Y. B. Berehovets*, the chief forensic expert of*
Kharkiv Scientific Research Forensic Center
of the MIA of Ukraine

THE ROLE OF THE OBLIGATORY FINGERPRINTING OF THE POPULATION IN SOLVING A CRIME AND IDENTIFYING THE PERSONS OF UNIDENTIFIED BODIES

Keywords: citizens' fingerprinting, fingerprint registration, identification, crimes solving.

Formation and development of a modern Ukrainian society and globalization of scientific and technological progress are current issues, which arise with regard to ensuring of science and technology attainment implementation in the practice of investigation and solving crimes, in particular crime prevention. Modern crime has a transnational character, it is organized enough and professional, which under such conditions, poses a danger not only to the national interests of an individual state, but also to the entire international community. The high technical equipment of criminal groups, the possession of the latest forms and methods of confrontation with police complicates, and sometimes eliminates the identification of features with them. Therefore, modern fingerprinting is important for the investigation and solving crimes.

Today in our country the period of reforms and improvement of legislation is continuing, therefore the issue of the fingerprinting management is on the change stage, acceptance of a new Instruction, which regulates functioning of the criminal record including fingerprinting record. However, unfortunately, the institute of obligatory fingerprinting has not been introduced yet.

It should be noted that positive changes have already begun to occur. Implementation of the latest technologies has also concerned Ukraine. A new qualitative impulse in the process of personal identification with the help of fingerprint information was done using biometric (including fingerprinting) information in the production of personal identification documents. It refers

introducing biometric passports – documents with an electronic chip, where the data of the passport owner will be stored.

The mentioned tendency was reflected during the transition to a new level of protection technology of the specified documents for the prevention of terrorist acts commission.

The issue of the adoption of appropriate regulatory legal acts, laws at the legislative level that regulate the general fingerprinting of the population of Ukraine for further solving crimes and the identification of unidentified bodies is considered in the article.

Gradual replacement of old passports for travel abroad, possible implementation of new electronic internal documents, biometric registration of persons entering the territory of the country, which will provide new opportunities for identification of unidentified bodies of prematurely deceased, victims of crimes, natural disasters, man-made disasters, persons who due to their physical or mental condition can not report about themselves.

Such experience of organization and conducting fingerprinting management can also be used in similar activities to implement new person identification technologies, such as the identification of appearance, the structure of the iris or the DNA molecule, which is more relevant today.

Therefore, today our legislators need to adopt a law on general mandatory fingerprinting and sampling of DNA profiles examples in the population of Ukraine, thereby replenishing the existing fingerprinting array and creating a single database of the DNA profile samples, in connection with the situation in the country and all over the world for quick solving crimes, and effective counter-terrorism.

In our view, conducting a general fingerprinting management will be correspond to the objectives of creating a centralized, single, simple system aimed at combating crime, which appointed to ensure adequate to existing threats protection level of the state and society .

A. F. Volobuiev, *doctor of law, professor,*
professor of criminal law and forensic Department
of Donetsk Law Institute of the MIA of Ukraine

POLYGRAPH: TECHNICAL AND CRIMINALISTIC METHOD OF DETECTION AND RECORDING OF EVIDENCE OR AN EXPERT RESEARCH INSTRUMENT?

Keywords: polygraph, research, special knowledge, examination, proofs.

The article defines the essence of psychophysiological person research using a polygraph in criminal proceedings and a possibility of using his results in evidence. On this basis, the following conclusions are made:

1) a polygraph is a technical device for detecting and recording human physiological reactions to certain information that needs to be evaluated by a specialist in the field of psychophysiology;

2) when conducting a person's diagnosis using the polygraph to obtain a reliable result, it is necessary to completely exclude the possibility of influencing the subject of the third party stimulus (a street noise, conversations in the next room, sounds in the corridor, etc.);

3) a specialist who conducts person diagnosis using a polygraph must have an appropriate level of training in the field of psychophysiology – the basic higher psychological education and specialized training in the use of a polygraph in psychological research;

4) realization in criminal proceedings a psychophysiological study of a person with using a polygraph is possible only in the form of forensic psychophysiological examination;

5) psychophysiological examination can be conducted in criminal proceedings both initiated by the prosecution party and initiated by the defense party to solve the following main tasks:

- establishment of psychophysiological reactions of a person which may be indications of implication or noninvolvement in a crime;

- establishment of psychophysiological reactions of a person which may be indications of possession or non-possession of information on particular circumstances of a crime;

- establishment of psychophysiological reactions of the person which may be signs of the leader of a criminal group;

- establishment of psychophysiological reactions of a person which may be self-denial signs in the commission of a crime.

6) psychophysiological examination is rather complex research aimed to the study of such a delicate matter as the human psyche, it must be carefully prepared for the petition formulation for an investigating judge.

The conclusions of the psychophysiological examination state the presence of person psychophysiological reactions, which can be assessed both in terms of prosecution and in terms of defense. But these conclusions are always of a certain degree of probability and should be assessed in conjunction with other evidence in criminal proceedings.

Preparation of a psychophysiological examination requires considerable time and effort, and it is simply impossible to do without prior consultation with involved expert (to discuss and agree on virtually all elements of the preparatory activities).

R. O. Huzikov, *chief forensic expert*
of Luhansk Scientific Research Forensic
Center of MIA of Ukraine

PROBLEM ISSUES AND PECULIARITIES OF HOMEMADE FIREARMS RESEARCH

Key words: improvised weapon, safety rules, forensic examination, identification research.

The main problem that arose during the research concerned the solving of the identification issue.

Was the shell shot from the given object structurally similar to a homemade revolver?

After the experimental shooting from the homemade weapon, such peculiarities were revealed: the traces on the bottom of the shells were less informative when researching the shells using the microscope "MS-1", at 4-8-fold magnification (artificial illumination, obliquely directed).

Traces of charging in the form of tracks, which were revealed on the shell body from the neck to the base on some shells, were feebly marked or absent.

The firing pin on the shell casing was reflected chaotically through the disalignment of axis of the bore with the frame and trigger and firing mechanism, and its not dense closing on each of experimental shells.

Due to its constructive peculiarities, traces of chamber walls defects did not form a single track complex.

Ejection traces were not available in a detailed study. Shells extraction take place manually.

Therefore, on this basis, it can be argued, that the study feature of the above described pattern is reflected in the analysis of the design, the presence of certain details and the order of their interaction, which is reflected in the conclusion about the purpose of the object.

Also, the problem with the improvised of weapon study is that it sometimes comes to the study in a loaded state. And the fact that the shot uses an electric ignitor, did not allow to discharge the sample provided for research safely. The experimental firing was conducted using an installation for proof shooting at a distance and with the help of electric ignition in the form of wire with switch and plug, in order to solve this problem and further research in accordance with paragraph 4.5.3 [3].

The peculiarity of the investigated object was reflected in a rather unusual and rarely found construction in the form of an electric method of ignition. And its practical use in experimental firing following safety technique.

Improvised firearm is generally individual, constructionally and technologically different which can be made either by a self-made method with the help of improvised hand tools, or by industrial equipment or parts of firearms. These peculiarities make it difficult to study of such weapons. A small practical experience in identifying research on improvised firearms and the lack of research in this area is that area of scientific and practical activity, which needs considerable attention.

V. V. Demidova, *adjunct of the criminalistics, forensic and psychiatry department of the Dnipropetrovsk State University of Internal Affairs*

INTERACTION FEATURES OF THE INVESTIGATOR WITH OTHER SUBDIVISIONS DURING THE CRIMES RELATED TO ANIMAL CRUELTY INVESTIGATION

Key words: investigator, operational subdivision, expert, specialist, treatment of animals, investigative (search) activities.

In the general sense, under the investigator interaction with other bodies, it is necessary to understand the investigator joint activity, the operational and forensic subdivisions in the development and implementation actions, related to complex use of procedural, investigatory, technological and criminalistic activities for the purpose of successful crime solving, perpetrators determination and revealing the circumstances that contributed to the crime commission and taking measures to eliminate them. The definition of "interaction" is closely linked with the term "organization", which means the process and result of socio-cultural phenomena ordering, as well as the establishment of links between equivalent units that perform qualitatively diverse functions.

