

Trends in Specific Expertise Application of Specialized During Investigation of Aggression Crimes

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DOI: 10.32353/khrife.1.2026.04 UDC 343.985(477)

Received: 14.02.2026 / Reviewed: 26.02.2026 / Accepted for printing: 31.03.2026 /

Available online: 31.03.2026



This article purpose is to identify current trends in the application of specific expertise during investigation of criminal offenses related to armed aggression, and to outline their significance for ensuring the process of evidence in national and international criminal proceedings. For achieving this goal, general scientific methods of analysis and synthesis, induction and deduction, as well as special methods were used: dialectical one, systemic-structural one, comparative-legal one, and generalization. It was found that modern practice of investigating offenses committed in connection with armed aggression is characterized by an increase in the share of digital data and an increased need for specific expertise not only at the stage of ordering forensic examinations, but also during the initial documentation of events, verification of evidence, establishment of cause-and-effect relationships, and analytical processing of information arrays. It was determined that key trends are the institutional expansion of the role of a specialist in criminal proceedings; digitalization of evidence (application of platforms for collecting and systematizing information, tools for secure fixation of photo and video evidence, OSINT-methods and digital forensics); proceduralization of technical methods due to increased requirements for proper fixation, preservation and verification of materials; interdisciplinary nature of specialized knowledge and the growth of the role of comprehensive

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 author acknowledges translation as corresponding to the original.

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and commission examinations. It was emphasized that in cases of mass casualties and population displacement, molecular genetic studies become of particular importance as a scientifically based tool for identifying victims and suspects, as well as verification of human genetic characteristics against forensic records, which ensures the determination of connections between events and individuals and contributes to the construction of evidentiary versions. It is substantiated that increasing the efficiency of investigating offenses related to armed aggression requires standardization of procedures for working with digital and biological materials, proper interagency interaction, integration of information and analytical systems, and ensuring the continuity of specific expertise use.

Keywords: crimes of aggression; specific expertise; forensic science; specialist; forensic DNA testing; proving.

Research Problem Formulation

Full-scale armed aggression of the Russian Federation against Ukraine has led to an unprecedented increase in the number of criminal proceedings related to war crimes, crimes against humanity and other criminal offenses committed in the context of armed conflict. The investigation of such acts is characterized by a complex factual structure of events, the scale of the consequences, the transnational dimension of proof, a high level of technological saturation of the evidence base and the need to comply with international standards in documenting offenses. Under these conditions, traditional approaches to organizing pre-trial investigations are insufficient, which highlights the need for active and systematic specific expertise application.

Modern practice of investigating crimes related to aggression indicates the growing role of specialized knowledge not only at the stage of conducting forensic examinations, but also during the inspection of the scene of the incident, recor-

ding evidentiary information, analyzing digital data, establishing cause-and-effect relationships, identifying victims and suspects, and also in the process of evaluating evidence. At the same time, the development of digital forensics, the use of information and analytical systems, remote documentation technologies, OSINT-research, and interdisciplinary expert approaches significantly expands the meaning of the concept of specialized knowledge and transforms the forms of its application in criminal proceedings.

Existing scientific research is mostly focused on individual procedural or tactical aspects of using specialized knowledge during the investigation of war crimes, documenting the consequences of hostilities, or conducting certain types of examinations. At the same time, development trends in this area, changing role of specific expertise in the evidence structure, its integration into organizational and tactical models of investigation, and the impact of modern technological challenges on the procedural mechanisms of their application remain insufficiently studied.

Identification of current trends in the application of specialized knowledge during the investigation of crimes of aggression is of particular relevance, since it is they who ensure scientific validity of evidence, improve the quality of documenting crimes in accordance with international standards, and contribute to the formation of an evidentiary base suitable for both national and international criminal proceedings.

Therefore, the need for theoretical understanding and generalization of modern trends in specific expertise application in criminal proceedings regarding crimes of aggression determines relevance of the chosen research topic and determines its scientific and practical significance.

Article Purpose

In order to identify current trends in specific expertise application during investigation of criminal offenses related to armed aggression.

Research Methods

For achieving the goal of this article, a complex of general scientific and special legal methods was applied. Using formal-logical methods (analysis, synthesis, induction, deduction), normative prescriptions and doctrinal approaches to the forms and limits of the application of special knowledge in criminal proceedings, as well as logical substantiation of conclusions about their evidentiary value in investigation of offenses related to armed aggression, were worked out.

