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KNOWLEDGE OF CRIMINALISTICS FOR AFTER CATASTROPHE TEAMS

Abstract: The author dealing with issues of utilization of knowledge of criminalistics in the development after catastrophe identification teams. The main activity of the DVI teams that are formed for the purpose of identifying victims after mass disasters is the systematic personal identification based on knowledge of criminalistics. The author also deal with the DVI teams management, roles and ways of working when deployed. The aim is to open a debate on the desirability of DVI team for the Slovak Republic. This study is some outputs and results of research project "Methods for CSI" vysk. 4/2008.

Key words: After catastrophe teams, DVI teams, identification of victims, incidents with a large number of dead, disasters, management team.

WIEDZA KRYMINALISTYCZNA ZESPOŁÓW IDENTYFIKUJACYCH OFIARY KATASTROF

Streszczenie. Autor przedstawił zagadnienia dotyczące wykorzystania wiedzy kryminalistycznej w szkoleniach zespołw identyfikujcych ofiary katastrof. Głwnym zadaniem zespołw tworzonych na potrzeby identyfikacji ofiar katastrof jest wykorzystanie wiedzy kryminalistycznej w systematycznych działaniach zmierzajcych do identyfikacji osb. Autor ponadto przedstawia zagadnienia zwizane z zarzdzaniem takimi zespołami, rolami poszczeglnych członkw zespołu i metodami ich pracy. Celem publikacji jest rozpoczcie otwartej debaty w zakresie wprowadzenia takich zespołw w Republice Słwackiej. Praca została przygotowana w oparciu o projekt badawczy "Methods for CSI" vysk. 4/2008.

Słwa kluczowe: zespoły identyfikujce ofiary katastrof, zespoły DVI, identyfikacja ofiar, wypadki masowe, zespoły zarzdzajce.

Introduction

Not only in last two decades came in different parts of the world for major accidents and disasters in which it was necessary to identify a large number of dead people. This has shown the importance of preparedness and rapid response to the needs of identifying a large number of people. This is the cause of identification to cope in extreme conditions early identification of the high number of victims so that they can be burial or repatriation. These are basic human and psychological grounds of major needs of civilized society.

These events led to the recommendation of Interpol began to emerge in economically developed countries (USA, Europe) concept DVI teams (Disaster Victim Identification Team). Basically the concept of the two teams, Ante Mortem (AM), which collects data from the medical documentation, from relatives, including genetic profiles and Post Mortem (PM), which cooperates with a visit to the crime scene, and a visit to the dead, and then also with continued autopsy after autopsy victims. Always for the purpose of individual identification.

DVI teams were deployed to the beginning especially in major traffic accidents. Size of operations associated with the use of DVI teams has grown significantly in the early 90s and for operations involving the identification of a higher number of victims in particular for natural disasters. Enlargement and the gradual development of DVI teams were caused mainly due to technological advances in DNA analysis (method of analysis of deoxyribonucleic acid), which is the time period youngest investigative techniques and significantly strengthened the importance of criminalistics biology methods such as individual identification. Unlike other methods of forensic biology (Uhlenhut method of determining species belonging, Therkelson method of determining blood-group characteristics Jánsky method of determining blood groups) primary DNA analysis allows identifying individuals based on biological traces, which ultimately meant the possibility of a successful identification of major the number of victims. A significant increase in the use of services DVI teams at that time due to the political level and to increase humanitarian disaster as wars (the war in the Balkans 1991–1999), natural disasters (Asian tsunami 2004), or terrorist actions (attack on the World Trade Centre in New York, 2001). It was precisely these events when dealing with the identification of victims increased severity DVI teams and knowledge of criminalistics and forensic science. Discussed problem in the study hypothesis on the scope and content of the activity DVI team in Slovakia using criminalistics methods. We will try to verify this hypothesis on the analysis of existing knowledge, focusing on security structures in the Czech Republic. (STČ 02/IZS, STČ 09/IZS, STČ 12/IZS)

Historical analysis of DVI teams evolution needs

The first European DVI teams date back to the 70s and 80s of the last century in Germany, Belgium and the Netherlands. Later then, in the 90s, Spain, Finland and France. Modern form of DVI teams and their development in other countries is dated after 2001, for example. Switzerland, the UK, Slovenia, Turkey and Italy. DVI teams were developed in other countries - USA, Canada, Australia, New Zealand, South Africa and elsewhere. The trigger of this development, including international cooperation were the consequences of the attacks on the World Trade Centre in 2001 and the Asian tsunami in 2004. (Discards, 2012) still supports the creation DVI team ensures Interpol. The national DVI teams can build your own structure, have their procedures and organization. This will not preclude, in close cooperation, in which each other the lessons learned and experience in this field. The unifying element of the recommendations of Interpol. The members of the DVI teams in the world include, for example forensic doctors, including dentists, pathologists, forensic anthropologists, investigators, psychologists, support groups for survivors, photographers, reporters, office workers, computer experts, security personnel, personnel for cooperation with the media, spiritual, staff funeral services and psycho-social non-profit organizations [13].

