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## Implementation of Preventive Activity; Foreign Experience in Criminological Work of Forensic Science Institutions

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### Abstract

This article considers the issue of using modern foreign experience of preventive activity in criminological work of forensic science institutions of Ukraine. Peculiarities of main organisational forms of forensic activity have been analysed through special institutions (forensic science institutions) and through specific professionals: forensic experts (for example, practice of witness institution: professionals who took the oath or obtained a license for forensic examination conducting), international standards used in forensic science. The position of necessity of legislative introduction of international standards in conducting forensic examination is revealed and substantiated.

*Keywords:* forensic science, forensic expert, international standards, criminological activity, prevention, forensic science institutions.

### Introduction

In recent years, interest in studying foreign experience in combating crime among domestic scientists is constantly growing, which indicates an attempt to study the best preventive practices of individual countries and implement them in Ukraine. However,

today there is a lack of research on the direct study of preventive activities of forensic institutions in foreign countries, which increases the relevance of the chosen direction and provides prospects for identifying effective practices to improve this activity by the subject.

## Literature Route

Some aspects of foreign practice of crime counteraction by special subjects were studied in the research papers of such domestic and foreign scientists as O. M. Bandurka, Yu. D. Bluvshstein, V. V. Golina, I. M. Danshin, O. M. Dzhuzha, N. I. Klimenko, O. M. Kliuiev, V. V. Litvinov, N. M. Tkachenko and others. The need issue for preventive work of experts and expert institutions was covered in their works by criminologists of Bulgaria, Latvia, Poland and Germany, in particular V. Moshinskaya, R. Zelvyanskyi, A. Solash, K. Rote, J. Dimov, Z. Bernachek, K. Shpindler and others.

Scientists point out that experts should note the circumstances identified while forensic examination that facilitated the commission of offenses and may develop preventive recommendations for the prevention of certain crimes [1, 61].

## Aim

The purpose of this article is to assess the use of modern foreign experience of preventive activities in the criminological activities of forensic science institutions of Ukraine.

## Main Content Presentation

Each country has its own features in organisation and functioning of forensic science activity influenced by legal system of such a country and history of its development. Research on domestic scientists indicate that in European countries there are two main organisational forms of forensic science activities: through special (forensic science institutions) and through specified ones: professionals – forensic experts (for example, there is a practice of the expert witness institution, i.e. for examinations involve professionals who took the oath, or experts who have obtained a license for the right to conduct a forensic examination) [2]. Researchers predominantly focus on the main organisational and procedural issues of forensic examination during the creation of special (expert) institutions in foreign countries, namely, study the departmental affiliation of forensic institutions, strengthening control in the field of forensic science, the nature of centralisation (association of all forensic institutions in a single institute of forensic examinations under a single management in one of the departments) and decentralisation (dispersion of institutions in the relevant departments) [3].

In many European countries, forensic science institutions in cooperation with police organisations under the jurisdiction of the Ministry of the Interior. For example,

in the United Kingdom: The Forensic Service (FSS) operates within the Ministry of the Interior. The FSS is an important body in the work of the British police to investigate, detect and prevent crime. FSS officers are involved in investigation and investigative activities, perform examinations and research for the regional police units of England, as well as the Royal Public Prosecutor's Office, customs and excise services and other law enforcement agencies. The service provides services to private companies both domestically and abroad. To perform specific types of examinations (for example, forensic examination of documents) involves involvement of specialists from private forensic laboratories. The United Kingdom is a country that has undergone the abolition of the "monopoly" on forensic examinations by state forensic science institutions [4].

Contrariwise, in some countries the forensic service is part of the Ministry of Justice (in Portugal and the Netherlands).

In France, forensic service is part of the armed police forces (National Gendarmerie and National Police) and reports to the Ministry of Defense. The National Gendarmerie includes a unique forensic science institute working closely with police, investigators, prosecutors and judges. In Spain and Poland, forensic laboratories report to the Ministry of Justice in addition to forensic laboratories under the Ministry of the Interior. In Spain, forensic laboratories have two separate departments: The Ministry of Interior and the Ministry of Justice [5, 136].

