

**MINISTRY OF INTERNAL AFFAIRS OF UKRAINE**  
**NATIONAL ACADEMY OF INTERNAL AFFAIRS**

**THE BASICS OF CRIMINALISTICS**  
**PRACTICAL MANUAL**

*Under the general editorship of Anna Myrovska*

**KYIV – 2021**

*Recommended by the scientific and methodical council  
of the National Academy of Internal Affairs  
(Protocol No. 3, dated 16.12.2020)*

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**The basics of criminalistics** : practical manual / Anna Myrovska, Artem Samodin, Tetiana Tsymbaliuk and other ; under the general editorship of Anna Myrovska. – Kyiv : Osvita Ukrainy, 2021. – 148 p.

ISBN 978-617-7993-67-3

The course book outlines the general provisions of the forensic science methodology, the issue of forensic techniques and other individual branches, the content of forensic tactics is disclosed, modern methods of investigation are considered the certain types of crimes.

The course book is intended for cadets, listeners, students, postgraduate students and faculty members of law schools and law enforcement officers.

## **TABLE OF CONTENTS:**

<b>Introduction</b>	<b>5</b>
 <b>Chapter I: GENERAL THEORY OF FORENSIC SCIENCE</b>	 <b>8</b>
1.1. Subject of forensic science	8
1.2. Functions and tasks of forensic science	14
1.3. The system of forensics	17
1.4. The concept and content of the methodology of forensics	21
1.5. Characteristics of methods of forensics	23
 <i>Questions for control to chapter 1</i>	 <b>31</b>
<i>Test tasks</i>	<b>32</b>
 <b>Chapter II: FORENSIC TECHNIQUE</b>	 <b>36</b>
2.1. Concept, system and tasks of forensic technique	36
2.2. The application for principles, forms, concepts and legal reasons of forensic technique	40
2.3. Classification of means of forensic technique	43
2.4. Methods of forensic technique	49
 <i>Questions for control to chapter 2</i>	 <b>53</b>
<i>Test tasks</i>	<b>54</b>
<i>Practical task</i>	<b>59</b>
 <b>Chapter III: FORENSIC TACTICS</b>	 <b>62</b>
3.1. Subject, tasks, sources and means of forensic tactics	62
3.2. Tactics of investigative (search) actions	67
3.3. Tactical techniques, tactical combinations, tactical operations	73

3.4. Investigations of the situation.	
Tactical decision and tactical risk. Forensic recommendation	77
<b>Questions for control to chapter 3</b>	<b>81</b>
<i>Test tasks</i>	<b>83</b>
<i>Practical task</i>	<b>88</b>
<b>Chapter IV: FORENSIC METHODOLOGY</b>	<b>90</b>
4.1. Concept, subject-matter and development trends of forensic methods (approaches)	90
4.2. Classification and structure separate methods of crimes investigation	95
4.3. Forensic characteristics of crimes	99
<b>Questions for control to chapter 4</b>	<b>102</b>
<i>Test tasks</i>	<b>103</b>
<i>Practical task</i>	<b>107</b>
<b>APPLICATIONS</b>	<b>109</b>
<b>Key to the task</b>	<b>146</b>
<b>List of used and recommended literature</b>	<b>147</b>
<b>List of recommended information resources</b>	<b>147</b>



## INTRODUCTION

Criminalistics has been traditionally assumed as special knowledge system that provides effective counteraction to criminal offences with regard to examination of unlawful activity's consistent patterns, evidentiary information's genesis and optimal utilization, special means and measures being used by law enforcement, human rights protection, judicial bodies and forensic offices in the field of criminal proceedings relation. Simultaneously in some cases criminalistics knowledge are making an impact to results of work of lawyers, notaries, counselors and other representatives of legal activity's different sectors.

Studying criminalistics, spreading its achievements among researchers and practitioners serves as collateral of qualitative legal education, basic and post-graduate training of police officers in specialized higher educational institutions National Academy of Internal Affairs appertains to. Nowadays methodology of criminalistics teaching comprises not only conventional theoretical scientific concepts, but also realities of bodies of pretrial investigation and operative units activity, foreign means and measures of crime counteraction, whereas didactical grounds of its practical component realization use elements of modern approaches to students' knowledge and skills building via informational technologies and latest criminalistics equipment.

Criminalistics is developing at a fast pace: by the end of 2020 more than 800 dissertations concerning directly or coming near problems of criminalistics have been successfully defended in Ukraine.

Work of teaching and research staff of respective criminalistics departments and scientific laboratories is worth mentioning due to significant improvement of current and development of new means, methods, tools and materials of finding, fixation, extracting, research and use of criminalistics data in criminal offences counteraction.

Researchers and practitioners from scientific and research institutes of Ministry of Justice of Ukraine, State Scientific and Research Institute of Ministry of Internal

Affairs of Ukraine, State Research Forensic Center of Ministry of Internal Affairs of Ukraine, Ukrainian Scientific and Research Institute of Special Technics and Forensic of Security Service of Ukraine, scientific and research forensic and forensic medicine establishments of Ministry of Health Care of Ukraine, scientific and research establishments and forensic services of Ministry of Defence of Ukraine and State Border Guard Service of Ukraine.

Textbook's architectonics is classically composed and includes material from four traditional parts of criminalistics taking into account some of its concepts' modern directions and trends (as well as investigational and judicial practice of criminal offences investigation). These parts' internal content is embodied in respective chapters; core information and questions for self control are envisaged in each of it.

First part «Theoretical grounds of criminalistics» is dedicated to general theoretical concepts of criminalistics, its history and periodization of development with regard to contribution made by leading scientists-criminalists, methodological fundamentals of criminalistics, outlines of criminalistics identification and diagnostics.

General provisions of criminalistics technics and its respective branches, e.g. criminalistics photography and video recording, trace evidence analysis, weapon studies, graphology, criminalistics document research examination, habitology, phonoscopy, scent research, criminalistics materiology etc. are given in second part «Criminalistics technics».

Taking into account rampant development of information telecommunication systems, algorithms of problem solving based on artificial intelligence, basics of electronic criminal proceedings and their implementation in law enforcement activity, investigational and judicial practice special focus is given to issues of information and reference support of law enforcement activity (criminalistics registry), information and analytical support of activity of bodies of National Police of Ukraine including use of criminal analysis capacities in criminal offences investigation.

Third part «Criminalistics tactics» confronts a reader with general provisions of criminalistics tactics, essence and meaning of such categories as investigative situation, tactical option, tactical combination, tactical operation, tactical decision, tactical risk, criminalistics recommendation and criminalistics line of enquiry in investigative activity and also highlights matters of pretrial investigation of criminal offences' organization and planning.

Tactics of investigative (operative) actions such as examination, search, interrogation, identification lineup, investigative experiment are given in classical criminalistics approach divided into preparation, working and final stage based on current criminal proceedings legislation and practice of its application by law enforcement bodies of power.

Being aware of timeliness and complexity of simultaneous interrogation of two and more persons previously interrogated, interrogation and identification lineup via video conference authors of the textbook allocate separate chapters to these investigative actions. Special focus is given to operative actions conducting, basics, forms and directions of special knowledge use and application of polygraphology capacities in pretrial investigation.

Forth part «Criminalistics methods» traditionally covers experience of criminalistics science concerning definition, essence and trends of development of criminalistics methods as scientific category, classification and structure of separate methods, criminalistics characteristics of criminal offences. Criminalistics methods of homicide, bodily harm, rape, theft, burglary, robbery, hooliganism investigation as well as investigation of crimes in the field of drugs, psychotropic substances, their substitutes and precursors trafficking, violations of traffic safety and vehicle operation rules are available with regard to modern status, structure and dynamics of crime in Ukraine.

Authors' scientific points of view during preparation of this textbook are given with regard to previously published scientific works in the field of criminalistics, criminal proceedings, forensic research and criminal law, materials of investigational and judicial practice.

This textbook is meant to be used by students, post-graduate students, teaching and research staff of legal higher educational establishments, law enforcement officials, judges, lawyers and other representatives of legal profession.

Remembering all scientists who dedicated their life and career to modern theoretical grounds of criminalistics science forming in general and some of its provisions in particular authors are sincerely thankful to leading scientists-criminalists and practitioners who helped during this textbook's preparation. Readers' comments and suggestions published in scientific journals or sent to the address of Department of Criminalistics and Forensic Medicine of National Academy of Internal Affairs will be highly appreciated.

## **Chapter I:**

### **GENERAL THEORY OF FORENSIC SCIENCE**

#### **1.1. Subject of forensic science.**

Forensic science is a system of multifaceted knowledge used in various spheres of public life. Appropriate understanding the subject of forensic science is crucial significance, in that its definition is specified the area of objective reality, which form the meaningful basis of this field of knowledge. Throughout the history of science, the importance of this problem was perceived by forensic scientists. The study of the views of many scholars makes it possible to highlight several approaches that characterize the evolution of representations concerning the sphere of interests of forensic science.

At the beginning of the XX century, the forensic science was perceived by scientists as a science of tools and techniques for applying the achievements of natural and technical sciences in order to investigate crimes.

In the thirties of the XX century, the Soviet forensics specified the subject of forensic science as a science studying techniques, methods of committing crimes, traces and the use of natural and technical sciences to accomplish purpose of the investigation.

Before the middle of the past century, in most of the existing definitions the subject of forensic science - quite clearly outlined a peculiar approach to the understanding of science, which can be called "instrumental". The concept of forensic science envisaged its understanding, mainly as an applied, auxiliary discipline, which is intended to serve the criminal procedural activity. This approach made forensics secondary in relation to, for example, the science of the criminal process, discipline, and did not allow it to be perceived as an independent branch of knowledge.

A turning point in the study of the outlined problem became the definition of the subject of forensic science, presented through the lens of laws that is studied by science (60s of the XX century).

According to the above mentioned point of view, forensics is the applications of science to crime means, accrue information of offenses and associates, and applications of collection, investigation, evaluation and implementation of evidence, and acquirement of special tools and methods of forensic expert examination and crime prevention based on the patterns (by R.S. Belkin).

Today, there are many definitions of the subject of forensic science. They contain a variety of features that, according to their authors, outline the interests of science. Without asking a detailed consideration of the advantages or contradictions of this or that definition of the concept of an object, it should be noted that among the most important signs of the subject of forensic science, the scientists called the following:

- 1.Synthesis of knowledge, which is the content of forensics, in most cases formed by the involvement of achievements of various branches of knowledge, with their further improvement and adaptation to the fight against crime.

- 2.Specificity of forensic science technologies, techniques and methods of disclosure, investigation and prevention of crimes.

- 3.The focus of forensics on the study of the patterns of the emergence of evidence (probative information) in the preparation, commission and concealment of crimes and patterns of detection, investigation and use of evidence (probative information) in the investigation and prevention of crimes.

- 4.Development of scientific and technical methods, technique and practice, recommendations for optimization of investigation and prevention of crimes.

The study of the definitions of the subject of forensics demonstrates that all of them contain three essential areas of interest in forensic science. First - the study of the patterns of the formation of criminal information and work with it. Secondly - studying the achievements of other areas of knowledge in order of involving them to the task of fighting crime. Thirdly - the development of certain tools to work with criminal information. There is quite a fair question about the validity of studying the patterns of their own development, the specifics of the production of new knowledge, their organization and use in practice in forensic science.

Proceeding from the fact, that science - is a certain system of knowledge, purposeful activity and a certain social institution, there is an opportunity to consider forensics in terms of these manifestations.

In the special literature, forensic knowledge is defined as a system of information (statement, data) about the level of knowledge of the patterns that make up the content of the subject of forensics, that is, the source principles, theories of concepts, categories, results, experiments, conclusions, methods, tools and recommendations used as tools of forensic scientific knowledge for the purpose of investigation and prevention of crimes.

One can say that forensic knowledge contains knowledge about the many objects, facts, circumstances. If you take as a sign the direction of the interests of criminology, then forensic knowledge can be divided into the following groups:

1. Knowledge about the regularities of the formation of criminal information and work with it.

2. Knowledge about the possibilities of using the achievements of other branches of science in the disclosure, investigation and prevention of crimes.

3. Knowledge about means, methods and tools of work with criminal information.

4. Knowledge about the features and patterns of their own development.

The most significant in scope, depth of research, and proven practice is knowledge of the first, second and third groups. They are presented in detail and systematized in such branches of science as forensic technology, forensic techniques and, partly, in the general theory of forensics.

As for knowledge about the peculiarities of their own development, they are mainly concentrated in the section "General theory of forensics", but their study shows the need for systematization and revision.

Forensic knowledge classified above according to the interests finds its place in the system of forensics, its sections. In turn, each of the sections is a certain system of knowledge, which includes the theoretical positions, laws, categories, methods, techniques, practice and factual material. This knowledge varies in form, content,

probability. Depending on the probability the knowledge can be reliable (axiomatic) and hypothetical (ideas, views). For example, the possibility of forensic identification of solid bodies for their imprints is traditionally considered reliable; on the other hand the possibility of identifying liquids and gases is hypothetical. Of course, hypothetical or reliable knowledge can be determined only in relation to the specific moment of the development of science, its potential opportunity.

Depending on the form of expression, knowledge may be advisable (methods, techniques) and directive (laws, principles, practice, algorithms). For example, the necessity of using psychological methods of influence during interrogation of a witness is determined by the investigator, and the necessity of unconditional adherence by the expert to the rules of handling a certain material carrier of evidence information (instrument for committing a crime, a reflection, a micro-lave) cannot be questioned at all because it will lead to loss of information.

By its content knowledge is divided into theoretical (category, hypothesis, theory) and practical (instrumental) - methodology, technology, methods and techniques. For example, the theory of forensic identification and the method of forensic identification of specific objects.

Manifestations, as has been emphasized earlier, forensic science is a deliberate activity in the study of certain laws, patterns, facts, circumstances, interrelationships and criminology as science is not limited to the fact that it represents a certain system of knowledge of production on the basis of such a study of new scientific knowledge.

In general, criminology, like other science of the criminal-law cycle, studies activity. The traditional object of interest is the work of the investigation and prevention of crime, which is no doubt for the majority of lawyers. Naturally, the science studied the activities of an investigator, an expert. In recent years, the interest of criminologists has grown significantly in the study of the problems of introducing scientific achievements into practice using a variety of forms, methods, channels. More and more supporters have won the thesis that forensics should study criminal activity. It has already been said that the scope of the use of forensic knowledge is expanding ever more.



Given the development of forensic science, scholars increasingly think that the existing definition of the subject of forensics has become "tight" for this science, narrowing its possibilities only to the remit of the oppugnancy to crime and the fight against crime.

That is, in modern conditions, forensic science can be defined as a system of knowledge about the legitimate generation (formation, occurrence), the identification (ascertaining), fixation, extraction, study, evaluation and use of information suitable for verification or establishment of any facts, events, phenomena, as well as development on the basis of known patterns of practice, methods, procedures, techniques, technologies, tools, materials, devices and their complexes and other means of optimizing the work with such information.

It is important to study the laws of the development of forensic science, which include:

- The law of connection and adversariness between existing and emerging forensic concepts;
- The law of active creative adaptation for the purposes of justice of the modern achievements of those sciences, whose provisions cannot be directly, without deviation and special adaptation, used in the proceedings;
- The law of the condition of forensic recommendations to the needs of the practice of legal proceedings and the improvement of this practice on the basis of the achievements of forensic science;
- The law accelerating the development of forensic science on the basis of scientific and technological progress in the field of forensics, as well as in related fields of scientific knowledge.

Accordingly, the basic principles of forensics should include: the principle of cognizance of the material world, objective reality; the principle of historicism; the principle of the systemic nature of science.

## **1.2. Functions and tasks of forensic science.**

The term "function" comes from the Latin (funcio) - execution, implementation, influence. In the reference literature, it is interpreted as a work of someone, something; duties; the scope of someone's or something's activity; duty, role.

Among representatives of certain natural and social sciences in the interpretation of the notion of the functions of science, there are also many features. If we do not detail some of the industry's specifics, then the functions of science are traditionally understood meaning its official role and public purpose, the main directions of its activity, inherent in the science of manifestation of its essence, arising from its internal nature as an independent system of knowledge.

It is known that forensic science belongs to the system of legal sciences, and it would be logical to say that forensics must perform a number of specific functions inherent in the legal sciences.

Summarizing different approaches, it should be noted that at the present stage the following main functions are inherent to forensic science:

a) Ascertaining function- fixation, registration, description, accumulation of information about objects, processes, phenomena and regularities that are discovered and observed, for further their theoretical explanation;

b) Interpretation function - disclosure of the internal essence, finding out the causes and internal connections of those phenomena, processes that are reliably known and recorded by the available signatory means;

c) Heuristic function - the discovery, the establishment of previously unknown phenomena, processes, patterns and the development of new theoretical positions and doctrines;

d) Predictive function - prediction, with the possible highest degree of reliability, the state of the object, phenomenon, process at a certain moment or time interval in the future;

e) Practical applied function - provision of the practice of prevention, investigation of crimes and other types of legal practice with the necessary technical means and methodical recommendations;

f) Communicative function - the dissemination of the achievements of forensics in a wide range of fields of science and practice and reliable obtaining the information necessary for forensic research;

g) Educational function - assistance on the side of science of acquiring and mastering forensic knowledge by law enforcement officers;

h) Nurture function - promoting with its specific means, methods and recommendations the formation of socially desirable legal behavior of individual and group subjects;

i) Critical function - the detection of flaws and errors in all manifestations of science.

Functions of all legal sciences have mainly theoretical and applied character. The system of forensic functions is no exception. Therefore, the functions of forensics are realized through the system of its tasks.

In general, the main task of forensic science is the forensic provision of the fight against crime by means, methods and techniques which are adequate to needs of practice for obtaining evidence-based information.

In addition, the general tasks include protecting a person, society and state from criminal offenses, protecting the rights, freedoms and legitimate interests of participants in criminal proceedings, as well as ensuring a prompt, complete and impartial investigation and judicial review so that anyone who has committed a criminal offense should be prosecuted in the measure of one's guilt, no innocent should be accused or convicted, no one should be subjected to unreasonable procedural coercion; an appropriate legal procedure should be applied to any participant of the criminal proceeding (Article 2 of The Criminal Procedural Code of Ukraine).

General tasks are the basis for the allocation of separate (special) tasks for each legal science, including forensics. They characterize a specific legal science; serve as

a benchmark and a program for its development and improvement. Some of the tasks of forensic science include:

1) further study of the objective patterns of reality, which form the basis of the subject of forensics;

2) development of new and improved existing technical and forensic means, tactical performances and methodical recommendations for the collection, research, evaluation and use of evidence;

3) development of measures to stop and prevent crime;

4) development and improvement of organizational, tactical and methodological bases of pre-trial investigation and judicial proceedings, organizational and methodological basis of forensic examination;

5) active study and generalization of investigative, expert, operative-search and judicial practice, foreign experience in the fight against crime, development of automated information bases.

### **1.3. The system of forensics**

The system of forensics - it is its constituent parts or sections, located in a certain sequence, which is inherent in the presence of internal and external interconnections.

Historical analysis shows that at first forensics was not split up - it was "police technique". Over time, techniques for conducting investigative actions were identified and summarized. So there was a second section - tactics. In the late 20's - early 30's of the twentieth century forensics was enriched by the third part - the method of investigation of certain types of crimes, or otherwise - a special part. Thus, the forensics system had been consisted of three sections: forensic technology, investigative tactics and investigation techniques, in particular, techniques and tactics were the general part, and the methodology - a special one. Such a system had been existed a considerable amount of time. In the 50 years the "introduction" appeared in it, which included the methods of forensics, the doctrine of the version, the problem of interaction between the operational units and the public. Thus, the fourth part of the forensics system was formed - the methodology (or the general theory of forensics, which was substantiated by RC Belkin).