What actually is DVI? DVI was one of the first systematic approach in the form of recommendations and forms for detecting the identity of victims of catastrophe. Interpol was created this concept in 1984. The abbreviation DVI is called "Disaster Victim Identification". Even though the Slovak Republic by his team does not have a DVI (cases are resolved "ad hoc") stands become mainstream in Slovak conditions. DVI is actually a systematic process, both from the standpoint of criminalistics y, and from the point of view of organization and management procedures in place unfortunate incident. As a rule, the content of special teams within the police. Therefore, in the analysis used mainly security and police sources in the Czech Republic.

While only the DVI Central and Eastern Europe originated in the Czech Republic. Its design concept in 2006–2008, prepared by experts Prague Institute of Criminalistics in collaboration with experts of the Military Institute of Forensic Medicine and Toxicology 1st Faculty of Medicine, Charles University in Prague and the project of the Ministry of Interior of the Czech Republic no. 263-5. Evaluation Team also worked with the Institute for vocational Air Accidents Investigation and the Office of the Criminal Police and Investigation of the Czech Republic. Rise to the DVI team put the events of recent years, when even in the Czech Republic were resolved events with a large number of victims. For example, in 2003, came to the bus accident near the village Nažidla, which killed 19 people, in 2008 the railway accident near the town of Fountain 8 people, a fire station in abandoned buildings in Prague to Florence in 2010

necessitated 9 victims. Compilation teams to identify persons in mass casualties were previously in the Czech Republic organized an "ad hoc".

Slovak Republic while among the countries that own DVI teams do not. The unfortunate events with more victims with us settled ad hoc approach. But to be balanced partner to surrounding countries, we should these issues be addressed systemically. Help with making a DVI team we were offered by the Swiss partners. Valuable experience, however, we can also provide colleagues from the Czech Republic who have their national team have DVI. It was built on land Prague Institute of Criminalistics in 2013 and currently ends his training in Switzerland are leaders in this field. For analysis, we used the available knowledge just by colleagues from the Czech Republic [13].

Scope of use DVI teams

A disaster can be defined as an unexpected event that causes death or injury of a large number of people. It is therefore a "serious disruption of the function of causing major loss of life, property or the surrounding environment, which go beyond the capacities of the affected community to cope with only its own resources" [10]. Traditionally DVI teams used in the so-called "Massive disaster" for which external assistance is needed, in particular due to congestion of internal resources, which has given the affected community and so is its ability to act independently significantly weakened. There are several types of disasters that may require assistance DVI teams. Adding to the traffic accidents are the terrorist attacks, natural disasters, industrial accidents, events connected with war, whether civil or between countries.

Another important factor determining the extent of use of DVI teams openness and closeness disaster. Closed disasters such air disaster, are those in which disaster victims are documented (although these documents are not always completely accurate). The role of DVI teams in such disasters is generally associated with the comparison remains with known information about people in a given disaster killed. In these cases, access to the AM data (ante-mortem data from death) for example information of a close relative of the victim, medical and dental documentation and documentation DNA greatly simplifies the identification. Open disasters are those in which the identity and amount of victims is unknown. To obtain information on the number and identity of victims is therefore much more complicated than in closed disasters. While at length concluded disaster victim identification is a matter for more than a few weeks in open disaster it can take several years. This is a huge number of victims, which may be several nations, nationalities and often from the territory of several states. In the case of wars and military conflicts it may take even longer, mainly due to the heavier locating victims (mass graves).

DVI teams management

As recommended by Interpol, it is important that each Member State of a permanent DVI team to disaster ready for immediate response. When planning and managing operations DVI DVI teams follow a pre-established principles. It is first necessary to assess the extent of the disaster, and then map out an in-depth scan of the affected area, also performed counting the victims and the extent of decomposition of bodies. The next steps are to create a plan to pick up and transport the remains of bodies and the establishment of a methodology needed to identify the victims. An important parameter in the identifications to determine the extent of identification (entire bodies, certain body parts, body parts of a certain size - the last two of these types are mainly in significant damage to the bodies). An important factor in the high fragmentation remains is to create the right (human) procedure, to inform relatives about the identification of the victim. It is therefore necessary to maintain the universal ethical principles and the principles of optimal emergency communication with the affected people unhappy. It is also important not create additional secondary trauma affected persons. Option could definitely argue that the theoretical basis of all activities of managing the system work at the crime scene and criminalistics inspection.

In addition to national governments in the world deal with DVI private companies. An example is firm Kenyon, which with its about 30 full-time employees and 1,200 contract workers (pathologists, dentists, anthropologists) addresses this issue worldwide, usually at the request of local authorities.

