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The thirty-third collection issue presents content on criminalistics, theory and methodology of forensic science, as well as information about celebrating the 100th anniversary of National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» and participation of its employees in the scientific and educational events of EU missions and international conferences. Our authors are representatives of forensic science institutions, higher education institutions, law enforcement agencies from Ukraine and foreign countries.

For students and employees of higher education institutions. The collection can be used in activities of law enforcement agencies, legal experts, and researchers.

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Contents

EDITOR-IN-CHIEF'S NOTE

Ella Simakova-Yefremian. Scientific Research is the Guarantee to Sustainable Development of Forensic Science in Ukraine 5

RESEARCH PAPERS

Larysa Bielik, Antonina Cheremnova. Forensic Disinformation as a Tactical and Forensic Means of Detecting and Solving Corruption Criminal Offenses 12

Yuriy Nizovtsev, Oleg Parfylo, Oleh Plakhotnik. Identification of Person Suspected of Committing a Cybercrime Using Wi-Fi Technologies 23

Alexei Horlachuk. The Establishment and Development of Forensic Economic Examination in Ukraine 39

Ivan Yatsenko. Forensic Veterinary Medicine Methods for Determining Defects in Veterinary Care 57

CASE NOTES

Mykhaylo Shepitko, Kateryna Latysh. Criminal Policy in the Field of Digital Counterpropaganda During the War 87

Kateryna Dziubak. Legal Responsibility Issue of Forensic Expert in the Field of Law 99

Iryna Okunevych. Features of Financial Support for Military Personnel and Extra Compensation during Martial Law in Ukraine 111

Kateryna Osypenko. Selection of Similar Objects While Valuation and Forensic Structural Engineering to Determine Market Value of Civil Buildings 129

Teodore Giorgobiani. Assessing the Russian-Chechen Wars and Their Impact on Regional Stability 142

Sertan Alibekiroğlu, Tetiana Droshchenko, Natalia Serdiuk. Particularities of Forensic Study of Criminal Personality 159

Yevhen Pivnov. Forensic Road Technical Examination: State and Changes in Accordance with New Tasks of Expert Support of Justice 178

SCIENTIFIC NEWS

National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» — 100 years 191

Scientific and educational activities of EU Missions 197

International Scientific and Practical Conferences 201

Theory and Practice
of Forensic Science and Criminalistics

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Scientific Research is the Guarantee to Sustainable Development of Forensic Science in Ukraine

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The implementation of innovations is a crucial tool for stimulating the development of any process or phenomenon. This is particularly important for developing countries, to which Ukraine belongs, as innovative developments and new knowledge empower a state to enhance the productivity of its economy, thereby providing its competitiveness in global markets. It is precisely this stimulation that fosters economic growth while simultaneously ensuring employment for the population. In turn, the development and implementation of innovations effectively contribute to future scientific research and technical explorations.

To overcome urgent challenges faced by forensic experts in their work, it is only possible through transparent disclosure and productive discussion these issue among leading researchers, forensic experts from state specialized institutions of forensic examinations, and private forensic experts. International experience in forensic science attests that the guarantee of any advancement is, among other things, the stimulation of scientific research and technical developments.

The generalization of expert practice eloquently demonstrates the direct connection between modern forensic science and the education of future specialists. As an integral part of the justice system, forensic science ensures a high level of professionalism and responsibility among experts and guarantees

This article is translation of the original Ukrainian content, which source is available at the link: *https://khrife-journal.org/index.php/journal* (translated by Tetiana Droshchenko). The author acknowledges translation as corresponding to the original.

citizens the right to qualified and independent conclusions. These conclusions are oriented towards the utilization of the latest advancements in science and technology. The enormous potential of forensic scientific research institutions in Ukraine is embodied not only in scientific events taking place at the highest level but also in the implementation and successful realization of scientific work, as well as the development of methodologies in practice.

Like any other field, forensic science in each country is characterized by national peculiarities, although in countries of the European Union, the law is maximally harmonized: in recent decades, there has been a trend in Europe towards converging legal systems. The basis for this convergence is universal legal values: ideas of human rights, social justice, the rule of law, the legal state, and others, which are gaining increasing prevalence in the modern world. At the same time, not only are the unique and distinctive features of national legal systems preserved, but they are also deepened, largely due to historical ethnical peculiarities.

The most important aspect of this activity is to establish cooperation and exchange of acquired experience and advanced technologies, to explore new ways and approaches to cooperation because science is the guarantee to harmonious development, cooperation, and the exchange of experience. Furthermore, the science unites a powerful community of like-minded individuals capable of actively advancing forensic science and criminalistics in Ukraine.

National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» constantly contributes to the development of scientific knowledge, exchange of experience, and establishment of relations with foreign forensic expert institutions and international associations of such institutions.

One of the ways to interact with the international scientific community is the Research Paper Collection "Theory and Practice of Forensic Science and Criminalistics" which is indexed in well-known international science-metric databases: Academic Scientific Journals Indexing, Bielefeld Academic Search Engine (BASE), CORE, Crossref, Directory of Open Access Journals (DOAJ), Directory of Open Access Scholarly Resources (ROAD), Directory of Research Journals Indexing (DRJI), ERIH PLUS, Eurasian Scientific Journal Index (ESJI), Europub, Index Copernicus International, MIAR, Polska Bibliografia Naukowa, RefSeek, ResearchBib, Ulrich's, WorldCat, Google Scholar, as well as in the Register of Scientific Publications of Ukraine and on the website of DOI (digital object identifiers). Full-text online versions of the collection are available on the Internet on the platforms of the V. I. Vernadskyi National Library of Ukraine, libraries of forensic science institutions of the Ministry of Justice of Ukraine, higher education institutions of the Ministry of Internal Affairs of Ukraine, etc.

Let us proceed to the content presented in the 33rd issue of the "Theory and Practice of Forensic Science and Criminalistics". All scientific papers in the Research Paper Collection are traditionally divided into two main groups: Research Papers and Case Notes.

The section with research papers begins with an article by Candidates of Law, Associate Professors ***Larysa Bielik*** and ***Antonina Cheremnova*** (both from Ukraine) on the topic: "Forensic Disinformation as a Tactical and Forensic Means of Detecting and Solving Corruption Criminal Offenses". It has been known that Article 45 of the Criminal Code of Ukraine distinguishes two groups of corruption criminal offenses, during the detection and disclosure of which suspects (accused) provide false information about the method of preparation, and commission of their criminal activity. The researchers compared the essence of criminal and forensic disinformation and examined the practice of the US Supreme Court regarding the legality of using disinformation by police officers in identifying racketeers and corrupt organizations.

The authors' criteria for the use of forensic disinformation by law enforcement officers, as well as its rules, are quite intriguing: 1) focus on the task; 2) validity, timeliness, mobility, efficiency, and flexibility; 3) compliance with the plan and the approved plan; 4) personnel, financial and logistical support; 5) situational validity, taking into account the personality of the offender; 6) creative approach with due regard for possible changes in the situation; 7) visualization.

Authors of the following research paper on "Identification of Person Suspected of Committing a Cybercrime Using Wi-Fi Technologies" are ***Yuriy Nizovtsev***, Candidate of Law; ***Oleg Parfylo***, Candidate of Law; ***Oleh Plakhotnik***, Candidate of Law, Docent (all from Ukraine). They thoroughly examined various methodological recommendations for using Wi-Fi routers to identify a mobile device through forensic examination. The article emphasized that in case of committing cybercrime using a Wi-Fi router, a professional and forensic expert can use technical information from the Wi-Fi router to identify the suspect's mobile device by MAC address. Researchers considered problematic issues of identifying signs of hiding digital traces during cybercrime commission and outlined a detailed procedural procedure for obtaining access to Wi-Fi routers to identify suspects during inspection, search, and investigation of cybercrimes. It should be noted that data from Wi-Fi will not only help identify criminal suspects in cybercrime investigations: this method can be universal for identifying criminal suspects with incomplete data. The provisions and conclusions of the author's research will be useful in investigative, investigative and forensic activities.

In the following research paper of this section, ***Alexei Horlachuk***, Candidate of Economics (Ukraine) explores "The Establishment and Development of Forensic Economic Examination in Ukraine". Forensic science is considered as an important state institution that indirectly reflects the state of economic relations, as a forensic expert investigates them within the procedural field, using the methodological foundation of economic sciences. The author examines stages of forensic economic examination development using the criterion of the transformation of economic relations. Due attention has been given to issues of economic property as the driving force behind economic relations. Since economic relations are directly linked to the issues of property rights, the consequences of violations of these rights in the economic sphere are the subject of an investigation by forensic economic examination appointed by judicial investigative authorities. The stages of the development of forensic accounting examination are analyzed, and the transformation of economic relations on a global and national scale is considered as a criterion for periodization, the role of the state in the development of economic sciences and forensic accounting examination is revealed.

One more significant research in this Collection is the research paper "Forensic Veterinary Medicine Methods for

Determining Defects in Veterinary Care" by ***Ivan Yatsenko***, Doctor of Veterinary Medicine (Ukraine). The author presents an original methodology of forensic veterinary examination of defects in veterinary care which is divided into five stages: familiarization and training one, managerial and informational ones, research and analytical ones, generalization and evaluation ones and final one. Forensic veterinary examination should determine the defect existence and provide conclusion on availability or lack of a cause-effect relation between the lack of veterinary care and a negative consequence for the animal and the main cause of such a consequence. Attention is focused on the fact that the forensic veterinary commission should assess timeliness, volume and validity of performed diagnostic and medical and tactical veterinary measures, correctness of surgical interventions or veterinary manipulations and their compliance with current regulatory documents. the proposed author's methods unify approaches to forensic research, minimizes subjectivity of forensic assessment of actions of veterinarians; expands the cognitive capabilities of pre-trial investigation bodies and the court; contributes to improvement of criminal and administrative legislation of Ukraine in terms of legal responsibility of veterinary workers for professional offenses. The key issues arising due to improper performance of professional duties by veterinarians are highlighted and ways to their solving are proposed.

Case Note Section begins with the article by ***Mykhaylo Shepitko***, Doctor of Law, Professor (Ukraine), and ***Kateryna Latysh***, Candidate of Law, Docent (Republic of Lithuania) who have researched criminal policy in the field of digital counterpropaganda during the war. With the aim of shaping an effective criminal policy, the authors consider it expedient not only to take into account the rapid technological development and the expansion of the digital space but also to comprehensively utilize them to counteract hostile digital propaganda during wartime. The scientists propose a set of measures aimed at preventing propaganda, its identification, prosecution, and punishment—activities that aim to spread misinformation, manipulate public opinion, and fuel hostility during a period of armed conflict.

The article by ***Kateryna Dziubak***, Candidate of Economic (Ukraine) on the topic "Legal Responsibility Issue of Forensic Expert in the Field of Law" deals with the changes to procedural legislation of Ukraine in 2017 added a new participant in lawsuit, namely: legal expert. Such an expert can be a person who has an academic degree and is a specialist in the field of law. Legislator did not put forward any other requirements for the new participant in lawsuit, that caused lively discussions, in particular, on the question of whether an expert in the field of law bears legal responsibility in general and what exactly. In view of the above, the purpose of this article is to determine the legal responsibility of forensic expert in the field of law. The author describes the rights and duties of an expert in the field of law, provided for by procedural legislation of Ukraine, compared of the procedural status of a forensic expert conclusion in the field of law with the conclusion of forensic research. Possible types of offenses by an expert in the field of law are proposed to be systematized into three groups: civil, organizational, and procedural ones. Four types of legal responsibility of forensic expert in the field of law are characterized: disciplinary, civil, administrative and criminal ones.

The article by ***Iryna Okunevych*** (Ukraine), considers the procedure for calculating and paying financial support and extra compensation for military personnel in Ukraine during martial law. The legal regulation of financial support and extra compensation for military personnel in Ukraine is dedicated to numerous legislative and by-law norms. The author systematized the grounds, procedure, and conditions for accrual and financial compensation, as well as extra compensation for military personnel during martial law; provided her own vision regarding the definition of the concept of "financial support for military personnel"; highlighted a circle of controversial issues related to financial support and extra compensation, for the resolution of which the military personnel turns to the court. The conclusions of the scientific research are based on an in-depth analysis of the current Ukrainian legislation, court practice and scientific literature, which reveal the issue on financial support and extra compensation for military personnel.

In the article by ***Kateryna Osypenko*** (Ukraine), titled "Selection of Similar Objects While Valuation and Forensic Structural Engineering to Determine Market Value of Civil Buildings", problematic issues faced forensic experts specializing in "Determination of the Appraisal Value of Buildings and Structures" are addressed. The author emphasizes that experts most often apply market and non-market valuation methods, provides characteristics of the consumer and exchange value forms of real estate, as well as the current National Property Valuation Standards, which are mandatory for compliance by entities engaged in valuation activities when assessing real estate objects of all ownership forms in any circumstances. The researcher lists the main types of values and methodological approaches to the valuation of civil buildings with premises of various functional purposes, outlines the main types of individual buildings, and highlights the features of selection when determining their market value as analogs of buildings for sale, including premises of various functional purposes. Peculiarities of the application of the method of building identification according to the state classifier of buildings and structures: ДК 018-2000 and the algorithm of actions of forensic experts for selecting similar objects are highlighted with an illustrative example of its application.

The next article is authored by our foreign colleague ***Teodore Giorgobiani***, titled "Assessing the Russian-Chechen Wars and Their Impact on Regional Stability". The author systematically examines the Russian-Chechen wars from diverse perspectives that occurred in the 1990s and lasted for almost a decade. The goal is to identify issues related to the behavioral dynamics of conflict participants and the negative consequences of war for regional stability. The article emphasizes the need for awareness of these issues and the formulation of informed models of behavior for the Russian Federation. The conflicts between the Russian Federation and Chechen rebellions can be viewed as evidence of Russia's disregard for international law and as a basis for understanding Russia's behavior in the contemporary political situation. A comprehensive understanding of the impact these conflicts have had on the region is crucial for grasping Russia's current political course, analyzing the country's actions post-Chechen wars, and anticipating its future involvement in conflicts. For a thorough analysis that reveals the complexities of the conflict and its consequences for political stability, relevant journal articles, research papers, and publications have been carefully examined, and legal and historical documents have been analyzed. Forensic examinations in cases related to the North Caucasus conflict contribute to uncovering the truth. The conclusions of forensic experts document frequent violations of humanitarian laws and human rights by both sides, indicating war crimes and crimes against humanity. The researcher thoroughly examines the legal aspects, emphasizes the potential rights of the Chechens to self-determination, questions the legality of Russian military intervention, explores wars from various perspectives, and highlights the comprehensive significance of their consequences.

This section continues with the article by the team of authors: ***Sertan Alibekiroğlu*** (Turkey), ***Tetiana Droshchenko***, and ***Natalia Serdiuk*** (both from Ukraine) titled "Particularities of Forensic Study of Criminal Personality". The authors studied the criminal personality in the light of psychological methods during the detection and solving of crimes, provided information on psychological methods that an investigator should employ, as well as the professional qualities that the investigator should have to directly study the criminal personality. Researchers considered the issue of determining the criminal personality within the field of criminology by examining, during interrogation and other investigative measures, their individual qualities and characteristics reflected in the traces of crimes (in particular, disclosure of personal characteristics of the criminal with the help of psychological techniques and formation of evidence in investigative and operational practice). The authors expounded the boundaries and principles of admissibility of psychological influence on the criminal's consciousness; outlined morality as a tactical approach to such influence; and proved that properly analyzed biographical data about the suspect provides the investigator with the opportunity to effectively influence the criminal's value system.

The section of case notes concludes with the manuscript by ***Yevhen Pivnov*** (Ukraine) titled "Forensic Road Technical Examination: State and Changes in Accordance with New Tasks of Expert Support of Justice". It includes detailed analyses of statistical data from expert practice which clearly demonstrates the growth in the number and complexity of road technical examinations performed over the past 8 years. The author outlines factors influencing the results of expert research, and based on this, formulates proposals aimed at the more efficient use of specific expertise to ensure the detection and investigation of crimes, as well as to improve the results of the work of forensic experts in the context of developing a scientific and methodological framework for enhancing the primary form of application of specific expertise - forensic examination.

At the end of the 33rd issue of "Theory and Practice of Forensic Science and Criminalistics": Research Paper Collection, you will find the Scientific News traditional section. This section provides information about events that have recently occurred in the scientific and forensic-expert spheres.

Editorial Board of "Theory and Practice of Forensic Science and Criminalistics": Research Paper Collection invites renowned scientists and young scientists from Ukraine and foreign countries, graduate students from higher education institutions and research establishments, as well as experienced forensic experts and debutantes who have an interest and inclination towards both scientific and practical research in the field of forensic support for justice, to publish their works in our journal.

Together, only together, we will overcome the aggressor, rebuild our state, actively contribute to its prosperity in all spheres, and elevate the expert support of justice in Ukraine to a new level!

Together we will win! Glory to Ukraine!

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Research Papers

Forensic Disinformation as a Tactical and Forensic Means of Detecting and Solving Corruption Criminal Offenses

Larysa Bielik * [a], Antonina Cheremnova ** [b]

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[a] Writing – original draft, project administration, methodology.
[b] Writing — original draft.

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The article purpose is to study the peculiarities of implementing forensic disinformation as a tactical and forensic means for detecting and solving corruption criminal offenses. To achieve this goal, formal-logical and system-structural methods were used. Article 45 of the Criminal Code of Ukraine distinguishes two groups of corruption criminal offenses, during the detection and disclosure of which suspects (accused) provide false information about the method of preparation, commission or concealment of their criminal activity. The essence of criminal and forensic disinformation is compared. The author examines the practice of the US Supreme Court regarding the legality of using disinformation by police officers in identifying racketeers and corrupt organizations. The author substantiates the moral grounds for the use of forensic disinformation. It is noted that the legend remains an effective and classical means of its implementation, and the most common form is the tactical operation "staging". The author distinguishes between the features of forensic and criminal staging. It is noted that forensic staging (as opposed to criminal staging) is a legitimate and constructive means of safeguarding and protecting the interests of an individual, society and the State from *corruption criminal offenses. The author identifies the criteria for the use of forensic disinformation and defines its rules: 1) focus on the task; 2) validity, timeliness, mobility, efficiency, and flexibility; 3) compliance with the plan and the approved plan; 4) personnel, financial and logistical support; 5) situational validity, taking into account the personality of the offender; 6) creative approach with due regard for possible changes in the situation; 7) visualization.*

Keywords: *corruption criminal offenses; forensic disinformation; investigative and operational search activities; detection and solving crimes.*

Research Problem Formulation

The scale of corruption in the activities of our government officials is staggering. Unfortunately, corruption is not a new problem for Ukraine. According to the international anti-corruption organization *Transparency International*, as of January 2023, Ukraine has slightly improved its performance: it received 33 points out of 100 in the *Corruption Perceptions Index (CPI*) for 2022, which means that this year our score increased by one point, and now our country ranks 116th out of 180 possible [1].

Of course, this indicator is somewhat optimistic, but it is worth remembering that corruption is the basis for the global flourishing of the shadow economy. Corruption completely paralyzes the economic development of the state and destroys the principles of free and transparent business activity based on the principles of fair competition.

Despite a rather lengthy discussion, theorists and practitioners are still arguing over many problematic issues related to the detection and disclosure of corruption-related criminal offenses.

In law enforcement practice, when detecting and solving corruption-related criminal offenses, officers of operational and investigative units are regularly forced to recognize false information provided by corrupt officials in order to avoid criminal liability. One of the most effective tactical means of recognizing the deception of corrupt officials is forensic disinformation, although recently, officers of operational and investigative units have been forced to prove the legality of its use. Given not only the theoretical but also the practical importance of forensic disinformation in the criminal justice system of Ukraine, the relevance of this issue is growing day by day and requires careful study and analysis.

Analysis of Essential Research and Publications

The theoretical, legal and practical aspects of the implementation of forensic disinformation are studied in the works

1 Україна — 116-та з-поміж 180 країн в Індексі сприйняття корупції / Детектор медіа [Електронний ресурс]. 07.02.2023. URL: https://cs.detector.media/reforms/texts/185173/2023-02-07-ukraina-116-ta-z-pomizh-180-krain-v-indeksi-spryynyattya-koruptsii/ (date accessed: 06.11.2023).

written by: O. Bandurka [2], V. Zhuravel [3], I. Kohutych [4], V. Lukashevych [5], M. Pohoretskiy [6], V. Tishchenko [7], M. Stashchak [8], V. Shepitko [9] and other Ukrainian scientists. However, a significant number of issues remain the subject of debate in scientific and practical circles, and some of them, given the development of investigative and operational search practice, require additional reflection and scientific substantiation.

Article Purpose

To investigate forensic disinformation as a tactical and forensic means in the detection and disclosure of corruption criminal offenses.

2 Бандурка О. М., Бандурка І. О. Злочинність і сучасність : монографія. Харків, 2020. 408 с.

3 Журавель В. А. Алгоритми в криміналістиці / Велика українська юридична енциклопедія : у 20 т. Т. 20 : Криміналістика, судова експертиза, юридична психологія // редкол.: В. Ю. Шепітько та ін. Харків, 2018. С. 20—22 ; Його ж. Злочини корупційної спрямованості. Там само. С. 322—323 ; Його ж. Об'єкт пізнання криміналістики. *Питання боротьби зі злочинністю* : зб. наук. пр. 2020. Вип. 39. С. 12—22. DOI: 10.31359/2079-6242-2020-39-12 (date accessed: 06.11.2023) ; Журавель В. А., Шепітько В. Ю. Розвиток криміналістики та судової експертизи в Україні: наближення до єдиного європейського простору / Правова наука України: сучасний стан, виклики та перспективи розвитку : монографія. Харків, 2021. С. 651—669.

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Research Methods

Using the formal logical method, the author determines the peculiarities of the use of criminal and forensic disinformation by officers of operational search and investigation units as a tactical and forensic means of detecting and solving corruption crimes. Using the systemic-structural method, the author analyzes the peculiarities of the use of criminal and forensic disinformation and identifies the criteria by which it can be stated that forensic disinformation is specifically used in the course of detection and disclosure of this category of crimes.

Main Content Presentation

Ukrainian legislation provides for criminal liability for providing deliberately false testimony, and defamation (dissemination of deliberately false information that discredits the dignity and honor of another person or undermines his or her reputation). Ukrainian criminal law contains a long list of crimes based on the preparation, commission, and concealment of deliberately false information.

This list includes corruption criminal offenses. Thus, in the note to Article 45 of the Criminal Code of Ukraine (hereinafter - *the CC of Ukraine*), corruption criminal offenses are *“criminal offenses under Articles 191, 262, 308, 312, 313, 320, 357, 410, if committed through abuse of official position, as well as criminal offenses under Articles 210, 354, 364, 3641, 3652, 368-3692 of this Code”* [10].

Analyzing the content of Article 45 of the Criminal Code of Ukraine, we see that the legislator conditionally divides corruption criminal offenses into two groups.

The first group includes:

- misappropriation, embezzlement or seizure of property through abuse of official position (Article 191 of the Criminal Code of Ukraine);
- stealing, appropriating, extorting firearms, ammunition, explosives or radioactive materials or obtaining them by fraud or abuse of office (Article 262 of the Criminal Code of Ukraine);
- stealing, misappropriation, extortion of narcotic drugs, psychotropic substances or their analogues or their acquisition through fraud or abuse of official position (Article 308 of the Criminal Code of Ukraine);
- stealing, misappropriation, extortion of precursors or their acquisition through fraud or abuse of official position (Article 312 of the Criminal Code of Ukraine);
- theft, misappropriation, extortion of equipment intended for the manufacture of narcotic drugs, psychotropic substances or their analogues, or seizure of such equipment by fraud or abuse of office, and other illegal actions with such equipment (Article 313 of the Criminal Code of Ukraine);
- violation of the established rules for the circulation of narcotic drugs, psychotropic substances, their analogues or precursors (Article 320 of the Criminal Code of Ukraine);
- stealing, misappropriation, extortion of documents, stamps, seals, obtaining them by fraud or abuse of office, or damaging them (Article 357 of the Criminal Code of Ukraine);

10 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 06.11.2023).

- theft, misappropriation, extortion by a serviceman of weapons, ammunition, explosives or other munitions, vehicles, military and special equipment or other military property, as well as their acquisition through fraud or abuse of office (Article 410 of the Criminal Code of Ukraine).

These crimes can be considered corruption only if their subject belongs to the category of persons defined in parts 3, 4 of Article 18 of the Criminal Code of Ukraine and the note to Article 364 of the Criminal Code of Ukraine [11].

The second group consists of corruption crimes that contain an unlawful corruption component:

- misuse of budgetary funds, making budgetary expenditures or granting loans from the budget without the established budgetary allocations or with their excess (Article 210 of the Criminal Code of Ukraine);
- bribery of an employee of an enterprise, institution or organization (Article 354 of the Criminal Code of Ukraine);
- abuse of power or official position (Article 364 of the Criminal Code of Ukraine);
- abuse of authority by an official of a legal entity of private law regardless of its organizational and legal form (Article 364^1 of the Criminal Code of Ukraine);
- abuse of power by persons providing public services (Article 365^2 of the Criminal Code of Ukraine);
- acceptance of an offer, promise or receipt of an unlawful benefit by an official (Article 368 of the Criminal Code of Ukraine);
- bribery of an official of a legal entity of private law, regardless of its organizational and legal form (Article 368^3 of the Criminal Code of Ukraine);
- bribery of a person providing public services (Article 368^4 of the Criminal Code of Ukraine);
- offering, promising or giving an unlawful benefit to an official (Article 369 of the Criminal Code of Ukraine);
- abuse of influence (Article 369^2 of the Criminal Code of Ukraine) [12].

Given the peculiarities of these corruption criminal offenses, in practice, there are certain difficulties in detecting and solving them. The analysis of criminal proceedings under the above-mentioned articles of the Criminal Code of Ukraine shows that criminals (in order to avoid criminal punishment) provide false information about the corruption criminal offense they have committed. Such information acquires the status of criminal disinformation, as it misleads employees of operational and investigative units; liability arises for its provision.

Criminal disinformation is a means of achieving a criminal intent that criminals use to commit and conceal corruption criminal offenses. In contrast, forensic (operational or investigative) disinformation is a permissible, lawful and effective element of the system of means used by officers of operational and investigative units in the detection and disclosure of corruption criminal offenses.

11 Кримінальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 06.11.2023).

12 Ibid.

The perpetrators of corruption-related criminal offenses are highly educated and often have substantial practical experience in a particular field, so they purposefully use both traditional and modern criminal disinformation technologies. In this context, employees of operational and investigative units constantly monitor the latest criminal disinformation technologies.

A legend remains a rather effective and classic means of forensic disinformation. Investigators effectively use this tool during the interrogation of accused (suspects) who deny their involvement in corruption-related criminal offenses. As a tactical element, the legend is more often used in practice by officers of operational and investigative units during the implementation of operational and investigative means or during covert investigative search actions on a separate order of the investigator.

In studying and analyzing the problem of disinformation in the operational and investigative activities aimed at detecting and solving corruption criminal offenses, it is worth paying attention to the following important circumstances. The defense, representing the interests of its corrupt client, constantly appeals to the fundamental inadmissibility of using any form of disinformation by the officers of the detective and investigative units. This position of the lawyer is quite understandable, but do thy correctly interpret the essence of forensic disinformation? It is quite obvious, for example, that covert infiltration of an employee into a criminal corruption formation (group) in order to expose their criminal activities cannot be carried out without the use of forensic disinformation. Since without the applucation of misleading information (for example, without misleading the other members of the corrupt formation (group) about his or her identity or true intentions), such an employee will not be able to penetrate them, he or she will not obtain information about corrupt activities (corruption schemes) in which these formations (groups) participate or are organized. Obviously, forensic disinformation and forensic deception are the things without which officers of detective and investigative units will not be able to collect information about the criminal and his criminal activities. Of course, it is not allowed to incite a person to commit a crime, which the legislator has unambiguously stipulated in Article 271 *“Control over the commission of a crime”* of the Criminal Procedure Code of Ukraine (hereinafter — *the CPC of Ukraine*) [13].

We have analyzed foreign practices on the matter. For example, the Supreme Court of the United States of America actively uses the provisions of *“The Racketeer Influenced and Corrupt Organizations Act, RICO Act”* [14], which has been in effect since the fall of 1970, and as a result, distinguishes between a criminal situation artificially created for an innocent person and the creation of a *“trap”* for a criminal. In this context, provocative actions exist if employees of operational search or investigative units incited or encouraged a person to commit a corruption criminal

13 Кримінальний процесуальний кодекс України від 13.04.2012 р. № 4651-VI (зі змін. та доп.). URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 06.11.2023).

14 RICO Offenses (Racketeer Influenced and Corrupt Organizations). Prepared by the Office of the General Counsel. 29 p. URL: https://www.ussc.gov/sites/default/files/pdf/training/primers/2023_Primer_RICO.pdf (date accessed: 06.11.2023).

offense by deliberately misleading him/her about the legality of his/her actions and using means that encouraged such a person to commit illegal actions that he/she would not have committed if he/she was not inclined to such activities [15].

Thus, when solving corruption-related criminal offenses, forensic disinformation can not only be but should be used as an auxiliary tool to identify true information. For instance, in Chapter 21 "Covert Investigative (Detective) Actions" (hereinafter - *CIDA*) of the CPC of Ukraine, the national legislator stipulated, in particular, the inspection and seizure of correspondence (Article 262), the removal of information from electronic communication networks (Article 263) and electronic information systems (Article 264), which does not fully comply with the generally accepted norms of morality. At the same time, the negative moral perception of these articles of the CPC of Ukraine by the society [16] is not a prohibition for their implementation, as they are less evil than corruption criminal offenses, because the purpose of these CIDAs is certainly moral, especially given that the permission to conduct them is granted by the court [17].

Decision-making in this context is the result of moral principles and appropriate actions. This is possible only when officers of operational search or investigative units have no other opportunity to obtain truthful information in any other way: as a result of these measures, they achieve a positive result.

We consider it appropriate to formulate the question of the admissibility of using forensic disinformation to detect and solve corruption criminal offenses as follows: when (under what circumstances) such disinformation remains the only possible tactical and forensic means of obtaining truthful information, under what conditions it can be used, and, of course, to define clear limits of its use.

When implementing forensic disinformation, the person against whom it is used always retains the right to choose how to behave, and general human rights must be respected.

In view of the above, forensic disinformation should be implemented as a tactical and forensic tool that misleads a suspected corruption criminal offense about the true state of events, while initiating them to take active actions that will demonstrate their true attitude to specific events, with the obligatory simultaneous documentation of this attitude. Since forensic disinformation is implemented by employees of operational and investigative units, it is an independent method of operational and investigative activity, or an element of a certain method of cognition and proof, or a tactical operation or operational combination.

An analysis of criminal proceedings on corruption-related criminal offenses shows that forensic disinformation is most often implemented in the form of a tactical *"staging"* operation. Forensic disinformation in the form

15 RICO Offenses ... . URL: https://www.ussc.gov/sites/default/files/pdf/training/primers/2023_Primer_RICO.pdf (date accessed: 06.11.2023).

16 Кримінальний процесуальний кодекс України ... . URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 06.11.2023).

17 Інструкція про організацію проведення негласних слідчих (розшукових) дій та використання їх результатів у кримінальному провадженні : затв. наказом Генпрокуратури, МВС, СБ, Адмін. Держприкордонслужби, Мінфіну, Мін'юсту України від 16.11.2012 р. № 114/1042/516/1199/936/1687/5. URL: https://zakon.rada.gov.ua/laws/show/v0114900-12#Text (date accessed: 06.11.2023).

of staging is the antithesis of criminal disinformation - criminal staging carried out by perpetrators of corruption criminal offenses to counteract the detection and disclosure of such offenses, when the perpetrator misleads employees of operational and investigative units, judges, experts to conceal their corruption and avoid criminal punishment.

Forensic staging (as opposed to criminal staging) contains a legitimate constructive means of safeguarding and protecting the interests of individuals, society, and the state from corruption-related criminal offenses. The forensic staging, which is organizationally, tactically, and technically supported, is aimed at misinforming the corrupt criminal. Such disinformation is essential, for example, during a tactical operation to expose bribe-takers. This is done by conducting an operational experiment (as an operational and investigative measure) or as a special investigative experiment (as one of the forms of CIDA under Art. 271 *"Control over the commission of a crime"* of the CPC of Ukraine with the participation of a person from whom the subject of the unlawful benefit is extorted. As part of such an operation, the person who provides the object of the unlawful benefit, under the close supervision of the operational and investigative units, imitates the behavior expected of the extortionist who is detained after the transfer of the object of the unlawful benefit, the characteristics of which are previously recorded by the operational and investigative units in the criminal proceedings.

Forensic disinformation in the form of a tactical operation is also a means of tracking down a corrupt criminal who is hiding from operational and investigative units, the court, or evading criminal punishment for corruption-related criminal offenses.

Let us highlight the criteria that indicate the implementation of forensic disinformation in the detection and disclosure of corruption criminal offenses:

- the imitation component of demonstrating the verbal or non-verbal behavior of a corrupt criminal;
- the ability of the developed forensic disinformation to influence the psychological state of the corrupt criminal and mislead him/her about the true state of events;
- the presence of imitation components in the course of certain activities (e.g., operational cover documents, means of disguising appearance, etc;);
- the use of certain attributes and details in a specific typical or atypical situation.
- Forensic disinformation should be based on certain rules:
- directly relate to the tasks to be performed during the detection and disclosure of corruption criminal offenses;
- be reasonable, timely, and effective;
- be flexible, given its connection with other components of the whole process;
- be implemented taking into account the developed idea and features of the approved plan, as well as the necessary personnel, financial and logistical support;
- have situational validity, taking into account the personality of the corrupt offender;
- be based on a creative approach in analyzing and evaluating the

current situation, with due regard for possible changes in such a situation, as well as the expected results, opportunities, and directions of its use in the future;
- be as veiled as possible in order to exclude the possibility of exposing it or its sources.

Conclusions

The results of the implemented forensic disinformation as a tactical and forensic tool must be recorded by the responsible persons of the operational and investigative units in charge of the materials of the proceedings on the corruption criminal offense. One of the characteristic features of such disinformation is its point nature and limited information impact within the place and time of its implementation, so the timely recording of the results obtained in this way is a mandatory rule for an effective implementation process. Forensic disinformation as a tactical and forensic means of detecting and disclosing corruption criminal offenses is developed and implemented only when it is impossible to successfully resolve the problematic situation without it (in any other way): it is used only during the implementation of operational search activities or investigative search actions.

Криміналістична дезінформація як тактико-криміналістичний засіб виявлення та розкриття корупційних кримінальних правопорушень

Лариса Бєлік, Антоніна Черемнова

Мета статті — дослідити особливості реалізації криміналістичної дезінформації як тактико-криміналістичного засобу виявлення й розкриття корупційних кримінальних правопорушень. Для досягнення мети застосовано формально-логічний і системно-структурний методи. За ст. 45 Кримінального кодексу України виокремлено дві групи корупційних кримінальних правопорушень, під час виявлення та розкриття яких підозрювані (обвинувачені) надають неправдиві відомості про спосіб підготовки, скоєння або приховання своєї злочинної діяльності. Зіставлено сутність кримінальної та криміналістичної дезінформації. Досліджено практику Верховного Суду США щодо законності використання дезінформації поліцейськими під час виявлення рекетирів і корумпованих організацій. Обґрунтовано моральні підстави для застосування криміналістичної дезінформації. Зауважено, що ефективним і класичним засобом її реалізації залишається легенда, а найбільш поширеною формою — тактична операція «інсценування». Розмежовано особливості криміналістичного та кримінального інсценування. Зазначено, що криміналістичне інсценування (на відміну від кримінального) є законним і конструктивним засобом убезпечення та захисту інтересів особистості, суспільства й держави від корупційних кримінальних правопорушень. Виокремлено критерії застосування криміналістичної дезінформації, визначено її правила: 1) спрямованість на виконання завдання; 2) обґрунтованість, своєчасність, мобільність, дієвість, гнучкість; 3) відповідність задуму й затвердженому плану; 4) кадрове, фінансове й матеріально-технічне забезпечення; 5) ситуаційна обґрунтованість з урахуванням особистості злочинця; 6) творчий підхід з обов'язковим урахуванням можливих змін ситуації; 7) візуалізація.

Ключові слова: *корупційні кримінальні правопорушення; криміналістична дезінформація; кримінальна дезінформація; слідча й оперативно-розшукова діяльність; виявлення та розкриття злочинів.*

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The authors declares that there is no conflict of interest.

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Identification of Person Suspected of Committing a Cybercrime Using Wi-Fi Technologies

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This article purpose is to investigate the issue of using Wi-Fi routers and information they contain during the investigation of cybercrimes committed using Wi-Fi technology as a method effective for identifying suspect person or group of persons and subsequently determining their location. For achieving this goal, general scientific and special scientific research methods were applied. Various methodical recommendations on the use of Wi-Fi routers for mobile device installation by means of forensic research have been developed. It is emphasized that in case of committing cybercrime using a Wi-Fi router, a professional and forensic expert can use technical information from the Wi-Fi router to identify the suspect's mobile device by MAC address. Problematic issues of identifying signs of hiding digital traces during cybercrime commission a are considered. The procedure for obtaining access to Wi-Fi routers for the purpose of identifying suspect during inspection, search, seizure and investigation of

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cybercrimes is outlined. Data from Wi-Fi routers has been proven to not only help identify criminal suspects in cybercrime investigations: this method can be universal for identifying criminal suspects with incomplete data. The "electronic data" term was analyzed, special role of a specialist in the review of electronic data was noted, and it was proposed to change the current Criminal Procedural Code of Ukraine in terms of specialist participation in electronic data review on behalf of investigator, prosecutor, and investigator during a pre-trial investigation of criminal cases. misdemeanors The provisions and conclusions of the author's research will be useful in investigative, investigative and forensic activities.

Keywords: *cybercrimes; routers; Wi-Fi technologies; electronic communications; electronic evidence; digital traces; investigations; forensic science; guidelines.*

Research Problem Formulation

The use of Wi-Fi routers and information they contain in cybercrime investigations can be an extremely effective method for the prosecution to locate a suspect and use technical information from such routers as digital evidence preserving digital cybercrime traces [1]. Wi-Fi routers are devices designed for wireless connection of mobile subscriber terminals with Internet and other network resources. Functionally, they route (direct in a certain direction) packets of information between wireless devices and the Internet. While communication, as user information (traffic of remote control commands, content of a website page, downloading of a certain file, transmission of a video stream, etc.) as service data necessary for operation of the network are transferred. Service data includes, among other things, information about a mobile device, while user information characterizes network activity and can contain cyberattack digital traces or other illegal activity. In addition, Wi-Fi router can contain certain information about service data and network activity, so-called logs. Moreover, after a suspect commits a cybercrime using a Wi-Fi router, specialist and forensic expert can use technical information from Wi-Fi router to identify the suspect's mobile device by MAC address. This information can be used by the prosecution to de-anonymize and find out the location of suspected person or group of persons and the real place of their access to the network based on such factual data. When applying this method, it is necessary to follow appropriate procedural procedures for obtaining information from the Wi-Fi router and its proper preservation for the purpose of further use of such information by the prosecution as evidence in criminal proceedings.

1 Омельян О. С. Поняття та ознаки цифрових слідів, що утворюються під час вчинення кіберзлочинів. *Криміналістика і судова експертиза*. 2020. Вип. 65. С. 461. DOI: 10.33994/kndise.2020.65.45 (date accessed: 17.10.2023).

From the point of view of procedural issues, the issue of digital evidence[2] in criminal proceedings should be regulated at legislative level: legislation should contain the procedure for obtaining access to Wi-Fi routers for the purpose of identifying a suspect during inspection, investigation, search and seizure of cybercrimes and performance of other tasks of criminal proceedings. Obtaining access to a Wi-Fi router in a way that is not determined by law can cause a violation of human rights, and according to the *Convention for the Protection of Human Rights and Fundamental Freedom*: "everyone has the right to respect for his private and family life, for his home and correspondence" (Part 1 Article 8) [3]. Since Wi-Fi routers are able to store information about devices that connect to them, including MAC addresses of devices, IP addresses, connection times, information about websites, etc., this information can be used by prosecution to identify a suspect, track movements of such a person and her activity on Internet at the time of committing cybercrime. Therefore, it can be argued that the procedural aspect of the investigation of cybercrimes should contain a clear procedure for the actions of specialists and forensic experts in joint work with pre-trial investigation bodies and procedural manager to obtain evidence of prosecution in criminal proceedings. In addition, data from Wi-Fi routers can be used not only to identify suspects in criminal proceedings during cybercrime investigations: this method can be universal for identifying suspects in criminal proceedings with incomplete data.

Article Purpose

Consider current issues related to identification of suspected cybercrime perpetrators, in particular those using Wi-Fi technology. Investigate possibility of identifying persons suspected of committing cybercrimes who actively hide digital traces of their activities. Analyze the *electronic data* term, as well as the role and specialist participation in such a procedural action as a review in of cybercrime investigation context.

Research Methods

For achieving this goal, general scientific (dialectical, comparison, analysis, synthesis, induction, deduction) and

2 Сіренко О. В. Електронні докази у кримінальному провадженні. *Міжнародний юридичний вісник: актуальні проблеми сучасності (теорія та практика)*. 2019. Вип. 14. С. 208—214. DOI: 10.33244/2521-1196.14.2019.208-214 (date accessed: 17.10.2023) ; Мурадов В. В. Електронні докази: криміналістичний аспект використання. *Порівняльно-аналітичне право*. 2013. № 3—2. С. 316—318. URL: https://pap-journal.in.ua/wp-content/uploads/2020/09/3-2_2013.pdf (date accessed: 17.10.2023) ; Алєксєєва-Процюк Д. О., Брисковська О. М. Електронні докази в кримінальному судочинстві: поняття, ознаки та проблемні аспекти застосування. *Науковий вісник публічного та приватного права*. 2018. Вип. 2. С. 247—253. URL: http://nvppp.in.ua/vip/2018/2/50.pdf (date accessed: 17.10.2023) ; Гуцалюк М. В., Гавловський В. Д., Хахановський В. Г. та ін. Використання електронних (цифрових) доказів у кримінальних провадженнях : метод. рек. / за заг. ред. О. В. Корнейка. Вид. 2-ге, доп. Київ, 2020. 104 с. URL: https://elar.naiau.kiev.ua/server/api/core/bitstreams/8e9e5637-7b62-475c-8c41-9850e317bfc4/content (date accessed: 17.10.2023).

3 Конвенція про захист прав людини і основоположних свобод (Європейська конвенція з прав людини) : від 04.11.1950 р.; ратифік. Законом України від 17.07.1997 р. № 475/97-ВР; чинна для України з 11.09.1997 р. (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/995_004#Text (date accessed: 17.10.2023).

special scientific methods (formal logical, logical-legal, system-structural ones) were used that contributed to content and validity of scientific conclusions and proposals of this research.

Analysis of Recent Researches and Publications

At the scientific level, the issue of using Wi-Fi routers and information they contain in criminal proceedings not only attracted attention, but became in-depth analysis object by leading scientists and forensic experts. Many scholars and practitioners have devoted their time and efforts to researching this complex issue (particularly in scientific fields such as criminalistics and forensic expertology). Among recent research papers and guidelines on the use of *Wi-Fi* and modern mobile technologies to identify persons suspected of committing criminal offenses, it is possible to distinguish several extremely interesting and promising research papers.

For example, M. Bobets and R. Kobets in 2022 considered investigative team actions in the identification context of person committed a criminal offense, in availability of Wi-Fi router (PC equipment requiring specific expertise) at the scene [4], and suggested using a screenshot of digital evidence concept in criminal proceedings, provided research guidelines that can be used to identify a person who has committed criminal offense. In 2023, M. Kobets investigated the sequence of actions of the investigator, if a mobile terminal (cellular radio telephone) is found at the scene, and the procedure for extracting information (computer data) from this device using the technical capabilities of the *Cellebrite UFED* hardware and software (mentioned research paper deserves attention in the context of logic of case development to establish a suspect in criminal proceedings) [5].

In 2021, V. Polyvoda analyzed the issue of identifying persons involved in commission of crimes using Wi-Fi and provided examples from experience of foreign colleagues [6].

In research guidelines for units of the National Police of Ukraine: *Search and recording of factual data on illegal acts committed using information and telecommunication systems or technologies in the investigation of the facts of sale of narcotics* (2022), the issue of using Wi-Fi to search for persons involved is partially disclosed to illegal circulation of narcotic drugs using the Internet: “under favorable conditions, it is possible to identify such persons, for example, based on the results of viewing the recordings of video surveillance cameras installed in premises where certain areas of Wi-Fi communication were used, where the drug dealer accessed the Internet

4 Кобець М. В., Кобець Р. М. Використання можливостей Wi-Fi роутерів під час виявлення та розслідування кримінальних правопорушень. *Криміналістичний вісник*. 2022. № 2 (38). С. 36—47. DOI: 10.37025/1992-4437/2022-38-2-36 (date accessed: 17.10.2023).

5 Кобець М. В. Дії слідчого під час виявлення на місці події мобільних терміналів (стільникових радіотелефонів). *Там само*. 2023. № 1 (39). С. 52—63. DOI: 10.37025/1992-4437/2023-39-1-52 (date accessed: 17.10.2023).

6 Поливода В. В. Можливості Wi-Fi маршрутизатора у встановленні особи, причетної до вчинення злочину. *Використання досягнень сучасної науки й техніки в розкритті злочинів* : мат-ли міжвідом. наук-практ. кругл. столу (Київ, 25.02.2021). 2021. С. 102—105 / Електронний репозитарій НАВС. URL: https://elar.naiau.kiev.ua/server/api/core/bitstreams/2f7d687f-7477-4670-80f6-b73c221681dd/content (date accessed: 17.10.2023).

network" [7]. Despite the fact that these recommendations are not aimed at the substantive investigation of cybercrimes, their logical connection with the method of identifying a suspect using Wi-Fi is obvious: they can be useful during the investigation of cybercrimes, although they do not provide for investigation of specific cases of such offenses.

In our opinion, it is worth noting the extremely promising and high-quality guidelines: *Using the capabilities of Wi-Fi routers to install a mobile terminal and its network activity*, prepared in 2022 at the Ukrainian Research Institute of Special Equipment and Forensic Expertise of the Security Service of Ukraine (hereinafter referred to as the *SBU FSISE*) highlighting the theoretical and practical aspects of using a Wi-Fi router which suspect a mobile terminal connected to (this helps to determine the device and its location, as well as network activity, that can indicate a cyberattack) [8]. This publication is intended for employees of forensic expert units, specialists, operatives and investigators.

The guidelines by B. Chernyakhovskyi and V. Yusupov: *Conducting search while investigation of unauthorized access to objects of critical information infrastructure* (2021) [9] deserve attention, because the stage of the general review of the working stage of the search of this publication deserves special attention, and "primary check locations of search objects, including determining type of connection: cable or Wi-Fi" corresponds to the subject of our article's research. In general, these guidelines characterize critical information infrastructure objects and types of criminal attacks on them through unauthorized access, analyze the grounds and procedural procedure for conducting a search and contain forensic recommendations for conducting it during investigation of such crimes and the procedure for conducting investigative actions.

Separately, it is worth mentioning the monograph by O. Samoilenko: Method *fundamentals of the investigation of crimes committed in cyberspace* (2020), which sections are devoted to the forensic characteristics and organization of the investigation of crimes committed in cyberspace [10].

Among the foreign developments, the joint work of Chinese and American scholars in 2012 is of interest, in which it is proposed to classify network forensic investigations into three categories (depending on when law enforcement

7 Кікінчук В. В., Матюшкова Т. П., Піддубна А. В., Манжай О. В., Носов В. В. Пошук та фіксація фактичних даних про протиправні діяння, які вчинені з використанням інформаційно-телекомунікаційних систем або технологій при розслідуванні фактів збуту наркотичних засобів : наук.-метод. рек. для підрозд. Нацполіції Укр. Харків, 2022. 69 с. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/59910657-34ae-431c-966d-eeaffcb057c8/content (date accessed: 17.10.2023).

8 Нізовцев Ю. Ю. Використання можливостей Wi-Fi маршрутизаторів для встановлення мобільного терміналу та його мережевої активності : метод. рек. Київ, 2022. 18 с.

9 Черняховський Б. В., Юсупов В. В. Проведення обшуку під час розслідування несанкціонованого доступу до об'єктів критичної інформаційної інфраструктури : метод. рек. Київ, 2021. 52 с.

10 Самойленко О. А. Основи методики розслідування злочинів, вчинених у кіберпросторі : монографія / за заг. ред. А. Ф. Волобуєва. Одеса, 2020. 372 с. DOI: 10.32837/11300.13264 (date accessed: 17.10.2023).

agencies conduct investigations in response to cybercrime incidents) [11]: in particular, proactive investigations are defined as those that take place to cybercrime incidents; real investigations; those that take place during these incidents, retrospective investigations - those that take place after these incidents. As an example, the application of a portable device based on a smartphone for the real location of a suspect who commits crimes in cyberspace is proposed. This study deals with data collection, GSM and Wi-Fi wireless signal strength and positioning accuracy through experiments.

In addition, in our opinion, by A. Kovalenko in 2017 and 2023 [12] and Ye. Khyzhniak 2017 [13] that investigated specifics of electronic data review a and documents during investigation of criminal offenses. The authors emphasize that in preparation for electronic data review, it is advisable to find out in advance what devices and types of data will have to work with, ensure participation of specialists and availability of the necessary technical means.

Taking into account activity of scientific research in the field of criminalistics based on digital traces and evidence, as well as the available guidelines for the use of Wi-Fi routers for the purposes and tasks of criminal proceedings, it can be confidently stated that the topic of identifying suspects through Wi-Fi routers in investigation of criminal offenses and searches suspects remains extremely relevant. This especially applies to use of modern technologies by criminals to commit crimes in cyberspace. Thereby the use of data from Wi-Fi routers to identify suspects is of particular importance at the stage of pre-trial investigation during investigation of crimes under Sec. XVI (Articles 361-3631) of the Criminal Code of Ukraine [14]. It is important to note that the success of this method of identifying suspects can be of great importance for proving guilt in criminal proceedings, not only during investigation of cybercrimes. Thus, it can be argued that the main purpose of using capabilities of Wi-Fi routers to identify a suspect and subsequently determine the location of radio equipment (radio-electronic means) is not only to establish the suspect location , but to use this data as evidence for prosecution at the stage of pre-trial investigation and legal proceedings.

Academic novelty consists in proposal to supplement part 2 of Art. 71 and Part 7 of Art. 237 of the Criminal Procedure Code

11 Huang J., Chen Yi., Ling Zh., Choo K., Fu X. A Framework of Network Forensics and its Application of Locating Suspects in Wireless Crime Scene Investigation / UMASS Lowell. #1 Public in mass. Massachusetts Lowell, USA, 2012. 33 p. URL: https://www.uml.edu/docs/HaLo_2012_Fu_tcm18-152079.pdf (date accessed: 17.10.2023).

12 Коваленко А. В. Особливості тактики огляду електронних документів під час досудового розслідування посягань на життя та здоров'я журналіста. *Вісник Національної академії правових наук України*. 2017. № 1 (88). С. 182—191. URL: http://nbuv.gov.ua/UJRN/vapny_2017_1_19 (date accessed: 17.10.2023) ; Його ж. Організація і тактика проведення огляду комп'ютерних даних. *Науковий вісник Херсонського державного університету. Серія: Юридичні науки.* 2023. Вип. 4. С. 53—58. DOI: 10.32999/ksu2307-8049/2023-4-9 (date accessed: 17.10.2023).

13 Хижняк Є. С. Особливості огляду електронних документів під час розслідування кримінальних правопорушень. *Держава та регіони. Серія: Право*. 2017. № 4 (58). С. 80—85. URL: http://www.law.stateandregions.zp.ua/archive/4_2017/15.pdf (date accessed: 17.10.2023).

14 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 17.10.2023).

of Ukraine [15] (hereinafter referred to as Criminal Procedure Code of Ukraine) with information about participation in the review of computer data (on behalf of the investigator, prosecutor and investigator during pre-trial investigation of criminal misdemeanors) by a specialist who has specialized knowledge and understands the process of obtaining electronic data, containing information about MAC addresses from Wi-Fi routers. In addition, it has proper equipment that enables to get digital traces of cybercrime without loss or damage. Based on research paper analysis and normative literature, it can be concluded that, currently there is no clear definition of the *electronic data* term. We offer an expanded interpretation of the concept of *electronic data*, including information contained in Wi-Fi routers. The method of searching for suspects, first proposed by Yu. Nizovtsev which we are considering at the scientific level, can be considered as academic novelty.

Main Content Presentation

Article 84 of Criminal Procedural Code of Ukraine states:

"1. Evidence in criminal proceedings is factual data obtained in the manner prescribed by this Code, on which basis the investigator, prosecutor, investigating judge and the court establish availability or lack of facts and circumstances that are significant for criminal proceedings and subject to proof.

2. Procedural sources of evidence are testimony, material evidence, documents, forensic expert conclusions" [16].

Data from Wi-Fi routers can be one source of evidence. If a suspect was using a Wi-Fi network during the commission of a crime, data about their connection to that network can be used to identify them and further locate them. The data should be understood as the MAC address of the mobile device and other technical data that a specialist or expert can obtain during a search and seizure that involves direct access to the router. Such data can be used to discover connections with other individuals within connections to that network. Taking into account the existing method of identifying suspected persons, which involves the use of data on the connection of a mobile device to Wi-Fi routers, it is necessary to consider problematic issues that contain a possible change of data on a connected mobile device in order to hide it. One of problematic issues in investigation of a cybercrime is concealment of information during its commission. Such concealment occurs by replacing or cloning the MAC address of the mobile device with the standard software of this device. MAC address (*Media Access Control*) is a unique identifier for a network interface. In the OSI (*Open Systems Interconnection model*) network model, the MAC address is used at the second (channel) level. Sometimes this address is called hardware or physical (*Hardware Address*). The MAC address of network interface is provided by the manufacturer, while the address space is distributed among manufacturers. Changing the MAC address can make it conditionally impossible to identify a mobile device based on data about its connection to Wi-Fi routers. Another problematic issue is the possibility of using a VPN. A VPN connection creates an encrypted channel between a mobile device and a VPN server, allowing hide data about network activity of a mobile device connected to a Wi-Fi network,

15 Кримінальний процесуальний кодекс України від 13.04.2012 р. № 4651-VI (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 17.10.2023).

16 Ibidem.

but without hiding MAC address data. Therefore, ability to identify the mobile terminal remains (if MAC addresses have not been changed), although the signs of a cyberattack (type of attack, its goal, etc.) can be hidden. Another problematic issue is possibility of using special software tools to disguise a mobile device as another device i.e., deliberately changing the MAC address not to an arbitrary address, but to the address of another specific mobile device in order to compromise it. These problematic issues can make it difficult or impossible to apply existing method of identifying suspects, so they need to be solved immediately.