Dialectical method helped to outline the contradictions between the need for operational documentation and the need

to ensure the procedural admissibility of evidence. System-structural method made possible to model the mechanism of using specific expertise as a holistic sequence of relevant actions of the prosecution and to determine the roles of the investigator, specialist, expert and other subjects.

Using comparative legal method, national approaches to specific expertise application were compared with internationally recognized standards for documentation, recording and methods of evaluating evidence (primarily digital) that is important for potential use of materials in international justice.

Generalization method was useful for systematizing the identified practical and scientific provisions and formulating conclusions regarding current trends in the application of specialized knowledge (in particular, digital forensics, analytical platforms, OSINT-tools, and molecular genetic research) during the investigation of offenses related to armed aggression.

Analysis of Essential Researches and Publications

The issue of specific expertise application in criminal proceedings traditionally occupies an important place in forensics and criminal process. In the current conditions of long-term martial law, scientific research shifts the emphasis from general theoretical provisions to applied models of using special knowledge during the documentation and investigation of crimes related to armed aggression. In particular, D. Serhieieva substantiates that special knowledge plays a system-forming role in the structure of evidence, as it provides scientifically substantiated establishment of cause-and-effect relationships between the event of a crime and its consequences.

The scientist proves that the development of digital forensics significantly expands specific expertise content and its effectiveness depends on procedural guarantees of the reliability of experts' conclusions, proper preservation of digital traces and interagency expert interaction ¹.

V. Tymoshko reveals the features of technical and forensic support for the investigation of criminal offenses. The researcher rightly notes that modern technologies (*OSINT*, digital analytics, 3D modeling, use of UAVs) are transforming traditional approaches to specific expertise implementation ².

O. Dufeniuk in her research proves that the effectiveness of war crimes investigations is impossible without systematic specific expertise use that includes coordination of expert capabilities, interdisciplinary interaction and managerial support for documentation procedure. The author emphasizes that special knowledge has not only evidentiary, but organizational and managerial significance ³.

I. Pyrih explores peculiarities of specific expertise application during the period of martial law. He emphasizes that

currently there is an urgent need to apply specific expertise during scene inspection. The scientist notes that involvement of specialists of different profiles ensures proper recording of traces of shelling and formation of an evidence base. The researcher summarized the list of forensic examinations typical for the investigation of criminal offenses committed under martial law, described the objects and topic of such researches ⁴.

I. Syvodied emphasizes that investigation of offenses in the de-occupied territories requires a transition from isolated expert researches to multidisciplinary and commission examinations, which makes it possible to integrate special knowledge from various fields to determine mechanism of the crime and identify the victims. He emphasizes the need to adapt expert procedures to the conditions of large-scale destruction and loss of evidence ⁵.

T. Podzolkova substantiates expediency of using analytical and prognostic specific expertise, in particular profiling to determine behavior patterns of offenders and predict criminal risks. The author's scientific conclusion is to expand

- 1 Сергеева Д. Б. Використання спеціальних знань у розслідуванні воєнних злочинів і злочинів проти людяності: процесуальні аспекти, експертна взаємодія та цифрова криміналістика. *Аналітично-порівняльне правознавство*. 2025. Т. 3. № 6. С. 234–247. DOI: [10.24144/2788-6018.2025.06.3.36](https://doi.org/10.24144/2788-6018.2025.06.3.36) (date accessed: 28.01.2026).
- 2 Тимошко В. В. Використання спеціальних знань під час документування та розслідування воєнних злочинів. *Вісник Кримінологічної асоціації України*. 2024. Т. 31. № 1. С. 307–314. DOI: [10.32631/vca.2024.1.25](https://doi.org/10.32631/vca.2024.1.25) (date accessed: 28.01.2026).
- 3 Дуфенюк О. М. Розслідування воєнних злочинів: логістичні, криміналістичні та судово-медичні питання. *Юридичний науковий електронний журнал*. 2022. № 4. С. 369–374. DOI: [10.32782/2524-0374/2022-4/88](https://doi.org/10.32782/2524-0374/2022-4/88) (date accessed: 28.01.2026).
- 4 Пиріг І. В. Використання спеціальних знань при розслідуванні злочинів, учинених в умовах воєнного стану. *Науковий вісник Дніпропетровського державного університету внутрішніх справ*. 2022. Спец. вип. № 2 (121). С. 347–352. DOI: [10.31733/2078-3566-2022-6-347-352](https://doi.org/10.31733/2078-3566-2022-6-347-352) (date accessed: 28.01.2026).
- 5 Сиводєд І. С. Застосування спеціальних знань і призначення експертних досліджень під час розслідування кримінальних правопорушень, які були вчинені на окупованих територіях України. *Вчені записки Таврійського національного університету імені В. І. Вернадського. Серія: Юридичні науки*. 2024. Т. 35 (74). № 2. С. 108–116. DOI: [10.32782/TNU-2707-0581/2024.2/17](https://doi.org/10.32782/TNU-2707-0581/2024.2/17) (date accessed: 28.01.2026).