Between pre-trial investigation bodies and operational subdivisions there are certain legal relations, which are envisaged by the legislation of Ukraine, in particular, the Criminal Procedure Code and departmental normative legal acts. So, according to the Art. 38 of the CPC of Ukraine the pre-trial investigation is conducted by the investigative body of pre-trial investigation alone or by the investigation team.

The investigator interaction with the operational subdivisions is the main source of the information obtaining, necessary for detecting, solving and investigating crimes.

The investigation team is not being set up for investigation because cruelty to animals is not a serious or extremely serious crime. In this form of interaction, there is a certain disadvantage, which concerns that the investigator does not instruct an assignment to a particular employee, but directs it to the relevant operational subdivisions.

A comprehensive, complete and effective investigation of a criminal offense is not possible without the use of special knowledge in the evidentiary process. A special knowledge is fundamental to the investigation in the evidentiary process of the analyzed offence. This is due to the fact that cruelty to animals is a specific crime, therefore, investigators, without special knowledge, appropriate education can not investigate on their own this type of criminal offense without the use of special knowledge and experts advice (specialists).

The investigator interaction with the expert (specialist) is fundamental during an animal cruelty investigation, because without the expert's conclusion about the cause of the animal death, infliction of its bodily injury or establishment of an inappropriate animals` management these facts can not be qualified under the Art. 299 of the Criminal Code of Ukraine. Examinations, which can be appointed by the investigator during the analyzed crime investigation, are forensic and veterinary-sanitary.

Summarizing up the above, it should be noted that in interaction with the operational subdivisions it is effectually to share responsibilities, joint planning of conducting investigative (search) operations and continuous informing for promptly making changes to the investigation plan. Concerning the investigator interaction

with an expert (specialist), this type of interaction is fundamental to solving a crime, because the appointment and conducting of examinations is a priority direction of the investigator's work. After all, he needs to find out as a result of which actions the animal died or the bodily injuries appeared.

I. H. Zavdovieva, *head of the Department of Kharkiv Scientific Research Forensic Center of MIA of Ukraine*

V. O. Horbenko, *chief forensic expert of Kharkiv Scientific Research Forensic Center of MIA of Ukraine*

O. M. Diachenko, *chief forensic expert of Kharkiv Scientific Research Forensic Center of MIA of Ukraine*

N. O. Cherkashyna, *chief forensic expert of Kharkiv Scientific Research Forensic Center of MIA of Ukraine*

A MISTAKE AND ITS MEANING IN THE FORENSIC EXPERT ACTIVITY

Keywords: forensic examination, mistake, expert conclusion, assessment of the expert's conclusion.

The article focuses on the problem of mistakes in forensic expert activity. Different approaches to mistakes` classification, causes and conditions of their occurrence have been considered and analyzed. The general ways of improving the process of conducting research and evaluating of its results with the aim to increase the evidentiary value of the expert conclusion are proposed.

Any fact, circumstance or event in the forensic examination always acts in three roles: as an original (as an objective reality, in relation to which an expert task

is solved); as a fragmentary representation of the original in the materials provided for research, which are the objects research; and as a model of the original, built by the expert to solve the main and intermediate issues. The completeness and quality of the facts, circumstances or events representation in the examination initial data is one of the decisive factors in the examination effectiveness, so this issue should deserve a special attention of the expert in solving the expert task.

An information, the truth of which is not in doubt from the point of view of the competence of the expert, can be considered reliable. Obviously, the information is incorrect, in which the truth is completely absent. Probabilistic is an information that gives rise to some doubts about its truth. In other words, the probabilistic information can not be attributed either to true or obviously false information to its verification, in other words the establishing the doubt level in its reliability.

Estimation of the level of truth or false of each part of information (verification) is conducted with the help of special expert knowledge and rules of formal logic.

The presence of false and probabilistic information, provided to the research materials from the very beginning of the forensic examination requires an expert (at the stage of the preliminary study) to perform a very responsible work related to the assessment of the information reliability, the establishment of clearly false information and the verification of probabilistic information. A significant part of the clearly inaccurate information in the materials provided to the study significantly complicates the decision of an expert task, which in the final stages of the study can be solved no other than on the basis of only reliable and valid in terms of the competence of the expert of information. The content of the false information in the materials provided to the study, its sources, as well as the grounds to consider it as technically incompetent, shall be specified in the expert's conclusion when solving the issues for which this information would be significant.

In order to verify the results of the study, obtained by the expert, it must be confirmed by all, without exception, the actual data, both the materials of the criminal proceedings and already established (based on the application of special knowledge)

during the examination. The presence of at least one fact that contradicts the result obtained by the expert in the form of a working hypothesis is the basis for reviewing this result and for a more detailed examination of the working hypothesis.

The criterion for the truth of the result obtained by the expert, is the absence of such actual data (from the number available in the materials provided or obtained as a result of the research), which would testify at least one reliable or capable, from the point of view of the expert competence, fact, phenomenon or circumstances that would contradict the expert's conclusion or doubted it.

Thus, one of the main directions of prevention and minimization of expert mistakes is the expert activity improvement both of each expert and expert subdivisions and organizations in general, by optimizing the processes of the quality management system in terms of their effectiveness. One of the criteria for optimizing the functioning of the quality management system should be minimization of expert mistakes.

O. S. Zavialov, *chief forensic expert of*
The State Scientific Research Forensic Center
of the MIA of Ukraine

P. O. Zelenyi, *forensic expert of*
The State Scientific Research Forensic Center
of the MIA of Ukraine

THE FEATURES OF 3,4-METILENDIOKSIPIROVALERON AND ITS DIFFERENCE FROM METHADONE AND COCAINE

Key words: 3,4-methylenedioxypyrovaleron, methadone, cocaine, qualitative chemical reactions, thin-layer chromatography, gas-liquid chromatography, liquid chromatography.

The relevance issue about the study of MDPV is due to its illegal trafficking and admission to the examination of the subdivisions of the Expert Service of the MIA, as well as in problematic issues of clear identification and distinguishing it

from methadone and cocaine, in particular, when using the qualitative reactions methods and thin-layer chromatography (TLC). Since coloration, which arises during the conducting qualitative chemical reactions, may differ slightly, and the substances indicated in most chromatographic systems have similar Rf values. Therefore, the use of such research methods requires additional attention and the use of the most appropriate chromatographic separation systems that will help to distinguish the MDPV.

For the assumption of the possible presence the methylenedioxypiroperone in the researched object, it is conducted qualitative reactions. To do this, to the aliquot particles of the reserched substance it is necessary to add: cobalt rhodonide reagents; Liebermann reagent; Mandelin reagent; Mecca reagent; reagent with gallic acid Frede reagent; Marki's reagent.

To identify MDPV using thin-layer chromatography, the researched substance weight with a calculation of 1-1.5 mg/ml (active ingredient) is extracted with methanol at room temperature. The resulting extract is applied to the starting line in an amount of 5 μl together with standard samples of MDPV, methadone and cocaine. The following solvent systems can be used for the chromatography: methanol-25% ammonia (100:1.5); ethyl acetate-ethanol-25% ammonia (85:10:5) toluene-acetone-ethanol-25% ammonia (45:45:7.5:2.5) benzene-ethanol-diethylamine (9:1:1). The detection of identified zones is conducted by developing a chromatographic plate with the above-mentioned reagents.

The instrumental research, identification, MDPV distinction and its possible mixtures with methadone and cocaine do not cause difficulties compared to previous methods, but at the same time, there is a need for reliable quantitative research and qualified assessment of the obtained results.

Using a gas chromatograph with mass selective detection for the study, for qualitative identification, it is necessary to prepare a methanol solution with a concentration of ≈ 1 mg/ml (in terms of the active substance) and use it for the study. The main ions to identify GC-MS (m/z): 65.1; 96.1; 126.1; 149.0.

