# INTERNATIONAL CONFERENCE SAFE AND SECURE SOCIETY 2022

Ceske Budejovice, October 4. – 5., 2022
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## CONFERENCE PROCEEDINGS

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# PREFACE

Safe and Secure Society 2022 Conference Proceedings contain selected and revised papers from the 7th International conference. Safe and Secure Society 2022 Conference was held as an "in-person" konference on October 4. – 5., 2022.

The conference provides a platform for meetings of experts dealing with security issues at regional, national and international level. The conference focused on:

- Getting familiar with the practical experience of each organization in emergencies associated with the “human” element.
- Comparing current approaches to dealing with emergencies on “human” element topic in terms of crisis management, rescue and psychosocial assistance, presenting the possibilities of involvement of non-governmental non-profit organizations, international assistance and development cooperation.
- Creating space for people, communities, and organizations to come closer together.

We are pleased to introduce you the proceedings from the conference on security and safety issues. We follow up the previous proceedings focused on the topic of security and safety. Therefore we had to refuse some authors. We also made the conditions of review process stricter, which led to increasing quality of published articles, in our opinion. We believe that you will find different views of the topic on safe society in all its complexity, and useful information on it as well.

We also submit the proceedings as a platform for establishing new work contacts which are inevitable for future development of the security issue. We are pleased that the publications from previous conference attract general interest. The number of participants, which is high every year, is important to us as well.

We will be glad if the proceedings is for you a memory of this year’s conference and also an invitation to other events and seminars on the security issue.
www.icsss.eu/en/

Štěpán Kavan
editor

# MASS THERMAL INJURIES IN PERSPECTIVE OF SAFETY OF PATIENTS IN THE EUROPEAN UNION

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**ABSTRACT:** Mass disasters with multiple thermal injuries are an actual topic of safety management of patients in an actual safety situation in Eastern Europe. Availability of highly specialized burn centers complies with geographic borders of countries, but from an international perspective it is reasonable usage of nearby burn centers in neighboring countries. The aim of the report is to describe the actual needs of coordinating national programs for mass burn disasters. Actual situation reflects recommendations of WHO and European Union authorities and allows to ratify them to national plans. But it is also needed step-back coordination of individual national plans to set the highest possible safety of management of burned patients in the European Union despite geographical borders of countries.

**KEY WORDS:** Burn, Coordination, Safety

## INTRODUCTION

Damage to the skin and subcutaneous tissue in case of a large scale burn can be life-threatening and affects all other organ systems. Due to its complexity, an injury requires multidisciplinary cooperation of several medical specialties in connection with lay first aid, components of an integrated rescue system, transport, stabilization, treatment and rehabilitation of the patient in a medical and social context. As a rule, the highest workplace with the competence of caring for a burn patient is a burn center. (Kuntscher, M., V., 2006). Since the first hours already have a significant impact on the patient's perspective (Alharbi, Z. 2012), it is essential for the safety of the burned patient to follow the sequence of steps immediately connected to each other in the health care system. The current security situation in the area of Eastern Europe in connection with the war in Ukraine necessarily creates space for a revision of the set mechanisms for managing burn injuries not only individually, but also in the area of a mass disaster or a war conflict with the possible injury of a large number of civilians.

## CLASSIFICATION OF BURNS

Access to an individual with extensive burns is initially on the side of the so-called first-responders. Those who are present at the place where the injury occurred or those who first came into contact with the burned individual become those. For the needs of lay first aid, the depth and surface extent of the burn is determined, for the needs of further management, the etiology of the burn is also essential (Cleaver, B., 2007).

The depth of the burn is determined by the layer of tissue that is the deepest affected area. The first stage involves damage to the epidermis, manifested by redness. The second superficial degree (IIa) mainly affects the superficial dermis and is characterized by the formation of bullae with the presence of capillary return at the base of the injury, the deeper second degree (IIb) is damage to the deeper structures of the dermis with absent capillary return, and the third degree represents thermal damage of the entire thickness of the skin in all its layers.

The range is given by the percentage representation of the damaged part of the skin. For an indicative evaluation, it is possible to use the rule of one palm, when the range of the palm and fingers of one hand of the patient represents roughly 1% of the body surface. For larger ranges, as well as for burns in children, Lund-Browder tables are used (Murari, A., 2019) which determine the extent of the burned area in percentage terms based on the proportionality of the representation of individual parts of the body surface.

The etiology of possible burns is broad, including common mechanisms of contact with a flame, hot object or liquid, also radiation, gamma radiation, infrared radiation, chemical factors, electrical energy through passage or arcing, friction. The correct characterization of the extent, depth and eventual etiology defines the approach of the first-responder in the case of first aid, as well as the further management of the patient in the pre-hospital care environment. In the case of mass casualties or war conflicts, the correct definition of the extent and depth is a determining element of the patient's perspective in the system of classification of the wounded.

## INITIAL MANAGEMENT OF THE BURN

The goal of initial treatment is to stop the worsening of the burn, stabilize the health condition and prevent its worsening. The first step is to eliminate the etiology, if it is still affecting the tissue. Removing smoldering clothing, moving the patient away from the radiation site, The next step is the elimination of the heat acting on and the elimination of the heat absorbed by the tissue of the body (Scheifer, JL, 2020), usually with running cold water.

Not every burn will require professional treatment, activation of the integrated rescue system or hospitalization. In addition to the already mentioned depth, extent and etiology, factors affecting the procedure are also factors on the patient's side, such as comorbidities, location of the burn, other associated injuries. Only taking into account all factors and influences on the patient's perspective provides a comprehensive basis for deciding on further management.

In the case of a high probability of spontaneous healing without professional intervention (e.g. a first-degree burn in the range of 1% of the body surface on the forearm of the upper limb in an immunocompetent otherwise healthy individual), transport to further professional treatment is not necessary. The gradual increase in the severity of the injury will probably require own or assisted transport to professional treatment, in cases of extensive injuries (e.g. the extent of more than 20% of the body surface in grade III in an adult individual) will require urgent professional transport to a medical facility with the aim of stabilizing the condition of the so-called deshock therapy and subsequent surgical and intensivist therapy.

## POSSIBILITIES OF FURTHER MANAGEMENT OF THE BURNED PATIENT IN THE TERRITORY OF THE SLOVAK REPUBLIC

If the burn patient's condition after the initial assessment and administration of first aid requires further treatment and self-transportation is not possible or is risky, components of the integrated rescue system of the Slovak Republic allow ground or air transport. Although air transport is usually the fastest, the meteorological and geographical conditions are not always suitable for this type of transport. In addition, another determining element is always the current utilization of the air rescue system and, in the event of a mass disaster, the logistical possibilities of its use. the second option is ground transportation in the form of an ambulance crew with a qualified paramedic or an ambulance crew with a doctor (Rzonca, P., 2019). The element of time availability of the burn center and the availability of the nearest medical facility also enters into the transport management. In the period of the so-called of the initial transport window up to 6 hours after the injury (Konigová R., 2010) the patient is transported directly to the burn center, in case of unavailability the deshock stabilization of the patient is indicated in the nearest anesthesiology-resuscitation department or a department with an intensive care unit in the

surgical department and subsequent transport after 48 hours of stabilization of the patient's general condition.

There are specific cases, such as the care of a severely burned pediatric patient who requires the provision of resuscitation care in the Department of Pediatric Anesthesiology and Intensive Care Medicine, where a team of burn surgeons with surgical burn treatment follows the patient in a reverse manner.

## ACCESS TO AN EVENT WITH A MASS DISABILITY OF A LARGE NUMBER OF INDIVIDUALS DUE TO THERMAL INJURY

In 2020, the author collective Smržová, Bakalář and Zajíček created a scheme of approach to an accident with a large number of burn patients entitled "Concept for solving an emergency with a large number of patients with thermal injury in the Czech Republic". Following the national and European burn plan, they prepared a document with localization for the Czech Republic and the current situation of burn centers in the Czech Republic and other components of the health system. For easier orientation in the event of a mass disaster, they adapted the perception of the extent of the burn injury and the conditions of health care provision to the specific conditions of the home environment. For this purpose, extensive thermal injury is assessed as damage to more than 50% of the body surface in an adult, and 20% of the total body surface in a child patient in the age range of 0-15 years regardless of the depth of the burn.

Care capacity was divided into immediate, i.e. how many burn patients the burn centers are able to receive within 6 hours of the injury, and delayed, i.e. how many burn patients the burn centers are able to receive in the following window of 48-96 hours after the injury. The total capacity of burn centers was set at 50 patients. The concept classifies the provided care into 3 levels, primary triage by emergency medical services, secondary triage by the nearest medical facility and tertiary triage by specialists in burn medicine. The individual floors are elaborated in the chapters classification, therapy, transport and communication. In primary triage, triage is recommended only on the basis of the rule of thumb or the 9% rule, while in medical facilities the use of Lund-Browder tables is recommended. The chapters gradually pass through the individual floors and follow up on the complex information in the chapters with schematic diagnostic and therapeutic procedures developed for the relevant floors and chapters with the possibility of identification and implementation for a specific individual.

## THE PERSPECTIVE OF MASS THERMAL INJURIES IN THE EU

The implementation of international guidelines and recommendations into national protocols for dealing with mass accidents enables the unification of the approach in the EU states. Equally important, however, is the backward coordination of individual states when dealing with mass disasters. the geographical extent of the accident may not always reflect the state-legal division. As an example, it is possible to cite the plane accident of the military aircraft Antonov An-24 from 19.1.2006 between the villages of Helce and Telkibanya in Hungary, which occurred during the landing maneuver of the aircraft at Košice Airport. 42 people died on board the plane. Due to the geographical location of the accident, the first ambulance crews were from Košice, i.e. a neighboring state. Similarly, it is possible to envisage a situation where the distribution of a large number of thermal injury patients is national, but given the geographical distribution of burn centers, it would be more even to distribute patients to nearby burn centers present in other states. National programs count on the distribution of patients in an international manner, as a rule, only after the national capacities have been exhausted. Therefore, the backward coordination of individual national approaches to mass thermal injuries with an emphasis on the effectiveness of the provided health care in available burn centers, regardless of nationality, and taking into account the availability of effective

ghealth care, is also essential. Considering the current security situation on the EU's eastern borders, this challenge is extremely topical.

## CONCLUSION

Thermal injuries are by their nature life-threatening injuries, which, however, are rare in statistical evaluation, requiring a multidisciplinary complex specialized approach. Therefore, they are focused in highly specialized burn centers. With the increasing risk of the presence of a civilian or military mass casualty, the urgency of updating the national protocols for solving a mass casualty also increases. In the EU, however, we have the possibility of coordination between national protocols and the geographical distribution of burn centers in order to ensure the highest possible health care for patients, regardless of the nationality of the territory where the mass casualty occurred.

## REFERENCES AND INFORMATION SOURCES


1. ALHARBI, Z. et al. (2012) Treatment of burns in the first 24 hours: simple and practical guide by answering 10 questions in a step-by-step form. In: *World journal of emergency surgery.* No. 13. ISSN: 1749-7922
2. CLEAVER, B. et al. (2006) *First Aid Handbook* . 2nd ed. Bratislava: Perfect. ISBN 978-80-8046-358-8
3. KONIGOVÁ, R. et al. (2010) *Complex treatment of burn trauma* 1st ed., Prague: Karolínum. ISBN 9788024616704
4. KUNTSCHER, M., V., et al. (2006) Current treatment strategies for pediatric burns. In: *Hand surgery, microsurgery, plastic surgery.* No. 3, pp. 156-163. ISSN: 07221819
5. MURARI, A. et al. (2019) Lund and Browder chart – modified versus original: a comparative study. In: *Acute and critical care.* No. 4, pp. 276-281. ISSN: 2586-6052
6. RZONCA, P. et al. (2019) Burns in practice of helicopter emergency medical service in Poland. Retrospective analysis. In: *Wiadomosci lekarskie.* No. 3, p. 500-505. ISSN: 435147
7. SCHEIFER, J., L., et al. (2020) Burn first aid knowledge in Germany and the influences of social-economic factors. In: *Burns.* 2020. No. 6, p. 1458-1465. ISSN 0305-4179
8. SMRŽOVÁ E., BAKALÁŘ B., ZAJÍČEK R. (2020) Concept of solving an emergency with a large number of patients with thermal injury in the Czech Republic. Ministry of Health of the Czech Republic.


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# INCREASING THE LEVEL OF PROCEDURES TO IMPROVE THE PREPARATION OF RESCUE UNITS OF THE INTEGRATED RESCUE SYSTEM DURING AN ADVERSE EVENT

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**ABSTRACT:** With the growing volume of technology modernization of various types of transport, the number of traffic accidents and incidents also increases. In most cases of these adverse events, the human factor is the cause. Rescuers of the Integrated Rescue System must therefore respond flexibly to these changes in traffic and, above all, must make changes in the field of tactics when dealing with adverse events and accidents, thereby increasing the level of theoretical and practical training for dealing with such adverse events. The article deals with the change in tactical procedures of rescuers of the integrated rescue system and discusses individual points of additional theoretical and practical training. Of course, the number of accidents for rescue services is also increasing when transporting bicycles or battery scooters. Let's imagine that such a type of transport can reach a speed of up to 50 km/h and more. Such interventions also increase stress, so it is very important to practice these activities during the intervention in order to reduce the effect of stress on the responding paramedic. Abroad, there are various types of simulation centers where rescuers practice various adverse events.

**KEY WORDS:** Adverse Event, Tactical Procedures, Incident, Integrated Rescue System, Simulation Center

## INTRODUCTION

Currently, various modern production technologies and production procedures are used, which creates new crisis situations. The rescue services must respond to all such positive or negative impacts, mainly by modernizing rescue equipment and procedures for dealing with various undesirable events and incidents. Based on this, the quality and level of new paramedic equipment and equipment, as well as the technical means of paramedics used in normal practice, also increases. The use of these means also results in a change in some methodological procedures and tactics of deploying the forces and means of rescue units of the Integrated Rescue System during such an undesirable event. Therefore, it is important to create suitable conditions for the preparation and training of procedures both in the field of theory and in practical training, which includes, in addition to new procedures with the use of new means, also the creation of suitable spaces for the given training, which would allow these activities to be simulated during the intervention. In Slovakia, we have a special departmental educational facility at the Academy of the Armed Forces of the Slovak Republic in Liptovský Mikuláš, where the evacuation and rescue of people, animals and things from places threatened and affected by floods, landslides and other natural disasters is simulated. Practical training is partly carried out for some interventions in the military training area in Lešt. This area also belongs to the Armed Forces of the Slovak Republic. Education in the field of solving crisis situations, adverse events and extraordinary events within the Civil Protection of the Population is also carried out by the Academy of the Police Force in Bratislava, where educators work within the framework of expertise in rescue services in the given issue, fulfill responsibly demanding tasks in the field of education and professional training

for a comprehensive a complex of activities related to saving citizens' lives and protecting property from fires and other undesirable events. The previously mentioned Lešť training area, which belongs to the Ministry of Defense and the Ministry of the Interior of the Slovak Republic, was created for specialization in the skills of a rescuer. In the given space, rescuers confirm their knowledge on simulated events. But all this needs to be gradually changed, or improved, and that is why various studies and projects are created to help rescuers during training and thus improve their expertise in the event of a certain type of adverse event. Firefighters have knowledge not only in the field of firefighting, as many people think, but also in the field of safety, technology, physics, chemistry, first aid, transport, psychology, prevention and other necessary skills that are important in the very activities and interventions of firefighting units. That is why it is important to educate fire brigades, but also other rescue units of the Integrated Rescue System in a high-quality way and prepare them for unexpected events, where they often have to be able to make decisions within a few seconds and correctly deploy their forces and resources to handle events with minimal loss of human life. The intervention must be as efficient and effective as possible. All this can only be achieved through appropriate and frequent training in the given area.

**RESCUE COMPONENTS OF THE INTEGRATED RESCUE SYSTEM**

Integrated rescue system is the coordinated procedure of the rescue units in ensuring their readiness and in carrying out activities and measures related to the provision of assistance in an emergency, it is divided into basic rescue units, other rescue units and Police Departments. At the site of the intervention, the intervention commander from the Fire and Rescue Service directs and coordinates the activity of the rescue units, in mountain areas, during rescue operations, the intervention leader from the Mountain Rescue Service, and with regard to mining activities, or in the case of activities carried out in a mining manner, the commander of the mining rescue service. However, if the Fire and Rescue Service does not intervene, the commander or unit leader of the rescue service, who is designated by the relevant coordination center, manages and coordinates the activities of the rescue services at the scene of the intervention, in the case of searching for aircraft, or providing assistance in the event of an air accident, the authority responsible for searching for aircraft and saving human lives.

Rescue components of the Integrated Rescue System in Slovakia are divided into:

- basic emergency services,
- other emergency services,
- Departments of the Police Force.

The basic rescue components of the Integrated Rescue System include :

- Fire and Rescue Service,
- Emergency medical service providers,
- Control chemical laboratories of civil protection,
- Mountain Rescue Service,
- Mining rescue service.

Other rescue components of the Integrated Rescue System include:

- Armed Forces of the Slovak Republic,
- Voluntary fire brigades of municipalities,
- Racing fire departments,
- Racing fire brigades,
- Workplaces carrying out state supervision or activities according to special regulations,

- Civil protection units,
- City (municipal) police,
- Slovak Red Cross,
- other legal entities and natural persons, the subject of which is the provision of assistance in the protection of life, health and property.

**THEORETICAL AND PRACTICAL TRAINING OF FIREFIGHTERS AND RESCUERS AT PRESENT**

Theoretical and practical basic professional training of emergency services is carried out in a departmental facility of the Ministry of the Interior of the Slovak Republic under the supervision of experts in the given activities. The training of rescuers itself is divided into several parts, where rescuers acquire the basics as well as higher expertise in various areas.

Areas of training of rescuers

- basic preparation,
- specialized training of a firefighter rescuer and firefighter rescuer specialist,
- training of machinist technician and specialist machinist technician,
- preparation for the performance of activities in the field of mechanical, connecting, anti-gas, flood and fire rescue services,
- preparation for activities in the field of information technology,
- preparation for activities related to the dispatch of rescue units and the deployment of forces and resources at the scene of the event,
- preparation of a paramedic for activities in the field of operative management,
- preparation in the field of applying legal relations in a personal office,
- preparation in the field of State Fire Supervision,
- preparation in the field of economics and logistics,
- and others.

Basic training of a rescuer

In the basic training, the rescuer acquires basic theoretical knowledge for the application of generally binding legal regulations in the field of fire protection, the Integrated Rescue System, Civil Protection of the Population, crisis management, flood protection and regulating the position and tasks of the rescue components of the Integrated Rescue System. He also acquires the necessary practical skills in the use and operation of material means, extinguishing agents, firefighting equipment and firefighting equipment of professional services (mechanical, connecting, anti-gas, fire rescue service and flood rescue service). As part of the education, the rescuer also acquires the practical skills necessary to carry out activities under professional guidance, related to fighting fires, providing assistance and performing rescue work in accidents, natural disasters and other undesirable events. Basic training is intended for all newly hired rescuers.

Specialized training of a rescuer

During the specialized training, the rescuer acquires theoretical knowledge, practical skills and abilities for **demanding** types of intervention activities. After completing this training, the rescuer also acquires, deepens and consolidates knowledge about the use of extinguishing agents, about non-linear burning processes, about procedures for fighting fires, about how to perform self-rescue, about providing assistance in rescuing people and about performing rescue work in accidents, natural disasters and in other adverse events. (SUJA, pp. 76, 89). He also acquires knowledge and skills in the field of providing first aid and the correct

use of medical aids, psychological care, post-traumatic intervention, the application of the principles of fire safety in buildings and securing buildings with fire engineering equipment. In this way, the rescuer is able to independently perform the specified activities related to the demanding intervention activity.

## PRACTICAL TRAINING IN THE FIELD OF SPECIALIZATION IN THE COORDINATION OF RESCUE COMPONENTS OF THE INTEGRATED RESCUE SYSTEM

The preparation and training of a paramedic of the integrated rescue system is a long-term and permanent process that does not end with the basic training of a paramedic and his assignment to various professional functions. With this step, it enters the system cycle of permanent preparation and training, the main goal of which is to achieve the required level of preparedness of the entire rescue system even in a period when no crisis phenomena are being solved. Educational activities and the training itself serve to prevent risks of various nature. Nowadays, simulators and simulators are increasingly used for the training of rescue services, which, due to advanced and modern computer technology, can model and simulate the conditions in which a rescuer finds himself during a real adverse event that he has to deal with. Part of the education is also regular checking of physical fitness, professional skills and knowledge. For training in the field of specialization in the diversity of interventions and coordination of rescue components of the Integrated Rescue System, the Military Training Center was established in Lešt, where the rescuer with individual rescue components practices the coordination of tasks and activities during interventions at the scene of the incident. This also builds respect between rescuers and rescue services. Regular training also reduces the effects of stress on the rescuer. The aim and purpose of the Lešť Training Center is also the fulfillment of tasks related to the security and defense of the state, the implementation of health care, medical security and special training, especially of special units of the Armed Forces of the Slovak Republic, special units of the executive branches of the security system of the Slovak Republic and foreign security forces and foreign armed forces.

<u>Other activities of this center:</u>

- ensures and carries out research and development according to the founder's requirements for the goals and needs of the results of scientific research in practice,
- supports and contributes to the development of the connection between research and technological and innovative progress and development,
- supports the cooperation of the research sphere with economic practice,
- contributes to shaping the environment and conditions that will increase the possibilities of experimental development and innovation in the environment of science and research.

<u>The Lešť training center also has:</u>

- field training facilities:
  - shooting range,
  - training grounds,
- special training facilities:
  - training settlement Jakub Village - the settlement contains a complex of several training simulators,
  - tactical shooting trainer Jakub Building Gun,
  - helicopter and landing simulator Jakub Koloseum,
  - climbing trainer Jakub Climbing,
  - climbing trainer Bralce-Via Ferrata,

  - multifunctional tactical shooting trainer Družba-Jakub High-Rise Building Gun,
  - Druzhba-Barrier shooting range,
  - obstacle course according to CISM standards,
  - laser shooting range Scatt,
  - Oremland Tactical Training Range,
- simulation technology devices:
  - constructive simulation,
  - live simulation,
- accommodation facilities,
- sports and regeneration facilities.

Types of adverse events and situations for which rescuers actually prepare:

- extinguishing car fires after a traffic accident,
- work in rescuing injured persons from a crashed bus full of extras,
- stopping the leakage of a dangerous substance from the tank,
- rescuing drowning people,
- liquidation of a fire in an apartment in an apartment building together with the evacuation of injured persons using high-altitude equipment,
- search and evacuation of disabled persons from industrial operations,
- activity of the search and rescue activities module,
- liquidation of the consequences of a simulated traffic accident with subsequent fire in a road tunnel,
- mastering basic principles in the field of disaster and mass casualty medicine, such as triage of the injured,
- from a psychological point of view, an increase in confidence in one's own abilities,
- verification of the abilities of rescue units of the IZS in various situations connected with search, rescue and providing first aid,
- improving first aid for bleeding and fractures, gunshot wounds,
- handling the outraged crowd of fans with the Police Department,
- learning the correct procedure for searching for victims of collapses,
- verification of the ability of the armed forces to defend and protect rescuers,
- improvement and verification of the communication of the IZS components with each other, as well as with the coordination center.

## SIMULATION OF THE INTERVENTION OF RESCUE UNITS OF THE INTEGRATED RESCUE SYSTEM IN THE EVENT OF ADVERSE EVENTS

Air transport provides the fastest transport of people, mail, some types of goods and the like. In order for this transport to be able to fulfill its tasks, it must meet certain requirements, which include speed, quality, economy, but above all safety. However, with the constant development and modernization of means of transport, the risk that may occur during operation also increases. Traffic accidents and other adverse events in traffic are among the most serious, because at one scene the rescuer encounters a whole range of problems and serious situations that need to be dealt with in a very short time. Rescuers must be specially prepared for these undesirable events. It is not enough if the rescuer only has general knowledge in the given issue. The rescuer must have knowledge of a broader nature in order to cope with such interventions as efficiently and effectively as possible. Aviation accidents are among the most serious incidents where a large number of people are killed and material damage is caused. For this, a project was approved, on which the Universities of Pardubice, Pilsen and the Technical University of Košice - Faculty of Aviation collaborated. The subject of the given project was

the creation of a training methodology for firefighters, rescuers and a simulator for interventions in air accidents with an emphasis on the protection of critical infrastructure. The project team also ensured the creation of all documents and the creation of a plan for the establishment of a center for training rescuers during interventions in air accidents. In order for the rescuer to have the widest possible view of the area, the project team was also involved in research into the flammability of materials used in the creation of aircraft, the spread of fire, combustion gases and smoke. The typology of accidents was also addressed. The steps, goals and method of solution were gradually proposed, which led to the creation of a design of a real aircraft fire simulation device, in full respect of the current valid legislation, technical specifications and professional standards, mainly in the field of air transport, so that the result is as close as possible to the possible reality occurrence of this adverse event.

**Fig 1: Simulated plane fire (Antwerp)**

*Source: self-edited*

**Fig. 2: Joint training of rescue units of the Integrated Rescue System**

*Source: self-edited*

To prepare the emergency services for adverse events in transport, specifically for an air accident, it is necessary to create additional training that is focused on these crisis situations, namely as in theoretical, so also on a practical level, and the corresponding methodology. It is a hierarchical procedure further training. The methodology describes the created software support for training rescuers on the simulator, both for theoretical training and planning evaluation visualization software for practicing practical intervention. The created methodology concerns the development of two software. E-learning software, which is aimed at supporting the training of rescuers on the simulator and supplementing theoretical knowledge in the area of specific parts of legislation , construction materials used in aviation - aircraft with a maximum take-off weight of up to 2000 kg and their physical and fire properties, communication procedures and responsibilities in the event of an air accident, critical infrastructure and other areas essential for dealing with adverse events in air transport. And then planning and evaluation visualization software for training and solving real adverse events in air transport. Simulation technologies/visualization software for the training of practical interventions of firefighters can be applied in various phases of preparation, training, continuous education or regular tactical exercises.

The basis of every simulation is the creation of a real model, or a model that will reflect the properties of a real object or situation. Training software in the form of planning and evaluation visualization software for practicing practical interventions also allows changing the input parameters for the purpose of simulating various situations (aviation incidents/accidents). Computer simulation allows us to simulate various scenarios, evaluate and optimize their results, and subsequently apply and implement the results in real life. Simulation is undoubtedly an effective tool to support the training, education and development of decision-making skills of firefighters and rescuers in various real contexts.

An extremely important role in the training of fire and rescue services is to teach individuals and rescue teams how to do their job correctly and safely. The goal of firefighter training on the simulator is to develop the decision-making skills of the individual, which during real interventions in air accidents have an impact or an impact on all rescuers who participate in the rescue operation. The very goal is to improve preparedness for future crises and emergencies, and they could be useful not only for firefighters, but also for crisis managers, doctors and paramedics. The virtual environment cannot completely replace real conditions, but it allows to approximate them as best as possible in order to avoid mistakes in real traffic incidents. The advantages of implementing changes in the training of rescuers in the form of simulator training can be summarized in the following points:

- Creating a complex and realistic environment - the possibility of simulating various accidents, incident conditions, circumstances, etc.
- Dynamic environment - allows participants to practice the ability to react quickly and effectively during an aviation incident.
- Realistic training - allows firefighters to prepare for specific events and situations in the event of air accidents.
- Increasing awareness and efficiency - linking theoretical and practical knowledge, preparing crisis scenarios.
- Availability - location, location, remote access, repeatability, etc.
- Flexibility - multiple use, repeatability, phasability, verification of variants and data.
- Simulations for innovation - development of new trends, verification of new procedures, etc.
- Safety and health protection at work - simulation cannot harm anyone.

## CONCLUSION

The purpose of this article was to point out the possibilities of training rescue units of the Integrated Rescue System in Slovakia, but also abroad. Rescue services often conduct training in centers abroad, but they are rescuers who are trained to manage an emergency as first responder specialists. The training is carried out on simulators and simulators, which the Slovak Republic does not have, that is why the project team was concerned with the development and establishment of such a simulator at home. These trainings take place independently, they are focused on rescue, protection and safety. The individual rescue units of the Integrated Rescue System practice what they are designed for. They practice these acquired skills during separate trainings, which they apply in one joint training. By creating such a simulator, the rescue services can practice rescue operations during traffic, aviation and other accidents and incidents more often and with better quality. The goal was also to point out the validity of the creation of a training center, a simulator for the possibility of joint training of the security and rescue components of the Integrated and Rescue System. "Fortune favors the prepared".

## REFERENCES AND INFORMATION SOURCES


1. Addendum no. 6 to the charter of charter of charter no. SÚMO-2223/2003 dated August 25, 2003 as amended no. 1, no. 2, no. 3, no. 4 and no. 5. Ministry of Defense of the Slovak Republic. 2016.
2. Aviation regulations of series L: L7 - Aircraft license plates; L10 - About civil aviation telecommunications service; L12 - Search and rescue in civil aviation; L13 - About the professional investigation of the causes of air accidents and incidents; L14 – Airports.
3. Regulation of the MVSR no. on special professional competence and on deepening the qualification in HSE.
4. NOVÁK, L. et al.: Planning of resources for solving crisis situations, Žilina: VŠEa MVS Bratislava, 2010. 9, 14, 21 p. ISBN 978-80970272-4-7.
5. Instruction P HaZZ no. 23/2010 on the content of basic training.
6. Instruction P HaZZ no. 33/2010 on the content of specialized training.
7. Instruction P HaZZ no. 33/2013 amending Instruction P HaZZ no. 33/2010 on the content of SOP.
8. ŠIMÁK, L. et al.: Terminological dictionary of crisis management. Žilina, 2005. 13, 19 p. ISBN 80-88829-75-5.
9. ŠIMÁK, L.: Crisis management in public administration. Žilina: FŠI ŽU, 2004. 35, 37, 38, 49, 50, 58-68, 85, 91-95, 100, 103-104, 106-108, 128, 142-143, 145 p. ISBN 80-88829-13-5.
10. SUJA, M. Regulation of fire protection and rescue activities. Bratislava: Police Academy in Bratislava, 2019. 122 p. ISBN 978-80-8054-804-9.
11. TISCHLER, P.; BLAŠKO, D. Training of rescue and security forces in the field of crisis management. DP. Central European Management Institute Prague 2016.
12. Teaching documents ŠOP SŠPO MVSR.
13. Decree no. 328/2001 Coll. of September 5, 2001 on some details of IZS security.
14. Decree of the Ministry of Internal Affairs and Communications no. 611/2006 Coll. on firefighting units, as amended.
15. Law no. 129/2002 Coll. on IZS, as amended.
16. Law no. 133/1985 Coll., on fire protection.
17. Law no. 239/2000 Coll., on integrated rescue system.
18. Law no. 320/2015 Coll. about the Fire and Rescue Service.

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# REFLECTION ON THE CENTRALIZATION OF HEALTH CARE AND ITS THREATS

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**ABSTRACT:** The necessity of reorganizing the provision of health care has been discussed at both the regional and central levels in recent years. This article deals with the possibility of centralization of health care provided in inpatient facilities. Assesses the need to apply different decision-making mechanisms, to delegate enormous responsibilities to individual managers, and to be influenced by external threats. The article aims to analyze the possible threats of centralization of healthcare care in general terms, taking into account the situation affected by the COVID-19 pandemic and the current energy crisis. The methods of scientific work - retrospective analysis of legal documents, scientific and professional publications, synthesis of mainly foreign data on the results of centralization and decentralization of health care - were used in the work. Modified risk management was used to assess potential threats. Based on the investigation, it can be concluded that centralization of health care facilities providing standard health care would have a significant impact on a wider part of the population. At the same time, there is a significant increase in the risk of turnover of health workers. On the other hand, highly specialized centers need to be operated regionally, but with the need for sufficient professional infrastructure. Changes in centralization and decentralization need to be implemented systematically and systematically on the basis of expert studies focused on the specific needs of a particular area based on local demographics and their evolution, infrastructure, and financial resources.

**KEY WORDS:** Centralization, Health Care, Health Sector, Analysis, Threat

## INTRODUCTION

One of the presented options for the reorganization of health care and its provision is its centralization and the building of ultra-modern "scientific" workplaces. Investigations and impact studies are presented, which point to the necessity of centralization from the point of view of sustainable specialized health care, for reasons of personnel security and saving of funds spent on specialized and highly specialized nursing care. In the case of the centralization of health services, the whole situation brings additional threats, in the form of their potential lack or limitation for certain risk groups, such as the elderly, the medically or mentally disadvantaged, families who care for several children, and others.

Research and the creation of sub-parts in the issue of centralization of health care began at a time when there were no signs that the economy of the state or companies should slow down or even stop. During the investigation of that time, there were various opinions about the transformation of the healthcare sector, mainly from among the politicians of the Visegrad states. In the Czech Republic, the most vocal promoter of centralization was the governor of the Zlín Region. He informed about the intention to build one and only central hospital that would offer all care in one complex for the region and adjacent regions.

To create a critical view of the centralization of healthcare, modified procedures from crisis and corporate management were applied. The conclusions are formulated on the basis of

analyzes of mainly foreign experiences with centralization and thus decentralization of health care.

## 1. ADVANTAGES AND DISADVANTAGES OF CENTRALIZING HEALTH CARE

If we evaluate centralization, then even the central management of health care has a number of advantages from a managerial point of view, which are summarized in Table 1. On the one hand, centralization enables uniform decision-making "from the center", on the other hand, it limits the autonomy of organizational units and can reduce the flexibility of decision-making. One of the basic points of Fayol's theory of management is the definition of the optimal spread of centralization and decentralization, not even, because the optimal balance depends on the quality of management personnel. (ŠAJDLEROVÁ, 2008)

**Table 1: Advantages and Disadvantages of Central Management**

| Advantages | Disadvantages |
|---|---|
| unified management (subject to one manager) | (enormously) high demands on the manager |
| simple way of management (subject to one manager) | can reduce decision-making flexibility |
| monitoring of all processes and changes | possible absence of local experts/specialists |
| cheaper way of driving | everything in one place (know-how, forces, resources, real estate.) |
| reduction of prices of individual items and improvement of contractual conditions | |

*Source: HOUGH, 1992*

Decentralization is the opposite of centralization. The field of state or business management differs considerably from the management of a medical facility and the provision of professional health care. The principle of decentralization primarily consists in delegating powers to lower organizational units. An example is the area of public administration and the transfer of responsibility to territorial self-government. The precise definition of competences at individual levels has a fundamental influence on decision-making powers and leadership. Without them, there is a risk of significant inefficiency of the system and the loss of motivated personnel. (ŠAJDLEROVÁ, 2008; DUŠEK, 2020) The advantages and disadvantages of decentralization are summarized in Table 2.

In the Czech Republic, we have a contradiction between the profitability and non-profitability of the healthcare sector, as well as its financing and the salary conditions of healthcare workers. These are mainly facilities that are under the direct authority of the Ministry. These employees are limited by Government Regulation No. 264/2022 Coll., on salary conditions for employees in public services and administration. Remuneration of employees has a direct influence on the possibilities of solving crisis situations associated with employee turnover and competitiveness on the labor market.

**Table 2: Advantages and disadvantages of decentralization**

| Advantages | Disadvantages |
|---|---|
| more flexible response to complications | possible duplication of decision making |
| greater freedom in decision-making | possible duplication of work |
| higher initiative of managers | possible duplication of purchases and costs |
| the use of competition between individual decentralized units | complex coordination in overall decision-making and determining the optimal strategy |
| knowledge of regional resources | |

*Source: self-edited*

In general, centralization is perceived mainly in the concept of large companies and crisis management. In normal situations, the central management of the company has rather disadvantages, on the contrary, it is the case in crisis management, where it is desirable.

Currently, the system known as "big data" is preferred, this is information centralization, where the company downloads all the data it is able to collect from its processes. In this way, he gains more control over them, and his own centralization leads to the automation of some processes. Support software can thus perform up to 90 percent of the work for supply centralization. However, without a person who knows the local market and its specifics, the company could lose sales. (KOLÁŘ, 2015) Centralization of purchasing and data in the healthcare sector can be used, but again only in a limited amount. That is, with the lowering of the prices of individual items and the improvement of contractual conditions for purchases of large quantities, when the power of negotiating institutions increases and there are economies of scale. (KOLÁŘ, 2015; Transforming our World, 2015*)*

At the same time, for the shopper, the purchased volumes in consumables increase significantly by merging the requirements of individual departments or clinics of the medical facility. A typical example is the current energy crisis and the end of energy price fixing for medical facilities. Thus, the state is considering the establishment of a "state energy trader", which would deal with the purchase of energy from the position of "power". The main disadvantages of centralization include specific purchasing requirements, slower response to changes in requirements in the department and lower operational efficiency. (KOLÁŘ, 2015)

Adequate assessment of the density of medical facilities in our territory is difficult to identify and evaluate in comparison with other countries. There are a considerable number of indicators and evaluation criteria within the European Union and the Organization for Economic Cooperation and Development (OECD), thanks to which we can compare individual states with each other. However, they do not take into account the historical development and especially the financing of the health care system.

In Table 3 we can find a comparison according to the number of beds per hundred thousand inhabitants. Here we will find the countries of the Visegrad Four, geographically close neighbors, countries that are very often referred to by the media and world economic leaders. Japan tops the list with 13 beds per 100,000 inhabitants.

The Czech Republic is in seventh place overall. According to the OECD survey (2020), the Czech Republic has 100,000 population was placed by Japan (13 beds), Korea (12.4 beds), Germany (8 beds), Russia (7.1 beds) and Hungary (7.0 beds). Other selected states can be found in Table 3.

The so-called acute beds are particularly monitored, where the Czech Republic occupies up to 11th place among OECD countries (2020). In the Czech Republic, there are beds that are designated as "follow-up care", e.g. follow-up care hospitals. European legislation does not recognize this term, the term "Long-Term Care (LTC)" is commonly used abroad. These beds/facilities are defined to meet clear standards, which may be lacking in aftercare.

**Table 3: Comparison of the number of beds in selected countries**

| State | Reporting year | Number of beds per 100,000 resident* | Population of the country (millions)** |
|---|---|---|---|
| United Kingdom | 2019 | 2.5 | 67,886 |
| USA | 2017 | 2.9 | 331,003 |
| Norway | 2018 | 3.5 | 4,421 |
| Austria | 2018 | 3.8 | 9.006 |
| China | 2017 | 4.3 | 1439,324 |

| | | | |
|---|---|---|---|
| Slovakia | 2018 | 5.7 | 5.46 |
| Poland | 2018 | 6.5 | 37,847 |
| Czech Republic | 2018 | 6.6 | 10,709 |
| Hungary | 2018 | 7 | 9.6 |
| Russian federation | 2018 | 7.1 | 145,934 |
| Germany | 2017 | 8 | 83,784 |
| Japan | 2018 | 13 | 126,476 |

* the number of beds is recorded according to the reports of individual states (source: OECD, 2020)
** the number of inhabitants is as of 1 June 2020 (source: UN, 2020)
*Source: UN, 2020; OECD, 2020*

However, comparing individual states is problematic, precisely in relation to the centralization or decentralization of health care. In addition, in many states, the subsidiarity system of healthcare facilities is "strictly" observed. The historical course of the healthcare system and the main reforms of individual countries is monitored by the WHO. (WHO, 2016 - 2020)

Results based on the centralization of special treatment are published regularly and are quantified. We can meet such centers in the case of cancers, cerebrovascular accidents (in the Czech Republic as high-threshold cerebrovascular centers or stroke units) or specific genetic diseases. The mostly published results of the treatment of selected tumors show the indisputable advantages of centralizing special medical care. Morrison et al. (2020) mentions the advantages of centralizing surgical care in very specific cases as an indisputable advantage for the patient even during recovery. (MORRISON et al., 2020) This confirms the rule of general management, where the training of a specific activity creates highly qualified but narrowly profiled specialists, which as a result saves already high financial demands.

Centralization of health care is preferred even in states that are historically close to us. Austria, with a similar population and similar country size to the Czech Republic, has a total of 3 university hospitals (Vienna, Innsbruck and Graz) with a total of about 5,500 beds. (HEALY et al., 2006) The Czech Republic currently has 11+1 teaching hospitals with a total of 18.7 thousand beds. (ALEXA et al., 2015) Slovakia, which has half the population of the Czech Republic, has a total of 10 university and faculty hospitals. In the OECD survey, the Czech Republic has 6.6 beds per 100,000. population, Austria 3.8 and Slovakia 5.7 beds.

Currently, there is a lack of studies that would confirm or refute the correctness of the centralization of general health care in the EU. It is positive from the organization's point of view to have a top workplace, but the social impacts are not taken into account. Calculations are missing for what percentage of the population will find health care difficult or inaccessible if there is no regional hospital in their district and they have to commute to the regional hospital. What impact would this situation have on health services? One of the few studies on the positivity of health care centralization is from Finland, where Huotari et al. (2020) describe the positive effect of the centralization of maternity care with regard to travel from different parts of Finland. Other criteria are not taken into account, in this I see a huge potential in the future investigation of the given issue.

## 2. ANALYSIS OF THE ISSUE OF CENTRALIZATION OF HEALTH CARE

In the previous chapters, situations were analyzed, or factors that can prolong or prevent the reach of health care. Factors affecting the availability of health services were determined based on the analysis of professional documents and the application of elements from corporate (enterprise) management (Figure 1).

**Figure 1: Factors affecting the availability of health services**


*Source: ŠÍDLO et al., 2017*

Factors affecting the availability of health and social care:

- time availability – must be adequate for the citizen from the point of view of legality, or the place of residence must have the availability of emergency medical services (and other components of the IZS) in case of acute cases;
- geographical – it is related to time availability and economic requirements, citizens living in the countryside or isolated areas have a higher coefficient of deterioration in the availability of health and social care;
- economic – we can look at the availability of health and social care from several directions:
  - on the part of the medical facility – whether the founder has the possibility to offer the service that the patient needs;
  - on the part of the patient, whether he is able to get the necessary health and social services;
  - by the patient in the case of a medical procedure that leads to the limitation or complete impossibility of the current way of life - purchase of adequate compensatory aids;
- capacity – capacity of the catchment medical facility;
- expert medical – sufficient saturation of the area with the required specialized experts;
- organizational – connection and cooperation between individual providers of health, social or health-social services;
- health condition of the population – partly related to the age structure of the population, in the case of a lower health condition of the population, medical resources will be exhausted more quickly.

Based on a retrospective analysis of professional publications, the most common advantages and disadvantages for centralized health services were compiled, which were used to create a SWOT analysis (Table 4).

Overall, the SWOT analysis is not very positive for the centralization of healthcare services, but strengths and opportunities can be used very effectively against weaknesses and threats. The most pressing problem for healthcare facilities throughout Europe is the lack of healthcare workers, or personnel for medical facilities. The opportunities to minimize the assembled threats could be used very effectively, especially the personnel shortage.

**Table 4: SWOT analysis of threats to healthcare facilities**

| | Pozitivní | | | Negativní/Škodlivé | | |
|---|---|---|---|---|---|---|
| INTERNÍ | **Silné stránky** | | | **Slabé stránky** | | |
| | **STRENGTHS** | | | **WEAKNESSES** | | |
| | | *důležitost* | *hodnocení* | | *důležitost* | *hodnocení* |
| | 1 Vytvoření špičkového zdrav. zařízení | 0,4 | 5 | 1 Počet lůžek | 0,3 | 4 |
| | 2 Vytvoření vysoce specializovaných od | 0,2 | 4 | 2 Logistika | 0,1 | 2 |
| | 3 Centralizovaný nákup a distribuce | 0,1 | 3 | 3 Doprava | 0,1 | 1 |
| | 4 Maximální konfort pro pacienty | 0,1 | 2 | 4 Personální zabezpečení | 0,5 | 4 |
| | 5 Maximální vyjednávací pozice | 0,2 | 4 | 5 | | |
| | Součet | | 4,1 | | | 3,5 |
| EXTERNÍ | **Příležitosti** | | | **Hrozby** | | |
| | **OPPORTUNITIES** | | | **THREATS** | | |
| | | *důležitost* | *hodnocení* | | *důležitost* | *hodnocení* |
| | 1 Infrastruktura | 0,1 | 1 | 1 Korupce | 0,2 | 3 |
| | 2 Jednotné řízení a kooperace | 0,2 | 4 | 2 Logistika | 0,1 | 1 |
| | 3 Výzkum a vývoj | 0,2 | 2 | 3 Změna právního prostředí | 0,1 | 1 |
| | 4 Bezpečnost a ochrana | 0,3 | 4 | 4 Přetížení zdravotnické záchranné služby | 0,2 | 2 |
| | 5 Dotace a dotační tituly | 0,2 | 2 | 5 Personální nedostatek | 0,4 | 5 |
| | Součet | | 2,9 | | | 3,2 |

| *SWOT - výsledek* | | CELKEM | 0,3 |
|---|---|---|---|
| Silné stránky | 4,1 | | |
| Slabé stránky | 3,5 | | |
| Celkem interní | 0,6 | | |
| Příležitosti | 2,9 | | |
| Hrozby | 3,2 | | |
| Celkem externí | -0,3 | | |

*Source: self-edited*

However, there are threats that the healthcare facility, i.e. the healthcare service provider (legal entity) cannot influence. PEST analysis (Chart 1), environmental impact analysis was used to compile these threats. To these threats, or in some cases of emergencies that have already occurred, every medical facility, as well as the provider of health services, should have a prepared crisis plan. Currently, there is a threat of a lack of energy, or the impossibility of paying the prices of available energies that are on the market. The payment of health insurance companies was not increased by the rate of inflation, and thus the health and social services sector is gradually underfunded. In order to be able to adequately evaluate individual threats, an analysis of each threat must be carried out directly for the given device with its specifics.

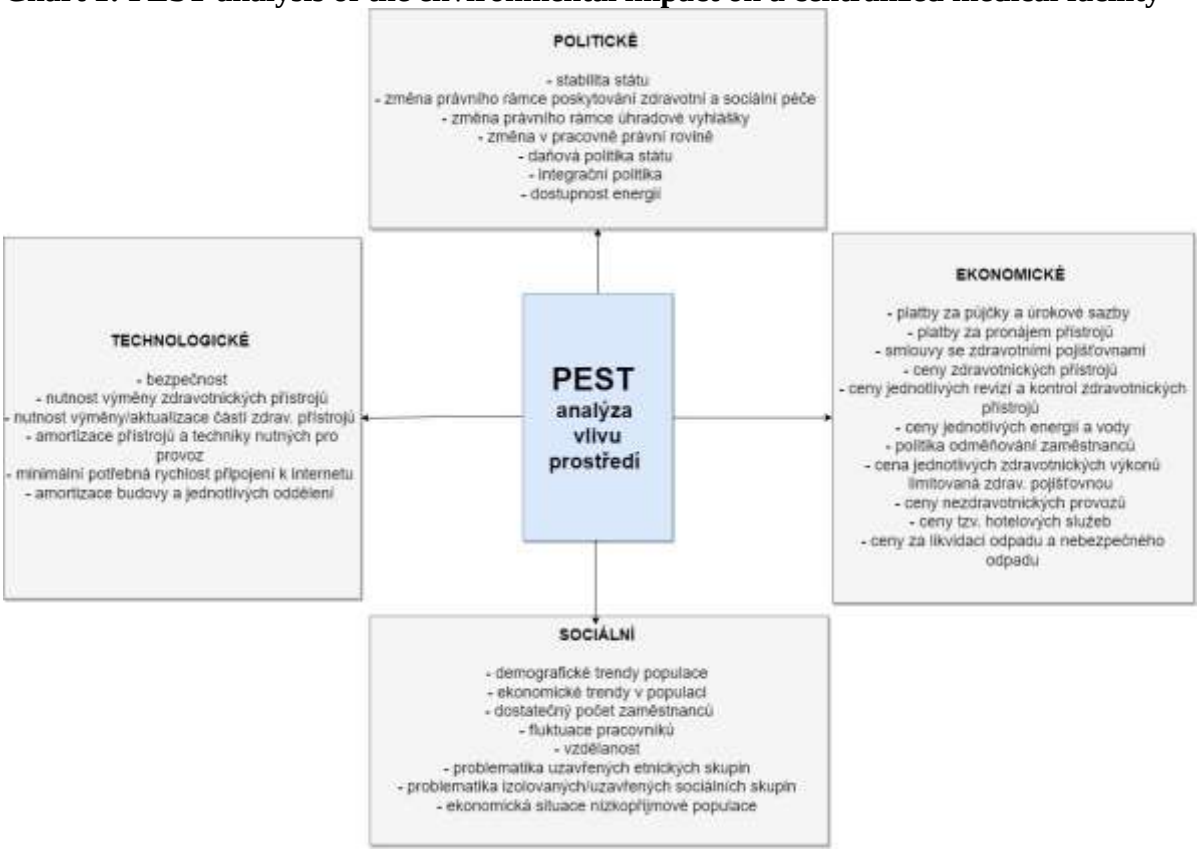
## DISCUSSION

The centralization of both inpatient and outpatient healthcare is not only about merging healthcare facilities to create one sophisticated or highly specialized facility. A whole range of managerial actions is associated with building centralized care. For the medical facilities themselves, this means, for example, the central purchase of energy, devices and tools, medicines consumables and their distribution, adequate allocation of scarce resources in the health sector, manpower and more. In the future, it is also necessary to take into account the sustainability of existing systems and their transformation, which WHO is working with in Agenda 2030. (Transforming our World, 2015)

According to the basic proposals, the first step towards sustainability is the gradual emergence of centralized health care. In the Czech Republic, we currently have e.g. Centers for highly specialized care for patients with burns (Vestník MZ 3/2016 ; Věstník MZ 15/2016 ), centers for highly specialized trauma care for adults and children (Vestník MZ 3/2016 ) or centers for highly specialized cerebrovascular care and centers of highly specialized care for patients with stroke (Vestník MZ 15 /2016 ; Act *372/2011 Coll* . ), in the sense of Act No.

372/2011., on health services and conditions for their provision, as amended (Act *372/2011 Coll.*).