In the above-mentioned guidelines: *Using capabilities of Wi-Fi routers to establish a mobile terminal and its network activity*, developed by SBU FSISE, it is stated that "use of information about connected mobile terminals recorded by the Wi-Fi router is possible if the router supports logging of network connections and if such logging is activated" [17]. In other words, information characterizing mobile terminals directly connected to the Wi-Fi network usually contains data about the network name of such a terminal, its MAC address, IP address, network connection time and session duration. Using reference data, the manufacturer of the mobile terminal can usually be determined by the MAC address, and in some cases, the specific model. In these guidelines, problematic issues of identification of suspected persons are also raised: "Certain features of the MAC address should be taken into account. First, this address can be changed in the settings of the mobile terminal or using special software. For example, modern smartphones have the function of generating a random MAC address every time you connect to network <...>. Second, the MAC address is not transmitted globally with network traffic. Within the Wi-Fi network, the MAC address is transmitted from the terminal only to the router, not further. And therefore, it is usually impossible to track a mobile terminal by its MAC address in global network" [18].

V. Polyvoda in the above-mentioned research paper notes that "in order to use the capabilities of the Wi-Fi router, it is necessary to understand that it is possible to change the MAC address on the technical device itself. Its change occurs only if the smartphone is not currently connected to any Wi-Fi network. With the help of special algorithms, it can be detected and filtered on the device with 100 % certainty. In particular, in addition to the random MAC address, smartphones periodically send the correct MAC address, which receives the Wi-Fi radar." The scientist notes that "share of smartphones that can replace their MAC address is no more than 30 % of large cities" [19].

M. M. Kobets and R. Kobets noted that "investigator (operative), on the basis of the decision of examining magistrate of the court of first instance, sends a request to the network operators of cellular radiocommunication in order to verify the MAC addresses established during the inspection of the scene and to establish the user data (IMEI, phone numbers and other data) that are in the database system of the provider of electronic

17 Нізовцев Ю. Ю. Op. cit.
18 Ibidem.
19 Поливода В. В. Op. cit. URL: https://elar.naiau.kiev.ua/server/api/core/bitstreams/2f7d687f-7477-4670-80f6-b73c221681dd/content (date accessed: 17.10.2023).

communication services of cellular radio communication" [20]. This algorithm application is primarily hampered by the fact that cellular operators do not have information about the MAC addresses of mobile terminals, so they are not able to provide such information at the investigator request, even if such a request is made in compliance with all procedural requirements.

Cellular operators receive information about mobile devices using their network, in particular IMEI (*International Mobile Equipment Identity*) numbers of these devices, as well as the subscriber identifier IMSI (*International Mobile Subscriber Identity*) contained in a SIM/USIM/R-UIM card. In most cases, the MAC address is used to identify a mobile device on a Wi-Fi network, not on a mobile network. In addition, "IMEI and IMSI are unique numbers. IMEI is provided to the mobile terminal by its manufacturer, IMSI by manufacturer of the SIM/USIM/R-UIM card, usually by the cellular operator (by the factory on its order). Therefore, the manufacturer of the mobile terminal has information about as IMEI (tracked by cellular operators) as MAC address of the terminal. This can be used when searching for a mobile terminal" [21]. Procedural procedure for searching for a mobile terminal is stipulated in Criminal Procedural Code of Ukraine, besides, such a search has its own special technical specifics.

In this regard, we suggest to "*install through reference sources on the Internet the terminal manufacturer that has the detected MAC address. Note that if the exact model of the terminal can usually be determined by the IMEI in reference Internet sources, then only the manufacturer can be determined by the MAC address. Having information about the manufacturer of the mobile terminal, in certain cases, it is possible to preliminarily assume what kind of device; it was smartphone, tablet computer, laptop, separate network interface (card), etc.*" [22]. Thus, first of all, you should establish the manufacturer of the terminal by its MAC address, but this can only give general information about the manufacturer. To obtain such information, it is necessary to contact the manufacturer, especially if this company manufactures different types of devices (i.e., in addition to Wi-Fi, the mobile terminal may have a built-in 3G/4G modem with which the mobile terminal can connect to the cellular network). Having determined the manufacturer based on the MAC address data, it is possible to contact the mobile terminal manufacturer for information about the IMEI of such a terminal. Then it is possible to get subscriber data, traffic data, connection duration, calls, etc. One of the forms of obtaining such data is a request from an investigator, in accordance with Art. 93 of the Criminal Procedural Code of Ukraine [23], according to the decision of the investigating judge, to cellular radio operators for the purpose of checking IMEI and setting user data in the database system of the provider of electronic communication services. After receiving the requested data from the cellular operator, the investigator,

20 Кобець М. В., Кобець Р. М. Op. cit. DOI: 10.37025/1992-4437/2022-38-2-36 (date accessed: 17.10.2023).

21 Нізовцев Ю. Ю. Op. cit.

22 Ibidem.

23 Кримінальний процесуальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 17.10.2023).

the prosecutor may decide to conduct such an undercover investigative (search) action as establishing the location of radio equipment (radio-electronic means) in accordance with Art. 268 of Criminal Procedural Code of Ukraine of Ukraine [24]. It is premature to talk about the effectiveness of such procedural actions based on the data received from the cellular operator. Effectiveness of procedural actions based on information received from the mobile operator will later affect the results of investigative practice. At the same time, it is necessary to take into account all the peculiarities of the collection of evidence by specialists, importance of such information for the identification of suspects, all procedural aspects of making procedural decisions and efficiency of their implementation, as well as the complexity of criminal proceedings in general. Initial evidence collection is very important, which will directly affect as beginning of the pre-trial investigation in particular as criminal proceedings in general. Effectiveness of the substantive criminal proceedings and the role of the specialist in gathering evidence that can be obtained from Wi-Fi routers acquire special importance in view of some circumstances. The parties to criminal proceedings (during the pre-trial investigation) and court (during the trial) may engage a specialist to provide technical assistance (photographing, drawing up diagrams, plans, drawings, sampling samples for examination, etc.), as well as to provide opinions in cases, provided for in Clause 7, Part 4 of Art. 71 of Criminal Procedural Code of Ukraine (according to part 2 of this article). The specialist is obliged to come upon summons to the investigator, inquirer, prosecutor, court and have with him the necessary technical equipment, devices and instruments (clause 1, part 5, article 71 of the Criminal Procedure Code of Ukraine) [25]. Therefore, specific expertise of specialist and availability of technical equipment, devices and devices can help the investigator, prosecutor and inquirer during the pre-trial investigation of criminal offenses to obtain primary evidence of the prosecution from the Wi-Fi router in order to identify the suspect person or group of persons and establish their location.

Taking into account the fact that specialist's knowledge and experience (in the case of participation in the review, search and provision of technical assistance during investigation of cybercrimes) can be of decisive importance for prosecution, it is advisable to consider the possibility of making changes to Art. 71 and 237 of the Criminal Procedural Code of Ukraine [26] regarding expansion of the powers of a specialist in criminal proceedings to examine electronic data and clarifying the interpretation of the *electronic data* term (in the context of regulating procedure for examining network equipment by specialist for the purpose of identifying mobile devices of suspects based on MAC addresses data, IMEI and IMSI). The purpose of such changes is to create clearer and more detailed procedural requirements for the review of such investigations. However, first it is necessary to analyze the *electronic data* term.

24 Кримінальний процесуальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 17.10.2023).

25 Ibidem.

26 Ibidem.

As early as 2007, Ye. Rashchenko noted that "there is a widespread opinion among many scientists; it is possible to influence computer information only with the help of other computer information. Based on this thesis, they note that mandatory feature of *cybercrimes* is such an instrument of their commission as computer information. <…> It should also be understood that computer data can either directly act as traces of a crime or contain such traces" [27] and referred to V. Holubiev: "Considering computer data as a source of forensic information, one cannot ignore the issue of its direct seizure. Such seizure may be carried out during a search, inspection of the scene, seizure or even reproduction of the situation and case circumstances" [28].

O. Kravchuk drew attention to problematic issues related to the *electronic data* definition and noted that "although there is currently no definition of computer data, the question may arise as to whether the contents of the seized phone should be reviewed as a review of computer data or as overview of things" [29]. Regarding the changes to the Criminal Procedural Code of Ukraine, the author notes the following: "Addition to Art. 237 of the Criminal Procedural Code of Ukraine stipulates that the investigator and the prosecutor can conduct an inspection not only of the area, premises, things and documents, but also of computer data" [30].

Analysis of scientific literature and legislative framework indicates that to date there is no definition of *electronic data* term and electronic data review is carried out by the investigator, prosecutor: "by reflecting in the review protocol the information they contain in a form suitable for perceiving their content (by electronic means, photography, video recording, shooting and/or video recording of the screen, etc., or in paper form)" (paragraph 2 of Part 2 of Article 237 of Criminal Procedural Code of Ukraine)[31]. It is also necessary to agree with O. Kravchuk on the features of inspection of the phone for electronic data that should be separated from a simple inspection of things.

We propose to expand the interpretation of *electronic data* term. Since the information located in Wi-Fi routers can contain MAC addresses of mobile devices of persons suspected of committing cybercrime (i.e., various mobile devices: smartphones, tablets, laptops, etc.), this information can be considered as electronic data. In such a case, an inspection or search of the contents of a phone or Wi-Fi router to identify factual data that can be of interest during the investigation of cybercrime can be classified as an inspection or search of computer data, provided that, in procedural terms, prosecution can still use them as evidence.

Returning to the issue of procedural significance of the review, it should

27 Ращенко Є. Комп'ютерні дані як носій криміналістичної інформації про злочин у сфері комп'ютерних технологій. *Правова інформатика*. 2007. № 1. С. 76—80. URL: http://nbuv.gov.ua/UJRN/Pinform_2007_1_12 (date accessed: 17.10.2023)

28 Голубєв В. О. Комп'ютерні злочини в банківській діяльності. Запоріжжя, 1997. С. 125.

29 Кравчук О. «Обшук» мобільних телефонів і комп'ютерів та інші зміни до КПК / Вищий антикорупційний суд України : офіц. сайт. Новини та події. 24.03.2022. URL: https://first.vaks.gov.ua/publications/37254/ (дата звернення 17.10.2023).

30 Ibidem.

31 Кримінальний процесуальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 17.10.2023).

be noted that according to Part 1 and Paragraph 1 of Part 2 of Art. 237 of the Criminal Procedural Code of Ukraine of Ukraine, the investigator and the prosecutor conduct computer data review, namely:

"1. In order to identify and record information about circumstances of criminal offense commission, the investigator and prosecutor conduct an inspection of the area, premises, things, documents and electronic data.

2. Inspection of a person's home or other property is carried out in accordance with the rules of this Code, provided for the search of a person's home or other property" [32].

Paragraph 2 of Part 6 of Art. 236 of Criminal Procedural Code of Ukraine provides additional features for the search, detection and recording of computer data during the search: "If during search and seizure the investigator, the prosecutor found access or the possibility of access to computer systems or parts thereof, mobile terminals of communication systems, for the detection of which no permission was granted to conduct a search, but for which there are sufficient grounds to believe that the information contained therein is important for establishing the circumstances in the criminal proceedings, the prosecutor, the investigator has the right to search, detect and record electronic data contained therein at the search and seizure location" [33].

However, it is worth emphasizing importance of review as a procedural procedure that plays a key role in collecting initial digital traces of cybercrime. In this case, the statement that review can be as forensic as procedural action can be considered, acquiring a new, independent meaning, especially if considering a specialist who can help obtain such electronic data during review procedure, in the manner established by Criminal Procedural Code of Ukraine. According to Part 7 of Art. 237 of Criminal Procedural Code of Ukraine: "during the inspection, the investigator, the prosecutor or the specialist involved on their behalf has the right to take measurements, take photographs, make sound or video recordings, draw up plans and diagrams, make graphic images of the inspected place or individual items, make impressions and casts, inspect and seize things and documents relevant to criminal proceedings. Items that are withdrawn from circulation by law are subject to withdrawal regardless of their relation to criminal proceedings. Confiscated things and documents that are not related to items that have been withdrawn from circulation by law are considered temporarily confiscated property" [34]. At the same time, this norm does not contain specialist actions regarding electronic data review data on behalf of an investigator, a prosecutor. Participation of specialist in the cybercrime aftermath and during electronic data review is important, and in some cases simply necessary, because the specialist: "has specific expertise and skills and can provide advice, explanations, references and conclusions during pre-trial investigation and trial with issues requiring relevant specific expertise and skills" (Part 1 of Article

32 Кримінальний процесуальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 17.10.2023).

33 Ibidem.

34 Ibidem.

71 of the Criminal Procedure Code of Ukraine) [35].

Conclusions

We propose to amend Part 2 of Article 71 of the Criminal Procedure Code of Ukraine as follows: *"A specialist may be engaged to provide direct technical assistance (photographing, drawing up diagrams, plans, drawings, sampling for examination**, conducting a review of electronic data**, etc.) to the parties to criminal proceedings during pre-trial investigation and hearing, as well as to provide conclusions in the cases provided for in paragraph 7 of part four of this article"*.

Taking into account the above, to Part 7 of Art. 237 of Criminal Procedural Code of Ukraine needs to be amended to provide for participation of specialist during electronic data review on behalf of the investigator, prosecutor and investigator during the pre-trial investigation of criminal misdemeanors. A specialist not only has the special knowledge and understanding of how to properly obtain electronic data from Wi-Fi router, which will include information about MAC addresses: he has the necessary technical equipment, devices and instruments that can contribute to obtaining digital traces committing a cybercrime without losing or corrupting such data. Therefore, we propose to set out Part 7 of Art. 237 of Criminal Procedure Code of Ukraine in the following wording: *"During inspection, the investigator, the prosecutor or specialist **involved on their behalf** has the right to measure, photograph, sound or video record, **search, identify and record electronic data**, draw up plans and schemes, make graphic images of the inspected location or individual items, make prints and casts, inspect and seize items and documents relevant to criminal proceedings. Items that are withdrawn from circulation by law are subject to withdrawal regardless of their relation to criminal proceedings. Confiscated things and documents that do not belong to items that have been withdrawn from circulation by law are considered temporarily confiscated property"*.

Summarizing analysis of the *electronic data* term, we come to the following conclusion: *"**electronic data** is information contained in Wi-Fi routers, as well as actual data on MAC addresses, IMEI and IMSI of mobile devices, which the prosecution can use to search for a suspect or a group of persons in order to prosecute them"*. We consider it appropriate to apply the provisions and conclusions of this author's research on crime detection and investigation, investigative and forensic expert activities.

Установлення особи, підозрюваної у скоєнні кіберзлочину з використанням *WiFi*-технологій

Юрій Нізовцев, Олег Парфило, Олег Плахотнік

Мета статті — дослідити питання використання WiFi-маршрутизаторів та інформації, яку вони містять, під час розслідування кіберзлочинів, учинених із використанням WiFi-технології, як методу, ефективного для встановлення підозрюваної особи або групи осіб з подальшим визначенням місця їх знаходження. Для досягнення поставленої мети застосовано загальнонаукові та спеціальні наукові методи дослідження. Опрацьовано різні методичні рекомендації щодо використання WiFi-маршрутизаторів для встановлення мобільного пристрою шляхом судово-експертного дослідження.

35 Кримінальний процесуальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 17.10.2023).

Наголошено, що в разі скоєння кіберзлочину із застосуванням WiFi-маршрутизатора, спеціаліст та експерт можуть використати технічну інформацію з WiFi-маршрутизатора для ідентифікації мобільного пристрою підозрюваної особи за MAC-адресою. Розглянуто проблемні питання із виявлення ознак приховування цифрових слідів під час скоєння кіберзлочину. Викладено процесуальний порядок отримання доступу до WiFi-маршрутизаторів із метою встановлення підозрюваної особи під час огляду, обшуку й розслідування кіберзлочинів. Доведено, що дані з WiFi-маршрутизаторів сприятимуть не тільки встановленню підозрюваних осіб у кримінальних провадженнях під час розслідування кіберзлочинів: цей метод може виявитися універсальним для встановлення підозрюваних осіб у кримінальних провадженнях із неповними даними. Проаналізовано термін «комп'ютерні дані», відзначено особливу роль спеціаліста у проведенні огляду комп'ютерних даних і запропоновано змінити чинний Кримінальний процесуальний кодекс України в частині участі спеціаліста в огляді комп'ютерних даних за дорученням слідчого, прокурора й дізнавача під час досудового розслідування кримінальних проступків. Положення та висновки авторського дослідження стануть у пригоді в оперативно-розшуковій, слідчій і судово-експертній діяльності.

Ключові слова: *кіберзлочини; маршрутизатори; WiFi-технології; електронні комунікації; електронні докази; цифрові сліди; розслідування; судова експертиза; методичні рекомендації.*

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The authors declares no conflict of interest.

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The Establishment and Development of Forensic Economic Examination in Ukraine

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Forensic economic examination, as a significant state institution, indirectly reflects the state of economic relations, as it studies them within the procedural field using the methodological foundations of economic sciences. The article's purpose is to study the main stages of the development of forensic economic examination, depending on the evolution of economic relations. The author examines stages of forensic economic examination development using the criterion of the transformation of economic relations. By employing methods of analysis, synthesis, and generalization, the conditions for the development of forensic economic examination are identified at each stage, highlighting characteristic features and patterns. Due attention has been given to issues of economic property as the driving force behind economic relations. Since economic relations are directly linked to the issues of property rights, the outcomes of violations of these rights in the economic sphere are the subject of an investigation by forensic economic examination appointed by judicial investigative authorities. The author examines the leading system-forming blocks of forensic economic examination which form its essence and are in constant dynamic development and interconnection. The stages of the development of forensic accounting examination are analyzed, and the transformation of economic relations on a global and national scale is considered as a criterion for periodization.

Keywords: *forensic economic examination; forensic accounting examination; economic relations; economic sciences; public production.*

This article is translation of the original Ukrainian content, which source is available at the link: *https://khrife-journal.org/index.php/journal* (translated by Tetiana Droshchenko). The author acknowledges translation as corresponding to the original.

Research Problem Formulation

Initially, the subject matter of our research has already received sufficient attention in the national scientific literature, thus it may not contribute significantly to scientific value, as it primarily involves a review of well-established key points in the development of forensic economic examination. However, if we consider this scientific matter as an issue of the transformation of multi-format economic (technical and economic, organizational and economic, socio-economic) relations of social production in historical epochs, identifying characteristic features and patterns, these issues acquire new, relevant content.

Analyzing the development of public production as a set of socio-economic relations, the course of which can be described by economic laws (general, specific or those that operate in several socio-economic formations or at one of the stages of the social mode of production), allows us to comprehend the deep cause-and-effect relationships of the process of the historical transformation of the economic environment and, on this basis, to study the relevant chronological changes in the functioning of the judicial and legal system, a crucial element of which is forensic economic examination.

The economic activity of the society is decisive concerning its other types. Given this indisputable fact of society's vital functioning, it is possible to trace the emergence and development of forensic accounting expertise (its methodological basis being specialized economic sciences), which (as a result of the epoch-making socio-economic transformations from the 20th to 21st centuries and the shift from a command and control system of management to a market-based one) has evolved into forensic economic examination.

In our research (along with considering the development of economic relations), the issue of economic property relations is of great importance (because the type of property is of key importance for forming the type of economic system) since they are fundamental prerequisites for forming and developing economic relations. Judicial-legal system (in particular, forensic economic examination, of which it is an element) projects onto itself the entirety of transformations of economic relations caused by the action of property relations, which gives grounds to consider this issue as a cause-and-effect relationship, which gives it a more prominent and deeper meaning and determines the relevance of the topic of our research.

Analysis of Recent Researches and Publications

Well-known Ukrainian scientists have devoted their works to the study of this issue: M. Bilukha [1], L. Dikan with co-authors [2], N. Klymenko and V. Fedchyshyna [3],

1 Білуха М. Т. Судово-бухгалтерська експертиза : підручник. Київ, 2004. С. 27—33.

2 Дікань Л. В., Понікаров В. Д., Кожушко О. В. Судово-економічна експертиза : навч. посіб. Харків, 2014. 432 с URL: http://repository.hneu.edu.ua/handle/123456789/7964 (date accessed: 20.11.2023).

3 Клименко Н. І., Федчишина В. В. Судово-економічна експертиза: сучасний стан і актуальні питання . *Криміналістичний вісник*. 2016. № 1 (25). С. 56—61. URL: http://nbuv.gov.ua/UJRN/krvis_2016_1_11 (date accessed: 20.11.2023).

O. Kovalenko [4], A. Oriekhova [5], I. Panchenko [6], I. Perevozova [7], V. Ponikarov and O. Kozhushko [8], A. Cherednichenko [9]. While acknowledging their creative contribution to exploring the concepts of developing forensic economic examination, we believe that this issue requires further research related to the global transformation of economic relations at both the national and international levels.

Article Purpose

To explore the establishment and development of forensic economic examination in correlation with the development of economic relations in public production and to identify, based on this correlation, potential future scenarios.

Research Methods

The methods of analysis, synthesis and generalization are used to determine the conditions for the development of forensic economic examination at each stage, with the identification of characteristic features and patterns.

Main Content Presentation

Public production is the objective reality and necessary condition for human life. The history of mankind shows that the priorities of human economic existence are the basis for the development of all spheres of human activity.

4 Коваленко О. В. Розвиток судово-економічної експертизи в Україні . *Криминалистика и судебная экспертиза*. 2013. Вып. 58 (2). С. 482—488. URL: http://nbuv.gov.ua/UJRN/krise_2013_58%282%29__91 (date accessed: 20.11.2023).

5 Орєхова А. І. Історичні аспекти розвитку судової бухгалтерії як форми контролю. *Стан та перспективи розвитку економіки України в умовах глобалізації: теорія та практика* : колективна монографія / за ред. О. О. Непочатенко. Умань, 2014. URL: https://repo.snau.edu.ua/bitstream/123456789/2151/1/%D0%9E%D1%80%D1%94%D1%85%D0%BE%D0%B2%D0%B0%20%D0%90.%D0%86.%20%D0%86%D1%81%D1%82%D0%BE%D1%80%D0%B8%D1%87%D0%BD%D1%96%20%D0%B0%D1%81%D0%BF%D0%B5%D0%BA%D1%82%D0%B8%20%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BA%D1%83%20%D1%81%D1%83%D0%B4%D0%BE%D0%B2%D0%BE%D1%97%20%D0%B1%D1%83%D1%85%D0%B3%D0%B0%D0%BB%D1%82%D0%B5%D1%80%D1%96%D1%97%20%D1%8F%D0%BA%20%D1%84%D0%BE%D1%80%D0%BC%D0%B8%20%D0%BA%D0%BE%D0%BD%D1%82%D1%80%D0%BE%D0%BB%D1%8E.docx.pdf (date accessed: 20.11.2023).

6 Панченко І. А. Організація судово-бухгалтерської експертизи: теоретико-практичні аспекти : автореф. дис. … канд. екон. наук. Київ, 2007. 21 с. URL: http://194.44.12.92:8080/jspui/handle/123456789/1620 (date accessed: 20.11.2023).

7 Перевозова І. В. Історико-ретроспективний аналіз становлення економічної експертизи в Україні. *Культура народов Причерноморья*. 2013. № 256. С. 38—43. URL: http://dspace.nbuv.gov.ua/handle/123456789/92336 (date accessed: 20.11.2023)

8 Поникаров В. Д., Кожушко О. В. Теоретические основы становления и развития судебно-экономической экспертизы в Украине . *Бізнес-Інформ*. 2011. № 2 (2). С. 158—160. URL: https://www.business-inform.net/export_pdf/business-inform-2011-2_2-pages-158_160.pdf (date accessed: 20.11.2023).

9 Чередніченко А. П. Історичні аспекти становлення та розвитку судово-економічної експертизи в Україні . *Криминалистика и судебная экспертиза*. 2013. Вып. 58 (1). С. 353—364. URL: http://nbuv.gov.ua/UJRN/krise_2013_58%281%29__46 (date accessed: 20.11.2023).

Economic and social aspects of society and individual activity are prioritized in the system of modern values [10].

The history of the emergence, establishment and development of forensic accounting examination today is limited to the history of accounting theory and practice, leaving aside the evolution of the use of accounting knowledge in legal activities [11].

The starting point of our study is the statement that the economy and economic relations are the basis for the formation and development of other activities, so the study of this multiform relationship in the context of forensic economic activity is epistemologically sound. Until 2001, forensic economic examination was called forensic accounting, so we will use these concepts in the chronological order of their application.

First of all, it should be noted that forensic accounting examination arose out of the practical need to assist law enforcement agencies in the investigation of economic crimes, having moved from a form of control to a form of application of accounting knowledge in the judicial process. This transformation took place under the influence of several factors (in particular, the emergence of accounting; accounting performing the function of controlling the preservation of the owner's property; the use of accounting data for making court decisions; the complication of economic activity, which led to the occurrence of offenses; low level of knowledge (or lack thereof) in economics (e.g., accounting) among law enforcement officials) [12].

Therefore, for meaningful coverage of the problem of our research, we will consider the leading system-forming blocks of forensic economic examination which form its essence and are in constant development and dynamic interconnection:

- a retrospective of the transformation of economic relations, which makes it possible to fully reflect the development of forensic expert activity in the economic sphere, which was entirely dependent on these processes;
- the emergence, development and differentiation of humanitarian knowledge (diverse economic sciences) that accompanied these processes, since the emergence of forensic accounting examination became possible only due to the formation of economic sciences

10 Філіпенко А. С. Основи наукових досліджень. Конспект лекцій : навч. посіб. Київ, 2005. С. 38. URL: https://kpdi.edu.ua/biblioteka/%D0%9E/%D0%9E%D1%81%D0%BD%D0%BE%D0%B2%D0%B8%20%D0%BD%D0%B0%D1%83%D0%BA%D0%BE%D0%B2%D0%B8%D1%85%20%D0%B4%D0%BE%D1%81%D0%BB%D1%96%D0%B4%D0%B6%D0%B5%D0%BD%D1%8C%20%D0%A4%D1%96%D0%BB%D1%96%D0%BF%D0%B5%D0%BD%D0%BA%D0%BE%20%D0%90.%D0%A1..pdf (date accessed: 20.11.2023).

11 Орєхова А. І. Op. cit. URL: https://repo.snau.edu.ua/bitstream/123456789/2151/1/%D0%9E%D1%80%D1%94%D1%85%D0%BE%D0%B2%D0%B0%20%D0%90.%D0%86.%20%D0%86%D1%81%D1%82%D0%BE%D1%80%D0%B8%D1%87%D0%BD%D1%96%20%D0%B0%D1%81%D0%BF%D0%B5%D0%BA%D1%82%D0%B8%20%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BA%D1%83%20%D1%81%D1%83%D0%B4%D0%BE%D0%B2%D0%BE%D1%97%20%D0%B1%D1%83%D1%85%D0%B3%D0%B0%D0%BB%D1%82%D0%B5%D1%80%D1%96%D1%97%20%D1%8F%D0%BA%20%D1%84%D0%BE%D1%80%D0%BC%D0%B8%20%D0%BA%D0%BE%D0%BD%D1%82%D1%80%D0%BE%D0%BB%D1%8E.docx.pdf (date accessed: 20.11.2023).

12 Панченко І. А. Op. cit. С. 6. URL: http://194.44.12.92:8080/jspui/handle/123456789/1620 (date accessed: 20.11.2023).

based on the study of economic relations (primarily accounting, which is rightly considered their mother science);
- judicial and legal system as a procedural field in the application of the functional purpose of forensic economic examinations, the species composition of which tends to increase due to the complication of economic relations.

At the same time, it should be remembered that the history of economic accounting predates the history of the judicial system, but only the emergence of the judicial system has led to the need to analyze economic accounting data, i.e., forensic accounting. This confirms the thesis that economic relations prevail over all other relations in the activities of society.

These system-forming blocks have their respective content: the first and second —economic, the third — procedural and legal.

The economic content of forensic accounting examination is the implementation of knowledge system in the field of accounting, finance, audit, inspection, economic analysis, etc. These features related to the use of specific expertice distinguish forensic accounting examination as an independent type of forensic examination. The procedural and legal content of the examination is to define it as a process governed by a system of rules enshrined in law. From the procedural and legal point of view, forensic accounting examination is no different from other forensic examinations [13].

The system-forming blocks and their interaction are shown schematically below.

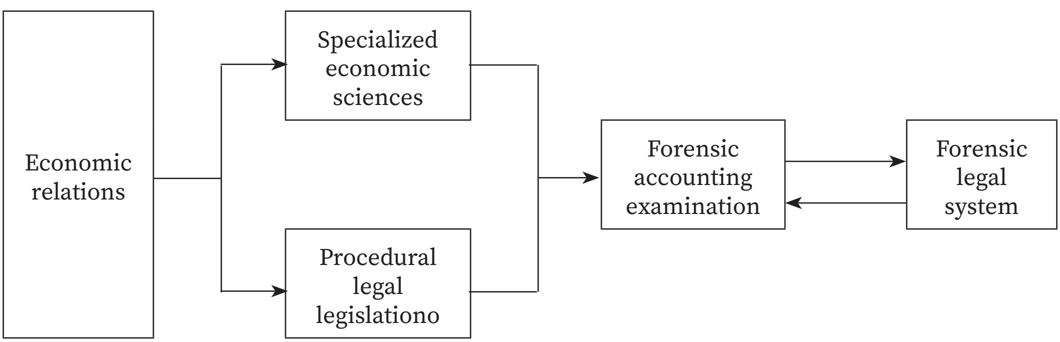

Fig. System-forming blocks of forensic economic examination in their interaction

13 Волкова І. А. Судово-бухгалтерська експертиза : навч. посіб. Київ, 2009. С. 10. URL: https://library.nlu.edu.ua/POLN_TEXT/CUL/39-Sud_buh_Eksper-Volkova.pdf (date accessed: 20.11.2023).

In the scientific literature (e.g., by A. Panchenko), one can find a systematic periodization of the formation and development of forensic accounting examination, in which researchers consider the following main historical stages [14]:

- I — the emergence of accounting and, at the same time, forensic accounting examination in the form of control as its function, which arose from the practical need to apply accounting knowledge in resolving commercial disputes;
- II (17th century) — establishment of particular institutes of expert accountants, whose specialists conducted examinations at the request of the judiciary;
- III (the beginning of 20th century) — separation of the spheres of audit, inspection and forensic accounting examination;
- IV (from the end of 1960s) — forensic accounting examination becomes an independent field of knowledge and with the advent of thorough scientific research acquires a theoretical basis.

A. Shelekhov considers three main stages in the development of forensic accounting [15]:

- I — formation of accounting practice, which covers the period from the 30th century BC to the second half of the 16th century AD and includes two sub-stages (the emergence and development of oral and written counting). At this time, primary data on counting (account) emerged and accumulated, creating the prerequisites for using these data in finding out the truth;
- II — formation of the theory of accounting and practice of forensic accounting (second half of the 16th century to the 20th century), when new forms of accounting emerged, theoretical knowledge about it was formed, and the practice of their application in legal activities was established;
- III — formation of forensic accounting, covering the period from the 20th to the 21st centuries. At this time, theoretical knowledge about the practice of applying the theory of accounting in legal activities (in particular, law enforcement) emerges and accumulates.

Of course, these periods of development and transformation of forensic accounting expertise are rather conditional, because they are based on the periods of the emergence and development of accounting.

We will consider the stages of development of forensic accounting examination, choosing the transformation of economic relations as the periodization criterion both on a global scale (since the emergence of the market and the corresponding economic relations in the classical form, as well as accounting (without which forensic accounting examination would not exist) are associated with developed countries, and the cause-and-effect relationship will be discussed further), and taking into account the national experience.

Stage 1: “The emergence of accounting” (from the time of the first states to the beginning of the Middle Ages)

During this period, socio-economic prerequisites emerged in their original form,

14 Панченко І. А. Op. cit. С. 6. URL: http://194.44.12.92:8080/jspui/handle/123456789/1620 (date accessed: 20.11.2023).

15 Шелехов А. О. Судова бухгалтерія : навч. посіб. Одеса, 2010. С. 6. URL: http://dspace.oduvs.edu.ua/handle/123456789/320 (date accessed: 20.11.2023).

which later, after the emergence and development of accounting, formed the basis for the formation of specialized economic knowledge.

First of all, it should be noted that in the 9th millennium BC, Mesopotamia developed the first accounting system in the world history [16] (although in its simplest form). The first written documents on accounting date back to that time, which is due to the powerful economic development of this ancient civilization, which left behind enough historical facts of economic life.

In the Ancient World, there were categories of people (civil servants and officials who had knowledge of primitive accounting and were literate) who controlled the use of public funds [17], and had authority in the courts in resolving economic disputes between different groups of the population. These processes could arise only in the conditions of the existence of a state, the formation of which is associated with the emergence of property relations (namely, the right to ownership of surplus products). They included the following individuals:

- who controlled and checked the use of the state treasury (treasurers, royal controllers) for various state or public needs (construction of roads, buildings, water canals, pyramids, etc.);
- knowledgeable in commercial matters, who were involved by one of the parties in resolving commercial disputes in courts (artisans, merchants, moneylenders, etc.) to prove their case or refute the evidence of the opposing party.

Even then, there was a need for specialists who were literate and familiar with monetary transactions due to their work, and who were able to perform control or audit functions (merchants, treasurers, etc.): such specialists in the modern world are expert accountants.

Historically, the emergence of economic accounting preceded the emergence of the judicial system, so with its emergence, courts began to widely use the data from this accounting. Accounting recorded the facts of economic life, i.e., actions and events that caused or could have caused legal consequences [18].

At the same time, the emergence of forensic accounting examination was preceded by certain economic prerequisites, without which it would not have existed at all, so their analysis allows us to trace this important cause-and-effect relationship. The leading place in this is occupied by property relations (they arose simultaneously with the emergence of the concept of the state as one of the most important

16 Geschichte der Buchhaltung / BVBC. . URL: https://www.bvbc.de/baden-wuerttemberg/chronik/geschichte-der-buchhaltung (date accessed: 20.11.2023) ; Die Geschichte der Buchführung / Rechnungswesenforum.de. URL: https://www.rechnungswesenbuch.de/geschichte_der_buchfuehrung.php (date accessed: 20.11.2023).

17 Історія економічних учень : підручник. У 2 ч. Ч. 1 / за ред. В.Д. Базилевича. Київ, 2006. С. 37, 41, 48.

18 Орєхова А. І. Op. cit. URL: https://repo.snau.edu.ua/bitstream/123456789/2151/1/%D0%9E%D1%80%D1%94%D1%85%D0%BE%D0%B2%D0%B0%20%D0%90.%D0%86.%20%D0%86%D1%81%D1%82%D0%BE%D1%80%D0%B8%D1%87%D0%BD%D1%96%20%D0%B0%D1%81%D0%BF%D0%B5%D0%BA%D1%82%D0%B8%20%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BA%D1%83%20%D1%81%D1%83%D0%B4%D0%BE%D0%B2%D0%BE%D1%97%20%D0%B1%D1%83%D1%85%D0%B3%D0%B0%D0%BB%D1%82%D0%B5%D1%80%D1%96%D1%97%20%D1%8F%D0%BA%20%D1%84%D0%BE%D1%80%D0%BC%D0%B8%20%D0%BA%D0%BE%D0%BD%D1%82%D1%80%D0%BE%D0%BB%D1%8E.docx.pdf (date accessed: 20.11.2023).

institutions of society), which are of exceptional importance for all state-building and social processes.

The priority of the property criterion is determined, *firstly*, by the fact that property is a multifaceted sociological category with several aspects that reflects almost the entire range of relations between individuals, collectives, states and other entities. *Secondly*, the type of economic property (for means of production, labor results, property management, etc.) determines socio-economic progress in society and the formation of the most powerful incentives to work. *Thirdly*, comprehensive human development involves not only the progress of the human worker but also the progress of the human owner.

The presence and degree of development of commodity-money relations is a specification of the property criterion. In this regard, a distinction is made between natural and commodity production, market, free market, socially oriented market and regulated market economies [19].

I. Perevozova calls the emergence and development of writing the objective prerequisites for the emergence of economic examination (along with the emergence of the state and financial and economic relations) [20]. The history of accounting in Western European countries (e.g., in Germany at the time) and in Kievan Rus dates back to the accounting in the centers of education and culture of the time — monasteries and churches [21].

Therefore, it can be argued that the prerequisites for the emergence of forensic accounting expertise are directly related to property relations (of course, in their more advanced form, which occurred much later), the control over the observance of which, as well as the protection of the interests of their participants following the rules of the time (for example, the collection of laws "Russian Truth", "Arthashastra", "Guan Tzu") was carried out by the state [22].

It is worth noting that in the times of Kievan Rus, expert documents were developed and submitted to the princely court by written persons familiar with economic accounting (dyaks, clerks, translators, interpreters, etc.) [23].

Essential aspects of the stage: the prerequisites for the emergence of forensic accounting examination are related to the emergence of property relations, which are the basis of economic relations.

Stage 2: "Forensic accounting examination at the stage of commodity production" (Middle Ages)

During this period, the productive forces gradually developed, creating conditions for the emergence of a new, market (capitalist) mode of social production and its characteristic economic relations at the next stage.

An important factor of this stage, which had a huge impact on the economic life of Europe and the world and which explains

19 Мочерний С. В., Ларіна Я. С. Політекономія : підручник / 3-тє вид., перероб. і допов. Київ, 2006. С. 66—67.

20 Перевозова І. В. Op. cit. С. 39. URL: http://dspace.nbuv.gov.ua/handle/123456789/92336 (date accessed: 20.11.2023).

21 Білуха М. Т. Op. cit. С. 29 ; Die Geschichte der Buchführung. URL: https://www.rechnungswesenbuch.de/geschichte_der_buchfuehrung.php (date accessed: 20.11.2023).

22 Історія економічних учень … . С. 37, 41, 48.

23 Перевозова І. В. Op. cit. С. 39. URL: http://dspace.nbuv.gov.ua/handle/123456789/92336 (date accessed: 20.11.2023).

the course of many economic processes of that time, is the geographical discoveries (late 15th– 17th centuries), which resulted not only in the discovery of new lands that later turned into new markets for goods but also in the enormous influx of precious metals (gold and silver) to Europe.

For this period, the emergence of the first banks providing loans with interest to entrepreneurs and merchants, as well as exchanges as one form of trade, is noted. By the way, the first international stock exchange appeared in 1460 in Antwerp (modern-day Belgium). In general, the purpose of the exchange (both commodity and stock) is not to provide the economy with capital or raw materials but to organize, regulate, and standardize capital markets, commodities, and so on [24].

These socio-economic transformations in Europe gave a powerful impetus to the development of trade and industry, which contributed to an increase in financial flows and trade turnover between their participants. This required appropriate financial control over business operations, which was of interest to merchants, bankers, landowners, and the state. These economic transformations created a need for people with knowledge of accounting.

At the same time, another important event took place in scientific and economic life – accounting was finally formed (in a much more advanced form), which, although dating from the 13th century, is more often associated with 1494, when Luca Pacioli published a fundamental work on accounting *"The sum of arithmetic, geometry, proportions and proportionality"*, which contained a separate section entitled *"Treatise on Calculations and Records"* [25] (there is no consensus on the time of its appearance).

Of course, the emergence of accounting was facilitated by economic life itself (to organize the ever-increasing volume and intensity of commodity exchange transactions), so it is quite understandable why it became the foundation (mother science) and the most important tool of forensic accounting. Accounting was spread unevenly in European countries.

Forensic economic examination, in the modern sense, emerged in the 13th-17th centuries, when the first institutions of experienced persons in the field of accounting and reporting were formed to verify calculations whose reliability was questioned and challenged in various instances [26]. Therefore, it is quite reasonable to assume that with the emergence of accountants as a separate institution, courts began to engage them to assist in resolving commercial disputes.

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24 Бурковська А. В., Бурковський І. Д., Лункіна Т. І. Особливості виникнення і розвитку бірж у країнах світу. *Науковий вісник Ужгородського національного університету*. 2015. Вип. 3. С. 51—52. URL: https://dspace.uzhnu.edu.ua/jspui/bitstream/lib/12837/1/%D0%9E%D0%A1%D0%9E%D0%91%D0%9B%D0%98%D0%92%D0%9E%D0%A1%D0%A2%D0%86%20%D0%92%D0%98%D0%9D%D0%98%D0%9A%D0%9D%D0%95%D0%9D%D0%9D%D0%AF%20%-D0%86%20%D0%A0%D0%9E%D0%97%D0%92%D0%98%D0%A2%D0%9A%D0%A3%20%D0%91%D0%86%D0%A0%D0%96%20%D0%A3%20%D0%9A%D0%A0%D0%90%D0%87%D0%9D%D0%90%D0%A5%20%D0%A1%D0%92%D0%86%D0%A2%D0%A3.pdf (date accessed: 20.11.2023).

25 Корягін М. В., Чік М. Ю. Основи наукових досліджень : навч. посіб. / 2-ге вид., стер. Київ, 2017. 622 с.

26 Сімакова-Єфремян Е. Б., Федоренко В. Л., Свиридова Л. В. та ін. Класифікація судових експертиз : монографія / за заг. ред. Е. Б. Сімакової-Єфремян. Харків, 2021. С. 386. URL: https://nncise.org.ua/diyalnist/naukova (date accessed: 24.11.2023).

The practice of applying accounting knowledge in courts since the 15th century has led to a distinction between forms of special accounting knowledge used in procedural and non-procedural forms [27]: accounting data was used to control the safety of a merchant's property in courts, and elements of examination were used to verify the reliability of accounting data.

The evolution of private property (the right to transfer it), capital, trade (exchange of goods), credit, writing (to keep permanent records), money, and arithmetic (as a means of calculation) led to a significant event for accounting — the introduction of double entry (accounts of own funds were added to the list of accounts of simple accounting), which contributed to the formation of a new theory of accounting: The rights and obligations of business entities were no longer considered as objects of accounting (real estate, goods, money) [28], which significantly affected the requirements for the use of an accountant's special knowledge in courts.

At the same time, the first legislative acts regulating the use of specific expertise (in particular, accounting) in legal practice were adopted at the state level [29].

Essential aspects of the stage: the emergence of the accounting profession and the emergence of double-entry bookkeeping; courts began to hear accountants as experts who could apply specific expertise in procedural and non-procedural forms.

Stage 3: "Forensic accounting examination at the stage of formation of market relations" (early 16th – late 19th centuries)

During this period, the driving force of social production was the Industrial Revolution, which began first in England and later took place in all Western European countries at different times, bringing about tremendous socio-economic transformations and introducing a new mode of production, the market (capitalist) economy.

The results of the Industrial Revolution gave a powerful impetus to the development of production, trade, and accounting. The evolutionary changes in accounting occurred in the introduction of important aspects of its management, which changed the reflection of income and expense accounting, profit and loss to collecting data on the costs of manufacturing a unit of production, and the concepts of "capital accounting", "depreciation of fixed assets", "relations with shareholders", "profit", as described in the works of the authors of that time [30].

The role of economic science in these processes was direct: it reflected these changes and at the same time generated them. In addition, in the seventeenth century, science turned into a special social institution. At the end of the seventeenth century, the first scientific revolution turned into an industrial revolution, which resulted in the development of a capitalist industrial society. Since then, the develop-

27 Перевозова І. В. Op. cit. С. 39. URL: http://dspace.nbuv.gov.ua/handle/123456789/92336 (date accessed: 20.11.2023).

28 Шелехов А. О. Op. cit. С. 6—9. URL: http://dspace.oduvs.edu.ua/handle/123456789/320 (date accessed: 20.11.2023).

29 Там само.

30 Томілін О. О., Гаврилова О. А., Мирошниченко А. О. Теорія бухгалтерського обліку : навч. посіб. Полтава, 2011. С. 9—10. URL: https://dspace.pdau.edu.ua/handle/123456789/8881 (date accessed: 20.11.2023).

ment of science has been largely driven by the needs of science and production [31].

In the middle-19th century, accounting was significantly improved: the Italian Francesco Villa revealed the legal and economic aspects of accounting in its essence (control over the organization of the economy and property, which involves the preservation of values and the efficiency of their use; ensuring maximum results at minimum costs), thanks to which accounting turned into an independent theoretical discipline with its own categorical apparatus and principles of conduct [32].

Thus, the second half of the 19th century can be considered the time of the formation of accounting as a science. Subsequently, the theoretical and methodological basis of accounting made it possible to use it in forensic accounting. However, it should not be assumed that forensic accounting expertise as such was developed solely due to accounting, as it was influenced by other economic sciences.

In the middle-19th century, joint-stock companies emerged and spread in European countries (including Ukraine, a large part of which was then part of the Russian Empire) due to the complexity and improvement of economic relations, the concentration of production, and the need to combine different types of capital. A characteristic feature of joint-stock companies is that they raise resources by issuing shares, which, when traded on stock markets, provide significant speculative profits. These processes are directly related to the activities of banks that lend to industry (primarily to sectors of the economy with above-average profit margins).

The intensive development of trade, economic and banking activities resulted in a significant number of debt obligations and claims to them, the complexity of accounting and collateralization of which, in turn, led to numerous lawsuits and court proceedings, which required legal regulation of accounting. Of course, the very nature of the market economy (we mean the market at the highest stage of its development), which is characterized by certain irregularities and chaos (unemployment, periodic crises due to overproduction, etc.), contributed to economic disruption to some extent.

Essential aspects of the stage: the transformation of accounting into a scientific discipline, which, thanks to the methodological framework, has become the mother science of forensic accounting.

Stage 4: "Forensic accounting examination in the conditions of developed market relations" (20 century)

When characterizing this stage, we will not cover the organizational aspects of the development of forensic accounting examination, which are caused by purely administrative measures. Instead, following the economic approach, we will focus on its landmark moments, established by economic factors.

At this stage, the type of our country's economic system changed from market to command-and-control (directive planning). Since the 1920s, the national

31 Філіпенко А. С. Op. cit. С. 12—13. URL: https://kpdi.edu.ua/biblioteka/%D0%9E/%D0%9E%D1%81%D0%BD%D0%BE%D0%B2%D0%B8%20%D0%BD%D0%B0%D1%83%D0%BA%D0%BE%D0%B2%D0%B8%D1%85%20%D0%B4%D0%BE%D1%81%D0%BB%D1%96%D0%B4%D0%B6%D0%B5%D0%BD%D1%8C%20%D0%A4%D1%96%D0%BB%D1%96%D0%BF%D0%B5%D0%BD%D0%BA%D0%BE%20%D0%90.%D0%A1..pdf (date accessed: 20.11.2023).

32 Корягін М. В., Чік М. Ю. Op. cit.

economy began to operate in a planned mode, which affected the form of economic relations, as well as the development of economic sciences that explained them.

With the growth of the state sector of the economy in the USSR and the near disappearance of enterprises of other forms of ownership (collective farms were effectively controlled by the state), the range of issues addressed by forensic accounting examination regarding the procedure for accounting and preservation of socialist property has hardly changed. However, in the context of total planning of the activities of state-owned enterprises, when the criteria for evaluating their efficiency were the fulfillment of targets and the introduction of new forms of remuneration, there was a need to solve problems of qualitative and quantitative characteristics of processes related to non-compliance with planning and economic discipline. This required the use of other research methods and techniques, some of which were borrowed from economic statistics, mathematics and planning, but most of all from economic analysis [33].

In the judicial and legal system, in addition to traditional forensic accounting, there was a need for planned economic examination. In the 1960s, forensic accounting examination developed into an independent field of knowledge [34], which was explained by its enrichment with the methodology of economic sciences.

In the 1990s, the national economy shifted to a market model, which led to a change in the format of economic relations between a significant number of its actors represented by different forms of ownership and management. In the context of the formation of a market economy and the corresponding infrastructure, the legal framework that regulated the activities of business entities was sometimes contradictory. Under such circumstances, the number of economic crimes typical of a market economy increased (illegal privatization, bankruptcy, financial fraud with securities, etc.). When investigating complex economic violations, forensic authorities required special economic knowledge, which eventually led to the emergence of new types of forensic accounting examinations (financial and credit, taxation, securities transactions, etc.), which required appropriate classification and a change in the names of various types of forensic examinations in the field of economics to forensic economic examinations. In addition, the field of research of an economic specialist went beyond purely accounting (for example, the study of securities transactions).

Essential aspects of the stage: forensic accounting examination has emerged as an independent field of knowledge.

Stage 5: "Forensic economic examination in the period of digital economy" (from the beginning of the 21st century to the present)

The transition of economic relations to a qualitatively new level (division of labor, specialization, cooperation, and intensification) in the early twentieth century in various countries of the world required comprehensive scientific research and the search for methods to minimize production costs, which became possible through the use of a theoretical and methodological framework:

- general economic sciences (economic theory, political

33 Сімакова-Єфремян Е. Б., Федоренко В. Л., Свиридова Л. В. та ін. Op. cit. С. 386. URL: https://nncise.org.ua/diyalnist/naukova (date accessed: 24.11.2023).

34 Ibidem.

economy, national economic management theory, etc.);
- specific economic sciences (functional (interdisciplinary) sciences that study aspects of economic system development — finance, credit, labor economics, pricing, etc., as well as sciences that study sectoral specifics industrial, agricultural, transport, etc. Among the economic sciences, a special place is occupied by the sciences that study quantitative relationships and statistical patterns of economic systems - economic statistics, accounting, economic programming, etc.) [35].

We would like to draw attention to the following important aspect: economic analysis, which is widely used today in forensic economic examinations, is a *"synthesized science formed by integrating several economic sciences"* [36]; it originated in the intensification of social production, when, in the context of increased competition, the number of business entities increased, which required analysis of their economic activities to make effective management decisions.

Thus, the emergence of specific economic sciences and the cause-and-effect relationships between them contributed to the formation and development of forensic accounting examination and enriched it with methodological tools.

It is interesting to analyze from the economic point of view the importance and role of the state in these processes. Since the establishment and formation of the market economy, the economy has been developing by impulses (depending on periodic crises of overproduction, the formation of monopolies, and sharp differentiation of society). Given the results of market self-regulation, since the 1930s, developed countries have faced an objective and urgent need to combine state regulation of the economy with market instruments of self-regulation.

As of today, regulation of the economic system with a significant number of subsystems and interactions between them is the prerogative of the state. The economic system itself is a set of interrelated and appropriately organized elements (productive forces, economic relations, and the economic mechanism). In its turn, the system of economic relations includes technical and economic relations (on the creation and use of tools and objects of labor), organizational and economic relations (on the application of methods and techniques of organization and management of social production) and socio-economic relations (property in the economic sense of the term) [37].

That is why, in order to ensure the development of the economic system, the state, on the one hand, must have a certain informative database necessary for making managerial decisions on balancing the economic system and its subsystems (primarily on regulating property relations), and on the other hand, the state's prerogative is also to use the judicial and legal system to protect the

35 Економічна енциклопедія. У 3 т. Т. 1 / редкол.: С. В. Мочерний (відп. ред.) та ін. Київ, 2000. С. 479.

36 Федоришина Л. І. Витоки розвитку економічного аналізу. *Причорноморські економічні студії*. 2016. Вип. 11. С. 234. URL: http://nbuv.gov.ua/UJRN/bses_2016_11_52 (date accessed: 20.11.2023).

37 Мочерний С. В., Ларіна Я. С., Устенко О. А., Юрій С. І. Економічний енциклопедичний словник. У 2 т. Т. 1 / за ред. С. В. Мочерного. Львів, 2005. С. 204.

interests of all participants in economic relations (primarily the state, which, according to the Constitution, protects the interests of the Ukrainian people).

We would like to note one more important aspect: the above-mentioned economic measures of state influence on the economy have played, are playing and will continue to play a leading role in the formation and development of the institute of forensic economic examination, which is due to the fundamental law of systematic economic development at the present stage.

Let's examine the essential areas of government regulation in the economy [38]:

1) the system of productive forces in general and each of its elements in particular;
2) economic property relations (for example, its individual forms: joint-stock, state, etc.);
3) technical and economic relations (for example, the concentration of production, its specialization, etc;);
4) organizational and economic relations and, above all, management.

From the foregoing, we conclude that state regulation of the economy involves primarily the regulation of economic relations, which (in the event of their violation in the economic system) are indirectly related to forensic economic examination (since it examines their economic side).

Modern forensic economic examination has a developed methodological framework that allows for a complete study of the economic side of an economic offense. As is well known, each method contains a certain set of techniques (e.g., documentary verification, comparison of documents, modeling), the number of which has a natural tendency to increase with the development of the theory and practice of forensic economic examination.

At the same time, economic transactions at the end of the 20th century and today are actively developing due to the use of information and communication technologies, rapid digitalization of some processes of economic life and the use of artificial intelligence, which soon will change the form of economic relations and will require forensic economic examination to develop new research methods (some of which can be created with the help of artificial intelligence).

Based on the study of the development of forensic economic examination at the considered stages, it is possible to identify its most important features and patterns:

- the emergence of the concept of property is a starting point, a prerequisite for the formation of the judicial system and, accordingly, the institute of forensic economic examination as an element of the judicial and legal system, since economic violations are always associated with the right of ownership (of an individual or legal entity, the state) to an object;
- the formation of forensic economic examination is associated with a certain level of development of economic relations and related economic sciences (formation of market infrastructure, the dominant role of the state in regulating economic processes and social production within the functioning of the economic system);
- the crucial role of the state in the formation of forensic accounting

38 Економічна енциклопедія … . С. 323.

examination as a necessary element of the judicial and legal system and a state institution for protecting the interests of participants in economic relations;
- the number of forensic economic examinations decreases as the level of economic crime decreases and vice versa.

The state of economic relations is determined by the level of economic stability (economic security), in which the state is particularly interested. Forensic economic examination as an element of the judicial and legal system (except for procedural nature) to some extent performs preventive functions (by providing suggestions to judicial and investigative authorities on preventing economic violations in the economy), which is also one of the indirect indicators of the state of the national economy.

Economic relations are directly related to the issue of property, and the consequences of violation of property rights (material losses, lost profits, shortages, etc.) in the economic plane are the subject of forensic economic examination.

The issue of ownership and the ratio of its types (state, collective, private, communal, mixed) in the national economy is one of the leading factors in the progress of social development (forensic economic examination is indirectly related to them through the mediation of forensic investigative bodies).

According to Article 13 of the Constitution of Ukraine: *“the land, its subsoil, atmosphere, water and other natural resources within the territory of Ukraine, natural resources of its continental shelf and of the exclusive (maritime) economic zone shall be the objects of property rights of the Ukrainian people. Government authorities and local government shall exercise the ownership rights on behalf of the Ukrainian people within the limits determined by this Constitution”* [39].

Thus, the transfer of natural monopolies and large enterprises to state ownership will help restore the balance between state, private, and municipal ownership. The state plays a crucial role in the functioning of the economic system, which already implies its transformation into a major participant in economic relations. Moreover, the global nature of these relations does not always mean positive results for the national economy. In today’s environment, the state, acting on behalf of and in the interests of the Ukrainian people, must always protect national economic interests. That is why this set of measures will undoubtedly have a positive impact on the economic stability of the state, and thus on reducing the level of economic crime through a more controlled impact on the development of economic relations.

Conclusions

Forensic economic examination has undergone a lengthy evolution as a crucial state institution. As an effective tool of the judicial and legal system and the embodiment of the principles of legality, independence, objectivity and completeness of research, it reflects the complex and contradictory results of economic relations, which always have the potential for improvement.

Of course, the functional purpose of forensic economic examination is to

39 Конституція України : Закон України від 28.06.1996 р. № 254к/96-ВР (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80#Text (date accessed: 05.11.2023).

provide important evidentiary sources of information to the needs of judicial and investigative authorities. However, the most important thing is that economic examination (as any element of the judicial and legal system) should protect the economic interests of the Ukrainian people.