For most countries is very costly in addition to DVI teams maintain a more technical background, for example mobile morgue. The said company therefore has six locations (USA, Canada, South America, United Kingdom, Australia and Hong Kong) complete technical background (stored in 60 trucks) and coupling of the contractors is capable of forming a functional infrastructure within hours. An example of successful cooperation on the scene is the identification of victims of terrorist attacks in London, where all identification was completed within ten days. Experts from Kenyon built on site with a mobile morgue autopsy room containing an X-ray machines, laboratory processing of DNA samples, and more. Everything was built in huge tents in the centre of London [3].

Methods of identifying

Identification of victims after mass disasters (Good is the English term MFI - Mass Fatality incidents) should follow the same rules as the identification of victims in any other incidents. The process itself such identification must be consistent to be credible for survivors. Therefore in the course of identifying victims of mass disasters place high demands on interdisciplinary collaboration of experts of many professions. Decisions associated with selecting the appropriate method for identification are influenced by several factors, namely:

- The state of the victim
- Personnel who are engaged in the identification
- Available resources and technology
- Data availability AM (ante mortem - before his death, that medical and dental documentation victims).

Until recently, the identification of victims of mass disasters never performed primarily on the basis of comparative anthropological data such as dental records and fingerprints criminalistics individual characters. Of other identifiers especially tattoos, birthmarks, scars, amputations, congenital physical defects, signs of operations (eg. Gallbladder, appendix) and implants (eg. Artificial hip joints, pacemakers). Very valuable data will also acquire the personal effects found with the bodies of the victims, of course, if they were intact and preserved (jewelry, watches, documents).

The development of DNA analysis was only a matter of time before this will highly reliable method for use in identifying victims of mass disasters. This method was first used in the United States in determining the identity of the bodies of the victims of shootings between the FBI and fanatical religious sect of David Koresh in 1993, and later in air accidents several flights with a large number of victims [2]. DNA analysis was also used in large-scale natural disasters, such as the Asian tsunami in December 2004. Unfortunately, DNA profiling (DNA identification profile) was used for the identification of victims of armed conflicts and genocide, such as victims were buried in mass graves in Bosnia, as well as the identification of terrorist attacks in the US, the UK and Spain [8].

Identification methods used in the event of disasters must be scientifically credible, reliable, and usable in terms of disaster and must be implemented within a reasonable time. The primary and most reliable methods include fingerprints, forensic dental analysis and DNA analysis. The secondary methods of identification include personal copies / medical findings and clothes.

DVI teams are made up of several groups. There is a group called Post Mortem (PM), acting at the crash scene and its members are standard police authorities, forensic doctors, photographer, technicians with GPS, recorder, drivers. Then the group Post Mortem (PM), which operates in the autopsy room,

and its members are mostly forensic doctors, anthropologists, photographers, geneticists, Typists and fingerprints, autopsy assistants. The third group is a group of teams DVI Ante Mortem (AM), which tend to be part of the police authorities, photographers, criminalistics technicians, and drivers. The fourth group is the identity of the constituent group (TU) consisting of prosecutors, police authorities, forensic doctors, geneticists, workers fingerprints, laboratories, Head of AM and PM groups. The main methods of the TU criminalistics dentistry, Fingerprinting and DNA analysis. Complementary methods to image analysis and anthropological research [20].

The process begins with the identification of victims of mass casualty site. At this point begins work group Post Mortem, which deals with the examination of the crime scene in order inspections victims and further inspections and ensuring the personal belongings of the victims and objects. Post Mortem Group continues to work in carrying out autopsies and auxiliary examinations, registration and identification of specific character traits. Ante Mortem group focuses on missing information (genetic material traces of fingerprints, photographs, etc.). The identity of the constituent group compares all available data and the evaluation of all information in cooperation with the Public Prosecutor confirmed the identity of the individual. Members of this group by group leader Ante Mortem and Post Mortem documents for establishing a person's identity by comparing identifiers.

Team members are mainly police officers who carry Criminalistic tactics procedures profiling of DNA, fingerprint, but also some acts of criminalistics dentistry and anthropology. Other specific expertise steps, such as X-ray examination and comparison of medical identification minutiae implemented within the DVI team Coroner. Part of the team is a psychologist whose aid is important not only for surviving victims, but a lot of times and the team members, because their work is challenging especially after mentally.

Labelling findings victims in Europe is united and when these operations are based on national circumstances. The data obtained from the identification of victims are recorded in the forms created by the standards of Interpol. For a group of Post Mortem available pink PM forms and identification cards (victims, body parts and objects), the group of Ante Mortem yellow Form AM (identification information obtained from persons close to an identified person, addresses treating physicians and dentists, photos, etc.) and group identity of Constituent white Form ID (identification) to which the written findings of post-mortem examinations carried out and the identity of the data ante mortem. Identification form data can be transferred after treatment to your computer, including figurative and documentation to be further processed.