The method of gas-liquid chromatography can be used for the quantitative MDPV determination. For this purpose, two paralenny samples weighing 2-2.5 mg

are selected. Each weight sample is dissolved in 2-3 ml of 0.1 N aqueous solution of sodium (potassium) hydroxide and placed in an ultrasonic bath for 15 minutes. Then to the resulting solution it is added 1 ml of heptane or hexane, extracted for 2-3 minutes, selected the organic layer. The extractions are repeated twice more, while separately combining the extracts of two parallel samples. The extracts are shaken and examined.

To obtain a researched substance sample by high-performance liquid chromatography, a methanol solution of MDPV with a concentration of 1-1.5 mg/ml is prepared and extracted on the ultrasonic bath for 15 minutes. For the study, 0.1 ml of methanol extract of the compound it is taken from the obtained extract and 0.9 ml of methanol is added. The resulting diluted compound solution is used for the study. The main ions for identification (m/z): 121; 163; 246; 276; 299; 315.

The experimental data provided by us will help in the selection of the most appropriate methods and research conditions, to provide an opportunity to objectively evaluate the results of the study, including the identification and distinction of these compounds by thin-layer chromatography.

A. V. Ishchenko, *doctor of law, professor, honoured lawyer of Ukraine, professor of the criminalistics and forensic department of the National Academy of Internal affairs*

V. M. CHYSNIKOV – THE SCIENTIST, WHOM IS WANTED TO ENVY WITH KINDNESS (TO THE 70TH ANNIVERSARY FROM THE BIRTHDAY)

Key words: V. M. Chysnikov, the history of criminalistics, H. M. Rudyi, dactyloscopy, investigator's kit, tracking dogs, Instruction to the officers of the Kyiv detective police.

This year, on 24th of August it turned 70 years old from the birthday of Volodymyr Mykolaiovych Chysnikov - famous Ukrainian expert in the field of law, law historian, doctor of law, docent, Chief Research Officer of the State Research Institute of the Ministry of Internal Affairs of Ukraine, Retired Police Colonel, the participant in the consequences liquidation of the Chernobyl accident.

Volodymyr Mykolaiovych was born in Shakhtarsk city, Donetsk region in the worker family. After secondary school graduation, he has worked as electrical fitter and then as cager. In June 1967 he was called to arms, graduated the junior aviation specialists school and served as a mechanic in the aviation regiment.

After the military discharge in 1969, during the year he was working as timberer at the mine in Krasnolutsk district, Voroshylovhrad (nowadays Lugansk) region, where his parents moved for permanent residence. In September 1970 he was sent to study in Donetsk Secondary Special Police School of the Ministry of Internal Affairs of the USSR on the recommendation of the labour collective of the mine.

In 1972, after this school graduation, the lieutenant of police V. M. Chysnikov was working as district police officer during three month and then he was transferred to the investigator position of the Krasnolutsk district department of internal affairs. Two years later, a young investigator was recognized as the «Best Investigator of the Voroshilovgrad Region of 1974».

In August 1975 the lieutenant of police V. M. Chysnikov became a full-time student of the Kyiv High School of the MIA of the USSR. During the education he has been actively participating in the students research work.

After graduation the captain of police V. M. Chysnikov has been working as the inspector of «A» division of the Bureau of Criminal Investigation of the DIA of the regional executive committee for two years.

In September 1980 the captain of police V. M. Chysnikov passed the exams to the graduate military course of the Kyiv High School of the MIA of the USSR and was assigned to historical and legal department. In 1984 he defended successfully the Ph.D. thesis on the «Legal basis for the organization and activities of the criminal investigation apparatus of the Ukrainian SSR (1917-1925)».

After graduation the military course the major of police V. M. Chysnikov moved to Brovary, Kyiv region with his family, where he had been working on the posts of primary investigator and deputy head of Brovary city department of internal affairs investigation division during 1983–1986. In June 1986 he participated in the consequences liquidation of the Chernobyl accident, being the head of crime scene investigation team in Chernobyl district department of internal affairs.

From June 1986 Volodymyr Mykolaiovych started teaching activity on the special disciplines department of the Kyiv higher political courses of the MIA of the USSR, which had been continuing nearly four years. In November 1990 he returned on the practical work of Brovary city department of internal affairs, on the post of a senior investigator, and then he returned to teaching activity the National Academy of Internal Affairs of Ukraine. In 1999 he was awarded the academic title of docent.

Since January 2008 Volodymyr Mykolaiovych worked as leading, and then chief research worker of the State Research Institute of the MIA of Ukraine. On 28th of February, 2018, at the specialized scientific council of the National Academy of Internal Affairs V. M. Chysnikov defended his doctoral thesis on «The criminal investigation police in Ukraine during the Russian Empire (1880-1917): historical and legal research» (specialty: 12.00.01).

Doctor of law V. M. Chysnikov's main area of scientific research are: legal biography, history of professional investigation, criminalistics, police law, law enforcement and judicial agencies and … teaching about L. Tolstoy. Scientific achievement of the scientist represents about 900 printed works, among which a significant number is devoted to the history of criminology.

The works of the scientist on the history of criminalistics were published in the magazines «State and Law», «Forensic Reporter», «Criminalistics and Forensic Examination», «Science and Law Enforcement», «Police of Ukraine», «MPA Reporter», «Police Investigator» (Moscow); newspapers: «The name of the law», «Legal Reporter of Ukraine», «Kyiv, Volodymyrska, 15». Volodymyr Mykolaiovych has been working with the editorial office of «Forensic Reporter» for more than ten years.

Volodymyr Mykolaiovych actively participates in international and all-Ukrainian scientific-practical conferences devoted to criminology issues, round table meetings, performs on television and speaks to collectives of scientific and educational institutions, etc.

For 40 years he has been researching a little-known, but interesting topic «Lev Tolstoy under the supervision of the secret police».

O. P. Necheporenko, *forensic expert of*
Sumy Scientific Research Forensic Center
of the MIA of Ukraine

MODERN PROBLEMS OF APPLICATION THE METHODS OF HUMAN GROWTH DEFINING IN TRASOLOGY

Key words: trace, trace evidence analysis, method, methodology, expert research.

In the article author analyzes the existing methods used in Ukraine and abroad to defining human growth based on the footwear prints analysis.

Among the techniques currently used by forensic experts are those that allow using simple mathematical calculations to answer a question about a person's shoes size, which print was detected at the crime scene, gender, the person state, the direction and speed of its movement, and also can define the growth. Among the questions that investigators are offering for solving to forensic experts, are both identifying and diagnostic character. But during the forensic examination there are cases of erroneousnesses, discrepancies in the obtained results and the actual picture of the trace.

Methods of defining the growth of a person introduced in forensic technology in the 60s of the last century. During this time, humanity has experienced not only the

influence of technological progress, but also the environmental factor that has imprinted on the anthropological peculiarities of a person, whose modern manifestations are acceleration, feminization and other manifestations. On the basis of changes in a person himself there are changes in the traces that the person leaves. This fact deserves the attention of research scientists and related to a review of the effectiveness and remodeling of techniques that are associated with physiology and human anthropology.

In his article the author analyzes the tasks of trassological examination, the questions that are often made on the study by the investigators, determines the relevance of the questions formulated in the methodology about the needs of the present. Among the questions identified by the Instruction on the appointment and conducting of forensic examinations at the present stage, there are almost no questions of a diagnostic nature.

In the article the author presents the results of studies on human growth calculations using three methods used in conducting expert research by trasology experts, analyzing the effectiveness and reliability of each method, and also introduces new means of a person growth defining used by national criminalists. According to conducted research, the most accurate result is obtained during the study of bare feet footprints, but practically such situation is not widespread.

As the conclusion, the author emphasizes that, together with the development of technology, trassological methods should be improved and checked for their effectiveness. The author emphasizes the relevance of this study and the need for new theoretical and practical developments.

