (authorized) body;
- forensic examination object: accounting documents (primary, accounting registers, financial statements) and outgoing documents, on the basis of which the calculation of losses in the act of audit (audit) or the appropriate controlling (authorized) body;
- source of information: acts of audits (inspections) of the relevant supervisory (authorized) bodies or specialists involved in the legislation;
- research method is selected by the expert according to the methodology according to the registration code 11.0.08 Methods, methods and techniques used in conducting forensic and economic examinations [1].

According to paragraph 1 of Art. 242 of the Criminal Procedure Code of Ukraine[2] and paragraph 2.3 of the Instructions on the appointment and conduct of forensic examinations and expert researches[3], Methods of resolving forensic economic expertise issues of causing material damage[4] the issue of establishing damages in their legal sense go beyond the statutory limits of the use of special knowledge by a forensic economist. Issues of unlawful conduct due to its legal nature, cannot be resolved during a forensic economic examination. The resolution of such an issue is the exclusive competence of the investigator or the court.

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[1] Методика «Методи, способи та прийоми, які використовуються при проведенні судово-економічних експертиз», реєстраційний код 11.0.08, ДНДІСЕ, 2003.

[2] Кримінальний процесуальний кодекс України від 13.12.2012 року № 4651-VI. URL: https: //zakon.rada.gov.ua/laws/show/4651–17 (Date accessed:25.03.2019).

[3] Інструкція про призначення та проведення судових експертиз та експертних досліджень: затв. наказом Міністерства юстиції України від 08 жовтня 1998 р. № 53/5 (as subsequently amended) URL: https://zakon3.rada.gov.ua/laws/show/z0705–98 (Date accessed: 25.03.2019).

[4] Методика вирішення судово-економічною експертизою питань щодо спричинення матеріальних збитків: реєстраційний код 11.0.22. КНДІСЕ, 2010.

When assigning forensic assessments for the determination of damages, given the limits of competence of the expert economist, he or she should not be confronted with the issues that need to be addressed:

- evaluations of the audited acts (certificates) for the study of the lawfulness of their preparation by the bodies of the State Audit Service, the State Fiscal Service or the specialists involved in the relevant field of knowledge involved as auditors;
- analysis of all results of economic activity, economic feasibility of conducted business operations, order of financing organization, use of working capital, evaluation of activity of financial bodies and banks;
- determining the economic feasibility of conducting business operations;
- establishing the range of perpetrators and the degree of their guilt;
- providing legal evaluation of the actions of officials and documents.

Conclusions. In addressing the issue of determining material damage (loss), the expert economist within his competence determines only the economic side of the damage, that is, the amount of losses inflicted on the injured person, regardless of the reasons for their occurrence.

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07.02.2013 № 73 URL: https://zakon.rada.gov.ua/laws/show/z0336-13 (data zvernennia: 14.03.2019) [in Ukrainian].

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ЗБИТКИ ЯК ПРЕДМЕТ СУДОВОЇ ЕКОНОМІЧНОЇ ЕКСПЕРТИЗИ У КРИМІНАЛЬНОМУ ПРОВАДЖЕННІ

Розглянуто особливості проведення дослідження судових економічних експертиз з питання визначення збитків у кримінальних провадженнях. Проаналізовано основні ознаки й критерії розмежування понять збитків у економічному та юридичному розумінні. Наведено орієнтовний перелік питань, що можуть бути поставлені на вирішення судових економічних експертиз. Докладно перелічено, які саме первинні документи, облікові регістри, бухгалтерська, фінансова та податкова звітність, акти ревізії

(перевірок) та інше є об'єктами дослідження у судових економічних експертизах. Визначено межі компетенції судових експертів — економістів щодо оцінки збитків виходячи із завдань судової економічної експертизи.

Ключові слова: збитки, складові елементи збитків, методи оцінки збитків, методи оцінки розміру збитків, компетенція, компетентність, межі компетенції експерта-економіста.

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УБЫТКИ КАК ПРЕДМЕТ СУДЕБНОЙ ЭКОНОМИЧЕСКОЙ ЭКСПЕРТИЗЫ В УГОЛОВНОМ ПРОИЗВОДСТВЕ

В уголовном производстве в процессе расследования или судебного рассмотрения дел о хищении и присвоении имущества, хозяйственных преступлений, назначается судебная экономическая экспертиза, при проведении которой исследуются конфликтные ситуации в финансово-хозяйственной деятельности предприятий, результатом деятельности которых стали убытки, потери товарно-материальных ценностей и денежных средств. То есть, судебная экономическая экспертиза является одной из форм использования специальных знаний в уголовном судопроизводстве.

Исследования в рамках экономической экспертизы основываются на изучении хозяйственной деятельности предприятия, процессов формирования финансовых показателей по проведенным операциям и правильности отражения их в учете.

Согласно п. 1 ст. 242 Уголовного процессуального кодекса Украины, и п. 2. 3 Инструкции о назначении и проведении судебных экспертиз и экспертных исследований, «Методики решения судебно-экономической экспертизой вопросов о причинении материального ущерба», вопрос по установлению убытков в их юридическом смысле выходит за установленные законом пределы использования специальных знаний судебным экспертом-экономистом.

Вопрос о противоправности поведения лица, в связи с его юридическим характером, не может решаться в ходе судебно-экономической экспертизы. Решение такого вопроса является исключительной компетенцией следователя или суда.

Решая вопрос об определении материального ущерба (убытков), эксперт-экономист в пределах своей компетенции определяет только экономическую сторону убытков, нанесенных потерпевшему, независимо от оснований их возникновения.

Ключевые слова: убытки, составляющие элементы убытков, методы оценки ущерба и его размера, компетенция, компетентность.

Received by Editorial Board: 12.10.2019

DOI:https://doi.org/10.32353/khrife.2.2019.29
UDC 343.98:33

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ISSUES RELATED TO THE FORENSIC EXAMINATION OF DOCUMENTAL CONFIRMATION OF LACK OF FUEL AND LUBRICANTS

One of the most important tasks of the forensic economic examination for the research on accounting, tax accounting and reporting documents, which are established by the Scientific and methodological recommendations on the preparation and appointment of forensic examinations and expert studies, approved by order of the Ministry of Justice of Ukraine dated on 08.10.1998 No. 53/5 is the definition of a documentary confirmation of the size of the shortage of fixed assets, material assets, stocks, including the shortage of fuels and lubricants.

The above regulatory document includes the following for the indicative list of issues resolved by this type of forensic examination:

– Is the documented shortage of fixed assets, material assets, stocks (including fuels and lubricants) established by the inventory act at the enterprise (the name of the enterprise indicated) for the period of work of the materially responsible person (the employee, materially responsible person is indicated) in the amount (quantitative and cost indicators are indicated) as of (date is indicated)?

In the modern world, business entities use specialized software for accounting and tax accounting, preparation of documents.

Therefore, in recent years, a significant part of forensic economic examinations on the issue of confirming the shortage of fixed assets, material assets, stocks, including fuels and lubricants, is appointed by the investigation or the court not only on properly submitted inventory materials and accounting records of the subject submitted to experts for examination management, but also by screenshots (snapshots of images on the screen of documents, programs, diagrams, etc.), which in their opinion can be documentary evidence of accounting data and inventory results.

The article considers an example of a question posed for research, provides an analysis of the current legislation of Ukraine on the correctness

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of the inventory of fuels and lubricants and determination of shortages, as well as an algorithm for conducting expert assessments defined by the legislation of Ukraine. The materials provided for research to the expert that cannot be documentary evidence of the shortage of fuels and lubricants are analyzed.

Keywords: forensic economic examination, shortage, fuels and lubricants, screenshots.

Formulation of Research Problem. Businesses need complete and transparent information about their financial condition and results of activities for internal control, which can be ensured only by conducting a complete and reliable inventory. According to D. L. Kuzmin [1], inventory is the only way to control the preservation of property among the set of methods of economic control.

Inventory should ensure the maximum compliance with the requirements of the legislation in the field of accounting by confirming the completeness and reliability of information on financial and economic activities, which allows to avoid losses from shortages and losses and prevent further storage of material values of unscrupulous employees.

One of the most important tasks of economic expertise in the study of accounting, tax and reporting documents established by the Scientific and methodological recommendations on the preparation and appointment of judicial expertise and expert studies, approved by the order of the Ministry of Justice of Ukraine dated 08.10.1998 № 53/5 and registered in the Ministry of Justice of Ukraine 03.11.1998 under No. 705/3145 (as of February 22, 2019) [2] (hereinafter referred to as Scientific and Methodological Recommendations No. 53/5) is to determine the documentary justification of the lack of fixed assets, ma territorial values, stocks, including lack of fuel and lubricants.

The above normative document includes the following question in the list of issues that are resolved by this type of forensic examination:

Does the lack of fixed assets, tangible assets and inventories (including lack of fuel and lubricants), ascertained by the act of inventory at the enterprise (indicate the name of the enterprise), for the period of work (indicate the period) of the materially responsible person (noted by

[1] Кузьмін Д. Л. Інвентаризація як економічна категорія: визначення, значення. *Вісник ЖДТУ.* Економічні науки. 2008. № 3 (45). С. 120–132.

[2] Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень: затв. наказом Міністерства юстиції України від 08.10.1998 № 53/5, зареєстрована в Міністерстві юстиції України 03.11.1998 за № 705/3145 (as amended on 22.02.2019). URL: http:// https: //zakon.rada.gov.ua/laws/show/z0705–98 (Date accessed: 16.03.2019).

PI. B. employee, financially responsible person) in the amount (quantitative and cost indicators are indicated) as of (date indicated)?

Analysis of Recent Researches and Publications. Many scientists and scientists, including: M. T. Biluha, Y. N. Kostyukova, have made a significant contribution to solving a number of key problems related to the organization and methodology of inventorying of economic entities of different types of ownership and industries. V. V. Avdeev, D. L. Kuzmin, T. A. Butenecz`, V. M. Glibko, M. Ya. Demyanenko, O. O. Ilchenko, D. V. Lugovska, S. N. Polenova, O. O. Snisar and others [1].

V. V. Avdeev [2] notes that the inventory is a sequence of practical actions to document the availability, condition and valuation of assets and liabilities of the organization to ensure the accuracy of accounting and reporting data. A similar definition in the work of I. N. Kostyukova, D. V. Lugovsky [3], namely, inventory — is a methodical method of accounting that is to establish the actual availability, condition and valuation of property and financial liabilities of the organization. S. N. Polenova [4] in defining the concept of

[1] E.g., Білуха М. Т. Теорія бухгалтерського обліку. Київ, 2000. 692 с.; Костюкова И. Н., Луговской Д. В. Инвентаризация–основной прием выявления товарных потерь. *Бухгалтер и закон.* 2011. № 10 (154). С. 6–14; Авдеев В. В. Порядок проведения инвентаризации. Все для бухгалтера. 2009. № 12 (240). С. 31–34; Кузьмін Д. Л. Інвентаризація як економічна категорія: визначення, значення. *Вісник ЖДТУ.* Економічні науки. 2008. № 3 (45). С. 120–132; Кузьмін Д. Л. Інвентаризація як метод господарського контролю. *Вісник ЖДТУ.* Економічні науки. 2012. № 2 (60). URL: http://www.stattionline.org.ua/ ekonom/75/11671-inventarizaciya-yak-metod-gospodarskogo-kontrolyu.html (дата звернення 14.03.2019); Бутенець Т. А. Контроль внутрішнього-сподарський чи внутрішній? *Міжнародний зб. наук. праць.* 2009. Вип. 2 (14). С. 5–20; Глібко В. М. Поняття, порядок проведення та оцінка матеріалів інвентаризації. *Теорія і практика правознавства.* 2015. Вип. 1 (7). С. 1–9; Дем'яненко М. Я., Чудовець В. В. Інвентаризація в системі бухгалтерського обліку: монографія. Київ, 2008. С. 14 ; Ільченко О. О. Практичне застосування контрольної функції інвентаризації для достовірності фінансової звітності підприємства. *Бухгалтерський облік, аналіз та аудит: проблеми теорії, методології, організації.* 2014. № 1. С. 83–89; Поленова С. Н. Инвентаризация объектов бухгалтерского учета: виды, порядок проведения и отражение результатов в учете. *Бухгалтер и закон.* 2009. № 1 (121). С. 2–9; Снісар О. О. Інвентаризація як метод внутрішнього контролю паливно-мастильних матеріалів. *Вісник ЖДТУ.* Економічні науки. 2012. № 1 (59). URL: http://www.stattionline.org.ua/ekonom/75/11517-inventarizaciya-yak-metod-vnutrishnogokontrolyu-palivno-mastilnix-materialiv.html (Date accessed: 30.03.2019).

[2] Авдеев В. В. Порядок проведения инвентаризации. *Все для бухгалтера.* 2009. № 12 (240). С. 31–34.

[3] Костюкова И. Н., Луговской Д. В. Инвентаризация — основной прием выявления товарных потерь. *Бухгалтер и закон.* 2011. № 10 (154). С. 6–14.

[4] Поленова С. Н. Инвентаризация объектов бухгалтерского учета: виды, порядок проведения и отражение результатов в учете. *Бухгалтер и закон*. 2009. № 1 (121). С. 2–9.

inventory draws attention to the procedure for its implementation, namely: inspection of property by counting, describing, measuring, evaluating, comparing the data in kind or value measurements with current accounting data to control its preservation is called inventory. S. V. Bardash[1] focuses on the legal component of the concept of inventory, namely: inventory should be understood as checking and assessing the actual presence of the object of control, which is characterized by a set of economic and legal features: the presence of an administrative document; implementation of actions by a collegial body; establishment of quantitative and qualitative characteristics of the object; registration and assessment of facts, legal regulation, accounting and bookkeeping of documents; generalization and realization of results; decision making.

However, these works addressed these issues solely in terms of "classic" accounting documents and inventory materials.

Recently, radical changes in the management of the documents of business entities have led to the emergence of new questions, the solution of which is due to the urgent needs of today.

Research Purpose. The purpose is to study features of the documents on which enterprises carry out the inventory, determine the procedure for inventorying and analyze the materials provided for research to experts that cannot be a documentary confirmation of the lack of inventory.

Main Content Presentation. Nowadays business entities use accounting software for tax and accounting purposes and use specialized software.

In view of this, there have been increasing cases where, in order to conduct studies to document the shortage of inventories, stocks, including fuel and lubricants (hereinafter referred to as F&L), screenings are provided to judicial expert economists or by the courts (screenshots of a monitor displaying an electronic program, a document) that they believe is documentary evidence of accounting data and inventory results.

For example, while performing a research on documented shortage confirmation, the following question is asked: whether the conclusions of the auditor's report as to the established shortage as a result of the discharge of diesel fuel from the tank (company official car brand) are indicated for the period (period is indicated).

In this case, the case file contains only screenshots of the monitor screen, which displays a graphical representation of the fuel level in the car tank (as a percentage) in a certain period of time according to the program

[1] Бардаш С. В. Інвентаризація: теорія, практика, комп'ютеризація. Житомир: ЖІТІ, 1999. С. 2.

of electronic control system and inventory, based on data displayed in the screenshot, in addition, the inventory report defines only the difference between the data on the amount of fuel in the tank at the beginning and end of certain time periods - days, months, etc., without determining the result of the inventory - shortages. Also, screenshots (screenshots) do not meet the criteria of primary, consolidated documents required by the Law of Ukraine № 996-XIV of 16.07.1999: On Accounting and Financial Reporting in Ukraine (hereinafter referred to as Law № 996)[1] and the Regulation of 24.05. 1995 № 88: On documentary support of records in accounting (hereinafter referred to as Regulation № 88)[2].

In order to prevent an erroneous algorithm for conducting a study on documentary confirmation of a lack of fuel and lubricants, this article describes the study algorithm defined by law, a list of documents required to confirm the lack of F&L and analyzed materials submitted for research to experts who cannot be documentary confirmation: lubricants.

According to Scientific and Methodological Recommendations No. 53/5, the objects of research of judicial economic expertise are the documents of accounting, tax accounting, which records information about business transactions.

The requirements of Law No. 996 are provided:

"1. The basis for accounting of business transactions are the primary documents. To control and streamline data processing on the basis of primary documents, consolidated accounting documents may be compiled.

2. The primary and consolidated accounting records may be made in paper or electronic form and must have the following required details:

Document Title (form);

- date of compilation;
- the company name on whose behalf the document was drawn up;
- content and volume of business transaction, unit of measure of business operation;
- positions of persons responsible for carrying out an economic operation and the correctness of its execution;
- personal signature or other data to identify the person who participated in the business operation.

[1] Про бухгалтерський облік та фінансову звітність в Україні: Закон України від 16.07.1999 № 996-XIV (as subsequently amended). URL: http:// https: //zakon.rada.gov.ua/laws/show/996–14 (Date accessed: 16.03.2019).

[2] Положення про документальне забезпечення записів в бухгалтерському обліку: наказ Міністерства фінансів України від 24.05.1995 № 88. URL: http:// https: //zakon.rada.gov.ua/laws/show/z0168–95 (Date accessed: 05.04.2019).

3. Information contained in the primary documents accepted for accounting shall be systematized in the accounts of the synthetic and analytical registers by double-entry them in the interconnected accounts of the accounts".

The requirements of Regulation No. 88 provide:

"2. 1. Primary documents are documents created in writing or in electronic form that contain information about business transactions, including orders and permissions of the administration (owner) to conduct them.

Business transactions are facts of business and other activities that affect the condition of property, capital, liabilities and financial results.

2.2. The basis for accounting of business transactions are the primary documents. While selling goods for cash, it is allowed to compile a primary document at least once a day on the basis of cash registers, checks, etc. To control and streamline the processing of information on the basis of primary documents may be compiled consolidated documents (hereinafter referred to as primary documents).

2.4. Primary documents should have the following required details: enterprise name, institution on whose behalf the document was prepared, the name of the document (form), date of preparation, content and volume of the business transaction, unit of measurement of the business transaction (in kind and / or value), the positions and names of the persons responsible for carrying out the business transaction and the correctness of its registration, personal signature or other data enabling the person who participated in the business operation to be identified.

2.7. Primary documents are drawn up on standard and specialized forms approved by the relevant public authority. Business transactions can be documented using self-made forms, which must contain mandatory details or details of standard or specialized forms".

The process of examining the documents submitted by the expert, when deciding on the problem of documentary confirmation of the shortage, should begin with the examination of inventory materials, since these information sources are the main, normatively established documents on the detected accounting discrepancies with the actual data on the state of assets of the entity.

First of all, studies are conducted on the conformity of inventory materials, the requirements of the current legislation on the procedure for inventory and documentation of its results.

Due to the fact that the expert is asked the documentary confirmation of the established shortage, during the study he uses the normative, legal acts

and accounting documents of the company, which provides an algorithm for inventorying and documenting its confirmation.

The inventory of fuel residues is carried out in accordance with the Regulations on inventory of assets and liabilities, approved by the order of the Ministry of Finance of Ukraine dated September 02, 2014 No. 879 registered at the Ministry of Justice of Ukraine on October 30, 2014 under No. 1365/26142 (as amended) hereinafter referred to as Regulation No. 879)[1].

According to 5th paragraph of Regulation № 879, the inventory is carried out in order to ensure the accuracy of accounting data and financial statements of the enterprise. During the inventory of assets and liabilities, their availability, condition, compliance with the recognition and measurement criteria are checked and documented. This provides:

- detecting the actual availability of assets and checking the completeness of the display of liabilities, funds for targeted financing, expenses for future periods;
- establishment of surplus or lack of assets by comparing their actual availability with accounting data.

According to clause 7 of Regulation No. 879, it is obligatory to carry out an inventory: … in case of establishing the facts of thefts or abuses, damage of values (on the day of establishing such facts) in the amount determined by the head of the enterprise…

Before starting to check the actual availability of assets:

- checking serviceability of all weighing instruments;
- complete processing of all documents on the movement of assets and the latest registers of income and expenditure documents or reports on the movement of assets are formed at the time of inventory;
- determined balances at the date of inventory;
- acts are grouped, sorted and decomposed by names, varieties, sizes in an order that is convenient to calculate (in the case of sudden inventories, this is done in the presence of an inventory commission (working inventory commission).

Availability of assets in the inventory is established by mandatory calculation, weighing, measurement. Predominance, measurement, calculation are carried out in the order of placement of assets in the room where they are stored. Determination of weight (volume) of bulk materials can be carried out on the basis of measurements and technical calculations. Measures of measurements and calculations are attached to the inventory descriptions.

[1] Положення про інвентаризацію активів та зобов'язань : наказ Міністерства фінансів України від 02 вересня 2014 року № 879. URL: http:// https: //zakon.rada.gov.ua/laws/show/z1365–14 (дата звернення 06.04.2019).

According to 14th paragraph of Regulation No. 879, inventory descriptions, inventory acts, and credentials shall be issued in accordance with the requirements established by the Regulation on documentary maintenance of accounting records, approved by the Ministry of Justice of Ukraine Order of May 24, 1995 No. 88 registered with the Ministry of Justice June 05, 1995 under No. 168/704 (as amended), for primary documents, taking into account the mandatory details and requirements provided for in this Regulation. Inventory materials can be completed both by hand and by electronic means of information processing.

In accordance with 15th paragraph of Regulation No. 879, inventory descriptions are used to record the presence, condition and valuation of an entity's assets and those assets owned by other entities that are off-balance sheet items.

According to 16th paragraph of Regulation No. 879, in the inventory description, assets are stated by name in quantitative units taken into account, separately at the location of such values and the persons responsible for their storage, with possible allocation by subaccounts and nomenclature.

Each page of the inventory describes in words the number of asset sequences and the total number of in-kind measurements of all assets recorded on that page, regardless of which units (pieces, meters, kilograms, etc.) are displayed.

Inventory acts are completed taking into account inventory items, and their identification and comparison with accounting data must be ensured.

According to 18th paragraph of Regulation № 879, inventory descriptions (inventory acts) are signed by all members of the inventory commission (working inventory commission) and materially responsible persons. In this case, the materially responsible persons provide a receipt confirming that the inspection of assets took place in their presence, in connection with which they have no claims against the members of the commission, and that they accept for safekeeping the assets listed in the description. When conducting an inventory in case of change of the materially responsible person and the person who accepts the assets gives a receipt of receipt of assets and the one who transfers – on the transfer of assets.

According to 19th paragraph of Regulation № 879, after the end of the inventory, the issued inventory descriptions (inventory acts) are submitted to the accounting service for verification, detection and reflection in the accounting of the inventory results. Thus, quantitative and price indicators according to accounting data are put against the corresponding data of the inventory description and by comparison differences between inventory data and accounting data come to light. Also, the company's accounting

department checks all calculations in the inventory descriptions (inventory acts). Identified errors in prices, billing and calculations must be corrected and certified by the signatures of all members of the inventory commission (working inventory commission) and materially responsible persons.

The last page of the inventory descriptions (inventory acts) makes a note of the price check, billing and result calculations signed by the persons who carried out the check.

Pursuant to 20th paragraph of Regulation No. 879, the accounting service compiles assets and liabilities, which reflect differences between accounting data and inventory data (inventory acts).

The value of surpluses and shortages of values in the reconciliation information is given in accordance with their assessment in the accounting registers.

Pursuant to Section 4 of Regulation № 879, conclusions on identified discrepancies between the actual availability of assets and liabilities and accounting data provided in the reconciliations and proposals for their settlement are reflected by the inventory commission in the minutes drawn up after the inventory and transmitted to consideration and approval by the head of the enterprise. The protocol shall state: the reasons for shortages, losses, surpluses, as well as proposals for offsetting due to resorting, write-off of shortages within the norms of natural loss, as well as excessive shortages and losses from damage to property, indicating the reasons and measures taken to prevent such losses and shortages.

3. The results of the inventory, based on the approved minutes of the inventory committee are reflected in the accounting and financial statements of the reporting period when the inventory is completed.

According to the Instruction on the Application of the Plan of Accounts of Accounting of Assets, Capital, Liabilities and Economic Transactions of Enterprises and Organizations, approved by the Order of the Ministry of Finance of Ukraine No. 291[1] dated on 30.11.99, accounting for the availability and movement of fuel and lubricants intended for the operation of transport means and other production needs, are carried out on the 203 sub-account: Fuel by type, location and materially responsible persons.

All F&Ls (gasoline, diesel fuel, motor oil, etc.) that are accounted for in subaccount the 203 Fuel of account 20 Production reserves, no matter where the F&Ls are stored: in tanks, canisters, tanks, tanks of cars are subject to inventory.

[1] Інструкція про застосування Плану рахунків бухгалтерського обліку активів, капіталу, зобов'язань і господарських операцій підприємств і організацій: наказ Міністерства фінансів України від 30.11.99 р. № 291. URL: https: //zakon.rada.gov.ua/laws/show/z0893–99 (Date accessed: 7.04.2019).

Thus, the primary task of F&L inventory is:

- identification of the actual F&L balance (m. cube, tons, l) by types, brands, storage sites and materially responsible persons;
- comparison of the actual F&L balance with the enterprise accounting data;
- check the order of storage of F&L.

In order for the company to be able to recover damages from the guilty person in the event of shortage of F&L as a result of theft (drain) of fuel, etc., it is necessary to document the presence and movement of F&L.

The main primary documents on the basis of which fuel is written off are the statement of fuel delivery and the travel document. In addition, a fuel consumption card and a driver's identity card are drawn up for each vehicle. The fuel consumption accounting card shall indicate the actual and standard fuel consumption for each travel document. The driver's identity card reflects the accounting of actual and standard fuel consumption for each travel letter and summarizes the results of work for the month (savings or overspending). The movement of fuel from the moment of departure of the car from the enterprise and before return and its rest was fixed in travel documents of the car.

The use of travel documents by enterprises operating vehicles, in accordance with Article 265-3 of the Law of Ukraine of 05.07.2011 № 3565-VI [1] On Amendments to Certain Legislative Acts of Ukraine to Eliminate Excessive State Regulation in the Field of Road Transport has become optional - from 14.08.2011. Typical forms were abolished: for cars — from 16.04.2013 by the order of the State Statistics Service of Ukraine from 19.03.2013 № 95 [2], for freight - from 10.12.2013 by the order of the Ministry of Infrastructure of Ukraine of the Ministry of Economic Development and Trade of Ukraine dated on 10.12.2013 № 1005/1454 [3].

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[1] Про внесення змін до деяких законодавчих актів України щодо усунення надмірного державного регулювання у сфері автомобільних перевезень: Закон України від 05.07.2011 № 3565-VI. URL: http: //zakon.rada.gov.ua/laws/show/3565–17 (Date accessed:16.03.2019).

[2] Про визнання таким, що втратив чинність, наказу Державного комітету статистики України від 17 лютого 1998 року № 74 «Про затвердження типової форми первинного обліку роботи службового легкового автомобіля та Інструкції про порядок її застосування»: наказ Державної служби статистики України від 19.03.2013 № 95. URL: http://zakon.rada.gov.ua/ laws/show/z0521–13 (Date accessed: 10.03.2019).

[3] Про визнання таким, що втратив чинність, наказу Міністерства транспорту України, Міністерства статистики України від 29 грудня 1995 року № 488/346: наказ Міністерства інфраструктури України Міністерства економічного розвитку і торгівлі України від 10.12.2013 № 1005/1454. URL: https: //zakon.rada.gov.ua/rada/

To confirm the accounting, costs and write-offs of PMMs, the vehicles operating the vehicles, even if they have the right not to write out to the traveler, may continue to use them in their business activities, if necessary, can be used as well as those canceled forms, and self-developed forms (containing all required details of primary documents) in accordance with clause 2.7 of Regulation No. 88, that is, may use the form of the primary document, which is approved by the accounting policy order of the enterprise, provided that there are all the features of the original document and information about the business operation. This form of document should reflect the operation of the car including the movement of fuel and its balance in the tank from the moment of departure of the car from the company until return. These indicators on the basis of travel letters are also recorded in the control log.

Summary information (indicators) on the movement of fuel and its balance in the tank for each type of fuel is recorded in the statement of accounting for fuel and lubricants for the month, which is approved and submitted to the accounting department. The statement is compared with data on fuel balances in the acts of removal of fuel residues in car tanks, as well as with data on the actual receipt of fuel by drivers and data of reports of financially responsible persons (refuelers) for the current month.

For every 1st day of the month, or in the event of theft, establish an inventory of the residual fuel in the tanks of the car with an inventory description.

In order to prevent differences of actual data on the quantity (volume) of F&L with accounting data, it is necessary to include in the act of inventory the information on fuel specified in coupons and other documents containing information about previously paid F&Ls owned by the enterprise and stored at other enterprises and if possible, to check the presence of such F&L.

Disadvantages of F&L that were established as a result of inventory according to the decision of the head of the enterprise, are attributed to the compensation of the responsible person or to the expenses of the activity.

The algorithm for conducting expert studies on documentary confirmation of inventory or surplus (F&L) amounts established by inventory is divided into three main steps.

At the first stage of the specified algorithm, expert conducts research on the subject of documentary confirmation of quantitative and cost indicators of fuel balances of the business entity as of the date of the preliminary inventory. These studies are based on these documents on the preliminary inventory and accounting documents for the accounting of fixed assets and inventories.

show/v1005733–13 (Date accessed: 6.03.2019).

In the second stage, the expert examines the accounting documents for documentary confirmation of the accounting of the quantitative and value indicators of the inventories in accounting.

In the third stage of the study, the expert compares the results of expert studies on the documented quantitative and value accounting of inventory balances with actual inventory balances established by the inventory commissions.

Having examined the inventory materials for the proper carrying out of this control measure and the substantiated documentation of its results by the expert, using the methods of comparison and documentary verification, researches are conducted for documentary confirmation of the indicators of the F&L balance in the accounting.

At the same time, the expert should conduct research of accounting documents for their compliance with the requirements of the current legislation, which regulates the procedure of accounting, the reflection of these indicators in the accounting documents of the entity.

According to the results of the aforementioned studies of accounting documents, according to the foregoing algorithm of carrying out judicial economic expertise, conclusions are drawn that are the solution of the task set before the expert for documentary confirmation of quantitative and cost indicators of the lack of fuel and lubricants of the entity.

Conclusions. Therefore, forensic experts should use inventory materials prepared in accordance with the legislation of Ukraine, the entity's primary and accounting documents, when deciding on issues of documentary confirmation of a shortage, including fuel and lubricants.

In the absence of inventory materials, documented F&L balances at the time of inventory, primary and accounting documents of the company, experts are not able to document the lack based on the provided screenshots (screenshots of the monitor with the image of electronic programs, documents, charts, etc.) case files and solve the task set by law enforcement agencies and courts.

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Т. В. Марченко

ПИТАННЯ, ЩО ВИНИКАЮТЬ ПРИ ПРОВЕДЕННІ ЕКСПЕРТИЗ З ДОКУМЕНТАЛЬНОГО ПІДТВЕРДЖЕННЯ НЕСТАЧІ ПАЛИВНО-МАСТИЛЬНИХ МАТЕРІАЛІВ

Останнім часом значна частина судових економічних експертиз із питання підтвердження нестачі призначається не за належно оформленими матеріалами інвентаризацій та обліковими документами підприємства, а за скріншотами (знімками зображень на екрані).

Розглянуто особливості проведення судових економічних досліджень, пов'язаних з документальним підтвердженням нестачі паливно-мастильних матеріалів. Описано визначений законодавством алгоритм дослідження, перелік документів, необхідних для підтвердження нестачі паливно-мастильних матеріалів та проаналізовано матеріали, надані на дослідження експертам, які не можуть бути документальним підтвердженням нестачі паливно-мастильних матеріалів.

Ключові слова: судова економічна експертиза, нестача, паливно-мастильні матеріали, скріншоти.

Т. В. Марченко

ВОПРОСЫ, КОТОРЫЕ ВОЗНИКАЮТ ПРИ ПРОВЕДЕНИИ ЭКСПЕРТИЗ ПО ДОКУМЕНТАЛЬНОМУ ПОДТВЕРЖДЕНИЮ НЕДОСТАЧИ ГОРЮЧЕ-СМАЗОЧНЫХ МАТЕРИАЛОВ

Одним из важнейших заданий экономической экспертизы по исследованию документов бухгалтерского, налогового учета и отчетности, которые установлены Научно-методическими рекомендациями по вопросам подготовки и назначения судебных экспертиз и экспертных исследований, утвержденных приказом Министерства юстиции Украины от 08.10.1998 г. № 53/5, является определение документального подтверждения размера недостачи основных средств, материальных ценностей, запасов, в том числе недостачи горюче-смазочных материалов.

Вышеуказанным нормативным документом к ориентировочному перечню решаемых данным видом судебной экспертизы вопросов включен следующий: «Подтверждается ли документально недостача основных средств, материальных ценностей, запасов (в том числе, горюче-смазочных материалов), установленная актом инвентаризации на предприятии (указывается название предприятия), за период работы материально-ответственного лица (указывается работник, материально-ответственное лицо) в размере (указываются количественные и стоимостные показатели) по состоянию на (указывается дата)»?

В современном мире субъекты хозяйствования для ведения бухгалтерского и налогового учетов, составления документов используют специализированное программное обеспечение.

Поэтому, в последнее время значительная часть судебных экономических экспертиз по вопросу подтверждения недостачи основных средств, материальных ценностей, запасов, в том числе горюче-смазочных материалов, следствием или судом назначается не только по предоставленным на исследование экспертам надлежаще оформленным материалам инвентаризации и учетных бухгалтерских документов субъекта хозяйствования, но и по скриншотам (снимкам изображений на экране документов, программ, диаграмм и т. д.), что по их мнению может являться документальным подтверждением данных бухгалтерского учета и результатов инвентаризации.

В статье рассмотрен пример поставленного на исследование вопроса, приведен анализ действующего законодательства Украины о правильности проведения инвентаризации горюче-смазочных материалов и определения недостачи, а также приведен алгоритм проведения экспертиз, определенный законодательством Украины. Проанализированы материалы, предоставленные на исследование эксперту, которые не могут быть документальным подтверждением недостачи горюче-смазочных материалов.

Ключевые слова: судебная экономическая экспертиза, недостача, горюче-смазочные материалы, скриншоты.

Received by Editorial Board: 12.10.2019

DOI:https://doi.org/10.32353/khrife.2.2019.30
UDC 343.98

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PECULIARITIES OF FORENSIC RESEARCH IN CASES OF DETERMINATION OF THE ACTUAL EXPENSES OF THE PENSION FUND FOR PAYMENT AND DELIVERY OF PENSIONS BY AGE, PROVIDED ON PREFERENTIAL CONDITIONS

This article discusses the theoretical and practical aspects of the features of forensic-economic examinations related to documentary evidence of the calculation of the actual costs of the Pension Fund for the payment and delivery of preferential pensions. One of the important issues related to these studies is the validity of calculating the costs of reimbursement of pension payments and the inclusion in this calculation of surcharges, allowances and increases that are intended in accordance with the legislation of Ukraine and paid from other sources than the funds of the Pension Fund.

The article analyzes the regulatory legal acts of Ukraine regulating the procedure for reimbursement by the Pension Fund of the actual costs of payment and delivery of old-age pensions assigned on preferential terms. The categories that are entitled to the granting of old-age pensions on preferential terms are determined, the differences are indicated in calculating the seniority, including for the period of work in elected posts, during the passage of military service and study in the specialty that gives the right to pension. It was clarified which of the costs incurred by the Pension Fund of Ukraine are not refundable and indicates the need to determine the monthly pension amount to be reimbursed. It is noted that the calculation includes the actual expenses incurred by the territorial bodies of the Pension Fund for which these pensions were assigned.

The theoretical and practical aspects of conducting such forensic examinations presented in the article can be used in expert practice in order to optimize forensic research.

Keywords: preferential pensions, pension fund, actual costs, payers of insurance premiums, policyholders, preferential terms, preferential length of service, total length of service.

Formulation of Research Problem. One of the challenges recently raised by judicial experts and resolved with the use of specialist knowledge in the field of economics is to determine the actual costs of the Pension Fund for the payment and delivery of retirement pensions for preferential terms and their

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reimbursement by enterprises and organizations for lawsuits on collecting debt for the benefit of preferential pensions.

This article considers the theoretical and practical aspects of the peculiarities of forensic economic examinations related to the documentary confirmation of the calculations of the actual costs of the Pension Fund for the payment and delivery of preferential pensions. One of the important issues related to these studies is the validity of the calculation of costs for reimbursement of pension benefits and the inclusion in this calculation of surcharges, allowances and increases, which are assigned in accordance with Ukrainian legislation and paid from sources other than the Pension Fund.

Analysis of Recent Researches and Publications. As this problematic issue is related to the expert tasks specified in the Scientific and Methodological Recommendations on the Preparation and Assignment of Forensic Expertise and Forensic Research, appropriate methodologies were developed in due time by experts of state specialized expert institutions, in particular: Methodology of Expert Research on Sizing reimbursement by the Pension Fund of the actual cost of retirement benefits by age [1](developed by KhRIFE, registration code: 11.1.7).

The Research Purpose is to substantiate and systematize the theoretical knowledge of judicial expertise related to determining the amount of compensation to the Pension Fund of Ukraine of the actual cost of retirement benefits by age by analyzing the legislative framework and expert practice in conducting this type of forensic examinations.

Main Content Presentation. The legislation of Ukraine on pension provision for citizens provides for the possibility of granting retirement pensions on preferential terms.

Pension insurance for insured persons who worked or worked in underground work, works with particularly harmful and especially difficult working conditions under Schedule No. 1 and other works with harmful and difficult working conditions under List No. 2 of industries, jobs, occupations, positions and indicators and as a result of job certification, positions that give entitlement to retirement benefits on preferential terms that under previous legislation were eligible for preferential retirement benefits are exercised in accordance with separate legislation through professional and corporate foundations.

The procedure for collecting and using the compulsory state pension insurance fee is determined by the Law of Ukraine: On Obligatory State Pension Insurance Fee that[2] provides the following:

"Article 1

[1] Реєстр методик проведення судових експертиз. URL: http:// rmpse.minjust.gov.ua/ (дата звернення 10.03.2019).

[2] Про збір на загальнообов'язкове державне пенсійне страхування: Закон України від 26 червня 1997 року № 400/97-ВР. *Відомості Верховної Ради України*. 1997, № 37. Ст. 237.

Payers of the fee for Obligatory State Pension insurance are:

business entities, regardless of ownership, their associations, budgetary, public and other legal entities, as well as natural persons that are business entities using the work of employees…

Article 2

Taxation Object is:

For taxpayers defined in paragraphs 1 and 2 of Article 1 of this Law, in addition to the taxpayers assigned to the fourth group of single tax payers, the subject of taxation shall also be the actual expenses for payment and delivery of pensions assigned in accordance with paragraphs b – h Article 13 of the Law of Ukraine: On Pension Provision[1] (hereinafter referred to as Law No. 1788-XII) until reaching the retirement age provided for by Article 26 of the Law of Ukraine Law of Ukraine: On Obligatory State Pension Insurance Fee [2] (hereinafter referred to as Law No. 1058-IV)".

Reimbursement of expenses of the Pension Fund for payment and delivery of pensions granted on preferential terms shall be carried out in accordance with clause 2 of the Final Provisions of the Law of Ukraine: On Obligatory State Pension Insurance Fee that determines the following:

"Enterprises and organizations for the purpose of remuneration, pay a pension fund that covers the actual costs of payment and delivery of pensions to persons who were employed full time in underground work, work with particularly harmful and especially difficult working conditions for list No. 1 of industries, jobs, professions, positions and indicators approved by the Cabinet of Ministers of Ukraine, except those directly employed full-time in underground work (including personnel of mining units) from mining in coal, shale, ore and other minerals, in the construction of mines and mines according to the list of works and professions approved by the Cabinet of Ministers of Ukraine, starting from the day this Law enters into force, in the amount of 20 percent with the subsequent increase of 10 percent to 100 percent annually. percentage of compensation of actual expenses for payment and delivery of these pensions before the acquisition of the right to retirement pension according to this Law.

The Law of Ukraine: On Pension Provision No. 1788-XII determines:

"Article 13: Benefits shall be entitled to retirement benefits, regardless of place of last employment:

a) full-time workers in underground work, work with particularly harmful and especially difficult conditions of work: according to the list № 1 of industries, jobs, professions, positions and indicators approved by the Cabinet of Ministers of Ukraine…;

[1] Про пенсійне забезпечення: Закон України від 5 листопада 1991 р. № 1788-XII. Відомості Верховної Ради України, 1992, № 3. Ст. 10.

[2] Про загальнообов язкове державне пенсійне страхування: Закон України від 9 липня 2003 року № 1058-IV. *Відомості Верховної Ради України,* 2003, № 49–51. Ст. 376.

b) full-time workers on other jobs with harmful and difficult working conditions – according to the list № 2 of industries, jobs, professions, positions and indicators, approved by the Cabinet of Ministers of Ukraine…".

Procedure for collection of obligatory state pension insurance contributions, payment of compulsory state pension insurance fee for certain types of business transactions and other payments to the Pension Fund of Ukraine budget, accrual and payment of financial penalties and penalties, as well as expenses Of the Pension Fund of Ukraine for payment and delivery of pensions assigned on preferential terms is defined by the Instruction on the procedure of calculation and payment by insurers and the insured and persons contributing to compulsory state pension insurance to the Pension Fund of Ukraine [1] (hereinafter referred to as Instruction 21-1).

The requirements of this Instruction provide the following:

Paragraph 2 "Payers of insurance premiums are:

2.1 Insurers;

2.1.1. Employers: enterprises, institutions and organizations established in accordance with the legislation of Ukraine, regardless of ownership, type of activity and management, associations of citizens, trade unions, political parties (including branches, representative offices, branches and other separate divisions of these enterprises, institutions , organizations, associations of citizens, trade unions, political parties that have a separate balance sheet and independently make payments to insured persons), … who use the work of individuals under an employment contract (contract) or other conditions provided by law, or under agreements of civil law nature…".

Paragraph 6.1. "Expenditures of the Pension Fund for payment and delivery of pensions granted on preferential terms in accordance with paragraph 2 of the Final Provisions of the Law of Ukraine: On Obligatory State Pension Insurance Fee shall be reimbursed in the following amounts: for payers specified in subparagraph 2.1.1 of paragraph 2.1 of this Instruction (except for taxpayers classified in the fourth group of single tax payers) and 100 percent of the actual costs of payment and delivery of pensions, assigned in accordance with the first paragraph of Part 2 of the Final Provisions of the Law to insured persons who worked or work in hazardous and difficult working conditions according to the list № 2 production works, professions, positions and indicators approved by the Cabinet of Ministers of Ukraine and according to the results of attestation of jobs, in positions that give the right to receive an old-age pension on preferential terms: for payers specified in subparagraph 2.1.1. paragraph 2.1 of this Instruction, — the actual cost of payment and delivery of pensions to full-time employees in

[1] Про затвердження Інструкції про порядок обчислення і сплати страхувальниками та застрахованими особами внесків на загальнообов'язкове державне пенсійне страхування до Пенсійного фонду України: постанова Правління Пенсійного фонду України від 19.12.2003 № 21–1. URL: http://search.ligazakon.ua/l_doc2.nsf/link1/REG8663.html (Date accessed: 13.03.2019).

underground work, work with particularly harmful and particularly difficult working conditions on the list № 1 production, work, professions, positions and indicators approved by the Cabinet of Ministers Ukraine, except for workers who were directly employed full-time in underground work (including personnel of mining units) for the extraction of coal, shale, ore and other minerals, in the construction of mines and mines according to the list of works and professions approved by the Cabinet of Ministers of Ukraine...".

Paragraph 6.2. "The costs of payment and delivery of pensions granted on preferential terms to persons with seniority that entitles them to the award of pensions at several enterprises shall be borne by those enterprises in proportion to the length of service, subject to the requirements of paragraph 3, subparagraph 1, subparagraph 1, subparagraph XV of Final Provisions of the Law of Ukraine On Obligatory State Pension Insurance Fee.

If the pension on preferential terms is assigned with mutual crediting of the periods of work provided by Articles 13, 14 and 55 of the Law of Ukraine: On Pension Provision that provided the right to this preferential pension, reimbursement of actual expenses for payment and delivery of these pensions is carried out by those enterprises. which this length of service was made in the amounts provided for in part 2 of the Final Provisions of the Law of Ukraine: On Compulsory State Pension Insurance.

Paragraph 6. 4. «Amounts for compensation for the current year are determined by the bodies of the Pension Fund of Ukraine annually in calculations of actual expenses for payment and delivery of preferential pensions, assigned in accordance with Part 2 of the Final Provisions of the Law (in accordance with Annexes 6 and 7) sent to enterprises by January 20 current year and within 10 days of newly assigned (recounted) pensions.

Paragraph 6.7. "… the sums of actual expenses for the payment and delivery of preferential pensions for the period from the date of the appointment of the pension to the date of compilation of the actual expenses for payment and delivery of preferential pensions, designated in accordance with paragraph 2 of the Final Provisions of the Law, shall be paid simultaneously with the payment of the actual expenses for payment and delivery of preferential pensions for the first current month".

On January 1, 2015, the Law of Ukraine dated on December 28, 2014 № 71– VIII [1] On Amendments to the Tax Code of Ukraine and Certain Legislative Acts of Ukraine Concerning Tax Reform entered into force, amending the Tax Code. Thus, a fixed agricultural tax is excluded from the list of national taxes and fees. In fact, it has been replaced by the Single Tax of the fourth group. However, for the payers of this tax, the legislation does not provide benefits for the reimbursement of actual costs for the payment and delivery of pensions.

[1] Про внесення змін до Податкового кодексу України та деяких законодавчих актів України щодо податкової реформи: Закон України від 28.12.14 р. № 71-VIII. Відомості Верховної Ради, 2015, № 7–8, № 9. Ст. 5.

Therefore, from 01.01.2015, agricultural enterprises have an obligation to reimburse the actual costs of payment and delivery of pensions granted on preferential terms. It is important to take into account that only the expenses actually incurred by the Pension Fund starting from 01.01.2015 are subject to reimbursement. That is, the Pension Fund has no right to require former payers of the fixed agricultural tax to reimburse the costs incurred by it in previous years (until 01.01.2015).

Not included in the amount of actual costs for the payment and delivery of benefits to be reimbursed, additional pensions, additional costs for the payment of an increased amount of the supplementary pension, allowances and advances, designated in accordance with the legislation of Ukraine, paid from sources other than the Pension Fund. Ukraine (paragraph 6. 6 of Section 6 of Instruction No. 21-1).

The following documents should be analyzed when examining expert tasks to determine the actual costs for the payment and delivery of preferential pensions:

- materials of the pension case:
- employment record book;
- certificates of the enterprises and the organizations that the person was engaged in carrying out the work full time;
- certificates of salary of the person;
- certificate of identification code assignment;
- diploma of education;
- data of personalized accounting from the system of compulsory state social insurance on the amount of earnings from which insurance premiums for compulsory state pension insurance are paid;
- data about detained persons (if any);
- annual and monthly reports on the calculation of the actual costs for the payment and delivery of preferential pensions.

Depending on the particular circumstances of the case, this list of documents may be expanded.

The expert should bear in mind that when carrying out examinations, laws, laws and regulations are applied only in the version that was in force at the time of the fact in question (time of appointment of the pension, its transfer, etc.).

For this purpose, a person's age, his / her (insurance) experience is established, which entitles him/her to the appointment of a retirement pension on preferential terms and the period of acquiring this experience by researching the materials of the pension case, the employment record book, etc.

The entire period of work in the respective positions or occupations irrespective of the date of their inclusion in the lists is credited to the privileged length of service, subject to confirmation by the documents of the relevant working conditions during the performance of work before 21.08.1992 and by the results of performance appraisal of the workplaces since 21.08.1992.

Forensic expert should pay attention to the differences in the calculation of the length of service, if the person worked before 01.01.1992 and if he worked both before and after that date. If, for example, a person worked before 01.01.1992 and his position was not provided for in the lists in force at that time, and the position was first entered in the lists in force after 01.01.1992 (the person at that time no longer worked in this profession) then she will not be entitled to a preferential pension.

There are also peculiarities of enrollment in preferential service, which gives the right to the appointment of a privileged pension, the period of work in elected positions, during the passing of conscript military service and training in the specialty that entitles to the appointment of a pension.

In determining the amount of preferential old-age pension, the expert should pay special attention to the wording of Law № 1058-IV that was in force at the time of the initial pension, and take into account changes in pension legislation in the subsequent recalculation of pensions, as well as Law 1058 – IV (dated on 01.01.2004) the amount of old-age pension was not limited. Later in Art. 27 of Law № 1058 – IV was amended to limit the amount of pension: the maximum amount of pension (including allowances, increases, additional pension, targeted cash benefits, pension for special services to Ukraine and other pension supplements established by law) could not exceed twelve the minimum size of the old-age pension established by para. 1 hour 1 tbsp. 28 of this Law, and from 01.10.2011: ten minimum old-age pensions.

It should also be borne in mind that pensions assigned in accordance with Art. 100 of Law No. 1788-XII, are not liable to compensation, namely:

a) to persons who, on the day this Law enters into force, have full length of service in the aforementioned jobs that gave entitlement to a pension on preferential terms, pensions in the amounts stipulated by this Law shall be assigned in accordance with the age and seniority requirements established by the current legislation;
b) to persons who do not have full work experience with harmful and difficult working conditions, the age required for the appointment of a pension in accordance with Article 12 shall be reduced in proportion to the available length of service in accordance with Articles 13 to 14 of this Law, on the basis of the requirements of this length of service established previously existing legislation.

The expert examines further the calculations of the Pension Fund on the actual expenses for the payment and delivery of preferential pensions, designated in accordance with Part 2 of the Final Provisions of Law No. 1058-IV (in accordance with Annexes 6 and 7), which are sent to the enterprises by January 20 of the current year and within 10 days of newly assigned (transferred) pensions (clause 6.4 of Instruction No. 21-1).

It should also be noted that in case of liquidation of an enterprise without successors or declaring bankruptcy and opening of liquidation procedure,

calculations for reimbursement to the body of the Pension Fund of Ukraine of the actual expenses for payment and delivery of pensions for preferential terms are not sent at the location of such enterprise.

Amounts of actual expenses for the payment and delivery of preferential pensions for the period from the date of the pension appointment until the date of calculation of the actual expenses for payment and delivery of preferential pensions, designated in accordance with Part 2 of the Final Provisions of Law No. 1058-IV shall be paid simultaneously with the payment of the actual expenses for payment and delivery of preferential pensions for the first current month (paragraph 6.7 of Instruction No. 21– 1).

For this purpose, it is necessary to determine the total length of service and preferential service on the list № 1 or № 2, the period of obtaining preferential internship, to check the purpose of preferential pension for compliance with the legislation in force for that period of time.

It should be remembered that the basis for inclusion in the calculation of the Pension Fund body of the amount paid by the company to cover the actual costs of payment and delivery of preferential pensions are the calculations of the territorial bodies of the Pension Fund of Ukraine. This requirement is provided for in paragraph 6. 8 of the Instruction № 21–1 stipulating that "in case of awarding pensions on preferential terms to persons who have the required length of service outside the place of destination of this pension, the Pension Fund body sends the calculation… to two copies through the body of the Pension Fund at the location of this enterprise (except for enterprises whose location is a free economic zone: Crimea). Reimbursement of the amounts of actual costs for payment and delivery of pensions, appointed on preferential terms, in such cases is carried out by the company to the accounts of the Pension Fund at the location of the company".

In order to verify the amounts of actually paid and unpaid pensions and its delivery by the national postal operator, the expert analyzes bank statements to confirm the transfer of funds for the payment of pensions through current accounts in banks with a mark and stamp of the bank. It should be noted whether the transfer of funds for the payment of preferential pensions on the list № 1 or № 2.

The final stage of the examination is to compare the results of the study conducted on the size of the preferential pension of the person and the pension to be reimbursed to the Pension Fund with the data specified in the messages of the Pension Fund and Calculations of actual expenses for payment and court expertise related to determining the amount of compensation. To the Pension Fund of Ukraine, the actual cost of payment of preferential pensions by the age of pensions assigned in accordance with Part 2 of the Final Provisions of the Law of Ukraine: On Obligatory State Pension Insurance Fee in the part of pensions assigned in accordance with ..." that are appendices № 6, № 7 to Instruction № 21-1.

Conclusions. The theoretical and practical aspects of forensic studies related to determining the amount of reimbursement to the Pension Fund of Ukraine of actual retirement benefits by age can be used in expert practice to optimize forensic research.

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I. O. Савченко

ОСОБЛИВОСТІ ЕКСПЕРТНОГО ДОСЛІДЖЕННЯ У СПРАВАХ ПРО ВИЗНАЧЕННЯ РОЗМІРУ ФАКТИЧНИХ ВИТРАТ ПЕНСІЙНОГО ФОНДУ НА ВИПЛАТУ І ДОСТАВКУ ПЕНСІЙ ЗА ВІКОМ, ПРИЗНАЧЕНИХ НА ПІЛЬГОВИХ УМОВАХ

У статті проаналізовано нормативно-правові акти України, які регламентують порядок відшкодування органам Пенсійного фонду фактичних витрат на виплату і доставку пенсій за віком, призначених на пільгових умовах. Визначено категорії, яким надано право на призначення пенсії за віком на пільгових умовах, вказано на відмінності в обчисленні пільгового стажу, в тому числі за період роботи на виборних посадах, за час проходження строкової військової служби та навчання за спеціальністю, що дає право на призначення пенсії. Роз'яснено, які витрати, понесені Пенсійним фондом України, не підлягають відшкодуванню та звернено увагу на необхідність визначення щомісячного розміру пенсії, який підлягає відшкодуванню.

Наголошено, що до розрахунку включені понесені фактичні витрати тих територіальних органів пенсійного фонду, якими ці пенсії були призначені.

Ключові слова: пільгові пенсії, Пенсійний фонд, фактичні витрати. платники страхових внесків, страхувальники, пільгові умови, пільговий стаж, загальний стаж.

И. А. Савченко

ОСОБЕННОСТИ ЭКСПЕРТНОГО ИССЛЕДОВАНИЯ В ДЕЛАХ ОБ ОПРЕДЕЛЕНИИ РАЗМЕРА ФАКТИЧЕСКИХ ЗАТРАТ ПЕНСИОННОГО ФОНДА НА ВЫПЛАТУ И ДОСТАВКУ ПЕНСИЙ ПО ВОЗРАСТУ, НАЗНАЧЕННЫХ НА ЛЬГОТНЫХ ОСНОВАНИЯХ

В данной статье рассматриваются теоретические и практические аспекты особенностей проведения судебно-экономических экспертиз, связанных с документальным подтверждением расчетов фактических затрат Пенсионного фонда на выплату и доставку льготных пенсий. Одним из важных вопросов, которые касаются указанных исследований, является обоснованность расчета затрат на возмещение пенсионных выплат и включение в данный расчет доплат, надбавок и повышений, которые предназначены в соответствии с законодательством Украины и выплачиваются за счет других источников, чем средства Пенсионного фонда.

В статье проанализированы нормативно-правовые акты Украины, которые регламентируют порядок возмещения органом Пенсионного фонда фактических затрат по выплате и доставке пенсий по возрасту, назначенных на льготных условиях. Определены категории, которым надано право на назначение пенсий по возрасту на льготных условиях, указаны отличия при подсчете льотного стажа, в том числе за период работы на выборных должностях, за время прохождения срочной военной службы и учебы по специальности, которая дает право на назначение пенсии. Розъяснено, какие из затрат, понесеннях Пенсионным фондом Украины не подлежат возмещению и указано на необходимость определения месячного раз мера пенсии, который подлежит возмещению. Отмечено, что в расчет включены понесенные фактические затраты тех территориальных органов Пенсионного фонда, которыми эти пенсии назначались.

Приведенные в статье теоретические и практические аспекты проведения такого рода судебных експертиз могут быть использованы в экспертной практике с целью оптимизации экспертного исследования.

Ключевые слова: льготные пенсии, пенсионный фонд, фактические затраты, плательщики страховых взносов, страхователи, льготные условия, льготный стаж, общий стаж.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.31
UDC 342.9

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FORENSIC ECONOMIC EXAMINATION IN PROVING THE CIRCUMSTANCES SUBJECT TO MANDATORY PROOF IN THE CRIME INVESTIGATION IN THE FIELD OF FINANCING OF SOCIAL TARGET PROGRAMS

Traces of criminal activity in the field of financing social targeted programs are often reflected in a number of documents that formulate and accompany this activity. The article emphasizes that the results of an economic study in the form of an expert's opinion are one of the sources of evidence in criminal proceedings, which is objective in nature to establish the truth and solve the case in essence. Attention is drawn to the fact that the expert's practical activities, the limits of his competence in terms of determining the range of issues that he can decide, depend on the correct definition of the subject and object of examination. It has been established that one of the features of crimes in the field of financing social targeted programs is that they are committed by officials using multi-way combinations and associated with hiding data in accounting documents. It is proved that all collected true and fictitious documents must be attached to the materials of criminal proceedings; interrogated all persons who can provide information related to the crime event; and also, all examinations have been carried out, the conclusions of which can be used by an expert economist to provide an expert conclusion.

Key words: crimes, financing of social target programs, economic knowledge, forensic economic examination, verification, proof.

