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**SOME PROBLEMS OF APPOINTMENT AND CONDUCT OF EXAMINATIONS IN CASES OF COPYRIGHT PROTECTION**

The article is devoted to the study of problem aspects of the appointment and carrying out of the expertise in cases of protection of the author’s rights.

As a result of scientific analysis, the persons involved in such cases and which are obliged to pay for an expertise are determined. In particular, it is concluded that the authorities and persons who legally have the right to protect the rights, freedoms and interests of others, and are applied to the court for protection of rights, freedoms and interests of other persons or state or public interests as well as the non-party claimant should remain under a duty to pay the court fees of the expertise in cases where the expertise is appointed for their applications.

It is grounded that due to the fact that representatives can commit on behalf of the person they represent, any proceedings that can commit this person, the person they represent is subject to the obligation to pay the court fees of the expertise. The only exception is the representation of intervener with one of the litigants.

There are defined the range of circumstances that cannot be as a subject of expertise in cases of protection of the author’s rights. It was found that questions to answer that are not required special knowledge of specialists in a particular field and (or) to answer this questions the court may receive or request information from the parties to the dispute, other members of civil process or from the relevant authorities and officials, cannot be subject of expertise.

It is concluded that in cases concerning the protection of copyrights specifics of the objects of copyright, which is also the object of judicial expertise necessitates the involvement as experts not only professionals in the field of intellectual property, but also professionals in the relevant fields, particularly in the field of literature etc.

Suggestions for optimizing civil procedural legislation of Ukraine in the appropriate context are done. In particular, in order to practice there will not a problems with the definition of the subject that is duty to pay the court fees of the expertise and in order not to limit the right of the persons involved in the case to apply for the appointment of expertise are offered to change amend ch. 2 art. 86 of Civil Procedural Code of Ukraine and put it as follows: «Funds to pay for forensic expertise have to pay a person involved in the case if this person to apply for expertise».

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**SOME COOPERATION AND LEGAL REGULATION ISSUES OF THE ACTIVITY OF FORENSIC SERVICE OF UKRAINE AND PRELIMINARY INVESTIGATION UNITS OF NATIONAL POLICE DURING POLICE REFORMS INTRODUCTION**

Relevance of the study explains the need to choose the most optimal way of Forensic Service of MIA of Ukraine reforms in cooperation with the departments of preliminary investigation.

The goal of the study is an analysis of the cooperation of Forensic Service and the investigative units, which based on the study and expert investigative practices and some normative acts regulating their joint activity.

According to the Law "On the national police " the Expert Service was not included to the police, and its personal became civil. So the territorial departments of Forensic Service don’t obey the police department on the ground, and their service relationships are built exclusively in the form of interaction.

Significance for the detection and investigation of crimes has a new Regulation on the Expert services of MIA, approved by Ministry of Internal Affairs on 03.11.2015 №1343, sketching out its main tasks and subordination.

Order of the Ministry of Internal Affairs from 03.11.2015 № 1339 "On approval of Instruction on the involvement of employees of the preliminary investigation police units and the Expert Service of the Ministry of Internal Affairs of Ukraine, experts’ participation in the crime scene search" has a great value in cooperation of Expert service with police departments.

Instruction defines the procedure for the involvement of employees of the Preliminary investigation police and Expert services using specialized mobile laboratory under preliminary investigation and the responsibilities and authorities of workers as specialists during the crime scene search.

Manual implies involvement of the forensic officers who joined the preliminary investigation police units in crime scene search and other investigative (detective) actions.

These innovations open up opportunities of the Expert service, including the improvement of forensic activities.

However, there are some issues that are not conducive to proper cooperation of the Expert Service with preliminary investigation units.

Firstly: the reduction of positions of forensic experts and transfer them to the preliminary investigation police units significantly increased the number of materials that are sent by preliminary investigation units to the territorial departments of Expert service, as special for fingerprint and trasological examinations that led to the violation of the terms of their conduct.

Secondly: there is not assessment mechanism for newly established forensic inspectors, which together with the lack of skills led to reducing the effectiveness of crime scene search.

Thus, the question of improving the quality of crime scene search and the reasons for violation the terms of conducting some types of expertise, require further study and appropriate corrective action.

It should be noted that the reform of Expert service together with police departments should be considered in the context of the overall reform of the entire forensic activities in the country.

Also, some institutional legal acts require revision regulating the activities of Expert service.

Consequently the comments of this article and suggestions will help to direct rule-making and practical activities aimed at reforming the Expert Service and the police departments to effective steps to ensure their cooperation.

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**THE CONCEPT AND PRINCIPLES OF LEGAL ADMINISTRATIVE STANDARDIZATION TO ENSURE THE ACTIVITY OF RESEARCH INSTITUTIONS OF MIA**

In the article reviewed the concept and principles of administrative and legal support standardization. With the development of technology and the transition to mass production and consumption of scientific and technical products was born a question of convey or output, its rapid repair and security for human technological development, environmental security. Therefore, the technical regulation (standardization) is intended to solve the issue through appropriate regulatory legal requirements for technical products.

So the standard is normative document based on consensus, adopted by a recognized organ that sets general and repeated use, rules, guidelines or characteristics about the activities or their results, and aims to achieve an optimum degree of order in a certain area, and standardization - is an activity to establish provisions for common and repeated use on existing or potential problems and aims to achieve an optimum degree of order in a given area.

The purpose of standardization in Ukraine is to ensure that objects Standardization its purpose; managing diversity, applicability, compatibility, interchangeability of objects of standardization; ensuring sustainable production through the application of recognized rules, guidelines and procedures; ensure protection of life and health; the rights and interests of consumers; ensure the safety of work; preserving the environment and saving all kinds of resources; elimination of technical barriers to trade and preventing their occurrence, support the development and international competitiveness of products.

Objects of standardization include: materials, components, equipment, systems, compatible; rules, procedures, functions, methods, activities or their results, including products, personnel, management system; requirements to terminology, symbols, packaging, marking, labeling and so on.

In our view the term “legal administrative” regulation in the field of standardization" should first consider the position of providing quality products and services to citizens and ensure the safety of these products, not in terms of improving product competitiveness as a tool for entrepreneurs.

That is, the administrative and legal regulation in the field of standardization should be defined as an activity permitted under applicable regulatory acts of state agencies focused on the impact of legal and administrative means to a scientific and technical activities to establish regulations, standards and requirements for their reuse to ensure regulation and ordering of technical production and quality assurance of products, works and services, and their safety for humans and the environment.

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**SPECIAL PROTECTION FEATURES FOR DOCUMENTS AGAINST FORGERY: FORENSIC SPECIFICATION**

In connection with the fast development and distribution of printing and office equipment, it’s became very easy to falsify many documents using modern printing, copying and other techniques.

Protecting of the documents from an imitation always was one of the major tasks in any society. The analysis of the publications of domestic and foreign scientists has shown that all of them exposed the separate aspects and there is no unitization of concept concerning the protection of documents from forgery, which would give a possibility to allow avoid ambiguous perception and expert mistakes.

Any means of protection created for implementation of this or that necessary to society. Defense facilities are multifunction objects that execute associate functions. Basic functions of defense facilities are protection of documents from an imitation, to identify them, expose an unauthorized division to the documents and inform of their origin and motion.

In addition, the means of defense must contain information about a producer and information, allowing conduct an independent control of the state, origin and motion of document, be the distinctive sign of authenticity of document, and also have sufficient stability from an imitation.

Special protective means of documents against forgery are: 1) special security features (holographic protective element, the protective tape, security fibers, etc.); 2 ) Specific materials used for the manufacture of a specific category of documents (special paper, paint and the like); 3) special manufacturing technology of documents that make it impossible to counterfeit (special design techniques, manufacturing, document finishing, etc.).