V. Pankevych, *PhD in Law, Associate Professor of Law Department of Vinnytsia Institute of Trade and Economics of Kyiv National University of Trade and Economics*

O. Splavska, *Deputy Head of Vinnytsia Scientific Research Forensic Centre of the Ministry of Internal Affairs of Ukraine*

LEGAL REGULATION OF PROFESSIONAL ETHICS OF A FORENSIC EXPERT

Key words: ethics, the Ethics Code, forensic expert, legal liability

State constitutional provisions on recognition of a person as the highest social value, their life and health, honour and dignity, inviolability and security – due to the recent activation of the legislator in the field of reforming the conceptual foundations of procedural law – receive a new, more progressive and modern meaning. The important changes in the direction of the state's implementation of its primary responsibility – the establishment and safeguarding of human rights and freedoms, undergo major institutions of civil, economic, administrative and criminal processes.

The recent changes in the criminal procedural law have an obvious focus on maximizing the realization of the principle of dispositivity in the legal status of criminal-procedural relations participants, minimizing voluntarism and subjectivity of investigating bodies, and stimulating the execution of a qualitative and effective pre-trial investigation.

One of the key roles in terms of completeness, objectivity, reliability and impartiality of the evidence creation during any of the processes certainly carried out by forensic examination. Currently, it is almost impossible to imagine the economical and criminal processes without an expert with special knowledge and skills who establishes relevant factual information contained in the subject of evidence or dispute. The professional conclusion necessarily appears as one of the proofs in each

of these processes.

The prevalence and the important role of forensic expert activity within rapid development of modern science and technology are putting completely new requirements forward, including moral and ethical, to subjects of such activity. Additionally, the lack of legal framework for the existence and codification of key ethical standards of a forensic expert practically makes the state's response to their violation impossible through the application of legal responsibility to perpetrators, which in turn generates the distrust elements of the parties to a trial and creates an illusion of the prejudice and partiality of such kind of evidence in the case.

The necessity of introduction of a Chamber or Association of Forensic Experts and the adoption of the Ethics Code of a forensic expert thus becomes obvious. The powers of the Chamber (Association) of Forensic Experts should include the possibility of assessing the actions or inactivity of a forensic expert according to the requirements of the code, and the right to suspend or terminate the professional activities of such entity. Therefore, one of the problematic issues of the existing system of forensic examination, which requires urgent resolution, is the statutory regulation of the requirements of professional ethics of a forensic expert. However, not only the definition of moral and ethical principles of the professional activity of a forensic expert bears great social importance, but also the legislative consolidation of the mechanism for their implementation and observation, and should become a modern trend of development of moral and ethical side of state forensic examination in the aspect of judicial reform.

The professional ethics of a forensic expert should be based on the notions of a professional duty regarding moral standards of behaviour while performing service duties and professional honour, which reflects the moral norms, focused on the realization of the general principles of forensic examination. In order to regulate the specified requirements for the professional activity of the subjects of expert services, regardless of the subordination and form of ownership, it is necessary, at the legislative level or with the help of the resolution of the Cabinet of Ministers of Ukraine, to introduce into the legal framework the Ethics Code of a forensic expert, the projects of which are developed by scientists and practitioners.

***V. H. Peliushok**, PhD in Philosophy in the Field of State Administration, Deputy Head of the Technical Research of Documents and Handwriting Department of the Laboratory of Forensic Research Types of the Kyiv Scientific Research Forensic Centre of the MIA of Ukraine*

EXAMINATION ISSUES OF TECHNICAL DOCUMENT IMAGERY (COPIES)

Key words: technical image, copies, montage, reprinting

Modern development of science and technology contributes to the emergence of new technologies and devices, and the global network "Internet" provides access to various information, including forensics. In turn, the criminal world, in order to achieve its goal, is inventing new ways and means of falsifying documents, using knowledge of criminology and achieving scientific and technological progress.

To date, most documents are transferred into the electronic format or transformed through electronic programs and devices into documents or their copies (technical images). This gives an opportunity to fraudsters to manipulate and create documents using images of genuine details, but with amended content.

The rules of economy are applicable in criminalistics as well – demand generates proposal. Indeed, the question of the possibility of conducting a research in (image) copies of documents becomes relevant both for the bodies of pre-trial investigation, court and individual citizens. However, the decision for set questions lies with the experts who will adjust the existent methods and methodologies under a query – research of copies. Therefore, the current issues in the technical examination of documents remains unsolved due to lack of methodical providing for this type of research – documents with altered primary maintenance at research of technical images of documents.

Indeed, the trial of decision of questions, technical images of documents related to research, can be carried out in a few aspects:

- establishment of accordance of the given copy of original of document;
- establishment of fact of making of technical image of document by editing (making alteration is in a document);
- establishment of making of a copy (technical image) of document from the copy of document or its original.

Presently, the practice of criminalistics research of such type of imitation of documents, runs into editing made by means of a copy machine or computer technique is the technical editing.

The technical editing is brought by means of a copy machine or computer technique of changes in primary maintenance of document, with its next printing.

The question relates to two documents: the first – is the document that served as an original during printing and the changes made to it, while the second is the copy (technical image) that is being researched, in which it is necessary to find those changes that took place with the document copy.

As a rule, for editing, the images of actual forms of documents, imprints of printing, signatures, handwritten records and other necessary essential elements of document are used. Therefore, in order to establish this, it is necessary to have a standard in the original document.

The elaboration of the desirable results suggests that issues related to the study of copies (technical images) of documents fall into the category of complex at the stage of forensic transformation and create new subspecies of examination of documents with variable contents: by the «new» object of research - copy (by a technical image), by method of making alteration, by the technical editing and by tasks that was decided by this examination - except diagnostic, appeared yet and identification.

A. S. Povkh, *Deputy Head of the Laboratory of State Scientific Research Forensic Center of the Ministry of Internal Affairs*

S. M. Romanchuk, *Senior Forensic Expert of State Scientific Research Forensic Center of the Ministry of Internal Affairs*

CONTAMINATION DURING MOLECULAR-GENETIC RESEARCH. CAUSES OF ITS OCCURRENCE AND ITS CONSEQUENCES

Key words: contamination, laboratory, molecular genetic testing, deoxyribonucleic acid

During the molecular genetic testing there is a risk of contamination that may occur at any stage of the research, such as: evidence review, search for traces of biological origin, selection of deoxyribonucleic acid (forth - DNA) from the researched objects, conducting a polymerase chain reaction in real time, amplification, fragmentary capillary electrophoresis, etc.

This article describes the types of contamination, its preventive measures and the actions of a forensic expert biologist (forth - an expert) in case of its occurrence.

The place of occurrence distinguishes pre-laboratory contamination, when the object is contaminated by alien DNA before it gets into the DNA laboratory, and actually laboratory contamination itself.

Pre-laboratory contamination, depending on its origin, includes primary and secondary contamination, and contamination during running of other forensic examinations.

Laboratory contamination includes the following types: contamination of researched objects with human genomic DNA from the environment, cross contamination, contamination with products of amplification (amplicon).

A separate section of the article is devoted to the consequences of contamination when working with the consideration of human genetic features.

In details described common measures for preventing contamination and measures to prevent contamination in the following cases: during withdrawal of material evidence; during the research preceding the molecular genetic analysis; during pollution of objects with human genomic DNA from the environment; during cross-contamination; in the allocation of DNA; during contamination with products of amplification.

The last section of the article defines the sequence of actions of the expert and a set of measures after the detection of contamination in the molecular genetic laboratory, the amount of which is determined by the research results of control elution and reagents, and bidistilled deionized water used during the study.

V. A. Polishchuk, *Head of Department of*
Ternopil Scientific Research Forensic Centre
of the Ministry of Internal Affairs of Ukraine

SPECIFICS OF EXPERT EXPERIMENT DURING COMPUTER-TECHNICAL FORENSICS

Key words: experiment, modelling, virtualization, observation, data storage, operating system

The role of computer-technical forensics in the process of proof during investigation of criminal proceedings, proceeding of criminal and civil cases in the court is constantly increasing. Rapid development of information technology requires forensic experts to keep up with the times and use modern methods and tools during a research.

The relevance of research is conditioned by the need for a constant improvement of the methodology of computer-technical research, including during

conduction of an expert experiment.