Formulation of Research Problem. Crimes in the field of financing socially targeted programs are most often committed by entities in the process of carrying out their professional management or financial and economic activities and are expressed in non-compliance with the rules and regulations governing it. Traces of such criminal activity, as a rule, are reflected in a number of documents by which this activity is made out and accompanied. Crimes in the field of financing social target programs are latent, as they are disguised by seemingly ordinary and at first glance legitimate business agreements. In addition, it should be borne in mind that such crimes are usually committed using techniques aimed at distorting and falsifying the

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results of the subject's activities related to the implementation of social target programs. In this regard, one of the leading places in the investigation of criminal proceedings for crimes in the field of financing social targeted programs have expert research on the use of techniques and methods for diagnosing the financial and economic condition of the enterprise. It should also be noted that the detection and detection of crimes in the field of financing of socially targeted programs will be facilitated by the correct application of the subjects of criminal proceedings of special knowledge in the field of accounting, financial and tax accounting; economics and production management; finance and credit; taxes and taxation; banking; analysis of financial and economic activities, etc.

Analysis of Recent Researches and Publications. Patterns of traceability, which are associated with the execution of operations in the field of document management, banking operations, the functioning of production technologies, accounting and reporting, organizational and management actions, unauthorized receipt of information, etc., in other words, patterns of occurrence of traces of crime in the field of business management S. P. Golubyatnikov, S. V. Evdokimenko, M. K. Kaminski, V. P. Kubanov, A. F. Lubin, M. M. Lisov, V. V. Lysenko and others [1]. However, the issue of detecting crimes in the field of financing socially targeted programs has remained out of the attention of scientists.

The Article Purpose is to outline the features of forensic expertise and to highlight their capabilities in proving circumstances that are required to be proven when investigating crimes in the field of financing social programs.

Main Content Presentation. Scientists have proved that specific expertise is not well-known knowledge that is not widespread and which is possessed by a limited number of specialists. According to a broad understanding, a specialist is a person who has special knowledge, including economic, and can acquire different procedural status, namely: can participate in criminal proceedings as a specialist or as an expert. From a forensic point of view, special economic knowledge should be considered a means of identifying and recognizing the signs of interaction of the crime with the economic system and its individual parts [2]. Adaptation of certain

[1] E.g., Голубятников С. П. Использование банковских документов при выявлении хищений в клиентских организациях: учеб. пособ. Нижний Новгород: Нижнегородский юридический институт МВД Росии, 1997. 115 с.; Лисенко В. В. Криміналістичне забезпечення діяльності податкової міліції: (Теорія та практика): монографія. Киев: Логос, 2004. 324 с.; Євдокіменко С. В. Теорія і практика судово-економічної експертизи: монографія. Харків: Панов. 2016. 540 с.

[2] Чеберяк П. П. Завдання судових експертиз при розкритті й розслідуван-

provisions of specific economic fields of knowledge, such as accounting, banking, auditing, audit to the needs of criminal investigations, as well as the integration of economic and forensic knowledge is a prerequisite for improving the effectiveness of crime prevention in financing social target programs.

One of the forms of using special economic knowledge in criminal proceedings is conducting forensic economic examinations, which is important for the investigation of crimes in the field of financing targeted social programs. This is due to the fact that the results of economic research in the form of an expert opinion is one of the sources of evidence in criminal proceedings, which is objective in nature and reflects correlations to ensure the criminal process to establish objective truth in a particular criminal proceeding and its solution in essence. Analysis of the process of proving in court proceedings as a separate case of cognition indicates that the solution of the vast majority of problematic situations that arise in the process of legal regulation requires reliance on sound, scientific specific expertise. The collection of evidence in the course of pre-trial investigation with the help of special knowledge is becoming increasingly important today, especially in cases where such knowledge is used in the form of forensic science.

Like any other forensic examination, forensic economic examination is appointed by the bodies of pre-trial investigation or by the court to solve problems related to the subject of evidence. Expert tasks arising from the tasks of each specific crime are in a certain direct or indirect dependence on the set of features that characterize the crime.

The expert conclusion is a detailed description of the research conducted by the expert and the conclusions drawn from their results, substantiated answers to questions posed by the person who involved the expert or the investigating judge or court that commissioned the examination (paragraph 1 of Article 101 of the Criminal Procedural Code of Ukraine) [1].

We should agree with V. V. Lysenko, who noted that forensic expertise differs from the expertise carried out in other areas of human activity and emphasized the following features:

ні злочинів, вчинених в економічній сфері України. *Наукові записки Львівського університету бізнесу та права.* 2013. Вип. 10. С. 83–88. URL: http://nbuv.gov.ua/UJRN/Nzlubp_2013_10_22 (Date accessed: 21.06.2019).

[1] Кримінальний процесуальний кодекс України (as subsequently amended) від 13.04.2012 № 4651-VI. *Відомості Верховної Ради України.* 2013. № 9–10, № 11–12, № 13. С. 88.

- preparation of materials for examination, the appointment of it carrying out is carried out in accordance with a special legal regulation that defines the rights and obligations of the expert; the subject who appointed the examination and the participants in the criminal proceedings;
- conducting research based on the use of specialized knowledge in various fields of science, technology, arts or crafts;
- formulate the forensic expert conclusion having the status of source of evidence in criminal proceedings [1].

Analysis of scientific papers shows that in many scientific sources there are no indications of differences between accounting and financial and economic research, they are often simply called accounting. P. P. Cheberyak notes that terminologically this is not entirely justified. Historically, the first to form a forensic accounting examination, otherwise known as the examination of accounts; later it was joined by planning and economic researches. He emphasizes that as a result of recent economic reforms, the transition to market conditions, planning and forensic economic examination has lost its relevance but the need for forensic financial and economic expertise has increased significantly. Currently, the unifying name is the term: Forensic economics consisting of two types: forensic accounting and forensic financial and economic examinations [2].

It is difficult to agree with the last statement of P. P. Cheberyak, because according to the current legislation in the areas of research economic expertise is divided into examinations: accounting and tax accounting; financial and economic activities; financial and credit operations and includes, accordingly, the study of documents of accounting, tax accounting and reporting, the study of documents of financial and economic activities, the study of documents of financial and credit operations [3]. It should also be emphasized that the problem

1 Лисенко В. В. Криміналістичне забезпечення діяльності податкової міліції (Теорія та практика): монографія. Київ: Логос, 2004. С. 210.

2 Чеберяк П. П. Завдання судових експертиз при розкритті й розслідуванні злочинів, вчинених в економічній сфері України. *Наукові записки Львівського-університетубізнесу та права.* 2013. Вип. 10. С. 83–88. URL: http://nbuv.gov.ua/UJRN/Nzlubp.2013.10.22 (Date accessed: 21.06.2019).

3 Інструкція про призначення та проведення судових експертиз, експертних досліджень та Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень : наказ Міністерства юстиції України від 08.10.1998 р. № 53/5 (as subsequently amended). Офіційний вісник України. 1998. № 46.

of classification of forensic economic examinations remains relevant today, as it has not only theoretical significance for the formation and improvement of the theory of forensic science. This situation is exacerbated by the fact that the classification of examinations is the basis for the development of expert methods, makes the whole process of expert research objective and creates a scientific basis for formulating the expert's opinion and evaluation by the investigating authorities and the court as sources of evidence. The practice of investigation and consideration by courts of crimes in the field of financing social targeted programs indicates that it is not uncommon for issues to be resolved beyond the expert's expertise, which indicates the difficulty of determining the initiator of the forensic economic expertise. There is also a lack of unity in the views of the characteristics of forensic economic expertise and among scholars, due to the lack of a single scientifically sound approach to the classification of forensics, the presence of differences in the wording of the subject and object of forensic economic expertise. Thus, N. V. Vodopyan believes that the subject of financial and economic expertise is reflected in the document information on financial and economic performance of the enterprise, corporatization, bankruptcy, lease, targeted use of budget funds that have become the subject of review of judicial and investigative bodies and in which respect questions are put to the decision of forensic expert [1].

According to P. P. Cheberyak, all types of forensic economic examinations examine one object - accounting and economic operations. On this basis, forensic economic examinations can be classified into the examination of the accounting process and the examination of economic transactions. The subject of examination of the accounting process are the laws of information reflection of economic activity in the accounting system of economic activities of economic entities are investigated to solve problems that arise in the investigation of economic crimes. The objects of such examination are the facts of economic activity and the accounting procedure [2].

Please note that the correct definition of the subject and object of forensic examination depends on the practical expert activities, limits of his competence in terms of determining the range of issues that he can solve. In a general sense, the subject of examination is its essential feature

1 Водоп'ян Н. Ф. Межі компетенції експерта при виконанні судово-економічних експертиз. *Теорія та практика судової експертизи і криміналістики:* зб. наук. праць. Харків: Право, 2008. Вип. 8. С. 464.

2 Чеберяк П. П. Op. cit.

determining nature and sources of knowledge of an expert in any area of specialization.

O. V. Khomutenko and S. V. Kudryashov defined the concept of the subject of forensic economics as: it is the factual data contained in the objects of research, and information about economic transactions (the state and results of economic activity of the subjects of economic relations) that are essential to the appointing authority and are established and obtained as a result of the examination of documents applying specific expertise in the field of economics [1]. Based on this, we can determine within forensic economics:

- forensic examination topic of accounting and tax accounting is reflected in the documents of accounting and tax accounting business transactions that have become the object of investigation or trial and in respect of which the expert provides the conclusion on raised issues;
- forensic examination topic of financial and economic activity are the regularities of informational reflection of economic activity in the system of economic indicators and other accounting and economic information, which reveals the content of economic transactions that are investigated to solve problems of detection and investigation of economic crimes; objects of such forensic examination are economic transactions;
- forensic examination topic of financial and credit transactions are reflected in the documents business transactions of banks and enterprises in relations with banks, that have become the object of consideration by judicial investigative bodies, in which respect, questions are raised to the expert decision.

In the investigation of crimes in the field of financing socially targeted programs, a special place is occupied by the use of economic knowledge including in the field of forensic accounting, through the use of which it is possible to prove the circumstances subject to mandatory proof. It should be noted that one of the features of the commission of crimes in the field of financing social target programs is that they are committed by officials using multi-pass combinations and involve the concealment of data in accounting documents. To detect such a crime and identify its signs, the investigator must use a set of scientifically sound effective methods of checking and investigating transactions with cash and non-cash payments. Certain methods of using special

1 Хомутенко О. В., Кудряшова С. В. Про предмет і об'єкт судової економічної експертизи Теорія та практика судової експертизи і криміналістики. Випуск 10. Харків: Право, 2010. С. 555.

economic knowledge are important for improving not only the practical methods of investigators, but also the theoretical provisions of forensic methods of investigating crimes in the field of financing social target programs. Scholars note that the study of certain methods of using special economic knowledge, their justification should be carried out directly by the investigator, prosecutor, judge, and indirectly with the participation of specialists, which are auditors, auditors, forensic experts [1].

Separate methods of verification and research on data in documents and records of accounting during the research on cash and non-cash payments are regulatory, arithmetic and formal verification, cross-checking and mutual control. These methods can be used by law enforcement officers themselves but in the vast majority of complex situations, a significant effect can be achieved with the help of accountants involved in inventories, audits or audits, or conduct research within the appointed forensic accounting examination.

Along with the document on the appointment of the examination (involvement of an expert), the expert should provide accounting and tax accounting documents, which contain the initial data to address the issues. Such documents may be income and expenditure invoices, tax invoices, warrants, reports of materially responsible persons, inventory cards, cash books, inventory materials, acts of audits, reports, orders, acts of acceptance of work performed, employment contracts, payment statements, bank statements , payment orders and claims, liability agreements, accumulative (circulating) information, journals-orders, memorial orders on balance accounts, general ledgers, registers of tax invoices, tax declarations, balance sheets and other primary and consolidated documents of accounting and tax accounting and reporting . If the accounting and tax accounting was carried out in electronic computing form, the expert is provided with the registers of accounting and tax accounting in printed form, which must be certified in the prescribed manner. Additionally, they can be provided at the request of the expert on electronic media. If the examination is appointed to verify the conclusions of the documentary audit, the document on the appointment of the examination (involvement of an expert) indicates which conclusions and for what reasons are in doubt (contrary to other case materials, unconvincingly substantiated by financial inspectors, etc.). If necessary, to determine which documents should be provided to the expert for research in each case, it is advisable to consult a forensic economist [2].

1 Чеберяк П. П. Op. cit.

2 Інструкція про призначення та проведення судових експертиз, експертних

For example, while investigation of in the field of financing socially targeted programs, law enforcement officers collect documents confirming the fact of lack or excess of funds in the treasury. The following shall be attached to the inventory act: extracts from orders on appointment of a person to certain positions; agreements on material liability of relevant persons; extracts from their employment records and characteristics; originals of illegal and questionable documents, accounting documents, cash reports, receipts, handwritten explanations of cashiers on the reasons for the facts of shortages, surpluses or theft of funds.

In addition, it is important to involve specialists to conduct a documentary audit, which takes into account the fact that an inventory of cash has already been conducted by the entity. Taking into account the results of the inventory, during the audit or audit on the basis of the analysis of settlement and cash documents, it is possible to establish signs that indicate the facts of misuse of cash. Inventory, audit or audit reports conducted prior to criminal proceedings are attached to the primary audit materials as source accounting information, which is indicative on the basis of that investigation can determine whether there are signs of a criminal act and whether they are sufficient for criminal proceedings [1].

For performing check of cash checks requires the help of specialists in the field of accounting, as well as the use of special forensic knowledge. At the same time, it should not be forgotten that cash receipts from the current account in the bank can be received only by those persons who are specified in the notarized card with samples of the company seal and signatures of persons authorized to receive money. That is why it is necessary to compare the seals and signatures in each of the checks with the prints of the seals and signatures of specific individuals. In such cases, a technical examination of documents and handwriting examination may be initiated.

While crime investigation in the field of financing socially targeted programs, special attention should be paid to checking the checks on the basis of which payments were made for purchased goods, and the debt for the purchase of products on credit was repaid. In these cases; it is possible to establish the signs of the crime, which indicate certain circumstances,

досліджень та Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень: наказ Міністерства юстиції України від 8.10.1998 р. № 53/5 (as subsequently amended). Офіційний Вісник України. 1998. № 46.

1 Еремин С. Г. Методы проверки и исследования бухгалтерской информации для установления доказательств по делам о преступлениях в сфере экономики. Аудит и финансовый анализ. № 2. 2007. С. 1–8.

including: the unreasonable crediting of money to the accounts of fictitious organizations in the form of funds received for prepayment for services; for cash transfer associated with the misappropriation of certain amounts on virtually non-cash payment documents [1].

While crime investigating in the field of financing socially targeted programs, the investigator and prosecutor, after checking the documents, must count the money received at the box office and issued through the box office for each day and throughout the period to be checked. In case of discrepancies in each of the amounts, explanations of the reasons for their formation should be obtained from the head, chief accountant and cashier of the organization. Each of them provides such explanations separately without prior acquaintance with the explanations of others, as their explanations are further compared with the explanations and testimonies obtained during the interrogation of bank employees who process payment orders for the transfer of funds for non-cash payments and checks for issuance of cash for business trips, expenses for various domestic purchases, etc. The outlined measures make it possible to identify the subject of the crime in the field of financing socially targeted programs, which can be both an individual official and a group of persons who acted with joint intent.

Forensic accounting and tax reporting of criminal offenses in the field of financing social targeted programs related to theft of funds during cash transactions is intended not only to confirm or refute the validity of audit findings or audits and audits for audit offenses that took place in the activities of the enterprise or institution and contributed to the commission of the crime, to determine:

- size of the actual material damage;
- persons involved or guilty of their task;
- shortcomings in the organization of accounting and control, etc.

Accounting documents that were the source of the audit or audit, as well as the facts and records established after their conduct that are relevant to the criminal proceedings, are subject to expert examination. The expert economist uses formal, normative, arithmetic checks, mutual control, cross-checks of interconnected cash transactions.

Conclusions. Thus, in order to prove the circumstances of committing crimes in the field of financing socially targeted programs, in most cases it is advisable to appoint forensic economic examinations. The

1 Голубятников С. П. Использование банковских документов при выявлении хищений в клиентских организациях: учеб. пособ. Нижний Новгород: Нижегородский юридический институт МВД Росии, 1997. С. 26–27.

appointment of such an examination is preceded by complex investigative work, which includes a thorough study of documentary audit materials, extraction and study of additional documents, interrogation of officials and responsible persons who participated in the implementation of targeted social programs, and other investigative actions. The subject of such examination is the actual data related to the distribution and use of budget funds and funds, negative deviations in these processes and financial planning, which affected the financial indicators and related results of economic activity, as well as the circumstances that contributed to committing crimes due to non-compliance with financial discipline. At the time of the appointment of a forensic economic examination, the materials of the criminal proceedings must contain complete information about the event to be investigated by the expert. All collected real and fictitious documents, informal notes of materially responsible persons must be attached to the materials of the proceedings; all persons who can testify about the crime in the field of financing socially targeted programs were interrogated, and all examinations were conducted, the conclusions of which can be used by a forensic economist.

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Д. В. Вітер

СУДОВО-ЕКОНОМІЧНА ЕКСПЕРТИЗА У ДОВЕДЕННІ ОБСТАВИН, ЩО ПІДЛЯГАЮТЬ ОБОВ'ЯЗКОВОМУ ДОКАЗУВАННЮ ПРИ РОЗСЛІДУВАННІ ЗЛОЧИНІВ У СФЕРІ ФІНАНСУВАННЯ СОЦІАЛЬНИХ ЦІЛЬОВИХ ПРОГРАМ

Сліди злочинної діяльності у сфері фінансування соціальних цільових програм часто знаходять своє відображення у низці документів, якими ця діяльність оформлюється й супроводжується. У статті підкреслюється, що результати економічного дослідження у вигляді висновку експерта є одним із джерел доказів у кримінальному провадженні, яке має об'єктивний характер щодо встановлення істини та його вирішення по суті. У статті звернено увагу на те, що від правильного визначення предмета та об'єкта експертизи залежить практична діяльність експерта, межі його компетенції в аспекті визначення кола питань, які він може вирішувати. Встановлено, що однією з особливостей вчинення злочинів у сфері фінансування соціальних цільових програм є те, що вчиняються вони посадовими особами із використанням багатоходових комбінацій та пов'язані із приховуванням даних в документах бухгалтерського обліку. Доведено, що до матеріалів провадження повинні бути додані всі зібрані дійсні та фіктивні документи, допитані всі особи, які можуть надати свідчення щодо події злочину, а також проведені всі експертизи, висновки яких можуть бути використані експертом-економістом для надання висновку експерта.

Ключові слова: злочини, фінансування соціальних цільових програм, економічні знання, судово-економічна експертиза, перевірка, доказування.

Д. В. Витер

СУДЕБНО-ЭКОНОМИЧЕСКАЯ ЭКСПЕРТИЗА В ДОКАЗАТЕЛЬСТВЕ ОБСТОЯТЕЛЬСТВ, КОТОРЫЕ ПОДЛЕЖАТ ОБЯЗАТЕЛЬНОМУ ДОКАЗЫВАНИЮ ПРИ РАССЛЕДОВАНИИ ПРЕСТУПЛЕНИЙ В СФЕРЕ ФИНАНСИРОВАНИЯ СОЦИАЛЬНЫХ ЦЕЛЕВЫХ ПРОГРАММ

Следы преступной деятельности в сфере финансирования социальных целевых программ часто находят свое отражение в ряде документов, которыми эта деятельность оформляется и сопровождается. В статье подчеркивается, что результаты экономического исследования в виде заключения эксперта являются одним из источников доказательств в уголовном производстве, который имеет объективный характер для установления истины и решения дела по сути. Обращается внимание на то, что от правильного определения предмета и объекта экспертизы зависит практическая деятельность эксперта, границы его компетенции в аспекте определения круга вопросов, которые он может решать. Установлено, что одной из особенностей преступлений в сфере финансирования социальных целевых программ является то, что они совершаются должностными лицами с использованием многоходовых комбинаций и связанных с сокрытием данных в документах бухгалтерського учета. Доказано, что к материалам уголовного производства должны быть присоединены все собранные истинные и фиктивные документы; допрошены все лица, которые могут предоставить информацию, относящуюся к событию преступления; а также проведены все экспертизы, заключения которых могут быть использованы экспертом-экономистом для предоставления заключения эксперта.

Ключевые слова: преступления, финансирование социальных целевых программ, экономические знания, судебно-экономическая экспертиза, проверка, доказывание.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.32
UDC 343.98:33

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FORENSIC ECONOMICS AS A REGIONAL INSTRUMENT FOR SUPPORTING MANAGEMENT DECISIONS

Isolation of economic information of conflict situations created by Forensic Science Institutes on the basis of general array of economic information and the study of the mechanism and its impact on management decisions, improvement of the mechanisms for its creation will allow to obtain the economic effect of a positive impact on management decisions in the long term. Information that arises when resolving conflict situations in the economic sphere subsequently acts as a regulator of managerial decisions of other business entities in the region, and a forensic economic examination generates relevant information, an instrument for supporting managerial decisions. The activities of a single research institute of forensic examinations of the Ministry of Justice of Ukraine has a regional status, regional isolation and regional effectiveness, that is, we are dealing with an object, first of all, at a regional level of integrity and manageability. At the same time, all research institutes of forensic examinations of the Ministry of Justice of Ukraine work on the same principles and use the same forensic examination methods included in the Register of Certified Expert Techniques.

Keywords: economic information of conflict situations; management decisions; regional level.

Formulation of Research Problem. The role of the component that simultaneously reflecting properties of the regional economy and provides constant changes in its structure by supporting management decisions, is performed by information. Information and information systems in the economy form the institutional management conditions, productivity, exchange process determining relevance of the article topic.

Analysis of Recent Researches and Publications. Numerous works of foreign and domestic scientists D. Bell, N. Wiener, F. Weber, A. Toffler, A. Ursul, K. Shannon, L. Melnik, V. Trofimov, V. Glushkov, R. Nizhegorodtsev, M. Castells, B. Gates [1]. are devoted to the study of information and development

[1] Шеннон К. Работа по теории информации и кибернетике. Москва: ИЛ.

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of information systems and technologies. In recent years, V. P. Kamsha, V. V. Lidovsky, V. S. Tsymbalyuk, and Z. V. Partiko[1]. have devoted their works to this problem. The functioning of regional economies and the economy as a whole is impossible without its quality information support. Of great importance in this process is the information generated on the border of the interaction of economic processes and legal norms of management [2]. This information is created in audit activities, control systems, monitoring models, audits, forensic economic examinations and expert research. Nowadays, information created as a result of resolving conflict situations of an economic nature is strengthening its role in the process of economic development and new economic relations. Despite the fact that information issues are widely and thoroughly studied, there is reason to consider little studied such a place as the place of information created during forensic economic examinations in the formation of economic relations at the regional level at the stage of management decisions.

The Article Purpose is to substantiate the focus on forensic economics as a regional tool for supporting managerial decisions.

Main Content Presentation. The most significant contribution to the resolution of economic conflicts is made by forensic economic expertise, which is legally defined as mandatory in the judicial settlement of certain disputes of an economic nature. According to Art. 242 of the Criminal Procedural Code of Ukraine of Ukraine, investigator or prosecutor is obliged to apply to the investigating judge for an examination to determine the amount of pecuniary damage caused by a criminal offense [3].

Forensic economic examination which one of the tasks is to establish the elements of economic crimes that require special economic knowledge, is involved in the destruction of illegal behavior in the field economy.

The driving force for the launch of appropriate mechanisms is the qualification of such systems of conduct as illegal in criminal law. Thus, the development of Ukrainian competitive economy directly depends on

1963. 19 с; Винер Н. Кибернетика или управление связями в живом организме и машине. Москва, 1968. 166 с.

[1] Камша В. П., Камша Л. С., Камша Ю. В. Про кібернетику другого етапу НТР. Складні системи і процеси. 2010. № 1(17). С. 25–41; Лидовский В. В. Теория информации: учеб. пособ. Москва: Компания Спутник+, 2004; Цимбалюк В. С. Інформаційне право (основитеорії і практики). Київ: Освіта України, 2010; Партико З. В. Теорія масової інформації та комунікації. Львів: Афіша, 2008. 292 с.

[2] Хомутенко О. В. До питання про формування поняття «Експертна економічна інформація». *Судова експертиза. Сучасний стан та перспективи розвитку:* тези доповідей міжнародної наук.-практ. конф. Київ: Міністерство юстиції України, 2010. С. 338–341.

[3] Кримінальний процесуальний кодекс України № 4651-VI від 13.04.2012. URL: http://www.zakon.rada.gov.ua (Date accessed: 10.03.2019).

the perfection of its criminal law. Criminal schemes of economic activity losing their basic qualities, characteristics and parameters that make them criminal, create the preconditions for the formation of systems of economic interactions of a new level. "Chaos - reveals the positive role of chaos and believes that everything new is created through chaos, which is understood as a state of the system of any nature, when it loses its basic qualities, characteristics and parameters" [1].

Based on the principles of economic synergetic (a new direction of economic analysis) that shifts the center of gravity to such phenomena as imbalance and nonlinearity in the development of economic systems, destruction, including criminal schemes of interaction, is a natural stage of economic development. region. Therefore, it is natural to have the tools to ensure this process.

From the point of view of law, forensic economic expertise is a procedural action, the author considers as a modern form of one of the tools involved in a set of actions to destroy forms of undesirable economic systems, creating "chaos" as a prerequisite for creating new ones. At the same time, formation of these preconditions does not fully ensure the fundamental quality of the new systems of economic interactions only guarantees their difference from the destroyed ones "in this place, at this time".

In the conditions of the imperfection of the legislation governing economic relations, the legislation that does not provide conditions for the development of economic entities in the legal field; the destruction of old criminal schemes of economic relations causes at the first stage the formation of marginal behavior of economic entities, internally disagreeing with the requirements of law governing economic relations. In the second stage, such destruction causes the formation of new criminal schemes of economic relations of a higher level of perfection, aimed at counteracting their destruction.

Thus, the process of forming a quality economy should be aimed not only at eliminating the consequences of undesirable for the economy of the region management decisions, not only at forming a "fear" of being punished, but also at creating preconditions for managers at the micro level to make positive decisions. direction of economic development of the region as a whole. The chaos created by the destruction of undesirable patterns of economic behavior is constructive. "… Constructive chaos is constructive through its destructiveness and thanks to it, destructive on the basis of constructiveness and through it. Destroying it builds and the system leads to destruction" say

[1] Решетило В. П. Синергия становления и развития региональных экономических систем: монография. Харьков: 2009. С. 11.

well-known experts in the field of synergetic E. Knyazev and S. Kurdyumov [1]. Thus, the process of building a quality economy is infinitely long, because everything that is built must be destroyed to build a new, more perfect.

Formation of business culture along with the impossibility of complete destruction of undesirable patterns of economic behavior provides a certain relationship between order and chaos caused by the destruction of the relevant patterns of behavior. "The whole of Nature is created in such a measured and rhythmic way, always reserving a place for the incubation period" [2]. The information that arises in resolving conflict situations related to the destruction of undesirable patterns of economic behavior and the consequences of this destruction, further acts as a regulator of management decisions of other economic entities at the crossroads between "quality economy" and "shadow economy". Indeed, management decisions always use information about their possible consequences by analyzing the results of the behavior of other entities in similar situations. An analysis of the possibility of an economic conflict with a counterparty or the state and the results of resolving such a conflict. Through this mechanism, the information generated in the area of economic conflict affects (regulates) management decisions.

In addition, forensic economic expertise provides direct support to management decisions through the mechanism of appointment of expert economic research on issues important for their adoption. Within the competence of the expert economist, it is possible to solve a wide range of tasks that can provide information support for management decisions of an economic nature.

While forensic activities, clarification of economic information distorted as a result of economic crimes or errors is carried out (indicators of financial, tax reporting are specified or information on their distortion is refuted). The result of the process of refining economic information is to improve its quality as a whole, which is also the basis of any management decision.

Thus, forensic economic expertise is involved in supporting economic decision making in three aspects:

- provides answers to the immediate questions that need to be clarified to make a decision;
- specifies economic information distorted by economic crimes or mistakes, strengthening the basis for managerial decision making which is this information;

[1] Cit.ex. Решетило В. П. Экономическая синергетика институциональных изменений. : монография. Харьков: Прометей. Пресс, 2006. С.18.

[2] Решетило В. П. Економічна синергетика формування ринкового трансформаційного потенціалу в перехідних системах. *Економіка:* зб. наук. праць. Харків: ХДПУ, 2003. С. 137–141.

- participates in the formation of information on the resolution of conflicts of economic nature that is taken into account by managers when making certain decisions, in order to prevent the occurrence of undesirable consequences.

Separation of economic information of conflict situations from the general mass of economic information and study of the mechanism, consequences of its influence on management decisions, improvement of mechanisms of its creation will allow to gain economic effect from positive influence on management decisions in the long run.

Any business entity that is the bearer of managerial decisions operates not in a vacuum, but on a specific platform (based on a specific region) with its own peculiarities and unique structure of relations.

The need for spatial perception of the economy is determined by the awareness of the limited use of the territory only for purely economic activities. Practice confirms the need for multi-purpose organization of the territory (along with economic, such as environmental, ecological, recreational). The importance of the properties and qualities of the territory, the region as a kind of indicator of the state of the human environment. Now the territory is beginning to be perceived as a natural basis for any economic activity, as a basis for consolidating the interests of certain social groups, managing various forms of management, various social activities. Thus, in modern conditions, a qualified economist who studies the peculiarities of production, consumption, must not only know the specifics, problems and conditions of a particular enterprise, but also take into account the multifaceted spatial forms of economic activity, the specifics of regional conditions and development of complexes[1]. In other words, while formation of management decisions it is also necessary not only to know the specifics, problems and conditions of management of an individual enterprise, but also to take into account the spatial forms of economic activity, specifics of regional conditions of enterprises and development of complexes.

Therefore, it is important to formulate views on judicial economic expertise as a tool to support managerial decisions lies precisely in the regional aspect of application.

Organizationally, forensic economists are included in the structure of forensic research institutes of the Ministry of Justice of Ukraine and other subjects of forensic activity [2]. There are three interrelated processes in the activity of the economic segment of forensic activity: organizational-procedural (examination); information (regulatory framework, factual

[1] Регіональна економіка: підручник. Вінниця: ВДАУ, 2008. 434 с.

[2] Про судову експертизу: Закон України від 25 лютого 1994 року № 4038-XII. URL: http://www.zakon.rada.gov.ua (Date accessed: 15.02.2019)

information on business transactions, high-quality and reliable source information: expert opinion taken into account in the courts); economic process (financing, tariffs, cash flows, effect of activity).

There is a special, legally approved procedure for examination (expert research) and there are requirements for the final result of the conclusion[1]. Ultimate result of forensic economic examination: the conclusion should be characterized by validity, accurate economic calculations, objectivity and completeness of the study. The opinion of experts is considered by the body that appointed it and uses it as a source of evidence in making decisions of economic and legal content.

The forensic activity on economic issues itself leads to the acquisition of experience, the formation of a data bank on the results of conflict situations, and takes part in the process of property protection and criminal law relations.

The result of expert work is a package or database contained in the conclusions of the forensic economic examination. This bank contains a high-quality information base for the analysis of economic conflict situations in the region and the development of recommendations for certain management decisions by economic entities based on information on the origin and results of economic disputes.

The regional aspect of forensic economic expertise is manifested in the fact that, first, the very organizational structure of forensic science in Ukraine is formed through a network of subjects of expert justice and their regional offices that have a certain service area. On the example of the network of institutes of forensic examinations of the Ministry of Justice of Ukraine it can be noted that the structure of the performed works, its volumes, scientific and methodical work of each has its own peculiarities. At the same time, in the author's opinion, the number and structure of examinations performed by a particular forensic institute of the Ministry of Justice of Ukraine is rather a specificity of the region served by the institute and to a lesser extent an indicator of the institute efficiency. This is evidenced by the fact that individual laboratories of forensic economic examinations fulfill the entire volume of orders received by them, and the number of employees is regulated by the volume of work received for execution. As an example, we can also cite the increase in the volume of military examinations performed, which is caused by the conduct of hostilities on the territory of Ukraine, and not by the fact that certain structural units began to work better.

[1] Інструкція про призначення та проведення судових експертиз та експертних досліджень та Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень: затв. наказом МЮУ від 08.10.1998 р. № 53/5. *Офіційний вісник України.* 1998. № 46. Ст. 1715.

Secondly, these regional branches (institutes) close the cash flows to the region (expenses, profits, taxes) and thus participate in the economic processes of the region.

Thirdly, the region as a system and its component (forensic institutions) are connected with the fact that the institute invests all the positive influence of its work (research results) into the economic systems of its region, increasing in them the culture of business and thereby reducing the level of conflict potential. economic activity in the region.

Fourthly, general decisions of the regional governing bodies and the regional regulatory acts are the norms and set-pieces for direct implementation by all regional entities, including those that are binding on the institution.

On this basis, it can be determined that Forensic Science Institutions and their structural units have a specific spatial affiliation of the region, a clearly defined area of activity included in the economic and social structure of the region and subordinated to the regional management system in solving regional problems. Thus, some institutions of forensic science and their activities are an active part of the impact on regional governance and development, part of the economic mechanism of the region (cash flows, statistics, tax revenues, etc.), part of the regional information system. At the same time, the standardization of forensic economic expertise conclusions, regardless of the region of their preparation, is ensured by the possibility of re-examination in a region other than the primary one, the functioning of the forensic economic expertise section of the scientific advisory and methodological council of the Ministry of Justice of Ukraine forensic examinations of Ukraine regardless of the region.

The regional specificity of the Forensic Science Institutions of the Ministry of Justice of Ukraine in the area ofeconomic expertise is also reflected in the research methods they are developing.

Method topic developed by the institutes reflects the peculiarities of the regions of functioning of the respective institutes: usually the regional KhRIFE develops those directions of methodological support that are most characteristic for work in the given region, which indicates the main vectors of economic conflicts. Methodical work in favor of specialization of forensic experts.

Conclusions. Thus, the activity of a separate research institute of forensic examinations of the Ministry of Justice of Ukraine has a regional status, regional closure and regional effectiveness, i.e. we are dealing with an object, first of all, a regional level of integrity and manageability. At the same time, all research institutes of forensic examinations of the Ministry of Justice of Ukraine work on the same principles and use the same methods of conducting forensic examinations, included in the Register of certified expert methods. Information that arises in resolving conflict situations related

to the destruction of undesirable patterns of economic behavior and the consequences of this destruction, further acts as a regulator of management decisions of other economic entities in the region, and forensic economic expertise conducted during conflict resolution. situations and generates relevant information, namely: a tool to support management decisions.

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О. В. Хомутенко

СУДОВА ЕКОНОМІЧНА ЕКСПЕРТИЗА ЯК РЕГІОНАЛЬНИЙ ІНСТРУМЕНТ ПІДТРИМКИ УПРАВЛІНСЬКИХ РІШЕНЬ

Відокремлення економічної інформації конфліктних ситуацій, що створюється у сфері судових експертиз із загального масиву економічної інформації та вивчення механізму та наслідків її впливу на управлінські рішення, удосконалення механізмів її створення, дозволить отримати економічний ефект від позитивного впливу на управлінські рішення в довгостроковій перспективі. Діяльність окремо взятого НДІ судових експертиз Міністерства юстиції України має певний регіональний статус, регіональну замкнутість і регіональну результативність, тобто ми маємо справу з обєктом, перш за все, регіонального рівня цілісності і керованості.

Ключові слова: економічна інформація конфліктних ситуацій; управлінські рішення; регіональний рівень.

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СУДЕБНАЯ ЭКОНОМИЧЕСКАЯ ЭКСПЕРТИЗА КАК РЕГИОНАЛЬНЫЙ ИНСТРУМЕНТ ПОДДЕРЖКИ УПРАВЛЕНЧЕСКИХ РЕШЕНИЙ

Выделение экономической информации конфликтных ситуаций, которая создается ННИ судебных экспертиз из общего массива экономической информации и изучение механизма и ее влияния на управленческие решения, совершенствование механизмов ее создания позволит получить экономический эффект от положительного влияния на управленческие решения в долгосрочной перспективе. Информация, которая возникает при решении конфликтных ситуаций в экономической сфере, в дальнейшем выступает регулятором управленческих решений других хозяйствующих субъектов в регионе, а судебная экономическая экспертиза формирует соответствующую информацию-инструмент поддержки управленческих решений. Деятельность отдельно взятого НИИ судебных экспертиз Министерства юстиции Украины имеет региональный статус, региональную замкнутость и региональную результативность, то есть мы имеем дело с объектом, прежде всего, регионального уровня целостности и управляемости. При этом, все НИИ судебных экспертиз Министерства юстиции Украины работают на одинаковых принципах и пользуются одинаковыми методиками проведения судебных экспертиз, включенными в Реестр аттестованных экспертных методик.

Ключевые слова: экономическая информация конфликтных ситуаций; управленческие решения; региональный уровень.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.33
UDC 615. 46/47

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PECULIARITIES OF FORENSIC MERCHANDISING EXAMINATION OF MEDICAL SUPPLIES

This article outlines the issues of conducting forensic examination of medical goods. The focus is on regulating the turnover and sale of such goods by relevant regulatory and technical documents. According to the results of expert practice, the need for the creation of the research work "Methodological recommendations for merchandising research of medical goods" was revealed. In order to optimize the work, the study focuses on the classification of goods. Despite the fact that the life and health of each of us depends on the safety and effectiveness of medical products, the transparency and clarity of the settlement of legal relations in the production and circulation of these products guarantee its quality. Due to the imbalance of the economy, there is a cessation or significant decrease in the volume of production of the pharmacy assortment, at the same time, the market is saturated with low-quality or counterfeit goods. The main areas of falsification: assortment, quality, value, quantity, information. The elimination or suspension of these negative processes in practical pharmacy can be helped by careful application of merchandising analysis at all stages of product distribution, including when placing an order for a product, accepting, evaluating it by quantity and quality, as well as when stored in a pharmacy warehouse, pharmacy or medical preventive institution. Commodity analysis allows you to identify high-quality medical supplies by the organoleptic method, check their quantity, assortment accessories, evaluate their safety and the like. The following types of merchandising analysis are distinguished: documentary, qualitative, quantitative, assortment and complex. An integral part of any product is its labeling - a carrier of relevant information both about the product itself and about items related to its circulation. Starting January 1, 2019, mandatory marking was introduced using units of the International System (SI). Changes in the legislative framework regarding the taxation of medical goods affect their value.

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Key words: forensic expertise, turnover, quality, merchandising analysis, falsification, labeling, taxation.

Formulation of Research Problem. While performing research, a forensic expert while forensic examination uses approved methods and guidelines for the relevant groups of goods. Creation of research work is of particular relevance which purpose is to address issues of determining product types or groups of goods by their functional characteristics, labeling, selection of regulatory and technical documentation for commodity quality assessment, selection of assessment methods, storage conditions, packaging and packaging for the quality of medical supplies.

Analysis of Recent Researches and Publications. Research on of medical supplies was covered in research papers of such authors as B. P. Gromovyk, N. B. Yarko, I. Ya. Gorodetskaya, O. M. Kornienko, N. L. Khanyk [1] in general or specific aspects.

Article Purpose. The purpose of the article is to announce the work on the R&D Topic: Methodical Recommendations for Merchandising Research on Medical supplies.

Main Content Presentation. Research on medical supplies that are the objects of forensic examination has been conducted very rarely, but recently the need for examinations for it is constantly growing. In order to optimize the work, it is necessary to be able to classify goods on various grounds to identify goods by the codes of the Classifier of Goods and Services (SCGS).

Classification of goods: ordering and distribution of goods on the basis of certain characteristics by classes and smaller divisions that can be independent of each other or be in logical sequence and subordination.

Classification of products and services is carried out according to national classifiers developed both at the level of individual enterprises (organizations) and at the level of states.

There are such levels of classifiers:

- international: standard classifiers used worldwide;
- interstate: classifiers used within economic unions and other interstate associations, for example, classifiers used in the EU, CIS countries, etc.;
- national/inter-sectoral: classifiers used within the country (they should not contradict international classifiers);

[1] Громовик Б. П., Ярко Н. Б., Городецька І. Я., Корнієнко О. М., Ханик Н. Л. Медичне і фармацевтичне товарознавство: Товари аптечного асортименту: навч. посіб. Вінниця: Нова Книга, 2011. 496 с.

- sectoral: classifiers used within one industry;
- system or local classifiers adopted by an individual enterprise (organization) for use within its automated system.

At the state level, there is a single system of classification and coding of technical and economic information [1].

In merchandising field y, the classification object is goods, their properties, quality indicators, as well as raw materials for their production, methods of evaluation and types of quality control, etc.

Classification methods are a set of ways to divide certain objects into subsets. Classifiers use two classification methods: hierarchical and faceted. The choice between these methods depends on the characteristics of the relevant subject area.

Currently, the circulation issue of medical goods is regulated mainly at the level of resolutions of the Cabinet of Ministers of Ukraine and regulations of the Ministry of Health. There is no law regulating legal relations in the field of production and circulation of medical supplies.

Circulation of medical supplies: activities related to the development of new medical supplies, the production of their prototypes, the conduct of toxicological studies, technical and clinical (medical) tests, the organization of production and production, storage, transportation, importation into the customs territory of Ukraine and export, shipment, wholesale and retail sale (trade), acquisition, exchange, free provision, operation, advertising, disposal and destruction, including from state registration, entry into the state register, provision of the population, health care institutions and other institutions, licensing of activities in the field of circulation of medical devices, certification, state control of production and control of their quality, safety and efficiency and other related activities with medical products.

Given that the safety and efficacy of medical supplies depend on each of us, the transparency and clarity of the legal relationship in the production and circulation of these products will guarantee its quality.

Product quality is a set of its properties and characteristics that give it the ability to meet the stipulated or anticipated needs of the buyer. Quality does not include all the properties of the product, but only those that are related to meeting specific needs in accordance with the purpose of the product. In addition to consumer characteristics, quality includes those that ensure compliance with the requirements of designers, manufacturers, workers in the field of circulation that are relevant to the product. An important task of commodity science is to identify the maximum set of product properties that are responsible for its quality. These properties can be manifested at all stages of the product life cycle.

[1] Ibid.

In recent years, urgency of the problem of quality of medical supplies sold to the population and medical institutions has increased significantly. Commodity analysis allows you to identify quality medical products by organoleptic method, check their quantity, range, assess their safety etc.

Quality assessment and methods of its determination are one of the important tasks of commodity analysis. The main purpose of creating a quality management system for medical devices in pharmacies and hospitals is to organize a set of activities that provide the consumer with high quality medical care.

High quality of goods of the pharmacy assortment is ensured by quality control of raw materials, metrological control of equipment working and residual quality control of finished products, development of requirements for storage conditions and implementation with subsequent control over compliance with these requirements.

The quality indicator is the quantitative and qualitative characteristics of the properties of the goods determining conformity of its production, operation or consumption.

Quality indicators are purpose, reliability and durability. Purpose: the ability of the product to meet the physiological and social needs of consumers. Purpose is one of the defining properties of product quality. If the product does not satisfy the consumer for its intended purpose then other properties lose their appeal.

Purpose properties depending on the needs are divided into subgroups of functional, social, classification and universal purpose, which determine the main functions of the product, as well as its characteristics: composition indicators, structure and technical level. Indicators of composition and structure depending on the type of product are different. For example, in metal medical devices the percentage of separate elements is defined; in hollow rubber products: tightness, mechanical properties, elasticity, etc.

Functional properties determine the ability of goods to perform their essential functions and meet the needs. They are characterized by the following qualities:

- fulfillment of the basic function characterizing the degree of satisfaction of the most significant need when used for its intended purpose;
- perfection of auxiliary operations determined by the peculiarities of the functioning of the products at different stages of the technological cycle of goods movement;
- versatility of use, determining the range of conditions and methods of operation of the product for its intended purpose.

While determining the functional properties, it is necessary to establish the main purpose of the product and the conditions of use for its intended purpose, which provide the most complete satisfaction of needs. For cutting tools it is the sharpness of the cutting edges, ensuring high quality of the cut depending on the properties of the fabric, etc.; for clamping automaticity and durability of fabrics; while closing there should be no skew of sponges, etc.

Social purpose: ability of goods to meet individual and social needs. Indicators of this purpose often include the appearance of goods, composition and content of their individual components. These indicators undergo significant changes over relatively short periods, so many manufacturers resort to a strategy of constantly maintaining a high level of product quality.

Classification Purpose: ability of certain properties and indicators to act as classification features, which may be indicators or properties (functional properties of medical products, etc.).

Universal Purpose: ability of properties and metrics to meet a variety of needs[1].

In order to meet quality requirements, particular attention should be paid to storage conditions.

Medical products have a shelf life, that is, a period during which they retain therapeutic effect and are in conditions that meet the requirements of the current regulatory and technical documentation.

The shelf life is determined by the regulatory and technical documentation.

Medical supplies should be stored separately in groups:

- rubber products;
- plastic products;
- dressings and accessories 1.

Quality assessment and methods of its determination are one of the important tasks of commodity analysis. The main purpose of creating a quality management system for medical devices in pharmacies and hospitals is to organize a set of activities that provide the consumer with high quality medical care.

High quality of medical goods is ensured by quality control of raw materials, metrological control of equipment by working and residual quality control of finished products, development of requirements for

[1] Про затвердження Положення про організацію лікування, медичної реабілітації та забезпечення потерпілих внаслідок нещасного випадку на виробництві та професійного захворювання лікарськими засобами та виробами медичного призначення: постанова від 09.06.2010 № 18. База даних «Законодавство України»/ ВР України. URL: https://zakon.rada.gov.ua/ laws/show/z0489-10 (Date accessed: 26.06.2019).

storage conditions and implementation with subsequent control over compliance with these requirements.

Most medical products have their own specific quality indicators, which can change under the influence of temperature, humidity, various gases and air, light radiation, microorganisms and more. For example, for dressings it is hygroscopicity, capillarity, neutral reaction of water extract, etc., which must meet the requirements of NI [1].

In spite of the existing state system of quality control, safety of pharmacy products and protection of consumer rights, due to the imbalance of the economy, their production is stopped or significantly reduced, while at the same time the market is saturated with low quality or counterfeit goods. The main areas of falsification are:

1. Assorted falsification of goods – forgery, which is carried out by the complete or partial replacement of goods of one type or designation of goods of another type or designation, while maintaining the similarity of one or more features.
2. Qualitative forgery is the replacement of a higher quality product with a lower quality product.
3. Cost forgery is misleading the consumer by selling low-quality goods at prices of high quality or goods of smaller size at prices of goods with large size characteristics.
4. Quantitative falsification is the misleading of the consumer by significant deviations from the parameters of the goods (e.g. bandage length), exceeding the norms of normative documentation.
5. Information fraud is the misleading of the consumer by means of inaccurate or distorted information about the product, in the accompanying documents, on the consumer marking, in advertising. Most often distorted: product name, barcode, quantity, manufacturer, country-manufacturer.

Eliminating or suspending these negative processes in practical pharmacy can be aided by careful application of commodity analysis at all stages of the movement of goods, including when placing an order for a product, receiving it, evaluating it by quantity and quality, as well as storage at a pharmacy warehouse, at a pharmacy or health care facility.

In order to objectively evaluate the quality of domestic and imported goods, it is necessary to evaluate their quality, quality, competitiveness, etc.

The purpose of commodity analysis is:

[1] Баранова І. І., Коваленко С. М., Семенів Д. В. та ін. Медичне та фармацевтичне товарознавство: підруч. для студентів вищ. навч. закл. Харків: НФаУ: Золоті сторінки, 2017. 320 с.

1. The study of the basic characteristics of the goods that make up its consumer value, as well as their changes through all turnover stages.
2. Determination of conformity of consumer properties of a given product to a set of requirements and indicators which collectively determine its quality.
3. Identification of conformity of this product to certain indicators of regulatory documentation.

The main tasks of merchandising analysis:

1. Determination of correctness of registration of supporting documentation.
2. Checking the correspondence of the quantity of the ordered goods with the data specified in the accompanying documents.
3. Analysis of the assortment of the goods ordered: establishing the conformity of the goods to the class, group, type or variety indicated in the accompanying documentation.
4. Identification of conformity of real indicators of quality of goods with the requirements established by NI.
5. Identification of goods by description, marking and packaging.
6. Registration of appropriate documentation in case of discrepancy between quantity and quality of goods.

Merchandising analysis includes the assessment of organoleptic properties and basic quality indicators, which brings it closer to the evaluation of the product by the consumer. In this regard, there are the following types of commodity analysis: documentary, qualitative, quantitative, assortment and complex.

The documentary analysis consists in the expert assessment of the merchandising characteristics of the commodity, based on the information in the shipping and other documents.

Qualitative analysis involves assessing the quality characteristics of a product to determine their compliance with regulatory requirements.

This type of analysis is used to receive a product by quantity, and to determine the quantitative loss of the goods and the causes of their occurrence.

Assortment analysis is an expert assessment of quantitative and qualitative characteristics of the product to establish its assortment affiliation. Often, this analysis is part of a qualitative analysis, since the quality assessment should identify the product, i.e. check the conformity of the assortment of the product to its name, article, trademark, indicated in the marking and accompanying documents.

Comprehensive analysis is an expert evaluation of all product characteristics based on their testing and document analysis.

An integral part of any product is its labeling — a carrier of relevant information about the product itself and about items related to its circulation. This can be both information that placement is stipulated by law, and additional information necessary for producers, consumers and other parties involved in the circulation of this product.

Labeling is designed to identify the product, its individual consumer properties, provide information about the manufacturer, qualitative and quantitative characteristics. There are specific requirements for labeling: clarity and unambiguity of text and illustrations; clearness; compliance with the consumer properties of the product; reliability: information provided should not mislead the recipient and consumer about the quantity, quality of the manufacturer, country of origin, etc.

While inspection, information of labeling on the packaging (according to the orders of the Ministry of Health of Ukraine) and in the accompanying documents that should be identical, is analyzed. If there are discrepancies in the information on the packaging and in the documents, this can be the result of counterfeiting.

On February 1, 2008, in accordance with the order of the State Consumer Standard of Ukraine No. 294 of 01.11.2007 [1], the national standard was introduced that is identical to the translation of EN 980:2007: Graphical symbol for use in the labeling of medical devices.

This document is designed to establish uniform labeling requirements for both domestic and foreign medical devices. The standard defines graphic symbols that are most commonly used by the manufacturer to provide information on medical devices (including in vitro laboratory diagnostic devices) and are intended to reduce the need for multiple translation of words into different national languages.

In most European countries, EN 980: 2007 has ceased to be valid and has been replaced in 2012 by EN ISO 15223-1: 2012 that does not change the symbols and designations of EN 980: 2007 but only introduces some new ones.

For example, the marking of medical gauze bandages in accordance with the NI should include the name of the manufacturer and its trademark and address, name and size of bandage, standard designation, sterile or non-sterile, date of manufacture, date of sterilization (for sterile bandages), number batches, registration number, storage conditions, barcode.

Another significant change is the implementation from January 1, 2019 of mandatory labeling using International System (SI) units. Given the provisions on the labeling of all products imported into Ukraine, the

[1] ДСТУ EN 980: 2007. Символи графічні для маркування медичних виробів [Чинний від 2007-11–07]. Вид. офіц. Київ: Держспоживстандарт України, 2007. 18 с.

symbols must be indicated in accordance with the rules set out in the order [1]. The order applies to all types of medical devices that contain marking units.

From now on, units of measurement should be specified using International System (SI) units, for example:

- мг – mg;
- мл – ml;
- Гц – Hz.

Recently, there have been changes in the legal framework regarding the taxation of medical supplies, which significantly affects their value. Since 01.01.2018, the value added tax rate of 7 percent on transactions for the supply in the customs territory of Ukraine and import into the customs territory of Ukraine of medical devices that are included in the State Register of Medical Equipment and Medical Devices or meet the requirements of relevant technical regulations that is confirmed document of conformity, and permitted for placing on the market and / or commissioning and use in Ukraine[2]. A legal conflict arises when medical goods purchased at a rate of 7%, due to limited purchasing power of the population cannot be sold until the expiration of their registration certificate of state registration, which automatically leads to their removal from the State Register of Medical Equipment and Products. medical purposes and, accordingly, the taxation of such products is carried out at a VAT rate of 20 %.

Such medical devices are allowed for sale and use in Ukraine until their expiration date without undergoing procedures for conformity assessment and marking with the national mark of conformity (in the wording of these paragraphs: "medical devices that have passed state registration entered in the State Register of Medical Equipment and Medical Supplies purpose and permitted for use on the territory of Ukraine and putting into circulation and/or operation without passing the procedures of conformity assessment and marking with the national mark of conformity").

Conclusions. Summarizing the above, at this stage, in the absence of a unified algorithm for solving typical questions of forensic expertise

[1] Про затвердження визначень основних одиниць SI, назв та визначень похідних одиниць SI, десяткових кратних і частинних від одиниць SI, дозволених позасистемних одиниць, а також їх позначень та Правил застосування одиниць вимірювання і написання назв та позначень одиниць вимірювання і символів величин : наказ Міністерства економічного розвитку і торгівлі України від 04. 08. 2015 № 914. База даних «Законодавство України»/ВР України. URL: https: //zakon.rada.gov.ua/laws/show/z1022-15 (Date accessed: 26. 06. 2019).

[2] Податковий кодекс України. Відомості Верховної Ради України, 02.12.2010 № 2775-VI. Ст. 399. База даних «Законодавство України»/ВР України. URL: https: // zakon.rada.gov.ua/laws/show/2628-19#n5 (Date accessed: 28.06.2019).

in order to resolve issues related to determining the value, compliance with the requirements of regulatory and technical documentation, storage conditions, etc., it would be advisable to create modern methodological recommendations will be able to be guided by forensic experts while research on medical supplies.

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Gromovik, B. P., Yarko, N. B., Gorodecka, I. Y. and others. (2011). *Medichne i farmacevtichne tovaroznavstvo.* Tovari aptechnogo asortimentu. Vinnitsya [in Ukrainian].

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Pro orhanizatsiiu zberihannia v aptechnykh zakladakh riznykh hrup likarskykh zasobiv ta vyrobiv medychnoho pryznachennia: Zakon Ukrainy vid 16.03.1993. № 44. URL: https://zakon.rada.gov.ua/rada/show/ru/v0044282–93 (data zvernennia: 26.06.2019) [in Ukrainian].

Pro zatverdzhennia vyznachen osnovnykh odynyts SI, nazv ta vyznachen pokhidnykh odynyts SI, desiatkovykh kratnykh i chastynnykh vid odynyts SI, dozvolenykh pozasystemnykh odynyts, a takozh yikh poznachen ta Pravyl zastosuvannia odynyts vymiriuvannia i napysannia nazv ta poznachen odynyts vymiriuvannia i symvoliv velychyn: Zakon Ukrainy vid 08.08.2015. № 914 URL: https://zakon.rada.gov.ua/laws/show/z1022-15 (data zvernennia: 26.06.2019) [in Ukrainian].

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ОСОБЛИВОСТІ ТОВАРОЗНАВЧОГО ДОСЛІДЖЕННЯ ТОВАРІВ МЕДИЧНОГО ПРИЗНАЧЕННЯ

Товари медичного призначення все частіше стають об'єктами судово-товарознавчої експертизи. Ключовою особливістю дослідження є те, що обіг та реалізація таких виробів регламентується відповідними нормативно-технічними документами.

У статті розглянуті аспекти класифікації, вимоги маркування з використанням одиниць Міжнародної системи. Визначено мету та основні завдання товарознавчого аналізу. Висвітлені основні види фальсифікації. Розібрані показники якості, їх специфічність. Через зміни у законодавстві, при визначенні вартості товарів медичного призначення, особливу увагу слід приділяти їх оподаткуванню.

Ключові слова: судово-товарознавча експертиза, обіг, якість, товарознавчий аналіз, фальсифікація, маркування, оподаткування.

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ОСОБЕННОСТИ ТОВАРОВЕДЧЕСКОГО ИССЛЕДОВАНИЯ ТОВАРОВ МЕДИЦИНСКОГО НАЗНАЧЕНИЯ

В данной статье обозначена проблематика проведения судебно-товароведческих экспертиз товаров медицинского назначения. Акцентируется внимание на регламентации оборота и реализации таких товаров соответствующими нормативно-техническими документами. По результатам экспертной практики, выявлена необходимость создания научно-исследовательской работы «Методические рекомендации по товароведческому исследованию товаров медицинского назначения». С целью оптимизации работы при проведении исследования особое внимание уделяется классификации товаров. Несмотря на то, что от безопасности и эффективности товаров медицинского назначения зависит жизнь и здоровье каждого из нас, прозрачность, а также четкость урегулирования правоотношений в сфере производства и обращения этой продукции гарантируют ее качество. Вследствие разбалансировки экономики происходит прекращение или существенное снижение объемов производства аптечного ассортимента, в то же время рынок насыщается низкокачественными или фальсифицированными товарами. Основные направления фальсификации: ассортиментная, качественная, стоимостная, количественная, информационная. Ликвидировать или приостановить эти негативные процессы в практической фармации может помочь тщательное применение товароведческого анализа на всех этапах товародвижения, в том числе при оформлении заказа на товар, приеме, оценке его по количеству и качеству, а также при хранении на аптечном складе, в аптеке или лечебно-профилактическом учреждении. Товароведческий анализ позволяет выявить качественные товары медицинского назначения органолептическим методом, проверить их количество, ассортиментную принадлежность, оценить их безопасность и тому подобное. Различают следующие виды товароведческого анализа: документальный, качественный, количественный, ассортиментный и комплексный. Неотъемлемой частью любого товара является его маркировка — носитель актуальной информации как о самом товаре, так и о предметах, связанных с его обращением. С 1 января 2019 введена обязательная маркировка с использованием единиц Международной системы (SI). Изменения в законодательной базе относительно налогообложения товаров медицинского назначения влияют на их стоимость.

Ключевые слова: судебно-товароведческая экспертиза, оборот, качество, товароведческий анализ, фальсификация, маркировка, налогообложение.

