



REPORT CONTAINING COMPARISON OF PROFESSIONAL IMPROVEMENT IN THE MINER-PIROTECHNIC FIELD/ CBRN-E SAFETY IN POLICE AND BORDER GUARDS IN POLAND, ESTONIA

“Preventing and fighting CBRN-E terrorism – building capacity of actors involved in the detection and mitigation of CBRN-E risks at air and road border crossings on European level”



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I. Introduction

In December 2016, the Provincial Police Headquarters in Lublin signed a grant agreement with the European Commission for the implementation of the project "Prevention and combating terrorism with the use of CBRN-E weapons - building the potential of entities involved in detecting and reducing CBRN-E risks" as part of the European Commission's specific program "Internal Security Fund".

The main aim of the project is to strengthen the capacity of law enforcement agencies in EU Member States to manage related risks with incidents using CBRN-E materials, as well as strengthening coordination and cooperation between law enforcement authorities and other entities during CBRN-E incidents at the external EU border leading to increased security of critical infrastructure. This goal will be achieved through improving the competences of law enforcement agencies in the area of CBRN-E risk related to incidents at airports and the external EU border. The project was addressed to the officers of the Provincial Police Headquarters in Lublin, Nadbużański Border Guard Department, Lublin Airport, Estonian Police and Border Guards, Slovak Border Guards and other Police units in Poland.

This study contains a comparison of the professional training in miner-pyrotechnics and CBRN-E in force in Poland, Estonia and Slovakia.

POLAND

Source of information: ORDER NO. 19 OF THE CHIEF COMMANDANT OF POLICE dated July 14, 2015 on the methods and forms of the operation of anti-terrorist subunits of the Police and Police-pyrotechnical units of the Police; Decision No. 19 of the Chief Commandant of Police of February 1, 2010.

Threats related to chemistry, biology of radioactivity and explosives are daily for law enforcement services in Poland. Initially, hazards occurring during military operations were considered CBRNE threats. Their detection and eradication were the domains of the armed forces. Currently, the exposure to such threats is the one of, in particular, by Police officers, Border Guards, and firefighters. Combating common criminality and terrorism involves the recognition of various substances in laboratories, producing psychoactive substances and explosives. Common criminals more often reach for odorants, flammable gases and explosives. All of them pose a threat to the life and health of officers and bystanders.



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In the CBRNE response system there are many entities responsible for counteracting these incidents. These are: police, fire brigades, health service, army, civil defense, crisis management services, SANEPID, Environmental Protection Inspection and scientific research units.

However, Police officers are the first to reach the scene. Police officers are responsible for detecting and identifying threats, securing the site and calling for appropriate support in the form of members of the Miners and Pyrotechnic Teams of Independent Police Counter-terror Subunits.

Police anti-terrorist subunits and Police miner-pyrotechnic units conduct combat operations or support rescue operations. Miner-pyrotechnic activities can be carried out as part of anti-terrorism, rescue, implementation or support of rescue operations. They consist in particular in locating, recognizing, neutralizing, removing, transporting and destroying explosive materials or devices made at the factory or in an improvised manner, posing a threat to life, health and property, as well as public safety and order and overcoming construction closures and other obstacles using explosives.

These activities are carried out by police officers who are authorized to carry out miner-pyrotechnic activities independently in the Police using the available technical and protective measures, including the use of altitude techniques and underwater works.

Specialist knowledge is gained during training organized by the Police Training Center in Legionowo on the course of independent conducting miner – pyrotechnic activities.

The graduate of the course will be prepared to perform official duties, consisting in:

- evacuation of people.
- using equipment designed to neutralize materials and explosive devices.
- neutralizing explosive materials and devices.
- using explosives in anti-terrorist activities.
- The course should also enable the development of new specific skills necessary for the performance of official duties, such as:
- recognition of military and mining explosives,



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- recognition of fuses,
- recognition of switched devices and energy sources,
- determining the method of searching the area,
- determining a safe distance when evacuating people,
- conducting evacuation of people,
- making decisions regarding the elimination of the effects of an explosive explosion in a facility or area,
- neutralization of military, mining and homespun explosives,
- neutralizing switching devices and energy sources,
- neutralizing fuses,
- performing explosive entrance to rooms,
- making and interpreting X-ray images.

The participants of the course may be police officers in permanent service, having completed a course in the field of miner-pyrotechnic reconnaissance, intended for serving in the miner-pyrotechnic unit of Police or tasks related to the use of explosives. The duration of the course is 31 training days.