Kind of criminalistic methods used to processes of victims identifying

Criminalistics identify persons or things in general. Identification of individuals but is spread over several departments criminalistics techniques and summarizes the identification of persons by external characters (including so-called portrait identification), using the ridge patterns in the form of fingerprints, using odour (ie. Odorology), using feet trace (which is one of the Tratology areas), through biological traces, but especially by the DNA, using skeletal remains (Anthropology) and teeth (Criminalistics Odontology). It should be mentioned also the visual recognition persons related by serving as one of the simplest methods of identification. But not all methods can be used, the identification of individuals by external characteristics can be carried out using the so-called dynamic characters (which a person identifies eg. by walk). The same applies e.g. people with body odour, but which in turn can be used differently - specially trained dog can smell a corpse found by example in the ruins of the house.

Work on the scene of the incident and criminalistics inspection

Inspection is the specific primary method of forensic/criminalistics investigation, which is seeking immediate observation, preliminary review and provide criminalistics and other important objects - traces. In our case, applied for trace denote all the features that enable the identification and are referred to in the remainder of the study. Inspection is determined, review, evaluate and document the physical state of the environment, as well as other important objects having a relationship with criminalistics ical relevant event. The objective is to determine the overall situation and information useful for understanding the objective truth of the event, as well as relations between objects and other relevant circumstances.

Summary of inspections is based on direct observation of a particular environment related to study criminalistics relevant event - that disaster and its victims. It is also necessary to determine the changes that arose subsequent conduct of a person and are important for Criminalistic identification. Inspection except direct observation includes other general methods as measured, comparison, description, analysis, synthesis, application of other disciplines, the use of specific methods and procedures for Criminalistic examination and, finally, recommendations made criminalistics. Reconnaissance is characterized by sensory, empirical learning material situation of physical objects and environments

with logical thinking, analysis and evaluation of the information thus obtained are directed to the most objective and complete knowledge of the studied material situation or particular objects. When sighting is also found in other relevant factors are not the primary aim of inspections. In particular, investigate the causes and conditions also cover information for making assumptions and versions [12].

The importance of inspections for the detection process is that it is determined through visual inspection and explores essential and significant part of the important features of objects relevant event features the actors and its cause. Results of survey, (especially the scene reconnaissance) allow the bodies involved in the cognitive process properly identify and determine the focus of further work in examining criminalistics ical relevant sites and on their documented. These results enable a vision of clarifying the nature of the events of the possible causes and conditions of its formation and entities that operate during the event on the investigated objects. The quality of the inspections carried out depends on the benefit of further action. For the purpose of clarifying the inspection referred to in terms of its importance as one of the major procedural steps. Failure to appreciate the importance of inspections leads in some cases to inconsistent execution of inspections giving rise indelible shortcomings that make it difficult or even impossible objective, complete and rapid examination, clarification, and sometimes disclosure of all relevant circumstances. Criminalistics ical theory and practice improves reconnaissance tactics and its practical implementation based on the new procedures. Inspection despite the fact that it is a criminalistics methods must also respect the ethical and legal requirements. It must be done so that it does not reduce the human dignity or endanger the life and health of participants viewing. As the results of inspections should be in the nature of evidence for any legal proceedings shall only be carried out reconnaissance operations in accordance with the rules of inspection.

Meeting can acquire knowledge primarily by direct observation. These can be used after documented as evidence. Indirect evidence - derived, obtained typically performed when inspection of quality and well prepared experienced staff who can draw the logical place to correct the effects found and examined feet and objects. They are more likely to be useful for further criminalistics examination procedure or clarification - for example, a secondary victim identification [12].

The application of information theory in reconnaissance activities and managing DVI teams are the most important principles of inspection [16].

The fundamental principles of inspections we include:

- Management of inspections by a leading,
- Urgency survey,
- Uniqueness survey,
- Non substitutability of inspection.

The actual implementation of the activities of the working group members can be divided into several main stages [11]:

preparatory stage

- Preparatory activities in the workplace,

- Measures taken at the scene immediately after the arrival an working groups, preparatory inspection, ...

implementation of inspections

- Trap sites

- Security measures in place,

- Access to the facilities and their approximate inspection,

- Search, designation, ensuring and documenting feet by detailed surveys,

- Directing the search for other tracks in direct relation to clarifying event

- Taking the reference material,

Final action on the ground and evaluation survey, and distribution of material and traces the criminalistics examination and expertise.

Criminalistic documentation

Criminalistic documentation reasonable method criminalistics tactics which is a systematic process of verbal and pictorial indirect reinsurance (indirect fixation) traces of other major criminalistics call objects and relations between them. Significant is also secure other essential information about the course and results of criminalistics and expert surveys, reinsurance of examination. Also show the results of this process, which can take many forms.

Content criminalistics documentation and matching criminalistics documentation is mainly associated with the process of criminalistics examination.

Criminalistics examination begins the moment you find criminalistics traces. Therefore, the criminalistics documentation included criminalistics examination. Documentation shall be subject only to the rules and principles applicable to the methods of criminalistics examination, but a significant influence on the form and content have other principles - the most common reason of practical use in particular the principle of self-related legal process.