Received by Editorial Board: 12.10.2019

FORENSIC STRUCTURAL ENGINEERING, FORENSIC REAL ESTATE AND LAND VALUATION

DOI: https://doi.org/10.32353/khrife.2.2019.34
UDC 625.8:625. 712:625.08

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ACTUAL ISSUES OF CONSTRUCTION AND TECHNICAL RESEARCH USING TEST LABORATORIES

In modern conditions of the development of the construction industry, the issue of improving the quality of research with the use of test construction laboratories has become relevant. The article details what kind of documentation the testing laboratory should have. The premises in which the tests are carried out should meet the requirements of the test methods applicable to the production area, the condition and conditions that are provided for in them (temperature, humidity, air purity, lighting, sound insulation and vibration, protection from radiation of electric, magnetic and other physical fields, parameters of all power grids), as well as sanitary norms and rules, safety and environmental requirements. The testing laboratory should have the equipment necessary for testing and measuring equipment in all respects. Test equipment and measuring instruments should comply with the requirements of regulatory documents and test methods. This article describes the types of construction work that are subject to quality control, and describes the basic requirements for laboratories, equipment and personnel. The article also discusses issues related to quality control in construction, and also describes the most pressing issue that arises before experts at the present time, namely: examination of the construction of roads, parking lots, sites and other road construction facilities. At the

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same time, the article reflects that it is necessary to carry out tests and quality control of construction materials and quality control of the work performed. Testing construction and technical laboratories determine the technological and operational properties of concrete, brick, insulation materials; concrete strength tests are carried out on samples obtained from reinforced concrete and concrete structures; coring should be carried out according to technology using special equipment for diamond drilling in natural conditions.

Keywords: construction and technical expertise; testing laboratory; equipment; research work; highways; car parks; road surface; asphalt concrete.

Formulation of Research Problem. An urgent problem for solving expert tasks of construction and technical expertise is the lack of testing laboratories and measuring equipment in the field of construction in forensic institutions. Due to their absence during the examination to establish compliance with the construction work performed, or individual elements of real estate, structures, products, materials of design and technical documentation and the requirements of regulations in the field of construction: building code, standards, specifications, as well as to determine the technical condition of buildings, structures and utilities, the causes of damage and destruction of objects and their elements, there are some difficulties in establishing the properties and other qualities of building materials, structures and products of the construction industry.

Data obtained through the test equipment of the construction and technical laboratory are necessary because, first of all, the technical competence is the expert's conclusion.

Analysis of Recent Researches and Publications. Expertise on the quality of the building materials, structures and products of the construction industry was covered in the Research and Development of Non-destructive Research Methods[1].

Article Purpose. The purpose of the article is to uncover the problem of the lack of forensic testing laboratories and measuring equipment in the field of construction.

Main Content Presentation. At first, we consider as necessary in general requirements to test building laboratories. One of the main ones is the requirement for laboratory staff, who should have professional training, qualifications and experience in conducting tests. Employees who are directly involved in conducting tests and research are certified for the right to conduct specific tests.

[1] НДР «Застосування неруйнівних методів досліджень», реєстраційний код 10.6.13 Архів Донецького НДІСЕ.

The test rooms should meet the requirements of the test procedures applicable to the production area, the conditions and conditions provided (temperature, humidity, air cleanliness, lighting, sound and vibration insulation, radiation protection against electrical, magnetic and other) physical fields, parameters of all power supply networks), as well as sanitary rules and regulations, safety and environmental requirements.

The test laboratory should have the equipment necessary for the tests and the measuring equipment for all parameters. Test equipment and measuring instruments should meet the requirements of regulatory documents and test methods.

All test equipment and measuring instruments should be certified and verified. The procedure of attestation and verification in the testing laboratory is documented in accordance with the requirements established by current regulations.

The testing laboratory should have up-to-date documentation including:

- documents setting technical requirements for the product being tested and the methods of its testing – standards and specifications, including international standards (rules, technical recommendations, etc.);
- documents establishing the programs and methods of testing (measuring) the products assigned to this accredited laboratory. Test methods (measurements) shroud be certified in the prescribed manner;
- documents related to the maintenance of test equipment and measuring equipment: schedules of verification of measuring equipment and certification of test equipment used, passports on them, methods of certification of test equipment and methods of verification of non-standardized measuring equipment, operational documentation for tools measuring equipment used;
- documents defining the system for storing information and test results (protocols, workbooks, reports, etc.).

The laboratory shall establish and document procedures to ensure that workplace instructions, regulations, guidelines and other documents related to quality assurance, occupational safety and records are maintained and available in the workplace.

If the test results are obtained through an electronic data processing system, the reliability of the system eliminates the possibility of their distortion. The system should be able to detect computer malfunctions during calculations to take appropriate action.

Designation of samples of products and products for testing shall be by documentary designation or marking.

Samples of products and products shall be identified for compliance with the technical documentation and shall be accompanied by an appropriate

selection document signed by the authorized person of the certification body for the specific product.

One of the methods of control is the testing of materials: the determination of the technological and operational properties of materials performed mainly with the help of modern measuring, testing, chamber and auxiliary equipment.

Testing materials are made for a variety of purposes: determination of the properties of raw materials, quality control of finished products, research and more.

When testing materials, mechanical and physicochemical methods of studying the properties of materials, both destructive and non-destructive, are used. Destructive methods of testing materials cause damage or complete destruction of the test object; with non-destructive methods, further use of the object is possible. At the same time, it should be noted that in 2007 the forensic engineers of Donetsk Scientific Research Institute of Forensic Expertise carried out research on the topic: Application of non-destructive research methods [1]. However, in practice, this research work remains on paper, as the equipment used in non-destructive research methods is not available in forensic institutions (see Fig. 1-2).





Fig. 1—2. An example of a non-destructive method of concrete research

More than 80% of defects in the construction of objects are due to deviations from the current building codes and rules in the design and production of construction site work.

One of the tasks of quality control of construction is to ensure compliance of the completed construction works of the project and the requirements of regulatory documents.

Quality control in construction is subject to:

1. Determination of density, soil moisture and geodetic control of vertical planning (excavation).
2. Quality control of the foundation and walls of the basements (underground part).
3. Control of quality of arrangement of plates of overlapping.

[1] Ibid.

4. Quality control of the arrangement of reinforced concrete walls.
5. Control of quality of laying of reinforcement (reinforcement).
6. Quality control of formwork.
7. Quality control of brickwork of walls, partitions.
8. Installation quality control of reinforced concrete columns[1].
9. Installation quality control of reinforced concrete beams and crossbars1.
10. Quality control of welded joints; control of welded joints of precast concrete structures; welds.
11. Control of the quality of installation of stairs and platforms.
12. Quality control of the arrangement of joints of structures made of precast concrete[2].
13. Quality control of roof insulation works. The device of thermal insulation, the device of a roof from rolled, artificial, polymeric materials.
14. Quality control of the installation of window blocks.
15. Quality control of installation of door blocks.
16. Quality control of flooring, waterproofing, sound insulation. Installation of board floors, monolithic coverings from a ceramic tile.
17. Quality control of finishing works: plastering, painting, wallpaper, glass works.
18. Control of arrangement of drainage, paving, sidewalks, crushed stone basis, etc.

The most pressing issue facing experts today is the examination of the construction of roads, parking lots, sites and other road construction sites[3]. At the same time, it is necessary to test and control the quality of construction materials and quality control of the work performed (see Fig. 3-8).





Fig. 3—5. An example of a visual-instrumental survey of sports grounds

[1] ДСТУ БВ. 2.7–319: 2016 «Суміші асфальтобетонні і асфальтобетон дорожній та аеродромний. Методи випробувань». [Чинний від 2017–01–01]. Вид. офіц. Київ: Мінрегіон України, 2010. 18 с.

[2] ДСТУ БВ. 2.7–214: 2009 «Будівельні матеріали. Бетони. Методи визначення міцності за контрольними зразками». [Чинний від 2010–09–01]. Вид. офіц. Київ: Мінрегіон України, 2010. 43 с.

[3] Ibid.

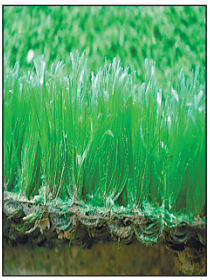




Fig. 6—8. An example of a visual-instrumental survey of sports grounds

Forensic examination of the road surface includes checking the quality of roads, road surface (asphalt concrete, etc.). Also, with the help of specialized equipment of construction and technical laboratories it is possible to check the quality of work on laying sidewalks, platforms, etc.

Inspection of highways is carried out in several stages. Expert research should include a visual diagnostic system; video diagnostics of road surfaces, examinations and tests: field and laboratory.

Video diagnostics requires specialized equipment and software to obtain a photo or video image of the condition of the road surface for further computer processing to determine the type and geometric dimensions of defects with the electronic outline of the condition of the road surface. With the help of the software product the registration of road surface images is performed with the subsequent processing of the obtained data on the presence of surface damage and determination of the geometric dimensions of the detected defects.

But nowadays full-scale visual-instrumental examinations of the condition of sections of highways are performed with the use of linear measurements (roulette, rulers), a road curvimeter, a two-meter rail for measuring deformations of road clothing (track depth, displacement, comb, etc.).

On the basis of the data obtained in testing construction laboratories, it is possible to provide quality control of the construction of roads within which such necessary tests are carried out:

- determining the thickness of the layers of road wear;
- determination of the degree of compaction of the sandy base of roads;
- determination of geometric parameters of the road;
- quality control of the construction materials used and their compliance with the project requirements;
- evaluation of the main parameters of the cross-section of roads;
- assessment of the quality of construction works when arranging layers of road clothing;
- soil testing.

When required when testing asphalt concrete, the limit of compressive strength, water saturation, water resistance, average and actual density of asphalt concrete, the coefficient of compaction of asphalt concrete and mixtures are measured.

Quality control of roads can be carried out both in the process of construction or reconstruction of the road, and in the process of operation. Quality control includes checking compliance with technology, quality of work at all stages of construction or operation.

In test construction and technical laboratories determine the technological and operational properties of concrete, brick, insulation materials, etc. The strength of concrete is tested on samples selected from reinforced concrete and concrete structures. Core drilling should be performed according to the technology with the help of special equipment for diamond drilling in kind (see Fig. 9-13).



Fig. 9—13. Example of a visual-instrumental survey of the condition of road sections

The main components of the equipment of the construction laboratory are: hydraulic press and bursting machine, spectrophotometric equipment, drying cabinets, muffle furnaces, laboratory scales, viscometer, penetrometer, ductilimeter, vacuum installation, sets of molds for crushed stone samples, etc.

Conclusions. Summarizing the above, it should be noted that the possibility of conducting research with the help of specialized modern laboratories can be written endlessly, but at the same time it is necessary to develop algorithms of consistent actions of expert builders in conducting studies in field and laboratory conditions with the presentation of their methodological recommendations personnel, as well as to establish, develop and improve the testing laboratories that is required by modern forensic engineering.

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D*STU B V. 2. 7–319: 2016 «Sumishiasfaltobetonni i asfaltobetondorozhniy ta aerodromniy. Metodiviprobuva».* Kiev, 2016 [in Ukrainian].

Naukovo-doslidni roboti *«Zastosuvannya neruynivnih metodiv doslidzhen».* Donetsk, 2007 [in Ukrainian].

В. В. Контимирова, В. В. Мазурова

АКТУАЛЬНІ ПИТАННЯ ПРОВЕДЕННЯ БУДІВЕЛЬНО-ТЕХНІЧНИХ ДОСЛІДЖЕНЬ ІЗ ЗАСТОСУВАННЯМ ВИПРОБУВАЛЬНИХ ЛАБОРАТОРІЙ

У статті розглянуті основні питання щодо проведення досліджень із застосуванням випробувальних будівельно-технічних лабораторій.

Метою статті є розкриття проблеми щодо відсутності в установах судових експертиз випробувальних лабораторій та вимірювальної техніки у галузі будівництва.

Піднята проблема досліджень будівельних матеріалів, виробів та конструкцій в інженерно-технічних лабораторіях установ судових експертиз, у зв'язку з відсутністю обладнання для проведення будівельно-технічних експертиз.

Ключові слова: будівельно-технічна експертиза; випробувальна лабораторія; обладнання; науково-дослідна робота; автодороги; автостоянки; дорожнє покриття; асфальтобетон.

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АКТУАЛЬНЫЕ ВОПРОСЫ ПРОВЕДЕНИЯ СТРОИТЕЛЬНО-ТЕХНИЧЕСКИХ ИССЛЕДОВАНИЙ С ПРИМЕНЕНИЕМ ИСПЫТАТЕЛЬНЫХ ЛАБОРАТОРИЙ

В современных условиях развития строительной отрасли стал актуальным вопрос о повышении качества исследований с приме-

нением испытательных строительных лабораторий. В статье детально отображено, какую именно документацию должна иметь испытательная лаборатория. Помещения, в которых проводятся испытания, должны соответствовать требованиям методов испытаний, применяемых к производственной площади, состоянию и условиям, которые в них предусмотрены (температура, влажность, чистота воздуха, освещение, звукоизоляция и вибрация, защита от излучения электрических, магнитных и других физических полей, параметров всех электросетей), а также санитарным нормам и правилам, требованиям к безопасности и охране окружающей среды. Испытательная лаборатория должна иметь оборудование, необходимое для тестирования и измерения оборудования по всем параметрам. Испытательное оборудование и измерительные приборы должны соответствовать требованиям нормативных документов и методам испытаний. В данной статье описаны виды строительных работ, которые подлежат контролю качества, а также описаны основные требования к лабораториям, оборудованию и персоналу. В статье также рассмотрены вопросы в отношении контроля качества в строительстве, а также описан наиболее актуальный вопрос, который встает перед экспертами в настоящее время, а именно: экспертиза строительства автодорог, автостоянок, площадок и других объектов дорожного строительства. При этом в статье отражено, что необходимо проводить испытания и контроль качества именно строительных материалов и контроль качества проведенных работ. В испытательных строительно-технических лабораториях определяют технологические и эксплуатационные свойства бетона, кирпича, утепляющих материалов; осуществляются испытания прочности бетона по образцам, добытых из железобетонных и бетонных конструкций; бурение с отбором керна должно выполняться по технологии с помощью специального оборудования для алмазного бурения в натурных условиях.

Ключевые слова: строительно-техническая экспертиза; испытательная лаборатория; оборудования; научно-исследовательская работа; автодороги; автостоянки; дорожное покрытие; асфальтобетон.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.35
UDC 343.148:122:622

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FORENSIC RESEARCH ON CAUSATION WHILE WORK ORGANIZATION AT AN EXCAVATION SITE

Coal mining at excavation sites is a complex and multifaceted process, during which a significant number of hazards to workers arise. The organization of work on the site provides for the implementation of a significant number of legislative and regulatory acts on labor protection. At the same time, there is a high probability of violations of safety rules, resulting in an incident (accident, accident). Investigation of such situations requires a forensic expert to have the necessary methodological support for conducting forensic mining examination.

Purpose of this research paper: develop a model for establishing a causal relationship between the causes of the accident and the persons whose action (inaction) created the prerequisites for the occurrence of an incident during the execution of the technological process at the excavation site.

While research, the following methods were used: analysis of legislative and regulatory acts on labor protection, situational analysis and engineering and logical analysis.

The practical result of the work is to establish by a forensic expert when performing a mining technical examination using the model of a causal relationship of a circle of persons whose action (inaction) is associated with the occurrence of an accident when organizing work on the excavation sites of a coal mine.

Based on the analysis of legislative and regulatory acts on labor protection, regulating the requirements for technological design documentation of an excavation site, using an engineering and logical approach, a model has

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been developed for establishing a causal relationship between the causes of an accident and the persons whose action (inaction) created the prerequisites for the occurrence of an incident during the time of the technological process at the excavation site. The model is used to determine the nature of the actions (inaction) of persons who, under certain conditions, were in direct or indirect (mediated) causal connection with the onset of the event.

Keywords: excavation site, legislative acts, research method, regulations on labor protection, causal relationship, technological design documentation, coal mine.

Formulation of Research Problem. Coal mining in the excavation sites of coal mines is a complex and multifaceted process during which there are a significant number of hazards for workers. The organization of work at the site involves the implementation of a significant number of laws and regulations on labor protection. In this case, there is a high probability of safety violations, resulting in an incident (accident, accident). The study of the causes and consequences of emergencies in the mining industry and in underground conditions requires a forensic expert to have the necessary methodological support.

Forensic mining expertise belongs to the class of forensic engineering expertise and is an independent kind of forensic expertise.

The objects of forensic mining examination investigated in criminal proceedings related to emergencies in the mining industry, the occurrence of which is due to violations of the rules of safety and labor protection, are material and materialized sources of information that are[1]:

- mine workings (trunks, benches, galleries, pits, perimeter barrels, crossbars, drifts, bremsbergs, etc.);
- devices and systems of control and control over technological processes;
- technical documentation: project for preparation and mining of lava, geological characterization of soil rocks and roof of the reservoir, geological characteristics of the extracted reservoir, geological surveys of lava, digging from the plan of mining works, report card for entry to work of engineering and technical workers, job-technical instructions of engineers , the act of investigating the accident, the act of checking the entity, information on the modes of ventilation, air conditioning, gas and gas modes, etc.;
- materials of criminal proceedings, which contain the protocol of inspection of the scene, protocols of other investigative (court) actions, protocols of interrogation of witnesses, victims, schemes, photographs, etc.

[1] Гончаренко В. Г., Гора І. В., Будко Т. В. Експертизи у судочинстві України: наук.-практ. посіб. Київ: Юрінком Інтер, 2015. 504 с.

The main tasks of mining expertise on the fact of violation of safety and labor protection requirements at mining enterprises and in underground conditions include [1]:

- find out the causes of technological process violations;
- determination of compliance of actual operating conditions of mining machines, mechanisms, equipment, tools with the requirements of regulatory technical documentation, their technical condition and suitability for performing specific technological and technical operations;
- establishing the qualification of the subject of the technological process the nature of the work that he performs;
- defining the objective possibility of performing certain actions in the specified mining, geological and mining conditions;
- determination of the shortcomings of organizational and technical nature in the production process of the mining enterprise;
- determination of compliance of working conditions at a mining enterprise and a certain workplace with the rules and norms of safety;
- identification of circumstances that resulted in a production injury or accident at a mining enterprise;
- establishment of conformity of behavior of persons involved in the event, requirements of normative legal acts on labor protection, regulating actions of miners and engineering and technical workers in normal and extreme production conditions;
- detection of actions of persons who did not meet the requirements of normative legal acts on labor protection and who were in direct (direct) cause and effect connection with the occurrence of an event or complication and development of negative consequences of a certain emergency situation.

Performing forensic research on the fact of an accident during the performance of works at the excavation site involves the solution of all the above tasks of mining expertise within the criminal proceedings. When conducting an examination in order to perform a certain expert task, experts use appropriate research methods, methods of forensic examinations.

Analysis of Recent Researches and Publications. A. A. Krupka, Yu. O. Kryvchenko, I. M. Marchenko (Donetsk Scientific Research Institute of Forensic Expertise)[2] were engaged in development of methods of carrying out forensic mining examinations, they are founders of formation of

[1] Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень: затв. наказом М-ва юстиції України від 08.10.1998 р. № 53/5 (у ред. наказу від 22.02.2019 р. № 563/5). URL: https: //zakon.rada.gov.ua/laws/show/z0705–98 (Date accessed:20.06.2019).

[2] Методика дослідження причинно-наслідкових залежностей при виконанні гірничотехнічних експертиз. Донецький НДІСЕ М-ва юстиції України, 2005. URL: http://rmpse.minjust.gov.ua/page/10 (Date accessed:20.06.2019).

methodology of performance of researches on establishment of the reasons and consequences of emergencies in the mining industry and in underground conditions [1]. Further development of this issue is carried out by mining experts of Dnipropetrovsk Research Institute of Forensic Expertise. The procedure of expert research of causal relations is described in the works of Z. M. Sokolovsky (KhRIFE)[2] where he did not rule out in some cases the need to differentiate causal relations into direct, basic, necessary, accidental, sufficient, etc.

In theoretical and practical terms, mining expertise is a field of special knowledge and has its own theoretical and methodological basis. In order to conduct a more complete and high-quality study of a certain type of issue within a specific (mining) examination, it is necessary to develop algorithms (models) as structural elements of the relevant hierarchy of methodological recommendations.

Research Purpose. The purpose of this research paper is to develop a model for establishing a causal link between the causes of an accident and the persons whose actions (inactivity) created the prerequisites for an incident during the technological process at the excavation site.

To achieve this goal, it is necessary to solve the following problems:

- identify the causes of accidents related to the development and use of technological design documentation of the excavation site;
- analyze the regulatory requirements for employees who, under certain conditions, may be directly or indirectly (indirectly) associated with the occurrence of the event;
- establish the connection between the causes of the accident and the persons whose actions (inactivity) created the prerequisites for the incident during the technological process at the excavation site.

This paper deals with violations directly related to the work at the mine site.

Main Content Presentation. The excavation section consists of a clearing face, sliding and ventilation drifts and is the main structural element of the mine, where coal is directly mined. During the performance of works within the excavation site, hazardous and harmful production factors (HHPF) may occur, from the action of which workers should be protected[3].

[1] Методика виконання судової гірничотехнічної експертизи. Донецький НДІСЕ М-ва юстиції України, 2005. URL: http://rmpse.minjust.gov.ua/page/10 (Date accessed:20.06.2019).

[2] Соколовський З. М. Методика експертного дослідження причинних зв'язків. 1970. URL: http://rmpse.minjust.gov.ua/page/9 (Date accessed: 20.06.2019).

[3] НПАОП 10.0–1.01–10. Правила безпеки у вугільних шахтах: затв. наказом Держгірпромнагляду України від 22.03.2010 р. № 62. Документ від 22.03.2010 р. № z0398–10. Дата оновлення: 31.10.2014. URL: https: //zakon.rada.gov.ua/laws/show/z0398–10 (Date accessed:20.06.2019).

An orderly sequence of interrelated actions and operations performed over the initial data prior to obtaining the desired result is a process site at the excavation site, that should be carried out in accordance with the technological design documentation (TDD) of the excavation site using a set of measures to prevent HHPF.

Technological design documentation is a project that establishes technological processes for coal extraction in treatment pits, conduction and re-fixing of mine workings, transportation of workers and goods and contains a set of measures to prevent all dangerous and harmful production factors. The passport of the excavation site consists of an explanatory note and a graphic part and is the main component of the TPD of the site. The presence of technological project documentation in the materials of criminal proceedings is a necessary component (as an object of research) for a complete, objective and comprehensive research.

In order to obtain a valid conclusion, a forensic expert should apply methods developed with the specific nature of the objects under study.

In the broadest sense, method is a way of knowing reality, achieving a goal, solving a task, that is, in a certain way orderly, substantiated and philosophically justified cognitive activity; in a narrow sense, it is a set of techniques, operations and methods of theoretical knowledge and practical transformation of reality, the achievement of certain results.

The method of forensic examination is a set of techniques, operations and methods of theoretical knowledge and practical transformation of reality to address the issue before the expert. The techniques, operations and methods that make up the method are a practical application of knowledge of the laws of objective reality in order to obtain new knowledge about it. A well-established method, which decomposes into a sequence of strictly defined rules, which solve class, genus, species, subspecies expert tasks, and a certain type of issue within a particular examination, can be an algorithm as a structural element of the hierarchy of methodological recommendations.

It is the responsibility of the forensic expert to determine the manner in which the examination is carried out (the choice of certain methods, research methods).

While conducting a research on the causes and consequences of emergencies in the mining industry and in underground conditions, the method of situational analysis, integrated approach or engineering-logical analysis is most often applied with the use of operational-information model of the production situation under consideration.

Situation analysis is a complex technology of preparation, adoption and implementation of management decision based on the analysis of a particular management situation.

The method of situational analysis uses the new situation of the object of control as an object of study. Situational analysis allows you to organize and guide the process of active collection, evaluation and processing of existing primary information and reproduction of new, secondary information, both analytical and forecasting. situation analysis is carried out in three stages according to the generally accepted scheme (Fig. 1).

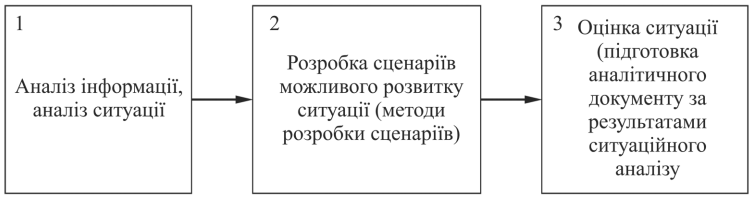


Fig. 1. Stages of situation analysis

While forensic mining examination the research involves the presence of analytical, comparative and synthesizing stages, thus creating an information model based on which the circumstances of the event (emergency) are specified, organizational and technical causes of its occurrence, employees involved in the event are identified and, in the event, direct (direct) connections of cause and effect.

Formation of operational-information model of the production situation is as follows.

While detailed research, the study and analysis of the objects and materials submitted for examination are carried out, on the basis of which the actions of certain persons involved in the accident are studied. An imaginary dynamic and ideal model of the event is built, on the basis of which the appropriate (adequate) actions of the above-mentioned persons are determined, which are then compared with their actual behavior, and finally, the forensic expert forms an operational-information model. causal relationships between the admitted employees of the enterprise deviations from the requirements of regulations on labor protection and the creation of a threat of death or other serious consequences at work.

On the basis of operational information model of the accident with the use of a comprehensive approach or within the framework of engineering and logical analysis, special investigations are carried out in order to identify the cause and effect dependencies between the deviations from the requirements of normative legal acts on labor protection, admitted at the enterprise by a specific person, its inadequate actions and negative phenomena, events, facts, etc.

Causation is an objective phenomenon caused by laws, knowledge of which is a necessary prerequisite for a correct conclusion.

The negative consequences that have occurred can be caused by the action of both one and a set of disparate causes. In other words, an offense

in the field of labor protection is usually not limited to a violation of any one rule of safety or industrial sanitation, but is a set of deviations from the requirements of regulations on labor protection. The peculiarity of this type of crime is the presence of a complex causal link between violations of occupational safety rules and the consequences that resulted from.

Most often, the direct causal relationship is the actions (inaction) of the direct performers, while between direct and indirect causality "balance" the actions of engineers and controllers. The presence of a significant number of the latter at production facilities, which is associated with the performance of high-risk work, certainly increases and complicates forensic research.

To satisfy the needs of the investigator and the court practice to solve the issues of mining technical expertise, a forensic expert needs to apply special knowledge in the elaboration of normative acts, methods, recommended scientific and technical and reference literature, other information sources.

To improve the quality of the examination and to shorten the term of its execution, the authors propose the use of separate models of causality after the incident at the coal mines.

Based on the study of the list of causes of the accident according to the classifier given in Annex 4 to the Procedure for Investigation [1] and analysis of the requirements of legislation and regulations on labor protection to establish violations of organizational and technical nature at the excavation site and determine the range of persons, actions (inaction) which led to the occurrence of an accident, developed a generalized model of establishing a causal link upon the occurrence of an incident during work on the excavation site of a coal mine (Fig. 2).

The following abbreviations were adopted in this model: MLU – Mining Law of Ukraine[2]; OLP – the Law of Ukraine: On Labor Protection[3]; SR – Safety Rules in coal mines6; RTO – Rules of technical operation of coal mines [4].

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[1] Порядок проведення розслідування та ведення обліку нещасних випадків, професійних захворювань і аварій на виробництві: затв. постановою Кабінету Міністрів України від 30.11.2011 р. № 1232 (у ред. наказу від 26.04.2017 р. № 294). URL: https://zakon.rada.gov.ua/laws/show/1232–2011-%D0%BF (Date accessed: 20.06.2019).

[2] Гірничий Закон України: Закон України від 06.10.1999 р. № 1127-XIV. URL: https://zakon.rada.gov.ua/laws/show/1127–14/ed20181104 (Date accessed: 20.06.2019).

[3] Про охорону праці: Закон України від 14.10.1992 р. № 2694-XII. URL: https://zakon.rada.gov.ua/laws/show/2694–12 (Date accessed: 20.06.2019).

[4] СОУ 10.1–00185790–002–2005. Правила технічної експлуатації вугільних шахт. [Чинний від 2007–01–01]. Вид. офіц. Київ, 2006. 355 с.

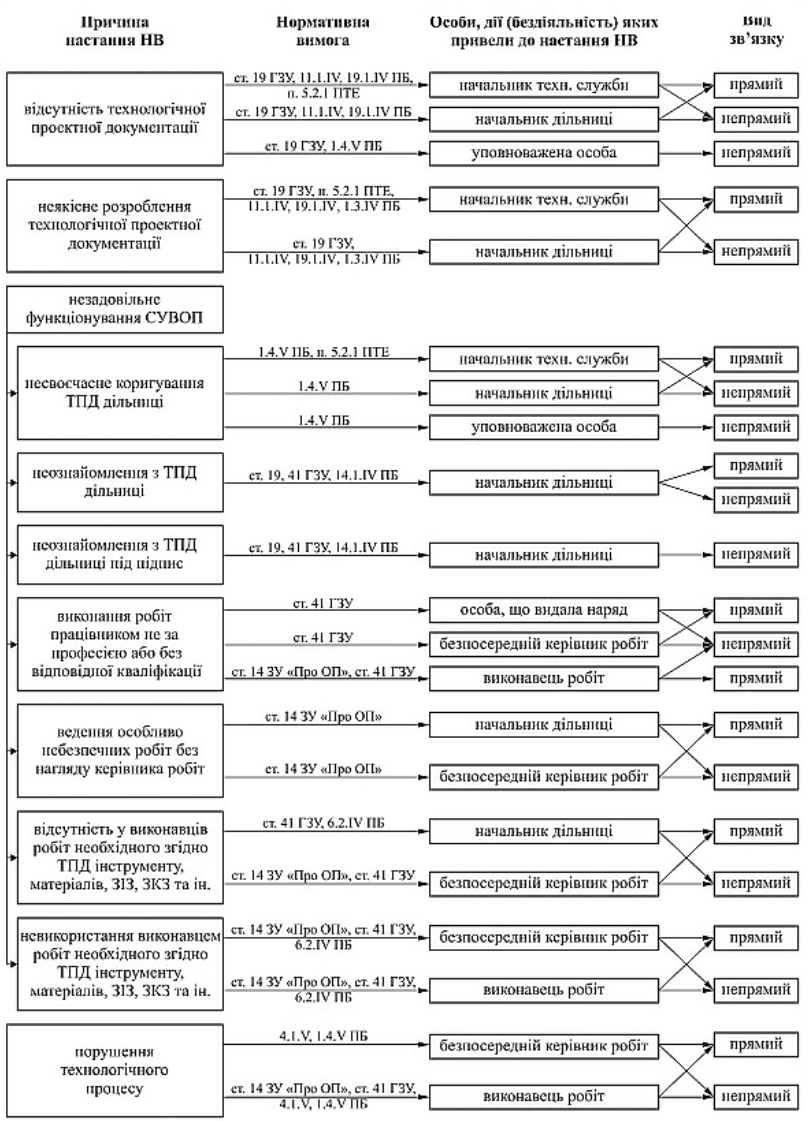


Fig. 2. The model of establishing a causal relationship in the organization of work on the excavation site

The model shown in Fig. 2, is designed to determine the range of persons whose action (inaction) is associated with the development and application of technological design documentation in the organization of work at the

excavation site. It should be noted that this model does not provide for the location of the top management of the enterprise (Deputy Director of Production, Deputy Director of Occupational Safety, Chief Mechanic, Chief Power Engineer, Shift Supervisor, Miners of Ventilation and Safety, Air Gas Control, etc.). If the above persons were present at the work site, the forensic expert should further investigate the actions (inaction) of these persons before monitoring the working conditions and safety at the workplaces of the excavation site and their involvement in the organization of work during which the accident occurred (incident).

Conclusions. Based on the above, we can draw the following conclusions:

- on the basis of the analysis of the Procedure for Investigation 7 the causes of accidents related to the development and use of technological design documentation of the excavation site of coal mines;
- analysis of legislative and regulatory acts on labor protection and the circle of employees of the mining enterprise, which under certain conditions may be in direct or indirect (indirect) connection with the occurrence of the event;
- connection between the causes of the accident and the persons whose action (inaction) created the prerequisites of the incident during the technological process at the excavation site;
- based on the analysis of legislative and normative-legal acts on labor protection, regulating the requirements to the technological design documentation of the excavation site, applying the engineering-logical approach, a model of establishing a causal link between the causes of the accident and persons whose action (inaction) preconditions for the occurrence of the incident during the technological process at the excavation site. The model determines the range of persons who, under certain conditions, were in direct or indirect (indirect) causal connection with the occurrence of the event.

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N*PAOP 10.0-1.01-10. Pravyla bezpeky u vuhilnykh shakhtakh* (2014). [in Ukrainian].

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ЕКСПЕРТНЕ ДОСЛІДЖЕННЯ ПРИЧИННОГО ЗВ'ЯЗКУ ПРИ ОРГАНІЗАЦІЇ РОБІТ НА ВИЇМКОВІЙ ДІЛЬНИЦІ

На підставі аналізу законодавчих та нормативно-правових актів з охорони праці, що регламентують вимоги до технологічної проектної документації виїмкової дільниці, застосовуючи інженерно-логічний підхід, розроблена модель встановлення причинного зв'язку між причинами настання нещасного випадку і особами, дія (бездіяльність) яких створила передумови настання інциденту під час виконання технологічного процесу на виїмковій дільниці. За допомогою моделі визначається характер дій (бездіяльність) осіб, які при певних умовах знаходилися у прямому або непрямому (опосередкованому) причинному зв'язку з настанням події.

Ключові слова: виїмкова дільниця, законодавчі акти, метод дослідження, нормативно-правові акти з охорони праці, причинний зв'язок, технологічна проектна документація, вугільна шахта.

О. А. Муха, И. А. Шайхлисламова

ЭКСПЕРТНОЕ ИССЛЕДОВАНИЕ ПРИЧИННОЙ СВЯЗИ ПРИ ОРГАНИЗАЦИИ РАБОТ НА ВЫЕМОЧНОМ УЧАСТКЕ

Добыча угля на выемочных участках угольных шахт является сложным и многогранным процессом, во время которого возникает значительное

количество опасностей для работников. Организация работы на участке предусматривает выполнение значительного количества законодательных и нормативно-правовых актов по охране труда. При этом существует большая вероятность возникновения нарушений правил безопасности, в результате чего возникает инцидент (авария, несчастный случай). Исследование таких ситуаций требует наличия у судебного эксперта необходимого методологического обеспечения для проведения горнотехнической экспертизы.

Цель работы: разработать модель установления причинной связи между причинами несчастного случая и лицами, действие (бездействие) которых создало предпосылки наступления инцидента во время выполнения технологического процесса на выемочном участке.

При проведении исследования использованы методы: анализ законодательных и нормативно-правовых актов по охране труда, ситуационный анализ и инженерно-логический анализ.

Практический результат работы заключается в установлении судебным экспертом при выполнении горнотехнической экспертизы с помощью модели причинной связи круга лиц, действие (бездействие) которых связано с наступлением несчастного случая при организации работ на выемочных участка угольной шахты.

На основании анализа законодательных и нормативно-правовых актов по охране труда, регламентирующих требования к технологической проектной документации выемочного участка, применяя инженерно-логический подход, разработана модель установления причинной связи между причинами несчастного случая и лицами, действие (бездействие) которых создало предпосылки наступления инцидента во время выполнения технологического процесса на выемочном участке. С помощью модели определяется характер действий (бездействия) лиц, которые при определенных условиях находились в прямой или косвенной (опосредствованной) причинной связи с наступлением события.

Ключевые слова: выемочный участок, законодательные акты, метод исследования, нормативно-правовые акты по охране труда, причинная связь, технологическая проектная документация, угольная шахта.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.36
UDC 343.148

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LICENSE DOCUMENTS REGULATING THE PERFORMANCE OF CONSTRUCTION WORKS AT CURRENT STAGE

One of the tasks of the construction and technical expertise is to determine the technical feasibility of dividing a residential building into isolated apartments with separate exits to the land plot, including the possibility of converting the allocated part of the house into an isolated apartment (room) by carrying out the necessary construction work for reconstruction, redevelopment, re-equipment in accordance with the current regulatory documents. Along with this, questions arise about the granting of permits for the performance of such work and the procedure for their implementation. The main requirements of legislative and regulatory acts in the field of construction, which regulate the procedure for carrying out construction work for reconstruction, redevelopment, re-equipment and obtaining the necessary permits for the implementation of re-equipment, proposed by experts in the options for dividing residential buildings and structures of individual developers between co-owners in accordance with the ideal shares each and when determining the order of using the premises. Law of Ukraine No. 1817-19 "On Amendments to Certain Legislative Acts of Ukraine Concerning Improvement of Urban Planning Activities" radically changed the rules for obtaining the right to perform construction work and commissioning completed construction projects. The belonging of an object to a certain class of consequences (responsibility) at the stage of development of project documentation determines the stages of design, the need for an examination of project documentation, at the construction stage - obtaining the necessary permits, acceptance of completed construction

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objects into operation. A list of construction works that do not require documents giving the right to perform them, and after which the object is not subject to acceptance into operation is given.

Keywords: construction, permits, isolated apartment, classes of consequences, re-equipment, redevelopment of premises, reconstruction, urban planning activities.

Formulation of Research Problem. Law of Ukraine No. 1817-19 On Amendments to Certain Legislative Acts of Ukraine on Improvement of Urban Planning Activity[1] came into force on 10.06.2017. in accordance with which dramatically changed the rules for acquiring the right to perform construction works and putting into operation completed construction sites.

According to the Law No. 1817-VIII is fulfilled:

- replacement of the classification of construction objects by difficulty categories (5 steps) by their division by classes of consequences (responsibility);
- replacement of the three-stage permit system (notification, declaration, permit) to the two-stage permit system (notification, permit);
- increasing the responsibility of urban planning entities and officials.

As a result of the amendments, the by-laws, the system of normative acts, the application of building codes and standards, as well as the practice of applying the new regulations of Cabinet of Ministers of Ukraine ensuring the implementation of the Law have been reformed.

Analysis of Recent Researches and Publications. Due to the improvement of the system of permits at the legislative level, there are practically no publications on construction permits in modern conditions. This circumstance largely determines the need to analyze the laws and regulations governing the procedure for obtaining building permits.

The Article Purpose is to analyze and determine the modern regulatory framework of permits in addressing issues related to the possibility of transforming the allocated parts of the house into isolated apartments (premises) by reconstruction, redevelopment in accordance with applicable regulations.

[1] Про внесення змін до деяких законодавчих актів України щодо удосконалення містобудівної діяльності : Закон України від 04.09.2018 № 2517-VIII. URL: http zakon.rada.gov.ua/go/1817–19 (Date accessed:10.04.2019). E.g., Про регулювання містобудівної діяльності: Закон України від 04.09.2018 № 2517-VIII. URL: https://zakon.rada.gov.ua/go/3038–17 (10.04.2019); Загальні принципи забезпечення надійності та конструктивної безпеки будівель, споруд, будівельних конструкцій: ДБН В.1.2–14: 2009 від 22.06.2009 № 245. URL: https://zakon.rada.gov.ua/go/ 3038–17 (10.04.2019); Порядок виконання підготовчих та будівельних робіт: постанова Кабінету міністрів України від 25.04.2018 № 327. URL: https://zakon.rada.gov.ua/go/466–2011-п (Date accessed: 17.04.2019).

Main Content Presentation. As expert practice shows, the issues that are the subject of construction and technical expertise are most often issues related to resolving disputes between the subjects of joint partial ownership of buildings and structures. These disputes usually arise over the distribution of buildings and structures between the co-owners in accordance with the ideal shares of each, determining the order of use of the premises. This article discusses buildings and structures for various purposes and specifies individual houses. The task of the examination is to determine the technical feasibility of dividing a residential building into isolated apartments with separate land exits, including the possibility of converting the allocated parts of the house into isolated apartments by appropriate redevelopment, re-equipment and reconstruction in accordance with applicable regulations. In these categories of cases, the courts raise the issue of the need for reconstruction, redevelopment, re-equipment, obtaining permits, coordination with the relevant authorities, the need for acceptance of completed facilities into operation.

On June 10, 2017, the Law of Ukraine № 1817-19: On Amendments to Certain Legislative Acts of Ukraine Concerning the Improvement of Urban Development 1, came into force which radically changed the rules for acquiring the right to perform construction works and commissioning completed facilities.

All objects are divided according to the following classes of consequences (liability) (part 5 of Article 32 of the Law of Ukraine) [1]:

- minor effects – CC1;
- medium effects – CC2;
- significant consequences – CC3.

According to Appendix A of building code B. 1. 2 – 14:2009 [2]:

As a rule, CC3 class buildings and structures should be attributed:

- objects of oil and gas, gas-processing, metallurgical, chemical and other industries, equipped with fire and explosive tanks and storage of liquid fuel, gas and gas products, especially during their storage under pressure (technological pipelines, apparatus, boilers) isothermal tanks with a capacity exceeding 10 thousand cubic meters, storage tanks for oil and petroleum products with a capacity of 30 thousand cubic meters or more, high pressure vessels, etc.);

[1] Про регулювання містобудівної діяльност і : Закон України від 04.09.2018 № 2517-VIII. URL: https://zakon.rada.gov.ua/go/3038–17 (Date accessed: 10.04.2019).

[2] Загальні принципи забезпечення надійності та конструктивної безпеки будівель, споруд, будівельних конструкцій: ДБН В.1.2–14: 2009 від 22.06.2009 № 245. URL: https://zakon.rada.gov.ua/go/3038–17 (Date accessed:10.04.2019).

- facilities of chemical, petrochemical, biotechnology, defense and other industries related to the use, processing, production and storage of chemical-toxic, explosive and fire-hazardous substances and industrial explosives, biohazards, etc.;
- explosion and gas in accordance with the classification of the State Labor Inspectorate, the building of the main ventilation systems in mines and quarries;
- construction of main ventilation systems at mines and mines;
- nuclear power facilities (nuclear eclectic power plants, nuclear power electric heat supply plants, nuclear power plants), including storage facilities and plants for processing nuclear fuel and radioactive waste, as well as other radiation-hazardous facilities according to the classification of the SNRIU;
- hydro and thermal power plants (hydro, thermal power plants, thermal power plants, thermal power plants, hydroelectric power plants) with a capacity of more than 1,0 million kW;
- capacities and tunnels on roads of the highest category, with a length of more than 1000 m or a run of more than 300 m;
- stationary structures of signs of navigation situation;
- locks and main port facilities on waterways of the 1st and 2nd classes of DSTU Б В. 2.3-1;
- construction and construction of large railway and railway stations;
- trunk pipelines with a diameter of more than 1000 mm, or with a working pressure of more than 2.5 MPa, as well as sections of trunk pipelines of smaller diameter and with less working pressure at the points of crossing through water obstacles, railways and roads;
- hydrotechnical structures of irrigation systems with an area of irrigation and drainage of more than 300 thousand hectares and reservoirs with a volume exceeding 1 cubic kilometer;
- large elevators and granaries, millers;
- residential, public or multifunctional buildings over 100 m high;
- construction of major museums, state archives, repositories of national historical and cultural values;
- spectacular objects with masses of people (stadiums, theaters, cinemas, circuses, showrooms, etc.);
- construction of universities, institutes, schools, pre-schools, etc.;
- large hospitals and other healthcare facilities;
- universities and other large trade enterprises;
- support facilities for large areas of urban development and industrial areas;
- large objects of protective and protective nature (anti-landslides, landslides, anti-flood structures, protective dams, etc.).

- generally, CC2 class buildings and structures should be those that are not in the CC3 class:
- the main objects of the metallurgical industry, heavy engineering, petrochemicals, shipbuilding, defense industry (blast-furnace and workshop, assembly buildings, high chimneys, etc.);
- copers, machinery departments of mining machines;
- hydro and thermal power facilities with a capacity of less than 1.0 million kW, distribution systems of the main high-voltage power grids (including supports of transmission lines and open switchgears);
- capacities for oil and petroleum products;
- road lanes of main roads, runways, bridges and tunnels less than 1000 m long, cableways, stations, airports, helicopter stations;
- main pipelines;
- big hotels, hostels;
- water and sewerage facilities (including water towers, sewage treatment plants, water intakes) of industrial enterprises and settlements;
- construction of entertainment and sports enterprises, trade enterprises, catering, public services, health institutions;
- buildings and structures of central depots to provide for the vital needs of the population, depots of especially valuable equipment and materials, military depots;
- residential, public or multifunctional buildings up to 100 m high.

Generally, CC1 class buildings and structures should be attributed:

- all objects of industry, energy, transport and communication, agriculture and processing of agricultural products, which are not in classes CC3 and CC2;
- public buildings, physical and sporting objects not in the class of CC3 and CC2, as well as all temporary objects, mobile homes;
- objects of inland roads, communications and product pipelines;
- greenhouses, hothouses;
- low voltage distribution network supports, lighting supports.

Belonging of the object to a certain class of consequences (responsibility) at the stage of development of design documentation determines the stage of design, the need for examination of design documentation, at the stage of construction — obtaining the necessary permits, acceptance of completed facilities.

According to Part 1 of Art. 34 of the Law of Ukraine: On Regulation of City Planning Activity, Procedure for preparatory and construction works [1], the developer has the right to perform construction work after:

[1] Порядок виконання підготовчих та будівельних робіт: постанова Кабінету міністрів України від 25.04.2018 № 327. URL: https://zakon.rada.gov.ua/go/ 466–2011-

1) submission of notification of the commencement of construction works to the appropriate body of state architectural and construction control regarding the objects of construction, which by the class of consequences (responsibility) belong to the objects with minor consequences (CC1), and about the objects whose construction is carried out on the basis of a construction passport and who do not require a permit to perform construction works according to the list of construction objects approved by the Cabinet of Ministers of Ukraine.

It is forbidden to perform construction work without submitting a notice on the beginning of construction works.

In accordance with the law, the developer is responsible for the completeness and accuracy of the information specified in the notice submitted to him about the commencement of construction works and for the execution of construction works without notice.

2) obtaining a permit to perform construction work in accordance with Art. 37 of the Law of Ukraine: On Regulation of City Planning Activity, Procedure of Preparatory and Construction Works approved by the Cabinet of Ministers of Ukraine Decree No. 466 of April 13, 2011, as amended by the Cabinet of Ministers of Ukraine Decree No. 404 of June 7, 2017.

The right to perform construction work on construction sites that belong to medium (CC2) and significant (CC3) consequences by the class of consequences (responsibility), connection of the construction object to utilities and structures is granted to the builder after obtaining permission for construction work.

Permit for construction works is issued by the state architectural and construction control bodies at no charge within ten working days from the date of registration of the application.

An application has to be submitted for approval:

1) a copy of the document certifying the ownership or use of the land plot, or a copy of the contract of superficies;
2) a copy of the document certifying the ownership of the house or building, or the consent of its owner, certified in accordance with the procedure established by law, to carry out construction works in the case of reconstruction, restoration or major repairs;
3) design documentation for construction, developed and approved in accordance with the procedure established by law.

The form of the permit for construction works, the form of the application submitted for its receipt, the form of refusal to issue a permit

п (Date accessed: 17.04.2019).

to perform construction works, the procedure for issuing and revocation of a permit to perform construction works are determined by the Cabinet of Ministers of Ukraine.

If the state architectural and construction control body has not issued a permit for construction works or refusal to issue it within the period established by this Article, the customer shall apply to the central executive body implementing the state policy on state architectural and construction control and supervision. taking measures within ten working days related to the issuance of the said permit or refusal to issue it. If a construction permit or refusal to issue it is not issued within the specified period, the right to perform construction works arises on the tenth working day from the date of registration of a written request sent by registered mail to the central executive body implementing state policy. issues of state architectural and construction control and supervision, and the permit is considered issued.

According to part 1 of article. 31 of the Law of Ukraine: On Regulation of City Planning Activity, project documentation for construction of facilities is developed in the manner prescribed by the central executive body, which ensures the formation of state policy in urban planning, taking into account the requirements of urban planning documentation and source data. norms, state standards and rules. In according to the Procedure for approval of construction projects and their forensic examination [1] approved by the Cabinet of Ministers of Ukraine from 11.05.2011 № 560, before approval and approval of construction projects in cases specified in Article 31 of the Law of Ukraine: On Regulation of City Planning Activity2, examination of projects construction.

According to part 4 of Art. 31 of the Law of Ukraine "On Regulation of City Planning Activity" and the Law of Ukraine: On Amendments to Certain Legislative Acts of Ukraine to Improve City Planning Activity" 1 dated on January 17, 2017 № 1817-VIII, are subject to mandatory examination of construction projects that:

1) according to the class of consequences (responsibility) belong to objects with medium (CC2) and significant (CC3) consequences for compliance with standards on sanitary and epidemiological well-being of the population, ecology, labor protection, energy saving, fire, technogenic, nuclear and radiation , durability, reliability, durability of buildings and structures, their operational safety and engineering support, including the observance of standards on the creation of an unobstructed living environment for persons with disabilities misery and other low-mobility groups;

[1] Порядок затвердження проектів будівництва і проведення їх експертизи: постанова Кабінету міністрів України від 25.04.2018 № 32. URL: http://zakon.rada.gov.ua/go/ 466–2011-п (Approval Date: 06.05.2019).

2) are constructed on the territories with difficult engineering-geological and technogenic conditions, – in a part of durability, reliability and durability of buildings and constructions;
3) are constructed with the involvement of budget funds, funds of state and communal enterprises, institutions and organizations, as well as loans provided under state guarantees, if their estimated value exceeds 300 thousand hryvnias in relation to the estimated part of the project documentation. According to paragraph 6 of the Procedure for approval of construction projects and their examination approved by the Cabinet of Ministers of Ukraine dated May 11, 2011 № 560, the examination is the final stage of development of construction projects, i.e. carried out before project approval.

Commissioning of completed facilities (Article 39 of the Law of Ukraine: On Regulation of City Planning Activity, Procedure for commissioning of completed facilities[1] approved by the Cabinet of Ministers of Ukraine № 461 from 13.04.2011, as amended in accordance with Resolution of the Cabinet of Ministers of Ukraine № 409 of 07.06.2017.

The commissioning of works completed by construction that belong to objects with minor consequences (CC1) according to the class of consequences (responsibility), and objects whose construction was carried out on the basis of a construction passport, is carried out by registration with the relevant body of the state architectural and construction free-of-charge control of the facility's declaration of readiness for operation.

If after the registration of the notice of commencement of construction works or issuance of a permit for commencement of construction works there is a change in the name of the customer and / or general contractor and / or general designer and / or contractor due to a change in the type of company or in connection with the transformation of a joint-stock company into another business company, the declaration of readiness of the object for operation, which is submitted for registration, indicates a new (changed) name of these persons (if according to the declaration form they should be specified). the change of name occurred in connection with a change in the type of joint-stock company or in connection with the transformation of a joint-stock company into another business company. If there is such an indication in the declaration of readiness of the facility for operation, the state architectural and construction control body has no right to return such a declaration on the basis of different names of these persons in the declaration of construction and in the declaration of readiness for operation.

[1] Порядок прийняття в експлуатацію закінчених будівництвом об'єктів: постанова Кабінету міністрів України від13.04.2011 № 461. URL: http://zakon.rada.gov.ua/laws/show/461–2011-п (Date accessed:10.04.2019).

The form of the declaration of readiness of the object for operation, the procedure of its submission and registration are determined by the Cabinet of Ministers of Ukraine.

The commissioning of works completed by construction that belong to objects with medium (CC2) and significant (CC3) consequences according to the class of consequences (responsibility) is carried out on the basis of the act of readiness of the object for operation by the issuance of state architectural and construction bodies control of the certificate in the order determined by the Cabinet of Ministers of Ukraine.

The date of commissioning of the completed construction object is the date of registration of the declaration of readiness of the object for operation or certification.

The operation of objects that have not been accepted for construction (if such approval is required by law) is prohibited.

If the relevant body of state architectural and construction control detects the fact of submission of inaccurate data provided in the sent notification or registered declaration, which are grounds to consider the object as unauthorized construction, in particular if it is built or is being built on land not allocated for this purpose , or without a relevant document entitling to perform construction work, or without a duly approved project or construction passport, as well as in case of cancellation of city planning conditions and restrictions on registration of such declaration, the right to start preparatory or construction works acquired on the basis of the notification, are subject to cancellation by the relevant body of the state architectural and construction control in the order established by the Cabinet of Ministers of Ukraine. The relevant body of state architectural and construction control shall notify the customer in writing within three working days from the date of cancellation of the cancellation of the declaration or the right to start the execution of preparatory or construction works acquired on the basis of the submitted notification.

Issuance of a permit, registration of a declaration or issuance of a certificate is carried out by entering data in the register in compliance with the requirements of the Laws of Ukraine: On the Permit System in the Field of Economic Activity [1] and On Administrative Services [2].

Residential buildings that are built for the state and local budgets of apartments that are intended, in particular for socially vulnerable groups (disabled people, war veterans, large families, citizens affected by the

[1] Про дозвільну систему у сфері господарської діяльності: Закон України від 13.03.2018 № 2320-УІІІ. URL: http://zakon.rada.gov.ua/ laws/show/2806–15 (Date accessed: 11.04.2019).

[2] Про адміністративні послуги: Закон України від 18.05.2017 № 2042. URL:

Chornobyl disaster, etc.) are commissioned for conditions of completion of the full amount of interior decoration works in such apartments.

Multi-family residential buildings are commissioned subject to the requirements of state building codes for creating an unobstructed living environment for persons with disabilities and other low-mobility groups of the population.

List of construction works that do not require documents that give the right to perform them, and after which the facility is not subject to commissioning[1], according to the resolution of the Cabinet of Ministers of Ukraine № 406 dated on 07.06.2017:

1. Remodeling and redevelopment work for a dwelling house and a dwelling, as well as a non-residential building, building, structure, premises in them, the execution of which does not involve interference with the enclosing and supporting structures and/or engineering systems of the common use for the objects the class of consequences (responsibilities) belong to objects with minor consequences (CC1), with medium (CC2) and significant (CC3) consequences.
2. Replacement of roofs of buildings and structures in accordance with building codes without interference with load-bearing structures.
3. Reconstruction, major repairs, technical re-equipment of internal systems: heating, including the installation or replacement of equipment for individual heat stations, replacement of pipelines of heating systems, balancing of heating systems, installation of balancing valves and/or flowmeters, change of type of heating systems from single pipe on two-pipe and/or vertical to horizontal, installation and /or replacement of heating appliances, equipment of heating devices with automatic temperature controllers in the room missing from the installation and replacement of equipment, and other equipment distributor control and heat meters; ventilation; water supply and sewerage, including pipelines; power and low-current systems that ensure the functioning of buildings and structures.
4. Replacement of existing window, balcony and door openings.
5. Connection and connection to the engineering networks in accordance with the technical conditions of individual (manor) dwelling houses, gardens, cottages, outbuildings and garages, garages located on private,

http://zakon.rada.gov.ua /laws/show/5203–17 (Date accessed: 07.05.2019).

[1] Перелік будівельних робіт, які не потребують документів, що дають право на їх виконання, та після закінчення яких об'єкт не підлягає прийняттю в експлуатацію: постанова Кабінету міністрів України від 20.03.2019 № 236. URL: http://zakon.rada.qov.ua/ilavs/card/406–2017-п (Date accessed: 07.05.2019).

suburban and garden land plots and land plots for the construction of individual garages.

6. Erection of temporary buildings and structures on the land without arrangement of foundations, including sheds, arbors, tents, shelters, stairs, flyovers, summer showers, greenhouses, garages, as well as wells, wells, backroom closets, toilets, cesspools, cesspools, fences, outdoor pools and covered pools, cellars, cellar entrances, gates, gates, entrances, terraces, porches for individual (homestead) apartment buildings, garden, country houses.
7. Placement of temporary structures for conducting business activities in accordance with Article 28 of the Law of Ukraine: On Regulation of City Planning Activity.
8. Demolition and dismantling of buildings and structures without further construction, which are not preparatory works, and without impairment of the operational suitability of other buildings and structures.
9. Equipping of buildings and structures with devices for separate accounting of thermal energy, hot and cold water.
10. Works on restoration of the elements of improvement defined by the Law of Ukraine: On Settlement Improvement existing playgrounds and sports grounds, platforms for walking of pets, adjacent territories of apartment houses.
11. Arrangement of means of unhindered access to housing, communal and public facilities of persons with disabilities and other low-mobility groups of the population.
12. Installation of technical means of telecommunications and antenna communication structures for mounting antenna-feeder devices on buildings, structures, in built-in and attached premises, in / on container-type premises, as well as on existing ground masts with extensions and towers. The possibility of installation of these technical means of telecommunications and antenna structures for mounting antenna-feeder devices is determined by the assessment of technical condition and in accordance with the requirements of legislation on cultural heritage protection in consultation with the owner of the building, structure or other real estate.
13. Restoration of separate structures of buildings and structures with the purpose of elimination of consequences of emergencies (accidents) and restoration of functioning of objects intended for life support of the population without changing their geometric dimensions.
14. Installation of automated systems for early detection of the threat of emergencies and alerting the population, fire protection systems and their components, systems of internal and external fire-fighting water supply,

systems of lightning protection of buildings and structures, automatic installations for control of explosive concentrations of gas in air.