the specific expertise concept beyond the classical expert activity and to include psychological and analytical methods in the system of criminal analysis⁶.

In the dissertation by H. Bershova, it was proved that specific expertise is a means of optimizing criminal proceedings and their use should be implemented in interrelated procedural and organizational forms. The scientist substantiates the need to unify scientific approaches to the forms of specific expertise application and introduction of innovative technologies in evidence-based activities⁷.

N. Shevchyshena notes that investigation peculiarity of war crimes is the mandatory specific expertise application during the conduct of primary investigative (detective) actions, the use of technical means of fixation and work with digital sources of information. The researcher outlines the following range of problematic issues: the protection of participants in investigative (detective) actions during the conduct of procedural measures, logistical difficulties and a significant burden on employees. Urgent challenges also remain the lack of practical experience in investigating crimes of this category, the need to establish effective intra-agency and inter-agency cooperation with other law enforcement agencies, as well as the need to create and develop modern infor-

mation-analytical and forensic databases. A separate problem is technical limitations, in particular the lack of modern equipment for conducting investigative and expert researches, as well as the overload of specialists and forensic experts due to the significant volume of assigned examinations. In addition, the issue of developing specialized methods for investigating individual war crimes remains relevant, which is due to the constant expansion of the spectrum of means and methods of their committing⁸.

A separate area of research is presented in the work of V. Sinoverskyi, where specific expertise is considered through the prism of organizational, tactical and psychological support for the investigation of criminal offenses committed by organized groups under martial law. The scientist substantiates that specific expertise performs not only the function of proof, but managerial and communicative ones, since it contributes to formation of investigative versions, investigation planning and the choice of tactics for conducting investigative (search) actions. Important researcher conclusion is the provision on the need to integrate procedural and non-procedural forms of using specific expertise, as well as on the essential role of psychological interaction between the investigator, specialist and

6 Подзолкова Т. Ю. Використання спеціальних знань при розслідуванні кримінальних правопорушень проти національної безпеки. *Забезпечення стійкості у складних умовах* : зб. мат-лів доп. учасн. міжнар. міждисциплінар. наук.-практ. конф. (Харків — Брістоль, 08.06.2023). Харків, 2023. С. 257—259. URL: <https://dspace.library.khai.edu/xmlui/bitstream/handle/123456789/5481/Podzolкова.pdf?sequence=1&isAllowed=y> (date accessed: 28.01.2026).

7 Бершов Г. Є. Теоретико-правові та праксеологічні основи використання спеціальних знань при розслідуванні військових злочинів : дис. ... д-ра юрид. наук. Харків, 2024. 410 с. URL: <https://dspace.univd.edu.ua/server/api/core/bitstreams/959a2411-029d-49f0-ab7e-469652fe77a3/content> (date accessed: 05.02.2026).

8 Шевчишена К. П. Розслідування воєнних злочинів в Україні : автореф. дис. ... канд. юрид. наук. Київ, 2024. 23 с. URL: https://www.navs.edu.ua/files/spec-vchena-rada/srd_26_007_03/2024/avtoref_shevchyshena.pdf (date accessed: 05.02.2026).

forensic expert in ensuring evidence effectiveness⁹.

Thus, currently there is a rapid evolution of approaches to understanding specific expertise from an auxiliary tool for improving the quality of investigative activities to a comprehensive system that covers procedural, organizational, technical and analytical components of proof. At the same time, the tendencies of transformation of specific expertise use in criminal proceedings for crimes of aggression remain insufficiently studied, which necessitates further scientific generalization.