Thematic scope:

Block no.	Topic No.	Time implementation in hours of teaching
I	1. Contemporary bomb terrorism	1



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Block no.	Topic No.	Time implementation in hours of teaching
GENERAL AND LEGAL ISSUES	2. Legal aspects of miner - pyrotechnic activities.	2
II EXPLOSION AND ITS EFFECTS	1. Systematics of explosives.	4
	2. Military explosives.	3
	3. Mining explosives.	3
	4. Ashes and masses and pyrotechnical mixtures.	4
	5. Other dangerous chemical substances having a direct impact on the way of miner-pyrotechnic activities.	2
	6. Safety regulations when working with explosives.	3
	7. Explosive devices used in the army.	8
	8. Full-time means and methods for initiating an explosion.	8
	9. Effects of explosives and pyrotechnic substances.	8
	10. Principles of the preliminary identification of the type of explosive at the scene of the incident.	2
	11. Practical work with factory explosives and home-made explosives.	14
	Credit with a grade	2
III UNCONVENTIONAL WAYS AND MEASURES OF INITIATING EXPLOSION	1. Unconventional methods of initiating the explosion.	3
	2. The phenomenon of current flow and the energy effects of current flow.	16
	3. Other unconventional ways to initiate an explosion.	4
	Credit with a grade	6
IV	1. Interpretation and making X-ray photography.	8



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Block no.	Topic No.	Time implementation in hours of teaching
NEUTRALIZATION OF EXPLOSIVE MATERIALS OR DEVICES	2. Tactics and neutralization techniques.	104
V EXPLOSIVE ENTRANCES TO BUILDINGS	1. Rules for making explosive entrances.	8
VI INVESTIGATION FOLLOWING AN EXPLOSION	1. Miner – pyrotechnics' role in the ATK team.	24
TOTAL		237

Graduates receive specialist course completion certificates, where "positive" and "Entitlement to independently conduct mining and pyrotechnic operations carried out by the Police" are used as the result, as issued by the head of the Police training unit entrusted with the implementation of the course.

At the same time, obtaining a certificate with a positive result gives you the right to neutralize explosives and materials.

II. Estonia

Source of information: ESF program "Development of the system of qualifications"
OCCUPATIONAL QUALIFICATION STANDARDS

EOD1 Technician, Level 4



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The main institutions performing tasks in the CBRNE area in Estonia are:

- Board of Rescue Services,
- Security Service,
- Police and Border Guard Board,
- Health Management Board,
- Environmental Management Board,
- Tax and Customs Board,
- Office for technical supervision,
- Veterinary and Food Administration,
- Ministry of Defense,
- Private sector,

The Board of Emergency Services is an autonomous government institution in the Ministry of the Interior. It is responsible for inland fires and emergency services in Estonia.

In addition to other tasks, the Rescue Service Board performs tasks related to the utilization of explosives through the Estonian EOD Center.

The EOD Center is an important partner of the police and security authorities.

The EOD Center's pyrotechnical tasks include the elimination of threats related to bombs, explosions and ammunition as well as chemical, biological, radiological and nuclear threats, the implementation of underwater EOD procedures and the use of dogs to detect explosives.

Pyrotechnicians are well-trained, have experience and high-quality equipment, which allows them to make a significant contribution to ensuring security in Estonia.

Professional standards for EOD specialists were first confirmed in Estonia in 2012, they are used to describe the work of EOD specialists and to recognize them internationally.



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Professional standards for EOD technicians include the professional qualifications of the EOD1 technique, the EOD2 technique, the EOD3 technique, the EOD4 technique and the EOC instructor technician. The organization of vocational training is based on the international training principles and safety rules of the EOD (Explosive Ordnance Disposal).

The task of the EOD1 technician is to help in the identification of explosives and destruction of explosives identified in the place of discovery.

The task of the EOD2 technician is to help in the assessment and determination of the safety level of the found objects, so as to safely move the object or objects.

The task of the EOD3 technician is to identify explosives and assess the level of the safety of found objects, perform recovery procedures and destroy any type of ammunition.

The EOD4 technician is a specialist who has been trained and qualified to destroy items requiring special techniques and skills, especially for handling explosive devices and other improvised explosives (e.g. liquids in rocket engines, depleted uranium ammunition, etc.).

The EOD instructor-technician is a professional who has gone through all the stages of mine clearance and has obtained relevant competences. The task of the EOD instructor-technician is supervision, data analysis and transfer of knowledge.

The objective of the EOD1 technician is to support the higher level EOD technicians in activities related to combating bomb threats, threats related to ammunition and explosive threats on land and in inland waters. They work under the guidance of higher level EOD technicians.