15. Placing on the roads of the elements of sanitary equipment and technical means defined by the Law of Ukraine "On Roads", in accordance with the building norms, standards and schemes of the organization of traffic.
16. Replacement of units and units of technological equipment and their engineering networks, control and automation systems that have become obsolete and whose technical resources have been exhausted in existing workshops and premises.
17. Construction of fortification structures, engineering and technical equipment for the purpose of strengthening the defense capability of the state in the zones determined by the list of settlements in the territory of which the anti-terrorist operation was carried out, approved by the decree of the Cabinet of Ministers of Ukraine dated December 2, 2015 No. 1275.
18. Works related to railway transport, namely: reconstruction, technical re-equipment and major overhaul of engineering structures, earthen cloth, railway tracks and crossings, passenger platforms, neck of stations with switching points, contact network of railways, overhead power lines 6 – 35 kV, located on the supporting structures of the contact network and individual supports of the contours, overhead and cable lines, distribution and power supply devices, signaling, centralization and interlocking of communication, stationary communication devices, devices of stationary electrical centralization of arrows and signals, bitter centralization, key dependence of arrows and signals, automatic and semi-automatic blocking, dispatching centralization and control, moving automation, means of automatic control of the technical condition of rolling stock during train movements (retrofitting).
19. Demolition of self-constructed objects by court decision.

This list does not apply to sites belonging to cultural heritage sites. The works specified in paragraph 18 of this list are performed on public railway infrastructure facilities located within the Right of way, according to approved design documentation, standards, norms and rules. Execution of construction works should be carried out in compliance with the requirements of legislation, building codes, standards and regulations.

Conclusions. Thus, in accordance with the Resolution of the Cabinet of Ministers of Ukraine dated on April 13, 2011 № 466: Procedure for preparatory and construction works, provisions of the Law of Ukraine: On

Architectural Activity [1], the Law of Ukraine: Law of Ukraine: On Regulation of City Planning Activity (Article 34), the Law of Ukraine № 1817-19 dated on 10.06.2017, On Amendments to Certain Legislative Acts of Ukraine on Improving City Planning Activity 1, perform redevelopment and re-equipment is possible after the customer submits a notice of commencement of construction works to the State Architectural and Construction Inspectorate or its territorial body at the location construction object. As of today, this is a replacement for the permission of the executive committee of the local Council of People's Deputies (provided for in Article 152 of the Housing Code of Ukraine).

Reconstruction should be carried out according to the design documentation developed by an organization that has a license to carry out this type of work and requires documents that give the right to perform them, and after which the facility is subject to commissioning. Redevelopment, which does not involve interference with enclosing and load-bearing structures and/or engineering systems of general use, does not require documents that give the right to perform them, and after which the facility is not subject to commissioning. Design of re-equipment of engineering networks should be carried out on the basis of technical conditions obtained by the customer independently in the relevant institutions.

The provisions of the legislative acts on obtaining permits for the reconstruction, redevelopment and refurbishment of individual dwellings, which should be carried out for the implementation of the proposed distribution options, can be used by experts in carrying out the expertise of this area.

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ДОЗВІЛЬНІ ДОКУМЕНТИ, ЩО РЕГЛАМЕНТУЮТЬ ВИКОНАННЯ БУДІВЕЛЬНИХ РОБІТ НА СУЧАСНОМУ ЕТАПІ

Однією із завдань будівельно-технічної експертизи є визначення технічної можливості розподілу житлового будинку, квартири на декілька ізольованих квартир з окремими виходами як на земельну ділянку, так і на сходову клітину багатоповерхового житлового будинку. Перетворення виділюваної частини будинку в ізольовану квартиру (приміщення) передбачає проведення необхідних будівельних робіт по реконструкції, перепланування, переобладнанню згідно з діючими нормативними документами. Разом з цим, виникають питання стосовно надання дозволів на виконання таких робіт. Проведено аналіз сучасної нормативної бази дозвільної документації при вирішенні питань з можливості перетворення виділюваної частини будинку в ізольовану квартиру (приміщення).

Ключові слова: будівництво, дозвільні документи, ізольована квартира, класи наслідків, переобладнання, перепланування приміщення, реконструкція, містобудівна діяльність.

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РАЗРЕШИТЕЛЬНЫЕ ДОКУМЕНТЫ, РЕГЛАМЕНТИРУЮЩИЕ ВЫПОЛНЕНИЕ СТРОИТЕЛЬНЫХ РАБОТ НА СОВРЕМЕННОМ ЭТАПЕ

Одной из задач строительно-технической экспертизы является определение технической возможности раздела жилого дома на изолированные квартиры с отдельными выходами на земельный участок, включая и возможность переоборудования выделяемой части дома в изолированную квартиру (помещение) путем проведения необходимых строительных работ по реконструкции, перепланировке, переоборудованию согласно действующим нормативным документам. Вместе с этим, возникают вопросы о предоставлении разрешений на выполнение таких работ и порядка их выполнения. Рассмотрены основные требования законодательных и нормативных актов в области строительства, которые регулируют порядок выполнения строительных работ по реконструкции, перепланировке, переоборудованию и получения необходимых разрешительных документов для реализации переоборудований, предложенных экспертами в вариантах раздела жилых домов и сооружений индивидуальных застройщиков между совладельцами в соответствии с идеальными долями каждого и при определении порядка пользования помещениями. Законом Украины № 1817–19 «О внесении изменений в некоторые законодательные акты Украины относительно усовершенствования градостроительной деятельности» кардинально изменились правила получения права на выполнение строительных работ и ввода в эксплуатацию законченных строительством объектов. Принадлежность объекта к определенному классу последствий (ответственности) на стадии разработки проектной документации определяет стадийность проектирования, необходимость проведения экспертизы проектной документации, на стадии строительства — получение необходимых разрешений, принятие завершенных строительством объектов в эксплуатацию. Дан перечень строительных работ, не требующих документов, дающих право на их выполнение, и по истечении которых объект не подлежит принятию в эксплуатацию.

Ключевые слова: строительство, разрешительные документы, изолированная квартира, классы последствий, переоборудование, перепланировка помещения, реконструкция, градостроительная деятельность.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.37
UDC 343.98:728(477)

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SOME FEATURES OF RESEARCH ON DISTRIBUTION OF OLD HOUSING RESIDENTIAL BUILDINGS

The decision of the questions arising at carrying out researches on section of apartment houses of old building is actual for the theory and practice of carrying out forensic examinations connected with development of variants of section of such real estate, considering uncertainty and contradictions of the data of separate documents (technical, legal). residential real estate, which is in the right of common share ownership as a result of certain actions for redevelopment, construction, reconstruction.

Errors (the results of incorrect calculations, inaccuracies, typos, etc.) allowed in the preparation of technical inventory documents, on the basis of which documents of title to real estate are drawn up, affect the calculations when developing options for the section of residential real estate. With long-term operation, all changes in the composition of households that are made by the co-owners of this property at different periods of time, such as changes in the space-planning solution of objects, engineering and technical equipment, landscaping, etc., should be reflected in the documents submitted for research including the corrected ideal shares in connection with the carried-out improvements to the residential real estate of the old building. These factors affect the completeness of the study and the expert formation of conclusions about the possible division of objects of old residential buildings.

The analysis of regulatory and legal documentation has been carried out, unified approaches have been developed to carry out research on the

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division of residential buildings of old buildings, taking into account certain factors that affect the results of the conclusions of this type of forensic examination.

Keywords: construction objects, construction; residential development; real estate, surveys, redevelopment; area, reconstruction, distribution, technical inventory, technical condition, operation, ideal shares, common share ownership, forensic examination, forensic engineering.

Formulation of Research Problem. According to the Civil Code of Ukraine [1]: property owned by two or more persons (co-owners) belongs to them on the right of joint ownership (joint property); joint ownership is considered partial if the agreement or law does not establish joint ownership of property; the co-owner has the right to allocate in kind a share of the property that is in joint partial ownership. Forensic experts often have to decide on the possibility of distribution in kind of home ownership in accordance with the shares of co-owners.

Resolving issues related to the distribution of old residential buildings combined with the issue of error (the results of incorrect calculations, inaccuracies, typographical errors, etc.), which are allowed in the preparation of technical documents inventory, on the basis of which the legal documents for real estate, and subsequently studies on the distribution of residential real estate (households).

Analysis of Recent Researches and Publications. The main publication, which fully spells out the issues of research on the distribution of residential buildings, including the old building is Guidelines for conducting research on the distribution and use of real estate [2].

This fact largely determines the need to analyze the legislative and regulatory acts governing the procedure for obtaining technical and legal documents for real estate.

The Article Purpose is to conduct an analysis and determine common approaches to the implementation of research on the distribution of residential buildings of old buildings, taking into account certain factors that affect the results of the conclusions of this type of forensic examination.

Main Content Presentation. According to the Civil Code of Ukraine 1 (The Official Bulletin of the Verkhovna Rada of Ukraine, 2003) (as amended): property owned by two or more persons (co-owners) belongs to them on the right of joint ownership (joint property) (Paragraph 1, Article

[1] Цивільний кодекс України від 6 січня 2003 року № 435-IV. *Відомості Верховної Ради України,* 2003. № № 40–44. Ст. 356.

[2] Звіт про науково-дослідну роботу IV.3.1–2016/1 «Методичні рекомендації щодо проведення досліджень з розподілу та порядку користування нерухомим майном». Архів Харківського НДІСЕ за 2016 р.

355), joint ownership is considered partial, if the contract or law does not establish joint ownership of property (paragraph 4, Article 355), the co-owner has the right to allocate in kind shares from the property that is in joint partial ownership.

Guidelines for conducting research on the distribution and order of use of real estate2 provides the concept of separation of a dwelling house (from a technical point of view), this is the technical possibility of dividing the nature of a dwelling house in accordance with the shares of co-owners (or close to these shares) with arrangement in the parts of the house allocated to the co-owners of separate isolated, at least one-room apartments, in accordance with the requirements of regulatory documents.

Addressing the distribution of old residential buildings requires careful study of all technical and legal documents submitted for research on these buildings. In the practice of experts, when developing options for the distribution of residential buildings of old buildings, there is a need to analyze the data of these documents, which guarantees a complete and objective research and sound conclusions of examinations.

The problem faced by experts in carrying out such research is the errors (the results of incorrect calculations, inaccuracies, typographical errors, etc.) allowed in the preparation of technical documents inventory, on the basis of which the legal documents for real estate are formed and further, if necessary, conducted on the distribution of residential real estate (households).

The concept of home ownership is defined by the Instruction on economic accounting in village, settlement and city councils [1], namely: a residential building with outbuildings and buildings located on the same land plot.

While long term operation of residential buildings can change many times the composition of co-owners, planning and design of real estate, components of home ownership: demolition of existing buildings and structures, or vice versa construction of new buildings, redevelopment of buildings, replacement of structural elements. And sometimes, by carrying out new construction or reconstruction in most of the old building, the co-owners make integral improvements to the household, resulting in a new real estate object in an improved condition, which can only partially reproduce the real estate object (old building). that existed before.

These factors affect the calculations while developing options for the distribution of residential real estate and should be taken into account by the

[1] Інструкція з ведення погосподарського обліку в сільських, селищних та міських радах: затв. наказом Державної служби статистики України від 11.04.2016 № 56. URL: https://zakon.rada.gov.ua/laws/show/z0689-16 (Date accessed: 22.08.2019).

expert in the study. At the same time, the study of the information presented in the documents submitted for research requires a lot of forensic expert time.

Data on information objects provided to the expert for research should be organized in chronological order; from the time of commissioning of residential real estate to the time of the study in order to distribute these objects.

Instruction on the procedure for conducting a technical inventory of real estate[1] defines the procedure and methods of conducting a technical inventory of constructed (reconstructed) buildings, ancillary buildings and structures in order to:

- determination of their actual area and volume (relative to design);
- inspection and evaluation of the technical condition of existing objects;
- determine the value of the objects.

Technical inventory provides:

- initial technical inventory of objects;
- current inventory assessment work to establish changes over a period of time after the initial inventory.

Instruction on the Procedure for Technical Inventory of Real Estate Objects is valid throughout Ukraine for technical inventory of real estate objects of all forms of ownership.

Technical inventory of newly constructed (reconstructed) and existing objects is carried out at the expense of customers by utility companies – the technical inventory office.

Technical inventory is subject to objects of all forms of ownership, located on land plots (at separate postal addresses), regardless of whether they are built according to properly designed documents or on their own: houses, including annexes and superstructures, public and industrial buildings, outbuildings and structures, as well as built-in and separately located protective structures.

On the basis of technical inventory materials, inventory cases and technical passports for real estate objects are compiled.

According to the Instruction on the procedure of technical inventory of real estate objects, one of the objects subjects to technical inventory are residential apartments of low-rise type, residential houses with farm buildings and structures located on separate land plots, gardens holiday homes, garages.

[1] Інструкція про порядок проведення технічної інвентаризації об'єктів нерухомого майна: затв. наказом Державного комітету будівництва, архітектури та житлової політики України від 24.05.2001 № 127 URL: https://zakon.rada.gov.ua/laws/show/z0582-01 (Date accessed: 22.08.2019).

An inventory case is formed and maintained for each real estate object throughout its existence and stored in the state registration authority for the location of such object.

According to the requirements of the Instruction on the procedure of technical inventory of real estate, in case of changes in the composition, technical condition, homeowners, etc., the technical inventory bureau makes appropriate corrections and additions to the inventory documents. If there are changes, the technical passport is replaced with a new one marked in the old technical passport, which remains with the customer. The material should be concentrated in one inventory case.

While conducting real estate surveys by real estate experts, disputes often arise between co-owners about the right to own or use specific premises in the home, basements, attics, and outbuildings.

According to Article 331 of the Civil Code of Ukraine (as amended) [1]: the right of ownership of a new thing, which is made (created) by a person is acquired; unless otherwise provided by contract or law. The person who made (created) the thing from his materials on the basis of the contract is the owner of this thing. Ownership of newly created real estate (residential buildings, buildings, structures, etc.) arises from the moment of completion of construction (creation of property).

Therefore, it is very important for the experts to trace the technical and legal documents for this property to the stages of operation of a dwelling house in chronological order, its components and legal identity, in particular to find out the following:

1. Establishing how the primary shares of co-owners at the time of joint partial ownership of real estate, the value of which premises in the house and the value of which buildings and structures was assigned to the calculation of ideal shares (in the inventory should be the calculation of shares of co-owners in ownership of the surveyed real estate, if the co-owners have applied for such a statement). This calculation is based on data on the total area of the building, the cost of buildings and structures, including data on the area of individual parts of the house with outbuildings and structures with their cost indicators, which are calculated to belong to certain co-owners.
2. If the composition of co-owners of households from the time of joint partial ownership to the time of the study on the distribution of a residential building has changed a large number of times, and previous co-owners completed additions to a residential building, which were commissioned before 2003 in the manner prescribed by law. bureau of

[1] Цивільний кодекс України від 6 січня 2003 року № 435-IV. *Відомості Верховної Ради України,* 2003, № № 40–44, Ст. 356.

technical inventory at the request of co-owners, as a rule, calculations of redistribution of shares in the ownership of real estate in connection with the construction of new buildings.

In the practice of forensic experts conducting research on the possibility of distribution of real estate, there are cases when the analysis of inventory materials submitted for research, it is incorrect to determine the ideal shares of co-owners of the surveyed household, from the time of joint ownership to the time of the study. distribution of this property, for example, in connection with the implementation of redevelopment of premises, dismantling of old fireplaces, stoves, partitions or construction of new structural elements inside the house. All these re-equipment increase (or decrease) the total area of the premises of the house in relation to the construction (initial) area of the house. In accordance with the requirements of the Instruction on the procedure for conducting a technical inventory of real estate4, the calculation of the area of the premises of buildings is carried out in the logs of internal measurements. When calculating, use the values determined in the process of direct measurements. The area of the premises of the house is calculated by the sum of the areas of the interior.

Therefore, in the future, if necessary, the calculation and determination of the shares of co-owners by the employees of the technical inventory bureau are allowed errors in the calculations, due in particular to the use in these calculations of the value of the actual total area of reconstructed (reconstructed) premises resulting from remodeling.

Incorrectly defined source data, which contain inventory materials, include incorrectly determined ideal shares of co-owners in real estate ownership, the amount of which is not equal to one (or more than one). According to the Instruction on division, allocation and calculation of shares of real estate[1]: the right of each co-owner in joint partial ownership is determined by the share, which is expressed in simple correct fractions (1/2; 1/3; 3/5, etc.). In this case, the size of the shares of co-owners of real estate specified in the title documents should be one in total.

In the future, the shares of co-owners in the ownership of real estate over time can be transformed by various transactions with this property (inheritance, sale, gift, etc.), and determined by previously committed errors, which affects the conclusions about the change of ideal shares in the distribution options, and as a consequence of the calculation of compensation for the performance of residential real estate distribution experts.

[1] Інструкції щодо проведення поділу, виділу та розрахунку часток об'єктів нерухомого майна: затв. наказом Міністерства з питань житлово-комунального господарства України від 18.06.2007 № 55 URL: https://zakon.rada.gov.ua/laws/show/z0774-07 (Date accessed: 22.08.2019).

At the same time, it should be noted that experts in the implementation of research on the distribution of residential real estate using current at the time of the study copyright owners' documents on real estate, prohibited from going beyond the competence of a forensic expert, have no right to containing valid title documents: source data for the distribution of real estate.

It should be noted that the methods of conducting research on the distribution of residential real estate does not cover the range of problematic issues related to the reconstruction / redevelopment of the investigated building objects that are jointly owned by the joint owners, as well as issues using the original data in the case of providing experts to perform residential real estate distribution documents (technical, law enforcement) containing incorrect data, provided that corrections are currently being made It is very difficult to obtain the data of these documents and it is to a greater extent impossible due to the change of the planning and planning decision of the object from the time of construction, change of its composition and various legal transactions with this property.

In addition, it should be noted that the difficulty of resolving the issue of distribution of old residential buildings also arises in connection with changes in the legislation of our state. Thus, in accordance with the requirements of Article 119 of the Civil Code of the Ukrainian SSR (as amended by the Decrees of the Presidium of the Supreme Soviet of the Ukrainian SSR), The Code repealed on the basis of the Code № 435-IV (435-15) of January 16, 2003, Official Bulletin of the Verkhovna Rada of Ukraine, 2003, № № 40-44) [1]: when a participant of joint partial ownership of a residential building increases the usable area of the building at his own expense by extension, superstructure or reconstruction, carried out with the consent of other participants and in the prescribed manner, the share of participants in joint ownership of the house and the order of use of premises in it is subject to the corresponding change.

And according to p.p. 3, 4 of Article 357 of the Civil Code of Ukraine (as amended) 1: the co-owner has the right to increase his share in the right of joint partial ownership, if the improvements of common property that cannot be separated, made at his own expense with the consent of all co-owner compliance with the established procedure for the use of common property. The co-owner of a residential building, other building, construction may make an extension (extension) at his own expense in accordance with the procedure established by law without the consent of other co-owners, if

[1] Цивільний кодекс Української РСР (із змінами і доповненнями, внесеними Указами ПВР Української РСР (Кодекс втратив чинність на підставі Кодексу № 435-IV (435–15) від 16.01.2003. Відомості Верховної Ради України, 2003. № 40–44. Ст.119). URL: https://zakon.rada.gov.ua/laws/show/1540-06 (Date accessed: 22.08.2019).

this does not violate their rights. Such completion (extension) is the property of the co-owner who made it, and does not change the size of the shares of co-owners in the right of joint partial ownership.

Thus, the entry into force of the new Civil Code of Ukraine [1], with the construction of new buildings in the household, which is jointly owned, the ideal share of co-owners in real estate ownership was redistributed at the request of co-owners, and their size was determined by calculations in inventory and inventory. ideal shares were indicated in the title documents. And after the introduction, in accordance with the requirements of the Civil Code of Ukraine of 2003 (as amended), due to changes in the composition of households due to new buildings, the ideal share of co-owners in real estate ownership does not change. But how to take this into account in the distribution of old housing, and neither regulations nor methods of conducting this type of examination is not specified.

Conclusions. In the absence of a unified approach, the distribution of old buildings converted as a result of certain redevelopment, reconstruction or new completion not included in a common partial ownership and considering the fact that the distribution of the dwelling house in kind is actual real estate is not feasible for certain reasons, it is proposed to provide options for the distribution of an apartment building developed according to the inventory documents as of the time preceding the changes made in the same House's light repair work, construction, reconstruction.

It should be noted that after the court decision on the distribution of real estate, in the future may be any transactions with this property. Therefore, when drawing up title documents, there is a question of real estate, built by the co-owners at their own expense, if the ideal shares in connection with the creation of these objects do not change as required by applicable law. Therefore, when conducting a study on the distribution of old housing, as mentioned above, experts are recommended, together with the proposed options for the distribution of real estate in joint ownership, the court decision to calculate the change in shares of co-owners based on the total cost of actual components household (together with new buildings erected in person). Such calculation should include the shares of real estate of joint partial ownership, allocated to the co-owners during the distribution and the shares that are personally erected by the owners of the new building.

If according to the materials of the technical inventory an expert finds that the ideal shares are currently determined with errors in relation to the time of formation of joint partial ownership of the investigated real estate, the calculation of compensation is proposed not to be carried out. analysis of the data of the inventory file and based on the results of this analysis

1 Ibid.

to provide a justification for the impossibility of determining monetary compensation for the co-owner, whose ideal share is reduced by the option of distribution of real estate.

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ДЕЯКІ ОСОБЛИВОСТІ ПРОВЕДЕННЯ ДОСЛІДЖЕНЬ З РОЗПОДІЛУ ЖИТЛОВИХ БУДИНКІВ СТАРОЇ ЗАБУДОВИ

Вирішення питань, що виникають при проведенні досліджень з розділу житлових будинків старої забудови, актуально для теорії і практики проведення судових експертиз, пов'язаних з розробкою варіантів розділу такої нерухомості, враховуючи невизначеність і протиріччя даних окремих документів (технічних, правовстановлюючих), які надаються на дослідження, та зміни складу житлової нерухомості, що знаходиться в праві спільної часткової власності в результаті здійснення певних дій з перепланування, будівництва, реконструкції. Проведено аналіз нормативної та правовстановлюючої документації, розроблені єдині підходи до виконання досліджень з розподілу житлових будинків старої забудови з урахуванням певних факторів, які впливають на результати висновків такого виду експертиз.

Ключові слова: будівельні об'єкти, будівництво; житлова забудова; нерухомість, обстеження, перепланування; площа, реконструкція, розподіл, технічна інвентаризація, технічний стан, експлуатація, ідеальні частки, спільна часткова власність, судова експертиза, будівельно-технічна експертиза.

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НЕКОТОРЫЕ ОСОБЕННОСТИ ПРОВЕДЕНИЯ ИССЛЕДОВАНИЙ ПО РАЗДЕЛУ ЖИЛЫХ ДОМОВ СТАРОЙ ЗАСТРОЙКИ

Решение вопросов, возникающих при проведении исследований по разделу жилых домов старой застройки актуально для теории и практики проведения судебных экспертиз, связанных с разработкой вариантов раздела такой недвижимости, учитывая неопределенность и противоречия данных отдельных документов (технических, правоустанавливающих), которые предоставляются на исследование и изменения состава жилой недвижимости, находящейся в праве общей долевой собственности в результате осуществления определенных действий по перепланировке, строительству, реконструкции.

Погрешности (результаты некорректных расчетов, неточности, опечатки, др.), допускаемые при составлении технических документов инвентаризации, на основании которых составляются правоустанавливающие документы на недвижимое имущество, влияют на расчеты при разработке вариантов раздела жилой недвижимости. При долгосрочной эксплуатации, все изменения состава домовладений, которые вносят совладельцы этой недвижимости в разные периоды времени, такие как, изменение объемно-планировочного решения объектов, инженерно-техническое оснащения, благоустройства и др., обязательно должны быть отражены в документах, предоставляемых на исследование, в том числе откорректированы идеальные доли в связи с проведёнными улучшениями жилой недвижимости старой застройки. Указанные факторы влияют на полноту исследования и формирование экспертом выводов о возможном разделе объектов старой жилой застройки.

Проведен анализ нормативной и правоустанавливающей документации, разработаны единые подходы к выполнению исследований по разделу жилых домов старой застройки с учетом определенных факторов, влияющих на результаты выводов такого вида экспертиз.

Ключевые слова: строительные объекты, строительство; жилая застройка; недвижимость, обследования, перепланировки; площадь, реконструкция, распределение, техническая инвентаризация, техническое состояние, эксплуатация, идеальные доли, общая долевая собственность, судебная экспертиза, строительно-техническая экспертиза.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.38
UDC 343.98

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REGARDING PROBLEMS OF FORENSIC STRUCTURAL ENGINEERING CLASSIFICATION

Analysis of expert practice demonstrates that the range of objects and the number of construction and technical studies performed is constantly increasing. Taking into account the relevance of this kind of forensic examination both for the investigation of criminal proceedings and for other types of legal proceedings, the main provisions related to the formation of the theoretical basis of forensic construction and technical expertise in terms of its classification are considered. Currently in Ukraine, the Lists of sorts of forensic science and expert areas of specialization are in force, according to which the qualifications of a forensic expert are assigned to specialists of scientific research institutions of forensic examinations of the Ministry of Justice of Ukraine, as well as to specialists who do not work in state specialized institutions. These Lists are appendices to the Regulations on Qualification Commissions and Certification of Forensic Experts, approved by order of the Ministry of Justice of Ukraine dated on 03.03.2015 No. 301/5. According to specified document, as separate sorts of forensic science, forensic structural engineering, forensic real estate valuation, forensic land valuation, and forensic highway engineering are recorded for the relevant sorts of forensic areas of specialization. The subject of judicial construction and technical and construction appraisals should be considered the factual data and circumstances of the case (production) established on the basis of special knowledge in the field of construction, which have evidentiary value for any type of legal proceedings, while research on the relevant construction objects: real estate, building materials, structures and related technical documentation. In other words, technical content of forensic engineering and forensic real estate valuation consists in the implementation of knowledge on construction by examining the relevant construction objects, analyzing technical documentation within the framework of the subject and tasks of these categories of examinations by the relevant subject by applying an

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appropriate system of research methods. These features distinguish them into independent kinds of forensic science.

Keywords: forensic structural engineering, expert conclusion, expert Area of specialization, class, kind, sort of forensic science, forensic science classification.

Formulation of Research Problem. Analysis of expert practice shows that the range of objects and the number of performed construction and technical research is constantly growing. In recent years, the following statistical picture has been observed: in 2009, 7,895 construction and technical examinations were performed in the system of forensic institutions of the Ministry of Justice of Ukraine (which amounted to 8.5% of the total number of conducted studies); 2010-8162 (8.6%); 2011-8497 (8.7%); 2012-8550 (11.5%); 2013-8977 (13.1%); 2014-6980 (11.8%); 2015-6676 (10.5%); 2016-6831 (10.3%); 2017-9842 (10.8%); 2018-11065 (10.5%). The decrease in the number of examinations in 2014-2016 is due to the fact that Ukraine has lost control over the territories in the Crimea and the eastern region (part of Donetsk and Luhansk regions), where there were two powerful expert institutions, however, in percentage terms growth trends remain; it is about 10% of the examinations performed on all types of research in specialized institutions of the Ministry of Justice. Note that in total, the system conducts forensic examinations in more than 90 types of forensic areas of specialization [1].

Considering relevance of this kind of forensic science both for the investigation of criminal proceedings and for other types of litigation, let us consider the main provisions related to the formation of the theoretical base of forensic construction and technical expertise in the aspect of its classification.

Analysis of Recent Researches and Publications. Theoretical and scientific-methodical provisions of forensic construction and technical expertise are reflected in the scientific works of Ukrainian and Russian scientists: L. Gula, Z. M. Skibinskaya, O. Ya. Zayats, V. V. Kontimirova, V. V. Mazurova, O. V. Komandirova, O. V. Levchenko, O. V. Kisil, A. Yu. Butyrina, O. S. Vershinina, S. D. Voloshchuk, A. V. Krakhina, M. Yu. Sedneva [2] and other specialists in this field of special knowledge. Analysis of publications shows that the basis for the differentiation of

[1] Пучко Д. В. Современное состояние и перспективы развития судебной строительно-технической экспертизы в Украине. *Criminalistics and Forensic Expertology: Science, Studies, Practice.* V. XV. Book II. Lietuvos Teismo Centras, Lietuvos Kriminnalistu Draugija, 2019. P. 311–326.

[2] Див., напр.: Гула Л. Особливості будівельно-технічної експертизи з визначення завищення даних про вартість виконаних будівельно-ремонтних робіт із залученням бюджетних коштів. *Вісник Національного університету «Львівська полі-*

forensic construction and technical research, however, like any other, laid organizational and procedural, scientific and methodological and other criteria, depending on the set of characteristics of different aspects of the subject, object, sub, tasks, research methods and special knowledge used. At the same time, there are debatable issues regarding the assignment of certain studies to certain types (subtypes) of forensic construction and technical expertise, which affects the practice of its appointment and conducting.

Article Purpose. On the basis of the analysis of special literature, regulations and expert practice, consider the main provisions related to the formation of the theoretical base of forensic construction and technical expertise in the aspect of its classification.

Main Content Presentation. We follow the trend according to which forensic construction and technical expertise should be considered as a genus in the class of engineering and technical expertise, differentiated by

техніка». Серія: Юридичні науки. Lviv Polytechnic National University Institutional Repository URL: http://ena.lp.edu.ua (Date accessed: 01.09.2019); Гула Л. Характеристика організації будівельно-ремонтних робіт як об'єктів будівельно-технічної експертизи з визначення характеру їх виконання. Вісник Національного університету «Львівська політехніка». Серія: Юридичні науки, 2017. № 861. С. 432–439; Скибінська З. М., Заяць О. Я. Суб'єкти малого підприємництва та особливості застосування спрощеної системи оподаткування, обліку та звітності у будівельному виробництві. Науковий вісник: зб. науково-технічних праць Національного лісотехнічного університету України, 2007. Вип. 17.8. С. 244–248; Контимирова В. В., Мазурова В. В. Про актуальність питання з організації випробувальних будівельно-технічних лабораторій в установах судових експертиз. Вісник ОНДІСЕ. Вип.5, 2019. С. 90–94; Командиров О. В., Левченко О. В., Кисіль О. В. Перспективи застосування bim-технології (building information modeling) в будівельно-технічній експертизі. Вісник ОНДІСЕ. Вип.5, 2019. С. 86–89; Бутырин А. Ю. Судебная строительно-техническая экспертиза (теоретические, методические и правовые основы). Москва, 1998. 196 с.; Бутырин А. Ю. Методики исследования объектов судебной строительно-технической экспертизы. Оконных заполнений из ПВХ; квартир, поврежденных заливом (пожаром); межевых границ земельных участков. Москва: Библиотека эксперта, 2007. 220 с.; Бутырин А. Ю. Строительно-техническая экспертиза в судопроизводстве России: дис. докт. юрид. наук: 12.00.09 / МГЮА. Москва, 2005. 608 с.; Бутырин А. Ю. Теория и практика строительно-технической экспертизы. Москва: Городец, 2006. 224 с.; Вершинина О. С. (ред.) Практическое пособие строительного эксперта: изд. 4-е. перераб. и доп. Москва: Спутник+, 2007. 835 с.; Волощук С. Д., Крахин А. В., Седнев М. Ю. Судебная строительно-техническая экспертиза. Определение объёмов и стоимости фактически выполненных проектно-изыскательских работ: учеб. пособ. Москва: АСВ, 2014. 176 с.; Бутырин А. Ю., Орлов Ю. К. Строительно-техническая экспертиза в современном судопроизводстве: учебник / Гос. учреждение Российский федеральный центр судебной экспертизы при М-ве юстиции РФ. Москва: РФЦСЭ, 2011. 368 с.

types (subspecies) depending on the tasks and objects of study: buildings (industrial and civil construction), engineering structures; objects of individual construction. Our conclusions are explained by the following provisions.

According to the State Classification of Buildings and Structures DK 018-2000, these real estate objects are differentiated depending on their purpose - production or non-production. Buildings are earth-related building systems made of building materials, semi-finished products, equipment and facilities as a result of various construction and installation works. Buildings are structures consisting of load-bearing and enclosing or connected (load-enclosing) structures that form above-ground or underground premises intended for living or staying of people, placement of equipment, animals, plants, objects. Buildings include: residential buildings, dormitories, hotels, restaurants, shopping malls, industrial buildings, railway stations, public speaking buildings, medical institutions, educational institutions, etc. Engineering structures are three-dimensional, planar or linear ground, above-ground or underground building systems, consisting of load-bearing and, in some cases, enclosing structures and designed to perform production processes of various types, placement of equipment, materials and products, for temporary stay and movement of people, vehicles, goods, movement of liquid and gaseous products, etc.[1]

Engineering structures are classified mainly on the basis of engineering designs and are determined by the purpose of the object. Engineering structures include: transport structures (railways, highways, runways, bridges, overpasses, etc.), pipelines and communications, dams, complex industrial structures, sports and entertainment facilities, etc. The unit of classification in the specified Classifier, basically, is a separate building or an engineering construction (building, road, pipeline, etc.). For complex buildings consisting of several buildings, each building can be classified individually or as a group. Combined dwellings should be identified by one classification feature according to the main purpose [2].

While forensic expert examination, the forensic expert should take into account the specifics of each of the above and defined by the Classifier of construction sites. Of course, this Classifier is not the only document that allows you to see and analyze all the variety of objects of construction and technical expertise. At the same time, in the Instruction on appointment and carrying out of forensic examinations and expert researches in a class of engineering and technical examinations construction-technical, road-technical and appraisal-construction examinations are allocated.

[1] Державний класифікатор будівель та споруд ДК 018–2000. URL: https://zakon.rada.gov.ua/rada/show/va507565–00 (Date accessed: 27.08.2019).

[2] Ibid.

As our own experience of procedural management in criminal proceedings for construction crimes shows, one of the most pressing tasks that can be solved by forensic experts in the field of construction is to establish the value of construction sites and construction work, which is often associated with proving the facts. illegality of use of budget funds (their misuse). In such expert situations, the objects of construction and technical examination are: buildings, structures, engineering and other equipment and documentation to them: technical passports, inventory; working projects and working documentation; specifications, explanatory notes to the project; conclusions of the state complex examination; local estimates; general information on land resources; agreements or contracts; additional agreements; acts of performed contract works; certificates of performed contract work; reports on regulatory write-off of materials; acts of inspection of hidden works; calendar plans or network schedules; work logs; acts of commissioning of buildings or structures, etc. However, forensic construction and technical expertise plays an important role in the investigation (trial) of criminal proceedings on accidents, accidents that occur during construction works; consideration of civil claims for ownership of real estate; in cases of administrative offenses related to the establishment of the legality of construction, operation of construction sites, compliance of the performed works with construction norms and rules, etc.[1]

According to the Article 2 of the Law of Ukraine: On Forensic Examination, the legislation of Ukraine on forensic examination consists of this Law and other regulations[2]. The Instruction on Appointment and Conduct of Forensic Examinations and Expert Investigations, approved by the Order of the Ministry of Justice of Ukraine of October 8, 1998 № 53/5 (as amended), provides for the classification (distribution) of forensic examinations on various grounds: sequence, number of experts per or several specializations, the nature (industry) of special knowledge, etc.[3]

The formation of forensic structural engineering as a separate field of knowledge is closely related to one of the most important documents

1 Пучко Д. В. Питання класифікації будівельних об'єктів раніше розглядалося нами в роботі: проблемні питання судової будівельно-технічної експертизи. Актуальні питання судової експертизи і криміналістики: зб. матеріалів міжнарод. наук.-практ. конф., присвяченої 150-річчю з дня народження Засл. проф. М. С. Бокаріуса (Харків, 18–19 квіт. 2019 р.). Харків: ХНДІСЕ, 2019. С. 310–312.

2 Про судову експертизу : Закон України 25.02.1994 № 4038-XII. Голос України від 21.04.1994 (including subsequent amendments and additions).

3 Про затвердження Інструкції про призначення та проведення судових експертиз та експертних досліджень та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз та експертних досліджень: наказ Міністерства юстиції України від 08.10.98 № 53/5 (as subsequently amended). Відомості Верховної Ради України. 1998. № 46. Ст.172.

governing the appointment of construction and technical expertise in civil cases on the distribution of households belonging to citizens, the legality of their construction by decision of the Plenum of the Supreme Court dated on July 31, 1981: On judicial practice in resolving disputes related to the right of private house ownership[1].

For the first time in Ukraine, units of forensic construction and technical research were established in the research institutes of forensic expertise of the USSR Ministry of Justice: in 1988 – at KhRIFE and Kyiv Scientific Research Institute of Forensic Expertise; in 1991 – at Odessa Scientific Research Institute off Judicial Expertise.

Approval of the Instruction on appointment and conduct of forensic examinations and expert research and Scientific and methodological recommendations on preparation and appointment of forensic examinations, in accordance with the order of the Ministry of Justice of Ukraine dated on October 8, 1998 № 53/5, defines, in fact, the class of forensic examination is forensic engineering and the kind of research data is forensic structural engineering.

In order to strengthen control over the quality of training and certification of forensic experts from among specialists of research institutes of forensic examinations and specialists who are not employees of state specialized institutions, the Regulation on expert qualification commissions and attestation of forensic experts was approved. № 285/7-A) and the List of the main types of forensic examinations and expert specialties for which the qualification of a forensic expert is assigned. According to this List, the types of forensic examinations, indices and types of expert specialties are determined, namely: type of forensic examinations — construction and technical expertise; indices and types of expert specialties — 10.6 Research of real estate, building materials, structures and relevant documents; 10.7 Distribution of land and determination of the order of land use; 10.10 Determination of the appraised value of construction objects and structures; 10.14 Estimation of land plots" The specified list at one level of classification units of the kind of construction and technical examination includes types of expert specialties concerning construction objects and lands and land plots. We believe that this classification does not fully correspond to the object-oriented approach to the differentiation of expert specialties, as we are dealing with different objects, each of which is specific: construction, on the one hand, and land, on the other. Of course, it should be borne in mind that in many areas of expert tasks, these objects are closely interrelated, as buildings and structures are

1 Про судову практику з вирішення спорів, пов'язаних з правом приватної власності на жилий будинок: постанова Пленуму Верховного Суду СРСР від 31 липня 1981 року. URL: https: //zakon.rada.gov.ua/ laws/show/v0004400–81 (Date accessed: 25.12.2018).

located on land. But such a connection can be conditionally compared, for example, with handwritten texts in documents, which are, on the one hand, the objects of handwriting research, and on the other hand, are studied within the technical examination of documents. This in no way hinders the separation of handwriting examination, on the one hand, and technical examination of documents, on the other, as separate generic units of the forensic class in the general classification of forensic examinations.

With the adoption on July 12, 2001 of the Law of Ukraine: On Appraisal of Property, Property Rights and Professional Appraisal Activity in Ukraine, National Standard № 1: General Principles of Valuation of Property and Property Rights (Resolution of the Cabinet of Ministers of Ukraine dated on September 10, 2003 according to № 1440) and other normative documents, the main tasks of Forensic Structural Engineering were supplemented by establishing the type of value, namely: determining the real estate market value as specified in the Scientific Guidelines for preparation and appointment of forensic examinations and forensic researches approved by order of the Ministry of Justice of Ukraine dated on December 30, 2004 for № 144/5. With the amendments to the Instruction on appointment and conducting forensic examinations and forensic researches dated on December 26, 2012 № 1950/5, Forensic Structural Engineering (Forensic Real Estate Valuation), Forensic Land valuation and Forensic Highway Engineering are separated.

At present, the Lists of types of forensic examinations and expert specialties are valid, according to which the qualification of a forensic expert is assigned to specialists of research institutions of forensic examinations of the Ministry of Justice of Ukraine, as well as specialists who do not work in state specialized institutions. These lists are annexes to the Regulation on expert qualification commissions and certification of forensic experts, approved by the order of the Ministry of Justice of Ukraine dated 03.03.2015 № 301/5[1]. According to the specified document as separate types of forensic examinations connected with construction, construction-technical, land-technical, appraisal-construction, appraisal-land and road-technical examination on the corresponding types of expert specialties is fixed: research of real estate objects, building materials, structures and relevant documents (10.6), land distribution and determination of the order of land use (10.7); determination of the estimated value of construction objects and structures (10.10); valuation of land plots (10.14); road technical research (10.16). The separation of these types of expertise is carried out on the basis

[1] Див.: Перелік основних видів судових експертиз та експертних спеціальностей, за якими присвоюється кваліфікація судового експерта фахівцям науково-дослідних установ судових експертиз Міністерства юстиції України. Положення про експертно-кваліфікаційні комісії та атестацію судових експертів (п. 3 розд. V): затв. наказом М-ва юстиції України від 03.03.2015 № 301/5. Дод. 6, 7.

of differentiation of the main objects (buildings and structures, land, roads) and the research tasks (and therefore the topic).

If we consider the classifications of forensic examinations in other countries, then along with construction and technical expertise in the Russian Federation in the relevant list of forensic examinations there is a land management examination (research on land management, including the definition of the area), and in the Republic of Kazakhstan construction expertise includes two areas of specialization: forensic construction and economic research of buildings and structures; forensic construction and technical study of buildings and structures. In the Republic of Belarus examination of project documentation is carried out; geodetic expertise; from the section of households, examination of flooding and fires of real estate; examination to determine the insulation parameters of air and shock noise of enclosing structures; examination to determine the level and source of noise in residential and public buildings; examination to determine the compliance of ventilation and heating systems with the requirements of technical regulations; examination to determine the compliance of buildings with insolation and lighting standards. As exclusive types of forensic examination in comparison with the Ukrainian classification, in the Baltic States examination of flammability of materials (research of flammability of building materials and other products) is allocated; examination of earthworks; examination of land resources management, and within the examination of fire safety — examination of construction, building materials, facilities and projects for compliance with fire protection rules. The National Center for Forensic Examinations under the Ministry of Justice of the Republic of Moldova has organized the following examinations: construction (research of real estate, building materials, structures and technical documentation); examination of valuation and distribution of households; construction objects and equipment (assessment of real estate objects, distribution of real estate and determination of the land use order).

The classification of forensic examinations is dividing them into structural elements, to determine the connection and difference of individual classes, genera, types and subtypes of examinations. The correct definition of forensic examination, choice of the expert institution and the expert and consequently, the proper use of the expertise in the judicial process depend on the correct determination of the type and type of forensic examination and its capabilities[1]. The classification of forensic examinations is a system of ideas about the field of expert knowledge formed by science and practice. Science reveals objective criteria that make it possible to distinguish scientific knowledge used in judicial proceedings as special. Practice

[1] Клименко Н. І. Судова експертологія: курс лекцій: навч. посіб. для студ. юрид. спец. вищ. навч. закл. Київ, 2007. С. 115.

establishes structural elements that contribute to the implementation of scientific knowledge in expert activities [1].

Thus, construction and technical expertise is closely related to land and technical and road engineering, which are distinguished as genera in the class of forensic engineering [2].

With the adoption on July 12, 2001 of the Law of Ukraine: On Appraisal of Property, Property Rights and Professional Appraisal Activity in Ukraine [3], National Standard № 1: General Principles of Property Valuation and Property Rights [4] the main tasks of construction and technical expertise include determining the market value of real estate [5]. In our opinion, land valuation is a separate kind in the class of forensic engineering.

The legislation of Ukraine uses the field of knowledge term that is subject area of education and science, which includes a group of related specialties for which training is carried out. According to the approved by the resolution of the Cabinet of Ministers of Ukraine dated April 29, 2015 № 266 List of branches of knowledge and specialties in which training of higher education is carried out, under the code of branch: 19" – Architecture and construction, codes of areas of specialization 191, 192, 193 Architecture and urban planning, Construction and civil engineering, Geodesy and Land Management[6]. As we can see, the distribution by type of forensic science

[1] Інформація із Звіту про НДР: Удосконалення класифікації судових експертиз. Наук. кер. Сімакова-Єфремян Е. Б. ХНДІСЕ, КНДІСЕ та ін. № держреєстрації 0116U003867. Харків: ХНДІСЕ, 2018. 705 с.

[2] Вперше, як роди інженерно-технічних експертиз, земельно-технічна та дорожньо-технічна експертизи з'явились у редакції наказу Міністерства юстиції України від 26 грудня 2012 р. № 1950/5 «Про внесення змін до наказу Міністерства юстиції України від 08 жовтня 1998 р. № 53/5» (зміни до Інструкції про призначення та проведення судових експертиз та експертних досліджень).

[3] Про оцінку майна, майнових прав та професійну оціночну діяльність: Закон України від 12 липня 2001 року № 2658-ІП. Офіційний вісник України від 07.09.2001, № 34. Стор. 1. Ст. 157.

[4] Про затвердження Національного стандарту № 1 «Загальні засади оцінки майна і майнових прав»: постанова Кабінету Міністрів України від 10.09.2003 № 1440. Офіційний вісник України від 26.09.2003, № 37. Стор. 64. Ст. 1995.

[5] Про внесення змін та доповнень до Інструкції про призначення та проведення судових експертиз та експертних досліджень та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз, затверджених наказом Міністерства юстиції України від 08.10.98 № 53/5: наказ Міністерства юстиції України 30.12.2004 № 144/5, зареєстрований в Міністерстві юстиції України 19 січня 2005 р. за № 61/10341. Офіційний вісник України від 18.02.2005, № 5. Стор. 275. Ст. 325.

[6] Перелік галузей знань і спеціальностей, за якими здійснюється підготовка здобувачів вищої освіти, затверджений постановою Кабінету Міністрів України від 29 квітня 2015 р. № 266. URL: http://vnz.org.ua/zakonodavstvo/101-perelik-galuzej-znan-i-spetsialnostej (Date accessed: 10.09.2019).

only conditionally corresponds to the specified classification of branches of knowledge.

Conclusions. Thus, in the composition of engineering and technical examinations, the scope of research of which includes construction objects, can be distinguished as types of construction and technical and assessment and construction expertise. The subject of forensic construction and technical and appraisal and construction expertise should be considered established on the basis of special knowledge in the field of construction factual data and circumstances of the case (proceedings) that have probative value for any type of proceedings during the study of relevant construction objects: buildings and structures, building materials, structures and relevant documents. In other words, the technical content of forensic construction and technical and appraisal-construction examinations is to implement knowledge of construction by studying the relevant construction objects, analysis of technical documentation within the subject and tasks of these categories of examinations by the relevant entity through the application of appropriate research methods. These features distinguish them into independent kinds of forensic science.

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ЩОДО ПРОБЛЕМНИХ ПИТАНЬ КЛАСИФІКАЦІЇ СУДОВОЇ БУДІВЕЛЬНО-ТЕХНІЧНОЇ ЕКСПЕРТИЗИ

Досліджено проблемні питання судової будівельно-технічної експертизи як джерела доказів у різних видах судочинства, в аспекті її класифікації. Аналіз експертної практики свідчить про те, що діапазон об'єктів і кількість виконуваних будівельно-технічних досліджень постійно зростає. З огляду на актуальність даного роду судової експертизи як для розслідування кримінальних проваджень, так і для інших видів судочинства, розглянуто основні положення, пов'язані з формуванням теоретичної бази судової будівельно-технічної експертизи в аспекті її класифікації.

На підставі аналізу спеціальної літератури, нормативно-правових актів та експертної практики, виокремлюється низка питань, що носять дискусійний характер і на сьогодні не визначені остаточно.

Ключові слова: судова будівельно-технічна експертиза, висновок експерта, експертна спеціальність, клас, рід, вид судової експертизи, класифікація судових експертиз.

Д. В. Пучко

О ПРОБЛЕМНЫХ ВОПРОСАХ КЛАССИФИКАЦИИ СУДЕБНОЙ СТРОИТЕЛЬНО-ТЕХНИЧЕСКОЙ ЭКСПЕРТИЗЫ

Анализ экспертной практики свидетельствует о том, что диапазон объектов и количество выполняемых строительно-технических исследований постоянно возрастает. Учитывая актуальность данного рода судебной экспертизы как для расследования уголовных производств, так и для других видов судопроизводства, рассмотрены основные положения, связанные с формированием теоретической базы судебной строительно-технической экспертизы в аспекте ее классификации. На сегодня в Украине действующими являются Перечни видов судебных экспертиз и экспертных специальностей, по которым присваивается квалификация судебного эксперта специалистам научно-исследовательских учреждений судебных экспертиз Министерства юстиции Украины, а также специалистам, которые не работают в государственных специализированных учреждениях. Эти Перечни являются приложениями к Положению о квалификационных комиссиях и аттестации судебных экспертов, утвержденному приказом Министерства юстиции Украины от 03.03.2015 № 301/5. В соответствии с указанным документом, как отдельные виды судебных экспертиз, зафиксированы строительно-техническая, земельно-техническая, оценочно-строительная, оценочно-земельная и дорожно-техническая экспертизы по соответствующим видам экспертных специальностей. Предметом судебных строительно-технических и оценочно-строительных экспертиз следует считать устанавливаемые на основе специальных знаний в области строительства фактические данные и обстоятельства дела (производства), имеющие доказательственное значение для любого вида судопроизводства, в ходе исследования соответствующих объектов строительства: недвижимости, строительных материалов, конструкций и соответствующей технической документации. То есть, техническое содержание судебных строительно-технических и оценочно-строительных экспертиз заключается в реализации знаний по строительству путем исследования соответствующих объектов строительства, анализа технической документации в рамках предмета и задач указанных категорий экспертиз соответствующим субъектом путем применения соответствующей системы методов исследования. Эти особенности выделяют их в самостоятельные роды судебной экспертизы.

Ключевые слова: судебная строительно-техническая экспертиза, заключение эксперта, экспертная специальность, класс, род, вид судебной экспертизы, классификация судебных экспертиз.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.39
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LEGAL AND SOCIO-PSYCHOLOGICAL FEATURES OF CRIMES RELATED TO HUMAN TRAFFICKING IN THE WORLD

The article is devoted to the legal and socio-psychological features of crimes related to human trafficking. It is noted that this issue has been reflected in various studies. It is believed that currently there can be about 21 million people in slavery, and the income from this criminal business can be at least 32 billion dollars annually. About 11.7 million people are exploited in the Asia-Pacific region, 3.7 million in Africa, 1.8 million in Latin America and the Caribbean, 1.6 million in Central and South-Eastern Europe and in Europe: 5 million. In the countries of the Middle East, where there is a developed economy, there are about 600 thousand people. About 63 international non-governmental organizations are involved in helping to solve the problem of human trafficking in the world, accompanying and providing various assistance (social, legal, psychotherapeutic) to victims of human trafficking every day. It is noted that the oldest international human rights organization in the world that bases its activities on the UN treaties against slavery is the international organization Anti-Slavery International, founded in 1839 in London, Great Britain. There are two types of human trafficking. The analysis made it possible to describe the most typical mental states of victims of trafficking in persons that are associated with a mental health problem, namely: depression, anxiety, post-traumatic stress disorder. Attention is focused on the fact that the suffering inflicted on an individual victim as a result of physical or mental impact on him by criminals involved in human trafficking requires compensation for the full recovery of the victim's mental health and the establishment of justice, not only in the form of bringing to criminal responsibility the perpetrators but

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also in the form of non-property compensation for the harm that was caused by this grave crime to the victims (men, women, children). Suggestions are made to continue work on the development of a methodology for forensic psychological examination of victims of crimes related to human trafficking.

Keywords: crime, human trafficking, human exploitation, non-property harm, vulnerable state, mental problems, victim of human trafficking.

Formulation of Research Problem. The existence of such a criminalized phenomenon as human trafficking does not leave any country in the world indifferent. The existence of business in the form of human trafficking is facilitated by the support of certain international criminal organizations for which the sale and resale of people becomes a lucrative occupation. It is estimated that about 21 million people are currently in slavery, and the proceeds of this criminal business could be at least $ 32 billion annually[1]. The problem of slavery causes significant damage to the human psyche and can lead to irreversible mental changes of a negative nature in his personality.

Analysis of Recent Researches and Publications. The study of the problem of human trafficking began to be actively engaged in the XIX and early XX centuries. such scientists as C. Lombroso, F. Liszt, Am-Rin Otto Genne, M. Gernet, G. Ferraro, S. Gogel[2]. Establishment of international features of this crime, and especially the study of the problem of trafficking in women and I. I. Karpets, I. I. Lukashuk, Yu. O. Reshetov[3] and others were engaged in establishing the international features of this crime, and

1 Боротьба з торгівлею людьми. URL: http://google-ukraine-blog.blogspot.com/2013/04/blog-post_10.html (Date accessed: 14.04.2019).

2 Преступление. Новейшие успехи науки о преступнике; Анархисты / Чезаре Ломброзо; [предисл. В. С. Овчинский]. Москва : ИНФРА-М, 2011. VI, 313, [2] с.: табл; 22 (Библиотека криминолога); F. List, Frank Cass. The Natural System of Political Economy, London, UK, 1983; Otto Henne am Rhyn (англ.). Encyclopaedia Britannica. URL: https: //www.britannica.com/biography/Otto-Henne-am-Rhyn (дата обращения 5.01.2018); А. А. Герцензон. Михаил Николаевич Гернет, его жизнь, общественная и научная деятельность (1874–1953). История царской тюрьмы. Москва, 1960. Т. 1. С. 29; K. Ferraro (2006). Neither Angels nor Demons: Women, Crime, and Victimization. Boston: Northeastern University Press. First Published March 1, 2008. URL: https: // journals.sagepub.com/doi/abs/10.1177/1077801208314080 (Date accessed: 11.03.2019); Гогель С. К. Курс уголовной политики в связи с уголовной социологией; Сост. и вступ. ст. В. С. Овчинского, А. В. Федорова. Москва : ИНФРА-М, 2009. 386 с.

3 Карпец И .И. Преступность: иллюзии и реальность. Москва : Российское право, 1992. 432 с.; Лукашук И. И. Международное право. Общая часть : учеб. для студентов юрид. фак. и вузов; Рос. акад. наук, Ин't государства и права, Академ. правовой ун-т. Изд. 3-е, перераб. и доп. Москва : Волтерс Клувер, 2005. 432 с.; Решетов Ю. А. Борьба с международными преступлениями против мира и безопасности. Москва : Междунар. отношения, 1983. 224 с.

especially in studying the problem of trafficking in women and children. The role of transnational criminal groups was considered in the works of A. I. Kononov, V. V. Luneev, A. S. Ovchinsky[1] and others. Ways to combat human trafficking through criminological and criminal law aspects reflected in the works of O. M. Bandurko, V. V. Golin, V. O. Ivashchenko, V. V. Luneev, E. L. Streltsov, S. D. Shapchenko[2] and others. Criminal activity related to human trafficking, according to statistics, has an increased growth rate and encourages scientists from different countries to research that would help in investigating this shameful criminal phenomenon, as well as trying to compensate for the moral suffering and provide the necessary assistance to victims of this criminal offense.

Research Purpose. Analysis of legal and socio-psychological features of the crime related to human trafficking in the context of international socio-psychological practices and regulations.

Main Content Presentation. In January 2019, R&D on Development of methods of forensic psychological examination of victims of crimes related to human trafficking was launched by T. M. Egorova, Head of Department of forensic psychology, engineering, transport and commodity research of the Poltava branch of the Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations, S. G. Moroz head of the Poltava branch of the Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations and O. A. Nazarov, Director of Kyiv International Forensic Institute of Psychological Expertise and Polygraph Research, PhD in Psychology, Docent. During the 6 months of 2019, a large amount of various data from the scientific, scientific and methodological literature on

[1] Кононов А. И., Романов Н. А. Общая характеристика политического экстремизма в современных условиях. Москва, 1994. 176 с.; Лунеев В. В. Преступность XX века: мировые, региональные и российские тенденции. 2-е изд., перераб. и доп. Москва : Волтерс Клувер, 2005. 912 с; Овчинский А. С., Чеботарева С. О. Матрица преступности. Под науч. ред. В. С. Овчинского. Москва : НОРМА, 2008. 112 с.

[2] Даньшин І. М., Голіна В. В., Валуйська М. Ю. та ін. Кримінологія: Загальна та Особлива частини: підручник; за заг. ред. В. В. Голіни. 2-ге вид. перероб. і доп. Харків: Право, 2009. 288 с.; Иващенко В. А. Криминологические и уголовно-правовые аспекты борьбы с торговлей женщинами и детьми : автореф. дис. канд. юрид. наук: 12.00.08. Москва, 2000. 19 с.; Правовий вплив на неправомірну поведінку: актуальні грані : монографія/за ред. проф. О. В. Козаченка, проф. Є. Л. Стрельцова. Миколаїв : Іліон, 2016. 768 с.; Шапченко С.Д. Склад злочину як кримінально-правовий феномен: сутність та основні форми існування. *Вісник Академії адвокатури України.* Київ: Видавничий центр Академії адвокатури України, 2009. № 1. С. 240–243; Бандурка О. М. Загальна характеристика проблеми торгівлі людьми. *Співробітництво держави та громадськості з питань протидії торгівлі людьми*: зб. наук. пр. Київ-Харків : Вид-во Нац. ун-ту внутр. справ, 2004. С. 9–13.

legal and socio-psychological issues of crimes related to human trafficking was summarized which only confirms how relevant the work is, which has a huge international demand for final result.

According to international legal concepts, crime such as human trafficking is the recruitment and movement of people using means of deception and coercion for the purpose of exploitation [1]. Examples of trafficking in human beings include the sale of men, women and children across borders and abroad for the purpose of forced labor, domestic service and other miscellaneous activities, including fisheries, agriculture and construction, as well as for criminal acts.

According to various researches in the world, human trafficking is a global problem: in the Asia-Pacific region, about 11.7 million people are exploited, in Africa - 3.7 million, in Latin America and the Caribbean — 1.8 million, in Central and South-Eastern Europe — 1.6 million, in Europe— 1.5 million. In the Middle East, where there is a developed economy, about 600,000 [2]. Assistance in solving the problem of human trafficking according to the collected data in the world is about 63 international non-governmental organizations that accompany and provide various assistance (social, legal, psychotherapeutic) to victims of trafficking every day [3].