Становлення та розвиток судової економічної експертизи в Україні

Олексій Горлачук

Судова економічна експертиза як важливий державний інститут опосередковано відображає стан економічних відносин, оскільки досліджує їх у процесуальному полі, використовуючи методологічну базу економічних наук. Метою статті є дослідження ключових етапів розвитку економічної експертизи залежно від еволюції економічних відносин. Розглянуто етапи розвитку судової економічної експертизи з використанням критерію трансформації економічних відносин. Застосовуючи методи аналізу, синтезу й узагальнення, визначено умови розвитку судової економічної експертизи на кожному з етапів із виокремленням характерних особливостей і закономірностей. Належну увагу приділено питанням відносин економічної власності як рушійної сили економічних відносин. Оскільки економічні відносини безпосередньо пов'язані з питанням прав власності, то результати порушень цих прав в економічній площині є предметом дослідження судової економічної експертизи, яку призначають судово-слідчі органи. Розглянуто провідні системно-утворювальні блоки судової економічної експертизи, які формують її сутність і перебувають у постійному динамічному розвитку та взаємозв'язку. Проаналізовано етапи розвитку судово-бухгалтерської експертизи, як критерій періодизації розглянуто трансформацію економічних відносин у світовому й національному масштабі. Розкрито роль держави в розвиткові економічних наук і судово-бухгалтерської експертизи.

Ключові слова: *судова економічна експертиза; судово-бухгалтерська експертиза; економічні відносини; економічні науки; суспільне виробництво.*

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The author declares no conflict of interest.

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Forensic Veterinary Medicine Methods for Determining Defects in Veterinary Care

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This research paper purpose is to develop forensic veterinary medicine to determine defects in veterinary care. General and special scientific methods were used to achieve the goal. The author's methods of forensic veterinary medicine of defects in veterinary care carried out in five stages: familiarization and training one, managerial and informational ones, research and analytical ones, generalization and evaluation ones and final one. It has been proven that the forensic veterinary examination should determine the defect existence and provide conclusion on availability or lack of a cause-effect relation between the lack of veterinary care and a negative consequence for the animal and the main cause of such a consequence. Attention is focused on the fact that the forensic veterinary commission should assess timeliness, volume and validity of performed diagnostic and medical and tactical veterinary measures, correctness of surgical interventions or veterinary manipulations and their compliance with current regulatory documents. It is substantiated that the proposed author's methods unify approaches to forensic research, minimizes subjectivity of forensic assessment of actions of veterinarians; expands the cognitive capabilities of pre-trial investigation bodies and the court; contributes to improvement of criminal and administrative legislation of Ukraine in terms of legal responsibility of veterinary workers for professional offenses. The key issues arising due to improper performance of professional duties by veterinarians are highlighted and ways to their solving are proposed.

This article is translation of the original Ukrainian content, which source is available at the link: *https://khrife-journal.org/index.php/journal* (translated by Andriy Bublikov). The authors acknowledge translation as corresponding to the original.

Keywords: *forensic veterinary medicine; forensic veterinary examination; examinee animals; defects and shortcomings of veterinary care; negative consequences for health and life of animal; methods and stages of forensic veterinary research.*

Research Problem Formulation

Forensic expert activity is generally regulated both in Ukraine and in the rest of the world [1]. At the same time, in the field of domestic forensic veterinary medicine, process of forming a theoretical base, developing forensic methods and guidelines, and creating reference literature continues up to day, since it was introduced in Ukraine only in 2019.

Arsenal of forensic veterinary medicine was quickly replenished with the latest researches [2]. In particular, scientists of Kharkiv Scientific School of Forensic Veterinary medicine developed guidelines: *Rules of Forensic Veterinary Determination of the Severity of Damage Caused to Animal Health*” [3], *Methods of Forensic Veterinary Examination of Animal Corpses* [4] and *Methods of Forensic Veterinary Examination of Animals in order to Establish their Injury* [5]; analyzed in detail the practice of forensic veterinary examination of live animals that have suffered serious bodily injuries, resulting in injury [6].

All these scientific achievements led to formation of one more, if not the most difficult and most important, area of forensic veterinary medicine that is determination of defects in veterinary care (hereinafter referred to as *VC*) and veterinary sanitary measures. The number of such offenses, unfortunately, tends

1 Синоверська Т. І. Міжнародний досвід розслідування жорстокого поводження з тваринами та напрями його запровадження у вітчизняну практику. *Науковий вісник публічного та приватного права.* 2019. Вип. 1. Т. 1. С. 222—228. DOI: 10.32844/2618-1258.2019.1-1.38 (date accessed: 07.10.2023) ; Cooper J. E., Cooper M. Veterinary involvement in forensic medicine. *The Veterinary Record.* 2021. Vol. 189. Is. 6. Pp. 249—250. DOI: 10.1002/vetr.1004 (date accessed: 07.10.2023).

2 Skrypka M., Panikar I., Boyko Yu., Dmytrenko N., & Kurales O. Pathogenesis and pathomorphology of distraction trauma in the framework of pre-trial investigations of cruelty to animals. *Scientific Horizons*. 2023. Vol. 26. No. 4. Pp. 54—64. DOI: 10.48077/scihor4.2023.54 (date accessed: 07.10.2023) ; Сердюков Я. К., Шкундя Д. Ю. До питання про з’ясування давності настання смерті у свійських котів. *Ветеринарія, технології тваринництва та природокористування*. 2021. № 8. С. 65—69. DOI: 10.31890/vttp.2021.08.09 (date accessed: 07.10.2023).

3 Яценко І. В., Париловський О. І. Правила судово-ветеринарного визначення ступеня тяжкості шкоди, заподіяної здоров’ю тварини (методичні рекомендації). Харків, 2022. 47 с.

4 Яценко І. В., Казанцев Р. Г. Методика судово-ветеринарної експертизи трупів тварин. Харків, 2022. 336 с.

5 Яценко І. В. Методика судово-ветеринарного дослідження тварин з метою встановлення їх каліцтва. Харків, 2021. 50 с.

6 Idem. Вплив новітніх наукових здобутків Харківської наукової школи судово-ветеринарних експертів на ефективність призначення та проведення судово-ветеринарної експертизи. *Progressive research in the modern world.* Proceedings of the VI International Scientific and Practical Conference (March 2—4, 2023). BoScience Publisher. Boston, USA. 2023. Pp. 27—44. URL: https://sci-conf.com.ua/wp-content/uploads/2023/03/PROGRESSIVE-RESEARCH-IN-THE-MODERN-WORLD-2-4.03.23.pdf (date accessed: 07.10.2023).

to increase. In view of this, the expert's opinion becomes an important piece of evidence in initiated case (proceeding) against veterinarians in connection with their improper professional activity.

Instead, peculiarities of forensic veterinary medicine in case of detection of defects in veterinary activities in regulatory documents, rules and methods are mentioned only fragmentarily. The lack of theoretical substantiation and special methodological support of forensic veterinary medicine regarding defects in veterinary activities in case of negative consequences of professional activity of veterinarians does not meet modern requirements of legal proceedings, causes unreasonable refusals to conduct forensic examination, substitution of forensic examination with other procedural actions, formulation in the procedural document on appointment of forensic examination of issues beyond forensic expert competence, as well as the subjectivity of such forensic examinations.

Analysis of Recent Researches and Publications

The issues of defects in veterinary activity are detailed in particular in research papers by : R. Munro [7](Integrity and Limitations of Forensic Veterinary Evidence); C. Oxtoby [8], B. Gartrell i B. White [9], C. A. Alexander-Leeder with co-authors[10], R. Low i A. W. Wu [11](various errors in veterinary practice); J. Wallis with co-authors [12], G. M. Hayes with co-authors [13] (harm from professional errors of veterinarians); E. H. Hofmeister i L. Love [14], M. Turner [15];

7 Munro R. Viewpoint: Integrity and Limitations of Forensic Veterinary Evidence. *Journal of Comparative Pathology.* 2022. Vol. 199. Pp. 86—87. DOI: 10.1016/j.jcpa.2022.10.003 (date accessed: 07.10.2023).

8 Oxtoby C. Getting it right on mistakes. *The Veterinary Record.* 2019. Vol. 185. Is. 14. Art. 453. DOI: 10.1136/vr.l5967 (date accessed: 07.10.2023).

9 Gartrell B., White B. Surviving clinical errors in practice. *New Zealand Veterinary Journal.* 2021. Vol. 69. Is. 1. Pp. 1—4. DOI: 10.1080/00480169.2021.1840740 (date accessed: 07.10.2023).

10 Alexander-Leeder C. A., Guess S. C., Waiting D. K., Davidow E. B. Medical errors: Experiences, attitudes and perspectives of incoming and outgoing final-year veterinary students in the USA. *The Veterinary Record.* 2022. Vol. 191. Is. 3. Art. 1735. DOI: 10.1002/vetr.1735 (date accessed: 07.10.2023).

11 Low R., Wu A. W. Veterinary healthcare needs to talk more about error: For the wellbeing of our patients and medical teams. *Journal of Veterinary Internal Medicine.* 2022. Vol. 36. Is. 6. Pp. 2199—2202. DOI: 10.1111/jvim.16554 (date accessed: 07.10.2023).

12 Wallis J., Fletcher D., Bentley A., Ludders J. Medical Errors Cause Harm in Veterinary Hospitals. *Frontiers in Veterinary Science.* 2019. Vol. 6. Art. 12. DOI: 10.3389/fvets.2019.00012 (date accessed: 07.10.2023).

13 Hayes G. M., Bersenas A. M., Mathews K., Lane W. G., LaLonde-Paul D. F., Steele A., Avellaneda A. A multicenter observational study investigating care errors, staffing levels, and workload in small animal intensive care units. *Journal of Veterinary Emergency and Critical Care (San Antonio, Tex.).* 2020. Vol. 30. Is. 5. Pp. 517—524. DOI: 10.1111/vec.12991 (date accessed: 07.10.2023).

14 Hofmeister E. H., Love L. Patient safety culture is needed in veterinary medicine. *Journal of the American Veterinary Medical Association.* 2023. Vol. 1. Pp. 1—5. DOI: 10.2460/javma.23.07.0370 (date accessed: 07.10.2023).

15 Turner M. Improving veterinary patient safety through systems analysis of clinical incidents. *The Veterinary Record.* 2022. Vol. 191. Is. 12. Pp. 496—498. DOI: 10.1002/vetr.2559 (date accessed: 07.10.2023).

K. M. Whipple with co-authors [16] (veterinary patient safety culture); M. L. Daly [17], C. O. Cummings with co-authors[18] (advanced VC quality).

Ukrainian doctors and lawyers also devoted some attention to the problem of medical errors: I. Seniuta [19] (concept and types of defects in the provision of medical care); O. Mostovenko [20] (concepts, signs and classification of medical errors); A. Serdiuk [21] with co-authors (concept of forming a strategy for preventing defects in the provision of medical care in the domestic health care system); V. Khyzhniak [22] with co-authors (forensic support of "medical cases").

Defects in provision of medical care are analyzed in the scientific works of foreign medical scientists: V. Grenon with co-authors[23], D. Ostrovsky with co-authors [24], T. Miyagami with co-authors [25] (diagnostic medical errors due to negligence); A. Ünal i Ş. S. Intepeler [26] (bibliometric analysis of world sources on medical errors).

Thus, the issue of defects in veterinary activity did not attract proper attention of

16 Whipple K. M., Leissinger M. K., Beatty S. S. Frequency and classification of errors in laboratory medicine at a veterinary teaching hospital in the United States. *Veterinary Clinical Pathology.* 2020. Vol. 49. Is. 2. Pp. 240—248. DOI: 10.1111/vcp.12851 (date accessed: 07.10.2023).

17 Daly M. L. The case for quality improvement in veterinary medicine. *Journal of Veterinary Emergency and Critical Care (San Antonio, Tex.).* 2022. Vol. 33. Is. 1. Pp. 11—15. DOI: 10.1111/vec.13264 (date accessed: 07.10.2023).

18 Cummings Ch. O., Krucik D. D. R., Carroll J. P., Eisenbarth J. M. Improving within-team communication to reduce the risk of medical errors. *Journal of the American Veterinary Medical Association.* 2022. Vol. 260. Is. 6. Pp. 600—602. DOI: 10.2460/javma.21.09.0407 (date accessed: 07.10.2023).

19 Сенюта І. Я. Дефекти надання медичної допомоги: поняття і види. Медичне право. 2017. № 1 (19). С. 55—66. URL: http://medicallaw.org.ua/fileadmin/user_upload/pdf/Journal_19.pdf (date accessed: 07.10.2023).

20 Мостовенко О. Поняття, ознаки та класифікація лікарських помилок. *Підприємництво, господарство і право.* 2018. № 10. С. 37—40. URL: http://pgp-journal.kiev.ua/archive/2018/10/8.pdf (date accessed: 07.10.2023).

21 Сердюк А. М., Скалецький Ю. М., Ріган М. М. Концепція формування стратегії запобігання дефектам надання медичної допомоги у вітчизняній системі охорони здоров'я. *Environment & Health.* 2020. № 1. С. 4—11. DOI: 10.32402/dovkil2020.01.004 (date accessed: 07.10.2023).

22 Хижняк В. В., Ольховський В. О., Моргун А. О., Куценко К. В., Моргун О. О. Судово-медичний супровід «лікарських справ». *Теорія та практика судової експертизи і криміналістики.* 2018. Вип. 18. С. 558—567. DOI: 10.32353/khrife.2018.65 (date accessed: 07.10.2023).

23 Grenon V., Szymonifka J., Adler-Milstein J., Ross J., Sarkar U. Factors Associated with Diagnostic Error: An Analysis of Closed Medical Malpractice Claims. *Journal of Patient Safety.* 2023. Vol. 19. Is. 3. Pp. 211—215. DOI: 10.1097/PTS.0000000000001105 (date accessed: 07.10.2023).

24 Ostrovsky D., Novack V., Smulowitz P. B., Burke R. C., Landon B. E., Isbell L. M. Perspectives of Emergency Clinicians About Medical Errors Resulting in Patient Harm or Malpractice Litigation. *JAMA Network Open.* 2022. Vol. 5. Is. 11. Art. 2241461. DOI: 10.1001/jamanetworkopen.2022.41461 (date accessed: 07.10.2023).

25 Miyagami T., Watari T., Harada T., Naito T. Medical Malpractice and Diagnostic Errors in Japanese Emergency Departments. *The Western Journal of Emergency Medicine.* 2023. Vol. 24. Is. 2. Pp. 340—347. DOI: 10.5811/westjem.2022.11.55738 (date accessed: 07.10.2023).

26 Ünal A., Intepeler Ş. S. Scientific View of the Global Literature on Medical Error Reporting and Reporting Systems From 1977 to 2021: A Bibliometric Analysis. *Journal of Patient Safety.* 2022. Vol. 18. Is. 7. Pp. 1102—1108. DOI: 10.1097/PTS.0000000000001025 (date accessed: 07.10.2023).

a wide range of Ukrainian researchers, which, on the one hand, indicates relevance of our research, and on the other hand, requires active research, since the lack of methods for forensic veterinary medicine in administrative and criminal proceedings and civil cases adversely affects the practice of forensic veterinary medicine, causing unreasonable refusals to its conducting; substitution of forensic examination with other procedural and non-procedural actions; raising questions to forensic expert that fall outside his competence, etc.

Article Purpose

Develop a method of forensic veterinary examination to determine the defects of the VC in administrative and criminal proceedings and civil cases initiated as a result of improper performance by veterinary workers of their professional duties.

Research novelty lies in the fact that for the first time in world practice, the author of this research paper proposes a method of forensic veterinary medicine in order to determine VC defects, which will have a positive impact on forensic expert activity, will contribute to improvement of legislation on offenses against health and life of animals (in particular, due to improper performance of professional duties by veterinarians).

Research Methods

Research methodological basis is a systematic approach, namely: general scientific and special scientific methods, which is due to specifics of the topic under consideration.

Main Content Presentation

Forensic veterinary medicine specifics for the purpose of determining VC defects are determined by treatment specifics, diagnostic and preventive activities, special list of issues for mandatory resolution, scope of materialized examined objects, requirements for the forensic veterinary expert and/or members of forensic veterinary commission.

Based on the research of conclusions of the forensic veterinary examination compiled during 2015-2022 by specialists of National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» of the Ministry of Justice of Ukraine (hereinafter referred to as NSC «Hon. Prof. M. S. Bokarius FSI») and the Bureau of Forensic Veterinary Research of the Kharkiv State ZooVeterinary Academy, and taking into account their own expert experience, developed methods of forensic veterinary examination to determine defects in veterinary activity.

Forensic veterinary medicine methods for determining VC defects in and their negative consequences for animals

The *topic* of forensic veterinary examination for the purpose of determining defects in veterinary medicine is a set of factual data and circumstances of proceedings (case), in particular: poor performance of diagnostic, medical and tactical, resuscitation, rehabilitation and other procedures by a veterinarian; low-quality implementation of preventive measures, associated with improper performance or non-performance by veterinarian of his professional duties that caused or could cause negative consequences for health of the animal(s) in the form of a health disorder (diseases, injuries, mutilations, etc.) or death that forensic veterinary expert determines by applying special veterinary knowledge and means (methods) based on results of a comprehensive research on tangible and materialized objects for the purpose of solving diagnostic and situational tasks [27] .

The *objects* of forensic veterinary examination of VC defects are tangible and materialized sources of information about the offense case, recorded in case files, that forensic expert comprehensively, fully, objectively and directly examines during forensic veterinary examination on the basis of special veterinary knowledge within the scope of subject of forensic research, using a set of methods, methods and tools for solving diagnostic and situational expert tasks set in procedural document on appointment of a forensic veterinary examination (forensic expert recruitment) [28].

The *materialized (information) objects of* forensic veterinary examination in order to determine VC defects of include: veterinary documents, inspection minutes of scene and interrogation of witnesses and victims; schemes, photo and video documents, phonograms; conclusions of primary forensic examinations; protocols of investigative experiments; job descriptions of veterinarians; charter of veterinary institution where VC was provided, etc.

Subjects of forensic veterinary examination for the purpose of determining defects of veterinary medicine are doctors of veterinary medicine who have qualification of a forensic expert majoring in 18.1 *Veterinary researches* [29].

The *content* of forensic veterinary examination for the purpose of determining defects is VC elements (institution and document management, diagnosis, medical and tactical, prevention, rehabilitation, resuscitation, deontological), the stages of its provision (at pre-hospital, hospital or post-hospital stage), nature of the defects (insufficient , untimely, incorrect, or VC non-submission); timeliness, volume, justification of conducting diagnostic and medical-tactical veterinary visits, correctness of surgical interventions or veterinary manipulations and compliance with current regulatory documents; the result of the determined defect and the conclusion about availability or lack of cause-effect relation between it and a negative consequence for health and life of the animal, as well as a conclusion about the main cause of negative consequence.

Forensic research is cognitive activity of forensic expert, in particular a forensic expert, which foundation is the latest achievements in science and technology, his knowledge of modern effective research methods, and personal skills. In the process of forensic-veterinary expert research of materialized objects, it is appropriate to distinguish four stages (*q.v. Fig. 1*).

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27 Яценко І. В. Предмет судово-ветеринарної експертизи та його значення в теорії і практиці судової експертизи. *Науковий вісник Ужгородського національного університету. Серія: Право.* 2022. Вип. 73. Ч. 2. С. 154—173. DOI: 10.24144/2307-3322.2022.73.55 (date accessed: 07.10.2023).

28 Idem. Правовий статус та гносеологічна характеристика об'єктів судово-ветеринарної експертизи. *Теорія та практика судової експертизи і криміналістики.* 2023. Вип. 2 (31). С. 63—102. DOI: 10.32353/khrife.2.2023.05 (date accessed: 07.10.2023).

29 Idem. Концептуальні засади професійної підготовки судово-ветеринарних експертів у державних спеціалізованих експертних установах України. *Криміналістика і судова експертиза.* 2023. Вип. 68. С. 731—766. DOI: 10.33994/kndise.2023.68.71 (date accessed: 07.10.2023).

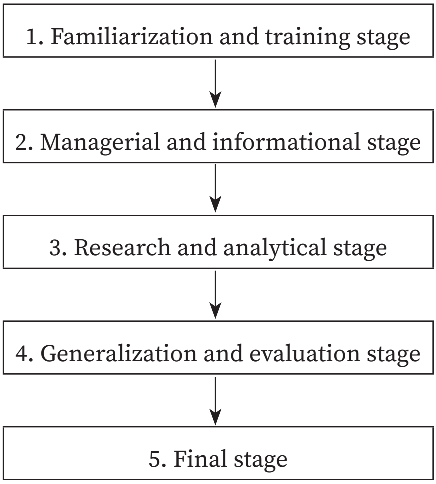

Fig. 1. Stages (algorithm) of determining defects in veterinary care

Step-by-step forensic veterinary examination for the purpose of identifying VC defects will enrich forensic expertise with new data, increase the requests of pre-trial investigation bodies and courts and their opportunities for well-founded qualification of crimes and misdemeanors against health and life of animals, and will satisfy society with the results of fair legal proceedings.

The proposed phasing of conducting a forensic veterinary examination during performance of a specific forensic expert task is determined by the need to use certain research methods, methods and means that belong to forensic expert competence [30].

Specifics of each stage of forensic veterinary examination depend on specifics of the topic and objects of research. At each stage, patterns are identified for acquisition of new knowledge about offense case, since the basis of any stage is expert procedures, characteristics of the object of forensic examination, the practice of solving similar expert tasks, etc. Compliance with algorithm for conducting forensic veterinary research at each stage will allow obtaining reliable, objective and effective results embodied in their effectiveness, verification and admissibility from law standpoint [31].

Let us characterize each stage and highlight its importance in general algorithm for the forensic veterinary determination of VC defects.

1. Familiarization and training stage

It begins with the receipt of a procedural document (resolution or decision) on appointment of forensic veterinary examination (application for involvement of forensic veterinarian) at the forensic institution. The head of institution or his deputy for Forensic Examinations examines received materials.

The head of forensic science institution can directly involve forensic veterinarian and determine the term of the examination or entrust it to his deputy in charge of forensic examinations. The latter instructs the appropriate structural subdivision of the expert institution to organize the examination (at NSC «Hon. Prof. M. S. Bokarius FSI» it is the laboratory of physical, chemical, biological and veterinary research), which head forms the composition of the forensic veterinary commission and appoints its chairman from among commission members.

The Chairman of forensic veterinary commission accepts materials, material evidence and other documents for the case for signature in registration log, stores them in a safe sealed after the end of working day.

30 Yatsenko I. Theoretical justification and praxeological significance of the stages of expert research of a living animal. *Law. Human. Environment.* 2023. Vol. 14. No. 1. Pp. 107–131. DOI: 10.31548/law/1.2023.107 (date accessed: 07.10.2023).

31 Ibidem.

Forensic Veterinary Commission:

- studies the procedural document submitted for research;
- determines the object to be investigated (most often these are materialized objects: veterinary documents, photo and video documents, protocols of scene inspection and interrogation of witnesses and victims; schemes, conclusions of primary forensic examinations, job instructions of veterinary medicine workers, statute of a veterinary medicine institution);
- studies provided materials (their type, title). In accordance with clause 4.3 of Section IV of Instruction on appointment and conducting forensic examinations and researches (hereinafter referred to as *specialized Instruction*), if received materials *are issued with violations "that exclude possibility of organizing forensic examination, the head of forensic science institution shall immediately notify the body (person) who appointed the examination (involved forensic expert) in writing"*[32]. If *"body (person) that appointed the examination (involved forensic expert) does not take appropriate measures to eliminate these obstacles, the head of forensic science institution shall return the materials to him (her) after thirty calendar days from the date of sending the notification"*[33];
- verifies compliance of provided materials and objects with those specified in the procedural document on forensic examination appointment (forensic expert involvement);
- examines the list of questions asked in procedural document on forensic examination appointment;
- highlights forensic examination topic, taking into account the content of posed questions in procedural document on its appointment and checks its relationship with forensic research object[34];
- draws up a petition to the subject of forensic examination appointment for the provision of additional case files, in particular, for provision of additional veterinary documents; conclusion of primary examination; animals for research; histological preparations, etc.[35]

In case of non-fulfillment of the expert's petitions for provision of additional materials or non-payment of forensic examination cost within 45 calendar days from the date of sending petition, *Notice of impossibility to provide forensic expert conclusion* is drawn up, and case materials are returned to the subject of the examination appointment indicating the motivated reasons for impossibility of it

32 Інструкція про призначення та проведення судових експертиз та експертних досліджень : затв. наказом Мін'юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 20.10.2023).

33 Ibidem.

34 Яценко І. В. Предмет судово-ветеринарної експертизи … . DOI: 10.24144/2307-3322.2022.73.55 (date accessed: 07.10.2023).

35 Idem. Теоретико-праксеологічне обґрунтування форм і напрямів реалізації експертної ініціативи під час проведення судово-ветеринарної експертизи. *Аналітично-порівняльне правознавство.* 2023. № 4. С. 501—518. DOI: 10.24144/2788-6018.2023.04.81 (date accessed: 07.10.2023).

conducting it (Paragraph 5 of Clause 1.13 of Section I of the specialized Instruction [36]).

Forensic veterinary examination in order to determine VC defects can be carried out only if the person who appointed examination provides all necessary case files. *"Forensic examination term begins from the working day following the day of receipt of materials by forensic science institution and ends on the day of expert's conclusion (notification of the impossibility of providing conclusion)"* (Paragraph 1, Clause 6, paragraph 1.13, Section I of specialized Instruction [37]).

Forensic examination term should not exceed 90 calendar days (Paragraph 1 of Clause 1.13 of Section I of specialized Instruction[38]).

As noted above, in order to provide forensic expert conclusion on results of commission forensic veterinary examination in order to determine the VC defects in a categorical form, issues correctly formulated in procedural document are important, that it is desirable for the subject of examination appointment to agree with forensic veterinary experts of institution where the examination is supposed to be appointed. In view of the above, the author of this publication proposes a selection of such questions for the first time.

Questions about the VC defect associated with objective factors:

1) "Was the animal injury (disease) diagnosed correctly, timely and to a sufficient extent?";
2) "Did veterinarians prescribe correct treatment for animal and could they predict negative consequences of disease (injury) in advance?";
3) "Did sick animal have objective indications for urgent surgical intervention?"
4) "Was surgical intervention in animal carried out methodically and correctly?";
5) "Was veterinary assistance provided to animal in a timely manner? If not, what are consequences of such lateness?";
6) "Is veterinary care provided in sufficient volume? If not, what are consequences of such a deficiency?";
7) "Is the complex of medical measures prescribed to animal by forensic veterinarian correctly defined?";
8) "At what stage of veterinary care did complication of the disease (injury) begin?";
9) "Were resuscitation measures performed on animal correctly, in a timely manner and to a sufficient extent?";
10) "Are there a causal relationship between shortcomings of providing veterinary care and occurrence of negative (severe) consequences for health and life of the animal?";
11) "What is the cause of animal death and are there a causal relationship between the defects of veterinary care and the onset of death?";
12) "What is severity of animal injuries?";
13) "Is onset of animal death related to the effect of veterinary drugs administered to?";
14) "Is onset of animal death related to incorrectly defined treatment scheme?".

Questions about the VC defect associated with subjective factors:

36 Інструкція про призначення та проведення … . URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 20.10.2023).

37 Ibidem.

38 Ibidem.

1) "Would animal have survived in case of timely and correct provision of qualified veterinary care?";
2) "Could veterinarian have prevented animal death if he had provided it with qualified veterinary assistance in a timely and correct manner?";
3) "Could veterinarian have prevented the death of animal fetus(es) by performing a caesarean section"?;
4) "Could veterinarian detect disease of animal during its veterinary examination?";
5) "Was veterinarian able to provide appropriate veterinary care, taking into account the level of his professional training and qualifications?";
6) "Did veterinarian violate his job instructions while providing veterinary care (fulfilling his professional duties)?"

The given lists are not exhaustive. The forensic veterinarian can be asked other questions within the scope of forensic research topic.

We emphasize that while asking questions to the forensic veterinary commission about VC defects, forensic examination subject should avoid the following questions:

- duplicated ones;
- incorrect or provocative in content ones;
- able to cause a wrong assessment of veterinarian actions;
- not belonging to competence of forensic veterinarians (in particular, legal qualification of specific actions of v veterinarian(s) and their legality, his (their) culpability and responsibility);
- difficult in wording, cumbersome in structure, unclear in content, overloaded with unnecessary details, with complex grammatical constructions;
- impractical to find out, as they are general and do not have any significance for proper assessment of veterinarian(s) actions;
- combination of these errors.

Answers should be formulated according to the principles of legality of expert procedure, independence and competence of forensic expert, comprehensiveness, completeness, scientific validity, verification, admissibility and reliability, maximum clarity; they should be based on specific factual data discovered while studying veterinary documents[39].

Plurality of questions developed by the author of this research paper enables:

- detect specifics of illegal activity or inaction of veterinarians, assess their harmful (negative) consequences in order to clarify cause-effect relations between such actions (inaction) and their consequences, i.e., to establish objective side of the offense;
- determine possibilities of veterinarian(s) to foresee harmful (negative) consequences of their actions or inaction, i.e., to find out subjective side of the offense;
- reveal correspondence or inconsistency of the level of professional training of veterinarian(s) to job position held (level of education, specialization, educational program, professional qualification).

39 Шепітько М. В. Дотримання принципу незалежності судово-експертної діяльності в Україні. *Актуальні питання судової експертизи та криміналістики* : зб. мат-лів міжнар. наук.-практ. конф., присвяч. 100-річ. від дня народж. д-ра юрид. наук, проф., засл. діяча науки і техніки України М. В. Салтевського (Харків, 07—08.11.2017). Харків, 2017. С. 80—81 (date accessed: 07.10.2023).

2. Managerial and informational stage

In accordance with Clause 4.5 of Sec. IV of specialized Instruction: *"forensic expert appointed by the head of the commission does not have advantages over other co-executives in solving the issues raised"*: he performs only managerial functions [40].

The chairman of forensic veterinary commission can simultaneously be reporter in the case and can appoint one of the commission members as the reporter.

If it is impossible to hold a meeting of expert commission, each member of the commission has the right to individually familiarize himself with case files and then express his conclusion in writing.

At this stage, the expert commission draws up an algorithm for solving the tasks set before forensic examination, that should contain correct, justified and appropriate sequence and content of actions, in particular, with sequence determination and deadlines for the execution of separate researches in order to achieve the final result of forensic research (*q.v. Fig. 2*). If necessary, they agree on managerial issues regarding involvement of specialists who are not employees of forensic science institution in work of the expert commission.

Forensic experts involved in the commission examination who do not work in state specialized institutions, but on a professional basis carry out forensic expert activities, provide research in accordance with the requirements of the Instruction on the peculiarities of forensic expert activity by certified forensic experts who do not work in State specialized forensic science institutions [41].

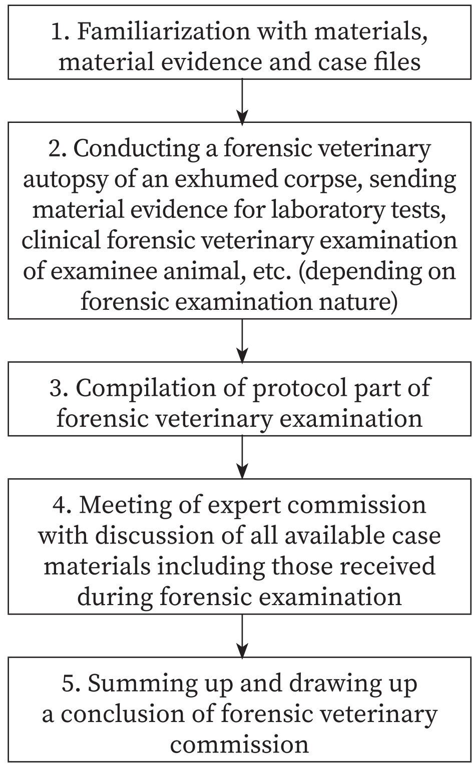

Fig. 2. Algorithm for conducting commission forensic veterinary examination of veterinary care defects

For his part, the reporter in the case selects from official information resource current legal acts, methods, instructions, rules, guidelines, methodological recommendations, monographs, scientific articles, as well as other modern sources of special literature that will be used while forensic examination and processes them with expert commission members.

40 Інструкція про призначення та проведення … . URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 20.10.2023).

41 Інструкція про особливості здійснення судово-експертної діяльності атестованими судовими експертами, що не працюють у державних спеціалізованих експертних установах : затв. наказом Мін'юсту України від 12.12.2011 р. № 3505/5 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z1431-11#Text (date accessed: 20.10.2023).

3. Research and analytical stage

This stage of forensic veterinary examination for the purpose of determining VC defects consists in research and analysis of the case files is direct research on veterinary documents as materialized objects submitted for forensic veterinary examination. Conditionally, it can be divided into two stages: the *1st* – assessment of sick animal state in the dynamics of course of the disease and the *2nd* – determination of VC defect (*q.v. 3*).

The state of sick animal is assessed by the forensic veterinary commission at the time of initial application for VC while its provision.

At the first stage of this stage, taking into account information provided in veterinary documents provided for research, forensic veterinary commission analyzes registration and anamnestic data of examinee animal, as well as examines veterinary documents available in case files. Next, he states in which period of time the animal was given medical care (pre-hospital (ambulatory), hospital or post-hospital).

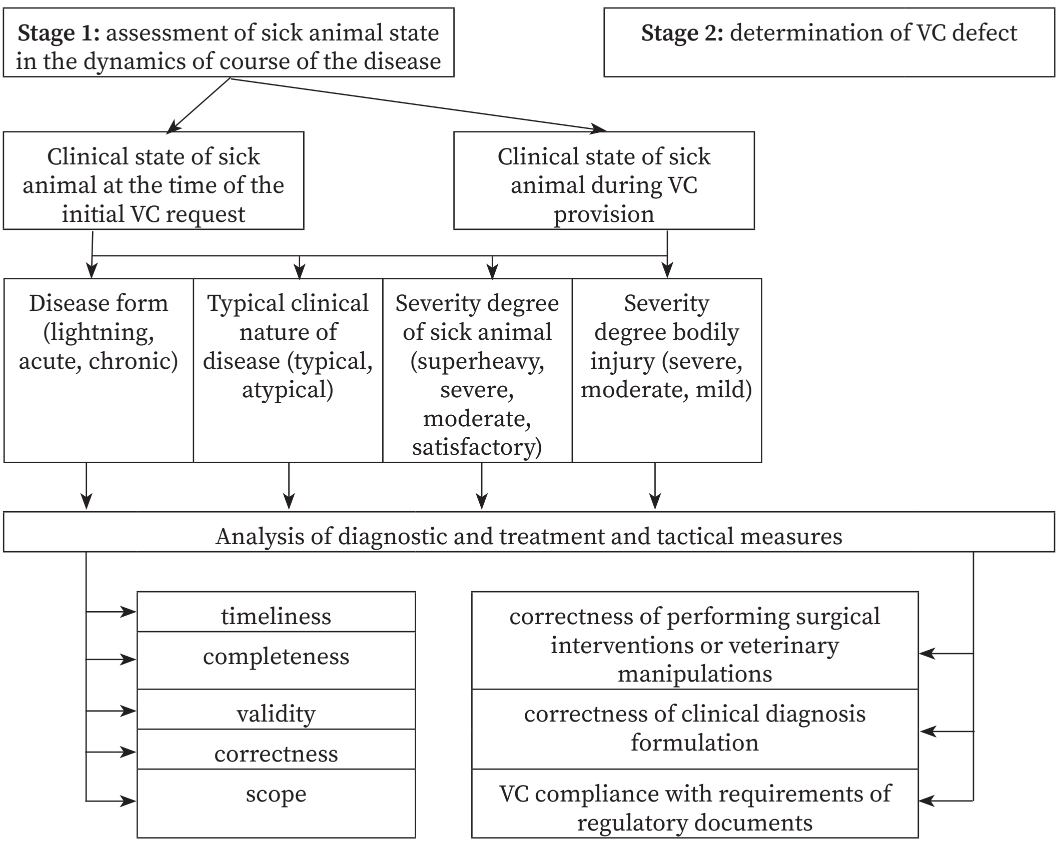

Fig. 3. Algorithm for carrying out research and analytical stage of forensic veterinary determination of a VC defect

If research object is a living examinee animal, forensic veterinary expert commission carries out its clinical examination, revealing scars on the skin, lameness, places from performing veterinary manipulations, obvious signs of mutilation (traumatic amputation of a part of the body or organ, traumatic enucleation, traumatic extirpation teeth, etc.). If necessary, they perform instrumental, imaging and laboratory researches. According to the results of forensic examination of the animal, it is necessary to determine formation age of injuries and to find out whether they coincide with the time of providing VC to this animal.

The issues of formation of bodily injuries, especially in various species of animals, has not been sufficiently investigated and experimentally confirmed to date, therefore it is appropriate to use actual data developed by clinical veterinary surgery and traumatology. Forensic expert can state that it is not possible to find out how long ago the animal was injured. If the experts find a sufficient number of signs indicating the time of injury to the animal, then it can be categorically stated that injury to the examinee animal occurred at the time and under the circumstances specified in the procedural document on appointment of forensic veterinary examination. According to veterinary documents, it is necessary to analyze clinical condition of the sick animal in the dynamics of course of the disease (determine clinical condition of examinee animal at the time of initial application for veterinary care and with a certain frequency during VC provision or until its complete recovery, or formed mutilation, or the onset of death), in the same method determine the degree of severity of damage caused to the animal health, in accordance with guidelines [42].

At the research and analytical stage, the results of the analysis of any biological fluids (blood, urine, milk, etc.) should be immediately grouped into three groups: 1) increased indicators, 2) reduced indicators, 3) unchanged indicators, within physiological norm.

Let us illustrate grouped indicators with an example from our own practice. From the blood analysis of examinee cat that was treated in veterinary clinic due to a wound from a throwing weapon: *"Among clinical parameters of the blood, number of erythrocytes was increased — 6.5×10^{12} M/uL (standard: $4.0—6.0 \times 10^{9}$), number of leukocytes — 16.1×10^{9} M/uL (standard: 16.1), segmented neutrophils — 80 % (standard: 55—72). Decreased: hematocrit — 27 % (standard: 30—47), share of lymphocytes — 9 % (standard: 30—60). Other indicators, in particular, hemoglobin, color indicators, myelocytes, eosinophils, rod-nuclear neutrophils, young neutrophils, monocytes, platelets are within the physiological norm."* According to the same principle, it is advisable to group the results of biochemical blood tests, for example: *"Among biochemical indicators of the blood, the following are elevated: glucose — 9.2 mmol/l (standard: 3.6—6.5), total bilirubin — 20 IU/l (standard: 0—17). Decreased: ALT — 3.8 Units/L (standard: 10—74), AST — 5.1 Units/L (standard: 10—60). The rest of the indicators, in particular, total protein, albumin content, urea, creatinine, alkaline phosphatase is within the physiological norm"*.

For assessment the scoop and quality of VC provision, diagnostic procedures are carefully analyzed, paying attention to the name, technical and instrumental support, informativeness for formulating clinical diagnosis.

42 Яценко І. В., Париловський О. І. Op. cit.

In the minutes of imaging researches (ultrasonography, magnetic resonance or computer tomography, etc.), it is advisable to divide all examined organs into two groups: 1) without changes, 2) with changes, and emphasize conclusions of the relevant clinical or pathomorphological researches.

Examining ambulatory card (medical history) of the subject animal, forensic veterinary expert commission should find out:

- disease date or date of injury to the animal;
- time that has passed from illness or injury to the initial application for medical care;
- whether VC was provided to the animal before application to veterinary institution;
- primary diagnosis;
- nature and results of diagnostic researches and treatment measures.

Analyzing drug prescriptions during VC provision, forensic and veterinary expert commission should pay attention to the following criteria: titles of veterinary drugs; their compatibility with simultaneous use; peculiarities of sensitivity to the drug of a certain species of animals, intolerance, age and species restrictions; dosage of veterinary medicines; frequency and duration of their use, etc.

In case of animal death, it is necessary to carefully analyze completeness and quality of the post-mortem examination of the corpse, which is given in the *Minutes of post-mortem examination of the animal corpse* and contains the results of post-mortem examination and additional researches (pathohistological, microbiological, toxicological, parasitological ones, etc.). Based on case files, it is necessary to examine pathomorphological preparations made from the organs and tissues of animal corpse under examination with their description, added by pathologist. If the treatment of animal ended in its death, then the forensic veterinary examination for the purpose of determining VC defects should include research of such veterinary documents as *Extracts from the medical history* or *Extracts from the card of ambulatory sick animal*.

During research on pathological autopsy minutes of the corpse, forensic veterinary expert commission focuses on the description of traces of veterinary manipulations during the intravital VC administration, in particular: surgical wounds, intubation tubes, catheters, drains, probes, traces of injections or infusions, and compares clinical data provided in veterinary documents about the treatment of the animal, and the pathomorphological picture set out in the protocol of corpse autopsy and determines their correspondence (inconsistency). It is appropriate to check correspondence of injuries described by veterinarian in veterinary documents provided for research, traumatic changes in soft tissues, bones of the skeleton, and internal organs, outlined in the protocol of the post-mortem examination of animal corpse.

Thus, as research result of veterinary documents, forensic veterinary commission distinguishes two groups of specifics: 1) those characterizing the physiological norm of the examinee animal; 2) those characterizing its injury or disease. The latter will be analyzed and used to make a forensic veterinary diagnosis and draw up forensic expert conclusion.

At the analysis stage of all documents provided for research, forensic veterinary expert commission should analyze whether clinical diagnosis is correctly formulated: the main disease (injury), complications of the main disease (injury), concomitant diseases (injury) are distinguished. Itis imperative to take into account existence in the animal of one or more diseases other than the primary one, or the effect of such an additional disease (comorbidity) and find out their possible impact on both the conducted therapeutic and tactical measures and negative consequences for the animal.

The second stage of the research and analytical stage is detection and analysis of defects in VC provision (*q.v. Fig. 4*).

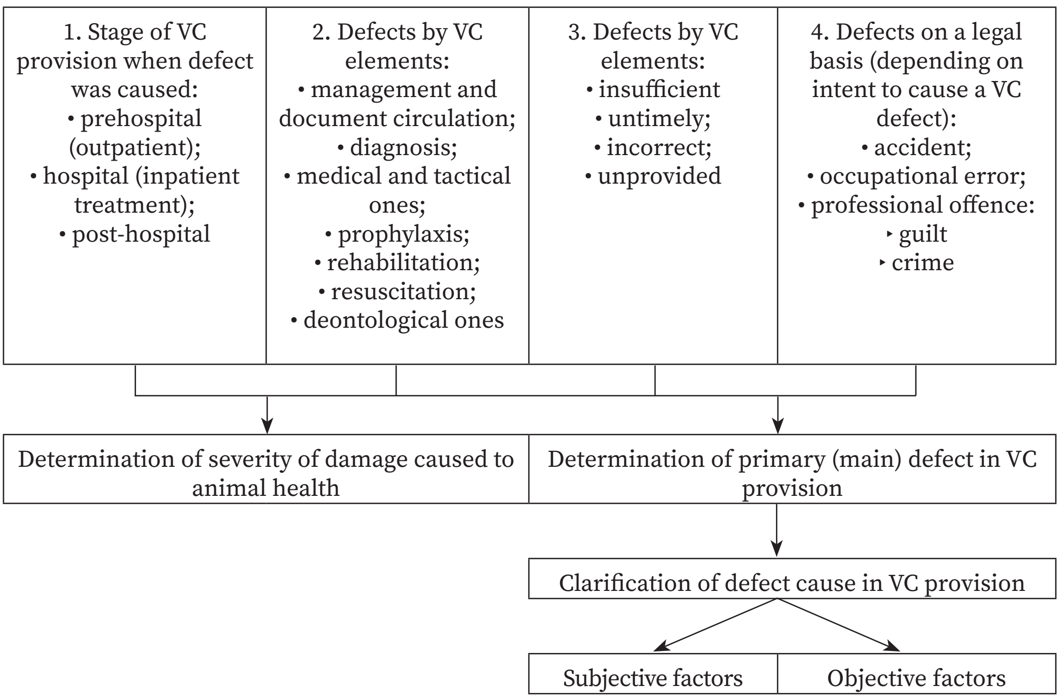

Fig. 4. Algorithm for determining defects in veterinary care at the research and analytical stage of forensic veterinary examination

The results of this stage are decisive for ascertaining the main death cause, clarifying correspondence of clinical and pathomorphological diagnoses or discrepancies between them, and contribute to objective determination of timeliness, scope and compliance of the chosen diagnostic and therapeutic tactics.

Forensic veterinary diagnosis formulated by the forensic veterinary commission, is important prerequisite for reasonably compiled, logically interrelated and scientifically substantiated final conclusions. In view of this, forensic veterinary diagnosis is built on the pathogenetic principle in the form of a list of nosological forms set out in a logical sequence, for example: underlying disease (damage), → its complication, → concomitant pathology.

One of important issues of forensic examination of VC defect (which object of is as a living animal as a corpse) is mutilation as a result of injuries caused by diagnostic and/or medical-tactical treatment, since mutilation caused to a vertebrate animal (in particular, by veterinarians during VC) is the topic of a criminal offense under Part 1 of Art. 299 of the Criminal Code of Ukraine[43]. The conclusion on the lack of animal mutilation after the injury can be reached by studying circumstances of the case under which the injury was caused and arising from the materials of the proceedings (case), as well as provided veterinary documents and the results of the direct clinical forensic veterinary animal examination.

Forensic veterinary expert commission, establishing mutilation of an animal formed as a result of VC defects should adhere to the following algorithm:

- provides morphological damage description (wound, bone fracture, abrasion, etc.);
- determines injury severity;
- finds out injury danger to life;
- establishes whether the damage was not accompanied by physical loss of any organ (part of the body) or its functions (part of the body);
- determines whether the damage to exterior is corrective or irreparable;
- establishes whether the damage caused disfigurement (distortion) of the body [44].

It should be noted that forensic veterinary commission has opportunity to assess deformation of the animal body parts as a result of injury 21—30 days from the moment of injury after regression of traumatic soft tissue edema. At the same time, the issue of animal mutilation occurrence due to VC defects is resolved only according to the results that have the final form of post-traumatic injuries without surgical intervention, but not earlier than 60—90 days from the date of injury, since involutional changes of such scars are possible during a certain period.

According to the *Rules of Forensic Veterinary Determination of the Severity of Damage Caused to the Animal Health*, damage to exterior is [45] diagnosed that led to mutilation: whether it is corrective or incorrigible, whether it has disfigured (distorted) the exterior or not.

We emphasize: expert assessment of correctability or incorrigibility of injuries to the animal during the improper VC provision should be carried out according to consequences that are determined over time and which have final (sustainable) form of post-traumatic injuries. In case of obvious, unconditional and undoubted post-traumatic irreparable damage to the animal body, forensic veterinary commission can finally qualify the injury immediately after the injury, without expecting full healing of the injury (for example, traumatic enucleation of the eyeball, traumatic extraction of teeth, traumatic amputation of the auricle, nose or tail, etc.). Deformities (distortions) of body parts can be assessed as animal mutilation, if the grounds are available [46].

It should be noted that, while determining mutilation of an animal as a result of irreparable damage (mutilation,

43 Кримінальний кодекс України від 05.04.2001 р. № 2341-ІІІ (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 07.10.2023).
44 Яценко І. В., Париловський О. І. Op. cit.
45 Ibidem.
46 Яценко І. В. Методика судово-ветеринарного дослідження тварин … .

distortion) to the body during inappropriate VC provision, forensic veterinary expert commission should provide an objective veterinary characterization of the consequences of this damage, depending on their localization, finding out whether surgical treatment is required to significantly reduce severity of post-traumatic pathological changes (scarring, deformation, etc.), for which they can additionally involve a veterinarian who specializes in veterinary surgery, as well as an expert in assessing animal breeds and other professionals.

VC provision appropriateness can be clarified by analyzing job descriptions of employees and the charter of veterinary medical institution where such assistance is provided.

4. Generalization and evaluation stage

At this examination stage, in order to determine VC defects, forensic veterinary expert commission, having studied and analyzed case files (especially available veterinary documents), finds out informative (suitable for formulating expert conclusions) and uninformative (unsuitable for forensic veterinary examination) data, summarizes and evaluates the obtained informative results in order to identify the type of VC defect in accordance with the proposed above classification.

At a joint meeting of the forensic veterinary expert commission, information on clinical course, diagnosis, clinical and forensic veterinary diagnoses, as well as treatment regimens for the sick animal are discussed. As a result of the study of informative veterinary documents, two groups of signs of examinee animal state are distinguished characterizing: 1) physiological norm, 2) damage or disease (the latter will be analyzed and used to draw up a forensic expert conclusion).

Forensic veterinary commission assesses injury signs or painful changes detected in examinee animal consistently: 1) characterizing the main injury or disease that caused animal health disorder, injury or death; 2) which characterize complications of the main injury or disease; 3) that characterize competing, concomitant and background injuries or diseases.

Taking into account this important stage of technologically complex research on VC defects, forensic veterinary commission:

- analyzes the results obtained at previous stages;
- critically evaluates alternatives;
- finally evaluates obtained data, determines their expert significance (informativeness of pathognomonic (most characteristic) signs of VC defect) for solving diagnostic and situational tasks of forensic veterinary examination (in particular, improper (poor-quality) performance of diagnostic, treatment-tactical, resuscitation, rehabilitation and other procedures by veterinarian, as well as improper organization of preventive measures or their missing in general);
- determines the fact of a real cause or a high probability of causing negative consequences for the animal(s) in the form of a health disorder (illness, injury, mutilation, etc.) or death;
- finds out cause-effect relation of VC defects with proper (improper)

performance (non-performance) by veterinarian of his professional duties.

At generalization and evaluation stage, it is necessary to apply dialectical method and methods of formal logic (analysis, synthesis, deduction, induction) and form internal conviction of forensic expert as a basis for conclusions [47]: these results are part of the synthesizing section of the research part of the expert conclusion.

Expert assessment of injuries or diseases detected in a live examinee animal, that became the result of improper performance by veterinarian of their professional duties, should be scientifically substantiated by the latest achievements of evidence based veterinary medicine, forensic veterinary medicine and other related sciences.

At the stage of assessing forensic veterinary research in order to determine VC defects, forensic veterinary commission (among other tasks) should substantiate correctness of the clinical diagnosis made by veterinary medicine employee while providing CV, because incorrectly made clinical diagnosis could be result of a diagnostic defect, as well as cause the choice of erroneous treatment, resuscitation or rehabilitation tactics. For this purpose, forensic veterinary commission substantiates its own forensic veterinary diagnosis, based on objective judgments about the nature of injuries recorded in veterinary documents (abrasion, wound, bone fracture, etc.) with an emphasis on a detailed description of the site of injury (lat. *status localis*) or the injured organ or disease nosology.

For determining the type of VC defect, forensic veterinary commission should assess nature, location, mechanism; priority, sequence and prescription of damage formation, substantiate the cause-effect relation between damage nature and severity of the damage caused to animal health by this defect.

Correlation between the damage to animal and harm caused to its health as a result of the VC defect is confirmed or refuted by the forensic veterinary expert commission, clarifying cause-effect relation between them and justification of damage severity caused to animal health (that will help the examination subject to reasonably provide a legal assessment and trace relationship between the actions (inaction) of veterinarians and admitted VC defect, as well as negative consequences for health and life of examinee animal).

Answering the question of whether the examinee animal felt pain as a result of a defect in the gastrointestinal tract, and determining duration of pain process, forensic veterinary commission should rely on data on nature of injuries, their number, localization, degree of severity, etc. For example, if an animal is severely injured as a result of surgery or other veterinary manipulations, forensic veterinary commission states that at the time of the injury and in the post-traumatic period, animal felt unbearable pain and suffered from the inflicted physical injuries. If the damage to the animal health caused by VC was of medium or light severity, forensic veterinary commission may note that the animal felt moderate pain and did not suffer for a long time from inflicted bodily injuries.

Evaluating results of forensic veterinary research on establishment of defects in VC provision, forensic veterinary

47 Яценко І. Внутрішнє переконання експерта: судово-ветеринарний аспект. *Теорія та практика судової експертизи і криміналістики.* 2023. Вип. 3 (32). С. 67—88. DOI: 10.32353/khrife.3.2023.05 (date accessed: 20.10.2023).

expert commission should maximally apply special veterinary knowledge and expert experience for correct and objective formulation of the forensic veterinary diagnosis and substantiation of answers to the questions posed in the procedural document on appointment of forensic veterinary examination regarding VD defect existence.

Culmination of summarizing and evaluation stage of forensic veterinary examination is qualification of actions of forensic veterinarians during VC provision (*q.v. Fig. 5*). With this in mind, the actions of the veterinarian(s) can be seen as providing appropriate medical care if the animal health is not harmed and if harm is caused, it is the accident result.

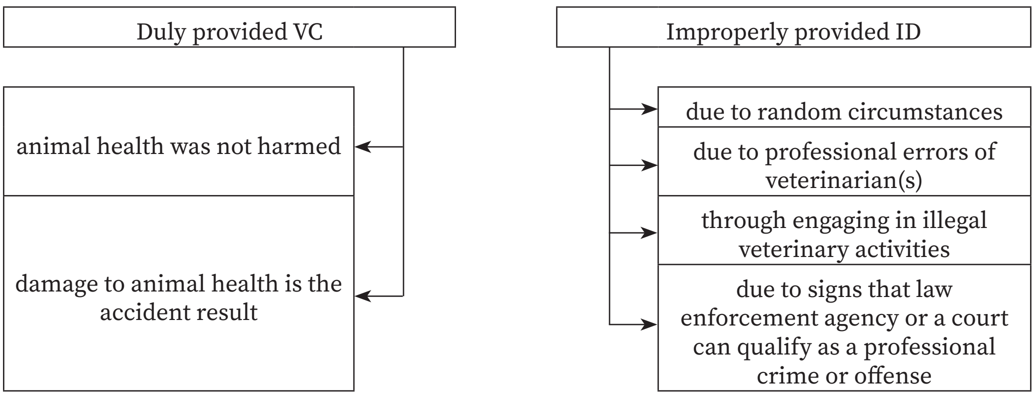

Fig. 5. Qualification of veterinarian actions in the case of providing veterinary care

If veterinary care is provided improperly, forensic veterinary expert commission should determine the signs of VC defect, taking into account materialized and tangible objects examined at previous stages and guided by following general signs:

1) improper (low-quality) performance of diagnostic, therapeutic-tactical, resuscitation, rehabilitation and other procedures by veterinarians and improper management of preventive measures or their missing at all;
2) fact of real or high probability of causing negative consequences for animal(s) in the form of health disorders (disease, injury, mutilation, etc.) or death due to VC defects;
3) staying VC defects in a direct cause-effect relation with improper (proper) performance or non-performance by veterinarian(s) of their professional duties.

We draw attention to the fact that, having established a defect in VC provision in veterinarian professional actions, the forensic veterinary commission determines its specific type (*q.v. table*), differentiating it according to other defects similar in characteristics.