The purpose of the research is to analyse and systematize the ways of the experiment method application during the computer-technical forensics, and giving recommendations on how to choose the best possible algorithm of using this method.

A range of practical methods is analysed and recommendations on how to choose them considering the tasks, the features of the researched objects and the means available for making an investigation are given in the research.

The best possible algorithm for performing an expert experiment, that allows to perform a deeper and more detailed analysis of the research results is suggested. The advantages and disadvantages of typical experimental methods are formulated, reasons for selection of one or another method are given, algorithms of their use are suggested.

For some methods of performing the experiment are suggested software tools and technical solutions considering the tasks, that are solved during the examination.

The procedural features and limitations, that can emerge during an experiment in the course of performing computer-technical forensics, are considered in the article.

The research represents that the method of expert experiment allows us to solve a wide range of problems that can emerge during the performing of computer-technical forensics, however, the application of this method has some features. Moreover, the rapid development of information technology requires constant updating of research methods, considering the capabilities of modern software and hardware.

S. Y. Serdiukov, *the chief forensic expert of*
Luhansk Scientific Research Forensic Center
of the MIA of Ukraine

THE PROBLEM ISSUES ARISING WHEN DEFINING THE VEHICLE SPEED BEFORE THE INITIAL CONTACT

Key words: road traffic incidents, transport vehicles collision, the speed of the transport vehicle, deceleration.

In modern conditions there is a high level of severity of the road traffic events (DTP) consequences, which requires the introduction of effective measures to improve the road safety system. One of the complex measures that have a high efficiency impact on reducing the number of accidents and the severity of their consequences is the speed control, which provides for the clear regulation of permitted speeds and strict control of these norms implementation by road users. This improvement direction of such control system is not possible without improving the quality of the accident expert investigations, which ensures the objectivity and reliability the reconstruction of their participants' actions and the perpetrators establishment, including on the basis of the speed factor evaluation, which characterizes the set of the speed parameters vehicles at all stages of an accident development.

But most of the methods for calculating the vehicle speed in the traffic accidents, used today in expert practice, were developed in the last quarter of the last century in the time of the USSR, and largely were not took into account the changes that have taken place so far both in the vehicle design and in the road environment, as well as in the information technologies development that provide today the possibility of operative and highly reliable, the most difficult road and transport situations modeling.

The questions discussed in this article are aimed at conducting a critical analysis of methods for defining the vehicle traffic speed in an accident in the course of the road accident analysis in order to develop proposals for further refinement and

supplementation of these methods. This, in turn, should ensure the compliance with the main work conclusions of the novelty criterion.

On the basis of the above, the author asserts:

1. In the course of forensic automotive expertise in order to determine a car speed before collision using "traditional" methods, that are sufficiently tested and widely used in expert practice, it is necessary to use modern measuring equipment (disellometers) to obtain real parameter values.

2. Approximately (in complex) with "traditional" methods that are sufficiently tested and widely used in expert practice, it is necessary to apply modern means of assessing the vehicles' speed – using data from electronic control units, video surveillance cameras records and the DVR recordings during the complex photographic and automotive engineering expertise conducting.

B. P. Surzhan, *Legal Adviser of*
Luhansk Scientific Research Forensic Centre
of the Ministry of Internal Affairs of Ukraine

LEGAL LIABILITY OF A FORENSIC EXPERT IN THE LIGHT OF THE JUDICIAL REFORM

Key words: legal liability, criminal liability, disciplinary liability, administrative liability, forensic expert, forensic investigation

In year 2016 the judicial reform has started. During this time the formation of a new Supreme Court began, the High Council of Justice and the Public Council for Integrity were created, the Law on the Constitutional Court of Ukraine was adopted, the new procedural codes were developed and introduced in the legal field of Ukraine.

Due to European Integration Aspirations of Ukraine reformation of judicial system is defined as a priority task. The reformation of the Judicial System is primarily aimed at solving the issue of judicial independence and implementation of the new relevant legislation, as well as solving of the problems related to the raising level of the social responsibility.

Ukraine's focus on building of the state of law and the introduction of pan-European values substantially actualizes research, dedicated directly to the legal responsibility, both from the state to the citizen and the person to the society.

Judicial reform has not bypassed the main provisions of forensic expert activity, because it is one of the elements of the judicial system.

One of the main characteristics of a court expert's procedural status is his legal responsibility for failure or improper discharge of his duties. Holding the forensic expert legal liable is specified by the Law of Ukraine "On Forensic Examination". The responsibility of the forensic expert is one of the important principles of ensuring the rule of law and discipline in the system of forensics activity.

Currently, based on the newly adopted procedural laws, problematic issues related to the legal liability of the forensic expert of a state specialized institution whilst carrying out their responsibilities, are becoming particularly relevant and require comprehensive study.

The purpose of the article is to analyse theoretical issues regarding legal liability, that can be applied to the forensic expert of a state specialized institution due to failure or improper discharge of his duties, development of practical recommendations for improving the issue of liability in forensic expert activities.

According to the result of the research the following conclusions can be formulated:

Activity of the forensic expert as a participant in legal proceedings requires high level of responsibility for his actions. The possibility of holding the forensic expert to different types of liability also comes from the fact that failure or improper discharge of his duties is not always intentional or conscious, but can be caused by subjective or objective factors. Hence, alongside with criminal (highest level)

liability, forensic expert is charged with administrative, disciplinary and civil liability.

To prevent bias, the legislator should determine the type of liability and relevant legal norms in case of non-submission or untimely submission of application for recuse if the grounds provided by the procedural law are present.

Legislation on the forensics expertise requires improvement and implementation of relevant Western experience, in particular on issues of moral, ethical and legal liability, adopted both in the general law on forensic expertise and in the Code of professional ethics of a forensic expert.

O. S. Tesliuk, *forensic expert of*
Kherson Scientific Research Forensic Center
of the MIA of Ukraine

THE PECULIARITIES OF VIDEOPHONOGRAM RESEARCH WITH MOUNTING FEATURES. LINGUISTIC ANALYSIS AS A COMPONENT OF INTEGRATIVE RESEARCH

Key words: forensic examination, mounting, a person identification by his voice and speech, video phonogram, spectrum, instrumental analysis, linguistic analysis.

The article describes conceptual and methodological approaches to solving both identification and diagnostic tasks in relation to the same research object during the forensic speaker recognition on the example of videophonogram research with mounting features. Taking into account the practical experience, the questions often raised by the initiator for solving the forensic speaker recognition in complex are: identifying persons by voice and speech, and the presence of mounting features in the studied record.

The chosen topic urgency is due, firstly, to an increasing the cases of mounted records examinations, which is a completely natural phenomenon in the context of

the rapid development of technologies for manipulating the digital data of audio/video files, their availability to a wide range of users. Secondly, it is due to the methodology requirements, which involves the study of each mounted record fragment as a separate research object, which can significantly affect not only the course of examination, but also the conclusion as a whole.

In connection with above mentioned, the author suggested a certain algorithm for such tasks combination, aimed at implementing of the completeness principles and objectivity of expert research. One of the main article theses is the following - before solving the identification tasks for the same object, it is advisable to conduct a diagnosis of the presence/absence of mounting features, using an integrative approach by combining the different types of analysis. The possibilities and significance of a linguistic analysis in combination with instrumental research methods are shown, its ability to act as a determinant in decision making in the conditions of ambiguity or insufficiency of the revealed signs by research of acoustic signals and environments.

The application of such an integrated approach will allow to make a substantial conclusion and, in the case of mounting features detection, to select the "mounting" fragments correctly. The possibility of the further person identification by voice and speech will depend on the quantitative and qualitative fragments` characteristics from which the recording is mounted.

In conclusion, the author stresses such main article theses are the following: giving the priority to the mounting features diagnosis in an object, related to which the question was asked, and about the person identification by voice and speech; using an integrative approach to research; conducting a linguistic analysis as an important component of a selected set of methods; and separating the mounted video phonograms into parts by comparing the results of each analysis type.

Above-mentioned information will allow the expert to make a reasonable and well-considered decision, to avoid expert mistakes.