The concept of “special protection” in criminalistics is a synthesis, a collective character. These tools include: 1) special materials; 2) with enhanced security technology (from fakes) 3) security features.

The special materials include: 1) paper; 2) paint; 3) tools for pressing the film and lamination; 4) threads and more.

The special technology include: 1) protection of the stage design using special methods of layout and image processing; 2) high tech printing methods; 3) protection features by paper or other basis; 4) protection using special paint; 5) for additional finishing and finishing procedures after printing.

The term “special security” in forensic science can be defined as a mean designed to control unauthorized reproduction of the document by determining the authenticity and integrity of the composition or element comparison of eligibility criteria characteristic features visual, instrumental and other methods.

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CREATION THE TYPICAL INVESTIGATIVE SITUATIONS IN SPECIFIC FORENSIC TECHNIQUES

Переклад авторів.

The relevance of the problem of creation the typical investigative situations in specific forensic techniques due to the need to streamline the structure of these situations and use the situations for further select the most optimal algorithm of crime investigation.

Scientists largely determine the typical investigation of the situation as a set of data on the crime situation and the situation of its investigation. Discussing the creation of the typical investigative situations scholars view them as multiple category; emphasize the need to determine the close connection of typical situations that are composed in various stages of investigation of certain categories of crimes, with the process of building a separate forensic techniques that equips law enforcement recommendations to investigate these offenses. But scientists want not only to determine the typical investigative situation and offer it in a clear and accessible system to create a real opportunity to operate their practitioners wider. If we consider the specific investigation of the situation as a generalized description of the volume of information on events under investigation, which the investigator concludes with the criminal proceedings and the typical situation understood as a template, which should be imposed specific situation for its comparison with the typical, the task of scientists is to determine the optimal number different types of typical situations that would allow law enforcement officers to make the right choice.

However, the researchers point out the lack of a single, unified mechanism of formation sets specific situations in developing forensic methods. The results of our analysis of the views of scientists regarding typical situations prevailing in the investigation of injuries of varying severity as evidenced by the allocation of somewhat differing situations in individual methods to investigate the same or quite similar crimes. Some scientists suggest situations in which no description given awareness about some individual characteristics, and a set of data. This set of such complex situations does not cover all their options, and thus limits the user recommendations (investigator) on choosing a typical situation, the most similar to the one that emerged during the actual investigation. I must say that the whole content of typical situations comes down to awareness of the characteristics of the most significant events and circumstances the possibility of obtaining information from certain sources, what we can’t agree. In our view, correct, but not completely completed solution is scientists who build system situations because of their classification on the basis of the most significant circumstances.

But by itself the classification of finite situations does not solve the problem of choosing a typical situation that most aligns with the state, formed a separate investigation. In our view, the classification is based on simple (single) situations selected for various reasons, each of which applies to only one feature (for example, information about the offender) should be the basis for a more complex model situations (situational models). This will fix the problem of multiple typical situations to investigate crimes of this type. That is, by varying’s action, taken one from each group defined by some reason, you can create a significant number of more complex situations (models), one of which most matches the specific situation in separate proceedings. Accordingly, investigators from algorithms (search) and other actions designed to address every single situation after combining several of them in a separate situational model also unite, and the resulting set of actions will contribute effectively to the investigation in the present proceedings.

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**POLYGRAPH IN CRIMINAL PROCEEDING IN UKRAINE, PROCEDURAL AND FORENSIC REQUIREMENTS**

This is fairly new criminal proceedings for Ukraine, this kind of research has shown to be effective and at the same time the results are not recognized completely reliable. There is no common scientific basis that would eliminate doubts about the reliability of data obtained by polygraph. But we need to have a separate law that would regulate the procedure for the use of polygraph in Ukraine. Recognizing that at this stage of development of science and technology can’t create a technical device that would have recorded the veracity of the testimony, not to recognize the effectiveness of the polygraph in criminal proceedings. Results psychophysiological research undoubtedly facilitating the detection more effective combating of crime.

Preferably, the investigative nature of the criminal process in Ukraine under preliminary investigation is the need to establish reliable criminal procedural safeguards to prevent arbitrariness and bias on the part of the authorities during its implementation. The requirements of the law governing the criminal proceedings, consistent with moral norms, taking into account that a person, society, the state should be protected from criminal offenses. Morality is thus seen as a social institution that sets the criteria for admissibility required the use of forensic tools, including polygraph. The basic principles of criminal proceedings include the requirements of legality and appropriateness, the principles of public morality, which is a manifestation of the principles of justice.

There are long and methods of establishing the truth, the truth in criminal proceedings by testing. The requirement of the truth in criminal proceedings is manifested in the use of polygraph. Recognizing use polygraph testing, stress that the aim of this study can only establish a certain degree of probability, tested the veracity of answers to questions to meet the needs of criminal proceedings. Mandatory compliance with the voluntary consent of the test is to study and prevent the violation of other human rights.

Polygraph recognized psychophysiological kind of equipment that records the manifestation of physiological changes in the body during her emotional excitement. Such devices should not cause harm to human health, human life, the environment and be certified.

The proof in criminal proceedings is made, as the laws of logic and regulated by law. The risk of false or inaccurate knowledge may have negative legal and moral consequences. Consider unfair acceptable recognition results psychophysiological studies obtained using threats, violence, blackmail, extortion tested on a polygraph.

By forensic requirements refer reservation on the use of polygraph. Need preliminary medical examination the person offered to take a polygraph test on. Failure of the survey persons found insane, or those suffering from mental disorders, in a state of narcotic or alcoholic intoxication or under the influence of drugs, are in a state of extreme emotional disturbance (strong emotion, passion, frustration) etc. Using the polygraph as a forensic tool by members of the pre-trial investigation, prosecutors and judges, one should consider European standards of human rights in criminal justice.

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**THE MECHANISM OF TRACES APPEARING, SCIENTIFIC PERCEPTION DEVELOPMENT**

As is known, in forensic science mechanism of traces appearing is a system of trace-mappings appearing. This can be a result of physical, chemical, biological and other processes.

The perception and development of the mechanism of trace historically passed several stages:

In the first stage only the trace as a source of information mainly about offender and some of his actions during the crime attracted the attention of forensic. The definition of the track didn’t formulate, the mechanism of traces’ appearing wasn’t analyzed, traces were classified by traces-mapping objects. So, I. Yakimov divided all traces found at the crime scene into two groups: Human footprints and different tracks. The first he attributed footprints, fingers, teeth, nails, blood and seminal stains, droppings; to the second - traces of animal feet, wheels, tools, breaking, weapons, flammable substances and incendiary instruments, tracks counterfeiting. He changed this classification later by dividing "different tracks" on groups: animal tracks and traces of guns and drugs crime.

Forensics of the old Soviet times in the first two-volume textbook on Forensic (1935) proposed to divide traces of human (legs, fingers, teeth, blood stains, semen, hair), traces of the actions of firearms and guns, cracking of vehicle and other traces (traces of wear, dust and dirt, tobacco ashes and cigarette butts, stained with various substances). S. Potapov isolates traces of fingers, toes and other body parts, blood stains; damages on the body, traces of tools and traces of other origin (hooves, wheels, foot animals) and others.

The first definition of the trace proposed I. Yakimov, "trace is a mark of the object on something that allows us to understand its form or its purpose." On the track he distinguishes spot that allows you to have an idea about the only substance that has left him, as a part of the substance.

In 1935, for the first time the term "theory of the tracks" was used in the literature and in 1936 - the term "trasology."

The second stage of the scientific perception of the mechanism of appearing traces associated with the works S. Potapov about the theory of forensic identification, V. Shevchenko about scientific basis of the doctrine of the tracks, which he then called trasology and A. Vinberh about the basic principles of forensic examination.