Types of defects in veterinary care and their causes and symptoms

Defect type	Defect causes and symptoms
1. Accident in veterinary practice	1) Actions of veterinarian as a result of intervention justified by veterinary science and practice under conditions of awareness of such intervention danger; 2) proper and timely performance by the veterinary veterinarian(s) of their professional duties, if in a specific case everything necessary is done to prevent negative consequences in accordance with the principles of veterinary science; 3) provision by veterinarian(s) of qualified VC in accordance with regulatory acts, standards in the field of animal health protection, protocols for treatment of sick animals, instructions on measures for prevention and control of infectious diseases of animals, as well as other regulatory documents; 4) unforeseeable, irresistible and unavoidable coincidence of circumstances; 5) cause-effect relation between VC provision and the damage caused to animal health or occurrence of its death; 6) unsuccessful outcome of veterinary intervention does not depend on VC defects, in particular, mistakes of the veterinarian(s) (occurred due to animal organism specifics, case complexity, the unfavorable environment for VC provision); 7) legality of actions of veterinarian(s) and the lack of error criterion of in his (their) actions, but according to effective factor is a defect in VC provision; 8) lack of legal liability based on the results of legal deed qualification
2. Professional error in veterinary practice	1) Defect caused damage to the animal health; 2) civil liability based on the results of legal deed qualification; 3) error nature is not related to negligent and/or dishonest attitude of the specialist to performance of professional duties; 4) VD defects in the form of deed (active form of behavior) or inaction (passive form of behavior) of veterinarian(s) during performance of his(her) professional duties; 5) thin border with professional offenses (guilt and crimes); 6) veterinarian(s) commit(s) acts contrary to the requirements of animal health standards and protocols, instructions, making mistakes due to subjective (low level of qualification, underestimation or overestimation of advisory conclusion, results consultation, etc.) or objective (severity of the condition of the sick animal, lack of necessary veterinary technical and instrumental support, etc.) factors
3. Defects due to insufficient VC	The VC is provided in a smaller amount than required; improperly; does not meet certain requirements; unsatisfactory, poor
4. Defects due to untimely inspection	VC is not provided when needed, untimely

Defect type	Defect causes and symptoms
5. Defects due to incorrect VC	VC does not meet certain norms, rules, requirements; does not meet the truth, reality; is false is not as it should be; did not contribute to desired consequences
6. Defects due to non-provision of technical specifications	Inactivity of veterinarian(s), while VC provision is his (their) professional duty
7. Defects due to illegal VC provision	VC provided by improper entity: individual without veterinary education and confirming diploma, or in default of a legal entity or an individual entrepreneur license to conduct economic activities in veterinary practice

Thus, generalization and evaluation of materials provided for research is characterized by staging: first, there is an accumulation of interim conclusions, and on their basis, final conclusions are formed that are expert tasks for forensic veterinary commission, answers to asked questions in the procedural document on appointment of a forensic veterinary examination to determine VC defects, as well as the research result.

5. Final stage

This stage of forensic veterinary examination to establish VC defects consists in formulation of final conclusions by forensic veterinary commission and drawing up of *Expert Conclusion* as a procedural document that concludes forensic examination. In order to form the final forensic expert conclusion, sufficient expert grounds are necessary, corresponding to the principles of legality of expert procedure, independence and competence of the forensic expert, verification, comprehensiveness, scientific validity, completeness, and the use of the maximum amount of means and research methods.

Obtained evidence on the clinical course, diagnosis, clinical and forensic veterinary diagnoses, as well as treatment regimens for the sick animal are discussed at a joint meeting of forensic veterinary commission.

It should be noted that forensic veterinary commission formulates final conclusions based on internal conviction of each of its members, when the commission believes that the objects provided for research are sufficient and they are in a suitable condition, and the results of the forensic researches obtained are sufficient to provide a reasonable and objective conclusion; are confident in its correctness, have no doubts about accuracy of their decision and are ready to act in accordance with [48]. We state: there is a cause-and-effect relationship between the provision of objective, substantiated, correct and truthful conclusion by the commission of forensic veterinary experts and the internal conviction of experts that this conclusion is exactly the same.

48 Яценко І. Внутрішнє переконання експерта … . DOI: 10.32353/khrife.3.2023.05 (date accessed: 20.10.2023).

At the end of final part of *Expert Conclusion*, the forensic veterinary commission states factual data that are the results of research on materialized objects (most often veterinary documents), places special emphasis on pathognomonic deviations from morphological and physiological norms in organs and tissues directly related to bodily injury or disease, states how justified, motivated, reasoned, visual and convincing they are.

Final conclusions are formed by forensic veterinary commission on the basis of a cumulative research on veterinary documents, taking into account intermediate conclusions. The wording of final conclusions should be based on the forensic veterinary diagnosis that is a concise veterinary conclusion about what kind of disease or injury examining animal had, about the clinical course and final consequences of the disease or injury (complete recovery, injury or death); at the same time, veterinary interventions should be taken into account.

The final stage of the forensic veterinary examination in order to determine VC defects is drawing up of forensic expert conclusion. We will leave the theoretical discourse on this issue for further research, and we will publish its results in the next research paper.

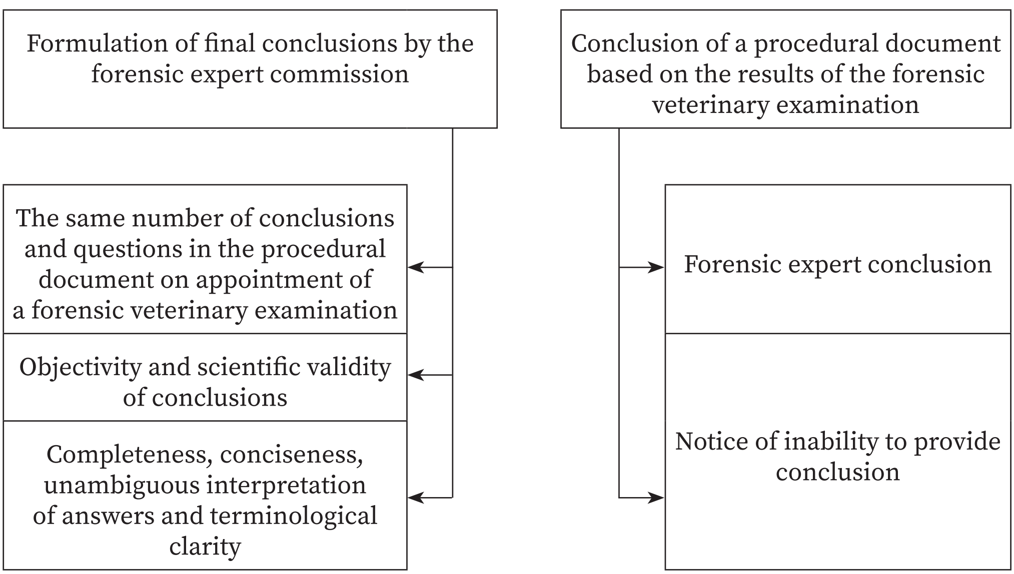

Fig. 6. Algorithm of final stage of forensic veterinary examination of defects in veterinary care

The reporter in the case formulates draft conclusions with answers to the questions raised in the procedural document (resolution) by the subject of appointment of the forensic veterinary examination (forensic expert recruitment). If forensic veterinary expert commission recognizes that VC provision contains defect signs, conclusions should indicate the main reason for development of an adverse consequence of VC provision, in particular: unfavorable conditions or circumstances of veterinary intervention (for example, the VC provision in an unequipped room, without sufficient lighting and proper instrumental equipment, laboratory base); VC provision in default of other VC specialists who could provide professional advice; special condition of sick animal (aggression, neglect of treatment, rapid or acute course of the disease, old age and layering of chronic pathologies; individual anomalies of the body structure and functioning of individual organs, non-standard reactions of the body to action of veterinary drugs or performed veterinary procedures (defects occur regardless of veterinarian professionalism in default of intent in his act), atypical development of diseases; allergic reactions that cannot be predicted during veterinary intervention, etc.); insufficient diagnosis (incomplete clarification of animal owner's complaints about the vital activity of the sick animal, failure to take into account anamnestic data, imperfect clinical examination due to the physical impossibility of using the latest diagnostic methods and means, inadequate evaluation of results of clinical and laboratory researches); negligent surgical intervention or performance of other treatment and preventive measures; unjustified professional veterinary risk, which does not belong to the category of force majeure and which is considered as an aggravating case with the inevitability of negative consequences for the health and life of the animal characteristic of it; unsatisfactory management of various VC stages, as at the outpatient as inpatient stages of its provision, in particular, careless management of document management, etc.).

The results of forensic veterinary examination are drawn up in the form of *forensic expert conclusion* or *Notification on impossibility of providing forensic expert conclusion*. Each opinion of experts should contain the following parts: *Introduction*, *Research* and *Conclusions*. In the introductory part, the questions posed for forensic examination solution are presented in revision of the person who appointed the examination. In the research part of conclusion, the following are noted: extracts from the procedural document on appointment of forensic veterinary examination; circumstances of the case; necessary information from case files and all available veterinary documents with their long titles; other factual data obtained during examination, provided in the form of quotations (in quotation marks) and containing information necessary to answer the questions posed for the examination; data of the primary forensic examination, as well as (if available) autopsy data of exhumed corpse, laboratory tests of physical evidence, clinical examinations of examinee animal, etc.

Depending on case nature, the following should be recorded from medical history: state of the sick animal at the time of initial VC application; records of the medical history that record animal state during entire treatment period; protocols of operations; clinical diagnoses; schemes of prescribed drug treatment; volume and frequency of administration of medicinal substances; results of laboratory studies of the body's internal environment; nature and volume of resuscitation measures; data of the protocol of the pathological autopsy of the corpse with the results of histological examination or data of the primary forensic veterinary examination, etc.

Strictly speaking, *Forensic expert conclusions* are drawn up in accordance with posed questions. Numbering of the answers should coincide with numbering of the questions of the procedural document on appointment of forensic veterinary examination. At the same time, it is allowed to combine questions that are similar in content and to change their sequence, without changing wording of the questions. If it is impossible to provide an answer on any question, the reason for this is substantiated.

Note that *Forensic expert conclusion* is drawn up on the form of forensic science institution, it is signed by the forensic experts who conducted the research. Signatures in the final part are certified by an imprint of the seal forensic science institution on each page of the text of final conclusions. If photo tables are added to expert conclusion, they are signed by forensic experts; signatures are certified by an imprint of the seal forensic science institution (Clause 4.15 of Chapter IV specialized Instruction [49]).

One copy of expert conclusion after signing it by all members of the forensic veterinary expert commission together with accompanying document shall be sent in the prescribed manner to the person (body) that appointed forensic veterinary examination. The second copy is drawn up as a supervisory proceeding and left in the archive of forensic science institution that conducted the re-examination (Paragraph 4.17 of Section IV of specialized Instruction [50]).

Together with the conclusion of experts, materials, material evidence and other documents related to this proceeding (this case) shall be returned. Accompanying document should contain: title and number of expert conclusions sent; the case on which the forensic veterinary examination was conducted; the number of the Unified Register of Pre-Trial Investigations; returning physical evidence and other documents related to this case.

We would like to emphasize that currently, requirements for forensic veterinary examination management have been increased as one of the main sources of evidence in cases of offenses in VC. In view of this, it is important to single out the key problems that arise due to improper performance of professional duties by a veterinarian and that do not allow to use all possibilities of forensic veterinary science, since these issues affect evidentiality and objectivity of the conclusions of forensic experts, have a negative impact on assessment of factual data discovered by the trial in the proceedings (case), and complicate or make impossible to find out the truth in the proceedings (case). Experience of forensic evaluation of VC defects testifies to the following ways of solving the outlined issues:

- develop VD standards and protocols for treatment of animals to regulate diagnostic, therapeutic, preventive and other veterinary activities for certain nosological diseases based on the latest achievements of science and technology and introduce them into veterinary activities;
- develop a regulatory framework for VC provision in accordance with the requirements of veterinary science, criminal,

49 Інструкція про призначення та проведення … . URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 20.10.2023).

50 Ibidem.

civil, administrative, economic legislation and requests of civil society;

- introduce the study *Forensic Veterinary Medicine* educational component at law faculties majoring in 081 *Law* to improve the professional training of students, in particular during the investigation of cases with a special subject, namely: forensic veterinarian;
- initiate involvement of specialists in the field of veterinary activity (especially majoring in such areas of veterinary activity as: surgery, reproductive medicine, cardiology, traumatology, endocrinology, neurology, etc.), as well as forensic veterinary experts (as specialists) in investigation of cases regarding improper VC provision and professional cooperation with;
- create advisory body of forensic veterinarians under State Production and Consumer Service, who would be involved in investigation of offenses (in particular, law enforcement agencies) with a special subject: a veterinary medicine worker and develop a corresponding regulation about this body;
- in order to prevent terminological confusion and complications in clarifying the necessary circumstances of the event and to facilitate the final establishment of the truth, standardize conceptual and categorical terminology (e.g., *accident in veterinary practice, professional error in veterinary practice, crime in veterinary activity, guilt in veterinary activity, failure or improper performance of professional duties by veterinarian, engagement in illegal veterinary activity, illegal conduct of experiments on vertebrate animal, illegal issuance of veterinary prescription*);
- develop and normatively consolidate forms of branch documents that are mandatory for use by subjects of veterinary activity of various forms of ownership (in particular, *Extract from the outpatient card of the animal*, *Extract from the medical history of the animal*, *Protocol of ultrasonographic examination of the animal*; *Protocol of X-ray examination of the animal*, *Protocol of magnetic resonance examination of the animal*, *Results of clinical and biochemical analysis of blood*, *Results of clinical and biochemical analysis of urine*, *Protocol of pathoanatomical dissection of the animal corpse*, etc.);
- supplement section X Research guidelines on preparation and appointment of forensic examinations and forensic researches [51] with a list of developed questions regarding defects of the veterinary medicine, that can be submitted by the subject of appointment of forensic veterinary examination for resolution to the forensic veterinary commission.

51 Науково-методичні рекомендації з питань підготовки та призначення судових експертиз та експертних досліджень : затв. наказом Мін’юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 20.10.2023).

Conclusions

Author's five-stage methods of forensic veterinary examination is proposed for the purpose of determining the VC defects: 1) Familiarization and training stage, 2) Managerial and informational stage, 3) Research and analytical stage, 4) Generalization and evaluation stage, 5) Final stage. The specified stages reflect sequence of actions of the forensic veterinary expert commission during the examination, highlight all the main issues that must be resolved for the actual investigation of circumstances of the veterinary incident and its mechanism, and complement each other. Each previous stage is the basis for the next one, and conclusion of the commission of forensic veterinary experts on VC shortcomings and the negative consequences for the health and life of animal(s) is enriched with information and acquires greater validity.

It is proved that use of proposed methods of forensic veterinary medicine in order to determine the VC defects contributes to effective clarification of defects in the VC elements (management and document circulation, diagnosis, treatment and tactical, preventive, rehabilitation, resuscitation, deontological measures), and at what stage of VC provision it occurred (pre-hospital, hospital or post-hospital), the nature of certain defects (insufficient, untimely, incorrect VC or its failure), with obligatory consideration of objective and subjective factors that caused them.

Forensic veterinary examination should state the result of the determined defect and provide a conclusion on the availability or lack of a cause-effect relation between the VC defect and negative consequence for the animal(s), as well as on the main cause of the negative consequence, namely: an unfavorable coincidence of circumstances, accidents that do not depend on the actions of the veterinarians, as they cannot be predicted and prevented (accident); professional error in veterinary practice (improper performance or non-performance by veterinarian(s) of their professional duties as a result of an objective or subjective error not related to negligent and dishonest attitude towards these duties: insufficient, untimely, incorrect VC provision); random coincidence of unfavorable circumstances; disease incurability or injury severity; unprofessional and unqualified actions in violation of the procedure for granting a license; defects due to VC non-provision or illegal VC provision.

Forensic veterinary commission should assess formulation correctness of clinical diagnosis, i.e., timeliness, scope, validity of the scheme of diagnostic and treatment-tactical veterinary measures, the correctness of the performance of surgical interventions or veterinary manipulations and compliance of VC provision of CD with requirements of current regulatory documents (if any).

It is argued that the determination of VC defects and negative consequences for the health and life of animals(s) according to the methods proposed by the author in this research paper will allow law enforcement agencies and the court to find out veterinary mechanism for development of adverse consequences for the health and life of animals(s).

Application of proposed methods of forensic veterinary medicine for the purpose of determining VC defects will have a positive effect on efficiency of conducting and effectiveness of forensic examination in case of identifying the VC shortcomings and negative consequences for the health and life of the animal(s), as it unifies approaches to forensic research, minimizes subjectivity of forensic assessment of professional actions of veterinarians becomes a scientific basis for providing a well-founded and objective conclusion of forensic expert(s) in a categorical form as a means of proof in legal proceedings; expands cognitive capabilities of pre-trial investigation bodies and court; creates foundation for improving criminal and administrative legislation of Ukraine in terms of the legal responsibility of veterinarians for professional offenses.

Методика судово-ветеринарної експертизи з метою визначення дефектів ветеринарної допомоги

Іван Яценко

Мета роботи — розробити методику судово-ветеринарної експертизи для визначення дефектів ветеринарної допомоги. Для досягнення поставленої мети застосовано загальнонаукові та спеціальні наукові методи. Наведено авторську методику судово-ветеринарної експертизи дефектів ветдопомоги, здійснюваної у п'ять етапів: ознайомчо-підготовчий, організаційно-інформаційний, дослідницько-аналітичний, узагальнювально-оцінний і завершальний. Доведено, що судово-ветеринарна експертиза має визначити наявність дефекту й надати висновок про наявність або відсутність причиново-наслідкового зв'язку між недоліком ветдопомоги та негативним для тварини наслідком і про основну причину такого наслідку. Увагу акцентовано на тому, що судово-ветеринарна експертна комісія має оцінити своєчасність, обсяг, обґрунтованість проведених діагностичних та лікувально-тактичних ветеринарних заходів, правильність виконання оперативних утручань або ветеринарних маніпуляцій і їх відповідність чинним нормативним документам. Обґрунтовано, що пропонована авторська методика уніфікує підходи до експертного дослідження, мінімізує суб'єктивність експертної оцінки дій працівників ветмедицини; розширює пізнавальні можливості органів досудового розслідування та суду; сприяє вдосконаленню кримінального й адміністративного законодавства України в частині юридичної відповідальності працівників ветмедицини за професійні правопорушення. Виокремлено ключові проблеми, які виникають через неналежне виконання працівниками ветмедицини своїх професійних обов'язків, і запропоновано шляхи їх розв'язання.

Ключові слова: *судова ветеринарна медицина; судово-ветеринарна експертиза; підекспертні тварини; дефекти й недоліки ветеринарної допомоги; негативні наслідки для здоров'я та життя тварини; методика й етапи судово-ветеринарного дослідження.*

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The author declares no conflict of interest.

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Criminal Policy in the Field of Digital Counterpropaganda During the War

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Criminal policy in the field of digital countermeasures against propaganda during war involves propaganda definition and its forms at international and national levels. Detection of various propaganda forms, classified as criminal offenses that encroach on foundations of national security, public order and security, as well as peace and security of humanity and the international legal order, is extremely relevant today. The most dangerous form of propaganda is war propaganda. War propaganda is a separate criminal offense that affects peace and security of mankind and the international legal order. War propaganda is a criminal offence, similar to the crime of aggression and war crimes, which requires their distinction. Rapid technological development and expansion of the digital space dictate new trends that should be taken into account when forming a criminal policy in the field of digital counterpropaganda during wartime. The protection of national security and democratic values requires a balanced approach: the use of digital means should not violate the basic rights and freedoms of citizens. The study of criminal policy in the field of digital countermeasures against propaganda *during the war was facilitated by the use of a complex of scientific methods: 1) logic one (for propaganda characterization of and its types, determination of digital means of countermeasures against this phenomenon); 2) philosophical (in order to find a philosophical basis for countering propaganda); 3) historical and legal one (during the analysis of the historical and legal experience of countering propaganda in wartime); 4) formal and logical one (for construction of criminal policy in the field of digital countermeasures to propaganda during wartime); 5) comparative legal one (when comparing the implementation of criminal policy in Ukraine and other States).*

Keywords: *criminal policy; counteraction to criminal offenses; digital means of countering criminal offenses; propaganda; war propaganda.*

Research Problem Formulation

Research on criminal policy in the field of digital counterpropaganda during the war involves, first of all, the propaganda definition and its forms at the international and national levels. Detection of various propaganda forms, classified as criminal offenses that encroach on the foundations of national security, public order and security, as well as peace and security of mankind and the international legal order, is extremely relevant nowadays. The most dangerous form of propaganda is war propaganda. War propaganda is a separate criminal offense, similar to the aggression crime and war crimes, which requiring their separation.

Given modern development of Ukraine, digital counteraction becomes an important aspect of countering war propaganda and other forms of propaganda during a military conflict. Dangerous information influence carried out with the help of digital means that is intrusive and manipulative in nature and incites society to war and fuels; it should be blocked by modern digital means that will allow to detect such propaganda and neutralize its destructive impact.

Analysis of Essential Researches and Publications

Certain aspects of criminal policy in the field of digital countermeasures against propaganda during the war were studied by such scientists as Zh. Denisyuk [1], S. Dmytrashko [2], P. Doichynovych [3], U. Koruts [4], N. Meltser [5],

1 Денисюк Ж. З. Пропаганда та контрпропаганда в контексті стратегій державної інформаційної політики. *Вчені записки ТНУ імені В. І. Вернадського. Серія: Державне управління*. 2021. Т. 32 (71). № 2. С. 46—51. DOI: 10.32838/TNU-2663-6468/2021.2/08 (date accessed: 10.12.2023).

2 Дмитрашко С. А. Стратегія впливу на масову свідомість у націонал-соціалістичній Німеччині. *Вісник НТУУ «КПІ». Політологія. Соціологія. Право.* 2018. Вип. 2 (38). С. 12—17. DOI: 10.20535/2308-5053.2018.2(38).152880 (date accessed: 10.12.2023).

3 Propaganda, War Crimes Trials and International Law: From Speakers' Corner to War Crimes ; ed. by P. Dojčinović. Routledge, 2012. 336 p.

4 Коруц У. З. Поняття пропаганди війни: історико-правовий аспект. *Південноукраїнський правничий часопис*. 2019. № 4. Ч. 1. С. 118—121. DOI: 10.32850/sulj.2019.4.1.26 (date accessed: 10.12.2023).

5 Мельцер Н. Международное гуманитарное право. Общий курс : справ. изд. Женева : МККК, 2016. 419 с.

Zh.-M. Khenkerts and L. Dosvald-Bek [6]. The scientific investigations of the named authors were only indirectly related to the criminal policy of digital counteraction to such a phenomenon as propaganda. Given the war duration in Ukraine and the aggressive nature of propaganda used by the enemy as a weapon, this research is extremely relevant.

Research Methods

During research, the following methods were used: 1) logic one (to characterize propaganda and its types, to determine digital means of countering this phenomenon); 2) philosophical one (in order to find a philosophical basis for countering propaganda); 3) historical and legal one (when analyzing historical and legal experience of countering propaganda in war conditions); 4) formal and logical one (for constructing a criminal policy in the field of digital counteraction to propaganda during war); 5) comparative and legal one (when comparing the implementation of criminal policy in Ukraine and other countries).

Article Purpose

Explore criminal policy in the field of digital counterpropaganda during wartime.

Main Content Presentation

Importance of criminal policy formation in the field of digital counterpropaganda is determined by international experience: court precedents qualify the actions of persons accused of war propaganda as a crime against humanity, as genocide, as a separate crime, and as a component of other international crimes. Thus, the Nazi propagandist of the Third Reich, Julius Streicher, Editor and owner of the *Der Stürmer* antisemitic newspaper was sentenced to death by the Nuremberg International Military Tribunal. This is the first conviction for propaganda, when persecution and actions were classified as a crime against humanity [7]. In order to recognize war propaganda as a crime, it is necessary to prove that the accused person directly incited specific acts of aggression, thereby creating a favorable belligerent atmosphere, which happened in the described case regarding Jews.

International Covenant on Civil and Political Rights states that any advocacy of national, racial or religious hatred that constitutes incitement to discrimination, hostility or violence, as well as any propaganda for war, should be prohibited by law [8].

A more recent example of mass media use to incite hatred, incite violence and discriminate against a certain ethnic group is the crimes in Rwanda: The International

6 Хенкертс Ж.-М., Досвальд-Бек Л. Обычное международное гуманитарное право. Т. 1. Нормы. Женева : МККК, 2006. 874 с. URL: https://www.icrc.org/ru/doc/assets/files/other/customary.pdf (date accessed: 10.12.2023).

7 Propaganda, War Crimes Trials … .

8 Міжнародний пакт про громадянські і політичні права : прийнята Генасамблеєю ООН 16.12.1966 р. док. ООН A/RES/2200 A (XXI) ; ратифік. Указом Президії ВР УРСР від 19.10.1973 р. № 2148-VIII [Чинна для України з 23.03.1976 р.]. URL: https://zakon.rada.gov.ua/laws/show/995_043?find=1&text=війн#w1_1 (date accessed: 10.12.2023).

Criminal Tribunal convicted the founders and journalists of the Rwandan company RTLM for the crime of genocide and crime against humanity (persecution, as in the example described above), related to the use of this mass media [9]. The court proved the facts of incitement to the genocide of the entire Tutsi ethnic group using specific linguistic constructions with the help of specific broadcasting channels. By the way, conducting linguistic examinations and understanding the speech and cultural context in such cases are extremely important not only for the correct qualification of actions, but also for compliance with the procedural order, which is strictly regulated. We mean cases when domestic experts are allowed to carry out linguistic examinations of a foreign text, who do not have an appropriate document that would confirm their knowledge of foreign language, which content they are analyzing, as they do not have an understanding of the context of the conflict. Thus, during appropriate linguistic or complex psycholinguistic examinations, questions can arise regarding the need to translate the text. For example, a forensic expert understands the language in which the text provided for research is presented, because he studied it at school, but he does not have a translator's diploma in the relevant language (in the case under study, it is Russian). Then the question arises about the need to translate the text into Ukrainian for further research [10] or to involve a forensic linguist who has a document confirming his knowledge of the language which the text was submitted in for research. We consider the second situation to be more justified from a procedural point of view: in order to prevent the defense party from initiating in court the recognition of such a conclusion of the forensic examination as inadmissible due to similar procedural specifics.

The decision of International Criminal Tribunal for the former Yugoslavia, which convicted the political leader, the leader of the Serbian Radical Party and the paramilitary Serbian group: *Chetniks* for a single speech that prompted the commission of rapes, murders and other crimes, is worthy of attention[11]. In other words, this person was convicted not for the direct commission of murders, rapes, etc., but for a single speech with elements of *hate speech* and threats against the local non-Serb population? namely, Croats: the court qualified his actions as a crime against humanity that gives grounds for reflection on the urgent need to formulate the criminal law policy of our state, given the existing international law enforcement practice.

At the same time, it is necessary to take into account the fact that (unlike the Second World War); currently propaganda

9 Опришко Л. Відповідальність ЗМІ за геноцид. Приклад Руанди / Journalism Teachers' Academy. 20.07.2022. 17:42. URL: https://www.jta.com.ua/trends/vidpovidalnist-zmi-za-henot-syd-pryklad-ruandy/ (date accessed: 10.12.2023).

10 Ухвала Сихівського райсуду м. Львова від 27.07.2023 р. Справа № 464/1692/22. Провадження № 1-кп/464/32/23. URL: https://zakononline.com.ua/court-decisions/show/112504386?-from=%22Пропаганда%20війни%22%20AND%20%22експертиза%22 (date accessed: 10.12.2023).

11 Куренкова О. Нацисти прагнули «великої Німеччини». Кремль — створення «великої Росії» коштом України — юрист Предраг Дойчинович / Суспільне новини. 09.01.2023. 09:37. URL: https://suspilne.media/325738-nacisti-pragnuli-velikoi-nimeccini-kreml-stvorenna-velikoi-rosii-kostom-ukraini-urist-predrag-dojcinovic/ (date accessed: 10.12.2023).

is mainly spread thanks to the digital environment, when social networks are its main tool. In this case, the Internet is not only a springboard for spreading false information: it has created the so-called army of trolls and bot networks, etc., which, supporting electronic communication in comments, convince Internet users of the "truth" of such information or resort to aggressive methods of intimidation, thereby depriving Internet users of any desire to search for the relevance of widespread information. For example, at least 47 governments used a combination of human and Internet bot campaigns to manipulate online discussions to spread propaganda in 2023; twice as many as 10 years ago [12]. A clear example of this is the analysis of internal documents of one of the leading contractors of the Russian special services regarding the development of tools designed to carry out cyberattacks and spread disinformation, control the Internet space and use digital means to promote certain propaganda narratives [13]. Certainly, such traditional mass media as television, radio and newspapers are also actively used as a hybrid weapon not only in the aggressor country, but also abroad, exerting a much larger influence in terms of scope. Although such actions have been prohibited since at least 1936, the time of the adoption of the International Convention on the Use of Radio Broadcasting in the Interests of Peace, in Art. 2 declaring the duty of States to refrain from war propaganda of [14].

Criminal Code of Ukraine provides for liability for the following forms of propaganda: 1) collaborative activities (Part 3 of Art. 111 [1]); 2) cruel treatment of animals (Art. 299); 3) import, production or distribution of works promoting the cult of violence and cruelty, racial, national or religious intolerance and discrimination (Art. 300); 4) war propaganda (Art. 436); 5) propaganda of communist and national-socialist (Nazi) totalitarian regimes (Art. 436[1]) [15]. The definition of this act in domestic criminal legislation is not given, but it should be noted that these socially dangerous acts encroach on quite different objects: 1) foundations of national security; 2) public order and security; 3) peace, security of mankind and international law and order.

Only in Art. 436 of *War propaganda* and in Art. 300: *Importation, production or distribution of works promoting the cult of violence and cruelty, racial, national or religious intolerance and discrimination* of the Criminal Code of Ukraine provides for quite stable criminal liability, since there have been no special changes in

12 Ryan-Mosley T. How generative AI is boosting the spread of disinformation and propaganda / MIT Technology Review. October 4, 2023. URL: https://www.technologyreview.com/2023/10/04/1080801/generative-ai-boosting-disinformation-and-propaganda-freedom-house/ (date accessed: 10.12.2023).

13 Leloup D., Reynaud F. Inside Vulkan, the digital weapons factory of Russians intelligence services / Le Monde. March 30, 2023, at 5:00 pm (Paris). URL: https://www.lemonde.fr/en/pixels/article/2023/03/30/inside-vulkan-the-digital-weapons-factory-of-russian-intelligence-services_6021230_13.html (date accessed: 10.12.2023).

14 Международная конвенция об использовании радиовещания в интересах мира : подпис. Генассамблеей ООН 23.09.1936 г. ; ратифиц. Президиум. ВС СССР 17.09.1982 г. с оговорк. и заявл. URL: https://zakononline.com.ua/documents/show/141016___141016 (date accessed: 10.12.2023).

15 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 10.12.2023).

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these rules regarding the definition of propaganda [16]. The rest of provisions of this Code do not stipulate such liability. Due to anti-communist, anti-national-socialist, European integration vector of Ukraine's development and the beginning of Russian aggression against Ukraine, the number of criminal offenses in the form of propaganda has increased significantly.

In paragraph 2, Part 1 of Art. 1 of the Law of Ukraine: *On Condemnation of the Communist and National Socialist (Nazi) Totalitarian Regimes in Ukraine and the Prohibition of Propaganda of Their Symbols,* which has a direct connection and mention of it in Art. 436[1] of Criminal Code of Ukraine, the following definition of propaganda of the communist and national socialist (Nazi) totalitarian regimes is given: "Public denial, in particular through the media, of the criminal nature of the communist totalitarian regime of 1917—1991 in Ukraine, the national socialist (Nazi) totalitarian regime, dissemination of information , aimed at justifying the criminal nature of the communist, national socialist (Nazi) totalitarian regimes, the activities of the Soviet state security bodies, the establishment of Soviet power on the territory of Ukraine or in separate administrative and territorial units, the persecution of participants in the struggle for the independence of Ukraine in the 20th century, production and/or distribution, as well as public use of products containing symbols of communist, national socialist (Nazi) totalitarian regimes" [17].

In 2021, Ukrainian legislators provided for criminal liability for propaganda of actions that have signs of cruelty to animals (Article 299 of Criminal Code of Ukraine [18]), although they did not formulate a definition of propaganda [19].

Since the beginning of the Russian aggression against Ukraine, collaborative activities have been criminalized and liability has been provided for "implementation by a citizen of Ukraine of propaganda in educational institutions, regardless of types and forms of ownership, in order to facilitate implementation of armed aggression against Ukraine, establishment and approval of temporary occupation of part of the territory of Ukraine, avoidance of responsibility for implementation by aggressor State of armed aggression against Ukraine, as well as the actions of citizens of Ukraine aimed at implementing the educational standards of the aggressor State in educational institutions" (Part 3 of Art. 111[1] of the Criminal Code of Ukraine) [20].

16 Кримінальний кодекс України ... . URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 10.12.2023).

17 Про засудження комуністичного та націонал-соціалістичного (нацистського) тоталітарних режимів в Україні та заборону пропаганди їхньої символіки : Закон України від 09.04.2015 р. № 317-VIII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/317-19#Text (date accessed: 10.12.2023).

18 Кримінальний кодекс України ... . URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 10.12.2023).

19 Про внесення змін до деяких законодавчих актів України щодо імплементації положень деяких міжнародних угод та директив Європейського Союзу у сфері охорони тваринного та рослинного світу : Закон України від 15.07.2021 р. № 1684-IX. URL: https://zakon.rada.gov.ua/laws/show/1684-20#n42 (date accessed: 10.12.2023).

20 Про внесення змін до деяких законодавчих актів України щодо встановлення кримінальної відповідальності за колабораційну діяльність : Закон України від 03.03.2022 р. № 2108-IX. URL: https://zakon.rada.gov.ua/laws/show/2108-20#Text (date accessed: 10.12.2023) ; Кримінальний кодекс України ... . URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 10.12.2023).

Obvious connection between propaganda and war crimes cannot be denied, as international researchers also point out [21]. Thus, in the reference publication: *International Humanitarian Law. The General Course* by N. Meltser issued by the International Committee of the Red Cross, emphasizes that the state that carries out the occupation cannot use propaganda aimed at voluntary entry into the occupation forces [22]. Article 51 of Geneva Convention relative to the Protection of Civilian Persons in Time of War states that "an Occupying Power shall not have the right to compel protected persons to serve in its armed or auxiliary forces" [23].

Additional Protocol I to Geneva Conventions stipulates that the parties to the conflict must take all practicable measures to ensure that children under the age of 15 do not take direct part in hostilities: the parties must refrain from recruiting them to their armed forces. In the case of recruitment from among persons who have attained the age of 15 but who have not yet attained the age of 18, the parties to the conflict shall give preference to persons of an older age. And already in the II additional protocol to the Geneva Conventions it is stated that "children who have not reached the age of fifteen are not subject to recruitment into armed forces or groups, and they are not allowed to participate in hostilities", but in this case it is not about prohibition of propaganda. Among the customs of war, it is also noted that "children should not be recruited into armed forces or armed groups" (norm 136) [24].

Therefore, we can conclude that war propaganda is a criminal offense similar to war crimes, but it is not directly recognized as a war crime. Only if there are signs of coercion or recruitment, it is possible to raise the question of committing a war crime that violates the laws and customs of war (Article 438 of Criminal Code of Ukraine). In practice, unfortunately, there are cases of arbitrary interpretation of coercion as propaganda. Thus, the Podilskyi District Court of Kyiv convicted a person for promoting service in the army of occupying state: Russian Federation. The court, referring to Art. 51 of the Geneva Convention on the Protection of the Civilian Population in Time of War, interpreted individual statements in the mass media and other activities of the defendant in the city of Sevastopol and AR Crimea as propaganda and a violation of the laws of warfare [25]. This example demonstrates the need to distinguish not only war crimes and other crimes against peace, human security and international legal order, but the concepts of *propaganda*, *coercion*, and *recruitment*.

For formation of criminal policy in the field of digital counteraction to propaganda during the war, it is

21 Saxon D. Propaganda as a Crime Under International Humanitarian Law: Theories and Strategies for Prosecutors / Propaganda, War Crimes Trials … . 24 p.

22 Мельцер Н. Указ. соч. С. 420.

23 Женевська конвенції про захист цивільного населення під час війни : прийнята 12.08.1949 р. ; ратифік. Указом Президії ВР УРСР від 03.07.1954 р. [Чинна для України з 03.01.1955 р.]. URL: https://zakon.rada.gov.ua/laws/show/995_154#n1507 (date accessed: 10.12.2023).

24 Хенкертс Ж.-М., Досвальд-Бек Л. Указ. соч. С. 617. URL: https://www.icrc.org/ru/doc/assets/files/other/customary.pdf (date accessed: 10.12.2023).

25 Вирок Подільського райсуду м. Києва від 15.06.2023 р. Справа № 758/16427/21. Провадження № 1-кп/758/422/23.

important not only to determine propaganda forms in international and national terms, their criminal legal qualification, the application of sanctions and punishments, but other means used to prevent such propaganda, its detection and prosecution.

Nowadays, governments and political players in both democratic and autocratic countries use artificial intelligence to create texts, photos and videos to manipulate public opinion in their favor and automatically censor critical online content.

Therefore, countering wartime propaganda in digital space and with artificial intelligence use and other digital tools is an important part of criminal policy. For example, with the start of full-scale war against Ukraine in 2022, TikTok began selectively flagging accounts run by Russian State propaganda agencies to inform users that they were exposed to Kremlin disinformation. It is difficult to say what exactly caused such a selection, since a significant number of accounts with millions of subscribers were left without the appropriate marking, although there were valid reasons for this [26]. Freedom House researchers documented 22 countries that have passed laws requiring or encouraging online platforms to use machine learning to remove unwanted online speech [27].

In view of the above, we see the need to form a digital toolkit to counter propaganda of war that can contain a variety of technologies and software solutions that will help to detect, analyze and control propaganda content. Among such digital tools, the following can be distinguished:

- machine learning and artificial intelligence algorithms capable of analyzing significant amounts of data and detecting patterns characteristic of propaganda messages, containing text, photo and video analysis;
- tools for verifying the truthfulness of the facts presented (platforms for verifying information, such as *Snopes*, *FactCheck.org*, etc. allow you to verify the accuracy of news and information distributed on the network);
- tools for detecting fake news (specialized software that uses linguistic (language) models and other technologies to identify potentially false, fake content);
- browser extensions (tools that are integrated directly into web browsers and help users identify unreliable sources of information and fake news);
- social networks and platforms (implementing their own content moderation tools to combat disinformation and propaganda, using both algorithms and human verification);
- educational platforms and initiatives (training programs and resources aimed at improving digital literacy and critical thinking in order to develop public skills to distinguish manipulative content);
- analytical tools for researching and analyzing trends, identifying

26 Klepper D. TikTok propaganda labels fall flat in ‘huge win’ for Russia / AP News. March 30, 2023. 5:44 pm GMT +2. URL: https://apnews.com/article/tiktok-russia-propaganda-labels-ukraine-kremlin-china-88ecd866a2c34218ebbaccb45e435c12 (date accessed: 10.12.2023).

27 Ryan-Mosley T. Ibidem. URL: https://www.technologyreview.com/2023/10/04/1080801/generative-ai-boosting-disinformation-and-propaganda-freedom-house/ (date accessed: 10.12.2023).

patterns, certain narratives, tracing marks in the dissemination of information on Internet, including propaganda and disinformation trends.

Relevance and the initial stage of implementation of these tools can be evidenced by the *Procedure for the Functioning of the Information and Analytical Platform for Electronic Verification and Monitoring* approved in 2021 [28].

It is especially important to develop digital means of countering war propaganda containing a variety of technologies and methods aimed at identifying, analyzing and blocking or neutralizing propaganda materials. We have analyzed international practice on this issue and consider it appropriate to single out the following areas of the formation of digital means of countering war propaganda:

- monitoring of social networks by using machine learning algorithms to detect and analyze propaganda messages in social networks, telegram channels, etc. (analysis of text, photos and videos for the presence of distorted or manipulative information);
- fact-checking and verification of information through the development of platforms and tools for fact-checking and verification of sources of information that can include cooperation with independent fact-checking institutions;
- recognition of fake news by using artificial intelligence algorithms to identify the falsity of such news and manipulative content (analysis of text structure, sources of information and linguistic specifics of presentation);
- digital literacy and education by launching educational campaigns and training programs to increase the level of digital literacy of citizens that will help them critically evaluate information;
- cooperation with technology companies by establishing partnerships with companies: developers of social media and other platforms to implement algorithms and rules that prevent the spread of propaganda and misinformation;
- use of legal mechanisms, introduction of legislative initiatives and measures aimed at preventing propaganda and punishing its dissemination;
- international cooperation with international non-governmental organizations and governments of other countries to coordinate efforts in the fight against military propaganda.

Criminal policy in the field of digital countering propaganda during war has an important legal significance, since its implementation affects the establishment of Ukraine as an independent, democratic and legal state. The introduction of a separate criminal policy in the field of digital counter-propaganda will make it possible to gradually and planned counter as propaganda as war in general. Legal, economic, informational and other countermeasures against digital propaganda can have a positive effect that minimizes and neutralizes the

28 Порядок функціонування інформаційно-аналітичної платформи електронної верифікації та моніторингу : затв. наказом Мінфіна України від 26.07.2023 р. № 428. URL: https://zakon.rada.gov.ua/laws/show/z1186-21#Text (date accessed: 10.12.2023).

informational impact of its spread. One should agree with P. Doichynovych, who asserts the need to distinguish between war propaganda, which can lead to the commission of war crimes, crimes against humanity and genocide, as in the cases mentioned above, and war propaganda, which leads to the crime of aggression [29] This important emphasis also demonstrates the similarity of propaganda to the crime of aggression in the international legal sense and national criminal law (Article 437 *Planning, preparation, initiation and waging of an aggressive war* of Criminal Code of Ukraine [30]). This is confirmed by the presence of propagandists in the list of suspects in the February 24 capital case [31].

Conclusions

Criminal policy in the field of digital counteraction to propaganda during the war should include a set of measures aimed at preventing propaganda (activities aimed at spreading disinformation, manipulating public opinion and inciting hatred during the military conflict), its detection, prosecution and punishment.

Highlights of this policy can include:

1) legislative regulation (adoption of clear legal norms defining propaganda as a crime, especially in the context of military conflicts);
2) media monitoring and analysis (creation of systems for monitoring media content in order to identify and control the dissemination of propaganda materials);
3) international cooperation (cooperation with international organizations and other States to combat cross-border propaganda and disinformation);
4) imposition of sanctions (application of punishments, including criminal liability, to persons and organizations guilty of spreading military propaganda or disinformation);
5) educational work (conducting an information campaign among the population to raise awareness of the risks and consequences of military propaganda and importance of critical information perception);
6) protection of human rights (measures to counter propaganda should not violate fundamental human rights and freedoms, including freedom of speech and expression).

Criminal policy in the field of digital counterpropaganda during the war requires a balanced approach to protecting national security and democratic values (taking into account the digital context) while respecting fundamental rights and freedoms of citizens.

Кримінальна політика у сфері цифрової протидії пропаганді під час війни

Михайло Шепітько, Катерина Латиш

Кримінальна політика у сфері цифрової протидії пропаганді під час війни передбачає передусім визначення пропаганди та її форм на міжнародному й національному рівнях. Виявлення різних

29 Куренкова О. Op. cit. URL: https://suspilne.media/325738-nacisti-pragnuli-velikoi-nimeccini-kreml-stvorenna-velikoi-rosii-kostom-ukraini-urist-predrag-dojcinovic/ (date accessed: 10.12.2023).

30 Кримінальний кодекс України ... . URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 10.12.2023).

31 Список підозрюваних магістральної справи «24 лютого» / Офіс Генпрокурора : офіц. сайт. URL: https://gp.gov.ua/detectable (date accessed: 10.12.2023).

форм пропаганди, класифікованих як кримінальні правопорушення, що посягають на основи національної безпеки, громадський порядок і безпеку, а також мир і безпеку людства та міжнародний правопорядок, сьогодні є надзвичайно актуальним. Найбільш небезпечною формою пропаганди є пропаганда війни. Пропаганда війни — це окреме кримінальне правопорушення, яке посягає на мир і безпеку людства та міжнародний правопорядок. Пропаганда війни є кримінальним правопорушенням, подібним до злочину агресії та воєнних злочинів, що потребує їхнього відмежування. Стрімкий технологічний розвиток та експансія цифрового простору диктують нові тенденції, на які доцільно зважати, формуючи кримінальну політику у сфері цифрової протидії пропаганді під час війни. Захист національної безпеки й демократичних цінностей потребує збалансованого підходу: застосування цифрових засобів не має порушувати основних прав і свобод громадян. Дослідженню кримінальної політики у сфері цифрової протидії пропаганді під час війни сприяло використання комплексу наукових методів: 1) логіки (для характеристики пропаганди та її видів, визначення цифрових засобів протидії цьому явищу); 2) філософського (із метою пошуку філософського підґрунтя протидії пропаганді); 3) історико-правового (під час аналізу історико-правового досвіду протидії пропаганді в умовах війни); 4) формально-логічного (для конструювання кримінальної політики у сфері цифрової протидії пропаганді під час війни); 5) порівняльно-правового (під час порівняння реалізації кримінальної політики в Україні й інших державах).

Ключові слова: *кримінальна політика; протидія кримінальним правопорушенням; цифрові засоби протидії кримінальним правопорушенням; пропаганда; пропаганда війни.*

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Legal Responsibility Issue of Forensic Expert in the Field of Law

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Changes to procedural legislation of Ukraine in 2017 added a new participant in lawsuit, namely: legal expert. Such an expert can be a person who has an academic degree and is a specialist in the field of law. Legislator did not put forward any other requirements for the new participant in lawsuit, that caused lively discussions, in particular, on the question of whether an expert in the field of law bears legal responsibility in general and what exactly. In view of the above, the purpose of this article is to determine the legal responsibility of forensic expert in the field of law. The methodological basis of the article is separate scientific methods of cognition, in particular: logical-semantic, systemic-functional, comparative-legal, structural-logical (reveals the issue of legal responsibility of an expert in the field of law) and methods of mathematical statistics (for quantitative comparative assessment and qualitative analysis of the obtained results). The article describes the rights and duties of an expert in the field of law, provided for by procedural legislation of Ukraine. Comparison of the procedural status of a forensic expert conclusion in the field of law with the conclusion of forensic research was made. Possible types of offenses by an expert in the field of law are proposed to be systematized into three groups: civil, organizational, and procedural ones. Four types of legal responsibility of forensic expert in the field of law are characterized: disciplinary, civil, administrative and criminal ones.

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***Keywords**: forensic expert in field of law; legal responsibility; conclusion of forensic expert in field of law; offense of forensic expert in field of law; duties of forensic expert in field of law; Regulations on Central Expert Qualification Commission; participant in procedural legal relations.*

Research Problem Formulation

Law of Ukraine № 2147-VIII: *On Amendments to the Economic Procedural Code of Ukraine, the Civil Procedural Code of Ukraine, the Code of Administrative Procedure of Ukraine and other legislative acts* dated on 03.10.2017 introduced a new participant in lawsuit, namely: *legal expert* [1]. This legislative act in Art. 73 of Civil Procedural Code of Ukraine [2], Art. 70 of Commercial and Procedural Code of Ukraine [3] and Art. 69 of the Code of Administrative Proceedings of Ukraine [4] introduced: "provision that a person who has a scientific degree and is a recognized specialist in the field of law can be involved as an expert on legal issues. Additional requirements and detailing of the legal status of an expert in the field of law, his rights and obligations, drafting and execution of the relevant document by an expert in the field of law, methods and techniques he uses when providing answers to the questions posed, the procedure for appointing and conducting expert examinations in the field rights and many other aspects of the activity of an expert in the field of law are not defined by the above-mentioned codes and other legislative and regulatory acts" [5].

Similarly, the legislation does not contain reservations about bringing an expert in the field of law to justice[6]. Relevance of researched issue lies in the fact that to this day there are ongoing discussions around the question "does forensic expert in the field of law bear any responsibility at all and for which offenses; on the basis of which laws it is possible to bring him to justice if necessary; can the

1 Про внесення змін до Господарського процесуального кодексу України, Цивільного процесуального кодексу України, Кодексу адміністративного судочинства України та інших законодавчих актів : Закон України від 03.10.2017 р. № 2147-VIII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2147-19#Text (date accessed: 02.11.2023).

2 Цивільний процесуальний кодекс України від 18.03.2004 р. № 1618-IV (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/1618-15#Text (date accessed: 02.11.2023).

3 Господарський процесуальний кодекс України від 06.11.1991 р. № 1798-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/1798-12#Text (date accessed: 02.11.2023).

4 Кодекс адміністративного судочинства України від 06.07.2005 р. № 2747-IV (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2747-15 (date accessed: 02.11.2023).

5 Дзюбак К. М. Відповідальність експерта у галузі права: чи передбачена вона процесуальним законодавством? *Теоретичні питання юриспруденції і проблеми правозастосування: виклики XXI століття* : тези доп. учасн. III Всеукр. наук.-практ. конф. (Харків, 19.06.2020). Харків, 2020. С. 9—12. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/e2172522-77cc-48a2-bcb2-aa47fec76578/content (date accessed: 02.11.2023).

6 Ibidem.

conclusions of the expert in the field of law be considered reliable without prior warning of the expert in the field of law about criminal liability for a knowingly false conclusion or for refusing without valid reasons to perform one's duties" [7] etc.

Article Purpose

Legal responsibility issue of forensic expert in the field of law.

Research Methods

Methodological basis of the article is separate scientific cognition methods, in particular: logical-semantic; system-functional; comparative legal ones. Using the structural-logical method, the issue of legal responsibility of an expert in the field of law is revealed. The methods of mathematical statistics are used for quantitative comparative assessment and qualitative analysis of the obtained results.

Analysis of Recent Researches and Publications

The analysis of legal literature "proved the lack of scientific research on the above issues. Scientists and practicing lawyers focused more attention on defining the legal nature of the institute of an expert in the field of law, on the legal personality of an expert in the field of law as a participant in civil, economic, administrative procedural legal relations" [8], such as O. Bortman [9], N. Zozulia [10], O. Karmaza [11], H. Kebernyk [12]. The following outstanding domestic scientists who deeply research the problems of expertise in the field of law also presented their research papers on the topic: L. Mamchur [13], I. Ozerskyi [14], M. Shcherbakovskyi [15] et al. "This is understandable, because the

7 Дзюбак К. М. Op. cit. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/e2172522-77cc-48a2-bcb2-aa47fec76578/content (date accessed: 02.11.2023).

8 Ibidem.

9 Бортман О. Експерт у галузі права: суддя на фрілансі? *Юрист і Закон.* 2017. № 47. URL: https://vkp.ua/publication/ekspert_u_galuzi_prava_suddya_na_frilansi (date accessed: 05.11.2023).

10 Зозуля Н. Експерт з питань права: проблема процесуального статусу / Українське право. 14.12.2017. URL: https://ukrainepravo.com/scientific-thought/legal_analyst/ekspert-z-pitan-prava-problema-protsesualnogo-statusu/ (date accessed: 05.11.2023).

11 Кармаза О. Експерт у галузі права в судовому процесі: теорія та судова практика. *Право і суспільство.* 2019. № 5. С. 89—94. DOI: 10.32842/2078-3736-2019-5-1-14 (date accessed: 05.11.2023).

12 Кеберник Г. В. Наукова експертиза в адміністративно-юрисдикційній діяльності: основи організаційно-правового регулювання в європейських країнах. *Науковий вісник Міжнародного гуманітарного університету. Серія: Юриспруденція.* 2014. Вип. 8. С. 87—92. URL: http://nbuv.gov.ua/UJRN/Nvmgu_jur_2014_8_24 (date accessed: 05.11.2023).

13 Мамчур Л. В., Мельніков М О. Висновок як процесуальна форма використання фахових знань експерта з питань права в цивільному процесі України. *Прикарпатський юридичний вісник.* 2019. Вип. 4 (29). Т. 2. С. 66—69. DOI: 10.32837/pyuv.v2i4(29).436 (date accessed: 05.11.2023).

14 Озерський І. В. Експертиза в галузі права як нова форма застосування спеціальних знань юридичного психолога. *Юридичний науковий електронний журнал.* 2019. № 5. С. 313—316. DOI: 10.32782/2524-0374/2019-5/75 (date accessed: 11.11.2023).

15 Щербаковський М. Г. Фахівець з питань права: експерт чи консультант? *Актуальні проблеми криміналістики та судової експертології* : мат-ли міжвідом. наук.-практ. конф. (Київ, 22.11.2018). Київ, 2018. С. 479—482. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/d8a68738-7911-4f10-b203-9a18b4aa1c28/content (date accessed: 12.11.2023).

judicial reform "engineered" overnight to receive another tranche from the IMF turned out to be unable to resolve the legal conflicts of the already imperfect legislation of our country. On the contrary, each further innovation, as it is fashionable to say, "reform", sinks the country into an ever-widening institutional abyss. This time she touched the institution of an expert in the field of law" [16].

Main Content Presentation

"Scope and content of the rights and duties of expert in the field of law are set out in three clauses of the procedural codes. Yes, an expert in the field of law has the right to:

- *know the purpose of summons to the court;*
- *refuse to participate in the legal process if he does not have the relevant knowledge;*
- *for payment of services and compensation for expenses related to a summons to court.*

Among the duties of expert in the field of law, it is determined that a legal expert must appear before the court upon its summons, answer the questions posed by the court, and provide explanations. In default of objections from the parties to the case, legal expert may participate in the court session via video conference.

The decision on admitting legal expert to participate in the case and attaching his conclusion to the case file is adopted by the court.

The above norms are comprehensive in terms of their consolidation by procedural legislation that gives rise to various "flights of fantasy" of law stakeholders and the ambiguity of the interpretation of the status of an expert in the field of law during his participation in the legal process. If we turn to the same legislation, namely Art. 115 of Civil Procedural Code of Ukraine, it turns out that the opinion of an expert in the field of law is not evidence, has an auxiliary (advisory) nature and is not binding on the court; the court may refer in the decision to the opinion of an expert in the field of law as a source of the information contained therein, and shall make independent conclusions on the relevant issues.

This gives us grounds to draw an analogy between the conclusion of an expert in the field of law and the conclusion of forensic research. The content of the concept of "forensic research conclusion" is fixed in clause 1.3 of the Instructions on the Appointment and Conduct of Forensic Examinations and Expert Investigations, approved by the Order of the Ministry of Justice of Ukraine № 53/5 dated on 08.10.1998 (hereinafter referred to as Instructions on Forensic Examination)[17] *which stipulates that " in accordance with the current legislation, for legal entities and individuals on a contractual basis, expert studies are conducted by experts, which require special knowledge and the use of criminology and forensic methods." The basis for expert research is a written statement (letter) from the customer (a legal entity or an individual) with a list of issues to be resolved, as well as objects provided for research. The conclusion of an expert study is not considered by the court*

16 Дзюбак К. М. Op. cit. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/e2172522-77cc-48a2-bcb2-aa47fec76578/content (date accessed: 02.11.2023).