The structure of criminalistics documentation reflects developments in cognitive processes, as reflected in the relevant methods of criminalistics documentation. Intensive manifested mainly in their forms - some authors talk of a second criminalistics documentation. In some experiments about capturing trends in criminalistics documentation efforts appear to explain complex forms in digital documentation as a separate method or form of documentation. This concerns the use of the described forms of documentation in digitized form (.doc., Docx., Rtf, pdf, mp3, mp4, and thousands of others) [12].

The distribution methods criminalistics documentation should be an essential criterion distribution of their scientific basis. Scientific basis for such a premise for each method, which in its content covers all variants of the method. Criminalistics documentation shall provide and submit to an examination of criminalistics clues provided by 4 methods according to their nature:

- Written - for example Minutes
- Sound - as digital mp3 format on a CD,
- Photo graphic - for example video,
- Topographical - for example sketch.

Each of these methods has its natural basis outside of criminalistics y. This is natural, since criminalistics adopted in its development results of many cognitive sciences. Historically, this was also the case in all methods and forms of criminalistics documentation.

Content sites forms of criminalistics documentation of Criminalistic define requirements for its use, especially for examination. Therefore, there are significant differences between different forms. The content of the various forms is limited investigative techniques that are documented and human senses, which is the same form (and its method) primarily intended. The abbreviation (s) of each object must be identical in all forms of one file [14].

Formal arrangement forms of criminalistics documentation requirements define its use, especially for legal purposes and are significantly different in the legislation of different countries.

Criminalistics documentation shall provide and submit to an examination of view criminalistics traces in the form of different records [12]:

- Method of written documentation has the form: Minutes, opinion, statement, confirmation....
- Sound methods of documentation has forms: sound recording, sometimes closer phonogram,
- Method of photographic documentation has forms: photography, photogrammetric recording, holography, films, movie....
- Methods of topographic documentation has form: sketch the plan, scheme graph.

All forms of criminalistics documentation are realized record. Entries in criminalistics documentation fixation is the content and scope of the selected image or another choice of objective reality, bound to a particular carrier stop sign, track itself, or another major criminalistics call information.

Although the documentation is very important principles - such as determining the rules for its implementation. Given the breadth of knowledge kindly refer the reader to the relevant textbooks or study.

Basic identification methods

Like criminalistics identified by comparing the trace of the perpetrator, who left the track, or it could leave, this procedure can be "turn", and now two times. Not identify the perpetrators, but generally anyone - it is the first difference with criminality - criminalistics in general is a particular interest in identifying offenders and other people interested in it only in the meantime, while they may be excluded and continue to ignore them. The process is again "inverted" in that it is traditionally the track seeking the person that left it, in the case of identification of victims can seek to a found body "f" by the persons in the first left and compare them.

Use of biology - identification by DNA

An example would be to compare the DNA profile of the victim with the profile obtained from traces of biological material left on the toothbrush. However, there are differences between the use of DNA to convict the offender and to determine the identity of the victims of mass disasters. The biological material for identification of the victim's body comprises a DNA which can be partially or fully degraded. In these cases, the use of DNA to be extracted from the bone, most of the femur. For example, in bodies that have undergone a fire probably the DNA results are insufficient, it is therefore necessary to resort after other methods of identification.

Forensic anthropology

Forensic anthropology is used for identification in particular examination of the skeletal system. It has a dual role. Based on the length of the thigh bone is quite possible to accurately estimate the amount of characters and by the shape of the skull to determine the race. Despite the fact that these characters are rather a group, can be very important to eliminate people who do not fit into these categories. Notable as well as the finding that an identified person had an accident or have implemented the joints - that information can be optimally used to identify individuals.

Super projection

Super projection the classical method of Criminalistic, which is superimposed on an image of the skull and photograph people fabricated for life. In the past it was the overlapping of two photos manually. Today's job easier special software. More valuable are those photos where the person smiles so that its visible teeth. These photos can then be used as additional reference points when comparing.

Odontology

Teeth are the strongest part of the musculoskeletal system and through medical documentation can serve as a very valuable source of information for the identification of victims. With the combination of teeth and their method of medical treatment (healthy tooth, tooth extraction, implant - implant material), and if that is correct, documentation, it is possible to identify a high probability of a person. The likelihood is even greater if the available partial or complete dental X-rays, which can be used for visual comparison.

Fingerprinting

Basic important method for identifying criminals. In many cases it is also used to identify the victims of catastrophe. Its application can complicate the absence of comparative materials, which vary depending on the laws of the country. In most countries, scoped offenders and their fingerprints in the database, allowing very quick scan. An example of the use of fingerprints in the catastrophe was the identification of victims of terrorist attacks in Madrid. Thanks to the person applying for a license provide fingerprint index finger (which is a civil database and can only be used in these cases and not in search for offenders), it is possible to identify more than half dead in a few days and only on the basis of fingerprint [3].