I. H. Tkachenko, *forensic expert of the Kharkiv Scientific Research Forensic Center of the Ministry of Internal Affairs of Ukraine*

V. V. Tkachenko, *docent of the applied chemistry department of the V. N. Karazin Kharkiv National University*

MOLECULAR DOCKING FOR MODELLING THE COMPLEX OF THE POTENTIONAL PSYCHOACTIVE COMPOUNDS WITH CANNABINOID RECEPTORS CB1

Key words: synthetic cannabinoids, cannabinoid receptors, molecular docking, agonists, antagonists.

In our time, synthetic cannabinoids have become widely known on the illegal market of psychoactive compounds and represent a serious threat to society, being objects of abuse, in order to achieve euphoria. A large number of synthetic cannabinoids, like marijuana and herbs containing natural cannabinoid tetrahydrocannabinol, have historically gone from scientific research and pharmacological testing to drugs that are forbidden by law in many countries. However, drug trafficking continues to search for new types of psychoactive substances that have a modified structure compared with forbidden compounds, offering them to the consumer.

On the territory of Ukraine, the emergence of new types of synthetic cannabinoids is constantly fixed, including those that structurally reproduce the cannabimimetics widely spread in recent years, most of which are still not forbidden by current legislature. The application of molecular docking using computer simulation is a fundamentally new approach in the identification of new psychoactive compounds, which will make it possible to unambiguously attribute them to substances hazardous for human health.

Synthetic cannabinoids, similar by chemical structure to already forbidden substances, but with minor changes in the chemical structure, can not be legally recognized as narcotic (psychotropic) agents. Partially, this legal problem can be solved by the final legislative determination of the concept of "derivatives", which includes some substances that are similar to the narcotic drugs and psychotropic substances structure and which are not included in the list of narcotic drugs, psychotropic substances, their analogues and precursors as the individual line items. However, it is impossible to assert that compounds with similar structure will have similar physiological (narcotic or psychotropic) effects. Considering this, the unequivocal confirmation requires biological research using *in vivo* and *in vitro* methods that involve high costs of time and human resources, which prevents the timely identification of new psychotropic substances that may endanger the people's health or even life, and including them in the list of narcotic drugs, psychotropic substances, their analogues and precursors. Thus, the identification of synthetic cannabinoids and their classification as psychotropic substances remains a current issue for forensic examination, which needs to be solved at the legislative level.

In this paper, the binding energy of some known agonists and cannabinoid receptor antagonists CB1 by molecular docking were calculated. From the obtained data it is visible that there is a clear correspondence between the theoretically calculated values of the binding energies of the ligands, calculated according to the proposed method, and the known values of the dissociation constant of the ligand-receptor complexes. Further researches in this direction can be related to the establishment of a certain correlation between the corresponding values, which requires data about a much larger array of ligands.

The data, obtained by us, confirm the expediency of using molecular docking with computer simulation as a new approach for assigning new synthetic cannabinoids to highly dangerous drugs as an alternative to *in vitro* or *in vivo* studies using a computer with a molecular docking program.

K. V. Tokarieva, *Senior Forensic Expert of*
Kirovograd Scientific Research Forensic Centre
of the Ministry of Internal Affairs of Ukraine

ACTUAL ASPECTS OF THE MECHANISM OF FORENSIC ECONOMIC EXAMINATION IN MODERN CONDITIONS

Key words: forensic economical examination, expert, mechanism, business activity, methods of forensic economical examination

In the article researched the main elements of forensic economical examination mechanism, whose purpose is to provide a reliable forensic economical legality of financial and economic aspects of the economic functioning entities in the work of law enforcement and judiciary.

Expert research of various aspects of business, financial and economic activities of business entities of all forms of ownership (in the presence of legitimate grounds for its implementation) remains one of the most important tasks in the work of the local law enforcement and the court. The implementation of such research requires involving professionals with good knowledge of financial and tax accounting, modern methods of economic analysis, skills of integrated use of tools range for running of examination.

The legislative fundamentals of forensic economical expertise in Ukraine are represented in The Constitution of Ukraine, the Criminal Procedural Code of Ukraine, the Civil Procedure Code of Ukraine, the Code of Commercial Procedure of Ukraine, the Administrative Justice Code of Ukraine, the Law of Ukraine "On Forensic Examination", the Regulation on the appointment and performing of forensic examinations and expert research, science methodology recommendations on the preparation and appointment of forensic examinations and expert research, other standard regulations.

The main principles of forensic expert's work are legitimacy, independence, objectivity and completeness of research, complexity and sense of purpose.

Forensic economical expertise is performed in three ways: examination of statutory and tax accounting; examination of financial and business operations documents; examination of financial and credit operations documents.

The efficiency of forensic economical expertise mechanism is currently characterized by five key elements:

The legislative (normative) element depends on availability, coherence and compliance with the modern world standards of state laws and implementing regulations on forensic economical expertise issues.

The informational element is characterized by providing experts with timely and reliable information for running an examination, access availability to all primary sources of information.

The organizational and economic element provides for the provision of proper conditions for the performing of examination, including access to the necessary equipment, usage of modern information and communication technologies, databases.

The intellectual (professional) element is characterized by the involvement of qualified experts who possess the modern methods of economic and financial phenomenon and processes analysis.

The feature of the psychological element is the psychological fortitude of the involved experts for stress, acts of corruption, and pressure from those who are interested in the results of expert examination.

The theory of forensic economical expertise distinguishes the following methods of research: methodological, specific empirical, calculation and analytical, documentary and methodological, others.

Currently, there is a necessity for a clear classification of performing methods of the forensic economical expertise and a thorough analysis of existing methods of forensic economical expertise for their relevance to the modern realities.

***A. N. Khokh**, Research Scientist of the Research*
Laboratory of Materials, Substances and Products
of the Scientific Department of Technical
and Special Studies of the State Institution
"Scientific-Practical Centre of the State
Committee of Forensic Examination of the Republic of Belarus"

***V. B. Zviahyntsev**, PhD in Biology, Associate Professor,*
Head of Forest Protection and Wood Science Department
at Belarusian State Technological University

APPROACH TO SOLVING FORENSIC TASKS CONNECTED WITH BREED, AGE AND LIVING CONDITION DIAGNOSIS OF TREES

Key words: wood, breed, age, living condition, forensic botanical examination

In cases of violations in the forest sector, the most important stage of proof procedure is to schedule a complex of forensic investigations, the leading place among which, as practice shows, is taken by forensic-botanical examination with dendrochronological analysis (FBE DA) – a new type of forensic investigations in the Republic of Belarus, that has differentiated from the botanical investigations.

FBE DA allows the reliable determination of the age of the tree, the time of cutting (year and season), the category of living conditions, the place of growth, the belonging of individual elements of wood to a single tree, the sequence of damages inflicted to the tree, etc. Preliminary investigation bodies and courts annually set more than a hundred investigations on the study of objects of plant origin requiring the use of dendrochronological analysis. Most of these investigations are set during the pre-trial proceeding, the remaining amount falls directly at the trial period.

Forensic-botanical investigation with dendrochronological analysis is based on the following criteria:

1) the annual formation of a clearly visible annual layer in trees growing within the temperate and cold climate zones with distinct change of seasons of the year;

2) the strict individuality of the radial increment of each specific tree;

3) synchronous spatial and temporal variations in the width of annual layers in the vast majority of trees growing within a homogeneous climatic region.

The uniqueness of the anatomical parameters of the wood (the width of the annual layer, as well as of the zones of earl and late wood) along with the relative simplicity of their determining offers wide opportunities for building up an evidence base on the facts of thefts of wood, illegal forest cutting, frauds with timber, etc.

Till today in the state institution «Scientific and Practical Centre of The State Forensic Examination Committee of The Republic of Belarus» have been developed modern methods and technical facilities for carrying out of expert research based on the results of conducted research:

– «Methodological recommendations on timber research using tree-ring method in forensic and botanical enquiry»;

– «Forensic and botanical enquiry with the use of tree-ring analysis» skill improvement academic program;

– experimental prototype of «DendroExp» automated work place for tree-ring analysis information processing.