**Chart 1: PEST analysis of the environmental impact on a centralized medical facility**




*Source: self-edited*

In studies published abroad, we see a successful evaluation of the centralization of health care. Especially in regions with a relatively low population, such as Finland, which primarily evaluates the centralization of maternity care and associated criteria such as mother and child survival, access to medical facilities and others. (HUOTARI et al., 2020) It should be added, however, that in the Nordic countries, and especially in Finland, the care of the birthing mother is in the home environment with the maximum care of professional midwives, but also doctors. (GALKOVÁ et al., 2022)

The most frequent positive results are reported in specific and highly specialized surgical care, where the necessity of centralizing health care clearly follows. (MUGURUMA et al., 2019) As part of the SARS-CoV-2 pandemic and its course, deficiencies were revealed throughout the entire health care delivery system. The most common and most serious was the lack of so-called rare resources in the health sector; e.g. insufficient number of acute beds, insufficient number of qualified health workers. During individual waves of the SARS-CoV-2 disease, even with a high number of hospitalizations, the Czech Republic managed this problem, due to the robustness of the current system.

In a large study, Agrawal et al. (2020) demonstrably point out and demonstrate the necessity of centralizing specific care, such as centralized oncology clinics. The same procedure is also chosen (the Czech Republic adopted the same position) in the Czech Republic, where oncology clinics are now established in faculty or larger regional hospitals.

Benefits for centralized health care predominated to a lesser extent in the evaluation of threat determinations. However, we also see opposite trends from abroad, namely to

decentralize maximized centralized care. The predominant advantages of decentralized care are in the small surgical procedures performed. A study by Iverson et al. (2019) brings insight into the preservation of devices that will be able to perform minor surgical procedures so that there is no time delay. This reflects repeated warnings about the possibility of making care more difficult. From a study by Liwanaga et al. from the Philippines, where there was decentralization of health services and the transfer of responsibility to local governments according to established criteria, there is no evidence that care or its availability has worsened, but there was no improvement in the monitored period either. It must be noted that the level of healthcare differs from the European one and the results of this study cannot be fully implemented.

## CONCLUSION

The centralization of health care brings with it significant political and media attention. However, according to the international mandatory reporting by the OECD (2020) and the UN (2020), the trend of reducing beds worldwide is clear. The development of reducing beds is problematic, especially when extraordinary events occur, when it is necessary to immediately increase capacity. In their study, Dubas-Jakóbczyk et al. (2020) also point to this trend, focusing mainly on Eastern European countries.

In general, the centralization of health services brings benefits that outweigh possible threats. However, this model is inapplicable if the network of general practitioners and outpatient specialists is not expanded and the health care delivery system is not strengthened by other health and social services.

## REFERENCES AND INFORMATION SOURCES


1. AGRAWAL, Raag and Sudhakaran PRABAKARAN. (2020) Big data in digital healthcare: lessons learned and recommendations for general practice. *Heredity*. 2020, 124 (4), 525-534. ISSN 0018-067X. Available from: doi:10.1038/s41437-020-0303-2
2. CZECH REPUBLIC. (2022) *Government Regulation No. 264 of 31 August 2022*. Prague: Government of the Czech Republic, 2022, 264/2022 Coll, number 264.
3. CZECH REPUBLIC. (2011) Act on Health Services and Conditions of Their Provision (Health Services Act). In: *372/2011 Coll*. Prague: Parliament of the Czech Republic, 2011, 131/2011, number 372.
4. CZECH REPUBLIC. (2020) *Journal of the Ministry of Health of the Czech Republic No. 15 of 11/13/2015*. Updated: 27 May 2020. Prague: Ministry of Health of the Czech Republic, 2015, 15/2016, number 15.
5. CZECH REPUBLIC. (2020) *Journal of the Ministry of Health of the Czech Republic No. 3 of February 8, 2016*. Updated: 27 May 2020. Prague: Ministry of Health of the Czech Republic, 2016, 3/2016, number 3.
6. DUBAS-JAKÓBCZYK, K., T. ALBREHT, D. BEHMANE, et al. (2020) Hospital reforms in 11 Central and Eastern European countries between 2008 and 2019: a comparative analysis. *Health Policy*. 2020, 124 (4), 368-379. ISSN 01688510. Available from: doi:10.1016/j.healthpol.2020.02.003
7. DUŠEK, Jiří et al. (2020) *Modern HR Management: Trends and Challenges*. České Budějovice: University of European and Regional Studies, z.ú., 2020. ISBN 978-80-7556-069-8.
8. GALKOVA, Gabriela, Pavel BÖHM, Zdeněk HON et al. (2022) Comparison of Frequency of Home Births in the Member States of the EU Between 2015 and 2019. *Global Pediatric Health*. 2022, **9**. ISSN 2333-794X. DOI:10.1177/2333794X211070916

9. HEALY J, SHARMAN E, LOKUGE B. (2006) Australia: Health system review. Health Systems in Transition 2006; 8(5): 1–158. ISSN 1817-6127 https://www.euro.who.int/__data/assets/pdf_file/0007/96433/E89731.pdf
10. HOUGH, Harry E. and James M. ASHLEY. (1992) *Handbook of buying and purchasing management*. Upper Saddle River, New Jersey: Prentice Hall, 1992, 453 pp. ISBN 978-01-3374-190-2.
11. HUOTARI, Tiina, Jarmo RUSANEN, Timo KEISTINEN et al. (2020) Effect of centralization on geographic accessibility of maternity hospitals in Finland. *BMC Health Services Research*. 2020, 20 (1). ISSN 1472-6963. Available from: doi:10.1186/s12913-020-05222-5
12. IVERSON KR, Svensson E, SONDERMAN K, et al. (2019) Decentralization and regionalization of surgical care: a review of evidence for the optimal distribution of surgical services in low- and middle-income countries. *Int J Health Policy Manag.* 2019;8(9):521–537. doi:10.15171/ijhpm.2019.43
13. KOLÁŘ, Vojtěch. (2015) Benefits and risks of centralizing logistics activities. *Logistics, Hospodářské noviny*. Economia, 2015. ISSN 1213-7693. Also available from: https://logistika.ekonom.cz/c1-64749000-vyhody-a-rizika-centralizace-logistickych-aktivit
14. MORRISON, Jeffrey C., Boris GERSHMAN, Badrinath KONETY et al. (2020) Centralization of Health Care to Facilitate Greater Use of Nephron-Sparing Surgery for Localized Renal Tumors: Identifying Appropriate Health Care Delivery *Annals of Surgical Oncology*. 2020, 27 (6). ISSN 1068-9265. Available from: doi:10.1245/s10434-019-08167-0
15. MUGURUMA, Takashi, Chiaki TOIDA, Masayasu GAKUMAZAWA et al. (2020) Effects of establishing a trauma center on the mortality rate among injured pediatric patients in Japan. *PLOS ONE*. 2019, 14 (5). ISSN 1932-6203. DOI:10.1371/journal.pone.0217140
16. OECD (2019), *Health at a Glance 2019: OECD Indicators*, OECD Publishing, Paris. DOI: 10.1787/4dd50c09-en.
17. OECD: Hospital beds (Total, Per 1,000 inhabitants, 2019 or latest available). (2020) *Data.oecd.org* [online]. Paris: OECD, 2020. Available from: https://data.oecd.org/healtheqt/hospital-beds.htm
18. ŠAJDLEROVÁ, Ivana and Miloslav KONEČNÝ. (2008) *Fundamentals of Management* . Ostrava: Vysoká škola baňská - Technical University, [2008]. ISBN 978-80-248-1520-6.
19. ŠÍDLO, Luděk, Martin NOVÁK, Přemysl ŠTYCH and Boris BURCIN. (2017) *Assessing and Modeling Access to Primary Health Care: A Synthesis Study* [online]. Prague: Charles University, Faculty of Science, 2017, 31 pp. TD03000312. Available from: https://www.natur.cuni.cz/geografie/demografie-a-geodemografie/veda-a-vyzkum/vybrane-projekty/hodnoceni-a-modelovani-dostupnosti-primarni-zdravotni-pece-jako-klicového -aspect-of-health-furnace-in-cr/summary-study.pdf
20. *Transforming our World: The 2030 Agenda for Sustainable Development* [online]. (2015) United Nations, 2015. Also available from: https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981
21. UNITED NATIONS: Department of Economic and Social Affairs: Population Dynamics. (2020) In: UNITED NATIONS. *Population.un.org: World Population Prospects 2019* [online]. United Nations, 2020. Available from: https://population.un.org/wpp/Download/Files/1_Indicators%20(Standard)/EXCEL_FI

LES/1_Population/WPP2019_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx
22. WORLD HEALTH ORGANIZATION, EUROPE. *European Observatory on Health Systems and Policies: Full list of country HiTs* [online]. 2016, updated 2020. Available from: https://www.euro.who.int/en/about-us/partners/observatory/publications/health-system-reviews-hits/full-list-of-country-hits

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# EVACUATION MANAGEMENT OF THE ANAESTHESIOLOGY AND RESUSCITATION DEPARTMENT

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**ABSTRACT:** The unexpectedly announced evacuation of a medical facility brings a number of complications and steps that must be managed in a very short period of time. The presented qualitative research was solved with the help of content retrospective analyzes of available scientific documents by means of a set keyword. Subsequently, from the proven analyzes, a system of evacuation groups and management of prioritization of patient evacuation was compiled using a significance tree. The result of the work is a unique decision-making mechanism for prioritizing patients who have a selection of patients in case of insufficient time to evacuate the entire ward. The proposed decision-making mechanism tries to eliminate the common paradigm of planned evacuation and applies elements of management of mental prioritization of patients from disaster medicine and war medicine to civilian crisis planning in healthcare.

**KEY WORDS:** Evacuation; Anaesthesiology and Resuscitation Department; Hospital; Crisis Management; Disaster

## INTRODUCTION

The term "evacuation" is based on the Latin "e-vacuo", which in translation means empty; "Evacuatio" therefore emptying (QUITT and KUCHARSKÝ, 1992). In the Academic Dictionary of Foreign Words, we find two meanings under the keyword “evacuation”: “eviction (population from an endangered area); evacuation, evacuation (territory) from the army, the population '. The second meaning is from the field of physics and means "exhaustion of gas from an enclosed space, creation, creation of a vacuum" (KRAUS et al., 2005). In crisis management, we can also encounter the neologism of "invacuation", which is shelter and emergency accommodation in a building, also used for this activity the term inverse evacuation (DVOŘÁČKOVÁ, 2013). In the general meaning of crisis management, evacuation is defined as: “a set of organizational and technical measures ensuring the relocation of persons, animals and material resources in order of priority from places at risk of emergency to places where alternative accommodation is provided for persons and catering (emergency survival), for housing animals and for material means of storage' (By-law 380/2002 Sb., 2002).

Medical facilities have their crisis plans in case of a necessary evacuation. We standardly divide patients and employees of medical facilities into individual groups, which we then evacuate under specified conditions (TEKIN et al., 2017). Patients in most wards can evacuate on their own or with help. According to statistics, 10 – 100 % of hospitalized patients are capable of evacuation with limited mobility or completely independent evacuation (ČSN 73 0835, 2020). However, these statistics exclude patients from the anaesthesiology and resuscitation department, resp. separate hospital where 100% of patients are unable to self-evacuate. This category includes, for example, neonatology and infant wards, and some intensive care units may be included.

There may be cases where it is necessary to carry out the evacuation immediately, without preparation and with a minimum of time. Thus, in the case where the time required to evacuate the so-called “required safe egress time” (RSET) is less than the time available to evacuate the so-called “available safe egress time” (ASET) (FOLWARCZNY and POKORNÝ, 2006), individual practiced steps of the evacuation decision algorithm are necessary (BÖHM and POŽÁr, 2020).

Threats in medical facilities where immediate evacuation is required can be divided into external and internal. Internal threats coming from the hospital environment can most often be: leakage of a biological agent (biological accident); chemical leakage; leakage of radiation agent; physical risks; the risk associated with the attack; risk associated with fire (BÖHM and POŽÁR, 2020; WABO et al., 2012). Within the framework of crisis management, it is possible to reduce the risk of an emergency to a certain extent. However, in the event of this emergency, we must act immediately to minimize loss of life, health and, possibly, property.

The research focuses on a very specific area of evacuation of anaesthesiology and resuscitation departments. In case of lack of time to evacuate until the occurrence of an emergency or to mitigate or eliminate the consequences of an emergency, it is necessary to proceed similarly as in the case of war medicine. It is therefore necessary that the principles operating in pre-hospital emergency care be applied to medical facilities with an emphasis on rescuing as many health professionals and patients as possible (Medical Evacuation, 2019; STČ 09 / IZS, 2016).

## MATERIALS AND METHODS

Content retrospective analysis of available documents was used for qualitative research in the field of evacuation of anaesthesiology and resuscitation wards.

The main 3 criteria were set for the analyzed documents: the document must be indexed in Web of Science, Scopus or PubMed; the document must contain the keyword: 'disaster triage', 'simple triage and rapid treatment', 'triage START', 'algorithm triage'; the document must relate directly to the triage system of the disabled / patients in pre-hospital or hospital care.

Based on the analysis of available documents, the division of evacuation groups was created by induction and logical usage. The breakdown was created by modifying the standard simple triage and rapid treatment (START) sorting algorithm (BENSONET et al., 1996). The main premise was the optimization of existing systems or the creation of a new system of evacuation groups to meet the needs of the division of patients in anaesthesiology and resuscitation wards. Based on the created system of evacuation groups, a logical algorithm was created to determine the priority of patients to be evacuated. By analytical investigation of individual steps from the available materials of the description of extraordinary events, plans of individual decision steps were compiled. With the help of the significance tree method, individual points were built, which gave rise to the final algorithmization of the evacuation management.

## RESULTS AND DISCUSSION

The disadvantage of anaesthesiology and resuscitation departments from the point of view of crisis planning is the characteristics of the composition of patients, which is very broad and variable. Nursing care includes the care of patients with a sudden failure of one or more basic life functions for which these functions need to be supported or artificially replaced. Furthermore, the nursing staff provides patients with anaesthesia with continuous monitoring and care for basic vital functions during surgical or diagnostic procedures and care for vital functions in the immediate postoperative period until the effect of anaesthetics subsides; it is also involved in the treatment of acute pain in patients. The usage of the current labels was chosen to label individual patients.

The most commonly used template was the START system, which operates with 4 colors. (BENSON et al., 1996) Currently, there is fragmentation in the use of colors, especially white and blue in individual sorting systems (ELBAIH, 2017). The proposed colors for evacuation (Figure 1) correlate with existing systems due to the consequence of operation and minimization of errors of medical staff, especially doctors, nurses or paramedics.

It is practically impossible to meet the group S1 (green) at a separate anaesthesiologist-resuscitation department. These are patients who walk alone, i.e. those who can evacuate themselves or with help. This group was left here due to the connection to the already existing START or Manchester Triage System. We do not know the exact parameters and variables that can interfere with and prolong the evacuation. Group S2 (yellow) refers to patients who are not capable of self-evacuation or assisted evacuation, but will not need any special care during evacuation (e.g. replenishment of continuously administered drugs, airway aspiration, and other specific nursing procedures). If a patient needs such, it is included in group S3 (RED).

**Figure 1: Evacuation groups and their description**

| Group | Brief Description | |
|---|---|---|
| S1 | Green | Walking patients |
| S2 | Yellow | Stabilized patient without significant nursing interventions during transport |
| S3 | RED | Stabilized patient requiring significant nursing interventions during transport |
| S4 | PURPLE | Restless/aggressive, restraint ordered, psychiatric patient |
| S5 | Blue | Imminent cardiac arrest, infaustic or nonprospective patient |
| S6 | Black | Deceased patient |
| S1-6 | striped | Infectious patient or suspected infectious patient |

*Source: self-edited*

A special group is S4 (purple). This is a group of patients who may intentionally or unintentionally endanger transport personnel. This group of patients includes patients under the influence of drugs or addictive substances, people with mental disabilities, people convicted of crime. Evacuation of S4 is necessary either with the help of the security of the medical facility, the shelf, a larger number of paramedics or by chaining (restriction of movement) of the victim. Alternatively, selecting additional steps that are time consuming.

Group S5 (blue) is a group of patients who have full support of vital functions and the prediction of their normalization is uncertain. This group also includes patients with an infamous prognosis and a condition in which vital functions are likely to be arrested during evacuation; infaust prognosis, infaust disease, infaust diagnosis means that the patient can no longer be cured and the disease ends in death. If the quality of life does not deteriorate due to the side effects of the treatment, it is possible to delay the treatment with the aim of death.

The last group S6 is marked in black and indicates a deceased patient, or a patient where vital functions were stopped when the evacuation was announced.

**Figure 2: Marking of infectious evacuation groups**

| Infectious S1 | Infectious S2 | Infectious S3 | Infectious S4 | Infectious S5 | Infectious S6 |
|---|---|---|---|---|---|

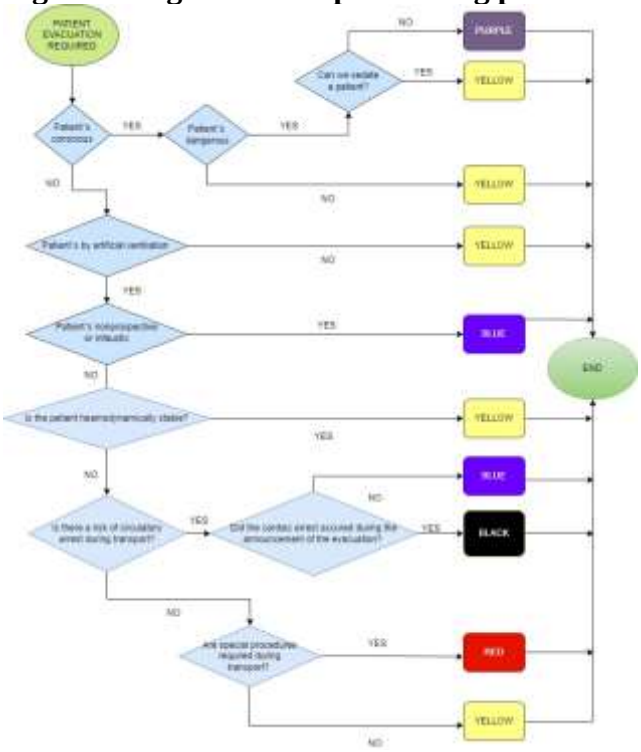
*Source: self-edited*

In the event of an evacuation of the entire medical facility, patients from different wards are likely to come into contact. Infectious patients must be provided with a special label. For this case, a simple marking change can be used in the form of hatching while maintaining the color scheme of Figure 2. This marking style does not change the system and is immediately visible.

A decision algorithm was created to assign an adequate color using the significance tree. Figure 3. The above designation of evacuated patients for decision making is to determine the patient who has the highest probability of survival. This decision-making process must take as little time as possible. When deciding which patient was previously transported, the classic paradigm of rescuing all patients does not apply, but we must take into account the time we have left in the event of an emergency. After the available time for evacuation has elapsed, the conditions for life disappear and the result is death for both patients, medical and support staff, and intervening units.

The goal of this algorithm is to determine the patients who have the least time during evacuation. Evacuated patients are divided into groups from S1 to S5; thus, from patients who are hemodynamically stable (without or with instrumentation) and require a minimum of nursing procedures during transport. The questions are chosen simply, with only the answer "YES" or "NO", in order to avoid unnecessary delays. The selected color code marks both the patient and his bed.

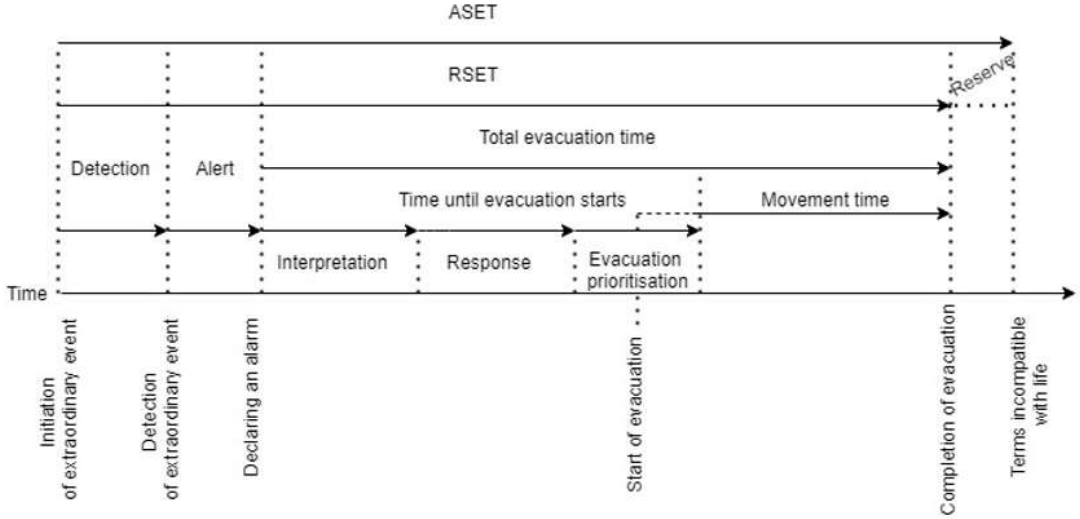
**Figure 3. Algorithm for prioritizing patients to be evacuated**




*Source: self-edited*

CAVE: The evacuation algorithm of the anaesthesiology and resuscitation department is not intended to replace the evacuation and trauma plans of the medical facility. It is a link on the timeline of the announcement of unplanned immediate evacuation and ASET Figure 4.

**Figure 4: Graphical representation of the evacuation time and its individual steps**




*Source: Folwarczny and Pokorný, 2006*

According to the summarization of Stasková and Thótová (2015), we understand nursing in the overall concept as the care of a health care provider for human needs. This idea was brought up already by Nightingale in 1860. From the point of view of crisis management, however, situations may arise where medical staff have to completely reduce or stop continuous medical care in order to save the patient's life. Thus, the original paradigm of nursing is completely suppressed. Examples are emergencies where the number of victims prevails over the number of rescue or evacuation facilities.

Medical facilities must have evacuation plans, escape routes and evacuation lifts designed according to both national and international standards (MDPH Hospital Evacuation Toolkit, 2014). The actual evacuation can then be complicated or completely prevented by a virtually infinite number of variables, parameters and threats, for which we try to minimize their risk. As part of the content retrospective analysis, the records referred to past emergencies, evacuation, its conclusions and shortcomings, errors. No such analysis contained specific plans for the activities of medical staff, only general recommendations. This research is unique in that it proposes specific actions in the event of an emergency that would endanger the lives of the personnel and patients and the announcement of the necessary evacuation in the period before the actual evacuation. However, it is not a substitute for own evacuation or fire prevention plans, but it can be a new segment in their management of prioritizing patient evacuation. We need to realize that even with our best will, we are not able to save everyone. This thesis is confirmed in the study of Wabo et al. (2012).

The available articles usually deal only with the practice of self-evacuation or theoretical training. In a study by Zell et al. (2019), when during the simulated evacuation of 60 beds of the 60-Bed Neonatal Intensive Care Unit, they also determined the knowledge of each person during the evacuation. This research offers a prelude to the actual evacuation, i.e. sorting management. Of course, the presented classification system is not compatible with the Zella study, because this algorithm cannot be applied to children. However, the Zell study finds that every healthcare professional needs to know their role during an evacuation. In the case of evacuation prioritization management, it is unconditional to have designated sorting staff

(officers) and already during sorting the evacuation can start according to the offered patient prioritization and the Figure 4 timeline and thus speed up the evacuation of the ward itself.

Comparative studies, such as the study by Dean et al. (2014), on the other hand, evaluate the classification systems among themselves, highlight their positive aspects and point out the negative ones. However, we still find little information that would address the actual classification of patients for evacuation in a medical facility and its algorithmization. Ryan et al. (2018) states that the use of the sorting system was not used at all in 29.5% of the monitored cases, despite the training of the staff. This is an aspect mentioned by us, where it is necessary for each of the participants to know and fulfill their role in the evacuation. This is one of an infinite number of variables that can make evacuation difficult or impossible. In this idea, we start from the Hospital Evacuation Planning Guide (2014), where it is recommended that the evacuation manager must be a trained employee in the position of an authorized employee of the ward, the head of the ward or the head nurse.

In all sorting systems, in addition to the individual groups, colors are used for unambiguous orientation. Our introduced system is based on experienced and used sorting systems. In a review article by Benson et al. (1996) lists 4 basic colors for START (green, yellow, red and black). As well as other sorting systems, such as the Manchester Triage System, but it works with multiple colors, a detailed description is provided by Azeredo et al. (2015), which also mentions blue color. We have created a range of colors that are already in use. We also used the blue color as a so-called "hold" - a delay, because the prognosis of the patient's survival is uncertain. The inconsistency of blue can be difficult in the decision-making process, and some sorting systems use it to identify a deceased patient. However, most sorting systems use it to identify a patient in an emergency with a large number of injured who has such a massive injury that he or she is likely to die, as confirmed in their review studies by Bazyar et al. (2019) and Elbaih (2017). To correlate with already established sorting systems, we also chose the blue color for inauspicious patients and patients where the prognosis of further life is uncertain. In patients where vital signs have stopped at the time of the immediate and urgent evacuation, we do not perform resuscitation and mark the patient with black. The justification is the same as in all other classification systems. At this time, there is no time to resuscitate one patient, because our task is to rescue as many affected people as possible (Benson et al., 2016; Bazyar et al., 2019). However, there may be situations where vital signs stop during transport. In this case, the instructions are identical, resuscitation is not performed, but how the evacuating medical professional behaves.

The comparison can again be found in the guidelines for prehospital emergency care. In the valid national standards STČ 09 / IZS (2016) we find the wording: “In case of death of an injured person during transport in an ambulance (helicopter), the head of the departure group decides whether to return the vehicle (helicopter) with the deceased or whether transports the body of the deceased to the medical forensic equipment. The emergency medical center EMS informs about this decision.” However, we cannot use this approach during the evacuation of the building. It is clearly true that we always direct evacuation out of the building, Hospital evacuation Planning Guide (2014). In the event of death during transport, the healthcare professional may either leave the bed with the body and equipment off the evacuation route so as not to obstruct others and evacuate himself, or continue with the bed and the deceased. The decision to continue is mainly due to the equipment that can be used for any additional patients due to the worsening condition. The healthcare professional cannot return to his ward for another patient bed because he could restrict or block the escape corridor, get into an area that has already been cleared and no one will know about it. We also do not know how much time is left until the living conditions in a given place cease to exist, and therefore a trained healthcare professional could lose his life. We find a number of retrospective analyzes on the correct use of the START method. Chen et al. (2020) published a retrospective study on the correct use of

the START method, in which they evaluated the correct use using software tools. As with the rapid transport of the disabled, a quick and correct triage is necessary. It would be worthwhile to process the proposed algorithm directly into the software monitoring the patients, and in the event of an evacuation, patients would be automatically identified, immediately and without human intervention. Ritchie et al. (2021) in his study offers an interesting assessment of the impacts of Covid and their impacts on the community and individual impacts in the addressed framework as disasters. From the point of view of the patient, relatives of patients and due to the sociological point of view, the evacuation of the medical facility and especially the anaesthesiology and resuscitation ward is also a disaster (not according to the definition of a disaster from crisis management). Here, one expects help and can die here due to extraordinary events. From the point of view of crisis management, it is important to save the maximum number of lives, eliminate or minimize damage to health and save material equipment. At this moment, the health professional must forget, resp. suppress the implanted basic paradigm of nursing and focus only on evacuation.

## LIMITS OF STUDY

The research did not include the solution of subsequent evacuation steps, such as material and energy security of evacuated patients and their subsequent transport to another inpatient facility, where the final savings will be made. The research did not involve time in the case of devices that are divided into completely separate and impassable rooms. The research did not address the ethical dimension of the triage due to different attitudes in different countries. The task of evacuation management is to make an immediate decision on a quick and adequate rescue. The limiting element of evacuation is organizational knowledge or ignorance of individual employees of medical facilities. This criterion is not included due to the possible retrospective evaluation of the emergency.

## CONCLUSIONS

In this article, we have introduced the basic framework for evacuation. We dealt with the unplanned emergency evacuation from the medical facility and specifically from the anaesthesiology and resuscitation ward. In case of lack of time necessary for a successful evacuation, we must set clear rules for who and when to evacuate.

The article presents a unique proposal for the management of patient prioritization to the ARO during evacuation in the case of evacuation, when there is an absolute lack of time for the evacuation of all patients. Prioritization management is based on the classification systems already used in practice, so that it is as simple as possible for medical staff from the point of view of learning. The algorithm is compiled according to the significance tree method, which simplifies decision-making in stressful situations. However, the proposed algorithm is not a substitute for own evacuation or fire protection plans, but enters into them as a possible new link. Priority management for patients to be evacuated can be applied to all wards where there are adult patients with vital support or replacement.

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## REFERENCES AND INFORMATION SOURCES


1. AZEREDO, Thereza Raquel Machado, Helisamara Mota GUEDES, Ricardo Alexandre REBELO DE ALMEIDA, Tânia Couto Machado CHIANCA a José Carlos Amado MARTINS. 2015. Efficacy of the Manchester Triage System: a systematic review. International Emergency Nursing. 23(2), 47-52. ISSN 1755599X. DOI:10.1016/j.ienj.2014.06.001.
2. BAZYAR, Jafar, Mehrdad FARROKHI a Hamidreza KHANKEH. 2019. Triage Systems in Mass Casualty Incidents and Disasters: A Review Study with A Worldwide Approach. Open Access Macedonian Journal of Medical Sciences. 7(3), 482-494. ISSN 1857-9655. DOI:10.3889/oamjms.2019.119.
3. BENSON, Mark, Kristi L. KOENIG a Carl H. SCHULTZ. 1996. Disaster Triage: START, then SAVE-A New Method of Dynamic Triage for Victims of a Catastrophic Earthquake. Prehospital and Disaster Medicine. 11(2), 117-124. ISSN 1049-023X DOI:10.1017/S1049023X0004276X
4. BÖHM, Pavel a Josef POŽÁR. 2020. Možné komplikace při evakuaci akutních lůžek nemocnice. In: Aspekty práce pomáhajících profesí 2020. Kladno: ČVUT, Fakulta biomedicínského inženýrství, p. 145-158. Ed. 1. vol. 1. ISBN 978-80-01-06783-3. DOI: 10.14311/BK.9788001067833
5. By-law 380/2002 Sb. 2002. CZECH REPUBLIC. Vyhláška Ministerstva vnitra k přípravě a provádění úkolů ochrany obyvatelstva. In: By-law 380/2002 Sb. Praha: Ministry of Interior CR, 2002, 133/2002.
6. CHEN, Chia-Hsi, Tak-Yee WONG, Hsiu-Chun CHEN, Jui-Fang HUANG a Chung-Jing WANG. 2020. Telemedicine communication using instant messaging technology improves prehospital triage in high mountain train disasters. Hong Kong Journal of Emergency Medicine. ISSN 1024-9079. DOI:10.1177/1024907920966530.
7. ČSN 73 0835. 2020. Požární bezpečnost staveb - Budovy zdravotnických zařízení a sociální péče. 2. Praha: Úřad pro technickou normalizaci, metrologii a státní zkušebnictví, 2020.
8. DEAN, Matthew D. a Suresh K. NAIR. Mass-casualty triage: Distribution of victims to multiple hospitals using the SAVE model. European Journal of Operational Research. 2014, 238(1), 363-373. ISSN 03772217. DOI:10.1016/j.ejor.2014.03.028.
9. DVOŘÁČKOVÁ, Věra. 2013. Invakuace v Čechách. Naše řeč. Praha: Ústav pro jazyk český AV ČR, 96(4), 220-221. ISSN 2571-0893. Available from: http://nase-rec.ujc.cas.cz/archiv.php?lang=en&art=8298.
10. ELBAIH, Adel Hamed. 2017. Triyaj Türleri. Arşiv Kaynak Tarama Dergisi. 26(4), 441-467. ISSN 1300-3755. DOI:10.17827/aktd.326944.
11. FOLWARCZNY, Libor a Jiří POKORNÝ. 2006. Evakuace osob. 1. vyd. V Ostravě: Sdružení požárního a bezpečnostního inženýrství. ISBN 80-86634-92-2.
12. KRAUS, Jiří et al. 2005. Nový akademický slovník cizích slov A-Ž. Praha: Academia. ISBN 80-200-1351-2.
13. MDPH Hospital Evacuation Toolkit: II. Hospital evacuiation Planning Guide. 2014. Boston: Harvard, School of Public Health. Available from: https://www.mass.gov/lists/hospital-evacuation-toolkit.
14. Medical Evacuation. 2019. ATP 4-02.2. 2. Washington, D.C.: Department of the Army, 124 s. Available from:

https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN17834_ATP%204-02x2%20FINAL%20WEB.pdf. PIN: 104487-000.
15. QUITT, Zdeněk a Pavel KUCHARSKÝ. 1992. Česko-latinský slovník starověké a současné latiny. Praha: Státní pedagogické nakladatelství. Střední slovníky jednostranné (Státní pedagogické nakladatelství). ISBN 80-041-6903-1.
16. RITCHIE, Liesel a Duane GILL. 2021. Considering COVID-19 through the Lens of Hazard and Disaster Research. Social Sciences. 10(7). ISSN 2076-0760. DOI:10.3390/socsci10070248.
17. RYAN, Kevin, Douglas GEORGE, James LIU, Patricia MITCHELL, Kerrie NELSON a Ricky KUE. 2018. The Use of Field Triage in Disaster and Mass Casualty Incidents: A Survey of Current Practices by EMS Personnel. Prehospital Emergency Care. 22(4), 520-526. ISSN 1090-3127. DOI: 10.1080/10903127.2017.1419323
18. STASKOVÁ, Věra a Valérie TÓTHOVÁ. 2015. Conception of the human-to-human relationship in nursing. Kontakt. 17(4), e184-e189. ISSN 12124117. DOI:10.1016/j.kontakt.2015.09.002.
19. STČ 09/IZS: Zásah složek IZS u mimořádné události s velkým počtem zraněných osob. 2016. Ed. 2. Praha: Ministry of Interior – Directorate General of Fire Rescue Service of the CR, 55 s.
20. TEKIN, Erdal, Atif BAYRAMOGLU, Mustafa UZKESER a Zeynep CAKIR. 2017. Evacuation of Hospitals during Disaster, Establishment of a Field Hospital, and Communication. The Eurasian Journal of Medicine [online]. 49(2), 137-141. ISSN 13088734. DOI: 10.5152/eurasianjmed.2017.16102.
21. WABO, Nero C, P ÖRTENWALL a A KHORRAM-MANESH. 2012. Hospital evacuation; planning, assessment, performance and evaluation. Journal of Acute Disease. 1(1), 58-64. ISSN 22216189. DOI:10.1016/S2221-6189(13)60013-X.
22. ZELL, Lisa, Carmen BLAKE, Dawn BRITTINGHAM, Ann-Marie BROWN a Lamia SOGHIER. 2019. Simulation Prepares an Interprofessional Team to Evacuate a 60-Bed Level 4 Neonatal Intensive Care Unit. 2019, 33(3), 253-259. ISSN 0893-2190. DOI:10.1097/JPN.0000000000000430.

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# INTERNAL FIRES

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**ABSTRACT:** Fires have been a problem for every community since time immemorial. Fire chooses victims of human lives, of their health, of their property, threatening entire cities, but also ecosystems. For sufficient prevention, since perfect prevention is almost impossible, it is necessary to have as much knowledge about fires as possible and to know their behavior in the room and in the open. If we understand the spread of the fire, we can limit its consequences. An internal fire can be defined as a fire that occurred in an enclosed area of the building, in which persons, animals were killed or their health was directly threatened. An internal fire can also be considered to be a fire in which material damage has occurred. Slovak legal standards are focused on the development of fire safety of buildings on the basis of technical standards and decrees. This method is elaborate and functional and, in general, it can be stated that it covers almost all situations. The subject of the research are areas of fire origin, ie buildings.

**KEYWORDS:** Fire, Fires in Closed Spaces, Fire Raising, Deliberately Set Fire, Crime, Burning Band

## INTRODUCTION

Fire is a very complicated and complex phenomenon occurring in different environments under highly variable conditions. It mainly includes combustion, heat radiation, turbulence, fluid dynamics and other physical and chemical processes. Every year it causes damage to health, property and, last but not least, threatens natural ecosystems. There is an old but true saying that arson is a crime that is easy to commit but harder to solve. Advances in arson investigation will play a key role in reducing this number. Fire scenes are like charred and blackened jigsaw puzzles, where no one starts with the complete picture, but everyone involved in an arson investigation can have essential pieces. Although everyone may have different roles, responsibilities and responsibilities, it is essential for success that everyone recognizes the potential value of other members' contributions from the very beginning and works together as a team to accurately piece together the whole picture. The police have a statutory duty to investigate crimes and the fire and rescue service currently has a statutory power to routinely investigate the origin and cause of fires. The Fire and Rescue Service has sufficient experienced experts and professional teams of fire investigators who are trained to assist in the investigation of the fire scene and its cause. In other cases, they rely on the expert and professional experience of commanding officers, who have, among other things, other duties, such as, for example, fire safety.

Based on the study of documentation on past fires, we can assume under what circumstances a fire will occur in a similar environment and under similar conditions. Subsequently, we can determine how the fire will spread in the given environment, how to locate it as quickly as possible and then extinguish it. The spread of fire itself is influenced by many different circumstances, including the environment, the surrounding climatic conditions, the type of fuel and its quantity. This can ultimately cause the fire to behave differently. For

this reason, it is possible to determine the origin and spread of potentially threatening fires only to a limited extent, for objects and conditions of a similar type.

## 1. INTERNAL FIRES

An internal fire can be defined as a fire that started in an enclosed space of a building, in which people, animals were killed or their health was directly threatened (BS EN ISO 13943, 2010). An internal fire can also be considered a fire that caused material damage. According to discoverability we divide internal fires into (VLADIMIROVIČ, 2008):

- open (visible flame, smoke),
- hidden (a fire that is not visible, shafts, pipes).

According to the cause when a fire occurs, we divide them into:

- human-caused (deliberate or negligent),
- not caused by humans (electrical short circuit).

An interior fire is a complex phenomenon involving many physical and chemical processes such as NFPA: Fires in the US (2014):

- burning,
- radiation propagation,
- heat radiation,
- fluid dynamics,
- turbulent gas flow.

Fires in the interior of residential buildings or family houses are characterized by the fact that they are very dangerous. They are characterized by high temperatures, dense smoke and the production of toxic combustion products. Fires of this type can spread very quickly, the cause of which is a large amount of flammable substances in living spaces such as sofas, paintings, carpets or furniture, which can complicate emergency work and the liquidation of the fire itself (VRÁBĽOVÁ, 2015) . The specificity of such fires is that they are surrounded by building structures. Such fires then depend not only on the equipment of the premises (their fire load), but also on the dimensions, geometry, method of ventilation and oxygen supply (STN 73 0540-1, 2002).

A fire in closed spaces can therefore have several scenarios (BALOG, KVARČÁK, 1999):

1. The fire will not spread to other combustible materials, the only thing that will burn is the fuel.
2. Similar scenario to the first point, but not enough oxidizing agent is available.
3. The fire has sufficient ventilation and fuel. As a result, the fire develops freely in the enclosed space and spreads to all combustible materials.
4. Flame burning is very slow, or only smoldering takes place. Flammable gases containing a significant proportion of unburned flammable gases are produced. The subsequent penetration of the oxidizing agent leads to back-ignition or even explosive burning.
5. Flame combustion is very slow, or smoldering, where after the introduction of an oxidizing agent, the fuel ignites again with subsequent spatial ignition. In this case, the fire has sufficient ventilation and an amount of fuel. This is followed by an extension to other combustible material in the given space.
6. Fire breathing is a phenomenon where a fire is controlled by ventilation. It arises as a result of a decrease in the rate of heat release due to the limited amount of oxygen.

The rate of spread of fire (horizontal flame spread) mainly depends on:

- ignition temperature,
- thermal properties of materials,
- heat flow intensity of the flame.

The speed of fire spread in the living room is approximately 0.7 m/min. In the case of a forest fire, it is 1.3 m/min. These are indicative figures, as the actual speed depends on a number of factors. In the case of internal fires, there is also a risk of spreading through openings to higher floors. The rate of burning of the material depends on the chemical and physical properties of the substances, their distribution, gas exchange, etc. A big danger, as already mentioned, is smoke and the associated formation of toxic combustion products and CO. In statistics, suffocation or poisoning is the most common cause of death in interior fires, followed by burning. That is why ventilation is an important activity, which the intervening units in the interior spaces must ensure either by opening windows or doors and using a portable fan. As a result, they can reduce smoke and the concentration of hazardous fumes, increasing visibility even several meters. In a smoky space under fire conditions, visibility can be literally zero, and responding units must rely only on proper orientation in the space, while it is important to maintain contact with the wall and communication with others.

## 1.1 DEVELOPMENT OF INTERNAL FIRES

The beginning of the course of a fire in buildings corresponds to the course of a fire in an open space with limited influence of climatic conditions. However, the combustion conditions change rapidly in the room. The conditions under which combustion takes place depend on the concentration of oxygen and fuel, the time when the ignition source acts (flame, spark, radiant heat...). Due to the influence of the development of smoke, also with regard to the consumption of oxygen during combustion, its concentration and thus the course of combustion in a closed space are constantly reduced. The interface between the layer of smoke and air descends towards the floor. How the development of the fire will continue depends on the type and construction of the space and the course of the fire. The progress of the fire in the space is also influenced by the temperature, which changes the properties of the building structures and the combustible materials used.

There is also an acceleration of the burning process, and the conditions for the intervention of units also worsen. Non-flammable materials and constructions change their shape due to high temperature, or melt or change their state. Gas exchange has a fundamental influence on the further progress of the fire, namely the number, size and location of openings. Air exchange occurs as a result of the difference in temperature and pressure between the room and the surroundings and as a result of wind action. In objects with a minimum number of openings or where air exchange is ensured by ventilation, flame burning takes place precisely at these openings. If all structures and opening closures have a sufficiently high fire resistance and their deformation does not occur during a fire, there may be a case where the combustion is interrupted.

In other cases, the fire takes place in objects with fully or partially open openings. With a large area of openings, the fire is characterized by a high rate of fire spread due to a sufficient supply of air oxygen. The predominant direction of movement of the burning zone is the direction to the side of the open holes. With such intense burning, the rate of development of decomposition products exceeds the rate of oxygen supply and their mutual mixing; decomposition products escape together with carbon monoxide, which is created during incomplete combustion together with flue gases from the building and burns there in the open space. Burning manifests itself in the way that flames shoot out of the holes, which can cause the fire to spread to the surrounding environment. The course of a fire in buildings depends on the amount and properties of burning substances and the exchange of gases, which depend

primarily on the size and position of the open openings. The process of flue gas and air exchange can also be influenced by the installed air handling equipment.

## FACTORS AFFECTING THE DEVELOPMENT OF INTERNAL FIRES

The development of a fire depends on several factors. In general, these are factors such as the characteristics of flammable substances (physical, chemical properties, ...), gas exchange conditions, heat transfer conditions, explosions and explosions, fire propagation paths, resistance of structures and meteorological conditions (REICHEL, 1981).

However, in the conditions of internal fires, the factors are also somewhat different. The factors affecting the development of internal fires are (STN EN 73 0031: 1990):

- the size and location of the initiation source,
- type, location, size, quantity, orientation and surface area of fuel,
- the geometry of the closed space,
- size and location of ventilation openings in the space,
- material properties of the bounding space.

A spark with a very low energy content, a hot heated surface or a flame can act as an initiation source . The source can be chemical, electrical or mechanical energy. The larger the initiating source, the faster the subsequent growth of the combustible material fire. The way of burning depends on the method of initiation. When initiated by a spark, flameless combustion usually occurs, flames appear only later. The moment when the flames appear can take a long time, because it mostly forms low temperatures and this burning is accompanied by a large amount of 20 toxic gases. Flame combustion usually occurs during controlled flame initiation. The location of the ignition source is also important during initiation. This source can be placed near combustible substances, which would subsequently promote combustion in the room. Also, the lower the initiator is placed, the faster the burning.

Another and very important factor is the distribution method of combustible material, their size, amount and surface area. The position of the burning substance in the room, the position relative to other combustible materials (their mutual distance) is important. When spreading a fire in interiors, it is also necessary to take into account whether the walls are lined with flammable material, because vertically the fire spreads faster than horizontally. For the same mass of combustible material, the area is important. The more fragmented the surface, i.e. the larger the area, the sooner the substance ignites. Rather, sawdust ignites 1 kglike a solid piece of an equally heavy cube made of the same wood. In closed spaces, these are most often solid materials of interior equipment. Heavy wooden furniture causes a slow fire development, but the fire reaches large proportions compared to new modern plastic furniture. A rapid increase is much more dangerous than a large fire. It also depends on where the fuel is stored, whether it is stored near the walls or in the space of the room. This is because better access of cold air is allowed in the space than at the walls. Distances between combustible materials are also important, as this affects how quickly the fire will spread. Flames spread faster vertically than flames spreading horizontally. Therefore, it depends on whether the walls and ceilings are lined with combustible materials. This can also cause a fire to develop quickly. The material of the bounding surfaces of the enclosed space can affect the temperature of the hot gases and thus the temperature of the flow to the burning fuel and other combustible substances. It is important what properties these materials have. The decisive properties are conductivity, density and heat capacity. The geometry of the closed space also significantly affects the development of the fire. The geometry of the space is related to the gas temperatures and the amount of air in the room Assuming that there is the same amount of combustible material in two rooms, it can be compared. The geometry of the premises depends a lot on the area of the floor and the height of the ceiling. If the fire takes place in a small room, the temperature is high and rises quickly.

But when the fire takes place in a large hall, the same amount of fuel does not reach the same temperature, and the room becomes smoky later.

If one room has smaller dimensions and a lower ceiling, the fire will spread faster (more flammable substances are located in the preparation zone). With a lower ceiling, the room becomes smoky faster. Also, a low ceiling can cause flame feedback on the fuel and thus affect the burning speed. In rooms with a large floor plan area and a high ceiling, the fire spreads more by radiation from the fire to other combustible materials present; the placement of these items is also important there. If it burns in a medium-sized room that is closed or has very small openings, the fire will begin to have very little oxygen and may die out or continue to burn very slowly (REICHEL, 1981).

The flow of gases during an internal fire, which is also characterized by the release of heat and the formation of combustion products. Combustion products have a larger volume than the given combustible substance. In the event of an internal fire, there is an increase in gas pressure. In the case of an internal fire, the combustion gases rise up to the ceiling due to the rising temperature and accumulate there. The volume of flue gases increases with the development of combustion and the space is filled with smoke after mixing with air. The neutral plane represents the interface between the smoky space and the clean environment. From the point of view of ventilation or ventilation, it is necessary to ensure activities for the systematic direction of smoke and heat from the place where the fire is in the building (VALÍČEK ET AL., 2012).

## 1.2 PARAMETERS OF INTERNAL FIRES

Individual models, when properly applied and when entering all the required input data, are able to provide a comprehensive picture of certain fire parameters according to the determination of the given model. Some parameters of the fire in its certain phases can also be determined by calculation. These calculations are often simplified in practice due to the complexity of the fire process, and also the possibility of applying them is limited by the changing values of fire parameters in its individual phases.

### Heat release rate

The heat release rate (HRR) represents the energy released by the burning material per unit of time. This quantity is the basic parameter for determining the burning intensity. It can be determined by oxygen calorimetry. The essence of this method is that most substances release a constant amount of energy per unit amount of oxygen consumed. This constant has a value of 13.1 MJ (± 5%) per kilogram of oxygen consumed (BLOMQVIST et al., 2004). Another method of determining the rate of heat release is calculation using the mass burning rate and the effective calorific value according to the relationship:

$$\dot{Q} = \dot{m}\,\Delta H_{eff}$$

*Where:*

Q - heat release rate, HRR (kW)

m - mass burning rate ($kg.s^{-1}$)

$H_{eff}$ - effective calorific value ($kJ.kg^{-1}$)

**Factors influencing the movement of gases in closed spaces**

During the development of a fire, pressure conditions change in a closed space. During a fire, heat is released and combustion products are created, which are interesting because they have a larger volume than the original combustible substance and in the space, there is an increase in gas pressure. The temperature rises in the space where the fire is taking place, and with the temperature increases the volume of air and also the combustion products. Based on the increasing temperature and gas pressure, heat and gases are exchanged between the combustion space and the surroundings. During a fire in an open area, due to the increasing temperature of the combustion products and based on the pressure difference between the combustion space and the surroundings, the combustion products flow upwards (SMARTFIRE, 2008). In buildings, when burning, due to the rising temperature in the space, the combustion gases rise up towards the ceiling, where they accumulate. As the combustion progresses, the volume of flue gases increases and, after mixing with air, the space is filled with smoke. In the upper parts of the space, there is an overpressure, in the lower parts of the space, on the contrary, a negative pressure. The boundary between the part with overpressure and underpressure is formed by the neutral plane. At the location of the neutral plane, the pressure is atmospheric (GROSSHANDLER, 1993). The position of the neutral plane at a known overpressure value can be determined according to the following relationship (STN 92 0201-1, 2000):

$$z_n = \frac{\Delta p_{ij}}{\left(\rho_i - \rho_j\right) g}$$

Where:

$z_n$ - height of the neutral plane (m)
$p_{ij}$ - overpressure value (Pa)
$ró_i$ - air density in the ith space (kg.m $^{-3}$)
$ró_j$ - air density in the jth space (kg.m $^{-3}$)
g - gravitational acceleration (ms $^{-2}$).

Pressure ratios and other factors in closed spaces are of lesser or greater importance from the point of view of the movement of gases. Among the basic factors affecting the movement of smoke in buildings we can include:

- chimney effect,
- buoyancy,
- increase in gas volumes,
- wind,
- air conditioning equipment.