The oldest international human rights organization in the world, which bases its activities on UN treaties against slavery, is the international organization Anti-Slavery International, the official website: www.antislavery.org. Anti-Slavery International was founded in 1839 in London, UK. A significant merit of the organization is the influence on the abolition of slavery in the British Empire. The organization has consultative status with the United Nations Economic and Social Council and observer status with the International Labor Organization. It is a non-religious, non-political independent organization that works closely with partner organizations around the world to combat various forms of modern slavery.

In international practice, the professionals most in need of assistance to victims of trafficking in human beings have been called "mental health

[1] United Nations (2000). Optional Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime. General Assembly Resolution 55/25 (2000) UN. P. 26.

[2] International Labour Office (2012). ILO Global Estimate of Forced Labour: results and methodology. ILO. P.54.

[3] List of organizations that combat human trafficking. URL: https://en.wikipedia.org/wiki/List_of_organizations_that_combat_human_trafficking (date of access 12.05.2019).

professionals" of the individual, to whom may be representatives of such professions as:

- psychologists;
- psychiatrists;
- social workers;
- psychotherapists.

Everyone involved in solving the problem of human trafficking understands that there is a high percentage of latent victims among the victims of this crime, which makes it much more difficult to solve this problem and provide the necessary assistance to all victims of the crime. Victims of trafficking may be afraid to disclose their experiences because of threats of harm to themselves or their families by criminals, the risk of detention or deportation, or they may be stifled by feelings of shame or guilt. Others may find it difficult to recall and share their experiences, trauma can affect the reporting of details and chronology of events, which is crucial for bringing perpetrators to justice, and therefore the work of mental health professionals is crucial for the restoration of justice [1].

In the world, trafficking crime is a form of modern-day slavery, that is, a trafficker can use a person by three means: by force, fraud or coercion, to force him to engage in commercial sex or physical labor.

There are thus two types of human trafficking:

1. Physical work. When people are forced to perform physical work or provide services under the influence of force, fraud or coercion.
2. Commercial sex. When adults are forced to have sex for money under the influence of force, fraud or coercion. It should be borne in mind that if minors are involved in trafficking, then the very fact that they have committed commercial sexual intercourse, regardless of the presence of force, fraud or coercion is a sign of a crime.

Similarly, in the world, there are definitions that should be understood in terms of force, fraud and coercion in the context of trafficking offenses.

Strength includes physical restraint, physical harm, sexual assault and beatings. Negative information to monitor the behavior of the future victim is often used by criminals to control the victims, especially in the early stages of victimization, to break the victim's resistance in the future.

Fraud involves false promises about work, wages, working conditions, love, marriage, or a better life. Subsequently, there may be allegedly “unexpected changes” in working conditions, compensation or debt agreements or the nature of the relationship, which makes previously promised fraudulent.

[1] Zimmerman C., Borland R. Caring for Trafficked Persons: Guidance for Health Providers. International Organization for Migration. P. 98.

Coercion refers to the threat of serious harm or physical restraint on any person, psychological manipulation, seizure of documents, as well as threats of shame and fear due to blackmailing of information or photos with others or communication to the authorities for prosecution.

By default, such groups as are recognized as vulnerable in international practices:

1) persons who have been abused or neglected as a child;
2) children who participate in the system of non-native upbringing (adoptions brought up in orphanages, boarding schools);
3) fast and homeless youth;
4) Native Americans, Native Hawaiians, and Pacific Islanders;
5) victims of violence;
6) lesbians, gays, bisexuals, transgenders (LGBTQ);
7) migrant workers;
8) undocumented immigrants;
9) racial and ethnic minorities;
10) people with disabilities;
11) low-income people;
12) people with a history of substance abuse;
13) people whose communities are traumatized across generations [1].

It is traditionally believed that the vulnerable condition of victims depends on such parameters as age, physical or mental condition, the peculiarity of their perception of criminal behavior. In the conduct of offenders in establishing a vulnerable state, a special role is given to finding out whether the offender was aware of and used the psychological, physical and family problems of the victim during the crime, which only increases the victim's vulnerability, as the offender's communication with her becomes manipulative.

In order to provide assistance to victims of trafficking, various countries offer public, including religious, organizations to register as sub-grant recipients of the Trafficking Victims Assistance Program. In the United States, for example, in fiscal year 2017, a national network of HHS-funded grantees provided direct assistance to more than 1,500 victims of trafficking and their families. Local organizations that assist foreign nationals who have been trafficked may register as a sub-recipient for one of the grant recipients anywhere in the United States. Funding allows service providers to support victims of trafficking, including short-term and long-term housing rentals, mental health counseling, education, training, legal protection, or financial

[1] Office on trafficking in persons. An Office of the Administraion for Children & Families. URL: https: //www.acf.hhs.gov/otip/about/what-is-human-trafficking (Date accessed:17.04.2019).

counseling. In addition, the United States passed the Protection of Victims of Trafficking in Persons Act (TVPA) in 2000, which is a comprehensive federal anti-trafficking law. The law provides for a tripartite approach to the assessment of this crime including prevention, protection and prosecution of criminals [1]. By the way, in Ukraine a similar law was adopted only in 2011 and was called the Law of Ukraine: On Counteracting Human Trafficking. This Law defines the organizational and legal framework for combating trafficking in human beings, guaranteeing gender equality, the main directions of state policy and principles of international cooperation in this area, the powers of executive bodies, the procedure for establishing the status of victims of trafficking and assistance to such persons [2]. Researches conducted over the last five years in Ukraine (2013–2018) suggests that Ukraine is now largely a source, transit and destination for men, women and children, who are mainly exposed to forced labor and, to a lesser extent, trafficking. for the purpose of sexual exploitation. Ukrainian citizens are victims of sexual exploitation and forced labor in Ukraine, as well as in Russia, Poland, Moldova and other parts of Europe, Kazakhstan and the Middle East. Some Ukrainian children and vulnerable adults are forced into begging. A small number of foreign nationals, including those from Moldova, Russia and Uzbekistan, are subjected to forced labor in Ukraine. Victims of trafficking in Ukraine have been exploited in a variety of sectors of the economy, including construction, agriculture, manufacturing, domestic work, timber production, care services, and street begging; Experts report that the number of foreign victims in Ukraine has fallen sharply since the start of hostilities in eastern Ukraine. Migrants traveling through Ukraine illegally are vulnerable to crimes related to human trafficking. Ukraine has established a procedure for granting official status to a victim of human trafficking, which is valid for 2 years [3].

Special attention should be paid to the fact that Ukraine was among the first countries in Europe to establish criminal liability for human trafficking in 1998. The Criminal Code of Ukraine provides for punishment for trafficking in human beings under Article 149, which defines these criminal acts as the recruitment, transfer, concealment, transfer or receipt of a person committed for the purpose of exploitation, deception, blackmail or vulnerability.

On October 18, 2007, the European Parliament launched the European Day against Trafficking in Human Beings as a sign of consolidation of

[1] The Trafficking Victims Protection Act (TVPA) of 2000. 2013. P. 13.

[2] 18 жовтня – Європейський день боротьби з торгівлею людьми / Міністерство соціальної політики України. 18 Жовтня 2018. URL: https: //www.msp.gov.ua/news/16082.html (Date accessed 8.04.2019).

[3] Бугайчук К. Л. Порядок встановлення статусу особи, яка постраждала від торгівлі людьми: інформаційно-науковий довідник. Харків : ХНУВС, 2017. 66 с.

awareness-raising activities on the phenomenon of human trafficking and public indifference to this phenomenon.

According to various researches, the most common mental states of victims of trafficking in human beings are various signs of mental health problems such as depression, anxiety and post-traumatic stress disorder.

Research performed in different countries demonstrated that depression, anxiety, post-traumatic stress disorder (PTSD), as well as self-harm and suicide attempts are common among survivors of human trafficking [1]. Researcher performed in England [2] found that symptoms of depression, anxiety and PTSD were reported in 78 % of women and 40 % of male victims of trafficking. Similarly, a study of victims of trafficking in the Greater Mekong Subregion found that 61 % of men and 67 % of women, as well as 57% of children, reported a probable state of depression (i.e. symptoms indicative of depression as measured by a standardized screening tool) and probable PTSD in 46% of men, 44% of women and 27% of children [3].

Thus, most of those who were rescued from trafficking and received victim status were diagnosed with depression, anxiety, post-traumatic stress disorder, or a more serious diagnosis: extreme stress disorder (DESNOS), the development of which is mostly associated with the presence of such aggravating factors in the victim as the presence of early childhood trauma, an extraordinary level of experience of intrusive trauma, insufficient characterological functioning, etc. In addition to these diagnoses, many victims of sexual trafficking also have secondary mental health problems, such as alcohol and drug abuse, as well as comorbid medical conditions that increase the psychological burden experienced by victims of trafficking after a crime.

In addition to behavioral disorders, victims may have somatic pain symptoms that may predominate over behavioral ones, such as headache, itching, social abstinence, feelings of uncontrolled aggression, abdominal or pelvic pain, chronic fatigue, unwarranted behavior change and apathy (low motivation)[4].

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[1] Ottisova L., Hemmings S., Howard L. M., et al. Prevalence and risk of violence and the mental, physical, and sexual health problems associated with human trafficking: an updated systematic review. *Epidemiology and Psychiatric Sciences,* 2016. № 25. P. 317–341.

[2] Ibid.

[3] Kiss L., Pocock N., Naisanguansri V., et a. Health of men, women, and children in post-trafficking services in Cambodia, Thailand, and Vietnam: an observational cross-sectional study. *Lancet Global Health*. 2015.P. 154–161.

[4] Miller Cl, Duke G, Northam S. Child sex-trafficking recognition, intervention,

The most effective psychodiagnostic instrumental methods, according to psychologists, who were able to identify the vulnerable state of the victims were:

- General anxiety disorder diagnosis scale (GAD-7);
- Patient Health Questionnaire (PHQ);
- PTSD CheckList – Civilian Version (PCL-C).
- Common approaches to psychological care, which positively changed the condition of the victims, were different approaches to such areas of psychotherapy as:
- Narrative exposure therapy (NET);
- Trauma focused cognitive behavioral therapy (TF-CBT);
- Eye movement desensitization and reprocessing (EMDR) [1].

Conclusions. Based on the above, it can be concluded that a large number of international organizations in the world provide assistance in resolving the problems of victims of trafficking, but the issue of compensation for non-pecuniary damage caused to victims of trafficking is almost unresolved. Negative psycho-emotional states are quite typical for victims of this crime: depression, anxiety, PTSD. Suffering caused to a victim by an individual as a result of physical or mental abuse by criminals involved in trafficking needs to be identified by expert psychologists in order to further compensate for the full recovery of the victim's mental health. The work on the development of methods of forensic psychological examination of victims of crimes related to human trafficking is of great international importance given its novelty and the establishment of justice not only in the form of criminal prosecution of perpetrators, but also in the form of non-pecuniary damage. was committed by this serious crime to the victims (men, women, children).

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and referral: an educational framework for the development of health-care-provider education programs. *J Hum Trafficking.* 2016, № 2 (3). P. 177–200.

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О. А. Назаров

ЮРИДИЧНІ ТА СОЦІАЛЬНО-ПСИХОЛОГІЧНІ ОСОБЛИВОСТІ ЗЛОЧИНІВ, ПОВ'ЯЗАНИХ ІЗ ТОРГІВЛЕЮ ЛЮДЬМИ У СВІТІ

Стаття присвячена юридичним та соціально-психологічним особливостям злочинів, пов'язаним з торгівлею людьми. Наголошується, що

дане питання знайшло відображення в різних міжнародних дослідженнях. Вказується на особливості кримінально-правової кваліфікації торгівлі людьми у світі. Висловлюються пропозиції по продовженню роботи щодо розробки методики судово-психологічної експертизи потерпілих за злочинами, пов'язаними із торгівлею людьми.

Ключові слова: злочин, торгівля людьми, експлуатація людини, немайнова шкода, уразливий стан, психічні проблеми, жертва торгівлі людьми.

O. Nazarov

LEGAL AND SOCIALLY-PSYCHOLOGICAL CHARACTERISTICS OF CRIMES RELATED TO TRADE PEOPLE IN THE WORLD

The article is devoted to the legal and socio-psychological characteristics of crimes related to human trafficking. It is noted that this issue is reflected in various studies. It is believed that about 21 million people may be in slavery at the moment, and the income from this criminal business may be at least $ 32 billion annually. About 11. 7 million people are exploited in the Asia-Pacific region, 3. 7 million in Africa, 1. 8 million in Latin America and the Caribbean, 1. 6 million in Central and Southeast Europe, and 1 in Europe, 5 million. In the countries of the Middle East, where there is a developed economy of about 600 thousand people. About 63 international non-governmental organizations are involved in solving the problem of human trafficking in the world, accompanying and providing various assistance (social, legal, psychotherapeutic) to victims of human trafficking every day. It is noted that the oldest international human rights organization in the world, which bases its activities on the UN treaties against slavery, is the international organization Anti-Slavery International, founded in 1839 in London, United Kingdom. Painted two types of trafficking. The analysis made it possible to describe the most typical mental states of trafficked persons who are associated with the problem of mental health, namely: depression, anxiety, post-traumatic stress disorder. It is emphasized that the suffering caused to the injured individual as a result of the physical or mental impact on him by the criminals involved in trafficking in persons will require compensation for the full restoration of the victim's mental health and the establishment of justice not only in the form of bringing to justice the perpetrators, but also in the form of non-pecuniary compensation for the harm that was inflicted by the serious crime on the victims (men, women, children). Suggestions are made to continue the work on developing a methodology for forensic psychological examination of victims of crimes related to human trafficking.

Key words: crime, human trafficking, human exploitation, non-material harm, vulnerable condition, mental problems, human trafficking victim.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.40
UDC 343.98:159. 9

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THEORETICAL ASPECTS OF FORENSIC PSYCHOLOGICAL EVALUATION OF TYPOLOGICAL PERSONALITY TRAITS

The history of the use of psychological knowledge in order to solve legal issues goes back more than a hundred years. All this time, certain theoretical issues of forensic psychological examination remain controversial. This is also true for the psychological examination of the individual psychological (typological) characteristics of the personality of the suspect (accused).

This article purpose is to formulate the theoretical provisions of the forensic psychological examination of individual psychological (typological) characteristics of the personality of the suspect (accused) and the main concepts of this type of forensic examination.

The definition of the object and topic of forensic psychological evaluation is localized in terms of the object and subject of forensic psychological examination of typological (individual psychological) characteristics of the personality of the suspect (accused). Based on the analysis of the legal significance of the psychological study of the personality of the suspect (accused) in criminal and administrative proceedings, the tasks of the forensic psychological examination of the typological characteristics of the personality of the suspect (accused) are formulated. Based on the subject of psychology, the legal significance of psychological facts for the establishment of legal criteria, regulatory requirements for the qualifications and behavior of an expert, a clarification is proposed regarding the criterion for determining the limits of competence of an expert psychologist. By using the concept of a limiter in relation to general psychological categories, it is proposed to define the main concepts of a forensic psychological examination of the typological characteristics of the personality of the suspect (accused).

Theoretical provisions of the forensic psychological examination of the psychological characteristics of the personality of the suspect (accused) are formulated: the object, the subject, the legal meaning, the tasks, the limits of competence, the basic concepts that are an element of the system of theoretical and methodological provisions of the forensic psychological examination and the basis for creating a methodology of the forensic psychological examination of the typological characteristics of the personality of the suspect (accused).

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Keywords: forensic psychological examination, psychological examination of typological characteristics of the personality of the suspect (accused), legal meaning, object; topic, limits of competence; tasks of psychological examination of the typological characteristics of the suspect (accused) personality, legally significant circumstances, individual psychological (typological) personality characteristics of the suspect (accused), the significant influence of individual psychological characteristics of a person on his behavior, increased suggestibility, increased tendency to fantasize, increased cruelty.

Formulation of Research Problem. Expediency of applying special psychological knowledge to solve the problems of law enforcement practice has already been proven. Such tasks are the assessment of the internal causes of a person's actions, his individuality, specificity and dynamics of emotional state in legally significant situations. The conclusions of the forensic psychological examination are used to establish the qualifying features of the offense, individualization of criminal liability, evaluation of testimony. The lack of methods for conducting psychological examinations of some of its subject types [1] complicates the conduct of research by experts and their evaluation by the customer. At present, a method of forensic psychological examination of the typological features of a person is being developed. The formulation of theoretical provisions is a necessary basis for technique building.

Analysis of Recent Researches and Publications regarding on the theoretical and methodological aspects of psychological examination shows that despite their discussion for a long time M. M. Kochenov, I. A. Kudryavtsev, F. S. Safuanov, O. D. Sitkovskaya, G. A. Ogorodnikova, M.-L A. Chepa, M. V. Kostytsky, N. V. Alikina, T. M. Egorova, V. V. Egorov [2] and others, these

[1] Реєстр методик проведення судових експертиз. URL: http://rmpse.minjust.gov.ua (Date accessed 26.06.2019).

[2] E.g., Коченов М. М. Судебно-психологическая экспертиза: теория и практика. Избранные труды. Москва: Генезис, 2010. 352 с. ; Кудрявцев И. А. Судебная психолого-психиатрическая експертиза. Москва: Юрид. лит., 1988. С. 122–134 ; Сафуанов Ф. С. Судебно-психологическая экспертиза в уголовном процессе. Москва: Гардарика, 1998. С. 42–44 ; Ситковская О. Д., Конышева Л. П., Коченов М. М. Новые направления судебно-психологической экспертизы. Москва : Юлитинформ, 2000. С. 7–10 ; Огородникова Г. А. К вопросу о предмете, объекте и пределах судебно-психологической экспертизы. *Вестник Южно-Уральского государственного университета.* Челябинск : Изд-во ЮУрГУ, 2008. № 2 (102). Серия «Право». Выпуск 13. 119 с. URL: https: //www.twirpx.com (Date accessed:03.02.2019) ; Чепа М.-Л. А. Про предмет і об'єкт судової психологічної експертизи. *Актуальні проблеми навчання і виховання людей з особливими потребами:* зб. наук. праць. № 3 (5). 2007. С. 290–299 ; Костицький М. В. Особливості проведення судово-психологічної експертизи в адміністративному процесі. *Науково-інформаційний вісник Івано-Франківського університету права імені Короля Данила Галицького.* 2013. № 8. С. 10–16. URL : http://nbuv.gov.ua/UJRN/Nivif (Date accessed: 01.06.2019) ; Алікіна Н. В., Єгорова Т. М., Савкіна Т. В. Вплив

issues remain debatable. The authors of recent publications have focused on certain theoretical positions. The subject of interest of M. V. Kostytsky[1] and V. V. Koshynets [2] is the specifics of forensic psychological examination in the administrative process. These authors analyze the procedural and organizational features of the examination, provide their views on the stages and procedures of its examination, which do not fully comply with the currently established procedure, ethical requirements of the subject of examination. M. A. Chepa addresses the problem of the object, the subject of forensic psychological examination, the limits of competence of the expert [3]. T. M. Egorova and V. V. Egorov proposed the definition of the object of forensic psychological evaluation [4].

Selection of previously unsolved parts of the overall problem. The main theoretical aspects of the examination of individual psychological (typological) features are described by a number of scientists who are recognized as classics: I. A. Kudryavtsev, F. S. Safuanov, O. D. Sitkovskaya, L. P. Konysheva, M. M. Kochenov[5]. The works of the mentioned authors emphasize the legal

на судово-психологічну експертизу інтеграційних і диференційних процесів у сучасній психології. *Теорія та практика судової експертизи і криміналістики*: зб. наук. праць. Вип. 16/ред. кол.: О. М. Клюєв, В. Ю. Шепітько та ін. Харків: Право, 2016. С. 481–484 ; Єгорова Т. М., Єгоров В. В. Дискусійні питання щодо об'єкта і предмета судової психологічної експертизи. *Актуальні питання судової експертизи і криміналістики:* зб. матеріалів міжнарод. наук.-практ. конф., присвяченої 150-річчю з дня народження Засл. проф. М. С. Бокаріуса (Харків, 18–19 квіт. 2019 р.). Харків: ХНДІСЕ, 2019. С. 428–430.

[1] Костицький М. В. Особливості проведення судово-психологічної експертизи в адміністративному процесі. *Науково-інформаційний вісник Івано-Франківського університету права імені Короля Данила Галицького*. 2013. № 8. С. 10–16. URL : http://nbuv.gov.ua/UJRN/Nivif (Date accessed: 01.06.2019).

[2] Кошинець В. В. Використання спеціальних психологічних знань в адміністративному процесі. *Науковий вісник публічного та приватного права*: зб. наук. праць. Випуск 5. Т. 2. Київ : Науково-дослідний інститут публічного права, 2018. С. 111–116. URL: http://www.nvppp.in.ua/vip/2018/5/tom_2/2.pdf (Date accessed: 01.06.2019).

[3] Чепа М.-Л. А. Про предмет і об'єкт судової психологічної експертизи. *Актуальні проблеми навчання і виховання людей з особливими потребами:* зб. наук. праць. № 3 (5). 2007. С. 290–299.

[4] Єгорова Т. М., Єгоров В. В. Дискусійні питання щодо об'єкта і предмета судової психологічної експертизи. *Актуальні питання судової експертизи і криміналістики:* зб. матеріалів міжнарод. наук.-практ. конф., присвяченої 150-річчю з дня народження Засл. проф. М. С. Бокаріуса (Харків, 18–19 квіт. 2019 р.). Харків : ХНДІСЕ, 2019. С 428–430.

[5] E.g., Кудрявцев И. А. Судебная психолого-психиатрическая експертиза. Москва : Юрид. лит., 1988. С. 122 –134; Сафуанов Ф. С. Судебно-психологическая экспертиза в уголовном процессе. Москва : Гардарика, 1998. С. 42–44; Ситков-

significance of psychological examination of individual personality traits, emphasize the need to apply the principle of contextuality, a systematic approach, discuss the limits of competence, mention research methods. Monographs and textbooks on legal and criminal psychology cover the structure of the personality of the person who committed the crime, the legal significance of establishing individual psychological characteristics of the person for the correct qualification of the act, establishing guilt, motive and purpose of the crime, public danger of the accused, choosing an adequate punishment finding ways to prevent recurrence of illegal actions[1]. At the same time in many textbooks on forensic psychological examination there are no sections devoted to forensic psychological examination of individual psychological (typological) features of the personality of the suspect (accused) [2].

Therefore, it is relevant to further develop the theoretical provisions of forensic psychological examination of individual (typological) characteristics of the individual, which will contain its initial theoretical provisions: legal value, subject, object, tasks, basic concepts, limits of competence, algorithm of actions of the expert, and development of methodology of this type of expertise.

This Article Purpose is to formulate theoretical provisions of forensic psychological examination of typological features of an individual: object, subject, legal value, tasks, delineation of boundaries of competence, definition of basic concepts.

Main Content Presentation. The legal significance of forensic psychological evaluation of typological features of a person follows from the principles of guilty responsibility, justice and individualization of punishment.

According to the principle of guilt, in a criminal case it is mandatory to prove, in addition to the objective, subjective side of the crime. This need is indicated by paragraphs 2 and 4 of Art. 91 of the Criminal Procedure Code of Ukraine, which provides for the obligation to prove the form of guilt, motive and purpose of the criminal offense, the circumstances that affect its severity,

ская О. Д., Конышева Л. П., Коченов М. М. Новые направления судебно-психологической экспертизы. Москва : Юлитинформ, 2000. С. 7–10.

[1] E.g., Васильев В.Л. Юридическая психология. Санкт-Петербург : Питер Пресс, 1997. С. 269–279; Зелинский А.Ф. Криминальная психология. Научно-практическое издание. Киев : Юринком Интер, 1999. 240 с.

[2] E.g., Нагаев В. В. Основы судебно-психологической экспертизы: учеб. пособие для вузов. Москва : ЮНИТА-ДАНА; *Закон и право*, 2000. 333 с.; Саковская О. Н. Судебно-психологическая экспертиза: текст лекций. М-во образования и науки Рос. Федерации, Яросл. гос. ун-т им. П. Г. Демидова. Ярославль : ЯрГУ, 2013. 63 с.; Енгалычев В.Ф., Шипшин С. С. Судебная психологическая экспертиза в уголовном и гражданском процессах: вопросы теории и практики: практикум для студ. фак. психологии высш. учеб. заведений (специалитет, бакалаврат, магистратура). Москва : Изд-во Московского психолого-социального университета ; Воронеж : МОДЭК, 2015. 456 с.

characterize the accused, aggravate or mitigate punishment, exclude criminal liability or are grounds for criminal closure proceedings[1].

Elements of the subjective composition of the crime reflect the psychological characteristics of the person accused of committing a criminal offense, reflect the presence in his mind of an assessment of protected social relations, forecast the results of their actions, desirability or assumption of such consequences in connection with their own needs[2]. These elements of consciousness are covered by the legal concepts of guilt: reflection of the mental attitude of the person to the predicted consequences of their actions, and motive — the driving force that prompted a person to commit an act.

Establishing elements of the subjective composition of the crime is the prerogative of the investigation and the court, and the presence of psychological content in them is the reason for the need for special knowledge. Methods of psychology can now establish the content and structure of the main motivational lines of personality, its orientation, the degree of indirectness of behavior, features of temperament, character, emotional and volitional sphere, psychological states.

The Criminal Code of Ukraine[3] contains instructions on circumstances that aggravate or mitigate punishment. According to Part 1 of Art. 66 of the Criminal Code of Ukraine, among the mitigating circumstances are the commission of a crime due to the coincidence of serious personal, family or other circumstances, the commission of a crime under the influence of threat, coercion or material, official or other dependence. Significant variability of individual characteristics of people does not allow to create a universal list of difficult circumstances and situations in which a person assesses the threat as real. Another factor that can mitigate the punishment is the sincere repentance of the accused. The high probability of defensive behavior, simulating remorse, and demonstrating a willingness to correct in order to mitigate punishment can be an obstacle to properly assessing a person's social danger. Establishment of the leading motives of the person, other its individual psychological features, the relation of the offender to objective conditions of an illegal situation is possible by means of psychology.

Article 67 of the Criminal Code of Ukraine contains an exhaustive list of aggravating circumstances. The statement of circumstances specified in paragraphs 3 (commission of a crime based on racial, national or religious hatred or discord), 10 (commission of a crime with extreme cruelty) may require the establishment of psychological facts. Such facts may be the negative attitude of the accused to people of other nationalities, religious beliefs, opinions.

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[1] Кримінальний процесуальний кодекс України: Закон України від 13.04.2012 № 4651-VI. URL : http://zakon3.rada.gov.ua/laws/show/4651–17 (Date accessed 18.06.2019).

[2] Кримінальний кодекс України: Науково-практичний коментар/Ю. В. Баулін, В. І. Борисов, С. Б. Гавриш та ін.; За заг. ред. В. В. Сташиса, В. Я. Тація. Київ : Ін Юре, 2003. С. 69–70.

[3] Кримінальний кодекс України : Закон України від 05.04.2001 № 2341-III (Rev. 27.06.2019). URL: http://zakon2.rada.gov.ua/ (Date accessed: 29.06.2019).

A provision similar to the above provisions of the Criminal Code of Ukraine is contained in the Code of Ukraine on Administrative Offenses. Paragraph 3 of Article 34 of this Law, the circumstances that mitigate the liability for an administrative offense, called its implementation in the event of serious personal, family circumstances, or other circumstances recognized as serious by the authorized person [1].

Thus, the findings of forensic psychological examination of typological features of the individual can be used in criminal and administrative proceedings to establish the elements of subjective crime and individualization of punishment.

The scope of forensic psychological examination tasks is limited by legally significant circumstances. From the content of the above provisions of the Criminal and Criminal Procedure Codes it follows that to establish the elements of the subjective composition of the crime, the degree of public danger, individualization of punishment are important motives and goals of the person formed before the tort, the specifics of its behavior after it, as well as during the pre-trial investigation and trial. Therefore, legally significant circumstances may apply to any of these periods.

Thus, the legal significance of forensic psychological evaluation of typological features of personality is to establish psychological facts: value system, leading motives of the subject, his character, temperament, emotional state, which were in a legally significant situation (in pre-criminal, criminal, post-criminal stages of crime, during the pre-trial investigation and trial) and may be a psychological basis for establishing the subjective composition of the crime and the criteria for individualization of criminal liability.

Forensic psychological examination of typological features of personality solves diagnostic and situational problems. In the course of each study it is necessary to diagnose (attribute to a certain type) a set of individual manifestations of personality, as well as to reconstruct the method of realization of the established properties in the form of a complex act of will in a specific illegal situation. Thus, the tasks of forensic psychological examination of typological features of personality are: establishing the dominant motives of the subject, his characterological and dynamic features, specific (of interest to the investigation or court) features of character and personality and how to manifest them in a particular illegal situation.

The issue of determining the object and subject of forensic psychological examination is debatable. M. A. Chepa points to the basic importance for the correct construction of forensic psychological research, definition of its object and subject, emphasizes that the scope of these concepts is determined by the common field of jurisprudence and psychology. The author believes that the subject of forensic psychological examination are the circumstances of the case, which are established during the consideration of the case on the basis of special

[1] Кодекс України про адміністративні правопорушення: Закон України від 07.12.1984 № 8073-X (редакція від 03.07.2019). URL: https://zakon.rada.gov.ua/ (Date accessed: 03.07.2019).

knowledge. Objects of psychological examination M.L. Chepa names factual data that have tangible and intangible (i.e., psychological) properties. Based on the fact that the properties of the psyche are ideal phenomena, the author proposes to adjust the provisions of Art. 1 of the Law on Forensic Science, supplementing it with instructions on the possibility of research of intangible objects [1].

According to the Scientific and methodological recommendations on the preparation and appointment of forensic examinations and expert research, the object of forensic psychological examination are mentally healthy persons (suspect, accused, defendant, acquitted, convicted, witness, victim, plaintiff, defendant, minors, minors, adults and the elderly) [2].

T. M. Egorova and V. V. Egorov demonstrated inconsistency of the content of the Law of Ukraine: On Judicial Examination provided in Guidelines, the current state of science, traced the evolution of scientists' understanding of the concept of the object of forensic psychological examination, investigated the problem mental norm, pathology and mental health and offered their definition of the object of forensic psychological examination. This definition reflects the existence of a common object field of psychology and jurisprudence, current understanding of mental health and mental norms, limiting the tasks of psychological examination to legally significant circumstances, methodological specifics of mental research and corresponds to the Law of Ukraine: On Judicial Examination. According to the definition proposed by T. M. Egorova and V. V. Egorov, the object of forensic psychological examination is a person as a person (subject) and a set of sources of information that reflect information about the mental activity of the subject in legally significant circumstances. With this understanding of the object of forensic psychological examination, the subject of forensic psychological examination is psychological facts that reflect a set of psychological phenomena (mental processes, states, typological features, etc.) manifested in human behavior under legally significant circumstances [3].

General object and subject of forensic examination is specified in subject types of forensic psychological evaluation according to expert tasks [4].

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[1] Чепа М.-Л. А. Про предмет і об'єкт судової психологічної експертизи. *Актуальні проблеми навчання і виховання людей з особливими потребами :* Зб. наук. праць. № 3 (5). 2007. С. 290–299.

[2] Про затвердження Інструкції про призначення та проведення судових експертиз та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз та експертних досліджень: наказ М-ва юстиції України від 8 жовтня 1998 р. № 53/5. URL: http://zakon2.rada.gov.ua/ (Date accessed: 28.02.2019).

[3] Єгорова Т. М., Єгоров В. В. Дискусійні питання щодо об'єкта і предмета судової психологічної експертизи. Актуальні питання судової експертизи і криміналістики : Харків : ХНДІСЕ, 2019. С. 428–430.

[4] Єгорова Т. М., Алікіна Н. В., Савкіна Т. В. Диференціальний підхід до проведення судової психологічної експертизи як підстава визначення її предметних видів. *Ароцкеровські читання:* зб. матеріалів міжнар. наук.-практ. конф., присвяч. 90-річчю від дня народж. видат. вченого-кримаіналіста, д-ра юрид. наук, проф. Л. Ю. Ароцкера (Полтава, 25 трав. 2017 р.). Харків: Право, 2017. С. 155–157.

Thus, the object of psychological examination of typological features of personality is a person as a person (suspect, accused), a set of sources of information (materials of criminal proceedings, other documents, results of experimental psychological examination), which reflect individual psychological (typological) features of the subject and their manifestation in legally significant circumstances (during the period related to the event of the crime in which he is suspected or accused, during the pre-trial investigation and lawsuit in court).

A special (specific) subject of forensic psychological evaluation of typological features of personality is a set of psychological facts that reflect the individual psychological (typological) features of the person (suspect, accused) and the specifics of his activities in legally significant circumstances.

M. M. Kochenov[1], N. V. Alikina, T. M Egorova[2], O. N. Sakovskya[3] rightly point out that a misunderstanding of the limits of the competence of an expert psychologist entails a number of dangers, including erroneous court decisions, doubts in scientific ability of forensic psychological examination. Scientists address the issue of defining the limits of competence of an expert psychologist in different ways. O. N. Sakovskaya, F. S. Safuanov[4], outline the limits of competence of an expert psychologist with a list of tasks that can be addressed to the examination. The significant variability of the wording of the questions asked by customers to solve the examination, the need to adjust the list of tasks of psychological examination in connection with the development of new subject areas, indicates the need for criteria that define the competence of the expert. G. A. Ogorodnikov[5], referring to P. S. Dagel, I. M. Reznichenko, V. V. Melnik, D. P. Kotov, proposes to delineate the limits of competence of a forensic psychologist legal, epistemological and moral criterion.

According to the epistemological criterion, the solution of psychological examination is permissible to ask only those questions, the answers to which can be found by means of objective, reasonable, tested in expert practice methods of scientific psychology. This criterion also limits the set of psychological theories

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[1] Коченов М. М. Судебно-психологическая экспертиза: теория и практика. Избранные труды. Москва: Генезис, 2010. 352 с.

[2] Алікіна Н. В., Єгорова Т. М., Савкіна Т. В. Вплив на судово-психологічну експертизу інтеграційних і диференційних процесів у сучасній психології. *Теорія та практика судової експертизи і криміналістики:* зб. наук. праць. Вип. 16/ред. кол.: О. М. Клюєв, В. Ю. Шепітько та ін. Харків: Право, 2016. С. 481–484.

[3] Саковская О. Н. Судебно-психологическая экспертиза: текст лекцій. Ярославль, 2013.

[4] Сафуанов Ф. С. Судебно-психологическая экспертиза в уголовном процессе. Москва, 1998.

[5] Огородникова Г. А. К вопросу о предмете, объекте и пределах судебно-психологической экспертизы. *Вестник Южно-Уральского государственного университета.* Челябинск: Изд-во ЮУрГУ, 2008. № 2 (102). Серия «Право». Выпуск 13. 119 с. URL: https: //www.twirpx.com (Date accessed: 03.02.2019).

from which the expert research is built. The content of the law contains a hidden reference to the fact that man is a being who consciously builds his behavior in accordance with the goal and the constructed forecast. As F. S. Safuanov emphasizes, the provision that the main source of determining human behavior is its conscious activity, and allows the use of categories of responsibility [1]. Therefore, it is necessary to abandon the use in the field of forensic psychological examination of theories that determine the determinants of human behavior as environmental influences, unconscious motivations or genetically determined "programs".

Legal criterion means the exclusion from the scope of tasks of an expert psychologist of issues within the competence of lawyers. The requirement to comply with the legal criterion is contained in the content of Article 242 of the Criminal Procedural Code of Ukraine prohibiting forensic examination to clarify legal issues [2]. The application of the legal criterion is associated with the peculiarities of the application of the categorical apparatus of forensic psychological examination, the distinction between legal and psychological criteria of the qualifying features of legal norms [3]. It should be borne in mind that going beyond the competence of an expert psychologist is possible in the field of approximation of the subject field of psychology and other sciences (psychiatry, linguistics, art history, sexology). Therefore, it is proposed to apply the subject criterion of the limits of competence of the expert psychologist, which is to limit its scope of tasks to the subject field of psychology and to exclude issues of jurisprudence and other sciences.

Moral criterion of the limits of competence concerns the subject of examination, the requirements for the qualification of the expert, the aspects of his professional activity, which relate to confidentiality, respect for the dignity of the subject, correctness, etc. A number of authors point out the need to comply with these requirements. N. V. Alikina emphasizes the need for high standards of professional competence of an expert psychologist, careful selection of candidates and gradual individual training of experts[4]. G. A. Ogorodnikov believes that it is necessary to expand the regulatory framework governing the behavior of

[1] Сафуанов Ф. С. Судебно-психологическая экспертиза в уголовном процессе. Москва, 1998. С. 33–44.

[2] Кримінальний процесуальний кодекс України: Закон України від 13.04.2012 № 4651-VI. URL: http://zakon3.rada.gov.ua/laws/show/4651–17 (Date accessed: 18.06.2019).

[3] Ситковская О. Д., Конышева Л. П., Коченов М. М. Новые направления судебно-психологической экспертизы. Москва : Юлитинформ, 2000. С. 7–10; Сафуанов Ф. С. Как построить предметный вид судебно-психологической экспертизы. *Психология и право*. 2017. № 1. С. 220–239. URL: 10.17759/psylaw.207070118. 10.12.2017 (Date accessed: 20.06.2019).

[4] Алікіна Н. В. Про розвиток судово-психологічної експертизи. Теорія та практика судової експертизи і криміналістики : зб. наук. праць. Вип. 5/ред. кол.: М. Л. Цимбал, В. Ю. Шепітько та ін. Харків : Право, 2005. С. 481–484.

experts [1]. O. O. Slipets, S. G. Moroz express an opinion on the expediency of developing a code of ethics for an expert psychologist [2]. M. V. Kostytsky, speaking about the subject of forensic psychological examination, focuses on the personal traits of the expert, the availability of professional experience, ignoring the issue of obtaining and confirming the qualifications of the expert, the mechanism and criteria for assessing his competence[3]. Requirements for the qualification of a certified expert, his professional dynamics, legality of behavior, independence from outside influence, refusal to obtain illegal benefits, confidentiality, correctness, prevention of actions to the detriment of the reputation of colleagues, management, institution where the expert works, and the State are reflected in a number of regulations. acts regulating the activities of certified forensic experts [4]. Verification of the professional competence of the expert and his awareness of the rules of conduct in the performance of professional duties is possible by the means provided by the Regulations on the expert qualification commission and certification of forensic experts [5]. Expert can be held legally liable for violating a number of ethical norms.

Thus, setting the limits of competence of a forensic expert psychologist by subject, epistemological and moral criteria allows them to be observed during the examination of typological features of the individual.

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[1] Огородникова Г. А. К вопросу о предмете, объекте и пределах судебно-психологической экспертизы. URL: https: //www.twirpx.com (дDate accessed: 03.02.2019).

[2] Сліпець О. О., Мороз С. Г. Щодо питань етики судового експерта-психолога. Актуальні питання судової експертизи і криміналістики : зб. матеріалів міжнарод. наук.-практ. конф., присвяченої 150-річчю з дня народження Засл. проф. М. С. Бокаріуса (Харків, 18–19 квіт. 2019 р.). Харків : ХНДІСЕ, 2019. С. 430–432.

[3] Костицький М. В. Психологічна експертиза в системі психологічної практики. Юридична психологія. 2015. № 1. С. 14–31. URL: http://nbuv.gov.ua/ UJRN/ urpp (Date accessed: 01.06.2019).

[4] E.g., Про запобігання корупції : Закон України від 14.10.2014 № 1700-VII. URL: https://zakon.rada.gov.ua/laws/show/1700–18/card (Date accessed: 26.06.2019); Положення про експертно-кваліфікаційні комісії та атестацію судових експертів: наказ Міністерства юстиції України від 03.03.2015 № 301/3. URL: https://zakon.rada.gov.ua/laws/show /z0249–15 (Date accessed: 28.02.2019); Про затвердження Інструкції про призначення та проведення судових експертиз та експертних досліджень та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз та експертних досліджень : наказ М-ва юстиції України від 8 жовтня 1998 р. № 53/5. URL: http://zakon2.rada.gov.ua/ (Date accessed: 28.02.2019); Довідник кваліфікаційних характеристик посад працівників науково-дослідних установ судових експертиз Міністерства юстиції України : наказ МЮ України від 19.04.2012 № 611/5. URL: https: //zakon.rada.gov.ua/laws/show/v0611323–12 (Date accessed:28.02.2019).

[5] Положення про експертно-кваліфікаційні комісії та атестацію судових експертів: наказ Міністерства юстиції України від 03.03.2015 № 301/3. URL: https: //zakon.rada.gov.ua/laws/show /z0249–15 (Date accessed: 28.02.2019).

Functioning feature of the categorical psychology apparatus is the use of some of its concepts in other areas of human existence. The use of the concepts of psychology in the everyday, vital sense can simplify, transform their meaning [1]. Inclusion of psychological knowledge in the scope of law leads to the use of the concepts of psychology as a categorical apparatus of jurisprudence, as a consequence, homonymy or approximate sound of concepts (such are the concepts of motive, person, action, deed). This requires clarification of the content of the categories. The subject, the tasks of forensic psychological examination determine the formation of specific concepts, the content of which is correlated with legal criteria. O. D. Sitkovskaya, L. P. Konysheva, M. M. Kochenov, point out that specific concepts of forensic psychological examination are created by introducing the concept of limiter [2]. F. S. Safuanov, based on the legal significance of psychological examination, showed the relationship of legal and psychological criteria and relevant concepts for different subject sorts [3]. Formation of the concepts of forensic psychological examination by introducing the concept of a constraint on the categories of general psychology allowing provide a definition of the basic concepts of psychological examination of the typological features of personality. Such concepts, in addition to the above definitions of the object and subject of examination, are the definition of individual psychological (typological) features of the accused (suspect), the significant impact of individual psychological characteristics on the behavior of the accused (suspect), legally significant situation, increased subordination other people, increased tendency to fantasize, increased cruelty. The following definitions are proposed.

Individual psychological (typological) features of the accused (suspect) are a hierarchical system of his personal characteristics (values, leading motives), temperament, character, emotional and volitional sphere, cognitive activity, established ways of emotional response, etc., manifested during his life in a legally significant situation.

Legally significant situation is a period of time (may include pre-criminal, criminal, post-criminal stages of the tort and the situation of pre-trial investigation and trial), during manifestation of individual psychological characteristics of the accused (suspect) is important to establish the qualifying features of the crime or circumstances individualizing (extenuating or aggravating) punishment.

Significant influence of the individually-psychological characteristics of the accused (suspect) on his behavior in a legally significant situation is such influence that limits the person's ability to make a meaningful assessment of the situation and conscious control over his behavior.

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[2] Ситковская О. Д. Новые направления судебно-психологической экспертизы. Москва: Юлитинформ, 2000. С. 7–10.

[3] Сафуанов Ф. С. Как построить предметный вид судебно-психологической экспертизы. URL: 10.17759/psylaw.207070118 (Date accessed: 20.06.2019).

Increased controllability of influence by other people is the tendency of a person to easily subordinate to other people because of insufficient critical (rational) acceptance of their judgments and actions significantly adversely affecting his ability to consciously control his own behavior.

Increased tendency to fantasize is an insufficiently regulated consciousness of the person's production of imagery.

Increased cruelty is a complex of individual psychological characteristics, which is neglect of the value of life and well-being of living beings, manifests a lack of empathy, a readiness for destructive actions against living beings.

Conclusions. Methods of subject types of forensic psychological examination should be based on theoretical provisions of forensic psychological examination, contain definitions of object, subject, limits of competence, tasks, which are determined by the legal significance of psychological examination of each subject, contain requirements for structure and content of forensic expert conclusion.

Limits of forensic psychologist competence are limited by subject, epistemological and moral (ethical) criteria that consist in limiting the range of solved problems in the subject field of psychology, exclusion from the methods of psychological examination of methodological and methodological instruments that do not meet the requirements of scientific skills, availability of requirements for qualification the subject of examination.

The conceptual apparatus of each of the subject types of forensic psychological examination is formed on the basis of the concepts of the science of psychology by limiting their volume according to the legal criterion of qualifying characteristics.

Formulated theoretical provisions of forensic psychological examination of typological features of a person is the basis for creating a methodology and its entry in the Register of methods of forensic examination in accordance with the procedure established by the Ministry of Justice of Ukraine[1] is a step towards the implementation of the tasks of scientifically grounded implementation of psychological knowledge in the practice of forensic psychology requirements for the structure and content of forensic expert conclusion[2].

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О. О. Сліпець

ТЕОРЕТИЧНІ АСПЕКТИ СУДОВО-ПСИХОЛОГІЧНОЇ ЕКСПЕРТИЗИ ТИПОЛОГІЧНИХ ОСОБЛИВОСТЕЙ ОСОБИСТОСТІ

Розглянуті теоретичні аспекти судово-психологічної експертизи типологічних особливостей особистості підозрюваного (обвинуваченого): юридичне значення, видовий об'єкт та предмет, завдання, межі компетенції експерта, особливості категоріального апарату. Запропоновано формулювання основних понять, уточнення щодо критеріїв меж компетенції експерта.

Ключові слова: судово-психологічна експертиза, психологічна експертиза типологічних особливостей особистості, юридичне значення, об'єкт, предмет, межі компетенції, завдання психологічної експертизи типологічних особливостей, юридично значимі обставини, індивідуально-психологічні (типологічні) особливості особи, суттєвий вплив індивідуально-психологічних особливостей особи на її поведінку, підвищена підвладність впливу з боку інших людей, підвищена схильність до фантазування, підвищена жорстокість.

Е. А. Слипец

ТЕОРЕТИЧЕСКИЕ АСПЕКТЫ СУДЕБНО-ПСИХОЛОГИЧЕСКОЙ ЭКСПЕРТИЗЫ ТИОЛОГИЧЕСКИХ ОСОБЕННОСТЕЙ ЛИЦА

История использования психологических знаний с целью решения вопросов права насчитывает более ста лет. Всё это время отдельные теоретические вопросы судебно-психологической экспертизы остаются дискуссионными. Это справедливо и для психологической экспертизы ин-

дивидуально-психологических (типологических) особенностей личности подозреваемого (обвиняемого).

Цель статьи состоит в формулировании теоретических положений судебно-психологической экспертизы индивидуально-психологических (типологических) особенностей личности подозреваемого (обвиняемого) и главных понятий экспертизы этого вида.

Определение объекта и предмета судебно-психологической экспертизы локализировано в понятиях объекта и предмета судебно-психологической экспертизы типологических (индивидуально-психологических) особенностей личности подозреваемого (обвиняемого). Исходя из анализа юридического значения психологического изучения личности подозреваемого (обвиняемого) в уголовном и административном судопроизводстве, сформулированы задачи судебно-психологической экспертизы типологических особенностей личности подозреваемого (обвиняемого). Исходя из предмета психологии, юридического значения психологических фактов для установления юридических критериев, нормативных требований к квалификации и поведению эксперта, предложено уточнение относительно критерия определения пределов компетенции эксперта-психолога. Посредством применения понятия-ограничителя относительно общепсихологических категорий, предложено определение главных понятий судебно-психологической экспертизы типологических особенностей личности подозреваемого (обвиняемого).

Сформулированы теоретические положения судебно-психологической экспертизы психологических особенностей личности подозреваемого (обвиняемого): объект, предмет, юридическое значение, задачи, пределы компетенции, основные понятия, которые являются элементом системы теоретических и методических положений судебно-психологической экспертизы и основой для создания методики судебно-психологической экспертизы типологических особенностей личности подозреваемого (обвиняемого).

Ключевые слова: судебно-психологическая экспертиза, психологическая экспертиза типологических особенностей личности подозреваемого (обвиняемого), юридическое значение, объект; предмет, пределы компетенции; задачи психологической экспертизы типологических особенностей личности подозреваемого (обвиняемого), юридически значимые обстоятельства, индивидуально-психологические (типологические) особенности личности подозреваемого (обвиняемого), существенное влияние индивидуально-психологических особенностей человека на его поведение, повышенная внушаемость, повышенная склонность к фантазированию, повышенная жестокость.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.41
UDC 343.98

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REGARDING MULTIDISCIPLINARYRESEARCH ON BIOLOGICAL DAMAGE OF FIBER MATERIALS BY THE METHOD OF SCANNING ELECTRON MICROSCOPY

The article considers the need for a comprehensive study of biological damage to fibrous materials by scanning electron microscopy. The basic types and characteristics of fibers and fibrous materials, types of their damages, in particular, biological, and the mechanism of their formation are stated. It is shown that with modern methods of studying morphological characteristics the most effective method is scanning electron microscopy providing the possibility of direct study of the object in a wide range of magnifications. The use of scanning electron microscopy makes it possible to identify qualitatively new micro-features of a volumetric nature in the study of fibrous materials. Agents of bio-damages (bio-factors) - microbiological (bacteria, microbes, fungi, blue-green algae), phytological (mosses, lichens, higher plants, algae), zoological (insects, birds, mammals) are considered. Emphasis is placed on the study of damage caused by mold caused by moths, dogs, etc.

Carrying out a multidisciplinary research on various types of damage of various fibrous materials allows to obtain an information database, the ability to differentiate damage of chemical, mechanical, thermal and biological nature, to identify micro-features that individualize a subject (factor) action, influence, increase the potential for trace information about

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the actual data and circumstances of the event in those cases when it is not possible to diagnose the damage only on the basis of external morphological features. The obtained data testify to the effectiveness of the chosen direction of research. The results of the research are positive for the creation of an optimal scheme of research, methods of microscopic examination of damage to materials of fibrous nature in order to solve diagnostic, identification and situational problems of forensic science.

Keywords: forensic activity, forensic biological examination, forensic trace evidence analysis, multidisciplinary examination, biological damage of fibrous materials, scanning electron microscopy.

Formulation of Research Problem. The use of modern achievements of science and technology is important in improving the efficiency of forensic science institutions.

Forensic research on fibrous objects is relevant and promising for establishing factual data during the investigation of cases of different categories. Objects of fibrous nature belong to the objects of everyday use of every person, are found in almost every criminal situation of serious crimes against the person, belong to the offender, victim and other persons related to the event and constitute elements of its material situation. Objects of fibrous nature, in particular clothing, interact continuously with other objects of both fibrous and other nature. A significant part of crimes is committed in conditions of active interaction of the subject of the crime and other persons with various objects, as a result of which on clothes, the body of the offender and the victim, tools of the crime, objects of criminal encroachment and other objects connected with remain different fibers in the form of trace layers.

Development of forensic examination of fibrous materials and products from them poses new challenges, the solution of which is impossible without a comprehensive study of both textile materials and the fibers themselves. Increasingly important for the investigation of crimes is the study of damage to clothing as a result of the use of tools, vehicles, etc., and the development of expert methods based on the results. Investigation of clothing damage is one of the main areas of multidisciplinary trace evidence analysis, examination of materials, substances and products, as well as biological examination.

Despite the fact that expertise in establishing the mechanism of formation of damage (chemical, thermal, mechanical, biological) materials, fibers are appointed quite often, differentiation of damage, establishment of the mechanism of their formation cause difficulties, which requires the development of new technical means and techniques of expert research.

Previously, only isolated research on the nature of some types of fibers. The most effective of the modern methods of research on morphological characteristics is the method of scanning electron microscopy (SEM), which provides the ability to directly study the object in a wide range of magnifications (from 10 to 100000x). Raster electron microscopy is based on a method of obtaining an image of the surface structures of an object by detecting secondary electrons emitted by the interaction of the surface of the object and the focused flow of electrons in the scan mode.

As previous researches have demonstrated, the most effective results can be obtained by using scanning electron microscopy (hereinafter referred to as SEM), which allows the detection of qualitatively new three-dimensional micro-features. However, at present there is no method of expert examination of damage to materials of fibrous structure, single fibers using SEM.

Carrying out complexes of experimental researches of different in nature damages of various in fibrous nature materials allows to obtain information database, possibility of differentiation of damages of chemical, mechanical, thermal and biological character, detection of micro-signs that individualize one or another effect, factor (influence), obtaining traceable information on the actual data and circumstances of the event in cases where only by extrinsic morphological signs to diagnose the damage it is impossible.

Analysis of Recent Researches and Publications. Research on fibers in order to determine changes in the structure of fibers that occur as a result of machining, bleaching, the impact of various operational factors and external conditions have been devoted to the work of domestic and foreign scientists such as V. M. Beregina, S. V. Grigoriev, I. A. Ermilova, K. V. Illarionova, K. A. Kostrova, T. O. Kuzmina, S. V. Putintseva and others [1].

During the forensic examination of fibrous materials and products from them there is a need to analyze the features of the structure and the formation of defects both on the surface and inside the fibers. The systematization of the detected microdefects, mechanical and other damages by types of fibers is important while research on fibers, etc.

[1] E.g., Криминалистическое исследование волокнистых материалов и изделий из них: Метод. пособ. для экспертов. Москва: ВНИИСЭ, 1986. Вып. IV. 139 с. ; Путінцева С. В. Методичні вказівки до проведення лабораторних робіт з дисципліни «Теоретичні основи товарознавства». Херсон: ХНТУ, 2013. 12 с. ; Илларионова К. В., Берегина В. М., Ермилова И. А., Григорьев С. В. Характеристика физико-механических показателей хлопковых волокон новых селекционных линий. Текстильная промышленность, 2006. № 1–2. С. 16–19.

Among the main issues of forensic examination of fibers and fibrous materials is the question of establishing the mechanism of formation of their damage. Conducting such research allows to solve identification, diagnostic and situational problems. In the course of the research, the nature of the damage and the mechanism of their formation are established, the issues related to the identification (identification) of the weapon by the damage on the given clothes are solved, etc.

The problem of bio-damage is complex in the scientific sense and multidisciplinary in practice; scientifically based on knowledge of biology, chemistry, trace evidence, materials science. In the works of chemists, materials scientists and biologists analyzed some damage to textile fibers and means of their protection against the action of, in particular, microorganisms[1].

The Article Purpose is a multidisciplinary research on biological damage to fibrous materials by scanning electron microscopy.

Main Content Presentation. Bio-damage agents (bio-factors) are microbiological (bacteria, microbes, fungi, blue-green algae), phytological (mosses, lichens, higher plants, algae), zoological (insects, birds, mammals). For expert examinations of clothing, clothing items with damage caused, for example, by insects, rodents (rats, squirrels), predators (wolves, foxes), dogs when the corpse is in the woods; leeches, crayfish and other bio-damaging agents when the corpse is in the water. In such cases, the issues of establishing the mechanism of formation of these damages, their differentiation with damage of another nature, such as mechanical, are often resolved. Microorganisms act on fibrous materials primarily through biochemical exposure, and damage by insects and animals by their nature have common features with mechanical damage and are mainly combined.

The resistance of fibers and tissues to bio-damage depends primarily on the nature of the fibers from which they are made. Textile materials based on natural fibers — cotton, linen and others, utilized by saprophytic microflora are most often used for forensic research with microbiological damage.

[1] Ермилова И. А. Теоретические и практические основы микро-биологической деструкции текстильных волокон и способов их защиты от воздействия микроорганизмов: дисс. ... д-ра техн. наук. Ленинград: ЛИТЛП им. С. М. Кирова, 1982. 470 с. ; Пехташева Е. Л., Нестеров А. Н., Заиков Г. Е., Софьина С. Ю. Биостойкость природоокрашенных хлопковых волокон. Вестник Казанского технологического университета. 2012. № 5. С. 110–113; Пехташева Е. Л. Биоповреждения и предохранение непищевых материалов, Москва : Мастерство, 2002. 224 с.; Пехташева Е. Л., Сапожникова А. И., Неверов А. Н., Синицин Н. М. Оценка степени микробной обсемененности шерстяных волокон. Технология текстильной промышленности. *Известия ВУЗов,* 2003. № 2 (271). С. 18–20 ; Brian J.McCarthy. Biodeterioration in wool textile processing. *International Dyer*, 1980. № 164. P. 59–62.

Chemical fibers and fabrics, especially synthetic, are more biostable but biodestructive microorganisms also adapt to.

Microbiological damage to flax, jute and other fiber walls, as well as their fabrics, manifests itself in the form of single staining (the appearance of colored spots or darkening of the fibers) and is accompanied by the appearance of a putrid odor. Microscopic transverse cracks and chips, microholes and shells in the fiber walls are observed on the affected the fiber walls. Research on the relative biostability of fiber walls have demonstrated that manila and jute fibers are the most stable, and flax and hemp fibers are the least stable.

Availability of cellulose, pectin, nitrogen and other organic substances in cotton fiber and their high hygroscopicity make it a favorable environment for abundant microflora. To a greater extent, microorganisms damage the lower varieties of cotton, which have high humidity. The most serious damage to cotton occurs during storage.

Under natural conditions, the cotton product is widely used in contact with the ground (tent fabrics). Under these conditions, simultaneously with the damage to the fiber inside, there is damage to the outside. In this case, the main role in tissue damage is played by cellulose-destroying bacteria and fungi. A key role in the process of fiber destruction is played by a group of bacteria with yellow-pigmented mucous colonies, which are representatives of the epiphyte of the microflora constantly present on the cotton plant.

Damage to cotton fibers, fabrics and textiles by microorganisms is first accompanied by the appearance of colored spots of yellow, orange, red, purple and other colors, then a rotting odor appears, and finally, the product loses its strength and for example, destroys of molding (Fig. 1).