Y. V. Tsyhaniuk, *PhD in law, lead engineer of Khmelnytsky Scientific Research Forensic Centre of the MIA of Ukraine, lawyer*

AN EXPERT IMMUNITY IN CRIMINAL PROCEEDINGS WHILE INTERROGATION IN A COURT

Keywords: interrogation, criminal proceedings, an expert immunity, subject of expert interrogation.

The article focuses on finding out the essence of expert immunity in criminal proceedings during interrogation in a court. Thus, the Supreme Anti-Corruption Court since the first working day some changes, referring to direct relation to the expert immunity during interrogation in a court, have introduced in the Criminal Procedural Code of Ukraine. The indicated changes, as well as current legislation, are analyzed in detail in the article.

Furthermore, the expert interrogation subject in a court is defined, the questions that can be posed to the expert during an interrogation in a court, the essence of an expert immunity during interrogation in a court is determined. In particular, the expert interrogation subject in a court relates to the examination procedure and supplements the content of earlier compiled the expert conclusion.

Thus, in the article it is accented, that an expert can be questioned about when, where, whom (name, education, specialty, a court expert`s competence certificate, forensic expert's work experience, scientific degree, academic status, expert position) and on what basis the examination was conducted; questions dealing with the place and the time of examination; questions about people who were attended during the examination; the questions list that was posed to the expert; questions referring to obtained an expert materials description and which materials were used or weren't used by the expert; in relation to conducting researches, including the methods applied in the research, the findings they obtained and their expert evaluation; as to answers` explanation according to set questions. A question may also be posed about whether he is warned about the liability for knowingly submitting false conclusions and the refusal, without valid reasons, to fulfill his obligations and by whom. Moreover, whether during the examination there was found out the information that matters for a criminal proceeding and that deals with the questions which were not set, and about which the expert marked about them in his conclusion. Also during the interrogation, the expert can be asked questions expounded in the Part 3 of the art. 356 of the Criminal Procedural Code of Ukraine.

Taking into account the requirements of the art. 356 of the Criminal Procedural Code of Ukraine in relation to the questions that can be posed during an interrogation, and the accepted changes to the art. 65 of the Criminal Procedural Code of Ukraine, a

conclusion is set forth, that immunity from testimony, related to an expert conclusion itemization in plain (popular) language: informing the person that asks a question, about the conclusions` content in order to explain to this person the essence of scientific, technical or other kind of special knowledge.

An expert immunity during an interrogation in a court in the criminal proceedings is a set of the norms that provide realization of an expert right to refuse a testimony in the cases provided of the criminal procedure.

It was determined that the expert immunity during an interrogation in a court can be realized under the art.18 of the Criminal Procedural Code of Ukraine (as freedom from self-incrimination, and the right to give evidence against immediate relatives and family members), and also under the part 3 of the art. 356 of the Criminal Procedural Code of Ukraine (in relation to the set list of questions for the expert interrogation) and, in a prospect, after inuring of changes to the part 2, the art. 65 of the Criminal Procedural Code of Ukraine (in relation to a right not to explain the expert conclusion).

D. K. Cherednichenko*, head of the*
Main forensic center of the State Border
Guard Service of Ukraine

MODERN EUROPEAN STANDARDS IMPLEMENTATION IN PERSONNEL TRAINING SYSTEM OF THE STATE BORDER GUARD SERVICE OF UKRAINE ON DOCUMENTS EXAMINATION

Key words: State Border Guard Service of Ukraine, training of personnel, documents verification, border control, European standards.

In the modern terms of European integration of Ukraine in the State Border Guard Service of Ukraine it is conducted the planned work on the European standards

implementation into the border control system. This process directly concerns the implementation of the modern three-level document verification system that would conform with the operating standards of EU member states. Consequently, the existing in the border department of Ukraine the personnel training system on documents examination needs a reconsideration.

The aim of the article is a defining of direct practical recommendations related to the implementation into the personnel training system of border department of Ukraine of the modern European approaches in relation to training, retraining and further training of specialists on documents examination.

In EU member states the documents examination system has, so called, the pyramidal principle. The personnel training system on documents examination is based on the same principle. According to it, the system consists of next levels: basic; increased; specialist. Such principle is considered optimal, regardless of elements quantity of the system. Offered approach answers the basic principles of border control, accepted in EU, for the harmonized programs of the document specialists training.

European methodology principle of personnel training consists in the transmission of professional knowledge, necessary for detecting signs of documents forgery, from an increased level to basic. The functions of conducting the educational and methodical work on document verification and recruitment for the training on the increased level program rely on the third level specialists.

With the aim of providing the implementation in the documents verification system of the European standards, the executives of State Border Guard Service of Ukraine confirmed the «Conception of development of the documents verification system of Ukraine citizens, foreigners and stateless persons, that cross the state boundary of Ukraine on a period to 2021». Thus, in accordance with the European standards, in the border department of Ukraine, the necessary conditions in relation to further development of the personnel training system on documents examination have already formed.

In this direction the prospects of further researches should be defined the problems related to: processing and confirming of qualifying requirements to the three level specialists on documents verification; mechanisms of organization and conducting

the specialists training; development and implementation of the only program of refresher courses for the specialists on documents verification of the second and third levels, taking into account the European standards.

***V. M. Chysnikov**, doctor of law, docent,*
chief researcher of the State Research Institute
of the MIA of Ukraine

H. M. RUDYI – FAMOUS UKRAINIAN FORENSIC PRACTITIONER OF THE BEGINNING OF THE 20TH CENTURY (TO THE 155TH ANNIVERSARY FROM THE BIRTHDAY AND THE 100TH ANNIVERSARY OF THE DAY OF DEATH)

Key words: H. M. Rudyi, dactyloscopy, «investigator's kit», tracking dogs, Instruction to the officers of the Kyiv detective police, history of criminalistics.

In August 1903, H. M. Rudyi was sent to the exhibition in Dresden to familiarize himself with the newest improvements in the field of criminal police in order to apply them in the Kyiv detective department. H. M. Rudyi was interested primarily in the new method of criminal registration: the identification of criminals with the help of fingerprinting (prints of ten fingers).

Returning from a business trip, H. M. Rudyi firstly in Russia organized a dactyloscopic bureau at the anthropological office, which began to operate on January 01, 1904. Heorhii Mykhailovych proposed to organize a clear system of dactyloscopic bureaus:

1) county and private – in county and provincial prisons, correctional institutions and other places of confinement, and in villages, where there are no places of imprisonment - at the local police department or the senior police officer;

2) provincial – at the provincial prison inspection or detective department (if it is);

3) central – at the Main Prison Department or at the St. Petersburg Detective Police Station.

Each bureau should has had:

- magnifier;
- a zinc plate in size of "a credit ruble";
- roller;
- a vial of printing ink;
- blank cards of the forms № 1, 2;
- a special cabinet with an appropriate number of drawers for distribution of fingerprint cards of the form number 1 in the order of classification and cards number 2 strictly in alphabetical order.

In 1904, Heorhii Mykhailovych composed for the officers of the anthropological cabinet "Handbook for the fingerprinting research of Dr. Windt", the main provisions of which were included in the "Instructions to the Chiefs of the Kyiv Detective Police System" developed by him. In January 1905, he was approved as the prosecutor of the district court and, in accordance with the order of the Kyiv governor, was published in a separate brochure.

The instruction of H. M. Rudyi contained one hundred and fifty pages, had a "pocket" size, which was conditioned by the necessity of the detective police officers to carry it always with themselves. Structurally, the Instruction consisted of 10 chapters and 205 paragraphs.

Developed by H. M. Rudyi the Instruction for the officers of the Kyiv Detective Police was the first regulatory legal act in Russia, which not only legally consolidated the use of dactyloscopy in police practice as one of the methods of criminal registration and defined various ways of its practical use in the fight against crime, but also regulated the comprehensive aspects of the organization and activities of the investigative department, was a universal practical criminalist's handbook. Also, in

this document for the first time in the Russian Empire was consolidated the use of police tracking dogs in police practice.