17 Про затвердження Інструкції про призначення та проведення судових експертиз та Науково-методичних рекомендацій з питань підготовки та призначення судових експертиз та експертних досліджень : наказ Мін'юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 01.11.2023).

as evidence, since the legislator did not grant this document legal recognition." [18].

Moreover, in clause 4.21, Ch. IV of Instructions on forensic examination it is stated that "expert studies are performed in the order provided for conducting examinations". *Forensic expert conclusion is based on the structure and content of the expert's conclusion, with the following exceptions:*

- *in introductory part of the conclusion, it is indicated who and when applied to the institution or directly to the expert with the order to conduct the research;*
- *the entry concerning responsibility of the person conducting the research for providing a known false conclusion is omitted.*

It should be noted that criminal liability of expert for providing a knowingly false conclusion is defined in Art. 384 of the Criminal Code of Ukraine[19]. *In other words, in the case of drawing up a conclusion of an expert study, the expert is not warned of criminal liability. Under such conditions, an expert in the field of law is exempted from criminal liability*[20].

"However, <…> if we consider the figure of an expert in the field of law as an expert who possesses special knowledge, namely legal knowledge, it is likely that in this case he is covered by sectoral Law of Ukraine: *On Judicial Examination* № 4038-XII [21] dated on 25.02.1994. Article 7 of this Law establishes that forensic expert activity is carried out by state specialized institutions, as well as forensic experts who are not employees of the specified institutions, and other specialists (experts) from the relevant fields of knowledge in the manner and under the conditions determined by this Law." This Law, in particular Article 14, provides for the possibility of a forensic expert to be held legally liable on the grounds and in the manner prescribed by law. Until October 3, 2017, this article provided for the possibility of bringing a forensic expert to disciplinary, material, administrative or criminal liability.[22].

In addition, among the requirements for forensic expert conclusion opinion, there is a provision on warning (awareness) of expert about criminal liability for providing a knowingly false conclusion under Article 384 of Criminal Code of Ukraine or for refusing to provide an opinion under Article 385 of the Criminal Code of Ukraine.

Based on the approach proposed by legislator to determine the legal status of an expert in the field of law, we consider it necessary and justified to include in the opinion of an expert in the field of law a record of the knowledge of the expert in the field of law about criminal liability under Article 384 of the Criminal Code of Ukraine and in cases of impossibility of providing answers to the question is under Article 385 of the Criminal Code of Ukraine" [23].

Our opinion about whether forensic examination in the field of law should be

18 Дзюбак К. М. Op. cit. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/e2172522-77cc-48a2-bcb2-aa47fec76578/content (date accessed: 02.11.2023).

19 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 01.11.2023).

20 Дзюбак К. М. Op. cit. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/e2172522-77cc-48a2-bcb2-aa47fec76578/content (date accessed: 02.11.2023).

21 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/4038-12#Text (date accessed: 01.11.2023).

22 Ibidem.

23 Дзюбак К. М. Op. cit. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/e2172522-77cc-48a2-bcb2-aa47fec76578/content (date accessed: 02.11.2023).

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considered scientific and legal (discussed in previous publications by the author of this article) was supported by the legislator in Part 10 of Art. 21 of the Law of Ukraine: *On Scientific and Scientific and Technical Expertise* № 51/95-ВР dated on 10.02.1995 (hereinafter referred to as Law № 51/95-ВР): "The expert of scientific and scientific and technical expertise is responsible for untimely, low-quality and illegal conduct of scientific and scientific-technical expertise, non-fulfillment of the terms of the contract for its conduct" [24]. In Art. 35 of Law № 51/95-ВР lists offenses in the field of scientific and scientific and technical expertise. For a more convenient perception of information, we investigated the possible types of offenses of forensic expert in the field of law and systematized them according to three groups, that is discussed below.

The *first group* is civil law containing possible offenses related to performance by forensic expert in the field of law of the duties of conducting an examination, agreed between him and the client of forensic examination under the terms of the contract.

The *second group* is managerial, it lists the types of offenses caused by improper involvement of forensic expert in the field of law in the conduct of scientific and legal examination.

The *third group* is procedural, it contains types of offenses that may arise as a result of external interference in workflow of forensic expert in the field of law or the bias and bias of his conclusions.

Visual information on groups of possible types of offenses of forensic expert in the field of law is provided in the table 1.

Table 1

Possible types of offenses by forensic expert in the field of law

Group of offenses	Types of offenses
Civil law one	Non-fulfillment of requirements of normative legal acts on forensic science and the terms of agreement on scientific and legal examination
	conducting a scientific and legal examination contrary to its main purpose, defined in the contract for conducting forensic examination
	non-fulfillment of the contract terms or mandate to conduct a scientific and legal examination
Managerial one	Making decisions without conducting a scientific and legal examination in the case when legislation stipulates mandatory conducting such examination
	taking actions that hinder management and conducting scientific and legal examination, or illegal refusal to provide forensic science institutions, organizations and temporary expert teams with necessary information and content
	provision of paid services in the field of scientific and legal examination by enterprises, institutions, organizations, temporary expert teams, which statutes do not provide for such activity

24 Про наукову і науково-технічну експертизу : Закон України від 10.02.1995 р. № 51/95-ВР (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/51/95-вр#Text (date accessed: 15.11.2023).

Group of offenses	Types of offenses
Procedural one	Involvement of officials and specialists who are their authors or directly interested persons in conducting scientific and legal examination of R&D and scientific and technical pilot projects
	deliberate coercion or creation of circumstances for experts and expert commissions that lead to the illegal or biased conduct of scientific and legal examination or preparation of unfounded or deliberately unreliable conclusions
	discrediting or persecuting forensic experts based on their prepared conclusions unfavorable to the person or institution discrediting or persecuting them
	violation by the examination subject of copyright and rights to industrial property objects in relation to the examination object, examination results, violation of conditions of information confidentiality obtained by forensic expert while expert work
	falsification of conclusions of scientific and legal examination

As stated earlier, disciplinary, civil, administrative and criminal liability is possible for experts in the field of law mentioned in the table of offenses in the field of scientific and legal examination.

Let us consider in detail such type of legal responsibility of forensic expert in the field of law as disciplinary. We will try to find out mechanism and terms of bringing the expert to such responsibility and which subjects the legislator has foreseen application of disciplinary sanctions.

Disciplinary responsibility is a violation of labor discipline by an employee with application of reprimand or dismissal. We emphasize that this issue is clearly formulated in the current labor legislation, providing for two types of disciplinary responsibility: general and special ones. Each of these types has its own characteristic features concerning the types, procedure of application and appeal of disciplinary sanctions. Visually, main types of disciplinary responsibility are given in the table 2.

Table 2

Types of disciplinary responsibility of employees

General one	Special one
1. Provided by the Code of Labor Laws and internal regulations. 2. The ground is a disciplinary fault traditionally containing subject, subjective side, object, and objective side. 3. The subject is always a person who has an employment relationship with the owner or a body authorized by him	1. It is carried out: a) in order of subordination; b) according to the statutes on discipline; c) according to separate normative acts. 2. Penalties may be applied by bodies that have the right to hire (select, approve and appoint an employee). 3. The subject is always a person who has an employment relationship with the owner or a body authorized by.

General disciplinary responsibility is applied in accordance with the requirements of the Labor Code of Ukraine[25] and the rules of the internal labor procedure. In addition, the Labor Code of Ukraine and the rules of the Labor Code are provided for all categories of employees, except for those whose labor activities are regulated by special legislation of Ukraine or departmental acts (statutes, regulations, disciplinary orders). It should be noted that reprimand and dismissal as punishment for violation of labor discipline are applied to the employee according to the general rule within the scope of general disciplinary responsibility.

Special disciplinary responsibility provides for possibility of applying to the violator of labor discipline other measures of disciplinary sanctions and influence, such as: "demotion in class rank, demotion in position, badge deprivation , dismissal with deprivation of class rank, warning of incomplete official compliance, delay to one year in the assignment of another rank or in appointment to higher position, verbal remark, remark, severe reprimand, demotion in a special rank by one degree" [26] etc.

Therefore, bringing specific violator of labor discipline to disciplinary responsibility involves taking into account his legal status. The fact that, in accordance with Part 1 of Art. 1471 of the Labor Code of Ukraine, "disciplinary sanctions are applied by the body that has been granted the right to hire (elect, approve and appoint) a given employee" [27]. It is worth emphasizing that disciplinary sanctions have the right to be imposed by higher authorities as well, if employees bear disciplinary responsibility according to statutes, regulations and other acts of legislation on discipline.

For example, according to Art. 13 of the Disciplinary Statute of the Internal Affairs Bodies of Ukraine "The Minister of Internal Affairs of Ukraine has the right to impose disciplinary sanctions provided for in this Statute on all rank-and-file and senior officers" [28]. Example of the dismissal of employees holding elected positions is interesting. The legislation stipulates that such employees can be dismissed only by the decision of the body that elected them, and only on the grounds stipulated by legislation.

As for the legal basis for the application of disciplinary responsibility of forensic expert in the field of law, current labor legislation does not provide specific definitions, does not define a clear composition of offenses due to which the employee (forensic expert in the field of law) is subject to disciplinary responsibility. The question immediately arises: is an expert in the field of law always an employee and who is his employer? After all, in many cases, by forensic expert in the field of law, we understand a person who works independently, more precisely, we refer to a specific scientist who may not work in State institution, but be an individual entrepreneur, or a private entrepreneur, or have another status. Or, on the contrary,

25 Кодекс законів про працю України від 10.12.1971 р. № 322-VIII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/322-08#Text (date accessed: 12.11.2023).

26 Види, підстави та порядок накладення дисциплінарних стягнень / Мін'юст України : офіц. сайт. URL: https://minjust.gov.ua/m/str_23358 (date accessed: 12.11.2023).

27 Кодекс законів про працю … . URL: https://zakon.rada.gov.ua/laws/show/322-08#Text (date accessed: 12.11.2023).

28 Про Дисциплінарний статут органів внутрішніх справ України : Закон України від 22.02.2006 р. № 3460-IV (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/3460-15#Text (date accessed: 14.11.2023).

forensic expert in the field of law may have an employment relationship with the relevant body, but his performance of his official duties does not concern expert activity. Then provision of a scientific and legal expert opinion will be outside the scope of employment relationship between. In this case, who is the subject of applying disciplinary sanctions, if disciplinary sanctions can be applied to an employee only by the body that has disciplinary power over the latter? There are many questions, to none of which the legislator does not give answers.

In particular, Art. 35 of Law № 51/95-ВР [29] contains only one reference to the laws, which deal with prosecution of persons guilty of committing offenses specified in the table 1, offenses in the field of scientific and scientific and technical expertise. There is no other information that would contain the specified types of disciplinary liability, disciplinary offenses, disciplinary penalties, etc., in Law № 51/95-ВР. Analysis of Art. 14 of the branch Law [30] defining legal, managerial and financial foundations of forensic expert activity, as well as the Regulation on the Central Expert Qualification Commission under the Ministry of Justice of Ukraine and the attestation of forensic experts hereinafter referred to as the Regulation on CEQC), which in Sec. VI defines, in particular, the procedure for consideration of issues of disciplinary responsibility of forensic experts, indicates that "certified forensic experts may be subject to disciplinary liability for violating the requirements of the legislation of Ukraine on forensic expertise and/or methodological requirements during the conduct of research" [31].

In clause 12 of the chapter VI of the Provisions on CEQC stipulates that "following disciplinary sanctions may be applied to forensic experts:

1) warning;
2) temporary (up to one year) suspension of validity of the Certificate for relevant expert specialization;
3) qualification deprivation of forensic expert in the relevant expert specialization" [32].

Among those listed in the table 1 types of disciplinary sanctions cannot be applied to forensic expert in the field of law as follows:

- suspension of certificate validity, since the scientific and expert activity does not require mandatory condition of having a certificate or other permit document (we noted this above);
- qualification deprivation of forensic expert due to the fact that expert in the field of law is not a forensic expert;
- lowering the qualification class of forensic expert due to the fact that experts in the field of law are not forensic experts of forensic science institutes of the Ministry of Justice of Ukraine.

29 Про наукову і науково-технічну експертизу … . URL: https://zakon.rada.gov.ua/laws/show/51/95-вр#Text (date accessed: 15.11.2023).

30 Про судову експертизу … . URL: https://zakon.rada.gov.ua/laws/show/4038-12#Text (date accessed: 14.11.2023).

31 Положення про Центральну експертно-кваліфікаційну комісію при Міністерстві юстиції України та атестацію судових експертів : затв. наказом Мін'юсту України від 03.03.2015 р. № 301/5 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z0249-15#Text (date accessed: 15.11.2023).

32 Положення про Центральну експертно-кваліфікаційну комісію … . URL: https://zakon.rada.gov.ua/laws/show/z0249-15#Text (date accessed: 15.11.2023).

As for the warning, we believe that this type of disciplinary sanction can be applied to the expert in the field of law, but on the condition that he has an employment relationship, that is, there are relevant rules of labor discipline that should be followed by him and this type of disciplinary liability is provided for in normative documents regulating labor relations.

In addition to criminal and disciplinary liability, an expert in the field of law can bear tort liability "in case of causing property damage by his actions during the examination" [33]. We draw attention to the fact that in this case the expert must have a working relationship with the institution of higher education, which, in fact, has been harmed as a result of the violation of the labor duties assigned to him. Such damage and its amount should be proven in a court of law and a corresponding court decision should be issued to hold forensic expert financially liable.

The conditions for imposing material liability on forensic expert in the field of law are as follows:

- direct actual damage;
- illegal employee behavior;
- causal connection between illegal actions or inaction and caused damage;
- fault of the employee in caused damage (under agreement on assuming full material responsibility, employee failed to ensure integrity of valuables transferred to him for safekeeping);
- property or other valuables received by employee under a one-time power of attorney or other one-time documents;
- damage was caused by actions that have characteristics of those that are prosecuted in a criminal procedure;
- employee caused damage while intoxicated;
- damage was caused outside performance of working duties;
- official illegally dismissed the employee or transferred him to another position;
- damage caused by shortage, intentional destruction or damage to materials, products, devices, etc., issued to the employee by the enterprise, institution for use.

Separately in Art. 185[4] of Code of Ukraine on Administrative Offenses [34] provides for administrative responsibility of forensic expert for evading appearance of a pre-trial investigation body or court, that in our opinion, can be applied to activity of forensic expert in the field of law. In addition, the legislation of Ukraine stipulates obligation of forensic expert in the field of law to appear before the court upon summons, answer the raised questions provide explanations.

33 Експерт у кримінальному провадженні: права, обов'язки, відповідальність / Довід.-інф. платф. правов. консульт. URL: https://wiki.legalaid.gov.ua/index.php/%D0%95%D0%BA%D1%81%D0%BF%D0%B5%D1%80%D1%82_%D1%83_%D0%BA%D1%80%D0%B8%D0%BC%D1%96%D0%BD%D0%B0%D0%BB%D1%8C%D0%BD%D0%BE%D0%BC%D1%83_%D0%BF%D1%80%D0%BE%D0%B2%D0%B0%D0%B4%D0%B6%D0%B5%D0%BD%D0%BD%D1%96:_%D0%BF%D1%80%D0%B0%D0%B2%D0%B0,_%D0%BE%D0%B1%D0%BE%D0%B2%27%D1%8F%D0%B7%D0%BA%D0%B8,_%D0%B2%D1%96%D0%B4%D0%BF%D0%BE%D0%B2%D1%96%D0%B4%D0%B0%D0%BB%D1%8C%D0%BD%D1%96%D1%81%D1%82%D1%8C (date accessed: 15.11.2023).

34 Кодекс України про адміністративні правопорушення від 07.12.1984 р. № 8073-X (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/80731-10#Text (date accessed: 15.11.2023).

Conclusions

Performed research makes it possible to reach the following conclusions. Legal expert can be held liable: disciplinary, civil, administrative and criminal ones. While raising the issue of responsibility of forensic expert in the field of law, we based our reasoning on current industry legislation related to expert activity.

Note that such uncertainty in the activity of forensic expert in the field of law exists due to the lack of valid regulatory document that would regulate expert activity. Thereby further research should be directed to the development of a legislative and regulatory framework on activities of experts in the field of law for comprehensive and objective clarification of the truth during case consideration.

Питання юридичної відповідальності експерта в галузі права

Катерина Дзюбак

Зміни до процесуального законодавства України 2017 року додали нового учасника судового процесу — експерта з питань права. Таким експертом може бути особа, яка має науковий ступінь та є фахівцем у галузі права. Інших вимог до нового учасника судового процесу законодавець не висунув, що спричинило жваві дискусії, зокрема з питання, чи несе експерт у галузі права юридичну відповідальність узагалі та яку саме. З огляду на зазначене, метою цієї статті є визначення питання юридичної відповідальності експерта в галузі права. Методологічним підґрунтям статті є окремі наукові методи пізнання, зокрема: логіко-семантичний, системно-функціональний, порівняльно-правовий, структурно-логічний (розкриває питання юридичної відповідальності експерта в галузі права) і методи математичної статистики (для кількісного порівняльного оцінювання та якісного аналізування здобутих результатів). У статті наведено права й обов’язки експерта в галузі права, передбачені процесуальним законодавством України. Проведено порівняння процесуального статусу висновку експерта в галузі права із висновком експертного дослідження. Можливі види правопорушень експерта в галузі права запропоновано систематизувати за трьома групами: цивільно-правові, організаційні, процесуальні. Схарактеризовано чотири види юридичної відповідальності експерта в галузі права: дисциплінарний, цивільно-правовий, адміністративний і кримінальний.

Ключові слова: *експерт у галузі права; юридична відповідальність; висновок експерта в галузі права; правопорушення експерта в галузі права; обов’язки експерта в галузі права; Положення про Центральну експертно-кваліфікаційну комісію; учасник процесуальних правовідносин.*

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Ozerskyi, I. V. (2019). Ekspertyza v haluzi prava yak nova forma zastosuvannia spetsialnykh znan yurydychnoho psykholoha [Expertise in the field of law as a new form of application of the special knowledge of a legal psychologist]. *Yurydychnyi naukovyi elektronnyi zhurnal.* № 5. DOI: 10.32782/2524-0374/2019-5/75 [in Ukrainian].

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Features of Financial Support for Military Personnel and Extra Compensation during Martial Law in Ukraine

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This paper intends to determine and systematize the basis, procedure, and conditions for accrual and financial compensation, as well as extra compensation for military personnel during martial law. The methodological basis of the research is a system of general scientific and special methods of scientific knowledge, namely: dialectical, formal-logical, systemic-structural, and formal-dogmatic. The legal regulation of financial support and extra compensation for military personnel in Ukraine contains numerous legislative and by-law norms. The lasting changes in the legislation, the development of scientific opinion regarding financial support, and the escalation of the war in Ukraine require the systematization of the grounds, procedure, and conditions for accrual and financial compensation, as well as extra compensation for military personnel during martial law. The author's own definition of the concept of financial support for military personnel is given. The main grounds, procedure, and conditions for accrual and financial compensation, as well as extra compensation for military personnel during martial law, have been established and systematized. A circle of controversial issues related to financial support and extra compensation, for the resolution of which the military personnel turns to the court, has been highlighted. The conclusions of the scientific research are based on an in-depth analysis of the current Ukrainian legislation, court practice and scientific literature, that reveal the issue on financial support and extra compensation for the

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military personnel. The results of the study can be used in the future for law-making, research activities of forensic institutions, practical activities, and other purposes.

Keywords: *martial law; military personnel; military service; financial support; base salary; allowances; bonuses; extra compensation.*

Research Problem Formulation

The issue concerning financial support for military personnel becomes especially relevant during martial law. The armed conflict, which began with the armed aggression of the Russian Federation in the east of our country back in 2014 and escalated into a full-scale invasion of Ukraine's territory since 2022, has led to the imposition of martial law and, in turn, an increase in the number of military personnel.

By Presidential Decree No. 64/2022, dated February 24, 2022, martial law was imposed in Ukraine starting from 5:30 a.m., for a duration of 30 days. Martial Law in Ukraine has been extended in accordance with Presidential Decrees No. 133/2022, dated March 14, 2022, No. 259/2022 dated April 18, 2022, No. 341/2022 dated May 17, 2022, No. 573/2022 dated August 12, 2022, No. 757/2022 dated November 07, 2022, No. 58/2023 dated February 06, 2023, No. 254/2023 dated May 01, 2023, No. 451/2023 dated July 26, 2023 [1], approved by the Law of Ukraine *On the approval of Decree of the President of Ukraine "On the introduction of martial law in Ukraine"* [2].

Let us define the terms *"martial law"* and *"military personnel"*.

The Law of Ukraine *"On the Legal Regime of Martial Law"* defines *"martial law as a special legal regime introduced in Ukraine or in its certain areas in the event of armed aggression or threat of attack, threat to the state independence of Ukraine, its territorial integrity and provides for the granting of powers to the relevant state authorities, military command, military administrations and local self-government bodies necessary to avert the threat, repel armed aggression and ensure national security, eliminate threats to the state independence of Ukraine, its territorial integrity, as well as temporary restrictions on constitutional rights and freedoms of man and citizen and the rights and legitimate interests of legal entities, caused by the threat, with an indication of the duration of these restrictions*" [3].

The concept *"military personnel"* is defined in the Regulation on military service by citizens of Ukraine in the Armed Forces of Ukraine: *"citizens who undergo military*

1 Про введення воєнного стану в Україні : Указ Президента України від 24.02.2022 р. № 64/2022 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/64/2022#Text (date accessed: 13.09.2023).

2 Про затвердження Указу Президента України «Про введення воєнного стану в Україні» : Закон України від 24.02.2022 р. № 2102-IX. URL: https://zakon.rada.gov.ua/laws/show/2102-20#Text (date accessed: 13.09.2023).

3 Про правовий режим воєнного стану : Закон України від 12.05.2015 р. № 389-VIII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/389-19#Text (date accessed: 13.09.2023).

service are military personnel of the Armed Forces of Ukraine” [4]. The Law of Ukraine On Military Duty and Military Service” defines military personnel *“as citizens of Ukraine, foreigners and stateless persons undergoing military service”* [5].

Military personnel include:

“*a) officers, ensigns and midshipmen, military personnel of overtime service and military service under contract;*

b) senior and rank-and-file members of internal affairs bodies of Ukraine, senior and rank-and-file members of the tax police, senior and rank-and-file members of the State Criminal-Executive Service of Ukraine, senior and rank-and-file members of civil defense agencies and units;

c) persons from among the military personnel of the Armed Forces, other military transformation, state security and internal affairs bodies of the former Soviet Union of the SSR, National Guard of Ukraine, State Border Guard Service of Ukraine, Civil Defense Forces of Ukraine;

d) senior and rank-and-file members of the State Fire Guard, senior and rank-and-file members of the State Service for Special Communications and Information Protection of Ukraine;

e) citizens of other states from the number of military personnel of the armed forces and other military formations formed in accordance with the legislation of these states, who permanently reside in Ukraine, and in accordance with international agreements, the binding consent of which has been given by the Verkhovna Rada of Ukraine, their pension provision is carried out in accordance with the legislation the state in whose territory they live;

f) persons from the number of conscript military personnel and family members of officers, ensigns and midshipmen, conscript military personnel and military personnel under contract and some other persons” [6].

According to the analytical portal *“Slovo i Dilo”* (“Word and Deed”), *“in 2013 there were only 166 thousand people in the ranks of the Armed Forces of Ukraine. After the annexation of Crimea and the start of hostilities in Donbas, the number of the Armed Forces of Ukraine increased to 250 thousand, and it remained so until 2018. In 2019, the number of the Ukrainian army decreased to 246 thousand. But already the following year, the Armed Forces of Ukraine once again numbered 250 thousand soldiers. In 2021, the number of the Armed Forces was again 246 thousand people. In 2022, after the start of a full-scale invasion and taking into account the mobilization in the ranks of the Armed Forces, approximately 700 thousand people. Thus, compared to 2014—2021, the size of the Ukrainian army has almost tripled”* [7].

The legislation defines the military service as a state service of a special nature, in which citizens of Ukraine, foreigners, and stateless persons who are fit in terms of health and age are professionally engaged in activities related to the defense of

4 Про Положення про проходження громадянами України військової служби у Збройних Силах України : Указ Президента України від 10.12.2008 р. № 1153/2008 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/1153/2008#Text (date accessed: 14.09.2023).

5 Про військовий обов’язок і військову службу : Закон України від 25.03.1992 р. № 2232-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2232-12#Text (date accessed: 13.09.2023).

6 Військовослужбовець / Вікіпедія. URL: https://uk.wikipedia.org/wiki/Військовослужбовець (date accessed: 25.09.2023).

7 Як змінювалася чисельність Збройних сил України / Аналітичний портал «Слово і Діло». URL: https://www.slovoidilo.ua/2022/10/14/infografika/bezpeka/yak-zminyuvalasya-chyselnist-zbrojnyx-syl-ukrayiny (date accessed: 22.09.2023).

Ukraine, its independence and territorial integrity [8]. The time of military service is taken into account for citizens of Ukraine in their insurance and work experience, experience in a specialty and civil service experience. The law-defined feature of military service emphasizes its difference from civilian work.

Therefore, military service is not considered as an employment relationship in the usual sense, military personnel are not employees in the traditional sense of the term, since they do not receive wages but financial support.

The financial support is awarded to military personnel based on their military rank, length of service and other factors, and is a payment that covers their expenses and provides some social security. The financial support is determined by the legislation of Ukraine, it may vary depending on the specific conditions of service, the degree of risk and the scope of military tasks.

The size of military personnel's financial support is important when calculating the one-time financial support to military personnel, which is provided in the event of their release from service. In addition, it also affects the protection of the further right of military personnel to adequate social security, in particular pension.

Therefore, the question of the procedure for calculating financial support and extra compensation for military personnel during martial law remains relevant today and indicates the need for further scientific research in this field.

Analysis of Recent Researches and Publications

Publications of Ukrainian scientists P. Y. Atamas, D. R. Vichavskyi, O. H. Vodchytsia, M. V. Liapin, D. O. Marusevych, O. Marchukova, O. M. Muzychuk, M. M. Posternak, O. V. Udovenko, S. M. Chimyshenko, and others are devoted to the separate issues of financial support. Their publications are general reviews and comparisons of the financial support system for military personnel.

A number of normative acts are devoted to the normalization of the financial support of military personnel during martial law (in particular, the calculation procedure, the mechanism and conditions of its payment).

The lasting changes in legislation and the development of scientific opinion regarding financial support (in particular, extra compensation), the escalation of the war in Ukraine require further research into the issues of financial support of military personnel during martial law.

Article Purpose

Establishment and systematizing the grounds, procedure, and conditions for accrual and payment of financial support and extra compensation for military personnel during martial law.

Research Methods

The research is based on the system of general and special methods of scientific research. The dialectical method contributed to the research and analysis of the legal nature and economic content of financial support for military personnel. A formal-logical method made it possible to formulate its own vision of the concept of *"financial support for military personnel"*. System-structural and format-dogmatic methods made it possible to conduct a comprehensive study of the system of the

8 Про військовий обов'язок і військову службу : Закон України від 25.03.1992 р. № 2232-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2232-12#Text (date accessed: 13.09.2023).

regulatory and legal basis of the financial support for military personnel in Ukraine during martial law.

Main Content Presentation

The issue of financial support for military personnel has become up-to-date since 2014, starting from mobilization associated with the anti-terrorist operation in the east of our country. With the onset of the full-scale invasion of the Russian Federation into the territories of Ukraine in February 2022 and the subsequent imposition of martial law, its significance has gained new prominence.

Scientists distinguish two aspects of money security: economic and legal. The economic aspect involves the cost or price of labor, expressed in a monetary amount. The legal aspect of financial support, on the one hand, consists in the legally defined amounts and payment procedure, in the normatively established obligation of the state to pay military personnel a decent remuneration for their service, on the other hand, in the subjective right of military personnel to receive this remuneration for prior established norms.

The majority of researchers consider financial support as a special type of remuneration for military personnel and persons equated to them.

In particular, O. M. Muzychuk provides the following definition of financial support: *" remuneration paid for the performance by them (military personnel – Ed.) of the service-labor function stipulated by the employment agreement (contract) and consists of both basic payments, which are made regardless of the possibilities of budget financing, and other additional types of it, which heads of bodies and units of internal affairs have the right to establish within the framework of the wage fund"* [9].

M. M. Posternak believes that financial support is a payment that military personnel receive for their service [10].

O. V. Udovenko interprets financial support *"as sufficient remuneration guaranteed by the state, calculated in monetary terms, which a military personnel receives within the allocations provided for in the budget for financial support, taking into account the conditions of military service, position, military rank, qualifications, academic degree and academic rank of a military personnel"* [11]. Also, in his opinion, the financial support for military personnel is *"the main source of their income, with the help of which they are able to meet their needs in their non-work (personal) life, and therefore, to fully realize their labor potential in military service"* [12].

M. V. Liapin and S. M. Chimyshenko consider that financial support is *"the share of the national income received in cash by military personnel to meet their material and cultural needs, taking into account the peculiarities of military service and the procedure for its performance by different*

9 Музичук О. М. Сутність та особливості грошового забезпечення персоналу ОВС. *Вісник ХНУВС*. 2007. № 37. С. 384—389. URL: https://dspace.univd.edu.ua/server/api/core/bitstreams/85eee26e-cd60-4a5d-82ab-29baa0e1481c/content (date accessed: 13.09.2023)

10 Постернак М. М. Грошове забезпечення військовослужбовців: як обчислювати та надавати. *Головбух: Бюджет*. 2019. № 22 (360). URL : https://ebudget.mcfr.ua/736888 (date accessed: 13.09.2023).

11 Удовенко О. В. Принципи грошового забезпечення військовослужбовців. *Юридична наука*. 2020. № 3 (105). С. 500—506. DOI: 10.32844/2222-5374-2020-105-3.62 (date accessed: 13.09.2023).

12 Idem. Правове регулювання грошового забезпечення військовослужбовців : дис. ... канд. юрид. наук. Харків. 2021. 227 с. URL: https://openarchive.nure.ua/handle/document/18628 (date accessed: 13.09.2023).

categories of military personnel" [13]. D. R. Vichavskyi explains the essence of financial support in a similar way *"A system of financial incentives guaranteed by the state, which military personnel receive to meet their material and cultural needs in accordance with the quantity and quality of work, taking into account the peculiarities of military service and the procedure for its performance by different categories of military personnel"* [14].

According to D. O. Marusevych, such terms as *"wages"*, *"remuneration"*, and *"financial support"*, are synonymous and mean remuneration, usually calculated in monetary terms, paid to an employee for performed work [15].

Since military personnel have a special legal status, V. I. Aleshchenko notes that financial support is a guarantee of social security. After all, for military personnel it is the main source of income with which they can meet their needs [16]. The same opinion is shared by V. M. Tsyganok [17].

Thus, financial support for military personnel is financial compensation and remuneration received by persons performing military service and having the status of military personnel in the armed forces or other military formations.

The regulatory framework for financial support includes international legal acts with norms related to remuneration (human rights acts and ILO international legal acts), national legal acts on remuneration and on financial support for military personnel (legislative and by-laws).

During the period of martial law on the territory of Ukraine, the procedure for calculating, the mechanism and conditions for paying financial support and additional remuneration to military personnel of various structures are set out in the relevant regulations, among other things:

- the mechanism and terms for the payment of financial support for military personnel of the Armed Forces of Ukraine, State Transport Special Service of Ukraine, and certain other persons are regulated by the *"Procedure for the Payment of Remuneration to Servicemen of the Armed Forces of Ukraine and Certain Other Persons"* approved by Order of the Ministry of Defense of Ukraine

13 Ляпін М. В., Чімишенко С. М. Роль грошового забезпечення в системі матеріального забезпечення військовослужбовців. *Сучасні проблеми розбудови Збройних Сил України* : мат-ли всеукр. наук.-практ. конф. (Київ, 26.04.2013). Київ, 2013. С. 197—198.

14 Вічавський Д. Р. Роль грошового забезпечення у стимулюванні до військової служби. *Бізнес, цифрові інновації та підприємництво: стан, аналіз тенденцій та науково-економічний розвиток* : мат-ли міжнар. наук.-практ. конф. (Львів, 22.12.2018). Львів, 2018. Ч. 2. С. 67—69.

15 Марусевич Д. О. Теоретичні засади адміністративно-правового регулювання грошового забезпечення поліцейських. *Адміністративне право і процесі; фінансове право. Інформаційне право*. 2017. Вип. 3. С. 123—128. URL: http://www.nvppp.in.ua/vip/2017/3/26.pdf (date accessed: 13.09.2023).

16 Алещенко В. І. Служба у війську повинна стати привабливою та престижною. *Військо України*. 2007. № 11 (89). С. 14—17. URL: https://shron3.chtyvo.org.ua/Viisko_Ukrainy/2007_N11_89.pdf?PHPSESSID=rp5jmjnmsj1qum6avjjavvsjg0 (date accessed: 13.09.2023).

17 Циганок В. Грошове забезпечення військовослужбовців — один із найважливіших елементів їх матеріального становища та мотивації на службі. *Науковий вісник Ужгородського національного університету. Серія: Право.* 2023. Вип. 78. Ч. 1. С. 333—337. DOI: 10.24144/2307-3322.2023.78.1.54 (date accessed: 13.09.2023).

No. 260 dated 07.06.2018 (hereinafter — *Procedure No. 260*) [18];

- tariff grids of ranks and coefficients of official salaries of military personnel, extra compensation and the amounts of seniority allowances are determined by the Resolution of the Cabinet of Ministers of Ukraine "On the financial support for military personnel, members of the rank and file and some other persons" dated August 30, 2017 No. 704 (hereinafter — *Resolution No. 704*) [19].

These regulations determine the terms of payment of financial support and extra compensation for military personnel during martial law and ensure compliance of their rights and obligations with Ukrainian legislation.

The financial support for military personnel, members of the rank-and-file, and officers includes: base salary, salary for a military (special) rank, monthly (increase in base salary, allowances, extra compensation, rewards of a permanent nature, bonuses) and one-time additional types of financial support [20]. In more detail, the components of financial support are shown in fig. 1.

FINANCIAL SUPPORT		
Monthly main types of financial support	Monthly additional types of financial support	One-time additional types of financial support
• base salary; • salary according to military rank; • seniority allowance	• base salary increase; • allowances; • copayments; • compensation for military personnel holding positions related to the direct performance of cybersecurity and cyber defense tasks • bonuses	• compensations (except for крім military personnel holding positions related to the direct performance of cybersecurity and cyber defense tasks), as well as extra compensation for the period of martial law; • assistance

Fig. 1. Components of financial support for military personnel

18 Порядок виплати грошового забезпечення військовослужбовцям Збройних Сил України та деяким іншим особам : наказ Міноборони України від 07.06.2018 р. № 260 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z0745-18#Text (date accessed: 13.09.2023).

19 Про грошове забезпечення військовослужбовців, осіб рядового і начальницького складу та деяких інших осіб : постанова КМУ від 30.08.2017 р. № 704 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/704-2017-п#Text (date accessed: 13.09.2023).

20 Ibidem.

The basis for calculating financial support for military personnel is their base salary. Most allowances, copayments, and compensations are calculated on the basis of the base salary.

Base salaries of military personnel are determined on the basis of the tariff coefficients set out in Annexes 1, 12, 13, and 14 to Resolution No. 704. The tariff coefficient corresponds to the tariff category assigned to each military position.

Considering account the provisions of Resolution No. 704, the calculation of the base salary for military personnel (BS) can be presented in the following formula:

$$BS = 1762.00\ UAH \times TC, \qquad (1)$$

where *TC* — the relevant tariff coefficient in accordance with Annexes 1, 12, 13, and 14 to Resolution No. 704.

The amount of the long-service allowance is calculated as a percentage of the sum of the military rank salary and the base salary, depending on the period of calendar and preferential service of the military personnel [21].

The Resolution No. 704 states that *"to pay allowances for the length of service to military personnel (except for military personnel in regular military service and military personnel of intelligence services), rank and file and commanders in the amounts according to Annex 16, and to military personnel of intelligence agencies (except for military personnel in regular military service) — in the amount of 3 percent of the base salary for each calendar year of service, but not more than 50 percent of the base salary"* [22].

In addition, according to Procedure No. 260, "*1. Military personnel (except for military personnel in regular military service) are paid a monthly allowance for length of service in military service as a percentage of their base salary (for the main or temporarily held position), taking into account the salary for military rank, in the following amounts:*

from 1 to 5 years — 25 percent;
from 5 to 10 years — 30 percent;
from 10 to 15 years — 35 percent;
from 15 to 20 years — 40 percent;
from 20 to 25 years — 45 percent;
from 25 and more years — 50 percent.

2. The length of service for allowance is calculated from the date of commencement to the date of completion of military service" [23].

The calculation of the longevity allowances (LA) is represented by the following formula:

$$LA = (BS + SFR) \times \%, \qquad (2)$$

where *SMR* — salary for military (special) rank (UAH);

% — the percentage of the base salary taking into account the salary for military (special) rank, determined in accordance with Annex 16 to Resolution No. 704 and p. 1 sect. IV of Procedure No. 260.

In addition, military personnel (except for those in regular military service) are paid a monthly allowance for the peculiarities of their service, the amount of which depends on the complexity and importance of their duties. This allowance is taken into account from the date of the military personnel's entry into the position, as well as

21 Атамас П. Й., Сергієнко І. В., Таран О. В. Удосконалення системи нарахування та обліку грошового забезпечення військовослужбовців-контрактників. *Економіка і суспільство.* 2018. № 19. С. 1219—1226. DOI: 10.32782/2524-0072/2018-19-182 (date accessed: 13.09.2023).

22 Про грошове забезпечення … . URL: https://zakon.rada.gov.ua/laws/show/704-2017-п#Text (date accessed: 13.09.2023).

23 Порядок виплати грошового забезпечення … . URL: https://zakon.rada.gov.ua/laws/show/z0745-18#Text (date accessed: 13.09.2023).

in the case of temporary performance of duties at a position that provides for such an allowance. It is paid during the entire period of performance of duties in the relevant position and is added to the military personnel's financial support.

In accordance with Resolution No. 704, "allowance for the peculiarities of service for military personnel (except for military personnel in regular military service) and persons holding the rank of private or commander in the amount of up to 100 percent of the base salary, taking into account the base salary for the military (special) rank and allowances longevity allowance" [24].

Thus, the amount of this allowance is a percentage of the sum of the military rank salary, base salary and longevity allowances [25]. The calculation of the amount of the allowance for the peculiarities of service depending on the complexity and importance of duties performed (APS) can be summarized as follows:

$$APS = (BS + SMR + LA) \times \% \qquad (3).$$

Military personnel, excluding military personnel in regular military service, as well as enlisted personnel and officers, receive bonuses from the bonus fund based on their individual contributions to overall service performance. The bonus fund comprises at least 10 % of base salaries and cash support fund savings. For military personnel of intelligence agencies, this fund is not less than 30 % of their base salaries and savings of the payroll fund. The amount of the bonus is determined in accordance with the personal contribution and results of the military personnel, but within this fund [26].

The calculation of the bonus can be represented by the following formula:

$$Bonus = BS \times \%, \qquad (4)$$

where % is set in accordance with Resolution No. 704 within the bonus fund depending on the personal contribution of the military personnel to the overall performance of the service.

Taking into account the above, the amount of financial support for military personnel can be presented in the form of such a formula:

$$FS = BS + SMR + LA + APS + Bonus. \qquad (5)$$

According to the Law of Ukraine *"On Indexation of Monetary Incomes of the Population"* [27], financial support is subject to indexation. It should be taken into account that Clause 3 of the Final Provisions of the Law of Ukraine *"On the State Budget of Ukraine for 2023"* [28], the effect of the Law of Ukraine *"On Indexation of Monetary Incomes of the Population"* has been suspended for 2023.

The basis for determining the base month of indexation is the increase in base salaries. That is, the beginning of the countdown for calculating the consumer

24 Про грошове забезпечення … . URL: https://zakon.rada.gov.ua/laws/show/704-2017-п#Text (date accessed: 13.09.2023).

25 Атамас П. Й., Сергієнко І. В., Таран О. В. Op. cit. DOI: 10.32782/2524-0072/2018-19-182 (date accessed: 13.09.2023).

26 Про грошове забезпечення … . URL: https://zakon.rada.gov.ua/laws/show/704-2017-п#Text (date accessed: 13.09.2023).

27 Про індексацію грошових доходів населення : Закон України від 03.07.1991 р. № 1282-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/1282-12#Text (date accessed: 21.09.2023).

28 Про Державний бюджет України на 2023 рік : Закон України від 03.11.2022 р. № 2710-IX (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2710-20#Text (date accessed: 21.09.2023).

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price index is the month of salary increase. From this month, the value of the consumer price index is taken as 1 or 100 percent, and the increase of the index is calculated from the next month. At the same time, indexation is calculated in the month following the month in which the inflation index was officially published.

Extra compensation is a temporary payment provided during martial law. It is essential to note that the extra compensation is a component of the monthly financial support for military personnel and is not taken into account when determining the amount of one-time additional types of financial support. It is intended to compensate for special conditions of service during martial law and can be paid separately from the basic financial support for military personnel.

The procedure for accrual and the amount of this compensation is determined by the Resolution of the Cabinet of Ministers of Ukraine *"Issue of certain payments to military personnel, rank and file officers, police officers and their families during martial law"* dated February 28, 2022 No. 168 (hereinafter — *Resolution No. 168*) [29]. It should be noted that the amount and terms of accrual of extra compensation often change. In accordance with the Resolutions of the Cabinet of Ministers of Ukraine dated 07.03.2022 No. 217, dated 22.03.2022 No. 350, dated 01.04.2022 No. 400, dated 01.07.2022 No. 754, dated 07.07.2022 No. 793, dated 27.09.2022 No. 1066, dated 08.10.2022 No. 1146, dated 20.01.2023, No. 43, dated 09.08.2023, No. 836, dated 15.09.2023, No. 1001, dated 20.09.2023 No. 1001-2023-r.

According to the latest changes in Resolution No. 168 (depending on the tasks performed during martial law), the following amounts of extra compensation are provided:

"Military personnel of Armed Forces, Security Service, Foreign Intelligence Service, Main Directorate of Intelligence of the Ministry of Defence of Ukraine, National Guard, State Border Guard Service, State Security Administration, State Special Communications Service, State Transport Special Service (hereinafter — military personnel), who take a direct part in hostilities or the implementation of measures necessary to ensure the defense of Ukraine, protect the safety of the population and the interests of the state in connection with the military aggression of the Russian Federation against Ukraine, being directly in the areas of their implementation, on the territory of Ukraine temporarily occupied by the Russian Federation, on territories between the positions of the defense forces and the positions of the troops of the aggressor state, extra compensation of UAH 100,000 is paid monthly in proportion to the time of participation in such actions and activities;

Military personnel who perform combat (special) tasks as part of a military command body, the headquarters of a group of troops (forces) or the headquarters of a tactical group up to and including the control point of an operational-strategic group of troops, as well as part of the command and headquarters of a military unit (combined unit) (in including outside the areas of combat (military) operations), which carries out operational (combat) control of military units and units conducting military (combat) operations on the combat contact line at the distance of the execution of combat (special) tasks by a military

29 Питання деяких виплат військовослужбовцям, особам рядового і начальницького складу, поліцейським та їх сім'ям під час дії воєнного стану : постанова КМУ від 28.02.2022 р. № 168 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/168-2022-п#Text (date accessed: 13.09.2023).

unit (a unit, in particular, a combined) of the first echelon of defense or offensive (counteroffensive, counterattack), an additional remuneration in the amount of UAH 50,000 is paid per month in proportion to the time of completion of such tasks in accordance with the conditions determined by the Ministry of Defense;

military personnel who carry out combat (special) tasks during the period of implementation of measures necessary to ensure the defense of Ukraine, protect the safety of the population and the interests of the state in connection with the military aggression of the Russian Federation against Ukraine, extra compensation of UAH 30,000 is paid every month, calculated on a month in proportion to the time it takes to complete such tasks.

Military personnel who hold positions of management and instructor-teaching staff in training military units (training centers, training units) are paid an extra monthly compensation in the amount of UAH 15,000 to UAH 30,000, taking into account their level of training (qualification) in proportion to the time of training and training personnel per month in accordance with the list of positions of management and instructor-teaching staff in training military units (training centers, training units), approved by the heads of relevant ministries and state bodies" [30].

"UAH 6,000 — for military personnel calculated per month in proportion to the time of service (in proportion to the time of service);

UAH 2,350 — to cadets of higher military educational institutions, higher education institutions with specific conditions of study, as well as higher education institutions that include military institutes, military training faculties, military training departments, military training departments, institutions of professional pre-higher military education, which before enrolling in training, were not in military service or were in military service (in proportion to the time of service (stay in training)).

Military personnel who, in connection with an injury (contusion, trauma or mutilation) related to the defense of the Motherland, are recognized by the military medical commission as limited fit for military service or unfit for military service with a review after 6—12 months and included in the disposition the relevant commanders, within two months from the day of enlistment (without taking into account the time spent on vacation and treatment), the financial support (without taking into account the extra compensation) for the last position held in full is paid. After being at the disposal for more than two months and until the end of the stay at the disposal, such military personnel are paid a monthly salary according to their military rank, a longevity allowance and an extra compensation in the amount of UAH 20,100 (calculated per month in proportion to the time spent at the disposal).

Military personnel who, in accordance with the procedure established by law, are seconded to carry out tasks in the interests of the defense of the state and its security, while remaining in military service as part of rural (village), city, district and regional military administrations, in the territory (or part of this territory), exercising their powers military (combat) operations are conducted, and combat (special) tasks are performed, the payment of an extra compensation is carried out in the amount of UAH 30,000" [31].

30 Питання деяких виплат ... . URL: https://zakon.rada.gov.ua/laws/show/168-2022-п#Text (date accessed: 13.10.2023).

31 Зміни до Порядку виплати грошового забезпечення військовослужбовцям Збройних Сил України та деяким іншим особам : наказ Міноборони України від 26.09.2023 р. № 566. URL: https://zakon.rada.gov.ua/laws/show/z1705-23#Text (date accessed: 13.10.2023).

Orders for the payment of extra compensation are issued by commanders or superiors.

Funds received by military personnel as extra compensation are also subject to taxation in accordance with current legislation.

"According to the Orders to pay an extra compensation in amount of UAH 100,000, such Orders include persons, <...> who:

In connection with an injury (contusion, trauma, mutilation) related to the protection of the Motherland, and for police officers and members of the rank and file of the civil defense service — with participation in hostilities or ensuring the implementation of national security and defense measures, repulse and deterring armed aggression, being directly in the areas of their conduct (implementation), in particular in the territory of Ukraine temporarily occupied by the Russian Federation, in the territory between the positions of the defense forces and the positions of the troops of the aggressor state, during the implementation of the specified measures, are undergoing inpatient treatment in security institutions health (including foreign ones), including the time of transfer from one health care hospital to another, or are on leave for treatment after an injury (contusion, trauma or mutilation) in connection with receiving a serious injury according to the conclusion (by Resolution) of the military-medical (medical-expert, medical) commission;

captured (except for those who voluntarily surrendered) or are hostages, as well as interned in neutral states or missing (in the case when the specified events occurred both before and after the introduction of martial law);

died as a result of an injury (contusion, trauma or mutilation) received after the introduction of martial law, related to the defense of the Motherland (payment is made for the entire month in which the person died)" [32].

"The grounds for calculating and paying the main and additional types of financial support are:

the state of the military unit (institution, organization);

orders on appointment to a position and enrollment in the lists of personnel of a military unit, on entry into the performance of duties for the position, including temporarily, on enrollment in the disposition;

orders on the establishment and payment of basic and additional types of financial support;

orders on the assignment of military ranks;

cash certificate or certificate of cash payments (with the exception of persons conscripted (accepted) for military service under a contract, including during military service)" [33].

It should be noted that there are certain situations in which financial support can be paid to military personnel without submitting a monetary certificate. According to the Order of the Ministry of Defense of Ukraine dated April 22, 2021 No. 104 (hereinafter - *Order No. 104*), these include payments:

"to conscript military personnel from the 1st day of the month following their arrival based on the salary for the position to which they are appointed. In this case, the copayment of financial support for the current and previous months is made after obtaining the certificate or its duplicate from the previous place of service;

32 Питання деяких виплат ... . URL: https://zakon.rada.gov.ua/laws/show/168-2022-п#Text (date accessed: 13.10.2023).

33 Порядок виплати грошового забезпечення ... . URL: https://zakon.rada.gov.ua/laws/show/z0745-18#Text (date accessed: 13.09.2023).

to other military personnel – from the day of their entry into the performance of their duties at the new place of service. In this case, the copayment of financial support before the day of taking up the duties of the position at the new place of service is carried out after receiving the certificate or its duplicate (in case of loss of the monetary certificate) from the previous place of service” [34].

The financial support for military personnel is paid within the allocated funds provided for in the budget of the military unit for the financial support for military personnel. This means that the funds allocated for financial support are fixed and limited by the budget volumes given for these purposes.

The financial support is made at the place of staff service.

The listed financial support (copayment) in case of a change in the service status of personnel (assignment of a military rank, appointment to another position, etc.) is paid together with the financial support for the month in which the relevant changes occurred.

Financial support is paid in cash according to payment documents, disbursement cash orders or by crediting funds to card accounts in the order and amounts provided by law.

After payment is paid, the military unit prints registers of crediting funds to card (checking) accounts. A copy of the printed register of crediting funds to card accounts is signed by the commander of the military unit and the head of the financial authority. Each page of the signed register of crediting funds to card accounts is certified by the signatures of the heads of the financial and military (personnel) bodies.

One-time additional types of financial support are paid after the right to receive them arises (issuance of the relevant payment order).

Excerpts from orders, certificates and other documents confirming the right of military personnel to receive financial support which are submitted to the Head of the financial authority, are signed (certified) by the official responsible for the accounting of the unit’s personnel and sealed with the imprint of the stamp (seal for orders) of the military unit.

According to Order No. 104, *“financial support confirmation (including through card accounts) is a payroll statement (register of crediting funds to card accounts), a cash receipt signed by the person receiving the funds.*

In payroll records, positions of military personnel, except for vacant ones, are recorded in the same sequence as they are indicated in the staffing table or staffing list.

The grounds for compiling the statement are:

- the staff of the military unit and staffing lists approved in accordance with the established procedure;
- standards of financial support and other payments established by law;
- orders and other documents on the appointment and service of personnel, setting base salaries, allowances, copayments, bonuses, etc;
- financial certificates of military personnel enrolled for financial support;
- timesheets of working hours;
- other documents required by law.

Military personnel who receive financial support in cash, shall sign the payroll sheets (cash vouchers) acknowledging their receipt. Cash shall be issued from the cash desk of the

34 Про внесення змін до наказу Міністерства оборони України від 22.05.2017 № 104 : наказ Міноборони України від 22.04.2021 р. № 104. URL: https://www.mil.gov.ua/content/mou_orders/mou_2021/mou_104.pdf (date accessed: 13.09.2023).

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military unit only to the person specified in the expenditure document" [35].

It should be noted that *"military personnel captured as prisoners or hostages, as well as interned in neutral states or missing, shall retain payments in the amount of their base salary at the last place of service, salary by military rank, longevity allowance, other monthly additional types of permanent financial support and other types of financial support, taking into account changes in length of service and norms of financial support. The families of these military personnel shall be paid monthly financial support, including additional and other types of financial support, in accordance with the procedure and in the amounts established by the Cabinet of Ministers of Ukraine"* [36].

"The payment of financial support to these family members is carried out until the circumstances of the capture of military personnel or hostages, internment of military personnel or their release, or their recognition as missing or dead in accordance with the procedure established by law are fully clarified" [37]. This means that family members are paid financial support for the period until the status of the military personnel is determined or until reliable information about their condition is received.

In the above cases, financial support is paid no more than until the day the military personnel is removed from the military unit's personnel lists. This is important to ensure control over financial payments and to avoid possible abuse or unlawful payments.

The peculiarities, rules, and procedure for documenting the payment of military personnel's allowances are set forth in Order No. 104 [38]:

"if military personnel is unable to receive financial support while participating in combat actions and operations, upon their report, financial support is paid to family members" [39].

Financial support to family members of military personnel is paid *"in the following ways:*

in cash (through the cash desk of the military unit);

by postal transfer (with payment for these services at the expense of the military unit);

by crediting to a card account" [40].

The choice of payment method depends on the conditions and convenience of both the military unit and the recipients of financial support.

"In their reports, military personnel must indicate the recipient of financial support, the method of receipt and, if necessary, their postal address (card (bank) account details).

Upon the expiration of the established terms for the payment of financial support, the cashier shall duly execute justifying documents, namely:

in the settlement and payment statement opposite the names of persons to whom the payment of financial security has not been made, stamps or makes a handwritten note "Deposited";

35 Про внесення змін до наказу … . URL: https://www.mil.gov.ua/content/mou_orders/mou_2021/mou_104.pdf (date accessed: 13.09.2023).

36 Про соціальний і правовий захист військовослужбовців та членів їх сімей : Закон України від 20.12.1991 р. № 2011-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2011-12#Text (date accessed: 14.09.2023).

37 Ibidem.

38 Про внесення змін до наказу … . URL: https://www.mil.gov.ua/content/mou_orders/mou_2021/mou_104.pdf (date accessed: 13.09.2023).

39 Ibidem.

40 Ibidem.

makes a register of deposited sums;

at the end of the statement, make a record of the amount actually paid in writing and the amount of payments not received that are subject to deposit, reconcile these amounts with the total amount on the payroll and certify the record with their signature. If the money was given out by another person other than the cashier, such as a dispenser, an additional entry is made on the statement "Money issued by (signature)";

records the amount actually paid in the cash book and stamps the statement "Expense cash order No. ___"" [41].

The Head of the financial department checks the records made by cashiers in the payroll sheets and the amounts issued and deposited in these sheets. The deposited amounts are then transferred to the registration account, and on their basis, one general cash expenditure order is drawn up.

The formation and preparation of payrolls for the payment of financial support is carried out in the established form set out in Annex 13 to Order No. 104. This statement is signed by the commander of the military unit, the Head of the financial body, and the person who prepared it. In addition, by the decision of the commander, they form and draw up a statement for each unit of the military unit separately [42].

If the financial support is not paid for a full month, or if it is recalculated, or if one-time additional types of financial support are paid, the accountant (or other contractor) shall prepare a calculation in an arbitrary form. This calculation is attached to the payslip and signed by the accountant or contractor responsible for this process.

Each payslip receives the next sequential number, which is assigned from the beginning of the year to the end of the year.

The total amount to be transferred to card accounts or handed over is indicated in words on the payroll statement.

The following deductions are made from the salaries of military personnel:

"personal income tax;

executive documents in accordance with applicable laws and regulations;

according to written reports of military personnel on voluntary agreement to pay alimony, for living in departmental housing, including for consumed housing and communal services;

accrued amounts of material damage caused or voluntary compensation for damage caused;

other deductions (contributions, fees, etc.) provided by law" [43].

Despite sufficiently unambiguous legal regulation and a well-established mechanism for paying military personnel financial support (including additional remuneration), according to the Unified State Register of Court Decisions [44], the number of appeals by military personnel to courts has increased to resolve disputes over:

- accrual and payment of "unfair" amount of financial support to military personnel;
- failure (or refusal to carry out) the indexation of financial support for military personnel;

41 Про внесення змін до наказу ... . URL: https://www.mil.gov.ua/content/mou_orders/mou_2021/mou_104.pdf (date accessed: 13.09.2023).