Main Content Presentation

Crimes of aggression in the scientific and law enforcement sphere are understood in a narrow and broad sense. In international criminal law, the crime of aggression is considered as an independent international crime that encompasses the planning, preparation, unleashing or carrying out of an act of aggression by a state, which by its nature, scale and severity is a clear violation of the Charter of the United Nations. In the practice of pre-trial investigation and Ukrainian forensic doctrine, a broader approach is used, according to which it refers to a set of criminal offenses committed in connection with armed aggression or in conditions of armed conflict that determines specifics of the mechanism for their commission and proof. It is this approach that makes possible to comprehensively cover both international crimes and criminal offenses provided for by national legislation that are actually

the main criminal proceedings in modern conditions.

The group of criminal offenses related to armed aggression includes several categories of torts. First of all, these are international crimes (in particular, crime of aggression in the narrow sense), war crimes, crimes against humanity and other acts that encroach on the peace and security of mankind. A significant part is criminal offenses provided for by national criminal legislation, related to violations of the laws and customs of war, cruel treatment of the civilian population, illegal movement of persons, and the use of prohibited means of warfare. In addition, crimes of aggression in a broad forensic sense also include general criminal offenses committed during and caused by war (in particular, intentional murder, torture, sexual violence, destruction of property, collaborationist activities and crimes against the foundations of national security). They are united not only by the crime circumstances, but by common forensic signs that affect investigation management.

Criminal offenses of the group of crimes we are studying are classified according to several criteria. According to the object of the offense, they include crimes against international peace and security, against the life and health of the civilian population, property and infrastructure, as well as crimes against the foundations of national security. According to the commission mechanism, they can be combined into acts related to the use of military means of destruction, crimes related to the activities of occupation authorities, war crimes, etc. In terms of the specifics of forensic characteristics,

9 Синоверський А. Організаційно-тактичні та психологічні основи використання спеціальних знань під час розслідування кримінальних правопорушень, вчинених організованими злочинними групами в умовах воєнного стану. *Юридична психологія*. 2023. Т. 33. № 2. С. 129—140. DOI: [10.33270/03233302.129](https://doi.org/10.33270/03233302.129) (date accessed: 05.02.2026).

three leading groups of crimes can be distinguished: 1) crimes that have large-scale consequences and leave a significant number of material traces; 2) crimes of combatants; 3) criminal offenses committed in the digital environment.

Another characteristic specific is international dimension of evidence, since the collected materials must meet the standards suitable for their use both in national criminal proceedings and in international judicial institutions. This leads to increased requirements for the procedures for recording, preserving and verifying evidence.

In the context of crimes of aggression, it should be noted that there has been a significant transformation of the modern model of documenting and investigating war crimes, within which the systematic study of materials with evidentiary potential (in particular, digital) is of paramount importance. While in the initial stages of full-scale aggression the main emphasis was on recording maximum number of facts and testimonies, further development of practice demonstrates a transition to a structured, standardized and analytically oriented approach aimed at generating evidence suitable for use in national and international judicial mechanisms.

Important trend is the institutionalization of the evidence collection process through the creation of specialized digital platforms and tools that ensure not only the accumulation of information, but also its initial systematization and subsequent procedural integration. The warcrimes.gov.ua platform serves as a centralized data accumulation mechanism, providing a unified procedure for the initial docu-

mentation of events and involving a wide range of actors, from law enforcement officers to citizens and human rights organizations¹⁰. Similarly, analytical systems such as *I-DOC* demonstrate the next stage in the development of evidentiary activities: cataloging materials, establishing connections between events, suspects and victims, forming structured cases and building hierarchies of suspects, which brings the evidence collection process closer to the logic of criminal prosecution.

A separate manifestation of the growing role of digital materials is the introduction of specialized evidence capture tools (for example, *EyeWitness to Atrocities*) that automate metadata capture, ensure the integrity of files and create prerequisites for verifying their authenticity. The recognition of materials obtained using such technologies in the judicial practice of Ukraine indicates the gradual integration of digital evidence into the system of criminal evidence and the formation of new approaches to their evaluation by the court.

A significant trend is also the professionalization of working procedure with indications and other types of evidence. The experience of international human rights initiatives and practices of documenting war crimes shows that the quality of evidence is determined not only by the amount of information collected, but also by the procedures for their receipt, verification and storage. Avoidance of leading questions, multi-level verification of indications, their comparison with other sources and compliance with the chain of evidence preservation are crucial to ensure their procedural admissibility.