Separation of traces in a separate category of objects needed to identify the creation of their classifications, which aren’t based on the type of traces-making object, but the quality of the trace or the mechanism of its formation. This definition was formulated by S. Potapov in 1945: traces – are "features which displayed on material objects causally related to an event being investigated. Traces can arise from people and certain subjects from acts of nature "[5]. Later V. Shevchenko praised this definition as the first attempt to clarify the meaning of the word "trace" as a forensic term.

According to scientists, the definition of S. Potapov indirectly contributed to the acceleration of development in forensic two concepts of trace: a wide (essentially domestic) and narrow (trasology) sense.

B. Shevchenko came to characteristics and classification the “trace” from the position to study the mechanism of formation the traces. He formulated the principles which laid down on trasology as a scientific theory and had a decisive influence on its development.

The third stage of the modern theory of the tracks began with clarifying some terms and concepts. The objects involved in the formation of the tracks, called trace-making and trace-receiving. The list was supplemented by another subject - matter of the trace. The trace concept clarified and developed [7, p. 16]. There were made some proposals to amend the classification tracks.

The study of traces continued and depended on the type of trace-making and trace-receiving objects and mechanisms of tracks.

The common stable feature, unifying all elements of the formation the tracks, while reflecting the dynamics of the process is the mechanism of traces. The mechanism of formation traces largely determines the basic regularities of proof.

The theoretical mechanism of tracks appearing is related equally to trasology, ballistics, forensic tools and various technics.

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**USAGE OF MICRO-OBJECTS DURING PRE-TRIAL INVESTIGATION OF CRIMES, COMMITTED BY CRIMINAL GROUPS AND ASSOCIATIONS**

The article deals with the usage of micro-objects during the pre-trial investigation of crimes committed by criminal groups and associations, and the value of the forensic results of microscopic research for the activity of the units of the National Police of Ukraine. Also article tells us about improvement of the investigators’ activity during the pre-trial investigation of crimes committed by organized criminal groups. The classification of microscopic objects and methods of fixation have been determined.

It’s essential that the priority of the National Police of Ukraine is ensuring and guarantee the constitutional rights of all citizens of our state, preventing criminal attacks, especially organized by criminal groups and associations and protect them from the acts of violence and fight against particularly dangerous crimes - murders, robberies and serious bodily harm, economic crimes, etc. It was noted that one of the main factors in law enforcement practices aimed at ensuring the implementation of these tasks is building a robust evidence for disclosure and investigation the crimes.

The purpose of the article is to provide the proposals for improving the investigator's activities on the use of micro-objects in the course of pre-trial investigation of criminal offenses committed by organized criminal groups and associations. It is noted that the investigators who carry out the pre-trial investigation of criminal offenses committed by organized criminal groups and associations should not ignore the more specific classification of microscopic objects, which allows them better understand the existing diversity of this kind of material sources and, as a result - to collect and research them more effectively and put the questions to the expert more correctly.

The attention is focused on the fact that during the microscopic research one should take into account the circumstances of the criminal offense, the nature and characteristics of the nature of objects. The author defines in detail how the species classification of microscopic objects constructed a simplified classification of species of microscopic objects. Propose appropriate guidelines for the identification of micro-at- trial examination.

Also, the authors identified ways of micro-fixing during the research; such as photographs, drawings, preparation of plans, schemes and so on. The withdrawal of microscopic objects was also taking into consideration. The need for compliance with the prohibition of mixing microscopic objects seized from various objects was described.

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**PSYCHOLOGICAL AND LINGUISTIC EXPERTISE IN ANTI-EXTREMISM CASES: THE PROBLEM OF CONDUCTING ANALYSIS OF THE STRATEGY OF DISCREDIT, REVISED**

A comprehensive psycho-linguistic expertise becomes increasingly popular in cases of verbal extremism in the Republic of Belarus. This examination is appointed in the investigation of such crimes (offenses) as incitement to racial, ethnic, religious or other social hatred or discord (art. 130 of the Criminal Code), the propaganda the aggression war (art. 123 of the Criminal Code), advocacy and (or) public demonstration , production and (or) distribution of Nazi symbols or paraphernalia (art. 17.10 of the Administrative Code), distribution, manufacturing, storage, transportation information products containing calls to extremist activity or promotes such activity (art. 17.11 of the Administrative Code). The investigation of such kind of cases determines the necessity of some investigative actions, and because of the difficulty of proving the subject - the mandatory appointment of forensic examinations. The aim of a comprehensive psycho-linguistic expertise is establishing all the circumstances and facts of relevance to the legal qualification of the statements (text materials) as the extremist.

This examination conducts in the State Committee of the forensic examinations of the Republic of Belarus, which was created in 2013. Due to the lack of its own methods for conducting a psycho-linguistic analysis of "extremist" texts the experts use foreign ones, adapting them to the national regulatory and legal acts, and taking into account the differences in linguistic codes of communication, mentality and social attitudes.

Experts’ assessment of conflict-speech products based on general principles contained in the "Methodology of forensic psycho-linguistic examination of materials on matters concerning combating extremism and terrorism", by O.V. Kukushkin, Y.A. Safonov, T.N. Sekerazh [6]. The purpose of the examination - to establish the presence or absence of such characteristics (features) in the material that are important for making a decision on the case, the main feature is the compliance or noncompliance of meaning of the material to the meanings, which are described in law as prohibited for public expression [6, p. 15].

Among the forbidden meanings (conventionally called it "extremist") according to the Law of the Republic of Belarus of January 4, 2007 № 203-Z "On counteraction to extremism" are:

- Incitement of racial, ethnic, religious or other social hatred or discord;

- Propaganda of exclusivity, superiority, inferiority of a person on the grounds of social, racial, national, religious, linguistic affiliation;

- Propaganda and public demonstration of Nazi symbols or paraphernalia;

- Appeals to violent change of the constitutional system and (or) the territorial integrity of the Republic of Belarus;

- Calls to seize and retain state power by unconstitutional means;

- Calls for the creation of armed formations;

- Calls for the implementation of terrorist activities;

- Calls for the organization and implementation of mass riots, acts of hooliganism and vandalism motivated by racial, ethnic, religious or linguistic affiliation;

- Calls for the obstruction of the lawful activity of state bodies and others.

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**THE PROBLEM OF BLADE SHARPENING ANGLE MEASUREMENT AND ANALISYS OF THE RESULTS**

The success of forensic research is largely depends on the existence of theoretical and methodological foundations that are the basis for practice. Therefore it is very important to research the main problems of methodologies and examination of knives.

An important part of scientific and methodological basis of knives’ examination is Research Methodology of knifes and structurally similar products (further - Methodology). However, as the practice shows this methodology require some revision.

The aim of the article is to define the problem of determining the angle sharpening blades, as one of the technical characteristics of bladed knives, and developing proposals for clarifying some conditions concerning the measurement of this technical specification.

The presence and degree of sharpening blades is determined by examination and experimentation. If the examination found that the blade has a factory sharpening angle which is 31 or more, the object consider to be not designed to cut causing damage and the test is not carried out. If the sharpening angle is 30 or less experimental cuts (at least five) should be conducted. Experimental cuts are made using 10-12 mm birch (or similar density) wood; a cut should be smooth without scoring, the blade should not be bending without obtuse.

However, according to the analysis, knives have blades with quite different form.

Analysis of formula of blade sharpening angle measurements shows a number of factors that affect the size of the error of calculations. In particular, the accuracy of the result depends on:

- Use the value of the largest thickness of the blade, which can vary significantly in different parts of the blade measuring;

- The use of the mean length of slopes without giving its calculation methods

- Practical aspects determine the length of the cutting edge, because the blade configuration complicates the installation of the measuring device (caliper) on the border of slopes opposite the cutting border, and measure with a ruler does not allow receiving accuracy more than 0.5mm.