The exchange of gases through a vertical opening with two-way flow can be determined by the following relations:

$$m_{ij} = \frac{2}{3} C_D \sqrt{2\rho_i(\rho_j - \rho_i)g} \left( \frac{(\rho_j/\rho_i)^{1/3}}{1+(\rho_j/\rho_i)^{1/3}} \right)^{3/2} B_o (H_u - H_l)^{3/2}$$

$$m_{ji} = \frac{2}{3} C_D \sqrt{2\rho_j(\rho_j - \rho_i)g} \left( \frac{1}{1+(\rho_j/\rho_i)^{1/3}} \right)^{3/2} B_o (H_u - H_l)^{3/2}$$

Where:

$m_{ij}$ - mass The amount of gases flowing through the opening from the i-th to the j-th space (kg.s $^{-1}$)

$\rho_i$ - air density in the ith space (kg.m $^{-3}$)

$\rho_j$ - air density in the jth space (kg.m $^{-3}$)

$g$ - gravitational acceleration (ms $^{-2}$)

$C_D$ - discharge coefficient (-)

$B_o$ - opening width in meters (m)

$H_u$ - height of the upper edge of the opening (m)

$H_l$ - height of the bottom edge of the opening (m)

## 1.3 TEMPERATURE OF GASES IN THE BURNING SPACE

Technical practice often needs to know the approximate temperatures inside the burning space during the individual phases of the fire. Before a volumetric fire, the height of the temperature is important primarily because of the persons present inside the burning space. After a volume flare-up, when the fire spreads to most of the space, it is important to monitor the development of temperatures in the given space in order to correctly determine the fire resistance of building structures (MÜLLEROVÁ, VÁCVAL, 2016). The fire resistance of the structure is evaluated by the established criteria and time in minutes (Decree No. 94/2004 Coll.). The following criteria and symbols are used to assess the fire resistance of structures (Decree no. 94/2004 Coll.):

- R – load capacity, stability.
- E – integrity.
- I – thermal insulation.
- W – radiation controlled insulation.
- M – mechanical resistance.
- C – self-closing.
- S – tightness against smoke penetration.
- G – resistance to fire (burning) of soot.
- K – fire protection capability.

### The temperature of gases before bulk ignition

McCaffrey and his colleagues conducted more than 100 experimental fires with cellulosic and synthetic materials or gaseous hydrocarbon fuels in rooms with a height of 0.3 mup to 2.7 mand floor plan areas in the range of 0.14 m$^2$up to 12 m$^2$ (MCCAFFREY et al., 1981). The test rooms also had different sizes of windows and doors, and the structures bordering these rooms

were made of different materials. From the results of experimental measurements, the following relationship of temperature increase in the burning space was determined (MCCAFFREY et al., 1981):

$$\Delta T_g = 6.85\left(\frac{\dot{Q}^2}{A_o\sqrt{H_o}h_k A_T}\right)^{1/3}$$

Where:
$T_g$ - temperature increase in the burning space (°C)
Q - heat release rate (kW)
$A_o$ - opening area ($m^2$)
H - opening height (m)
$h_k$ - heat transfer coefficient ($kW.m^{-2}.K^{-1}$)
$A_T$ - total area of structures in the PÚ excluding openings ($m^2$)

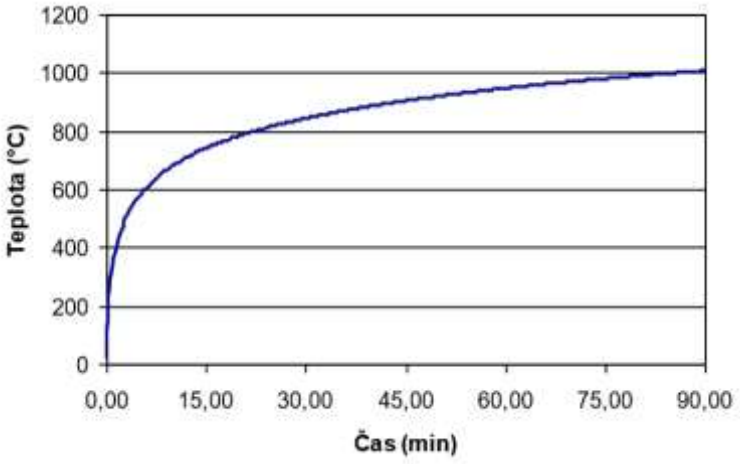
**The temperature of the gases after a volume explosion**

The temperature of the gases in a closed burning space after a volume flare, characterizing the temperature development in the fire section, is most often described by temperature curves. The standard temperature curve is defined by various national standardization organizations and serves to determine the fire resistance of building elements (Figure 1) (MÜLLEROVÁ, 2016). Its application is limited to the approximation of the fire temperature after a bulk flash.

$$T_g = 20 + 345\log_{10}(8t+1)$$

Where:
$T_g$ - temperature of gases in the fire section (°C)
t - time (min.)

**Figure 1: Standard temperature curve**




*Source: self-edited*

In addition to the standard temperature curve, there is also a hydrocarbon curve enabling the simulation of a fire with a rapid increase in intensity. Fully developed flammable liquid fires can be represented by this curve. The external fire curve is used when assessing the thermal load of structural elements occurring outside the building. The application of the slow heating

curve is suitable provided that the fire resistance of the given element may be reduced to its exposed temperatures associated with a developing fire.

## 1.4 NON-LINEAR FORMS OF FIRE PROPAGATION

In addition to the danger resulting from the toxicity of combustion products, we must also take into account the ability of these products to catch fire or even explode, which is related to incomplete combustion due to insufficient access of air to the fire. This danger is mainly caused by fires in closed spaces (apartments, warehouses, shops, cellars, etc.), when there is a risk of non-linear spread of the fire. Fire zones were mentioned here. Burning zone, smoking zone and thermal preparation zone. All three bands do not occur precisely in the case of non-linear forms of fire propagation. During these phenomena, in a short moment, the zone of smoke becomes a zone of burning (or explosive burning). Therefore, they spread at a high speed and are a source of great danger for the responding firefighters, but also for the people in the space. International research has shown that the content of incompletely burned products of burning substances is much greater than assumed. These products of combustion with a high temperature and a high concentration of flammable gases are collected in the space under the ceiling. They gradually heat up more and more, which leads to reaching the flash point. The ignition of this cloud can lead to three phenomena, which differ in the strength of their effect and the phase of the fire during which they can occur. They are:

- rollover (hydrogen-oxygen flames),
- flashover (sudden flare-up of gases in the entire space),
- backdraft (explosive combustion). (BALOG, KVARČÁK, 1999).

These are phenomena described mainly in Anglo-American literature, hence their hard-to-translate names. All three phenomena differ from each other in the strength of their effect and the phases of the fire in which they can occur. In the following text, we will describe them individually, including the possibility of prevention before their emergence or effect.

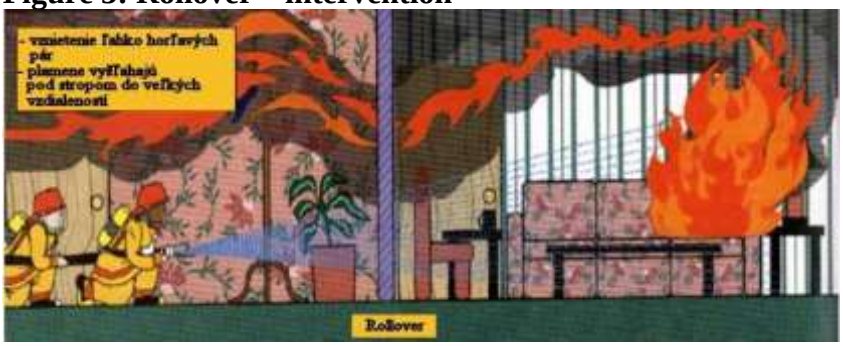
## 1.5 ROLLOVER

The first of the three phenomena mentioned during incomplete combustion is rollover, also known as flameover. It is the burning of unburned combustible combustion products that collect under the ceiling. The temperature is highest in this area. This phenomenon occurs in the fire phase, when there is still a relatively sufficient amount of oxygen in the air (Figure 2). These gases gradually spread beyond the area affected by the fire (Figure 3). There they mix with air and create a combustible mass with great energy potential. This layer of gases is an overpressure layer (it consists of combustion and pyrolysis products). The bottom layer is called vacuum and contains the remaining air in the room. During combustion, mainly water vapor and carbon dioxide are produced, carbon monoxide and sulfur dioxide are also produced in smaller quantities. In the room affected by the fire, the temperature rises slightly (about 40 °C), the flame temperature is approx 500 °C.

**Figure 2: Rollover**

*Source: self-edited*

**Figure 3: Rollover – intervention**




*Source: self-edited*

Rollover occurs when a large amount of flammable gases accumulates in the initial phase of the fire near the ceiling of the burning room. These very heated combustible gases are pushed out by combustion products from the burning room into the surroundings, where they mix with atmospheric oxygen. If the concentration of flammable gases reaches the flammability limit, they will ignite and the fire will spread rapidly. The flames spread at great speed at ceiling level over long distances until all the flammable gases produced burn out. (KUČERA, 2009). This insight is very important and it follows that in such threatened areas, rescuers and civilians (e.g. during evacuation) must move close to the ground! In such an ignition of flammable gases, it is necessary to immediately lie down on the ground so as not to be hit by the flames spreading at high speed at the level of the ceiling (Figure 4).

**Figure 4: Rollover – creation**

*Source: self-edited*

Therefore, the responding firefighters must move in threatened areas close to the ground and with the utmost caution. During extinguishing work, it is important to focus on extinguishing the fire, because rollover occurs only with intensive development of flammable gases and vapors.

## 1.6 FLASHOVER

In the next phase of the fire, the fire spreads to other combustible substances in the space. Air oxygen concentration is still sufficient. And this will cause the laminar flow of combustion products to turn turbulent. At that time, all combustible materials in the room are heated (the zone of heat preparation therefore extends to the entire space of the given room). All combustible substances are heated, thus combustible vapors are released more intensively, and cold air is pushed lower and lower to the ground (Figure 6). The temperature in the room reaches 700°C. In closed spaces, the concentration of oxygen decreases rapidly. At the moment when the concentration of released gases and vapors reaches the explosive limit, there will be an immediate ignition of these gases and vapors located in the entire space of the room (Figure 5) (KVARČÁK, 2005). The biggest danger of this phenomenon is that it cancels the principle that there is less temperature near the ground. The materials located near the floor have not yet been exposed to high temperatures. Since this phenomenon is preceded by a significant increase in temperature and suppression of cold air completely to the ground, and even the materials on the floor (often PVC) begin to release flammable vapors. When the floor is heated, the aforementioned general ignition of the entire space and the burning of all flammable substances in the space already occurs.

**Figure 5: Flashover**

*Source: self-edited*

**Figure 6: Flashover - before creation**

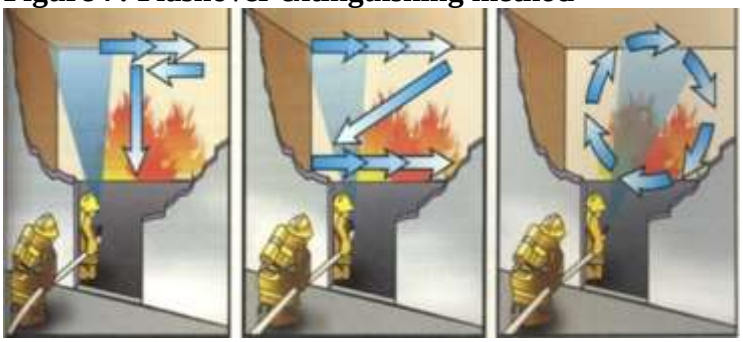

*Source: self-edited*

Symptoms:

- Rapid increase in temperature in the space from hot gases moving at ceiling level.
- Visible tongues of flame in layers of smoke at ceiling level.
- "Smoking" from objects.
- The formation of burning gas balls above the floor.

The only way to prevent a flashover is to cool all the objects in the burning room and the room itself, ie the direction of the water flow must be constantly changed so that the burning room and the objects in it are sufficiently cooled. The direction of the water flow changes from the ceiling down to the objects and back, and proceeds in such a way that even those objects in the room that are not yet burning are cooled (Figure 7).

**Figure 7: Flashover extinguishing method**



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**BACKDRAFT**

The last phenomenon is backdraft. As the fire develops further, the concentration of oxygen in the air decreases. When the concentration drops below 15%, flame burning is no longer possible. After that, the room starts to fill with thick smoke and the temperature drops to a value of approx 500°C. The air pressure increases, due to radiant heat, incomplete combustion occurs and thus the release of explosive gases. It is these influences that increase the risk of explosion. There are gases in the room with a concentration higher than the upper explosion limit. A backdraft, i.e. an explosion, will occur if the oxygen concentration in the room increases, e.g. when the door is opened, the window glass is discharged, etc. This explosion can damage the supporting structures of the building, collapsing part or the whole building (Figure 8). The best conditions for the formation of backdraft are in attics, in basements, in areas without ventilation (or in openings with fillings that will not break in the event of a fire).

**Figure 8: Backdraft**

*Source: self-edited*

Symptoms of backdraft observable in building structures:

- Construction characteristics of the building or room where the fire is burning. These are buildings with little possibility of natural ventilation, closed openings, building structures with good thermal insulation properties and the presence of a sufficient amount of substances whose pyrolysis products are flammable.
- An oily stain covering the windows. This layer is caused by the condensation of pyrolysis products and combustion products and the cold surface of the glass.
- Heated doors and handles.
- Smoke billowing around doors and other vents. Smoke pulsation in ventilation-controlled fires is caused by gas exchange and gas mixing processes. This can also cause the window panels to rattle (Images 9, 10, 11).

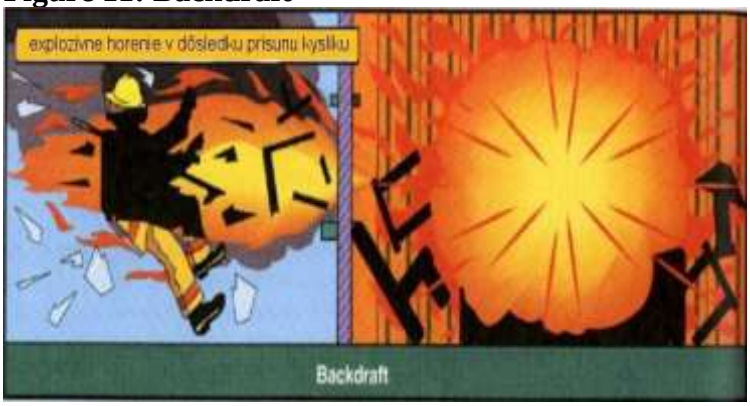
**Figure 9: Backdraft preparation**


*Source: self-edited*

**Figure 10: Forcible entry into space**


*Source: self-edited*

**Figure 11: Backdraft**




*Source: self-edited*

Signals observable when looking inside the room:

- blue and dark red flames. These are accompanied by the burning of carbon monoxide and incomplete combustion. Furthermore, it can be the presence of characteristic flames, which are a sign of incomplete combustion, i.e. a fire controlled by ventilation, which can be a harbinger of backdraft,
- smoke drawn back into the room. This occurs when fresh air enters the room,
- squealing sounds that can occur when a large amount of compressed gas flows through small and narrow openings,
- color of smoke. Unburned hydrocarbons color the smoke black, the smoke is thick.

All these symptoms are detectable both by devices and by human senses. During interventions, it is necessary to be careful and observe the surroundings very closely. An appropriate prevention of backdraft would be the construction of ventilation shafts with fire dampers. Responding firefighters should be protected by a stream of water, with which they fight the fire and cool the area. They must also stand in a safe place and consider all possible risks to avoid injuries. In case it is not possible to create ventilation in the room, the only possible way is to spray water mist into the room through the smallest possible opening in the upper part.

Prevention of backdraft, or the reduction of its effect is in the construction of ventilation shafts through which combustion products escape into the air. The mouth of the ventilation shafts is at the highest point of the building. Such shafts bring other benefits, such as reducing the smoke of the room affected by the fire and other areas, such as stairs and so on. In this way, rollover will also be prevented, as the combustion products will be removed through the ventilation shaft, which actually serves as a regular chimney, i.e. the combustion products will not reach such a large quantity outside the room affected by the fire.

**WARNING SIGNS AND PRECAUTIONS**

- The sudden opening of the door can cause flashover, backdraft or pressure drop in the staircase (if the windows in the area affected by the fire have not yet been broken).
- Minimizing the phenomenon can be achieved with door opening technicians and 3D water mist.
- Closing the door to the staircase on that floor before opening the door to the burning room.
- Fires in hard-to-reach places, in attics or in well-insulated rooms with limited ventilation hide a great risk of backdraft, especially if combustion products are present in these rooms for a very long time. In the vicinity of ledges and gutters, warning signs warning of overpressure in the space can be seen.

- Oil residues on window openings, hot doors, pulsating smoke around these objects are certain signs that if doors or windows are opened, there is a high probability of backdraft.
- Any sudden increase in heat in a burning room is a signal for the occurrence of a flashover. The heat forces firefighters to crawl on the ground.
- Use of short water pulses to the upper part and use of 3D water mist to cool the gas phase.
- A flame in a smoke layer is a harbinger of a flashover.
- When creating and opening holes in the wall, cavities, a stream of water must be prepared, and all gases that come out of the hole or are sucked into the hole must be cooled by pulses of water.
- Never rule out danger, even if the fire is already extinguished. Pay attention to heated gases that can be found under layers of unburned materials (in closed spaces, attics, etc.). It is necessary to cool the space until it is completely ventilated.
- Depending on the situation, carefully deploy overpressure ventilation, which can carry burning residues or heated particles into a cloud of overheated flammable gases.

**CONCLUSION**

Fires have been a problem for every community since time immemorial. Fire takes its toll on people's lives, their health, property, they threaten entire cities, but also ecosystems. For sufficient prevention, since perfect prevention is almost impossible, it is necessary to have as much knowledge as possible about fires and to know their behavior in the room and in the open space. When we understand the spread of fire, we will be able to limit its consequences.

Slovak legal standards are aimed at developing fire safety of buildings based on technical standards and decrees. This method is sophisticated and functional, and in general it can be stated that it is sufficient for almost all situations. Someone has said that a fire can be one of the fastest and most devastating ways to shut down a business. Nowadays, there is a greater number of fires occurring in all types of businesses, whether industrial or public buildings, from arson, which are intentionally set for any reason. These deliberately set fires are often associated with forced entry and disguised robbery. In order to prevent the business from stopping due to these or other reasons, the management must consider, as an integral part of activity planning, every type of risk and must take measures to prevent their occurrence or reduce their effect. Arson fire planning must be part of management's safety policy to protect people and property from fire. The responsibility of the management is focused on the analysis of the risk of arson (ie the vulnerability of the enterprise to arson from the outside and the inside), consideration of the effectiveness of various auxiliary measures and their price, the relationship of the risk analysis and auxiliary measures to the overall fire safety and the security program in the enterprise.

The history of fire protection is as old as the discovery of fire by humans. People quickly learned that when fire gets out of control or is handled carelessly, it can endanger their own lives or property. As society developed, so did fire protection. Legal regulations and Slovak technical standards (STN) any unwanted burning in which the lives or health of natural persons or animals, property or the environment are immediately threatened, which causes damage to property, the environment or which results in the injury or death of a natural person or animal, they denote by the term "fire". In general, we say that a fire is a burning that occurs outside a designated area, that is, a burning that causes material damage to society and loss of human and animal lives.

## REFERENCES AND INFORMATION SOURCES


1. ARIOZ, O. (2007): Effects of elevated temperatures on properties of concrete. In Fire safety journal, 42, 8, p. 516-522.
2. BABAUSKAS, V. (2016) : Electrical Fires, SFPE Handbook of Fire Protection Engineering, Springer, New York, p. 662-704.
3. BALOG, K., KVARČÁK, M. (1999): Dynamics of fire. Ostrava: SPBI. 96p. ISBN-80-86111-44-X.
4. BLOMQVIST, P., ROSELL, L., SIMONSON, M. (2004): Emission from Fires Part II: Simulated Room Fires. In Fire technology journal, ISSN 0015-2684, 40, 1, p. 59-73.
5. BRADÁČOVÁ, I. et al. 1999: Buildings and their fire safety. Prague: ŠEL, 1999. 264 p. ISBN 80-902697-2-9.
6. GROSSHANDLER, W. (1993): RadCal and Narrow Band Model for Radiation Calculations in a Combustion Environment. NIST Technical Note 1402, National Institute of Standards and Technology, Gaithersburg, Maryland.
7. MCCAFFREY, BJ, QUINTIERRE, JG, HARKLEROAD, MF (1981): Estimating room temperatures and the likelihood of flashover using fire test data correlations. In Fire technology, No. 17. No. 2nd p. 98-119.
8. MÜLLEROVÁ, J. - FELCAN, M. (2017): Modeling of internal fires 1st ed. - Hodonín : European Institute of Law and Forensic Engineering, 341 p.,ISBN 978-80-906601-1-3.
9. MÜLLEROVÁ, J., VÁCVAL, J. (2016): Fire safety characteristic of oak wood and medium-density fiberboard In: Production management and engineering sciences. Leiden; London: CRC Press/Balkema; Taylor & Francis Group. ISBN 978-1-138-02856-2. with. 207-211.
10. MÜLLEROVÁ, J. (2016): Flashover fire modeling by real small-scale models. In: SGEM 2016: ecology, economics, education and legislation, Albena, Bulgaria. Volume II. - Sofia: STEF92 Technology. ISBN 978-619710556-8.
11. REICHEL, V. (1981): Determination of requirements for building structures from the point of view of fire safety, 1st edition, Czechoslovak Fire Protection Association, Prague.
12. REICHEL, V. (1978): Designing fire safety of buildings, Part I, SNTL, ČSP, 1977, II. Part, VÚPS, Prague 1978.
13. VALÍČEK J., MÜLLEROVÁ J., KUBĚNA K., KOŠTIAL P., HARNIČÁROVÁ M., MIKULÍK M. (2012): Emission distribution and regulation of local heat source, Diffusion in solids and liquids, Portugal, Trans Tech Publications Switzerland, 2012 , pp.330-334.., Emission distribution and regulation of local heat source, Diffusion in solids and liquids, Portugal, Trans Tech Publications Switzerland, pp.330-334.
14. VLADIMIROVIČ, S. (2008): Improving the training of members of fire brigades based on the technology of simulation modeling of fires in buildings. Dissertation, Moscow: AGPS. 113 p.
15. VRÁBĽOVÁ, Ľ. (2015): Modeling risk situations in a simulator for non-linear forms of fires. Dissertation, FBI, University of Žilina.
16. Act of the NR SR no. 314/2001 Coll. on fire protection as amended.
17. Decree of the Ministry of Internal Affairs and Communications no. 94/2004 Coll. which establishes the technical requirements for fire safety in the construction and use of structures STN ISO 018200: 1991: Fire characteristics of substances. Terms and definitions.
18. BS EN ISO 13943 2010: Fire Safety – Vocabulary.
19. EN 13501-2010: Fire resistance test of structural elements.
20. STN 92 0201-1: 2000, Fire safety of buildings. Common provisions. Part 1: Fire risk, size of fire section.
21. STN 73 0540-1: (2002): Thermal technical properties of construction structures and buildings. Thermal protection of buildings. Part 1: Terminology.

22. SMARTFIRE Fire Field Modeling Environment (2007): CFD Models Survey. [online]. Updated 2008 [cit. 2016-02-18]. Available at: http://www.firemodelsurvey.com-/pdf/SMARTFIRE_2007.pdf .
23. LUO, M. et al. (1997). Application of field model and two zone model to flashover fires in a full-scale multi-room single level building. In Fire safety journal, 29, p. 1-25. http://www.agi.my/wp-content/uploads/2011/09/flashover-firefighters-nightmare.pdf .

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# AFRICAN EMIGRATION TO EUROPE

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**ABSTRACT:** From the 1960s onwards , the main source countries for migration from Africa to Europe were Morocco, Algeria and Tunisia, which led to the emergence of large diasporas originating in these countries at the end of the 20th century. In the aftermath of the 1973 oil crisis, immigration controls in Europe were tightened. The result was not a reduction in migration from North Africa, but rather support for the permanent settlement of previously temporary migrants and related family migration. Much of this migration was from the Maghreb to France, the Netherlands, Belgium and Germany. Since the second half of the 1980s, destination countries for Maghreb migrants have expanded to include Spain and Italy due to increased demand for low-skilled labor in these countries. Spain and Italy imposed a visa requirement on migrants from the Maghreb in the early 1990s, resulting in an increase in illegal migration across the Mediterranean.

**KEY WORDS:** Africa; Emigration; Europe; Spain

## INTRODUCTION

Between 2000 and 2005, an estimated 440,000 people emigrated from Africa annually, most of them to Europe. According to Hein de Haas, director of the Institute for International Migration at the University of Oxford, the public debate on African migration to Europe portrays the phenomenon as an "exodus", composed largely of illegal migrants driven by conflict and poverty. Migration from Africa to Europe, he argues, is driven by structural demand for cheap migrant labor in informal sectors. Most migrate on their own initiative and are not victims of human traffickers. In addition, he claims that while the media and popular perception see them as irregular migrants who arrive mostly by sea, most of them actually arrive on tourist visas, with false documents, or enter through the Spanish enclaves of Ceuta and Melilla. It states that most irregular African migrants enter Europe legally and subsequently overstay their visas. Similarly, migration expert Stephen Castles says that despite the media hysteria about the increase in migration from Africa to Europe, the actual numbers appear to be quite small, although the figures are surprisingly imprecise. Most of the African emigration goes to other countries for better conditions. Economic crises, wars, hunger, poverty, insecurity, dictatorships, natural disasters cause emigration. (LAS CAUSAS DE LA EMIGRACIÓN EN ÁFRICA, online).

## INFLOW OF MIGRANTS TO SPAIN

The influx of groups of immigrants to Spain, driven by the political-social and economic instability of their countries of origin, who illegally cross the Spanish border through unauthorized posts with a risk to life and integrity, or who once legally entered the territory of Spain, fell into irregularities due to the expiration of the relevant permits or authorized, is the reality of the phenomenon of immigration, which goes far beyond the provisions of the legislation of the Spanish immigration system, which apply to nationals of third countries. The Spanish legal system responds to irregular entry, permanent residence in Spain by providing a

series of measures for return, forced departure or expulsion, the ultimate purpose of which is the obligation to leave Spanish territory. It is therefore a proven reality that in many cases it is not possible to carry out some measures due to lack of economic means, non-acceptance of a foreign immigrant in the country of origin. To this must be added the fact that many of the immigrants who are detained on the Spanish shores lose their documents **.** In the search for solutions aimed at preventing the persistence of this type of situation in practice and with the aim of combating and mitigating irregular migration flows, international cooperation through the conclusion of bilateral agreements on migration cooperation and readmission with countries of origin, or the transit of illegal immigrants, occupies a central place in the current immigration policy of the EU and Spain. ( INMIGRACIÓN Y UNIÓN EUROPEA, online).

Currently, one of the flows of illegal immigrants with the greatest social and media impact, due to its most tragic dimension in the loss of human life, is that which comes from Africa via sea vessels bound for the Spanish coast and to the vessels of other countries in the south of Europe. Spain, and the Canary Islands, due to its geographical proximity to the African continent and its position as a border region of Southern Europe, is the territory of the Spanish state, which currently suffers the most from the influence of the influx of illegal immigrants by sea from sub-Saharan Africa, which culminated in 2006 in the so-called crisis de los cayucos (boat crisis). Although this reality of the immigration phenomenon represents a minority of foreigners who are in an irregular situation in Spain . (INMIGRACIÓN Y UNIÓN EUROPEA, online).

The Spanish state has formally concluded three types of categories of bilateral agreements with African countries on migration issues, which can be systematized as follows:
1) Agreements regarding the regulation and management of work flows.
2) Agreements on the readmission of persons in an illegal situation.
3) Framework agreements on cooperation in the field of immigration .

Currently, the Spanish state has formally concluded two types of bilateral agreements with African countries on the readmission of immigrants from non-EU countries in an illegal situation:
1) special readmission agreements.
2) framework agreements on cooperation in immigration matters.

Within the first category of agreements, the purpose of which is to establish regulatory guidelines for the readmission and transit of persons in an illegal situation, the following should be listed in chronological order:

- Agreement of 13 February 1992 between the Kingdom of Spain and the Kingdom of Morocco on the movement of persons, transit and readmission of foreigners who entered illegally (BOE nº 100 of 25/04/1992 and Correction of Errata, BOE nº 130 of 30/5/1992).
- Protocol between the Government of Spain and the Government of the People's Democratic Republic of Algeria on the movement of persons signed in Algiers on 31 July 2002 (BOE No. 37 of 2.12.2004).
- Agreement between the Kingdom of Spain and the Republic of Guinea-Bissau on immigration signed in Madrid on 7 February 2003 (BOE No. 74 of 27.3.2003).
- Agreement between the Kingdom of Spain and the Islamic Republic of Mauritania on immigration signed in Madrid on 1 July 2003 (BOE No. 185 of 8 April 2003).

Regarding the second type of agreements, which are closer in time and more in line with the focus of the foreign policy of Spain and the Community, which are currently being developed with African states, Spain has signed the following:

- Framework agreement on cooperation in the field of immigration between the Kingdom of Spain and the Republic of The Gambia, concluded "ad referendum" in Banjul on 9 October 2006 (BOE No. 310 of 28.12.2006).
- Agreement on cooperation in the field of immigration between the Kingdom of Spain and the Republic of Guinea, concluded "ad referendum" in Conakry on 9 October 2006 (BOE nº 26, dated 30.1.2007 and Correction of Errata, BOE nº 80, dated 4/3/2007) .
- Framework agreement on cooperation in the field of immigration between the Kingdom of Spain and the Republic of Cape Verde, concluded "ad referendum" in Madrid on March 20, 2007 (BOE No. 39, 14/02/2008). (INMIGRACIÓN Y UNIÓN EUROPEA [online]).

In terms of territorial conformity, as well as in terms of political and demographic trends, the Mediterranean region has been characterized by conflicts and divisions, generally related to security and demographic planning. The estimate of the number of Africans in Southern European countries is imprecise, mainly due to limited data. In the statistics of Italy and Portugal, only persons with regular residence are taken into account. In Spain, on the other hand, the entire population is taken into account regardless of residence status, so there is the possibility of quantifying immigration by country of origin. At the beginning of 2010, more than two million African citizens lived in Italy, Portugal and Spain, with Italy and Spain being their main destinations. While the majority of Africans emigrating to these countries came from West and North African countries, the main flows of emigrants to Portugal came from West, South and Central Africa. The number of African citizens has increased substantially since the mid-1990s. African immigration was a moderate process compared to that from other regions. In Italy, immigration from former colonies is not significant. African population growth during the 2000s was very modest compared to other groups. Spain is the destination of most immigrants from southern Europe. First, immigration from Morocco became visible in the 1980s. (NOTAS DE POBLACIÓN, online).

Through coercive and discursive initiatives, Europe tries to limit Africans' ambitions to move. In monitoring, containing and preventing African mobility, however, European leaders face a dilemma: to enact a range of racial and spatial exclusions that often appear grossly coercive, while remaining true to the community's stated commitment to expanding individual freedoms in the service of global progress. These include freedom of movement restricted by European interventions not only for those migrating from the African continent, but also within it. Europe seeks to resolve the tension between coercive border creation and internal liberalism by setting a time-space trap for Africans. (IRIANN , FREEMANTLE & LOREN B, 2022).

Given the increased incidence of forced displacement, human trafficking and violations of migrants' rights in recent years, international human rights and humanitarian organizations have promoted humanitarian narratives that portray migrants as vulnerable persons in need of international protection. Consistent with global patterns, the number of forcibly displaced persons in West Africa has increased over the past decade due to a sharp increase in conflict caused by armed groups. For example, at the end of 2019, approximately 2,159,009 forcibly displaced persons were housed in the ECOWAS (Economic Community of West African States) region. Approximately 348,108 of these persons were refugees, 46,713 asylum seekers and 1,734,241 stateless persons. The worsening situation of forced displacement has prompted both international and regional responses. In many West African countries, the protection of forcibly displaced persons has historically been governed by a combination of frameworks, including the United Nations Convention Relating to the Status of Refugees (1951), the 1967 Protocol Relating to the Status of Refugees, the OAU Convention Relating to the Problem of Refugees in Africa (1969), ECOWAS (Economic the West African Community). Since 2018, West African countries have been cooperating with UNHCR (the Office of the United Nations

High Commissioner for Refugees) on the implementation of the Global Compact on Refugees, which seeks to ensure increased protection for refugees. UNHCR (the Office of the United Nations High Commissioner for Refugees) and West African governments are also currently using the Peace, Humanitarian Aid and Development approach to integrate peace-building strategies with economic inclusion programs for refugees and internally displaced persons. (Teye, JK 2022).

**CROSSING OF MIGRANTS THROUGH CEUTA AND MELILLA INTO SPAIN**

Both Ceuta and Melilla have been under Spanish rule since the 17th century, although they have long been claimed by Morocco. The port cities now form the EU's only land border with Africa. They have semi-autonomous status, like some regions of mainland Spain. (BBC, online). The influx comes at a time of renewed tension over Western Sahara, a territory occupied by Spain until 1975 , when Morocco annexed it. Since then, it has been disputed between Morocco and the indigenous Sahrawi population, led by the Polisario Front (BBC, online).

In 2003 and 2004, unauthorized boat arrivals along the Spanish coast were almost evenly split between the Canary Islands and the Spanish mainland. In addition, there have been numerous attempts at unauthorized entry across the borders of Spain's two North African enclaves, Ceuta and Melilla. Near the departure points for all these routes there are waiting zones where transit migrants wait for the opportunity to take the last step to Europe. These include spontaneous camps in the forests of Mount Gourougou near Mellilla and in the Saguia el-Hamra canyon near Laayoune in the Western Sahara. In these and other places, transit migrants live in precarious conditions while they wait for the opportunity to enter Spanish territory. Most migrants from sub-Saharan Africa heading to Morocco or Western Sahara take one of three routes through Niger, Mali or Mauritania. Many migrants don't have enough money to cover the whole journey when they set out and have to work their way north. It is not unusual to spend several years traveling from West Africa to Europe. Virtually all transit migrants depend on people smugglers to reach North Africa. It is usually a small scale and transit is ensured by different smugglers on different sections of the road (CARLING , JØRGEN , 2007).

**Figure 1: map of the Spanish enclave of Ceuta**


*Source: BBC[online]*

Between January 1, 2021 and April 30, 2021, the entry of 8,340 migrants was registered, after the first half of May it rose to 9,318. On May 17, 2021, a massive entry through the Ceuta border was recorded, which lasted throughout May 18 and which, according to calculations, represented arrival of about 10,000 people. After summer months in 2021 with inflows of around 3,000 to 4,000 migrants per month, an increase of 50% to 60% compared to 2020, a new increase was recorded in September 2021. More than 8,200 arrivals were received that month **.** In January 2022, more than 4,200 migrants arrived in Spain (30.6% compared to January 2021) and after February this number increased to 7,319 migrants compared to the first two months of 2021. These arrivals represented 73.2% more. The latest figures from the Ministry of the Interior on the subject, which correspond to illegal entries into Spain between January 1 and March 15, 2022, put the entries at 8,276, among them the latest jump to the Melilla fence number 3 ( EUROPAPRESS, online).

**Image 2: A group of migrants near the Ceuta fence, 17 May 2021**

*Source: EUROPAPRESS, online*

**NUMBER OF MOROCCANS IN SPAIN**

From African countries , 64,954 Algerians , 8,313 Mauritanians , 28,409 Malians , and 872,759 Moroccans live in Spain. ( MARROQUÍES EN ESPAÑA. PADRÓN MUNICIPAL 2022, CIFRAS DE POBLACIÓN, online).

**Table 1: Number of Moroccans in Spain**

| | | | |
|---|---|---|---|
| 1 | Barcelona | 137,010 | 15.07% |
| 2 | Murcia | 89,914 | 10.03% |
| 3 | Madrid | 80,090 | 9.18% |
| 4 | Almeria | 61,749 | 7.08% |
| 5 | Alicante | 44,757 | 5.13% |
| 6 | Tarragona | 42 118 | 4.83% |
| 7 | Girona | 40,744 | 4.67% |
| 8 | Málaga | 33,642 | 3.85% |
| 9 | Balearic Islands | 29,063 | 3.33% |
| 10 | Valencia | 26,519 | 3.04% |
| 11 | Lleida | 18,320 | 2.01% |

| | | | |
|---|---|---|---|
| 12 | Granada | 17 136 | 1.96% |
| 13 | Castellon | 16,864 | 1.93% |
| 14 | Toledo | 16,845 | 1.93% |
| 15 | Navarra | 15,727 | 1.8% |
| 16 | Las Palmas | 14,262 | 1.63% |
| 17 | Huelva | 13,817 | 1.58% |
| 18 | Zaragoza | 13,086 | 1.5% |
| 19 | Cádiz | 12,339 | 1.41% |
| 20 | Bizkaia | 11,550 | 1.32% |
| 21 | Melilla | 11,371 | 1.3% |
| 22 | Seville | 10499 | 1.2% |
| 23 | Guipuzcoa | 8831 | 1.01% |
| 24 | La Rioja | 8516 | 0.98% |
| 25 | Albacete | 6253 | 0.72% |
| 26 | Alava | 6214 | 0.71% |
| 27 | Guadajara | 5969 | 0.68% |
| 28 | Caceres | 5309 | 0.61% |
| 29 | Jaen | 5228 | 0.6% |
| 30 | Ciudad Real | 5006 | 0.57% |
| 31 | Teruel | 4906 | 0.56% |
| 32 | Ceuta | 4801 | 0.55% |
| 33 | Cuenca | 4472 | 0.51% |
| 34 | Santa Cruz de Tenerife | 4408 | 0.51% |
| 35 | Valladolid | 4308 | 0.49% |
| 36 | Leon | 3777 | 0.43% |
| 37 | Huesca | 3776 | 0.43% |
| 38 | Avila | 3214 | 0.37% |
| 39 | Burgos | 3069 | 0.35% |
| 40 | Asturias | 3055 | 0.35% |
| 41 | Segovia | 2924 | 0.34% |
| 42 | Coruña | 2839 | 0.33% |
| 43 | Córdoba | 2703 | 0.31% |
| 44 | Pontevedra | 2519 | 0.29% |
| 45 | Lugo | 2250 | 0.26% |
| 46 | Cantabria | 2148 | 0.25% |
| 47 | Badajoz | 1985 | 0.23% |
| 48 | Palencia | 1920 | 0.22% |
| 49 | Salamanca | 1849 | 0.21% |
| 50 | Soria | 1391 | 0.16% |
| 51 | Zamora | 858 | 0.1% |
| 52 | Ourense | 839 | 0.1% |

*Source: MARROQUÍES EN ESPAÑA. PADRÓN MUNICIPAL 2022, CIFRAS DE POBLACIÓN [online]*

**CONCLUSION**

Thanks to its location on the southern border of the European Union, Spain has become a destination country for significant non-EU migration flows, but also a transit country for emigrants to other European Community states. The phenomenon of illegal immigration, and especially the fight against illegal immigration of nationals of third countries, represents one of the action priorities of the European Union and the Spanish state. Migrants embark on dangerous journeys along the West African coast to reach the Canary Islands. The distance they must travel varies from less than 100 kilometers from the nearest point on the African coast to more than 1,600 kilometers from The Gambia. In order to reach Spain, migrants also pass through Morocco and Algeria. The western Mediterranean route leads to unauthorized arrivals in Spain via the Mediterranean Sea to mainland Spain, as well as overland to the Spanish enclaves of Ceuta and Melilla in North Africa. In order to reach Spain, migrants pass through

Morocco and Algeria. In 2018, the route through the western Mediterranean became the most frequently used route to Europe. After reaching a peak number of arrivals in 2018 , their number has steadily decreased in 2019 and 2020 due to various factors, such as, in particular, Morocco's increased efforts to combat illegal migration, close cooperation between Morocco, Spain and the EU, and the COVID-19 pandemic. In 2006, more than 31,000 irregular migrants arrived in the Canary Islands. It was the so-called the Cayucos crisis , named after popular fishing vessels from Senegal and Mauritania.

## REFERENCES AND INFORMATION SOURCES


1. BBC [online] [cit.18.5.2021.] Available from: https://www.bbc.com/news/world-europe-57150051 [online ]
2. LAS CAUSAS DE LA EMIGRACIÓN EN ÁFRICA [online]. Available from: https://www.fuhem.es/papeles_articulo/las-causas-de-la-emigracion-en-africa/
3. CARLING, JØRGEN., (2007). Unauthorized Migration from Africa to Spain International Migration, Vol: 45, Issue: 4, Page: 3-37 ISSN: 0020-7985,
4. EUROPAPRESS [online][cit.21.3.2022]. Available from https://www.europapress.es/epsocial/migracion/noticia-espana-registra-entrada-irregular-50000-migrantes-costas-ceuta-melilla-crisis-marruecos-20220321130524.html
5. INMIGRACIÓN Y UNIÓN EUROPEA [online]. Available from: https://www.ugr.es/~redce/REDCE10/articulos/04MAsuncionAsinCabrera.htm
6. IRIAN, FREEMANTLE & LOREN B, LANDAU (2022). Migration and the African Timespace Trap: More Europe for the World, Less World for Europe, Geopolitics, 27:3, 791-810, DOI: 10.1080/14650045.2020.1859479 Available from: https://doi.org/10.1080/14650045.2020. 1859479
7. MARROQUÍES EN ESPAÑA. PADRÓN MUNICIPAL 2022, CIFRAS DE POBLACIÓN[online].[cit.21.3.2022]Available from: https://epa.com.es/padron/marroquies-en-barcelona/
8. NOTAS DE POBLACIÓN [online.]Available from: https://repositorio.cepal.org/bitstream/handle/11362/12906/np95107146_es.pdf?sequence=1&isAllowed=y
9. TEYE, JK (2022). Critical migration policy narratives from West Africa. International Migration, 60, 73–84. Available from: https://doi.org/10.1111/imig.13012


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# EMERGENCY MANAGEMENT AND POSSIBILITIES OF INVOLVEMENT OF NON-GOVERNMENTAL ORGANIZATIONS

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**ABSTRACT:** The study focuses on the issue of extraordinary events such as disruptions in society and the involvement of non-governmental non-profit organizations. The goal is to describe the possibility of involving non-governmental non-profit organizations in dealing with extraordinary events and crisis situations. Rescue and security forces are established in the Czech Republic to deal with emergencies, whose priority mission is to save life, health, property and the environment. In addition to the state-guaranteed components, non-state non-profit organizations are also involved in the preparation and solution of extraordinary events. The rules of cooperation and coordination according to the Act on the Integrated Rescue System, as amended, apply primarily to their coordination during emergencies. Non-governmental non-profit organizations, which prepare for longer and systematically and are involved in the solution of extraordinary events, create platforms for cooperation and coordination focused on follow-up activities after rescue work, e.g. monitoring of the affected area, humanitarian, psychosocial, material and financial assistance, consulting and other professional assistance.

**KEY WORDS:** Non-governmental non-profit Organizations, Volunteerism, Integrated Rescue System, Safe Society

## INTRODUCTION

Contemporary human society is significantly influenced by globalization processes, which are manifested in all regions of our planet. On the one hand, it brings many positives, but on the other hand, numerous negatives that our society has to deal with (IVANČÍK, 2011). Not solving or insufficiently solving these negatives in the form of undesirable phenomena, events or processes can disrupt the functioning of our society and threaten its safety (IVANČÍK, 2012; HU., X. et al .). However, human society can be resistant or, on the contrary, vulnerable to such phenomena, events or processes, which can have harmful effects and lead to the emergence of disorders in society. Disturbances can mainly consist in the violation of basic social values and relationships to which society provides legal protection.

As a result of a social disorder, a situation may arise that calls for a solution to an emergency using all available forces and resources (MAWSON, 2005). A relatively large number of actors can respond to the solution of an emergency, from statutory entities of the state and local governments, such as the basic components of the integrated rescue system and crisis management entities, through non-governmental non-profit organizations, volunteers and workers of helping professions. Realized activities take place on the basis of the existence of the community of human society. Above all, mutual human help and solidarity are crucial here. (HRUŠKA et al., 2018). All participants are united by the common goal of rescuing, helping and supporting those affected.

Protection of society as an integrated complex of measures is focused on human safety. Extraordinary events, by their action, lead to a violation of the state of security and in more

extensive manifestations affect the entire society (OMUKUTI, 2021). Rescue and security forces are established in the Czech Republic to deal with emergencies, whose priority mission is to save life, health, property and the environment. In addition to the state-guaranteed components, non-governmental non-profit organizations (NGOs) are also involved in the preparation and resolution of emergencies. For their coordination during emergencies, the rules of cooperation and coordination according to Act No. 239/2000 Coll., on the integrated rescue system, as amended, apply primarily. NGOs, which prepare for the longer term and systematically and are involved in dealing with extraordinary events, create platforms for cooperation and coordination focused on follow-up activities after rescue work, e.g. monitoring of the affected area, humanitarian, psychosocial, material and financial assistance, consulting and other professional assistance. The term NGO Panel is used for this form of cooperation and cooperation between several NGOs. The term NGO Panel can be explained in terms of content as a space for discussion, a communication platform (KAVAN, 2014).

## METHODOLOGY AND OBJECTIVE

Non-governmental, non-profit organizations can be involved in solving emergencies and crisis situations. Risks are caused by events that endanger people's lives, their health, threaten and destroy material values, the environment and cultural values. Risk is an unwanted and negative deviation of an object, subject, system, function, activity or links and is a potential source of threat, or causes threats. A threat is an event or phenomenon in which a specific object or subject (bodies, things and persons) is limited, endangered, damaged, destroyed or devastated. It does not arise randomly, but always as a result of some cause. It always takes place in a specific space and time, with varying degrees of intensity, but always with specific consequences. The general division of risks and threats is necessary from the point of view of the necessity of naming the risk, defining its properties and describing its effects. From the need to secure state functions, risks and threats can be divided into external and internal, military and non-military, security, political (international political, military political), economic (socioeconomic), social, cultural and religious, ecological and civilizational (globalization). From the point of view of their danger to man and society, from the point of view of possible consequences and from the point of view of ensuring sustainable development, they can be divided into limiting, threatening, damaging, destroying, devastating and existential.

The involvement of NGOs and volunteers in dealing with extraordinary events or their consequences can take place when dealing with extraordinary events and their consequences within the framework of the integrated rescue system (IZS) or as part of crisis management. Involvement within the IZS takes place mainly at the tactical level of management, which is carried out by the intervention commander. This is an activity directly at the site of the intervention, with persons affected by an extraordinary event or at the place of the predicted effects of an extraordinary event. In addition to the tactical level of management, cooperation in the framework of crisis management also usually takes place simultaneously at the strategic level of management, which can be coordinated by the mayor of the municipality with extended powers, the governor of the region or the mayor of the capital city of Prague. Coordination within the framework of crisis management is then carried out, for example, through an NGO coordinator or a representative of the NGO panel.

Since time immemorial, in order to protect its existence, human society has had to deal with various calamities and catastrophes that have influenced and still significantly influence the actions and behavior of the human individual and the entire society. Various extraordinary events threaten human lives, health, property, the environment, disrupt social, technological and natural systems. Such situations arise on a local scale, but they can affect a significantly wider supra-regional scope. This fact creates a need for the company to protect basic values and respond promptly to extraordinary events. Depending on the level of perception of these facts

(the so-called reference level) and the level of its development, society faced and still faces the consequences of extraordinary events. She tried to prevent, avert, or at least reduce and mitigate negative consequences. One of the basic systemic pillars of cooperation in the preparation and resolution of emergencies in the Czech Republic is the integrated rescue system.

## RESULTS AND DISCUSSION

The integrated rescue system is intended for the coordination of multiple entities in the preparation and execution of rescue and liquidation work during extraordinary events (accidents, natural disasters, pandemics, terrorist attacks, etc.). In this way, the constitutional right of a citizen to help in the event of a threat to health or life is fulfilled. IZS arose from the need for the daily activities of rescuers, especially in the case of complex accidents, accidents and natural disasters, when it is necessary to organize the joint activities of all (including NGOs) who can contribute with their strength and means, competences or other possibilities to saving the lives and health of persons, animals, property or the environment. It is a system of cooperation and coordination of components, state and local administration bodies, natural and legal persons in the joint execution of rescue and liquidation works. This is a very difficult task, especially in the challenging period of emergency management, which must have its own clearly defined rules (SKALSKÁ et al., 2010).

The integrated rescue system is an effective system of links, rules of cooperation and coordination of rescue and security forces, state and local government authorities, natural and legal persons in the joint execution of rescue and liquidation work and preparation for emergencies. According to Act 239/2000 Coll., on IZS, an integrated rescue system means the coordinated procedure of its components in preparing for emergency events and in carrying out rescue and liquidation work. The integrated rescue system is used when preparing for an emergency and when it is necessary to carry out rescue and liquidation work simultaneously by two or more components of the integrated rescue system (Act No. 239/2000 Coll.). When it was necessary to work together to solve a larger incident, there was always an interest in working together and using synergy to achieve a quick and efficient rescue or liquidation of the emergency. The cooperation of the interested parties at the scene of the intervention has always existed in some form. However, the different workload and powers of the individual components established and continue to establish the necessity of a certain coordination of procedures (Integrated rescue system, 2009).

The IZS Act defines two groups of components: basic and other components. The operation of basic and other components in the integrated rescue system does not affect their position and tasks set by special legal regulations.

The basic components of the integrated rescue system are the Fire Rescue Service of the Czech Republic, fire protection units included in the area coverage of the region by fire protection units, the medical rescue service and the Police of the Czech Republic. The basic components of the integrated rescue system ensure continuous readiness to receive reports of emergency occurrences, their evaluation (estimation of the threat resulting from the emergency and estimation of the necessary forces and resources) and immediate intervention at the scene of the emergency. For this purpose, they deploy their forces and resources throughout the territory of the Czech Republic (Act No. 239/2000 Coll.). Basic components of IZS:

- they are able to intervene quickly and continuously;
- they have comprehensive jurisdiction over the territory of the entire state;
- they operate the emergency telephone line.

Other components of the integrated rescue system are dedicated forces and means of the armed forces, other armed security forces, other rescue forces, public health protection authorities, emergency, emergency, professional and other services, civil protection facilities, non-profit organizations and citizen associations that can be used to rescue and liquidation

works. Other components of the integrated rescue system provide planned assistance during rescue and liquidation work on request (Act No. 239/2000 Coll.).