Another manifestation of development is the use of analytical tools for processing

10 Якщо ви стали потерпілим або свідком воєнних злочинів Росії — фіксуйте та надсилайте докази! / Офіс Генерального прокурора : офіц. вебсайт. URL: <https://warcrimes.gov.ua/> (date accessed: 05.02.2026).

large data sets that makes possible to detect recurring systemic offenses and confirm the organized nature of criminal activity. Therefore, research on materials, especially digital ones, ceases to be a technical stage and turns into an independent area of proof that requires specific expertise in the field of digital forensics, data analytics, documentation of international crimes and procedural standards of their application.

Thus, the modern practice of investigating war crimes demonstrates a steady trend towards an increasing role of studying evidentiary materials, primarily digital ones, which is manifested in the development of specialized information collection platforms, technologization of evidence recording, introduction of international verification standards, and the strengthening of the analytical component of evidence. In such conditions, specific expertise is increasingly becoming not an auxiliary, but a system-forming element of forensic support for investigation of crimes related to armed aggression.

Peculiarities of proving crimes of aggression are due to their complex structure and the scale of the consequences. First of all, this is manifested in the need to establish cause-and-effect relationships between specific actions and their results, which often requires the use of special knowledge within the framework of an integrated approach. The most common of these are: knowledge in the field of military affairs, forensic ballistics, explosives, forensic medicine, engineering and

other fields. Typical is the active use of digital and remote sources of evidentiary information (for example, satellite photo and video materials, telecommunications data, results of OSINT-researches) that significantly increases the role of digital forensics. Complex and commission examinations are of particular importance, since the mechanism reconstruction of the event is often impossible without integrating the knowledge expert witnesses of various profiles.

For crimes of aggression, specific expertise use in the field of molecular genetics is typical. Such a request from law enforcement practice is due to difficulties of identifying victims and suspects due to large-scale destruction, population displacement and the long time between the crime and the beginning of the investigation. Therefore, in current conditions, molecular genetic studies are gaining special importance as one of the most objective and scientifically sound tools of evidence, capable of ensuring reliable identification of individuals even in the absence of traditional identification features or in the event of significant damage to biological material ¹¹. DNA analysis makes possible to establish the identities of the deceased in cases of mass burials, exhumations, or fragmentation of bodies, as well as to confirm family ties with persons who have disappeared under circumstances related to aggression.

Possibilities of molecular genetic research are also manifested in ability to provide a link between individual epi-

11 Гамалюк Б. М., Ходирева І. Т. Окремі питання правового регулювання судової молекулярно-генетичної експертизи та обліку генетичних ознак людини. *Вісник Луганського державного університету внутрішніх справ ім. Е. О. Дідоренка*. 2022. Вип. 2 (98). С. 190—201. DOI: [10.33766/2524-0323.98.190-201](https://doi.org/10.33766/2524-0323.98.190-201) (date accessed: 04.02.2026) ; Топчій В. В. Молекулярно-генетична експертиза в кримінальному процесі в умовах воєнного стану. *Ірпінський юридичний часопис*. 2024. Вип. 4 (17). С. 245—251. DOI: [10.33244/2617-4154.4\(17\).2024.245-251](https://doi.org/10.33244/2617-4154.4(17).2024.245-251) (date accessed: 28.01.2026).

sodes of criminal activity through the analysis of biological traces that contributes to the mechanism reproduction of the event and establishment of involvement of specific persons. Of particular importance is the integration of the results of forensic DNA examinations into automated genetic databases that makes possible to carry out a comparative analysis of a large number of profiles, identify matches and speed up the identification process. In the context of investigation of crimes of aggression, this creates prerequisites for the formation of a systemic evidence base, where the results of individual examinations become elements of a single information and analytical model.

At the same time, importance of molecular genetic researches is determined not only by its technological capabilities, but also by the high requirements for the procedures for collecting and preserving biological samples, maintaining the chain of transmission, preventing contamination, and ensuring the procedural purity of research. Thereby effectiveness of the application of such specific expertise depends on the proper training of investigators, specialists, and forensic experts, effective interdepartmental coordination and the use of standardized methods that is especially relevant in the context of mass documentation of armed aggression consequences.