The maximum relative error calculation the blade sharpening angle is 4.5% and it is in direct proportion to the size of the angle, so this method does not allow receiving a sufficient accuracy.

In other countries the question of blades sharpening differently normalized in the regulations. Thus, the Russian standard №51500-99 «Hunting knives and daggers" in contrast to the Methodology contains only the requirement that the blade should be sharpened - without specifying the sharpening angle (art. 4.9) and definition of a blade. (art. 3.21). Blade is a sharpened border of warhead knives that have an edge with an acute angle combination surfaces. An acute angle is an angle less than 90 . [7]

Thus, the determining factor in that standard is the existence of sharpening and its functionality (suitability for the application of cutting injury), not its angle. This approach avoids the measurements.

In order to approach research methods knives to practice some of its provisions should be updated.

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**THE PROBLEM OF ORGANIZATION THE FORENSIC PROVIDING DURING THE CRIME SCENE SEARCH IN CASE OF IMPROVISED EXPLOSIVE DEVICE**

Primary and immediate investigative procedure in any crime investigation, including terrorist attack, committed with the use of improvised explosive device (IED), should be the crime scene search. The set of evidence, collected during such inspection by devices, technology and methods of forensic techniques, is not only helps in detection of criminals, but also serves as a key element in the system of counter terrorism.

Discussing the problem of forensic providing for crime scene search in case of improvised explosive device detection the author takes notice of key objectives that have to be solved during this investigation, namely: providing security, studying and recording the conditions of crime scene investigation, detecting and extracting crime traces, establishing guilty person and obtaining necessary intelligence for maintaining further investigation actions and measures.

One of the topical issues, considered by the author, is IED destroying with military sappers’ assistance, that were detected during clearing the terrain of explosive devices. Following actions of the sappers can cause irreversible loss of crime traces – valuable retrieval and evidence-based information. This situation requires settling through interaction of all crime scene investigation team participants within technical-forensic provision of terrorist crime investigation.

To take timely and effective decision, permanent staff of the specialized crime scene investigation team has to know search methods and means as well, as master the art to localize and disarm explosive devices, also has to be aware of capabilities, resources and specifics of technical means that are being used.

Disposed without explosion IED should be subjected to inspection and preliminary investigation by the crime scene investigator for the case of fingerprints evidence, markings, inscriptions etc., should be taken picture of them from different directions and packed into hard container. Ensuring safety and integrity of the elements of IED after destructive exposure is the most important condition for its complete reconstruction and conducting investigation.

According to the author`s conclusions the main feature of technical-forensic providing for crime scene search in case of improvised explosive device detection is security measures at every stage, obligatory involvement of experts that have appropriate qualification in explosive ordnance disposal, also application of up-to-date means of forensic engineering.

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**THE MAIN FEATURES OF THE IMITATION OF THE DOCUMENTS. THE METHODS OF THEIR DETECTION.**

Every time of dealing with the document which certifies personality, is it necessary to know whether this document real or not. Is the appearance of a person, represented on a photo, original? So, it seems conservative operation, but in fact it is a difficult process, that requires not only an elementary attentiveness and certain cognitions about that there must be essential elements of real document and features of it falsification, imitation.

The verification of documents should include not only its study but also watching behavior of its bearer who can guard to more careful study of document, as well as personality of its proprietor.

An imitation can be partial or complete depending on an aim that is pursued at the imitation of documents, qualification and economic feasibilities of performer, an imitation can be partial or complete.

**Complete imitation of documents.**

An imitation will be complete, when all component of the document are recreated (paper, binding material and other), text and base-line printing, handwritten and typewritten filling of form, signatures of public servants, prints of the stamp and other essential elements.

The other method of complete imitation of documents is making copies. These counterfeited documents, as a rule, it is difficult to find out by sight, however making copies of documents well appears at application of the special technical equipment for verification of documents in an ultraviolet and infra-red ray and even at an insignificant increase.

**The partial imitation of the documents**

It is such type of imitation, when in the essential elements of real document was made an alteration, it could be an addition or replacement of some of its part. The choice of means of partial imitation depends not only on an aim of person that carries out an imitation but also from the features of counterfeited document (quality of paper of form, type of defense, properties of inks, quality of stamp ink and other).

A partial imitation of documents is the most widespread type of imitation. The reason is that for its realization doesn’t need difficult polyline equipment, as the alteration is made in existed form of real documents. Depending on essential elements which changed in the document, different method of imitation will be used. There are a few basic methods of partial imitation of documents.

**The mechanical erasure of the text.**

Mechanical erasure of text is an exception of the printed typo script or other essential elements of handwritten document, with the aim of his imitation. There are always tracks at this method of imitation.

**The Etching (discoloration) of the text.**

The exception of text can be carried out by the way of its chemical digestion, discoloration under the action of some preparations. It is visible in the removed light and in ultraviolet light.

**Finishing writing and corrections is in the handwritten text**

This imitation is applied, mainly, in those cases, when for the finished writing strokes, differ in thick from the strokes of basic text. The finished writing strokes and letters differ in a color and tint of inks.

**Replacement of folia in the document.**

The imitation of document is consists of replacement of some of its folia that on the maintenance undesirable for a criminal. It is visible at the removed light and in ultraviolet light.

**Replacement of photo in the document.**

Replacement of photo is one of the most widespread methods of imitation. To replace a photo in a document without tracks is practically impossible. In practice there were cases, when we met methods of imitation with complete replacement of photos or with partial replacement. At complete replacement all the photo hatches from document and at partial only its part that carries the image of face of proprietor of document (thus aim to save the fragments of prints of printing to the photo). For replacement of photo which was made in the computer printing there is a necessity to change a fully informative page. It is visible the light of ultraviolet light and at an increase in the removed light.

But, the absolutely exact imitation of document’s is impossible and thus even at the greatest quality of imitation the detailed analysis allows to reduce such deviations from in a document an original, that are sufficient for establishment of imitation.

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**THE PROBLEM OF PORTRAIT FORENSIC IDENTIFICATION USING VIDEO IMAGES**

The article deals with the current state and trends of the portrait forensic identification using video. The author stress the importance of the subject under study, as there is a small number of modern scientific works on the subject and it is wide use of video as for search operations, investigation, etc., and for fixing offenses. The author defines in detail the benefits of identification with help of video images here he attributes the following factors: a comparison between video images allows identify a person through its functional features; use video enables the image creation of two- and three-dimensional images.

The author emphasize the factors that expert should remember when working with video and, if necessary, explain the differences in their assessment of the signs. These include shooting conditions, the time of its implementation, angle shooting (shooting side or back); camouflage face with a hat and clothing (cap, scarf, etc.); shortness of fixing a moving object, video quality, through which holds video shooting; insufficient coverage or when a video clip object from a distance, the structure of the video is not accurately determine the quality and characteristics of appearance, lost small parts of the face.

The article describes all the stages of legal expertise in carrying out identification on the basis of appearance for the movie, and the peculiarities of each. The problem of experts’ cooperation, work under identification persons using video, are not regulated. The way of solving the problems. The article states that used to compare functional features have determined (calculated) identification of significance, so rarely used in practice, the more stressed the need to develop table identifying the importance of functional characteristics. In addition, noted that science and technology is not standing still. A new type of fixing is a digital recording. Analysis expert practice identification by video, made by the author, shows that a significant proportion of research facilities accounted for images obtained from cameras, which tend to have poor quality, which greatly complicates the subsequent identification of the person on the video.

As a conclusion to the article, the author emphasizes the importance of using functional features in comparative research and development table identifying the importance of functional features, offers ways to harmonize cooperation with experts, conducting computer expertise is not regulated.