The dactyloscopy was not only innovation of H. M. Rudyi in the domestic detective work borrowed from the West. Being in September 1903 at the Dresden exhibition, Heorhii Mykhailovych paid attention to one interesting exhibit item among the novelties of police equipment. It was a small-sized suitcase with numerous tools and instruments necessary for the detection and investigation of material evidence found on the crime scene. This, so to speak, was an ancestor of a modern "investigator's kit", the inventor of which is the famous Austrian forensic scientist Hans Gross.

Until recently in historical and law literature it was noted that in Russia tracker dogs first appeared in the police service in 1906. However, archival documents convincingly testify to the fact that the Russian dog service of the Ministry of Internal Affairs system originates from Kyiv, and one of its founders was Heorhii Mykhailovych Rudyi.

The materials of Heorhii Mykhailovych Rudyi personal file show that in early 1918 he lived in the city of Fastiv, Vasylkiv district of Kyiv province, had a small estate, about two hundred acres of land and a water turbine mill in Romanivka village of Skvyra district of Kyiv province.

Until recently, the futher fate of H. M. Rudyi remained unknown. In previous author's publications, it was noted that, it is likely "... to survive the terrible calamity of the civil war, a former detective police officer and pioneer of domestic criminology is unlikely to succeed." As it turned out, this assumption was true. About the tragic death of H. M. Rudyi it was reported on the Internet with reference to the Kyiv newspaper "The latest news" for 1918. The required number of the newspaper is in the Central State Historical Archive of Ukraine.

H. M. Rudyi tragically died at the age of 55. Judging by the materials of the newspaper publication, the day of his death should be considered 25 (12) February 1918.

***O. V. Shvedova**, PhD in law, associate*
professor of criminalistics and forensic department
of Educational and Scientific Institute № 2 of the
National Academy of Internal Affairs

THE CONCEPT DEFINITION OF A COMPREHENSIVE DOCUMENTS FORENSIC EXAMINATION METHOD MADE BY USING COMPUTER TECHNOLOGY

Key words: expert method, comprehensive research, document, computer technology.

The creation necessity of new separate methods of forensic engineering documents evaluation, to which we refer the method of comlex forensic engineering documents evaluation, made by means of computer technologies, is caused by appearance of new objects, regarded to which new tasks are set, and inefficiency of existing methods and etc.

For example, the new objects of forensic engineering documents evaluation are the documents executed by means of modern computer devices, and new tasks (is solved mainly in complex with application of knowledge in the field of forensic engineering documents evaluation and computer forensic examination) are establishment: - whether the printed texts are executed on one or more printers; - whether the texts of documents are made with using a single text template (file); - whether the texts of documents in paper form and in electronic form on hard disks match the signs of formatting; - whether the text of the original document (separate fragments) and its copies are executed by scanning from the text of their previous versions and then transferred to the computers of the suspects; - in what sequence the texts (fragments) of documents was made and printed etc.

Methods of complex documents forensic examination made by using the computer technologies, is the program of its basic task solving by means of the methods system

(ways, methods, technical equipments, operations), that are used in a certain sequence with an aim of fact sheets establishments, that belong to forensic engineering documents, computer forensic examination, other types (kinds) of forensic examination and have an evidential value in the case, which is investigated.

The methods of complex documents forensic examination made by using the computer technologies includes for itself, both general methodical positions of forensic examination and positions of methods of separate types of examinations. For its creation, such separate methods of forensic engineering documents were studied:

- recovery of invisible texts (digestion, washing off, erasure), texts of burned or torn out documents;
- establishment of the signature technical forgery fact;
- establishment of the group membership (class, brand, model, font brand) of the printing machine and its identification;
- defining, whether on one or different types of printing machines the text of the document is printed;
- establishment of the typing limitation term;
- setting information about the artist of the typewritten text;
- setting a group membership and printers identification, establishing a single origin of documents, etc.;

complex methods of documents forensic examination:

- materials research of writing, paper;
- definition of the drawing sequence of intersecting strokes;
- setting a limitation term for the document execution;

genitive methods of computer forensic examination:

- research of the computer system hardware;
- software research;
- research of computer information, etc .;

specific methods of computer forensic examination:

- research of printer, scanner;
- studying the contents of a hard drive, a laser (optical) disk etc.

In accordance with these provisions, the concept of methods of a comprehensive documents forensic examination method made by using computer technology had been forming.

I. V. Yudina, *Senior Forensic Expert*
of State Scientific Research Forensic Centre
of the Ministry of Internal Affairs of Ukraine

CURRENT ISSUES OF FORENSIC EXAMINATION OF DOCUMENTS WITH CHANGED PRIMARY CONTEXT

Key words: forensic examination of documents, expert practice, changes of the primary context of the document, aspects of theoretical and scientific methods, forensic technical document examination.

Prior to reviewing the subject of the article, it is important to mention material forgery of documentation by its scope. We can distinguish complete and partial types of forgery. In case of complete forgery, the blank form is produced according to the original sample and then filled in with personal data. In case of partial forgery, usually, all the necessary alterations are brought into the original document.

According to the forensic practice, complete forgery is usually used for manufacture of currency notes (both Ukrainian and foreign) and of vehicle documentation, such as registration certificates, driver licenses, permits to drive, etc.

Partial forgery is used for forgery of various identification documents – passports of the citizen of Ukraine, pension certificates, students' ID cards, other preferential certificates, medical books, sick leave certificates, legal treaty, notarial, financial and accounting papers.

Partial forgery can be divided into two groups. To the first group belong adscripting, reprinting and duplication – this type of new notes brought into the original document without removing primary ones.

To the second group belong erasure, etching and washout – deletion of the original contents of the whole document or its parts mechanically or by means of discoloration.

One of the popular ways of documentation forgery are adscripting, reprinting and duplication, but recently, experts revealed other "modern" ways of changing primary context of document. Due to this fact, the author proposed to complete existing traditional classification with the following: masking previous requisites (notes) by the white liquid like correction pen; discoloration of handwriting strokes by applying to them the use of writing instruments with fading inks and making changes through appliqués.

Almost all the methods of partial forgery of original documents are tightly interconnected, consequently mentioned above adscripting, reprinting and duplication may be followed by erasure, etching and washout. Almost every mean of changing the original context of the document have its own characteristics, which maybe outlined through persistent, purposeful and skilled survey using modern research technologies,

Substitution of photos is usually performed in identification documents – passport of the citizen of Ukraine, pension certificates, certificate of the partcipante of combat operations and even in students' ID. Usually the photo in documents should be fully replaced, but sometimes criminals substitute onply a part of it. There were cases of substitution emulsion layer of a photo or photomantage.

Moreover, sometimes criminals put a new ph to upon an old one. This type of forgery is usually used in laminated documents.

Substitution of the pages of a document is one of the way of document forgery wich are composed of two and more pages. In blank-books are usually removed double sheet or its part and replaced by similar sheet taken from another document, which, depending on the purpose of the substitute, possesses or not necessary inscriptions and requisites (signature, stamp, etc.)

Currently, in the official document flow, alongside with the originals of documents properly made documents' copies are widely used. There were often met in expert practice cases of producing fake copies through making partial changes in the context of original documents and also producing of fake copies by using original documents. Therefore, the establishing of the fact of document producing with the help of montage is a question at issue, while solving diagnostic problems in forensic technical document examination. However nowadays this expert examination stays one of the less developed both theoretically and scientific-methodologically as there is no unified terminological approach.

Montage of the document is a document production through finding and connecting parts of existing documents with one another or newly produced requisites and forming them in one document.

The technology of montage document producing is simple and does not require special serious preparations. First of all, the original copy of the document or the document in particular should be scanned, then should be changed the content of the document of the received image through graphic editors, for example "Adobe Photoshop". Finally, the edited image is printed. That way received copies are almost similar with the original.

All in all, the usage of computer technologies in document producing have created a range of tasks for forensic technical examination of documents. It is indisputable that improvement of existing and creation of new expert methodologies, technical equipment and software, training of qualified specialists are very important. Every participant of offence investigation should remember – there are no perfect crimes and the expert should alway be one step forward the criminal.