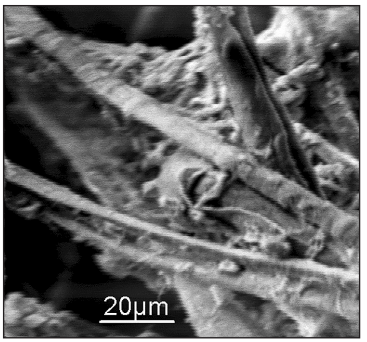


Fig. 1. Mold damage

Electron microscopy revealed that the destruction process of cotton fiber under the action of enzymes proceeds most intensely in areas with lower density of fibrillar structure.

Each stage of damage to the cotton fiber corresponds to a certain type of destruction of the fiber. The initial degree of damage is manifested in spots, when due to the violation of the fiber wall, its surface contains cracks of different lengths and widths. Swelling is formed as a result of accumulation of microorganisms and products of their vital activity in large quantities in a certain area of the fiber. Swelling may be accompanied by rupture of the fiber wall under biomass pressure. In this case, microorganisms and the products of their activity protrude, which leads to the rolling of the fiber into lumps, and in the yarn – to its breaks, uneven in thickness and strength. The action of external microflora causes damage to the wall. The highest degree of destruction is the disintegration, stratification of the fiber into individual fibrils. The decorated structure of the fiber is absent. In all cases of damage to the surface of the fiber may be present a large number of fungal mycelia, which with its hyphae permeates the entire fiber or envelops it that prevents the spinning and dyeing of textile materials.

The main chemical component of wool is the protein keratin, which can be a nutrient medium for the development of microorganisms. The destruction of wool occurs in several stages: first, microorganisms destroy the scaly layer, and then penetrate into the cortical layer of the fiber, although the cortical layer itself is not destroyed, because the intercellular layer between cells serves as a nutrient medium. As a result, the structure of the fiber is disrupted: the scales and cells are no longer connected, the fiber cracks and breaks down. The activity of microbiological processes that develop on wool fibers depends on the mechanical damage to the fiber and the pre-treatment of wool.

The penetration of microorganisms can occur through sections of fiber or through microcracks in the scaly layer. Slits can be of different origins: mechanical, chemical, etc. It has also been found that wool that has undergone intensive mechanical or chemical treatment is more easily destroyed by microorganisms than wool that has not undergone such treatment. Under the influence of microorganisms, structural changes of wool are observed - damage to the scaly layer, its complete exfoliation, splitting of the cortical layer.

Damage to wool fibers can be reduced to several generalized species, due to the peculiarities of their structure: spotting and fouling – the accumulation of bacteria or hyphae of fungi and products of their activity on the surface of the fiber; scaly layer damage, local and widespread; delamination of the cortical layer to spindle cells; decay of spindle-shaped cells.

Bacteria, however, play a predominant role in the destruction of wool. Mushrooms are less active on wool. Fungi create conditions for the further life of destructive bacteria. The role of microscopic fungi can also be reduced

to the splitting of the tops of the fibers, as a result of mechanical forces of growing hyphae. This cleavage allows bacteria to penetrate into the fiber. Wool as a carbon source is almost never used by mushrooms. Microorganisms affect mainly the cell-membrane complex, under the action of which there is a decrease in the breaking load and yellowing of wool fibers.

Chemical fibers are fibers (threads) obtained by industrial means in the factory. Depending on the raw material are divided into three main groups:

1) artificial fibers obtained from natural organic polymers (for example, cellulose proteins) by the removal of polymers from natural substances and their chemical action;
2) synthetic fibers are made from synthetic organic polymers obtained by the synthesis reaction with low molecular weight compounds (monomers), the raw materials of which are petroleum and coal products;
3) mineral fibers obtained from inorganic compounds.

In contrast to natural, chemical fibers do not have their own permanent and specific microflora, so the biodegradation of these materials may be mainly involved in the most common types of microorganisms with high adaptability. The emergence and progression of biological destruction of polyamide fibers is largely due to their properties and the properties of microorganisms, their species composition. Basically, the type of microorganisms that damage polyamide and other chemical fibers is determined by the conditions of their operation, which form the microflora, and its adaptive capabilities.

The consequence of macro-, micro- and chemical structural changes is a change in various indicators of the properties of polyamide fibers. Studies by optical microscopy showed that all fibers that were exposed to microorganisms had damage characteristic of synthetic fibers: fouling, swelling, wall damage.

As a result of the development of microorganisms on the polyamide fibrous materials, there is a change in the morphology of the fibers, their molecular and supramolecular structure resulting in a decrease in the strength properties, color change, odor emergence.

Synthetic fibers are fundamentally different in structure from natural and artificial fibers and, being a foreign substrate for microorganisms, they are more severely damaged: microorganisms, although slower, are still able to populate synthetic tissues and utilize their carbon during development (i.e., cause bio-damage). When studying the biostability of tissues made of acrylic fiber, PETE, polycaprolactam, it was found that soil fungi and bacteria act approximately equally on the characteristics of these tissues,

causing an increase in the degree of swelling of the fibers, reduced strength, reduced relative elongation.

Synthetic fibers are a potential source of energy and nutrition for microorganisms. The first stage of the process of interaction of microorganisms with synthetic fibers can be rightly considered from the standpoint of the theory of adhesion, taking into account the peculiarities of the structure and properties of microorganisms as a biological system. The whole process of exposure to microorganisms on the fiber can be divided into several stages: attachment to the fiber, growth and reproduction on the fiber, its use as a source of power and energy.

Defects in the form of cracks, chips, dents, which can occur in the process of obtaining and processing fibers, greatly contribute to the damage of chemical fiber, the destruction processes that begin with the surface. Not only physical but also chemical heterogeneity can contribute to the process of biodegradation of synthetic fibers. The consequence of structural changes is a decrease in the strength properties of the fibers. Thus, the fastest emergence and course of the process of biodegradation of synthetic fibers contribute to poor ordering and low degree of orientation of fiber macromolecules, their low density, low crystallinity, as well as the presence of defects in the macro- and microstructure of fibers, pores and voids in their inner parts.

Artificial fibers and fabrics are obtained by chemical treatment of natural cellulose derived from wood: spruce, pine, fir. Artificial fibers based on cellulose include viscose, acetate and others. These fibers, derived from natural raw materials, are more amorphous in structure than the original high molecular weight natural material, and therefore are characterized by lower strength, increased moisture content and ability to swell.

Viscose fibers are similar in chemical structure and microbiological resistance to ordinary cotton fibers. The biostability of these fibers is low: many cellulolytic microorganisms are able to destroy them.

Acetate fibers are obtained from cellulose acetate, a product of the esterification of cellulose with acetic anhydride. They differ significantly in their properties from viscose and are more like synthetic fibers. Yes, they have lower hygroscopicity, less swelling, less loss of strength in the wet state. They are more resistant to the harmful effects of cellulolytic enzymes of bacteria and microscopic fungi.

Among the artificial textile materials of the new generation, bamboo textile fibers, first obtained in Japan, stand out. Bamboo has antimicrobial properties due to the presence of the bambokan substance in the fiber. Bamboo fibers have an unusual porous structure, which makes them much more hygroscopic than cotton fibers. Clothes made of bamboo fibers are beneficial because the moisture is instantly absorbed and evaporated by the

fabric due to the presence of pores, and the strong antimicrobial properties of bamboo prevent the appearance of the smell of sweat.

Various modified viscose fibers, such as micromodal and modal, derived from beech wood, have not been studied for biostability. There is also no information on the biostability of man-made fiber fibers derived from milk casein, soybean protein, corn, peanuts, corn kernels.

One of the most common damage to fibrous materials is animal damage, such as moth damage.

Moth (Tineina) is an insect of a number of scale insects, or butterflies. Moth larvae belong to keratophakic and feed on the hair. They damage fur, wool, stocks of fur and wool raw materials, felt and felt linings in devices, leather covers of books, clothes. The most dangerous and permanent pest, which has the ability to mass year-round reproduction and causes great economic damage, is the moth. The second most harmful is considered to be the fur moth. Hungry caterpillars can damage non-food but available materials such as paper, cardboard, cotton, linen and synthetic fabrics, PVC and polyethylene films, telephone wire insulation, and more. Inspection and examination of damaged fibrous materials (fur, wool, etc.) can reveal minor damage to the surface of materials, inconspicuous damage to the pile, bites from the edges, grooves on the surface, noticeable destruction of the pile, through damage (holes) (Fig. 2, 3).

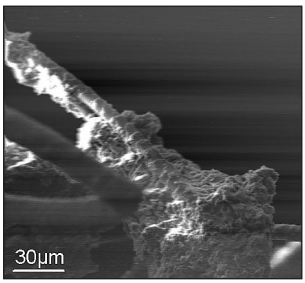


Fig. 2. Moth damage

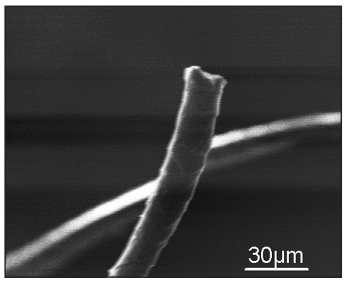


Fig. 3. Moth damage

The most characteristic feature that unites rodents, such as rats and mice, is the extremely unique structure of the maxillary apparatus. On the upper and lower jaws are one pair of incisors, they are very large, devoid of roots and grow throughout the life of the animal. Their free end is chisel-shaped, the front wall is covered with a thick layer of enamel. The main distinguishing feature for mice is the presence of teeth and notches on the upper incisors. Examination and examination of the damage can reveal traces of teeth in the form of shallow scratches; on the edge of the material on the surface of the bite, the material is damaged but not bitten; the material is gnawed.

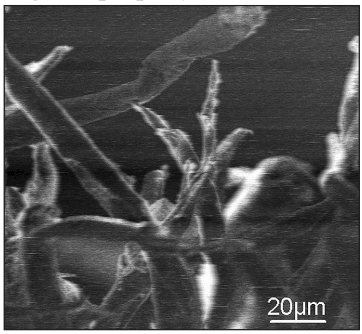
The most common items for research are clothing damaged by predators, namely, canine viz. dogs. A dog bite in most cases occurs through one or more layers of clothing. Clothing plays a protective role when bitten and is the first trace-receiving surface. With a static bite, you can detect damage in the form of pulling the threads or tearing them from the action of the fangs. Examination of the reverse side of the tissue can detect the protrusion and deformation of the fibers and floss at the site of the bite, oriented in the direction of the tooth. In the case of immersion of the tooth, damage to the tissue of a round or oval shape, with fibers and threads (and sometimes edges), deformed in the direction of the tooth. When straightening the threads and comparing them, it is observed that the damage was formed as a result of tissue rupture, that in the field of view of the microscope there is a deformation of the woven weave viz. thickening and thinning. At full compression of jaws through the model of clothes it is possible to reveal signs of action of teeth viz. antagonists that is shown in formation of two adjacent damages having a different direction of deformation of threads and various volume of damages. In most cases, a static bite reveals areas of compression of the threads of round, triangular or rectangular shape, the corresponding action of the chewing surfaces of the teeth. The combination of these injuries may indicate the action of the entire jaw, which is quite suitable for identifying the dental status of the animal. Traces of teeth are well reflected on the materials of woven weaving, natural and artificial leather, fabrics with synthetic coating. Traces of teeth are well visible on viscose silk knitwear, woolen with an admixture of synthetic fibers, materials and other fabrics. These traces reflect sufficient information for identification.

Damage to clothing during a dynamic dog bite is varied: from tissue tears from 0.2 × 0.2 cm to tears up to 15—20 cm in length. Depending on the type of weaving, the damage can be linear, angular, T-shaped, wavy or arcuate. The edges of the damage are represented by elongated, unevenly interrupted loose threads, with elements of thickening and thinning of the weave, both at the edges of the damage and at a distance in the places of laying the seams. When a person tries to throw off an animal that has clung to him, a static-dynamic bite is formed on the clothes: at the edges of the damage you can find the compression of the threads (static bite) with anti-aliasing elements in the direction of rupture, more pronounced in close proximity to it (dynamic trace).

Thus, by a comprehensive assessment of damage to clothing, you can speak about the actions of the jaw of the animal — upper or lower, the shape and size of the jaw, the size and radius of dental arches, the shape of the chewing surface of the teeth, the reliefs of the cutting edge and the chewing

surface, the interposition of the teeth, the type of impact (static or dynamic) and its direction (Figs. 4, 5).

Detection and detailed study of damages of fibrous materials (clothing) while trace evidence analysis complex study by expert biologists, material scientists, trace evidence analysts allows to identify the object that caused the damage found on the clothing, to compare and correlate the detected damage, to properly evaluate them.



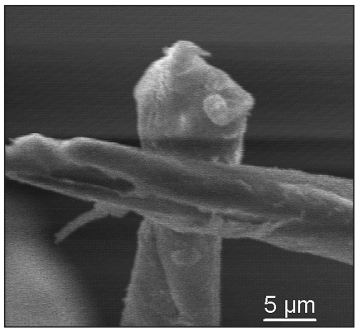


Fig. 4, 5 Damage in dog bites

In resolving the issue of the type of damage, in the absence of an instrument of damage, the expert should compare the signs established in the investigated damage with the signs known to him, characteristic for various types of mechanical damage viz. cut, chipped, chopped, chipped-cut and others, and conclude the type of tool that caused the test damage.

Conclusions. Thus, conducting a set of experimental studies of different types of damage of various fibrous materials allows to obtain an information database, the possibility of differentiation of damage of chemical, mechanical, thermal and biological nature, detection of micro-features that individualize a subject (factor) of action, influence , increasing the potential for obtaining trace information about the actual data and circumstances of the event in cases where it is impossible to diagnose the damage only by external morphological features.

Obtained data testify to effectiveness of the chosen direction of research. The results of the research are positive for the creation of an optimal scheme of research, methods of microscopic examination of damage to fibrous materials in order to solve diagnostic, identification and situational problems of forensic science.

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Т. Є. Балинян, Л. М. Дереча, Ю. О. Носатенко

ДО ПИТАННЯ ЩОДО КОМПЛЕКСНОГО ДОСЛІДЖЕННЯ БІОЛОГІЧНИХ ПОШКОДЖЕНЬ ВОЛОКНИСТИХ МАТЕРІАЛІВ МЕТОДОМ РАСТРОВОЇ ЕЛЕКТРОННОЇ МІКРОСКОПІЇ

У статті розглянуто комплексне дослідження біологічних пошкоджень волокнистих матеріалів методом растрової електронної мікроскопії. Викладено основні види та характеристики волокон та волокнистих матеріалів, види та механізм утворення пошкоджень. Наведено агенти біопошкоджень — мікробіологічні, фітологічні, зоологічні.

Проведення комплексного дослідження різних за характером пошкоджень різноманітних за волокнистою природою матеріалів дає можливість диференціації пошкоджень хімічного, механічного, термічного та біологічного характеру, виявлення мікроознак, що індивідуалізують той чи інший предмет (фактор) дії, впливу, збільшення потенціалу одержання слідової інформації про фактичні дані та обставини події у тих випадках, коли тільки за зовнішньо-морфологічними ознаками діагностувати пошкодження неможливо.

Ключові слова: судово-експертна діяльність, судова біологічна експертиза, судова трасологічна експертиза, комплексна експертиза, біологічні пошкодження волокнистих матеріалів, растрова електронна мікроскопія.

Т. Е. Балинян, Л. Н. Дереча, Ю. А. Носатенко

К ВОПРОСУ О КОМПЛЕКСНОМ ИССЛЕДОВАНИИ БИОЛОГИЧЕСКИХ ПОВРЕЖДЕНИЙ ВОЛОКНИСТЫХ МАТЕРИАЛОВ МЕТОДОМ РАСТРОВОЙ ЭЛЕКТРОННОЙ МИКРОСКОПИИ

В статье рассмотрена необходимость комплексного исследования биологических повреждений волокнистых материалов методом растровой электронной микроскопии. Изложены основные виды и характеристики волокон и волокнистых материалов, виды их повреждений, в частности, биологических, и механизм их образования. Показано, что при современных методах исследования морфологических характеристик наиболее эффективным является метод растровой электронной микроскопии, который обеспечивает возможность непосредственного изучения объекта в большом диапазоне увеличений. Использование растровой электронной микроскопии дает возможность выявления качественно новых микропризнаков объемного характера при проведении исследований волокнистых материалов. Рассмотрены агенты биоповреждений (биофакторы) — микробиологические (бактерии, микробы, грибы, сине-зеленые водоросли), фитологические (мхи, лишайники, высшие растения, водоросли), зоологические (насекомые, птицы, млекопитающие). Акцентировано внимание на исследовании повреждений, образованных в результате действия плесени, причиненных молью, собаками и др.

Проведение комплексного исследования различных по характеру повреждений разнообразных по волокнистой природе материалов позволяет получить информационный банк данных, возможность дифференциации повреждений химического, механического, термического и биологического характера, выявить микропризнаки, индивидуализирующие тот или иной предмет (фактор) действия, влияния, увеличение потенциала получения следовой информации о фактических данных и обстоятельств события в тех случаях, когда только по внешне-морфологическим признакам диагностировать повреждения не представляется возможным. Полученные данные свидетельствуют об эффективности выбранного направления исследований. Результаты проведенных исследований являются положительными для создания оптимальной схемы исследований, методики микроскопических исследований повреждений материалов волокнистой природы с целью решения диагностических, идентификационных и ситуационных задач судебной экспертизы.

Ключевые слова: судебно-экспертная деятельность, судебная биологическая экспертиза, судебная трасологическая экспертиза, комплексная экспертиза, биологические повреждения волокнистых материалов, растровая электронная микроскопия.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.42
UDC 343.98

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SOME ISSUES OF ESTABLISHING THE CAUSES OF TECHNICAL DAMAGE TO PROPERTY AND DETERMINATION OF MATERIAL DAMAGE AS A RESULT OF FLOODING

The article lists some problematic issues that arise when conducting research into the causes of technical damage to property and determining material damage as a result of flooding. The relevance of the subject matter of the article is noted, that is emphasized by the availability of appropriate methods developed by specialists from state specialized institutions, in particular by forensic experts from the Kyiv Scientific Research Institute of Forensic Expertise and the Odessa Scientific Research Institute of Judicial Expertise. The definition of the current legislation on material damage is given.

The article indicates the need to establish a proper defendant in civil disputes that arise when considering material damage, in accordance with the current provisions on the maintenance and maintenance of the housing stock. Fixation of damages is carried out using the act of pouring, field examination, photographic fixation.

Keywords: property damage, flooding, material damage, losses.

Formulation of Research Problem. The list of issues that are resolved with the help of construction and technical examination include determining the amount of material damage to the object (building, apartment, premises, etc.) and establishing the technical causes of damage to the object due to its flood.

In expert practice, one of the problematic issues in conducting this type of research and drawing conclusions is the establishment of technical causes of damage to the object due to its flooding.

State of Problem Research. As the given problematic question belongs to the expert tasks specified in Research guidelines concerning preparation and appointment of forensic examinations and researches[1] by experts of the

[1] Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень : наказом Міністерства юстиції України 08.10.98 № 53/5 (у редакції наказу Міністерства юстиції України від 26.12.2012 № 1950/5). URL: http://search.ligazakon.ua/l_doc2.nsf/link1/ REG3145.html (Date accessed: 18.06.2019).

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state specialized expert institutions in due time have developed corresponding techniques, in particular:

Methods of Determination of flooding causes taking into account new technologies and determination of material damage according to its consequence, developed by Kyiv Scientific Research Institute of Forensic Expertise (registration code 10.6.11);

Methods of Research on damages (defects) of apartments as a result of their flooding developed by Odessa Scientific Research Institute of Judicial Expertise (registration code 10.06.03).

The Article Purpose is to highlight some of the problematic issues that arise while conducting such researches.

Main Content Presentation. According to the Resolution of the Plenum of the Supreme Court of Ukraine of March 27, 1992 № 6 On the practice of consideration of civil cases by courts on claims for damages [1] considering claims for damages, courts are guided by the fact that damage to a person and property is subject to full compensation. the extent of the person who caused it, provided that the actions of the latter were illegal, there is a direct causal link between them and the damage and is the fault of the person.

Article 12 of Code of Civil Procedure of Ukraine [2] stipulates the implementation of civil proceedings on the basis of the parties' competitiveness, which provides for each of the parties to prove the circumstances relevant to the case and to which it refers as the basis of their claims or objections.

According to Article 7 of the Law of Ukraine: On Housing and Communal Services [3] consumer (individual or legal entity that is the owner (co-owner) of real estate, or with the consent of the owner another person who uses real estate and receives housing and communal services for own needs and with or on whose behalf the relevant contract for the provision of housing and communal services) has the right to compensation for damage to his property and / or premises, damage caused to his life or health as a result of improper provision or failure to provide housing and communal services. The Contractor is obliged to: ensure the timeliness and appropriate quality of housing and communal services in accordance with the law and the terms of the contract, including by creating quality management systems in accordance with national or international standards; to exercise control over the technical condition of engineering equipment of houses, apartments, premises; to

1 Про практику розгляду судами цивільних справ за позовами про відшкодування шкоди : постанова Пленуму Верховного Суду України від 27.03.1992 № 6. URL: https: //zakon.rada.gov.ua/laws/show/v0006700–92 (Date accessed: 18.06.2019).

2 Цивільний процесуальний кодекс України від 18 березня 2004 року № 1618-IV. Відомості Верховної Ради України.2004, № 40–41, 42. Ст. 49.

3 Про житлово-комунальні послуги : Закон України від 9 листопада 2017 року № 2189-VIII. Відомості Верховної Ради. 2018, № 1. Ст.1.

maintain in proper technical condition, to carry out maintenance and repair of indoor networks, to take measures to eliminate emergencies, to eliminate violations of the quality of services within the time limits established by the contract and/or legislation.

According to Article 8 of the Law of Ukraine: On Housing and Communal Services the manager (natural person-entrepreneur or legal entity-subject of entrepreneurial activity, which under the agreement with the co-owners ensures the proper maintenance and repair of the joint property of the apartment building and the adjoining territory and proper living conditions and satisfaction of household and household needs) is obliged to: maintain properly the property specified in the contract with the owner (co-owners); to provide conditions for timely carrying out of capital and current repairs in accordance with established standards, norms, norms and rules; to ensure the proper operation and maintenance of the assets on its balance sheet.

According to the Standard list of services for the maintenance of buildings and structures and adjacent territories and the Standard agreement on the provision of services for the maintenance of buildings and structures and adjacent territories[1], approved by the Cabinet of Ministers of Ukraine from 20.05.2009 № 529, these services include maintenance of indoor systems heat and hot cold water supply, drainage and sewerage and current repairs of structural elements, indoor systems of hot and cold water supply, drainage, heat supply, storm sewerage and technical devices of buildings.

While determining the work related to the maintenance of current repairs or capital, should be guided by the Indicative list of services for the maintenance of buildings and structures and adjacent areas and services for the repair of premises of buildings.

Maintenance of residential buildings, among other things is a set of works aimed at maintaining the serviceability and operation of technical equipment. The maintenance system of residential buildings must ensure the safe and uninterrupted operation of buildings, utilities and equipment during the established service life of the building. Maintenance of residential buildings includes work to monitor its condition, ensure serviceability, efficiency, adjustment and regulation of engineering systems and more. Control over the technical condition is carried out by implementing a system of technical inspection of residential buildings. The system of technical inspection of residential buildings includes scheduled (general, preventive) and unscheduled inspections.

[1] Про затвердження Типового договору про надання послуг з утримання будинків і споруд та прибудинкових територій: постанова КМУ від 20 травня 2009 р. № 529. URL: https: //zakon.rada.gov.ua/laws/show/529–2009-п (Date accessed: 18.06.2019).

In addition, the letter of the State Committee of Ukraine for Construction and Architecture for № 7 / 7-401 dated 30.04.2003 [1] demonstrates that current repair of the building is a set of repair and construction works, which provides for systematic and timely maintenance of performance and prevention of premature wear. structures and engineering equipment. If the building as a whole is not subject to major repairs, the set of current repairs may include individual works that are classified as related to major repairs (except for works that involve the replacement and modernization of structural elements of the building). Current repairs should be carried out at intervals that ensure efficient operation of the building or facility from the moment of completion of its construction (overhaul) to the moment of installation for the next overhaul (reconstruction). The letter also states that the overhaul of the building is a set of repair and construction works, which involves the replacement, restoration and modernization of structures and equipment of buildings due to their physical deterioration and destruction, improving performance, as well as improving the planning of the building and landscaping without changing the construction dimensions of the object.

Pipes replacement works are capital works that are not included in the tariffs for services for the maintenance of buildings and structures and adjacent areas. According to the Housing Code of Ukraine, the financing of capital repairs of the housing stock is carried out at the expense of its owner, namely: in communal houses viz. at the expense of the local budget; in houses of state property — at the expense of the enterprise of the institution of the organization to which this house belongs; in the houses of housing cooperatives viz. at the expense of the cooperative; in the buildings of public housing viz. at the expense of the owners of the fund. The frequency of repairs for each type of building, taking into account their technical condition, is set for each region by local authorities.

It is the housing and operating organization (manager) who is responsible for the maintenance of the home systems, and therefore may be held liable for the improper performance of its duties.

Regarding the liability of utilities, it should be noted that in accordance with the Rules for the provision of district heating, hot and cold water supply and sewerage, approved by the Resolution of the Cabinet of Ministers of Ukraine of July 21, 2005 № 630[2] distribution points where the transfer of services from

[1] Щодо віднесення ремонтно-будівельних робіт до капітального та поточного ремонтів: лист Державний комітет України з будівництва та архітектури від 7/7–401 від 30.04.2003. URL: https: //zakon.rada.gov.ua/ rada/show/v–401509–03 (Date accessed: 18.06.2019).

[2] Про затвердження Правил надання послуг з централізованого опалення, постачання холодної та гарячої води і водовідведення та типового договору про надання послуг з централізованого опалення, постачання холодної та гарячої води і водовідведення:

the executor to the consumer, there are: from the central heating — branches from risers within the apartment; for the supply of cold and hot water — after the first water shut-off valves on the branch from the riser in the consumer's apartment; drainage — drain hole of sanitary appliances. According to Art. 7 of the Law of Ukraine: On Housing and Communal Services the contractor is obliged to maintain in proper technical condition, carry out maintenance and repair of indoor networks, take measures to eliminate emergencies, eliminate violations of service quality within the time limits established by contract and/or legislation. Thus, the service consumer is only liable if the cause of the flood is a fault / damage located after the utility distribution point.

The person whose property was damaged as a result of the spill must prove that the cause of the spill is the damage located at the point of distribution where the services are transferred from the contractor to the consumer.

Thus, in order to consider a civil dispute over compensation for damages due to flooding, it is necessary to determine the appropriate defendant, because, for example, leaks from the upper apartment do not always indicate the fault of the neighbor. It is likely that in some cases the appropriate defendant may be both the balance holder of the house and the provider of housing and communal services. Therefore, it is advisable to determine the division of responsibilities between the owner of the apartment located above and other entities. This requires the exact establishment of the cause of the flood, which is carried out directly by a construction expert, provided that access is provided for a proper inspection.

Research guidelines concerning preparation and appointment of forensic examinations and researches states that to resolve the issues of forensic expert to determine the damage and destruction of the object and its structural elements and their causes, it is necessary to provide technical inventory, acts (reports) of previous surveys and researches.

Fixation of the fact of flooding of the object (apartment, premises) is carried out by means of the act of flooding made according to requirements of item 2.3.6: Rules of the maintenance of apartment houses and adjacent territories [1].

Annex 4 establishes the form of the act of flooding, according to which the fact of flooding the apartment and its consequences is fixed by the act of commission inspection of the apartment with the participation of representatives of the organization (enterprise), which, according to the agreement, is a contractor (enterprise), which, in accordance with the agreement, serves indoor heating,

постанова КМУ від 21 липня 2005 р. № 630. URL: https: //zakon.rada.gov.ua/laws/show/630–2005-п (Date accessed: 18.06.2019).

[1] Про затвердження Правил утримання жилих будинків та прибудинкових територій: наказ Державного комітету України з питань житлово-комунального господарства від 17.05.2005. № 76. URL: https: //zakon.rada.gov.ua/laws/show/z0927–05 (Date accessed: 18.06.2019).

water supply and sewerage systems, a representative (owner) of the house, building committee and approved by the head of the organization (enterprise), which, in accordance with the agreement, provides maintenance services and buildings and adjacent areas.

At the same time, the presence of stakeholders both from the victim and from the guilty parties is obligatory.

The act must reflect: date of drafting the act; the names, initials and positions of members of the commission; surname, first name, patronymic of the owner, tenant, tenant, damaged apartment; apartment address, floor, form of ownership; the surname, first name, patronymic of the owner, tenant, tenant of the apartment which caused the flood; apartment address, floor, form of ownership; nature of the spill and its causes; material damage, the amount of necessary repairs to the premises of the apartment, the list of damaged due to flooding and their approximate cost; Opinion of the commission on the guilt of the person who committed the spill.

The act should be signed by all members of the commission. Refusal to sign the act by the present persons on the part of the victim and the guilty party does not affect its validity: in this case, the act must state that the said persons (surname) refused to sign the act for one reason or another.

In addition, the Rules for the maintenance of residential buildings and adjacent territories stipulate that the act of flooding must be familiarized with the residents of the apartments (owners of premises) by signing it. In addition, the acts must indicate the clear reason for the flood, as required by Annex 4 to paragraph 2.3.6 of these Rules: "clearly indicate the reasons, namely the unauthorized interference of residents of the square. № system operation (replacement of radiators, pipelines, valves, towel dryers, etc.), unsatisfactory maintenance of systems, premature failure of heating radiators, pipelines, valves, flexible liners, etc.".

After obtaining the initial data for this type of construction and technical examinations (research), such as: technical passports for facilities and acts of flooding, the next step is a full-scale inspection.

Expert inspection includes measurements of damaged due to pouring of structures, finishing materials and the etc.

The guiding document for expert in conducting such inspections is Methods for establishing the actual volume and cost of construction work performed according to the reporting documentation developed by the KhRIFE in 2006.

In addition, for a comprehensive research on flooding causes, it is necessary to inspect the objects (apartments, premises) that are located above the object and have been damaged. This requires a detailed study of water pipes, shut-off valves, their technical condition, arrangement, connection, joining of system elements in accordance with current building codes and regulations.

Without providing access to the nodes of the water supply network, it is impossible to provide a detailed survey of the reasons for the flooding and the occurrence of the corresponding damage.

The next step is to determine the amount of damage caused by flooding. As a rule, the amount of losses is determined by estimating on the basis of such software packages as АВК, Строительные технологии – СМЕТАТМ", etc.

The cost of damages is calculated in accordance with DSTU Б Д. 1. 1-1:2013 "Rules for determining the cost of construction.

In this case, the initial data on the cost of building materials may be the goods waybills, receipts, checks for the purchase of such materials when performing the owner of finishing and other repairs.

Obtaining such initial data is stated by the expert when making a request to the body that has appointed the construction and technical examination.

The provisions of the Civil Code of Ukraine[1] on damages provide the following:

"Art. 22 Article, Paragraph 1. A person who has been harmed as a result of a violation of his civil law is entitled to compensation.

Art. 22 p. 2. The losses are:

1) losses incurred by the person in connection with the destruction or damage of the thing, as well as expenses incurred by the person or must be made to restore his violated right (real damage) …"

Since these are real damages, the cost of restoring the physical condition of the object that existed before the violation of civil law should be calculated.

For this purpose, the physical wear and tear of the interior decoration (finishing works) of the object (apartment, premises) is determined in accordance with the current methods and rules, in particular, the Standard of the Ministry of Housing and Communal Services of Ukraine СОУ ЖКГ 75. 11–35077234.0015 :2009: Dwelling houses. Rules for determining the physical wear of residential buildings [2].

Conclusions. A comprehensive examination of the baseline data during the survey provides a clear, unbiased conclusion as to the technical causes of damage and material damage resulting from pouring.

The information provided may be used in the course of forensic construction and technical examinations on the technical causes of damage and material damage resulting from pouring.

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[1] Цивільний кодекс України від 6 січня 2003 року № 435-IV. *Відомості Верховної Ради України,* 2003, № № 40–44, Ст. 356.

[2] Про затвердження СОУ ЖКГ 75.11–35077234.0015: 2009 «Житлові будинки. Правила визначення фізичного зносу житлових будинків» : наказ Міністерства з питань житлово-комунального господарства України 03.02.2009 № 21. URL: https: // zakon.rada.gov.ua/rada/show/v0021662–09 (Date accessed: 18.06.2019).

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DSTU BD.1.1-1:2013 *«Pravyla vyznachennia vartosti budivnytstva».* Baza danykh «Zakonodavstvo Ukrainy» / VR Ukrainy. URL: http://budstandart.ua/normativ-document.html?id_doc=53879&minregion=21001 (data zvernennia 18.06.2019) [in Ukrainian].

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ДЕЯКІ ПИТАННЯ ВСТАНОВЛЕННЯ ПРИЧИН ТЕХНІЧНИХ ПОШКОДЖЕНЬ МАЙНА ТА ВИЗНАЧЕННЯ МАТЕРІАЛЬНОЇ ШКОДИ ВНАСЛІДОК ЗАЛИТТЯ

У статті наведено деякі проблемні питання, що виникають при проведенні досліджень причин технічних пошкоджень майна та визначення матеріальної шкоди внаслідок заливання. Зазначено про актуальність тематики статті, що підкреслюється наявністю відповідних методик, що були розроблені фахівцями державних спеціалізованих установ, зокрема, судовими експертами Київського науково-дослідного інституту судових експертиз та Одеського науково-дослідного інституту судових експертиз. Приведено визначення чинного законодавства щодо матеріальної шкоди.

У статті також значиться про необхідність встановлення належного відповідача у цивільних спорах, що виникають при розгляді питань

матеріальної шкоди, згідно з діючими положеннями про утримання та обслуговування житлового фонду. Фіксація пошкоджень здійснюється за допомогою акту про залиття, натурного обстеження, фотофіксації.

Ключові слова: пошкодження майна, залиття, матеріальна шкода, збитки.

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НЕКОТОРЫЕ ВОПРОСЫ УСТАНОВЛЕНИЯ ПРИЧИНЫ ТЕХНИЧЕСКИХ ПОВРЕЖДЕНИЙ ИМУЩЕСТВА И ОПРЕДЕЛЕНИЯ МАТЕРИАЛЬНОГО УЩЕРБА В РЕЗУЛЬТАТЕ ЗАЛИТИЯ

В статье приведены некоторые проблемные вопросы, которые возникают при проведении исследований причин технических повреждений имущества и определения материального ущерба в результате залития. Отмечена актуальность тематики статьи, которая подчеркивается наличием соответствующих методик разработанных специалистами государственных специализированных учреждений, в частности, судебными экспертами Киевского научно-исследовательского института судебных экспертиз и Одесского научно-исследовательского института судебных экспертиз. Приведено определение действующего законодательства относительно материального ущерба.

В статье также указывается на необходимость установления надлежащего ответчика в гражданских спорах, которые возникают при рассмотрении вопросов материального ущерба, согласно действующим положениям о содержании и обслуживании жилищного фонда. Фиксация повреждений осуществляется с помощью акта о заливке, натурного обследования, фотофиксации.

Ключевые слова: повреждение имущества, залитие, материальный ущерб, убытки.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.43
UDC 343.98

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RESOLUTION OF ISSUES RELATED TO THE USE OF LAND PLOTS FOR INAPPROPRIATE PURPOSE WHILE CARRYING OUT FORENSIC ECONOMIC EXAMINATION

This article Analyzes the normative legal and legislative acts of Ukraine governing the control over the use of land plots and determining the amount of damage from the use of the land plot for other purposes. The procedure for determining the amount of damage caused as a result of the use of a land plot for other purposes, approved by the Resolution of the Cabinet of Ministers of Ukraine dated July 25, 2007. No. 963 in "Methodology for determining the amount of damage caused as a result of unauthorized occupation of land plots, use of land plots for other purposes, removal of soil cover (fertile soil layer) without special permission." Considered are the normative legal acts of Ukraine, establishing the competent authorities, which are entrusted with state supervision (control) in terms of compliance with land legislation, use and protection of lands of all categories and forms of ownership. A list of documents is given that confirm the fact of the offense and which are the basis for calculating the amount of damage caused as a result of the use of the land plot for other purposes. The need for a study on this type of expertise "Calculation of the amount of damage caused as a result of the use of a land plot for other purposes", drawn up by the relevant competent authority, is noted, and some methods and techniques for examining documents are outlined. The boundaries of the competence of a forensic expert-economist in conducting economic research related to determining the amount of damage caused as a result of the use of a land plot for other purposes have been determined.

Keywords: land, control over the use of the land plot, state inspector, use for other purposes.

Formulation of Research Problem. All lands of Ukraine according to the main appropriate purpose are divided into categories that have a special legal regime. Improper use of land plots, accompanied by

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deviations from the requirements of duly approved land management documentation, has recently become one of the most common violations of land legislation. The legislation stipulates that damages caused as a result of violation of the legislation of Ukraine on land protection are subject to compensation in full.

In expert practice, there are questions regarding the confirmation of the calculation of the amount of damage caused as a result of the use of land for other purposes, carried out by the authorized body. At present, there is no detailed research algorithm that can help in performing forensic research related to determining the amount of damage caused by the use of land for inappropriate purpose.

Analysis of Recent Researches and Publications. It should be noted that research directly related to this topic has not been conducted in Ukraine. However, the growth of activities related to the change of purpose of the land has attracted the attention of scientists to this problem. The works of such scientists as E. V. Kryvovyaz, A. G. Martin[1], are devoted to this question, which cover the theoretical principles and practical methods of determining the amount of damage caused to society due to improper use of land. An ecological and economic mechanism has been developed to control the use and protection of land and compensate for losses already caused to society due to violations of land use rules, which is based not only on bringing the violator to administrative responsibility, but also compensation for damages caused to society by misuse of land.

The Article Purpose is to develop an algorithm for research in addressing issues related to the use of land for other purposes during the forensic economic examination, which is based on current laws and regulations of Ukraine governing issues of control over land use and calculation of size damage caused by the use of land for other purposes and determining the limits of competence of the forensic economist in resolving issues related to the calculation of the amount of damage caused by the use of land for inappropriate purpose.

Main Content Presentation. Analyzing the practice of appointing forensic economic examinations, it should be noted that the number of litigations related to the violation of land use in accordance with its purpose and the number of studies on the appointment of forensic economic expertise on the issue of documenting the damage caused by land use not for its inappropriate purpose.

1 Кривов´яз Є. В., Мартин А. Г. Організаційно-економічний механізм відшкодування збитків, спричинених нецільовим використанням земель: монографія. Київ: Компринт, 2015. 206 с.

Purpose is one of the basic characteristics of any land that defines its legal regime.

The urgency of this topic is primarily due to the entry into force of the Resolution of the Cabinet of Ministers of Ukraine of July 25, 2007 № 963: Methods for determining the amount of damage caused by unauthorized occupation of land, misuse of land, removal of soil (fertile layer of soil) without special permission (hereinafter referred to as Methods № 963) [1].

These Methods No. 963 is aimed at determining the amount of damage caused to the state, territorial communities, legal entities and individuals, in all categories of land due to the use of land not for the intended purpose.

According to the first part of Article 14 of the Constitution of Ukraine, land is the main national wealth under special protection of the state, which is to ensure the rational use of land resources, preservation and reproduction of soil fertility, protection from damage and pollution, sale by citizens, legal entities and the state. their property rights and land use in accordance with the law. The courts have an important role to play in protecting the rights and legitimate interests of citizens, legal entities and the state in land and related property relations.

Land relations in Ukraine are regulated by the Land Code of Ukraine (adopted by the relevant Law of Ukraine of 25.10.2001 № 2768-III), in Art. 4 defining that the task of land legislation is to regulate land relations in order to ensure the right to land of citizens, legal entities, territorial communities and the state, the rational use and protection of land.

The composition and purpose of the lands of Ukraine is defined by Chapter 4 of Section II of the Land Code of Ukraine, according to which the land of Ukraine by main purpose is divided into the relevant categories, the establishment and modification of which is carried out in accordance with the procedure established by law, and failure to comply with this procedure has corresponding consequences.

Article 19 of the Land Code of Ukraine lists the lands of Ukraine according to their main purpose according to nine categories: land of agricultural purpose, land of residential and social development, land of nature conservation and other environmental purpose, land of health purpose, land of recreational purpose, land of recreational purpose, land

[1] Методика визначення розміру шкоди, заподіяної внаслідок самовільного зайняття земельних ділянок, використання земельних ділянок не за цільовим призначенням, зняття ґрунтового покриву (родючого шару ґрунту) без спеціального дозволу: постанова Кабінету Міністрів України від 25 липня 2007 р. № 963. URL: https: //zakon.rada.gov.ua/laws/show/963–2007-п (Date accessed: 16.03.2019).

of historical and cultural purpose, land of forestry purpose, land of water fund, land of industry, transport, communication, energy, defense and other prize teaching.

According to Article 96 of the Land Code of Ukraine the land user is obliged to ensure the use of the land plot for the intended purpose.

Residential and public construction lands include land plots within settlements that are used to house residential buildings, public buildings and structures, and other public facilities. The use of land for housing and public buildings is carried out in accordance with the general plan of the settlement, other urban planning documentation, land management plan in compliance with state standards and norms, regional and local building rules, provided by Articles 38, 39 of the Land Code of Ukraine.

In Ch. 32: Control over the use and protection of land of the Land Code of Ukraine of 25.10.2001. № 2768-III determined:

"Art. 187 control over the use and protection of land is to ensure compliance with public authorities, local governments, enterprises, institutions, organizations and citizens of land legislation of Ukraine.

Art. 188: state control over the use and protection of land is carried out by the authorized bodies of executive power on land resources, and in compliance with the requirements of the legislation on land protection by specially authorized bodies on ecology and natural resources. The procedure for state control over the use and protection of land is established by law.

Art. 189: self-governmental control over land use and protection is exercised by village, settlement, city, district and regional councils.

Art. 190: public control over land use and protection is exercised by public inspectors, who are appointed by the relevant local self-government bodies and act on the basis of a provision approved by the central executive body for land resources".

State control over the use and protection of land of all categories and forms of ownership is carried out by the central executive body ensuring the implementation of state policy in the field of supervision (control) in the agro-industrial complex, as provided for in Art. 5 of the Law of Ukraine: On State Control over Use and Protections of Lands dated on June 19, 2003 № 963-IV (hereinafter referred to as the Law № 963) [1].

[1] Про державний контроль за використанням та охороною земель: Закон України від 19 червня 2003 № 963-IV. 2003. № 3. Ст. 350 URL: https: //zakon.rada.gov.ua/laws/show/963-15 (Date accessed: 8.04.2019).

State control over land use and protection is exercised through inspections.

Article 10 of Law No. 963 provides:

«State inspectors in the field of state control over land use and protection and compliance with the requirements of the legislation of Ukraine on land protection have the right:

freely inspect in accordance with the procedure established by law the land plots owned and used by legal and natural persons, to check the documents on the use and protection of land;

give obligatory for the fulfillment of instructions (prescriptions) on the issues of land use and protection and compliance with the requirements of the legislation of Ukraine on protection of lands in accordance with their powers, as well as the obligation to bring the land plot to a previous state in cases established by law, at the expense of a person who committed the relevant offense, with compensation for the damage caused to the land owner;

draw up inspection acts or reports on administrative offenses in the field of land use and protection and compliance;

requirements of the legislation on the protection of land and to consider in accordance with the law of the case of administrative offenses, as well as to submit in the procedure established by the legislation of Ukraine to the relevant bodies the materials of checks on the prosecution of the perpetrators;

in case it is impossible to locate the offender of the land law at the place of the offense to deliver it to the bodies of the National Police or to the premises of the executive body of the village, settlement, city council for identification of the offender and drawing up the protocol on the administrative offense;

summon citizens, including officials, to obtain verbal or written explanations from them about issues related to violation of the land legislation of Ukraine;

to submit to the prosecuting authorities, pre-trial investigation bodies the acts of inspections and other materials on acts that show signs of a criminal offense;

carry out, in the cases prescribed by law, photographing, sound recording, film and video shooting as an auxiliary means for preventing violation of the land legislation of Ukraine;

appeal to a court with a claim for compensation of losses of agricultural and forestry production, as well as the return of the land that has been used illegally or temporarily occupied that has expired".

Resolution of the Cabinet of Ministers of Ukraine dated on 14.01.2015 № 15 approved: The State Service of Ukraine for Geodesy, Cartography and Cadastre (StateGeoCadastre) providing that state supervision (control) in the agro-industrial complex in terms of compliance with land legislation, use and protection of land of all categories and forms of ownership, soil fertility is carried out by the StateGeoCadastre [1].

The territorial body of the State Service of Ukraine for Geodesy, Cartography and Cadastre and subordinated to it is the Main Department of the State Geocadastre in the region defined by the Regulations on the Main Department of the State Geocadastre in the region approved by the order of the Ministry of Agrarian Policy and Food of Ukraine To the Ministry of Justice of Ukraine on October 25, 2016 № 1391/29521 (hereinafter referred to as Resolution) [2].

This Resolution stipulates that the Main Department of the State Geocadastre in the region inspects land plots subject to reclamation and issues special permits for removal and transfer of soil cover of land plots in accordance with the approved projects, as well as inspects land plots damaged as a result of their unauthorized occupation, misuse, removal of soil cover (fertile soil layer) without special permission and calculates the amount of damage caused by unauthorized occupation of land, their misuse, removal of soil cover without special permission, and taking measures to its reimbursement in the manner prescribed by law (paragraph 4. paragraph 31, paragraph 34).

Within the limits of their powers, officials of the Main Department have the right to draw up inspection reports or protocols on administrative offenses in the field of land use and protection and compliance with land protection legislation and to consider, in accordance with the law, cases on administrative offenses. to the relevant bodies the materials of inspections to bring the perpetrators to justice; give mandatory instructions (instructions) on the use and protection of land and compliance with the legislation on land protection in accordance with their powers, as well as the obligation to restore the land in cases established by law, at the expense of the person who committed the

[1] Положення про Державну службу України з питань геодезії, картографії та кадастру: Постанова Кабінету Міністрів України від 14.01.2015 № 15. URL: https: // zakon.rada.gov.ua/laws/show/15–2015-п (Date accessed: 10.05.2019).

[2] Положення про Головне управління Держгеокадастру в області: наказ Міністерства аграрної політики та продовольства України від 29.09.2016 № 333. URL: https: //zakon.rada.gov.ua/laws/show/z1391-16 (Date accessed:11.03.2019).

relevant offense, with compensation for damages caused to the owner of the land (paragraph 6. Resolution).

Thus, state supervision (control) in terms of compliance with land legislation, use and protection of land of all categories and forms of ownership, is entrusted to the StateGeoCadastre.

Methods No. 963 provides that the calculation of the amount of damage caused as a result of the use of land not for the intended purpose is made by the State Inspectorate and its territorial bodies or the State Geocadastre and its territorial bodies.

During the forensic economic examination, when determining the amount of damage caused by the use of a land plot not for the intended purpose, it is necessary to establish whether there are appropriate calculations of the amount of damage made by the competent authorities in the case files.

When conducting a survey of a forensic expert, it is necessary to pay attention to information about the land plot, namely the functional use of the land plot and to what category of land for the main purpose the land belongs.

The procedure for determining the amount of damage caused by the use of a land plot not for the intended purpose is defined in clause 5 of Methods No. 963: for all categories of land (except land for residential and public development) according to the following formula:

$$Ш_ц = П_н \times 0{,}33 \times (Н_п + Н_ф \times К_р) \times К_о \times К_i \quad (3),$$ where

$Ш_ц$ is the amount of damage caused by the use of land for inappropriate purpose, hryvnias;

$П_н$ is the area of land that is not used for its intended purpose, hectares;

0,33 is the coefficient to take into account the share of average annual income that is redistributed through state and local budgets;

$Н_п$ is the average annual income that can be obtained from the use of land for its intended purpose, defined in Annex 1 taking into account the lists given in Annexes 2 and 3;

$К_i$ is the coefficient of indexation of normative monetary valuation of lands, which is equal to the product of indexation coefficients of normative monetary valuation of lands for 2007 and subsequent years determined in accordance with the Procedure for indexation of monetary valuation of lands approved by the Cabinet of Ministers of Ukraine of

May 12, 2000 № 783 (The Official Bulletin of Ukraine, 2000, № 20. Article 823);

$H_ф$ is the average annual additional income received as a result of the actual use of land not for its intended purpose, defined in Annex 8;

$K_р$ is the coefficient used to take into account the regional difference in the formation of the average annual income received from the actual use of land not for its intended purpose, defined in Annex 9;

$K_о$ is the coefficient used to take into account the environmental value, the presence of restrictions (encumbrances) determining the special regime of land use, defined in Annex 10;

for residential and public land according to the following formula:

$Ш_ц = П_н \times 0,33 \times (H_{пз} \times K_н \times K_к + H_ф \times K_р) \times K_о \times K_i$ (4), where $Ш_ц$, $П_н$, $Н_ф$, $К_р$, $К_о$ and the coefficient 0,33 have the same meaning as in the formula 3;

K_i is indexation coefficient of normative monetary valuation of lands, which is equal to the product of indexation coefficients of normative monetary valuation of lands for 2007 and subsequent years, determined in accordance with the Procedure for indexation of monetary valuation of lands approved by the Cabinet of Ministers of Ukraine dated May 12, 2000 № 783;

$H_{пз}$ is the average annual income that can be obtained from the use of land for housing and public buildings for its intended purpose in accordance with the group of settlements by population, defined in Annex 5;

$K_н$ is coefficient applied to settlements of regional significance, mm. Kyiv and Sevastopol, defined in Annex 6;

$K_к$ is coefficient applied to the settlements referred to resort, defined in appendix 7.

The basis for the calculation of the amount of damage caused by the use of the land plot is not for the intended purpose, is the case file on administrative proceedings prepared by state inspectors, confirming the fact of the offense, namely:

- act of checking compliance with the requirements of the land legislation;
- a report on an administrative offense;
- prescription (with the requirement of elimination of violation of the land legislation);
- act of survey of land.

The object of research for this type of expertise is to calculate the amount of damage caused by the use of land not for the intended purpose.

Forensic expert-economist notes that the assessment of the act of checking compliance with the requirements of the land legislation, compiled by the controlling body, in terms of the validity of the established violations of non-compliance with the requirements of land and environmental legislation as a result of the use of land is not intended, not within the competence, competence, competence since it involves establishing the facts of the case and evaluating the legal action.

Therefore, a forensic expert conducts a study of the correctness of the determination of the amount of damage directly given in the calculation provided by the state inspector.

Thus, in the course of the investigation, the forensic expert uses the information about the land used for non-intended use specified in the above documents and the initial data, which are given in the annexes to Methodology No. 963, to confirm the calculation of the amount of damage.

Therefore, during the forensic economic examination, it is possible to resolve the issue of arithmetic confirmation of the calculation of the amount of damage performed by the relevant controlling bodies using Method No. 963.

Considering the aforementioned, the economic research is conducted on the issue of confirmation of the calculations of the amount of damage, carried out by the controlling bodies with the application of Methodology No. 963, namely:

forensic economic examination verifies the correctness of the calculation of the amount of damage caused by the use of the land plot not intended for all categories of land (except land for residential and public development) according to formula 3 and for residential and public land for formula 4, which are provided for in paragraph 5 No. 963 and determines the arithmetic correctness of the calculation made by the state inspector.

Conclusions. Summarizing the above, it should be noted that the result of the study of a forensic expert-economist should be considered precisely the conclusion on the arithmetic correctness of the calculation of the amount of damage, which was performed by the appropriate controlling body.

However, the qualification of land that was used for a non-purpose purpose involves the solution of issues of law that are not within the competence of a forensic expert – economist, which should be indicated in the conclusions of the examination.

The following list of current Ukrainian legislation can assist in conducting expert studies and resolving issues related to determining the amount of damage caused by land use other than for the intended purpose.

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ВИРІШЕННЯ ПИТАНЬ, ПОВ'ЯЗАНИХ З ВИКОРИСТАННЯМ ЗЕМЕЛЬНИХ ДІЛЯНОК НЕ ЗА ЦІЛЬОВИМ ПРИЗНАЧЕННЯМ ПРИ ПРОВЕДЕННІ СУДОВОЇ ЕКОНОМІЧНОЇ ЕКСПЕРТИЗИ

Зазначено нормативно-правові та законодавчі акти України, що регулюють питання з контролю за використанням земельних ділянок і визначення розміру шкоди під час використання земельної ділянки не за цільовим призначенням. Наведено порядок визначення розміру шкоди, заподіяної внаслідок використання земельної ділянки не за цільовим призначенням. Визначено межі компетенції судового експерта — економіста при проведені економічних досліджень, пов'язаних з визначенням розміру шкоди, заподіяної внаслідок використання земельної ділянки не за цільовим призначенням.

Ключеві слова: земля, контроль за використанням земельної ділянки, державний інспектор, використання не за цільовим призначенням, розрахунок розміру шкоди.

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РЕШЕНИЕ ВОПРОСОВ, СВЯЗАННЫХ С ИСПОЛЬЗОВАНИЕМ ЗЕМЕЛЬНЫХ УЧАСТКОВ НЕ ПО ЦЕЛЕВОМУ НАЗНАЧЕНИЮ ПРИ ПРОВЕДЕНИИ СУДЕБНОЙ ЭКОНОМИЧЕСКОЙ ЭКСПЕРТИЗЫ

Проанализированы нормативно-правовые и законодательные акты Украины, регулирующие вопросы по контролю за использованием земельных участков и определению размера ущерба от использования земельного участка не по целевому назначению. Приведен порядок определения размера ущерба, причиненного в результате использования земельного участка не по целевому назначению, утвержденный Постановлением Кабинета Министров Украины от 25 июля 2007г. № 963 в «Методике определения размера ущерба, причиненного вследствие самовольного занятия земельных участков, использования земельных участков не по целевому назначению, снятия грунтового покрова (плодородного слоя почвы) без специального разрешения». Рассмотрены нормативно-правовые акты Украины, устанавливающие компетентные органы, на которые возложен государственный надзор (контроль) в части соблюдения земельного законодательства, использования и охраны земель всех категорий и форм собственности. Приведен перечень документов, которые подтверждают факт совершения правонарушения и которые являются основанием для осуществления расчета размера ущерба, причиненного в результате использования земельного участка не по целевому назначению. Отмечена необходимость исследования по данному виду экспертиз «Расчета размера ущерба причиненного в результате использования земельного участка не по целевому назначению», составленного соответствующим компетентным органом, а также изложены некоторые способы и приемы исследования документов. Определены границы компетенции судебного эксперта-экономиста при проведении экономических исследований, связанных с определением размера ущерба, причиненного в результате использования земельного участка не по целевому назначению.

Ключевые слова: земля, контроль за использованием земельного участка, государственный инспектор, использование не по целевому назначению.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.44
UDC 343.98

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ON METHOD DEVELOPMENT FOR MULTIDISCIPLINARY FORENSIC RESEARCH ON TRACE OF VEGETABLE ORIGIN

The issue of developing expediency of method for establishing the mechanism of the formation of traces of plant origin on garments has been investigated. Based on the analysis of special literature, an argument is made about the need to develop such a technique. To make a correct and objective decision in this case, it is important to use special knowledge in the form of a forensic examination, including a comprehensive one. Due diligence is usually a complex study as it integrates knowledge from various branches of science. As separate categories, forensic biological and forensic trace evidence analysis have a sufficiently developed scientific basis, at the same time, as regards their integration in the form of comprehensive studies, there is a shortage of appropriate methods. This directly relates to the need to develop a methodology for establishing layers of greenery on objects-carriers (garments). It is argued that only the integration of the knowledge of a forensic biologist (botanist) about the nature of layers of plant origin in conjunction with the special knowledge of an expert trace evidence analyst on the basis of the mechanism of trace formation will lead to a scientifically substantiated result. A series of experiments was carried out, according to the results of which complexes of signs were revealed that were sufficient to establish the nature of the contact (static, dynamic) and the direction of movement during dynamic contact. This allowed us to conclude that it is advisable to conduct the next series of experiments that would simulate the circumstances of the contact of clothing with the vegetation of various parts of the area during the commission of a crime. Taken together, the experiments carried out will form the basis for creating a methodology for establishing the mechanism for the formation of layers of greenery on garments.

Keywords: forensic examination, forensic methodology, green spots, layers of plant origin, the mechanism of the formation of layers.

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Formulation of Research Problem. Trace i9s a concept having a multifaceted interpretation. Various biological traces derived from humans or animals include blood, body secretions, hair, biological tissues, etc.; to traces of plant origin layering or exfoliation of plant microparticles, green spots, etc. The article considers it expedient to focus on the complex aspect of the study of biological traces, namely: traces of plant origin as an object of complex forensic biological and trace evidence analysis, as this issue is insufficiently studied in the literature and the relevant methodology is missing.

Analysis of Recent Researches and Publications. First of all, it should be noted that in some research papers, attention was paid to clarifying the essence of the traces of crime in criminology, namely, the etymology of the word; historical aspects of the development of the doctrine of traces; mechanism of formation; features of manifestation; evidentiary and other significance as sources of information; general rules for detecting these traces, fixing and removing them, etc.

Forensic practice shows that legal proceedings in legal proceedings in the form of forensic examination, including comprehensive, is important for making a correct and objective decision in a case. Comprehensive forensic examination is usually a complex study because it integrates knowledge from different fields of science. In this paper we will talk about comprehensive biological and trace evidence analysis. Note that as separate categories, forensic biological and forensic t trace evidence analysis have a well-developed scientific base, at the same time, as for their integration in the form of comprehensive research, there is a shortage of appropriate methods.