Thus, molecular genetic researches in criminal proceedings regarding crimes of aggression perform a complex function: they ensure identification of victims and suspects, increase evidence objectivity,

contribute to determining systematic nature of criminal actions and formation of evidence suitable for both national courts and international justice mechanisms. In this context, they are one of leading manifestations of modern trend towards the scientific and technological transformation of criminal evidence.

Revealing possibilities of DNA analysis, it is worth noting the importance and significance of applying special knowledge in the form of conducting checks on the forensic accounting of human genetic characteristics. We are talking about specialized electronic records (databases of DNA profiles) that accumulate genetic characteristics of convicted persons, unidentified corpses and missing persons, biological traces from the scene of events and other objects that are important for criminal proceedings¹². Such a system allows you to perform an automated comparison of the obtained DNA profile with the available data and determine matches without the need to first identify a specific person for comparison.

In practical terms, genetic trait testing has several interrelated functions. First of all, it is used to identify unidentified persons and the dead that is especially important in the investigation of crimes of aggression, when it comes to mass graves, movement of bodies and significant damage to the remains¹³. Matching a DNA profile to a database makes possible to find out kinship relations or identify a person by matching previously entered genetic data. In addition, verification of records helps to establish involvement of individuals in

12 Інструкція з організації функціонування криміналістичних обліків експертної служби МВС України : затв. наказ. МВС України від 10.09.2009 р. № 390. URL: <https://zakon.rada.gov.ua/laws/show/z0963-09#Text> (date accessed: 10.02.2026).

13 Степанюк Р. Л., Гусева В. О. Організаційні засади ДНК-ідентифікації загиблих унаслідок надзвичайних подій із масовими жертвами. *Криміналістичний вісник*. 2023. Т. 39. № 1. С. 29—38. DOI: 10.37025/1992-4437/2023-39-1-29 (date accessed: 28.01.2026).

several episodes of criminal activity, since biological traces seized in different places and at different times can combine a single genetic profile.

An important specific of such accounting is the results of an automated match, which, although they themselves do not replace forensic expert conclusion, but serve as an information reference point that allows investigation to form investigative versions and initiate a full-fledged molecular genetic examination. This is the difference between the analytical function of accounting and the procedural function of expert research: accounting helps to establish the likelihood of a connection, and examination confirms it from the point of view of evidence.

In the context of crimes of aggression, importance of genetic records increases significantly due to the large number of events and the significant volume of biological materials to be studied. The centralized accumulation of genetic profiles helps to conduct identification in the long term, when years pass between the event of the crime and the investigation. In addition, such records contribute to determining the systematic nature of crimes, as they make possible to combine individual episodes into a single evidentiary image. At the same time, functioning of the record of human genetic characteristics is associated with a number of specific needs and challenges. These include: the need to strictly adhere to the procedures for taking and storing samples, preventing contamination, ensuring the reliability of entered data and maintaining a proper chain of custody of evidence. Protection of personal data also becomes particularly important, since genetic information belongs to sensitive categories of data and requires clear legal regulation regarding access, use and storage periods.

Currently, genetic records are gradually being integrated with other digital information systems and forensic databases. Such integration allows combining the results of molecular genetic research with digital evidence, war crimes documentation materials and analytical platforms, that significantly expands possibilities of proving.

Thereby checking for genetic characteristics of a person is not only a technical procedure for finding matches, but an important element of modern evidence procedure that ensures identification of persons, establishment of links between events and the fixation of information in a procedural form. It is thanks to such mechanisms that molecular genetic researches become a strategic tool of criminal justice.

Thus, it is advisable to consider the crimes of aggression as a complex category of criminal offenses, united by the conditions of armed aggression, special mechanism of commission and specific approaches to proof. Their multi-level structure and complexity of the evidence process necessitate the systematic and integrated use of special knowledge that is gradually being transformed from an auxiliary tool into a leading element of forensic support for the investigation.

Conclusions

Based on the analysis of scientific research, materials of law enforcement practice, we have summarized the current trends in the use of special knowledge in the investigation of crimes of aggression. Thus, there is a tendency to institutional expansion of the role of a specialist in criminal proceedings. Special knowledge is considered not as an auxiliary element of a separate investigative (search) action,

but as a constant component of crime investigation activities from the stage of identifying and fixing evidence to their analysis and further expert research.