42 Ibidem.

43 Ibidem.

44 Єдиний державний реєстр судових рішень. URL: https://reyestr.court.gov.ua/ (date accessed: 26.09.2023).

- unpaid average salary (financial support) for the period of forced absence from work, etc.

Given the peculiarities and complexity of the process of calculating financial support and the volume of documents, it is impossible to investigate the documentary evidence and correctness of such accruals and payments without special knowledge.

Such studies are conducted by certified forensic economists of forensic research institutions, whose results in the form of conclusions are evidence in such cases.

Conclusions

The author analyzes the current legislation of Ukraine regulating financial support and systematizes the grounds, procedure, and conditions for accrual and payment of financial support and extra compensation for military personnel during martial law.

The results of the analysis can be further used:

- in lawmaking — for the development of new amendments to existing legal acts;
- in the research activities of forensic institutions — to develop and amend the methods of conducting forensic economic examinations on the calculation and payment of financial support and extra compensation to military personnel;
- in practical activities — to optimize the working time of forensic economists, etc.

Особливості грошового забезпечення військовослужбовців і додаткової винагороди в період дії воєнного стану в Україні

Ірина Окуневич

Мета дослідження полягає у визначенні та систематизації підстав, порядку, умов нарахування і виплат грошового забезпечення та додаткової винагороди військовослужбовцям у період воєнного стану. Методологічною основою дослідження є система загальнонаукових та спеціальних методів наукового пізнання, а саме: діалектичний, формально-логічний, системно-структурний та формально-догматичний. Правове регулювання грошового забезпечення та додаткової винагороди військовослужбовців в Україні містить численні законодавчі та підзаконні норми. Постійні зміни в законодавстві, розвиток наукової думки щодо грошового забезпечення та ескалація війни в Україні вимагають систематизації підстав, порядку, умов нарахування і виплат грошового забезпечення та додаткової винагороди військовослужбовцям у період воєнного стану. У результаті дослідження наведено власне бачення щодо визначення поняття грошового забезпечення військовослужбовців. Установлено й систематизовано основні підстави, порядок, умови нарахування та виплати грошового забезпечення й додаткової винагороди військовослужбовцям у період воєнного стану. Виокремлено коло спірних питань, пов'язаних із грошовим забезпеченням та додатковою винагородою, для розв'язання яких військовослужбовці звертаються до суду. Висновки наукового дослідження базуються на глибокому аналізі чинного вітчизняного законодавства, судової практики та наукової літератури, у яких розкрито питання грошового забезпечення та додаткової винагороди для військовослужбовців. Результати дослідження в подальшому можна використати в правотворчості, науково-дослідницькій діяльності судово-експертних та інших установ, практичній діяльності тощо.

Ключові слова: *воєнний стан; військовослужбовець; воєнна служба; грошове забезпечення; посадовий оклад; надбавки; премії; додаткова винагорода.*

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Author declare no conflict of interest.

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Selection of Similar Objects While Valuation and Forensic Structural Engineering to Determine Market Value of Civil Buildings

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The article is devoted to problematic issues faced by forensic experts during evaluation of civil buildings with premises of various functional purposes. This article purpose is to determine essence, content, general methodological principles and specifics of a unified approach while determining market value of civil objects, including premises of various functional purposes. Attention is focused on the fact that usually forensic experts can use market and non-market types of values. Characteristics of consumer and exchange forms of manifestation of real estate value are given. Current National Property Valuation Standards are listed that are mandatory for appraisers to perform while appraising real estate of all forms of ownership and in all cases. A list of the main types of values and methodical approaches to evaluation of civil buildings with premises of various functional purposes is provided. In addition, the main types of free-standing buildings and the peculiarities of selecting analogues of buildings for sale including premises of various functional purposes, while determining their market value are outlined. Peculiarities of the application of the method of building identification according to the state classifier of buildings and structures: ДК 018-2000 and the algorithm of actions of forensic experts for selecting similar objects are highlighted with an illustrative example of its application.

This article is translation of the original Ukrainian content, which source is available at the link: *https://khrife-journal.org/index.php/journal* (translated by Andriy Bublikov). The authors acknowledge translation as corresponding to the original.

Keywords*: multifunctional building; comparison object; class; rooms; similar property.*

Research Problem Formulation

In criminal proceedings and other types of legal proceedings, assessment and forensic structural engineering is carried out as necessary to determine the amount of damage caused by offense; restoration cost determination of immovable property objects that have suffered significant damage and destruction, etc. Analysis of forensic expert practice indicates that number of real estate objects including premises of various functional purposes is constantly increasing. In practice of carrying out this type of forensic examinations and researches, forensic experts quite often face the issue of selecting similar objects for valuation of such buildings. Existence of gaps in theoretical and methodological developments in this type of valuation and forensic structural engineering necessitates the need to study this issue in order to develop a unified approach to determining market value of civil objects including premises of various functional purposes.

Analysis of recent researches and publications

Theoretical and methodological provisions of valuation and forensic structural engineering and evaluation activities in Ukraine are reflected in research papers of domestic scientists. For example, in his dissertation, Yu. O. Chechil [1] outlined normative and theoretical principles of determining value of real estate at while criminal offense commission in criminal proceedings; determined peculiarities of initial data formation, identification and establishment of technical condition of immovable property while determination in criminal proceedings of its value while criminal offense commission and highlighted the basics of its determination methods.

H. B. Bashkirov and P. Yu. Baranov [2] considered peculiarities of conducting forensic structural engineering (evaluation) researches related to review of reports on value evaluation of real estate objects. They note that in order to carry out a high-quality and thorough review of the real estate appraisal report, it is necessary to perform a decomposition into an exhaustive list of issues reflecting regulatory review requirements. It is emphasized that in order to make forensic expert conclusion about the fact of undervaluation or overvaluation of the object, it is necessary to investigate the impact of identified shortcomings on the object value for each of the questions.

1 Чечіль Ю. О. Визначення вартості нерухомого майна на час вчинення злочину у кримінальному провадженні : дис. ... д-ра філософії. Київ, 2021. 261 с.

2 Башкіров Г. Б., Баранов П. Ю. Особливості проведення судових експертиз з оцінювання об’єктів нерухомості. Теорія та практика судової експертизи і криміналістики. 2013. Вип. 13. С. 374—379.

In the article by V. V. Solska, main normative legal acts that regulate evaluating property of enterprises in Ukraine are analyzed; concept essence of appraisal of enterprise property is revealed; the cases when property appraisal is mandatory are summarized; as well as property valuation cases are given that make possible to more objectively draw conclusion about the volume and condition of property of enterprises. At the same time, the main and secondary legal documents, on which basis of property of enterprises in Ukraine are assessed, have been systematized [3].

Despite availability of a certain amount of scientific research in this area, the results of the analysis of current state of development of researched problems make it possible to note that the issue related to selection of analogue objects for valuation of buildings including premises of various functional purposes. This circumstance largely determines the need to analyze the current legislative acts, building codes and regulations and other normative documents to determine a unified approach during this type of examinations.

Article Purpose

Essence determination, content, general methodological principles and features of a unified approach while determining market value of civil objects including premises of various functional purposes.

Research Methods

During research, both general research methods (dialectical, observation, description, analysis, synthesis, induction, deduction, modeling, etc.) special forensic and criminalistic methods were used.

Main Content Presentation

According to the Law of Ukraine: *On Judicial Examination*, forensic examination is a research based on specific expertise in the field of science, technology, art, crafts, etc., of objects, phenomena and processes with the aim of providing conclusion on issues that are or will be the topic of legal proceedings [4]. In other words, valuation and forensic structural engineering based on specific expertise in the field of construction determines factual data and circumstances of the case (proceedings) that have evidentiary value for any type of legal proceedings. Valuation and forensic structural engineering in accordance with Instruction on appointment and conducting forensic examinations and researches [5] is a separate type of forensic engineering.

The tasks of evaluation and forensic structural engineering are determination of various cost types of improvements to land plots (buildings and their parts, structures, objects of unfinished construction, transmission devices, etc.) and compliance of the performed evaluation of real estate with the requirements of normative legal

3 Сольська В. В. Нормативно-правове регулювання оцінки майна підприємств. *Проблеми системного підходу в економіці*. 2018. Вип. 1 (63). С. 112—116. URL: http://nbuv.gov.ua/UJRN/PSPE_print_2018_1_20 (date accessed: 02.10.2023).

4 Про судову експертизу : Закон України від 25.02.1994 р. № 4038-XII (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/4038-12#Text (date accessed: 02.10.2023).

5 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 Мін'юсту України від 08.10.1998 р. № 53/5 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/z0705-98#Text (date accessed: 02.10.2023).

acts on property evaluation, methodology, methods, valuation procedures.

The objects of valuation and forensic structural engineering are tangible (materialized) objects or formations that are examined by forensic expert using certain methods and means in order to solve tasks (questions) based on specific expertise application within the scope of forensic research subject (i.e., buildings and structures). Buildings are structures containing load-bearing and enclosing or combined (load-bearing and enclosing) structures that form above-ground or underground premises intended for residence or stay of people, equipment location , animals, plants and objects. Buildings include residential buildings, dormitories, hotels, restaurants, commercial or industrial buildings, railway stations, buildings for public performances, medical and educational institutions, et. [6].

All buildings are classified by functional purpose, according to which they are grouped into three groups: civil, industrial, and agricultural ones.

Civil buildings are buildings necessary to serve the general cultural and everyday needs of people (residential buildings, hospitals, shops, theaters, stations, offices, etc.). They can be residential or public (non-residential) ones, their classification is given in the Tab. 1.

Recently, the number of multifunctional buildings and complexes has been increasing connected with urbanization and the expansion of functional connections between residential and public elements of urban environment. They can include premises of various functions (administrative, credit and financial, catering, retail, entertainment, sports, etc.).

During its existence, functions and typology of building can change that leads to appearance of a typologically new building (for example, a typical residential five-story building may include not only residential premises, but offices, bank branch premises, shops, beauty salons, sports halls, hotel rooms, apartments, premises for working with children, etc.). Such buildings are gaining popularity as they try to combine several areas of use in one structure, including residential, hotel, commercial, cultural, entertainment, transport and parking ones.

Valuation and forensic structural engineering belong to procedural source of evidence in criminal proceedings and is an effective means of proof in civil, economic and administrative proceedings. Currently its objects are increasingly multi-purpose buildings. While conducting valuation and forensic structural engineering, forensic experts can determine market and non-market types of values. Market value is the value for which the appraised object can be sold in the market of similar property on the date of valuation according to the agreement concluded between the buyer and the seller, after conducting appropriate marketing, provided that each party acted with knowledge of the matter, judiciously and without coercion [7]. Non-market types include reproduction value, residual replacement value (reproduction), value in use, consumer value, liquidation value, investment value, special value, liquidation value,

6 Державний класифікатор будівель та споруд ДК 018-2000 : затв. і введ. в дію наказом Держстандарту України від 17.08.2000 р. № 507. URL: https://zakon.rada.gov.ua/rada/show/va507565-00#Text (date accessed: 02.10.2023).

7 Національний стандарт № 1 «Загальні засади оцінки майна і майнових прав» : затв. постановою Кабміну України від 10.09.2003 р. №1440 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/1440-2003-%D0%BF#Text (date accessed: 02.10.2023).

net realizable value, appraised value, etc., procedure for determining established by separate national standards. Non-market types of value as the basis of valuation are determined using methods and valuation procedures based on the results of analysis or purpose of the valuation object, as well as the study of the influence of use conditions or the alienation method of valuation object [8].

Table 1

Classification of civil buildings

Residential buildings	**Public (non-residential) buildings**
Apartments, cottages, country and garden houses, dormitories, boarding houses, shelters, etc.	Commercial buildings (shopping centers, shops, department stores, covered markets, kiosks, etc.)
	Public catering buildings (restaurants, bars, snack bars, cafes, buffets, canteens, etc.)
	Hotel type buildings (hotels, motels, holiday homes, apartments, other buildings for temporary accommodation)
	Buildings of State and local government bodies (financial service buildings, court bodies, administrative and household premises, etc.)
	Transport and communication facilities (stations, airports, electric transport depots, hangars, lighthouses, garages, parking lots, parking lots, bicycle sheds, etc.)
	Buildings for public performances (theaters, cinemas, circuses, museums, art galleries, concert halls, etc.)
	Buildings of research institutions (preschool education buildings, institutions of general secondary education, higher educational institutions, research institutes, etc.)
	Buildings of hospitals and health care institutions (hospitals, polyclinics, medical service points, dispensaries, boarding houses for the elderly and disabled, etc.)
	Buildings for cult and religious activities (churches, cathedrals, mosques, synagogues, funeral buildings, ritual halls, etc.)
	Multifunctional buildings and complexes containing premises of various purposes

8 Національний стандарт № 1 … . URL: https://zakon.rada.gov.ua/laws/show/1440-2003-%D0%BF#Text (date accessed: 02.10.2023)..

Real estate value (as well as the value of any product) has two forms of manifestation: consumer and exchange. Consumer value is determined by a set of natural and social properties of a real estate object from the point of view of specific consumer. In his reasoning, he proceeds from the option of using real estate that has developed, as well as its natural and social properties, determined by the level of technical development and social needs. Location of the land plot, quantitative and qualitative characteristics of buildings and structures, their uniqueness and durability, tastes and preferences of owner and many other factors form the consumer value of real estate. For example, architecturally and engineering obsolete residential building can have a high consumer value for a family due to historical or genealogical factors, but its exchange value can be insignificant. Exchange value arises in the process of exchanging real estate objects, whereas in commodity economy, the general equivalent of measurement is money. In a competitive market, price as a monetary expression of value is a factor that balances supply and demand. The form of exchange value manifestation is a price that reflects the combined effect of all market factors on a specific date of sale, based on the option of its best use.

Depending on valuation purpose and completeness of the rights to the appraised real estate, various types of value can be combined into two groups:

- value in exchange as an expression of exchange value;
- value in use as an expression of consumer value [9].

Value manifestation forms in exchange:

- *market value* reflecting object value for a specific owner; this value is objective, independent of the wishes of individual co-owners and reflects real economic conditions prevailing in this market;
- *liquidation value* is the value under condition of a forced sale; the amount of money from the sale of the object in terms that are too short for adequate marketing;
- *collateral value* is the value of objects that creditor hopes to receive during a forced sale in the event of the borrower’s insolvency;
- *insurance value* is a type of value based on the reconstruction cost or the cost of replacing the object; on its basis, insurance sums, interest and payments are determined;
- rental value is the rental value with determination of starting rent, it is the balance sheet value on the last day of the month preceding the date of determination of the starting rent;
- utilization is the cost of processing using waste to obtain a useful product.

Value manifestation forms in use:

- *investment value* is the value of a real estate object for a specific investor, based on his investment requirements and preferences;
- *book value* is the value reflected on balance sheet of organizations and enterprises (the original value of real estate at the time of commissioning, adjusted during the revaluation of fixed assets taking into account accounting depreciation, as well as deducting the cost of improvements during operation period);
- *value for tax purposes* is the value determined on the basis of real estate tax regulations (in countries

9 Державний класифікатор будівель та споруд … . URL: https://zakon.rada.gov.ua/rada/show/va507565-00#Text (date accessed: 02.10.2023).

with economies in transition, this value corresponds to market value).

Each type of value has its limitations and field of application.

Nowadays, there are four national property valuation standards in force in Ukraine [10]:

- National Standard № 1 *General Principles of Valuation of Property and Property Rights* that is mandatory during valuation of property and property rights by subjects of valuation activity, as well as for persons who, in accordance with the law, review property valuation reports;
- National Standard № 2 *Real Estate valuation* that is mandatory during appraisal of immovable property (real estate) by subjects of appraisal activity, as well as for persons who, in accordance with the law, review property appraisal reports and conduct state examination of reports from expert monetary evaluation of land plots of state and communal property in case of their sale [11];
- National Standard № 3 *Evaluation of integral property complexes* which is mandatory during evaluation of integral property complex of a business entity by subjects of evaluation activity, as well as for persons who review reports on valuation of an integral property complex [12];
- National standard № 4 *Evaluation of property rights of intellectual property* that is mandatory for subjects of evaluation activity during evaluation of property rights of intellectual property, as well as persons who, in accordance with the law, review valuation reports. The standard can be used to determine the amount of damages incurred in connection with the improper use of objects of intellectual property rights [13].

National standards contain definitions of concepts, valuation principles, methodological approaches and specifics of valuation of the relevant property depending on its purpose, requirements for the report content on valuation of the property and procedure for its review; cases of application and limitations regarding application of methodological approaches to determining non-market types of property value [14].

Provisions (national standards) of property valuation are mandatory for the subjects of valuation activities during their valuation of property of all forms

10 Сольська В. В. Op. cit. URL: http://nbuv.gov.ua/UJRN/PSPE_print_2018_1_20 (date accessed: 02.10.2023).

11 Національний стандарт № 2 «Оцінка нерухомого майна» : затв. постановою Кабміну України від 28.10.2004 р. №1442 (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/1442-2004-%D0%BF#Text (date accessed: 02.10.2023).

12 Національний стандарт № 3 «Оцінка цілісних майнових комплексів» : затв. постановою Кабміну України від 29.11.2006 р. №1655. URL: https://zakon.rada.gov.ua/laws/show/1655-2006-%D0%BF#Text (date accessed: 02.10.2023).

13 Національний стандарт № 4 «Оцінка майнових прав інтелектуальної власності» : затв. постановою Кабміну України від 03.10.2007 р. №1185. URL: https://zakon.rada.gov.ua/laws/show/1185-2007-%D0%BF#Tex (date accessed: 02.10.2023).

14 Сольська В. В. Op. cit. URL: http://nbuv.gov.ua/UJRN/PSPE_print_2018_1_20 (date accessed: 02.10.2023).

of ownership and in any cases of its performance [15].

The following basic methodological approaches are used for property appraisal: cost, income, comparative or a combination of several of them (depending on valuation purpose).

The main elements in the case of applying comparative approach are characteristics of similar property in terms of its location, physical and functional specifics, terms of sale, etc.[16], and comparison objects are similar properties selected for the application of the comparative approach [17].

Using a comparative approach to real estate valuation, it is necessary to take into account the results of analysis of sales prices and offers of such property with adjustments for differences between the comparison objects and the valuation object.

Forensic expert looks for sales offers of similar property, analyzes them and reaches certain conclusions. Information about property should meet real estate market requirements. Quite often it happens that it is extremely difficult to pick up analogues of property sales, especially if the buildings contain premises with three or more types of functional purpose.

In order to determine classification of buildings by functional purpose in Ukraine, they use State Classifier of Buildings and Structures (hereinafter referred to as *SC BS*).

The general structure of the SC BS digital code corresponds to the following scheme:

- *X section* (for example, buildings or engineering structures);
- *XX subsection* (for example, residential buildings, non-residential buildings, transport facilities, pipelines, communications and power lines, complex industrial facilities, other engineering facilities);
- *XXX group* (for example, buildings with one, two or more apartments; hotels, restaurants and similar buildings; dormitories; office or commercial buildings; buildings of transportation and means of communication; industrial buildings and warehouses; buildings for public performances; institutions of education, medical and recreational purposes; other non-residential buildings; highways, streets and roads; main pipelines, communications and power lines; local pipelines and communications; sports and entertainment buildings; other engineering structures, not previously classified) [18];
- *XXXX class* (for example, single-apartment houses (detached residential houses; villas, dachas; houses for forestry personnel; blocked houses with separate apartments with their

15 Національний стандарт № 2 … . URL: https://zakon.rada.gov.ua/laws/show/1442-2004-%D0%BF#Text (date accessed: 02.10.2023).

16 Національний стандарт № 1 … . URL: https://zakon.rada.gov.ua/laws/show/1440-2003-%D0%BF#Text (date accessed: 02.10.2023).

17 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, 2016. С. 161—163.

18 Державний класифікатор будівель та споруд … . URL: https://zakon.rada.gov.ua/rada/show/va507565-00#Text (date accessed: 02.10.2023).

own entrance from the street); houses with two apartments; dormitories (in particular, houses for elderly and disabled people; buildings for collective accommodation of students, children, workers and other social groups); hotel buildings (hotels, motels, campsites, boarding houses, individual restaurants and bars); other buildings for temporary accommodation (tourist bases, mountain shelters, children's and family holiday camps); office buildings (which are used as premises for office and administrative purposes, in particular, for industrial enterprises, banks, post offices, local governments, government and departmental departments, convention and conference centers, government buildings justice, parliamentary buildings); commercial buildings (shopping centers, arcades, department stores, specialized stores and pavilions; halls for fairs, auctions, exhibitions; covered markets; car service stations; enterprises and institutions of public catering: canteens, cafes, snack bars, etc.); train stations, air terminals, buildings of means of communication and related buildings (civil and military airports; urban electric transport; railway or bus stations; sea and river stations; funiculars; airplane hangars; telephone booths; lighthouses; air traffic control buildings); garages (ground or underground; covered car parks; sheds for bicycles); industrial buildings (covered industrial buildings; factories, workshops, slaughterhouses; breweries; assembly plants), tanks, silos and warehouses (for oil, gas, grain, cement, etc.; refrigerators and special warehouses; storage areas); buildings for public performances (cinemas, concert buildings, theaters; meeting halls and multi-purpose halls; casinos; circuses, music or dance halls and discotheques); museums and libraries, buildings of educational and research institutions (preschool, primary, secondary, professional, higher, inclusive education; music and sports schools for children and youth; research institutions, laboratories, etc.); buildings of hospitals and health facilities (facilities for providing medical assistance to sick and injured patients; sanatoriums, preventive clinics, specialized hospitals; psychiatric dispensaries; maternity homes; buildings used for thermal and salt treatment, functional rehabilitation; blood transfusion points, etc.); sports halls (for indoor sports games; courts, arenas, swimming pools, gymnasiums, ice rinks, etc.); agricultural, forestry and fishery buildings (cowsheds, piggeries, horse studs); buildings for cult and religious activities (churches, chapels, mosques, synagogues, cemeteries and funeral facilities, ritual halls, crematoriums); historical monuments and those protected by the state (ancient ruins; archaeological excavations; memorial, artistic and decorative buildings; statues); other buildings

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not previously classified (bus stops, public toilets, laundries, baths, etc.); freeways (motorways and highways; traffic interchanges; lighting, signaling, security and parking devices); streets and roads (urban and rural streets; suburban roads; avenues; alleys; alleys; bypass and approach roads; squares; sidewalks and pedestrian zones; lighting, signaling, security and parking devices)) [19];

- *XXXXX subclass* (for example, single-apartment houses of mass construction; one-apartment cottages and houses of increased comfort; manor-type houses; country and garden houses; two-apartment houses of mass construction, two-apartment cottages and houses, multi-apartment houses of mass construction; apartment houses of increased comfort; individual residential houses hotel-type; dormitories for workers and employees, students of higher education institutions; boarding houses for the elderly and disabled; children's homes and orphanages; homes for refugees; shelters for the homeless; houses for collective living; hangars for airplanes, locomotives, wagons, tram and trolleybus depots; buildings of enterprises of machine-building and metalworking industry, ferrous metallurgy, chemical and petrochemical industry, light industry, food industry, medical and microbiological industry; forestry, woodworking and pulp and paper industry; construction industry, building materials; buildings for livestock, poultry, grain storage, silage and hay buildings; buildings for horticulture, viticulture and winemaking, greenhouses, fisheries, forestry and animal husbandry) [20].

Digital codes of SC BS, covering the classification grouping: section – class, fully correspond to the Eurostat Classification of Types of Constructions according to which the main purpose of multifunctional buildings should be determined according to the algorithm:

- calculating percentage ratio of the areas of different purposes of the premises in the total area, with the ratio of these areas according to their purpose and use;
- classifying (systematizing, group) by the top-to-bottom method (determining compliance of the building first to the section (one class of the code) covering all or most of its total area, then to subdivision (two classes of the code, residential or non-residential buildings) by the largest specific gravity of the area;
- determining the group (three digits of the code) by the largest part in the total area within the subdivision;
- determining the belonging of the building to the class (four digits of the code) by the largest part in the total area within the group [21].

19 Державний класифікатор будівель та споруд … . URL: https://zakon.rada.gov.ua/rada/show/va507565-00#Text (date accessed: 02.10.2023).

20 Державний класифікатор будівель та споруд … .

21 Державний класифікатор будівель та споруд … . URL: https://zakon.rada.gov.ua/rada/show/va507565-00#Text (date accessed: 02.10.2023).

For example, research object is a four-storey building with a total area of 1,200 m^2, which first floor there is a cafe (150 m^2), hairdresser (50 m^2) and a dental office (100 m^2), on the second floor there is a center for preschool education and child development (300 m^2), on the third there is dormitory for employees (300 m^2), on the fourth there is a hostel (300 m^2).

At the first stage, we determine the percentage ratio of areas: the cafe premises occupy 12.5 %, hairdresser: 4 %, dentist's office: 8.5 %, preschool center: 25 %, dormitory: 25 %, hostel: 25 % of the total building area.

At the level of two levels of the code, the building belongs to the non-residential category, since the premises of the cafe, hairdresser, dentist's office, preschool education center and hostel occupy 75 % of its total area.

At the level of three categories, research object belongs to buildings for public performances, educational, medical and recreational facilities, since the dental office and the preschool education center have the largest percentage (33.5 %). Finally, at the level of four categories, the building belongs to the class of buildings of preschool and after-school educational institutions, since the preschool education center has the largest percentage (25 %) within this group.

Therefore, object research should be classified as a non-residential building, class of preschool and extracurricular educational institutions.

After determining the main purpose of the building, it is necessary to analyze possible use of premises with a lower specific weight relative to the main purpose of the building, and then look for offers for the sale of similar property. At the same time, it is necessary to take into account all or the main principles of evaluation in order to obtain the most reliable and accurate valuation of research object value.

Conclusions

In default of single approach to solving issues related to the identification of similar objects during the evaluation and construction examination to determine the market value of civil buildings with premises of various functional purposes, it is proposed to choose an analogous object using the building identification method according to the State Classifier of Buildings and Structures: ДК 018-2000. An algorithm of actions of forensic experts for carrying out examinations of this type is proposed. Essence, content and approach to selecting similar objects when determining the market value of civil buildings including premises of various functional purposes are proposed.

Provisions of legislative acts, building codes and rules regarding market value determination of civil real estate objects including premises of various functional purposes, as well as the proposed algorithm for selecting similar objects during valuation and forensic structural engineering are given in the article can be used during conducting forensic examinations in this direction.

Добирання об’єктів-аналогів під час проведення оціночно-будівельної експертизи з визначення ринкової вартості цивільних будівель

Катерина Осипенко

Статтю присвячено проблемним питанням, з якими стикаються судові *експерти під час проведення оціночно-будівельної експертизи з оцінювання цивільних будівель із приміщеннями різного функційного призначення. Мета статті — визначення сутності, змісту, загально-методичних засад і особливостей єдиного підходу під час визначення ринкової вартості цивільних об'єктів, до складу яких належать приміщення різного функційного призначення. Акцентовано увагу на тому, що зазвичай експерти можуть застосовувати ринкові та неринкові види вартостей. Надано характеристику споживчій і міновій формам прояву вартості нерухомості. Наведено чинні Національні стандарти оцінки майна, які є обов'язковими до виконання суб'єктами оцінної діяльності під час проведення оцінювання об'єктів нерухомості усіх форм власності та в будь-яких випадках. Надано перелік основних видів вартостей та методичні підходи з оцінювання цивільних будівель із приміщеннями різного функційного призначення. До того ж окреслено основні типи окремо стоячих будівель і особливості добирання аналогів будівель для продажу, до складу яких належать приміщення різного функційного призначення, під час визначення їхньої ринкової вартості. Виокремлено особливості застосування методу ідентифікації будівлі згідно з державним класифікатором будівель і споруд ДК 018-2000 та алгоритм дій судових експертів для добирання об'єктів-аналогів із наочним прикладом його застосування.*

Ключові слова: *багатофункційна будівля; об'єкт порівняння; клас; приміщення; подібне майно.*

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Assessing the Russian-Chechen Wars and Their Impact on Regional Stability

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The present article aims to systematically examine the Russian-Chechen wars from diverse perspectives, with the goal of cultivating a comprehensive understanding of issues pertaining to the behavioral dynamics of involved actors. The primary objectives encompass an in-depth analysis of the wars' repercussions on regional stability, dissemination of awareness regarding the subject matter, and the formulation of discernible behavioral patterns within the Russian Federation. This article critically examines the influence of the Russian-Chechen wars that occurred in the 1990s and lasted for almost a decade. The conflicts between the Russian Federation and Chechen rebellions had a significant influence on regional stability during that period. Moreover, they have caused great disruptions and pivotal political disagreements. The wars can be perceived as a foundation of Russia's disregard for international law and explain the country's actions in the modern political realm. Efficient realization of the influence that the conflicts had on the region is crucial in order to understand Russia's modern political orientation, analyze the country's actions after the Chechen Wars, and predict its future activity in regard to conflicts. In pursuit of exhaustive analyses delineating the intricacies of the conflict and its ramifications on political stability, the research method includes the adoption of a qualitative approach. This involves meticulous scrutiny of pertinent journal articles, research papers, scholarly publications, and examination of legal and historical documents. The article observes wars from various perspectives and tries to bring a comprehensive understanding of the results.

Keywords: *war; conflict; international law; independence; terrorism; human rights.*

Research Problem Formulation

The Chechen Republic of Ichkeria and the Russian Federation engaged in several military encounters known as Russian-Chechen Wars [1]. The period 1994—1996 saw the First Chechen War, and the Second Chechen War occurred from 1999 to 2000. Long-standing ethnic and territorial conflicts, as well as more general geopolitical issues like the fall of the Soviet Union and Russia's desire to preserve control over its borders, were the key causes and historical elements that sparked the commencement of these wars. The wars continued for several years and were highlighted by many pivotal moments and significant occurrences, such as the siege of Grozny (1994—1955), the withdrawal of Russian forces from Chechnya (1996), and the outbreak of the Second Chechen War (1999). The Russian Federation and the Chechen Republic of Ichkeria were the main participants in the conflicts, and each had ambitions and drivers. It is important to examine the various aspects and outcomes of conflicts to understand their influence on regional stability.

The North Caucasian region has been the subject of Russian imperialism for many centuries [2]. The local geographical situation made it attractive for Russia to create a natural buffer zone. Each attack from the Russian side was causing more and more local hatred towards the aggressor country. The locals were forced to fight for their freedom throughout the centuries, and Chechens were not an exception. Russia started its first military campaigns in the region in the 18th century, and it was the beginning of the "Caucasian Wars". One of the most famous leaders of Caucasian rebellions was the Imam Shamil who united the Caucasian resistance. Chechnya fell under Russian rule in 1859 but never stopped resisting.

During Soviet times, in 1944, Chechen and Ingush people were deported from their homelands to Central Asia and Siberia [3]. Joseph Stalin stated that the reason for exile was Chechen and Ingush's support for Germany during the Second World War, but there is no evidence for that. Many Chechens believe that the deportation was a form of ethnic cleansing, and it was intended to punish the Chechen and Ingush peoples and break their resistance to Soviet rule. The deportation ended in 1957, and locals could return home.

The situation became tense after the collapse of the Soviet Union. The environment created after the collapse allowed the development of various political movements and parties, and more independence-minded people started to gain power in Chechnya [4]. Chechnya declared independence in 1991, which was not recognized by the Russian government. The Russian government wanted to keep its status as hegemon. However, internal political problems caused various conflicts between central power and regions, including Chechnya, as it was viewed as a threat to Russian territorial integrity. This disagreement led to the First War in Chechnya.

1 Nation R. C. Russia and the Caucasus. *Connections.* 2015. Vol. 14. No. 2. Pp. 1— 12. URL: https://www.jstor.org/stable/10.2307/26326394 (date accessed: 10.10.2023).

2 Ibidem.

3 Williams G. B. Commemorating "The Deportation" in Post-Soviet Chechnya. The Role of Memorialization and Collective Memory in the 1994—96 and 1999—2000 Russo-Chechen Wars. *History and Memory. Studies in Representation of the Past.* 2000. Vol. 12. No. 1. URL: https://www.brianglynwilliams.com/deportation%20article.pdf (date accessed: 10.10.2023).

4 Oliker O. Russia's Chechen Wars 1994—2000: Lessons from Urban Combat. Santa Monica, CA: RAND Corporation, 2001. 121 p. DOI: 10.7249/MR1289 (date accessed: 10.10.2023).

The initial outbreak of hostility came in 1994 when the Russian government declared the invasion of Chechnya, the First Chechen War [5]. The Russian military started a large-scale December with the main goal of capturing Grozny, the capital city of Chechnya. Marvelous Chechen resilience caused heavy casualties for the invaders. The Russian attack was incompetent and poorly planned, with a lack of intelligence and reconnaissance. After the cease-fire in 1996, and the Russian military left the state, and Chechnya de facto independent [6]. The region was engulfed by violence, insecurity, and Islamic extremism. In addition, Chechen fighters who returned from Afghanistan were inclined to jihadist ideology.

The Second Chechen War (1999—2000) was much more forceful [7]. The first Russian campaign called "Anti-Terrorist Operation" started in October 1999 after Chechen fighters attacked Dagestan. Russians used heavy firepower, bombardment, and artillery to retake the territory. The second campaign was called the "Winter campaign", with the main objective of retaking Grozny. The conflicts were extremely tense and caused significant casualties on both sides, but eventually, Russians captured the city. Subsequently, the mountainous regions of Chechnya stayed under the control of local authorities. In the spring of 2000, Russia started its third campaign in the mountains to pacify the regions. Russians defeated local militants in September, and the whole region was under the control of the central government. The Russian strategy during the Second Chechen War combined military might with political and economic initiatives. Russian government aimed to split Chechen resistance while conducting military operations against militant groups. Russian government's military operations were characterized by indiscriminate killings, which led to widespread hostility and mistrust among the Chechen populace.

During the wars, the independence movement also underwent changes [8]. Throughout the first war, Chechens' main goal and mindset were political independence and sovereignty. In contrast, during the Second Chechen War, various political factions tried to capture power. A more severe and extremist Chechen resistance that aimed to create an Islamic state in the North Caucasus and wage terrorist activities against Russia was a defining feature of the Second Chechen War.

In the period between the two wars, the Russian government signed an agreement with the Chechen rebels in a town called Khasavyurt, but it was never implemented [9]. The agreement included a ceasefire and recognition of the independence of Chechnya. More international mediation attempts by organizations like the OSCE and Council of Europe were made during the Wars. In 2003, the Russian government signed an agreement with Chechen leader Akhmad Kadyrov and recognized the Chechen government. However, militants assassinated Akhmad in 2004 and the conflict continued.

5 Dash P. L. Russia's War of Attrition in Chechnya. *Economic and Political Weekly.* 1995. Vol. 30. No. 7/8. Pp. 369—373. URL: http://www.jstor.org/stable/4402405 (date accessed: 10.10.2023).

6 Oliker O. Op. cit. DOI: 10.7249/MR1289 (date accessed: 10.10.2023).

7 Tsatsos A. Second Chechen War: Causes, Dynamics and Termination - A Civil War between Risk and Opportunity? (November 3, 2014). URL: https://ssrn.com/abstract=2518687 (date accessed: 10.10.2023).

8 Shah S. A. A. Genesis of the chechen resistance movement. Strategic Studies. 2004. Vol. 24. No 4. Pp. 84—110. URL: http://www.jstor.org/stable/45242553 (date accessed: 10.10.2023).

9 Findley M. Path Dependence and Bargaining in Civil War Resolution (August 24, 2010). URL: https://ssrn.com/abstract=1676556 (date accessed: 10.10.2023).

The active war phase ended after the Russians took full control of Chechnya in 2000, but the partisan fights continued even after the assassination of Akhmad Kadyrov [10]. Chechnya remains a politically unstable territory, with continued worries about human rights violations and political persecution.

The forensic examination of the North Caucasus conflict reveals historical resistance against Russian imperialism. The analysis scrutinizes legal aspects, highlighting potential self-determination rights for Chechens and questioning the legality of Russian military interventions. The examination underscores widespread violations of humanitarian and human rights laws by both sides, resulting in war crimes and crimes against humanity. Despite condemnation from the European Court, Russia's denial of accountability remains, emphasizing the urgent need for legal resolution to establish lasting peace in the politically unstable region.

Article Purpose

The present article aims to systematically examine the Russian-Chechen wars from diverse perspectives, with the goal of cultivating a comprehensive understanding of issues pertaining to the behavioral dynamics of involved actors. The primary objectives encompass an in-depth analysis of the wars' repercussions on regional stability, dissemination of awareness regarding the subject matter, and the formulation of discernible behavioral patterns within the Russian Federation.

Research Methods

In pursuit of exhaustive analyses delineating the intricacies of the conflict and its ramifications on political stability, the research method includes the adoption of a qualitative approach. This involves meticulous scrutiny of pertinent journal articles, research papers, scholarly publications, and examination of legal and historical documents.

Analysis of Essential Researches and Publications

Numerous issues concerning different areas of international law were raised during the Russian-Chechen conflicts due to a lack of established legal frameworks [11]. Many infractions raised tensions between Russia and the international community, which approached Russia's conduct critically. Wars can be analyzed from various branches of international law like self-determination, use of force, humanitarian and human rights law, refugee law, and international criminal law.

In international law, the notion of self-determination has a dual significance: internal and external [12]. The internal component indicates the right of the people of a state to decide on their form of government, which is already recognized by international law. The exterior aspect

10 Roberson C. D. A small war: the development of the Russian-Chechen conflict 1994-2010 / United States Marine Corps Command and Staff College Marine Corps University. URL: https://apps.dtic.mil/sti/tr/pdf/ADA600545.pdf (date accessed: 10.10.2023).

11 Committee on Legal Affairs and Human Rights. Opinion on the conflict in Chechnya / Parliamentary Assembly of the Council of Europe. Doc. 8631. 2000. URL: https://assembly.coe.int/nw/xml/XRef/X2H-Xref-ViewHTML.asp?FileID=8857&lang=EN (date accessed: 10.10.2023).

12 Mustafa Z. The Principle of Self-Determination in International Law. The International Lawyer. 1971. Vol. 5. No 3. Pp. 479—487. URL: http://www.jstor.org/stable/40704674 (date accessed: 10.10.2023).

concerns people's right to decide their nationality and statehood.

As Z. Mustafa [13] explains, with respect to the second connotation (external), people of distinctive ethnic, religious, linguistic, and cultural backgrounds have the right to determine their political status, choice of government, and economic, cultural, and social development within a state in case if it does not disrupt state's national unity. This law is contradictory and works differently from case to case.

The main objective of Chechens during both wars was to claim independence [14]. They justified their aspirations with the right to self-determination under international law. While they met all criteria needed to determine their political wishes, the international community still did not show unilateral support for the uprising.

As mentioned before, the territory of Chechnya was annexed by the Russian Empire in 1859 after a long and severe war. After that, many uprisings were happening in the territory, and local people were not happy to be under Russian rule. After the Russian Revolution in 1917, the North Caucasus region became independent of the central government, and only in 1920, the Soviet Army returned to the region and took control [15].

According to the author, the topic is doubtful, but Chechens fit every criterion that is needed for a group to have the right to determine their political goals. Even though its aspirations greatly weakened regional stability and interfered with Russia's territorial integrity, a declaration of independence from the Chechen authorities may have been justified under international law based on self-determination.

Another law through which the wars will be analyzed is the use of force. Generally, any action that includes the use of force is considered illegal under international law, except in rare cases [16]. Such cases are self-defense if the action was authorized by the UN Security Council under Chapter VII of the UN Charter. Chapter VII of the UN Charter provides for action by the UN Security Council concerning threats to international peace, breaches of the peace, and acts of aggression. If the council decides that there are any of the above-mentioned threats, it might allow the use of force to regulate the situation. In international law, states have the right to act in self-defense against armed attacks.

In 1994, Russia entered the territory of Chechnya with the main goal of capturing the city [17]. This military campaign was not authorized by the UN Security Council and resulted in many doubts about the justice of this event. Similarly, the second interference in the territory of Chechnya in 1999 was not authorized.

13 Mustafa Z. Op. cit. URL: http://www.jstor.org/stable/40704674 (date accessed: 10.10.2023).

14 Garvie B. A. Chechnya and Russia: conflict and self-determination. Monterey, CA : Naval Postgraduate School, 2002. P. 75. URL: https://apps.dtic.mil/sti/pdfs/ADA411370.pdf (date accessed: 10.10.2023).

15 Reynolds M. A. Native Sons: Post-Imperial Politics, Islam, and Identity in the North Caucasus, 1917-1918. Jahrbücher Für Geschichte Osteuropas. 2008. Bd. 56. H. 2. Pp. 221—247. URL: http://www.jstor.org/stable/41052053 (date accessed: 10.10.2023).

16 Wood M. International law and the use of force: what happens in practice? *Indian Journal of International Law.* 2013. Vol. 53. Pp. 345—367. URL: https://legal.un.org/avl/pdf/ls/Wood_article.pdf (date accessed: 10.10.2023).

17 Hollis D. B. Accountability in Chechnya - Addressing Internal Matters With Legal and Political International Norms. *Boston College Law Review*. 1995. Vol. 36. Pp. 793—846. URL: https://lira.bc.edu/files/pdf?fileid=b22bcd59-4ca5-44c4-97f8-f3e0c4c45c0e (date accessed: 10.10.2023).

Furthermore, it may seem that Chechen's actions can be justified by self-defense as Russia invaded Chechnya in 1994. For a state, using force when another actor starts an armed campaign is justified, but Chechnya was not recognized as a state. Whether military actions taken by rebels can be justified with self-defense is a doubtful topic. Russia justified its actions as a counterterrorist mission. However, according to international law, they were only allowed to take armed action if they had authorization from the UN, which they did not.

Moreover, the most violated laws during the Chechen Wars were humanitarian and human rights laws. Humanitarian law regulates states' actions during armed conflicts while human rights grant human beings certain expected treatment [18].

The Committee on Legal Affairs and Human Rights [19] stated that during the Chechen wars, there were constant violations of international humanitarian law and human rights. The main reason for this was the lack of a legal framework. According to the committee, Russian intervention cannot be called an anti-terrorist operation due to its huge scale. There were reports of Russian violations such as indiscriminate bombardments, some of which targeted the civil population and villages; various acts of terror towards the civil population; displacement without adequate conditions; and the prevention of humanitarian assistance to the population. There have been several incidents where civilian convoys carrying fugitives from the conflict were subjected to air strikes or artillery shelling, particularly those traveling on the main route out of Chechnya towards Ingushetia, known as the "Rostov-Baku highway". Another flagrant violation of international law was the Russian government's ultimatum to Grozny's civilian population on December 6, 1999, according to which, anyone still in Grozny on December 11 would be deemed a terrorist and get destroyed. Freedom of movement was also violated. Russian government restricted internally displaced people (IDP) from staying in safe places and pushed them to return to their homes despite all instabilities [20]. This is a violation of international refugee law which is designed to protect displaced people [21]. Furthermore, Medecins Sans Frontieres [22] explains that after taking control of the

18 International Humanitarian Law (2016) / Inter-Parliamentary Union and International Committee of the Red Cross. URL: https://www.ipu.org/resources/publications/handbooks/2016-10/international-humanitarian-law (date accessed: 10.10.2023) ; The International Bill of Human Rights (1948) / Office of the High Commissioner for Human Rights. URL: https://www.ohchr.org/sites/default/files/Documents/Publications/Compilation1.1en.pdf (date accessed: 10.10.2023) ; International Human Rights Law - RAIO Lesson Plan (2019) / U.S. Citizenship and Immigration Services. URL: https://www.uscis.gov/sites/default/files/document/foia/International_Human_Rights_Law_RAIO_Lesson_Plan.pdf (date accessed: 10.10.2023).

19 The conflict in Chechnya / Committee on Legal Affairs and Human Rights. Parliamentary Assembly of the Council of Europe. 25.01.2000. Doc. 8631. URL: https://assembly.coe.int/nw/xml/XRef/X2H-Xref-ViewHTML.asp?FileID=8857&lang=EN (date accessed: 10.10.2023).

20 War crimes and politics of terror in Chechnya, 1994-2004. *Medecins Sans Frontieres*. 2014. URL: https://www.msf.org/sites/default/files/2019-04/MSF%20Speaking%20Out%20Chechnya%201994-2004.pdf (date accessed: 10.10.2023).

21 Hathaway J. C. International Refugee Law: The Michigan Guidelines on the Internal Protection Alternative. Mich. J. Int'l L. 1999. Vol. 21. No. 1. Pp. 131—133. URL: https://repository.law.umich.edu/articles/299/ (date accessed: 10.10.2023).

22 War crimes and politics of terror … . URL: https://www.msf.org/sites/default/files/2019-04/MSF%20Speaking%20Out%20Chechnya%201994-2004.pdf (date accessed: 10.10.2023).

territory, Russians reportedly tortured and sometimes killed the male population of some villages to find ones who participated in armed actions. Also, according to the Committee on Legal Affairs and Human Rights [23], the Office of the Secretary-General of the United Nations expressed concern about the intense military operation in Chechnya as it caused high casualties among civilians, including the elderly, women, and children, and urged the Russian leadership to take immediate action to protect the civilian population from further suffering, stop all violations of international law, and seek long-term resolution to the conflict through a political process.

Additionally, Chechen militants have violated various laws, notably by putting civilian lives in jeopardy by inciting Russian counterattacks on residential areas and by abusing and threatening those who tried to protect their towns from Russian bombing. There were also incidents of Chechen fighters torturing captured Russian soldiers. Furthermore, the Chechens captured some villages in Dagestan and announced an Islamic regime where they violated the rights of locals [24].

Such violations of IHL and IHRL are also violating two branches of international criminal law, which are war crimes and crimes against humanity. These abuses were made by both conflicting sides.

The civilian population went through incredible struggles during the two Chechen wars, but unfortunately, most of the criminals stayed without punishment. The European Court condemned Russia for researching all cases of violations and acting according to the law [25]. For many years, the Russian side denied humanitarian and human rights violations. Even now, tens of thousands of victims continue to be denied access to justice. On the Chechen side, most people who committed war crimes and crimes against humanity were either already dead or had received jail sentences. The Russian Federation has consistently disregarded its legal commitment to hold such individuals accountable.

Main Content Presentation

Influence of Wars on the Political Balance of Power in the Region

The massive conflict that lasted almost a decade between Russia and Chechnya was one of the important political events that occurred in the 1990s'. The dissolution of a great world power like the USSR left a lot of unsolved cases, and the situation in Chechnya was one of them. After the dissolution, many new countries emerged, and Russia aspired to hold the status of a great world power. On the other hand, ex-Soviet republics faced the harsh realities of the political world. Some republics wished to seek full independence from Moscow and find partners in the Western world, while others saw Russia as their main supporter. The Chechen people wanted to declare their independence and be free from Russian influence, but Moscow did not agree to lose its political power in the region. The wars caused shifts in the balance of power and political influence in the region.

23 The conflict in Chechnya … . URL: https://assembly.coe.int/nw/xml/XRef/X2H-Xref-ViewHTML.asp?FileID=8857&lang=EN (date accessed: 10.10.2023).

24 War crimes and politics of terror … . URL: https://www.msf.org/sites/default/files/2019-04/MSF%20Speaking%20Out%20Chechnya%201994-2004.pdf (date accessed: 10.10.2023).

25 Justice for Chechnya: The European Court of Human Rights Rules against Russia / Human Rights Watch. 2007. URL: https://www.hrw.org/sites/default/files/related_material/justice_for_chechnya_2_0.pdf (date accessed: 10.10.2023).

During and after the wars, the political course of the region drastically shifted [26]. The first president of the "Chechen Republic of Ichkeria," Dzhokhar Dudaev, won the 1991 elections with 80 % of the population voting for him. Dudaev was more nationalist- and tradition-oriented than religious. But later, he shifted his politics towards Islam to get help from other Muslim countries. He was assassinated in 1996 [27]. During the second Chechen war, the government of Chechnya was shifting towards sharia laws and supporting Islam. However, they did not have the support of the whole populations, and those shifts caused disputes in the region. One of the opponents of the Islamic regime was Akhmad Kadyrov [28]. The Russian side supported him. After Russia took control of the region in 2003, Akhmad was chosen as the leader of the region under suspicious circumstances. Akhmad died in 2004, and his son, Ramzan, took the position. Ramzan Kadyrov is also pro-Russian, and he fought against many small military formations of Chechnya's old authorities who were trying to sabotage Ramzan's rule and gain influence in the region. Eventually, Ramzan became the authoritarian leader of the region. Nearly all types of independent journalism were suppressed in Chechnya by Kadyrov. In addition, he instituted a religious code and a police force to uphold it, even though doing so plainly violates federal law [29]. Some of the rules in his religious code oppose the Koran, but he justifies them with local traditions. Kadyrov implemented religious codes based on his perception of Islam. He continues to be a leader of the region.

Chechen wars involved and influenced various regional or international actors [30]. Some of these actors had their interests in the conflict, while others feared the spread of instabilities in their regions. Countries like Georgia and Azerbaijan were highly affected by the war. Georgia became one of the places where refugees found the peace. Russia accused Georgia of letting Muslim militants go through the country, which was denied. These accusations raised doubts in the Georgian government about the possibility of the spread of the war in the country. One of the biggest threats to Russian political and cultural power over the region was the appearance of various Islamic and extremist militants. Muslim states saw the opportunity to spread their influence. Also, international organizations like the UN, OSCE, and European Council tried to interfere as mediators.

Russia is a multiethnic country and consists of many regions with their own culture, language, and traditions. If Russia lost control over Chechnya, other regions and ethnic minorities would see this as an opportunity to fight for their own freedom. For this reason, Russia used the most reckless methods to bring Chechnya under its rule at any cost.

26 Hughes J. Chechnya: the causes of a protracted post-soviet conflict. *LSE Research Online*. 2001. Vol. 4. No. 4. Pp. 11—48. URL: https://eprints.lse.ac.uk/641/1/Hughes.Chechnya.Civil_Wars.pdf (date accessed: 10.10.2023).

27 Chechnya After Dudayev. *Strategic Comments*. 1996. Vol. 2. Is. 4. Pp. 1—2. DOI: 10.1080/1356788960242 (date accessed: 10.10.2023).

28 Tomas A. S. Legitimacy, Success and Rebellion in Chechnya: The Rise and Fall of Chechen Independence. Chapel Hill. 2017. 92 p. DOI: 10.17615/n59e-6v23 (date accessed: 10.10.2023).

29 Tier 1. USCIRF-recommended countries of particular concern (CPC). Russia. USCIRF Annual Report. 2018. URL: https://www.uscirf.gov/sites/default/files/Tier1_RUSSIA.pdf (date accessed: 10.10.2023).

30 Oliker O. Op. cit. DOI: 10.7249/MR1289 (date accessed: 10.10.2023).

International efforts to bring peace to the region were constantly made and influenced the direction of the war [31]. Mostly, they brought platforms for negotiation. Diplomatic efforts frequently led to brief cessations of hostilities and intervals of reduced violence. These breaks in the fighting gave time for negotiations and consultations, as well as the delivery of humanitarian aid to the impacted districts. In post-war periods, various international organizations attempted to bring justice and peace to the region, but without significant results. Chechnya remains the region with one of the highest rates of human rights violations.

Terrorism Cases

Extremist groups had significant participation during the Chechen wars [32]. The idea of fighting against the oppression of Western Christian countries was popular in terrorist organizations of that period throughout the world, and Chechnya became one of the battlefields for extremist fighters [33].

V. A. Klimentov further explains that foreign fighters were attracted to fight in Chechnya due to the presence of prominent fighters like Shamil Basayev and Ibn al-Khattab, who fought in the Soviet-Afghan war. The opportunity to fight alongside such leaders as a part of the global jihadist movement made it fascinating for many extremists to participate in the Chechen Wars. It is important to note that terrorism during the wars was used as a method of fighting and achieving independence rather than a final goal.

Russian brutal actions played a significant role in the development of extremism among the local population [34]. A sense of revenge and grievance for all the human rights abuses that were happening on the Russian side fueled local people to use extreme methods of fighting. This was well used by Chechen rulers to promote their political objectives, primarily centered around Chechen separatism and retaliating against abuses by pro-Moscow security forces.

According to V. A. Klimentov [35], during and after the battles, extremist organizations in the North Caucasus used a variety of methods and strategies. Guerrilla warfare, terrorist assaults, and suicide bombings were among the strategies used. The terrorists chose high-profile civilian targets like Moscow and Stavropol Krai. Radical Islamists' explanations for suicide strikes went beyond logic, adding conceptions of martyrdom and fears about the afterlife.

The Author explains that extremist assaults contributed to the Chechen victory in the first war and resulted in a political settlement. This arrangement provided Chechnya with some sovereignty while also reducing the intensity of the fighting. Terrorism, as a strategy, did not, however, result in a total resolution of the disputes.

31 Freire M. R. Matching words with actions: Russia, Chechnya and the OSCE – a relationship embedded in ambiguity. UNISCI Discussion papers. 2005. N° 9. Pp. 159—171. URL: https://www.ucm.es/data/cont/media/www/pag-72532/UNISCI9Freire.pdf (date accessed: 10.10.2023).

32 Trenin D. V. The Forgotten War: Chechnya and Russia's Future. *Carnegie Endowment for International Peace.* 2003. Pp. 1—8. URL: https://carnegieendowment.org/files/Policybrief28.pdf (date accessed: 10.10.2023).

33 Klimentov V. A. Bringing the war home: the strategic logic of 'North Caucasian terrorism' in Russia. Small Wars & Insurgencies. 2021. Vol. 32. Is. 2. Pp. 374—408. DOI: 10.1080/09592318.2020.1788749 (date accessed: 10.10.2023).

34 Alonso S. Islamic extremism in the North Caucasus: What kind of threat for regional security? URL: http://iugm.es/uploads/tx_iugm/sonia-euroeste.pdf (date accessed: 10.10.2023).

35 Klimentov V. A. Op. cit. DOI: 10.1080/09592318.2020.1788749 (date accessed: 10.10.2023).

Negotiations with extreme Islamists were never approved by Russian authorities, and the extremist organizations' strategic goals were not completely realized.

Economic Influence on the Region

The wars in Chechnya had significant effects on the regional economy. Massive bombardments, which destroyed most of the region, ruined infrastructure, including factories, businesses, and agricultural land [36]. The wars led to a rapid decline of the region's economy and an increased struggle for the population to bear the environment.

Various aspects of Chechnya's economy suffered. Due to the destruction, industries and businesses in the region stopped working. This caused increasing rates of unemployment, which went up to 90 % [37]. Constant violence and a threatening environment damaged investments and economic growth; therefore, GDP drastically dropped. She further explains that the conflicts also had a significant influence on transportation networks. Infrastructure disruptions, such as roads, trains, and pipelines, hampered commerce and transit networks. Many Chechen roads were destroyed, and the rail network was severely damaged.