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**GENERAL FEATURES AND NEED FOR THEIR DESCRIPTION IN COURSE OF SEPARATE EXAMINATION OF SIGNATURES**

General features are the characteristics that appear in the manuscript as a whole. The signatures and handwriting, as a kind of manuscript are similar in nature. The graphic features of signature are traditionally defined by system of handwriting features. The determination of general features of handwriting with large number of graphic signs allowed isolate a group of superior characteristics (typical for most signs of their large number). However, between handwriting and signatures, there are a number of differences. It happens because the alphabetic texts coming to study, unlike the signatures are much larger volume. The structure of signature includes a limited number of letters and strokes; through it’s not always possible to define general features which are typical for the majority of their constituents.

The analysis of the literature and expert practices indicate that, taking as a basis the handwriting system of identification features the experts use different approaches to define and describe some general features of signatures. This is due to false transfer of the system of identification features handwriting on research of signatures. It is not considered that the general features have to determine for the signature as a whole. The study of these characteristics, especially the characteristics of III group (reflecting the structural characteristics of movements), in practice conducting using average and specified performance, taking into account their manifestation in reordering parts signature. However, in these cases, feasibility to specify some features can be in doubt.

Consequently, compliance with existing recommendations on specification of some features on stage of separate study is not always appropriate. This actually leads to their withdrawal from a number of general features, as they are not mark the signature as a whole, but only some individual components. These features can later be classified as separate and are determined on a comparison between certain parameters of signatures and their components.

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**THE PROBLEM OF RESEARCH OF HUMAN REGIONAL HAIR IN JUDICIAL PRACTICE:** **REFERENCES FOR INTERPRETATION**

It is known that hair is one of the objects of investigation in criminal cases on disclosure of murders, thefts, sexual crimes, searching missing persons, road accidents and so on.

One of the key problems of hair research is establishing its regional identity and similarity or differences with compared objects.

In general, hair research is voluminous and continuous research, reliability of conclusion is depends on experience and skills of acquired expert [4].

Research and differentiation of the regional origin of human hair is widely reflected in the works of scholars.

An expert performing expertise in this area, exploring not only the hair on the human head, but the hair of other anatomical areas of the body. The results of diagnostic study in this research is based only on morphological characteristics of the objects, and therefore there is a need for major macro- and micro-morphological features of regional human hair as generalizing table.

It’s established that the hair from different anatomical parts of the body has a constant distinguishing features that use during the comparative studies. But the following circumstances could complicate to find out the area of body from which the hair came:

- Specific regional characteristics are not always clearly defined;

- Some specific features can be specific to different regional groups of human hair.

Hair from different anatomical areas of the body has not only peculiar certain morphological features, but some combination of these characteristics. Thus, during the study of regional human body hair one should to install a specific set of characteristic of morphological features, which give the possibility to establish the regional identity. This will allow to the expert to reduce his time for searching and identification the complex of the features peculiar to a specific group of hair, and simplify the differential diagnostic of its regional origin.

The analyzed information from scientific sources has been systematized in the table.

It’s possible to classify human hair for various types using the set of the features (with high probability), including defining part of the body, which derives that hair, head, face, limbs, body hair, pubic, armpit hair, eyebrows and eyelashes taking into consideration given table.

However, there are some types of hair that can’t be attributed to any of these hair types because they can come from so-called transitional areas of the body that are on the verge of its anatomical parts. It is difficult to identify the fragment of rather short hair and immature hair.

Of course, examination of the hair can’t identify the person, however, micro- and macroscopic research will be a good evidence to prove person’s innocence.

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**THE POSSIBILITY OF DETERMINATION OF THE DISTANCE SHOT BY GAS, GAS-PELLET, STARTER (Zoraki) PISTOLS AND REVOLVERS USING CARTRIDGES WITH PELLETS AND RUBBER BULLETS**

In this work are considered some theoretical and practical aspects to determine the distance of the shot (when shooting meal, gas, "traumatic" (licensed) Short-smooth cartridges with firearms and structurally similar to the device by its damage in human clothes, etc. This Special attention is paid extra tracks shots that do not always take into account legal experts to determine the distance of the shot, the size, shape and intensity in the way homogeneous deposition of metals (lead, copper, antimony).

This article begins by heading works devoted determine the distance and direction of the shot with firearms and structurally similar to its devices.

Recently, the forensic ballistic expertise is increasingly entering new objects of research, design features which allow you to fire cartridges filled with meal shell. In the trunks of such weapons is a divider (partition) of various designs primarily intended to prevent the carrying out of ammunition rounds if their combat and technical characteristics are similar in design features to gas cartridges. Shots of such weapons capable of causing severe penetrating injuries, especially at close range, and represent a threat to human health and life.

We used the results of experimental firing with a 9-millimeter pistol gas «Rohm» 735 and a 9-millimeter gas revolver «ME 900 SAM», design features which allow you to fire ammunition filled with meal. On the outer surface of parts of the gun is marking notation: «ROHM Made in Germany. Mod.735 »Super P 35 cal. 35 GR, and on the surfaces of the gas revolver - «ME 900 SAM», Made in Germany. In no rifling barrels weapon (smooth), but is wall thickness 1,7-2 mm and a height of about 2.5-3 mm in a metallic tide at the top of the center bore. And 9 mm "Fort 12R", "PM-R", "Zoraki 914", "Stalker".

In addition to expert trails metallization results of experiments using the "traumatic weapons and structurally similar to its devices" and cartridges (certified) it coincide with the experimental data to determine the distance of the shot, etc. obtained by firing the gas and "gas-meal weapons" (more will be covered in future articles devoted to the above mentioned issues.

Determine the maximum detection distance first soot (marginal distance of 50 cm), then homogeneous metal (limit range is 120 cm), which means that the distance necessary to determine in the range of 50-120 cm, which, in turn, eliminates the need for expensive experimental shooting from distances of 50 cm and 120 cm above provided three shots from each distance.

The study identified a set of features that characterize gunshot damage to cotton fabric, formed by shots from a gas pistol and revolver ammunition filled with multiple shell (meal) with a distance "focus" – 250 cm.

The possibility is shown and differentiation distance shot through the use of different features within the entire investigated range of distances. To reduce the error definition is recommended to differentiate, for distances "focus" - 100 cm – distance shots on the analysis of the complex characteristics: the presence of damage, soot, dust particles, topography deposits of lead and antimony; for distances of 100-250 cm – distance shots by analyzing complex features for distances up to 100 cm and analysis talus size meal.

When conducting experimental firing barrel pistol and a revolver were directed perpendicular to the plane of obstacles.

The results of the comparison established morphological and trace metal (square, color, intensity) of the investigational damage with the same signs and traces of experimental lesions suggest about the issues raised.

The above sequence of research in determining the distance of a shot from a gas pistol (revolver) depending on the expert experience and is the result of subjective evaluation expert topography metal deposits. Result quantify when determining the distance of the shot can be obtained using atomic absorption analysis described in the literature.

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**THE ISSUE OF IDENTEFICATION THE GUNSHOT RESIDUE (GSR) AFTER THE LAST WEAPON’S CLEANING**

Socio-economic changes, which occur in Ukraine recently, accompanied by quantitative and qualitative changes in the structure of the crime. In particular, the number of crimes committed with firearms. The problem of establishing the fact of using seized weapons, especially in the case of grave crimes is quite relevant.

One of the most common issues during the examination of the shots’ product which carries out by Odessa Scientific Research Forensic Centre is the next: "Is there were any shots since the last cleaning of the weapons?" (The question is concerning the time of the crime, but not the standard procedure). There is not experts’ general opinion on the criteria that are to be used to answer this question.