The system of forensic science, as well as its subject, is constantly subjected to various changes. On the one hand, this was an objective necessity, since the process of accumulation of forensic theoretical and empirical data existed constantly, and as a consequence, there was a need for their generalization and systematization. On the other hand, sometimes the changes in the forensic system were subjective.

An analysis of forensic literature makes it possible to combine scientists with their attitudes toward the formation of the science system in three groups:

- 1) supporters of increasing the number of sections of the forensic system;
- 2) supporters of the return to the two-element system of forensic science (general and special parts);
- 3) supporters of the four-element forensic system.

The most numerous group of scientists is the supporters of the classical four-element construction of the forensic science. This position is also taken by the staff of

the Department of Criminalistics and Forensic Medicine of the National Academy of Internal Affairs. The specified system consists of four sections:

1. General theory of forensic science (the theoretical basis of forensics).
2. Forensic technique.
3. Forensic tactics.
4. Forensic methodology (method of investigation of certain types of crimes).

The general theory of forensic science - is a system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis.

Forensic technique—is a system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence. In practical terms, forensic technology is an arsenal of means and methods for gathering forensic information. This section of forensics consists of the following areas: criminalistics photography and video; forensic study of traces (trace evidence analysis); forensic investigation of weapons, ammunition, explosives and devices and traces of their use (weapon science); forensic handwriting analysis; technical and forensic study of documents; identification of a person by signs of appearance (habitscopy); forensic study of sound tracks (phonoscopic subject); forensic study of odor traces (odorology); forensic research of materials, substances and products; Information and reference support for law enforcement activities (criminal registration).

Forensic tactics - is a section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence.

Structurally in tactics there are two sections. The first contains the so-called general provisions: the concept, system, tasks, sources and principles of forensic

tactics; the doctrine of the forensic version, the organization and planning the investigation; the particularities of the interaction of the investigator with other law enforcement units, the use of expert assistance and the public in the investigation. The second section includes provisions on the tactics of conducting investigative (search) and secret investigative (search) actions, procedural actions during the criminal proceedings, covering the entire tactical complex of their possible implementation.

Forensic methodology– is the final section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes. Forensic Methodology consists of two parts: general provisions and separate (specific) methods of investigation of crimes.

The first part includes the data of research and application of the general patterns of organization and conduct of the investigation, conceptual apparatus, tasks and principles of forensic methodology, description of the structure of particular investigative techniques, etc. The general provisions reflect and ensure the integrity of the constituent parts of the forensic methodology, particular investigative techniques, their scientific validity and interconnection. The second part of the section consists of methods of investigation of certain types (groups) of crimes, which are developed on the basis of the general provisions of the forensic methodology in accordance with the requirements (needs) of the investigative practice.

It should be noted that the science system depends on the level of development of its constituent elements, the degree of theoretical development of sections. In accordance with their development, it must definitely improve its internal and external structure, including by separating from the forensics of individual elements, and creating on their basis new branches of scientific knowledge.

The subject of forensics and its system are internally and externally interrelated. The development of the subject and the system of forensics, the knowledge of its new constituents, has the same regular nature as in other branches of

scientific knowledge, one of the content of which is the transition from individual to general and profound theories.



## **1.4 The concept and content of the methodology of forensics**

In general, the methodology (gr. - methodos - the path of research, the approach of cognition and logos - science, knowledge) means: 1) the doctrine of the methods of knowledge and transformation of the world; 2) a set of techniques of research that are used in any science according to the specifics of the object of its knowledge.

According to the national scientific tradition, the methodology is considered as a doctrine of the scientific method of cognition or as a system of scientific principles, on the basis of which the research is based and the choice of a set of cognitive means, techniques of research is carried out.

Forensics - is a science that can rightly be called the science of crime investigation. That it's which gives the key to the knowledge and investigation of the crime, determination of its mechanism and other circumstances to the investigator, the prosecutor, the officer of the operational unit, the expert. The science promotes law enforcement activities, increases its effectiveness in the fight against crime with its recommendations, special methods and means of detecting, fixing, researching and using evidence.

The fight against crime, the protection of citizenships personal and property rights in modern conditions requires the use of new, non-traditional sources of evidence: traces of smell, sound, research of prints at the molecular and atomic levels - all this brings forward new challenges for forensics, which using the latest achievements of natural sciences, technical sciences, adapts them to the solving of specific tasks, transforms them into forensic practice.

The main subject of knowledge of forensics is a crime (criminal offense), which is a complex social phenomenon, characterized by its structure, interconnections between its elements. Known and quantitatively reproduced connections acquire the attributes and regularities that belong to this structure.

A crime in a social practical point of view is a dynamic system that has different forms of interaction between objects of living and inanimate nature. The structure of its elements includes: subjects; objects by means of which a crime is

committed; the method of its commission (covers the activities of preparation, execution and concealment); the result, that is, material reflections, as well as other circumstances of the place, time, behavior of persons in varying degrees involved in the crime committed.

In the process of committing a crime the elements of the dynamic system interact with each other, creating a set of sequential procedures called a mechanism. On the one hand, the mechanism of committing a crime, can be filed as a series of certain actions that occur in time, techniques, procedures of entities in the material environment; on the other - as a mandatory appearance of the trace pattern, regardless of the consequences of illegal activity, i.e. the reflection of the crime mechanism in the form of a system of trace-mappings.

The study of forensic patterns of the commission of a crime and its mechanism is only one side; the other side consists of methods and means of gathering, researching, presenting, using evidence to investigate and preventing a crime. Developed on the basis of knowledge of the patterns of the commission of the crime technical means, tactical techniques and recommendations for working with evidence received the name of forensic means.

These outlined and other science-related positions are studied by the methodology of forensics. It should be borne in mind that the methodology of science - is not only the doctrine of methods; this concept is much broader, representing the general theory of science, which includes knowledge of its subject, the conceptual apparatus, problems and patterns of development of this industry in the historical aspect. The main content of the above-mentioned questions is reflected in the content of the general theory of forensics, which forms the system of teaching on the forensic subject, its tasks, purpose and laws of development, the conceptual apparatus and the place of forensic knowledge in the legal sciences.

## **1.5. Characteristics of methods of forensics**

In the methodology of forensic science, an important place actually belongs to the methods of forensics.

Method (from the Greek *metodos*) in the broadest sense of the word is "the path to something", the path of study, the path of knowledge, theory, doctrine, conscious way to achieve a certain result, the implementation of certain activities, solving certain problems.

Traditionally, among the methods of forensics, the main one is considered as an all-embracing method - the dialectical method of cognition. An important role in forensic science and practice is played by the philosophical positions on the unity of theory and practice, interconnectedness and conditionality, the ability of matter to be reflected, the study of phenomena in development, conformity and invariance, and others. These philosophical propositions are specified by such categories as form and content, essence and phenomenon, necessity and chance, possibility and reality, cause and effect, system, structure and element, concrete and abstract, general and particular, etc.

The group of general scientific methods of forensics includes:

1. Sensory-rational: observation, description, comparison, experiment, modeling.
2. Logical: analysis, synthesis, induction, deduction, hypothesis, analogy, idealization, generalization.
3. Mathematical: measurement, computation, geometric construction, mathematical modeling.

These methods amount to sensual and rational cognition, since they are perceived not simply as the sum of individual isolated elements from each other, but their totality, systematized in a certain way. We characterize them.

Observation - is the perception of an object, a phenomenon, a process that is carried out deliberately and purposefully with the aim of studying it. Objects of observation - elements of the material world; people, signs of their appearance, manifestations of their character, temperament, emotional state; actions of people,

including those which form the way of preparing, committing and concealing a crime.

The subject of observation is a forensic scientist, a forensic practitioner. Observation can be direct and mediated. Among the methods of collecting and research evidence the observation is the most elementary and widespread method. At the same time, this method is an integral part of other methods: comparison, measurement, experiment, etc.

The description is important for determining the features of an object: the described characteristics are established by observation or with other methods and are the result of fixing the acquired information. A direct description is carried out by the researcher for expressing the results of direct observation (in the process or from memory). Mediated description is carried out by the researcher himself, but includes signs of objects perceived by others, for example, building an identikit picture on the basis of the distinguishing marks of the criminal described by the eyewitness.

Comparison – comparing characteristics, features of two or more objects. The objects of comparison can be: material objects, virtual images, conclusions and assumptions, results of actions. The use of the comparison method during an investigation must meet certain conditions: comparable objects must be related to the subject of evidence; only such features and attributes of material evidence, which are essential in the study of the circumstances of the criminal proceedings should be the subject to comparison. In such circumstances, the results of the comparison, the data are the basis for the adoption of procedural decisions. In terms of technology the comparison can be done by comparing objects and assessing their quality (size, shape, density, weight, color); overlays and combinations of comparison objects. In investigative practice, this method compares the features of additional discovered objects with characteristics of existing ones in the proceedings or the objects seized compared with the features of a certain group of objects or with a subjective analogical image.

Experiment - the reproduction of a phenomenon or event to study its connections with other phenomena. The purpose of the experiment is establishing the

nature of the observed phenomenon, its essence and origin, the ways and methods of managing it.

Modeling is a method of researching objects on their models. By the nature of the models one can distinguish the material (subject) and the ideal modeling, which is expressed in the corresponding symbolic form. Modeling is used in cases where the study of the object itself, phenomenon, process, for one reason or another, is impossible or inexpedient. In forensics many types of modeling are used: such as imaginary (for example, in the development of investigative versions and planning the investigation), physical (creating a material model of the layout, replicas and objects-analogs), mathematical (simulation of the conditions for ongoing the processes and phenomena with the help of appropriate calculations).

The type of modeling is a reconstruction - the restoration of the preliminary appearance and the state of the object on its remnants or descriptions. It is possible to implement as a material reconstruction, carried out by way of a layout or a complete reconstruction (for example, the reproduction of the human face on the skull), as well as imaginary reconstruction - logical modeling based on the reflection of visual images that arise in the imagination of the subject as a result of familiarization with certain objects and (or) their descriptions.

Logical methods: analysis, synthesis, induction, deduction, hypothesis, analogy, idealization, generalization.

Analysis. In forensics, the content of analysis is to examine the special aspects, characteristics, constituents of something. This is a process of partitioning the whole into parts. It is a necessary stage of cognition, which is inextricably linked with synthesis, and is one of the main operations from which the thinking process is formed.

Synthesis - a process of practical or imaginary connection of the whole of the parts or the connection of various elements, the sides of the object into a single whole. It is practically expressed during the nomination and verification of different versions in criminal proceedings.

Induction - a logical method, a way of reasoning from separate facts, provisions to general conclusions. It is important when making versions, knowing the circumstances of the criminal proceedings.

Deduction is, firstly, the transition in the process of cognition from the general to the specific, getting the specific from the general; and secondly, the process of logical conclusion, that is the transition from one or another logic rule from some of the given suggestion-references to their consequences (conclusions). This is the movement of knowledge from the more general to the less general, separate, derivation of the effects of assumptions.

Analogy is the establishment of similarity in some characteristics and relations between non-identical objects. On the basis of the revealed similarity, the conclusion is drawn - inference by analogy. In conclusion, by analogy, knowledge obtained from the consideration of a particular object ("model"), is transferred to another, less accessible for research object. For example, these are putting forward versions by analogy, the use of typical situations, typical investigative (search) actions, etc.

Abstraction is a method of cognition, in which everything which is not significant is dismissed. It consists in the fact that the subject, revealing certain features of the object under study, does not take into account the other which are insignificant ones.

Idealization - is to create abstract (idealized) objects that are really impossible, but are those for which there are pre-images in the real world. As a result, a so-called "idealized object" is created, which can use thinking when displaying real objects.

Generalization - consists in the allocation of similar, repetitive features and characteristics belonging to several individual phenomena or all subjects of this class.

Mathematical methods: measurement, calculation, geometric construction, mathematical modeling.

The objects of measurement in forensic science are various physical quantities that characterize objects; these are phenomena, processes: length, mass, volumes, temperature, time interval, speed, and so on.

Calculations - used to set the above mentioned parameters, as well as necessary for mathematical modeling.

Geometric constructions - used in working up plans, drawings, schemes, as well as when direct measurements are complicated (for example: there is a steep break in the place of the event and it is impossible to measure the distance between objects, then with the help of the necessary geometric constructions this distance is being determined).

Consequently, in forensics, research methods have their own peculiarities, which are determined with: 1) the specificity of the object under study; the existing patterns; the procedure of knowledge; 2) the scope of application - scientific research and practical activities to the investigating crimes.

Under separate (special) methods of research such methods are understood, the scope of which is limited to one or more sciences.

The system of special methods of forensics consists of two groups:

1. Actually forensic group (forensic identification, forensic diagnostics, technical and forensic methods, methods of fingerprinting, forensic study of traces (trace evidence analysis), ballistics, organization of investigation, planning of conducting investigation (search) actions, etc.).

2. Other sciences (physics, chemistry, biology, sociology, anthropology, anthropometry, psychology, cybernetics, etc.) which are adapted to solve forensic problems.

The forensic identification and forensic diagnostics are of key importance among separate (special) forensic methods.

Thus, forensic identification is the process of establishing the identity of a particular material object by its allocation from a certain set of objects in a unique set of features that were reflected in circumstances related to the crime.

The task of forensic identification is to establish the fact of the presence or absence of the identity of a specific, individually determined material object (person, subject). The phenomena of nature, time, logical concepts, legal categories (intent or

signs of committing a crime) and other intangible objects are not included to the subject of forensic identification.

Significant signs of forensic identification are: objects of forensic identification are individually defined and have a stable external structure; carried out by reflections of stable properties of identifiable objects; is realized in the process of pre-trial investigation and judicial review of a criminal offense.

By the nature of the reflection of the features of the object there are the following types of forensic identification:

- a. the establishment of the identity of the object on the features, repelled in the memory of a person;
- b. establishing the identity on the description;
- c. establishing the identity on the photo, video;
- d. establishing the identity on the material-fixed reflection of the signs of the external structure of the object;
- e. establishing the identity of the whole in parts, or, in other words, solving the question of whether two or more parts were one whole; whether these parts are parts of one whole.

The objects of forensic identification are people (suspect, victim), various material objects (tools of crime, firearms, vehicles, houses, buildings, etc.), and substances.

The circle of subjects of forensic identification is quite broad, it can be carried out by an expert, specialist, investigator, prosecutor, investigating judge, judge, any participant in the process. The scope of their actions and the meaning of identification acts are not the same.

Forensic diagnostics. Its common tasks include:

- a) Establishment of the spatial structure of the situation of a criminal event (where, in what circumstances an event occurred);
- b) Establishment of the mechanism of separate stages (phases) of events (mutual location of vehicles at the moment of the collision);



c) Determining the material structure of the situation of the place of the event (what characteristics and condition of objects in this situation);

d) Setting the time characteristics of a criminal event (when it happened, how much time it might take to commit certain actions, in what sequence there were actions, which traces arose earlier, and which later;

e) Determination of the characteristics and features of the objects that acted (persons, guns), their number, the nature of functioning (the number of participants in the crime);

e) A retrospective study of cause-effect relationships (which is the cause of a fire);

g) Prediction of the cause-effect relationships (which damage could be caused to the vehicle that has disappeared as a result of an accident);

c) The establishment of the mechanism of a criminal event as a whole, and others.

Thus, forensic diagnostics can be defined as the study of the characteristics and state of the object (situation) in order to establish the changes that have occurred therein, determining the causes of these changes and their relationship seeing the investigated criminal offense.

Techniques and forensic methods - are used in the field of technical and forensic scientific research: photographic, forensic study of traces (trace evidence analysis), forensic study of odor-traces (odorology), ballistic, and others. Methods based directly on the laws of natural and technical sciences are the original forensic methods developed in forensic science. Another group of techno-forensic methods is transformed by forensic methods of other sciences or spheres of practical activity. Such a transformation is not a simple adaptation, but is a qualitative transformation of the method that was carried out precisely in forensic science by integrating natural science, technical and forensic knowledge.

Special methods of other sciences that can be used without modification (for example, photographic or microscopic methods) or adapted for solving specific forensic problems (color distribution method as a modification of the photographic

method or the method of composing portraits picture as an anthropological method modification). It is not possible to give an exhaustive list of these methods, as in the process of carrying out a specific scientific forensic investigation, a necessity can be occurred to use methods that were not previously applied in forensic science. The most commonly used are:

Physical, chemical and physic chemical method - are used to determine the morphology, composition, structure, physical and chemical characteristics of substances and materials.

Biological methods - for the study of objects of biological origin (blood, particles of the epidermis, secretions, human hair, plant particles).

Anthropological and anthropometric methods- are used in providing the lifelong appearance of the deceased, the establishment of the deceased person by remnants.

Sociological methods - are used to study the opinions of practical officers on certain issues of law enforcement activities.

Psychological methods - are used in the development of tactical techniques and combinations, their improvement in accordance with various investigative situations, etc.

Cybernetic methods - are actually the latest information technologies based on the use of these methods; these ones allow to execute searching and automatic processing of information (for example, in forensic accounting), computer simulation (for selecting typical investigative versions or reconstruction of elements of the material situation of a crime event).

Given the variety of methods of cognition in forensic science it should be borne in mind that the main purpose of any scientific method - on the basis of relevant principles (requirements, orders) to ensure the successful resolution of certain cognitive and practical problems, to enrich knowledge, to optimize the functioning and development of certain objects.

**Questions for control to chapter 1:**

1. The concept and subject of forensic science.
2. Developmental history of forensic science, as a science.
3. The role of forensic science in counteracting crime.
4. The system of forensic science and its place in the system of other sciences.
5. The concept and content of the methodology of forensic science.

## **CHAPTER «GENERAL THEORY OF FORENSIC SCIENCE»**

### **TEST TASKS**

Choose one of the four suggested answers, which, in your opinion, is correct.

#### ***1. Forensics - is the...***

a- applications of science to crime means, accrue information of offenses and associates, and applications of collection, investigation, evaluation and implementation of evidence, and acquirement of special tools and methods of forensic expert examination and crime prevention based on the patterns;

b- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

c- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence;

d- comparing characteristics, features of two or more objects.

#### ***2. Developmental laws of forensic science include:***

a- the law of connection between existing and emerging forensic concepts;

b- the law of active creative adaptation for the purposes of justice of the modern achievements of those sciences, whose provisions cannot be directly, without deviation and special adaptation, used in the proceedings;

c- the law of the condition of forensic recommendations to the needs of the practice of legal proceedings and the improvement of this practice on the basis of the achievements of forensic science;

d- all of the options are right.

**3. *The basic principles of forensics include:***

- a- the principle of cognizance of the material world, objective reality;
- b- the principle of historicism;
- c- the principle of the systemic nature of science;
- d- all of the options are right.

**4. *The main functions of criminalistics:***

- a- ascertaining function; interpretation function; heuristic function;
- b- predictive function; practical applied function; communicative function;
- c- educational function; nurture function; critical function;
- d- all of the options are right.

**5. *Criminalistics system consists of the following sections:***

- a- general and special parts;
- b- introduction, list of methods, conclusions;
- c- general theory of forensic science; forensic technique; forensic tactics; forensic methodology;
- d- all of the options are right.

**6. *The general theory of forensic science - is a ...***

- a- system of scientific regulations and technical means developed on their basis, techniques, and methodology for collecting and research of evidence;
- b- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;
- c- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings;
- d- section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes.

### ***7. Forensic technique – is a ...***

a- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings;

b- section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes;

c- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

d- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence.

### ***8. Forensic tactic - is a...***

a- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is a methodological basis;

b- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence;

c- section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes;

d- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence.

### ***9. Forensic methodology – is a ...***

a- final section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes;

b- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

c- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence;

d- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence.