In Poland, there is a Central Forensic Laboratory and 17 regional laboratories under the Police command. Forensic laboratory experts participate in site inspections, apply the latest research methods in various fields, collect, accumulate and use DNA databases and fingerprint records, exchange these databases between the member states of the European Union to search for persons for administrative offenses or criminal offenses. In order to systematically control migrants in Europe, the Central Police Laboratory of Poland and other EU countries use the *Eurodac* system allowing not only to monitor migrants but to check their involvement in committing offenses in these countries by placing fingerprints in its database that is a mandatory requirement when crossing the border for entry or exit. This system is also used for data exchange between EU countries.

Simultaneously, within the framework of the Horizon 2020 Programme in the European Union, the issue of integration of DNA profile databases and fingerprint accounting with the possibility of posting additional information (photographs, images, weapons, etc.) is being addressed. DNA profiles are registered in the National DNA Database in accordance with the decision of law enforcement agencies (police, prosecutors, the Internal Security Agency, the Border Guard Service, the military police, the Central Anti-Corruption Bureau, the Customs Service) or the court investigating a particular criminal case. Experience in the use of new advances in science and technology, a high level of logistics, the exchange of forensic information, including fingerprint data, and DNA profile data is important for solving forensic tasks, in particular Expert service of the Ministry of Internal Affairs of Ukraine.

*Nataliia Filipenko, Hanna Spitsyna, Ihor Shynkarenko, Vitalii Tsybalisty. Implementation of Preventive Activity; Foreign Experience in Criminological Work of Forensic Science Institutions*

It is of scientific interest and experience of Arab world in development of preventive activities of forensic and forensic units. For example, the most technically equipped and with the highly qualified personnel is the forensic laboratory of the Dubai City Police (UAE) [6, 110]. It consists of seven departments: forensic, chemical, biology and DNA identification, fires and explosions, technical examination of documents, ballistics and traces of tools and mechanisms, computer science. The Dubai Police seeks to be recognised as the most progressive of all Arab police organisations. IT was the first to use automated fingerprint and DNA identification methods and GPS capabilities to search for stolen cars. In addition, it was the first police organisation to establish a human rights department.

Recently, the role of international cooperation in the field of forensic science has been steadily growing. The main purpose of state forensic institutions is to protect the interests of the state, the rights and freedoms of citizens and the rights of legal entities by conducting objective, scientifically sound forensic examinations and expert research. International cooperation of forensic institutions is important for the implementation of the rule of law improving forensic activities and improving forensic science quality as one of the main forms of using specific expertise in modern justice, as well as the formation of preventive recommendations for law enforcement agencies. Active activity in the field of international integration of our country into the world legal space puts before the state forensic institutions a wide range of tasks to establish international cooperation and expand cooperation with foreign specialised forensic science institutions.

One of the main directions of work of all public authorities in Ukraine on its integration into the European and world community is the preparation of proposals on international legal relations and Ukraine's accession to international treaties and conventions, signing agreements on legal cooperation with relevant foreign bodies and international organisations, interaction with them within their powers, etc. That is why the current trend is to expand the participation of forensic science institutions in such international cooperation, increasing their role in the development of theory and practice of forensic science and criminalistics [7].

Analysis of the state and dynamics of international forensic cooperation allows us to identify the following three groups of major trends in this area:

- 1) main trends in international forensic cooperation management (strengthening of regional cooperation in the field of forensic science, creation of international forensic teams, improvement of means and methods of communication between forensic science institutions, creation of joint databases and data banks);
- 2) main trends in development of international cooperation in the field of scientific support of forensic science (intensification of exchange of scientific achievements in forensic science, joint efforts of the international forensic community in developing current issues of forensic science, increasing interest in the general

*Nataliia Filipenko, Hanna Spitsyna, Ihor Shynkarenko, Vitalii Tsybalytyi. Implementation of Preventive Activity; Foreign Experience in Criminological Work of Forensic Science Institutions*

theory of forensic science, development of human rights issues while forensic examination);

- 3) main trends of international cooperation in the field of methodological support of forensic science activities.

However, the area related to strengthening the preventive activities of forensic institutions is not mentioned or highlighted as a priority that is, in the authors' opinion, an incomplete reflection of the criminological potential of these entities.

It should be noted that the European Union recognises the leading role in provision of judicial assistance by ENFSI, in particular in December 2011 at a meeting of the Council of Europe on Justice and Home Affairs adopted Decision on the Strategy for European forensics until 2020 providing for a single space European forensic science development of forensic science infrastructure in Europe [8].