Forensic medicine

Forensic medicine is the branch that is most commonly associated with autopsy. That is not the only process undertaken by medical examiners, although an essential part of their work. Do they cartridge includes an autopsy on which is determined by the identity of the victims. In the first phase comes to a more accurate estimate of the age. It can sometimes be difficult and estimated with big mistake, especially when the victims whose bodies are already in decomposition. Coroner may, for example, the scars on the body to determine whether the person has undergone surgery. This information may be simply used in the comparison with the medical documentation drawn during the life of the victim.

Identification by things (personal documents, credit cards, clothing)

This method of identification cannot be circumvented, or already covered by clothing, shoes, rings, watches and of course identification documents or credit cards. In particular articles from materials such as gold or stainless steel, can be used to identify the persons and the time in years.

International cooperation

Among the various police forces within organizations in the field of international police cooperation (Interpol), there are different procedures. Interpol seeks to develop methodological recommendations, which are then reflected in police work or even legislation. In the direct identification of the mechanisms used in Europe Prüm agreements within the Eurodac, AFIS, CODIS biological systems, or identification weapons - such kind of objects.

Methods of criminalistic most frequently used by DVI teams in identifying victims

Fingerprints

There are three reasons why the fingerprints are reliable indicators of identity: - Fingerprints are unique and unrepeatable - absolute identity between the papillary lines on the fingers of two different individuals or at different fingers of the same people there, - Fingerprints do not change - the papillary lines are formed in the fourth month and remain unchanged even after the death of the individual until the body (particularly the skin) biodegrade. The exception is temporary or permanent scarring of the skin, or some diseases such as leprosy,

- Unavoidable - papillary lines are unavoidable if not removed germinal layer of the skin, - Fingerprints can be classified and due to this fact can be systematically recorded and then easily obtainable for comparison purposes.

Dental analysis – Forensic/Criminalistic dental analysis

Unique structure and properties of human teeth and jaws are particularly suitable for use in the identification of living and dead victims. Dental information generated at the time of the post mortem (PM) are compared with the ante mortem (AM) data. They are supplied by dentists for which the victim was treated for his life. The teeth are well protected in the oral cavity and can resist external influences. Since consist of the toughest and most resilient substance, and with the deterioration of the soft tissue remain very valuable material for purposes of identification. This is particularly true for the treatment of teeth, such as regeneration and aesthetic restorations and crowns, root canals and teeth. If there are no dental treatment, there are other features for identification, e.g. can be compared anatomical and morphological characteristics of the teeth. The conclusions to which the DVI teams on the basis of dental analysis comparing the post mortem and ante mortem dental records to complete, either:

- Identification (if records are PM and AM in strict conformity)

- Possible identification (if specific characteristics correspond between AM and PM but either PM or AM data or both are minimal)
- Identification of possible (there is nothing which precludes identity, but either PM or AM data or both are minimal)
- Set aside identity (AM and PM records are from different people, but a comparison can be made)

Furthermore, a comparison of the post-mortem and ante mortem data for the purposes of identification, dental analysis provides information on some aspects of human life, or his lifestyle. This can be useful in providing ante-mortem database. For example, if it is estimated that the victim is a young person search criteria in the database can be limited to certain aspects before perishing. On the basis of an examination of the teeth and jaws can also determine the age of the victim at the time of death, but also to estimate a country or area from which the victim comes.

DNA analysis

Among some good methods of identifying victims include DNA analysis. Although the majority of human DNA is exactly the same in all people, though we differ with less than one percent of the genetic information stored in the nucleus. DNA profiling therefore used to identify sections known as microsatellites, which are different for each subject [7], except identical twins. DNA is nevertheless unique source material that can be used with high precision for the identification of a particular individual. In addition, DNA testing can also be performed on cases is a much spaced bodies of the victims, so this method can be used also for disasters involving the devastation and rapid decomposition of human bodies.

DVI teams collected DNA samples from the victims, they are sent to laboratories and analysed in accordance with international standards.

Personal description / medical findings and medical records

Personal description consists of basic data (age, sex, height, and ethnicity) and specific traits, which are medical conditions, such as scars, marks and surgical removal of organs, but also implant (eg. Artificial hip joints, pacemakers). The information may be vital information in determining the history of the victim. But tattoos, scars and physical birth defects may serve as indicators of identity.

Clothes

This category includes all the things found on the bodies of the victims - jewellery, articles of clothing, personal identification documents, etc. For ex-

ample, engraving on jewellery can be an important step to reveal the identity of the victim. For those identification evidence should take into account that things found during the victim's body may not be her. Therefore, higher identification value are also evidence that are firmly attached to the body of the victim - eg. piercing or "ingrown" wedding rings.