### ***10. Forensic identification - is the ...***

a- logical method, a way of reasoning from separate facts, provisions to general conclusions;

b- process of practical or imaginary connection of the whole of the parts or the connection of various elements, the sides of the object into a single whole;

c- process of establishing the identity of a particular material object by its allocation from a certain set of objects in a unique set of features that were reflected in circumstances related to the crime;

d- all of the options are right.

## **Chapter II:**

### **FORENSIC TECHNIQUES**

#### **2.1. Concept, system and tasks of forensic technique.**

In consideration priority of the person and citizen interests. The current state of crime is evaluated by a possible hazard to the nation and required the development of new equipments and methods for prevention crime. Stiffening of organized crime activity, organized, armament, technical equipment of criminals, that's why, it requires an appropriate level of forensic equipments, investigation and prevention of criminal offenses. One of the sources of such advances in law enforcement, there is a separate paragraph the forensic science- criminal investigation technique (forensic technique).

On the one hand, the term "forensic technique" has refers to the sub-discipline of criminology and on the other, set of techniques which are used in criminal proceedings. In historical perspective, the techniques had its beginning as special tools of the trade, which expanded cognitive opportunities of the investigator, employee of criminal investigator (detective), expert. Later, they obtained the duties of research material sources, and after that –expert evaluation and presentation of evidence in criminal proceedings. Consequently, the tasks and subject of forensic technique were developed.

As a part of forensic science, forensic technique- is a system of scientific provisions and references that provide with the development of techniques (devices, tools, accessories and materials). And also, methods and ways of their use in order to investigation and prevention of criminal offenses. Forensic technique has still remained intact and more accepted, this dual reference.

The scientific procedures of forensic technique are based on the acquirements and usage regularities of engineering, natural and other sciences (physics, chemistry, biology, anthropology, etc.), and also on certain criminalistics theories and practices (doctrine of the traces mechanisms, the theory of identification, etc.). And it's all



about development of techniques, methods and ways of intent the information acquisition from material evidence for acquirements of the occurrence of a criminal offense and make inquiries by way of learning the truth in criminal proceedings.

Forensic technique is tightly linked to other subdiscipline of criminology, and its provisions are implemented and realized, both in tactics of conducting separate investigative (search) activities and in methodology of investigation certain types of crimes, which supports successful investigation, as a general principle.

The tasks of forensic technique are as follows:

- development of technical equipments and methods that provides the introduction of new sources of criminalistics information in the investigation process;
- detection, recording, seizing and preservation of material vestigial traces of crime;
- establishment a mechanism for the track formation/condensation and the reasons for their cooperation;
- establishment of properties, states, group membership and identity of sources of information;
- processing and use of forensic information for investigation and prevention of criminal offenses;
- development of methods and technical means for the assessment and use of forensic information in law enforcement activities.

The system of forensic technique - is a subjective classification of scientific conditions, based with due regard the types (cases) of vestigial traces of crime, as well as distinctions of trace-indicating objects and tasks, resolvable in their examination, that permits the submission of relevant acquirement in the structure which covering the main elements (branches) of forensic technique. The system of forensic technique has comprises two parts: the general provisions and branches of forensic techniques.

The general provisions of forensic technique include the concept, content and sources, and its connection with some branches of criminalistics and other sciences, concept and content of its constituent elements (branches).

The branches of forensic technique has includes:

1) Forensic photography and video recording - a set of scientific provisions and purpose designed photo-, video tracking (recording) facilities and appropriate methods intended for collection, investigation and demonstration of evidence.

2) Trace evidence or trasology (forensic processing of traces) - studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies.

3) Ballistics (the application of weapons, ammunition, explosives, devices and traces) - studies the design patterns and operation of various types of weapons, that is the application of occurrence traces, as well as, develops items, methods and ways for research of such objects and using the purpose of traces the investigation and prevention of criminal offenses.

4) Graphology (or grapho-analysis)- investigates the patterns of the formation, development and functioning of written language and handwriting, develops methods of writing and handwriting in order to identification of the author of the manuscript, the authorship attribution (paternity) and other information, which has implications for establishment the truth of an investigation of criminal offenses.

5) Forensic technique of documents examination - involves the learning of laws the documents processing and the methods of whole or partial forgery, as well as develops tools, methods and ways of research, such objects for use in the investigation and prevention of criminal offenses.

6) The anthropometry (personal identification on the basis of appearance) - refers to the measurement of the human individual and material and perfect map, the theory operation of such features upon the ascertainment that are relevant during the investigation of criminal offenses.

7) The phonoscopy (forensics of sounds traces) –is a forensic teaching about designated use of recorded sounds to investigate criminal offenses.

8) The odorology or science of smells- is a system of scientifically hammered out methods and detecting technology, extracting, storing and studying odor print, for subsequent use and solving the resolution of unique tasks.

9) Forensic processing of substances, materials and articles.

10) The content of, criminal registration involves developing means, methods and ways of registration people, animals and other objects of investigation and prevention of criminal offenses.

As an composite element of criminal science, and that description the branches of forensic technique – is not exhaustive, as development the social relations of new departures (branches), in the modern context, which are: polygraph examiner – is a study of the socially importance questions of human body responses; forensic entomology - is the study of developmental delays insect on the corpse and the nature of the damage etc.

## **2.2. The application for principles, forms, concepts and legal reasons of forensic technique**

Forensic equipment, methods and ways are applied, as a rule, by those who are directly involved in the process of investigation and prevention of criminal offenses. We can include such investigators, investigators, experts, criminological inspectors, operational officers (staff), because they are using forensic techniques and specialist knowledge when working with evidence.

It is essential that proper custody of objects must be tend, when applying some techniques or methods, as their destruction or even change may subsequently adversely affect the results of the investigation of a criminal offense and significantly complicate the process of proof. Under certain conditions can employ a method that destroys or modifies the object under study is an expert. Other trial participants can use forensic equipments and methods, only those which will not bring about changes of appearance or destruction the object.

Primarily, at struggle with criminal nature is determined by eligibility, of forensic equipments and techniques, that is, direct consolidation in the law (or other statutory instruments), recommended, or not compatible with the law by nature.

The general legal reasons for the use of forensic equipments and methods are entrenched in the Criminal procedure code (CPC) of Ukraine. The article 25 which defines: "The prosecutor and investigator are obliged, within the limits of his competence, to begin pre-trial investigation in each case of direct detection of signs of a criminal offense ... as well as to take all measures envisaged by law to establish the occurrence of a criminal offense and the person who committed it". To carry out the tasks of criminal proceedings, to ensure the prompt, complete, objective and comprehensive investigation of the event, it is necessary to use all statutory means, including technical ones.

In the criminal procedural law there is no special rule that would contain a clear definition of the legal basis for the application of forensic technology, but at the same time, the article 273 in the CPC of Ukraine regulates the use of means used during the conduct of secret investigation (search) actions.

In addition, it should be noted that certain provisions of the application of forensic technology are enshrined in the relevant articles in the CPC of Ukraine and relate to the definition of techniques and means of fixing material evidence in conducting separate investigatory (search) actions, providing, where appropriate, the use of certain technical means. These norms are prerequisite for the use of special knowledge and technical means in criminal proceedings, depending on the specifics of the specific situation of the place of the event or the specifics of conducting an investigative (search) action. That is, the investigator selectively selects a set of scientific and technical means, technical methods and ways, which necessary for the successful conduct of a separate investigative procedure (search activity) or investigation as a whole, depending on the situational conditionality.

The procedure for the application of forensic technique and specialist knowledge is regulated by departmental normative acts, which are aimed at ensuring the implementation of criminal procedural legislation.

Proposals on the necessity of legislative consolidation of the complete list of all scientific and technical means, methods and ways that can be used during the investigation of criminal offenses, do not find their embodiment in connection with the inability to foresee by law the whole range of methods and means of work with evidential information through its constant expansion and improvement.

The facts of the use of technical means during the investigation, as well as the materials obtained as a result of their application, require a mandatory processing.

It is expedient to use the forensic technique in the protocol according to the following scheme: where, when, in connection with which objects, who, for what purpose and which scientific and technical means were used, objects or information, discovered or received as a result of application of technical means. The protocol necessarily states that before the use of technical means, persons who participated in conducting an investigative (search) action were notified about it.

Replenishment of an arsenal of scientific and technical means used in the fight against crime during the criminal procedure should be carried out with observance of the relevant principles, which may include:

- the principle of legality, according to which the use of any means of forensic technique should not contradict the requirements of the law and be aimed at respecting the rights, freedoms and legitimate interests of citizens;

- the principle of scientific (scientific substantiation) - is, guarantees of probability, reproducibility, accuracy and reliability of the results, which are based on the achievements of natural and technical sciences. To do this, any new method, technical means or methodology must first be tested and recommended for use;

- the principle of profitability - if obtaining the necessary results is possible with the help of various technical and forensic means, the advantage is given directly to those whose application is associated with the least cost of time, forces and means;

- the principle of safety determines the inadmissibility of the use of scientific and technical means that may be a threat to the life or health of participants in the criminal process;

- the principle of effectiveness is the provision for the rational use of such technical means and methods that ensure the prompt, objective, complete and comprehensive reception of information relevant to a successful investigation, that is, to achieve the best results in the best possible time.

### **2.3. Classification of means of forensic technique**

Special technical means of forensic science are scientifically conditioned, verified experimentally and in practice effective technical means used by the subjects of criminal procedural, expert, operative-search and administrative activity.

The purpose of the forensic technique during the investigation is to collect and study evidence. That a wide arsenal of scientific and technical means are borrowed from various natural and technical sciences, as well as specially developed criminology science instruments and methods.

Given the content of the notion of forensic technique, there are quite a number of views and approaches to the foundations of the classification structure of forensic science among criminologists, primarily due to the variety of grounds and criteria for their distribution to the relevant groups. Evaluating the system of technical and forensic means in general, we observe the constant expansion of classification groups, which is the result of the creation of new technical and forensic means.

#### 1. According to the source of origin (the branch-wise of scholarly knowledge):

- technical means developed in forensics for the collection and research of evidence (special);
- technical means borrowed from other sciences or branches of knowledge, but adapted for solving special forensic problems;
- technical means borrowed from other sciences or branches of knowledge that are used to ensure the investigation of crimes without constructive change.

#### 2. By purpose:

- technical means used by an investigator or a criminalist specialist to identify, extract and fix evidence;
- technical means used for the investigation of material evidence during forensic examinations;
- technical means used for fixing the course and results of investigative (search) actions;
- technical means used for the prevention of offenses.

### 3. By special purpose:

- means of photo and video recording equipment;
- means of recording equipment;
- means of work with material traces for the purpose of their detection, fixation and further research;
- means of analytical work;
- search tools;
- means of collecting, storing and processing information;
- aids.

### 4. By type of technical means:

- devices and equipment;
- tools and equipment;
- devices and materials;
- sets of scientific and technical means.

### 5. Where the technical means are used:

- means of "field criminology", that is, the use of which during the investigation is provided outside the cabinet of the investigator (expert laboratory);
- means of laboratory technique.

### 6. By subject of use:

- technical means used by investigators (technical support of the investigator, techniques of the investigator);
- technical means of operative-search activity;
- technical means of expert research (expert technology, specialist technique);
- technical means of forensic prevention.

6.1. The technical tools used by investigators allow you to solve the problems of identifying, fixing, researching and demonstrating evidence. The general technical means used by the investigator include: means of illumination, measurement, fixation, research and concentration of forensic information, as well as optical means.



Facilities of lighting, or lighting equipment, are used for artificial lighting of areas, enclosed premises, objects or people during forensic and preventive activities. How to use such means are stationary and portable sources of lighting for household or special purpose. Lighting devices, depending on the nature of the spectrum of radiation, are divided into: ordinary, ultraviolet, and infrared laser.

Optical devices are devices used to identify sources of information that are not perceived by the human eye. To optical means we can include magnifying glass of different multiplicity of increase and destination (dactyloscopic, measuring, textile with illumination for work with tracks, binocular), microscopes (biological, metallographic, comparative, luminescent, polarizing, measuring, stereoscopic).

Means of measurement, or measuring technique, are used for the following tasks: for measuring length (ruler, complex meters, roulette, calipers, micrometers); for measuring angles (protractor, angle meter, angle grid); for measuring areas (metric grids); for measuring the volume of liquid bodies (beakers, measures); for measuring body weight (weights of different classes); to determine elasticity of bodies (solids, manometers).

Means of fixing - these are devices, equipment, technical kits, materials, by means of which it is possible to fix, copy, simulate or preserve the source of information on a material medium. In general, the concept of "means of fixation" can be interpreted very widely, since the use of these means is the fixation of the source. In the future, the use of fixing tools allows you to solve identification tasks.

Means of concentration and processing of forensic information. The need for collecting and concentrating information about past criminal offenses to address urgent needs during the investigation arose at the stage of the birth of criminology, since the past experience has always been an example for the knowledge of the present. Means of concentration of steel records and file cards of various traces of crimes, persons who previously committed crimes, collections of means of committing crimes and objects with their footsteps.

With the commencement of computerization of law enforcement and the entire criminal justice process, new means of collecting, storing and processing information

have arisen. Today, the processing facilities, the concentration and storage of information are also technical complexes of electronic computers equipped with technical software tools that allow you to enter the source information, process and store it.

6.2. Technical means of operative-search activity. By purpose, they represent the main means of field criminology, that is, equipment, devices, materials and accessories that are used not only by operational staff, but also by investigators during the investigation of criminal offenses. The technical means of operative-search activity by their essence have been divided into three types:

- Operational technology - a system of hardware, which is used in operational activities, mainly secret.

- Special equipment - technical equipment, which includes devices, devices, materials and substances that serve to collect information by secret methods. Such means are characterized by small sizes, usually masked under everyday objects of the furnishings, clothes or tools, work remotely or in offline mode.

- Special tools - rubber batons, handcuffs, light-emitting diode devices, water taps, etc.

The main difference between operational equipment and forensic technique is not the qualitative characteristics of the technical means, but the procedural and methodical aspects of its use. Forensic technique, unlike operational, is used during investigative (search) actions, and the results of its use give rise to procedural sources of evidence.

6.3. Technical means of expert research. The forensic units have laboratories of a certain profile, which is determined depending on the category of performed research. They have concentrated expert techniques for dactyloscopic, trasologic, ballistic research, forensic research papers, manuscripts, cold weapons, and the like. The profile of the laboratory is determined by the specifics of technical equipment and research methods. Technical means of expert research may be classified as follows: measuring equipment, lighting and image reproduction equipment,

laboratory and microscopic technology, technical means of research in invisible rays, micro-site and smells research tools, means of computerization and automation.

Measurement technology - these are devices designed for complex and accurate measurements of solids, gaseous objects, cavities, temperatures and microscopic objects. Measuring technique of expert laboratories is primarily characterized by the possibility of conducting measurements of any physical bodies in aggregate states.

Lighting means fluorescent lamps, incandescent lamps, as well as sources of ultraviolet, infrared, X-ray and laser lighting. The category and power of the source of lighting are selected depending on the specific situation and tasks solved by the expert.

Image reproduction means - reproduction of the object being studied, its characteristics, research results. Obtaining an image involves the use of a variety of techniques, but the most traditional is taking pictures, thermograph, holography, etc.

Laboratory equipment - devices and devices that serve as auxiliary facilities for researching objects. The laboratory equipment may include means of packaging and storage of material evidence, tweezers, magnifiers, tripods, energy sources, heating devices, simulations, etc.

Microscopic technology is a compulsory element of any laboratory and an integral part of an expert's toolkit. Regardless of the research profile, the expert laboratories are equipped with optical (biological, luminescent, ultraviolet, metallographic polarization, stereoscopic, measuring, projection), electric, scanning and tunneling microscopes.

The technical means of research in the invisible beams of the spectrum are devices by which it is possible to carry out research of real evidence in the ultraviolet, infrared and X-ray spectral parts.

Means of research of micro-particles and odors are sets of optical devices and micro-tools intended for work with micro-objects, as well as kits (an ophthalmic suitcase) for the study of smell traces by means of physical and chemical methods.

Means of computerization and automation –is a system of technical means that allows the formation of individual and spectral data banks, obtaining background information, creating specific research methods.

It is necessary to take into account the fact that during the research the expert can use the means and methods from any branches of science and technology, the involvement of which is necessary for the full solution of the tasks set before him, therefore it is practically impossible to provide an exhaustive classification of means of expert technology.

6.4. Technical means of forensic prevention. Means of forensic prevention should be categorized according to the kinds of preventive tasks on the following groups:

- technical means used to identify facts that contributed to the commission or concealment of criminal offenses;
- technical means of protection of objects against criminal encroachments;
- technical means that create the conditions for the emergence of additional traces in the place of the commission of a criminal offense;
- technical means of obtaining information on criminal offenses that are being prepared;
- technical means of committing active psychological influence on persons inclined to commit offenses.

## **2.4. Methods of forensic technique**

Improvement of forensic means, expansion of scientific and technical possibilities of criminology by attracting knowledge from other branches of science, activating the problem of identity of science. It is well-known that the effectiveness of the use of technical and forensic means of detecting, fixing and researching traces during the investigation of crimes from the methods of their use, as well as the level of technical literacy, is directly related.

In philosophical dictionaries, the term "method" (from the Greek methods - a way, a method of knowledge, study, tracing) is defined as a way to achieve a certain goal, a set of techniques or operations of practical or theoretical development of reality.

Technological and forensic methods are a set of methods, means and techniques, through which the expansion of cognitive capabilities takes place, and the research of real sources for the purpose of revealing information that has certain procedural or evidentiary value and is widely used in the practical activity of the investigator, the operational officer and the expert.

The basis of the forensic method consists of technical means (tools) and objective laws of science and technology, on the basis of which various devices and devices for the implementation of various types of practical activities of the investigator, operational officer, forensic expert. Much of forensic technology is borrowed from various branches of science and technology and is common, and methods of using it in forensics are not much different from the use in the maternal industries. That is, the structure of the forensic method as a mandatory element must include the appropriate tools, on the basis of which the classification can be carried out.

Given the continuous creation and introduction into the procedural activity of new technical and forensic means, the number of approaches to the criteria for classifying methods based on them is constantly increasing, updated or changed. Thus, according to the types of technical means used during the research, the techno-forensic methods are divided into photographic, microscopic, spectrographic,

computer; for the branch of scientific knowledge: chemical, physical, biological, cybernetic; according to the tasks solved during the study: organoleptic, search, analytical.

The most common among the existing classifications of technical and forensic methods is their distribution by purpose to the methods used by an investigator or operational officer to identify, fix and pre-study material sources of information (methods of field criminology) and research methods used by the expert during the conduct of forensic examinations (methods of laboratory criminology).

#### Methods of Field Criminology:

1. Organoleptic methods are methods by which the process of knowledge of the subjects of procedural activity of any information sources, with the help of sensory organs (sight, hearing, touch, etc.), is initiated.

2. Methods of measurement - a set of methods for using measuring equipment and measurement principles to create measurement information. They are divided into organoleptic measuring and instrumental measuring methods.

2.1. Organoleptic measurement methods are methods by which an object or magnitude is matched in an imaginary way by a dimension or by a specific metric sample. The disadvantages of using such methods are, first of all, that the results obtained with their help have approximate or inaccurate values.

2.2. Instrumental measurement methods - one of the varieties of measurement methods and is a comparison (comparative) of an object, which is measured with a standard metric measure. Instrumental measurement methods are divided into three groups: contact, non-contact and combined measurement methods.

2.2.1. Contact methods of measurement - bringing the measuring instrument in direct contact with the object being measured and reading the information received (measured by the line of distance between the objects).

2.2.2. Contactless measurement methods - the procedure of contactless measurement is reduced to a comparison of the unit of measurement (scale) with the optical image of the object being measured (an increase in the microbe is compared with the scale of the microscope's eyepiece).