The EOD1 technician works in a team and his work is based on cooperation with colleagues, officials and private persons.

The professional qualifications of the EOD1 technique consist of mandatory and optional units of work.

MANDATORY UNITS OF WORK:

- Planning and organization of work



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- Performing the blow-up
- Counteracting bomb threats
- Counteracting threats related to ammunition
- Counteracting explosive threats

OPTIONAL UNITS OF WORK

- Use of a dog to detect EOD1 explosives
- Use of a dog to detect EOD3 explosives
- The rules for using a dog to detect explosives

The EOD technician works in high risk conditions. Physical, chemical, physiological and psychological factors influence his working environment. The work is carried out both outside and inside the building, requires sporadic physical effort. Employees must be aware of the health risks at work. The work is mentally and emotionally stressful, requires work at night, on weekends and on holidays. The main threats are injuries and diseases caused by explosions and chemicals, as well as possible negative health effects caused by various biological, chemical, physical and physical factors. During work, it is important to follow the health and safety rules and use personal protective equipment. The use of a heavy pyrotechnic suit requires good physical condition of EOD technicians.

QUALIFICATION REQUIREMENTS

The professional qualification of EOD1 technicians consists of five mandatory and three optional competencies.

MANDATORY QUALIFICATIONS

1. Planning and organization of work

Performance indicators



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- technicians use personal protective equipment (bulletproof vests, helmets, etc.) in accordance with the safety instructions for the work associated with the removal of mines, they for the team equipment used for the work associated with the removal of mines for the team, depending on the type of operation and in accordance with the instructions of the leader,
- prepare equipment for preventive work in accordance with the instructions of the higher-level EOD technique.

Assessment method: Practical work, test.

2. Carrying out the blow-up

Performance indicators

- technicians assist the miners' work leader in preparing the blow-up and limiting the danger zone in accordance with the leader's instructions, taking into account the safety rules regarding miners' work and using personal protection equipment (bulletproof vests, helmets, etc.);
- help in carrying out the blow-up, which is carried out in order to counteract the threat of a bomb explosion, help in preparing the necessary equipment in accordance with the instructions of the miner's work leader; help the police and rescuers to limit the danger zone in accordance with the leader's instructions; after the event, they maintain the equipment in accordance with the specifications and requirements specified for the equipment;
- help the miners' work leader in carrying out the blow-up related to the prevention of ammunition threats and ensure the inviolability of the danger zone, limiting it in accordance with the miners' leader's orders, taking into account the safety rules for miners' work and using personal protective equipment (bulletproof vest, helmet, etc.); take part in a control check of the explosion site in accordance with safety rules in order to avoid the presence of explosive fragments; after the event, they maintain the equipment in accordance with its specifications and requirements specified for the equipment.

Knowledge:

- 1) types and parameters of explosions;
- 2) effects of explosions on people, objects and environment;



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- 3) determining the safe distance from the explosion;
- 4) ways to reduce the effects of an explosion, protective measures
- 5) signals to carry out an explosion.

Assessment method: Practical work, test.

3. Counteracting bomb threats.

Performance indicators

- technicians carry out the orders of the miners' work leader at the scene of the event, help OED technicians in the preparation of the equipment in accordance with the instructions of the miner's work leader; carry out an inspection of the facility in accordance with the instructions of the miner's work leader;
- carry out orders of the miner's work leader on the incident, help the OED technicians of a higher degree in preparing the equipment in accordance with the instructions of the miner's work leader; use personal protective equipment (bulletproof vests, helmets, etc.);
- perform orders of the miner's work leader at the site, help the OED technicians of a higher level in preparing the equipment in accordance with the instructions of the miner's work leader; carry out an inspection of the facility in accordance with the instructions of the miner's work leader, use personal protective equipment (bulletproof vests, helmets etc.) in accordance with the specificity of technical inspection of the bomb;
- perform orders of the miner's work leader on the site, help the OED technicians of a higher level in preparing the equipment in accordance with the instructions of the miner's work leader; control secondary threats in accordance with the instructions of the miner's work leader; use personal protective equipment in accordance with the specificity of secondary hazards;

Knowledge:

- knowledge of personal protection equipment;
- technical support and its use;



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Assessment method: Practical work, test.