Thus, it should be noted that the international community is constantly interested in the field of forensic science and the use of its capabilities in combating crime and ensuring the administration of justice. In order to exchange information, improve expert methods, form common standards of forensic expertise, solve practical problems of law enforcement, train and improve staff skills and solve other important tasks, today more than thirty international organisations are successfully operating.

The next thing to pay attention to is the fact that both in Ukraine and in foreign countries it is important to introduce the latest information technologies in the preventive activities of forensic institutions (due to digitalisation procedures).

In forensic science activities, use of the advanced information technologies (hereinafter referred to as IT) and computer technology, advances in various sciences: mathematics, semiotics, modelling theory, algorithm theory, use in expert research of integrated automated data banks (hereinafter referred to as ADB), intelligent interactive (dialogue) information systems and the formation of automated information systems (hereinafter referred to as AIS) of the new generation allow timely receipt and processing of relevant information, record illegal activities of individuals and organised criminal groups, prevent illegal activities of criminal "authorities" and "leaders", organise work on active search of criminals and other persons, identify and eliminate the causes and conditions that contribute to the commission of crimes, thereby effectively implementing the requirements of current legislation to protect the rights and interests of people, society and the state as a whole from criminal encroachment [9].

Effective crime counteraction can be only under the condition of further development of special scientific knowledge, development of effective methods and scientific and technical means of obtaining, processing and analysis of evidence.

Current stage of development of forensic examination is characterised by high dynamism, active influence on its development of scientific and technological progress, purposeful and active search for effective ways to improve expert practice on a fundamental theoretical basis. The main features of forensic research at the present stage include its high science intensity, use of cybernetics integrating into forensic science and

*Nataliia Filipenko, Hanna Spitsyna, Ihor Shynkarenko, Vitalii Tsymbalistyi. Implementation of Preventive Activity; Foreign Experience in Criminological Work of Forensic Science Institutions*

criminalistics are a catalyst for further development of its traditional tools and methods based on achievements of natural, technical and human sciences. Information technologies in forensic activities are defined as an organised set of information, information processes and information systems to solve specific tasks.

For example, today in Ukraine various databases on specific forensic science objects have already been created and functioned:

- 1) the *TAIC*, automated information retrieval ballistic system and *Ricochet* laser automated ballistic system in ballistic examination;
- 2) the *Vzuttia*, automated investigative system to determine characteristics of the soles of shoes in their footsteps while trace evidence analysis;
- 3) the *Marka*, automated investigative system used during examination of paints and coatings. Its database contains information about the characteristics of several hundred reference samples of paint, which is necessary to solve classification and identification problems. With the help of *Marka* automated investigative system comes establishment of generic (brand) and group (within the brand) belonging to the enamel. Information on the quantitative characteristics of the elemental composition of the mineral part of all brands of car enamels used by car plants in Ukraine, Russia and European countries is used as a feature. The search is performed by comparing the main features of the unknown car enamel with the features of the known car enamels (standards) contained in the system data bank;
- 4) the *Provoloka*, automated investigative system used in the examination of metals and alloys and others.

Given what has been said about international cooperation and the development of forensic science, it is advisable to specify certain areas of use of results (opportunities) of forensic science institutions while crime counteraction.

## Conclusions

Summarising the above, it can be noted that Ukrainian international cooperation in the field of forensic science should develop in general areas, which include intensifying contacts and encouraging strengthening cooperation between forensic experts and forensic institutions of different countries, creating a common information space in the field of international forensic science, expert cooperation, support for establishment of international and regional forensic networks, development of scientific cooperation, participation in the work of international academies of forensic sciences and participation in the development and implementation of international standards in the field of forensic science.

Specialised strategic directions of international cooperation in the field of scientific research and methodological support of forensic examinations are the creation using domestic, international and foreign experience of scientific, methodological and organisational principles of forensic prevention (which is part of criminological activities of these



*Nataliia Filipenko, Hanna Spitsyna, Ihor Shynkarenko, Vitalii Tsybalisty. Implementation of Preventive Activity; Foreign Experience in Criminological Work of Forensic Science Institutions*

institutions) and investigation of terrorism and crime in the field of information technology, in particular with the illegal use of other people's personal data; transnational and international financial crimes; illicit trafficking in narcotic drugs and pharmaceuticals (especially during the spread of the COVID-19 coronavirus pandemic); environmental crimes and crimes against wild flora and fauna; crimes that encroach on cultural values; development of international cooperation in the field of development and production of forensic research equipment and materials; international exchange of achievements in the field of general theory of forensic science, etc.

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