2.2.3. Combined methods of measurement - the essence of such a method is the use of measuring object simultaneously contact and non-contact method of measurement.

3. Photographic methods - methods of high accuracy of fixing sources of information and the objectivity of their reproduction. Photographic methods are divided into storage, measuring, contrasting, signaling, color separating, stereoscopic, holographic, electrographic, thermographic, radiographic, cinematographic.

The essence of the application of laboratory methods is to conduct research objects, phenomena or processes containing information about the circumstances of the commission of a criminal offense, a person who has scientific technical or other special knowledge (expert).

Methods of laboratory criminology:

1. Physical research methods - are the most common and common methods for any laboratory. With the help of such methods, the permissible visual ability of a person to detect and investigate the weakly visible or invisible features of objects increases. When applying physical methods optical, polarization, luminescent, measuring, spectroscopic and other instrumental means are used.

2. Chemical methods of research - objects of chemical research are substances and objects of the material world, in order to establish their composition, origin, homogeneity or heterogeneity. Many chemical methods are combined with physical, forming physical and chemical methods. Of the classical chemical methods, polarographic, chromatographic and spectral are most often used.

2.1. Polarographic methods - a kind of electrochemical methods for the analysis of substances for the purpose of detecting the regularities of the passage of chemical reactions in time, the dependence of these laws on external conditions, as well as mechanisms of chemical transformations.

2.2. Chromatographic methods - allow to determine the content of individual components in mixtures quickly and reliably, to concentrate and identify these components.

2.3. Spectral methods - the essence of the methods is to study the optical spectrum of matter in order to determine its composition.

3. Biological methods. Objects of biological research are objects, microparticles of plant origin (wood, products from it, charcoal, plants and their parts) and animal origin (hair, wool, wool, feathers, down and products from these materials). Among biological methods are distinguished: botanical, spore-pollen, ichthyological, ornithological, virological, genetic engineering, histological, embryological, and the like.

4. Microscopic methods - studies that are carried out using such methods make it possible to expand visual perceptions of human beings through optical and electronic means. The objects of study of these methods are microparticles that the human eye can not distinguish.

5. Methods of research in ultraviolet rays - with the help of such methods of research it is possible to restore etched, damaged texts in documents, on fabrics and other objects, to differentiate loose materials (soil, dyes), fuel and lubricants, biological objects (disputes , seeds), spots of blood, sperm, saliva.

6. Methods of research in infrared rays - during the study with such methods it is possible to read texts that are covered with a thin layer of wood, paper, a dye penetrating for infrared rays.

7. X-ray research methods - X-rays can penetrate through objects of inorganic and biological origin, which is why they are used to search for hiding places, to detect hideouts in suitcases, postal items, containers, etc. (using special devices and installations )

8. Luminescent analysis - a modern high-sensitivity method based on the properties of objects of the material world to be luminescence in the event of exposure to ultraviolet, infrared, X-rays and other sections of the electromagnetic spectrum.

9. Cybernetic methods - a generalized concept that combines the methods of informatics and computing, through which the collection, processing and storage of



information in information databases with the use of computers and special programs is carried out.

10. Methods of spectral and adsorption analysis - belong to the research methods of elemental composition of matter. With their help determine the quantitative characteristics of the substance at the level of group membership (to ammunition, drugs, adhesives, dyes, liquids).

An important aspect of any scientific method as a whole, as well as technical and forensic methods, in particular, their integral part, is the mandatory requirement for the unbiased objectivity of the application of the necessary method and the inadmissibility of further subjective interpretation of the results.

### **Questions for control to chapter 2:**

1. The concept of forensic techniques.
2. The task of forensic techniques.
3. The structure of forensic techniques.
4. Subjects, principles and legal grounds for the application of forensic techniques.
5. Methods of forensic techniques.

## **CHAPTER«FORENSIC TECHNIQUE»**

### **TEST TASKS**

Choose one of the four suggested answers, which, in your opinion, is correct.

#### ***1. Forensic technique – is a ...***

a- section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes;

b- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings;

c- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence;

d- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis.

#### ***2. The branches of the forensic technique include:***

a- forensic photography and video recording; trace evidence or trasology (forensic processing of traces); ballistics (the application of weapons, ammunition, explosives, devices and traces); graphology (or grapho-analysis);

b- forensic technique of documents examination; the anthropometry (personal identification on the basis of appearance); the phonoscopy (forensics of sounds traces); the odorology or science of smells;

c- forensic processing of substances, materials and articles; the content of, criminal registration involves developing means, methods and ways of registration people, animals and other objects of investigation and prevention of criminal offenses.

d- all of the options are right.

### ***3. Special technical means of forensic science are ...***

a- special technical means used in the investigation process to fixation of the situation;

b- scientifically conditioned, verified experimentally and in practice effective technical means used by the subjects of criminal procedural, expert, operative-search and administrative activity;

c- special technical means used in the investigation process to record the sound;

d- special technical means used in the investigation process to fixation of the situation and record the sound.

### ***4. Forensic photography and video recording - is a ...***

a- set of scientific provisions and purpose designed photo-, video tracking (recording) facilities and appropriate methods intended for collection, investigation and demonstration of evidence;

b- refers to the measurement of the human individual and material and perfect map, the theory operation of such features upon the ascertainment that are relevant during the investigation of criminal offenses;

c- forensic teaching about designated use of recorded sounds to investigate criminal offenses;

d- involves the learning of laws the documents processing and the methods of whole or partial forgery, as well as develops tools, methods and ways of research, such objects for use in the investigation and prevention of criminal offenses.

### ***5. Ballistics - is a...***

a- involves the learning of laws the documents processing and the methods of whole or partial forgery, as well as develops tools, methods and ways of research, such objects for use in the investigation and prevention of criminal offenses;

b- studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies;

c- studies the design patterns and operation of various types of weapons, that is the application of occurrence traces, as well as, develops items, methods and ways for research of such objects and using the purpose of traces the investigation and prevention of criminal offenses;

d- investigates the patterns of the formation, development and functioning of written language and handwriting, develops methods of writing and handwriting in order to identification of the author of the manuscript, the authorship attribution (paternity) and other information, which has implications for establishment the truth of an investigation of criminal offenses.

#### ***6. Trace evidence or trasology (forensic processing of traces) - is a...***

a- forensic teaching about designated use of recorded sounds to investigate criminal offenses;

b- studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies;

c- system of scientifically hammered out methods and detecting technology, extracting, storing and studying odor print, for subsequent use and solving the resolution of unique tasks;

d- refers to the measurement of the human individual and material and perfect map, the theory operation of such features upon the ascertainment that are relevant during the investigation of criminal offenses.

#### ***7. Graphology (or grapho-analysis) - is a ...***

a- set of scientific provisions and purpose designed photo-, video tracking (recording) facilities and appropriate methods intended for collection, investigation and demonstration of evidence;

b- investigates the patterns of the formation, development and functioning of written language and handwriting, develops methods of writing and handwriting in order to identification of the author of the manuscript, the authorship attribution (paternity) and other information, which has implications for establishment the truth of an investigation of criminal offenses;

c- studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies;

d- all of the options are right.

***8. Anthropometry (personal identification on the basis of appearance) - is a...***

a- special technical means used in the investigation process to fixation of the situation;

b- investigates the patterns of the formation, development and functioning of written language and handwriting, develops methods of writing and handwriting in order to identification of the author of the manuscript, the authorship attribution (paternity) and other information, which has implications for establishment the truth of an investigation of criminal offenses;

c- refers to the measurement of the human individual and material and perfect map, the theory operation of such features upon the ascertainment that are relevant during the investigation of criminal offenses;

d- set of scientific provisions and purpose designed photo-, video tracking (recording) facilities and appropriate methods intended for collection, investigation and demonstration of evidence.

***9. Odorology or the science of smells - is a...***

a- system of scientifically hammered out methods and detecting technology, extracting, storing and studying odor print, for subsequent use and solving the resolution of unique tasks;

b- studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies;

c- forensic teaching about designated use of recorded sounds to investigate criminal offenses;

d- involves the learning of laws the documents processing and the methods of whole or partial forgery, as well as develops tools, methods and ways of research, such objects for use in the investigation and prevention of criminal offenses.

#### ***10. Forensic technique of documents examination - is a...***

a- studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies;

b- system of scientifically hammered out methods and detecting technology, extracting, storing and studying odor print, for subsequent use and solving the resolution of unique tasks;

c- refers to the measurement of the human individual and material and perfect map, the theory operation of such features upon the ascertainment that are relevant during the investigation of criminal offenses;

d- involves the learning of laws the documents processing and the methods of whole or partial forgery, as well as develops tools, methods and ways of research, such objects for use in the investigation and prevention of criminal offenses.

## **CHAPTER «FORENSIC TECHNIQUE»**

### **PRACTICAL TASKS**

#### **TASK 1.**

During the crime scene search, there were found and removed 2 shell casings and a fingerprint. The investigator needs to appoint forensic ballistic and dactyloscopic examination.

**Question:** Frame expert's questions for each type of examination.

#### **TASK 2.**

On May 9, 2016, Petrov broke into house 4 of apartment № 2 on Surikova street in Kyiv, where he stole someone else's property. The burglary was not found during the crime scene search. The locks on the front door have no external damage and in good condition. During the search of the suspect Petrov, the stolen items were found and seized, as well as a bunch of keys.

**Question:** Define possible ways to detect and fix traces. Identify forensic examinations that can be appointed.

#### **TASK 3.**

April 12, 2017, in the grocery store "Focus" on Klimentenko street in Kyiv, goods were stolen worth UAH 5000. A crime scene search revealed that metal bars were bent on one of the shop windows and rectangular traces with a transverse notch on the wooden parts of the window.

**Question:** Define what is needed to record and remove from the scene.

#### **TASK 4.**

During a fight, Ivanov received gunshot wounds to the abdomen and arm. At the crime scene were found two shell casings of different calibers. During the operation, one bullet was removed from Ivanov's abdomen. Through a search of suspect Petrov, the Makarov pistol was found and confiscated.

**Question:** How to properly remove and pack two cartridges, a bullet and the Makarov pistol? What forensic examinations may be conducted to set the necessary information?

#### **TASK 5.**

At the crime scene were found traces of 4 right hand fingers with papillary lines accurately reflect.

**Question:** Define the types of records that should be used to check these traces in order to investigate the crime.

#### **TASK 6.**

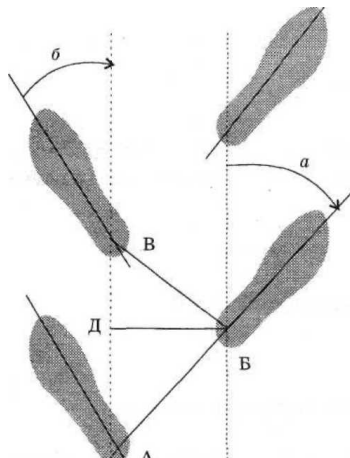
Name the main types of papillary patterns.





### TASK 7.

Name the elements of the track track and mark it on the diagram.



### TASK 8.

Formulate expert's questions that can be resolved by examining footprints.

## **Chapter III:**

### **GENERAL ISSUES OF CRIMINALISTIC TACTICS**

#### **3.1. Subject, tasks, sources and means of forensic tactics**

Forensic tactics –are the intellectual core of criminology, its logical and psychological basis. Methods, means, techniques of forensic tactics are reliable tool in the hands of subjects of law enforcement activities.

In fact, the emergence of the foundations of forensic tactics, as well as all forensic knowledge, occurred already during the formation of the most ancient states: there appeared such bodies as police, courts and prisons, which are inextricably linked with the need to create tools and methods of their activities including those which possess, in the present sense, forensic meaning.

During the formation of criminology as an independent field of knowledge tactics was seen as part of the police (criminal) technique. The writings of scholars of Austria-Hungary and Germany, G. Gross, A. Weingardt, G. Schneikert, V. Shtiber and others reflected the first notions of forensic tactics.

Among the foreign works that had a significant impact on the further development of forensic tactics, it is necessary to note the work of G. Gross, in which the author not only summarized the experience of investigative practice, but also proposed using methods developed by him and some predecessors to work on the investigation of crimes. Worthy of note is the work of the scientist A. Weingardt, known at the beginning of the 20th century, "Criminal tactics. Guide for the Investigation of Crimes ", which was published in Russia in 1910 with the reissue in 1912. The author submits to the criminal tactics the whole set of forensic police methods of combating crime, as well as methods and instructions for the prevention, termination, detection and investigation of crimes. In fact, the author includes in this section the whole set of any means that can assist in the investigation of a crime.

Summarizing, one can conclude that in its formation, forensic tactics has passed the following stages:

- the emergence of forensic tactics as one of the components of a growing array of forensic knowledge; emergence of individual scientific works on tactical and forensic issues (second half of the 19th century - 30th years of the 20th century);

- development of scientific principles of forensic tactics (formation of doctrines about its subject, forensic version, etc.); as a result - criminalistic tactics acquires the status of an independent section of criminology (40-50 years of the XX century.);

- intensification and deepening of scientific research problems of the subject of forensic tactics, its separate scientific categories; development of new sub-areas of forensic tactics: tactics of criminal activity, tactics of professional protection; judicial tactics (from the 60's of the twentieth century to the present).

In the military sphere, the term "tactics" (gamma tactica - the skill of building troops) is defined as an integral part of martial arts, including the theory and practice of preparation and conducting of a battle; the methods and techniques chosen for fighting. In this definition, the essence of tactics is understood as the ability to find or create a situation in which a decisive blow will be inflicted on the enemy in the most vulnerable to his place (position), that is the ability to outwit the enemy.

Generalized is the definition of forensic tactics as a part of the science of criminology, which includes a system of scientific regulations and practical guidelines developed on their basis for the organization and planning of pre-trial investigation and judicial proceedings, determination of the optimal behavior of investigating persons, methods of conducting investigative (search), secret investigatory, procedural actions during the court proceedings aimed at establishing the circumstances to be proved in the criminal proceedings and, gathering and evaluating evidence.

Thus, forensic tactics can be characterized as: 1) an integral part of the science of criminology; 2) a system of scientific provisions; 3) a set of recommendations.

Structurally, tactics is divided into two subsections. The first contains the so-called general provisions: the concept, system, tasks, sources and principles of forensic tactics; the doctrine of the forensic version, the organization and planning of

the investigation; the particularities of the interaction of the investigator with other law enforcement units, the use of expert assistance, and the public in the investigation. The second unit includes provisions on the tactics of conducting investigatory (search) and secret investigatory actions, procedural actions during the trial, covering the entire tactical complex of their possible implementation. This understanding of tactics and its structure has the most general character.

Concerning the tasks of forensic tactics, it should be noted that they are formed depending on the level of development of the science of criminology and the needs of practical activities. Based on their diversity and the need for systematization, the task of forensic tactics should be divided into general, special and specific.

The general task of forensic tactics is to facilitate the achievement of the objectives of criminal proceedings for the protection of individuals, society and the state from criminal offenses, the protection of the rights, freedoms and legitimate interests of participants in criminal proceedings, ensuring a prompt complete and impartial investigation and judicial review of criminal proceedings by the proper forces, means methods and ways of forensic tactics.

Special tasks include: development of tactical techniques, tactical combinations and tactical operations; improvement of organizational and tactical bases of pre-trial investigation and judicial proceedings; development and improvement of forensic means and methods of crime prevention; study and generalization of the best practices of judicial, investigative and expert activity, its tactical and organizational principles.

General and special tasks are realized through solving specific problems, which are solved by science at the current stage, that is primarily based on the needs of practice. For example: a review of the system of tactical techniques in counter-parties; development of tactics of investigators, secret investigative (search) actions; recommendations for use in the investigation of the factor of surprise, etc.

Sources of forensic tactics can be divided into legislative, scientific and practical.

The legislative sources of forensic tactics include the Constitution of Ukraine, the CPC of Ukraine, the Criminal Code of Ukraine, the Laws of Ukraine "On the National Police", "On Operational Investigative Activity", "On Forensic Expertise" and other, as well as international treaties of Ukraine, consent of which is provided by the Verkhovna Rada of Ukraine, regulating human rights and freedoms in criminal proceedings, the principles of their realization, implementation of measures of international cooperation.

The scientific sources of forensic tactics are the modern achievements of other sciences: legal (criminal procedure, criminal law, the theory of operative-search activity, etc.) and non-legal (philosophy, logic, psychology, computer science), as well as the provisions of other sections of the science of criminology (general theory of forensics, forensic technology, forensic methodology).

Practical sources of forensic tactics include materials of investigative, expert, judicial practice, from where the criminalistics tactics receive "orders" for the development of urgent issues of practical activities that require scientific substantiation.

The means of forensic tactics are the means of achieving the set tasks in the activity of investigation and prevention of criminal offenses, which belong to the sphere of forensic tactics. The investigator, or another competent entity (prosecutor, officer of the operational unit, court) chooses one or another tool on the basis of a thorough examination of the circumstances of the investigated proceeding, the particular investigative situation, the presence and nature of the opposition from individual investigators and other conditions.

The means of forensic tactics include:

- tactical method - this is the most rational way of action or the most appropriate line of conduct of the investigator, another competent entity, in the process of collecting, studying, use of evidence;
- forensic recommendation is scientifically substantiated and proven advice practice regarding the choice and application of technical and forensic means, forensic techniques and methods of gathering, researching and using evidence;

- tactics of the investigative (search) (informal investigation (search), procedural) action, which covers the whole typical tactical complex of its possible implementation;

- a tactical combination is a combination of tactical techniques and other measures aimed at establishing certain circumstances or solving a practical task and due to this purpose and the investigative situation of a separate investigation (search), secret investigation (search), procedural action;

- tactical operation is a complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according to the agreed plan and aimed at solving a specific practical task during the investigation.

### **3.2. Tactics of investigative (search) actions**

According to the CPC of Ukraine, an investigative (wanted) action should be understood as a measure adopted by the CPC of Ukraine that is used by competent persons to collect, study, evaluate and use evidence in a particular criminal proceeding. They have cognitive and at the same time, the procedural nature and the wanted direction, the essence of which is the attempt of the procedural person to find and properly record in the relevant procedural sources the actual data relevant for the criminal proceedings. No less important purpose of investigation (search) actions is to check the evidence obtained earlier in this criminal investigation or other established facts.

Investigative actions conducted by the investigator, other competent entities during the pre-trial investigation, is one of the main ways of gathering evidence aimed at establishing the circumstances of the criminal proceedings.

Investigative (search) actions include:

- 1) interrogation (Articles 224-226, 232, 351-354, 356 of the CPC of Ukraine);
- 2) the presentation of a person for identification (Articles 228-232, 355 of the CPC of Ukraine);
- 3) review (Part 3 of Article 214, Art. 237, 238, 239, 361 of the CPC of Ukraine);
- 4) exhumation of the corpse (Article 239 of the CPC of Ukraine);
- 5) search (Article 234-236 of the CPC of Ukraine);
- 6) investigative experiment (Article 240 of the CPC of Ukraine);
- 7) the exploration of a person (Article 241 of the CPC of Ukraine);
- 8) conducting an examination (Article 242 of the CPC of Ukraine).

Each investigative (wanted) action is characterized according to the tactics of its conduct.

Actually, the tactics of each investigative (search) action is subjected to the goals of achieving maximum effectiveness of its conduct and is a certain system. Thus, if we consider the structure of tactics as a system, then the content of its

constituent parts - subsystems - represents a certain stage of the investigative (search) action.

In general, the sequence of these stages is as follows:

- a) preparation for conducting an investigative (search) action;
- b) carrying out an investigative (search) action;
- c) fixing the course and results of the investigative (search) action;
- d) evaluation of the results and determination of their place and value in the system of evidence in the given criminal proceeding.