4. Counteracting threats related to ammunition

Performance indicators

- technicians safely handle ammunition and equipment used at work in accordance with applicable law;
- help the higher-level OED technicians in the preparation of specialized equipment for miners' work, support higher-level technicians in performing basic activities related to finding ammunition or searching for it in accordance with applicable regulations; using personal protective equipment in work related to removing mines;
- help higher-level OED technicians demarcate minefields, battlefields or polygons and its surroundings in accordance with IMAS (International Mine Actions Standards) standards, performs support activities in a minefield outside the danger zone in accordance with the instructions of a higher-degree OED technicians; use personal protective equipment in accordance with IMAS standards.

Knowledge:

- types and construction of ammunition;
- types of explosives and their installation;
- installation methods for minefields and types of minefields;
- tactics of groups clearing mines;

Assessment methods: practical work, test.

5. Counteracting explosive threats

Performance indicators

- help the miners' work leader in the preparation of blow-up related to the prevention of ammunition threats and ensure the inviolability of the danger zone, limiting it in accordance with the miners' work leader's instructions, taking into account safety rules for miners' works



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and using personal protection equipment (bulletproof vests, helmets, etc.); after the incident, they maintain the equipment in accordance with its specification and requirements specified for the equipment.

Knowledge

- types and parameters of explosions

Assessment methods: practical work, test.

OPTIONAL QUALIFICATIONS

6. Use of a dog to detect EOD1 explosives

Performance indicators

- under the supervision of a superior OED technician, provide dogs with the necessary daily movement, feeding and care;
- teach and train dogs according to the guidelines of the guide of a higher-ranking service dog;
- perform orders of the miner's manager at the scene, using personal protective equipment (bulletproof vests, helmets, etc.) in accordance with applicable regulations.

Knowledge:

- basics of dog training, instincts, stages of development, senses, learning processes;
- finding explosives and odor molecules.

Assessment methods: practical work, test.



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7. Use of a dog to detect EOD3 explosives

Performance indicators

- provide dogs with the necessary daily movement, feeding and care, monitor the health of the dog and inform the OED technician about the necessity to implement veterinary procedures;
- teach and train dogs according to the guidelines of the guide of a higher-ranking service dog, organize individual dog trainings in accordance with the training program, instruct other dog guides;
- use a properly trained dog to detect explosives; coordinate the use of dogs to detect explosives at the scene; perform orders of the miner's manager at the scene, use personal protective equipment (bulletproof vests, helmets, etc.) in accordance with applicable regulations; use personal protective equipment (bulletproof vests, helmets, etc.), if it is necessary, perform the duties of a miner's manager at the scene, make suggestions for the organization of the necessary training.

Knowledge:

- basics of dog training, instincts, stages of development, senses, learning processes;
- finding explosives and odor molecules;
- possibilities and purposefulness of using dogs to detect explosives in the event of bomb events;
- use of a heavy pyrotechnic suit during dog training and on-call duty.

Assessment methods: practical work, test.



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8. Instructor in the use of a dog to detect explosives.

Performance indicators

- provide the dog with the necessary daily movement, feeding and care, monitor the health of dogs and coordinate the implementation of veterinary procedures, select appropriate dogs to search for explosives for a given operation,
- teach and train dogs according to the guidelines of the guide of a higher-ranking service dog, organize individual dog trainings in accordance with the training program, instruct other dog guides;
- use a properly trained dog to detect explosives; coordinate the use of dogs to detect explosives at the scene; perform orders of the miner's manager at the scene, use personal protective equipment (bulletproof vests, helmets, etc.) in accordance with applicable regulations; use personal protective equipment (bulletproof vests, helmets, etc.), if it is necessary, perform the duties of a miner's manager at the scene, make suggestions for the organization of the necessary training.

Knowledge:

- basics of dog training, instincts, stages of development, senses, learning processes;
- finding explosives and odor molecules;
- possibilities and purposefulness of using dogs to detect explosives in the event of bomb events;
 - use of a heavy pyrotechnic suit during dog training and on-call duty.

Assessment methods: practical work, test.



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OVERVIEW QUALIFICATIONS

9. EOD1 technician, level 4

Performance indicators

- in accordance with applicable regulations, transport explosives and ensure intact state of explosives at the scene and / or destruction; help higher-level OED technicians use anti-explosives, to destroy ammunition, during rescue work to prevent the spread of dangerous substances and organize exercises related to mining work, analyze the explosive before use; use personal protective equipment in accordance with the order of the miner's manager.
- provide first aid to victims according to the requirements of first aid;
- drive a privileged vehicle with a sound signal, taking into account the applicable regulations and the specificity of miners' work;
- participate in the analysis after the events, in which they assess the situation, suggest changes in subsequent actions of the team, suggest the implementation of the acquired experience;

Assessment methods: practical work, test.

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