Chechnya's oil production has crucial importance for the economic situation of the region. The federal Ministry had control over Chechen oil resources, which limited the local population's revenue [38]. Massive oil resources might be one of the motivating factors for Russia to carry out massive wars. President of Chechnya Aslan Maskhadov tried to put oil resources under his control in 1997 but without success. Later, during the early 2000s, conflicts over oil were showcased better. The Russian-Chechen war turned into an internal conflict between the former authorities of Chechnya in the 1990s, which was won by Ramzan Kadyrov with Russian support. In the conditions of modern globalization, Russian aggression has once again entered a new stage of development. Russia's aggression in Ukraine and Georgia has triggered the greatest security crisis in Europe since the Cold War. In nearly three decades of independence, Ukraine and Georgia have sought to forge their paths as sovereign states while looking to align more closely with Western institutions, including the European Union and the North Atlantic Treaty Organization. The aspiration of Georgia and Ukraine for Euro-Atlantic integration and adherence to Western values has been a serious reason for discontent for Russia. As a result, Russia occupied 20 percent of Georgia's territory, and in 2021 an unprovoked war of aggression began against Ukraine's peaceful neighbor [39].

36 Elbuzdukayeva, T. U. Economic Recovery in Chechnya: History and Modernity. Chechen Scholars on Chechnya / eds. J. Wilhelmsen & E. Fatland. Norwegian Institute of International Affairs (NUPI), 2010. Pp. 41—62. URL: http://www.jstor.org/stable/resrep08066.5 (date accessed: 10.10.2023).

37 Ibidem ; Walker E. W. (1998). Chechnya and the Economic Consequences of Secession. *Contemporary Caucasus Newsletter*. 1998-1999. Is. 7. URL: https://iseees.berkeley.edu/sites/default/files/walker_1998-econ.pdf (date accessed: 10.10.2023).

38 Vendina O., Belozerov V. S., Gustafson A. The wars in Chechnya and their effects on neighboring regions. *Eurasian Geography and Economics*. 2007. Vol. 48(2). Pp. 178—201. DOI: 10.2747/1538-7216.48.2.178 (date accessed: 10.10.2023).

39 Abuseridze G., Grasis J. Legal and Economic Consequences of Russia's Expansionary Policy / Handbook of Research on Ethnic, Racial, and Religious Conflicts and Their Impact on State and Social Security. IGI Global, 2022. Pp. 243—256.

Additionally, the wars caused a loss of human capital. O. Vendina et al. [40] explained that a tremendous amount of the Chechen population left the republic and migrated to other regions of Russia. Moreover, ideological leaders, commanders, and other educated and developed members of society died, emigrated, or were captured by Russians. All skilled citizens stayed out of the region, which caused the downfall of the local economy and limited future possibilities for quality restoration of the economy. Massive migrations also affected the situation in bordering regions of the republic. As demand for housing, healthcare, and social services increased, local governments were put under pressure. Furthermore, the arrival of migrants boosted job competitiveness and lowered employment opportunities for locals.

After the wars in 2001, the Russian government implemented a plan for the restoration of Chechen infrastructure and economy [41]. The Russians started restoring all aspects of infrastructure, like schools, hospitals, roads, and others. In the academic year 2000/2001, 357 schools and three higher education institutes were in operation in Chechnya. The main focus was on the restoration of oil production. Even though big efforts were made to restore the region's economy, businesses and investments are not developing well because of the unstable situation and the autocratic rule of Ramzan Kadyrov.

World Feedback

The Russian-Chechen war had a considerable influence on world perceptions of the central Russian government's attitude toward dealing with separatist groups and territorial disputes [42]. The Russian army's cruel and indiscriminate acts during the Chechen conflict drew worldwide criticism and created major doubts about Russia's adherence to international law.

Russia's heavy military attack with disregard for international law displaced the country's preference for military force over diplomacy [43]. After the collapse of the Soviet Union, the Western world hoped to build a partnership with Russia. Yeltsin's attitude towards the West was positive, but this war became the root of the disagreement [44]. The author concludes that Russia's unwillingness to cooperate and disregard of international laws showcased its realistic approach to international relations, which completely opposes Western countries' liberal values.

The responses of other states around the world to the conflict varied. At the beginning of the conflict, some Western countries, like the US, were supporting Russia and its desire to restore territorial

40 Vendina O., Belozerov V. S., Gustafson A. Op. cit. DOI: 10.2747/1538-7216.48.2.178 (date accessed: 10.10.2023).

41 Elbuzdukayeva, T. U. Op. cit. URL: http://www.jstor.org/stable/resrep08066.5 (date accessed: 10.10.2023).

42 War crimes and politics of terror … . URL: https://www.msf.org/sites/default/files/2019-04/MSF%20Speaking%20Out%20Chechnya%201994-2004.pdf (date accessed: 10.10.2023).

43 Cornell S. E. International Reactions to Massive Human Rights Violations: The Case of Chechnya. *Europe-Asia Studies*. 1999. Vol. 51. No. 1. Pp. 85—100. URL: https://www.jstor.org/stable/pdf/153547.pdf?refreqid=excelsior%3Aad890aaac925518e0248368271c37ee6&ab_segments=&origin=&initiator=&acceptTC=1 (date accessed: 10.10.2023).

44 Relations with Russia / North Atlantic Treaty Organization. 03.08.2023. URL: https://www.nato.int/cps/en/natolive/topics_50090.htm (date accessed: 10.10.2023).

integrity [45]. As the conflict went on and violations of human rights became obvious, the US government felt the need to criticize Russia's actions [46]. Criticism stayed weak, and they did not impose any sanctions. Unlike the US, European countries were stricter on Russia. Alain Juppe, France's foreign minister, recommended using economic pressure to persuade Russia to uphold human rights norms. Some European nations, notably those in Scandinavia and the Baltic states, have even called for sanctions against Russia. It should be noted that in modern times, sanctions have played a crucial role in Russia's response to the invasion of Ukraine. Taken together, the full sanctions package against Russia is a very effective and efficient means of preventing Russia from providing operational logistics and sustaining its military aggression against Ukraine [47]. S. E. Cornell [48] further explains that Eastern European nations, mainly Poland, and free republics of the former Soviet Union, including Estonia, Latvia, Lithuania, and Ukraine, have condemned Russia's activities in Chechnya. They regarded Russia's invasion of Chechnya as part of a wider trend of imperialist policies and involvement in neighboring governments' affairs. Poland enthusiastically backed Chechnya's liberation fight and urged for acknowledgment of its right to self-determination. The Baltic countries demonstrated solidarity with Chechnya, while Ukraine was a major opponent of Russia during the conflict. As S. E. Cornell [49] states, the response of the Muslim world was varied. Some of the largest Muslim countries, like Turkey and Iran, did not criticize Russia. Turkey was concerned that their criticism of Russia's actions would cause problems with Kurdish aspirations for independence in its territory. Iran views Russia as one of its biggest partners in the international community. There were rumors about Saudi Arabia's military support for the Chechen population, but they were not proven. Additionally, there were efforts from international organizations like Human Rights Watch to document violations committed during the wars.

Overall, it is clear the world's response to the conflict and violations of international law was present, but it was not enough to have a factual effect on Russia. European countries were using terms like "abuse" instead of calling violations "war crimes". They should have insisted on making Russia accountable for its crimes and seeking a ceasefire as soon as possible.

Action Analysis and Future Threats

The actions taken by the Russian Federation during the Chechen wars were

45 War Crimes In Chechnya and the Response of the West: Testimony before the Senate Committee on Foreign Relations / Human Rights Watch. 29.02.2000. URL: https://www.hrw.org/news/2000/02/29/war-crimes-chechnya-and-response-west (date accessed: 10.10.2023).

46 Cornell S. E. Op. cit. URL: https://www.jstor.org/stable/pdf/153547.pdf?refreqid=excelsior%3Aad890aaac925518e0248368271c37ee6&ab_segments=&origin=&initiator=&acceptTC=1 (date accessed: 10.10.2023).

47 Abuseridze, G., Agapova, O. The Effect of Sanctions Against the Background of the Russian Occupation of Ukraine. *Integrated Computer Technologies in Mechanical Engineering-2022 (ICTM 2022). Lecture Notes in Networks and Systems*. 2023. Vol. 657. Pp. 475—481. DOI: 10.1007/978-3-031-36201-9_41 (date accessed: 10.10.2023).

48 Cornell S. E. Op. cit. URL: https://www.jstor.org/stable/pdf/153547.pdf?refreqid=excelsior%3Aad890aaac925518e0248368271c37ee6&ab_segments=&origin=&initiator=&acceptTC=1 (date accessed: 10.10.2023).

49 Ibidem.

keystones for the country's future political action. These wars could have been used as a prediction for Russia's political orientation and interest.

Firstly, the Chechen wars were an open disregard for various branches of international law from the Russian side. Even though Chechen rebels used various tactics including some terroristic attacks during the wars, Russia, as a member of the European Council state should have obeyed obligations that it holds for the international community. Russian violations of international laws are indicators of the country's political direction. Such actions showcase that Russia is ready to use every method possible to achieve its self-interests. Russia has proved its narcissistic nature in various political actions after the Chechen wars. Various examples include Russia's trade embargo on Georgia in order to push the last-mentioned to agreement regarding Russia's accession to the World Trade Organization, expanding trade with Iran, and situations in Ukraine, Syria, and others [50]. As experience shows, it is reasonable to think that Russia will continue pursuing its self-interests at any cost and disregard any international norms.

Moreover, the Chechen wars had a serious influence on the face of Russia as a newborn superpower state. Since the early days of the Russian Empire, the political orientation of the Russian government has always been directed towards the expansion of territories and influence on bordering regions. The same thing was expected after the dissolution of the Soviet Union. Even though, in the first years of its existence, Russia was trying to have friendly relations with the West, the Chechen wars should have been a strong indicator for future shifts in attitudes. Russia proved its power over the region during these wars as it was necessary to keep the country. In case Chechnya gained independence, it could have caused a snowball effect and spilled over the other ethnically distinct regions of Russia. Moreover, other actors like Islamic countries, saw Chechnya as an opportunity to spread their influence over the majorly Muslim north Caucasus region and create insecure, extremist states in Eastern Europe (EE). Such a state would give them more access and influence over other EE states or Russia. Also, unsuccessful attempts of international actors to bring peace and justice to the victims of these wars tarnish their names and create an image that they do not have actual influence and power. This is used well for anti-western and anti-globalization propaganda.

Chechen Wars should have been a red flag for the Western countries towards Russia. Instead, critics and punishments for violations were not harsh enough. This should become a lesson that it is important to take seriously the actions of the states, predict their future steps, and do everything to prevent unpleasant outcomes.

Conclusion

In conclusion, the Russian-Chechen wars were disastrous events that sacrificed political relations, economy, reputation, and most importantly, thousands of lives. The conflicts in the Caucasian region between Russians and local populations have been present for hundreds of years and some of them, are still blowing up. Such conflict exists between Chechens and Russians, which resulted in two Chechen Wars a couple of decades ago. The war had various interpretations, and some legal frameworks like the use of force in international law and self-determination in international

50 Abuseridze G. Trade War: Georgia vs. Russia. *Socrates: Rīga Stradiņš University Faculty of Law Electronic Scientific Journal of Law.* 2020. No. 3 (18). P. 150. DOI: 10.25143/socr.18.2020.3.147-154 (date accessed: 10.10.2023).

law could not explain it clearly. On the other hand, violations of other laws like humanitarian law, international human rights law, international refugee, and international criminal law were present from both sides. Such violations caused massive negative feedback towards the Russian Federation and destroyed the country's reputation in the eyes of the West. However, by keeping Chechnya, Russia proved its position as a regional hegemonic power. In addition, various terrorism cases from the Chechen side disrupted the rebels' possibility of obtaining strong support from other countries. Economic destruction that was caused by the wars became disastrous for the Chechen population as they were not able to completely recover. Moreover, although international criticism was present towards Russian violations of various international laws, some countries held on to be very harsh due to their political situations.

The wars were one of the first and loudest cases of Russian disregard for international law and stability, for the country's self-interest. The Chechen Wars are a good explanation for the actions that Russia has been pursuing in the international system for the last decades including the war in Georgia and Ukraine, and an efficient depiction of the country's main international interests. Actions taken by Russia during the Chechen Wars should have resulted in drastic steps from the international community to prevent further expansion of Russian ignorance. This case should become a valuable lesson for the world.

Оцінка російсько-чеченських війн і їхній вплив на регіональну стабільність

Теодор Джорджобіані

Ця стаття має на меті системно проаналізувати російсько-чеченські війни з різних позицій із метою розглянути проблеми, пов'язані з поведінковою динамікою учасників конфлікту. Основні завдання наукової роботи полягають у глибинному аналізуванні наслідків війн для регіональної стабільності, поширенні поінформованості щодо цієї теми та формулюванні пізнаваних моделей поведінки Російської Федерації. Ця стаття критично аналізує вплив російсько-чеченських війн, які відбувалися у 1990-х роках і тривали майже десять років. Конфлікти між Російською Федерацією та чеченськими повстанцями значно впливали на регіональну стабільність протягом того періоду. Судові експертизи у справах, пов'язаних із північнокавказьким конфліктом, сприяють встановленню істини. Докладно розглядаючи правові аспекти, підкреслюємо потенційні права чеченців на самовизначення, ставимо під сумнів законність російського втручання. Висновки судових експертів фіксують часті порушення гуманітарних законів і прав людини обома сторонами, що призвели до військових злочинів і злочинів проти людяності. Із метою вичерпного аналізу, що розкриває складнощі конфлікту та його наслідки для політичної стабільності, методи дослідження потребували якісного підходу, що полягав у ретельному дослідженні відповідних журнальних статей, наукових праць, наукових видань і аналізуванні юридичних та історичних документів. У статті розглянуто війни з різних позицій із метою певною мірою осягнути їхні наслідки.

Ключові слова: *війна; конфлікт; міжнародне право; незалежність; тероризм; права людини.*

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Particularities of Forensic Study of Criminal Personality

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The peculiarities of forensic examination of the criminal personality have been examined through the application of various forensic methods and tactics within the field of forensic science. The authors aimed to explore the forensic structure of the criminal personality in the light of psychological methods during the detection and solving of crimes. To achieve the set goal, general scientific (including observation and comparison, analysis and synthesis, induction and deduction, theoretical generalization, etc.) and specialized methods (such as grouping and systemic-structural approaches) of scientific research have been employed. The research paper provides information on psychological methods that an investigator should employ, as well as the professional qualities that the investigator should have in order to directly study the criminal personality. The issue of determining the criminal personality within the field of criminology has been investigated by examining, during interrogation and other investigative measures, their individual qualities and characteristics reflected in the traces of crimes (in particular, disclosure of personal characteristics of the criminal with the help of psychological techniques and *formation of evidence in investigative and operational practice). The ethical aspect of the impact on the accused individual (suspect) during pre-trial investigation and crime prevention is elucidated in this research paper. The boundaries and principles of admissibility of psychological influence on the criminal's consciousness are expounded, with morality outlined as a tactical approach to such influence. The classification and typology of criminals into groups and categories are highlighted. Information regarding the understanding of the criminal personality in criminology, achieved through the study of their individual qualities and traits, is presented and reflected in the traces of crimes. It is proved that properly analyzed biographical data about the suspect provides the investigator with the opportunity to effectively influence the criminal's value system.*

Keywords: *criminal; suspect; investigative and operational practice; investigative actions; behaviorism; experimental method; forensic psychological examination; profiling; lie detector.*

Research Problem Formulation

The unstable situation in any country is a powerful source of crimes and offenses. This is especially true if there are hostilities on its territory, as is the case in Ukraine today. In such circumstances, law enforcement officials face new challenges with the use of innovative approaches to preventing and solving offenses. Forensics and psychology are called upon to develop modern methods and techniques aimed at combating criminal offenses. Modern realities require the formation of new evidentiary information that will allow us to accurately determine the circumstances of the crime and the reasons for its commission.

One of the main tasks of forensics is, in particular, to use psychological and socio-psychological information about the personality of a suspect, which investigators and law enforcement agencies find out using a set of methods borrowed by forensics from psychology.

In the context of martial law in Ukraine, the instrumental method of lie detection (polygraphy) has gained wide practical application, which allows experts to identify a person's illegal intentions based on the analysis of psychophysiological reactions.

The range of methods used by law enforcement officials is quite extensive: depending on the specific situation (circumstances of the crime, identity of the suspects, etc.), the methods and directions of their application change. The methods mentioned in this article are chosen by investigators and operatives each time in accordance with specific life realities.

Article Purpose

Explore the forensic structure of the criminal personality in the light of psychological methods during the detection and solving of crimes.

Research Methods

To achieve the set goal, general scientific (including observation and comparison, analysis and synthesis, induction and deduction, theoretical generalization, etc.) and specialized methods (such as grouping and systemic-structural approaches) of scientific research have been employed.

Analysis of Recent Research and Publications

The criminalistic characteristics of a crime and one of its structural elements, information about the identity of the perpetrator, have been studied by several national scientists, including L. Vyhotskyi [1], H. Kostiuk [2], M. Saltevskyi [3], V. Shepitko [4], O. Polozenko with co-authors [5], etc.

Main Content Presentation

The identity of the perpetrator is one of the structural elements of the crime. The identity of the suspect in forensic science is studied within the framework of both forensic methods of crime investigation and forensic tactics [6]. The issue of forensic study of the suspect's identity, techniques, tactics and methods of collecting and using information about the person constantly arises in investigative and operational practice.

The general characteristics of personality and the individual (including the criminal) are given in many dictionaries, scientific papers, and even Internet posts, for example:

- *"a particular person in terms of their culture, character, behavior, etc.; individual, personality"* [7] and *"1. An individual; an individuum. <...>. 2. Human individuality, personality; a person as an embodiment of the individual principle in society"* [8];
- *"the system of features of the criminal's personality includes demographic data, some moral properties and psychological characteristics. The*

1 Психологія людини: Л. С. Виготський та сучасна наука : зб. ст. / за ред. М. В. Папучі. Ніжин, 2018. Вип. 1. 127 с. URL: http://www.ndu.edu.ua/storage/2021/zahal_psy_lib/%D0%92%D0%B8%D0%B3%D0%BE%D1%82%D1%81%D1%8C%D0%BA%D0%B8%D0%B9%20%D1%82%D0%B0%20%D1%81%D1%83%D1%87%20%D0%BD%D0%B0%D1%83%D0%BA%D0%B0%20%D0%97%D0-%B1%D1%96%D1%80%D0%BD%D0%B8%D0%BA%201.pdf (date accessed: 25.11.2023).

2 Костюк Г. С. Загальні закономірності онтогенезу людської психіки / Вікова психологія : підручник / за ред. проф. Г. С. Костюка. Київ, 1976. С. 28—52 ; Його ж. Навчально-виховний процес і психічний розвиток особистості / під ред. Л. М. Проколієнко. Київ, 1989. 608 с.

3 Салтевський М. В. Криміналістика (у сучасному викладі) : підручник. Київ, 2005. 586 с.

4 Шепітько В. Ю. Психологія судової діяльності : навч. посіб. Харків, 2006. 160 с. URL: https://library.nlu.edu.ua/POLN_TEXT/KNIGI/PRAVO/Shepitko_Psixolog_2006.pdf (date accessed: 25.11.2023).

5 Основи загальної психології : навч. посіб. У 2 т. / укладачі: О. В. Полозенко, Л. М. Омельченко, С. В. Яшник, В. І. Свистун, В. І. Стахневич, І. А. Мартинюк, Л. М. Жуковська. Київ, 2009. Т. I. 322 с. Т. II. 256 с.

6 Бурбело Б. А. Особливості криміналістичного вивчення особистості підозрюваного. *Актуальні проблеми кримінального права, процесу, криміналістики та оперативно-розшукової діяльності* : тези Всеукр. наук.-практ. конф. (Хмельницький, 03.03.2017). Хмельницький, 2017. С. 717—719.

7 Особистість / Академічний тлумачний словник української мови. В 11 т. // за ред. І. К. Білодіда. Київ, 1970—1980. Т. 5 : Н—О ; ред. тому: В. О. Винник, Л. А. Юрчук. 1974. С. 778. URL: https://sum.in.ua/s/Osobystistj (date accessed: 25.11.2023).

8 Особа / Там само. С. 777. URL: https://sum.in.ua/s/osoba (date accessed: 25.11.2023).

criminal personality is a concept that expresses the essence of a person who has committed a crime. In this regard, we can talk about the typical features of a person prone to commit certain types of crimes (this applies primarily to professional and organized crime). Generalized data on the most common motives for a crime make it possible to determine the range of needs of the offender that pushed them to commit the crime, and thus establish the main directions of the investigation."[9];

- *"a person can be defined as a stable set of qualities, properties that are acquired under the influence of the relevant culture of society and specific social groups to which he or she belongs, in whose life he or she is included"* [10];
- *"the formation of these qualities and properties is largely mediated by the biological characteristics of the individual. However, social influence plays a decisive role in the process of personality formation"* [11].

Personality (person) as a concept is the object of study of many sciences, not only legal ones. The complexity and versatility of the personality (person) actually makes it impossible for representatives of any science or branch of science to study it fully and comprehensively. The forensic aspect of studying the personality (person) of a criminal involves taking into account not all mental states, properties and qualities. The most important are the complex mental properties of a personality that reflect his or her activities, motives, goals, needs, interests, views, character, and will. It is worth remembering that even the most negative psychological qualities cannot lead to the commission of an unlawful act.

The effective use of psychological methods by an investigator directly depends on his or her professional qualities and skill in their application: broad outlook, sociability, emotionality, attentiveness, ability to psychologically influence (inform, persuade, suggest) and developed intuition.

Investigative actions are divided into *verbal* and *non-verbal*.

Most verbal actions are performed taking into account the investigator's ability to influence the suspect: *"Influence on the criminal is observed in almost all investigative actions, but in some investigative actions its potential is extremely high (interrogation); in others, it is extremely difficult to conduct them if such influence was not observed at the initial stage of this investigative action (influence in the form of optimizing the psychological state of the person, its adaptation to the conditions of the investigative action - presentation of the person for identification, investigative experiment)"* [12].

Other aspects of investigative actions such as examination of the scene and examination form a group of non-verbal investigative actions. For example, examination of the scene creates numerous opportunities for forensic analysis of the suspect's personality. At the same time, this analysis is not aimed at influencing: it is carried out in the process of reconstructing

9 Шепітько В. Ю., Коновалова В. О., Журавель В. А. та ін. Криміналістика : підручник / за ред. проф. В. Ю. Шепітька. 4-те вид., перероб. і допов. Харків, 2008. С. 278—279. URL: https://law.sspu.edu.ua/files/documents/books/library/17/shepitko.pdf (date accessed: 25.11.2023).

10 Гетманцева Я. В. Поняття та структура особи злочинця. *Закарпатські правові читання* : мат-ли II Всеукр. наук.-практ. конф. молод. вчен. та студент. (Ужгород, 29—30.04.2010). У 2 т. Ужгород, 2010. Т. 2. С. 222—225. URL: https://dspace.uzhnu.edu.ua/jspui/handle/lib/22942 (date accessed: 25.11.2023).

11 Якуба Е. А. Социология : учеб. пособ. для студент. Харьков, 1996. С. 86—87. URL: http://univer.nuczu.edu.ua/tmp_metod/715/yakuba.pdf (date accessed: 25.11.2023).

12 Бурбело Б. А. Op. Cit

the components of the suspect's personality, taking into account the actual traces of the crime.

Crime scene investigation provides information about numerous physical features of the suspect's personality: for instance, the scene investigation can give an idea of their height, build, physical strength, and health. The traces left at the scene are the initial data for drawing up a forensic portrait of the suspect's personality, which in turn is one of the ways to understand the events of the crime. Appearance features, group-specific blood properties, papillary patterns, discharge; age features, tissues, hair, functional state of the human biocomplex and its components (health status); Anatomical and neurotypological aspects that affect the development of functional and motor skills; features of the anatomy and function of the vocal apparatus.

Information about a person's biological characteristics is obtained through the use of specialized knowledge: such information is obtained mainly through expert examinations. Expert studies use various methods of relevant sciences, such as anatomy, biology, physiology, physics, chemistry, etc. To identify, record, and seize objects containing information about a person's biological characteristics, the investigator may, if necessary, engage a specialist (a doctor, a forensic expert, a psychologist).

A forensic portrait of a suspect's personality requires the use of all available data that is important for investigating a crime and finding out why it was committed. The products of the suspect's life, such as documents, personal records, drawings, and marks in books, magazines, and newspapers, play a special role in studying the suspect's personality. In the modern world, the most common trace of a suspect is his or her activity on the Internet.

Today, during the investigation of crimes, in many cases, law enforcement officials can use materials obtained from technical video surveillance systems that recorded the suspect, elements of the crime mechanism, etc. The video recording materials contain a wide variety of information (evidentiary, orientation) related to the functional features of a person's appearance (body structure, gait, gestures, articulation, facial expressions, etc.) These features can only be studied in dynamics since static images of a person's appearance do not convey these characteristics or convey them to a very limited extent. Modern video recording equipment helps to record, store and reproduce such information for further forensic investigation [13].

In forensic science, the identity of a criminal is determined by studying their individual qualities and properties reflected in the traces of crimes. During the investigation of criminal proceedings, this knowledge is used as a source of influence on the subject of the crime. Carefully analyzed biographical data of the suspect allows the investigator to effectively influence the level of values of the criminal's personality.

The largest group of forensically significant characteristics of a person are those that belong to their psychological portrait. Without taking them into account, it is impossible to determine the actual picture of the crime or to implement the tactical aspects of the investigation. Given that all elements of personality psychology are interconnected and interdependent, it is possible to distinguish those that are of the greatest forensic importance. In this way, the investigator finds out information

13 Vaschuk. Динамічні ознаки людини: криміналістичне дослідження / Правда про брехню. Наукова діяльність ДГ. 18.10.2023. URL: http://psylib.onua.edu.ua/?p=68 (date accessed: 25.11.2023).

about the person using a variety of methods derived from forensic science and psychology: observation, interview, biographical method, generalization of independent characteristics and analysis of performance, the method of experimentation, and forensic psychological examination. Among the less traditional methods that help to find out information that characterizes a person are the instrumental method of lie detection (polygraphy) and the method of behaviorism. The latter methods require the involvement of well-trained specialists: psychologists, physiognomists, psychiatrists, and profilers.

Consequently, we'll start with a conversation, which is a method of obtaining information and understanding psychological phenomena through oral communication. During such communication, you can study various aspects of the interlocutor's personality (in particular, the level of their intelligence, professional knowledge, attitude to events and persons, worldview, understanding of legal and moral norms, as well as personality traits for further diagnosis). The main requirements for conducting an interview are purposefulness, planning and an individual approach. The format, duration, place and time of the interview, as well as its purpose and subject matter, are determined by taking into account the information available to the investigator about the person being interviewed and the current investigative situation. The investigator must have perfect skills of effective listening and clear questioning. Initial questions should be chosen from a series of contact questions, i.e., those that are easy to answer. The tone of the conversation should be both even and rather formal, and the interrogation environment should be free of any extraneous stimuli. Investigative practice provides many examples of detecting and exposing the lie of an interrogated person during one interrogation. To achieve the desired result, the investigator must carefully prepare for the interrogation, because the more nuances of the case they investigate before the interrogation, the more likely it is that the suspect will finally tell the truth after false testimony. Various tactics are used to obtain full and reliable testimony from interrogated persons.

In order to obtain reliable information from interrogated persons, investigators often use techniques and principles of a logical and psychological nature, for example:

- creating favorable conditions for the effective identification of the mental abilities of persons providing information (for example, by activating memories during interrogation of a person based on temporal, spatial, event, subject, and figurative associations, conducting interrogation at the scene of the event or presenting photographs from the scene);
- using the psychological reaction of the person with the information to the actions of the investigator (such as the presentation of the instrument of crime during interrogation);
- use by the investigator of reliable knowledge or assumptions about actions that, given the psychological and other characteristics of the person with the information, the person could have taken in the past, with the demonstration of this knowledge and the results of their implementation in the presence of this person (in particular, by identifying traces of staging a crime);
- intentionally inducing the suspect to behave in a certain way (for example, by using the psychological characteristics of the person and

his or her expected natural reaction to the investigator's actions).

In practice, it is not uncommon for an investigator and an offender to have a difficult, insincere, and sometimes conflicting relationship. In order to achieve a positive result, the information conveyed to the offender must give him the impression that the investigator is fully or at least sufficiently aware of the situation. Then the offender will recognize the previously chosen course of action as unacceptable, and either confess or create a new model of behavior towards the law enforcement officer. It is important to remember that the need to immediately change one's behavior increases the likelihood of mistakes in the criminal's actions, and therefore makes it easier to expose lies in their verbal and non-verbal forms of communication.

It is worth noting that the expediency of having several investigators participate in the interrogation may be dictated by the need to study the personality of the interrogated person by observing his or her behavior: this task is usually assigned to one of the investigators. At least two investigators, or an investigator and an operative, should observe the behavior of the interrogated person and verbally and non-verbally influence him/her. We emphasize that the wide possibilities of speech influence in the form of a trilogy make it possible to suddenly change the topic of conversation, create a kind of *"coalition"* and continue communication, which is important in a conflict situation. The behavioral aspects of the interrogated person are determined by analyzing the information obtained during the interview by the officials participating in the investigative action. Thus, the tactical provisions for studying the personality of the accused should be considered from two perspectives. The first is related to the fulfillment of forensic tasks of the investigative action: it is realized in the procedural recording of evidence about the identity of the suspect. The second is the perception and evaluation of information about the suspect's identity, which cannot be recorded in the protocol of the investigative action due to the design of the action itself: it is determined by cognitive methods.

During the conversation, law enforcement officials often use the *method of persuasion* as a lever of influence aimed at awakening remorse and shame in the interrogated person, while helping to create a new worldview and changing his or her attitude to life, work, and people. This method is usually implemented in individual interviews with the suspect, during which the process of studying their personality and its impact is carried out concurrently. In a conversation with the suspect, it is necessary to explain to them the essence and ultimate goal of the actions of law enforcement officials, as well as to consider possible ways for the suspect to mitigate the sentence, facilitate the serving of the sentence, and prepare them for their return to freedom. Using the method of persuasion, you can simultaneously influence the intellectual, emotional and volitional spheres of the suspect's psyche.

During the interview, the investigator can also actively use such a method of psychological study of the personality as *observation*. In this context, the object of observation is the appearance of a person and his or her external behavioral manifestations (purposeful, direct and systematic perception). The method of observation allows us to get an idea of the temperament, volitional and emotional properties of a person. At the same time, the essence of observation as a method of personality study is not only non-passive observation and recording of the above manifestations but also their in-depth analysis from the standpoint of distinguishing between the natural and the accidental, the main and the secondary.

The following types of observation are distinguished: cross-sectional (short-term observation); longitudinal (long-term observation); third-party, selective, included (the observer becomes a member of the study group); free, external (observation from the outside); and standardized. One of the types of observation is considered to be self-observation, either immediate or delayed (in a person's memoirs, diaries, and memoirs, you can see what they were analyzing, what they were thinking, what they were feeling, what they were going through). The investigator's analysis of the suspect's self-observation information allows them to conclude how and what mental processes occurred with that person. The use of the observation method in a scientific and practical context allows for high results, prompt formulation of specific recommendations and monitoring of the effectiveness of their impact.

The essence of the *method of generalizing independent characteristics* is to collect, summarize and analyze information about a person received from different observers who witnessed the manifestations of mental and other personality traits in different settings and at different times. Instead, a characterization is understood as any (official and unofficial, oral and written) information about a person, which can be used to conclude his or her personal qualities and behavior. The application of the method of generalizing independent characteristics allows the investigator to obtain rich material about the psychological and socio-psychological manifestations of the person under investigation in different conditions (domestic, industrial, etc.). It is clear that any characteristics from different sources (testimonies of persons, written characteristics from the place of work and residence and other similar documents) are subject to careful analysis and evaluation.

The *biographical method* is used for a deeper study of a person. It involves collecting information about events and circumstances in a person's life in chronological order or by individual life stages. Biographical data allow us to conclude the process of forming life principles and positions, about the system of relationships, value orientations, and peculiarities of the mental state. There are many sources for obtaining biographical information, as well as for generalized independent characteristics, but they also include the person being studied. The main source in the biographical method is personal documents: life stories obtained during unstructured in-depth interviews, written autobiographies, diaries, letters, family archives, photographs, social media pages, etc. An important role here is also played by the environment, which treats the individual well or badly. This makes it possible to identify character traits, and abilities, understand the causes of events, and study the psychological state of a person.

Analysis of activity results as a method of personality study is most often used to study the personality of the accused. The main object of knowledge in this case is their criminal activity in all its diversity. However, one cannot limit oneself to it, especially when criminal activity occurs in parallel with other professional activities, and even more so when they are closely overlapping. The personal qualities of the subject are reflected in any kind of human activity.

The analysis of activity result should also include the procedural type of information collection, and clarification of the mandatory characteristics of the subject, in particular:

- belonging to individuals (citizen of Ukraine, stateless person, foreigner);

- sanity (mental state of a person, which consists in his/her ability to realize and control his/her actions (inaction) due to the state of mental health);
- the suspect (accused) reaches the legal age for criminal prosecution.

The *method of experimentation* consists in the active participation of the researcher in the activities of the subject to create conditions under which a psychological fact is revealed. By its nature and types, it is considered a natural and laboratory experiment. In a natural experiment, the individuals being tested have no information about the purpose and conditions of the experiment and treat the experiment as a real event in which they are participating. Even if natural experiments provide more reliable information, they cannot be repeated because they lose their naturalness and confidentiality to the participants. For example, the use of hidden equipment (cameras, video cameras, voice recorders) is considered unethical and unacceptable, since recording equipment can only be used with the consent of the test subject. This, of course, limits the breadth of the study, but it reduces the risk of causing undoubted trauma to the subjects. Such an experiment is usually not conducted in order to investigate the patterns that emerge in forensic investigative activities. Instead, a laboratory experiment is conducted in special conditions, with the use of special equipment and the actions of the subject stipulated by the instructions (the subject knows that an experiment is being conducted with his or her participation, although the final true content of the experiment may not be disclosed to him or her). The experiment is conducted many times with a significant number of subjects, which makes it possible to find out general statistically reliable patterns of the development of mental phenomena. In legal psychology, the laboratory experiment is of limited use: this is because the study of the mental characteristics of a person within the framework of legal proceedings excludes the possibility of conducting experiments (except studies conducted during forensic psychological examination). Ultimately, the necessary material can be collected using other methods, in particular, by summarizing judicial and investigative practice, to obtain scientific conclusions.

"The ethical aspect of influencing the personality of a suspect in the course of investigating crimes is extremely complex. Of course, investigative activity is regulated mainly by the norms of professional ethics, which provides for any psychological influence on the person of a suspect, depending on the situation, if it does not directly contradict the criminal procedure law" [14]. Part 2 of Article 11 of the Criminal Procedure Code of Ukraine (hereinafter - *the CPC of Ukraine*) states that *"it is prohibited during criminal proceedings to subject a person to torture, cruel, inhuman or degrading treatment or punishment, to resort to threats of such treatment, to keep a person in humiliating conditions, to force him or her to perform acts that degrade his or her dignity"* [15]. *Article 373 of the Criminal Code of Ukraine (hereinafter - the CCU*) provides for liability for coercion to testify [16]. During communication, psychological influence can be exerted by means of language: informing, persuading, and suggesting.

14 Бурбело Б. А. Op. cit.

15 Кримінальний процесуальний кодекс України від 13.04.2012 р. № 4651-VI (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text (date accessed: 25.11.2023).

16 Кримінальний кодекс України від 05.04.2001 р. № 2341-III (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 25.11.2023).

Psychological influence is the regulation of the process of information exchange in the course of communication. The choice of tactical techniques for individual procedural actions depends on the investigator's way of thinking, professional and general educational level. The process of using tactical techniques involves the possibility of changing the mental state of the subject of communication, for example:

- has a positive effect on the process of communication and helps to eliminate an undesirable state of mind;
- does not change the mental state of the subject;
- does not cause undesirable mental states (emotional stress, fear, frustration, etc.).

Psychological influence will have an effect only when the necessary conditions are created for its use or a situation is chosen in which the investigative action will be effective. Such conditions include the person's state of mind, the degree of information awareness, the ability to perceive the influence in a particular situation, and the most favorable moment of influence. It is important to diagnose the temperament of the suspect and choose methods of influence that have the characteristics of an emotional stimulus on the one hand and a logical one on the other. The influence can be as follows: sudden announcement or presentation of evidence; concealment of information about evidence; asking a set of questions that indicate the investigator's awareness; providing neutral information to give the suspect the impression that the crime is irreversible; asking questions aimed at detailing the message in order to cause a slander.

The admissibility of psychological influence means that it should not degrade the dignity of a person or distort the prospect of achieving objective truth. The influence must be moral. Psychological influence, transformed into a tactical technique, is a means of obtaining evidentiary information. The search for evidentiary information takes place during a criminal procedural inquiry. Knowledge of the truth in the field of justice must be moral.

A forensic psychological examination is a procedural action provided for by the CPC of Ukraine, which is carried out to obtain an expert opinion on issues of evidentiary value in a case and requires a thorough knowledge of psychology.

A forensic psychological examination is called for:

“• *establishment whether the accused with an intellectual disability is capable of fully realizing and controlling his/her actions;*
- [*whether*] *the victim (minor, juvenile) who has been raped is able to correctly understand the nature and significance of the actions committed against him or her and to resist;*
- *establishment the ability of the accused, victims and witnesses to adequately perceive the circumstances of the case and give correct testimony;*
- *whether the person who committed suicide had mental conditions leading to suicide before his or her death, and to establish the possible causes of these conditions;*
- *establishment the presence or absence of a state of affect or other non-pathological conditions (fear, depression, stress, frustration) in the subject at the time of the crime that significantly affected his or her consciousness and activities;*
- *determine the leading motives in human behavior and the motivation of individual actions that characterize his or her personality;*
- *establishment of individual psychological characteristics of the expert,*

[which] significantly influenced his behavior and the formation of the intention to commit a crime;

- *establishment of the structure of the criminal group based on the available data on the psychological characteristics of its members, to identify the leader, etc.;*
- *the presence or absence of a mental condition in the person operating the technical mechanism [that] significantly affected its management (in transport, at work) and caused an accident or emergency.*

Based on these tasks solved by forensic psychological examination, methods for solving them are selected. The information obtained in the course of forensic psychological examination is used for scientific purposes to develop theoretical problems of criminal psychology” [17].

Given that forensic psychology has no boundaries and is aimed at detecting and solving crimes, it is possible to use such a technique as *profiling*. From the very beginning of this method, the term *“profiling”* was used in the context of drawing up a search psychological portrait of an unknown person based on traces left at a crime scene. Recently, the term *“profiling”* has been used to refer to a number of applied socio-psychological techniques aimed at assessing the reliability of information provided by a person based on his or her nonverbal behavior (non-instrumental lie detection) [18].

Today, investigators and operatives actively use in their practice both the classic polygraph (lie detector) and new developments: remote detectors of the psycho-emotional state of biological objects [19].

A lie detector is a type of psychophysiological equipment that registers certain physiological changes in a person who lies during testimony. These include changes in respiratory and cardiovascular activity, skin galvanic resistance, and pupil response.

However, apart from the draft law on supplementing the Criminal Procedure Code of Ukraine with provisions on the use of a polygraph (lie detector) [20], submitted in early 2013 and withdrawn on November 27, 2014, there have been no other precedents for legislative initiatives on the use of a polygraph in criminal proceedings.

Regrettably, it is impossible to clearly determine the appropriateness of using a polygraph in criminal proceedings, as its indicators provide only physiological data about a person at a particular time. These physiological indicators arise as a result of psychological reactions that a polygraph examiner is not able to fully track. In addition, the polygraph examiner may make a mistake in interpreting the results of the examination and challenging these results is difficult, if not impossible,

17 Конспект лекцій з дисципліни «Кримінальна психологія» за спеціальністю 053 «Психологія» / укладачі: Ю. Подкопаєва, К. Гордієнко. Київ, 2021. С. 9—10. URL: https://er.nau.edu.ua/bitstream/NAU/54400/2/02_%D0%9A%D0%9F_%D0%9A%D0%9B.pdf (date accessed: 25.11.2023).

18 Нормативні акти, в яких передбачено застосування поліграфа та обов’язковість дотримання ДСТУ 8692:2016 / Всеукраїнська асоціація поліграфологів : офіц. сайт. URL: https://polygraph.ua/zakonodavstvo/ (date accessed: 25.11.2023).

19 Ibidem.

20 Проєкт закону про доповнення Кримінального процесуального кодексу України положеннями щодо використання поліграфа (детектора брехні) від 12.03.2013 р. № 2521. URL: http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=46058 (date accessed: 25.11.2023).

since the provisions of the Constitution of Ukraine (Article 28) [21] and the Criminal Code of Ukraine (Article 385) [22] are still subject to dispute.

Given the tendency to increase the use of polygraphs, it is likely that in the near future the data obtained with this device will become a source of evidence in criminal investigations more often.

In the forensic study of personality, an alternative method should be used — the *behaviorism method*. "***Behaviorism** (behavior) is a direction in psychology that reduces the psyche to behavior, which is thought of as a mechanical response to environmental triggers"* [23]. Behaviorists believe that *"it is impossible to know the inner world of a person and therefore we must limit ourselves to external observations. <…> For behaviorists, predicting and controlling behavior depends on an accurate determination of the external conditions that support behavior"* [24]. *According to this direction, consciousness as a subject of scientific research is denied, and the psyche is limited to various forms of behavior.*

The founder of behaviorism is an American psychologist John Broadus Watson (1878—1958), who developed the concept of a new direction in psychology, where the subject of study is not consciousness but behavior. According to his views, all manifestations of human behavior can be described using the *"stimulus-response"* relationship (stimulus is a change in the environment, and reaction is the body's response to this stimulus). *Burrhus Frederic Skinner* (1904—1990), a compatriot of J. B. Watson, contributed to the development of the classical theory of conditioned reflexes. He significantly expanded it by distinguishing among conditioned reflexes the category of *"operant"* reflexes, which the body forms spontaneously. These reactions can be modified by punishment or reward. Skinner highlighted the asymmetry between positive and negative stimulus reinforcement: negative reinforcement often leads to unpredictable, surprising, and undesirable consequences, while positive reinforcement promotes desired changes, shapes behavior, and increases self-esteem. A German-born British psychologist *Hans Jürgen Eysenck* (1916—1997), trying to find out how a person subordinates his or her internal impulses to the requirements of society, formulated a hypothesis that moral consciousness is a response to typical situations. This response is based on the same principle as J. B. Watson's theory: *"stimulus-reaction"*. The relationship between stimulus and response is strengthened by the presence of reinforcement, which can be either negative (punishment, pain, etc.) or positive. Behaviorists believe that the task of psychology is *"to recognize a possible stimulus from a reaction, and to imagine a certain reaction from a stimulus"* [25].

21 Конституція України : Закон України від 28.06.1996 р. № 254к/96-ВР (зі змін. та допов.). URL: https://zakon.rada.gov.ua/laws/show/254к/96-вр#Text (date accessed: 25.11.2023).

22 Кримінальний кодекс України … . URL: https://zakon.rada.gov.ua/laws/show/2341-14#Text (date accessed: 25.11.2023).

23 Пирог Г. В. Біхевіоризм / Велика українська енциклопедія. URL: https://vue.gov.ua/Біхевіоризм (date accessed: 25.11.2023).

24 Мацко Л. А., Прищак М. Д., Годлевська В. Ю. Основи психології та педагогіки (для студентів заочної форми навчання) : навч. посіб. [Електронний ресурс] / Навчальні посібники Вінницького національного технічного університету. Мережні електронні видання. URL: https://web.posibnyky.vntu.edu.ua/icgn/8prishak_osnovy_psiholog_pedagogiki/r213.htm (date accessed: 25.11.2023).

25 Мацко Л. А., Прищак М. Д., Годлевська В. Ю. Op. cit. URL: https://web.posibnyky.vntu.edu.ua/icgn/8prishak_osnovy_psiholog_pedagogiki/r213.htm (date accessed: 25.11.2023).

Thus, it is possible to influence a suspect's behavior by shaping or reinforcing certain patterns in his or her perception and response to stimuli. For example, positive reinforcement or punishment can influence a suspect's choice between offending and lawful behavior. Additionally, behavioral concepts may consider the formation of criminal behavior through learning and modeling. For example, if a suspect has studied or observed the actions of others who have committed crimes, this may influence his or her own behavior through learning and imitation. It is important to remember that a suspect's behavior reflects many factors, and behaviorism does not cover all aspects of this complex phenomenon.

In general, obtaining complete information about a person equips the investigator and operative with knowledge that contributes to the effectiveness of the investigation.

Since it is important to take into account the diversity of crimes and criminals in the fight against crime, it is advisable to classify criminals into separate groups and categories.

The classification does not study an individual with all his or her complex characteristics, but a group of criminals. In criminology, the most commonly used classification grouping is based on the following criteria:

"• by socio-demographic data (gender, age, place of residence). Criminal justice statistics distinguish between minors aged 14 to 18, young adults (18 to 29), and mature adults (30 and older);
- *by socio-economic indicators (education, profession, availability or unavailability of work, financial situation, etc.);*
- *by citizenship (Ukrainian citizens, foreigners and stateless persons);*
- *by the state of the person at the time of the crime (alcohol or drug intoxication, being a member of a criminal group, in prison, etc."* [26].

An alternative classification based on other grounds is possible: by motivation (e.g., crimes for profit, crimes for emotional reasons), social status, weapons used, and methods of committing the crime. This approach allows for more attention to be paid to the personal characteristics of suspects, examining their motivation, social environment, and methods of committing crimes.

Criminal law also classifies criminals according to the level of their social danger. This includes persons who have committed crimes of particularly grave, grave, medium or minor gravity, as well as those who have previously been sentenced to imprisonment.

The classification of criminals is the systematic division of them into different categories depending on the characteristics that are genetically linked to their criminal behavior. The scientific literature states that classification helps to achieve a higher level of understanding of the phenomenon. At the same time, a distinction is made between manifestation and cause characteristics, which determine the meaningful nature of such a division. The basis for classification is always the essential features of the phenomena under study.

Manifestation and cause signs within the same type should show homogeneous characteristics that reflect specific functional and deterministic

26 Лекція до теми «Особа злочинця» / розробник А. В. Воронцов. Одеса, 2018. С. 10. URL: https://oduvs.edu.ua/wp-content/uploads/2016/09/lek-2018-d_z-2_3-kriminologia_ta_profilakt_zloginiv-3.pdf (date accessed: 25.11.2023).

relationships. For example, committing theft as a manifestation is based on the signs-causes — a person's persistent focus on illegal ways to ensure their well-being, impunity after committing previous crimes, criminal experience, etc. The complex of these signs indicates the type of professional criminal.

In order to typify criminals, it is necessary to find out the inner essence of the grouped persons, their deep anti-social orientation and define them as persons focused on a specific type of criminal activity. The type of offender reflects the qualitative unity of essential features of many offenders.

The criminological classification of criminals (offenders) is most often based on two main principles: the presence of an anti-social orientation of a person and the depth and persistence of his/her antisociality. Taking into account the first criterion, the following types of criminals (offenders) can be distinguished:

"• with aggressive and disrespectful attitude to a person and his/her most important goods (life, health, honor, dignity, etc.);
- *with selfish and selfish motivation associated with ignoring the principle of social justice and honest work;*
- *individualistic and anarchic attitude to various social institutions, their social, official, family and other duties;*
- *with a frivolous and indifferent attitude to the observance of safety rules, which is manifested in the commission of careless crimes"* [27].

"Among criminals, we can also distinguish such types as consistent criminogenic, situational criminogenic and situational. The criterion for their distinction is the nature of the interaction between the social situation and the individual <...>.

The consistently criminogenic type *is formed in a microenvironment where norms of morality and law are systematically violated; the crime stems from a habitual style of behavior and is determined by the subject's persistent anti-social views, attitudes and orientations. As a rule, the situation conducive to the commission of a crime is actively created by the individuals themselves. Their criminal behavior is autonomous from external circumstances.*

The situational-criminogenic type *is characterized by the violation of moral norms and commission of non-criminal offenses, is formed and operates in a contradictory microenvironment; the crime is largely due to an unfavorable <...> situation. Such a person is driven to crime by his or her microenvironment and the entire previous anti-social lifestyle.*

Situational type*: immoral elements in the behavior of such a person and in his or her microenvironment are, if any, weakly expressed. Representatives of this type commit a crime under the decisive influence of a situation that arose through no fault of their own. At the same time, such a person (unlike an accidental criminal) may justify his or her own and other people's criminal behavior in these situations or not know the legitimate ways to resolve conflicts. Thus, among this type of embezzlers <...> there are people who take what is 'badly lying' "* [28].

For the forensic study of personality, it is necessary to take into account socialization defects that affect the personality of the offender from birth and throughout life. The most dangerous defects arise

27 Тема 3. Кримінологічний аналіз особи злочинця / Конспект лекцій з навчальної дисципліни «Аналіз та прогноз злочинності». Київ, 2015 / Studies by Magistr.ua. URL: https://studies.in.ua/analiz-ta-prognoz-zlochynnosti/3935-krimnologchniy-analz-osobi-zlochincya.html (date accessed: 25.11.2023).

28 Ibidem.

in childhood and adolescence when the foundations of personality are laid. There are also other social deformations: poverty and unemployment; negative environmental influences (individuals who grow up in an environment where crime and violence are normalized may learn these patterns of behavior and imitate them); lack of education; drug and alcohol abuse; social exclusion (individuals who feel socially excluded or discriminated against may feel resentment and anger, which can trigger antisocial behavior); family problems.

A person is not endowed with a personality as soon as he or she is born: they are formed and developed through interaction with the social environment and awareness of ideas, views, moral norms and behavioral standards that are characteristic of the society to which he or she belongs.

Thus, *"the formation of a personality occurs in the process of assimilating the experience and value orientations of a given society, which is called socialization. a person learns to fulfill special social roles, i.e., learns to behave in accordance with the role of a child, student, husband, etc.; all of them have a distinct cultural context and, in particular, are significantly influenced by the stereotype of thinking. If there are no severe congenital defects in brain development, consequences of birth or trauma, the formation of a personality is the result of the interaction between a person and society. In the course of life, a person can lose personality traits to varying degrees as a result of the development of chronic alcoholism, drug addiction, severe central nervous system diseases, etc., in principle, personality can "die" in a person who is still alive, which indicates a complex internal structure of this phenomenon"* [29].

The defect of socialization gradually affects the criminal's personality, which degrades. No one is born with the destiny to commit crimes; they are turned into criminals as a result of a wrong socialization process.

Let us consider in more detail the concept of *"criminal personality". Since it has a "socio-legal character and combines the general social concept of "person" and the legal concept of "criminal", the commission of a crime reveals in a person only his/her anti-social orientation, but does not fully reveal his/her social essence. a correct judgment of a person as a whole is possible only based on all his or her attributes and manifestations as a person. That is why the combination and correlation of socially positive and socially negative qualities give a complete picture of the perpetrators of crimes"*[30]*: in any case, the personality of the offender (offender) is characterized by deformation of moral beliefs, life attitudes, intellectual and emotional-will qualities* [31]. *"The moral and psychological characteristics of a criminal's personality are in a dialectical relationship with his or her social properties, and therefore should be considered in their unity"* [32].

Human personalities are very different. *"Some of them actively contribute to social progress, while others, on the contrary, impede it: they evade useful work, become violators of public order, or take some other anti-social position. The value of a person depends primarily on his or her real contribution to the overall*

29 Особистість: поняття, відповідальність, соціальне поводження, рольова теорія / ОСВІТА. UA. 23.11.2010. URL: https://osvita.ua/vnz/reports/sociology/12368/ (date accessed: 25.11.2023).

30 Лекція до теми «Особа злочинця» / розробник Л. М. Кулик. Одеса, 2018. 17 с. URL: https://oduvs.edu.ua/wp-content/uploads/2016/09/Lektsiya-4-10.pdf (date accessed: 25.11.2023).

31 Орлов П. І., Волобуєв А. Ф., Осика І. М. та ін. Протидія економічній злочинності : монографія. Харків, 2004. 567 с.

32 Лекція ... / розробник Л. М. Кулик. URL: https://oduvs.edu.ua/wp-content/uploads/2016/09/Lektsiya-4-10.pdf (date accessed: 25.11.2023).

social progress. Personality traits can be both positive and negative" [33].

Thus, the concept of *"criminal personality"* refers to a social being who has committed a crime, i.e. violated the standards of criminal law. The study of the criminal's personality aims to identify the mechanisms of criminal behavior, find out its determinants and develop reasonable recommendations for crime prevention on this basis.

Social deformation plays a key role in shaping the behavior of individuals who may later become involved in criminal activity. At the same time, not every person who has experienced social deformation becomes a criminal. Socialization defects do not always lead to the commission of an unlawful act, which should be borne in mind in investigative practice.

Conclusions

Innovative means of studying the personality of a criminal from the standpoint of criminal psychology, a detailed study of the origins of criminal activity and socialization defects will help law enforcement agencies to:

- identify measures of educational influence in the formation of a law-abiding citizen;
- make the right decisions of a criminal law and criminal procedure nature;
- select tactical techniques and methods of influence appropriate for each specific investigative situation;
- find out in detail the motives for the crime and the circumstances characterizing the personality of the accused;
- investigate the causes of the crimes committed;
- put forward correct investigative versions and clarify all the episodes in the case;
- determine the circle of all accomplices in the crime.

The identity of the perpetrator as an element of the forensic characterization of a crime has been studied by many scholars in such scientific fields as criminalistics, criminology, psychology, criminal law, and criminal procedure. Obtaining generalized information about the subject of the crime during the pre-trial investigation and its proper use is an important condition for determining the mechanism of the crime and identifying the persons involved, as well as clarifying the role functions of accomplices to the crime. a typical line of behavior of a subject during the commission of a crime allows an investigator and an operative to identify persons prone to illegal behavior, narrow down the circle of suspects in the commission of a crime, build versions, plan tactical operations, and, after identifying the criminals, determine the line of behavior for investigative actions.

Особливості криміналістичного вивчення особистості злочинця

Сертан Алібекіроглу, Тетяна Дрощенко, Наталя Сердюк

Розглянуто особливості криміналістичного вивчення особистості злочинця за допомогою різних криміналістичних методів і тактик криміналістичної науки. Автори мали на меті дослідити криміналістичну структуру особистості злочинця під час виявлення та розкриття злочинів крізь призму психологічних

33 Тема № 4 «Кримінологічне вчення про особу злочинця» : конспект лекції [Електронний ресурс]. Київ : НАВС, 2015. С. 3. URL: https://www.naiau.kiev.ua/files/kafedru/kkvp/lectures/kruminolog/4.docx (date accessed: 25.11.2023).