As part of the integrated rescue system, the organizational components of the Fire Rescue Service of the Czech Republic conclude agreements:

- planned assistance on request according to §21 of Act No. 239/2000 Coll., on Social Security;
- on the provision of personal or material assistance according to §15 of Decree No. 328/2001 Coll., on some details of security of the IZS;
- on the cooperation of the IZS components;
- about cooperation.

Planned assistance on request for the purposes of the IZS Act means a previously agreed upon method of providing assistance by other components of the integrated rescue system to the municipal office of the municipality with extended powers, the regional office, the Ministry of the Interior or the basic components of the integrated rescue system when carrying out rescue and liquidation work. The other components of the integrated rescue system are obliged, when determining the extent of the planned assistance on request, based on the request of the operational and information center of the integrated rescue system, to communicate (Act No. 239/2000 Coll.):

- persons authorized to provide assistance and the method of notifying them;
- forces and resources intended to provide assistance;
- the time required to provide forces and resources in the event of a request for assistance.

Agreements on the provision of aid are (Decree No. 328/2001 Coll.):

- written agreements on the provision of planned assistance on request, which are concluded by the general directorate or the fire rescue service of the region for the compilation of alarm plans and which determine the scope of the provision of assistance by other components;
- written agreements by which the regional fire brigade or the mayor of the municipality can pre-negotiate the method and scope of personal or material assistance for the need for rescue and liquidation work

On the basis of the agreements concluded in this way, space is prepared for mutual cooperation and collaboration with NGOs, which after the conclusion of the agreement become the other components of the IZS. It is necessary to point out that the basic components of the IZS usually do not cooperate and do not organize individual volunteers. The path to cooperation is created through non-state non-profit organizations, organizational units of municipalities and possibly other organizations that work directly with volunteers. Part of these agreements are the conditions for reimbursement of expenses and damages for the provision of personal or material assistance and for planned assistance on request. Assistance is provided at the request of the operational and information center of the region. Part of the written agreement usually includes the conditions for participation in joint exercises within the IZS.

Sometimes an extraordinary event can take on such proportions that lives, health, property, the environment are threatened and the normal activity of administrative offices, regional and municipal bodies, IZS components or critical infrastructure entities does not lead to averting the threat. Then it is possible to declare one of the crisis situations by the corresponding authority if the legal conditions are met. The decision to declare one of the crisis states must contain crisis measures and their scope. Crisis measures can be of an organizational or technical nature and must be intended to solve a crisis situation and eliminate its consequences, including measures that interfere with the rights and obligations of persons (Act 240/2000 Coll.).

Crisis management means the summary of management activities of crisis management bodies focused on the analysis and evaluation of security risks and the planning, organization, implementation and control of activities carried out in connection with (Act No. 240/2000 Coll.):

- by preparing for crisis situations and their resolution, or
- protecting critical infrastructure.

In order to illustrate and connect the topic of NGOs and volunteering to the crisis management system, an example at the level of a region and a municipality with extended scope (ORP) is given. The governor of the region and the mayor of ORP are setting up a crisis team. The crisis staff of the region and the crisis staff of the ORP are the founder's working body for solving crisis situations. The chairman of the crisis staff of the region is the governor, who appoints the members of the crisis staff of the region. The chairman of the ORP crisis staff is the mayor of the ORP, who appoints the members of the ORP crisis staff. The governor of the region or the mayor of the ORP can use the crisis team in the coordination of rescue and liquidation work at the strategic level according to the Act on IZS. Members of the crisis staff are members of the regional security council/ORP and members of the permanent working group. It is among the members of the permanent working group of the crisis staff that representatives of NGOs or representatives of the NGO Panel can be included, who can thus pass on current information about their activities and offer their free capacities, which can be used in solving an emergency or crisis situation. In addition to other tasks, the permanent working group prepares documents for the decision-making activities of the chairman of the crisis staff, e.g. in the area of population protection, involvement of NGOs and volunteers. It is appropriate that the form of involvement of NGOs is already resolved during the preparation for dealing with extraordinary events and crisis situations in the form of exercises. Coordination of the performed activities is essential.

The activities of NGOs and volunteers are dependent on the specific emergency and its impact on society. In addition to helping with the cleanup of the aftermath of MU, which is always the most visible, there are also a number of other very important volunteer activities. In general, the involvement of NGOs and volunteers in emergency situations can be divided into basic areas (Rules for volunteer assistance in emergency situations, 2013):

- MONITORING – serves to determine the needs of people affected by MU, when volunteers are involved in field investigations. The outputs from it are further used to determine the extent of damage and impacts of MU, material as well as psychological needs of those affected. They are important for the correct coordination of assistance from non-profit organizations and representatives of local government and IZS units.
- COORDINATION CENTER - collects and provides information to affected or helping organizations and individuals in the form of e.g. telephone conversations, e-mails, social networks, database programs. Volunteers get important information about places where help is needed and where they can apply for help, what are the transport options, or what are their limitations, offers of help are recorded.
- MATERIAL AID - storage and distribution of provided material aid. Volunteers help with receiving and sorting the delivered material aid and with its distribution to the affected citizens. It also involves renting dryers and providing information on their correct use. In some cases, it is possible to borrow small equipment - WAP high-pressure cleaners, power plants, electric hammers for knocking plaster, etc.
- MANUAL HELP - preparation for MU and cleaning up the consequences, e.g. in case of floods, help with bagging and building dams, cleaning sediments, cleaning, possibly knocking off plaster and other activities. This is the most exposed volunteer activity. In addition to the physical demands and the possibility of injury, volunteers may encounter

a variety of reactions from the people they come to help - from acceptance and gratitude for the help (we are not alone in this), to negative reactions or expressions of distrust and the like.

- PSYCHOSOCIAL HELP - help to people affected by MU. It focuses on supporting the affected persons' own strengths to cope with the crisis situation and fulfilling their physical, mental, spiritual and social needs in accordance with their values. Help can start immediately after the event and can continue for a period of several months. The result is, among other things, better preparedness for the next event.
- FINANCIAL ASSISTANCE - mainly trained volunteers of non-profit organizations, usually in cooperation with local government representatives, determine and evaluate the extent of damage to households (property of affected persons). On the basis of a uniform methodology, financial support is provided for the restoration of damaged real estate or sources of drinking water.
- EPIDEMICS - after 1.3.2020, the solution to the mass infection of people became a completely new area. Since the initial volunteer sewing of masks and their distribution, the involvement of volunteers has focused on activities in the field of support in the form of auxiliary staff in medical and social facilities, shopping for the elderly.

During the MU solution, representatives of NGOs, local government and IZS components meet regularly. It is desirable that all entities involved in this network cooperate with regard to the needs of the given event and, for this purpose, inform each other about the steps taken and planned. The meeting serves to transmit information from the field to the coordination center, to the mayors in the affected localities, but also to the public, who offer help. This concerns the possibilities of material and volunteer assistance, but also the division of the area into individual sectors and the responsibility of individual NGOs for activities in defined locations.

**CONCLUSION**

Helping those affected in a disaster situation should represent a normal human response in such moments in the form of solidarity, prosocial behavior and altruism. Helping is an effective way of personal and social coping with misfortune and also one of the possible psychological defenses. Such a defense separates the helper from the helped and creates an impression of power in a situation of powerlessness. Therefore, it is important to have clearly expressed values of volunteer help and to be aware of one's own values, attitudes and motivations in this area (Standards of psychosocial crisis assistance and cooperation focused on course and result, 2010).

When solving MU, it is necessary to perceive human contact. Often, only a non-verbal expression such as a smile, gestures of help and support is enough. It is important for the volunteer not to refuse help, sometimes it is enough to just listen. It is essential to treat all those affected with dignity, to be sensitive to the concerns and difficulties of the other person, to speak seriously, not to trivialize the situation, to speak clearly, distinctly and patiently (PALTTALA, 2012). It is important to answer the questions truthfully (truthful does not mean tactless). If necessary, it is advisable to help the affected person find a specialist. In addition to immediate material help, it is important to realize that during or after an emergency, there may be a need for psychosocial help and support.

In the course of an emergency, aid workers witness tragedies and suffering, work under considerable pressure, and after a certain time, the mental and physical consequences of this overload may manifest themselves. Self-reflection, supervision and lifestyle balance are necessary to prevent and manage stress. In case of failure to cope with the workload, workers in the helping professions may experience a state of emotional and physical exhaustion, which may be accompanied by a loss of interest in work, mistrust of others, loss of a caring attitude

and motivation, cynicism towards clients, a sense of personal failure and low morale. It arises from the long-term uncompensated load that comes from working with people. This condition is known as burnout syndrome. Prevention of burnout syndrome is training, training, further education, defining the mission and content of work, supervision and emphasis on a healthy lifestyle of the helping worker.

## REFERENCES AND INFORMATION SOURCES


1. HRUSKA, L. et al. (2018). Analysis of the state of volunteering abroad and in the Czech Republic. Ostrava, ACCENDO. ISBN not listed.
2. HU., X. and al. (2021). Disaster policy and emergency management reforms in China: From Wenchuan earthquake to Jiuzhaigou earthquake. International Journal of Disaster Risk Reduction. 52. doi: 10.1016/j.ijdrr.2020.101964.
3. Integrated Rescue System (2009). MV - DG HZS CR [online] [cit. 2022-10-09]. Available from: http://www.hzscr.cz/clanek/integrovany-zachranny-system.aspx
4. IVANČÍK, R. (2011). A phenomenon called globalization. In Military reflections, 2011, Vol. 6, No. 1, pp. 32-49. ISSN 1336-9202.
5. IVANČIK, R. (2012). A theoretical-methodological view of security. In Military Reflections, Vol. 7, No. 1, pp. 38-57. ISSN 1336-9202.
6. KAVAN, Š. (2014) System of cooperation of non-state non-profit organizations in dealing with extraordinary events in the Czech Republic In SPEKTRUM, Association of Fire and Safety Engineering, volume 14, No. 2/2014. Ostrava. ISSN 1804-1639.
7. MAWSON, A. (2005). Understanding Mass Panic and Other Collective Responses to Threats and Disasters. Psychiatry: Interpersonal [online]. 2005, 68(2), 95-113 [cit. 2022-10-25]. DOI: 10.1521/psyc.2005.68.2.95. ISSN 00332747.
8. OMUKUTI, J. et al. (2021). The value of secondary use of data generated by non-governmental organizations for disaster risk management research: Evidence from the Caribbean. International Journal of Disaster Risk Reduction. 56. doi: 10.1016/j.ijdrr.2021.102114.
9. PALTTALA, P. and et al. (2012). Communication Gaps in Disaster Management: Perceptions by Experts from Governmental and Non- Governmental Organizations. Journal of Contingencies and Crisis Management. 20, 1. doi:10.1111/j.1468-5973.2011.00656.x.
10. Voluntary Emergency Assistance Rules (2013). Working group at the Ministry of the Interior of the Czech Republic Volunteers in emergencies and crisis situations. ISBN not listed.
11. SKALSKA, K. et al. (2010). Integrated rescue system and fire protection. MV DG HZS CR, Prague. ISBN not listed.
12. Standards for Psychosocial Crisis Assistance and Collaboration Focused on Course and Outcome (2010). Ed. 1. Prague: Ministry of the Interior - General Directorate of the Fire Rescue Service of the Czech Republic. ISBN 978-80-86640-46-4.
13. Decree No. 328/2001 Coll., on some details of the integrated rescue system. In: Collection of laws of the Czech Republic, number 127/2001.
14. Act No. 239/2000 Coll., on the integrated rescue system and on the amendment of certain laws. In: Collection of laws of the Czech Republic, amount 73/2000.
15. Act No. 240/2000 Coll., on crisis management and on the amendment of certain laws (Crisis Act), as amended. In: Collection of laws of the Czech Republic, amount 73/2000.

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# THE CONTEMPORARY SECURITY THREATHS AND SECURITY POLICY – ELEMENTARY ISUES OF CROATIA

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**ABSTRACT:** This contribution is focusing on a problém of ceration of Security policy ina a small state on a example of Croatia. Contemporary threaths and develompment of the Political systém in new created state has an strong impact to the specifical enviroment of these issues, threats and Policy. This contributions present elementary resources for the research of the specific conditions of Security policy issues.

**KEY WORDS:** Threaths, Security Policy, Collective Security, Crisis Management, Small State

## INTRODUCTION

The internal and external activities of the Republic of Croatia are influenced by a number of factors, so it is necessary to provide general information about the country in which the research is conducted. Every action of the Republic of Croatia, both at the national and international level, is the result of the desire to achieve a specific national goal. Each national goal is an expression of efforts to ensure the welfare and survival of the state and the protection of its citizens. (IVANČÍK, 2022)

The Republic of Croatia covers an area of 56,538 km on land and 31,067 km on sea. It borders 6 countries and according to the 2021 census, 3,888,529 people live in the Republic of Croatia (It is important to point out that in the 2011 census the Republic of Croatia had a population of 4,284,889). The majority of the population are Croats, who make up about 90% of the population, while national minorities account for the remaining 10%. Their rights are regulated by the Constitution, a special constitutional law, and laws on the official use of the languages and scripts of national minorities and the education in minority languages. The official language is Croatian, and the population is predominantly Catholic (over 80%). The country consists of three geographical regions (continental, coastal and mountainous) with a predominantly Mediterranean climate by the sea and a moderate continental climate on land.

In the 1990s, Croatia's socialist and semi-market economy was transformed into a system based on private ownership and an open market economy. Economic development was affected by severe war damage, and in the early 1990s Croatia was in an economic depression. The Republic of Croatia is a democratic state with a parliamentary system. On June 25, 1991, the Croatian Parliament adopted the Constitutional Resolution on the Sovereignty and Independence of the Republic of Croatia. The semi-presidential system was transformed into a parliamentary system in 2001, and since then the president has had a representative function and is the commander-in-chief of the armed forces. The Croatian Parliament is the bearer of legislative power, while the Government is the executive power. The Republic of Croatia has three branches of government, so in addition to the legislative and executive branches, there is also the judicial branch, which is exercised by courts and other judicial bodies. The coat of arms, the flag and the anthem are the state symbols of the Republic of Croatia. They represent

the Republic of Croatia, and their use indicates affiliation with the Republic of Croatia. The use of these symbols, as well as their appearance and protection, are regulated by a special law.

## NATIONAL SECURITY STRATEGY OF THE REPUBLIC OF CROATIA

The National Security Strategy of the Republic of Croatia (hereinafter Strategy) is the most important public document in the field of security, which deals with the coordination and development of national security of the Republic of Croatia. The Croatian Parliament emphasizes that this document provides a unique basis for the creation and implementation of systematic institutional solutions, measures and activities to respond to general security challenges and specific forms of threats to the Republic of Croatia. According to the Strategy, national security can be defined as a state of protection of the basic values of society and institutions based on them. The Republic of Croatia is considered a secure country whose security situation is conditioned by numerous geographical, economic and historical factors.

In the first years, the security strategy of the Republic of Croatia was focused on defense and liberation of the territory, which is not surprising, considering that at that time the Republic of Croatia was under pressure from aggressors. After the Homeland War, there was a gradual transformation of the system towards democracy and the establishment of new foreign and security policy goals. The changes and transformation processes were not accompanied by appropriate strategic documents, so the only documents from which the conceptual approaches to national security could be discerned were the reports that President Franjo Tudjman presented to the Croatian Parliament once a year.

After the Homeland War, security policy focused on accelerating the opening to the outside world and initiating the process of integration into NATO and the EU. Since 2000, the Republic of Croatia has participated in about twenty peacekeeping operations led by UN, NATO and the European Union. Thus, it has demonstrated that extending security to the international level is a very important strategic component of its foreign and security policy. The fact that the public does not have the right to decide on participation in peacekeeping operations has been criticized, and opinions are divided. At the beginning of 2002, significant amendments were made to the law regulating the national security (the Act on the Security Intelligence System) and defense (The Law on Defense and the Law on Service in the Armed Forces of the Republic of Croatia). At the same time, the Republic of Croatia adopted the National Security Strategy and the Defense Strategy, which are considered key documents for the formation of security and defense policy. These strategic documents showed that the Republic of Croatia was firmly focused on international action and integration, which later proved to be the case. The country has been a member of NATO since 2009 and the European Union since 2013. It can be concluded that the internal security strategy at that time focused on the transition process (democratization), while the foreign policy focused on entering into alliances (integration on the international stage). In the 2000s, the government struggled with the problem of disorder in the system and the lack of review mechanisms. Everything was explained and elaborated in theory in documents, but not implemented in practice. The authors believe that the problem was the rapid transition of society, for which citizens were not ready, and the lack of institutions that would implement the new policies of the system. Critics believe that it was not possible to speak of national security at the time because it was not yet applicable and therefore not sustainable. (TATALOVIĆ, BILANDZIĆ,2005) In late 2010, the National Security Council prepared a new draft strategy with the aim of introducing new measures and creating an institutional framework. The draft strategy was strongly criticized by the professional and academic public in a public debate and was not referred to the further implementation process. The criticism referred to the insufficiently elaborated hierarchy of threats and risks to which the Republic of Croatia is exposed.

"From the text of the draft, one cannot read the views on the main processes in the field of international relations and security, neither at the global and regional level, nor in the immediate neighborhood of Croatia, which should be the starting point for structuring the National Security Strategy. Moreover, the draft does not clearly define the specific objectives of the foreign and security policy, nor does it attempt to clearly define the national goals and interests to be achieved by the strategy and the capabilities required to achieve them." (TATALOVIĆ, 2011, 37)

Given the dominance of the strategic goal to join NATO, the initiatives to change strategic documents in the field of national security came mainly from external actors (NATO) and were not the result of internal processes and knowledge of the need to revise the existing strategy (Tatalović, 2010). This is one of the reasons why no new strategies could be developed at that time. Due to the bad experience and the need to develop new security strategies, the government decided to involve a large number of experts from governmental institutions, civil society organizations and scholars (almost 150 people) in the elaboration. This time it was successful and the Croatian Parliament adopted the National Security Strategy on 14 July, 2017. It is important to note that the Strategy promoted the concept of internal security and partnership for security, which was later implemented in the Law on Internal Security System, adopted by the Croatian Parliament on 27 October, 2017.

In order to better study the issue of the security of a democratic state and its strategic orientation, an analysis of strategic documents is proposed. In order to prove the hypotheses in further research through this dissertation, the national security strategies from 2002 and 2017 and the reports of President Franjo Tuđman are analyzed.

## THREATS AND NEW SECURITY CHALLENGES IN THE REPUBLIC OF CROATIA

Some authors believe that the Republic of Croatia has encountered a number of obstacles in its transition to democracy and, in particular, in building a system of national security. Considering the position of the Republic of Croatia (taking into account the fact that most of its neighboring states are not stable, they are destabilized and struggling with crises, and some are not EU and NATO members), the risk of possible conflicts is high, although the danger of a military threat in the region is almost excluded. Crises caused by the transition process lead to internal unrest and destabilization of the system in most of the neighbors. There is a decline in living standards and increased unrest, accompanied by higher crime rates. Although the Republic of Croatia is not yet under direct threat, certain processes in its environment pose a security risk. (TATALOVIĆ, BILANDZIĆ,2005)

People think differently about their own safety today than they did 5 or 10 years ago. This is scientifically proven, but also quite logical, because the international environment and historical events affect human security. Sometimes people within a state are divided, i.e. they do not consider the same threats to be equally dangerous. This can be evidenced in the Republic of Croatia as well. Namely, some live near the border and feel threatened by migration, while others live inland and therefore may feel more threatened by natural disasters or something else entirely. In this paper, a survey is conducted in two Croatian cities. The same questions will be asked to the same number of respondents, assuming that the answers to the question of what represents the greatest insecurity for them will be different. After all, what represents the greatest threat to security for some is not necessarily the same for others.

In the literature, the sources of threat are usually divided into global and local threats, i.e. those that occur within a state and have no impact on another state, and those that threaten a state from the outside and have an international character. Some authors argue that states today are so intertwined that almost any threat is global in nature, so that direct or indirect events within one state have an impact on another state. Opinions are divided, but one thing holds true for all: there has been a shift from military to non-military threats. War is no longer the focus

of the study of international security; instead, diplomacy is increasingly sought to ensure a balance of power and peace. Therefore, research will focus on new forms of security threats, namely: terrorism, migration, ethnic conflict, illicit arms trafficking, crime, environmental threats, and cybersecurity, which is one of the most prominent today.

Almost always, public interest in someone or something increases when something big happens, something that affects the majority of the population. Thus, we can say that since the terrorist attack on the WTC and the Pentagon (September 11, 2001), terrorism has been increasingly studied and since then it has been considered a major threat in the world. Taking the Republic of Croatia as an example, we can state the following (two global and one local example are taken). With the large migration of the population from Syria in 2020, the concern about the migrant crisis grew, and shortly after the appearance of the COVID -19 virus, more and more people began to think about the health aspect of security. In 2000, in addition to all this, the Republic of Croatia was hit by a natural disaster - the earthquake in Zagreb and its surroundings. Incredible damage, many casualties, and reconstruction is not even close to complete. Human safety was threatened within 20 seconds, and suddenly all citizens of the Republic of Croatia began to learn about the earthquakes. Apart from the differences between these events, one of which was local and the other two global, the difference lies in who or what caused them. Earthquakes are the work of nature and can rarely be influenced by human activity, while migrations and coronaviruses are. This can be acted upon, and security analysts see room for improvement. They believe that the workings of natural forces can hardly be influenced, while human activities can or must be predicted and prevented or mitigated.

In recent years, crime has become a serious threat to individuals and the state. Organized crime includes trafficking in human beings, organs and drugs, and is often linked to money laundering and corruption. In the Republic of Croatia, the history of crime is most often associated with the corruption of public officials. According to Tatalović (2006), corruption is not only a characteristic of undemocratic and disorderly societies, but theoretically reduces to the acquisition of private goods to the detriment of the public interest of society (abuse of office), which is ubiquitous. The best known organization in the world dealing with the problem of organized crime is INTERPOL, which was founded in 1923. From its headquarters in Lyon, France, it has great power to obtain information, and it has carried out many successful operations. What slows down its effectiveness is bilateral agreements between states, because each state has the right to its own policy towards others, i.e. third parties, so there are problems with extradition of offenders, for example.

In addition to crime, there is the already mentioned illegal migration, that is, the illegal flow of people, money and goods. Nowadays it is impossible to stop migration, because people move mainly because human rights allow them to do so. They travel for various reasons - relocation, tourist trips, business meetings, family and health reasons, sports competitions and the like. Their movement is regulated in such a way that there are border controls, there are mechanisms to verify their personal documents, and there are clearly defined sanctions if measures and rules are violated. Today, however, we are increasingly confronted with illegal migration. Their occurrence is the result of wars, religious and ethnic conflicts, and economic and social crisis. In addition to the illegal crossing of borders by migrants, states face the problem of forged documents and the problem of robberies committed by migrants. The security of rich countries is most at risk as they are the final destination of migrants, but countries on the way to these final destinations are also seriously damaged and the security of their citizens is also at risk. Increased controls, the opening of borders and economic cooperation are intended to bring illegal migration under control and thus reduce its threat. Digital domination and the evolution of technology have led to everything and everyone being present online, changing the "game" in international relations. (IVANČÍK, 2011) All business is conducted online, and society is unaware that technology has brought with it a whole host of

threats, one of the biggest of which is cyberattacks. It is interesting that when examining the latest challenges facing states and individuals, there is always talk of cyber and information security. The fundamental difference between information security and cybersecurity is the type of data or information they protect. Information security focuses on protecting data from any kind of illegal access, while cybersecurity focuses on protecting data from unauthorized digital access. One of the main targets of cybercrime attacks in the Republic of Croatia is the financial sector and users of financial services such as online banking. From the Strategy and Action Plan of the Republic of Croatia, it is evident how much attention is paid to this type of threat.

It is very difficult to achieve security when it comes to cyberattacks. A joint approach of several competent institutions is required, as the field of cyber security encompasses all sectors of society. In the Republic of Croatia, the awareness of the problem is theoretically present, however, the society, i.e. citizens, are not sufficiently aware of the existence of cyber attacks. However, this awareness is increasing due to the growing presence of this type of attacks. When people are affected by a cyber threat, they start to research and think more about it. One of the roles of institutions is to raise citizens' awareness of cyber attacks so that at least some of the attacks can be prevented. With regard to the institutional framework of information security, the national and foreign bodies in which Croatia is a member or with which it cooperates should be considered. The main bodies responsible for information security in the Republic of Croatia are:

- The Office of the National Security Council (UVNS),
- The Information Systems Security Bureau (ZSIS),
- National CERT (computer emergency response teams) and the High-tech Crime Department
- The information systems and information technologies support agency,
- The Croatian Personal Data Protection Agency and The Central State Administrative Office for e-Croatia. (Tatalović, Bilandzić, 2005).

## CONCLUSION

All institutions in the Republic of Croatia coordinate their activities according to the recommendations of international institutions. The best known is EU CERT (Computer Emergency Response Team for EU Institutions, Bodies and Agencies), whose main goal is to collect information on threats, vulnerabilities and incidents related to cyber attacks. It works with national CERTs to try to prevent, detect and mitigate any type of cyber attack. Among international organizations, there is also the European Union Agency for Cybersecurity (ENISA), which assesses potential risks and solutions and advises member states. With crime on the rise, there is also the European Cybercrime Center and the European Defense Agency (EDA), which promotes and develops defense and research technologies by developing a common platform for responding to cyberattacks. The Republic of Croatia is investing more and more efforts and resources in cybersecurity, which means that it has recognized the potential threat to the security of its citizens.

Risk is always present, and the threat is realized when it exploits the weakness and vulnerability of a system. It is necessary to invest constant efforts and knowledge to prevent the threat to the state and human life. Security is the basis of human existence and as such it is an important part of daily life. It is a challenge first for the international community and then for the state to provide complete and absolute security. While this is desirable, it is very difficult to achieve. Each state combats security threats primarily at the national level and then combats others through the international community at the international level. In the Republic of Croatia, in addition to the above-mentioned threats and risks, the consequences of war are still present, especially the threat of landmines and explosives, which endanger human lives and economic development. (MATIKA, 2006)

The phenomenon of globalization has significant implications for the structure of the international community. No state has complete sovereignty and independence. They join together, form alliances, become members of international organizations, and consider themselves stronger when united. In addition to the economy, an important area of international cooperation is security. Security as an area of social activity that directly affects other values and areas of life, such as the economy, human rights, fundamental freedoms, culture and social rights. (IVANČÍK, 2021) With the emergence of new security threats such as international terrorism, migration, transnational crime, cyber attacks, and threats to human rights, the issue of security is becoming increasingly regionalized and globalized, forcing almost all countries to cooperate on security (CVRTILA, 1995). Consequently, security today is seen less and less in the context of threats and defense, and more and more through the application of preventive principles and activities, as modern democratic societies cannot afford inaction in the face of potential catastrophic consequences. In an effort to act as best they can and achieve the highest level of national security, states choose to integrate. This is all the more true as today's threats are increasingly global and less local. A problem at one end of the world affects (directly or indirectly) people at the other end. The international community, as the environment in which international actors (individuals, states, organizations, the Church, etc.) operate, has become the center of the struggle for peace and security in the world.

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## REFERENCES AND INFORMATION SOURCES

1. IVANČÍK, R. (2022): Bezpečnosť. Teoreticko-metodologické východiská. Plzeň : Vydavatelství a nakladatelství Aleš Čeněk, 2022. 239 s. ISBN 978-80-7380-873-0.
2. IVANČÍK, R. (2011): Fenomén zvaný globalizácia. In Vojenské reflexie, 2011, roč. 6, č. 1, s. 32-49. ISSN 1336-9202.
3. IVANČÍK, R. (2021): Prístupy vybraných teoretických škôl k bezpečnosti. In Právo a bezpečnost, 2021, roč. 15, č. 2, s. 37-59. ISSN 2336-532.
4. TATALOVIĆ S., M.BILANDZIĆ M. (2005): *Osnove nacionalne sigurnosti,* Zagreb: Ministarstvo unutarnjih poslova RH.
5. TATALOVIĆ, S. ,GRIZOLD A., CVRTILA V. (2008): *Suvremene sigurnosne politike*, Zagreb: Golden marketing-tehnička knjiga, 2008.
6. MATIKA, D. (2006): U susret euro-atlantskim sigurnosnim integracijama. Zagreb : Defendologija, 9 (4): 11-20.
7. CVRTILA, V. (1995) *Nacionalni interesi i nacionalna sigurnost* In: Politička misao, 32(2) Zagreb 1997 , p. 24 -33.
8. TATALOVIĆ, S. (2011): Treba li Hrvatskoj nova strategija nacionalne sigurnosti, In Profil politike. Vol 2. Zagreb.

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# THE CURRENT STATE OF INFORMATION SYSTEMS OF PUBLIC ADMINISTRATION FOR SOLVING SECURITY RISKS

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**ABSTRACT:** We focus on the analysis and assessment of the availability of information on crisis situations on the websites of public administration structures. The periods from 2020 to 2022, with their global and regional crisis events, gave us the opportunities to examine how public administration systems are prepared to deal with crisis events. Crisis events that need to be managed on public administration information pages are not only flood, fire, natural disasters, industrial and ecological accidents, but also migration, epidemic, energy crisis, unemployment or labor shortage and the danger of war.

**KEY WORDS:** Crisis, Public Administration, Crisis Management, Self - Government, Municipality

## INTRODUCTION

Citizen as a natural person has the right to timely warning of imminent danger, to provision with means of individual protection, to evacuation and shelter and to information on the method of protection, to immediate assistance in the event of a threat to life, health and property. The citizen expects information from the public administration and implementation of crisis management in all its bodies. It also expects that all components of public administration are ready to deal with a crisis situation and that information security is part of the culture of every institution operating in the public sector, that is, also in local government. In this activity, the local self-government lags behind due to human and material capacity reasons. The priority in the Slovak Republic from a legislative point of view in a crisis situation and its management is the responsibility of the state administration, and in the territory of self-government it is the district offices that have the human capacity for this activity. The territorial self-government may require the District Office to monitor and assess possible places where risks arise. The district level is designed to deal with most crisis situations and risks that may arise and threaten the stability of the given territory. Emphasis is placed on the readiness of the regional state administration in cooperation with the territorial self-government to solve the negative aspects of the crisis affecting the safety of the inhabitants, their property and the processes of the given territory.

The district office in each district (the Slovak Republic has 78 districts but 75 district offices) fulfills the tasks of civil protection, implements measures to resolve crisis situations, establishes a crisis staff, coordinates the activities of municipalities in preparing for a crisis situation and proceeds in its resolution as determined in legislation by the government and to the extent determined by the government and the central crisis staff. Both the district level and the territorial self-government must have a certain degree of preparedness and specialized human resources, functionality of information tools and applicable technical means in crisis management. As stated by Čambáliková and Uhlerová, an important part of the resources in any activity is also the potential consisting in the ability of collective action and cooperation. (ČAMBÁLIKOVÁ, UHLEROVÁ, 2021) We focused mainly on the possibilities and content

of information tools available to the citizen, because during the ongoing COVID pandemic, both citizens and the media were critical of the information that it is very weak at all levels of crisis management. That's why we decided to find out the objective state of websites from the local government, where the citizen first expects information up to the level of government entities.

By studying and investigating websites according to the criteria we have chosen and which are listed further in this post, we can prove that **crisis** management not only at the level of municipalities and cities in Slovakia, but also ministries and district offices has a very diverse informational character. We came to this realization when investigating, from a citizen's point of view, on w-pages all levels of crisis management, which we carried out in the period 2-5/2022.

**BASELINE STATUS AND OBSERVED RESULTS**

In the documents of the crisis units of the District Offices, the requirement is emphasized - *every municipality is obliged to have at least one person with professional competence in the area of civil protection of the population.* If the municipality does not have such a person, it is obliged to have the required documentation processed by a subcontractor. The law expects the mayor to be able to connect individual levels of crisis management when solving a crisis situation.

During the analysis and evaluation, we therefore also focused on the fact whether it is possible in practice to connect to the information system of the state administration quickly, intuitively and on the basis of the same logical scheme from the level of the village or city and thus obtain answers to the solution of the crisis situation. We made the following assumptions as a hypothesis for such an assessment:

- when opening the basic website, it is possible to quickly identify - recognize the link for resolving the crisis situation
- when you open the link for crisis management, there is a crisis management department with a contact and a description of competences, which will provide additional information for crisis management.

In Act No. 369/1990 Coll. states of crisis management are not specified, and from the content of paragraph 3, paragraph 3), letter d) for states of crisis management, the law places greater emphasis on mutual solidarity of the community in a given municipality. The citizen requests that basically every citizen of the village is obliged by law - " *to provide personal and material assistance during rescue work and removing the consequences of an emergency in the village"*. This personal obligation is subject to requirements to the extent stated in paragraphs 21 to 26 of the Act of the National Council of the Slovak Republic No. 42/1994 Coll. on civil protection of the population, as well as § 41 par. 2 letters c) Act No. 7/2010 Coll. on flood protection. The property obligation of a citizen and the solidarity of a citizen are required by § 128, Act No. 40/1964 Coll. of the Civil Code, which stipulates that " *the owner is obliged to tolerate that, in a state of emergency or in the urgent public interest, his property is used for the necessary time to the necessary extent and for compensation, if the purpose cannot be achieved otherwise".*

We can state that the law on general establishment assumes considerable knowledge of other laws from citizens in crisis situations, which without sufficient access to information, i.e. without good information, becomes an unrealistic requirement. Therefore, when analyzing the information on the websites, we focused on whether entities operating in the territory of the self-government have directly available information for obligations and procedures in a crisis situation. We also examined the fact whether there is a reliable partner for them that they can rely on in these situations, i.e. whether the city, municipality, ministry has human resources

designated for this activity in its organizational structure. In order to record the discovered facts, we processed them into tables, a selected sample of which is presented.

For the purposes of comparison and evaluation, we also included in the analysis selected ministries that have direct responsibility for crisis management and direct legislative obligations for crisis management. By examining the w-sites of the ministries, we found out the real possibilities for quick and reliable information, which citizens and subjects of local self-government have, which are dependent on information from individual levels of public administration when dealing with crisis situations.

For the analysis of w-sites on the awareness and availability of information for the public, citizens of the catchment area at the general management level, we selected the regional cities and urban districts of the cities of Bratislava and Košice with the largest number of inhabitants and district cities in regions under the jurisdiction of which there are more than 90 thousand inhabitants. We also examined cities that have a population of over 10,000 and some municipalities, regardless of population, in whose territory there are important industrial facilities or strategic infrastructure that represent a certain degree of threat in the event of technology crashes or other crisis situations arising from the geographical and demographic nature territories.

**Tab. 1: Web survey of approaches to crisis management on websites of municipalities and ministries**

| **City** | **Access for citizens on the main website for crisis situations** | **Organizational incorporation and title** | Number at saving |
|---|---|---|---|
| Bratislava - Rača | It has, under the name - Councils for crisis situations - Civil protection | Office of the Chief - Department of Civil Protection and Crisis Management | 2 |
| Bratislava - Petržalka | It doesn't have | It cannot be detected. The activity - Crisis management and civil protection is included in the area: Records and protection | 3 |
| Trnava | It doesn't have | It cannot be found either in the organizational structure or the statute of the city | 12 |
| Nitra | It doesn't have | It cannot be ascertained in the organizational structure and it is stated in the organizational rules - the head's office also includes a defense, protection and security officer | 13 |
| Žilina | It doesn't have | In the organizational order, the head of the office - Crisis Management Department, CO, OPP and OSH is directly in charge | 14 |
| Trencin | It doesn't have | It cannot be found in the organizational structure | 15 |
| Banská Bystrica | It doesn't have | In the structure of the Ministry of Internal Affairs, the list of departments includes - Crisis management department | 16 |
| Prešov | It doesn't have | It cannot be detected even in the organizational structure | 17 |

| | | | |
|---|---|---|---|
| Dunajská Streda (125 thousand inhabitants) | It doesn't have | It cannot be found in the organizational structure and in the Statute of the city there is an article 30 entitled - Assistance in emergency situations | 18 |
| Haystack (99 thousand inhabitants) | It has the logo - Civil Protection | In the organizational structure under the director of the mayor's office, there is a department - CO Officer, crisis management and economic mobilization | 27 |
| Moldava above Bodvou (10 thousand inhabitants) | Under the logo "City" - Crisis management and resolution of crisis situations (also with voice reading) | It cannot be found in the organizational structure, but under the logo - Crisis management and resolution of crisis situations, it provides detailed contacts and methods of behavior and solutions in selected crisis situations. | 28 |
| **Ministry** | | | |
| Ministry of the Interior of the SR | It has - under the pictorial logo "Crisis Management" | It can be found in the Regulation of the Ministry of the Interior of the Slovak Republic of March 30, 2015 on the organizational rules of the Ministry of the Interior of the Slovak Republic - Article 6, under f) Crisis Management Section. With some problems it is possible to find out what relations the ministry and its section have with municipalities and cities - which is secured and also contains documents for Crisis management of municipalities and cities (https://www.minv.sk/?krizove-riadenie-obci-a-miest) . | 1 |
| Ministry of Defense | No - The site has a logo for - International Crisis Management. However, this link is practically unusable in crisis situations. | The organizational structure includes the Department of Crisis Management and the Department of International Activities crisis management. The Department of Crisis Management has the Department of Civil Protection and crisis planning. Finding concrete relationships with municipalities and cities is difficult and impossible for various crisis situations. | 2 |
| Ministry of Economy | It doesn't have. In the Ministry line, there is a link to - Security and crisis management | The organizational structure includes the Security Department and crisis management. It was not possible to find concrete relationships with municipalities and cities for various crisis situations. | 3 |
| Ministry of Health | It doesn't have | The organizational chart of the Ministry of Health includes a department of crisis management. Finding specific relationships with municipalities and cities is challenging even in the structure of a separate crisis management department of the region's healthcare. | 4 |

*Source: Own processing.*

**Tab. 2: Web-based survey of approaches to crisis management on w-pages of district offices.**

| District office | Access for citizens on the main website for crisis situations | Organizational incorporation and title | Number at saving |
|---|---|---|---|
| Malacca | Has - crisis management logo and link | In the organizational structure, there is a Department of Crisis Management with a director and a contact. Contains downloadable documents in the link - Analysis of the territory of the Malacca district from the point of view of possible extraordinary events and a document Plan of the main tasks in the Malack district in the fulfillment of crisis management tasks | 2 |
| Brezno | Has - crisis management logo and link | In the organizational structure, there is a Department of Crisis Management with a director and a contact. The link contains downloadable documents - Manual for municipalities - floods | 3 |
| Rimava Saturday | Has - crisis management logo and link | In the organizational structure, there is a Department of Crisis Management with a director and a contact. The link contains only a link to the directive of the Ministry of the Interior of the Slovak Republic on the internal organization of the district office | 4 |
| Tvrdosin | Has - crisis management logo and link | In the organizational structure, there is a Department of Crisis Management with a director and a contact. It contains downloadable documents in the link - Information for the public in accordance with §15a of the Act No. 42/1994 Coll. on civil protection of the population, as amended | 5 |
| Sobrance | Has - crisis management logo and link | In the organizational structure, there is a Department of Crisis Management with a director and a contact. It does not contain any links or documents. | 6 |
| Rožňava | Has - crisis management logo and link | In the organizational structure, there is a Department of Crisis Management with a director and a contact. It does not contain any documents, only one link to - Directive of the Ministry of the Interior of the Slovak Republic of January 22, 2018, which modifies the details on the internal organization of the district office. | 7 |

*Source: Own processing.*

In the organizational structure of the local self-government, as can also be seen from Table No. 1, the units dealing with crisis management have different positions and names. Also, the description of the content and the scope of their activity is different. It is not always possible to clearly determine the content of the activity, the scope of authority and even responsibility. The scope of responsibility can only be clearly determined where this department, whether as a department, department or department, is directly subordinate to the mayor or mayor.

The ministries did not have a quick option and reliable information about crisis management in accessing their website, even if they have established crisis management departments (in different combinations and levels of position in the organizational structure of the ministry):

- Ministry of Transport and Construction
- Ministry of the Environment
- Ministry of Education, Science, Research and Sports
- Ministry of Agriculture and Rural Development
- Ministry of Culture
- Ministry of Labour, Social Affairs and the Family (the page was unavailable due to technical problems at the time of investigation 04/26/2022)
- Ministry of Investments, Regional Development and Informatization
- Ministry of Foreign Affairs and European Affairs
- Ministry of Finance
- Department of Justice.

In this assessment, we also took into account the fact that the Ministers of Finance, Defense, Interior, Foreign and European Affairs, Economy, Transport and Construction, Justice, Health are members of the Security Council of the Slovak Republic.

District offices have a very different level of information provision and, at the same time, inconsistent leadership of these departments from the level of the Ministry for Crisis Management.

## RESULTS OF INFORMATION ANALYSIS FOR CRISIS MANAGEMENT

The analysis showed a very different level of access to information for solving crisis situations at the level of cities and municipalities in Slovakia. When examining w-sites or municipalities and cities that have a link to crisis situations, we found that 75% of them did not have a link on the main website. We suggest that these links be unified by a label - a name on the main page, on the pages of all levels of crisis management. The table shows what different names are used in practice today. We also see that there is no uniform methodological guidance of the content of the activities of the territorial self-government units, which of course follows from our finding that even the district offices do not have a uniform approach to the interpretation and implementation of valid legislation in their practice. This is reflected in their websites, when up to 55% of them do not contain any relevant links or documents that would be helpful for the unification of information at the level of local government. During the analysis, we found that the District Offices had a uniformly created Department of Crisis Management with contact details, but in the content of their documents, the information for citizens or public and private sector entities is unclear, insufficient, out-of-date and erroneous. Most of the published documents have a general content and in some cases are only marginally related to crisis management.

And the findings also show that digital preparation for crisis management lags behind significantly, it does not have a uniform methodology or financial and material support. Both the pandemic and the migration crisis, the inattention of governments to public policies can lead to an increase in the loss of life, an increase in the number of health- and economically damaged citizens, which in current practice also causes mistrust of public administration bodies and

institutions. The basic principle of politics, which we call democratic, is the creation and protection of state institutions. (KULAŠIKOVÁ, KOVÁČOVÁ, 2019) If citizens' trust in institutions is to increase, it is desirable that, in accordance with valid legislation on the roles of crisis management, digital awareness of the municipality's obligations in the area of population protection should also be implemented. However, for this, it is necessary to form information on the roles and scope of the municipality, the rights and obligations of natural and legal persons in securing the tasks of crisis management in a uniform digital form on the pages of not only the territorial self-government, but also of the district offices and ministries.

## CONCLUSION

The crisis events that the public administration had to manage during the period of the survey were, or still are, migration, epidemic, energy crisis, climate crisis and also the danger of war. There are no clear criteria according to which we could evaluate the success of public administration actions in crisis management. However, in the conditions of Slovakia, it is generally accepted that the local self-government also had a positive influence on the management of the crisis, therefore it is necessary to analyze its operation and introduce good experiences into the legislation. But first, the current legislation must be functional at all levels of public administration in the form of accessible, unambiguous comprehensibility and the possibility of its execution. Unfortunately, as the results of our investigation show, this does not yet apply in the practice of public administration in Slovakia.

## REFERENCES AND INFORMATION SOURCES


1. ČAMBÁLIKOVÁ, M., UHLEROVÁ, M. (2021). *Regional social dialogue*. FES Bratislava. 2021.107 pp. ISBN 978-80-89149-93-3
2. KULASIKOVÁ, Z., KOVÁČOVÁ, N. (2019). *Is democracy a fetish?* In. Democracy in the 21st century. Central European Education Institute Ltd., Bratislava. 2019. 174 pp. ISBN CZ: 978-80-7632-037-6


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# A MICRO-STUDY OF VIOLENT SECURITY INCIDENTS ABROAD IN RELATION TO MASS SOCIAL EVENTS

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**ABSTRACT:** The aim of this thesis is to conduct a micro-study of violent security incidents at mass events in selected states. The purpose of conducting the microstudy is to observe the trend of violent security incidents in the selected states. Violent security incidents are associated with the global phenomenon of terrorism in the world. All these acts and actions are defined as terrorist attacks or attempted terrorist attacks. This finding was used to further analyze two of the world's largest databases that deal with terrorist attacks around the world and are the largest public source of this information. Both the UCDP and GTD databases are regularly updated and updated with new cases. For the global examination, it was necessary to adjust the period under examination to 2002 and 2019. The years 2020 and 2021 are not yet included in the databases.

**KEY WORDS:** Terrorism; Violent Security Incidents; Security Incidents at Mass Events.

## INTRODUCTION

The aim of the work is to conduct a micro-study of violent security incidents at mass events in selected states. The purpose of the micro-study is to monitor the development trend of violent security incidents in selected states. Violent security incidents are linked to the global phenomenon of terrorism in the world. All these acts and actions are defined as terrorist attacks or attempted terrorist attacks. This finding made it possible to use two of the world's largest databases that deal with terrorist attacks in the world and are the largest public source of this information for further analysis. The UCDP and GTD databases are regularly updated and supplemented with new cases. For a worldwide investigation, it was necessary to adjust the investigated period to the years 2002 and 2019. The years 2020 and 2021 are not yet entered in the databases.

In order to clearly define the wanted attacks, it is necessary to define the issue of terrorism. Precisely defining the term terrorism is not easy. This phenomenon can be interpreted differently with regard to the subject who performs the interpretation, the historical time period when the term was used or the purpose or intention for which it was used. To this day, for example, at the level of the United Nations, there is no unified and universally accepted definition. Experts have been trying to create a comprehensive definition since the 1930s. The first definition of terrorism was published only in 1980 in the USA and became the default standard for assessing and evaluating terrorist acts. It reads: “Terrorism is the calculated use of violence or the threat of violence, usually directed against non-participants, with the aim of instilling fear through which political, religious or ideological goals are achieved. Terrorism also includes criminal crimes, which are symbolic in nature and are a way to achieve goals other than those aimed at by the criminal act" (BRZYBOHATÝ, 1999). The problem of definition focuses on three kinds of views. They are sociological, national and international approaches. In 1983, Alex P. Schmid listed 109 attempts to define terrorism, unfortunately without success. Schmid argues that terrorism should be understood as a specific communication process

because terrorism is a means of achieving a state of fear and the victims are the bearers of a certain message. With this reasoning of Schmidt's, Dass drew attention to the fact that the border between terrorism and ordinary violence is not fixed (SCHEU, ŠULCOVÁ, 2004).

The definition of terrorism within the sociological approach is therefore possible from two perspectives (SCHEU, ŠULCOVÁ, 2004):

- By state and non-state actors. The evidence is the use of violence by military regimes in South and Central American states,
- from a party to armed conflict. Terrorists are those who differ from legitimate armed movements by not complying with humanitarian law.

Within national law, the main legal instrument against terrorism is the criminal law, which can do without a specific definition, but the facts that are relevant from the point of view of the fight against terrorism must be defined. They are crimes against life, health, personal freedom and property. The advantage is that terrorism does not have to be enforced as a criminal act, but focuses on specific values that the terrorist act interferes with (SCHEU, ŠULCOVÁ, 2004).

For the Czech Republic, the decisive definition, based on the factual nature of the crime "terrorist attack", is given in the Criminal Code. On the basis of this provision, terrorism can be briefly defined as the use of violence or the threat of violence in order to cause a feeling of fear in society, with the aim of achieving certain, usually politically motivated, goals. The Criminal Code of the Czech Republic states the following points (Criminal Code of the Czech Republic, No. 40/2009 Coll.): "The focus of the Czech criminal law on terrorism lies in the Criminal Code, more precisely in Section 311 (terrorist attack) and Section 312 (terror). The legal regulation contained in these standards most closely copies the knowledge gained through its theoretical definition."

- "In the case of the first criminal offense - a terrorist attack - it is crucial to prove the intention to damage the constitutional establishment or the defense capabilities of the Czech Republic, to disrupt or destroy the basic political, economic or social structure of the Czech Republic or international organizations, to seriously intimidate the population or to unlawfully force the government or another public body power or international organization to do, omit or suffer. Subsequently, the Criminal Code stipulates the behavior that, in connection with the first condition, fulfills the factual aspect of this criminal act."
- "On the other hand, the criminal act of terror combines only two basic undeveloped factors - the intention to damage the constitutional establishment of the Czech Republic and to intentionally kill another person. This amendment could be described as the "hard core" of the criminal-legal punishment of terrorism."
- In general, both of these points are considered particularly serious crimes. If this criminal offense is committed on the territory of the Czech Republic by a foreigner without permanent residence in the Czech Republic, the criminal investigation itself is discussed and proceeded according to Czech legislation. In general, both of these points are considered particularly serious crimes. If this criminal offense is committed on the territory of the Czech Republic by a foreigner without permanent residence in the Czech Republic, the criminal investigation itself is discussed and proceeded according to Czech legislation.

Terrorism - this worldwide, ever-evolving phenomenon, in its essence goes back to history since the beginning of civilization. Since time immemorial, a whole range of situations and conflicts occurring in interpersonal relationships have been resolved in the form of violent acts, which are an accompanying phenomenon of every human society. However, the violence used to solve problems in many cases created an uncontrollable reaction that eventually swept away the initiators of the violence. In this sense, violence can be considered an uncontrollable

double-edged sword. Manifestations of violence are therefore a part of every human society, and the forms of violence used develop according to this society. The goal of every cultural and democratic society is the effort to eliminate all manifestations of violence. Terrorism is currently one of the most dangerous dynamic forms of violence that can threaten the very essence of a democratic state. Although a large part of humanity is not aware of this fact, the danger of terrorist attacks affects not only entire states, state and non-state institutions, multinational and smaller corporations and legal entities, but also individuals themselves - each of us. The danger of terrorist attacks lies primarily in the fact that attacks are carried out against non-participating civilians with the aim of affecting the largest possible part of the population and thus reaching broad social awareness, and therefore it is difficult to predict where, when and against which persons a terrorist attack will occur committed. Another, already mentioned, danger of terrorism is the negative impact of these acts of violence on the very foundations of a democratic and free state. After the terrorist attacks of September 11, 2001 on the World Trade Center in the United States of America, the concept of terrorism became a very hot and watched topic, and a number of new and more effective anti-terrorist measures were adopted both at the national and global levels. With the development of society comes the development of means and methods used by terrorists. Completely new conventional and unconventional methods of committing terrorist acts are emerging.