Conclusion

The need for trained specialist teams to identify victims of mass disasters is increasing in many countries. This is mainly related to the public nature of incidents in recent years. First Interpol DVI were created in 1984 and was one of the first systematic approaches in the form of recommendations and forms for detecting the identity of victims of catastrophe. DVI is actually a systematic process, both from the standpoint of criminalistics, and from the point of view of organization and management procedures in place of incident. National European DVI teams were created in the 70's and 80's of the last century. Their emergence of more modern form is dated after 2001. The trigger for this development, including international cooperation were the consequences of the attacks on the World Trade Centre in 2001 and the Asian tsunami in 2004.

Slovak Republic does not have his DVI team and potential mass casualty addressing ad hoc approach. Although there are expert-level cooperation with teams of other countries will have these issues be addressed systemically in Slovakia.

For this analysis, we used the available evidence from the Czech Republic. DVI teams were deployed at the beginning mainly in road accidents. Enlargement and the gradual development of DVI teams were induced by technological developments in the field of DNA analysis. In addition to this, DVI teams to identify individuals using a variety of investigative techniques, thanks to which they have gained credibility and seriousness in the world. Identification of people is a very complex process in which methods are used more branches criminalistics techniques. These example identification of persons by external characters (including so-called. the portrait identification), using the ridge patterns in the form of fingerprints, using odour (ie. Odorology), using feet (which is one of the areas Trasology), through biological traces, but especially by DNA skeletal remains (anthropology) and teeth (Criminalistics Odontology). It should be mentioned also the visual persons recognition by related serving as one of the simplest methods of identification. But not all methods can be used, the identification of individuals by external characteristics can be carried out using the so-called dynamic characters (which a person identifies eg. by walk). The same applies e.g. people with body odour, but which may be used differently - specially trained dog can smell a corpse found by example in the

ruins of the house. The major methods but also includes determining the identity of the victims on the basis of an autopsy performed by forensic doctors. Cannot be circumvented or identify victims of their personal belongings, such as documents, credit cards, clothing, jewellery, etc.

All activities associated with the identification of victims of mass disasters by members of the teams, include for example forensic doctors, including dentists, pathologists, forensic anthropologists, investigators, psychologists, support groups for survivors, photographers, reporters, office workers, computer experts, security personnel, personnel for cooperation with the media, spiritual, funeral services workers and activists psycho-social non profit organizations.

The identification of victims is usually in extreme conditions and under pressure due to criminalistics methods DVI teams can determine with great accuracy the identity of the victim. Development and continuous improvement of investigative methods ultimately has a significant impact on the emergence and development of DVI teams in the world. Based on the problem analysis, we confirmed the hypothesis: scope and content of activities DVI team in the Slovak Republic shall be based on the use of criminalistics methods. We attempted to verify this hypothesis on the analysis of existing knowledge, focusing on security structures in the Czech Republic. This study is partial output and results of research project "Methods for CSI" height. 4/2008.

Literature

- [1] Donevová A., 2013: *Budúcnosť analýzy DNA v kriminalistike a niektoré aspekty jej právnej úpravy*. [cit. 2014.07.04.] In: Mílniky práva v stredoeurópskom priestore 2013. II. časť. Zborník z medzinárodnej vedeckej konferencie doktorandov a mladých vedeckých pracovníkov organizovanej Univerzitou Komenského v Bratislave, Právnickou fakultou v dňoch 21. – 23. 3. 2013 v priestoroch ÚZ NR SR Časť – Papiernička. Bratislava: Univerzita Komenského v Bratislave, Právnická fakulta, 2013. ISBN 978-80-7160-368-9. 1130 s. Dostupný na internete: http://lawconference.sk/milniky/sprava/files/doc/ZBORNÍK%202013_2%20%20cast.pdf
- [2] Drábek J., 2005: *Profilování DNA při hromadných katastrofách na příkladu WORLD Trade Centra 2001*. In: Kriminalistický sborník. Roč. 49, č. 5/2005, s. 40 – 45. Článek z periodika.