методів. Для досягнення поставленої мети застосовано загальнонаукові (зокрема, спостереження і порівняння, аналіз і синтез, індукцію і дедукцію, теоретичне узагальнення тощо) та спеціальні (наприклад, групування і системно-структурний та ін.) методи наукового дослідження. Наведено інформацію про психологічні методи, якими має послуговуватися слідчий, і про професійні якості, які мають бути притаманні слідчому для безпосереднього вивчення особистості злочинця. Досліджено питання визначення особистості злочинця в галузі криміналістики шляхом вивчення під час допиту й інших слідчо-розшукових дій його індивідуальних якостей і властивостей, відображених у слідах злочинів (зокрема, розкриття особистих характеристик злочинця за допомогою психологічних прийомів і формування доказів у слідчій та оперативній практиці). Висвітлено етичний аспект впливу на особу обвинувачуваного (підозрюваного) під час проведення досудового розслідування і профілактики скоєння злочину. Викладено межі та принципи допустимості психологічного впливу на свідомість злочинця, окреслено моральність як тактичний прийом такого впливу. Виокремлено класифікацію та типологію злочинців за групами й категоріями. Наведено інформацію про пізнання особистості злочинця, яке в криміналістиці здійснюють шляхом вивчення його індивідуальних якостей і властивостей, відображених у слідах злочинів. Доведено, що правильно проаналізована інформація про біографічні дані підозрюваного дає змогу слідчому ефективно впливати на цінності особистості.

Ключові слова: *злочинець; підозрюваний; слідча й оперативна практика; слідчі дії; біхевіоризм; метод експерименту; судово-психологічна експертиза; профайлінг; детектор брехні.*

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The authors declares no conflict of interest.

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Forensic Road Technical Examination: State and Changes in Accordance with New Tasks of Expert Support of Justice

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The purpose of this article is to establish a scientific foundation for the significance of studying the formation and expansion of the subject matter in expert road technical research. This is aimed at enhancing the efficiency of specific expertise utilization in investigating criminal offenses related to the construction and repair of roads. Additionally, it focuses on determining damages resulting from the destruction of road infrastructure due to hostilities and other negative factors affecting the state of road infrastructure. The methodological basis of the study is grounded in the principles of the theory of cognition, enabling an exploration of the essence of the subject matter of road technical research. It involves the identification of factual data and circumstances related to criminal proceedings (formulating the concept of the subject matter of road technical examination depending on the tasks to be addressed) and the determination of objects, subjects, and research methods. A set of methods of scientific cognition is applied, including general scientific, individual, and special methodologies. The author outlines and scientifically substantiates the directions for forming the subject areas of forensic road technical examination. Based on the analysis of statistical data from expert practice, the author demonstrates an increase in both the number and complexity of road technical examinations performed. The genesis of changes in the boundaries of the subject matter of forensic

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road and technical research is clarified. Attention is focused on the close connection of the subject of forensic research with the tasks to be solved in connection with qualitative changes in crime and the challenges of war. The author proves the need for the development and implementation of the latest forensic research methods for use by an authorized person in the investigation of criminal offenses in the field of road infrastructure. The factors influencing the results of expert research are outlined. The author formulates proposals aimed at the more efficient use of specific expertise to ensure the detection and investigation of crimes, as well as to improve the results of the work of forensic experts. This is discussed in the context of developing a scientific and methodological framework for enhancing the primary form of application of specific expertise - forensic examination.

Keywords: *specific expertise, expert, knowledgeable person, forensic methodology, expert opinion, pre-trial investigation, statistical data, forensic road technical examination, road infrastructure.*

Research Problem Formulation

One of the ways to increase the efficiency of forensic activities is the timely and purposeful use of modern capabilities of specific expertise through the involvement of knowledgeable people and the use of the latest material and technical tools. The detection and investigation of criminal offenses in the field of road infrastructure largely depend on the involvement of knowledgeable people in the form of forensic examination to research and use evidence in criminal proceedings. Changes in the vectors of urgent tasks faced by forensic experts during the full-scale invasion of Ukraine by the russian federation give rise to the need for their urgent solution. If, before the war, the determinants of the illegal use of budget funds in the road sector were most often attributed to deficiencies in state policy, delayed decentralization management reforms, outdated and ineffective measures of financial control over the legality of budgetary funds usage, etc.[1], then at the present stage, new challenges face forensic experts — to determine the extent of damage caused by the destruction of road infrastructure due to artillery shelling, aviation bombings, and missile strikes on objects of Ukraine's road infrastructure. These circumstances motivate researchers to develop new theoretical and methodological provisions in this area of forensic expert activity based on the analysis of expert practice and encourage further discussion on the problems of application of specific expertise in criminal proceedings in general and during the investigation and trial of crimes in the field of road infrastructure in particular.

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Analysis of Recent Research and Publications

The use of specific expertise in the investigation of crimes has received considerable attention, in particular, in the scientific works of Ukrainian researchers: L. Yu. Arotsker [2], V. P. Bakhin [3], V. S. Bondar [4], V. H. Honcharenko [5], V. A. Zhuravl [6], N. I. Klymenko [7], V. P. Kolmakova [8], V. O. Konovalova [9], V. K. Lysychenko [10], H. M. Nadhornyi [11], H. V. Prokhorova-Lukina [12], M. V. Saltevskyi [13], M. Ya. Sehai [14], E. V. Simakova-Yefremian [15], Z. M. Sokolovskyi [16], I. Ya. Fridman [17],

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15 Див., напр.: Сімакова-Єфремян Е. Б. Деякі проблеми та шляхи вдосконалення правового регулювання судово-експертної діяльності. *Держава і право. Юридичні і політичні науки*. 2001. Вип. 11. С. 447—451 ; Її ж. До питання про методи та методики експертних досліджень. *Сучасні проблеми розвитку судової експертизи* : зб. мат-лів засід. «кругл. столу», присвяч. 10-річ. створ. Севастоп. від. ХНДІСЕ ім. Засл. проф. М. С. Бокаріуса (Севастополь, 10—11.06.2010). Харків, 2010. С. 31—33 ; Її ж. Проблеми методичного забезпечення комплексних експертних досліджень. *Теорія та практика судової експертизи і криміналістики*. 2013. Вип. 13. С. 225—232.

16 Соколовский З. М. Проблема использования в уголовном судопроизводстве специальных знаний для установления причинной связи явлений : дис. ... д-ра юрид. наук. Харьков, 1963. 518 с.

17 Фридман И. Я. Использование данных судебной экспертизы для предупреждения правонарушений. Киев, 1972. 168 с.

V. Yu. Shepitko [18], M. V. Shepitko [19], M. H. Shcherbakovskyi [20] and others. The above-mentioned scientists and practitioners have pointed out the problematic aspects of defining the concept of specific expertise, the nature, structure, purposes, forms of its use in court proceedings, the principles of forensic expert activity, the legal regulation of the use of specific expertise, skills and abilities in criminal proceedings, the shortcomings of the legal regulation of the use of specific expertise; the problem of defining the general concept and functional purpose of experts in court proceedings for solving technical and forensic tasks of pre-trial investigation of a crime.

However, there is a lack of thorough research on improving the efficiency of the use of specific expertise in the investigation of criminal offenses related to the repair and construction of road infrastructure and road construction, as well as, what is now urgent, the determination of damages from the actions of the russian aggressor as a result of the destruction of road infrastructure facilities, which determines the relevance of the chosen topic of this research paper, guiding our further research.

Article Purpose

To develop and scientifically substantiate the areas of road technical research using specific expertise in the investigation of criminal offenses in the field of road infrastructure, and to formulate relevant proposals.

Research Objectives

In order to achieve this goal, it is necessary to perform the following tasks:

- to analyze the practice of conducting forensic road technical examinations, and based on this to find out the genesis of changes in the forms and methods of using specific expertise in the course of road technical research;
- to outline the factors that influence the results of expert research and to identify areas for improving the effectiveness of the use of specific expertise in the investigation of criminal offenses of road infrastructure;
- to formulate proposals aimed at more effective use of specific expertise in ensuring the detection

18 Шепітько В. Ю. Тенденції і перспективи розвитку криміналістики (концептуальність підходів і дискусійність поглядів). *Актуальні проблеми криміналістики* : мат-ли міжнар. наук.-практ. конф. (Харків, 25—26.09.2003). Харків, 2003. С. 5—8. URL: https://dspace.nlu.edu.ua//jspui/handle/123456789/13888 (дата звернення: 10.12.2023) ; Шепітько В. Ю., Журавель В. А., Авдєєва Г. К. Інновації в криміналістиці та їх впровадження в діяльність органів досудового слідства. *Питання боротьби зі злочинністю*. 2011. Вип. 21. С. 39—45. URL: https://dspace.nlu.edu.ua//jspui/handle/123456789/5481 (дата звернення: 10.12.2023) ; Шепітько В. Ю. Проблеми використання спеціальних знань крізь призму сучасного кримінального судочинства в Україні. *Судова експертиза*. 2014. № 1. С. 11—18.

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and investigation of crimes and improving the results of work in forensic science.

Research Methods

To achieve this goal, general, individual and special methods of forensic examination are used. Much attention is given to the methods of statistical analysis, generalization of the data obtained (synthesis) and justification of the need to develop a special method — a methodology for solving the problems of road technical examination.

Main Content Presentation

The processes of changes in the forms and methods of application of specific expertise, particularly, during forensic examinations, indicate that the subject matter of forensic research depends primarily on the tasks that forensic experts face today. In this regard, let's consider the practice of appointing forensic road technical examinations in the system of forensic institutions of the Ministry of Justice of Ukraine. The results of the analysis of statistical data are presented in the following table.

Table

Information on conducting forensic road technical examinations for 2015—2022

Year	Completed examinations and expert research												Pending resolution						Returned materials without research
				On request by										Unresolved due to a lack of					
	Total for the past year	**Total for the current year**	As % of the previous year	courts	MIA, National Police	Prosecutors' Offices	Security Service of Ukraine	Fiscal authorities	State Bureau of Investigation	other organizations, notaries	citizens, lawyers	Over a period of more than 90 days	Total issues	methods	specialists, equipment	incompleteness or unsuitability of research objects	other reasons	categorical conclusions	
2015	16	**36**	***125,0***	2	33						1	14	182	2		10		162	19
2016	36	**38**	***5,6***	2	24	7				1	4	5	116	2	5	29		55	20
2017	38	**61**	***60,5***	9	26	8		4		14		16	399	4	18	108	23	246	27
2018	61	**89**	***45,9***	9	28	51					1	35	176		5	5	15	151	35
2019	89	**102**	***14,6***	41	15	42					4	37	500					429	21
2020	102	**168**	***64,7***	72	80	7	6				3	58	669		99		29	540	91
2021	168	**246**	***46,4***	201	33				3		9	16	701	25		8	36	622	64
2022	246	**188**	***–23,6***	7	173					8		55	524	16		4	45	459	28
In total	**756**	**928**	***22,8***	**343**	**412**	**115**	**6**	**4**	**3**	**23**	**22**	**236**	**3267**	**49**	**127**	**164**	**148**	**2664**	**305**

The table shows an increase in the number of forensic technical road examinations: from 36 in 2015 to 188 in 2022. It should be noted that in 2022 a full-scale invasion of Ukraine began, so a certain decrease in the number of road technical examinations in comparison with the previous year (2021) (246 examinations) is explained by this factor. However, it should be noted that according to the Ministry of Justice of Ukraine, an increase in the number of forensic examinations in 2023 compared to the previous year occurred in road technical research — by 170.3 %. Thus, this indicates the relevance of the development of this area of road engineering research. Let's illustrate these indicators with the corresponding graphs, which clearly show the growth by customer: courts, law enforcement, and other customers (*see Figure 1*).

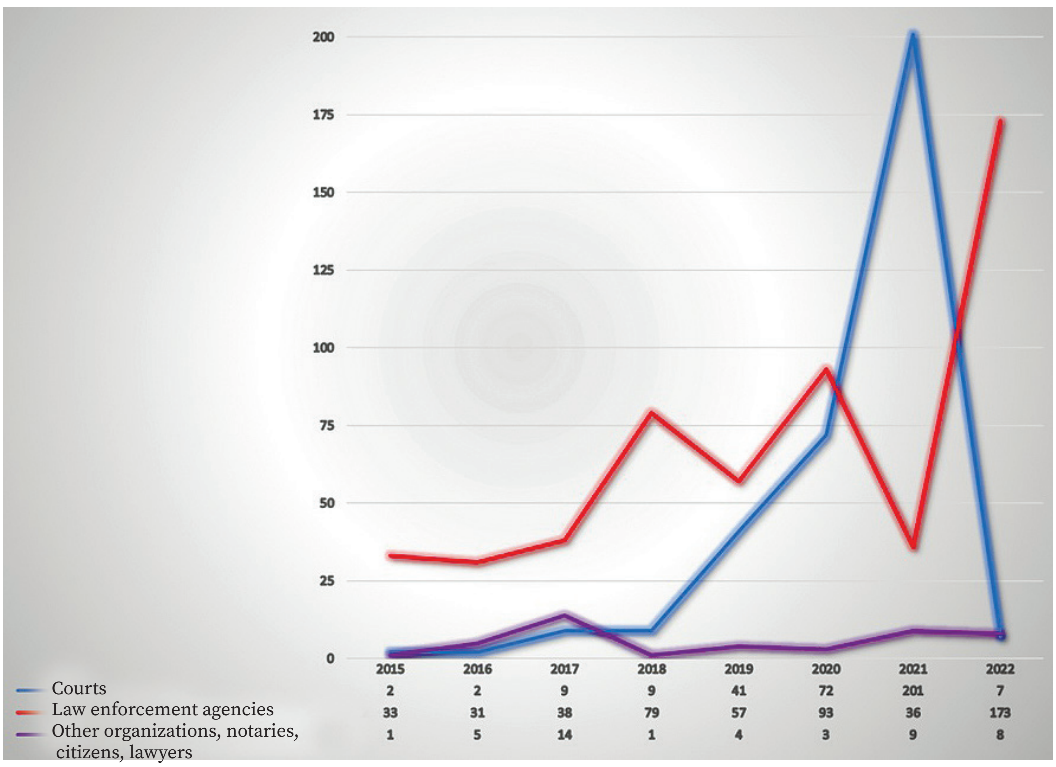

Fig. 1. The number of completed forensic examinations and expert research commissioned by courts, law enforcement agencies, and other organizations from 2015 to 2022

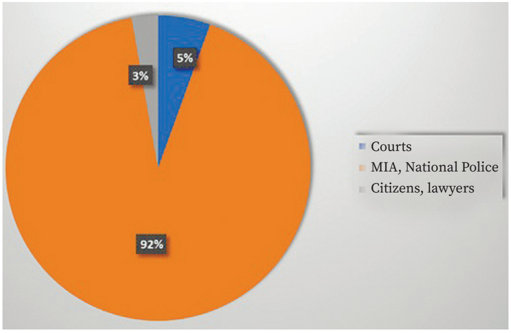

Fig. 2. Completed examinations and expert research in 2015 on request by

The diagram (*see Fig. 2*) shows that in 2015, 92 % of the following were completed: for the National Police (33 forensic examinations), 5 % for courts (2 forensic examinations), and 3 % for other customers (1 forensic examination). Compared to the previous year, the increase is 125 %.

The analysis of statistics for the year 2016 is shown in Fig. 3.

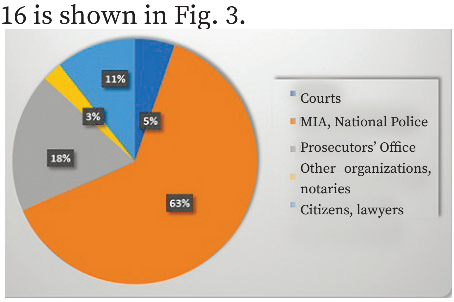

Fig. 3. Completed examinations and expert research in 2016 on request by

According to the analysis, the largest number of road technical examinations was conducted for the Ministry of Internal Affairs and the National Police — 63 % (24 examinations); 18 % (7 examinations) — for the Prosecutor's Office; 11 % (4 examinations) — for citizens, lawyers; 5 % (2 examinations) — for courts; 3 % (1 examination) — for notaries and other customers. Compared to 2015, the increase was 5.6 %. The composition of customers has changed: forensic examinations commissioned by the Prosecutor's Office, citizens and lawyers have appeared.

See Fig. 4 for the statistical analysis for the year 2017.

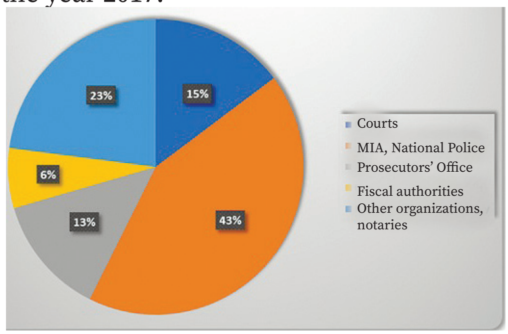

Fig. 4. Completed examinations and expert research in 2017 on request by

As can be seen from the diagram, the Ministry of Internal Affairs and the National Police are the leaders in terms of the number of examinations ordered — 43 % (26 examinations), the number of studies ordered by other organizations and notaries has increased — 23 % (14 examinations); the percentage of examinations ordered by courts has also increased — 15 % (9 examinations), prosecutors — 13 % (8 examinations), and fiscal authorities — 6 % (4 examinations). In total, the number of examinations performed increased by 60.5 %.

See Fig. 5 for the statistical analysis for the year 2018.

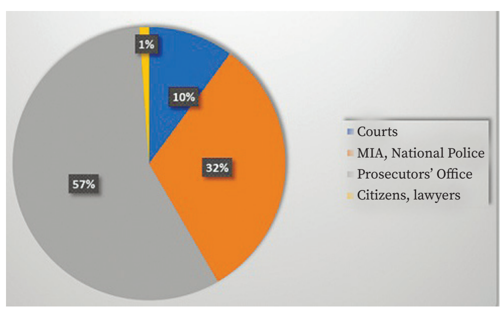

Fig. 5. Completed examinations and expert research in 2018 on request by

In 2018, there was a sharp increase in forensic road technical examinations ordered by prosecutors — 57 % (51 examinations); a significant number were also ordered by the Ministry of Internal Affairs and the National Police — 32 % (28 examinations) and courts — 10 % (9 examinations). In general, in 2018, the number of forensic road technical examinations increased by 45.9 %.

See Fig. 6 for the statistical analysis for the year 2019.

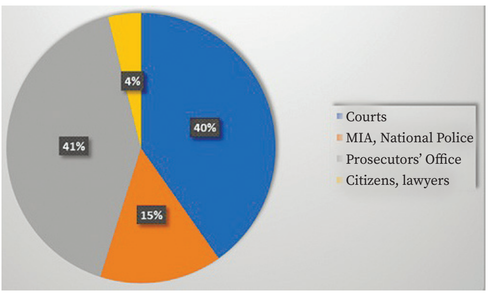

Fig. 6. Completed examinations and expert research in 2019 on request by

In 2019, the percentage of forensic examinations appointed by prosecutors and courts was almost the same — 41 % (42 examinations) and 40 % (41 examinations), respectively; 15 % (15 examinations) were appointed by the police and 4 % by citizens (lawyers). In total, in 2019, the number of forensic road technical examinations increased by 14.6 % (102 examinations were conducted).

See Fig. 7 for the statistical analysis for the year 2020.

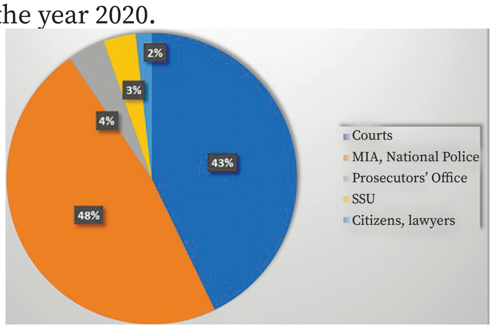

Fig. 7. Completed examinations and expert research in 2020 on request by

In 2020, the MIA (National Police) was again the leader in the appointment of road technical examinations — 48 % (80 examinations); 43 % — courts (72 examinations); significantly fewer examinations were conducted on request by the Prosecutor's Office, the Security Service of Ukraine, and citizens or lawyers — 4 %, 3 %, and 2 %, respectively. The total number of road technical examinations increased by 64.7 % (168 examinations).

See Fig. 8 for the statistical analysis for the year 2021.

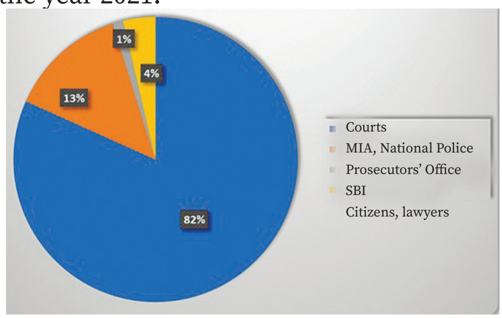

Fig. 8. Completed examinations and expert research in 2021 on request by

In 2021, the courts received the largest number of results of road technical examinations (82 % of the total number of examinations conducted, which amounted to 201 examinations); 13 % of the total number were conducted by the Ministry of Internal Affairs and the National Police (33 examinations); 4 % of examinations were conducted for citizens (lawyers) — 9 examinations and 1 % — for the State Bureau of Investigation (3 examinations). The total number of forensic road technical examinations increased by 46.4 % and amounted to 246 examinations — the largest number for the entire period of existence of this type of examination.

The year 2022 was marked by changes in priorities in forensic research. Fig. 9 summarizes the quantitative indicators of forensic road technical examinations conducted in 2022.

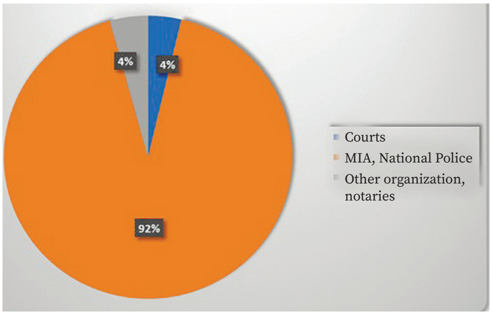

Fig. 9. Completed examinations and expert research in 2022 on request by

The diagram shows that the largest number of road technical examinations were conducted for the Ministry of Internal Affairs and the National Police, accounting for 92% (173 examinations). Forensic road technical examinations conducted for courts and other organizations each account for 4%. The decrease in the number of examinations conducted by 23%, as we have already noted — is due to the Russian aggression against Ukraine, which prevented many forensic institutions from operating as usual. At the same time, 188 forensic road technical examinations were conducted, and information from the Ministry of Justice indicates a significant increase in 2023.

Of interest to our scientific research is the analysis of the reasons for returning materials without conducting examinations. Figure 10 presents a diagram that reflects the number of materials returned without being examined.

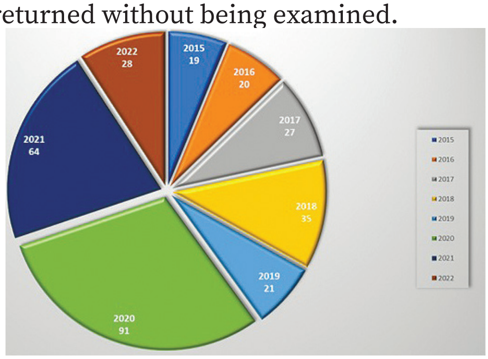

Fig. 10. Returned materials without being examined from 2015 to 2023

The diagram illustrates that, in 2015, 19 materials were returned without examination. In 2016, the number increased to 20, followed by 27 in 2017, 35 in 2018, 21 in 2019, and a significant peak of 91 in 2020 — the highest recorded. In 2021, the count decreased to 64, and in 2022, it was 28. The primary reason for returning materials without forensic examination was their inadequacy in addressing the raised issues. This highlights the imperative to formulate scientific and methodological recommendations for preparing materials for the forensic road technical examination process.

Let's continue the analysis of statistical data on issues related to forensic road technical examination. It concerns the number of questions posed to forensic experts during the period from 2015 to 2022, as presented in Figure 11.

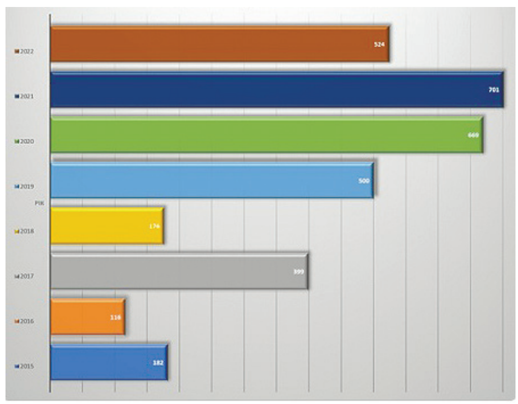

Fig. 11. Number of questions posed to experts from 2015 to 2022

The indicators provided in the diagram indicate a consistent trend of continuous growth in the number of questions posed for resolution by forensic experts in the field of road-technical examination. Specifically, in 2015, there were 182 questions, in 2016 — 116, in 2017 — 399, in 2018 — 176, in 2019 — 500, in 2020 — 659, in 2021 — 701, and in 2022 — 504. It is clear that the reduction in the number of questions posed for resolution in 2022 reflects a decrease in the number of appointed examinations due to the war.

Let us conclude the analysis of the statistical data on the number of issues by their implementation by the form of resolution (*see Fig. 12*).

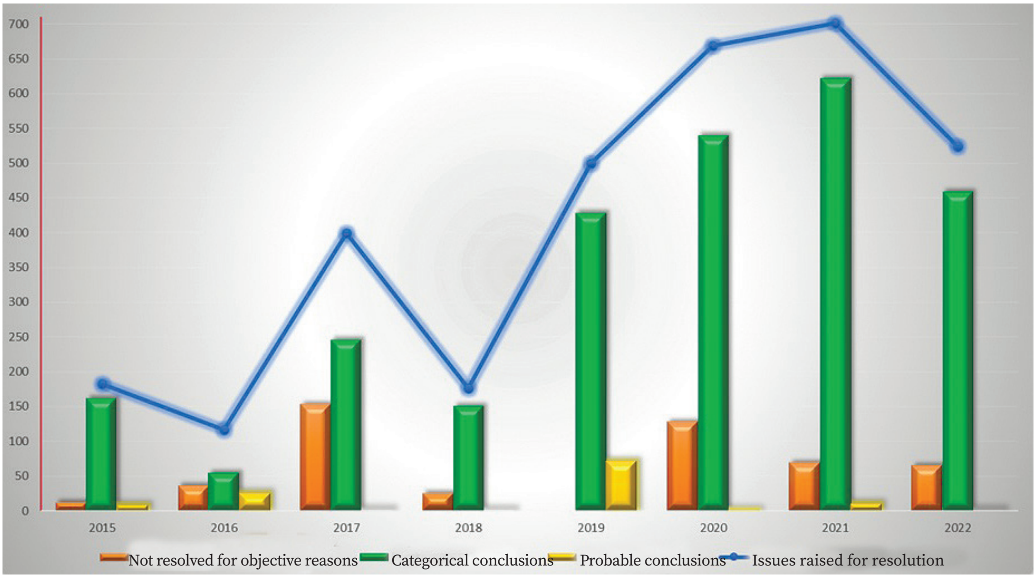

Fig. 12. Number of issues by resolution form from 2015 to 2022

As we can see, regarding the form of solving problems in forensic road technical examination, there is an increase in the number of problems solved in a categorical form. At the same time, there is also a considerable number of unresolved issues due to various factors, among which the need to develop a general methodology for forensic road technical examination is obvious.

Thus, based on the results of statistical analysis, the author outlines and scientifically substantiates the areas for improving the efficiency of the use of specific expertise in the investigation of criminal offenses in the field of road infrastructure.

Conclusions

Based on the above study, the author scientifically substantiates the relevance of studying the areas of formation and expansion of the subject matter of expert road-technical research to increase the efficiency of the use of specific expertise in the investigation of criminal offenses related to the construction, repair of roads and determining the amount of damage from the destruction of road infrastructure as a result of hostilities and other negative factors affecting the state of road infrastructure. The directions for the formation of the fields of the subject of forensic road-technical expertise are defined and scientifically substantiated. Based on the analysis of statistical data from expert practice, an increase in the quantity and complexity of performed road-technical examinations is demonstrated. The genesis of changes within the subject of forensic road-technical examinations is clarified. Emphasis is placed on the close connection between the subject of forensic expert research and

tasks that require resolution in connection with qualitative changes in criminality and the challenges of war. The need for the development and implementation of the latest forensic research methods is proved. The factors influencing the results of expert research are outlined. The author formulates proposals aimed at more efficient use of specific expertise in ensuring the detection and investigation of crimes and improving the results of work of forensic experts in the context of developing a scientific and methodological framework for improving the main form of application of specific expertise — forensic examination.

Судово-експертне дорожньо-технічне дослідження: стан і зміни відповідно до нових завдань експертного забезпечення правосуддя

Євген Півньов

Мета статті — науково обґрунтувати актуальність дослідження напрямів формування та розширення предмета експертного дорожньо-технічного дослідження з метою підвищити ефективність використання спеціальних знань у розслідуванні кримінальних правопорушень, пов'язаних із будівництвом, ремонтом доріг і визначенням збитків від руйнування дорожньої інфраструктури внаслідок воєнних дій та інших негативних чинників, що впливають на стан дорожньої інфраструктури. Методологічним підґрунтям дослідження є положення теорії пізнання, що дали змогу дослідити сутність предмета дорожньо-технічних досліджень, виокремити фактичні дані й обставини кримінального провадження (для формулювання поняття предмета дорожньо-технічної експертизи залежно від вирішуваних завдань) і визначити об'єкти, суб'єкти й методи дослідження. Застосовано комплекс методів наукового пізнання, зокрема: загально-наукових, окремих і спеціальних. Окреслено й науково обґрунтовано напрями формування полів предмета судової дорожньо-технічної експертизи. На підставі аналізу статистичних даних з експертної практики продемонстровано зростання кількості та складності виконаних дорожньо-технічних досліджень. З'ясовано генезис змін меж предмета судових дорожньо-технічних досліджень. Зосереджено увагу на тісному зв'язку предмета судово-експертного дослідження із завданнями, що підлягають розв'язанню у зв'язку із якісними змінами злочинності й викликами війни. Доведено потребу в розробленні та впровадженні новітніх методик судово-експертного дослідження для використання уповноваженою особою під час розслідування кримінальних правопорушень у сфері дорожньої інфраструктури. Окреслено чинники, що позначаються на результатах експертних досліджень. Сформовано пропозиції, спрямовані на більш ефективне використання спеціальних знань у забезпеченні розкриття та розслідування злочинів і поліпшення результатів роботи судових експертів у контексті розроблення науково-методичної бази для вдосконалення основної форми застосування спеціальних знань — судової експертизи.

Ключові слова: *спеціальні знання; експерт; обізнана особа; судово-експертна методика; висновок експерта, досудове розслідування, статистичні данні, судова дорожньо-технічна експертиза, дорожня інфраструктура.*

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Participants

Author contributed solely to the intellectual discussion underlying this document, case law research, writing and editing and assumes responsibility for its content and interpretation.

Declaration of Competing Interest

Author declare no conflict of interest.

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Assistance to Ukrainian forensic experts in documenting Russian war crimes from foreign partners

The last quarter of 2023 is marked by jubilant scientific events. On November 9, Kyiv hosted a celebration on the occasion of the 100th anniversary of the founding of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute». Many guests, partners, and colleagues, both Ukrainian and foreign, came to congratulate the Institution's staff. In the welcoming speech, Andrii Haichenko, the Deputy Minister of Justice of Ukraine, focused on the achievements of the Center's employees and their resilience and perseverance in addressing issues during forensic and expert activity. Congratulations were extended by Nataliia Tkachenko, Director of the Department of Expert Support of Justice of the Ministry of Justice of Ukraine, representatives of other state authorities, including the National Police, State Bureau of Investigation, prosecutors, and other law enforcement agencies, judicial authorities, heads of expert institutions within the Ministry of Justice system, Ministry of Internal Affairs, and the Security Service of Ukraine, as well as institutions and higher education establishments in the country.

On the occasion of this significant date, a commemorative coin of the National Bank of Ukraine, a postage stamp, and an envelope marking the 100th anniversary of NSC FSI were presented at the event. Additionally, printed periodicals and other publications of the institution were showcased.

Video greetings have been received from foreign friends and partners of the Center: descendants of the Institution's founder, Mykola Serhiiovych Bokarius, who actively participate in the life of NSC FSI, including ***Serhii Bokarius, Semen Sahaidachnyi,*** and ***Antonina Sahaidachna***; Latvian Minister of Justice, ***Inese Lībiņa-Egnere***; Board Chairman of ENFSI: European

Network of Forensic Science Institutes, ***Dorijan Keržan***. The event was attended by Ivar Prits, Director of Estonian Forensic Science Institute; ***Jānis Grasis***, Dean of the Law Faculty at Rīga Stradiņš University, etc.

The 100th anniversary testifies to the exceptional significance, competence, and reliability of the Center's activities over the century. During this time, the Scientific and Forensic Science Cabinet in Kharkiv has grown into the National Scientific Center, occupying a position as one of the leading expert institutions in Ukraine. Throughout the entire century, it has purposefully and devotedly ensured fair justice in our state through independent and objective examination, demonstrating to the world its commitment to the motto: "Conscientious serving the truth".

One of the main scientific events in November was the International Scientific and Practical Conference "Relevant Issues in Forensic Science and Criminalistics" on the occasion of the 100th anniversary of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute». The conference was attended by over 200 participants from Ukraine and other countries, including partners from Estonia, Georgia, Lithuania, Latvia, Spain, Germany, Scotland, Israel, Moldova, Turkey, Slovakia, Poland, and others.

The scientific event took place in hybrid mode at NSC FSI in Kharkiv and in the Kyiv Branch of the Center. The conference opening was joined by ***Andrii Haichenko***, the Deputy Minister of Justice of Ukraine; ***Nataliia Tkachenko***, Director of the Department of Expert Support of Justice of the Ministry of Justice of Ukraine, and other leaders of ministries and agencies of Ukraine, as well as foreign states, including ***Gabrielė Juodkaitė-Granskienė***, Doctor of Law, Docent, Member of the Supreme Court of the Republic of Lithuania; ***Olga Cataraga***, Doctor of Law, Director of the National Center for Forensic Expertise at the Ministry of Justice of the Republic of Moldova; ***Dariusz Zuba***, Doctor of Chemical Sciences, Professor, Director of

Professor Jan Sehn Institute of Forensic Research in Kraków, Ministry of Justice of the Republic of Poland; ***Snieguolė Matulienė***, Doctor of Law, Professor, Dean of Public Security Academy at Mykolas Romeris University; ***Zuzana Nemethova***, Director of Institute of Forensic Science, Slovakia, etc.

The participants of the event discussed urgent issues in criminalistics and forensic examination, paying special attention to issues arising from the state of war. These included the peculiarities of documenting the losses inflicted by the russian aggressor on our state and its citizens, contemporary normative-legal regulation of forensic activities, countering organized crime, challenges in conducting expert investigations in conditions of martial law, and the need for modernizing methods and technologies in forensic examination and criminalistics.

The attention of the participants was drawn to the presentations of foreign colleagues. ***Simon Berney-Edwards***, Executive Director of the Expert Witness Institute of the United Kingdom, emphasized in his presentation the development and regulation of the main competencies of forensic experts.

The Chief National Expert of EU Project Pravo Justice, ***Oleh Mykhaliuk***, reported on international experience and standards in ensuring the professional ethics of forensic experts.

Some observations on the principles of activity in the field of forensic science were expressed by ***Olga Cataraga***, Doctor of Law, Director of the National Center for Forensic Expertise at the Ministry of Justice of the Republic of Moldova together with ***Viktoria Prisakaru***, Forensic Expert of the National Anticorruption Centre of the Republic of Moldova, and ***Peter Petkovich***, Forensic Expert, Deputy Director of the National Center for Forensic Expertise at the Ministry of Justice of the Republic of Moldova.

Another representative of Great Britain, ***Maria Alejandra Perotti***, a licensee, PhD, Associate Professor, Principal Investigator and Head of the Laboratory School of Biological Sciences at the University of Reading, captivated the audience with a report on mass graves, which today serve as a unique niche for forensic biological evidence.

Nicolas Tsatis, Ph.D., a representative of the Department of Ballistic Wound Research, Forensic Medicine and Trace Science at the National and Kapodistrian University of Athens, in his abstracts, examined ballistic injuries in the aspect of characterizing injuries on the human body after a gunshot. He also provided examples of practical testing on relevant materials that simulate human tissues.

Pavel Giverts, Doctor of Philosophy in Law, Criminalistics and Forensics of the Ballistics Laboratory of Israel Police, dedicated his presentation (written in collaboration with colleagues from the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute»: ***Vitalii Nikitiuk***, Doctor of Economics, Sector Head, and ***Oleksandr Kolomiitsev***, PhD in Technical Sciences, Leading Research) to the man-made aspects that arise during the identification and diagnosis of firearms.

Ukrainian experts in the field of forensic science and criminalistics discussed current issues in forensic judicial activities in their reports. In particular, ***Valerii Shepitko***, Dr. of Law, Professor, Professor of the Department of Criminalistics at Yaroslav Mudryi National Law University, Laboratory Head at Academician Stashis Scientific Research Institute for the Study of Crime Problems, Honored Worker of Science and Technology of Ukraine and ***Mykhailo Shepitko***, Dr. of Law, Professor, Professor of the Department of Criminal Law at Yaroslav Mudryi National Law University, Leading Researcher at Academician Stashis Scientific Research Institute for the Study of Crime Problems, considered the role of international cooperation in criminal investigation and forensic activities in the light of informational support and the corresponding toolkit for its implementation.

Viktor Shevchuk, Dr. of Law, Professor, Interim Head at the Department of Criminalistics of Yaroslav Mudryi National Law University expressed his thoughts on changing the priorities of criminalistics tasks in the modern conditions of military threats and the transformation of crime.

In her report, Prof. ***Oksana Kaplina***, Dr. of Law, Professor, Head of the Department of Criminal Procedure at Yaroslav Mudryi National Law University, Corresponding Member of the National Academy of Legal Sciences of Ukraine, Honored Worker of Science and Technology of Ukraine, discussed the criminal procedural issues of forensic science.

Prof. ***Yuliia Chornous***, Dr. of Law, Professor of the Department of Criminology and Forensic Medicine of the National Academy of Internal Affairs spoke about current issues related to the conduct of forensic examinations in criminal proceedings.

The urgent issues of forensic ethics, including the experience of the EU in this area, were discussed in their report by ***Yurii Chechil***, Doctor of Philosophy in Law, Director of the Ukrainian Research Institute of Special Equipment and Forensic Science of the Security Service of Ukraine and ***Viktoriia Bila***, Doctor of Law, Associate Professor, Head of Scientific Laboratory of Ukrainian Research Institute of Special Equipment and Forensic Science of the Security Service of Ukraine.

Prof. ***Vasyl Stratonov***, Doctor of Law, Professor of the Department of National, International Law and Law Enforcement at Kherson State University reported on the intricacies of conducting semantic-textual examination to address the issue of taking measures to ensure the independence of judges and the authority of justice.

Prof. ***Ruslan Stepaniuk***, Doctor of Law, Professor of the Department of Criminalistics, Forensic Science and Paramedical Training at Kharkiv National University of Internal Affairs, discussed the trends of the illegal drug market in Ukraine during the war.

Prof. ***Valentyna Korzh***, Doctor of Law, Professor of the Department at Kharkiv National University of Internal Affairs, Honored Prosecutor of Ukraine, prepared her abstracts on the modern issues of forensic support for investigating corruption crimes.

The staff of NSC «Hon. Prof. M. S. Bokarius Forensic Science Institute» has prepared over 60 abstracts, including works of doctoral students studying outside the NSC FSI's

Postgraduate Program. The materials presented addressed the issues related to their dissertations.

The conference gathered and united a powerful community of like-minded individuals concerned with problems of forensic science and criminalistics in Ukraine. The event contributed to the formation of a strong scientific network of experts, lawyers, and criminologists who will continue to share their scientific achievements and practical developments with each other.

*Information was prepared by **Anatolii Tiapkin**,*
Head of Sector, Researcher at
NSC «Hon. Prof. M. S. Bokarius Forensic Science Institute»

Scientific and educational activities of EU Missions

The cooperation of NSC FSI with foreign organizations does not stop, but rather intensifies even in the conditions of war. From November 13 to 16, 2023, in Bucharest, the European Union Advisory Mission Ukraine (EUAM) in cooperation with General Inspector of the Romanian Police organized training visits for Ukrainian experts in countering the spread of firearms. The training was attended by the Deputy Prosecutor General, Head of the Department of Prosecutor General's Office of Ukraine, representatives of Security Service of Ukraine, State Bureau of Investigation, the National Police and the Ministry of Justice of Ukraine. The Ministry of Justice was represented by ***Oleksandr Kolomiitsev***, Leading Researcher at National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute», PhD in Technical Sciences, and expert in ballistics.

The visit was aimed not only at familiarizing the participants with the best modern practices for preventing the spread of firearms for further implementation in Ukraine but also at organizing the exchange of experience in forensic research. The

participants discussed the specifics of ballistics, fingerprinting, and handwriting research, as well as the particulars of photographic portrait examination and technical examination of documents. They also paid considerable attention to the practice of using forensic examination in combating illicit arms trafficking and cooperating with Romanian colleagues.

In his speech, Oleksandr Kolomiitsev outlined the issues of expert support and technogenic aspects of measures to prevent illicit trafficking in firearms and weapons based on other physical principles of introducing destructive elements into the flight, and also spoke about concealing the purpose of weapons on the example of pistols of some models using modern technologies and about the manufacture of weapons using 3D printing.

In addition, the Ukrainian delegation got acquainted with the activities and peculiarities of the National Forensic Institute (Romania).

In Lviv on November 27, 2023, a meeting took place between representatives of the European Commission, Directorate-General for Migration and Home Affairs DG HOME (Brussels), and representatives of Ukrainian law enforcement agencies regarding the current situation and further steps to control firearms and combat illegal trafficking of light and small arms in Ukraine. The staff of the National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» joined the discussion online: ***Ella Simakova-Yefremian***, Deputy Director for Academic Affairs, Doctor of Law, Professor, Honored Worker of Science and Technology of Ukraine, and ***Oleksandr Kolomiitsev***, Leading Researcher of the Arms Research Sector, Ph.D. in Technical Sciences. In her report, Ella Simakova-Yefremyan emphasized the importance of conducting such events, especially in terms of cooperation with best practices, and stressed that russian aggression has had an extremely negative impact on the criminal and political situation not only in our country.

The illegal trafficking of firearms is a significant challenge not only for the safety of Ukraine but also for our partners in the European Union. Russian aggression has contributed to a substantial number of firearms falling into the hands of the population, which could have a negative impact on the criminogenic and even political situation in certain regions of the world. Additionally, in the near future, this could lead to the activation of terrorist organizations. The concern of our European partners on this issue is entirely justified, as their countries may become either a transit corridor for the illegal supply of weapons to areas of local conflicts or end-users. In any case, this could provide grounds for the activation of local and transnational criminal or terrorist groups.

Oleksandr Kolomiitsev reported on possible consequences associated with the illegal circulation of small guns and firearms in Ukraine, the role of forensic experts in improving regulatory acts and methodological support in the regulation of weapons circulation. He focused on the problems encountered by forensic experts during investigations.

The role of the expert institutions of the Ministry of Justice, the National Police and the Security Service of Ukraine in these activities is crucial, since it is the experts in the field of weapons research and explosive research who should provide timely and substantiated analytical information on the technogenic aspects of illicit arms trafficking (determine the intended purpose of a particular weapon or product structurally similar to a weapon; assess the likely threats from new trends in weapons and ammunition production technology; find out the degree of danger of the latest weapons and ammunition). With the help of experts, information databases can be created for law enforcement agencies that contain all the necessary information about weapons samples, their tactical and technical data, ballistic characteristics, and manufacturing methods: this will facilitate not only the timely detection of weapons but also the identification of channels of supply and manufacture, which is of priority in cases of detection of weapons manufactured illegally.

It is worth noting that the professional knowledge of experts regarding the peculiarities of the technology for manufacturing weapons and ammunition is of paramount importance for determining the origin of both the weapon itself and its parts, details, and mechanisms, as well as for identifying places of weapon assembly from individual components or processing deactivated weapons. In addition, experts conducting operational measures to detect illegal weapons can provide information about the technological equipment used to manufacture specific components and parts of weapons, as well as about the professional knowledge of individuals engaged in this activity. The role of experts in the process of creating regulatory acts is also significant, as proposals and innovations related to weapons are not always well-founded and reasonable: involving experts in this process will contribute to preventing misunderstandings, ambiguous interpretations, and complications.

Ukrainian experts have invaluable experience that they can share with colleagues from other countries, enabling them to effectively collaborate in addressing contemporary challenges of crime and terrorism.

Information was prepared by ***Tetiana Kipusheva****,*
Researcher at NSC «Hon. Prof. M. S. Bokarius
Forensic Science Institute»

International Scientific and Practical Conferences

On November 18 and 19, 2023, the XI International Scientific and Practical Conference "Chemistry, Bio- and Pharmatechnologies, Ecology, and Economics in the Food, Cosmetic, and Pharmaceutical Industries" took place, organized by the National Technical University «Kharkiv Polytechnic Institute». The conference aimed to discuss proposals for solving problems and prospects for the development of chemistry, bio- and pharmaceutical technologies, ecology, and economics in the food and cosmetic industries, as well as modern methods of training specialists in these fields.

Representing National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» at the conference were ***Serhii Tiulieniev***, Director of the Center, Ph.D. in Economics, ***Hanna Spitsyna***, First Deputy Director, Doctor of Law, Professor, and ***Iryna Petrova***, Principal Researcher at NSC FSI, Doctor of Law, Professor (Iryna Petrova also became an Editorial Board member of the Collection of Abstracts of this event).

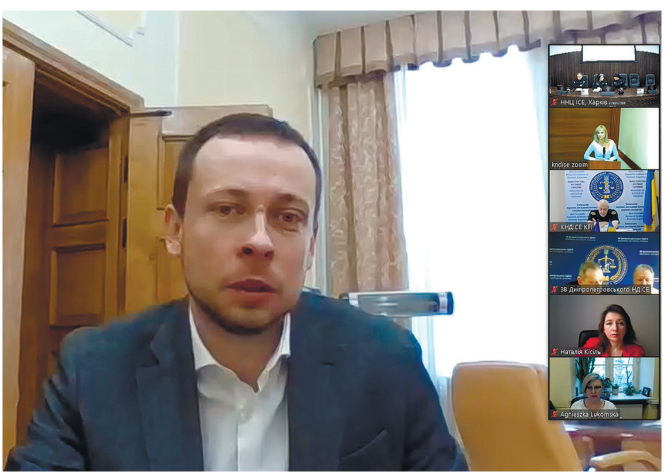
In abstracts of the Center's leadership on "Expert Study of Environmental Labeling in Consumer Rights Protection Cases" it is noted that during investigation of environmental labeling, an expert should take into account the conditional classification of all environmental labeling symbols into three types based on the content of the message. It is explained that in consumer rights protection cases, the expert should pay attention to:

1) in the case of purchasing fuel, electricity, and other energy sources — to ensure compliance of the procurement subject with the requirements for alternative fuel or energy sources;
2) when chemical products, plastic, rubber, sports goods, toys, detergents, and cleaning agents — to ensure compliance of the research subject with the requirements:
   a) environmental characteristics of the product and its packaging according to DSTU ISO 14021 (biodegradable; suitable for reuse, refill; percentage of recycled material, etc.);
   b) environmental standards and criteria for life cycle assessment according to DSTU ISO 14024 (environmental protection measures may also include restrictions on the production composition concerning the content of chemicals and mixtures that have a significant impact on the environment and human health based on hazard classes and categories);

3) in the case of catering services, hotel and restaurant services, recreation services, retail services, and cleaning services — for compliance of the subject matter with the requirements of the criteria of DSTU ISO 14024. As an alternative, the customer may specify requirements for the environmental management system at the service provision facility according to DSTU ISO 14001; for the labeling with environmental markings of products used in service provision; regarding the dosage of detergents and cleaning agents; safety procedures; packaging and consumer packaging disposal, etc.

On December 21, 2023, scientists and practitioners from National Scientific Center «Hon. Prof. M. S. Bokarius Forensic Science Institute» had the opportunity to participate in another International Scientific and Practical Conference «Current Issues of Forensic Expertology, Criminalistics and Criminal Procedure», organized for the fifth time by Kyiv Scientific Research Institute of Forensic Expertise.

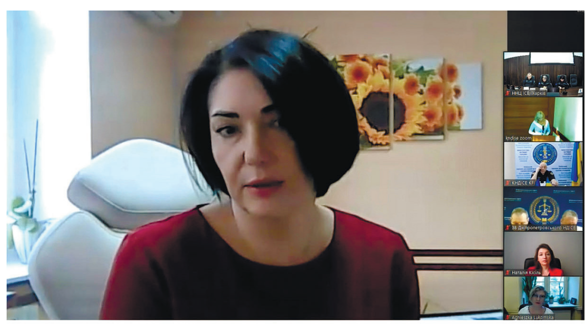
The conference was opened by its moderator, ***Nataliia Nestor***, Deputy Director, Kyiv Scientific Research Institute of Forensic Expertise, Doctor of Law, Senior Researcher, Honored Lawyer of Ukraine. Welcoming marks were addressed to the participants by ***Andrii Haichenko***, Deputy Minister of Justice of Ukraine, Doctor of Philosophy (PhD); ***Oleksandr Ruvin***, Director of Kyiv Scientific Research Institute of Forensic Expertise, Doctor of Law, Senior Researcher, Honored Lawyer of Ukraine; ***Nataliia Tkachenko***, Director of the Department of Expert Support of Justice of the Ministry of Justice of Ukraine, Candidate of Juridical Sciences, Honored Lawyer of Ukraine; ***Mykhaylo Smokovych***, Chairman of the Cassation Administrative Court within the Supreme Court, Doctor of Law, Honored Lawyer of Ukraine; ***Alla Basalayeva***, Head of the State Audit Service of Ukraine, PhD in Law, Honored Lawyer of Ukraine; as well as the leadership of the scientific research institutions of judicial expertise within the Ministry of Justice and the Ministry of Internal Affairs of Ukraine, and other distinguished guests.



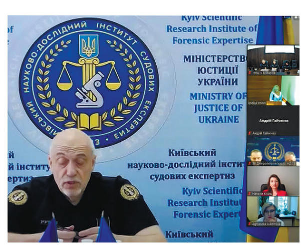
The conference attracted the attention of representatives from the legal and expert communities of Europe, the United States, Africa, and Australia, including ***Gregory Ducot***, Director International Criminal Investigative Training Assistance Program (Department of Justice, U.S.A.); ***Dorijan Kerzan***, Chairperson of the European Network of Forensic Science Institutes (ENFSI); ***Ken Williams***, President of the American Academy of Forensic Sciences (AAFS); ***Helena Trolläng***, Director of the Swedish National Forensic Centre (NFC); ***Yanko Kolev***, President of the International Association of Forensic Sciences (IAFS); ***Claude Roux***, President of the International Association of Forensic Sciences (IAFS) (2017-2023, Australia), etc.

The staff of the Center are regular listeners and speakers at many scientific events, as the exchange of views and experience for the purpose of continuous professional development is an integral part of expert work. Thus, in his abstract, ***Serhii Tiulieniev***, Director of NSC FSI, Ph.D. in Economics, focused on the current problem of raiding and revealed important aspects of the application of specific expertise in the investigation of raiding, in particular, typical forms and features of their implementation.

The focus deserves attention on the topics of presentations by the staff of NSC FSI, as well as by third-level education seekers. Indeed, experts in the field of weapon research, ***Vitalii Nikitiuk***, Sector Head, and ***Oleksandr Kolomiitsev***, Leading Researcher, presented abstracts on the classification of combat sickles. Abstracts on "Features of training a forensic expert in conditions of martial law" were prepared by ***Daria Davydenko***, Head of the Department of Postgraduate and Doctoral Studies, and ***Yuliia Kostenko***, Researcher. Current issues of forensic psychological examination for group crimes were discussed by ***Olha Herasymenko***, Sector Head, and ***Tetiana Kharina***, forensic expert. Postgraduate students, ***Dmytro Tsyplitskyi*** and ***Volodymyr Lezhnin***, presented abstracts on the status of a person for whom bail has been deposited, and the problems of judicial control over the extension of the pre-trial investigation period in consolidated criminal proceedings, respectively.



Ivan Yatsenko, Leading Researcher, and ***Ella Simakova-Yefremian***, focused on the interdependence of scientific developments in the field of veterinary examination and the improvement of administrative legislation in their abstracts.



Nataliia Kysil, Senior Forensic Expert, dedicated her presentation to specific aspects of conducting an examination in the field of intellectual property, while ***Yuliia Brailko*** and ***Nataliia Kysla***, Leading Researchers, prepared a report on the pragmatics of graphemes in semantic-textual examination.

Tetiana Yehorova, Leading Forensic Expert, paid attention to discourse analysis in the context of conducting a comprehensive psycho-linguistic examination, while ***Kateryna Rudnieva***, Sector Head, ***Alla Klimchuk***, Senior Researcher, and ***Andrii Bondarenko***, Researcher, paid attention to the examination of perfumes.

Olena Nazarova, a Forensic Expert, spoke about the peculiarities of preparing materials for the appointment of forensic examination of video and audio recordings in the conditions of martial law in Ukraine. ***Olena Slipets***, Sector Head, investigated the problematic issues of appointing forensic psychological examination regarding children.

The conference participants raised numerous current issues in the field of forensic expertise, criminology, and criminal procedure. This includes matters related to investigative tactics and methods of crime investigation, peculiarities of conducting forensic activities and legal proceedings in conditions of a state of war, types of forensic examinations, especially those concerning compensation for damage caused by aggressive warfare, and so on.

Information was prepared by ***Sofiia Karpova****,*
An employee at NSC «Hon. Prof. M. S. Bokarius Forensic Science Institute»

Requirements for content

According to the Edition subject matter, content regarding coverage of criminalistic current issues, relevant issues of performing various types of forensic examinations and specific expertise application in legal proceedings is published on the pages of the Scientific Edition.

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- Main content presentation with obtained results (to reveal important theoretical positions and research results, analyze scientific facts, ideas, thoughts, regularities, concepts, as well as trends of further topic development, emphasizing personal contribution of the research author(s));
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- References (the list of used sources transliterated according to the Roman alphabet, for example, on the site of Vernadsky National Library of Ukraine: *http://nbuv.gov.ua/node/929*);
- Abstract in English, indicating the author(s) surname, article title and keywords.

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Total scope of a scientific article (information about the author, article title, abstract, keywords, article text, bibliographic references, extended resume) should be not less than 36,000 characters.

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Article is submitted for publication in Ukrainian or English.

Text of the article should be printed using the Microsoft Word processor; A4 paper size; page orientation. Text should not contain hyphens and macros.

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If a research is executed within the framework of international projects (grants), then it should be mentioned.

Analyzing main researches on the article problematics, it is obligatory to consider the status of the issue in foreign and Ukrainian sources (not less than 20 publications, at the same time the majority should be represented by international indexed editions). References to the author(s) personal scientific papers are allowed only if they do not exceed 10 % of all references.

The article text should adhere to requirements for content, general rules of citation and references to used sources. Each quotation should be accompanied by a reference to the source which bibliographic description should be completed depending on its type (primary or secondary source) according to the National Standard of Ukraine ДСТУ 8302: 2015: *Information and documentation. Bibliographic reference. General terms and conditions of compilation*.

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Illustrations (tables, diagrams, graphics, schemes, formulas) can be submitted in the text article. Illustrations should be delivered in separate files. They should be provided in a format enabling to format (for translation purposes). Formulas should be performed using the Math Type formula editor not using Cyrillic characters.

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