There are two main components of this question in terms of the theory of forensic identification materials, substances and products: diagnostic ("held shots or ...?") and situational ("... since the last cleaning?). And if for the part of diagnostic questions available sufficient research methods, the situational part hasn’t any clear algorithm of its study.

It is known that during the operation and storage of firearms cleaning and greasing are binding actions. If they do not held, then the processes of contamination and rust can lead to the inability to secure use of the weapons and the failure of its individual components. These processes are significantly accelerated during the shots because the shot products are the active chemical compounds.

The most effective way to remove firing products from weapons is its mechanical cleaning. The result of it is removing of large particles of soot containing products of combustion powder, capsule charge projectile friction against the barrel weapons. However, because of the not perfect flat metal surface the products share shot weapons in the form of microparticulates and layers can be remained. To eliminate their influence on the metal parts of weapons carried lubrication cleansing of parts with a certain brand of oils with special impurities that enter into chemical interaction with active components of GSR and significantly slow down the process of corrosion.

In Odessa Scientific Forensic Research Center have been held the study of 60 samples of different weapons, which came for the shooting in order to obtain or renew an approval for its use, as well as standard-issue firearms from units of the Interior Ministry of Ukraine.

Analysis of the results of the research came to the next conclusions.

During the morphological studies found a clear line on the number of layers of swabs before and after firing a weapon, although in swabs from automatic weapons of rifle after shots the number of particles of burnt gunpowder is very small; but after using bullets "Flaubert" there is only snuff.

The elemental composition research showed increasing intensity peaks metals, but for each of the weapons types they had a different intensity.

Holding chromatographic studies revealed the presence of diphenylamine on samples of weapons, where a charge is applied nitrocellulose powder. However, diphenylamine was detected even before the shots (5% sample mode of "scan" and 22% - in the mode of "SIM"). Thus the most important area of diphenylamine peaks is typical after the shot of sawed-off shotguns and hunting, and less typical - for automatic weapons.

Research by thin layer chromatography showed reduction percentage of samples containing traces of petroleum oils (from 92% to shooting weapon to 8% after the shots) however, this method can’t fully indicate the presence or absence of GSB after the last cleaning. The presence in swabs only the traces of diphenylamine could to find out the fact of shot with using a nitrocellulose gunpowder charge. However, due to the high sensitivity of chromatographic methods diphenylamine could be found in case of poor cleaning weapons.

Thus, the finding of the GSR after the last cleaning weapons, based only on the results obtained from the use of modern highly sensitive analytical equipment can’t be categorical because of the existence of the possibility of poor cleaning weapons.

Only the morphological study of swabs of bore weapons, which confirmed the results obtained in the present highly sensitive analytical equipment, gives reason to conclude the presence of GSR after the last cleaning weapons. However, the categorical conclusion is advisable after comparing these results with studies swabs after experimental shooting weapons.

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**THE PROBLEM OF USING SKELETON CORPSES TO FIND OUT PRESCRIPTION BURIAL TECHNIQUE AND EXPERT TACTIC REVISITED**

World experience of skeletonized corpses study shows that the solution to a question of prescription of corpse burying is a quite difficult task that requires a complex approach. Skeletal remains are found usually incidentally at various excavations. More rarely, their exhumation can be scheduled, for example, if in the process of crime investigation the information of corpse location cover-up is know.

When different digging machines are used, there is the possibility of reallocating of skeletal remains or single bones towards the surroundings as well as their anatomical location should be kept in mind, and also various damages to bones and so on are possible. Because of these reasons, it is totally unacceptable to raise skeletal remains using earthmovers and other similar mechanisms. Exhumation of the found skeletal remains should be performed manually, gently spading the soil, carefully inspected and any findings should be recorded (by the example of archaeological excavations).

Especially important is to follow this rule in cases when the subject of the exhumation is a group burial (a burial of two or more corpses).

Identification of prescription of death coming after skeletal remains is allied to the appellation of skeletizing. The latter, in turn, depends on a set of conditions that are related directly to a human body state up to the time of his death, as well as to environmental conditions.

The first category includes a person's age, character and disease duration, cause of death, type of medical aid, degree of development of the subcutaneous fat layer and others.

The second category includes time of death, climate, type of burial (stay) - in the ground, water, in the open air; type of soil (humus, sand, loam), its morphological and physics-chemical properties (acidity, humidity, temperature); burial depth, method and type of burial (in an eternity box, without an eternity box, in clothes, without clothes, single or mass) and others.

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**SEARCH AND FILTER THE INFORMATION LOCATED ON DIGITAL MEDIA**

The offenders usually try to confuse the investigation or cover up wrongdoing. There is no exception in the scope of computers (PCs). Offenders are trying to destroy information that confirms their acts by removing it from the digital media PC.

However, the search for information on digital media is essential to investigate computer crimes.

The idea that after delete the information from the disk (digital media) all the data removes without possibility of recovery is false.

The basic principles of saving files to disk give the possibility to store information on digital media.

For efficient use of space information about the file and its contents is stored on disk in different places. The CD is a table which contains information about the files - file names, directory names (file path), the creation or modification of files and, most importantly, information about where in the drive is the contents of each file (where the start and where the end of file). The Windows operating system supports two file systems: FAT and NTFS. A large amount of information about files stored it in FAT or MFT, although some information about the structure of files and folders can be in other places of the disc.

When you delete a file from the table the information about file name, directory structure and physical location of the file on disk disappear. But the undamaged file remains on the disk till another file replaces it.

The same happens when you format digital media.

In other words, the operation of delete and format affect file table but not the information itself on disk. Accordingly, in case of fast formatting drives under any operating system or full format under OS Windows XP (or earlier versions on Windows) the information can be effectively restored. The most important is to start a recovery before the information is overwritten by another file or operating system. Disc after full format under Windows Vista or a later version of Windows generally can’t be restored.

To restore files a computer program R-Studio (developed by R-Tools Technology Inc. using technology IntelligentScan) is usually used. This program allows you to recover files even from damaged file systems or from digital media sections that have been reformatted to the other file system.

There are two methods to restore files that haven’t been overwritten. In all recovery programs use either one or both of them.

The first method is carried restore files by analyzing information about files and folders. This method is used the first in the recovery program information. In case of its success, there is not only files with original names, routes, marks the date and time are restores but the information itself. If the file system disk isn’t damaged seriously, it is likely to be able to restore completely the folder structure and files. In case of serious damage of file system, this method can’t reproduce the complete folder structure. In this case, the restored files will be stored in folders with names assigned to them virtual.

The second method involves scanning recover files of known file types (file search for signatures).

Search files signatures are conducted in case of the first method failed to achieve the desired result. This method allows you to recover more data, but it can’t get the original file names, mark the date and time or a complete folder structure and files on the disk.

Using of special signature allows recovering files of a certain type in case of partially or completely missing (corrupt) information on the directory structure and file names.

The step of restore of the deleted information is the basis for its finding.

For search we use two methods: direct search or index search using machines.

As a rule the direct search is largely ineffective, because it not only takes quite a lot of time, but also requires re-scanning every file to a new key sequence (and each new sequence of doubles, triples and more time spent searching for information).

The second method involves the use of information search indexing machine which scans all files containing the wanted text. Creating an index depends on the amount of processed information and can last from several seconds to several hours. After creating the index, you can immediately search for the information on the key sequences.

In some cases there is no need to restore deleted or encrypted information. It’s enough to prove its presence in the target digital media.

To sum up, it should outline the following key findings:

- Information search prior assessment of structured information of its recovery, physical capacity storage medium for recovery. For restoring data is used two methods: analysis of information about files and folders and scan for known file types (file search for signatures);

- For search there is using two methods: direct search or index search using machines.

- Research on recovery and information retrieval usually require large expenditures hardware resources calculation and continuous long study.