In order to monitor the selected countries, it was important to identify those countries that have experience with terrorist attacks. These are Belgium, France, Germany, Spain, USA and Great Britain.

## METHODOLOGY AND OBJECTIVE

The analysis of secondary data, which is based on the processing of already existing data, was chosen for the processing of a micro-study of violent security incidents in the world. This data can take the form of professional publications, media reports, outputs from research projects, formal and informal documents and databases of state and non-state organizations, annual reports, etc.

## 1. DETERMINING THE DURATION OF THE MICROSTUDY

At the beginning of the analysis, it was necessary to build a period of research. The year 2002, or September 11, 2001, when the terrorist attack on the WTC took place, was chosen as the beginning. This terrorist attack was a turning point in the understanding of security. Before September 11, 2001, when a person packed a carry-on bag on a plane on domestic flights within the United States, they could take sharp objects and drinks with them. There were no metal detectors and almost no queues at the airports. Passengers could arrive at the airport twenty minutes before departure and still know that they would make it to the plane. After September 11, conditions at all airports were significantly tightened across the board. In came paranoia and an anxious pursuit of one's safety, redeemed by a massive loss of privacy. Just a few weeks after September 11, 2001, security legislation began to change not only in the United States, but also in the European Union and the rest of the Western world. The year 2019 was chosen as the end of the examined period of the micro-study, which is the last full year in the database sources.

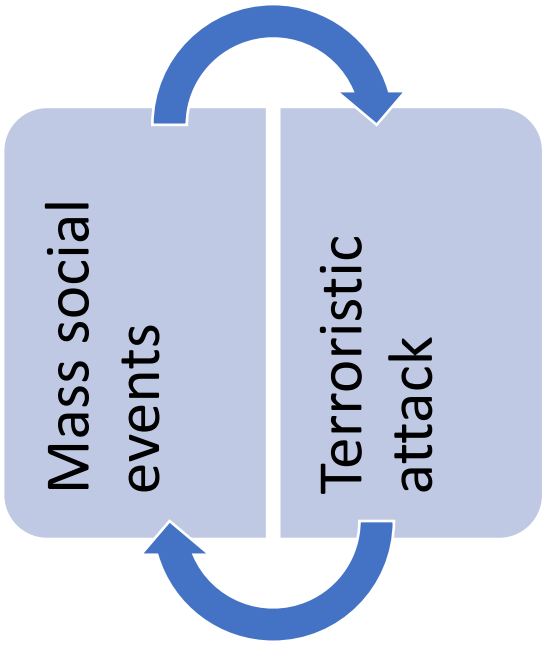
## DEFINITION OF THE SUBJECT OF INVESTIGATION

The research of the HELENA project is focused on the investigation of violent incidents at mass social events. A mass social event was defined, which is perceived as an exceptional event during which several people accumulate in one place for the purpose of sharing the same values and interests, which may be of a cultural, sports or other socially recognized nature.

Violent security incidents are incidents that seriously threaten lives, health, and property. It often happens unexpectedly and quickly. The solution requires special measures and procedures to eliminate the incident. It is characterized by a high degree of uncertainty.

Typically, this will involve violent security acts (attack with a cold weapon or a firearm) inside the organization's building (e.g. in a school building, etc.) or outside the building (e.g. at Christmas markets, etc.), an explosive placed in the building or outside the building, or it can go abduction of an employee, member of an organization, extortion, hostage-taking, gas explosion in or near the building, etc. Due to the lack of information, it is not usually clear at first whether it is an accident or a deliberate attack. The tools of this methodology are also suitable for solving situations when, for example, there is a serious traffic accident with a large number of injured employees or students, violent demonstrations are taking place around the building (in the given area) or in a situation where a state of crisis is declared in the region, where the organization is based and the situation affects it, etc. Due to this definition, it is necessary to look at violent security incidents as terrorist activities in view of the global issue, see figure no. 1.

**Figure 1: Definition of the conceptual apparatus**




*Source: Own processing.*

**SELECTION OF DATABASES**

For the study, it was necessary to select appropriate sources for analysis. For the purpose of the analysis, the following freely available database sources from the field of terrorist attacks were used:

- GTD: Global Terrorism Database (GTD | Global Terrorism Database (umd.edu). GTD is an open database containing information on domestic and international terrorist attacks worldwide from 1970 to 2019 and now contains over 200,000 cases. For each event, information is available on the date and location of the incident, the weapons used and the nature of the target, the number of casualties – and, if identifiable, information on the group responsible or the individual who caused the attack.

The National Consortium for the Study of Terrorism and Responses to Terrorism (START) makes GTD available through an online interface in an effort to improve understanding of terrorist violence so that it can be more easily studied and defeated.

Characteristics of GTD:

a. Contains information on more than 200,000 terrorist attacks.
b. Currently the most comprehensive unclassified database of terrorist attacks in the world.
c. It contains information on more than 95,000 bombings, 20,000 assassinations, and 15,000 kidnappings and hostage-takings since 1970.
d. Contains information on at least 45 variables for each case, with more recent incidents including information on more than 120 variables.
e. More than 4,000,000 news articles and 25,000 news sources were screened to gather data on incidents from 1998 to 2019 alone.

- UCDP: Uppsala Conflict Data Program (UCDP - Uppsala Conflict Data Program)
  The Uppsala Conflict Data Program (UCDP) is the world's leading provider of data on organized violence and the oldest ongoing civil war data collection project with almost 40 years of history. His definition of armed conflict has become the worldwide standard for how conflicts are systematically defined and studied. The UCDP produces high-quality data that are systematically collected, have global coverage, are comparable across cases and countries, and have long time series that are updated annually. In addition, this program is a unique source of information for practitioners and policy makers.
  UCDP also maintains and continuously updates its online database (UCDP Conflict Encyclopedia) on armed conflict and organized violence, which provides information on several aspects of armed conflict, such as conflict dynamics and resolution. This interactive database offers a web-based system for visualizing, processing and downloading data, including ready-made datasets on organized violence and peacebuilding, all for free.

**SEARCH KEYWORDS**

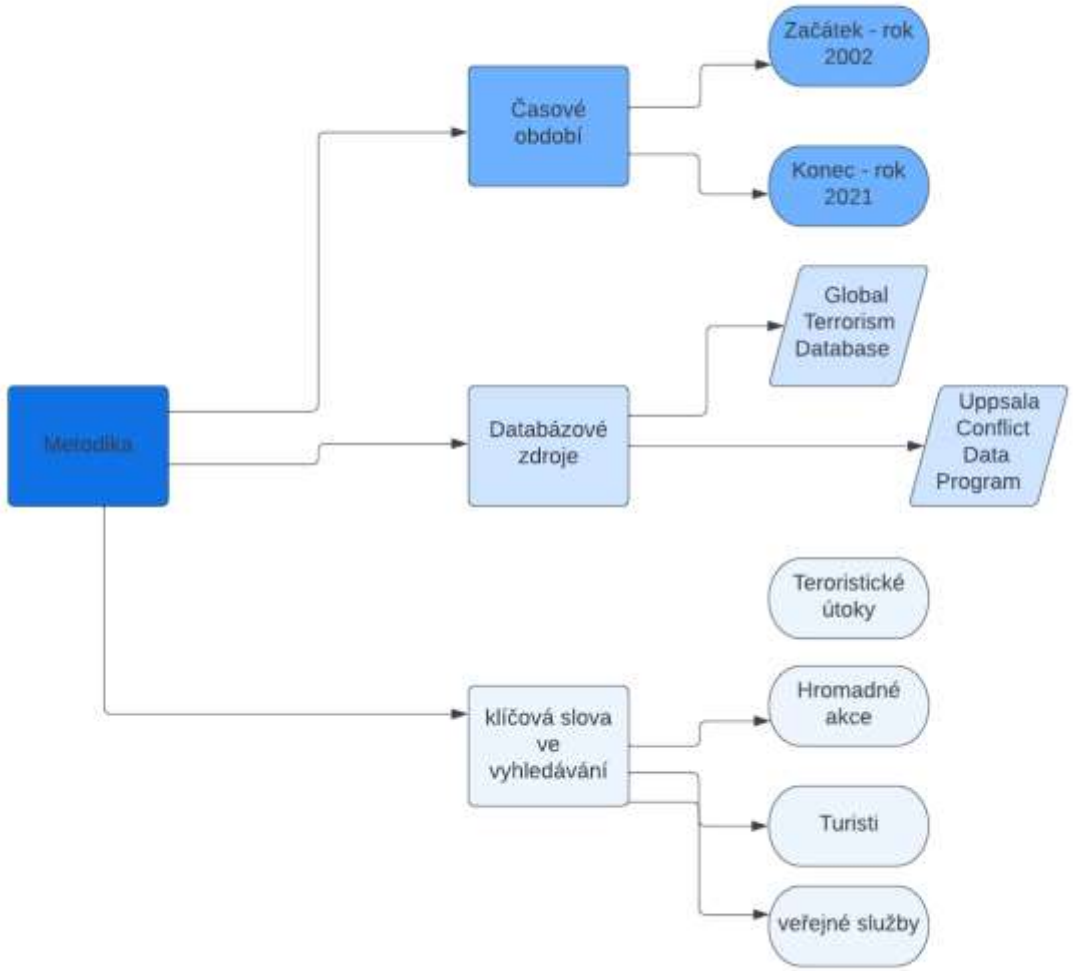
Due to the extensiveness of both selected databases, it was necessary to proceed systematically and sort terrorist attacks according to keywords.

<u>Attack Selection Criteria:</u>

- Earth:
  - ✓ Spain
  - ✓ the French
  - ✓ Germany
  - ✓ Belgium
  - ✓ Great Britain
  - ✓ United States of America
- Target of attacks:
  - ✓ A religious institution
  - ✓ Tourists
  - ✓ Communal services
  - ✓ AIRPORT
  - ✓ Educational institution
  - ✓ Transport

- ✓ Political meetings
- ✓ Unknown

**Figure 2: Mind map of micro-study methodology**




*Source: Own processing.*

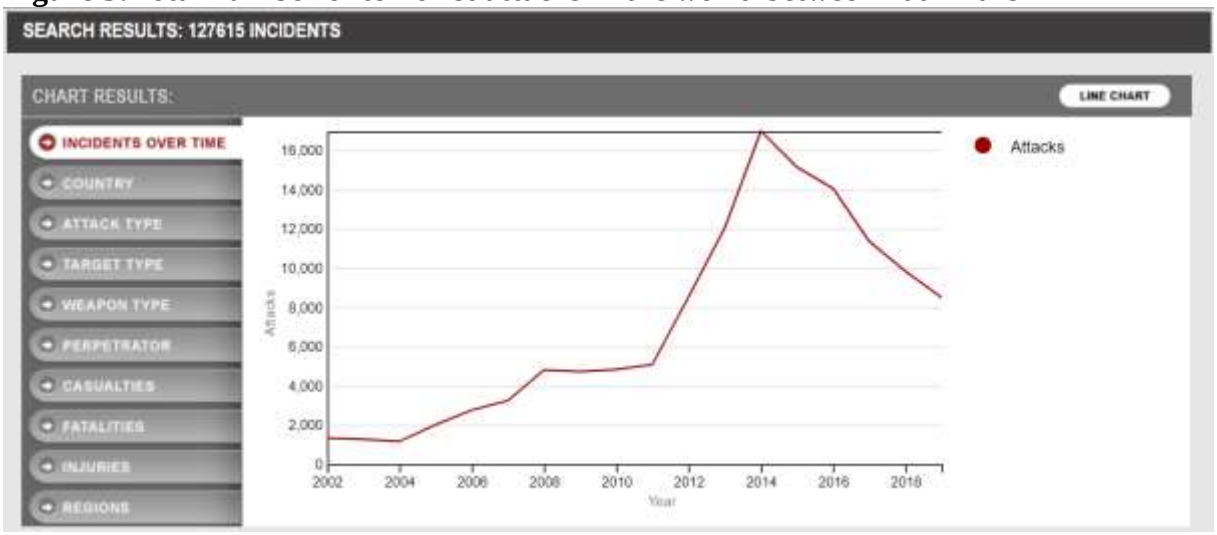
## RESULTS AND DISCUSSION

### Violent security incidents in selected countries

With regard to the needs of the research project, the primary purpose of the micro-study is focused on general information on terrorist attacks carried out in the world and in selected countries. For the needs of the analysis, 2 databases (UCDP, GTD) were used, which based on keywords generated attacks in selected territories in a selected timeline. Giant. 2 shows the development of terrorist actions in the world between the years 2002 - 2019. The picture shows an increasing trend, which peaks in 2014, when there was a gradual culmination of terrorist attacks. One can think about what led to this trend. Growing unrest in third countries and countries of the Middle East led to a large wave of migration that began in Europe in 2015. One of the largest protest actions that hit the Arab states can be considered as a possible beginning of the increase in terrorist attacks in the world. It was the so-called Arab Spring.

The first protests began in December 2010 in Tunisia , initiated by the suicide of a twenty-six-year-old salesman , Muhammad Bouazizi , who set himself on fire in front of the government office on December 17 in protest against poor living conditions and unemployment. His death caused widespread nationwide protests, at the end of which the twenty-three-year authoritarian rule of President Zine Abedin bin Ali ended on 14 January 2011, when he abdicated and left the country. Large-scale demonstrations and protests flared up in most Arab countries in the following weeks, mainly in Egypt, Algeria, Yemen, Jordan, Bahrain, Syria and Libya. The course and results of the riots varied from country to country, in many countries the ruling regimes tried to suppress these protests by force, which usually led to an escalation of tensions and even civil war in Libya and Syria . In Egypt, the rule of President Hosni Mubarak ended after almost 30 years, and large-scale military uprisings are underway in Syria and Yemen . Protests and riots are still ongoing in many countries today, and their outcome is unclear.

**Figure 3:Total number of terrorist attacks in the world between 2002-2019**




*Source: Own processing.*

Another look at the development of terrorist actions is a look at selected countries (Belgium, France, Germany, Spain, GB) between 2002-2019. Figure 3 shows a sharp increase in terrorist acts since 2012. This trend can be justified by the incipient migration crisis, which peaked in 2015-2016. Between 2007 and 2011 , the number of illegal migrants crossing the Mediterranean Sea from North Africa to Italy increased to such an extent that the European Union began to look for a suitable solution to this problem.

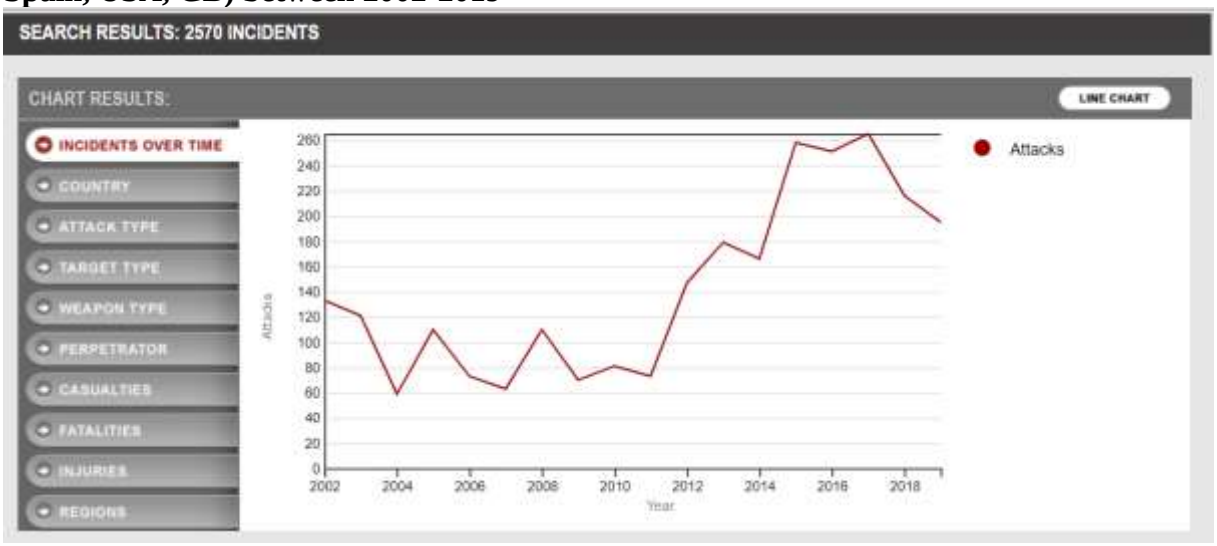
**SWEDEN**

In Sweden, a country with a strong representation of minorities and a welcoming immigration policy, a relatively detailed government study on the topic of migrant crime was created . The data comes from the years 1997-2001, but even then hundreds of thousands of immigrants lived in the country. The study is thorough, it examined 4.4 million residents aged 15-51. The proportion of foreigners born outside Sweden accused of a crime was 2.5 times higher than that of native Swedes. The frequency of accusations among descendants of foreigners who were already born in Sweden was twice as high as among Swedes, and among children from mixed marriages 1.4 times higher. In the group of people receiving social benefits, the share of accused persons was 6 times higher than among people who did without benefits. The Swedes also compiled so-called statistically representative samples (i.e. comparable according to age distribution, gender, education and income). The proportion of

accused foreigners was 2.1 times higher than that of native Swedes, and the proportion of accused descendants of foreigners was 1.5 times higher. Unfortunately, the study does not state the numbers of actual convicts.

Typically, immigrant communities from underdeveloped countries tend to be younger and poorer than native-born residents - and that's what accounts for some of their crime. The Swedes also found a higher proportion of accused persons among involuntary refugees before the wars - which makes sense, as a voluntary migrant for work can be expected to be more adaptable and potentially also to have a lower degree of experienced war trauma, which can make integration into society difficult. On the contrary, there were fewer accused among immigrants who came to Sweden as preschool children.

**Figure 4: Number of terrorist attacks in selected countries (Belgium, France, Germany, Spain, USA, GB) between 2002-2019**



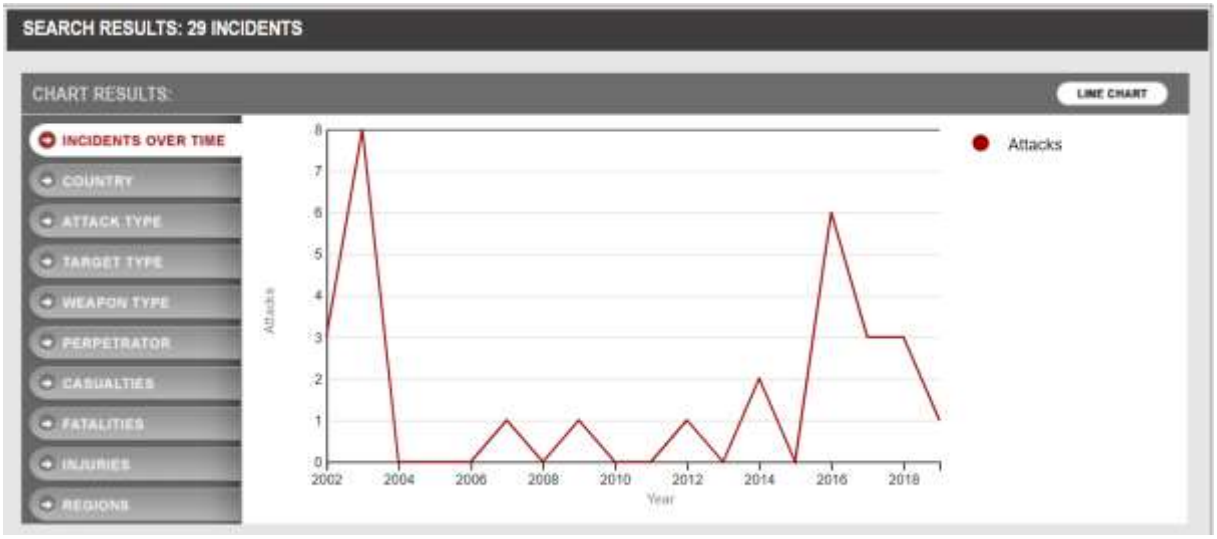

*Source: Own processing.*

**BELGIUM**

The first country of interest is Belgium. Belgium is one of the relatively safe countries from a tourist point of view. It can only be added that the same rules of vigilance apply here in places with a large concentration of people - at stations, airports, markets, etc., where pickpocketing occurs. Visiting some famous districts in the center of Brussels also carries its own risks. The number of terrorist attacks in Belgium can be found in Figure 4. During the period under review, a total of 29 terrorist attacks were carried out in Belgium. A total of 38 people died and a total of 306 people were injured during these attacks. The worst terrorist attacks happened on March 22, 2016 during the attacks on the Brussels Airport metro in the center of Brussels. Most of the 29 terrorist attacks targeted transportation infrastructure or government organizations.

Among the attacks involving attacks on mass social events, we can include a total of 5 attacks. All were led to a religious gathering of a Jewish or Muslim community. The attacks were firebombs of the Molotov cocktail type or some other type of firebomb. In all cases, the attackers were Islamic radicals.

**Figure 5: Incidence of terrorist attacks in Belgium**




*Source: Own processing.*

**GERMANY**

Migration policy was a significant milestone in the view of security-political events in Germany. At the turn of the 19th and 20th centuries, Germany was considered a country of emigration. Both world wars slowed down the influx of migrants, but since the 1950s, Germany has been one of the most sought-after countries in Europe for migrants. Since the 1990s, there has been a great debate in Germany regarding In 1993, the constitution was changed, due to the limitation of obtaining political asylum. In 2000, the issuance of so-called Green Cards, which focused on the recruitment of specialists, was stopped. In 2005, a new law focusing on immigration was introduced in Germany. The issue of the integration of immigrants was also a big topic of security, which after the attacks on the World Trade Center in 2001 cast a bad light on Muslim immigrants, especially on the Turkish minority, which is relatively numerous in Germany. In the 1990s, attacks on Turkish immigrants began to appear and the nature of terrorism, which focuses on extreme right-wing acts, also changed. Germany's migration policy, which has become strongly liberal due to the war in Syria, is changing political and security events. In Germany, the far right is starting to grow, when in the municipal elections on March 6, 2016, it received from 12% to 15%. Which makes it a party, allowing it to intervene in political events. This fact is important to perceive from the point of view of future development. People are becoming dissatisfied with the political-security situation in Germany and want change. Even the attacks carried out by migrants in Germany do not contribute to the situation, rather they awaken the extreme right-wing efforts of immigration and integration of immigrants that appeared even before the 2nd World War. At this time, the number of migrants reached its then maximum, which led to major problems in terms of coexistence and security-political events, see Figure 6.

In the monitored period, there were a total of 228 incidents with a total of 40 deaths in Germany. The biggest terrorist attacks were carried out on 19.12.2016 Berlin - attacks by a

truck on the Christmas market in Berlin and on 22.7.2016 Munich shopping center and deliberately setting fire to the shopping center.

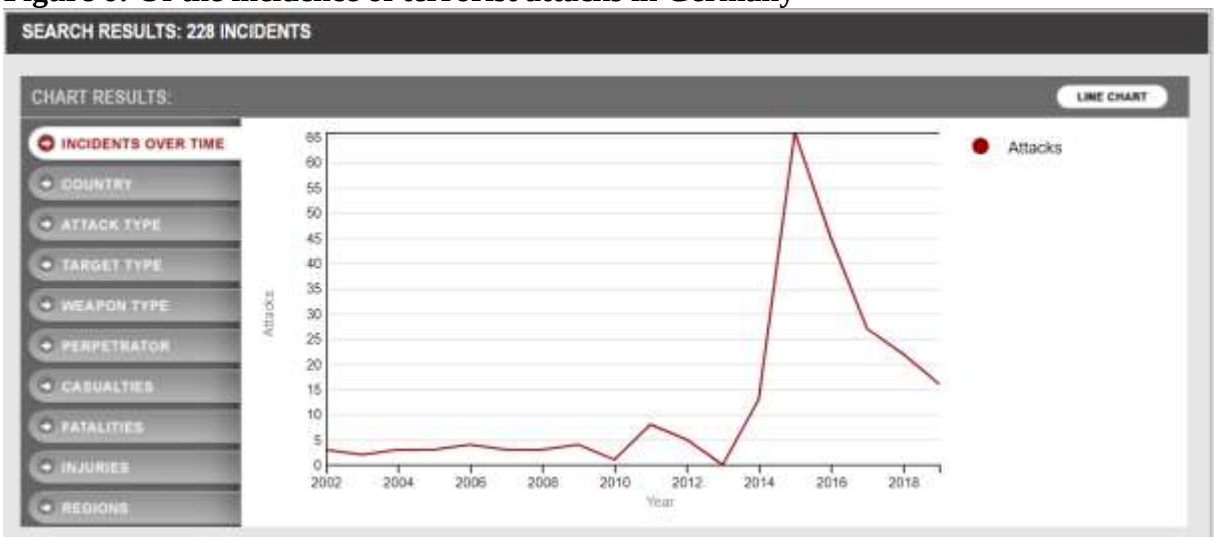
Among the attacks involving attacks on mass social events, we can include a total of 149 attacks. The most significant attack was the attack on the Advent markets in Berlin.

**12/19/2016 Berlin**

- The attacker drove a truck into the Christmas market at Breitscheidplatz in Berlin. At least 12 people were killed and 48 people, including two United States citizens, were injured in the attack. This was one of two attacks carried out on the same day; in an earlier action, an attacker hijacked a vehicle and killed the driver. The attacker, identified as Anis Amri, claimed responsibility for the Islamic State in Iraq and the Levant (ISIL). In addition, ISIL claimed responsibility for the incident; however, the attacker's connection to this group could not be confirmed. Amri was killed by police in Milan, Italy, a few days later.

Other attacks can be categorized as attacks on public spaces such as shopping centers, department stores, Turkish or Jewish communities. Most of the weapons used were in the category of incendiary charges, explosive weapons.

**Figure 6: Of the incidence of terrorist attacks in Germany**




*Source: Own processing*

**FRANCE**

A significant milestone in terms of political and security development was migration, which represented an important area in France after the Second World War. After the war, France was forced to admit that it needed about 1,500,000 workers for its economic growth. However, they were no longer in the country and France was forced to reach out to its colonies. The High Office for Population and Family had an important task before it. He should have selected the newcomers. The discussions culminated in the provisional government adopting two provisions that regulated both the conditions of entry and residence of foreigners and the conditions for obtaining French citizenship. It is a regulation from November 2, 1945, and these two texts form the legislative pillars of immigration to this day. It appears to be non-discriminatory against any ethnicity, guaranteeing special protection to asylum seekers and introducing the existence of a residence permit for a period of one to ten years. In 1945, the National Office for Immigration was also established. In 1962, the wave of immigration reached

its peak. Algerians fled to France during the Algerian War and this fact was one of the main reasons for the fall of Charles De Gaulle's government.

With the declaration of Algerian independence, the number of Algerian immigrants even doubled. At the beginning of the 70s, the situation was already sad. A large influx of new labor went hand in hand with the discontent of the French. Inadequate immigration control and an insufficient legal basis were among the factors that forced France to take drastic action. This came at the beginning of the 1970s, when, thanks to the economic crisis caused by the oil shocks, the French government decided in July 1974 to "close the door" and suspend all immigration. Despite the drastic interventions of the government, big problems arose for the new immigrants. These were predominantly young immigrants and the men themselves, who showed the potential for family reunification, which began to take place during the 1970s, changing the face of immigration in France. Thanks to this, xenophobia increased in France and the rise of terrorist organizations began. Some organizations fought against immigrants, others supported immigrants and supported their training with friendly organizations in the Middle East so that they could commit terrorist acts in France. The problem with immigration and the xenophobia and intolerance resulting from it gradually develops up to the current wave of immigration.

In the period under review, there were a total of 429 terrorist attacks in France, of which a total of 202 were attacks on public spaces or religious gatherings. The most significant attacks on the public sector are:

**11/13/2015 Bataclan**

- Three suicide bombers opened fire at the Bataclan concert hall in the 11th arrondissement of Paris, where the Eagles of Death Metal concert was taking place. In addition to the three bombers, at least 90 people were killed and 200 others were injured in the attack. In addition, at least 20 civilians were taken hostage for two hours during the incident. It was one of eight coordinated attacks carried out in Paris on the same day. Later reports indicated that an additional 132 people were injured in all eight incidents. The Islamic State of Iraq and the Levant (ISIL) claimed responsibility and said the attacks were carried out in retaliation for France's participation in a US-led coalition that carried out airstrikes against ISIL targets in Iraq and Syria.

**13/11/2015 La Belle**

- The attackers opened fire on the terrace of the La Belle Equipe bar in the 11th arrondissement of Paris. The attack killed at least 19 people, including one American citizen, and injured nine others. It was one of eight coordinated attacks carried out in Paris on the same day. Later reports indicated that an additional 132 people were injured in all eight incidents. The Islamic State of Iraq and the Levant (ISIL) claimed responsibility and said the attacks were carried out in retaliation for France's participation in a US-led coalition that carried out airstrikes against ISIL targets in Iraq and Syria.

**7/14/2016 Nice**

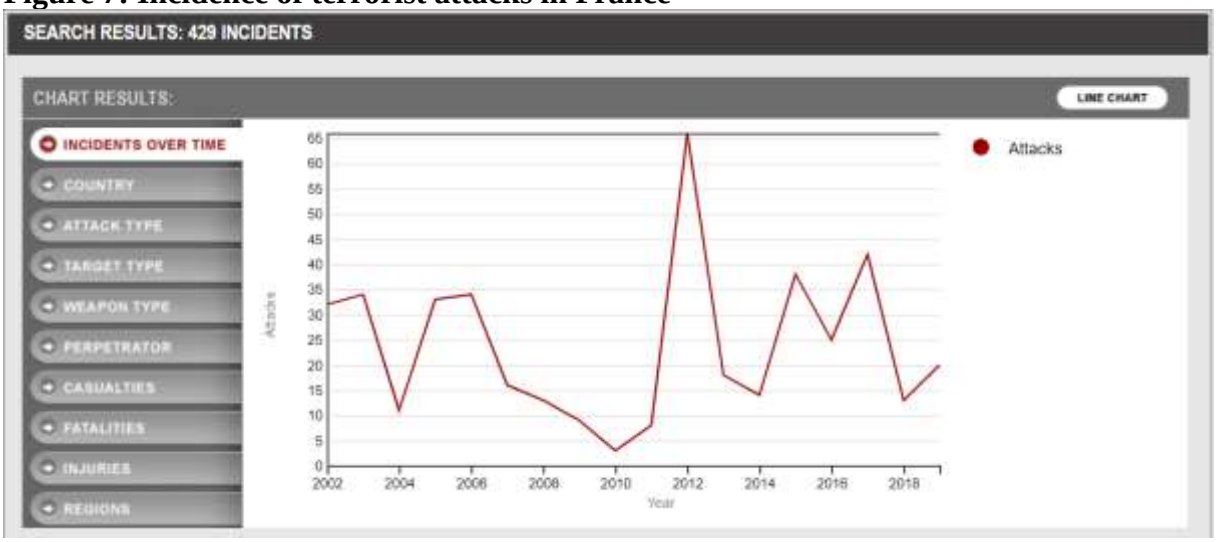
- The attacker drove a truck into a crowd of people celebrating Bastille Day in Nice, France's Provence-Alpes-Cote d'Azur region. The attacker, identified as Mohamed Lahouaiej-Bouhlel, opened fire on the officers and was then shot dead. In addition to the attacker, 86 people were killed and 433 people were injured in the attack. The Islamic State in Iraq and the Levant (ISIL) claimed responsibility for the incident; However, Bouhlel's connection to ISIL could not be confirmed.

**11/12/2018 Strasbourg**

- An assailant armed with a firearm and a knife attacked civilians at the Christmas market on Rue des Orfevres in Strasbourg, Grand-Est, France. Five civilians were killed and 11 others were injured in the attack. The attacker was killed by authorities on December

13, 2018. Cherif Chekatt, an unidentified person who claimed responsibility for the incident, claimed responsibility for the Islamic State in Iraq and the Levant (ISIL). The Amaq news agency of the Islamic State of Iraq and the Levant (ISIL) claimed that Chekatt was an ISIL "soldier"; however, the French interior minister refuted this claim.

**Figure 7: Incidence of terrorist attacks in France**




*Source: Own processing*

**SPAIN**

The most significant terrorist actions carried out in Spain associated with ethno-nationalist and separatist terrorism carried out by the terrorist group ETA. From 2006 to the end of 2014, Europol records a total of 2178 separatist terrorist attacks, of which 989 attacks took place in Spain in the Basque Country, which is 45.4% of all attacks (ROHÁČEK, 2015). The attacks recorded in Spain were mainly organized by the ETA terrorist group and the so-called taldes, which is a group of young ETA sympathizers. There has been a gradual weakening since 2010 and on 5 September 2012 ETA announced the end of offensive armed actions and on 10 January 2011 it announced a definitive end. Members of the SEGI group are responsible for the attacks, already small ones, which have been recorded since 2011. However, this is a small percentage of actions. The statistics show a gradual decrease in the number of attacks and arrests in connection with this type of terrorism. In Spain, the number of attacks linked to ethno-nationalist and separatist terrorism is gradually decreasing from 264 recorded in 2007 to 17 recorded in 2014 (ROHÁČEK, 2015).

The number of arrests also drops from 196 to 75 over the same time period. An important historical milestone for Spain and the whole of Europe was the terrorist attack carried out by Islamists on March 11, 2004 in Madrid. This happened exactly 911 days after the attacks of September 11, 2001 in the United States. On this day, Spain experienced the worst terrorist attack in history (Czech Television, 2009). Shortly after 8:30 a.m., ten bombs exploded on trains at Atocha station and two other bomb stations. The explosions claimed 191 lives and injured more than 1,800. Immediately after the explosions, the Spanish government identified the terrorist organization ETA as the culprits. Four hours after the attacks, police found detonators with Arabic recordings of the Koran. That same day, the Martyr Abu Hafiz Masri Brigades, inspired by Al-Qaeda, claimed responsibility for the attacks. Immediately after the attacks, an extensive search for the culprits began (RAUŠOVÁ, 2009). A parliamentary commission was

created to assist the investigation. Within half a year after the attacks, several dozen people were arrested.

A thorough investigation has not shown any links to Al-Qaeda or that the attacks were carried out at its behest. Among the defendants were a total of 27 men and one woman. 19 terrorists were from Morocco and the rest were Spanish. Recently, the Islamic State has threatened Spain with a terrorist attack. IS threatens attacks saying 'We will reclaim our land from the invaders'. IS points to the fact that Muslims ruled the territory of Spain until 1492. In that year, the reconquista began, which means the reconquest of the territory by Christians. IS has made it known that it would like to retake Spain by 2020. That this is a very serious threat was also confirmed by the Olive Press on March 10, 2016, where it reports the statement of Will Geddes, the chairman of the global security company Coorporate Proteciton. “Spain has historically experienced terrorist threats from Basque separatists and ETA to Al Qaeda and the devastating Madrid bombings. But since last summer, as expected, threats from IS radicals have escalated." (VLACHOVÁ, 2016).

The most threatened places should be the popular tourist destinations of the Costa del Sol, Costa Blanca and Costa Brava. In response to the terrorist attacks in Brussels, the Catalan government issued a decision train teachers in schools to be able to recognize elements of radicalization. Teachers should be able to identify unexpected changes in the behavior of pupils (sudden shyness, turning away from others, dressing in traditional Islamic clothing, or refusing to participate in sports activities for religious reasons, etc.) (VLACHOVÁ, 2016). Only a day after the Brussels attacks, a far-right attack on a mosque appeared in Madrid, Spain. A group posted a sign at the site of the attack: "Today Brussels, tomorrow Madrid?" The hashtags "TerroristasWelcome" imitating hashtag “RefugeesWelcome.” A Spanish MP for the Podemos party and member of the European Parliament pointed to the growing popularity of the hashtag with Islamic topic on social networks. He highlighted the efforts of some people to abuse terror to unleash anger, stigmatize within society and promote Islamophobia. Unfortunately, Spain's overall approach to refugees does not improve this situation.

The newspaper El Mundo reports how deplorable Spain's approach to the refugee crisis is (Vlachová, 2016). "Of the 984 Syrians it promised to accept between 2012 and 2013, Spain resettled only 128," and further referring to Paula San Pedro of Oxfam International, she states that since 2014 none of the remaining 854 refugees that Spain committed to the UN. "This is not only outrageous, but it is nowhere near the number of 16,037 refugees that would be a fair quota for Spain to resettle - one for every 3,000 inhabitants," said Paula San Pedro.

During the monitored period, there were a total of 236 viz. Picture No. 7 terrorist attacks of which 39 in public space. From the statistics of the UCDP and GTD databases, the culmination of terrorist attacks can be seen in 2006. It can be assumed that this is due to the termination of the activity of ethno-nationalist terrorist groups operating in Spain. The most significant attacks are:

**8/17/2017 Barcelona**

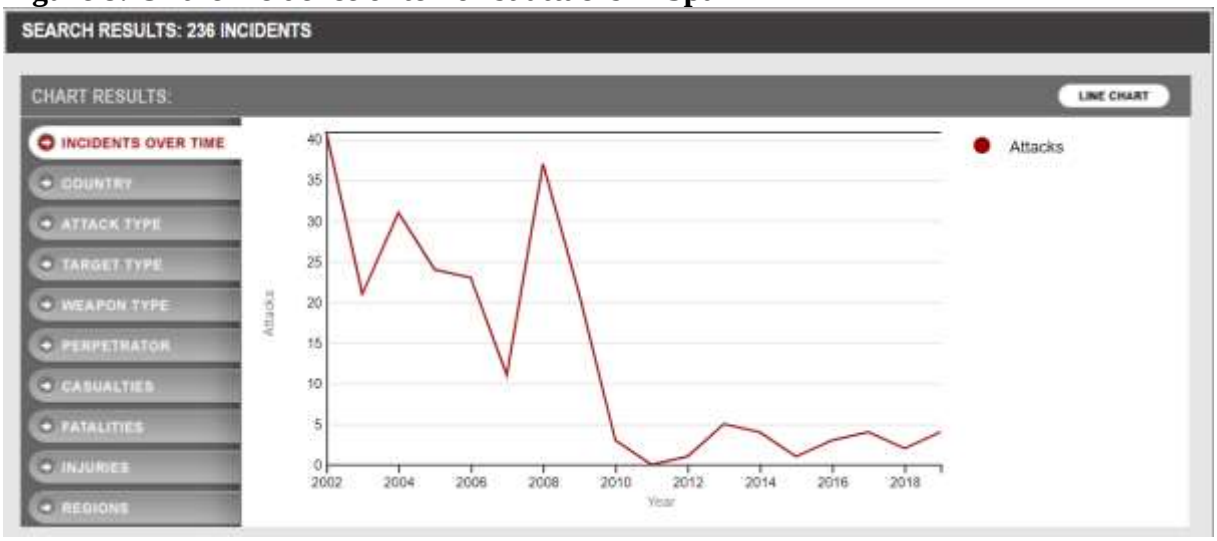
- The attacker drove a van into a crowd of pedestrians on Las Ramblas in Barcelona. The attack killed 14 civilians, including United States citizen Jared Tucker, and injured more than 100 civilians. It was one of three coordinated attacks in Catalonia within 24 hours. Authorities have identified the attacker, Younes Abouyaaqoub, as a Muslim extremist. The Islamic State in Iraq and the Levant (ISIL) claimed the attack was carried out in an attempt to attack countries participating in the US-led coalition against the group; however, the veracity of this claim could not be verified

**8/18/2017 Cambrils**

- Five attackers drove a vehicle into a crowd of pedestrians in the Catalan city of Cambrils. The attackers, who were wearing fake suicide belts, then got out of the vehicle and attacked nearby civilians with knives. One person was killed and six people,

including a police officer, were injured in the attack before all five attackers were shot dead by police. It was one of three coordinated attacks in Catalonia within 24 hours. Authorities identified the attackers as Muslim extremists. The Islamic State in Iraq and the Levant (ISIL) claimed the attack was carried out in an attempt to attack countries participating in the US-led coalition against the group; however, the veracity of this claim could not be verified.

**Figure 8: Of the incidence of terrorist attacks in Spain**




*Source: Own processing*

**GREAT BRITAIN**

The terrorist actions mentioned in chapter 3.5.5 mainly point to ethnic-religious problems, situated mainly in the area of Northern Ireland. Where for centuries two religions (Catholic 37% and Protestant 63%) and nationalities (British and Irish) mixed. Northern Ireland has been considered a multicultural community since the 12th century. In professional publications called bicommunal society. The most significant group operating in Great Britain and Ireland was the IRA, which is described in more detail in chapter 3.5.4. The current security situation is calmer from the point of view of local terrorist actions than in the years 1960-2000, but it is not completely calm. For many years there was an effort to sign a peace agreement, which did not happen until April 10, 1998.

The agreement incorporated a system of three elements (release of prisoners, disarmament and police reforms along with the protection of human rights). In addition to the agreement between the interested parties, the population also got involved in the issues, participating in a referendum in support of the Belfast Agreement with a 71% turnout. Elections to the Northern Ireland Assembly were held on 25 June 1998 and an official ceasefire was declared in August 1998. In early 1999, the British and Irish governments signed international treaties that provided the legal basis for intergovernmental institutions. The smile of all the negotiations led to the calming of the whole situation. And after several decades, a relatively safe atmosphere. A turning point in the security issue for Great Britain and Ireland occurred on July 7, 2005, when four bombs were detonated in central London. During the morning rush hour, there were successive explosions at tube and bus stations at Tavistock Square, Aldgate, Edqware Road and King's Cross stations. Immediately after the attacks, several groups came forward to carry out the attacks. It was not until September 2005 that Al-Qaeda claimed responsibility for the attacks, but the British government rejected this link.

During the attacks, 52 people died and over 700 were injured. On November 10, 2005, the European Monitoring Center on Racism and Xenophobia (EUMC) published a study

discussing the impact of the July 2005 terrorist attacks in London on Muslim communities in EU member states (Impact of the London terrorist attacks on Muslim communities in EU states. 2005). The study examines the government and police response to these attacks, the response of Muslim communities, media coverage and the potential for anti-Muslim riots to break out in the UK and elsewhere in Europe. The EUMC found that the strong and unified position of the UK government, the police and community leaders, including Muslims, in condemning the attacks as well as reprisals for them, played a key role in preventing anti-Muslim riots, both in the UK and across Europe scale. Muslim organizations in the EU strongly condemned the London attacks and expressed their determination to stand up to violent radicalism. Muslim leaders in the UK immediately condemned the assassinations, stressing that such acts were against Islam. They engaged in dialogue with the government, police and local authorities and supported efforts to eradicate terrorism and prevent arbitrary acts of retaliation against

Muslim communities. Muslim organizations in all other member states unanimously condemned the attacks, and while in Britain these organizations primarily planned to focus on working with wider society to eradicate all forms of extremism, in some other member states the emphasis was more on activating full cooperation members of Muslim communities with investigating authorities. Muslim religious leaders in some states have issued fatwas declaring the attacks to be acts totally contrary to Islam. In Britain, representatives of the Christian Church and Jewish communities immediately publicly declared their support for Muslims. A week after the attacks, the media in all member states generally tried to balance the news.

The British media emphasized the fact that the attackers did not act on behalf of the Muslim community (Impact of terrorist attacks in London on Muslim communities in EU countries. 2005). Once the perpetrators were identified as British Muslims, there was a shift and the media began to focus on wider issues related to Islam and preventing further attacks. Some media have focused on the position of Muslim communities in British society, particularly the apparent alienation of young men who practice Islam. In other member states, some media brushed off the topic of immigration regulation, while others focused on the radicalization of Muslim youth, which they attributed to insufficient integration. In most cases, the media made a clear distinction between terrorism and Islam. From the general perspective resulting from the reports of the National Contact Points, it can be stated that in the majority of EU member states there was no significant increase in anti-Muslim incidents during the monitored period.

In Great Britain, however, the number of attacks against members of Muslim communities and their places of worship increased almost immediately. In the five weeks following the bombings, London police saw a sharp increase in anti-religious crimes compared to the same period in 2004. These attacks were mostly directed against British Muslims.

Within the monitored period, a total of 1096 terrorist incidents were carried out in Great Britain, viz. Image #10 of those 591 terrorist attacks on the public sector. The most significant terrorist attacks in public space were the attacks:

**22/05/2017 Manchester**

- A suicide bomber, identified as Salman Abedi, blew himself up at the Manchester Arena after an Ariana Grande concert in Manchester, United Kingdom. In addition to the attacker, at least 22 people were killed and 119 people were injured in the explosion. The Islamic State in Iraq and the Levant (ISIL) claimed responsibility and said the attack was carried out in response to "transgressions against Muslim countries".

**22/03/2017 London**

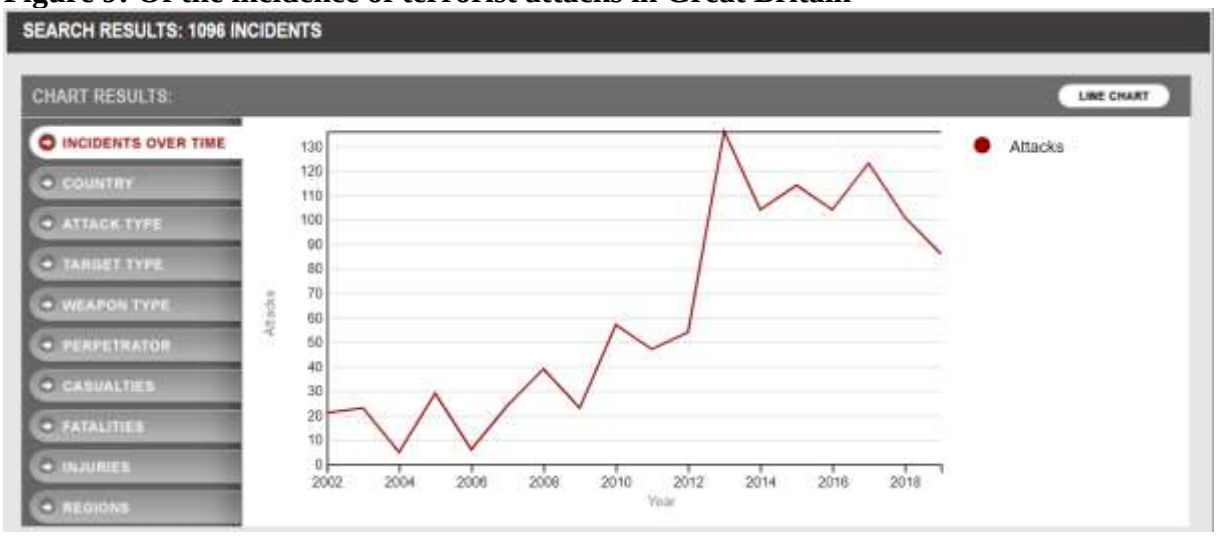
- An attacker drove a vehicle into pedestrians on Westminster Bridge in London (England, United Kingdom). The attacker then fled the vehicle outside the Palace of Westminster, stabbed a police officer and was then shot dead by police forces. In addition to the attacker, five people were killed and at least 50 people were injured in

the attack. Muslim extremist Khalid Masood claimed responsibility for the incident, saying the attack was carried out in retaliation for Western military offensives in the Middle East. The Islamic State in Iraq and the Levant (ISIL) also claimed responsibility for the incident; however, authorities disputed the veracity of this claim and could not confirm Masood's connection to ISIL.

**29/11/2019 Cambridge**

- An attacker wearing a fake explosives vest stabbed participants at the Learning Together conference organized by the University of Cambridge at the Fishmongers' Hall on London Bridge in London, United Kingdom. In addition to the attacker, two people were killed and three others were injured in the attack. No group claimed responsibility for the incident; however, sources attribute the attack to a jihadist-inspired extremist. The attack was unfoundedly claimed by the Islamic State in Iraq and the Levant (ISIL).

**Figure 9: Of the incidence of terrorist attacks in Great Britain**




Source: Own processing

**CONCLUSION**

Based on the results, it was necessary to analyze even the most significant terrorist attacks carried out at mass social events. The results of the selected countries show a high incidence of terrorist attacks. Of these, only a small amount is realized as part of mass social events. A total of 42 terrorist attacks were found from the UCDP and GTD databases that meet the conditions of a mass social action according to the parameters of the research project VB01000041. Selected attacks are listed in a separate appendix "Incidence world"
Out of a total of 38 terrorist attacks:

**Table 1: Summary of information**

| | | |
|---|---|---|
| Venue | Outdoor | 25 |
| | Internal | 13 |
| | Combined | 4 |
| Type | Cultural | 13 |
| | Sports | 6 |
| | Social | 23 |
| Duration | Short term | 35 |
| | Medium term | 1 |

| | | |
|---|---|---|
| | Long term | 6 |
| The type of violent incident | Firearm | 15 |
| | Knife | 4 |
| | Car | 2 |
| | Bomb/Grenade/Incendiary Weapon | 20 |
| | Other | 1 |

*Source: Own processing*

The table above shows that out of the total number of self-inflicted attacks, 25 attacks were carried out at outdoor events. The most common type of violent attack carried out at outdoor events was the use of a bomb. There were 13 attacks. In the case of internal actions, of which there were 11, the most frequent type of violent incident was the use of a firearm.
The most honest modus operandi is to use a bomb or a firearm.