Preparation for an investigative (wanted) action. One of the mandatory conditions of this stage is the construction of an imaginary dynamic model of the course of investigatory (search) action. Characteristic for the stage of preparation is the implementation of a number of organizational and tactical tasks:

- definition of the purpose, tasks of the investigative (search) action, ways to achieve them, drafting a plan of investigative (search) action, defining the object of tactical influence;

- system analysis of the initial investigative situation; assessment of available evidence, operative-search, orientation information;

- use of methods of reflexive thinking; methods and rules of forensic forecasting; methods of complex study of personality; multivariate programming of investigative (search) action;

- choosing of the place, time, most expedient, from the tactical aspect, the moment of beginning of investigation (search) action;

- definition of participants of investigative (search) action and their tasks; ensuring their appearance and participation; constant management of the participants and providing them with assistance in practical implementation of the provided instructions;

- taking measures to ensure the safety of participants in criminal proceedings, protecting material evidence and track information from the unlawful use of them;

- development of a tactical line of the investigator's behaviour and other competent persons involved in the conduct of investigative (search) action;



- ensuring interaction of the investigator with law enforcement agencies, public organizations, individual citizens, as well as organization of interaction within the pre-trial investigation unit;

- definition of the need and ensuring the possibility of using technical means during the investigation (investigative) action (means of detecting and fixing the traces of a criminal offense, means of fixing the course and the results of the investigative (wanted) action), etc.

Carrying out an investigative (wanted) action. At this stage, the planned tasks are implemented. This is a period of verification of the versions by confirming or refuting the formulated conclusions. General organizational and tactical tasks which can be solved during direct conducting of investigative (search) action are as follows:

- procedural registration of the involvement of participants in the investigative (search) action, clarification of their rights and responsibilities, the purpose and procedure for conducting an investigation action, notification of the use of technical means, ensuring the possibility of realizing the rights and obligations of participants;

- creation of conditions for direct contact of the investigator, specialist, other competent subjects with the object being investigated (person, subject, locality, document), application of a number of methods and techniques of cognition for this purpose;

- ensuring the protection of evidence information from the influence of interested persons, which may be expressed in its destruction, concealment, disguise or falsification;

- elimination of contradictions in the testimony of one and the same person, as well as elimination of contradictions in the testimony of different persons;

- verification of investigative versions, plan and dynamic model of investigative action, making corresponding corrections; nomination and construction of new versions;

- obtaining evidentiary and guiding information; verification, clarification, specification, additions to the information available in the proceedings.

It should be remembered that the process of obtaining information used in this method of cognition will depend on whether it relates to a group of verbal, nonverbal or mixed investigative (search) actions.

Verbal investigative (wanted) actions are aimed at obtaining evidence from people through the use of a set of special techniques (survey, description, analysis, observation, comparison, analogy, identification, modeling), organoleptic methods of logical, psychological, physical and other nature and appropriate means. The common features of verbal investigators (searches) are the special nature of the source of information and its receipt on the basis of free expression of will and judgments of the source. Verbal investigatory actions include interrogation and such kind of interrogation as simultaneous interrogation of two or more interrogated persons (Part 9 of Article 214 of the CPC of Ukraine).

The essence of non-verbal investigatory (search) actions consists in the direct perception of the material sources of evidentiary information, which may be the objects of the attack, the means of committing the criminal offense, the situation, the objects and things discovered on the site of the events that are relevant to the proceedings. In this case, methods of observation, description, comparison, organoleptic techniques, separate and comparative analysis, contact and non-contact methods are used; physical, chemical, biological methods and related techniques. This group of investigative (search) activities include review, exploration, search, exhumation of the corpse, appointment of expertise.

Investigative actions of complex (mixed) nature involve receiving information from a complex source - the system of "people-things", through the psychic reflection of the projection of the ideal to the material and associated with the use of complex special methods for obtaining evidence: experiment, modeling, and the involvement of specialists, technical means. These actions are intended to display objects that simultaneously contain information in verbal and physical forms and include a presentation for identification, an investigative experiment.

Thus, the applied organizational and tactical measures depend on the affiliation of a certain investigative action to a group of verbal, nonverbal or mixed.

Fixing of the progress and results. The task of this stage is to display all the contents of the investigative (search) action and the results obtained as accurate as possible. Organizational tactical measures are directed at the choice or creation of conditions that ensure the most effective use of means and methods of fixing evidence.

In general, the fixation of evidence information has several forms: verbal, graphic, subject, visual-image. According to Art. 103 CPC of Ukraine, investigatory (wanted) during the criminal proceedings can be recorded: 1) in the protocol; 2) on the carrier of information, in which by means of technical means certain procedural actions are recorded; 3) in the journal of the court session.

It is important that if according to Art. 104 CPC of Ukraine, with the help of technical means, interrogation is recorded, the text of the testimony may not be entered into the relevant protocol, provided that none of the participants in the procedural action insists on it. In this case, the protocol indicates that the testimony is recorded on the medium of information attached to it.

However, the indicated information does not cancel the record form of fixation, but only simplifies it if there are grounds provided for by the legislation. This provision should be applied in certain cases, because if the interrogation is of a conflict nature, the interrogator is a minor, or a person with the difficult health conditions, such simplification of the protocol form of fixation should not be used.

Thus, the process of obtaining evidence in the course of conducting an investigative action is connected with the decision of tasks of protocol fixation, drawing up of annexes to the protocol (Article 105 CPC of Ukraine): specially made copies, samples of objects, things and documents; written explanations of specialists who participated in conducting the relevant procedural action; transcripts, audio and video recordings of procedural actions; photographic tables, circuits, casts, carriers of computer information and other materials that explain the contents of the protocol, the certification of such information.

The fixation of the course and the results of the investigative action is both an independent stage and a component that accompanies the whole process of its implementation, provides the proof value of the results obtained.

The process of fixing evidence is complex and has two aspects: procedural and forensic. At the forefront in the procedural sense of fixation is the procedural form of certification and consolidation of evidence. The forensic aspect of the fixation is of a substantive nature, that is, the focus is on actions for fixing the course and the results of the investigative (search) action, the extraction of trace information or material evidence, and the means by which these measures are carried out.

An assessment of the results obtained and the determination of their place and value in the system of evidence in this criminal proceeding is the final stage of the investigative action. The analysis of the work performed and the results obtained is necessary both for checking the reliability of the evidence and for solving the issue of its evidential value and ways of its further use. At this stage, the set of investigative errors and their consequences is detected; the problem of the expediency (or in expediency) of the repeated conduct of this action is solved as well. The assessment document and its annexes are also considered to be the subject to review, in which the course and results of the action taken are presented in terms of its objectivity, completeness, logic and consistency of presentation, clarity of the formulating, the availability of necessary requisites.

The foregoing reflects the structural and systemic approach to determining the tactics of investigative (search) action. Only such an understanding can lead to the effective development of its constituent elements, which are inextricably tied to one single system of actions, mental processes and volitional decisions.

### **3.3. Tactical techniques, tactical combinations, tactical operations**

The tactical method is the main element of forensic tactics. The definition of tactical admission as a method for the implementation of a specific task, based on the psychological mechanism of its realization, which is the most rational and effective in certain situations (V.Shepitko), is quite well-founded.

The psychological mechanism of tactical admission implies:

- his psychological orientation related to the disclosure of lies, the actualization of forgotten, the reproduction of the incident, the search for the hidden;
- direct or indirect interaction between investigators and other competent entities on the conduct of investigative (search) actions and their respondents;
- the psychological effect of the use of the method (which is connected to the need of obtaining objective evidence, the detection of traces, other material evidence).

Characteristics of tactical admission involves taking into account such a feature as situational conditionality. Investigatory situation has a significant impact both on the choice of tactical methods, and on the feasibility of their application in various circumstances.

Application of tactical method is strictly limited to the requirements of their admissibility. The main criteria for admissibility of tactical techniques are as follows: legality; scholarship; ethics; selectivity of influence; compliance with the investigative situation, etc.

Classification of tactical techniques:

1. Depending on the content and purpose of the tactics, there are:

- cognitive (aimed at establishing the circumstances of criminal proceedings by detecting and investigating forensic information);
- managerial (aimed at effective interaction with the involved in the investigation individuals);
- organizational and technical (provide optimal external conditions and necessary organizational and technical means of activity). Tactical methods of

management and organizational and technical groups are auxiliary, aimed at providing conditions for knowledge of the event of a criminal offense.

2. In terms of the sequence of solving tactical tasks:

- initial (outgoing), aimed at detecting, fixing, extracting sources of forensic information;

- intermediate (aimed at establishing the facts to be proved or shaping the relevant conclusions: for example, identifying the victim, identifying the stolen property, proving the alibi of the suspect);

- final, aimed at solving the tactical tasks of the investigation, which ensure the adoption of final procedural decisions.

3. By the type of investigative (search) actions:

- tactical methods of inspection (analysis of individual traces at the site, simulation of the event, comparison of the simulated event and the actual picture of the place of the event, analysis of traces of signs of destruction, etc.);

- tactical methods of interrogation (statement of various types of questions, presentation of material evidence, declaration of fragments of testimony of individuals, conviction of the need to assist investigating authorities, etc.);

- tactical techniques of the investigator's experiment (staging various types of questions, analyzing the responses of the person whose testimony is checked, comparing the testimony received with the interrogation to the real situation of the place of the event; multiple experiments);

- tactical receptions of other investigative (search) actions.

4. According to the range of use:

- tactical receptions used in conducting one investigatory (wanted) action (interrogation on the spot, use of verbal intelligence during the search),

- tactical methods used in several investigative (search) actions (staging of certain questions, use of typical trace analysis algorithms).

5. According to the direction of the target:

- tactical methods aimed at influencing people (staging of control questions, presentation of photographs, conclusions of examinations);

- tactical methods aimed at studying the material environment (analysis of traces, objects and their features, the use of imaginary reconstruction of elements of the event).

6. According to the nature of the information:

- tactical methods based on verbal information (conversation on a third topic, explanation of the meaning of true repentance);

- tactical methods based on materialized information (demonstration of material evidence, other visual information);

- tactical methods based on logical and intellectual information (analysis of individual tracks or subjects, simulation of the occurrence of an event).

For the optimal solution of the tasks of criminal proceedings, the conduct of investigative (search) actions takes place in a systematic combination of tactical and forensic means.

A tactical combination is a combination of tactical techniques and other measures aimed at establishing certain circumstances or solving a practical task and the result of this objective and the investigative situation of a separate investigative (search), secret investigation (search), procedural action.

Consider the following main types of tactical combinations:

- tactical combinations aimed at ensuring the completeness of detecting and securing traces of a criminal offense (applicable during the inspection, search);

- tactical combinations related to the provision of the necessary investigative circumstances (tactical combinations aimed at recreating the situation of the place of the event in order to update the memory of the witness or the victim and obtain complete true testimony);

- tactical combinations as a means of psychological impact of the investigator, other competent subjects on persons who counteract criminal proceedings (tactical combinations intended to eliminate or neutralize the negative consequences of counteraction of the suspect during the interrogation), etc.

A tactical operation is a complex of investigatory, secret investigative (search) actions, organizational, technical and other measures that are carried out according to the agreed plan and aimed at solving a specific tactical task during the investigation.

Typical examples of tactical operations are the establishment of the deceased person, the establishment of accomplices in a criminal offense, sales channels for stolen property, and others. In the methodology for investigating mercenary crimes, an operation such as "Property Search" is allocated. During the investigation of economic crimes, the tactical operation "Document" (to ensure the collection of the necessary documentary data) occupies an important place. Under the condition of investigating crimes of common criminal nature, this is a tactical operation "Detention on the ground of a criminal offense" (an operation that is carried out to establish the mechanism, methods and tracks of the commission of the crime, those involved in it). Tactical operations require the development of special plans that must be in line with the general plan of the investigation.



### **3.4. Investigations of the situation. Tactical decision and tactical risk. Forensic recommendation**

Criminal proceedings are carried out in specific conditions of time, place, situation, based on the actions and behavior of persons involved in its sphere and under the influence of other factors. This complex interconnection system is the particular situation in which the investigator and other competent actors work.

The above situation, common in criminalistics, received the general name of the investigative situation.

At each stage of the investigation - the initial, the following, the final one - there may be numerous and varied investigative situations, that is, the circumstances and conditions determined by objective and subjective factors. In other words, the investigation process is a combination of different investigative situations, which requires their solution at the appropriate stages and individual segments of the time.

The investigative situation is understood by the scholars as a situation or circumstance that prevails at a certain moment in the investigation of a criminal offense.

The formation of an investigative situation is influenced by the following factors:

- psychological character: state of the investigator; non-conflict investigation process or vice versa; the consequences of the conflict between the investigator and the opposing persons;

- informational character: knowledge of the investigator about the circumstances of the criminal offense, possible evidence, countermeasures from interested parties;

- procedural and tactical: the state of proceedings; evidence and their sources; availability of sources of orientation information; the degree of tactical risk and the possibility of minimizing it;

- organizational and technical character: provision of communication between the next part and the investigative and operational group; the possibility of mobile maneuvering by the available forces and means, etc.

The combination of all these factors determines the individual character of each investigative situation at a certain point in the criminal proceedings.

Situation investigations can be classified:

1. According to the time of the occurrence of the investigation:

- initial (arise at the beginning of criminal proceedings);
- intermediate (next) (characteristic for the next stage of criminal proceedings);
- final (conclusive) (arise at the final stage of criminal proceedings and evaluation of its results).

2. According to the relations between the participants:

- conflict (if there is a counteraction between the parties or their interests do not coincide);
- non-conflict (characterized by full or partial coincidence of interests of participants);

3. In relation to the achievement of the purpose of the investigation:

- favorable (compiled in the presence of sufficient information, proper use of tactical and forensic, organizational and technical measures);
- unfavorable (characterized by lack of sufficient information, the need for additional tactical decisions, information gathering).

4. By the degree of community:

- typical (characteristic of the overwhelming majority of criminal offenses of a certain type at those or other stages of the investigation);
- specific (consist of a special coincidence of circumstances requiring the choice of non-typical means and tactical solutions).

In investigative practice there is a repetition of investigative situations, which creates the preconditions for their typing. Regarding typical situations, one can outline an algorithm for investigatory actions in the process of obtaining evidence. Knowledge of typical situations allows not only to predict their occurrence in appropriate conditions as regular, but also to choose appropriate means, methods and ways of investigation.

In accordance with the investigative situation, the investigator makes tactical decisions, while selecting the objective of tactical influence on the investigative situation in general or its individual components, the course and results of the investigation process and its elements, with the definition of methods, ways and means of achieving this goal.

The tactical decision process includes:

- a) analysis of the existing investigative situation;
- b) determination of the goals and tasks to be achieved for its solution;
- c) the choice of means and methods for achieving goals and objectives;
- d) realization of tactical decision.

Tactical decisions are divided into procedural and non-procedural. The first is the decision on the choice of investigator, secret investigatory (wanted) and other procedural actions. Non-procedural tactical decisions are methods and means of realization of procedural decisions by providing them with organizational and tactical measures.

Consequently, tactical decision is the willful act of the investigator, other competent subjects, which exists to determine the purpose, as well as the means and methods of its achieving. Hence, any tactical solution must meet a number of requirements: legality, ethics, reasonableness, timeliness, reality of execution.

The tactical decision consists of three parts:

- informational (consists of the analysis and evaluation of the investigative situation and its components, the set of procedural tasks, the features of counteraction to the investigation);
- organizational (defines functions, forms and directions of influence, the sequence of putting the existing forces and means into operation, carrying out necessary organizational and technical measures);
- operational (involves the definition of the goal of tactical influence, conditions, methods, means of achieving it, predicted results of the implementation of tactical decision).

The purpose of a tactical decision may be to change the investigative situation in general or its individual components in a direction favorable to the investigation; maximally effective use of unfavorable investigative situation; achieving tactical superiority over counter-tracing individuals; use of surprise, especially at the initial stage of the proceedings; providing methodological and offensive investigations.

The optimal use of tactical techniques and their systems involves studying the problem of tactical risk. In psychology, risk is defined as a situational characteristic of activity, which consists of the uncertainty of its outcome and possible adverse consequences in the event of failure.

In criminology, tactical risk can be defined as the performance of investigators, other competent actors in the conditions of possible adverse effects.

The tactical risk is a logical component of the investigation, which is inherent in the investigator's activity due to several reasons: a shortage of time, especially at the beginning of the criminal proceedings, "hot pursuit" investigation; information uncertainty of the situation, lack of data to make a well-balanced decision.

The complexity of decision-making by the investigator is caused by the degree of uncertainty in the situation, which involves the onset of ambiguous consequences - positive or negative. The challenge is to choose the position of the lowest tactical risk, anticipate negative consequences in advance and anticipate measures to prevent them.

That is, tactical risk is associated with situational conditionality, objective (availability of sources of evidence, technical equipment of pre-trial investigation bodies) and subjective (experience of the investigator, his theoretical readiness) factors.

Facing the tactical risk, it is necessary to predict the possible occurrence of negative results as a consequence of the implementation of a tactical solution; varying evidentiary information in order to achieve the objectives and determine the admissibility of tactical risk in a particular situation.

In a number of cases, we can talk about minimizing tactical risk, which is:

- changing the structure of tactical method or tactical combination by including to it the material evidence, documents, video and sound recordings or other sources of information aimed at overcoming the position of the opposing person;

- changing the psychological environment of action - choosing another place and time of its conduct, eliminating the influence of external factors;

- replacement of the investigator, conducting an investigation by a group of investigators, with the participation of a specialist, in order to ensure more intensive permissible influence or strengthening control over the reaction of the person to one or another information;

- change in the rate of conducting investigative (search) actions and the whole investigation to a more favorable investigative situation;

- comparison of the existing tactical risk situation by analogy with the previous situations; the assessment of tactical techniques used.

The proper choice of means of forensic tactics and taking into account the peculiarities of their implementation is facilitated by the use of the forensic science developed on the basis of the study of the practice recommendations. Forensic recommendation is a science practice advice, but not a one-time wish, designed for a one-time act of behavior, and a certain amount of knowledge intended for repeated use for a relatively long time.

According to the degree of expression of criminalistics recommendations can be divided into proposals: a) on the use of specific scientific and technological achievements; b) the procedure and conditions for the use of a particular instrument, method or technique for solving specific problems; c) on the use of practical means for other tasks or in other conditions.

### **Questions for control to chapter 3.**

1. Subject, task and structure of forensic tactics.
2. The concept and essence of the investigation situation, tactical techniques, tactical combinations, tactical operations.

3. The concept, meaning and essence of the forensic version.
4. Forensic content of the organization and planning of the investigation.
5. General stages of conducting investigative (search) actions.

## **CHAPTER «FORENSIC TACTICS»**

### **TEST TASKS**

Choose one of the four suggested answers, which, in your opinion, is correct.

#### ***1. Forensic tactic – is a...***

a- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

b- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence;

c- section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes;

d- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence.

#### ***2. Tactical method - is the...***

a- most rational way of action or the most appropriate line of conduct of the investigator, another competent entity, in the process of collecting, studying, use of evidence;

b- scientifically substantiated and proven advice practice regarding the choice and application of technical and forensic means, forensic techniques and methods of gathering, researching and using evidence;

c- complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according

to the agreed plan and aimed at solving a specific practical task during the investigation;

d- all of the options are right.

### ***3. Forensic recommendation - is the...***

a- complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according to the agreed plan and aimed at solving a specific practical task during the investigation;

b- scientifically substantiated and proven advice practice regarding the choice and application of technical and forensic means, forensic techniques and methods of gathering, researching and using evidence;

c- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

d- there is no correct answer.