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**INNOVATIVE TECHNOLOGIES IN FORENSIC: 3D SCANNERS DURING CRIME SCENE SEARCH**

The use of technical means occupies a prominent place in the detection and crimes investigation. These products are widely used for identifying, recording, removal, storage, processing trace information prior research and, of course, conducting examinations.

Traditionally during crime scene search the investigators, forensics and other law enforcement officials use common tools: tape tonnage, photo, video cameras, tachometers, etc. However, documenting the scene of the situation requires not only speed but also precision. However, taking into consideration the amount of work at the crime scene and its peculiarity (small space, limited time, etc.) these tasks associated with certain difficulties.

To conduct crime scene search and solve all the problems effectively can help the innovative scientific and technological means.

The main innovations which used during crime scene search are: 3D laser scanners, which allow you to document events in a comprehensive manner unlike traditional instruments.

In general, 3D laser scanning is a coverage process of million points of certain real environment (3D point cloud), allowing it to create a virtual model. Point clouds can be used for accurate, realistic 3D computer graphics model which has a wide range of applications (investigation of crimes, accidents, fire, etc.).

Laser scanners on high level can measure and capture almost all the details of the situation at the scene. Information collected by laser scanning, is much more accurate and complete compared with information collected through tape, sketches, tachometer. High performance and compact of laser scanner allow investigators to copy the scene quickly and completely. Recording the scene is performed in real time, and then using specially designed computer programs get detailed information about each subject.

Processing results of laser scans with a computer program allows you to build photo-realistic 3D model of the scene. Create a color three-dimensional model allows to illustrate the location and movement of participants, strengthening the evidence base.

Nowadays, 3D technology successfully use abroad (visualization facilities, a crime scene search from a certain point, the analysis of blood, fingerprints, ballistic examination, accident reconstruction, etc.).

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**LEGAL DESCRIPTION OF THE WAYS OF THE VEHICLE MISAPPROPRIATION**

The well-known social, political and economic instability in Ukraine (such as anti-terrorist operation in the East, internal migration etc.) caused some crime increasing. One of the most widespread crimes is misappropriation of vehicles.

The adoption of the Criminal Code of Ukraine in 2001 marked the introduction of significant changes in the legal regulation of criminal liability for misappropriation of vehicle (the Criminal Code of Ukraine there is an independent chapter XI «Crimes against traffic safety and transport operation " have significantly changed some of the aggravating circumstances of this crime, etc.). But, the question of the responsibility for committing this type of crime still remained to be unresolved.

The peculiarity of these crimes is that it is a way of commission determines the nature and extent of socially dangerous acts. In note 1, art. 289 of Criminal Code of Ukraine methods of vehicle misappropriation outlined rather abstract: under the misappropriation of vehicle should be understood "the act, which committed intentionally, this is illegal seizure of the vehicle using any method with any purpose against the will of owner or user."

Plenum of the Supreme Court of Ukraine provides more detailed interpretation methods misappropriation of vehicle.

Overall ways of misappropriation of vehicle can be classified in several different scenarios regarding the victim (the owner, legitimate user, parking guard and others). In particular, the definition of "against their will" may include several methods of committing this type of crime:

1) Connected with ignorance of the will of the victim (this method is the highest percentage among the ways of misappropriation of vehicle);

2) Connected with suppression of the will of the victim;

3) The misappropriation of vehicle connected with fraud or abuse of the will of the victim.

Proper identification of the method of vehicle misappropriation is important for the qualification of the crime. However, the legal definition of vehicle misappropriation, which provided application 1 to the notes of article 289 of Criminal Code of Ukraine does not include all the possible ways they occurred, and therefore it should be added the words "or controlling the vehicle."

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**S. Bychkov**, *chief expert*

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**PROBLEMS DURING THE RESEARCH OF SOME TYPES OF MOBILE PHONES (SMARTPHONES)**

For full and qualitative study of mobile phones, experts need to use specialized software. Most of these programs using their own algorithms can create a copy (image) investigational device. In most cases these programs have tools for creating and processing two types of images - the logical (file system copy content) and physical (a copy of the complete contents of the device’s memory), investigate the contents of memory cards, SIM-cards and more.

While the software working with mobile devices eventually improved, problems of the research mobile is not only to support the program of the investigational device, it can also consist in protection mobile phone or tablet by using password protection or graphic key.

In many cases, a study of this object is impossible or narrows to study its memory card or SIM-card (if available), because the software must obtain «permission» by synchronization (between the mobile phone and computer) password protection or «graphic key» do not allow this process.

Over time, this problem becomes more acute and its solution is important for a quality and complete investigation.

To overcome this problem it has been proposed methods analyzed in the article, which can be divided into destructive and non-destructive. The methods that should be used depend on the type of operating system and model of the device.

After analyzing the methods which possible to conduct a full investigation on the example of mobile devices that are based on modern operating systems, it can be concluded that the technological development of mobile devices is directly proportional to the development of software component, the main purpose of that is to ensure the privacy and security of user’s data, prevent their loss, damage or unauthorized access.

This criteria in some cases may be a problem complicating the study of mobile devices, making it difficult, because access to the data necessary to overcome device protection methods, which in turn differ in their severity and duration, and some of them need to change the properties of the device, or even its destruction.

**V. Sezonov,** senior forensic examiner of the Kharkiv Scientific Research Forensic Centre of MIA of Ukraine.

**DEVELOPMENT OF THE METHODOLOGY OF FORENSIC EXAMINATION OF VINS AND AND VEHICLE REGISTRATION DOCUMENTS**

Due to a great spread of offenses related to misappropriation of vehicles and growing professionalism of criminals, the evidence obtained through the forensics of vehicle identification numbers and their accompanying documents becomes increasingly important.

The task of preventing the illegal circulation of vehicles is solved with the help of a forensic expert who examines the authenticity of identification numbers of parts of vehicles and their accompanying documents in the course of the registration operation in territorial service centers of the Ministry of Internal Affairs of Ukraine.

Currently, there is no registered methodology for the forensics of vehicle numbers identification and their accompanying documents. Specialists of the expert service of the Ministry of internal Affairs of Ukraine are guided by the experience acquired in their work, independently improve their skills, exchange of the experience with other staff of expert divisions.

The importance and need for the developed and approved methodology of vehicle forensics is evident. The legislative standards regulating the algorithm of this type of research should also be improved.

To formalize the notions of the “inspection of vehicle identification numbers”, “vehicle forensics”, “forensic enquiry” is one of the main, not yet a single challenge to overcome in the algorithm of this type of research.

Methods used for forensic enquiry and examination of vehicles should be improved along with the development of vehicle technologies, documents and innovations in other fields of knowledge, which can be involved in addressing the problems of the forensics.

**S.V. Danets,** *Head of the department of the Kharkiv Scientific Research Forensic Centre of the MIA of Ukraine*

**DIGITAL VIDEO RECORDS AS THE SOURCE FOR INITIAL DATA IN AN AUTO TECHNICAL RESEARCH**

This article describes a method of determining the speed of the vehicles on the digital video recorder, which is being implemented and improved in Kharkiv scientific research forensic expert Centre of the Ministry of Internal Affairs of Ukraine during the auto-technical researches.

Nowadays, the technical tools, which can record the movement of the vehicles during the accidents, are very popular. Using data about the circumstances of the accident, received from technical means, will provide an opportunity to receive objective input data for performance auto-technical expert studies.

Due to its ease of use and relative affordability is the most common means specified digital video recorder.

The Purpose is to analyze the possibility of using data from the digital video recorder to record inquiries accident. Forming the basis for further development of techniques that will establish objective source data used in auto-technical studies.

Using information from digital video recorder during auto-technical examination outline the following issues:

1. The need to develop a method of processing data from the digital video recorder to establish parameters of movement of the vehicle.