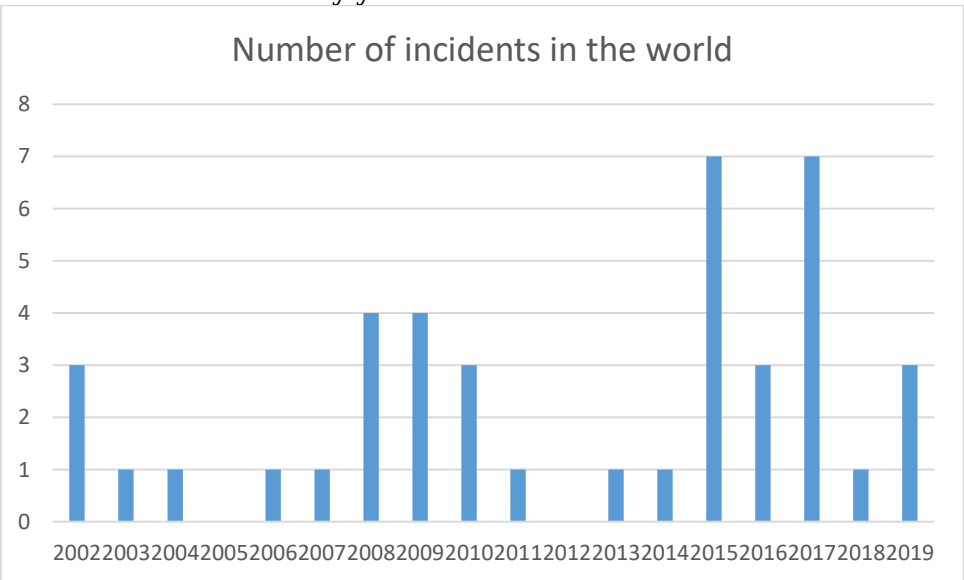
**Table 2: Modus operandi for the dead and wounded**

| | | Number of dead | The number of injured | Number of incidents |
|---|---|---|---|---|
| The type of violent incident | Firearm | 410 | 1605 | 15 |
| | Knife | 14 | 65 | 4 |
| | Car | 98 | 481 | 2 |
| | Bomb/Grenade/Incendiary Weapon | 149 | 1239 | 20 |
| | Other | 10 | 1 | 1 |

*Source: Own processing*

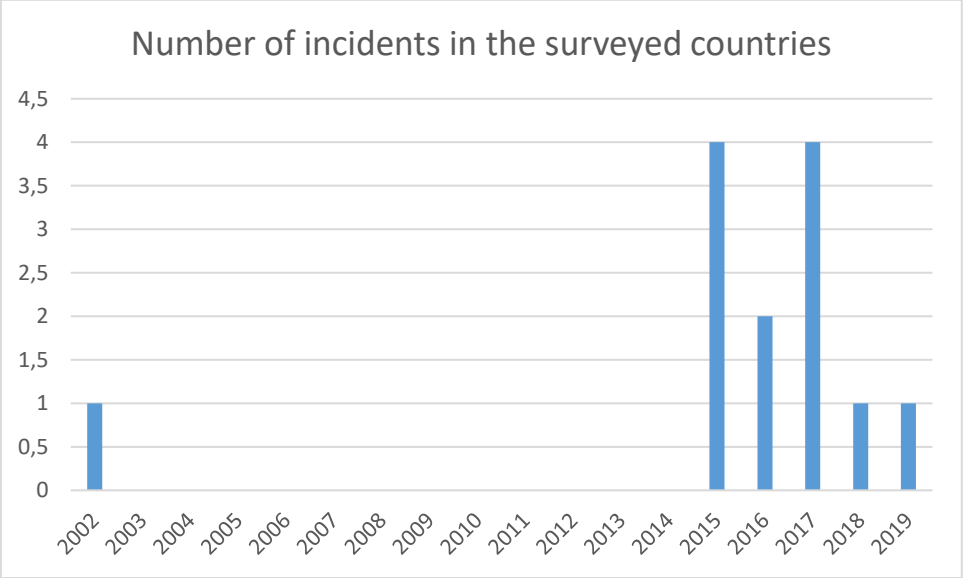
Figure 10 and Figure 11 show the number of violent security incidents that were carried out in the world during the period under review.

**Figure 10: Number of incidents by years**




*Source: Own processing*

**Figure 11: Number of incidents in the surveyed countries**




*Source: Own processing*

## REFERENCES AND INFORMATION SOURCES


1. Action Front for the Liberation of the Baltic Countries. 2011. In: Terrorist profile [online]. [feeling. 2016-04-12]. Available from: https://terroristprofiles.wordpress.com/2011/12/14/action-front-for-the-liberation-ofthe-baltic-countries/
2. Updating the Security Strategy of the Czech Republic: a formality or an opportunity? 2011. In: Natoaktual.cu: Official portal of the NATO Information Center [online]. [feeling. 2016-04-11]. Available from: http://www.natoaktual.cz/aktualizace-bezpecnostni-strategie-cr-formalitanebo-prilezitost-1d3-/na_analyzy.aspx?c=A110221_154732_na_analyzy_m02
3. ARTHUR, Paul. 2014. Ulster Volunteer Force (UVF). In: Encyclopedia Britannica [online]. [feeling. 2016-04-29]. Available from: http://www.britannica.com/topic/UlsterVolunteer-Force-Northern-Ireland-1966
4. Attack on the Turkish Embassy in Lisbon. 2016. In: Wikipedia: the free encyclopedia [online]. San Francisco (CA): Wikimedia Foundation [cit. 2016-04-11]. Available from: https://pt.wikipedia.org/wiki/Ataque_%C3%A0_Embaixada_da_Turquia_em_Lisboa
5. A brief history of the armed struggle of GRAPO in Spain [online]. Spain: 2012 [cit. 2016-04-08]. Available from: http://www.signalfire.org/2012/04/05/a-brief-history-of-thearmed-struggle-of-grapo-in-spain/
6. BENEŠ, Vlastislav. 2000. Spain and the Spanish. 1st ed. Prague: Grada. ISBN 80-716-9952-7.
7. BÍLKOVÁ, Veronika, Pavel, ŠTURMA and Jana NOVÁKOVÁ. 2003. International and European Instruments Against Terrorism and Organized Crime: A History of War Against Civilians: [from Antiquity to the Present]. Ed. 1. Prague: CH Beck. Law institutes. ISBN 80-717-9305-1.
8. BROUČKOVÁ, Magdalena. 2009. ETA Terrorist Organization [online]. [feeling. 2016-04-08]. Available from: http://tero.blog.cz/0903/teroristicka-organizace-eta
9. BRZYBOHATÝ, Marian, Veronika BÍLKOVÁ and Jana NOVÁKOVÁ. (1999 a). Terrorism: a history of war against civilians: [from antiquity to the present]. Ed. 1. Prague: Police History. Law institutes. ISBN 80-902-6704-1. 117

10. BRZYBOHATÝ, Marian, Veronika BÍLKOVÁ and Jana NOVÁKOVÁ. (1999 b). Terrorism: a history of war against civilians: [from antiquity to the present]. Ed. 1. Prague: Police History. Law institutes. ISBN 80-902-6701-7.
11. BRZYBOHATÝ, Marian, Veronika BÍLKOVÁ and Jana NOVÁKOVÁ. 2001. Contemporary Developmental Trends in Terrorism and Selected Pedagogical Issues in Special Forces Training: A History of War Against Civilians: [from Antiquity to the Present]. Ed. 1. Prague: Police Academy of the Czech Republic. Law institutes. ISBN 80-725-1073-8.
12. CARR, Caleb. 2002. A history of terrorism: a history of war against civilians: [from antiquity to the present]. Ed. 1. Prague: Threshold. ISBN 80-725-2063-6.
13. CTK. 2004. The football Euro is not threatened by a terrorist attack. In: Lidovky.cz [online]. [feeling. 2016-04-11]. Available from: http://www.sport.cz/fotbal/clanek/31086-fotbalovemu-euruteroristicky-utok-nehrozi.html
14. CTK. 2015. Germany detained four people, allegedly planning attacks on mosques. 2015. In: České noviny [online]. [feeling. 2016-04-08]. Available from: http://www.ceskenoviny.cz/zpravy/nemecko-zadrzelo-ctyri-lidi-chystali-pry-utoky-namesity/index_view.php?id=1212891
15. CT24. 2009. Exactly 911 days after September 11, 2001, terrorists struck in Madrid. In: Czech Television [online]. [feeling. 2016-04-11]. Available from: http://www.ceskatelevize.cz/ct24/archiv/1460844-presne-911-dni-po-11-zari-2001-teroriste-uderili-v-madridu
16. DAŇKOVÁ, Šárka. 2005. Terrorists in Germany. In: History and Present [online]. Prague [cit. 2016-04-08]. Available from: http://dejinyasoucasnost.cz/archiv/2005/6/teroriste-vnemecku/
17. DAVID, VLADISLAV, Michal Malacka. 2005. The Phenomenon of International Terrorism. Prague: Linde. ISBN 978-807-2015-245.
18. Impact of terrorist attacks in London on Muslim communities in EU countries. 2005. In: Migration online [online]. [feeling. 2016-05-07]. Available from: http://migrationonline.cz/cz/eknihovna/dopad-teroristickych-utoku-v-londyne-na-muslimske-komunity-ve-statech-eu
19. DUŠKOVÁ, Kateřina. 2012. ETA and IRA comparison of separatist organizations and their political activities. Pilsen. Bachelor thesis. University of West Bohemia in Pilsen, Faculty of Philosophy. Supervisor PhDr. Přemysl Rosůlek, Ph.D. 118
20. EICHLER, Jan. 2007. Terrorism and War in the Early 21st Century: Crisis Management. Ed. 1. In Prague: Karolinum. ISBN 978-80-246-1317-8.
21. ETA - Euskadi Ta Askatasuna. 2016. Válka.cz [online]. [feeling. 2016-04-08]. Available from: http://forum.valka.cz/topic/view/83102 ETA. 2015. Global terrorism database [online]. University of Maryland [cit. 2016-04-29]. Available from: http://apps.start.umd.edu/gtd/search/Results.aspx?search=ETA&sa.x=0&sa.y=0&sa=Search
22. FALTUSOVA, Gabriela. 2014. International Migration from Turkey to the Federal Republic of Germany. Brno. Bachelor thesis. Mendel University in Brno. Supervisor Ing. Milan Palát, Ph.D.
23. FUNDACAO, Mario Soares. 1977. Visita oficial de Ramalho Eanes à Madeira. In: Arquivo bibloteca [online]. [feeling. 2016-04-11]. Available from: PESTANA, João Filipe. 2011. Bandeiras da
24. FLAMA por toda a Ilha. In: Dnoticias.pt [online]. [feeling. 2016-04-11]. Available from: http://www.dnoticias.pt/actualidade/politica/271671-bandeiras-da-flamapor-toda-a-ilha Global terrorism database: National Consortium for the Study of Terrorism and Responses

to Terrorism [online]. 2015. Maryland: University of Maryland [cit. 2016- 04-29]. Available from: http://www.start.umd.edu/
25. GRAPO. 2015. Global terrorism database [online]. University of Maryland [cit. 2016- 04-29]. Available from: http://apps.start.umd.edu/gtd/search/Results.aspx?search=grapo&sa.x=0&sa.y=0&sa=Search 119
26. Grupos de Resistencia Antifascista Primero de Octubre. 2016. In: Wikipedia: the free encyclopedia [online]. San Francisco (CA): Wikimedia Foundation [cit. 2016-04-08]. Available from: https://es.wikipedia.org/wiki/Grupos_de_Resistencia_Antifascista_Primero_de_Octubre The Hague Convention: THE TAKING OF EVIDENCE ABROAD IN CIVIL OR COMMERCIAL MATTERS. 1970. Also available from: https://assets.hcch.net/docs/dfed98c0-6749-42d2-a9be-3d41597734f1.pdf
27. HLADIKOVÁ, Lucie. 2010. The Conflict in Northern Ireland in Cultural-Historical Context. In: Válka.cz [online]. [feeling. 2016-04-26]. Available from: http://www.valka.cz/13877-Konflikt-v-Severnim-Irsku-v-kulturne-historickychsouvislostech IBL, Petr. 2013.
28. Global terrorism. Ed. 1. Prague: Karlovy Vary University. ISBN 978-80-87236-14-7. Irish Republican Army (IRA). 2010. In: University of Maryland [online]. USA [cit. 2016-04-26]. Available from: http://www.start.umd.edu/tops/terrorist_organization_profile.asp?id=55
29. KOPECKÝ, Václav. 2012. The War in Algeria 1954-1962. In: Válka.cz [online]. [feeling. 2016-05-08]. Available from: http://www.valka.cz/14616-Valka-v-Alzirsku-1954-1962 Loyalist Volunteer Force (LVF). 2011. In: GlobalSecurity.org [online]. [feeling. 2016-04-29]. Available from: http://www.globalsecurity.org/military/world/para/lvf.htm
30. LYE, Keith. 2002. The world in your pocket: a detailed guide to countries around the world from A to Z. Czech ed. 1. Prague: Cesty. ISBN 80-718-1662-0.
31. MAKARIUSOVA, Radana. 2013. Terrorism, Global Terrorism, and the Al-Qaeda Era. 1st ed. Prague: Metropolitan University Prague Press. ISBN 978-80-86855-95-0.
32. MALY, Radomír. 2010. Objectively on General Franco, Francoism and Carlism. Parliamentary Papers [online]. [feeling. 2016-04-08]. Available from: http://euportal.parlamentnilisty.cz/PrintArticle/6798-objektivne-o-generalu-francovifrankismu-a-karlismu.aspx 120
33. MALY, Radomír. 2010. Tyrant or Father of the Fatherland? In: Te Deum [online]. [feeling. 2016-04-11]. Available from: http://www.tedeum.cz/3_2010/salazar_tyran_otec_vlasti_032010.htm MAREŠ, Miroslav. 2005. Definition of Terrorism, War and Guerrilla in Contemporary Security Terminology, Defense and Strategy. Brno. ISSN 1214-6463. Also available from: http://www.army.cz/mo/obrana_a_strategie/1-2004cz/mares.pdf
34. MÜLLER, Helmut M, Hanna VOLLRATH, and Karl-Friedrich KRIEGER. 1995. History of Germany. Prague: Lidové noviny Publishing House. History of States. ISBN 80-710-6125-5. MUST, Peter. 2015. A quarter of a century of unified Germany: differences persist. In: Economic journal [online]. [feeling. 2016-04-08]. Available from: http://ekonomickydenik.cz/ctvrtstoleti-sjednoceneho-nemecka-rozdily-pretrvavaji/
35. NOVÁKOVÁ, Jiřina. 2014. A fascist dictatorship was established in Spain Source: http://www.neaktuality.cz/zahranici/ve-spanelsku-byla-nastolena-fasisticka-diktatura/ [online]. 2014 [cit. 2016-04-08]. ISSN 1804-9125. ODSTRČILOVA, Jana. 2007. Political-geographical development of Spain. Brno. Thesis. Masaryk University in Brno.
36. ONLINE EDITORIAL. 2016. Neo-Nazi terrorist group planned attacks against refugees and mosques in Germany. In: Security magazine [online]. [feeling. 2016-04-08]. Available

from: http://www.securitymagazin.cz/zpravy/neonacisticka-teroristicka-skupinaplanovala-v-nemecku-utoky-proti-uprchlikum-a-mesitam-1404048763.html 121 PESTANA, João Filipe. 2011. Bandeiras da FLAMA por toda a Ilha. In: Dnoticias.pt [online]. [feeling. 2016-04-11]. Available from: http://www.dnoticias.pt/actualidade/politica/271671-bandeiras-da-flama-por-toda-a-ilha PERL. 2005. Terrorism and National Security: Issues and Trends. Prague: Charles University in Prague, Information Center for Combating Terrorism Issues. Portugal. 2016. In: Ministry of Foreign Affairs of the Czech Republic [online]. [feeling. 2016-04-11]. Available from: http://www.mzv.cz/jnp/cz/encyklopedie_statu/evropa/portugalsko/

37. RAUŠOVA, Zuzana. 2009. Spain marks five years since the bloody Madrid train attacks. In: Czech Television [online]. [feeling. 2016-04-11]. Available from: Spain commemorates five years since the bloody attacks on Madrid trains Source: http://zpravy.idnes.cz/spanelsko-si-pripomina-pet-let-od-krvavych-utoku-na-madridskevlaky-11t-/zahranicni .aspx?c=A090310_153059_zahranicni_zra Red Hand Defenders. 2016. In: BBC News [online]. [feeling. 2016-04-29]. Available from: http://news.bbc.co.uk/hi/english/static/northern_ireland/understanding/parties_paramilitaries/red_hand.stm Red Hand Defenders - Ireland. 2016. In: TRACK [online]. [feeling. 2016-04-29]. Available from: http://www.trackingterrorism.org/group/red-hand-defenders-ireland
38. RENNER, Tomas. The End of Terrorism in the Federal Republic of Germany in the 1990s: A Permanent European Exception? Acta Politologica. 167-180. ISSN 1803–8220. UN Security Council Resolution 1566. 2004. United nations. Also available from: https://documents-ddsny.un.org/doc/UNDOC/GEN/N04/542/82/PDF/N0454282.pdf?OpenElement
39. ROHAČEK, Martin. 2015. Terrorism in the European Union 2006–2014. In: Army newspaper [online]. [feeling. 2016-04-11]. Available from: http://www.armadninoviny.cz/terorismus-v-evropske-unii-mezi-lety-2006-2014.html
40. ŘÉHÁK, David, Pavel FOLTIN and Richard STOJAR. 2008. Selected Aspects of Contemporary Terrorism. 1st ed. Prague: Ministry of Defense of the Czech Republic - Military Information and Services Agency. ISBN 978-80-7278-443-1. 122 MFA COMMUNICATION No. 80/2001 Coll.,:
41. INTERNATIONAL CONVENTION ON THE SUPPRESSION OF TERRORIST BOMB ATTACKS. 2001. Also available from: http://www.esipa.cz/sbirka/sbsrv.dll/sb?DR=SB&CP=2001m080 SHARPE. 2001. World Terrorism: An Encyclopedia. Czech ed. 1. Prague: Svojtka. ISBN 80-723-7340-4.
42. STRAŠIKOVA, Lucie. 2008. Spain experiences worst terrorist attack in history just before 2004 elections [online]. In: Czech Television. [feeling. 2016-04-11]. Available from: http://www.ceskatelevize.cz/ct24/archiv/1460813-spanelsko-tesne-pred-volbami-vroce-2004-zazilo-nejhorsi-teroristicky-utok-v-dejinach
43. STRAŠIKOVA, Lucie. 2008. The Red Army Faction marked 30 years of terrorist attacks for Germany. In: Czech Television [online]. [feeling. 2016-04-08]. Available from: http://www.ceskatelevize.cz/ct24/archiv/1441016-frakce-rude-armady-znamenala-pronemecko-30-let-teroristickych-utoku
44. GRAY, Jiří. 2003: The New Paradigm of Terrorism, International Politics, 1/2003, pp. 4-7, Prague Strategy of the Czech Republic for the fight against terrorism from 2013. 2013. Prague: Ministry of the Interior of the Czech Republic. School Atlas of the World. 2007. 2nd ed. Prague: Kartografie Praha. ISBN 978-80-7011-925-9. Spain. 2007. Current journalism [online]. Production of Apu.c [cit. 2016-04-08]. Available from: http://www.spanelsko.apu.cz/index.html Spain. 2016.

45. Ministry of Foreign Affairs of the Czech Republic [online]. [feeling. 2016- 04-08]. Available from: http://www.mzv.cz/jnp/cz/encyklopedie_statu/evropa/spanelsko/ Terrorism. 2016. In: Ministry of the Interior of the Czech Republic [online]. [feeling. 2016-04-11]. Available from: http://www.policie.cz/clanek/narodni-kontaktni-bod-proterorismus.aspx?q=Y2hudW09Mw%3d%3d 123
46. Terrorist attack in France on the editorial office of Charlie Hebdo. 2015. In: Aktuálně.cz [online]. [feeling. 2016-05-08]. Available from: http://www.aktualne.cz/wiki/zahranici/teroristickeutoky-ve-francii/r~c93d1740a66a11e49e4b0025900fea04/
47. Terrorist attacks in Paris 2015. 2016. Aktuálně.cz [online]. [feeling. 2016-04-18]. Available from: http://zpravy.aktualne.cz/teroristicke-utoky-v-parizi2015/l~1fbdecde8aae11e5adcb0025900fea04/ Tokyo Convention: Convention on Offenses and Certain Other Acts Committed on Board Aircraft (Tokyo, 1963). 1963. Also available from: http://www.icao.int/secretariat/legal/Docs/Montr%C3%A9al%20Protocol%202014.pdf
48. TUR. 2008. Spain arrests 14 Islamists. They were preparing attacks. In: Aktuálně.cz [online]. [feeling. 2016-04-11]. Available from: http://zpravy.aktualne.cz/zahranici/spanelsko-zatklo-14- islamistu-pripravovali-utoky/r~i:article:518993/
49. KILLED ARTETA, Antonio. 1995. A History of Spain. Prague: Lidové noviny Publishing House. History of States. ISBN 80-710-6117-4. VALEŠ, Martin. 2006. The IRA is no longer a terrorist organisation. In: Aktuálně.cz [online]. [feeling. 2016-04-26]. Available from: http://zpravy.aktualne.cz/zahranici/ira-uz-neniteroristickou-organizaci/r~i:article:252455/
50. VLACHOVA, Anna. 2016. Fear of Terrorism, Islamophobia, Threats. Spain is reeling in crises Source: http://zahranicni.eurozpravy.cz/eu/150827-strach-z-terorismuislamofobie-vyhruzky-hledani-radikalu-ve-tridach-spanelsko-se-zmita-v-krizich/. In: EuroZprávy.cz [online]. [feeling. 2016-04-11]. Available from: http://zahranicni.eurozpravy.cz/eu/150827-strach-z-terorismu-islamofobie-vyhruzkyhledani-radikalu-ve-tridach-spanelsko-se-zmita-v-krizich/
51. What is Eta? 2011. BBC News [online]. Europe [cit. 2016-04-08]. Available from: http://www.bbc.com/news/world-europe-11183574
52. ZULU. 2012. Fronte di Liberazione Nacional Corsu. In: GlobalSecurity.org [online]. [feeling. 2016-04-18]. Available from: http://www.globalsecurity.org/military/world/para/flnc.htm FOREIGN. 2015. Live: Paris attacks claim 129 lives. The police arrested the first suspects, the traces lead to Belgium. In: Aktuálně.cz [online]. [feeling. 2016-04-18]. Available from: http://zpravy.aktualne.cz/zahranici/zive-do-parize-se-vratil-terorismus-desitkymrtvych-a-zranen/r~1abf2fac8a5611e5a705002590604f2e/

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# REQUIREMENTS FOR ENSURING THE SAFETY OF FIREFIGHTERS OF FRS CR WHEN RESPONDING TO A FIRE IN BUILDINGS WITH THE POTENTIAL PRESENCE OF RADIOACTIVE SUBSTANCES

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**ABSTRACT:** The Fire and Rescue Service of the Czech Republic occasionally intervenes in buildings and objects where radioactive or nuclear materials are stored or used. In such cases, special care must be taken to ensure adequate protection of all persons from possible exposure to ionizing radiation. This is especially important for rescuers in the vicinity of the fire and radioactively contaminated environments. To minimize their exposure, it is necessary to monitor the radiation levels and the concentration of radioactivity in the air using suitable detectors and other special monitoring devices. The results of these measurements should be expressed in recognized quantities and units, the level of which continuously reflects the radiation risk in a given location. This needs to be constantly monitored and maintained within certain limits or benchmarks in accordance with relevant standards and regulatory requirements. The paper discusses the approach of firefighters to ensure sufficient radiation protection in line with national regulations.

**KEYWORDS:** Firefighter, Safety, Radioactive Substance, Radiation Protection, Dose, Exposure Limit, Requirements, Regulatory Authority, Exposure Limit.

## INTRODUCTION

The primary mission of the Fire and Rescue Service (HZS) of the Czech Republic (HZS) is to protect the lives, health and property of citizens from fires and to provide effective assistance in the event of any emergency caused by fire (HZS, 2018). HZS CR is one of the basic bodies of the Integrated Rescue System, which has been operating under a new structure since January 1, 2001.

The main tasks and activities of the RFS CR can be summarized as follows:

- Interventions (firefighting, liquidation of consequences of natural disasters and other emergencies);
- State fire supervision;
- Preventive educational activities;
- Population protection;
- Providing humanitarian aid in the CR and abroad;
- Setting legislation in the area of fire protection, fire prevention and crisis management.

The firefighters of the FRS are trained and qualified to fight and terminate the fire, which may erupt in various places and buildings where some dangerous substances, including radioactive sources, may be damaged by the fire resulting in the release of radionuclides to the surrounding area. They have to be equipped with specific personal protective equipment (PPEs) to provide sufficient protection against external radiation and internal exposure due to the

inhalation of contaminated air. The contaminated areas have to be identified, and appropriate measures depending on the contamination level must be taken to protect firefighters.

## PROTECTION AGAINST RADIATION SOURCES

In general, radiation sources may be categorized into two main categories: a) radioactive sources (radionuclides) and b) radiation generators (X-ray tubes, particle accelerators). While radioactive sources continuously emit radiation, radiation generators produce radiation only during their working regime. If power supplies are cut off, the emission stops. In this case, these sources do not present any danger during the fire (SPELL, J. 2019).

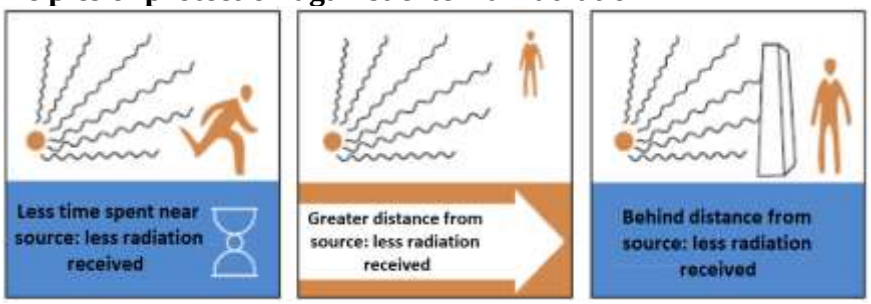
The most important characteristics of radionuclides include activity, half-life and type of radiation accompanying the decay process. The activity is defined as the number of radioactive decays per second. The unit used is Bq (becquerel), corresponding to one disintegration per second. Due to the decay, the number of radioactive nuclei in the sources goes down depending on the half-life, which is the time during which this number decreases to half of the original value (KUBINYI et al., 2018).

Radionuclides may emit various types of radiation: gamma photons, beta particles, alpha particles, protons and, in some cases also, neutrons. Each of these particles undergoes matter-specific interaction processes, which cause different damage to tissues and organs in the body of an exposed person. This is why radionuclides with the same activity producing the same number of particles may show different health damage.

Applications of radionuclides and nuclear materials are quite wide and include industry (industrial radiography, gauge monitors etc.), medicine (radiodiagnostic examinations, radiotherapy, nuclear medicine), research (mainly radioanalytical methods) and many other areas where a special role belongs to nuclear reactors used in nuclear power plants and research laboratories.

Radioactive sources fall into two distinctive categories: sealed (closed) sources and unsealed sources. If a sealed source is not severely damaged or destroyed by the fire, it can be considered as an external emitter and exposed persons from outside. Such exposure can be controlled by time, distance and shielding (Fig. 1).

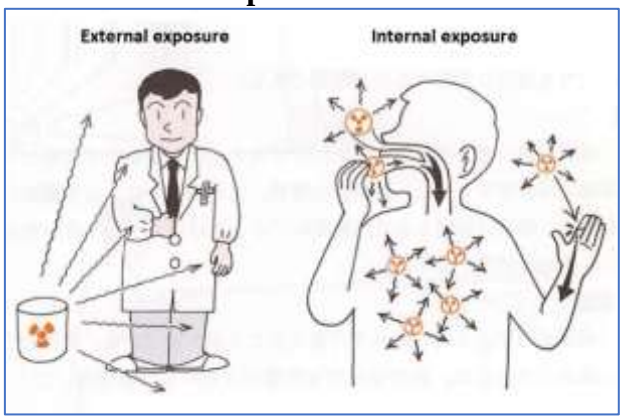
**Figure 1: Principles of protection against external radiation**




*Source: Own processing*

Unsealed sources may easily spread into the surrounding environment, where the air will be contaminated by released radioactive material. Its inhalation will result in external exposure of various organs in the human body. The illustration of both types of exposure is illustrated in Fig. 2.

**Figure 2: The difference between the exposure due to the external and internal radiation**




*Source: Own processing*

## QUANTIFICATION OF RADIATION EXPOSURE RISKS

The primary purpose of radiation protection consists of protecting workers, patients and members of the general public against any excessive exposure to ionizing radiation and controlling the radioactive contamination of the environment in accordance with the strict regulatory standards. In order to introduce efficient measures to control the exposure of people to various radiation sources, it is essential to develop a consistent system of radiation quantities and units reflecting the health effects caused by external and internal sources. The risk of radiation exposure can be quantified using some specific radiation quantities and units. Only very low doses (comparable with the natural radiation background) are encountered under normal circumstances. Such exposures may result in stochastic (delayed) effects, where the probability of their occurrence is proportional to the magnitude of the effective dose expressed in Sv (sievert). While for the stochastic effects only the unit Sv can be used, for the quantification of deterministic effects (tissue reactions), the units based on Gy (gray) should be applied. These effects occur at relatively higher doses where other quantities and units are more appropriate. In this case, one relies on a new quantity, namely RBE-weighted dose with a unit of Eq-Gy (equivalent gray). (SABOL, 2021; KUBINYI et al. SABOL, 2017).

Under typical situations, when everything is under control, it is expected that the total effective dose of the population would be around 3 mSv/y which is roughly the level of natural radiation background in most countries in the world. This exposure before about 30 years ago was much lower (around 1 mSv/y). The increase in population exposure is mainly to the more intensive use of radiation applications in medicine.

Radiation workers usually receive higher professional exposure for which the whole body limit of 20 mSv/y had been set. Here everything possible has to be done to keep all exposures as low below this limit as possible, following the ALARA principle (As Low As Reasonably Achievable).

In emergencies, including accidents or radiological terrorism, higher exposure is expected. Such exposure always causes visible health effects, which appear shortly after the exposure or within a few days or weeks. In the case of firefighters, we have to consider such situations when there is a potential that they may receive a very high dose if they are not adequately protected and the area around the fire is not monitored.

## RADIATION MONITORS AND PERSONAL PROTECTIVE EQUIPMENT

To ensure sufficient protection of firefighters, it is necessary that the level of radiation and radioactive contamination at the place of intervention is continuously monitored so that they can avoid higher exposure levels. For radiation monitoring, the firefighters use various radiation dosimeters or monitors (Fig. 3a). Moreover, firefighters wear special protective suits

and masks to minimize external and especially internal exposure through inhaling dispersed radioactive substances in the air (Fig. 3b).

**Figure 3: Protection of fighters using**
**3a) radiation monitor to warn them about any excessive level of radiation or radioactivity,**
**3b) personal protective suit and equipment**

a)

b)

*Source: Own processing*

**PROTECTION OF FIGHTERS IN SPECIFIC SITUATIONS AND CONDITIONS**

Firefighters acquired much beneficial experience from their previous interventions where they had to extinguish the fire under various specific conditions. This was the case of their interventions in Chornobyl and Fukushima where they had to work in an environment contaminated by radioactive materials released from damaged nuclear reactors.

Fire safety assessments and operational experiences gained from events in nuclear power plants (NPPs) have shown that fires and explosions have a high potential to strongly affect an NPP's safety. As a fire can occur at any time in a plant, fire protection of an NPP is extremely important throughout its lifetime, i.e., from the design stage to operation through to its decommissioning.

The hazard to firefighters attending radiation incidents is irradiation or contamination from radioactive materials. The hazards and level of risks that Fire and Rescue Service personnel face when attending incidents involving radioactive materials are dependent on their training and the use of appropriate monitors and PPE.

Sealed sources – a sealed source is a radioactive source that is encapsulated into a solid material, usually metal. The encapsulation is intended to prevent the escape of radioactive material while allowing the radioactive energy to pass through. Sealed sources are designed to withstand rough handling and elevated temperatures without releasing radioactive material. Because the radioactive source substance is encapsulated or plated onto a surface, sealed sources do not present a contamination hazard under normal conditions; however, they can present an irradiation hazard.

Unsealed sources – an unsealed source consist of powders, liquids or sometimes gases which contain radioactive elements and could quickly be released from their containers through leaks and spillages and dispersed into the environment. The main hazard with unsealed sources is contamination, although there may also be a significant irradiation hazard from the bulk material.

As has already been mentioned, we must distinguish between radiation effects in firefighters (similarly to any exposed person) at high and low doses. Deterministic effects occur at a relatively high dose, and the severity of the impact is proportional to the dose. The most common effects in this category are skin reddening, hair loss, impaired fertility, lowered blood count, nausea, vomiting and diarrhoea. On the other hand, stochastic effects are those where

the probability of experiencing the effect is proportional to the dose, but the severity of the effect is independent of the dose. The most common effect in this category is cancer, The likelihood of contracting cancer increases with the dose. A brief overview of radiation effects expected at certain levels of exposure is presented in Table 1.

**Table 1: A general awareness of the order of magnitude required for various health effects to be observed in an exposed person (based on CFR, 2011)**

| Summary of whole body doses and effects | | |
|---|---|---|
| Exposure (RBE Dose in Gy-Eq and effective dose in mSv) | Effects | Comments |
| 5 Gy-Eq | Probable lethal dose | Very dependent on the dose rate of exposure and the health of an individual |
| 3 Gy-Eq | Erythema (skin reddening) | May not appear for several days |
| 3 Gy-Eq | Depilation (hair loss) | Temporary between 3 and 7 Gy-Eq; permanent above 7 Gy-Eq |
| 1 Gy-Eq | Threshold for radiation sickness (tissue reactions) | Dependent upon other factors, e.g. health, dose rate, skin type etc. |
| 700 mSv | Threshold for temporary sterility | Can be permanent at higher doses in excess of 3 Gy-Eq |
| 100 mSv | Chromosomal changes in blood cells detectable; small increase in existing cancer rate | Minimum dose at which any physical changes can be detected; no noticeable effects by the exposed person |
| 5 mSv | Very small increase in the overall cancer rate | No immediate observable effects |

*Source: Own processing*

The FRS has to pay special attention to the training of the firefighters, where it is essential to take into account, especially the following tasks and measures:

- FRS services must ensure their members receive adequate training to deal with the hazards and risks associated with a fire involving radioactive and other dangerous substances;
- Training should be based on careful assessment of operational and individual needs in accordance with the relevant FRS guidance taking into account national occupational standards and other relevant requirements;
- Training programmes are supposed to be formulated in such a way as to move from simple to more complex tasks and from lower to higher levels of associated risk;
- Training should typically address all standard foreseen operating procedures and ensure an understanding of personal protective equipment and the skills that will be required to use it; and
- Training programmes should also pay attention to continuous professional development to ensure the maintenance of skills of personnel whenever there are changes to procedures, equipment etc.

Special attention should also be paid to protect firefighters responding to wildland fires (forests, damping places) where surface litter and vegetation containing radiological contamination may result in receiving radiological doses by inhaling resuspended radioactive material in the smoke. Another specific area that required some additional care is related to the cases where fire occurs in places where there are also stored some other agents from the broader family of CBRN group.

Dealing with a CBRN incident, threat or suspicion is always very complicated and potentially dangerous. For example, all Czech firefighters are properly equipped for such type of an incident across the country (personal protective equipment, detectors). Only a few special units of Police, Emergency Medical Service and the army have similar equipment and skills (SETNIČKA, 2019). In this case, the essential tasks for firefighters include providing first aid to disabled people, detection and confirmation of CBRN risk, timely population warnings, identification of hazardous materials, determination of contamination degree, demarcation of contaminated areas, decontamination, rescue and evacuation of population and recovery operations.

## CONCLUSION

Fires at buildings or other installations housing radioactive sources occur from time to time and are not so uncommon. The preparedness and training of fire respondents to deal with these situations have to be constantly improved, taking into account the nowadays situation and technology, which is continuously developing. By following the basic principles for dealing with fire, departments can begin their planning and actions around making their fire respondent and emergency response teams better informed, better prepared, and better equipped

This generic risk assessment examines the hazards and control measures relating to FRS personnel, the personnel of other agencies and members of the public when dealing with incidents involving radioactive and nuclear materials as well as radioactive waste. Depending on the nature and scale of these materials in objects where the fire erupted, or an accident happened, a variety of significant hazards may be present. The FRS may need to consider the contents of other specific generic risk assessments. They should therefore consider this with all other relevant assessments, including terrorist activities or radiological attacks, which would require some special measures. It is also essential to conduct their own evaluations and produce their own safe systems of work (including training programmes, provision of equipment, levels of response etc.) within the context of integrated risk management plans, local conditions, knowledge and existing organisational arrangements.

Lessons learnt from such accidents as occurred at the NPPs in Chornobyl and Fukushima should be incorporated into FRS procedures which should be constantly upgraded taking into account the latest advances in monitoring techniques and PPEs. This has also to include the improvement of preventive measures and effective means of communicating the risk with members of the general public.

## REFERENCES AND INFORMATION SOURCES


1. CFR (2011): *Fire and rescue service operational guidance.* TSO, London, January 2011. ISBN 9780117540774. Online (5 September 2022): www.tsoshop.co.uk.
2. FRS (2018): *Fire Rescue Service of the Czech Republic*, Kloknerova 26, Prague 4, Czech Republic. Online (5 September 2022): https://www.hzscr.cz/.

3. KUBINYI, J. – SABOL, J. – VONDRÁK, A. (2018): *Principles of radiation protection in nuclear medicine* (in Czech), pp. 304. Grada Publishing, Prague, 2018. ISBN 978-80-271-0168-9.
4. SABOL, J. (2022): *The current situation and problems in quantifying radiation exposure of workers and patients in nuclear medicine*. Eur J Nucl Med Mol Imaging, 2020, Vol. 47 (Suppl 1): S1-S753, S213-S214. ISSN 1619-7089.
5. SABOL, J. (2019): *Basic radiation protection related to the assessment of remediation measures in radioactively contaminated areas*. In: Remediation measures for radioactively contaminated areas (D.K. Gupta, A. Voronina, Eds.), pp. 291-314. Springer Nature, Cham, Switzerland, 2019. ISBN 978-3-319-73397-5.
6. SABOL, J., ŠESTÁK, B. (2017): *Quantification of the risk-reflecting stochastic and deterministic radiation effects.* RAD Conference Proceedings, vol. 2, pp. 104–108, 2017.
7. SETNIČKA, M. (2019): *The preparedness of fire and rescue service of the CR for the CBRN threats.* The science for population Protection, 2/2019, pp. 1-7.
8. SPELL, J. (2019): *A fighter's guide to radiation and response.* Fire Rescue, 16 July 2019. Online (5 September 2022): http//:///G:/Fire%20Vod/Firefighters/A%20firefighter's%20guide%20to%20radiation%20and%20response.htm.

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# PROFESSIONALLY QUALIFIED PERSONS IN THE FIELD OF FIRE PROTECTION

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**ABSTRACT:** For a safe society, it is necessary to implement measures to prevent the emergence, spread and rapid liquidation of crisis situations and the evacuation of people and animals, as well as environmental protection, which is ensured by professionally qualified persons or persons with special authorization. In the following text, based on the latest theoretical knowledge and practical approaches, we will therefore focus on mapping the current legal status of professional competence in the field of fire protection in the Slovak Republic and the Czech Republic. To compare both legal regulations, evaluate the situation and look for ways to make the provisions of the current legal regulation in the Slovak Republic more effective. We will mainly focus on professional competence and the persons who can obtain it based on the completion of vocational training, namely fire protection specialist, fire protection technician and village fire protection preventive officer. Comparisons of persons with professional competence between the Slovak and Czech legal arrangements in terms of professional competence, tasks and competences are also processed.

**KEY WORDS:** Professional Qualification, Professional Training, Fire Protection Specialist, Fire Protection Technician, Municipal Fire Protection Preventive Officer

## INTRODUCTION

Fire protection can also be defined figuratively as fire protection, which has a long-standing tradition among mankind. Fire was and is a great element for man, which can destroy many things, but also help. Therefore, man decided to understand fire and, of course, solve protection against this element. Nowadays, people are also educated about fire protection, whether it is in the family, at school, at work, it can be said that at every step. Someone is educated more, the other less. In principle, however, persons who want to deal with or ensure protection against fires must be persons with professional competence or with a special authorization. (BLAŠKO, D. et al., 2018) Several persons with professional qualifications or with special authorization work in the fire protection department, in practice we can meet so-called wet and dry firefighters, as well as persons who help legal entities, natural persons - entrepreneurs or natural persons with obligations regarding fire protection. We do not deal in detail with all persons with professional qualifications or with a special authorization in the field of fire protection from the point of view of comprehensiveness, but only with fire protection specialists, fire protection technicians and municipal fire prevention officers in the Slovak Republic and professionally qualified persons, fire protection technicians, preventionists and to authorized persons in the Czech Republic, which we will analyze on the basis of available publications and legal regulations.

During its history, the fire protection section has gone through various, whether major or minor, legislative changes. In our legislation, the basic legal regulation in the field of fire protection is Act of the National Council of the Slovak Republic No. 314/2001 Coll. on fire protection as amended and Act no. 315/2001 Coll. on the Fire and Rescue Service, as amended, which entered into force on April 1, 2002 and replaced the Slovak National Council Act no.

126/1985 Coll. on fire protection as amended. Law no. 314/2001 Coll. on fire protection, as amended, regulates the conditions for the protection of life and health of natural persons, property and the environment from fires and establishes the competence of state administration bodies and municipalities in the field of fire protection. It also regulates the tasks of fire brigades when performing rescue work during fires, natural disasters and other extraordinary events (BLAŽEK, O., SUJA, M., 2021). Furthermore, it regulates the duties of state administration bodies and other central bodies, municipalities, legal entities, entrepreneurial natural persons and natural persons in the field of fire protection, types of fire brigades, their establishment and duties in fighting fires and carrying out rescue work, the tasks of the Slovak Voluntary Fire Protection of the Republic and other civil associations in the area of fire protection, as well as sanctions for breach of obligations arising from regulations on fire protection. In total, the law is divided into nine parts, of which we focused mostly on the second and third parts related to the topic of our diploma thesis. The last amendment to this law was approved by the National Council of the Slovak Republic on May 14, 2015 with effect from September 1, 2015, except for Art. I §11d par. 1 in point 15, which entered into force on January 1, 2016. Act no. 315/2001 Coll. on the Fire and Rescue Service, as amended, regulates the establishment, position, tasks, organization and management of the Fire and Rescue Service, which replaced the Fire Protection Service.

This law also regulates the state service of a member of the Fire and Rescue Service, which is performed in a service relationship, as well as legal relationships related to the creation, changes and termination of the service relationship of a member of the Fire and Rescue Service. Undoubtedly, by-laws also have their special and specific status. Decree of the Ministry of the Interior of the Slovak Republic no. 121/2002 Coll. on fire prevention in the introductory provision defines the activities, places and time of increased risk of fire. Subsequently, in the first section, it regulates the details of the roles of legal entities and entrepreneurial natural persons who carry out fire prevention during such activities, at these places or at this time. The subject of this section is also the conditions for operating fire engineering equipment, preventive fire inspections and the types and method of keeping fire protection documentation. The second section regulates the details of the roles of natural persons, more specifically the principles of fire safety in activities with an increased risk of fire. The third section, which interests us the most in view of the choice of thesis topic, regulates the details of professional competence and training of fire protection specialists and fire protection technicians, content, scope and implementation of professional training, verification and certification of professional competence. In the fourth section, the municipality's documentation on fire protection is modified. The fifth section subsequently regulates the details of the implementation of state fire supervision, the types and content of fire inspections, the assessment of building documentation and the investigation of the causes of fires. The sixth section regulates preventive fire inspections and their content. The last seventh section contains transitional and final provisions.

The decree entered into force on April 1, 2002. Professional competence is partially defined by internal legal standards. Instruction of the President of the Fire and Rescue Service No. 9/2012 on the issuance and withdrawal of authorizations for conducting professional training in the field of fire protection defines, in two parts and thirteen articles, authorizations for training in the field of fire protection and the tasks, duties, authorizations and composition of the accreditation commission for issuing authorizations for conducting professional training in of the fire protection section and Instruction of the President of the Fire and Rescue Service No. 22/2012, amending the instruction of the President of the Fire and Rescue Service No. 9/2012 on the issuance and withdrawal of authorizations for conducting professional training in the field of fire protection. Subsequently, Notice of the Director of the Office of the President of the Fire and Rescue Service No. 12/2021 on the composition of the accreditation commission for issuing and revoking authorizations for conducting professional training in the fire protection section updates the composition of the accreditation commission for issuing authorizations for conducting

professional training in the fire protection section. The legal regulation governing the professional qualification and training of members of the fire and rescue service is Act No. 315/2001 Coll. on the Fire and Rescue Service, as amended, Instruction of the President of the Fire and Rescue Service No. 23/2010 on the content of basic training and Instruction of the President of the Fire and Rescue Service no. 43/2002 on the procedure for carrying out cyclical training of commanders of industrial fire brigades and commanders of municipal fire brigades and on the method of verifying their professional competence.

And last but not least, the legislation of the Slovak Republic on the verification of the professional competence of fire protection specialists, fire protection technicians and municipal fire protection preventive officers is regulated in more detail by the Instruction of the President of the Fire and Rescue Service No. 20/2015 on the verification of professional competence and on the recognition of professional qualifications for carrying out the activities of fire protection specialist, fire protection technician and village fire protection preventive officer, Instruction of the President of the Fire and Rescue Service No. 25/2015, which amends the Instruction of the President of the Fire and Rescue Service No. 20/2015 on the verification of professional competence and on the recognition of professional qualifications for carrying out the activities of a fire protection specialist, fire protection technician and village fire protection preventive officer and Instruction of the President of the Fire and Rescue Service no. 9/2018, amending the instruction of the President of the Fire and Rescue Service No. 20/2015 on the verification of professional competence and on the recognition of professional qualifications for carrying out the activities of a fire protection specialist, fire protection technician and municipal fire protection preventive officer, as amended by the instruction of the President of the Fire and Rescue Service no. 25/2015, the subject of which is the definition of certain terms for professional competence, the invitation to the verification of professional competence, the verification of professional competence, the minutes of the verification of professional competence, the registration of certificates and the archiving of documentation, the sample of the documentation of the certificate of professional competence and the range of questions for the written and oral parts verification of professional competence.

We can start the legal framework in the Czech Republic with the definition of Act no. 133/1985 Coll. about the fire department protection as amended in wording later ones regulations. It contains conditions for effective protection of life, health of citizens and property from fires and for providing assistance in natural disasters and other extraordinary events. A very important amendment in this law is the definition of persons with professional competence. In the area of fire protection in the Czech Republic, it is next in line Decree no. 246/2001 Coll. on setting conditions fire safety and state performance fire supervision (decree on fire prevention), where, among other sections, especially section six dealing with the verification of professional competence, training and training of employees on fire protection (fire protection) is important for our choice of topic.

This decree must also be accompanied by Decree no. 247/2001 Coll. on the organization and activities of fire protection units, as both in Slovak and Czech legislation, a member of the Czech Republic's Fire and Rescue Service is a person with professional competence. Law no. 360/1992 Coll., in force wording on the exercise of the profession of authorized architects and on the exercise of the profession of authorized engineers and technicians active in construction and related Decree no. 23/2008 Coll. on technical conditions fire protection of buildings also defines persons with professional competence, as authorized engineers and authorized technicians are among them. Finally, only the last legal regulation from the Czech Republic on professional competence in the form of an internal instruction, namely the Instruction of the General director of the Fire Rescue Service of the Czech Republic no. 37/2012 of 11/09/2012 , on the verification of the professional competence of natural persons , issuing and withdrawing certificate of professional competence , which defines the requisites for the preparation and course of the

professional competence exam, issuance, withdrawal of the certificate of professional competence, examination board and sample forms.

## METHODOLOGY AND GOAL

The methodology of the work represents a wide range of research methods through which we will fulfill the defined strategic goal and at the same time partial goals. These are mainly analytical-synthetic, inductive-deductive and mathematical-statistical methods. As the primary and basic general scientific method of basic research, we applied the method of analysis with its various modifications. From the point of view of the above-mentioned partial goals, we consider it necessary to identify the theoretical basis of the investigated issue, to analyze development tendencies, legal norms regulating professional competence in the field of fire protection. The most used method of creating the theoretical basis of the work is the analysis, especially of relevant publications, especially scientific and professional, scientific and professional articles in professional periodicals, but also from the proceedings of international and national scientific conferences. It is important to note in this section that the information database developing the issue of professional competence in the field of fire protection is minimal. In the scientific publishing activity (books, scientific studies, contributions in anthologies) it is a rarely and peripherally treated issue and to this day it is not specifically elaborated in textbooks or scripts.

With this in mind, we will mention fewer publication sources in the literature used due to their absence. However, the sources of legal regulation are also not that rich, parts of legal regulation. The de facto researched issue is elaborated in a few paragraphs, and subsequently we based it on internal acts. Through the analysis, we will also examine statistical information sources. We will also apply the method of historical analysis, or the historical method by which we will focus on the genesis of the field of fire protection. The subsequent procedure is the analysis of the legal norms of the Slovak and Czech legislation, which regulates the issue of professional competence in the field of fire protection, as well as the entire course of action within the given issue. The output will be the completion of the legal analysis of professional competence in the field of fire protection, which is directly related to the fulfillment of the strategic goal. Subsequently, we will use the comparative method of acquired knowledge. By comparing the essential provisions on professional competence in the field of fire protection in the framework of Slovak and Czech legislation, we will point out significant differences. We will partially use the comparison in the processing of development data, from the point of view of the amendment of the Slovak legislation and the subsequent polemic about the effectiveness of the amendment in question in the context of comparative conclusions with the Czech legislation.

We apply mathematical-statistical methods in the processing of selected data on the current state in the area of fire protection professional competence, not only for clear visualization, but especially for achieving a strategic goal. As part of the application of the method in question, we will express the obtained data mainly through tables and graphs. The given data will not only help us better understand the investigated issue, but at the same time will visually point out the investigated problems and emphasize the need for the analysis of the given issue in the professional public. Using the method of induction, we summarize individual knowledge with the aim of containing problematic questions as a whole. We will use the abstraction method when abstracting the analyzed relevant conclusions and recommendations. By induction, we summarize the scientifically acquired knowledge of problematic questions, and then by deduction we formulate our own conclusions.