### ***4. Tactical combination - is the...***

a- most rational way of action or the most appropriate line of conduct of the investigator, another competent entity, in the process of collecting, studying, use of evidence;

b- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence;

c- complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according to the agreed plan and aimed at solving a specific practical task during the investigation

d- combination of tactical techniques and other measures aimed at establishing certain circumstances or solving a practical task and due to this purpose and the investigative situation of a separate investigation (search), secret investigation (search), procedural action.



### ***5. Tactical operation - is the...***

a- combination of tactical techniques and other measures aimed at establishing certain circumstances or solving a practical task and due to this purpose and the investigative situation of a separate investigation (search), secret investigation (search), procedural action;

b- most rational way of action or the most appropriate line of conduct of the investigator, another competent entity, in the process of collecting, studying, use of evidence;

c- complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according to the agreed plan and aimed at solving a specific practical task during the investigation

d- all of the options are right.

### ***6. Investigative (search) actions include:***

a- interrogation;

b- exhumation of the corpse;

c- investigative experiment;

d- all of the options are right.

### ***7. Tactical risk can be defined as...***

a- the performance of investigators, other competent actors in the conditions of possible adverse effects;

b- most rational way of action or the most appropriate line of conduct of the investigator, another competent entity, in the process of collecting, studying, use of evidence;

c- complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according

to the agreed plan and aimed at solving a specific practical task during the investigation;

d- combination of tactical techniques and other measures aimed at establishing certain circumstances or solving a practical task and due to this purpose and the investigative situation of a separate investigation (search), secret investigation (search), procedural action.

#### ***8. Types of tactical combinations:***

a- tactical combinations aimed at ensuring the completeness of detecting and securing traces of a criminal offense (applicable during the inspection, search);

b- tactical combinations related to the provision of the necessary investigative circumstances (tactical combinations aimed at recreating the situation of the place of the event in order to update the memory of the witness or the victim and obtain complete true testimony);

c- tactical combinations as a means of psychological impact of the investigator, other competent subjects on persons who counteract criminal proceedings (tactical combinations intended to eliminate or neutralize the negative consequences of counteraction of the suspect during the interrogation), etc;

d- all of the options are right.

#### ***9. Depending on the content and purpose of the tactics, there are:***

a- initial (outgoing); intermediate; final;

b- tactical methods of inspection; tactical methods of interrogation; tactical techniques of the investigator's experiment;

c- cognitive; managerial; organizational and technical;

d- there is no correct answer.

#### ***10. The main types of tactical combinations:***

a- tactical combinations aimed at ensuring the completeness of detecting and securing traces of a criminal offense (applicable during the inspection, search);

b- tactical combinations related to the provision of the necessary investigative circumstances (tactical combinations aimed at recreating the situation of the place of the event in order to update the memory of the witness or the victim and obtain complete true testimony);

c- tactical combinations as a means of psychological impact of the investigator, other competent subjects on persons who counteract criminal proceedings;

d- all of the options are right.

## **PRACTICAL TASKS FOR CHAPTER**

### **«FORENSIC TACTICS»**

#### **TASK 1.**

After drinking alcohol, during a drunken quarrel that turned into a fight, Tkach and Musiyak threw the owner of the apartment Gusak into an open window from the 4th floor. The goose died from his injuries. In order to stage Gusak's suicide, Tkach and Musiyak broke a window.

**Question:** Indicate which traces on the clothes and body of the corpse, as well as at the scene (in the apartment and on the street) can refute the version of suicide, and what traces can be found and removed on the body and clothes of the suspects?

#### **TASK 2.**

To interrogate the juvenile suspect Pavlov, the investigator invited his father and teacher (class teacher) to participate. Prior to the interrogation, the juvenile requested that he not wish to testify in the presence of his class teacher, as this could affect his relationship with teachers and friends at school.

**Question:** How to resolve the application?

#### **TASK 3.**

Upon arrival at the scene, SOG members identified 14 foreign students who had been attacked by hooligans. They explained that for two weeks now, a group of local youth had been threatening them, attacking them several times near the dormitory and beating them. The hooligans threatened them and assured that they would not lag behind until they left Ukraine. All this was accompanied by insults and beatings with hands, feet and metal rods and chains. The leader and some of his

supporters demonstratively mocked the rooms of foreigners. They arrived at the hostel in 4 cars.

**Question:** Determine the tactics of inspection of the scene and other investigative (search) actions.

#### **TASK 4.**

During the interrogation of the suspect, the investigator quietly turned on the dictaphone and recorded the testimony of the latter. Subsequently, he attached this audio recording to the materials of the criminal proceedings and appointed a forensic phonoscopic examination of the audio recording obtained as a result of the interrogation.

**Question:** Describe the actions of the investigator. What should the investigator have done in this situation?

## **Chapter IV:**

### **GENERAL PROVISIONS OF FORENSIC METHODOLOGY**

#### **4.1. Concept, subject-matter and development trends of forensic methods (approaches)**

Criminalistics) Forensics provides processing of some types of crimes which has always been one of the priority growth areas of forensics science. This is due to the fact if that is the forensic methodology, as a special section of this science, analyzes the accumulated experience of investigation and comes up the most efficient methods and ways of inquiry criminal proceedings by specific categories. Forensics recommendations developed by science become the most important tool of the investigation officer - a kind of operating procedures in typical investigative cases.

As any objective phenomenon, the event of crime - is provide the individual and unique. There fore, it is also distinguished of knowledge by specific individual traits. However, each crime and methods of prejudicial inquiry bear repetitive evidences which, in turn the mainstay of the formation and development special investigation techniques, both in general and in regard to simple criminalistics characteristics of crimes.

Crimes investigation - is a specific activity, cognitive and organizational-tactical essence of which due to determined by the specific traits of evidentiary information and the procedures laid down by the law for its obtaining and using. This is a knowledge of the events of the past for the remaining material and psycho-physiological traces which determined by such distinctions, as the lack of immediate event perception by the investigator, the effect of objective and subjective facilitations on the traces of the matter under inquired.

However, the greatest threat to the preservation of the traces of the event is not the objective passage of time, but the conscious against of those who are seeking in distorting the investigation findings.

That particular crimes investigation are distinctly different from all other site of cognitive activity. Vestigial traces of crime are concealment and destruction; that has testimonial misrepresentation of information; influence on participants in criminal proceedings (bribery, threats, extortion, etc.); impeding access the activities of public officials- a shortlist of those forms response that the investigator, prosecutor, judge and employees of the operational subdivisions exposed during the investigation criminal offenses.

The provide necessitates for use such materials and methods of acquisition of information that are compensate or neutralize the negative conditions and difficulties of cognition. The fulfillment of this task is ensured by the use to full advantage of the scientific achievements of forensics methods, which is a whole new level of provisions implementation (recommendations) of forensic techniques and forensic tactics on the basis of comprehension and adaptation of these provisions to the particular characteristics of the detection, collection, examination, evaluation and application of evidentiary informations to specifics of commission and investigation of different types of crimes. Therefore, the term "forensic methodological recommendations" - covers the means of forensic techniques and tactics in case of certain types of crimes.

The final chapter of forensic science provides "Forensic Methodology"- conditionally conveys the essence of meanings which conveying the concept of "method". In the forensic technique, not only defined methods are developed and indicated for use in the investigation, but also provisions concerning: forensic characteristics corresponding category of crimes; typical investigative situations; typical lists of circumstances warrant determination; directions of interactions the investigator with other participants of the examination, etc.

Such recommendations are represented facilities of investigative matter on the derivative a typical inquisitional situation and tasks that can-do approach assisted by operating procedures of the crime investigator, and thus acquire with technological attitude. Given the way of some investigation methods - are a specific technological standard in which of how to act investigator in those or other conditions.

Forensic methodology (the final section of forensic science) - is a system of integrated scientific regulations and formed methodological recommendations on their basis, which provides the optimal organization of investigation and prevention of certain types of crimes.

As a branch of science, forensic methodology is comprised of two parts: general provisions and separate methods of criminal investigation.

The first part includes the data of research and application of the common patterns of organization and conduct of the investigation, conceptual framework, tasks and principles of forensic methodology, description of the structure of individual investigative techniques, etc. The general provisions reflect and ensure the integrity of the constituent parts of the forensic methodology, individual investigative techniques, their scientific validity and interconnection.

The second part of the chapter consists of investigation methods for certain types of crimes, which are developed on the basis of the general provisions of the forensic methodology in accordance with the requirements of the investigative practice.

The forensic methodology, as a system of interconnected and interrelated investigative (search) actions, secret investigative actions and other measures.

That are intended to provide for investigation and prevention of crimes, is built in accordance with certain principles:

- strict compliance with the law;
- scientific substantiation;
- the conditionality of its nature and content with circumstances that need to be established;
- step-by-step investigation, which reflects the features of the detection and collection of evidence;
- the optimal organization and tactics of carrying out necessary investigative (search) actions and secret investigators' actions that provide solving of problems of criminal proceedings;
- integrated use of facilities and facilities for a quick and complete solution to the problems in criminal proceedings.



The sources of formation and development the forensic techniques - are law, judicial, investigative, operative-search and expert practice and the position of science. In this case, the determining role belongs to the criminal and criminal procedural law.

The provisions of criminal law that establish the punishment of acts and the nature of circumstances that determine responsibility, it is the derivative of the development of separate (specific) methods of investigation and guidance to determine the subject of evidence for specific types of crimes. Thus, the emergence of new types of crimes (first in real life, and then in the form of specific norms of the criminal law) put the task of forensic science to develop appropriate separate techniques.

The rules of Crown law, which regulate the procedure for criminal proceedings, affect the content of certain criminalistic methods. Adoption of the new Ukraine Code of Criminal Procedure, significant changes in measures of inquiry (search), the appearance of secret investigative (search) actions affect the development and perfection of forensic techniques.

Particularly, the conduct of procedural actions in the via videoconferencing ensures the efficiency of litigation proceedings, the security of persons - participants in criminal proceedings, etc., which is reflected in the recommendations and structure of individual investigative techniques.

The data of advanced investigative practices serve as the basis knowledge of criminal activity, patterns the criminal manifestations, as well as experience in investigating crimes; checks of developed forensic recommendations; act as a customer for the development and improvement of certain methods of investigation of crimes; can offer new, born in practice, tools, techniques and techniques for their scientific synthesis and research.

An important source of development methodological recommendations - is the new progressive scientific developments. This, first of all, relates to branches of knowledge - legal psychology, forensic medicine, military ballistics, court entomology, information technologies, etc.

This process is characterized by the mutual influence of the constituent parts of criminology, which manifests itself in two main forms: first, the creation of new techno-forensic and tactical and forensic means and methods necessitates the development (or refinement) of methodological recommendations for their application in the course of investigation of certain types of crimes , secondly, the need for investigative practices (the emergence of new ways of committing and concealing crimes, etc.) determine the need to improve existing or develop new forensic means, hints and tips.

Thus, the forensic method widely uses the achievements of other sciences (psychology, science of management, physics, chemistry, cybernetics, etc.) to ensure the effectiveness of their recommendations. In this case, certain provisions are used in practice without changes, while others are applied after their adaptation to the objectives and purposes of forensic provision of criminal proceedings.

## **4.2. Classification and structure separate methods of crimes investigation**

The essence of forensic methodology - is disclosed in the recommendations for investigating criminal offenses. In the most general sense, these are recommendations for identifying traces of actions or inactivity, their analysis and legal assessment. Since various types (groups) of crimes are committed using a specific set of means and methods for achieving a criminal purpose, according to each type of crime will be characterized by its specific traces and the resulting means and methods for their detection, extraction, research and use. This determines the need to develop separate methods of investigation of certain types (groups) of crimes.

A prerequisite for the successful formation of new and modernization of available forensic methodological recommendations is the definition of conceptual approaches to the technology of creating the methods themselves. The solution to this problem depends, first of all, on the existence of a single, universally recognized and consistent classification of methods for investigating crimes, since various technological levels of such methods may offer different technological approaches to their creation.

In this regard, the basis for forensic classification of crimes is:

- a description of a certain type of crime, defined in the relevant sections of the special part of the Criminal Code of Ukraine;
- characteristic (classification) of the person of the offender, the victim;
- the nature of the primary information (typical investigative situation), which determines the algorithm of the first investigators (investigatory) actions and their features;
- peculiarities of display of criminal actions (trace picture of an event);
- peculiarities of the typical way of committing certain types (groups) of crimes, guns and means of committing them;
- degree of concealment and masking the crime, the presence of criminal experience, etc.

The best, in our opinion, today is a four-level classification of forensic techniques, which distinguishes the following levels:

1. Specific forensic methods (according to types of crimes clearly defined in the relevant sections of the special part of the Criminal Code of Ukraine, for example, the method of investigation of fraud);

2. Inner-form forensic methods (subtypes or varieties isolated from among the crimes of the same species for forensic-significant features, for example, in such a crime as a deliberate killing, distinguish the following intrinsic techniques, such as the methodology for investigating murders (a) related to (b) commissioned, (c) the mother of their newborn child, (d) committed on a religious basis, etc. In this sense, the forensic classification is characterized by a more differentiated approach than the criminal- legal, which brings it closer to the requirements of practice);

3. Interstate (or group, complex) forensic methods of investigation of crimes, which reflect recommendations for investigating complexes of interrelated criminal acts united on the basis of simultaneous consideration of criminal-law and forensic criteria for the classification of crimes. The commonality of these criminal manifestations is due to the fact that they are covered by the sole intent of the organizers, instigators, accomplices and performers, the common purpose and motives, the general mechanism for the implementation of the criminal plan, etc.

It is about a single chain of criminal behavior, in particular about the technology of criminal enrichment or criminal activity, for example, the legalization (laundering) of proceeds from crime. Investigation of the complexes of criminal acts determines the specifics of nomination and verification of investigative versions, planning, tactics of conducting separate investigatory (search) actions, secret investigative (search) actions and operational-search measures, peculiarities of carrying out tactical operations (combinations), etc.

4. Forensic methods. At the same time, the process of differentiation of techniques began to unfold the process of peculiar integration, when began to form techniques that have received a sufficiently broad reflection in forensic literature, for example, the method of investigation of crimes committed by minors; the method of

investigation of undisclosed crimes of past years; methodology for investigating crimes committed by and against foreigners, etc. The basis of these methods is the peculiarities of the subject of the crime, the influence of the time factor, the specifics of the means of committing crimes, etc.

So, for crimes committed by minors, the age-old peculiarities of their psychology are very peculiarly expressed both in unlawful activities (the motives and purpose of committing crimes, the choice and relation to the subject of the attack, the specificity of the trace situation, etc.) and in the process of conducting an investigation (underestimation of the consequences of the investigation, propensity to the false concept of a partnership, etc.).

In the investigation of undisclosed crimes of the past years, the main specific points related to the measures to mask the traces of the crime and the peculiarities of the organization of work to identify and eliminate the shortcomings admitted at the initial stage of the investigation (taking into account the effect of the time factor, the search for unused opportunities, etc.). Due to such features-features, one group combines very different types of crimes: murder, robbery, rape, theft, etc., to investigate which new opportunities arise.

The proposed classification allows not only to clearly distinguish forensic methods by the degree of generalization, the level of concretization of methodological recommendations, but also to determine different approaches to the technology of their creation. Thus, intrinsic forensic methods are most closely approximated to the needs of the practice, since they are developed on the basis of the results of the generalization of forensic practice and are therefore considered to be the most optimal and effective, since it is at this level that it is possible to formulate specific research tasks and construct an algorithm for their solution.

With all the diversity of individual techniques, they have certain typical elements. The typical structure of a separate forensic methodology, as a rule, consists of the following interrelated parts:

- forensic characteristics of this type of crime;

- a typical list of circumstances to be established during the investigation of crimes of this type (group);

- typical algorithm (plan) of investigative (search) actions, secret investigative (search) actions and other measures at each stage of the investigation taking into account typical investigative situations;

- peculiarities of the tactics of conducting separate investigative (search) actions, tactical operations (combinations);

- peculiarities of the use of special knowledge in criminal proceedings of this category;

- peculiarities of the interaction of the investigator with the operational units of the National Police, security authorities, bodies supervising the observance of tax legislation, bodies of the State Penitentiary Service of Ukraine, bodies of the State Border Guard Service of Ukraine, bodies of the State Customs Service of Ukraine and external cooperation with other government departments, institutions and organizations in criminal proceedings of this category;

- peculiarities of attracting public assistance and using the possibilities of the mass media during the investigation of crimes of this type (group);

- features of preventive activity of the investigator in criminal proceedings of this category.

The distinguished typical structural elements of individual methods in general correspond to the current state of development of this section of criminology, the needs of investigative practice, create a certain benchmark for the formation of new separate criminalistic methods, but do not exclude the introduction of substantiated criminalistic peculiarities of types and groups of crimes of changes and additions.

### **4.3. Forensic characteristics of crimes**

The emergence and development of forensic methodology in general and particular investigative techniques in particular are inextricably linked with purposeful system collection, research and synthesis of materials of investigative practices - the main source of the development of methodological guidelines and recommendations. As a result of the synthesis of practical and scientific activity, different characteristics of crimes that contain a description of the logical features of a crime are created in their subject matter. There are the following characteristics: criminal law, forensic, criminological, and others like that.

Criminal characteristics - description of the features that distinguish crime from misconduct, the classification of crimes by species, degree of danger, etc. Criminological characteristic - description of the genesis of the crime, its causes, conditions of commission, frequency of repetition, distribution of crimes on other grounds, for example, age, time, etc. Forensic characteristics are interconnected with elements of other characteristics and uses them. In particular, the subject of direct encroachment includes the criminal-legal characteristics of the subject, and the description of the person of the offender in most techniques is bordered with the criminological characteristic. Forensic characteristics are a description of the properties and features that are important for the disclosure of the mechanism of the crime, the nature of the remaining traces, the conditions for the commission of the crime and the characteristics of the offender.

The forensic description of crimes has defined as:

- information model of typical features of certain type (group) of crimes;
- an ideal model of typical connections and sources of evidence;
- a probable event model;
- a system of data (information) about a crime that contributes to the investigation;
- a system of generalized evidence, the knowledge of which is necessary for the organization of crime investigation;

- the system of peculiarities of the type of crimes of importance for the investigation;

- a system for describing criminologically significant signs of crime in order to ensure investigation and prevention of crime, etc.

The practical significance of these data is that during the investigation of a particular crime, the comparison of available data (which, where, when, in what manner, under what circumstances, etc.) with the system of summary information (scientific data) on the crimes of this type allows to identify similar in forensic-Significant signs of crime and on this basis, put forward probable versions, take into account forensic recommendations for further investigation plan, etc. The most commonly known is the general description of the method of committing a crime. And then, on the basis of generalized data on who previously committed such crimes in a similar way, it is possible to establish a rather specific direction for the search of the perpetrator. Of course, this will not be data on the specific person of the offender, but the characteristics of a certain (narrow or broad) group of people (convicted, minors, etc.), among which a suspect should be searched.

The practical application of a separate forensic description is clearly illustrated by the following example. In the course of an investigation into the brutal murder of a woman with subsequent mistreatment of the victim's body, five suspects were found who immediately confessed to the perpetrator and tried to "speed up" the investigation. This surprised the investigator and he appealed to the materials of the generalization of the practice of investigation of the killings L.G. Vidonov; while establishing that in this way murders are usually committed by mentally ill persons or repeatedly convicted. There were no such detained suspects, so he studied their environment in detail: he did not install mentally ill persons, but there were several repeated convictions. One of them turned out to be the sixth and most active participant in the crime - the initiator of the assassination.

Forensic description of crimes is a system of generalized data on the most typical signs of a certain type (group of) crimes manifested in the method and mechanism of the act, the circumstances of its commission, the person of the subject of the crime, and other circumstances, the logical relationship of which serves as the basis of scientific and practical solving the investigation tasks.