Considering the forms of multidisciplinary biological trace evidence analysis without touching the forensic medical aspect, it is necessary to distinguish multidisciplinary botanical trace evidence analysis and multidisciplinary zoological trace evidence analysis, based on the types of expert specialties qualified by forensic experts involved in their conducting. The qualification of a forensic expert is assigned in accordance with the Regulations on expert qualification commissions and attestation of forensic experts providing for the following specialties: in the field of forensic biology: 9.1 Research on plant origin, 9.2: Research on animal origin in the field of forensic trace evidence analysis 4.1: Research on human and animal footprints [1]. As for the traces formed from objects of plant origin, there is no separate specialty for traces in the specified List.

[1] Положення про експертно-кваліфікаційні комісії та атестацію судових екс-

Development of theoretical and methodical bases of complex research of traces of an animal and vegetable origin in modern conditions has both theoretical, and applied value. The practice of producing such examinations is little studied. For the most part, the available scientific works are devoted to traces of biological origin, the study of which does not require the application of a set of knowledge in the field of trace evidence analysis and biology. Thus, in the works of scientists and practitioners considered the concepts and classification of traces of biological origin; the concept, mechanism of formation and classification of traces of biological origin; their place in the system of scientific knowledge and competence of experts; general provisions for detection, fixation and removal; features of subjective recognition of information contained in traces of biological origin; general provisions for their detection and fixation of forensic information; features of detection, fixation and removal of traces of blood and other traces of biological origin; questions of appointment of examination, formulation of conclusions and their estimation by consequence (court), probative value of traces in disclosure of crimes on an example of traces of animals, etc. [1] Based on the review of literature sources, we came to the conclusion that the greatest attention of scientists was focused on the forensic study of the mechanism of blood formation and the competence of the forensic expert (forensic experts) who (should) be engaged in such research. The discussion revolves

пертів: затв. наказом Міністерства юстиції України від 03.03.2015 № 301/5. *Офіційний вісник України.* № 17. Ст. 468 (as subsequently amended).

[1] E.g., напр.: Аистов И. А. Использование следов биологического происхождения при расследовании преступлений: дис…канд. юрид. наук. 12.00.09. Саратов, 2000. 260 с. ; Кисляк С. Е. Криминалистическое исследование биологических следов человека в расследовании преступлений против личности: автореф. дис. канд. юрид. наук. 12.00.09. Волгоград, 1998. 19 с. ; Кисин М. В. Митричев В. С. Судебно-биологическая экспертиза волос животных. Выпуск 1. М., 1996. 90 с.; Кисин М. В., Туманов А. К. Следы крови. Москва, 1972. 86 с.; Лозинский Т. Ф., Шишкин В. М., Иванов Н. В. Обнаружение следов биологического происхождения при осмотрах мест происшествий, связанных с хищениями из металлических хранилищ. Москва, 1995. 28 с.; Мазурок О. Я. Виявлення, фіксація та вилучення слідів крові під час розслідування фактів безвісного зникнення особи. *Криміналістичний вісник.* № 2 (24), 2015. С. 99–103; Майорова Е. И. Концептуальные основы судебно-биологической экспертизы: дис…д-ра юрид. наук. 12.00.09. Москва, 1996. 374 с. ; Особливості збирання у досудовому провадженні біологічних слідів людини: методичні рекомендації. Національна академія внутрішніх справ України. Київ, 2016. 44 с.; Цэрэнчимэд Гантулга. Доказательственное значение следов в раскрытии преступлений: на примере следов животных: дис…канд. юрид. наук. 12.00.09. Москва, 2009. 150 с. ; Сімакова-Єфремян Е. Б. Комплексні судово-експертні дослідження: теорія та практика: монографія. Харків: Право, 2016. 456 с.

around whose competence this type of examination belongs to: forensic physician, criminologist, trace evidence analyst or this multidisciplinary research [1]. A large number of works is devoted to the study of the signs of blood strata. Thus, M. S. Bokarius outstanding forensic physician first developed a kind of classification of traces of blood (spots, splashes, stains, smears, blots, prints, puddles, etc.) [2] , that was subsequently changed and supplemented by other scientists [3].

In addition, the classification of multidisciplinary forensic science developed by E. B. Simakova-Yefremian provides such a category as complex forensic biological and trace evidence analysis, as well as the tasks to be solved with its help (establishment of the mechanism of formation of traces of biological nature, identification of objects in the footsteps of biological nature, including the establishment of objects belonging to one whole (in cases where the methods of trace evidence analysis; it is impossible to establish.) The same author concluded that there is a need to develop specialized methods of multidisciplinary forensic biological examination[4]. As for the methods of establishing soil layers on clothing, this issue was developed in the mid-nineties of the last

[1] Шиканов В. И. Комплексная экспертиза и ее применение при расследовании убийств. Иркутск, 1976. 230 с. ; Шиканов В. И. Криминалистическое значение следов крови. Иркутск, 1974, 143 с. ; Корухов Ю. Г. Криминалистическое значение следов крови на одежде: автореферат канд. дис. Москва, 1957. 16 с. ; Рассейкин Д. П. Расследование преступлений против жизни. Саратов, 1965. 115 с.

[2] Бокариус Н. С. Первоначальный наружный осмотр трупа. Харьков, 1925, 186 с.; Бокариус Н. С. Наружный осмотр трупа на месте происшествия или обнаружения его. Харьков, 1929. 188 с.

[3] E.g.,: Геньбом Р. Г., Корнеева-Асадчих Н. П. Судебно-медицинское исследование вещественных доказательств. Москва, 1972. 203 с.; Кисин М. В., Туманов А. К. Следы крови. Москва, 1972. 86 с.; Кноблох Э. Медицинская криминалистика. Прага, 1960. 419 с.; Попов В. И. Осмотр места происшествия. Москва, 1959. 231 с.; Трасологическое исследование следов крови на одежде: методическое письмо/сост. Тахо-Годи Х. М. Москва, 1970, 24 с.; Эдель Ю. П. О следах свободно падающих (с неподвижных и движущихся предметов) капель крови на горизонтальной плоскости. Материалы докладов и рекомендаций научной конференции общества судебных медиков Казахстана. Алма-Ата, 1968. С. 404–405 ; Kirk L. P. Beseitung von Blutspuren durch Waschen. Kriminalistik, 1954. 327 p; Laber T. L. Diameter of a bloodstain as a function of origin, distance fallen and Vume of drop. I. A. B, P. A. New, 1985. V.2. N l. P. 12–16; Lichte T. Dtsch.Z.gerichtl.Med. 1939. N22. 387 s; McDonell H. L. Interpretation of Bloodstains: Physical Considerations. Legal Medicine Annual, Cyril Wecht, Ed. New York: Appleton-Century-Crofts, 1971. P. 91–136; Prokop O. Lehrbuch der gerichlichen Medizin. Berlin, 1960. 611 s. etc.

[4] Сімакова-Єфремян Е. Б. Комплексні судово-експертні дослідження: теорія та практика : монографія. Харків : Право, 2016. 456 с.

century [1]. As a subject of this examination should be considered factual data (circumstances) of the case, which are important for the proceedings established by experts general (integration) task based on the synthesis of specific expertise in the field of trace evidence analysis and biology (botany, zoology) by research on objects of biological nature in order to solve integration tasks.

Summarizing the above, it should be concluded that the development of theoretical and methodological bases of the complex forensic biological and trace evidence analysis, in general, and the method of establishing layers (spots) of green, in particular, are required.

Purpose Formation. On the basis of experimental researches to develop the basic provisions of a technique of establishment of the mechanism of formation of spots of green.

Main Content Presentation. Due to the weak development of general methodological approaches to solving the expert problem of establishing the mechanism of formation of traces of biological origin, experts use their knowledge applied by them in other types of research on the mechanism of trace formation, which is not unjustified. It is obvious that the mechanism of trace formation depends on the nature and type of contact, as well as on the properties of trace-forming and trace-receiving objects, which must be studied in the process of developing the method. For example, layers of green spots can be formed both in the process of preparation and commission of a crime, and its concealment: at dynamic (movement of a body by a drag in various positions), static (the body falls, lies) contacts or their combination (while struggling, etc.).

Establishing a mechanism for tracing will help the court in the process of considering the case to restore the picture of the crime at certain stages (preparation, commission or concealment). Assessing the results of the forensic examination performed using such a technique, the court will be able to compare the facts established by experts with data contained in other sources of evidence, such as testimony of a suspect (accused), victim or witness and finally to establish the truth in the case lawful and reasonable decision.

[1] E.g.,Єфремян Е. Б. Про експертне дослідження механізму утворення ґрунтових нашарувань на предметах-носіях. Криміналістика та судова експертиза. Київ, 1992. Вип. 44. С. 100–105; Єфремян Е. Б. Про класифікацію задач комплексних криміналістичних ґрунтознавсько-трасологічних досліджень. Криміналістика та судова експертиза. Київ, 1993. Вип. 46. С. 91–96; Ефремян Э. Б., Хлесткова Е. А. Возможности комплексной криминалистической почвенно-трасологической экспертизы. Экспертная техника. Москва : ВНИИСЭ, 1994. Вып. 119. С. 18–22.

The task of establishing the mechanism of green spots can be solved only by conducting a comprehensive forensic biological and trace evidence analysis, because to establish the mechanism of trail formation plays an important role in knowledge in trace evidence analysis and forensic biology (botany). If the vegetation cover of a particular area is not dense and there are gaps in vegetation, the question of the mechanism of formation of layers should be addressed with the involvement of an expert in the field of forensic soil examination. As you can see, there is every reason to organize a comprehensive study. Even in the last century, M. S. Romanov emphasized that the use in forensic practice of both traces of substrate nature (layering of matter) and traces-reflections of the external structure (prints), is based on their trace evidence nature and their rigid opposition leads to the negative consequences [1]. We support this opinion, because only the integration of the knowledge of forensic biologist (botanist) about the nature of the stratification of plant origin in combination with the special knowledge of the trace evidence analyst t on the signs of the mechanism of trace formation will lead to a scientifically sound result.

However, not only the study of the nature of the stratification is important to establish the mechanism of trace formation. It is also important to study the properties of the carrier object. In our case, it is clothing that interacts with the vegetation, and is on a person in a certain condition and has certain properties. Thus, clothing materials, depending on the type of fibers that are part of them, the type of weave, etc. can show hydrophilicity (the property of well moisturizing (impregnated with liquid) and hydrophobicity (the property of not moisturizing or weakly moisturizing). As plant consists of an average of 80% water, these properties of the material of clothing affect the nature of the reflection of the layers of greenery on the material of clothing that has the appropriate properties. In addition, the type of clothing material (fabric, knitwear, nonwoven, etc.) is important. Therefore, the properties and condition of the carrier object should be investigated during the methods development.

Finally, the determining factor in developing a method for establishing the mechanism of formation of green spots is the study of trace evidence features of layering. Thus, it is necessary to study signs of each separate trace-layering, and then to make synthesis of the received results on set of all traces.

[1] Романов Н. С. Теоретические вопросы судебной трасологии. Сб. науч. трудов ВНИИСЭ. Москва, 1986. С. 112–124.

In order to develop a method for establishing the mechanism of formation of layers of greenery, we performed a series of experiments. The first stage is preparatory. We have made a number of containers for experimental research. These were small bags made of different types of materials: fabric, knitwear, nonwovens (See: Fig. 1-4).

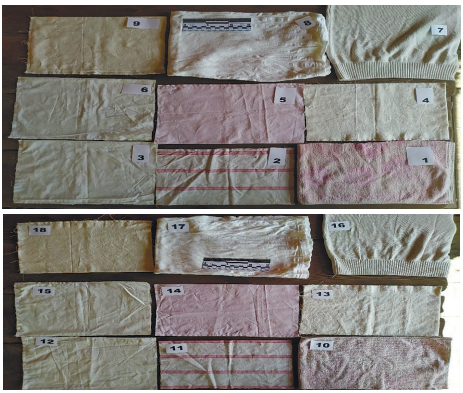


Fig. 1–2. Containers prepared for experiments

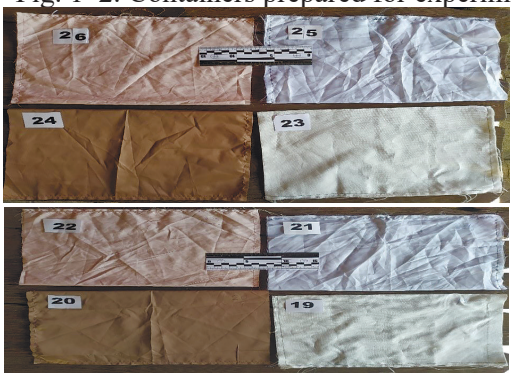


Fig. 3–4. Containers prepared for experiments, the materials of which exhibit hydrophilic and hydrophobic properties

The containers were filled with bulk material (during the experiment we used 2 kg of dry sand for each bag so that the container gained a certain weight for the convenience of the experiments), shrouded (tightly wrapped with rope so that the sand does not fall out), marked its conditional top) and bottom (where the end seam). The selection of materials was carried out in such a way that they had both hydrophilic (ability to quickly absorb moisture) and hydrophobic (not the ability or weak ability to absorb moisture) properties. The establishment of this ability was performed by applying a small amount of water to the surface

of the bag. Hydrophilic materials were immediately impregnated with moisture, and hydrophobic ones were not impregnated for a long time, and from some of them a drop of water was downloaded without wetting the material (See, respectively, Fig. 5 and Fig. 6).

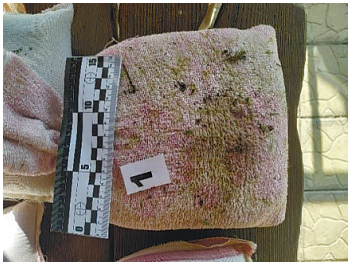


Fig. 5. Manifestation of hydrophilic properties (a drop of water is quickly absorbed into the material)



Fig. 6. Manifestation of hydrophobic properties (a drop of water is not absorbed into the material)

The experiments were performed on both sides of the containers (since the experimental traces are planned to be obtained both on the conditional front and on the back of the container). After that, the containers are ready for experiments (see Fig. 7).



Fig. 7. Containers prepared for experiments



Fig. 8. Site for the experiment (meadow of flowering plants)

The next step is the selection of areas with grassland: lawn, meadow of plants with broad leaves, meadow of flowering plants, etc. (See, for example, photo № 8).

The aim of a further series of experiments was to identify features characteristic of static and dynamic contact. The first series of experiments was conducted to study the signs of traces of static contact. During the experiment, each of the prepared containers was tightly pressed to the surface with a stand of different properties (tight static contact was carried out). The result is static traces. After photo pictures, the traces were studied and their features were described (See, for example, Figs. 9-12).



Fig. 9–12. The results of static (without moving) contact of experimental containers with the surface covered with vegetation (lawn (container 9), meadow of plants with broad leaves (container 8), meadow of flowering plants (containers 6, 5)

The obtained traces of static contact are characterized by certain sets of signs of contact (See: Figure 13):

- layers of layers are characterized by local groups of traces (spots) green;
- often the layers are accompanied by the remains of individual plant particles originating from the area covered by the vegetation (this makes it possible to identify, if necessary, a specific area);
- some spots of green, located in the contact areas, have clear boundaries;

- intensity of impregnation into the material, mainly – uniform; the irregularity of seepage into the material in the area of a single spot is observed in cases where the plant protrudes too much above the surface of the vegetation;
- on areas with lush vegetation, the leakage into the material is more intense due to the hydrophilic properties of this material;
- in local zones of traces of static influence of a layer are located between the threads of interweaving of the material in cases of dense static contacting, and in case of loose contact, on the supporting surface of the material;
- fibers protruding above the support surface of the material are not fixed by layers in a certain direction (protruding freely);
- individual spots are repeated in the form of outlines of fragments of leaves and stems of plants that have fallen into the contact zone.

Thus, the combination of the above signs of contact indicates the nature of the contact and is sufficient to formulate a conclusion about the formation of spots of greens as a result of static contact of the surface of the material with the vegetated surface.



Fig. 13. Detailed image of traces (without moving) of contact of the experimental container (knitwear showing weak hydrophilic properties) with the surface covered with vegetation (meadow of plants with broad leaves) (container 8)

At the second stage of a series of experiments, a dynamic contact was made: In the second stage of a series of experiments, a dynamic contact

was carried out: movement (with pressure on the container) on the surface of various areas covered with vegetation. The movement was carried out in different directions - towards the conditional top of the container and vice versa (towards its bottom). Thus, we obtained reliable sets of features that indicate the nature of the contact on the individual layers of greenery in different conditions of trace formation and the direction of movement of the conditional body during dynamic contact. The results of experimental studies of dynamic contact are shown in Fig. 14–19.









Fig. 14–17





Fig. 18–19. The results of dynamic (moving from top to bottom of the container) contact of experimental containers made of materials with different hydrophilic properties with the surface covered with vegetation

Analysis of green layers allows to distinguish a complex of reliable features in the diagnostic aspect:

- the trace is localized in one layer with fuzzy outlines;
- regardless of the density of contact when moving the layer tightly penetrates into the material;
- the intensity of the layer does not change in the direction of movement, which is explained by the nature of the trace-forming object;
- on the surface of the layer there is an alternation of contaminated and unpolluted areas with clear boundaries (unpolluted areas are formed by the formation of folds of material during movement);
- in certain cases, the direction of movement can be judged by the shape of the unpolluted area (more arcuate (curved) shape inherent in the direction opposite to the movement);
- if folded unpolluted areas of the layer are folded, their ridge will be directed in the opposite direction;
- the layers of greens do not fix the fibers protruding above the support surface in the direction of displacement, which is explained by the lower density of the material of the layer in comparison with the density of the material;
- layers of greenery are characterized by the presence of lines-tracks, parallel to the direction of movement, which are located perpendicular to the contaminated and uncontaminated areas of alternating tracks. These lines are formed by the reflection of the protruding parts of the plants, which more intensely “give” the green substance to the tracking object.

The above set of features is sufficient to formulate a conclusion about the dynamic nature and direction of contact, which produces a green trail.

Investigating the temporal criteria of the green layers, we have come to the conclusion that they are practically stored for a long period and are therefore reliable for diagnosing the mechanism of trace formation.

Thus, the conducted series of experiments testifies to the possibility of diagnosing the nature of contact by individual layers of greens, which makes it possible to go to the second part of the experiments directly during the reproduction of typical crime situations.



Fig. 20. Detailed image of the trace of the movement of the experimental container (tissue exhibiting hydrophilic properties) with a surface covered with vegetation (lawn (container 15))

During the next series of experiments with extras, different types of contact were reproduced directly in conditions that mimic the circumstances of the crimes. For this purpose, sets of clothes made of various materials (fabric, knitwear, non-woven material, etc.) that exhibit both hydrophilic and hydrophobic properties were consistently worn on the extra body. After each disguise, the body of the extra was exposed to different nature of the conditions in conditions close to the circumstances of interaction with areas of vegetation (body falls, different types and directions of dragging, chaotic movements, characteristic of the struggle, etc.). After taking photo pictures of all formed traces, the analysis of the revealed signs of traces, their description, generalization of all received results and development of algorithm of consecutive actions of forensic experts for the purpose of establishment of the mechanism of formation of spots of green on clothes was carried out.

The results of these experiments with extras dressed in specially prepared for the experiment clothes, on areas with different vegetation, we are going to publish in our next publication.

Of course, for any method it is important not only to develop an algorithm that is its main element but also to determine the subject of research, its tasks, an indicative list of issues, objects and subjects of research, as well as a set of methods, techniques, methods and equipment. The development of these elements should precede in the structure of the methodology a direct algorithm of actions of forensic experts. The methodology must include recommendations for the evaluation of the

results obtained and for the preparation of materials for the appointment of a comprehensive forensic biological and trace evidence analysis.

Conclusions. Summarizing the results of the above study, we can draw the following conclusions. The use of special knowledge in the form of forensic examination, including complex, is important for making a correct and objective decision in the case. Comprehensive forensic examination is usually a complex study because it integrates knowledge from different fields of science. As separate categories, forensic biological examination and forensic trace evidence analysis have a well-developed scientific base, at the same time, as for their integration in the form of comprehensive research, there is a shortage of appropriate methods. This is directly related to the need to develop a method of establishing layers of greenery on the objects-carriers (items of clothing). A series of experiments was carried out, the results of which revealed sets of features that can be used to establish the nature of contact (static, dynamic) and the direction of movement during dynamic contact. This allowed us to conclude that the next series of experiments would be expedient, which would simulate the circumstances of contact of clothing with the vegetation of different parts of the area during the commission of a crime. Collectively, the experiments will be the basis for creating a method of establishing the mechanism of formation of layers of greenery on clothing.

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О. Ю. Грошева

ЩОДО СТВОРЕННЯ МЕТОДИКИ КОМПЛЕКСНОГО ЕКСПЕРТНОГО ДОСЛІДЖЕННЯ СЛІДІВ РОСЛИННОГО ПОХОДЖЕННЯ

Досліджено проблемні питання розроблення методики судово-експертного дослідження механізму утворення слідів рослинного походження (плям зелені) на предметах-носіях (одязі). На підставі аналізу спеціальної літератури, експертної практики та експериментальних досліджень, розроблено основні положення вказаної методики.

За своєю сутністю механізм утворення нашарувань для будь-якого слідоутворюючого об'єкта має загальні ознаки слідоутворення, але на механізм формування слідів впливають і властивості об'єкта, що залишає слід (у даному випадку рослинного покрову ділянки місцевості, де вчинено злочин), і властивості слідосприймаючої поверхні предмета (наприклад, одягу), на якій залишаються сліди.

Сформульовано висновки та надано відповідні пропозиції з метою формування методики експертного дослідження, яка відсутня на сьогоднішній день.

Ключові слова:судова експертиза, судово-експертна методика, плями зелені, нашарування рослинного походження; механізм утворення нашарувань.

Е. Ю. Грошевая

О СОЗДАНИИ МЕТОДИКИ КОМПЛЕКСНОГО ЭКСПЕРТНОГО ИССЛЕДОВАНИЯ СЛЕДОВ РАСТИТЕЛЬНОГО ПРОИСХОЖДЕНИЯ

Исследован вопрос о целесообразности разработки методики установления механизма образования следов растительного проис-

хождения на предметах одежды. На основе анализа специальной литературы приводится аргументация о необходимости разработки такой методики. Для принятия правильного и объективного решения по данному делу важное значение имеет использование специальных знаний в форме судебной экспертизы, в том числе, комплексной. Комплексная судебная экспертиза, как правило, является сложным исследованием, поскольку интегрирует знания различных отраслей науки. Как отдельные категории, судебно-биологическая и судебно-трасологическая экспертизы имеют достаточно разработанную научную базу, в то же время, что касается их интеграции в виде комплексных исследований, то существует дефицит соответствующих методик. Это непосредственно касается необходимости разработки методики установления наслоений зелени на объектах-носителях (предметах одежды). Утверждается, что только интеграция знаний судебного биолога (ботаника) о природе наслоений растительного происхождения в совокупности со специальными знаниями эксперта трасолога по признакам механизма следообразования приведет к получению научно обоснованного результата. Проведена серия экспериментов, по результатам которых выявлены комплексы признаков, достаточных для установления характера контакта (статический, динамический) и направления перемещения при динамическом контакте. Это позволило сделать вывод о целесообразности проведения следующей серии экспериментов, которые имитировали бы обстоятельства контакта одежды с растительным покровом различных участков местности во время совершения преступления. В совокупности проведенные эксперименты станут основой для создания методики установления механизма образования наслоений зелени на предметах одежды.

Ключевые слова: судебная экспертиза, судебно-экспертная методика, пятна зелени, наслоения растительного происхождения, механизм образования наслоений.

Received by Editorial Board: 12.10.2019

DOI: https://doi.org/10.32353/khrife.2.2019.45
UDC 343.98

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MUTIDISCIPLINARY RESEARCH ON COUNTERFEIT AND FALSIFIED CONSUMER GOODS: THEORETICAL AND PRACTICAL ASPECTS

Examination of counterfeit and falsified products requires an integrated approach. This article discusses the concept of "falsification" and "counterfeiting" and provides their classification; justified the need for a comprehensive study; the main issues and tasks solved by experts in various fields of knowledge in the study of counterfeit and falsified products are given. Forensic examination of counterfeit and falsified products, depending on particular product is subject to analysis; it requires a whole range of expert studies: commodity examination (consumer characteristics of products, compliance with standards), examination of substances and materials (to determine from which materials or substances the products are made), documentary expertise (instructions for the product, accompanying documents, warranty coupons, certificates, etc.), expertise in the field of intellectual property (identity or confusion of registered marks for goods, services and designations applied to the product under investigation; the presence of all essential features patented industrial design in the design of the external form of the product or its packaging), chemical and biological forensic examination, etc.

In general, forensic examination of counterfeit and falsified products is one of the means of obtaining evidence, it is carried out in strict accordance with the current legislation and departmental regulations. The tactics of appointing and conducting examinations depends on the specific investigative situation, the available forces, means and methods.

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The conclusion based on the results of a multidisciplinary research provides not only a solution to the issue of the originality of the product, but also the determination in the case of falsification of its form and type. So, the product can be real in terms of intellectual property, but it can be falsified in terms of consumer properties, or simply defective. In addition, one should take into account not only the misappropriation of a trademark, name (brand), but also the falsification of the qualitative and quantitative characteristics of the goods.

Forensic examination of counterfeit and falsified consumer goods is one of the most complex expertise and requires an integrated approach involving a large number of specialists in various fields of knowledge, requires a lot of experience, information and technical support.

Keywords: falsification, counterfeiting, examination in the field of intellectual property, merchandising examination, examination of substances and materials, trace evidence analysis, questioned document examination, chemical and biological examination.

Formulation of Research Problem. Examination of counterfeit and falsified consumer goods depending on product is subject to analysis requires a set of forensic researches: forensic merchandising examination, forensic examination of substances and materials, questioned document examination (QDE), examination in the field of intellectual property. In cases where the products are related to information technology, computer forensic science is added. Examination of counterfeit and falsified products is one of the means of obtaining evidence and should be conducted in strict accordance with applicable law and departmental regulations.

Analysis of Recent Researches and Publications. The theoretical aspect of the problem of counterfeiting and counterfeiting is covered by S. P. Yeskova, V.V. Kovarda in the article: Counterfeit and falsified consumer goods and will have falsified products: concepts, essence, distinctive features [1] and considered by S. L. Panov in the article: Ratio of the concepts of counterfeit, falsification, pirated consumer goods: theoretical aspect [2].

Research Purpose. This article discusses the problem of organizing and conducting a multidisciplinary examination of counterfeit and falsified consumer goods.

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[1] Еськова С. П., Коварда В. В. Контрафактная и фальсифицированная продукция: понятия, сущность, отличительные особенности. *Молодой ученый.* 2016. № 20. С. 306–308. URL: https: //moluch.ru/archive/124/34275/ (Date accessed: 15.07.2019).

[2] Панов С. Л. Соотношение понятий «контрафактная», «фальсифицированная», «пиратская» продукция: теоретический аспект. *Право и политика.* 2008. № 2. С. 453–458.

Main Content Presentation. Currently, there is no common unified methodological approach to organization and conducting of a multidisciplinary examination of counterfeit and falsified consumer goods. This article substantiates the need for a comprehensive study; the main issues are given, the main tasks solved by experts in various fields of knowledge while research on counterfeit and falsified consumer goods are considered.

The market of food and non-food products is filled with endless flow of low-quality counterfeit and counterfeit products. Detected counterfeit products are decorated no worse than those manufactured at specialized enterprises. This became possible as a result of the use of various equipment for criminal purposes, for example, copying and duplicating equipment allowing you to copy the attributes of labels and other details at such a level that it is extremely difficult for a specialist to establish their forgery.

The damage caused by counterfeit and falsified products can be divided into several groups: the loss in the economy of the state in the form of non-receipt of tax and other payments to the state budgets and state extrabudgetary funds; damage to the prestige of the country, undermining the investment climate; damage to copyright holders of products and trademark rights; harm to the health of counterfeit and falsified consumer goods.

A reliable evidence base is important for the effective fight against the production and distribution of counterfeit and falsified consumer goods, for a positive solution to the issue of initiating criminal cases and further their successful investigation. The basis of such a database is often the results of expert research on counterfeit and falsified consumer goods.

The analysis of expert practice revealed the objects that most often come for expert research to Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations (hereinafter referred to as KhRIFE) in order to identify signs of difference from the original product. This analysis shows that five years ago, computer DVDs and music CDs predominated in the total number of items entered for research to determine whether or not original products matched.

This picture has undergone significant changes over the years. Today, the vast majority of the objects studied are food and non-food products.

KhRIFE investigates a large number of products with signs of falsification and counterfeiting, seized by law enforcement agencies. Experts conduct research on a wide variety of products: food products, washing powders, perfumes and cosmetics, tobacco products, motor oils, etc.

Forensic examination of counterfeit and falsified consumer goods depending on the product is to be analyzed, requires a set of forensic researches: forensic merchandising examination (consumer characteristics of products, compliance with standards), examination of substances and

materials (determine which materials or substances products are made of), documentary examination (instructions for the product, accompanying documents, warranty cards, certificates, etc.), examination in the field of intellectual property (identity or similarity to the degree of mixing of registered marks for goods and services and markings applied to the product under investigation; presence of all essential features in the design of the external form of the product or its packaging). In cases where the products are related to information technology, computer and technical expertise is added (to check and analyze software products).

Forensic research can answer a wide range of questions, the solution of which will facilitate the detection and investigation of the crime. Effectiveness of the information obtained in conducting such studies is largely determined not only by the correctness of the fixation and removal of physical evidence but the sequence of appointment of a particular examination and imposes certain requirements on their production.

To determine the fact of counterfeiting and falsification, their form and type, law enforcement authorities are asked the following questions:

- Are the markings on the withdrawn products during the search identical or similar to the mark for goods and services under certificate № XXX?
- Can you identify the marks for goods and services on the removed samples with the products of the manufacturing companies?
- What is the name and purpose of the goods submitted for research?
- Do the marking data match the actual product characteristics of the product?
- Does the quality of the product meet the requirements of the State Standard of Ukraine (hereinafter DSTU) in terms of organoleptic parameters?
- Does the marking and packaging of the goods seized during the search correspond to original samples? If not, on what grounds?
- What substances (materials) do the samples submitted for research contain? If these substances belong to objects of biological origin, then what is their taxonomic affiliation?
- Are harmful substances (materials, impurities), which pose a threat to human life and health, included in the samples?
- In what way are excise tax stamps and labels affixed to seized products manufactured?
- Did the samples submitted for research be manufactured in an industrial or non-industrial way?

As well as other various questions that are posed depending on the type of objects of the study and the tasks assigned to the investigation.

To address these issues, it is necessary to conduct a comprehensive study of seized products with the use of specialized knowledge in various fields of science and technology.

The terms counterfeit and falsification are often used as synonyms. This happens not only in everyday life, but also in special literature, in the media. However, from a legal point of view, these are two independent concepts.

Counterfeiting (Latin: contrafactio, French: Contrefaction means forgery) is the illegal use by certain organizations (firms) of well-known trademarks on the market, in order to obtain income from the production and sale of goods similar to the goods of well-known manufacturers for unfair competition and misleading the buyer (purchaser) conducting a "case" under someone else's name, illegal use of someone else's patent in the manufacture and sale of goods[1]. The term: counterfeiting occurs in the legislation of many countries and this type of activity is prosecuted under the law of the state.

The most common types of counterfeit consumer goods are:

- sale of goods using designations identical or similar to the degree of confusion with well-known brands of other manufacturers;
- counterfeiting appearance of industrial products, infringement of industrial design rights;
- illicit manufacture and use of works of literature, science, art, computer software and audiovisual products.

Counterfeit are also products made with the improper use of technology protected as an invention or utility model.

Falsification (Latin: falsifico means forge) are actions aimed at deceiving the buyer and/or consumer by counterfeiting the object of sale for selfish purposes. Therefore, counterfeiting, in a broad sense, can be seen as actions aimed at deteriorating certain consumer properties of the product or reducing its quantity while maintaining the most characteristic indicators [2].

According to the Ukrainian legislation on consumer protection: counterfeit products viz. products made in violation of technology, improper use of the mark for goods and services, copying the form, packaging, exterior design or improper reproduction of another person's goods [3].

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[1] Еськова С. П., Коварда В. В. Контрафактная и фальсифицированная продукция: понятия, сущность, отличительные особенности. *Молодой ученый.* 2016. № 20. С. 306–308. URL: https: //moluch.ru/archive/124/34275/ (Date accessed: 15.07.2019).

[2] Еськова С. П., Коварда В. В. Контрафактная и фальсифицированная продукция: понятия, сущность, отличительные особенности. *Молодой ученый.* 2016. № 20. С. 306–308. URL: https: //moluch.ru/archive/124/34275/ (Date accessed: 15.07.2019).

[3] Про захист прав споживачів : Закон України від 12 травня 1991 р. № 1023-XII. URL: http://zakon3.rada.gov.ua/laws/show/1023–12 (Date accessed: 15.07.2019).

Types of falsification:

1. Assortment: is carried out by full or partial replacement of the goods by its substitutes with preservation of several or one signs.

Counterfeiting is one way of assortment fraud.

Counterfeiting is one of the ways of assortment falsification. Counterfeiting (Latin: contrafactio) means forgery. Counterfeit products are a type of counterfeit products at the brand level. Two types of counterfeiting are used for counterfeit products: assortment and information but there are other types of counterfeiting.

2. Qualitative: counterfeiting of goods by means of food or non-food additives for improvement of organoleptic properties at preservation or loss of other consumer qualities or replacement of the goods on the same other grade;
3. Quantitative: misleading the consumer due to significant deviations of the parameters of the product that exceed the maximum allowable deviations (underweight or false measure);
4. Cost: misleading the consumer by selling low-quality goods at a high-quality price. It accompanies all other types of falsification.
5. Informational: misleading the consumer by providing inaccurate or distorted information about the product.

The concept of counterfeiting and falsification have differences from a legal point of view: the first means a violation of intellectual property rights, and the second means a violation of production technology [1].

Forensic examination to identify counterfeit and falsified consumer goods is a procedure aimed at identifying signs of counterfeiting (i.e. falsification) or misuse of registered trademarks (i.e. counterfeiting). Forensic examination to determine counterfeit and falsified consumer goods is also carried out in order to establish the characteristics of the product, for which an identification examination is carried out.

Forensic examination of counterfeit and falsified consumer goods is aimed at examining product samples and symbols used, including trademarks, for compliance with the original. In the course of work, an examination of goods of improper quality may be carried out, which is also aimed at detecting counterfeits among products and goods.

Forensic examination of counterfeit and falsified consumer goods is intended to solve the following tasks:

- determination of counterfeit/falsification;
- confirmation of product authenticity;

[1] Панов С. Л. Соотношение понятий «контрафактная», «фальсифицированная», «пиратская» продукция: теоретический аспект. Право и политика. 2008. № 2. С. 453–458.

- definition of changes in the composition of counterfeit or counterfeit products, its properties and quality;
- detection of signs of counterfeit and falsification.

In order to determine whether the object under research is falsified and/or counterfeit, it is necessary to solve a diagnostic task, in particular, to answer the question: whether the object meets (does not meet) the mandatory requirements for it. If not, what is the reason for this deviation?

As a rule, examinations of counterfeit or falsified products are a comparative analysis of the products of the manufacturer of the original products and withdrawn while investigative actions or investigative measures.

Samples for comparative research are important in the study of counterfeit and counterfeit products. The reference samples include comparative samples, standard and reference samples, for which their characteristics are consciously known, in particular, the place of manufacture, authenticity, chemical composition, physical and chemical parameters and other essential properties.

Forensic expert should have a legitimate sample to compare with the disputed object, and the expert can only answer the question of compliance or inconsistency of the identified features of the sample object.

It is the responsibility of the intellectual property experts to resolve the issue of identifying the markings affixed to the objects under investigation and to identify or resemble the degree of confusion with the mark for the goods and services of the manufacturer.

Under market conditions, a trademark, information and other intangible properties of goods themselves have become a commodity, so the materialization of a trademark in the form of applying this mark to the goods without permission is considered as its falsification.

The content of the object study in this case is to solve a diagnostic problem in order to determine the conformity (non-compliance) of the object under study with the requirements for legitimate goods, i.e. goods with a registered trademark and trade name.

Authentication examination is one of the most complex types of forensic examinations. It can be performed:

- if analogue is available;
- if analogue is unavailable.

If an analogue is available, a separate research on sample and analogue is performed on the same indicators and a comparative assessment is made to conclude that the object is falsified or its authenticity. If an analogue is unavailable, the expert determines the nomenclature of indicators by which you can determine the affiliation of the object to a particular group of goods. These indicators determine the authenticity of the product.

The objects of forensic merchandising examination in establishing the originality of the goods or its falsification are goods, packaging, labeling, accompanying documents. While conducting research, it is mandatory to use a sample of the original product (analogue) to compare. In the absence of an analogue sample, the use of scientifically substantiated standardized indicators of reliability (authenticity) is allowed.

One of the procedures for determining the conformity of goods to the established requirements is identification. The result of identification is the confirmation of conformity or establishment of non-conformity of assortment, qualitative, quantitative characteristics and commodity information. If a discrepancy is detected, the product is counterfeit.

The main criteria in the study of the product are its product characteristics, quality indicators, technical or technological condition, consumer value and consumer attractiveness.

The main product characteristics needed to identify the objects of study are the following data: brand; product model; completeness; manufacturing material; producing country; date of purchase and service life; technical characteristics; features of design and execution, depending on the group of goods [1].

While establishing of the product originality or its falsification, the analysis of commodity information contained in the accompanying documents including transport documents (consignment note, railway consignment notes, bill of lading, etc.), certificates and declarations of conformity, quality and safety certificates, operating documents (passports, instructions, guidelines), sampling acts, etc.

The next research stage is the analysis of product information provided in the label. Its carriers can be consumer and transport packaging, labels, tags, labels, control tapes, stamps, etc. Next, the conformity of the product information contained in the label with the mandatory requirements of current standards is checked.

Incomplete, inaccurate or distorted information in the labeling or accompanying documents is often a sign of counterfeit and counterfeit goods. The most frequently omitted or distorted information includes: country of origin, name and legal address of the manufacturer, composition, quality categories, date of manufacture and / or expiration date.

Forensic chemical and biological examination are necessary to determine the quality of the product, its compliance with sanitary and hygienic indicators, state standards and regulations. This type of expertise is most often used in resolving controversial issues related to health care, consumer protection in relation to counterfeit consumer goods.

[1] Замедлина Е. А. Товароведение и экспертиза товаров: учеб. пособ. Москва : РИОР, 2005. 156 с.

Within the framework of complex trace-technological examination and technical-forensic examination of documents, the method of production of material evidence presented for research, identification of violations of production technology, establishment of conformity of the method and quality of reproduction with original samples, research of graphic images on labels, excise tax stamps, etc. are carried out.

In almost every questioned document examination (QDE), the expert is asked about the method of printing the cover (label, insert booklet, special stamp, pack, etc.). Questions can be:

- diagnostic nature in order to establish compliance (non-compliance) with the requirements of the right holder (manufacturer) for the investigated printing products, as well as directly to the sample of the studied products;
- identification, to establish the identity of a particular printed form, or two or more copies of finished printing products.

The solution to some expert problems is impossible without research on packaging materials. These include paper, glue, paint. The study of paper, paints, adhesives is to determine their group affiliation, type, type of materials, determine the consumer purpose of the material or product thereof, establish the time of manufacture and source of the material.

One of the tasks of trace evidence analysis of objects is to establish a common source of origin of the product and to identify the production equipment used for its manufacture.

Trace evidence analysis clarifies the possibility of using this particular equipment for the manufacture of specific items. For example, whether this scanner was used to enter an image into a computer, whether this printer could be used to make copies, whether this remote copying technique was used to obtain an image of packaging, labels, etc.

In general, forensic examination of counterfeit and falsified consumer goods is one of the means of obtaining evidence, conducted in strict accordance with applicable law and departmental regulations. The tactics of appointing and conducting examinations depend on the specific investigative situation, available forces, means and methods.

The conclusion based on the results of a multidisciplinary research provides not only to address the issue of product originality, but also to determine in case of falsification of its shape and type. Thus, a product may be genuine in terms of intellectual property but may be counterfeit in terms of consumer properties or simply defective. In addition, it is necessary to take into account not only the misappropriation of a trademark, name (brand) but also forgery of qualitative and quantitative characteristics of the goods.

Conclusions. Forensic examination of counterfeit and falsified consumer goods is the most complex examination and requires a comprehensive approach involving a large number of specialists in various fields of knowledge; it requires extensive experience, information and technical support.

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Т. А. Заніна, А. П. Копитько, О. В. Мануленко

КОМПЛЕКСНЕ ДОСЛІДЖЕННЯ ФАЛЬСИФІКОВАНОЇ ТА КОНТРАФАКТНОЇ ПРОДУКЦІЇ: ТЕОРЕТИЧНІ ТА ПРАКТИЧНІ АСПЕКТИ

Експертиза контрафактної та фальсифікованої продукції вимагає комплексного підходу. В даній статті розглянуті поняття «фальсифікація» та «контрафакція», наведені їх класифікації; обґрунтована необхідність в проведенні комплексного дослідження; наведені основні питання, розглянуті основні завдання, що вирішуються експертами в різних галузях знань при дослідженні контрафактної та фальсифікованої продукції. Експертиза контрафактної та фальсифікованої продукції в залежності від того, яка саме продукція підлягає аналізу, вимагає цілого комплексу експертних досліджень: товарознавча експертиза, експертиза речовин та матеріалів, експертиза документів, експертиза у сфері інтелектуальної власності, хіміко-біологічна експертиза та ін.

Ключові слова: фальсифікація, контрафакція, експертиза в сфері інтелектуальної власності, товарознавча експертиза, експертиза речовин і матеріалів, трасологічна експертиза, експертиза документів, хіміко-біологічна експертиза.

Т. А. Занина, А. П. Копытько, А. В. Мануленко

КОМПЛЕКСНОЕ ИССЛЕДОВАНИЕ ФАЛЬСИФИЦИРОВАННОЙ И КОНТРАФАКТНОЙ ПРОДУКЦИИ: ТЕОРЕТИЧЕСКИЕ И ПРАКТИЧЕСКИЕ АСПЕКТЫ

Экспертиза контрафактной и фальсифицированной продукции требует комплексного подхода. В данной статье рассмотрены понятие

«фальсификация» и «контрафакция», приведены их классификации; обоснована необходимость в проведении комплексного исследования; приведены основные вопросы и задачи, решаемые экспертами в различных областях знаний при исследовании контрафактной и фальсифицированной продукции. Экспертиза контрафактной и фальсифицированной продукции в зависимости от того, какой именно товар подлежит анализу, требует целого комплекса экспертных исследований: товароведческая экспертиза (потребительские характеристики продукции, соответствие стандартам), экспертиза веществ и материалов (для определения, из каких материалов или веществ изготовлена продукция), документальная экспертиза (инструкции к товару, сопроводительные документы, гарантийные талоны, сертификаты и т. п), экспертиза в сфере интеллектуальной собственности (тождество или сходство до степени смешения зарегистрированных знаков для товаров, услуг и обозначений, нанесенных на исследуемую продукцию; наличие всех существенных признаков запатентованного промышленного образца в оформлении внешней формы продукции или ее упаковки), химико-биологическая экспертиза и др.

В целом, экспертиза контрафактной и фальсифицированной продукции является одним из средств получения доказательств, проводится в строгом соответствии с действующим законодательством и ведомственными нормативными актами. Тактика назначения и проведения экспертиз зависит от конкретной следственной ситуации, имеющихся сил, средств и методов.

Заключение по результатам комплексного исследования предусматривает не только решение вопроса об оригинальности продукции, но и определение в случае фальсификации ее формы и вида. Так, товар может быть настоящим в части интеллектуальной собственности, но может быть фальсифицированным в части потребительских свойств или же просто дефектным. Кроме того, следует учитывать не только незаконное присвоение товарного знака, наименования (марки), но и подделку качественной и количественной характеристик товара.

Экспертиза по исследованию фальсифицированной и/или контрафактной продукции относится к наиболее сложной экспертизе и требует комплексного подхода с привлечением большого количества специалистов в различных областях знаний, требует большого опыта, наличия информационного и технического обеспечения.

Ключевые слова: фальсификация, контрафакция, экспертиза в сфере интеллектуальной собственности, товароведческая экспертиза, экспертиза веществ и материалов, трасологическая экспертиза, экспертиза документов, химико-биологическая экспертиза.

Received by Editorial Board: 12.08.2019

TRAINING OF TOP QUALIFIED STAFF AT HON. PROF. M. S. BOKARIUS KHARKIV RESEARCH INSTITUTE OF FORENSIC EXAMINATIONS

It is impossible to imagine modern forensic activity without such a component as staff management. The realities of today put forward new requirements for the level of qualification of employees of specialized forensic institutions. The answer to the needs of practice was the opening in 2018 at Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations (KhRIFE) postgraduate training in the third educational and scientific level of education (Doctor of Philosophy PhD) majoring in 081 Law (administrative, forensic and forensic profiles). This area of activity of the Institute is developing rapidly. Thus, during 2019, doctoral studies were added to the KhRIFE graduate school, the license volume of enrollment was increased, and foreign citizens were given the opportunity to study. Confirmation of this development is the results of the second set of postgraduate and doctoral studies of KhRIFE: 1 doctoral student is enrolled; 6 postgraduate students and 7 people for postgraduate studies. The educational process and guidance of graduate students is provided by leading scientists of KhRIFE: doctors, professors: O. M. Kliuiev, O. P. Uhrovetskyi, E. B. Simakova-Yefremian, I. A. Petrova, O. P. Snigerov, E. M. Popovich and others.

Not only graduate students and doctoral students of KhRIFE but also employees of other institutions and organizations received a unique opportunity in 2019 — to defend their research in the specialized scientific council K 64.896.01 of KhRIFE, that started to work in 2019. It is gratifying that the first to use this opportunity were researchers from KhRIFE who successfully defended their dissertations and received the PhD degree in Law. They were gladly congratulated by all employees of the institution.

Anatolii Anatoliiovych Rusetskyi, Leading Researcher of KhRIFE defended the dissertation for the Doctor of Law degree majoring in 12.00.0: Administrative law and legal proceeding; finance law; information law. Dissertation defense on Administrative and legal support for cooperation

and coordination of law enforcement agencies at the regional level in Ukraine took place on March 16, 2019 at a meeting of the Specialized Academic Council D 64.700.01 at Kharkiv National University of Internal Affairs. Academic Supervisor: O. M. Kliuiev, Doctor of Law, Professor, Honored Lawyer of Ukraine. Official opponents: O. I. Mikolenko, Doctor of Law, Professor; A. L. Borko Doctor of Law, Docent; O. Yu. Drozd, Doctor of Law, Docent.

The dissertation of A. A. Rusetskyi reflects a theoretical generalization and a new solution to the scientific problem that is to determine the essence and features of administrative and legal support for interaction and coordination of law enforcement agencies at the regional level in Ukraine. The concept of interaction and coordination of law enforcement agencies at the regional level is outlined, the criteria for differentiation are proposed, the purpose, principles and tasks of interaction and coordination of law enforcement agencies at the regional level are defined. The paper describes the nature and features of the region as an object of administrative and legal protection and identifies the place of organization of interaction and coordination of law enforcement agencies. The dissertation carried out a historical and legal analysis of the interaction and coordination of law enforcement agencies at the regional level; the legal principles of interaction and coordination are revealed and the place of administrative and legal regulation among them is outlined. The concept and system of law enforcement agencies that interact at the regional level and the features of coordination of their law enforcement activities are also defined. The dissertation analyzes the competence of law enforcement agencies as subjects of interaction and coordination at the regional level; outlined legal guarantees and legal responsibility of law enforcement agencies as subjects of interaction and coordination at the regional level. The dissertation reveals the essence and structure of the administrative and legal mechanism of interaction and coordination of law enforcement agencies at the regional level. On the basis of the analysis of foreign experience and the revealed possibilities of its use in Ukraine in the dissertation the directions of improvement of interaction and coordination of activity of law enforcement agencies at the regional level are generalized. To this end, methods for optimizing the system of entities that organize the interaction and coordination of law enforcement agencies at the regional level have been developed, and criteria for evaluating the effectiveness of such interaction and coordination have been proposed.

Serafyma Hennadiivna Hasparian, Senior Researcher of KhRIFE defended the dissertation for the PhD in Law degree majoring in 12.00.07: Administrative law and legal proceeding; finance law; information law. Dissertation defense on the topic: Administrative and legal principles of staffing of forensic institutions of Ukraine took place on July 2, 2019 at the meeting of the Specialized Academic Council: K 64.896.01 at Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations of the Ministry of Justice of Ukraine. Academic Supervisor: O. M . Kliuiev, Doctor of Law, Professor, Honored Lawyer of Ukraine. Official opponents: O. M. Muzychuk, Doctor of Law, Professor, Honored Lawyer of Ukraine; N. V. Grishin PhD in Law, Docent.

The dissertation of S. H. Hasparian is devoted to the multidisciplinary research on essence, maintenance and features of administrative-legal bases of staffing of forensic science institutions and directions of their improvement taking into account domestic practice and foreign experience. The historical and legal analysis of the formation and development of staffing of forensic institutions of Ukraine is carried out in the work. The stages of formation of staffing of forensic activity in Ukraine are characterized; the essence and features, as well as the principles and functions of staffing of forensic institutions of Ukraine are clarified. The paper describes the legal regulation of staffing of forensic institutions of Ukraine and outlines the place of administrative legislation. The requirements for persons who may be forensic experts of specialized forensic institutions of Ukraine are systematized and the limits of their competence are determined. The expediency of optimization of criteria for assessing the quality of personnel of forensic institutions of Ukraine is substantiated in the work. The analysis of administrative procedures of staffing of forensic institutions of Ukraine allowed to specify the forms and methods of staffing of forensic institutions of Ukraine. In turn, the analysis of foreign experience in staffing of forensic institutions provided an opportunity to identify prospects for its use in Ukraine and identify key areas for improving administrative legislation governing the staffing of forensic institutions in Ukraine.

Iryna Mykolaivna Popovych, Senior Researcher of KhRIFE defended the dissertation for the PhD in Law degree majoring in 12.00.09: Criminal procedure and criminalistics; forensic science; crime detection and investigation. Dissertation defense on the topic: Procedural status of the parties in pre-trial investigation: theoretical, legislative and functional aspects took place on July 2, 2019 at the meeting of the Specialized Scientific Council: K 64.896.01 at Hon. Prof. M. S. Bokarius Kharkiv Research Institute

of Forensic Examinations of the Ministry of Justice of Ukraine. Academic Supervisor: M. V. Danshyn, Doctor of Law, Professor. Official opponents: O. V Kaplina Doctor of Law, Professor, Corresponding Member of National Academy of Legal Sciences of Ukraine; O. V. Martovytska, PhD in Law.

The dissertation of I. M. Popovych is devoted to research on procedural position of the parties of accusation and protection operating at a stage of pre-trial investigation of adversarial criminal proceedings of Ukraine. Based on the provisions of the theory of criminal procedure, international legal acts, the current Criminal Procedure Code of Ukraine and the results of the analysis of prosecutorial-investigative practice, the procedural position of both pre-trial authorities and all participants defending or representing their own interests is defined and presented. The dissertation emphasizes that the current Criminal Procedural Code of Ukraine has not fully regulated the adversarial nature of the parties at the pre-trial stage of criminal proceedings - pre-trial investigation; Many significant gaps and imperfections have been identified, which significantly complicate the process of conducting a pre-trial investigation in the conditions of adversarial proceedings, which requires changes and additions to the codified law, as well as intensification of scientific research on this issue. The results obtained as a result of the dissertation research allowed to formulate a number of conclusions and proposals that have both theoretical and legislative and practical significance.

Igor Volodymyrovych Sych, Senior Researcher of KhRIFE defended the dissertation for the PhD degree in Pharmacy majoring in 15.00.02 — Pharmaceutical chemistry and pharmacology. Dissertation defense on the topic: Synthesis, chemical and biological properties of 5-substituted derivatives of 2-thio (amino)-1,3,4-thiadiazole took place on June 7, 2019 at the meeting of the Specialized Scientific Council: D 64.605.01 at the National University of Pharmacy. Academic Supervisor: L. O. Perekhoda, Doctor of Pharmacy, Professor. Official opponents: S. M. Kovalenko, Doctor of Chemistry, Professor; A. M. Demchenko Doctor of Pharmacy, Professor.

The dissertation of I. V. Sych reflects the synthesis and study of physicochemical and biological properties of 81 new compounds of 5-substituted derivatives of 2-thio (amino)-1,3,4-thiadiazole. The dissertation proposes preparative methods for obtaining and synthesizing these compounds. Thus, intermediates that have been chemically modified and used to synthesize previously unknown compounds have been synthesized by cyclization. Elemental analysis, 1H NMR spectroscopy, mass spectrometry, UV and IR spectroscopy were used to confirm the structure

of the synthesized compounds. The results of pharmacological screening revealed compounds with high antimicrobial, moderate antifungal activity, pronounced diuretic and high anticonvulsant action. Based on the QSAR analysis, important patterns of the relationship "structure — anticonvulsant action" for further study of the leader-compound N- (5-ethyl-[1,3,4] thiadiazol-2-yl)-2-nitrobenzamide, the anticonvulsant activity of which is statistically significantly higher than the activity of the reference drug DEPAKINE®. The compound belongs to the 4th class of toxicity according to the results of computer forecasting. The obtained results of molecular docking of the leader compound to convulsive biotargets indicate in favor of the GABA-ergic mechanism of its action. The paper presents the DMF project on N-(5-ethyl-[1,3,4] thiadiazol-2-yl)-2-nitrobenzamide as a promising anticonvulsant compound.

Serhiy Mykhailovych Naumenko, Head of the Sumy Branch of KhRIFE defended the dissertation defended the dissertation for the PhD in Law degree majoring in 12.00.07: Administrative law and legal proceeding; finance law; information law. Dissertation defense on: Administrative and legal principles of interaction of expert institutions with law enforcement agencies took place on June 26, 2019 at the meeting of the Specialized Academic Council: D 55.051.07 at Sumy State University. Academic Supervisor: V. V. Pakhomov, Doctor of Law, Professor. Official opponents: I. O. Kravchenko, Doctor of Law; V. O. Nevyadovsky PhD in Law.

The dissertation of S. M. Naumenko is devoted to a multidisciplinary research on essence, content and features of administrative and legal principles of interaction of expert institutions with law enforcement agencies and areas for their improvement, taking into account domestic practice and foreign experience. The system of law enforcement agencies that interact with expert institutions is defined and the content of this interaction is revealed; the tasks and functions of expert institutions as subjects of interaction with law enforcement agencies are revealed. The competence of expert institutions is studied and their rights and responsibilities in interaction with law enforcement agencies are outlined, as well as legal guarantees of expert institutions in relations with law enforcement agencies; the content and features of legal responsibility of experts are covered. The dissertation reflects the essence and structure of the administrative and legal mechanism of interaction of expert institutions with law enforcement agencies. The main areas of interaction of expert institutions with law enforcement agencies are identified and the procedure for their implementation is determined.

Systematized administrative and legal forms and methods of interaction of expert institutions with law enforcement agencies. Based on the analysis of foreign experience in organizing the interaction of expert institutions with law enforcement agencies, the possibilities of its use in Ukraine have been established. The main directions of improvement of administrative legislation, which regulates the interaction of expert institutions with law enforcement agencies, are substantiated.

Svitlana Hennadiivna Moroz, Department Head of Poltava Branch at KhRIFE defended the dissertation for PhD degree in Economics majoring in 08.00.03: Economics and Management of the National Economy. Dissertation defense on the topic: Regulatory policy of small business development in Ukraine took place on July 1, 2019 at a meeting of the Specialized Academic Council: D 35.840.01 at Lviv University of Trade and Economics. Academic Supervisor: M. Yu. Barna Doctor of Economics, Professor. Official opponents: T. G. Vasyltsiv, Doctor of Economics, Professor; T. A. Pikhnyak, PhD in Economics.

In the dissertation of S. H. Moroz the set of tasks concerning scientific substantiation of theoretical-methodical and applied bases of formation and realization of regulatory policy of development of small business in Ukraine is solved. The object of research is the process of small business development, and the subject; tools and means of formation and implementation of regulatory policy for small business development in Ukraine. Conceptual bases of formation and realization of regulatory policy and its tools are substantiated. Theoretical and methodological bases and features of development of the small business sector as an object of state regulatory policy have been developed. Emphasis is placed on the world experience of implementing state regulatory policy in the field of small business development. The analysis of the state of functioning and development of the small business sector is carried out. A description of the regulatory policy in the field of small business development in Ukraine is given. The institutional and legal support for the implementation of the regulatory policy for the development of small business in Ukraine is assessed. The system of mechanisms of the state regulatory policy of small business development is substantiated. The strategic priorities for the implementation of the regulatory policy for the development of small business and areas for improving the institutional and legal support for the implementation of the regulatory policy for the development of small business have been identified.

Information was prepared by I. A. Petrova,
Senior Researcher at KhRIFE, Doctor of Law, Professor

PARTICIPATION IN INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE

On June 6—7, 2019, the 4th International Scientific and Practical Conference Museums and Restoration in the Context of Preservation of Cultural Heritage: Current Challenges of the Present was held at the National Kyiv-Pechersk Historical and Cultural Reserve.

The conference highlighted the implementation of national museum policy and its legislative support, the activities of museums, their role in the preservation of cultural heritage, the state of restoration of museum collections, as well as the international experience of research in museums and restoration.