The summarized conclusions will be partially presented at the end of the work and in the last sub-chapter, marked as well as suggestions for streamlining the current state of professional competence in the area of fire protection in the Slovak Republic. Using the method of synthesis,

we will formulate relevant facts and facts by combining individual selected and analyzed essential elements, sorting them and hierarchizing them into a whole. Through synthesis, we will formulate new insights into the field of professional competence in the field of fire protection, the characteristic elements of which we will outline in the work for possible inspiration for innovating certain customary schemes. As part of the applied methodology, we also implemented in a partial position the method of guided interview with experts, which we primarily used during the necessary consultations with experts from practice, as well as when confronting our own conclusions, their personal experiences and alternatives for streamlining the coordination of professional competence institutes in the field of fire protection in the Slovak Republic.

We used the guided interview to create feedback and verify the obtained conclusions, and for the reason mentioned, we applied it mostly in the final part of finalizing the work. We primarily approached experts from the Fire and Rescue Service of the Slovak Republic and the Fire and Rescue Service of the Czech Republic, as well as scientific erudite workers in the given field. These are experts who are qualified and professionally oriented to the issue of professional competence in the field of fire protection, they are aware of the shortcomings of the legal status, they know the differences and, based on their professional experience, they can evaluate the effectiveness of the obtained conclusions also for the needs of application practice. As part of conducting guided interviews, we will comply with certain binding conditions set by us. I consider it effective to conduct a standardized individual interview, i.e. conduct an interview with each respondent individually but with a precisely defined focus. For the needs of the research, I consider it more ideal to strictly process only a few questions (max. in number of 5), which will be specifically asked to individual respondents to a specifically defined problem related only to certain investigated problems. The questions should be formulated clearly, comprehensibly and should not cause the respondent to have doubts about their meaning. As part of the research process, we will proceed with the basic intentions of a guided interview, and we will first start the interview by introducing the respondent to the researched problem, then he will conduct the interview and record it in detail (ideally in written form). After the interview, we will process precise answers from the respondents. In the aforementioned processing, we proceed objectively, we will not present subjective attitudes towards the person of the respondent or his statements.

The main goal is, based on the latest theoretical knowledge and practical approaches, to map the current legal status of professional competence in the field of fire protection in the Slovak Republic and the Czech Republic and, based on the comparison, to evaluate the positives or negatives, which we will use in proposals for streamlining the coordination of institutes of professional competence in the field of fire protection in the Slovak Republic. To fulfill the main goal, we chose certain sub-goals. The first partial goal consists in coordinating the selection of a complex of information resources of the professional public with the aim of creating and developing general starting points and the theoretical basis of the work.

The second partial goal is focused on the legal analysis of Slovak and Czech legislation in the field of professional competence in the field of fire protection. In order to fulfill the given goal, it will be necessary to characterize in detail the persons possessing professional competence, as well as the legal conditions for acquiring professional competence in the field of fire protection and its duration. The third partial goal consists of the application of the comparative method of the analyzed legal regulations, on the basis of which we will evaluate their positive and negative aspects and try to propose a possible way of streamlining the coordination of professional competence institutes in the field of fire protection in the Slovak Republic. The subject of the research is professional competence in the field of fire protection with a focus on comparative aspects with the legislation of the Czech Republic. In the recent period, taking into account the signs of dynamization of the given area, the need for an

interdisciplinary approach to the identification of legal-theoretical and practical-application problems, as well as the accumulation of knowledge gained from experts in practice, inevitably arises.

## RESULTS AND DISCUSSION

The output is a comparison of the legislation of the Slovak Republic and the Czech Republic from the point of view of professional competence in the field of fire protection, an evaluation of the situation and the search for ways to make the provisions of the current legislation in the Slovak Republic more effective.

Legal regulation of professional competence in the field of fire protection in the Slovak Republic. In the field of fire protection, professional competence is defined as education and a summary of theoretical knowledge, practical experience, knowledge of generally binding legal regulations.

A person with professional competence in the field of fire protection:

- Slovak fire protection specialist,
- Slovak fire protection technician,
- prevention officer of fire protection of the SR municipality.

In addition to the above-mentioned fire protection specialists, fire protection technicians and fire protection preventive officers of the municipality, other persons with professional qualifications are also members of the fire protection department in the state fire supervision department, members of the fire protection department and fire brigades, in the case of the plant fire department, the commander, deputy commander, shift commander, commander squads, squad leader, professional service specialist technician, commander, squad leader at the volunteer fire brigade of the village and commander, squad leader at the competitive fire brigade . Employees of HaZZ in an employment relationship generally have basic vocational training and specialized vocational training.

A certificate of professional competence of a fire protection specialist without a time limit, based on an application, without verification of knowledge, is issued by the Ministry of Internal Affairs of the Slovak Republic after the end of the employment relationship to a natural person who was a member of the Fire Protection Agency and obtained a special professional qualification for performing state fire supervision and at the same time performed activities related to the state a fire supervisor for at least ten consecutive years immediately before the end of the employment relationship, or a person who was a member of the HaZZ and carried out training for at least ten consecutive years immediately before the end of the employment relationship. Based on the recognition of professional qualifications, the Ministry of the Interior of the Slovak Republic will issue a certificate of professional competence for the performance of the activities of a fire protection specialist without a time limit of validity also to an applicant from another country, if he meets the qualification requirements in the country of origin, which condition the performance of the activities of a fire protection specialist, has an officially certified copy proof of professional experience carried out to date for at least five years in the state in which he performed a similar activity performed by a fire protection specialist and proves that the compensation mechanism (trial or adaptation period) has been fulfilled. A certificate of professional competence can be issued to high school graduates with a study focus on fire protection, the content and scope of which meets at least the conditions of professional competence. The content and scope of the study focus on fire protection of the relevant secondary school, as well as the method of knowledge verification, must be discussed with the Ministry.

**Slovak fire protection specialist**

Only a natural person with professional qualifications can perform the activities of a fire protection specialist. Professional qualification is acquired by a natural person who has at least a higher professional education in the field of fire protection or a first-degree university education in a technical direction.

The fire protection specialist ensures the fulfillment of the following obligations for legal entities and natural persons - entrepreneurs:

- develops fire safety solutions in the construction project documentation,
- assesses conformity of products or their certification,
- during the development of new products and their use, it solves the requirements of fire safety,
- when placing technological equipment, it deals with fire safety, fire safety of products according to Act no. 264/1999 Coll. on technical requirements for products and on assessment of conformity and on the amendment and supplementation of some laws as amended, and assessment of materials, conditions of their safe use from the point of view of fire safety,
- in the buildings of a legal entity and a natural person - an entrepreneur, analyzes the risk of fire.

The certificate of professional competence of a fire protection specialist is issued and verified by the Presidium of the Fire and Rescue Service of the Ministry of the Interior of the Slovak Republic, and a fire protection specialist is certified by it. A graduate of a higher professional education in the field of fire protection, the content and scope of which meets the conditions of training for obtaining the professional qualification of a fire protection specialist, as well as a graduate of a university majoring in fire protection, the content and scope of which meets the conditions of training for obtaining the professional qualification of a fire protection specialist of protection can participate in the verification of professional competence without completing professional training within 6 months of successfully completing their studies. The method of knowledge verification, content and scope of the fire protection study focus of the relevant school must be discussed with the Ministry of the Interior of the Slovak Republic.

We divide the training of fire protection specialists into basic training and refresher training. Natural persons who do not yet have the professional qualification of a fire protection specialist must complete basic training in the range of 200 hours. Natural persons who have the professional qualification of a fire protection specialist will undergo refresher training in the range of 50 hours. The refresher training of a natural person with the professional qualification of a fire protection specialist is carried out once every five years. It is a regular verification of professional competence. The validity of the certificate of professional competence of a fire protection specialist after the third acquisition of professional competence, who at the same time performed the activities of a fire protection specialist for at least ten consecutive years, is without time limit. The period when the natural person was considered to be a person with professional competence for the purpose of verification of professional competence is also included in the period of ten consecutive years. A natural person with the professional competence of a fire protection specialist can also perform the activities of a fire protection technician or the activities of a village fire protection preventive officer.

A legal entity or a natural person-entrepreneur who conducts the training of fire protection specialists must have an authorization issued by the Ministry of the Interior of the Slovak Republic to conduct it. The list of entities to which such authorization was issued is publicly available in the section education - accredited entities.

**Slovak fire protection technician**

Only a natural person with professional qualifications can perform the activity of a fire protection technician. This means a natural person with complete secondary education.

The fire protection technician ensures the fulfillment of the following obligations for legal entities and natural persons - entrepreneurs:

- in the buildings of a legal entity and a natural person - an entrepreneur, he performs preventive fire inspections,
- determines the number of members of fire patrols and places with an increased risk of fire,
- conducts professional training of fire patrols and training on fire protection,
- in accordance with the actual situation, prepares, maintains and maintains fire protection documentation,
- when using the building and when changing the use of the building, determines the requirements for fire safety,
- evaluates and organizes training fire alarms.

The certificate of professional competence of the fire protection technician is issued by the relevant regional directorate of the Fire and Rescue Service of the Ministry of the Interior of the Slovak Republic, and the fire protection technician is certified by it. A high school graduate in the field of study fire protection, as well as a graduate of a higher professional education in the field of study fire protection, the content and scope of which meet the conditions of training for obtaining the professional qualification of a fire protection technician, can participate in the verification of professional competence without completing professional training within 6 months from successful completion of studies. The method of knowledge verification, content and scope of the fire protection study focus of the relevant school must be discussed with the Ministry of the Interior of the Slovak Republic.

We divide the training of fire protection technicians into basic training and refresher training. Natural persons who do not yet have the professional qualification of a fire protection technician must complete basic training in the range of 120 hours. Natural persons who have the professional qualification of a fire protection specialist will undergo refresher training in the range of 30 hours. The refresher training of a natural person with the professional qualification of a fire protection technician is carried out once every five years. It is a regular verification of professional competence. The validity of the certificate of professional competence of a fire protection technician after the third acquisition of professional competence, who at the same time performed the activities of a fire protection technician for at least ten consecutive years, is without time limit. The period when the natural person was considered to be a person with professional competence for the purpose of verification of professional competence is also included in the period of ten consecutive years.

A legal entity or a natural person-entrepreneur who conducts the training of fire protection technicians must have an authorization issued by the Ministry of the Interior of the Slovak Republic to conduct it. The list of entities to which such authorization was issued is publicly available in the section education - accredited entities.

**Prevention officer of the fire protection of the SR municipality**

Only a natural person with the professional qualifications of a municipal fire protection preventive officer may be authorized to perform the activities of a municipal fire protection preventive officer.

preventive officer ensures the fulfillment of the following obligations for the municipality:

- preventive fire inspections in the village,

- to fight fires and carry out rescue work, establish and maintain the capacity of the volunteer fire department of the village and ensure its material and technical equipment,
- professional training of the village's volunteer fire department
- training of control groups of the municipality,
- preparation of the fire protection documentation of the municipality,
- creating conditions for the performance of fire protection tasks for legal entities established by the municipality
- implementation of preventive and educational activities in the village.

The municipal fire protection inspector proves his professional competence with a certificate of professional competence. The professional competence of the village fire protection preventive officer is verified and the certificate of professional competence of the village fire protection preventive officer is issued by the relevant District Directorate of the Fire and Rescue Service.

A natural person can take part in the verification of professional competence, if he has completed professional training for fire protection prevention officers of the municipality within a defined scope, no later than 6 months after the end of the professional training. Completion of vocational training is proven by a certificate of completion of vocational training. The certificate of completion of the vocational training for the village fire protection preventive officer is valid for 18 months from the end of the vocational training. A high school graduate in the field of study fire protection, as well as a graduate of a higher professional education in the field of study fire protection, the content and scope of which meet the conditions of professional training for obtaining the professional qualification of a village fire protection preventer, can participate in the verification of professional competence without completing professional training within 6 months from the successful completion of studies. The method of knowledge verification, content and scope of the fire protection study focus of the relevant school must be discussed with the Ministry of the Interior of the Slovak Republic.

Only a natural person who has completed 80 hours of basic training for village fire prevention officers can take part in the verification of professional competence. A person with the professional competence of a municipal fire protection preventive officer is obliged according to § 11 par. 11 of Act no. 314/2001 Coll. on fire protection, as amended, at least once every 5 years from the issuance of the certificate of professional competence, undergo refresher training. Without a confirmation of completion of refresher training, the certificate of professional competence is invalid. Update professional training of the village fire prevention officer is 20 hours long. The validity of the certificate of professional competence of the fire protection preventive officer of the municipality is not limited in time. Professional training of municipal fire prevention officers is carried out by a legal entity or a natural person-entrepreneur who has an authorization issued by the Ministry to carry it out. The list of entities to which such authorization was issued is publicly available.

*Visiting PO specialist and visiting PO technician*

In the basic perception of a person with professional competence, we can also include a guest fire protection specialist and a guest fire protection technician. He is a natural person with professional qualifications from member states of the European Union, states that are parties to the Conventions on the European Economic Area and the Swiss Confederation. They are persons with a certificate of professional competence as a guest fire protection specialist and a guest fire protection technician. It is issued by the Ministry of the Interior of the Slovak Republic based on the request of the applicant. The Ministry of the Interior of the Slovak Republic keeps records of these visiting specialists and fire protection technicians. The validity of the guest fire protection technician's certificate is 6 months from the date of issue. The validity of the certificate for a visiting fire protection specialist is 12 months. The visiting fire

protection specialist has the right to extend the validity of the certificate by another 12 months, but only if he requests an extension during the period of validity. The Ministry of the Interior of the Slovak Republic will deregister a guest fire protection specialist or a guest fire protection technician after the certificate of professional competence expires. A visiting fire protection specialist, like a fire protection specialist, also uses a stamp of round form with a diameter of 35 mm in his work to certify the authenticity of documents, which in the text contains the title, first and last name, registration number, validity of the certificate and the words "visiting fire protection specialist".

The list of natural persons with a valid certificate of professional competence for the activity of PO fire protection specialist is publicly available. A person with the professional qualification of a fire protection specialist can also perform the activities of a fire protection technician and a village fire protection preventive officer. The list of natural persons with a valid certificate of professional competence for the activity of a fire protection technician will be provided by the relevant regional directorate of the Fire and Rescue Service, under whose territorial competence the place of permanent residence of a natural person with a valid certificate of professional competence for the activity of a fire protection technician falls. A person with the professional competence of a fire protection technician can also perform the activities of a village fire protection preventive officer. The list of natural persons with a valid certificate of professional competence for the activity of a village fire protection preventive officer will be provided by the relevant district directorate of the Fire and Rescue Service, under whose territorial competence the place of permanent residence of a natural person with a valid certificate of professional competence for the activity of a village fire protection preventive officer falls.

## LEGAL REGULATION OF PROFESSIONAL COMPETENCE IN THE FIELD OF FIRE PROTECTION IN THE CZECH REPUBLIC

Each organization must fulfill selected duties through professionally qualified persons in the field of fire protection. Due to the increased and high fire danger, these are primarily trainings for senior employees, training of preventive fire patrols and fire protection preventers (hereinafter referred to as " preventist PO").

Professionally qualified persons means a person professionally qualified in the field of fire protection, in the Czech Republic it is:

- professionally qualified person in fire protection (hereinafter referred to as "professionally qualified person PO"),
- fire protection technician (hereinafter referred to as "PO - CR technician"),
- PO preventionist.

Authorized engineers and technicians (hereinafter referred to as "authorized person"), who are defined according to Act no. 360/1992 Coll. on the exercise of the profession of authorized architects and on the exercise of the profession of authorized engineers and technicians operating in construction.

### Professionally qualified person PO in the Czech Republic

A professionally qualified PO person is authorized to perform tasks in the fire protection section and is also qualified to perform the activities of a PO technician in the Czech Republic. They are:

- experts and expert institutes in the basic field of fire protection registered in the list of experts and expert institutes managed by regional courts,
- natural persons who are graduates of fire protection schools or graduates of university studies, which includes a verification program for professional competence in the field

of fire protection approved by the Ministry of the Interior of the Czech Republic (hereinafter referred to as "the Ministry of the Interior of the Czech Republic"),
- members of the Fire Rescue Service of the Czech Republic, who are assigned to a position in the state fire control section or perform the function of a unit commander, and who have obtained a certificate of professional competence to perform their duties in the HZS CR (Fire Rescue Corps of the Czech Republic, hereinafter referred to as "HZS CR"),
- natural persons who have passed the examination of professional competence before the commission established by the Ministry of the Interior of the Czech Republic.

Expert activity may be performed by experts registered in the list of experts; expert institutes or persons not registered in the list of experts only under exceptional conditions established in the proceedings of state administration bodies. The expert is appointed for individual departments by the Minister of Justice or the President of the Regional Court to the extent that the Minister of Justice authorizes him. Experts are appointed based on a selection among persons who meet the conditions for appointment. Appointed experts are registered in the list of experts after taking the oath. The lists of experts are kept by the regional courts in the district in which the expert has a place of permanent residence, or a place of residence in the territory of the Czech Republic depending on the residence of the foreigner. When entering the list of experts, the Regional Court will assign to an expert who has not yet been assigned a person identification number, a person identification number provided by the administrator of the basic register of persons. The central list of experts is kept by the Ministry of Justice and the list is sent to the regional courts. Lists of experts are publicly accessible.

Members of the Fire and Rescue Service of the Czech Republic, who are assigned to a position in the state fire control section or perform the function of a unit commander, and who have obtained a certificate of professional competence to perform their duties at the HZS of the Czech Republic, perform:
- control of compliance with the obligations stipulated by regulations on fire protection,
- assessment of land -use planning documents, documents for issuing decisions, project documentation of the building for the construction procedure, documentation for permission to change the building before its completion and assessment of documentation for the procedure for the change in the use of the building, for the ordering of necessary modifications, for the ordering of security works, for the procedure for settlement of the rectification and to allow an exception in the scope of the fire -safety solution according to special legal regulations,
- by verifying whether the conditions of fire safety of buildings resulting from the assessed documents and documentation have been complied with,
- by approving fire risk assessments of activities with a high fire risk,
- investigating the causes of the fire,
- by checking the readiness and actionability of firefighting units,
- imposing measures to eliminate identified deficiencies and checking the fulfillment of these measures.

Natural persons who are graduates of schools specializing in fire protection or graduates of university studies, which includes a verification program for professional competence in the field of fire protection approved by the Ministry of the Interior of the Czech Republic, are graduates of the Secondary School of Fire Protection and the Higher School of Fire Protection in Frýdek - Místek. It is an organizational part of the HZS CR. The mission of the school, founded in 1967, is education in the field of fire protection. This takes place in high school studies in a daily form, intended for primary school graduates and is currently no longer provided. The highest form of education is studying at a higher vocational school, ending with a discharge and obtaining the DiS degree. (level 5B according to the International Standard

Classification of Education - ISCED issued by UNESCO). Various types of educational programs and professional courses for members of the HZS CR are an inseparable part of the school's activities. Since its establishment, the school has primarily served the needs of professional firefighters and rescuers. In 1991, a four-year full-time study for primary school graduates was introduced as a form of continuous and systematic preparation for the performance of a profession. The year 2002 can be considered a significant landmark in the school's history, when studies at the Higher Vocational School were opened in a combined form of study ("distance study"). Education in this type of study was the first at a school in the department of the Ministry of the Interior of the Czech Republic. Another activity of the school is the lifelong education of members of the HZS CR in the form of teaching in courses. Currently, it also conducts examinations and issues a certificate (including another agenda) on professional competence. The professional competence exam is taken before the commission of the Ministry of the Interior of the Czech Republic, which has an odd number of members, at least 3. The exam consists of two parts - a written test and an oral examination. The Ministry of the Interior of the Czech Republic may, on the proposal of the state fire supervision authority, decide to revoke the certificate of a person who shows serious deficiencies in the performance of the activities of a professionally qualified person. A person with a revoked certificate can apply for a new certificate issue no earlier than 3 months after the valid decision to revoke the certificate.

The activity of a professionally qualified person can be carried out:

- in an employment relationship (Act No. 262/2006 Coll.);
- on the basis of a special law (Act No. 455/1991 Coll).

**Czech fire protection technician**

The PO CR technician is one of the qualification levels of professional competence in the field of fire prevention (the lowest is the PO preventionist, the highest is the professionally qualified PO person). The PO CR technician is entitled to wear a uniform with four silver stars on the shoulder pads. The PO CR technician is authorized to ensure the fulfillment of obligations set for legal entities and natural persons – entrepreneurs, the following obligations are concerned:

- fire protection training for senior employees,
- professional training of PO preventers,
- professional training of members of fire prevention patrols of legal entities and natural persons - entrepreneurs who operate activities with increased fire danger,
- fire protection training for managers and other employees of legal entities and natural persons - entrepreneurs who operate activities with a high fire risk,
- provide the necessary quantity and types of firefighting equipment, physical means of protection against fires (e.g. portable fire extinguishers) and fire equipment (e.g. hydrants, fire hydrants) and keep them in working condition,
- create conditions for extinguishing fires and for rescue work, location of fire equipment,
- comply with the technical conditions and instructions relating to the fire safety of products or activities,
- mark the workplace and other places with appropriate safety signs, orders, prohibitions and instructions in relation to fire protection, including places where material means of fire protection and fire equipment are located (e.g. hydrants, electric fire alarms),
- regularly carry out preventive fire inspections, such as where fire equipment is located,
- enable the state fire supervision authorities to carry out inspections of the fulfillment of obligations, the so-called provide him with the required documents, documentation and information,

- immediately notify the territorially competent operational center of the HZS of the region; every fire that occurs during the activities of legal entities or natural persons - entrepreneurs or in the premises they own or use.
- when burning flammable substances in the open space, establish measures against the occurrence and spread of fire, notify this burning, including the proposed measures, in advance to the territorially competent HZS of the region,
- in activities with an increased fire risk and with a high fire risk, to provide the organization with protection against fires, and in a proven manner to establish and comply with the fire safety conditions of the operated activities, or technological procedures and equipment,
- ensure the maintenance, inspections and repairs of technical and technological equipment in the manner and within the time limits set by the fire safety conditions or by the manufacturer of the equipment,
- to determine, from the point of view of fire safety, the requirements for the professional qualification of persons entrusted with the operation, control, maintenance and repair of technical and technological equipment, unless this is stipulated by special legal regulations; and ensure that work that could lead to a fire is carried out exclusively by persons with relevant qualifications,
- have available the fire technical characteristics of manufactured, used, processed or stored substances and materials necessary to establish preventive measures to protect the life and health of persons and property.

The professional qualification to perform the function of a technician of the PO of the Czech Republic is obtained by passing an exam before a committee established by the Ministry of the Interior of the Czech Republic (SOŠ PO and VOŠ PO Frýdek - Místek). The PO CR technician has the professional competence to perform the tasks of a PO prevention officer.

**Preventive fire protection officer of the Czech Republic**

The PO preventer primarily performs tasks in the area of fire protection and can be appointed in writing after consultation with the PO CR technician of the District Office. Preventist PO ensures the fulfillment of obligations for a legal entity or a natural person - an entrepreneur arising from the Act on Fire Protection:

- mark the workplace and other places with appropriate safety signs, orders, prohibitions and instructions in relation to fire protection, including places where physical means of fire protection (e.g. portable fire extinguishers) and fire equipment (e.g. hydrants, Fire alarm),
- regularly check compliance with regulations on fire protection and immediately remove identified deficiencies, carry out preventive fire inspections, deployment of fire equipment,
- organizationally and professionally carry out training of other employees on fire protection in activities with increased fire risk,
- inspects the entire section of the workplace in the assigned section and records the result in the fire book,
- comments on measures in the area of fire protection and proposes the provision of fire protection in its preventive section.

The professional training of PO preventers must be carried out before their actual activity and during it must be repeated at least once a year. The scope and content of the PO preventionist training is determined by a legal entity or a natural person - an entrepreneur with a thematic plan and time frame. They must be in accordance with the performed activities and job classification. The documentation on the professional training of PO preventionists consists of the aforementioned thematic plan and timetable, further a record of the professional training

carried out, which contains the name of the legal entity or natural person - entrepreneur, the date, the content of the professional training, the method of verification of the acquired knowledge, or a document of this verification, the duration of the training, the list of PO preventionists with the signatures of the participants, the signatures of the persons who conducted the training, including the authorization to carry out the training.

**Authorized person**

Authorized persons ensure activities within the scope defined in the decision on the authorization of activities when assessing the conformity of products with the requirements of technical regulations. The authorized person is responsible for the professional level of performance of selected activities and other professional activities for which authorization was granted. Authorizing body, i.e. " Office for technical standardization, metrology and state prkušebnictví " (hereinafter referred to as " ÚPTNMaSZ ") will issue a decision on the authorization of the applicant, as long as the applicant for authorization meets all the conditions for properly ensuring compliance assessment activities set by the relevant government regulation. If the government regulation does not establish these conditions, the ÚPTNMaSZ can issue a decision on authorization based on the fulfillment of the necessary conditions according to the Act on Technical Requirements for Products.

The Act on Technical Requirements for Products distinguishes three levels of authorization:

- chartered engineer,
- authorized technician,
- authorized builder.

Fire safety of buildings is a field that deals with the prevention of the risk of occurrence and consequences of fire in buildings. It mainly deals with the safe evacuation of people, divides buildings into fire sections, deals with dimensioning and safety escape routes and exits, their equipment (emergency lighting) and design, evacuation time, number of emergency routes. It determines the optimal number of people for escape routes and exits. Assesses the necessity of placing fire equipment (electrical fire alarm, stable extinguishing equipment, fire extinguishers, ventilation). It evaluates the building structure in terms of fire resistance, technical equipment in the building according to other aspects of safety (maintenance of functionality, impact on health in case of fire).

Primarily, the scope of authorization of an authorized technician is defined:

- prepare (complete) project documentation, as long as it falls within the field of specialization, authorization,
- prepare only the relevant parts of the project documentation that fall into the field of specialization, authorization,
- participate in the development of project documentation, if it is prepared by an authorized architect or an authorized engineer,
- lead construction implementation.

**Comparative aspects of professional competence in the field of fire protection in Slovakia and the Czech Republic**

As we have tried to state, persons with professional competence can be found in various legal arrangements. In Slovak legislation they are scattered in several, in Czech legislation they are relatively well defined in one with an additional definition and a reference to several others. It should be noted that the Slovak legislation therefore appears somewhat chaotic, and a disinterested observer who does not know the issues will consequently not cover all persons with professional competence. In Table 1, we have clearly defined professionally qualified persons according to both legal regulations. We purposefully do not mention authorized persons

in the legislation of the Slovak Republic because they are regulated according to special legal regulations and the authorized person is bound to trade, and the fire safety of buildings as defined in the Czech legislation for authorized technicians and engineers is not directly mentioned in the legislation. In order to streamline the current state of professional competence in the field of fire protection in Slovakia, we have approached a few experts from the given issue in professional practice. In the form of a guided interview, we approached the experts and used their professional opinion, personal experiences and answers when confronting our own conclusions on the issue of professional competence in the field of fire protection in the Slovak Republic.

**Table 1: Professional competence**

| *Professional competence of the Slovak Republic* | *Professional competence of the Czech Republic* |
|---|---|
| WHO:<br>– Slovak fire protection specialist<br>– Slovak fire protection technician<br>– prevention officer of fire protection of the SR municipality<br>– members of HaZZ at the state fire control section<br>– forensic experts<br>– authorized engineer | WHO:<br>– professionally caused by a person:<br>– experts and expert institutes in the basic field of fire protection,<br>– natural persons who are graduates of schools specializing in fire protection or graduates of university studies, which includes a verification program for professional competence in the field of fire protection approved by the Ministry of the Interior of the Czech Republic,<br>– members of the HZS CR who are assigned to a position in the state fire supervision department or perform the function of a unit commander and who have obtained a certificate of professional competence to perform their duties in the HZS CR,<br>– natural persons who have passed the examination of professional competence before the commission established by the Ministry of the Interior of the Czech Republic.<br>– Czech fire protection technician<br>– preventionist of fire protection of the Czech Republic<br>– authorized engineer and authorized technician |

*Source: Own processing*

Table 1 further shows that the number of professionally qualified persons in Slovak and Czech legislation is identical with small deviations, which is shown in color. The biggest difference is between the preventive fire protection officer of the SR municipality and the fire protection preventive officer of the Czech Republic.

**Table 2: PPE and PPE**

| *PO SR specialist*<br>*Chartered Engineer* | *Professionally qualified person of the Czech Republic*<br>*Authorized technician and engineer* |
|---|---|
| – develops fire safety solutions for buildings in the project documentation of buildings, | – control of compliance with the obligations stipulated by regulations on fire protection, |

| *PO SR specialist*<br>*Chartered Engineer* | *Professionally qualified person of the Czech Republic*<br>*Authorized technician and engineer* |
|---|---|
| – assesses the conformity of products or during their certification,<br>– during the development of new products and their use, it solves the requirements of fire safety,<br>– when placing technological equipment, it deals with fire safety, fire safety of products,<br>– in the buildings of a legal entity and a natural person - an entrepreneur, he processes the analysis of the danger of fire.<br>– in the project documentation of buildings, it develops solutions for fire safety of buildings. | – assessing spatial planning documents, documents for issuing decisions, project documentation of the building for the construction procedure, documentation for the permission to change the building before its completion and assessment of the documentation for the procedure for the change in the use of the building, for the ordering of necessary modifications, for the ordering of security works, for the procedure for the agreement rectification and to allow an exception in the scope of the fire safety solution according to special legal regulations,<br>– by verifying whether the conditions of fire safety of buildings resulting from the assessed documents and documentation have been complied with,<br>– by approving fire risk assessments of activities with a high fire risk,<br>– investigating the causes of the fire,<br>– by checking the readiness and actionability of firefighting units,<br>– imposing measures to eliminate identified deficiencies and checking the fulfillment of these measures.<br>– prepares (complete) project documentation, as long as it falls within the field of specialization, authorization,<br>– prepares only the relevant parts of the project documentation that fall into the field of specialization, authorization,<br>– participates in the development of project documentation, if it is prepared by an authorized architect or an authorized engineer,<br>– leads construction implementation. |

*Source: Own processing*

In Table 2, the persons with the professional competence of the PO SR specialist and the professionally qualified person of the Czech Republic, who are more or less on the same level with competences in the field of fire protection, are analyzed separately. Authorized persons in the Slovak Republic (authorized engineer in the field of fire safety of buildings) and the Czech Republic (authorized engineer or technician in the field of fire safety of buildings) is a senior left specialist of the PO of the Slovak Republic and a professionally qualified person in the Czech Republic. The authorized person of the Czech Republic is directly defined in the Act on Fire Protection in connection with a special legal regulation. The authorized person of the Slovak Republic is dealt with only on the basis of the Slovak Chamber of Civil Engineers.

**Table 3: Technician PO**

| *PO SR technician* | *Technician PO CR* |
|---|---|
| – performs preventive fire inspections,<br>– conducts professional training of fire patrols and training on fire protection, | – regularly carry out preventive fire inspections, such as where fire extinguishers are located,<br>– fire protection training for senior employees,<br>– professional training of PO preventers ,<br>– professional training of members of fire prevention patrols in activities with increased fire danger,<br>– fire protection training for managers and other employees in establishments with activities with a high fire risk, |
| – when using the building and when changing the use of the building, determines the requirements for fire safety, | – create conditions for extinguishing fires and for rescue work, location for fire extinguishers,<br>– comply with the technical conditions and instructions relating to the fire safety of products or activities,<br>– to mark the workplace and other places with appropriate safety signs, orders, prohibitions and instructions in relation to fire protection, including places where physical means of fire protection and fire equipment are located, |
| – immediately notify the territorially competent district directorate of HaZZ; every fire that occurs during the activities of legal entities or natural persons - entrepreneurs or in the premises they own or use.<br>– when burning flammable substances in the open space, establish measures against the occurrence and spread of fire, notify this burning, including the proposed measures, in advance to the relevant district HAZ directorate,<br>– in the case of activities with an increased risk of fire, to provide the organization with protection against fires, and to establish and comply with the fire safety conditions of the operated activities, or technological procedures and equipment, in a proven manner,<br>– ensure the maintenance, inspections and repairs of technical and technological equipment in the manner and within the time limits set by the fire safety conditions or by the manufacturer of the equipment,<br>– to determine, from the point of view of fire safety, the requirements for the professional qualification of persons entrusted with the operation, control, maintenance and repair of technical and technological equipment, unless this is stipulated by special legal regulations; and ensure that work that could lead to a fire is carried out exclusively by persons with relevant qualifications,<br>– have available the fire technical characteristics of manufactured, used, processed or stored | – immediately notify the territorially competent operational center of the HZS of the region; every fire that occurs during the activities of legal entities or natural persons - entrepreneurs or in the premises they own or use.<br>– when burning flammable substances in the open space, establish measures against the occurrence and spread of fire, notify this burning, including the proposed measures, in advance to the territorially competent HZS of the region,<br>– in activities with an increased fire risk and with a high fire risk, to provide the organization with protection against fires, and in a proven manner to establish and comply with the fire safety conditions of the operated activities, or technological procedures and equipment,<br>– ensure the maintenance, inspections and repairs of technical and technological equipment in the manner and within the time limits set by the fire safety conditions or by the manufacturer of the equipment,<br>– to determine, from the point of view of fire safety, the requirements for the professional qualification of persons entrusted with the operation, control, maintenance and repair of technical and technological equipment, unless this is stipulated by special legal regulations; and ensure that work that could lead to a fire is carried out exclusively by persons with relevant qualifications,<br>– have available the fire technical characteristics of manufactured, used, processed or stored substances and materials necessary to determine preventive measures to protect the life and health of persons and property, |

| *PO SR technician* | *Technician PO CR* |
|---|---|
| substances and materials necessary to determine preventive measures to protect the life and health of persons and property,<br>– determines the number of members of fire patrols and places with an increased risk of fire,<br>– in accordance with the actual situation, prepares, maintains and maintains fire protection documentation,<br>– evaluates and organizes training fire alarms. | – provide the necessary quantity and types of firefighting equipment, material means of protection against fires and fire equipment and maintain fire extinguishers in an operational state. |

*Source: Own processing*

Table 3 shows that the activities performed by PO technicians of the Slovak Republic and the Czech Republic are identical with minor deviations, which is shown in color.

**Table 4: Preventive PO and Preventist PO**

| *Accountant PO villages* | *Preventionist PO CR* |
|---|---|
| – preventive fire inspections in the village,<br>– to fight fires and carry out rescue work, establish and maintain the capacity of the voluntary fire department of the village and ensure its material and technical equipment,<br>– professional training of the village's volunteer fire department<br>– training of control groups of the municipality,<br>– preparation of the fire protection documentation of the municipality,<br>– creating conditions for the performance of fire protection tasks for legal entities established by the municipality<br>– implementation of preventive and educational activities in the village. | – mark the workplace and other places with appropriate safety signs, orders, prohibitions and instructions in relation to fire protection, including places where physical means of fire protection (e.g. portable fire extinguishers) and fire safety devices (e.g. hydrants, electric fire alarms),<br>– regularly check compliance with fire protection regulations and immediately remove identified deficiencies, carry out preventive fire inspections, deployment of firefighting equipment<br>– Organizationally and professionally carry out training of other employees on fire protection in activities with increased fire risk.<br>– inspects the entire section of the workplace in the assigned section and records the result in the fire book.<br>– comments on the measures in the PO section and proposes the provision of fire protection in its preventive section. |

*Source: Own processing*

The biggest difference is between the fire protection prevention officer of the Slovak Republic and the fire protection prevention officer of the Czech Republic, which can be seen in Table 4. When comparing the fire protection prevention officer of the municipality and the PO prevention officer, we can briefly state that their competences, duties and tasks are different, as the fire protection prevention officer of the municipality works only in the municipality and PO preventionist only with a legal entity or a natural person - an entrepreneur. From the point of view of Slovak legislation, the prevention officer of the PO CR could be defined as the head of the workplace fire patrol.

Until 2000, in the Czech Republic, only a person with professional competence according to the Act on Fire Protection was defined as "Professional person". Since 2001, certificates have been issued for professionally qualified persons and also technicians of PO CR. The Act on Fire Protection states that PO CR technicians obtain certificates on the basis of an examination

before the commission of the Ministry of the Interior of the CR. In 2004, the University of Mining - Technical University of Ostrava, Faculty of Safety Engineering, also joined the solution of this issue, which awarded certificates of PO CR technicians to graduates who completed the study, which includes the verification program for the professional competence of PO CR technicians. It is also important to note that the Czech legislation does not have a time limit like the Slovak professional qualification, and professionally qualified persons do not have to undergo an update of the professional qualification verification, as in Slovakia.

We asked 4 basic questions from the given issue, which differed only in the fourth final question in the case of Slovak and Czech legislation. The first question asked, "Indicate what shortcomings you see in the legal status of fire protection professional competence," caught the experts we spoke to a bit by surprise, as they said that it is not so easy to answer briefly. The second question "What kinds of errors do you encounter, either on the part of applicants for professional competence or on the part of state administration bodies in the field of professional competence in the field of fire protection (granting of certificates, withdrawal of authorization, findings from inspections, etc.)." Question no. 3 "In your opinion, what would be a good thing to change in the current legal and practical functioning of the provisions of professional competence in fire protection in order to make the issue more effective." Question no. 4 differed due to the difference in legislation. In the case of the Slovak legislation, it read "How do you perceive the length of practice when certifying professional competence without a time limit on the part of an applicant from another state and on the part of a natural person of the Slovak Republic." In the case of the Czech legislation, it was "How do you deal with the recognition of professional competence in the case of a person from another country."

When summarizing professional competence in the field of fire protection in the Slovak Republic, we would recommend focusing on:

- amendment of legal regulations regarding professional competence, so that it is best defined clearly in the law on fire protection, who is a professionally qualified person in the field of fire protection,
- specifically defining the level of professional training for professionally qualified persons, it mainly concerns PO SR specialists, PO SR technicians and prevention officers of the PO SR municipality,
- verification of the education of experts who carry out vocational training, when a legal entity or a natural person - an entrepreneur receives authorization to carry out vocational training, the control of lecturers (lecturers) is not defined anywhere,
- specialist literature in the field of fire protection, which is currently very scarce and rather outdated,
- verification of professional competence, is solved at three levels and each level solves it according to its own,
- awarding a certificate without a time limit, there are no specific conditions for demonstrating practice,
- the validity of the certificate in case of long-term incapacity for work and excuse for not participating in the verification of professional competence, it is mainly about the non-lapse of the certificate when a person with professional competence is on long-term PN, as well as the period of professional experience, etc.,
- responsibilities of the PO SR specialty in its activities, it is defined what it performs, but not how and what all its responsibilities are,
- specific definition of criteria in education regarding the PO SR specialist,
- assessment of professional practice for persons from the Slovak Republic and persons from other countries.

## CONCLUSION

By comparing the legal regulations regarding professional competence in the field of fire protection in the Slovak Republic and the Czech Republic, we came to the conclusion that in the Slovak Republic professional competence in the field of fire prevention is defined in several legal regulations in contrast to the Czech Republic, where it is defined in one legal regulation, namely the Act on fire protection. In the comparison of activities (tasks) performed by professionally qualified persons in the field of fire protection, it is clear that a PO SR specialist can be assigned to a professionally qualified person of the CR (OZO), a PO SR technician to a PO CR technician, we compared the village PO prevention officer with preventionist PO CR, but it is not possible to compare them. In the Czech Republic, the function and concept of preventive fire prevention officer of a municipality does not appear in any legal regulation, and the function and concept of preventive fire protection officer in the Czech Republic could be assigned to the function of the head of the workplace fire patrol. From the questions given to experts from practice in the Slovak Republic and the Czech Republic, we got another insight into the issue of professional competence in the field of fire protection. Based on these requirements, we see the problem:

- in the fragmentation of legal regulations regarding professional competence,
- in defining the level of professional training for professionally qualified persons,
- in the education of experts who carry out vocational training,
- in the lack of specialist literature in the area of fire protection,
- in the fragmentation of the verification of professional competence,
- in granting a certificate without a time limit,
- in not defining the validity of the certificate in case of long-term incapacity for work and making excuses for not participating in the verification of professional competence,
- in the responsibility of the PO SR specialty in its activities,
- in the general definition of criteria in education regarding the PO SR specialist,
- in the difference in the assessment of professional practice for persons from the Slovak Republic and persons from other countries.

Even though the Act on Fire Protection (SR) and the Act on Fire Protection (CR) are based on a single law from 1985, we see that we have some things in common regarding professional competence in the field of fire protection and we differ in some.

## REFERENCES AND INFORMATION SOURCES


1. BLAŠKO, D. et al. Tactics Of Ground Deployment Of Forces And Resources Sit down For The Training Of Rescue Units For Fires Occurring . In *The Natural Environment , in Repüléstudományi Közlemények* , p. 193-144, Szolnok (Hungary): Nemzeti Közszolgálati Egyetem year 30, no. 2, 2018, ISSN 1417-0604.
2. BLAŽEK, O., SUJA, M. *Population protection during crisis situations* . Bratislava: Police Academy in Bratislava, 2021. 261 p. ISBN 978-80-8054-914-5.
3. GLESK, P., KURHAJEC, P., *Fire and rescue services* . Bratislava: Tlaciarne MV SR in Bratislava, 169 pp., ISBN 80-969263-0-6.
4. KOMÁR, P. *Fire Protection Act - Commentary* . Bratislava: Wolters Publishing House Kluwer , 2016, 328 pp., ISBN 978-80-8168-411-1.
5. Crisis Legislation ( File laws ), Pilsen: Vydavatelství a nakladatelství Aleš Čeněk , sro ., 2016, 405 pp., ISBN 978-80-7380-627-9.
6. KVARČÁK M., *Basics of fire protection* . SPBI Spektrum, 2005, ISBN 80-86634-76-0.

7. MIHÓK, D. *Professional competence of fire protection technicians and prevention officers of municipalities: Handbook* . Bratislava: Ing. Miroslav Mračko , 2004. 241 p. ISBN 80-8057-611-4.
8. Government Regulation No. 101/2005 Coll ., on more detailed requirements for the workplace and work environment .
9. Government Regulation No. 405/2004 Coll ., by which with changes government regulation no. 11/2002 Coll ., by which appearance and location are determined security signs and the introduction of signals .
10. Government Regulation No. 406/2004 Coll ., on more detailed requirements for ensuring safety and health protection when working in an environment with a risk of explosion.
11. Announcement of the Director of the Office of the President of the Fire and Rescue Service No. 29/2016 on the composition of the accreditation commission for issuing and withdrawing authorizations for conducting professional training in the field of fire protection.
12. Instruction of the President of the Fire and Rescue Service No. 20/2015 on the verification of professional competence and on the recognition of professional qualifications for performing the activities of fire protection specialist, fire protection technician and village fire protection preventive officer .
13. Instruction of the President of the Fire and Rescue Service No. 23/2010 on the content of basic training.
14. Instruction of the President of the Fire and Rescue Service No. 25/2015, which amends the Instruction of the President of the Fire and Rescue Service No. 20/2015 on the verification of professional competence and on the recognition of professional qualifications for performing the activities of fire protection specialist, fire protection technician and village fire protection preventive officer .
15. Instruction of the President of the Fire and Rescue Service No. 43/2002 on the procedure for carrying out cyclical training of commanders of industrial fire brigades and commanders of municipal fire brigades and on the method of verifying their professional competence.
16. Instruction of the President of the Fire and Rescue Service No. 9/2012 on the issuance and withdrawal of authorizations for conducting professional training in the field of fire protection.
17. *Handbook of fire safety and protection,* 2013, Bratislava: EPOS, 2013, 397 pp., ISBN 978-80-8057-998-2.
18. SUJA, M. *Regulation of fire protection and rescue activities* . Bratislava: Police Academy in Bratislava, 2019. 122 p. ISBN 978-80-8054-804-9.
19. Decree no. 087/2000 Coll ., Ministry of the Interior , by which conditions are set fire safety at welding and heating of resins in melting pots.
20. Decree no. 103/2006 Coll ., of the Ministry of the Interior on establishing principles for defining the emergency zone planning and about the scope and method elaboration external emergency plan.
21. Decree no. 123/2015 Coll . The decree which a list of expert fields and branches for the performance of expert activity is established.
22. Decree no. 246/2001 Coll ., on setting conditions fire safety and state performance fire supervision (decree on fire prevention ).
23. Decree no. 247/2001 Coll . Decree of the Ministry of the Interior on the organization and activities of units fire protection.
24. Decree no. 247/2001 Coll ., of the Ministry of the Interior on the organization and activities of units fire protection.

25. Decree of the Ministry of the Interior of the Slovak Republic no. 121/2002 Coll. on fire prevention.
26. Law no. 022/1997 Coll ., on technical requirements for products and on changes and additions some of laws , in wording later ones regulations .
27. Law no. 036/1967 Coll. Act on experts and interpreters .
28. Law no. 071/2000 Coll ., by which with amends Act no. 22/1997 Coll ., on technical requirements for products and on changes and additions some laws .
29. Law no. 101/2000 Coll ., on protection personal data and about the change some of laws , in wording later ones regulations .
30. Law no. 109/2001 Coll ., full text of Act no. 50/1976 Coll ., on territorial planning and construction of the Order (Building Act), as it follows from the later ones of changes .
31. Law no. 133/1985 Coll ., on fire protection , in wording later ones regulations .
32. Law no. 314/2001 Coll. on fire protection as amended.
33. Law no. 315/2001 Coll. on the Fire and Rescue Service, as amended.
34. Law no. 320/2015 Coll . Act on Firefighters emergency choir of the Czech Republic and about the change some of laws ( Firefighting Act emergency choir ).
35. Law no. 360/1992 Coll . on the exercise of the profession of authorized architects and on the exercise of the profession of authorized engineers and technicians operating in construction.

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# THE INSTITUTIONAL PRINCIPLE OF THE INTEGRATED RESCUE SYSTEM IN TERMS OF THE PROPOSED LEGISLATIVE CHANGE

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**ABSTRACT:** Crisis events can occur in any place and therefore it is necessary to know how to respond to them in a timely and efficient manner manner with the aim of minimizing the negative impact. In order to improve the coordinated procedure, it was necessary to analyze and legislatively change the institutional principle of the functioning integrated rescue system, specifically by including the Police Force among the basic rescue units. the aim of the authors was to evaluate the effectiveness of the change of the functioning institutional principle and to point out its positive and negative aspects. In conclusion, the authors state that they agree to that mentioned change also with regard to various extraordinary police events or high - profile incidents, for which primaries members of the Police Force are trained and therefore their coordination is desirable in the given cases

**KEY WORDS:** Integrated Rescue System, Typical Scenarios, Police Force, Emergency Police Events.

## INTRODUCTION

Current society is changing, endogenous and exogenous factors and conditions are changing, which can generate crisis events in an unclear period of time and anywhere in the world, the negative effects of which can be insignificant, but also catastrophic. These phenomena can cause disruption of social processes and cause panic and chaos, disruption of traffic arteries or production processes, disable communication and the functionality of information systems, interrupt the supply of drinking water and energy and disrupt the functionality of services, create a barricade situation, hostage-taking, active shooter, high-profile incidents, general threat with a weapon or a weapon of mass destruction, as well as a number of other negative phenomena. Developed countries currently have enough professionally trained forces and modern technical means to be able to effectively face crisis events. Professionalization is also ensured in the conditions of the Slovak Republic. The rescue units are able to perform their tasks well, despite the fact that they are not financially secure enough, and their material and technical equipment is not at the required level compared to other states. The current problem for a long time has been and still remains the effective deployment of dedicated forces and resources to deal with crisis events and the effective coordination of their activities.

If we wanted to summarize the risks and threats that we can realistically face, it would represent only a truncated outline of examples, which is constantly changing and being supplemented according to the ad hoc situation that has arisen. The Slovak Republic is a country with a relatively high population concentration and moderately developed industrial production. Part of the production enterprises is equipped with an outdated technical base and related production technologies, which are quite risky in the chemical and heavy industries. In addition, the ongoing process of transformation of the economy and its gradual privatization bring with it a number of risks. In industry and agriculture, large quantities of flammable, explosive, toxic

and radioactive substances are used, or substances that release toxic products during combustion, as well as other dangerous substances that can be a source of crisis phenomena. Nuclear energy, which the Slovak Republic wants to continue to use effectively, is also a potential source of possible accidents. In road transport, the source of risks is the ever-increasing volume of truck traffic in our territory with a high volume of dangerous cargo transportation. Ongoing problems are in the reconstruction and modernization of railway transport, and a potential danger is also the increasing number of overflights of our territory in international air corridors. An important source of crisis phenomena in our country is also pipeline transport, mainly the transportation of oil and natural gas for our needs, but also their transit to the west.

Even our country does not avoid natural disasters, the most serious of which are floods. Even though we have a number of protective structures and dams built on our territory, high water causes considerable material damage, as well as loss of human life. A concrete example was the floods in the summer of 1997 and 1998. Another potential source of crisis phenomena, which mainly limits the flow of traffic, are snow disasters and extensive icing. In addition to the situations in question, we encounter a variety of extraordinary police-relevant events having the character of a crisis phenomenon, usually caused by one or more persons with the aim of causing significant damage to life, health, or property.

In this way, a number of potential possibilities for the emergence of crisis phenomena are created in a relatively small space in the center of Europe. We must and want to be permanently prepared for their emergence. It is necessary to clearly establish the responsibility of the governing bodies, as well as executive forces and means, their rights and obligations during rescue operations.

The low level of equipment of emergency units with special protective means and equipment is also a problem. In some cases, this can cause a serious threat or permanent damage to the health of persons involved in rescue operations. The legal protection of persons who manage rescue operations and decide on the deployment of forces and resources must also be resolved. (KOŠČÁK, P., JENČOVÁ, E., BLAŠKO, D.)

The risk of endangering life, health or property as a result of accidents, crashes, natural disasters or disasters cannot be excluded. The provision of immediate assistance in the event of a threat to life, health or property is a public interest and is guaranteed by the Constitution of the Slovak Republic. (Exploratory report on the draft law on the integrated rescue system http://www.minv.sk/pripo/IZS/dovodizs.htm.). Immediate assistance is inseparably linked to the activities of the rescue services, especially the Fire and Rescue Service, the Emergency Medical Service, the Mine Rescue Service, the Mountain Rescue Service and the inevitable participation of the Police Force. On the provision of aid, especially in the event of a crisis situation (§ 2 letter a) of Act no. 387/2002 Coll. on the management of the state in crisis situations outside of wartime and martial law, as amended) , other legal entities, natural persons - entrepreneurs, voluntary civil associations or institutions with a humanitarian mission also participate

The increasing risk of endangering life, health, property or the environment caused by the increase in accidents and natural disasters or as a result of the potential threat of a terrorist threat, requires a systemic change in the provision of emergency assistance by emergency services. This change consists in the transition from a particular action of the rescue units to a coordinated one. The principle of coordinated action applies to ensuring preparedness and to the performance of activities and measures related to the provision of emergency assistance.