Taking into account the criminalistics described in the crime description, it is necessary to clearly distinguish between:

- the theoretical concept as the basis for the formation of separate methods for investigating crimes;
- a working instrument of investigation as a system of collected and aggregated data on criminologically significant signs of a particular type (group) of crimes.

Of course, the aggregated data of the type (group) of crimes cannot act as a universal one hundred percent method for investigating crimes, since they represent a typical one, and each committed crime can be so individual that in some cases it may not have analogues in the past. However, it is still a lot more typical and because of this, there is the forensic method itself. Therefore, data of forensic characteristics are called and help in most cases to investigate specific crimes.

One of the most controversial in the theory of forensic characteristics of crimes is the question of the quantitative and qualitative composition of elements, that is, forensic-significant features, which should form the core of forensic characteristics.

The main elements of the forensic characterization of a certain type (group of) crimes should include only those elements that are distinguished by a clear search-and-search direction, and they include:

- characteristic of the subject of criminal encroachment (things of the material world, which seek to seize criminals - money, values, property, etc.);
- typical ways of committing a crime (consisting of methods for preparing for committing criminal acts, direct committing a crime and ways of concealing (disguising) criminal acts);
- a typical trace of the event (a set of material and psycho-physiological traces that are inherent in a certain type (group of) crimes and certain ways and stages of its commission);
- characteristics of the offender (characterized by physical, socio-demographic data, factors that had an impact on the formation and implementation of a criminal goal, the creation of a criminal group, the distribution of roles among accomplices, etc.);

- characteristics of the victim (demographic data, information about lifestyle, features of character, habits, relationships and relationships, signs of victimal behavior, etc.);

- the motive and purpose of committing crimes (the motive is an internal motive, the driving force of a person's actions, which determines its meaning and helps to reveal more deeply the mental attitude of the person to the accomplice; the goal is the idea of the desired result that the person who aspires to determine the direction of the act) .

It should be noted that these elements cannot be considered as a single and unchanging system for all types of crimes. This is the most typical set of forensic-significant features, designed to provide an applied function of forensic characteristics. With regard to certain types of crimes, this set may change - to reduce and expand. Thus, in the case of murder, rape will not be the subject of an offense in "pure form", and that the crime associated with the victim will be reflected in the description of the method of committing a crime or in describing the person of the victim (victim). When forming a methodology for investigating murders by order, the following element of forensic characteristics will be important: the motive and purpose of committing a crime. It is this element that allows you to identify the customer of a crime by studying the issue - "Who needed a crime to be profitable?".

Thus, forensic characteristics are a working tool of investigation in the form of a systematic synthesis of the data of investigation of a significant amount of criminal proceedings in respect of each specific category of crimes, with the definition of the interconnection of all forensic-significant features of these types of crimes.

#### **Questions for control to chapter 4:**

1. The concept and essence of forensic methodology.
2. The impact of forensic methods on the effectiveness of pre-trial investigation.
3. Sources of formation and development of forensic methodology.
4. Concept and general description of stages of pre-trial investigation.
5. The concept and content of forensic characteristics of crimes.

## **CHAPTER «FORENSIC METHODOLOGY»**

### **TEST TASKS**

Choose one of the four suggested answers, which, in your opinion, is correct.

#### ***1. Forensic methodology – is a ...***

a- final section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes;

b- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

c- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence;

d- system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence.

#### ***2. The basic principles of the forensic methodology include:***

a- step-by-step investigation, which reflects the features of the detection and collection of evidence;

b- the optimal organization and tactics of carrying out necessary investigative (search) actions and secret investigators actions that provide solving of problems of criminal proceedings;

c- strict compliance with the law;

d- all of the options are right.

### ***3. Criminal characteristics ...***

a- system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis;

b- description of the features that distinguish crime from misconduct, the classification of crimes by species, degree of danger, etc. Criminological characteristic - description of the genesis of the crime, its causes, conditions of commission, frequency of repetition, distribution of crimes on other grounds, for example, age, time;

c- complex of investigators, secret investigative (search) actions, operative-search, organizational, technical and other measures, which are carried out according to the agreed plan and aimed at solving a specific practical task during the investigation;

d- section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence.

### ***4. The forensic description of crimes has defined as:***

a- information model of typical features of certain type (group) of crimes;

b- an ideal model of typical connections and sources of evidence;

c- a probable event model;

d- all of the options are right.

### ***5. The main elements of the forensic characterization include:***

a- typical ways of committing a crime; a typical trace of the event; the motive and purpose of committing crimes;

b- characteristic of the subject of criminal encroachment; typical ways of committing a crime;a typical trace of the event;characteristics of the offender;characteristics of the victim; the motive and purpose of committing crimes;

c- all of the options (a,b) are right.

d- there is no correct answer.

***6. Characteristic of the item of criminal encroachment:***

a- money;

b- jewelry;

c- things of the material world, which seek to seize criminals - money, values, property, etc.;

d- cars.

***7. A typical trace of event:***

a- fingerprints;

b- a set of material and psycho-physiological traces that are inherent in a certain type (group of) crimes and certain ways and stages of its commission;

c- blood;

d- there is no correct answer.

***8. Offender characteristics include:***

a- socio-demographic data;

b- factors that had an impact on the formation and implementation of a criminal goal;

c- all of the options (a,b) are right;

d- there is no correct answer.

***9. Victim characteristics include:***

a- demographic data, information about lifestyle, features of character, habits, relationships and relationships, signs of victimal behavior, etc.;

- b- socio-demographic data;
- c- information about lifestyle;
- d- there is no correct answer.

***10. Typical ways of committing the crime:***

- a- methods for preparing for committing criminal acts,
- b- direct committing a crime
- c- ways of concealing (disguising) criminal acts;
- d- all of the options are right.

## **PRACTICAL TASKS FOR CHAPTER**

### **«FORENSIC METHODOLOGY»**

#### **TASK 1.**

On August 1, 2020, at approximately 10:00 a.m., Nesterenko addressed the territorial police body and reported that near the garbage cans near the house № 4 on the street Peace in Kyiv, he found a package with part of a human hand.

#### **Question:**

1. Assess the investigative situation.
2. Indicate the circumstances to be established.
3. Build investigative versions and make an investigation plan.
4. Identify the investigative (search) actions that need to be carried out at the initial stage of the investigation.

#### **TASK 2.**

On September 7, 2020, at about 10 pm, Tikhonov addressed the territorial police body with the message that about one hour ago at the trolleybus stop of the route №7 on the street In Sadova, a stranger in Kyiv hit him several times in the back of the head and, snatching a diplomat containing 25,000 hryvnias in cash, disappeared in the direction of apartment building № 7 on the same street.

#### **Question:**

1. Assess the investigative situation.
2. Indicate the circumstances to be established.
3. Build investigative versions and make an investigation plan.
4. Identify the investigative (search) actions that need to be carried out at the initial stage of the investigation.

### **TASK 3.**

On April 26, 2020, a naked corpse of a woman with traces of numerous hematomas and stab wounds was found near the Rusanivka residential area, on the shore of the lake.

#### **Question:**

1. Assess the investigative situation.
2. Indicate the circumstances to be established.
3. Build investigative versions and make an investigation plan.
4. Identify the investigative (search) actions that need to be carried out at the initial stage of the investigation.
5. Specify what needs to be recorded and removed from the scene.
6. Identify possible ways to detect and fix traces. Identify forensic examinations that can be appointed.



## APPLICATIONS

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## **GENERAL THEORY OF FORENSIC SCIENCE**



At the beginning of the XX century, the forensic science was perceived by scientists as a science of tools and techniques for applying the achievements of natural and technical sciences in order to investigate crimes.

There are many definitions of the subject of forensic science. The scientists called the following:

Synthesis of knowledge

Specificity of forensic science technologies, techniques and methods

The focus of forensics on the study of the patterns of the emergence of evidence

Development of scientific and technical methods



### Forensics

is the applications of science to crime means, accrue information of offenses and associates, and applications of collection, investigation, evaluation and implementation of evidence, and acquirement of special tools and methods of forensic expert examination and crime prevention based on the patterns (by R.S. Belkin).



### **Forensic science**

is a system of knowledge about the legitimate generation (formation, occurrence), the identification (ascertaining), fixation, extraction, study, evaluation and use of information suitable for verification or establishment of any facts, events, phenomena, as well as development on the basis of known patterns of practice, methods, procedures, techniques, technologies, tools, materials, devices and their complexes and other means of optimizing the work with such information.

The main functions are inherent to forensic science:

Ascertaining  
function

Interpretation  
function

Heuristic  
function

Predictive  
function

Practical  
applied function

Communicative  
function

Educational  
function

Nurture  
function

Critical function

## Some of the tasks of forensic science include:

- further study of the objective patterns of reality, which form the basis of the subject of forensics
- development of new and improved existing technical and forensic means
- development of measures to stop and prevent crime
- development and improvement of organizational, tactical and methodological bases
- active study and generalization of investigative, expert, operative-search and judicial practice

## The system of forensic science consists of four sections:



1. General theory of forensic science

1.2. Forensic technique.



1.3. Forensic tactics

4. Forensic methodology



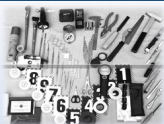
### **The general theory of forensic science**

- is a system of basic principles, theoretical concepts, categories, notions, terms and methods, which is its methodological basis.



### **Forensic technique**

- is a system of scientific regulations and technical means developed on their basis, techniques and methodology for collecting and research of evidence



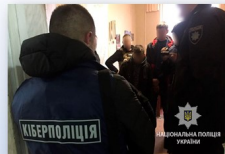
### Forensic tactics

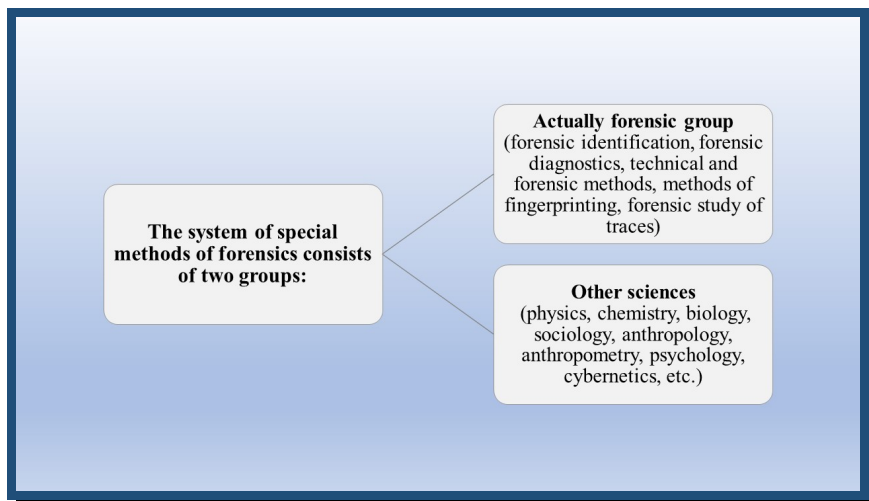
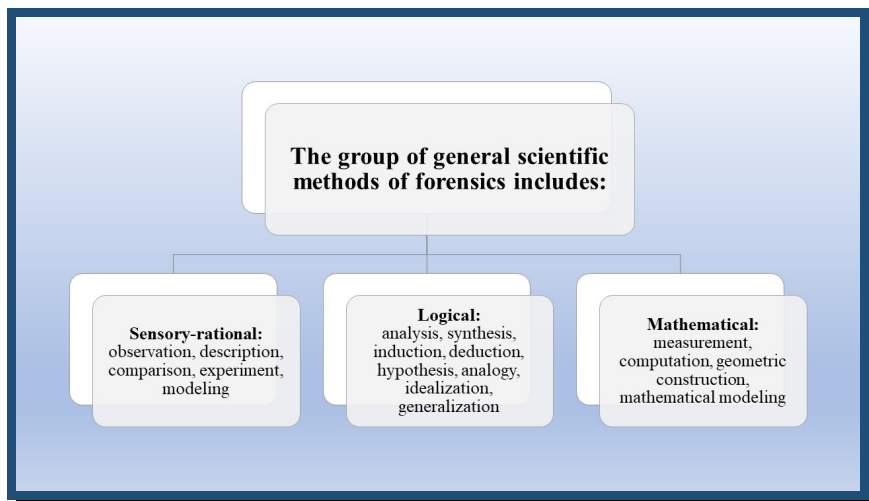
- is a section of the forensic science, which includes a system of scientific regulations and practical recommendations developed on their basis on the organization and planning the pre-trial investigation and judicial proceedings, determination of the optimal line of behavior of persons conducting investigations, methods of conducting investigative (search) and secret investigative (search), procedural actions during the criminal proceedings, aimed at establishing the circumstances to be proved, the collection and evaluation of evidence.



### Forensic methodology

- is the final section of the forensic science, a system of integrated scientific provisions and a set of methodological recommendations formed on their basis that provide an optimal organization of investigation and prevention of certain types of crimes.





### Forensic identification

is the process of establishing the identity of a particular material object by its allocation from a certain set of objects in a unique set of features that were reflected in circumstances related to the crime



By the nature of the reflection of the features of the object there are the following types of forensic identification:

the establishment of the identity of the object on the features, repelled in the memory of a person

establishing the identity on the description

establishing the identity on the photo, video

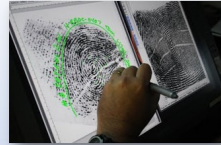
establishing the identity on the material-fixed reflection of the signs of the external structure of the object

establishing the identity of the whole in parts, or, in other words, solving the question of whether two or more parts were one whole

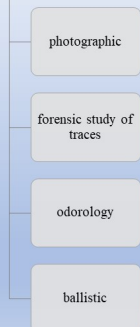


## Forensic diagnostics

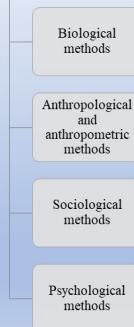
can be defined as the study of the characteristics and state of the object (situation) in order to establish the changes that have occurred therein, determining the causes of these changes and their relationship seeing the investigated criminal offense.



### Techniques and forensic methods:



### Special methods of other sciences:



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## FORENSIC TECHNIQUE



### Forensic technique



sub-discipline of  
criminology

set of techniques  
which are used in  
criminal  
proceedings

As a part of forensic science,  
**forensic technique**- is a system of scientific provisions and references that provide with the development of techniques (devices, tools, accessories and materials) and also, methods and ways of their use in order to investigation and prevention of criminal offenses.

The tasks of forensic technique are as follows:

detection, recording, seizing and preservation of material vestigial traces of crime

- development of technical equipment and methods that provides the introduction of new sources of criminalistics information in the investigation process

establishment a mechanism for the track formation/condensation and the reasons for their cooperation

establishment of properties, states, group membership and identity of sources of information

processing and use of forensic information for investigation and prevention of criminal offenses

development of methods and technical means for the assessment and use of forensic information in law enforcement activities

### **The system of forensic technique**

- is a subjective classification of scientific conditions, based with due regard the types (cases) of vestigial traces of crime, as well as distinctions of trace-indicating objects and tasks, resolvable in their examination, that permits the submission of relevant acquirement in the structure which covering the main elements (branches) of forensic technique.

and consist of:

**1.The general provisions of forensic technique** include the concept, content and sources, and its connection with some branches of criminalistics and other sciences, concept and content of its constituent elements (branches)



## 2. Forensic photography and video recording

- a set of scientific provisions and purpose designed photo-, video tracking (recording) facilities and appropriate methods intended for collection, investigation and demonstration of evidence.



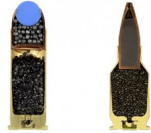
## 3. Trace evidence or tassology (forensic processing of traces)

- studies the patterns and occurrence of various kinds (types) of traces, develops tools, methods and ways of detection, collection, investigation and using the purpose of traces with investigation and prevention of felonies.



#### 4. Ballistics (the application of weapons, ammunition, explosives, devices and traces)

- studies the design patterns and operation of various types of weapons, that is the application of occurrence traces, as well as, develops items, methods and ways for research of such objects and using the purpose of traces the investigation and prevention of criminal offenses.



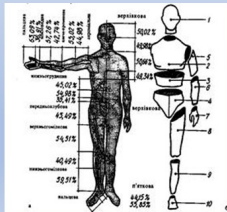
#### 5. Forensic technique of documents examination

- involves the learning of laws the documents processing and the methods of whole or partial forgery, as well as develops tools, methods and ways of research, such objects for use in the investigation and prevention of criminal offenses.



## 6. The anthropometry (personal identification on the basis of appearance)

- refers to the measurement of the human individual and material and perfect map, the theory operation of such features upon the ascertainment that are relevant during the investigation of criminal offenses.

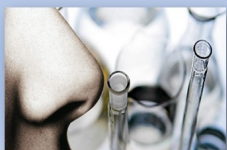


## 7. The phonoscopy (forensics of sounds traces) –

is a forensic teaching about designated use of recorded sounds to investigate criminal offenses.



**8. The odorology or science of smells**  
– is a system of scientifically hammered out methods and detecting technology, extracting, storing and studying odor print, for subsequent use and solving the resolution of unique tasks.

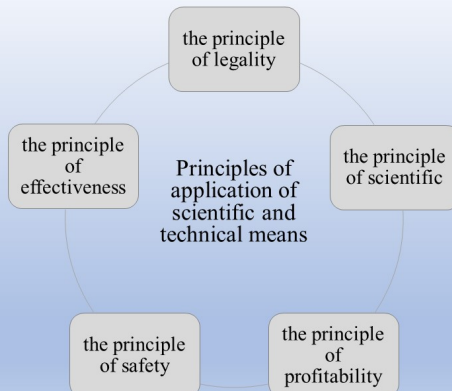
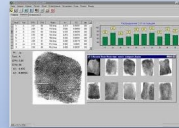


**9. Forensic processing of substances, materials and articles**





**10. The content of criminal registration**  
involves developing means, methods and ways of  
registration people, animals and other objects of  
investigation and prevention of criminal offenses.