Conference participants

Importance and relevance of the proposed for discussion issues of restoration and preservation of museum collections is emphasized by the important representation of the foreign diplomatic corps and the Ambassador of Turkmenistan to Ukraine Amanmuradov Nurberdy. The participants of the conference were also greeted by the Ambassador of the Republic of Lithuania to Ukraine Marius Janukonis and the Director of the Representation of the Polish Academy of Sciences in Kyiv Henryk Sobchuk. In their speeches, they all stressed the importance of international cultural dialogue and cooperation in the field of restoration activities.

Foreign guests represented various institutions and, in particular, the State Historical and Cultural Reserve Avei (Gazakh, Azerbaijan), the State Historical and Cultural Reserve Keshikchidag (Akstafa, Azerbaijan), the Art Museum of Lithuania, the Restoration Center named after Pranas Hudinas (Vilnius), Mir Castle Complex Museum (Republic of Belarus), Institute of Humanities of the V. Piletsky Higher Vocational School (Republic of Poland), Rzeszów University (Republic of Poland), Baku State University (Azerbaijan), University of Prešov).

Olha Serhiivna Puklich, Senior Researcher presented Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations, while the conference. She shared with the participants the experience on topical issues and problems in the field of art criticism, namely: attribution of works of art and technical and technological methods of research.

The purpose of the conference was to determine the current state of restoration of the monuments of the Museum Fund of Ukraine, to determine the level of restoration of the preservation of cultural heritage monuments, to study the problems of the development of the restoration industry in the context of museum studies.

Participants of the conference: specialists of research institutes, museums, restoration centers, institutions of higher education, graduate students and doctoral students, students received a collection of scientific papers prepared by the organizers.

Information prepared by K. Sylenok

INTERDEPARTMENTAL SCIENTIFIC AND PRACTICAL WORKSHOP: PROBLEMATIC ISSUES OF APPOINTMENT AND CONDUCTING OF FORENSIC EXAMINATIONS IN CRIMINAL PROCEEDINGS ON CORRUPTION CRIMES

July 12, 2019, Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations conducted the Problematic Issues of Appointment and Conducting of Forensic Examinations in Criminal Proceedings on Corruption Crimes interdepartmental scientific and practical workshop for the staff of the National Anti-Corruption Bureau of Ukraine (hereinafter referred to as NABU).

The event was attended by Artem Sytnyk, Director of the National Anti-Corruption Bureau of Ukraine, Andriy Kaluzhinsky, Head of the NABU Detective Unit, and other NABU staff.



Participants of the interdepartmental scientific and practical workshop

Oleksandr Mykolaiovych Kliuiev Director of KhRIFE, Doctor of Law, Professor, Honored Lawyer of Ukraine made the introductory speech was and greeted all present and outlined the main trends in the development of forensic science. Forensic examination is of great probative value in the process of pre-trial investigation of corruption crimes, along with the involvement of specialists and their consultation, as one of the main forms of using special knowledge in criminal proceedings. Effectiveness of the special knowledge use in the investigation of corruption crimes fully depends on the level and quality of organizational and methodological support for cooperation between forensic institutions and employees of the National Anti-Corruption Bureau of Ukraine. Oleksandr Mykolaiovych Kliuiev expressed hope that workshop would become an important event that would increase the efficiency of forensic activities and interaction of NABU employees with forensic science institutions.

Artem Sytnyk, Director of the National Anti-Corruption Bureau of Ukraine in his speech emphasized that the seminar will provide an opportunity to identify a range of problematic issues that exist in NABU activity in terms of involvement of court experts; to identify ways of solving problems arising from expert research, to exchange experience, to get acquainted with new developments, achievements, discoveries, methods of appointment and conducting forensics.

Discussion of issues included in the program of interdepartmental scientific and practical workshop: Problematic Issues of Appointment and Conducting of Forensic Examinations in Criminal Proceedings on Corruption Crimes for the staff of the National Anti-Corruption Bureau of Ukraine was conducted at a high scientific level.

Based on the results of the seminar the Features of preparation of materials for appointment and carrying out of forensic examinations in criminal proceedings on corruption offenses sourcebook was published.

Information prepared by K. Sylenok

XV INTERNATIONAL CONGRESS: CRIMINALISTICS AND FORENSIC EXPERTOLOGY: SCIENCE, STUDIES, PRACTICE

On 19-21 September 2019 in Representative Palace of Lithuanian Armed Forces «Ramovė» (Kaunas, Lithuania) was held XV International Congress «Criminalistics and Forensic Expertology: Science, Studies, Practice». The congress was organized by Criminalists Association of Lithuania, Forensic Science Centre of the Ministry of Justice of Lithuania and Mykolas Romeris University. About 140 participants from Azerbaijan, Belarussia, Czechia, Estonia, Germany, Greece, Italy, Kazakhastan, Latvia, Lithuania, Poland, Russia, Slovakia, Switzerland, UK, Ukraine and USA attended the congress. Scientific reports with presentations have been published in congress collection (in 2 vol.).

The congress program included thematic panels: 1) Innovative methods in didactics of criminalistics and forensic expertology; 2) Special knowledge as measure for implementation of modern scientific achievement into legal proceedings; 3) Perspectives of polygraph and psychophysiological investigations — legal regulation and practices; 4) Modern digital technologies in criminalistics and forensic science — digitalization of the procedures; 5) Peculiarities of modern methods of criminalistics; 6) Modern tactics of criminalistics — novelties of subjects; 7) Tactics of criminalistics — strategy of criminalistics — politics of criminalistics? 8) Perspectives of common international scientific programs — time is short; 9) Classical theory of criminalistics and modern practices.

On 19 September 2019 the congress was opened by musical performance of Lithuanian Armed Forces Orchestra. Also, congress was opened with the remarks of inviting guests: Prof. Dr. Inga Žalėnienė (President of Mykolas Romeris University); Dr. Giedrius Mozūraitis (Director of Forensic Science Centre of the Ministry of Justice of Lithuania) and Prof. Dr. Snieguolė Matulienė (Head of Criminalists Association of Lithuania).

Prof. Habil. Dr. Valery Shepitko (President of International Criminslists Congress) awarded Prof. Dr. Snieguolė Matulienė (Head of Criminalists Association of Lithuania) by «Herbert Manns Silver Medal» for «Outstanding Public Service in Criminalistics Development and

Popularization». After opening of the Congress and welcoming speeches it was participants photographing.

International congress worked in plenary sessions. The first day of the Congress (19 September) included only one session. 1st session of the Congress was chaired by Prof. Habil. Dr. Valery Shepitko (Ukraine) and Prof. Dr. Henryk Malewski (Lithuania). The following presentations were made during the session: «Virtual Reality» — Dr. Till Sieberth (Switzerland); «Topical Issues of Poligraphological Research» — Mgr. Oksana Stevenson and Prof. Dr. Bruce White (USA);

«The Developments of Scientific Perceptions of Tactics of Criminalistics and Modern Trends» — Prof. Habil. Dr. (Ukraine); «Do we really Need a Law Expert-Witnesses in Poland? » — Prof. Habil. Dr. Tadeusz Tomaszewski (Poland); «Information Fiction in the Investigation of Crimes» — Prof. Habil. Dr. Valery Tishchenko and Assoc. Prof. Dr. Larysa Bielik (Ukraine); «New View into the Criminalistic Documentation and its Use» — Prof. Dr. Jozef Metenko, Assoc. Prof. Dr. Martin Samek and Miriam Metenkova (Slovakia); «Concept of the Theory on Information Computer Support of Criminalistical Activity: Subject, Object, System, Regularities» — Prof. Habil. Dr, Elena Raossinskaya (Russia); «The German Association of Criminalistics (DGfK) — a Mission for an Interdisciplinary, Criminalistic Approach in the German Speaking Countries» — Dr. Silke Brodbeck and Prof. Dr. Petra Hasselmann (Germany); «The Complex Scientific Concept of Forensic Didactics and Competence Development for Law Enforcement and Justice Officials and Models of its Implementation» — Prof. Dr. Vidmantas Egidijus Kurapka and Prof. Dr. Henryk Malewski (Lithuania). The first day of the congress was finished by discussions on scientific reports topics. Special attention was paid to rapprochement of National and International Non-Governmental Organizations — Lithuanian, Polish and Ukrainian Criminalists Associations. As result of this activity it was considered constitutive documents of European Network of Criminalists Associations (with headquarters in Vilnius, Lithuania). German Association of Criminalistics was interested in this uniting. First day of the Congress finished by gala dinner.

The second day of the Congress (20 September) included four sessions.2nd session of the Congress was chaired by Prof. Habil. Dr. Tatyana Moiseeva (Russia) and Prof. Dr. Vidmantas Egidijus Kurapka (Lithuania). The following presentations were made during the session: «Methodology of Criminalistics: Discussions, Trends, Prospects» — Prof. Habil. Dr. Viktor Shevchuk (Ukraine); «On Contemporary State of

Islamic Phobia Based Hate Crimes in Czech Republic» — Assoc. Prof. Dr. Marek Fryšták and Mgr. David Čep (Czechia);

«Systematization of Criminalistic Knowledge: Modern Trends» — Dr. Viktoria Yaremchuk (Ukraine); «Use of Innovative Digital Technologies in Medicine: Criminalistical Aspects» — Prof. Habil. Dr. Irina Perepechina and Dmitry Perepechin (Russia); «Unification of Training of Forensic Experts As a Necessary Condition of International Integration of Judicial -Expert Activity» — Prof. Habil. Dr. Tatyana Moiseeva (Russia); «International Arrangement of Counter-Terrorism Strategies» — Dr. Jan Provaznik (Czechia); «Combating against Extremism: Criminalistic Aspects (Experience of Azerbaijan Republic)» — Assoc. Prof. Dr. Bakhtiyar Aliyev (Azerbaijan); «Illicit Turnover of Cigarette as One of the Forms of Organized Crime and International Criminalistical Cooperation in the Fight Against it» — Jurgita Baltrūnienė (Lithuania); «Performed Activities and Insights due to New Scholarly Researches Analysis of the Cases of Applicability of Criminal Liability For Hate Crimes and Hate Speeches» — Assoc. Prof. Dr. Žaneta Navickienė and Vilius Velička (Lithuania); «Possibility to Use Special Knowledge in Pretrial Stage of Administrative Litigation» — Prof. Dr. Eglė Bilevičiūtė and Karolis Kurapka (Lithuania); «Counteraction to Investigation and System of Actions on its Neutralization» — Prof. Habil. Dr. Stanislav Yalyshev (Russia).

3rd session of the congress was chaired by Prof. Habil. Dr. Tadeusz Tomaszewski (Poland) and Prof. Dr. Henryk Malewski (Lithuania). The following presentations were made during the session: «Forms of implementation of Criminal Policy on Counteraction to Crimes Against Justice» — Assoc. Prof. Habil. Dr. Mykhaylo Shepitko (Ukraine); «Obstruction of Crime Investigation: Procedural and Tactical Aspects» — Prof. Dr. Ryšardas Burda (Lithuania); «Criminalistical Problems of Block Chain Technologies and Criptocurrencies» — Prof. Dr. Habil. Igor Komarov (Russia); «Driving to Suicide: Methods and Technologies» — Dr. Lesia Keryk (Ukraine); «Problems of Usage of Special Knowledge at Court Proceedings» — Dr. Iryna Shepitko (Ukraine); «Strategy of Criminalistics within the Criminal Proceeding against an Accused Legal Entity» — Mgr. Jan Malý (Slovakia); «Police Reforms: Challenges, Mistakes, Expectations» — Dr. Gediminas Bučiūnas (Lithuania); «New Technology in Latent Finger Print Detection» — Owen Lang (UK).

4th session of the congress was chaired by Assoc. Prof. Dr. Marek Fryšták (Czechia) and Prof. Dr. Ryšardas Burda (Lithuania). The following presentations were made during the session: «Assessment of

Influence of the Narcotic and Psychotropic Substances on Perpetrators of Traffic Offences» — Prof. Dr. Věra Kalvodová, Mgr. Katarina Kalvodová and Mgr. Marcela Lukášová (Czechia); «Peculiarities of the Tactics of Questioning in the Criminal Procedure in Latvia» — Dr. Vladimirs Terehovičs and Assoc. Prof. Dr. Elita Nimande (Latvia); «Tactical Decision in the System of Concepts of Criminalistics» — Assoc. Prof. Dr. Oleg Bululukov (Ukraine); «Operational Search Actions in the Republic of Poland» — Prof. Habil. Dr. Mieczysław Goc Mand Jacek Kudła (Poland); «Some Problems of Legal Regulation of Performance of Search in the Republic of Belarussia» — Assoc. Prof. Dr. Siafhei Rybak and Assoc. Prof. Dr. Dmitry Romaniuk (Belarussia); «Recognition of Persons by Functional and Dynamical Features» — Assoc. Prof. Dr. Martin Samek (Slovakia); «The Activity of the Riot Police at the Place of the Criminalistics Relevant Event» — Assoc. Prof Dr. Martin Laca (Slovakia); «Facebook: Online Portrait of the Criminal» — Assoc. Prof. Habil. Dr. Olesya Vashchuk (Ukraine); «Role of Psychologist in Lithuanian Criminal Law» — Rasa Ižganaitė (Lithuania); «Intensive Supervision: Problem of Dissonance between Coercive Measure Efficiency and Intervention in Private Life» — Prof Dr. Raimundas Jurka and Ieva Žentelytė (Lithuania); «Intervention Program for Changing of Violent Behavior, its Application in Lithuania» — Assoc. Prof. Dr. Rokas Uscila (Lithuania);«Interrogation of Persons with Mental and/or Behavioral Disorders» — Prof. Dr. Jolanta Zajančkauskienė, Prof. Dr. Snieguolė Matulienė and Ąžuolas Volkas (Lithuania).

5th session of the Congress was chaired by Prof. Habil. Dr. Elena Rossinskaya (Russia) and Dr. Giedrius Mozūraitis (Lithuania). The following presentations were made during the session: «Firepower of Semi-shell Projectiles Fired from Hunting Weapons» Prof. Habil. Dr. Violetta Kwiatkowska-Wójcikiewicz and Assov. Prof. Dr. Leszek Stępka (Poland); «Graphology or Document Examination? Future Perspectives and Scuola Forense di Grafologia — SFG» (Greece/Italy); «Forensic Expertise in the Area of Water Transport in Ukraine» — Assoc. Prof Dr. Artem Ripenko (Ukraine); «History of Forensic Polygraph Examinations in Russia» — Assoc. Prof. Dr. Yaroslava Komissarova and Khamzin Said (Russia/USA); «Forensic Genetics Analysis: The Problem of Artificial DNA and Chimerism» — Assoc. Prof. Dr. Vitalii Kirvel (Belarus).

International congress during second day of the event were included discussions after sessions, breaks to coffee and lunch. Second day of the Congress was closed by gala dinner, where participants had possibility to have talks in an informal meeting.

The third day (21 September) included two sessions. This part of the conference was chaired by Prof. Dr. Vera Kalvodovǎ (Czechia), Assoc. Prof. Dr. Andrej Gorbatkov (Lithuania) — during 6th session and Prof. Dr. Jozef Metenko (Slovakia), Assoc. Prof. Dr. Gabriele Juodkaitė-Granskienė (Lithuania) — during 7th session. The following presentations were made during the plenary session: «Scientific Equipment of Forensic Activities in Belarussia» — Assoc. Prof. Dr. Nadzeya Shakel and Igor Moroz (Belarussia); «Comprehensive Expertise — a Recipe for Black Days of Forensics» — Prof. Habil. Dr. Anna Koziczak (Poland); «Banknotes Examinations» — Matej Barta (Slovakia); «Modern Security Techniques for Identity Document in Poland» — Habil. Dr. Renata Wlodarczyk (Poland); «Using of the Results of Linguistic Examination in Criminal Procedure» — Assoc. Prof. Dr. Svetlana Kushnirenko and Assoc. Prof. Dr. Anton Kharatishvili (Russia); «Forensic Linguistics in the Investigation of Crimes» — Dr. Liudmyla Svyrydova (Ukraine); «Investigation of Copies of Signatures: Possibilities and Threats» — Rasa Tamošiūnaitė (Lithuania); etc.



The most active participants took part in the final discussions of the conference

The conference was closed by summarizing of this event. During the conference closing, participations are decided to hold next International congress “Criminalistics and Forensic Expertology: Science, Studies, Practice” in Bratislava, Slovakia (September, 2020).

Information prepared by M. V. Shepitko,
Doctor of Laws, Senior Researcher, Leading Researcher at the Research Institute for Crime Problems named after Academician V. V Stashis of the National Academy of Legal Sciences of Ukraine

WORKSHOP ON INCREASING THE QUALIFICATION OF EVALUATES AND VESSELS EXPERIENCES ON THE NEWS AND PROBLEMS OF DETERMINATION OF COLORSHIPS WAS CONDUCTEDON THE BASIS OF HON. PROF. M. S. BOKARIUS KHARKIV RESEARCH INSTITUTE OF FORENSIC EXAMINATIONS

On September 20, 2019 at Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations on the initiative of the All-Ukrainian Public Association: Union of Experts of Ukraine held a workshop on training of appraisers and forensic experts on the topic: Novels and problems of determining the value of wheeled vehicles.

Workshop began with greetings from Igor Starodubov, President of the All-Ukrainian Public Association Union of Experts of Ukraine, PhD in Law and Ella Simakova-Efremyan, Deputy Director for Academic Affairs of KhRIFE, Doctor of Laws, Senior Researcher.



Workshop participants

In particular, Igor Starodubov drew the attention of the participants of the seminar to the proposal to amend the "Methodology of commodity examination and evaluation of wheeled vehicles", approved by the order of the Ministry of Justice of Ukraine and the State Property Fund of Ukraine dated November 24, 2003 № 142/5/2092 and SPF of Ukraine dated July 24, 2009, №. 1335/5/1159, which provoked active discussion among court experts on the feasibility of such innovations.

The participants of the seminar were acquainted with the final reports on research work on the topics: Development of guidelines for determining the cost of accidentally damaged wheeled vehicles in case of inexpediency of their restoration and Development of guidelines for automotive examinations of wheeled vehicles equipped with electric and hybrid engines. Information on scientific developments planned for inclusion in the thematic R&D plan of FSI (forensic science institutions) of the Ministry of Justice of Ukraine for 2020, as well as the results of reviewing expert opinions were not left out.

Particular attention was paid to the problematic issues of the evaluation and expert activities that provoked lively discussion.

The work of the seminar was completed with the presentation of court experts and evaluators of the certificate of the participant of the seminar.

Information prepared by O. O. Mykhalskyi,
Head of Laboratory of Forensic Trade Analysis
and Intellectual Property Forensic Analysis, PhD in Law

REPRESENTATIVES OF HON. PROF. M. S. BOKARIUS KHARKIV RESEARCH INSTITUTE OF FORENSIC EXAMINATIONS PARTICIPATED IN THE INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE: CURRENT PROBLEMS OF FORENSIC SCIENCE, CURRENT PROBLEMS, TRENDS AND PROSPECTS

On September 25—27, 2019, a delegation of Kharkiv Research Institute of Forensic Expertise participated in the international scientific and practical conference on the topic: Current Problems of Forensic Science, Current Problems, Trends and Prospects dedicated to the 15th anniversary of the National Bureau of Expertises of the National Academy of Sciences of the Republic of Armenia.

The conference included plenary and sectional meetings, thematic workshops and round tables, which cover legal, organizational, as well as professional aspects of various areas of forensic activity. Theoretical and methodological problems of certain types of forensic examination are considered.

Oleksandr Oleksandr Mykolaiovych Kliuiev, Director of KhRIFE, Doctor of Law, Professor, Honored Lawyer of Ukraine headed the KhRIFE delegation. The conference was attended by Ella Borysivna Simakova-

Yefremian, Deputy Director for Academic Affairs; Doctor of Law, Senior Researcher; Oleksandr Oleksandrovych Sviderskyi, Deputy Director for Forensic Examinations, PhD in Law; Serafyma Hennadiivna Hasparian, Executive Assistant. Reports were prepared by all participants.

During his speech, Oleksandr Kliuiev noted that the interaction and cooperation between KhRIFE and the National Bureau of Expertises of the National Academy of Sciences of the Republic of Armenia has a long and fruitful history.



KhRIFE delegation at an international scientific and practical conference

Back in 1929, a group of forensic doctors from Yerevan, headed by the head of the Department of Forensic Medicine of the Yerevan Medical Institute, Associate Professor E. T Shek-Osepyan arrived to get acquainted with the work of the Kharkiv Institute of Forensic Science. The delegation was delighted with what they saw, as the institute was equipped at the level of the world best forensic institutions, and the teaching methods developed by Mykola Bokarius were impressive in their depth, richness of the best practical examples and avant-garde scientific developments. Today, such cooperation is carried out and mutual contacts are strengthening. Thus, in 90 years we see the revival of the traditions of the ancient partnership. In 2019, our Armenian colleagues, led by the Director of the National Bureau of Expertises of the National Academy of Sciences of the Republic of Armenia A. N. Ovsepyan came to celebrate the 150th anniversary of the birth of M. S. Bokarius, KhRIFE founder and took part in international scientific and practical conference on the occasion of the anniversary.

The international scientific and practical conference is a great opportunity for discussion among colleagues, specialists and like-minded people. This gives an opportunity to hear each other and jointly study the vectors of development of forensic institutions, to develop common strategic directions for further development, to exchange best practices in the application of new technologies and innovative equipment in the implementation of forensic examinations. This event was a good achievement in expanding the scope of cooperation of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations with the National Bureau of Expertises of the National Academy of Sciences of the Republic of Armenia.

In her speech, Ella Borysivna Simakova-Yefremian stressed that current visit of the Ukrainian delegation to the National Bureau of Expertises of the National Academy of Sciences of the Republic of Armenia testifies to the fruitful prospects for the development of mutual relations. She stressed that the international scientific-practical conference will provide participants with inspiration, and the forensic industry of different countries, a new impetus to move forward.

Within plenary and sectional sessions, the participants discussed topical issues of forensic development, international cooperation in the framework of European projects, features of various types of forensic examinations, etc. During the event, acute, debatable issues of appointment and conduct of forensic examinations in various types of proceedings were considered. Thus, Oleksandr Oleksandrovych Sviderskyi took part in a section meeting on topical issues of forensic examination of the circumstances of road accidents and presented a report: Investigation of the circumstances of road accidents that occurred in conditions of limited visibility, using software and Serafyma Hennadiivna Hasparian Executive Assistant of Director of the Institute devoted her report to the administrative procedures of staffing forensic institutions of Ukraine.

In addition, while conference, the first issue of the Armenian Journal of Forensic Science and Criminalistics was presented, where the Forensic Expert in Administrative Proceedings at Ukraine scientific article by Oleksandr Mykolaiovych Kliuiev, Director of KhRIFE is published.

Based on content sent to the organizing committee, a summary of the papers was published and the conference resolution was adopted.

Information prepared by E. B. Simakova-Yefremian,
Deputy Director for Academic Affairs, Senior Researcher

PARTICIPATION IN SCIENTIFIC AND PRACTICAL WORKSHOP: MODERN METHODS OF TRAFFIC COLLISION RECONSTRUCTION, FORENSIC VEHICLE EXAMINATIONS AND RESEARCHES

On September 28-29, 2019 on the basis of the Lviv Research Institute of Forensic Examinations, the scientific and practical workshop: Modern Methods of Traffic Collision Reconstruction, Forensic Vehicle Examinations and Researches was held. Ihor Yastreb, Director Lviv Research Institute of Forensic Examinations made an introductory speech at the workshop. Andrii Vasylovych Lubentsov, Head of the Laboratory of Traffic Collision Reconstruction presented Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations at the workshop. The event was also attended by representatives of other forensic institutions of Ukraine and foreign countries, law enforcement agencies.



Workshop participants

The workshop was held in the format of active discussion of such topical issues as the technique of assessing the strength and durability of structural elements, the algorithm of work at the stage of pre-trial investigations of road accidents, analysis of the state of safety at railway crossings, the system of ensuring traffic safety on railway transport, estimation of the market value of transport , means of expert investigation

of the causes and time of destruction of parts, analysis of the causes of destruction of vehicle parts.

Particular attention was paid to the practical aspects of the use of special software "PC-CRASH" during the technical, transport and trace evidence, automotive examinations and research. This computer program is used to analyze and simulate traffic accidents. An important advantage of the program is the ability to calculate the parameters of the movement of vehicles and other objects in the dynamics — taking into account their actual parameters, as well as the environment and control effects. In addition, the program found application and kinematic calculation modules. The simulation results obtained from the results of work with the program "PC-CRASH" can be presented as text files containing the source and calculation data, as well as displayed in the form of diagrams and tables. 2D and 3D animations are used to visualize the performed simulation. In addition, the performed simulation can be added to the expert opinion in the form of a project file.

The participants of the seminar shared their experiences and opinions with invited European colleagues working in the field of forensic science and criminalistics.

Information prepared by A. V. Lubentsov,
Head of Laboratory of Traffic Collision Reconstruction, PhD in Law

PARTICIPATION IN THE INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE: ECONOMY AND FINANCE IN THE CONDITIONS OF GLOBAL CHANGE: NATIONAL AND INTERNATIONAL DISCOURSE

On October 28, 2019, a delegation from the Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations represented by Oleksandr Mykolaiovych Kliuiev, Director of the Institute, Doctor of Law, Professor, Honored Lawyer of Ukraine; Oleksandr Oleksandrovych Sviderskyi, Deputy Director for Forensic Examinations, PhD in Law and Serafyma Hennadiivna Hasparian Executive Assistant of the Institute, PhD in Law took part in the International scientific and practical conference: Economy And Finance In The Conditions of Global Change: National And International Discourse.

The conference was held with the support and participation of representatives of the Kherson Regional Council of the Department of

Education and Science of the Kherson Regional State Administration; delegations from Germany (European Association for Science and Education, Union of Entrepreneurs); Israel; USA; The Republic of Moldova (National Institute of Economic Research of the Academy of Sciences of Moldova) and the Republic of Belarus (University of Applied Sciences); teaching staff of the International University of Business and Law; Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations; representatives of higher education institutions; financiers, bankers, business representatives and others.

The welcoming speech was opened by the Candidate of Law, Professor, Rector of the International University of Business and Law Sergiy Nenko, who in his speech emphasized the importance of analyzing the tendencies and main directions of economic policy formation in Ukraine and in the world.



KhRIFE delegation at an international scientific and practical conference

Interesting reports on the topics of the event were made by: Oleksandr Mykolaiovych Kliuiev, Director of KhRIFE, Doctor of Law, Professor, Honored Lawyer of Ukraine; Rainer Schamberger, Chairman of the Union of Entrepreneurs of Munich, Honorary Doctor of the International University of Business and Law, Doctor of Philosophy; Helmut F. Schreiner, Honorary Chairman of the Schreiner Group (Schreiner Group, Germany), philanthropist, philosopher,

professor at the International University of Business and Law; Igor Alexandrovich Solovyov, Doctor of Economics, Professor; Serhii Serhiyovych Nenko, Rector of the International University of Business and Law, PhD in Law, Docent; Elena Vasilyevna Lepyokhina, Doctor of Economics, Professor and many others.

During the conference, the scientific community of scientists and guests aroused great interest in the application of innovative entrepreneurship, the formation of new banking strategies, digitalization in the development of European law and the formation of green energy. Discussion of these issues was the first step in developing the latest types of environmental research, methods and guidelines for economic orientation.

During the conference in the framework of expanding international relations and enhancing international cooperation, a meeting of the Presidium of the International Academy of Law and Justice — IALA was held according to its results (with the award of relevant diplomas) elected to the ranks of the Academy: Full Member (Academician) — Oleh Uhrovetskyi First Deputy Director, Doctor of Laws, Docent, Honored Lawyer of Ukraine ; Corresponding Member — Oleksandr Oleksandrovych Sviderskyi, Deputy Director for Forensic Examinations, PhD in Law.

Information prepared by S. He. Hasparian, PhD in Law

PARTICIPATION OF THE REPRESENTATIVES OF THE HON. PROF. M. S. BOKARIUS KHARKIV RESEARCH INSTITUTE OF FORENSIC EXAMINATIONS IN THE EU — ACTION INTERNATIONAL PROJECT

From November 12 to 14, 2019, the 4th meeting of the Ukrainian Working Group on Psychoactive Substances Research (hereinafter referred to as WG PSR) took place in Lviv within the framework of the international project "ACTION - EU". The project is implemented on the basis of the Framework Agreement between the Government of Ukraine and the Commission of the European Communities (Law of Ukraine of 03.09.2008 № 360-VI) and the Memorandum of Understanding.

The event was attended by Maryna Zarubina, Head of Department of Forensic Chemistry and Physics of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations.

The meeting was opened by the Regional Action Coordinator of the EU-EU Action, Jose Manuel Collodras. Speeches were also made by the head of the URG DPAR, Natalia Tkachenko, Head of the Department of Expert Support of Justice of the Ministry of Justice of Ukraine and Yaroslav Paliydeputy, Director of the Lviv Research Forensic Center.

The latest version of the draft legal act prepared by the representatives of the Donetsk Research Forensic Center of the Ministry of Internal Affairs on the circulation of standard samples was discussed. The presentation of the scientific analyst on protection and safety, Thomas Nefau PhD in Physics on the EU4MD Project and the European Early Drug Detection System. After the meeting, the delegation visited the Lviv Research Forensic Center of the Ministry of Internal Affairs of Ukraine.



Participants of WG PSR meeting

Participation in such activities and further cooperation contributes to the development of an effective strategy to counteract the illicit trafficking in narcotic drugs of natural and synthetic origin.

Information prepared by Maryna Zarubina,
Head of Department
of Forensic Chemistry and Physics

SCIENTIFIC AND PRACTICAL WORKSHOP ON PROBLEMATIC ISSUES OF TRAFFIC COLLISION RECONSTRUCTION

On November 18, 2019 at the Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations hosted a scientific and practical workshop on the issues of Traffic Collision Reconstruction.

Andrii Vasylovych Lubentsov, Head of the Laboratory of Traffic Collision Reconstruction of KhRIFE was the moderator of the event. The meeting was attended by employees of the laboratory of engineering and transport research, representatives of Poltava, Sumy Branch of KhRIFE and other experts in the field of Traffic Collision Reconstruction.

In the course of the meeting, topical issues were discussed regarding the peculiarities of the internal combustion engine expertise, studies of collisions of vehicles with special signals; the use of the braking parameters of modern vehicles in expert practice; introduction of modern information technologies; issues related to the review of accidents and their impact on the expert's findings, etc.

Attention was paid to the discussion of the List of conformity of the fields of knowledge and specialties of higher education, for which the qualification of a forensic expert in the specialty 10.2 “Research of the technical condition of vehicles” is given.



Participants of the scientific and practical workshop

As a result of active discussion, optimal decisions were made on important issues of forensic automotive expertise development.

Information prepared by Andrii Vasylovych Lubentsov,
Head of Laboratory of Traffic Collision Reconstruction, PhD in Law

INTERNATIONAL ROUND TABLE: INNOVATIVE METHODS AND DIGITAL TECHNOLOGIES IN CRIMINALISTICS, FORENSIC SCIENCE AND LEGAL PRACTICE

On December 12, 2019 on the basis of the National Academy of Legal Sciences of Ukraine a meeting of the international round table "Innovative Methods and Digital Technologies in Criminalistics, Forensic Science and Legal Practice " was held. Materials of reports were prepared by scientists of Ukraine and foreign countries.

The event was directly attended by the Dean of the Academy of Public Safety of the University of Mikolas Romeris (Lithuania) Sniegole Matuliene; representatives of the Department of Criminalistics of Yaroslav Mudryi National Law University; Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations; Department of Forensic Medicine, Medical Law named after M. S Bokarius, Honored Professor of Kharkiv National Medical University; employees of the Research Institute for the Study of Crime named after Academician V. V. Stashis and other scientists.

The event was opened by Valerii Yuriiovych Shepitko, moderator of the International Round Table, Doctor of Law, Professor, Academician of National Academy of Legal Sciences of Ukraine, Head of the Department of Criminalistics of Yaroslav Mudryi National Law University; he outlined the main issues of the round table and stressed the importance of introducing innovative methods in criminalistics and forensic science.

Volodymyr Andriiovych Zhuravel, Doctor of Law, Professor, Academician of the National Academy of Legal Sciences of Ukraine, Chief Academic Secretary of the National Academy of Legal Sciences of Ukraine made a report on formalization as an innovative means of optimizing the pre-trial investigation. The report of Viktor Mykhailovych Shevchuk, Doctor of Law, Professor, Professor at the Department of Criminalistics of Yaroslav Mudryi National Law University was devoted to innovative areas of criminalistics.

Ella Simakova-Yefremian, Deputy Director for Academic Affairs, Doctor of Law Senior Researcher represented Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations; she made a report on the topic: Implementation of the latest methods of expert research and approaches to forensic science is a necessary factor in expert support justice.



Meeting of participants of the International Round Table

While scientific event, problematic issues related to the justification of the need to develop innovative activities in criminalistics, forensic science and legal practice were actively discussed. All participants of the round table made in-depth reports on the topic of the event.

During the meeting, scientific discussions took place, appropriate decisions were made. Based on the results of the International Round table, the Innovative methods and digital technologies in criminalistics, forensic science and legal practice sourcebook was published.

Information prepared by E. B. Simakova-Yefremian,
Doctor of Law, Senior Researcher

III INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE: PROBLEMS OF THE THEORY AND PRACTICE OF FORENSIC SCIENCE ON INTELLECTUAL PROPERTY

On December 12, 2019, Kyiv hosted the III International Scientific and Practical Conference: Problems of Theory and Practice of Forensic science on Intellectual Property (Krainev Readings) on the occasion of the 15th anniversary of the Research Center for Forensic Intellectual Property of the Ministry Justice of Ukraine.

The scientific and practical conference was held in order to study and develop the scientific heritage of the well-known scientist and forensic expert, the first director of the Center Peter Krainev (1952-2014), and to formulate modern theoretical and methodological foundations of forensic examination of intellectual property objects.

Vladyslav Leonidovych Fedorenko, Director of the Scientific Research for Forensic on Intellectual Property, in his speech, along with other issues of formation and development of the center, mentioned the long-term and productive cooperation between the Scientific Research for Forensic on Intellectual Property and Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations.

Representatives of KhRIFE, KFI, Dnipropetrovsk Scientific Research Institute of Forensic Expertise, Odessa Scientific Research Institute of Judicial Expertise, National Bureau of Expertises (NBE — SNPO) of the National Academy of Sciences of the Republic of Armenia took part in the III Krainev Readings. Natalia Mykolayivna Tkachenko, Head of the Department of Expert Support of Justice of the Department for Judicial Affairs and Bankruptcy of the Ministry of Justice of Ukraine, PhD in Law was present.

Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations was presented by Inna Volodymyrivna Sabadash, Leading researcher, PhD in Law.

Topical questions were presented to the participants of the III Krainev Readings:

- The theory, history and methodology of forensic science on intellectual property;
- Scientific heritage of forensic expert and scientist P. P. Krainev (1952—2014);

- problems of reforming forensic science in the field of intellectual property;
- forensic science in the field of technical creativity (inventions, utility models, industrial designs);
- forensic examination of commercial (brand) names and trademarks;
- forensic economic researches and examinations in the field of intellectual property;
- forensic computer data analysis, databases and telecommunications systems;
- ways of development and improvement of science and education in the field of intellectual property protection, etc.



I. V. Sabadash at Krainev Readings

Reports were made by: forensic experts of the forensic merchandising department of the National Bureau of Forensic Examinations of the National Academy of Sciences of the Republic of Armenia Anna Asutovna Harutunyan and Shushanik Ashotivna Movsiyan; partners of the Patent and Legal Agency Dubinsky and Osharova, lawyer, patent attorney Victoria Sopilnyak and Anton Koval; Scientific Secretary of the Research Center for Forensic Intellectual Property of the Ministry of Justice, Candidate of Economic Sciences, Forensic Expert Lilia Pavlovna Tymoschyk; Director of Unicheck Ukraine Andriy Sidlyarenko.

The conference addressed important issues related to the formation of modern theoretical and methodological foundations of forensic examination of intellectual property rights. The conference is intended for forensic experts, judges, lawyers, appraisers, experienced and novice researchers, members of the public, as well as anyone who shares the values of intellectual property rights.

Participation in such activities and further cooperation contributes to the progressive development of forensic science.

Information prepared by I. V. Sabadash,
Leading Researcher of KhRIFE



Oleksandr Mykolaiovych Kliuiev

In 1991, Oleksandr Mykolaiovych graduated from Kharkov Engineering-Economic Institute (nowadays: Simon Kuznets Kharkiv National University of Economics), in 1997 he graduated from military postgraduate school of Kharkiv Institute of Internal Affairs (nowadays: Kharkiv National University of Internal Affairs), in 2018 Oleksandr Mykolaiovych graduated from Classic Private University.

From 1986 to 2006 he served in the internal affairs bodies of Ukraine and in the tax police bodies of the State Tax Administration in Kharkiv region. In 2006—2008 Oleksandr Mykolaiovych worked as Deputy Chairman of the Kharkiv Regional Council, in 2010 Oleksandr Mykolaiovych worked as Head of the Laboratory for Scientific Organization of the Educational Process of the Educational and Scientific Institute of Law, Economics and Sociology of the Kharkiv National University of Internal Affairs.

From 2011 to 2016 Oleksandr Mykolaiovych was Vice-Rector for Academic Affairs acting Professor at the Department of Department of Administrative, Criminal Law and Procedure of the International University of Business and Law (IUBL) private Higher Education Institution: (Kherson).

High professionalism and focus on the result helped O. M. Kliuiev to gain the support of citizens and to become a deputy of the regional council of Derhachi Raion, and later to become the Deputy chairman of Kharkiv Oblast Council.

During his career, Oleksandr Mykolaiovych also worked as a Vice-Rector for Academic Affairs acting Professor at the Department of Department of Administrative, Criminal Law and Procedure of the International University of Business and Law (IUBL), where his curiosity and comprehensiveness of knowledge found a way out and paved the way for new scientific discoveries.

Since 2016, Oleksandr Mykolaiovych has been appointed director of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations. During the work of O. M. Kliuiev the institute has undergone significant improvements: the number of areas of expert research, scientific work of the institution has increased, international relations have intensified, the building of the institute has been completely restored, and a number of examinations have been conducted over the past five years. The Institute has become a member of the leading organization in the field of forensic science — the European Network of Forensic Science Institutes (ENFSI). KhRIFE laboratories have received an Accreditation Certificate for compliance with the requirements of the international standard ISO/IEC 17025 in twelve areas of forensic researches. The work on accreditation of KhRIFE laboratories in accordance with the international standard ISO/IEC 17020 has continued. This certification allows law enforcement agencies, courts and prosecutors and others to be confident that the institute can provide technically competent and effective expertise with consistently reliable results.

Thanks to leadership of O. M. Kliuiev, the department of postgraduate and doctoral studies was opened at the institute, licenses for educational activities in the field of higher education at the third educational and scientific level were obtained. Specialized Scientific Council having the right to accept for consideration and defense of dissertations for PhD degree in Law in specialization areas: 12.00.07 Administrative law and procedure; Finance law; Information technology law and 12.00.09, Criminal procedure and Criminalistics; Forensic science; Crime detection and investigation successfully works.

Oleksandr Mykolayovych heads the Editorial Board of the collection of scientific papers: Theory and Practice of Forensic Science and Criminalistics that since 2019 is published twice a year. From 2020, the institute will also publish the publication: Archive of Criminology and Forensic Sciences twice a year.

O. M. Kliuiev is actively engaged in scientific activity: a considerable number of research papers, articles in scientific professional and foreign editions, monographs and textbooks have been published.

In 2019 he became the author and co-author of more than two dozen scientific papers, including the textbook: Forensic examinations in civil and commercial proceedings; scientific publication: Dedicated to the 150th anniversary of the birth of Mykola Mykolayovych Bokarius, the Honored Professor; a practical guide to the appointment and conduct of forensic examinations and expert research; Methods of research of actions of personnel of management bodies and fire and rescue divisions during carrying out fire and technical examination; participation in the development

of the textbook: Forensic examinations in civil and commercial proceedings; scientific articles: *Practice of forensic examinations in cases of environmental legislation in the world of approximation of Ukrainian legislation to European Union law, Problems of professional development of forensic experts of the Ministry of Justice of Ukraine, Improvement of forensic expert support of justice: theoretical, legal and organizational aspects, A number of patents* and four scientific publications that are referenced in international scientometric databases, etc.

A creative approach to solving any problems, firmness of character, optimism and at the same time discipline and persistence helped O. M. Kliuiev reach considerable heights and gain true authority among the staff of forensic science institutions of Ukraine and abroad, law enforcement officials.

The Editorial Board of the collection of scientific papers: Theory and Practice of Forensic Science and Criminalistics congratulates Oleksandr Mykolaiovych Kliuiev on his anniversary and wishes for health, prosperity, fruitful scientific activity and further creative success.



Oleh Petrovych Uhrovetskyi

In 2019, Oleh Petrovych Uhrovetskyi, First Deputy Director of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations, Doctor of Law, Docent, Honored Lawyer of Ukraine celebrated his 55th anniversary of the birth. Oleh Petrovych Uhrovetskyi was born in the village of Huty of Bohodukhiv Raion of Kharkiv Oblast.

From 1982 to 1986 he studied at the Kharkiv Higher Military School of the rear of the Ministry of Internal Affairs, Oleh Petrovych graduated from this institution with honors and obtained the qualification of engineer-economist. He continued his studies at Yaroslav Mudryi National Law University majoring in Law, defended his PhD and then doctoral dissertation.

O. P. Uhrovetskyi devoted almost a quarter of a century to serving the Motherland in the Armed Forces and the internal troops of the Ministry of Internal Affairs of Ukraine. During his long career, Oleh Petrovych has repeatedly shown himself as an experienced leader, highly qualified specialist and a brave man.

After the explosion of the fourth power unit of the Chernobyl NPP, he was involved in the liquidation of the accident and its consequences. He later took an active part in public order measures in the Nagorno-Karabakh conflict zone, where he and other servicemen helped resolve the difficult situation between the conflicting parties.

For some time, he held senior positions in the State Tax Administration of Ukraine of Kharkiv region. He dealt with administration issues in Kharkiv. During his service in the STA and the Ministry of Internal Affairs of Ukraine he was awarded many badges of honor. Oleh Petrovych has the rank of Major general of the Ministry of Internal Affairs.

Oleh Petrovych worked at the Kherson Private Higher Educational Institution of the International University of Business and Law as the Head of the Department of Administrative, Criminal Law and Procedure, held the position of Professor at the Kharkiv National University of Internal Affairs where he established himself as a leading highly qualified specialist. His erudition, intelligence, initiative, desire to always reach the truth contributed to the significant results he achieved.

Since 2017, Oleh Petrovych has been working at Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations. He participates in scientific conferences, workshops, round tables, etc., increases the prestige of the institute in Ukraine and internationally. Oleh Petrovych made a significant contribution to the development of science, KhRIFE forensic activity. He is a full member of the editorial board of the collection of scientific papers: Theory and Practice of Forensic Science and Criminalistics.

Only in 2019, the jubilee year for himself, Oleh Petrovych joined the preparation of such research papers as the scientific publication: Dedicated to the 150th anniversary of the birth of Mykola Mykolayovych Bokarius, the Honored Professor; textbook for law enforcement officers: Features of preparation of materials for the appointment of forensic examinations; received the copyright to the computer program: Software for the automated workplace for determination of the general mineralization of water solutions. He is the author of scientific articles: On the issue of court costs related to the involvement of a forensic expert in administrative proceedings, Directions of formation of the modern theoretical basis of forensic activity in Ukraine, etc. Oleh Petrovych has scientific publications reviewed in international scientometric databases Scopus, Web of Science.

The editorial board of the collection of scientific papers: Theory and Practice of Forensic Science and Criminalistics congratulates Oleh Petrovych Uhrovetskyi on his anniversary and wishes him good health, prosperity, creative inspiration and fruitful scientific work.



Viktoriia Ivanivna Dubynka

Viktoriia Ivanivna is a Senior Forensic Expert of Department of Trace Evidence Analysis of Criminalistics Laboratory of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations. Victoria Ivanovna Dubynka was born on April 1, 1964 in Kharkiv.

In 1987 she graduated from Kharkiv Polytechnic Institute majoring in Chemical Technology of Glass and Silicates and obtained the qualification of Industrial Chemical Engineer.

Victoria Ivanivna began her career in 1987 as an engineer at the Kommunar Corporation. Since 1993 she has taken decisive steps in scientific and expert activities; firstly, as a Junior Researcher at Forensic Chemistry, Physics and Biology laboratory of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations. Since 1998, she is Researcher of Trace Evidence Analysis laboratory, since 2001 she is Senior Researcher of Trace Evidence Analysis and Audio Forensics Laboratory, since 2006 she is Senior Researcher of t Trace Evidence Analysis, ballistics, explosive research and t questioned document examination (QDE), since 2011 she is Senior Forensic Expert of the Criminalistics Laboratory at KhRIFE.

For her long journey in expertise, thanks to her many years of experience, she has accomplished countless expertise and expert studies using best practices.

Viktoriia Ivanivna is actively engaged in scientific work. In her scientific work she has published scientific articles in various professional journals. During her work at KhRIFE Victoria Ivanivna was a performer of many research topics, in particular: *Forensic examination of exterior mirrors of vehicles to solve diagnostic problems, Methods of establishing the sequence of strokes formed by electrophotographic method and pastes for ballpoint pens in the absence of areas of mutual intersection, Development of methods of diagnostic and identification studies of animal tracks,* etc.

The persistence, conscientiousness and professionalism of such specialists as V. I. Dubynka in combination with invaluable theoretical and practical experience is an important factor in the effective work of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations.

The Editorial Board of the Collection of scientific papers: Theory and Practice of Forensic Science and Criminalistics sincerely congratulates the distinguished Victoria Ivanovna Dubynka on her anniversary and wishes her happiness, good health and well-being.



Tetiana Mykhailivna Yehorova

Tetiana Mykhailivna is Head of the Department of Criminalistics, Forensic psychology, Road Accident Analysis of the Poltava branch of Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations. She is Forensic Expert of the first qualification class, was born on October 14, 1954 in Dnepropetrovsk.

In 1979, she graduated from the Faculty of Psychology of the Moscow State Pedagogical Institute. She worked as a psychologist at the Okhtyrka Vocational School for Delinquent Adolescents, a medical psychologist at the Poltava Regional Psychiatric Hospital named after A. F. Maltsev; Senior lecturer at the Department of Psychology of Poltava National State Pedagogical University named after V. G. Korolenko.

Tetiana Mykhailivna is one of the first employees who created a team of forensic experts of the Poltava Branch since its inception. Since November 2000 she worked under a civil law contract. Since August 2001 she worked as a Researcher. Since May 2003 she worked as a Senior Researcher. Since February 2018 she worked head of the Poltava Branch of KhRIFE.

From the first days of work she organized the direction of forensic psychological researches, since 2000 she is a member of the section of forensic psychological examination, since 2015 — the chairman of the section of forensic psychological examination of the scientific advisory council and methodological on problems of forensic examination at the Ministry of Justice of Ukraine.

Based on many years of teaching and methodical experience, actively covered in her lectures, seminars, in the media, etc. the tasks of forensic psychological examination; has developed a methodological structure of forensic psychological research conclusions on the activity of financial pyramids; serial killings; terrorist acts; crimes committed by organized criminal groups; crimes related to trafficking in human beings; crimes against the life, health and moral development of children; inflicting moral harm on the victims (claimants); the emotional state of the person during the transaction (agreement), etc. During her work, she has completed more than 800 expertise and expert studies, which she conducted at a high professional level.

Takes an active part in the scientific and methodological work of the Kharkov Research Institute of Forensics, in international scientific conferences (has more than 40 scientific publications), is the head of 8 research works and a co-executor of 5 R&D; has developed a new type of psychological research on video materials and is the author of four techniques listed in the Register of Methods for Forensic Expertise.

As a scientist, forensic expert, responsible and responsive mentor, he enjoys authority and respect, constantly provides methodological assistance to young workers, conducts internships for expert psychologists working in the expert institutions of the Ministry of Science of Ukraine.

In her scientific work she has a large number of scientific papers, articles in scientific and foreign editions, monographs among which are: *Comprehensive forensic psycho-psychiatric examination of suicides: methodical recommendations (2012), Insanity: legal criteria and psychiatric grounds (2003), Discussion questions about the subject and subject of forensic psychological examination (2019)* and many others.

For her diligent attitude and diligent performance of duties, a significant personal contribution to the development of the forensic expertise, Tetiana Mykhailivna Yehorova was repeatedly awarded with certificates of honor, and she was thanked.

The editorial board of the collection of scientific articles: *Theory and Practice of Forensic Science and Criminalistics* sincerely congratulates the Honorable Tetiana Mykhailivna Yehorova on the anniversary and wishes her determination, new ideas and inexhaustible inspiration.



Alla Fedorivna Klimchuk

Alla Fedorivna was born on March 12, 1949 in Kharkiv. In 1976, she graduated from Kharkiv Polytechnic Institute with a degree in Chemical Technology of Organic Substances. She devoted a lot of time to engineering. Since 1978 she has held the position of engineer-technologist at the world-famous Pamir household refrigerators plant in Dushanbe, which was built by specialists from the German Democratic Republic, Hungary and Czechoslovakia, and whose employees were considered highly qualified specialists in their field. Since 1989, Engineer of the Department of Organic Substances Technology of the Ukrainian Correspondence Polytechnic Institute.

Alla Fedorivna devoted a significant part of her life to work at Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations, where she came to work in April 1990 as a Junior Researcher at Forensic Chemistry and Physics Laboratory.

In 1991, she was awarded the qualification of a forensic expert majoring in Research of petroleum products and fuels and lubricants, in 1995 – Research of alcohol-containing mixtures, in 2009 — Research of chemical substances and special chemicals. She performed more than 2,000 examinations, the quality of which meets the high level of modern requirements.

Since 2005 she is a mentor of young forensic experts. She has helped many scientists to open new horizons of research in the fields of physical, chemical and biological knowledge. Many of them have already obtained scientific degrees and today work for the benefit of the Motherland. In addition, Alla Fedorivna has extensive experience in reviewing the findings of both experts KhRIFE and other forensic institutions of the Ministry of Justice of Ukraine. In 2007, Alla Fedorivna was awarded the 1st qualification class of a forensic expert.

A. F. Klimchuk has mastered many methods of forensic research: thin-layer, gas-liquid chromatography, spectrophotometric method in the UV and visible regions of the spectrum, and so on. Constantly improves his professional level by studying new forensic and special literature, shows a thirst for learning new knowledge.

Currently, A. F. Klimchuk takes part in the implementation of scientific work on the topic: Methods of research of binary and complex mixtures of petroleum products. Extensive scientific experience and versatility of general knowledge allowed her to make a significant impact on the development of methodological support of forensic science based on the results of the developed methods published 18 research papers.

Alla Fedorivna has established herself as a disciplined, proactive worker who is respected among the scientific and expert community of Ukraine. Assists employees of investigative and judicial institutions and provides them with methodological assistance in sampling at the scene, formulation of questions during the appointment of examinations.

The editorial board of the collection of scientific papers: *Theory and Practice of Forensic Science and Criminalistics* congratulates Alla Fedorivna Klimchuk on the glorious anniversary and wishes good health, prosperity and further success in all cases.



Ludmila Viktorivna Mamontova

Lyudmila Viktorivna Mamontova was born on February 7, 1949 in Kharkiv. In 1973, she graduated from the Kharkiv Institute of Engineering and Economics with majoring in Organization of mechanized processing of economic information and obtained a qualification of engineer-economist.

In 1991, Lyudmila Viktorivna began working at Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations: firstly, as an economist, and since 1992 – head of the financial and economic department. Since 2013 he has been a leading forensic expert in the document research sector using budget and credit funds from the Economic Research Laboratory, since 2015 he has been a researcher in the tax research document research sector of the Economic Research Laboratory and since 2016, he has been a Senior Researcher at the KhRIFE laboratory.

L. V. Mamontova performed more than 450 examinations of various categories of complexity, all at the appropriate scientific and practical level. Lyudmyla Viktorivna reviews the conclusions of expert research and economic expertise of employees of KhRIFE, Poltava and Sumy branches of KhRIFE, FSI (forensic science institutions) of the Ministry of Justice of Ukraine and participates in workshops and training of experts — business entities and citizens.

Lyudmyla Viktorivna always studies the current regulations regarding various areas of economic activity of enterprises and other documents, in order to ensure the proper level of performance of examinations and expert research. She also participates in research work, in particular, actively publishes articles in journals and collections of scientific papers.

Lyudmila Viktorovna's invaluable life experience, practical knowledge, skills in expert activity is a benchmark for young generations of experts and scientists and a worthy example to follow.

The editorial board of the collection of scientific articles: *Theory and Practice of Forensic Science and Criminalistics* sincerely congratulates dear Ludmila Viktorivna Mamontova a on her anniversary and wishes her good health, creative inspiration and well-being.

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Requirements for research paper submitted for publication in the *Theory and Practice of Forensic Science and Criminalistics* scientific journal

REQUIREMENTS FOR CONTENT

Scientific, theoretical and practical content regarding coverage of criminalistics modern problems, actual issues of performing various types of forensic examinations and special knowledge application in legal proceedings are published on the pages of Scientific Journal.

Scientific style of the material presentation (accuracy, logic, conciseness, clarity, connectivity, integrity, completeness) and its high scientific level.

Structural elements should include:

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b) **Analysis of Recent Researches and Publications** on the selected article topic, outlining the problematic field of the research that article is devoted;

c) **Article purpose** (it is necessary to formulate the publication main thesis differing from previously considered research on the chosen topic, the goal should be formed according to problem definition and research analysis in recent years, deepening existing approaches, focusing on the introduced in the scientific circulation terminology, theories, regularities, refinements of earlier known regulations);

d) **Main content presentation** with obtained results (important theoretical positions and research results, obtained scientific facts, ideas, thoughts, regularities, concepts, trends of further topic development, personal author contribution should be revealed in this part of the publication);

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Total scope of a scientific article (information about the author, article title, abstract, keywords, article text, subordinate bibliographic references, extended resume, References: list of used sources) should be 10—20 pages.

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Text of the article should be printed using the MS word processor (in the .docx format); A4 paper size; page orientation: portrait, justified, all side indented: 20 mm; Font: Times New Roman (Font size: 14 pt); Line spacing: 1.5. **Text should not contain hyphens and macros.**

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Films (DVDs, video files)

Producer A. A. (Producer A) Director, B. B. (Director). (Year). Film title [File format].

Production Country: Studio.

Video, online (video streaming)

Publication [File format]. (Publish Date). URL: http://

Video, Internet (YouTube)

Author, A. A. [Alias] (Publish Date) Publication Name [File format]. http://

Music

Composer A. A. (Copyright year). Composition title [Recorded by B. B. Performer, if he/she is different from Composer]. According to Album tile [Record: CD, cassette, etc.]. Release city: Studio. (Record date if it is different from song authorship date).

TV serial, episode

Director B. W. (Scriptwriter), & Director, D. D. (Director). (Release Date). Episode name [TV serial episode]. (Producer) Part title. Production city, Production country: Studio or distributor.

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TV presenter name. (Broadcasting date). Broadcasting Production city, Production country: Studio or distributor.

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Painter (canvas date creation). Title [genre]. Production city, Production country: Museum

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Hon. Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations, (hereinafter referred to as the KhRIFE) is a state specialized scientific institution relating to the Ministry of Justice of Ukraine and, according to Ukrainian legislation, carrying out scientific, forensic, technical, and organizational and educational activities in the field of Forensic Science, Criminalistics and law.

The KhRIFE purpose is to meet the needs of preliminary investigation bodies, judicial authorities, other state bodies, as well as legal entities and individuals for providing them with an independent, qualified and objective forensic examinations aimed at maximizing the use of science and technology achievements.

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Oleksandr Kliuiev, Doctor of Law, Professor, Honored Lawyer of Ukraine heads Prof. M. S. Bokarius Kharkiv Research Institute of Forensic Examinations.

O. M. Kliuiev, Director of KhRIFE strengthened and broadened the institute international relations by concluding cooperation agreements with state forensic science institutions in the countries of Europe and Asia and joining the international organization ENFSI. KhRIFE obtained ISO/EC 17025 accreditation, and license for educational activities in the field of high education at the third educational and scientific level (training doctors of philosophy). On the order of the Ministry of Education and Science of Ukraine dated on November 7, 2018, No. 1218, Specialized Academic Council K 64.896.01 was created at KhRIFE

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Scientific publication

Theory and Practice of Forensic Science and Criminalistics

Collection of scientific papers

Issue 20

Executive editor: Valentyn Fesiunin
Translated by Andriy Bublikov & Daryna Dukhnenko
Computer make up: Ihor Lushchyk

Manuscript approved for print: 24.12.2019. Format: 60x90\16. Wood free uncoated paper (WFU). Typeface: Times New Roman. conventional printed sheets: 40,0.
Circulation of 200 copies.
Publishing house "Pravo" of the National Academy of Legal Sciences of Ukraine and the Yaroslav Mudryi National Law University.
80A, Chernyshevska Str. Kharkiv, Ukraine, 61002
Tel. / Fax (057) 716-45-53
Website: www.pravo-izdat.com.ua
Certificate on the entry of publishing business subject in the State Register of Publishers, Manufacturers and Distributors of Publishing Products – Series ДК No. 4219 dated on 01.12.2011

Made in printing house: «Promart»
Tel.: (057) 717-28-80