On the basis of these principles, a draft law on the integrated rescue system was developed (Act No. 129/2002 Coll. on the Integrated Rescue System, as amended), which consisted in the need to create legal prerequisites for building an information and communication infrastructure and ensuring coordinated activities of emergency services and other legal entities, natural

persons - businessmen and natural persons in the provision of emergency assistance in the event of a threat to life, health or property. And also in the need to adjust the coordination of the activities of rescue units at the place of emergency aid provision, the provision of sanctioning measures in case of non-fulfillment of obligations arising from this legislation, as well as the regulation of the provision of material resources and personal assistance and reimbursement of expenses when providing assistance to the components of the integrated rescue system.

Law no. 129/2002 Coll. on the integrated rescue system as amended (hereinafter referred to as the "IZS Act") characterizes the integrated rescue system as a coordinated procedure of its components in ensuring their readiness and in carrying out activities and measures related to the provision of immediate assistance in times of need. A situation in which life, health, property or the environment is in immediate danger and in which the affected person is dependent on the provision of immediate assistance is characterized as an emergency.

The executive components of the integrated rescue system are rescue units, which are divided into basic rescue units (§ 8 of Act No. 129/2002 Coll.), other rescue units (§ 9 of Act No. 129/2002 Coll.) and units Police force. Basic rescue units carry out their activities in accordance with their focus and mission according to special regulations, while their professional activities are not affected by operating in an integrated rescue system. Other rescue services provide assistance only if they are called for that purpose.

Based on various types of analyzes at the strategic level of the management and coordination of the rescue components of the integrated rescue system, we consider it highly relevant to complete the composition of the basic rescue components, of which the Police Force must be an immanent part without a doubt, as proposed in the amendment to the Act on IZS.

## METHODOLOGY AND GOAL

When processing the paper in question, we primarily worked with scientific methods typical for qualitative research, namely, we frequently used the analysis method, which we applied in the analysis of elementary and approved concepts of the development and renewal plan until 2027, followed by the analysis of relevant legislative documents, i.e. legal regulations with with a special focus on the currently commented draft law on the integrated rescue system. Last but not least, we analyzed other relevant publication outputs. As part of the next methodology, we also applied other common methods, i.e. the method of induction, deduction, description, while through the method of synthesis, we derived and formulated conclusions and attitudes to the issue in question. The aim of our work was to focus attention on the analysis of the institutional principle through the lens of the planned amendment to the law on the integrated rescue system, as well as the evaluation of our positions on the expediency of the bill in question. Of course, it was not possible to devote detailed attention to the complete amendment of the law on the integrated rescue system in the article in question, and our goal was to direct attention exclusively to the analysis of the change in the institutional principle or the aspect of supplementing the group of basic rescue units with the Police Corps, as well as the justification of the relevance of the change in question.

## RESULTS AND DISCUSSION

From a historical point of view, the integrated rescue system has gone through relevant changes, but they were not comprehensive and therefore needed to be stabilized and finalized in order to be adequately prepared to deal with extraordinary events, crisis situations or other specific events. The mentioned change does not only concern the institutional system of the operation of the integrated rescue system in the understanding of the construction of the basic components, other components and units of the Police Force, which had and still have an independent status. The expression of a society-wide demand oriented towards guaranteeing and ensuring the protection of life, health, property and the environment through the

coordinated action of the relevant forces and means of the rescue services requires attention to the principle of coordinated action, which is closely related to ensuring readiness for the performance of measures and interventions that closely they are related to the provision of assistance in times of need, or in crisis situations or extraordinary events. (BLAŽEK, O., SUJA, M., 2021) With the application of the current law on the integrated rescue system, there are several application aspects and questions that need to be solved for the future. As we state, our goal is to analyze and draw attention to a partial change of the institutional principle, which has a special status, namely the inclusion of the Police Force among the basic components of the rescue system. The subject proposed amendment to the Act on IZS will allow to profile the mutual ties of cooperation and cooperation of the relevant entities, as well as coordination bodies and, last but not least, what can be considered striking in the given situations, the functioning of operators and operation centers in the context of an integrated information and communication infrastructure with effective voice and data communication under the assumption and acceptance of the immediate transfer of information in accordance with technical solutions.

As part of the presentation of the results and conclusions, we would emphasize the partial historical aspects of the creation of an integrated rescue system in the Slovak Republic. Among the primary sources of law focused on the issue of designing an integrated rescue system was Act No. 575/2001 Coll. on the organization of ministries and other central bodies of state administration, as amended, which established the competence of the Ministry of the Interior of the Republic of Slovenia in the area of a comprehensive rescue system. The initial functioning was based on bilateral or multilateral agreements and contracts. Based on the increase in situations in which there was a risk of endangering life, health, property or the environment due to the increasing number of accidents, natural disasters, or crisis situations in the form of the threat of a terrorist attack, we were required to coordinate the system in question at the legislative level. The identified need was also related to the implementation of the decision of the Council of the European Union 91/396/EEC on the introduction of a single European number for emergency calls 112.

Based on the entire process and procedures, as well as the creation of various proposals, Act No. 129/2002 Coll. about IZS. The integrated rescue system represents the coordinated procedure of the components defined in § 7 of the Act and the following in ensuring their readiness and in carrying out activities and measures related to the provision of assistance in times of need. Even from the definition itself, it follows that it is not possible in all occasions and in all situations to clearly transfer specific issues, such as the resolution of high-profile incidents of extraordinary police events, exclusively to other emergency services, such as the Police Force. An important aspect related to the aforementioned law is its institutional composition, as well as the readiness of emergency services oriented to save lives, health, property and the environment.

According to Section 8 of the Act on the Integrated Rescue System, after the proposed and approved amendment to the law, the basic rescue forces will include the Police Force. The basic tasks of the entities in question include the provision of immediate professional, medical, technical and other necessary assistance in an emergency based on the instructions of the coordination center or its operational emergency call center, among other things they carry out organizational, technical and other measures for the provision of assistance in an emergency and for this purpose equip them with technical and material resources, which are essentially part of the material and technical equipment of a member of the Police Force. They are participating in professional training and will continue to process data on their activities, comprehensive but also available forces and resources, and submit them to the district office in the regional headquarters by the end of February for the previous calendar year. They primarily carry out their activities in their intervention area, while the law does not affect their status and

tasks, which are regulated by Act no. 171/1993 Coll. on the Police Force, as amended, and other relevant laws. The operations center also has an irreplaceable position in terms of coordination. The police officer assigned to the operations center or the operations officer decides on the basis of information that it is an intervention in which the tasks of the Police Force will be predominantly fulfilled in accordance with § 2 of the Act on the Police Force. The activity of rescue units at the scene of the intervention will be managed and coordinated by a member of the Police Force designated by him. The Operations Center of the Police Force immediately informs the relevant coordination center about the assumption of command. In the event that there is no commander designated for the intervention in the type scenario or the plan of type activities, or the commander is not designated, as a rule he will be determined by his respective coordination center, while the latter may subsequently, in accordance with the law, request assistance in the intervention of other and other rescue components of the integrated rescue system or other legal certified persons. The change of the institutional principle for the creation of a complex system of basic rescue components represents the fulfillment of a unified coordinated procedure for dealing with emergency situations or crisis situations from their initial notification to the operations center, respectively. coordination center until the complete completion of the implemented intervention, or termination of coordinated assistance provided by the mutual cooperation of rescue services at the site of the relevant event. We have to realize that even from the very concept of the organization and development of the integrated rescue system until 2027, 4 key areas emerged on which the change of the integrated rescue system should be oriented, namely:

- effective receipt of notification of events and emergency situations,
- integrated management of incident resolution at the coordination center and processing of information for the needs of crisis management authorities and rescue services,
- coordinated procedure of rescue services according to standardized procedures
- and quality management. (Concept of the organization and development of the integrated rescue system until 2027)

With regard to the current security risks and threats, which are constantly pointed out by the whole world, we consider it necessary, similarly to what the legislator states, to incorporate the Police Force into the basic rescue forces. The addition of the aforementioned institutional element to the basic rescue units will undoubtedly have variable meanings, especially with regard to the planned creation of typical activities and typical scenarios, also referred to as a plan of common procedures. By the plan of joint procedures, we understand the creation of uniform unified procedures for defining the tasks and measures of the relevant components providing assistance in an emergency, as well as planning the capacities of forces and means for solving a specific situation. (Proposed amendment to Act No. 129/2002 Coll. on integrated rescue system, as amended)

The inclusion of the Police Force as an important and irreplaceable institutional entity will ultimately lead to the unification of rescue services, which will determine the relevant status of the Police Force and thus enable more effective coordination of all services. The Ministry of the Interior of the Slovak Republic will also have a special position in the complete proposed change, which, together with the Police Force, will deal with raising awareness and educational and preventive activities aimed at educating the population, preparedness to deal with extraordinary events, crisis situations, recognizing threats, but also reducing unauthorized calls to emergency numbers. The position of the Police Force with regard to the performance of specific tasks in the field of operational management can, in justified cases, also be built in separate premises of the Ministry. Events that should be the exclusive responsibility of the Police Force are clearly identified within the operation centers. On the basis of the operational officer and the information obtained after the verification of the event, it is possible to deploy

forces and resources (in cases of an extraordinary police-relevant event/ high-profile incident) primarily by the Police Force in cooperation with other basic rescue units with the aim of eliminating the event in question as efficiently as possible and subsequent monitoring of the whole situation. Even the very connection of the person of first contact during the verification of the event can provide us with a large amount of information, which after its evaluation and verification can adequately help us to identify the relevant event, i.e. whether it can be categorized as an extraordinary police-relevant event, or a crisis situation, or otherwise, and thus whether crisis management is required.

The innovation of the system is the premise of more effective communication between individual actors within the coordination of rescue services, as well as more effective deployment of relevant and tactically trained forces and means to deal with a specific situation.

For the sake of illustration, we allow ourselves to mention a specific case, namely a high-profile incident or an extraordinary police-relevant event. A high-profile incident or an extraordinary police event is an event that consists of an actual or threatened illegal situation, caused by a natural person or a group of natural persons, in which one or more people have been killed or there is a real threat of killing one or more people, causing serious injury to health, health disorders, large-scale damage or causing other serious consequences, e.g. killing or injuring persons, taking hostages, restricting personal freedom, kidnapping, extortion, use of explosive devices, biological substances, chemical substances, or nuclear material , regardless of its later legal qualification. Such specific high-profile events also include other relevant cases detailed in the internal regulations of the Ministry of the Interior of the Slovak Republic. From the point of view of the pyramid distribution of a high-profile incident, the most serious form can be perceived as a terrorist attack, which is specified in more detail in internal regulations as a coordinated crisis situation. Such a situation is typical of on-site chaos, public panic, an attempt to increase negative impacts, while the on-site security situation can prevent members of the integrated rescue system from carrying out an intervention. Given the logic of the matter and the nature of the event, the mentioned cases should be directly managed by the commander of the intervention, who within the tactical unit would be a member of the Police Force, ideally the commander of an emergency police unit or the commander of a special purpose unit. The characteristics of such an extraordinary police event literally require intervention on the part of the Police Force with regard to its specificity, the difficulty of handling, intervention and non-intervention solution alternatives, the need for negotiation and especially the organization of procedures so that losses are minimized.

## CONCLUSION

The authors themselves state that the proposed amendment to the law regarding the adjustment or changes in the institutional aspect of basic rescue components subsumes positives as well as negatives on the one hand. We are of the opinion that the current positives radically outweigh the shortcomings, but we dare to say that the law on the integrated rescue system constantly has gaps in practice, which are necessary and desirable to eliminate, either by a radical amendment or a complete change, or by issuing a new law on the integrated rescue system. Among the significant positives of the inclusion of the Police Force among the basic rescue units of the integrated rescue system is the assumption of more effective communication between individual actors within the coordination of rescue units, as well as more effective deployment of relevant and tactically trained forces and means to deal with a specific situation.

The second significant benefit with regard to § 10 of the Act on the Integrated Rescue System is the provision that the operation center is established by the basic rescue component. The aforementioned provision outlines an effort to unify the reception and processing of emergency information, so that in the future the activities of the coordination center will come under one organizational unit. Last but not least, the positive is the increase in the cohesion of

the integrated rescue system and the improvement of clarity, as well as the comprehensibility and deployment of forces and means in individual situations, which completes the set of basic rescue units with nationwide scope and creates the premise of developing mutual relations based on the equal status of the basic rescue units. Not only is there an expansion of the capacities of forces and means that are able to provide relevant assistance in the framework of cooperation with other entities, whether in the protection of life, health or property. A significant benefit is tactical erudition, ability to take action, as well as appropriate professional preparation and professionalism, which is subsumed by the component in question. The institutional principle of the addition according to the proposed amendment is the completion of an irreplaceable entity into the components of the integrated rescue system among the basic rescue units, undoubtedly the addition of the Police Force, while the change in question eliminates and minimizes the current lack of components advancing at the scene of the intervention, which, considering their nature and specifics, would belong exclusively within the competence of the Police Force. The stated opinion is oriented primarily to the tactical level of such official interventions.

Last but not least, with regard to the financial, legal and economic aspects of the implemented change, from our point of view, it can be seen as ultimately, but not absolutely, positive. Creation of space for financial savings, or more efficient spending of public funds when dealing with specific events, more efficient, effective, more efficient spending of budget funds. Even so, the minimalistic proposal for an institutional change of the basic rescue units is due to the accumulation of forces and means with which, at a specific moment, according to the need and evaluation of the situation, the minimization of the deployment of forces beyond the scope of the necessary solution to the situation in question will be dealt with police incident, active shooter, in such cases it is appropriate to deploy forces and means in a precise manner, in accordance with individual unified procedures, which, given the current situation, can successfully manage the intervention in question and bring it to a successful end, that is, after identifying such a situation and subsequent effective elimination with the deployment of only those components that are necessary to solve the status quo .

## REFERENCES AND INFORMATION SOURCES


1. BLAZEK, O., SUJA, M. (2021): *Protection population During crisis situations*. Bratislava: Academy Policeman choir in Bratislava. 261 p. ISBN 978-80-8054-914-5.
2. Explanatory report on the draft law on the integrated rescue system http://www.minv.sk/pripo/IZS/dovodizs.htm.
3. Concept of the organization and development of the integrated rescue system until 2027.
4. KOŠČÁK, P., JENČOVÁ, E., BLAŠKO, D. (2021): *State transport policy in the context of integrated transport systems* . Košice: Technical University of Košice. 162 p. [CD-ROM]. ISBN 978-80-553-4004-3.
5. Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Code of Electronic Communications (revised version) (OJ L 321, 17/12/2018).
6. SUJA, M. (2008): Prospects for the development of an integrated rescue system until 2010. In *Current issues of public administration (public service) and possibilities for its further improvement* : proceedings of an international scientific conference. Bratislava: Academy of the Police Force in Bratislava, University of Economics and Management of Public Administration in Bratislava. ISBN 978-80-8054-442-3. pp. 95-100.
7. SUJA, M. (2019): Development of IZS - legal regulation of the Integrated Rescue System. In November 1989 - politics, law, police and security [electronic document]: proceedings

of the scientific conference held on November 6, 2019. Bratislava: Academy of the Police Force in Bratislava. ISBN 978-80-8054-844-5. pp. 342-360.
8. Law no. 129/2002 Coll. on the integrated rescue system, as amended.
9. Act no. 387/2002 Coll. on managing the state in crisis situations outside of wartime and martial law, as amended.

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# THE ISSUE OF SECURITY IN THE EDUCATION SYSTEM OF UKRAINE IN CONNECTION WITH THE RUSSIAN-UKRAINIAN WAR

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**ABSTRACT:** The article is devoted to security issues that arose in the Ukrainian education system in connection with the Russian-Ukrainian war. The main problems are the safety of participants in the educational process. These problems are most often solved by the introduction of distance education and the minimization of mass events. The article analyzes the changes introduced in the Ukrainian education system during the war. The second block of questions is related to the strengthening of education on issues of personal and public safety in educational institutions of Ukraine.

**KEY WORDS:** Safety; Security; Ukrainian Education System; Russian-Ukrainian War.

## INTRODUCTION

The full-scale war launched by Russia against Ukraine on February 24, 2022 led to drastic changes in Ukrainian education. These changes are primarily related to ensuring the safety of the educational process. Russian troops have struck and are striking Ukraine's educational institutions, schools, kindergartens, universities, vocational and technical education institutions, etc. The life and health of all participants in the educational process, teachers, pupils, students, cadets and administrative staff of educational institutions are at risk. The safety of participants in the educational process became an absolute priority during the war. The hostilities resulted in a significant number of evacuees. Many teachers and students evacuated to countries near and far abroad. Even more participants in the educational process were evacuated from the western, safer regions of Ukraine. The issue of conducting the educational process and its restoration is acute in the liberated territories and territories in the combat zone. A separate topic is the issue of the education of pupils and students who, for one reason or another, remained in the occupied territories but wish to continue studying in Ukrainian educational institutions.

Security training became especially important during the war. Changes were made not only in the programs of disciplines that traditionally taught security issues, but also in other subjects. The issue of the quality of safety training in Ukrainian educational institutions, schools, vocational and technical and higher education institutions is acute. The training, retraining and advanced training of teachers who teach safety subjects has become extremely important.

## METHODOLOGY AND PURPOSE

The purpose of writing the article is to publish an analysis of the functioning and level of stability of the education system of Ukraine in the conditions of war. Disclosure of the main reasons and factors affecting the safety of the educational process. Possibilities of ensuring and increasing the level of safety of participants in the educational process.

During the research, retrospective and comparative analysis, induction and deduction, and statistical analysis were used. The main research methods were comparative analysis and content analysis, which were based on defined criteria related to risk factors for the educational process.

**MAIN PART**

The war with Russia began on February 20 (according to some sources, February 22) 2014. Taking advantage of the moment of overthrowing the power of President Yanukovych and not a short period of formation of the new Ukrainian government, Russia took measures to seize Crimea. Analysts believe that Russia had a plan to seize Crimea and was waiting for the right moment. The further escalation of Russian-Ukrainian relations is connected with the activities of pro-Russian activists in the east of Ukraine in April 2014. Russian special services created and managed the activities of extremist groups, which led to the formation of the Donetsk and Luhansk "people's republics" and the beginning of military confrontation. At the beginning of the military conflict, Russia tried to portray it as an internal Ukrainian conflict and denied the presence of its troops on the territory of Ukraine. Over time, the presence of Russian troops on the territory of Ukraine became so obvious that Russia stopped denying it.

During 8 years of military confrontation, a significant number of residents of the occupied regions of Ukraine evacuated to safe Ukrainian territories. Students had no problems with learning in new places. A number of universities that previously operated in the cities of Donetsk, Luhansk and others were evacuated. In particular, Donetsk National University, Shevchenko Luhansk National University, Volodymyr Dal East Ukrainian National University, Tugan-Baranovsky Donetsk National University of Economics and Trade and other educational institutions were evacuated. Evacuated educational institutions were supported by the state based on proposals made by the Ministry of Education and Science of Ukraine. The problem of evacuated educational institutions is the lack of premises, equipment, dormitories and other infrastructure necessary to ensure the educational process. The primary task for evacuated educational institutions was to ensure social and living conditions for students and teachers. In the process of evacuation, the issues of licensing, accreditation, regulations, determining the scope of the state order were resolved. The main issue in the process of evacuating educational institutions was the issue of the safety of the people who carried out this evacuation. Educational institutions were not always evacuated by their managers (rectors). There were cases when the evacuation of the educational institution was led by heads of departments, professors, etc. Unfortunately, the evacuation was often carried out already from the occupied territories, which did not allow transporting the equipment and all the necessary documentation. Restoration of documentation and other bureaucratic obstacles took a lot of time and effort. It should be noted that there were no emergency evacuation plans in educational institutions, and it was this circumstance that made the move difficult. 69 years of peaceful life and the absence of serious dangers led to the fact that the system of civil protection that remained after the Soviet Union was perceived formally in educational institutions. In many institutions, there were no officers responsible for civil protection issues, despite the fact that such positions are mandatory by law. Article 20 of the Code of Civil Protection of Ukraine clearly states: "in educational institutions with the number of 500 or more people who receive education on a full-time basis, civil protection officials are appointed" (Кодекс цивільного захисту України / Code of civil protection of Ukraine, 2013).

Clause 6 of Article 33 of the Civil Defense Code of Ukraine states that mandatory evacuation is carried out in the event of armed conflicts. The decision to carry out an evacuation can be made at different levels. At the state level, decisions on evacuation are made by the Cabinet of Ministers of Ukraine. At the regional level, evacuation decisions are made by regional administrations and Kyiv and Sevastopol city state administrations. At the local level,

decisions on evacuation are made by district, district state administrations in the cities of Kyiv or Sevastopol, and relevant local self-government bodies. At the facility level, the decision on evacuation is made by the managers of the economic entity (Кодекс цивільного захисту України / Code of civil protection of Ukraine, 2013). During the Russian military aggression, some heads of educational institutions removed themselves from their activities or even went over to the side of the enemy.

The next stage of the war began on February 24, 2022, with the beginning of a full-scale invasion of the territory of Ukraine by Russian troops. The first day was marked by a certain state of confusion. A number of educational institutions were waiting for official orders. Teachers, students and pupils were evacuated. The evacuation process was practically spontaneous. The very next day after the introduction of martial law, the Ministry of Education and Science of Ukraine, in a letter dated February 25, 2022 No. 1/3276-22, recommended temporarily suspending the educational process in preschool, general secondary and professional (vocational and technical) education institutions. Before the start of the forced break, the Ministry of Education and Science of Ukraine asked to conduct online safety training (Letter of the Ministry of Education and Science of Ukraine № 1/3276-22, 2022). On the same day, information appeared on the website of the Ministry of Education and Science of Ukraine with a link made by the Minister of Education and Science S. Shkarleta in his Telegram channel. On the website of the Ministry and in the minister's address, it was clarified about the termination of the educational process in all educational institutions and the announcement of vacations for two weeks (Address of the Minister of Education and Science of Ukraine in the Telegram channel on February 25, 2022). This necessary measure was implemented to preserve the lives of all participants in the educational process. Thus, the war caused a two-week stoppage of almost the entire education system of Ukraine. It should be noted that the shutdown affected even relatively safe regions, such as Zakarpattia, Ivano-Frankivsk, Chernivtsi and other regions.

Already on February 28, 2022, the Ministry of Education and Science of Ukraine launched an information campaign on how to calm children during war. Psychological care from Svitlana Roiz included several videos, in particular, "How to take care of a child if you are in a shelter with him", "If a father or mother protects the country", "Rules of support if a family is evacuated with a child". This is one of a number of measures implemented to increase the level of safety of participants in the educational process, primarily children. Children are the least protected from threats, including psychological ones. Daily online meetings with certified psychologists of the Association of Innovative and Digital Education were organized. Various Telegram channels to support children began to work, Distance schools and communities opened free access to educational platforms and materials for all children with Internet access.

The first days of Russia's military aggression were the most difficult, including for the science and education system of Ukraine. It was this period that determined a number of subsequent steps in the development of Ukrainian education.

07.03.2022 The Ministry of Education and Science of Ukraine published letter No. 1/3378-22, which contained clarifications regarding labor obligations, vacations, organization of remote work of employees, remuneration of employees of educational institutions during the suspension of education, labor rights and guarantees of employees who are volunteers for territorial defense, actions if the employee is called up for military service, etc. (Letter of the Ministry of Education and Science of Ukraine № 1/3378-22., 2022)

The restoration of the educational process began in the western regions of Ukraine. On March 9, 2022, the Department of Education and Science of the Ivano-Frankivsk Region resumed the educational process in schools, vocational and technical education institutions, and pre-higher education institutions. On March 14, the educational process began in the Lviv region.

The restoration of the educational process in the education system of Ukraine was influenced by the letter of the Ministry of Education and Science of Ukraine dated March 6, 2022 "On the organization of the educational process." The letter described the situation that developed during the war. In particular, it was noted that in many regions, educational institutions have become a refuge for refugees. It was determined that the priority in this time of war was to ensure the maximum possible safety of every child, every employee of the education system.

For students who were evacuated from dangerous regions, admission to general secondary education institutions was simplified as much as possible. This was done only at the request of one of the parents. For children with special needs, including internally displaced persons, it was recommended to use social networks (Viber, Telegram, WhatsApp, etc.); use of electronic platforms (ZOOM, Google Classroom, etc.); conducting Skype conferences; communication in telephone mode; correspondence via e-mail, etc.

The Ministry of Education and Science of Ukraine recommended actively using available platforms and resources of state and private educational institutions ((Letter of the Ministry of Education and Science of Ukraine № 1/3371-22, 2022).

Many distance schools responded to this call, including "Atmospherna Shkola", "Optima", "DAR", "Jamm School", educational platforms "Liko Education Online", "OkStudy", "GIOS", lyceums and other educational and scientific educational organizations (Distance schools and learning platforms provide free access for education seekers", 2022).

The education system began to adjust its work. In many educational institutions, work was carried out to help the armed forces of Ukraine. In particular, teachers and students wove nets. Schools and other educational institutions have become centers for the collection of humanitarian aid for the military.

On March 29, 2022, the Ministry of Education and Science of Ukraine published letter "1/3725-22 "On the organization of the educational process in primary school in wartime conditions". The letter emphasized the use of the distance education system. It was suggested to use electronic textbooks that could be read online or saved to your own computer to use them offline. This significantly improved the educational process in case of failures in the communication system.

The safety of children and the safe conduct of classes were not left out of consideration. Methodical recommendations that were attached to the letter discussed the procedure for working under military threats. The actions of teachers and students after the "Air alarm" signal were listed in detail.

On March 30, 2022, the Minister of Education and Science, Serhii Shkarlet, announced that vocational (vocational and technical) education institutions in 15 regions had completely renewed the educational process in a distance format. Institutions of vocational pre-higher education provide training in 23 regions in a distance or mixed form. Education in higher education institutions continues in 17 regions of Ukraine. Higher education institutions of 3 regions are partially working, and universities of 3 regions are on vacation.

In order to improve knowledge on security issues during war, the Ministry of Education and Science of Ukraine, together with the National Ecological and Naturalistic Center for Pupils and the Laboratory of Out-of-school Education of the Institute of Education Problems of the National Academy of Sciences of Ukraine, developed an end-to-end training program on out-of-school education in the health direction "Fundamentals of life safety in conditions of hostilities" (End-to-end training program for extracurricular health education" Fundamentals of life safety in the conditions of hostilities", 2022), as well as methodical recommendations for it (Methodological recommendations for the end-to-end training program for extracurricular health education "Fundamentals of life safety in the conditions of hostilities", 2022). The

program included the study of security issues during air raids, chemical threats, shelling and radiation threats. Considerable attention in the program was paid to the issues of first aid.

The issue of security was constantly under the close attention of the Ministry of Education and Science of Ukraine and other state and non-state organizations. The UNICEF Ukraine team, together with Svitlana Roiz, prepared rules for supporting children during evacuation. Other domestic and international institutions worked on the issues of organizing education during hostilities and ensuring the safety of participants in the educational process. In particular, it is UNICEF, the Google team, the Cedos Analytical Center and many others.

The system of distance learning was organized not only at the level of individual educational institutions, but became widespread throughout the country. Within the framework of the project "Learning without borders" of the Ministry of Education and Science of Ukraine, the Ministry of Culture and Information Policy, the Ukrainian TV channels PLUSPLUS, "Pixel" and regional channels of the Public Broadcaster, the broadcast of video lessons for schoolchildren of grades 5-11 was organized. These lessons were broadcast on such popular online television platforms as MEGOGO, Kyivstar TV, 1+1 video, sweet.tv and volia.tv.

The restoration of the education system in Ukraine took place taking into account the circumstances that developed in different regions. The date of the end of the academic year in general education institutions was determined independently, based on the existing conditions. Educational material could be taught to students in a tighter study schedule.

In order to ensure security, the Ministry of Education and Science of Ukraine made admission to higher education institutions more liberal. For this, the Verkhovna Rada of Ukraine introduced amendments to the Law of Ukraine "On Higher Education". These changes are outlined in the Law "On Amendments to Certain Laws of Ukraine in the Field of Education", which entered into force on May 1, 2022. The change in the procedure not only took into account the peculiarities of the martial law, but also ensured adequate safety for the participants. For the first time, the National multi-subject test for obtaining a bachelor's degree (master's degree in medical and veterinary specialties) took place in the form of online computer testing. This testing covered three subjects: Ukrainian language, mathematics, history of Ukraine. For applicants who were outside of Ukraine, the National Multi-Subject Test took place at the same time as in Ukraine.

For future masters, a master's complex test (MCT) was conducted for the specialties "Law", "International Law" and a master's test of educational competence (MTNK) for business specialties. For the testing, the main, additional and specially organized sessions were formed. Those entrants who, for some reason, could not pass the test during the main session, are invited to do so in subsequent sessions.

In connection with the circumstances caused by the war, the Ministry of Education and Science extended the terms of the admission campaign. For example, this year's admissions campaign to vocational and technical education institutions will last until November 1, 2022.

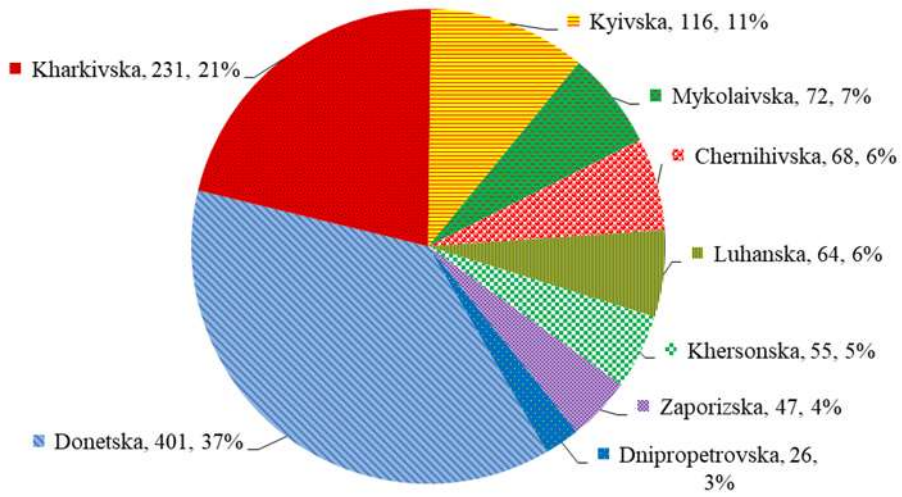
Today, the education system of Ukraine as a whole works in a mixed mode. Some pupils and students work online, some attend educational institutions face-to-face. This depends primarily on the educational institution's ability to ensure the appropriate level of security for all participants in the educational process at times of increased danger, in particular when there is a threat of shelling or bombing. Therefore, the availability of a full-fledged storage has become one of the main conditions for the possibility of restoring the face-to-face (off-line) educational process. According to the Ministry of Education and Science of Ukraine, 16,419 educational institutions have proper shelters, which is more than 62.2% (More than 90% of all educational institutions are ready for the heating season, 2022). As of October 5, 2022, there are 564 institutions operating in the vocational and technical education system. The educational process is carried out in full-time form by 157 institutions, 287 in mixed and 120 institutions in distance form.

The military actions of the Russian occupying forces led to the destruction of educational institutions, the destruction of their material base and the death of teachers. Separately, it should be mentioned that many teachers and scientific and pedagogical staff of higher education institutions joined the ranks of the Armed Forces of Ukraine. So the education system suffered not only material but also personnel losses. It is worth mentioning the teachers of higher education institutions who, being in the ranks of the Armed Forces of Ukraine, continued to conduct the educational process.

As a result of hostilities, in particular, due to bombing and shelling by the armed forces of the Russian Federation, 2,500 educational institutions were damaged. 289 educational institutions were completely destroyed.

As of the morning of September 28, 2022, more than 1,172 children were injured in Ukraine as a result of the full-scale armed aggression of the Russian Federation. According to the official information of juvenile prosecutors, 395 children died and more than 777 were injured of various degrees of severity (Juvenile prosecutors: 395 children died as a result of the armed aggression of the Russian Federation in Ukraine, 2022).. Most children were affected in the Donetsk region (Graf 1.). It is in the Donetsk region that Mariupol is located, where many children were injured. It will be possible to establish the exact number of injured and dead children only after the end of the war and the processing of all sources.

**Graf 1: The number of children who suffered as a result of the war in the regions of Ukraine**




*Source: Ювенальні прокурори, 2022 (Juvenile prosecutors, 2022).*

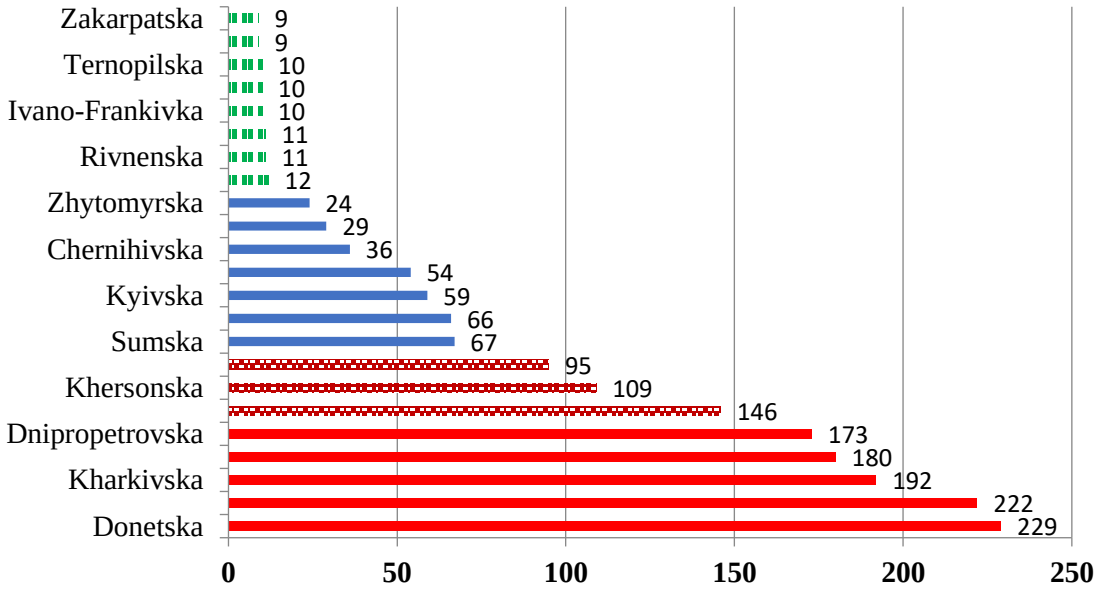
The unevenness of the data by region is connected by the equation of the area of the regions where intense hostilities took place, the total number of population in these areas. In addition, the number of injured children was influenced by the intensity of shelling. Evacuation matters were important for children's safety. The main issue remained the actual possibility and speed of evacuation. Unfortunately, the hostilities continue and the numbers of injured and dead children are increasing.

According to the National Police of Ukraine, during the full-scale aggression of Russia, 241 children disappeared, 6,326 children were found, and 7,833 children were deported to Russia. According to the National Information Bureau, 55 children were returned (Children of war, 2022).

Discrepancies in the number of injured, deported, and dead children are due to various sources and the ongoing work to establish exact numbers, which is complicated by hostilities.

Ukrainian children, including students of schools, institutions of higher and vocational education, are constantly in danger due to possible shelling. In the territories close to the front line, these are shelling by artillery, mortars and rocket fire systems, etc. In regions further from the front line, long-range rocket fire is a danger. To solve the issue of the security of the organization of the educational process, it is important to assess the probability of shelling, which can be done in particular by the number of air alarms, the time at which these alarms were announced, as well as the distribution of alarms by days of the week and hours of the day. In most regions of Ukraine, there is an average of more than one alarm per day (Graf 2.). Western regions of Ukraine are the safest, where alarms occur on average once every three days. These are the western regions of Ukraine: Lviv, Zakarpattia, Rivne, etc. In these areas, it is expedient to conduct the educational process in face-to-face format. Of course, it is necessary to provide for the possibility of sheltering students and all participants of the educational process. On average, one to two air alarms are observed in the central and southern regions of Ukraine, in particular in Odesa, Vinnytsia, and Kyiv. In these territories, a significant number of educational institutions also organized face-to-face education. Some educational institutions use remote and mixed forms of the educational process.

**Graf 2: The number of air alarms by regions of Ukraine per month (from 08/28/2022 to 09/28/2022)**



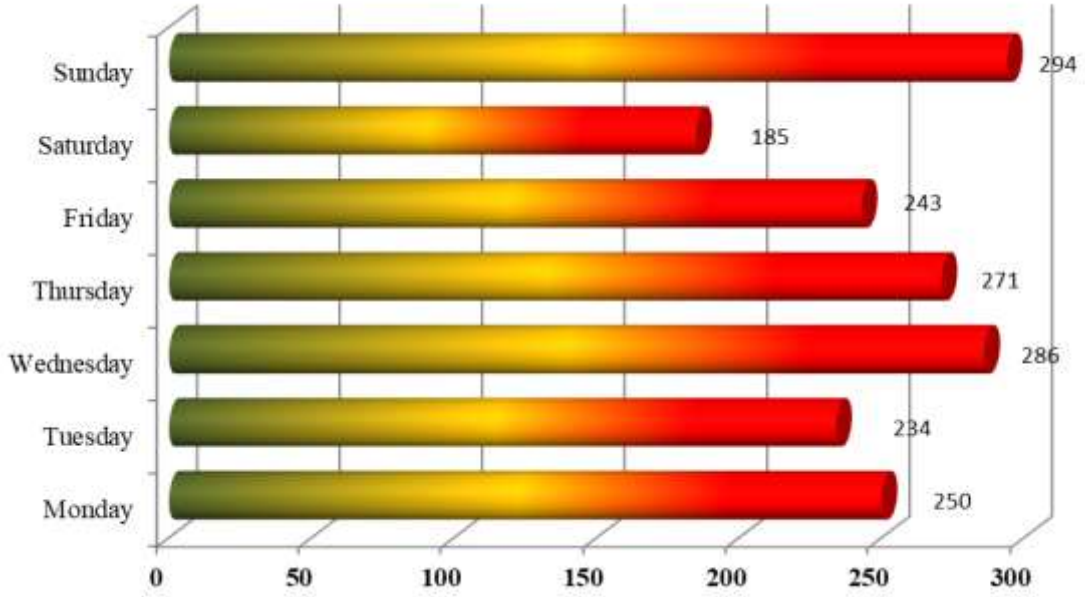

*Source: Air-alarms.in.ua, 2022.*

Analysis of air strikes by days of the week (Graf 3) and by time of day (Graf 4) shows that the intensity of shelling is not uniform. For example, there are more air alarms on Sundays compared to other days of the week. In terms of time, the most alarms were announced between 12 and 6 p.m., and the least between 6 and 12 p.m. The average duration of air alarms is about 39 minutes. The longest anxiety lasted for 5 hours and 47 minutes (Air-alarms.in.ua, 2022). Small differences in the frequency of air alarms do not make it possible to significantly increase the level of safety of participants in the educational process by changing the time of educational events.

One of the factors that will determine the possibility of introducing full-time (off-line) training is the provision of comfortable conditions in educational institutions for participants in the educational process. Considering the fact that the main indicator of comfort in the conditions of the onset of the cold period is the temperature in the premises of educational institutions.

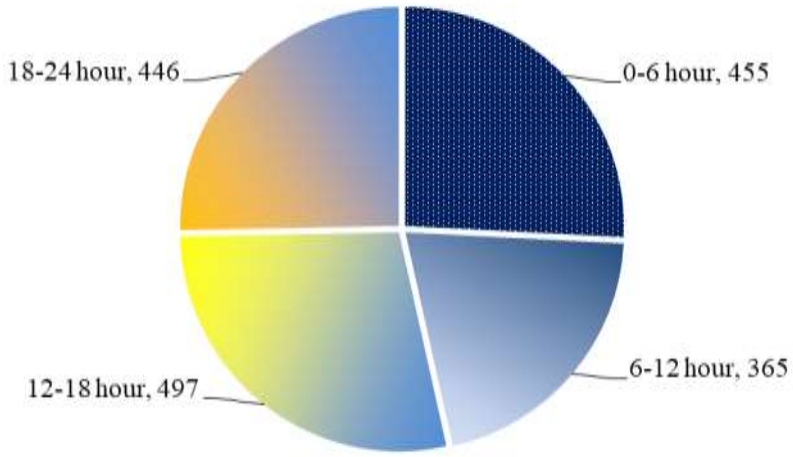
According to the Minister of Education and Science of Ukraine, Serhiy Shkarlet, the preparation of educational institutions for the autumn-winter period in the conditions of martial law continues successfully. As of October 7, 2022, 24,388 educational institutions are ready for the heating season - this is more than 90% of all institutions. Educational institutions in 8 regions are 100% ready for the heating season: Kyiv, Vinnytsia, Volyn, Ivano-Frankivsk, Rivne, Poltava, Ternopil and Chernivtsi.

**Graf 3: The number of air alarms in Ukraine by day of the week (from 08/28/2022 to 09/28/2022)**




*Source: Air-alarms.in.ua, 2022.*

**Graf 4: Distribution of air alarms in Ukraine by time of day (from August 28, 2022 to September 28, 2022)**




*Source: Air-alarms.in.ua, 2022.*

School readiness for the winter season is 91.5%. Schools are 100% ready in 11 regions, including: Vinnytsia, Volyn, Dnipropetrovsk, Zhytomyr, Kyiv, Ivano-Frankivsk, Kirovohrad,

Rivne, Poltava, Ternopil and Chernivtsi and the city of Kyiv (More than 90% of all educational institutions are ready for the heating season, Serhii Shkarlet, 2022). Of course, these are data on educational institutions in the territory controlled by Ukraine.

One of the determining factors of the stability of the education system is the energy system of Ukraine. The provision of electricity to the population directly affects the possibility of distance learning. A power outage makes it impossible for computers and means of communication to function. Communication between the participants of the educational process is lost. In addition, the war made it impossible to print books for schools. Therefore, in conditions of power outages, students cannot access textbooks. The same applies to students, cadets, etc. A massive missile attack on October 10, 2022 caused significant damage to Ukraine's electricity system. Power outage schedules have been implemented in many areas. Therefore, educational institutions had to quickly move educational activities to favorable hours. In this way, the education system of Ukraine quickly reacted to new threats.

## RESULTS AND DISCUSSION

Russia's war against Ukraine has had a significant impact on the education system of Ukraine. Some educational institutions remained in the occupied territory. Many institutions were damaged or completely destroyed. The material and technical base of educational institutions suffered losses. Partially lost personnel potential. The education system had to be rebuilt. Quick decisions were made regarding the organization of the educational process. The stability of the education system in wartime was conditioned by the changes that occurred during the COVID-19 pandemic. The rapid transition to a distance and mixed form of educational institutions made it possible to practically not stop the educational process. The safety of participants in the educational process in wartime is a top priority. State bodies, the Ministry of Education and Science of Ukraine, the State Service for Emergency Situations are making efforts to ensure the safety of the educational process. Topics related to wartime security have been added to the curricula of a number of secondary education subjects.

The analysis of selective threats, in particular, missile attacks (air alarms) showed that the use of different time frames will have little effect on raising the level of the educational process. Educational institutions independently choose the forms of organization of the educational process. Depending on the conditions, face-to-face (off-line), remote or mixed forms are chosen. The stability of the education system in the country is ensured by the readiness of educational institutions for the prompt transition from one form of the educational process to another and the organization of the educational process taking into account the prevailing conditions.

## CONCLUSION

The war significantly affects the functioning of the education system. As a result of the destruction and occupation, some educational institutions cannot work. Some educational institutions were destroyed or evacuated. A number of factors, in particular shelling, availability of electricity, communications, conditions for conducting classes, in particular heat, are decisive in the possibility of conducting an educational process. The war continues. The Ukrainian education system is gaining practical experience in organizing the educational process in difficult conditions and ensuring the safety of participants in the educational process.

**REFERENCES AND INFORMATION SOURCES**


1. *Кодекс Цивільного Захисту України* (2013), (*Code of Civil Protection of Ukraine*) (Відомості Верховної Ради (ВВР), № 34-35, ст.458) [online]. [cit. 2022-9-24]. Dostupný z https://zakon.rada.gov.ua/laws/show/5403-17#Text [in Ukrainian].
2. Про організацію освітнього процесу (2022) (About the organization of the educational process). *Лист МОН* № 1/3276-22 від 25.02.22 року. (*Letter of the Ministry of Education and Science of Ukraine*) [online]. [cit. 2022-9-24]. Dostupný z URL: https://osvita.ua/legislation/Ser_osv/86140/ [in Ukrainian].
3. *Звернення Міністра освіти і науки України у телеграм каналі* 25.02.2022 (2022) (*Address of the Minister of Education and Science of Ukraine in the Telegram channel* on February 25, 2022) [online]. [cit. 2022-9-24]. Dostupný z https://t.me/SerhiyShkarlet/672 [in Ukrainian].
4. *Лист МОН України* від 07.03.2022 Про практику застосування трудового законодавства у галузі освіти і науки під час дії правового режиму воєнного стану № 1/3378-22 (2022) (*Letter of the Ministry of Education and Science of Ukraine* № 1/3378-22) [online]. [cit. 2022-9-25]. Dostupný z URL: https://mon.gov.ua/storage/app/media/doshkilna/2022/04/10/03/Pro.trud.zakon.u.haluzi.osv.nauky.voyen.stanu-1.3378-22-07.03.22.pdf [in Ukrainian].
5. *Лист Міністерства освіти і науки України* від 06.03.2022 «Про організацію освітнього процесу» № 1/3371-22 (2022) (*Letter of the Ministry of Education and Science of Ukraine* № 1/3371-22) [online]. [cit. 2022-9-24]. Dostupný z URL: https://auc.org.ua/sites/default/files/kerivnykam_06_03_org_osvit_procesu.pdf 2 [in Ukrainian].
6. *Сайт Міністерства освіти і науки України*. «Дистанційні школи та навчальні платформи надають безкоштовний доступ для здобувачів освіти» (2022) Опубліковано 10 березня 2022 року о 17:51 (*Website of the Ministry of Education and Science of Ukraine*. "Distance schools and learning platforms provide free access for education seekers"). [online]. [cit. 2022-9-26]. Dostupný z URL: https://mon.gov.ua/ua/news/distancijni-shkoli-ta-navchalni-platformi-nadayut-bezkoshtovnij-dostup-dlya-zdobuvachiv-osviti [in Ukrainian].
7. *Наскрізна навчальна програма з позашкільної освіти оздоровчого напряму «Основи безпеки життєдіяльності в умовах бойових дій»* (2022) (*End-to-end training program for extracurricular health education " Fundamentals of life safety in the conditions of hostilities* "). Автори-укладачі Корнієнко А.В. Мачуський В.В. Вербицький В.В. Київ. [online]. [cit. 2022-9-25]. Dostupný z URL: https://mon.gov.ua/storage/app/media/news/2022/04/01/Prohrama.pozashk.Osnovy.bezp.zhyttyediyal.v.umovakh.boyovykh.diy.01.04.22.pdf [in Ukrainian].
8. *Методичні рекомендації до наскрізної навчальної програми з позашкільної освіти оздоровчого напряму «Основи безпеки життєдіяльності в умовах бойових дій»* (*Methodological recommendations for the end-to-end training program for extracurricular health education "Fundamentals of life safety in the conditions of hostilities*") (2022). Автори-укладачі Корнієнко А.В. Мачуський В.В. Вербицький В.В. Київ. [online]. [cit. 2022-9-25]. Dostupný z URL: https://mon.gov.ua/storage/app/media/news/2022/04/01/Metod.rekom.do.prohramy.pozashk.Osnovy.bezp.zhyttyediyal.v.umovakh.boyovykh.diy.01.04.22.pdf [in Ukrainian].
9. *Понад 90% усіх закладів освіти готові до опалювального сезону*, – Сергій Шкарлет. (2022). (*More than 90% of all educational institutions are ready for the heating season*, Serhii Shkarlet.) [online]. [cit. 2022-09-27]. Dostupný z URL:

https://mon.gov.ua/ua/news/ponad-90-usih-zakladiv-osviti-gotovi-do-opalyuvalnogo-sezonu-sergij-shkarlet [in Ukrainian].
10. Ювенальні прокурори: 395 дітей загинуло внаслідок збройної агресії РФ в Україні *Офіс Генерального прокурора.* (2022) (Juvenile prosecutors: 395 children died as a result of the armed aggression of the Russian Federation in Ukraine) (2022). [online]. [cit. 2022-9-28]. Dostupný z URL: https://www.gp.gov.ua/ua/posts/yuvenalni-prokurori-395-ditei-zaginulo-vnaslidok-zbroinoyi-agresiyi-rf-v-ukrayini-2 [in Ukrainian].
11. *Діти війни*. (2022). Dyty viiny [*Children of war*.] 2022. [online]. [cit. 2022-9-27]. Dostupný z URL: https://childrenofwar.gov.ua/ [in Ukrainian].
12. *Air-alarms.in.ua* (2022) [online]. [cit. 2022-9-30]. Dostupný z https://air-alarms.in.ua/?from=2022-08-28&to=2022-09-28#statistic
13. *Понад 90% усіх закладів освіти готові до опалювального сезону*, – Сергій Шкарлет. (2022) (*More than 90% of all educational institutions are ready for the heating season*, Serhii Shkarlet.). [online]. [cit. 2022-9-29]. Dostupný z URL: https://mon.gov.ua/ua/news/ponad-90-usih-zakladiv-osviti-gotovi-do-opalyuvalnogo-sezonu-sergij-shkarlet [in Ukrainian]..

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