The second major trend is evidence digitalization. There is a shift in emphasis from traditional sources of evidence to electronic (digital), which determines the development of special knowledge in the field of information technology, cybersecurity and digital forensics. Thus, the need to develop and improve the rules for seizure of computer equipment, mobile devices, work with digital traces and compliance with the standards for the preservation of digital evidence has been actualized that indicates formation of a separate specialization of investigative activity.

The third trend is the proceduralization of technical methods. Therefore, specialized knowledge should be applied in accordance with appropriate procedures for the collection, inspection, recording and retrieval of information. This approach reflects the general evolution of the criminal process: technical or scientific tools are of evidentiary value only if they are properly formalized. This is especially true in military proceedings, where the risks of loss or distortion of information are much higher.

Another important trend is interdisciplinary nature of specific expertise used during investigation. Such expertise pertains to forensic knowledge, digital technologies, data analytics, forensic science, and organizational aspects of the investigation. This confirms that modern proof is no longer based on a narrow expert area of specialization, but is based on the integration of knowledge of various industries.

It is indicative of tendency to strengthen the role of forensic examinations as a systemic element of evidence planned in the early stages of evidence collection.

Separately, it is worth noting the trend towards standardization of methods for working with evidence. The reference to international standards for working with digital evidence demonstrates the desire to ensure the compatibility of the evidence base with international justice mechanisms, which is fundamentally important for cases of war crimes and crimes of aggression.

Thus, it can be argued that leading trends in specific expertise application are in transition from the occasional involvement of experts to the formation of a technologically integrated model of proof, in which a specialist, digital tools, forensic examinations and standardized procedures are the only system. This demonstrates the general transformation of criminal proceedings in war conditions from a traditional model to a scientific and technological one, where specific expertise actually becomes the basis for solving tactical investigative tasks.

Тенденції застосування спеціальних знань під час розслідування злочинів агресії

Володимир Твердохліб

Мета статті — визначити сучасні тенденції застосування спеціальних знань під час розслідування кримінальних правопорушень, пов'язаних зі збройною агресією, та окреслити їх значення для забезпечення процесу доказування в національному й міжнародному кримінальному судочинствах. Для реалізації поставленої мети застосовано загальнонаукові методи аналізу та синтезу, індукції та дедукції, а також спеціальні методи: діалектичний, системно-структурний, порівняльно-правовий і узагальнення. З'ясовано, що сучасна практика

розслідування правопорушень, учинених у зв'язку зі збройною агресією, характеризується збільшенням частки цифрових матеріалів і посиленням потреби у спеціальних знаннях не лише на етапі призначення судових експертиз, а й під час первинного документування подій, верифікації доказів, установлення причиново-наслідкових зв'язків і аналітичного опрацювання масивів інформації. Визначено, що ключовими тенденціями є інституційне розширення ролі спеціаліста у кримінальному провадженні; цифровізація доказування (застосування платформ збирання та систематизації відомостей, інструментів захищеної фіксації фото-й відеодоказів, OSINT-методів і цифрової криміналістики); процесуалізація технічних методів завдяки підвищенню вимог до належної фіксації, збереження та верифікації матеріалів; міждисциплінарність спеціальних знань і зростання ролі комплексних і комісійних експертиз. Наголошено, що в разі масових утрат і переміщення населення особливого значення набувають молекулярно-генетичні дослідження як науково обґрунтований інструмент ідентифікації потерпілих і підозрюваних, а також перевірка за криміналістичними обліками генетичних ознак людини, що забезпечує визначення зв'язків між подіями й особами та сприяє побудові доказових версій. Обґрунтовано, що підвищення ефективності розслідування правопорушень, пов'язаних зі збройною агресією, потребує стандартизації процедур роботи з цифровими й біологічними матеріалами, належної міжвідомчої взаємодії, інтеграції інформаційно-аналітичних систем і забезпечення безперервності користування спеціальними знаннями.

Ключові слова: злочини агресії; спеціальні знання; судова експертиза; спеціаліст; молекулярно-генетична експертиза; доказування.

Financing

This research did not receive any specific grant from funding institutions in the public, commercial or non-commercial sectors.

Disclaimer

Founders had no role in the research design, data collection and analysis, decision to publish or manuscript preparation.

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 declares no conflict of interest.

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