### **Types of technical and forensic means according to the source of origin (the branch-wise of scholarly knowledge):**

technical means developed in forensics for the collection and research of evidence (special)

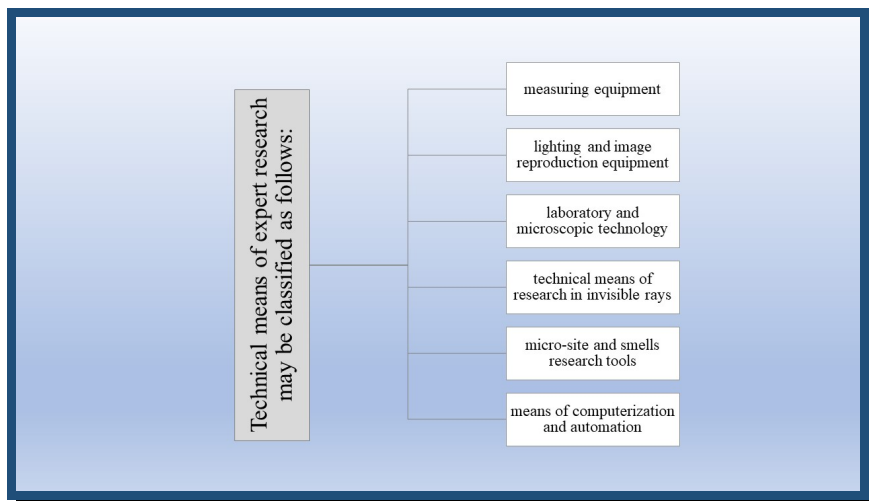
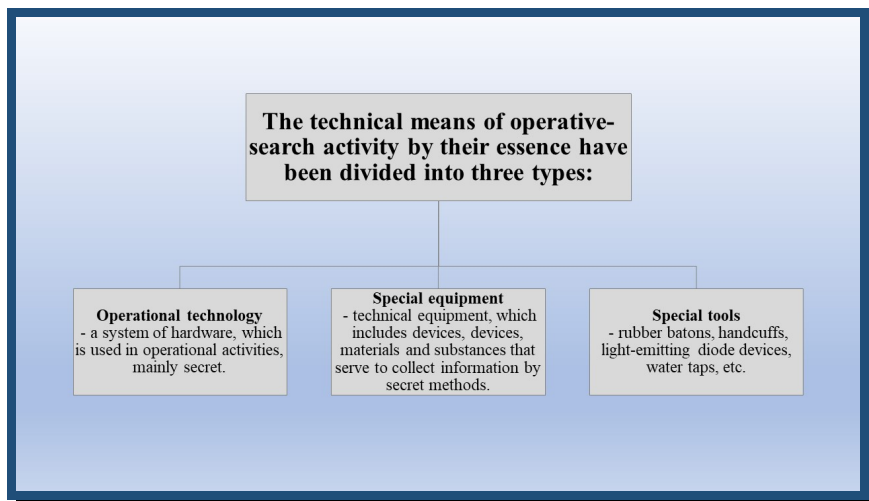
technical means borrowed from other sciences or branches of knowledge, but adapted for solving special forensic problems

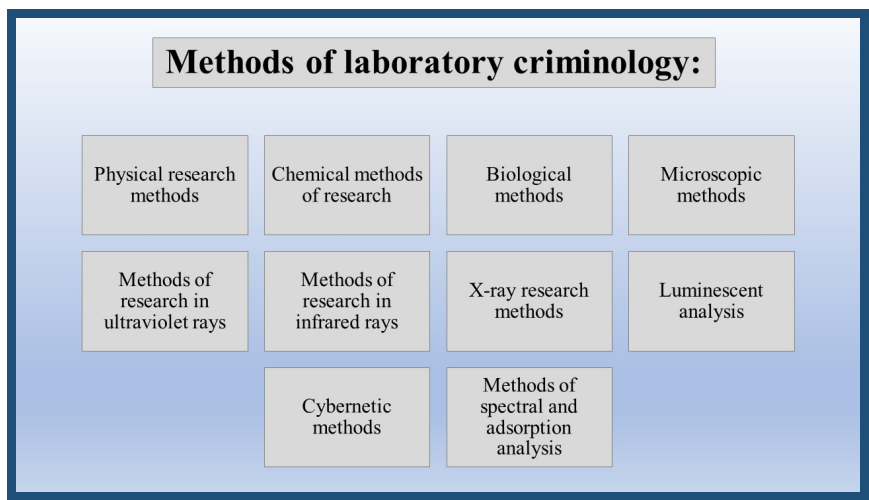
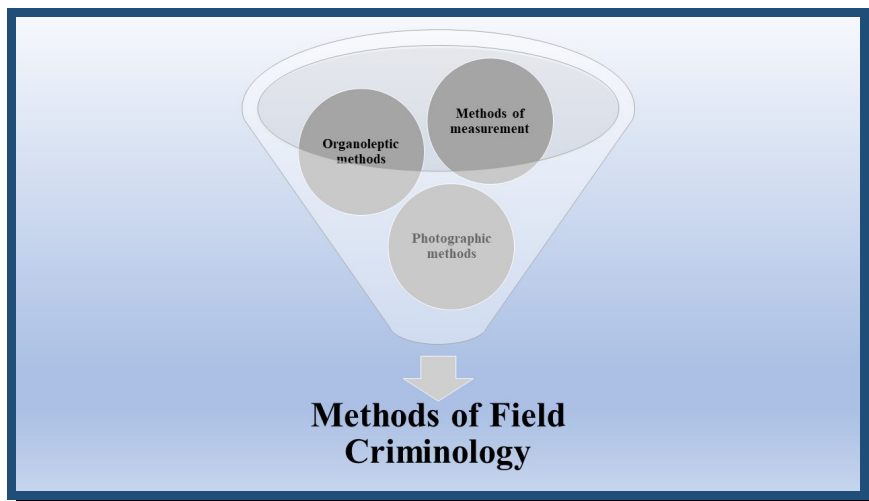
technical means borrowed from other sciences or branches of knowledge that are used to ensure the investigation of crimes without constructive change

### **Types of technical and forensic means where the technical means are used:**

means of "field criminology", that is, the use of which during the investigation is provided outside the cabinet of the investigator (expert laboratory)

means of laboratory technique





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## FORENSIC TACTICS

### **Forensic tactics**

is a part of the science of criminology, which includes a system of scientific regulations and practical guidelines developed on their basis for the organization and planning of pre-trial investigation and judicial proceedings, determination of the optimal behavior of investigating persons, methods of conducting investigative (search), secret investigatory, procedural actions during the court proceedings aimed at establishing the circumstances to be proved in the criminal proceedings and, gathering and evaluating evidence.

Forensic tactics can be characterized as:

an integral part of the science of criminology

a system of scientific provisions

a set of recommendations

The means of forensic tactics include:



tactical method



tactical operation

forensic recommendation



a tactical combination

tactics of the investigative (search) action



## Investigative (search) actions include:

**interrogation**  
(Articles 224-226, 232, 351-354, 356  
of the CPC of Ukraine)

**the presentation of  
a person for  
identification**  
(Articles 228-232, 355  
of the CPC of Ukraine)

**review**  
(Part 3 of Article 214, Art.  
237, 238, 239, 361  
of the CPC of Ukraine)

**exhumation of the  
corpse**  
(Article 239  
of the CPC of Ukraine)

**search**  
(Article 234-236  
of the CPC of Ukraine)

**investigative  
experiment**  
(Article 240  
of the CPC of Ukraine)

**the exploration of a  
person**  
(Article 241  
of the CPC of Ukraine)

**conducting an  
examination**  
(Article 242  
of the CPC of Ukraine)

## Stages of false investigative (search) actions:

preparation for conducting  
an investigative (search)  
action

carrying out an investigative  
(search) action

fixing the course and results  
of the investigative (search)  
action

evaluation of the results and  
determination of their value  
in the system of evidence

### **Preparation for an investigative (wanted) action:**

- definition of the purpose, tasks of the investigative (search) action;
- system analysis of the initial investigative situation; assessment of available evidence, operative-search, orientation information;
- use of methods of reflexive thinking;
- choosing of the place, time, most expedient, from the tactical aspect, the moment of beginning of investigation (search) action;
- definition of participants of investigative (search) action and their tasks;
- taking measures to ensure the safety of participants in criminal proceedings;
- development of a tactical line of the investigator's behavior and other competent persons involved in the conduct of investigative (search) action;
- ensuring interaction of the investigator with law enforcement agencies;
- definition of the need and ensuring the possibility of using technical means during the investigation (investigative) action, etc.

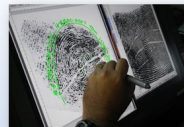
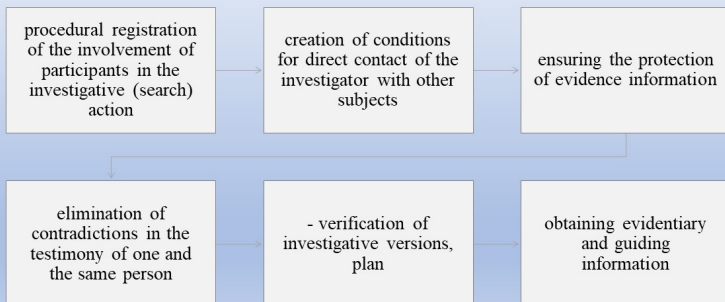
### **Carrying out an investigative (wanted) action**

is a period of verification of the versions by confirming or refuting the formulated conclusions. General organizational and tactical tasks which can be solved during direct conducting of investigative (search) action.





## Carrying out an investigative (wanted) action:



## Fixing of the progress and results

the task of this stage is to display all the contents of the investigative (search) action and the results obtained as accurate as possible



**An assessment of the results**

obtained and the determination of their place and value in the system of evidence in this criminal proceeding is the final stage of the investigative action.



The tactical method is the main element of forensic tactics.

The definition of tactical admission as a method for the implementation of a specific task, based on the psychological mechanism of its realization, which is the most rational and effective in certain situations (V.Shepitko), is quite well-founded.

## Classification of tactical techniques:

### 1. Depending on the content and purpose of the tactics, there are:

cognitive

managerial

organizational and technical



### 2. In terms of the sequence of solving tactical tasks:

initial (outgoing)

intermediate

final



### 3. By the type of investigative (search) actions:

tactical methods of inspection, of interrogation, of the investigator's experiment etc.

## The fixation of evidence information has several forms:

in the protocol



on the carrier of information, in which by means of technical means certain procedural actions are recorded

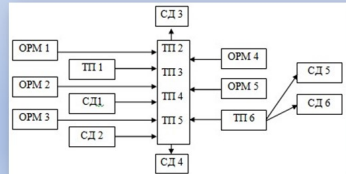


in the journal of the court session



## Tactical combination

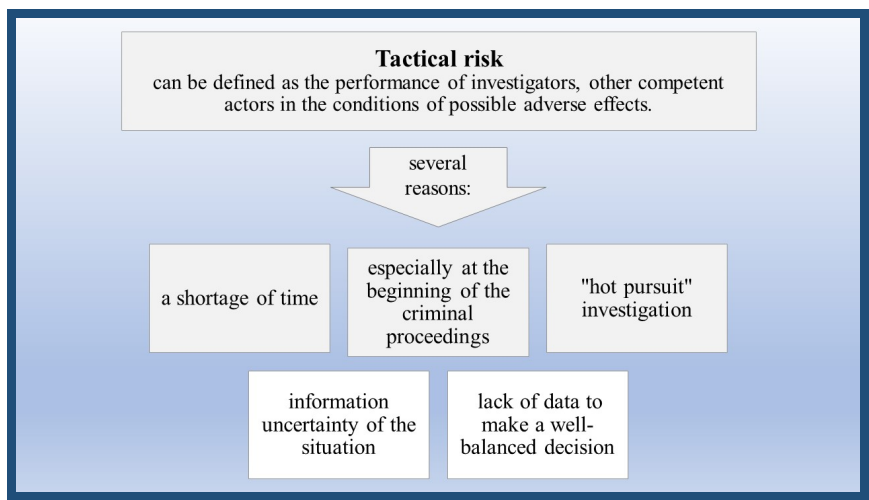
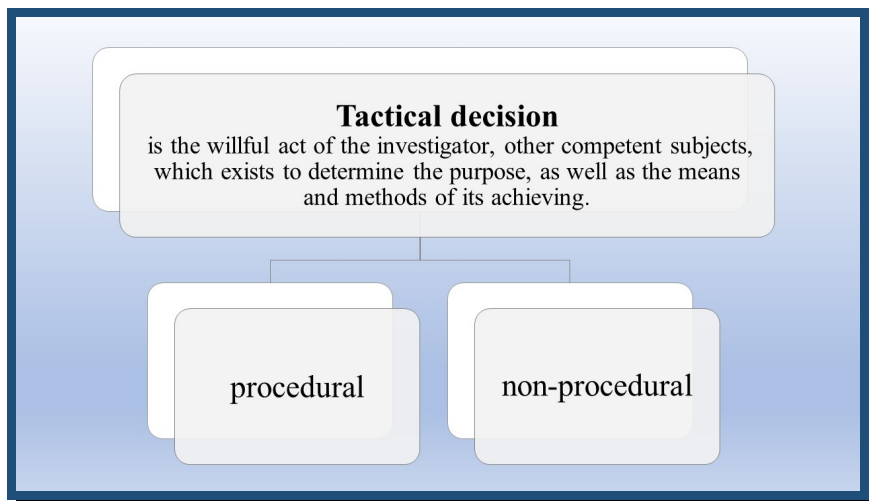
is a combination of tactical techniques and other measures aimed at establishing certain circumstances or solving a practical task and the result of this objective and the investigative situation of a separate investigative (search), secret investigation (search), procedural action.



## Tactical operation

is a complex of investigatory, secret investigative (search) actions, organizational, technical and other measures that are carried out according to the agreed plan and aimed at solving a specific tactical task during the investigation.





# NATIONAL ACADEMY OF INTERNAL AFFAIRS

Department of Criminalistics and forensic medicine



## FORENSIC METHODOLOGY

### **Crimes investigation**

- is a specific activity, cognitive and organizational-tactical essence of which determined by the specific traits of evidentiary information and the procedures laid down by the law for its obtaining and using.



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- is a specific activity, cognitive and organizational-tactical essence of which determined by the specific traits of evidentiary information and the procedures laid down by the law for its obtaining and using.



In the forensic technique, not only defined methods are developed and indicated for use in the investigation, but also provisions concerning:

forensic characteristics  
corresponding category  
of crimes

typical investigative  
situations; typical lists of  
circumstances  
warrant determination

directions of interactions  
the investigator with  
other participants of  
the examination

### **Forensic methodology (the final section of forensic science)**

- is a system of integrated scientific regulations and formed methodological recommendations on their basis, which provides the optimal organization of investigation and prevention of certain types of crimes.



### **The principles of forensic methodology:**

strict compliance with the law

the conditionality of its nature  
and content with circumstances  
that need to be established

scientific substantiation

step-by-step investigation,  
which reflects the features of the  
detection and collection of  
evidence

the optimal organization and  
tactics of carrying out necessary  
investigative (search) actions  
and secret investigators actions  
that provide solving of problems  
of criminal proceedings

integrated use of facilities and  
facilities for a quick and  
complete solution to the  
problems in criminal  
proceedings



## The basis for forensic classification of crimes is:



a description of a certain type of crime, defined in the relevant sections of the special part of the Criminal Code of Ukraine



characteristic (classification) of the person of the offender, the victim



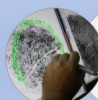
the nature of the primary information (typical investigative situation), which determines the algorithm of the first investigators (investigatory) actions and their features



peculiarities of display of criminal actions  
(trace picture of an event)

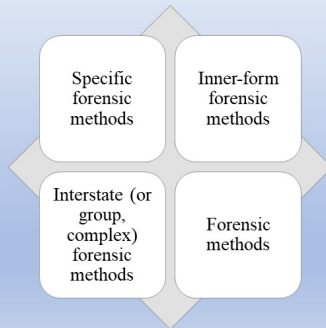


peculiarities of the typical way of committing certain types (groups) of crimes, guns and means of committing them

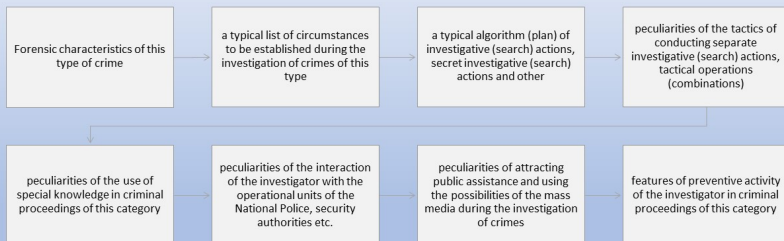


degree of concealment and masking the crime, the presence of criminal experience, etc.

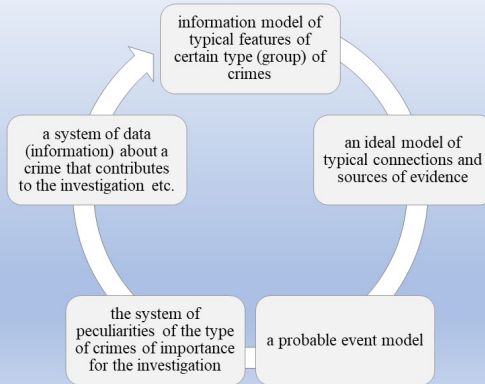
Four-level classification of forensic techniques, which distinguishes the following levels:



The typical structure of a separate forensic methodology, as a rule, consists of the following interrelated parts:

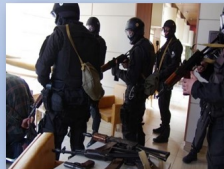


The forensic description of crimes has defined as:



### Forensic description of crimes

is a system of generalized data on the most typical signs of a certain type (group of) crimes manifested in the method and mechanism of the act, the circumstances of its commission, the person of the subject of the crime, and other circumstances, the logical relationship of which serves as the basis of scientific and practical solving the investigation tasks.



The main elements of the forensic characterization of a certain type (group of) crimes should include:

1. Characteristic of the subject of criminal encroachment (things of the material world, which seek to seize criminals - money, values, property, etc.)



2. Typical ways of committing a crime (consisting of methods for preparing for committing criminal acts, direct committing a crime and ways of concealing (disguising) criminal acts)



3. Typical trace of the event (a set of material and psycho-physiological traces that are inherent in a certain type (group of) crimes and certain ways and stages of its commission)

4. Characteristics of the offender (characterized by physical, socio-demographic data, factors that had an impact on the formation and implementation of a criminal goal, the creation of a criminal group)

5. Characteristics of the victim (demographic data, information about lifestyle, features of character, habits, relationships and relationships, signs of victim behavior, etc.)

6. The motive and purpose of committing crimes



## KEY TO THE TASKS

### CHAPTER «GENERAL THEORY OF FORENSIC SCIENCE»

1 a	6 b
2 d	7 d
3 d	8 b
4 d	9 a
5 c	10 c

## KEY TO THE TASKS

### CHAPTER «FORENSIC TECHNIQUE»

1 c	6 b
2 d	7 b
3 b	8 c
4 a	9 a
5 c	10 d

## KEY TO THE TASKS

### CHAPTER «FORENSIC TACTICS»

1 b	6 a
2 a	7 a
3 b	8 d
4 d	9 c
5 c	10 d

## KEY TO THE TASKS

### CHAPTER «FORENSIC METHODOLOGY»

1 a	6 c
2 d	7 b
3 b	8 c
4 d	9 a
5 b	10 d

### **List of used and recommended literature:**

- Конституція України : Закон України від 28 червн. 1996 р. № 254к/96-ВР. URL: <http://zakon5.rada.gov.ua/laws/show/254к/96-вр>.
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- Кримінальний процесуальний кодекс України: Закон України № 4651-VI від 13 квіт. 2012 р. (зі змінами та доповненнями). URL: [zakon.rada.gov.ua/go/4651-17](http://zakon.rada.gov.ua/go/4651-17).
- Криміналістика : підручник / [В. В. Пясковський, Ю. М. Черноус, А. В. Самодін та ін. ] ; за заг.ред. В. В. Пясковського. – 2-ге вид., перероб. і допов. – Київ : Філія вид-ва «Право», 2020. – 752 с.
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- Програмний продукт «Мультимедійний підручник «Криміналістика» / [Алексеев О.О., Арешонков В.В., Атаманчук В.М. та ін.]. – Свідцтво про реєстрацію авторського права на твір № 65883 (Дата реєстрації 06.06.2016).
- Слідчі (розшукові) дії у кримінальному провадженні [навч. наоч. посіб. у схемах і таблицях] / О. А. Осауленко, А. В. Самодін, Г. М. Степанова та ін. – К. : «Центр учбової літератури», 2015. – 140 с.

### **List of recommended information resources:**

Офіційне інтернет-представництво Президента України <http://www.president.gov.ua>

Офіційний портал Верховної Ради України <http://rada.gov.ua>

Урядовий портал <http://www.kmu.gov.ua>

Міністерство внутрішніх справ України <http://mvs.gov.ua>

Національна поліція України <https://www.npu.gov.ua>

Національна академія внутрішніх справ <http://www.naiau.kiev.ua>

Criminalists congress <http://crimcongress.com/guide>

*Навчальне видання*

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Практикум

(англійською мовою)

*За загальною редакцією Анни Миrowsької*

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Підписано до друку 15.04.2021. Формат 60х84/16.

Папір офсетний. Ум. друк. арк. 8,60.

Тираж 100 прим. Зам. № 1504-21/7.

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Виготовлювач: ФОП Поліщук О.В.

Свідоцтво суб'єкта видавничої справи ДК №2142 від 31.03.2005

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