- [3] Fürbach M., 2014: *Mrtvolý zkoumajú v mobilní pitevně. Je jedno, zda útočí teroristé nebo tsunami*. In: Technet.cz. [cit. 2014.07.04] Dostupné na internete: http://technet.idnes.cz/jak-se-vysetruje-teroristicky-utok-v-moskve-na-letisti-domodedovo-1dx-/vojenstvi.aspx?c=A100413_081742_tec_technika_fur
- [4] Ivor J., 2002: *Zákon o analýze a databáze DNA na Slovensku*. In: Kriminológia. Roč. 35 č. 3 (2002). S. 216-219.
- [5] Koukolík Z., 2012: *Projekt vzniku českého DVI týmu*. In: Časopis 112. Roč. IX., č.2/2012. [cit. 2014.07.04]. Dostupné na internete: <http://www.hzscr.cz/clanek/casopis-112-rocnik-xi-cislo-2-2012.aspx?q=Y2hudW09NA%3D%3D>
- [6] Kožina J., 2014: *Právní aspekty využití analýzy DNA pro identifikační účely*. [cit. 2014.07.04]. Dostupný na internete: www.mvcr.cz/soubor/kozina-pdf
- [7] Krajník V., a kol., 2002: *Kriminalistika*. Bratislava: APZ v Bratislave, 2002. ISBN 80-8054-254-6. 238 s.
- [8] Lohaj R., 2005: OOS - Forensic Disaster Victim and Thing Identification: Informácia z medzinárodnej konferencie ENFSI o identifikácii obetí masových katastrof. Praha, 12. október 2005.
- [9] Marušinská T., 2011: *Správa zo zahraničnej cesty konanej v dňoch 11. – 14.10.2011 do Českej republiky, Praha*.
- [10] Masár O., a kol., 2014: *Vybrané kapitoly z medicíny katastrof*. [cit. 2014.03.04]. Bratislava: Univerzita Komenského v Bratislave, Lekárska fakulta, 2010. ISBN 978-80-223-2835-7. 57 s. Dostupný na internete: http://www.fmed.uniba.sk/fileadmin/user_upload/editors/akademicka_kni_zca/dokumenty_PDF/Elektronicke_knihy_LF/Vybrane_kapitoly_z_mediciny_katastrof.pdf
- [11] Metenko J., 2012: *Kriminalistická taktika*. Bratislava: Akadémia PZ, 2012. ISBN 978-80-8054-553-6. 267 s.
- [12] Meteňko J., Bačíková I., Samek M., 2013: *Kriminalistická taktika*, Brno: Václav Klemm – vydavateľstvá a nakladateľstvá, 2013, 1. vydanie, 307 s., ISBN 978-80-87713-08-2.
- [13] Meteňko J., Trybulová S., 2015: Use knowledge of criminalistics in developing DVI teams. Book of Papers, *8th INTERNATIONAL SCIENTIFIC CONFERENCE CRISIS MANAGEMENT DAYS*, 14 and 15 May 2015, Veleučilište Velika Gorica, Velika Gorica, Croatia 2015, p. 559-570. ISBN 978-953-7716-66-0.
- [14] Polák P., *Svedok v trestnom konaní*. 1. vyd. Bratislava: Paneurópska vysoká škola, 2011; Žilina: Eurokódex, 2011. 296 s. ISBN 978-80-89447-49-7.

- [15] Sokol M. a kol., 2008: *Tímy pro identifikaci obětí hromadného neštěstí (DVI) v ČR a SR*. [cit. 2014.28.02.] In: Zborník z 1. slovensko-českého vedeckého zjazdu súdneho lekárstva s medzinárodnou účasťou. Jún 18. – 21. 6. 2008, Gabčíkovo. Dostupný na internete: <http://www.sudmed.ru/index.php?act=attach&type=post&id=2934>
- [16] Šimovček I., *Teória kriminalistiky*. Bratislava: IURA EDITION, 2000, 161 s. ISBN 80-88715-90-3
- [17] Štetina J., a kol., 2000: *Medicína katastrof a hromadných nešťestí*. Praha: Grada 2000. 436 s. ISBN: 80-7169-688-9
- [18] Štetina J., a kol., 2014: *Zdravotníctví a integrovaný záchranný systém pri hromadných nešťestíach a katastrofách*. Praha: Grada 2014. 584 s. ISBN 978-80-247-4578-7.
- [19] Trubenová B., 2014: Od stopy k páchatel'ovi. [cit. 2014.03.04.] In: Mladý vedec. Dostupný na internete: <http://www.mladyvedec.sk/archiv/archiv-piateho-cisla.html>.
- [20] Vymětal Š., 2012: *Psychologické aspekty DVI (aspekty identifikace obětí hromadných nešťestí)*. [cit. 2014.03.04.] Dostupný na internete: <http://www.unbr.cz/Data/files/Konf%20MEKA%202012/vymetal.pdf>

Law and internal documents

- [21] Zákon NR SR č. 129/2002 Z. z. o integrovanom záchrannom systéme
- [22] Zákon NR SR č. 417/2002 Z. z. o používaní analýzy deoxyribonukleovej kyseliny na identifikáciu osôb.
- [23] Zákon č. 171/1993 Z. z. o policajnom zbore
- [24] Vestník MZ SR 1997, čiastka 12-13, s. 100-103 zo dňa 6.5.1997. Konceptia v odbore súdne lekárstvo.
- [25] Vestník MZ SR, ročník 54, osobitné vydanie zo dňa 31.08.2006
- [26] Rezolúcia rady 2001/53/ES o výmene výsledkov analýzy DNA
- [27] STČ 02/IZS demonstrování úmyslu sebevraždy
- [28] STČ 09/IZS velký počet raněných a obětí
- [29] STČ 12/IZS psychosociální pomoc

Internet sites

- [30] <http://www.interpol.int/INTERPOL-expertise/Forensics/DVI>
- [31] <http://www.forensic.sk/profil/>
- [32] http://solen.sk/index.php?page=pdf_view&pdf_id=1430&magazine_id=1