2. The need to determine the applicability of data digital video recorder to establish the speed (and subsequently, deceleration or acceleration, location coordinates of the road);

3. The need to develop a methodology for setting the parameters of movement of the vehicle according to digital video recorder.

Modern automatic systems, including such as digital video recorders, allows to investigate the circumstances of the accident at the various stages. Including yield space-dynamic characteristics of vehicle movement, such as speed, confirming the practical activities of experts Kharkiv scientific research forensic expert center of the Ministry of Internal Affairs of Ukraine. But there are some problems in the implementation of automatic technologies in auto-technical examinations conducted in Ukraine since the accident investigation for their help just started implemented. There is no experience of such studies and their methodologies.

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*of the MIA of Ukraine*

**SOME ASPECTS OF FORENSIC RESEARCH OF TRANSPORT COLLISIONS IN TRAFFIC ACCIDENTS**

The article clarify the mechanism of the vehicle collision that require additional research if the driver, who created a danger, had the technical ability to stop the car before the point of collision.

According to the guidelines to implement the forensic examination of traffic accidents technically possible to prevent collision in most cases determined by comparing the distance from the collision of the vehicle, whose driver had a preference for movement in the time of danger in traffic, with the distance needed to stop it in terms event. Opinion that the driver had the technical ability to prevent collision braking, mainly possibly reach, provided that the distance from the collision to the vehicle at the moment of danger, within the distance required to stop it.

But expert practice has some cases in which even under the above conditions opinion on the technical possibility to prevent the collision is just the opposite. In these cases the collision mechanism needs further study.

For this case, the author of the work done by analyzing the mechanism of collision of vehicles at the stage of convergence, where there is a need for additional research for the correct conclusions about the technical possibility to prevent the collision the driver for which was created danger.

Thus, on the basis of the study, the expert concluded that the absence of the driver technically possible to prevent the collision even if the timely application of braking and traffic at speeds most acceptable in terms of the visibility of the road.

Summing up the results of the analytical work, it should be noted that during the analysis of complex types of collisions of vehicles in the expert there need for additional (more detailed) investigation of the mechanism of traffic situations. After all, only the results of a detailed investigation of the nature of the rapprochement of vehicles at certain stages can reach the maximum reasonable conclusions that will provide an objective assessment of the actions of participants of the accident.

The article presents the use in research of computer software CARAT-3.

The use of experts (in the analysis of collisions of vehicles) such "tools" as computer simulation program CARAT-3 in practice provides significant advantages, as it allows to significantly reduce the process of research and provides visibility (illustrative) results.

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**CHOICE OF SAFE LATERAL SPACING DURING THE RESEARCH OF CAR MANEUVER**

This article focuses on the analysis of complex traffic situations during expert research of vehicle maneuvers. It is about addressing the issue of the presence or absence of the driver capability to prevent a traffic accident by applying the maneuver.

The author noted that in deciding on the presence or absence of the driver of the vehicle technical capability to prevent a traffic accident by applying maneuver expert compares two values. One of these values is determined by calculation. The examiner must determine the magnitude of the deviation of the cross or transverse displacement of the vehicle lane to determine the second value.

In turn, the transverse deflection or lateral displacement vehicle lane consist of two parts, as shown in picture 1. The first part of the transverse or lateral displacement deviation of the vehicle strip (mutual overlap of the vehicle and obstacles) or graphical easily determined analytically. In determining the second part (the safe side interval) used empirical formulas based on studies of 60-70 years of the last century. This unique approach to determining the safe side of the interval is not available, that is a definite problem with the expert study of traffic situations related to maneuver the vehicle.

In addition, the author noted that the traditional approach to defining the safe side of the interval (lateral distance between the front of the vehicle and the obstacle) can not be applied in all cases, which under certain conditions can lead to false conclusions, as shown in Figure 2. This is the second issue of the expert study of traffic situations related to maneuver the vehicle as defined by the author.

Thus, the author addressed the real problems of expert research of traffic situations related to maneuver the vehicle, and the ways of their solution.

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**PROF. S. MATVIIV ONE OF THE FOUNDERS OF ODESSA CABINET OF FORENSIC EXPERTISE (DEDICATED TO 135 BIRTHDAY ANNIVERSARY)**

October 4 (September 22) this year marks the 135th anniversary of the birth of the famous scientist-criminalist, doctor of medicine, Professor S. Matviiv - one of the pioneers of domestic and world criminalistics in the field of forensic ballistics.

Sergiy Mykolaiovych Matviiv was born in 1881 in Moscow.

After graduation from the University during the year S.Matviiv taught math, physics and natural history in the Novobuzhska Teachers' Gymnasium. In autumn 1904 he entered the medical faculty of the university.

In 1908, after passing the tests, he carried the motion of the Odessa zemstvo to work as a doctor. The young doctor had the opportunity to participate in the elimination of epidemics of cholera and typhus in Odessa district during the year of his work.

In May 1909, the district doctor S. Matviiv, with a year experience of medical practice, passed the exams at the medical faculty of the Kharkiv Imperial University successfully and, according to the decision of the Kharkiv state medical executive commission, he was awarded the degree of a doctor. Next two years, S. Matviiv worked in the Tiraspol region, occupying the position of reserve doctor, and then an epidemic doctor at the Tiraspol city government and simultaneously taught natural sciences in the Tiraspol industrial gymnasium.

In March 1910, S. Matviiv was appointed as a freelance laboratory assistant at the Department of Physiology of Chemistry of the Medical Faculty of Novorossiysk University. In August 1911, by decision of the Pedagogical Council of the Odessa Higher Women's Courses, he was elected to the post of assistant at the Department of Medical Chemistry, where he worked part-time until May 1913. In early 1913, S .Matviiv expressed a desire to work in this institution.

Having passed theoretical and practical training in the field of criminalistics and forensic expertise, on January 1 (14), 1914 S. Matviiv was appointed, as an assistant to the manager of the cabinet of scientific and forensic examinations under the prosecutor of the Odessa Trial Chamber and concurrently as a head of the forensic identification department.

The main duties of S. Matviiv as a head of the forensic identification department were judicial ballistics, judicial handwriting, forensic medicine, and also fingerprint studies, to which he paid particular attention.

S. Matviiv continued to combine forensic activity with scientific and pedagogical work.

After the October Revolution of 1917, S. Matviiv worked as a teacher of building hygiene in the Odessa Agricultural Hydraulic Engineering College (1918-1920), and also as a senior assistant at the Department of Physiological Chemistry of the Medical Faculty of Novorossiysk University (1920-1923).

The lectures given by S. Matviiv in these educational institutions were mainly devoted to forensic activity and, in particular, to the research of physical evidence.

His scientific works published in 1925-1937 (about 30 articles in Ukrainian, Russian and German) were devoted to forensic science and forensic examination. They mainly dealt with the problems of handwriting and writing, fingerprinting and, especially, ballistics in the practice of investigating crimes.

The most popular works of S. Matviiv are the studies of broken and riddled glasses. He identified the signs, which made it possible to determine the direction of the shot or strike.

The scientist was the first in domestic and world practice to suggest using deformed bullets fired from the cutoff to identify firearms. He was the first to develop a technique for the use of coring traces for identification purposes when establishing the mutual affiliation of the bullet to the sleeve. S. Matviiv also was the first to suggest using a gelatinous mass of film for the practice of rolling bullets in order to obtain a display of traces from the rifles of the barrel of a firearm in the form of deploying a bullet circle into a straight line. He designed a device for rolling bullets, which greatly simplified the conduct of identification studies.

On August 25, 1937, the heart of Sergiy Matviiv ceased to beat. He was only 56 years old. He was buried in Odessa, where he lived his entire adult life.