

## EOD SUPPORT IN OPERATIONAL ENVIRONMENT

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In areas where military or small military conflicts occur or have occurred, there is a wide variety of standardized or improvised explosive mechanisms, which are still unexploded. Explosive mechanisms threaten both the forces and means that contribute to the accomplishment of the missions, freedom of movement / action, causing personal and fighting vehicles losses and making it difficult to use the logistical support means, but not in the end also affects civil society.

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**Motto:** "Terrorism is the most amorous form of organized violence".

*Paul Wilkinson*

In the last decades, military conflicts have evolved a lot, so that classical wars, so-called conventional, gradually turned into unconventional, asymmetric conflicts. These types of conflicts, unfortunately, are also waged between different actors in terms of military endowment. Thereby, less trained actors from the military point of view, referring here to the equipment and the level of training, are increasingly using as a form of compensation in their actions improvised explosive devices. As a counter measure for these actions, stronger actors have developed a military branch to deal with the neutralization of these improvised devices. This military specialty is called Explosive Ordnance Disposal (EOD).

Operations conducted on both national and non-national territory combine simultaneously three kinds of elements – offensive, defense and stability. Armed forces use offensive and defensive operations to defeat the enemy on land. They simultaneously carry out stability operations in order to interact with the population and civil authorities. Civilian support is the fourth component of large-scale operations in which different types of operations are conducted. EOD is an essential component for all phases across the entire operational environment.

EOD support is an essential element in the protection of military and civilian personnel, critical

assets, infrastructure and public safety. Threats with explosive devices may be present in all phases of military operations. To manage risk to the lowest possible level, commanders must integrate EOD support in all the phases of the whole spectrum of the operational environment<sup>1</sup>.

Offensive operations are combat operations performed to defeat and destroy enemy forces and create advantages by using land, resources and populated centers. They impose the commander's will on the enemy. EOD structures act to support the goals of offensive operations by depriving the enemy of resources. This is done by neutralizing and destroying the ammunition captured from the enemy. EOD structures also support the information gathering process by post-explosion analysis, analysis of the resulting fragments, explosion site exploitation, and by analyzing the technical components of the explosive devices used. EOD support is the only branch capable to provide security against the use of improvised explosive devices (IED), and also capable to provide ample information about the techniques used by the enemy, thus contributing to the development of the counter improvised explosive ordnance (C-IED) process. In addition, EOD structures support the creation of a safe environment for stability operations by reducing the enemy's ability to use explosive munitions, ensuring a safe state, and eliminating all unexploded ordnance (UXO) of both friendly and enemy forces<sup>2</sup>.

Defense operations are combat operations performed to defeat an enemy attack, to gain time,

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to save forces and to develop conditions favorable to conduct offensive or stability operations. EOD structures participate in the fulfillment of the defense objectives by protecting people, assets and critical infrastructures. This is done by decommissioning and neutralizing or destroying UXO, IED, home-made explosives, chemical and biological weapons, nuclear weapons, and weapons of mass destruction. The lead factors of EOD missions during defense operations include: the security level of operations, enemy weapons and also their tactics, techniques and procedures (TTPs). EOD units will focus on protecting their own forces, multinational forces and the host nation from all threats involving explosive devices or ammunition. EOD structures support the development of information collection plans during defense operations in the same way as for offensive operations; in addition, EOD forces provide significant support for vulnerability and threat assessment.

Stability operations include various military missions, tasks and activities conducted outside the territory of the state, in coordination and cooperation with other nations, with the purpose of maintaining or restoring a secure environment, providing essential government services, infrastructure reconstruction and humanitarian aid. The support provided by EOD structures during offensive and defense operations continues during stability operations. The main purpose is to limit the influence of opponents and to isolate the population from the danger posed by the enemy by establishing civil security. If the enemy represents a significant military threat, the forces engaged in Stability Operations perform self-defense activities as well as defending civilian population against attacks. EOD units will focus on the safety and security of the forces, civilian population and infrastructure in terms of the threats posed by explosive devices. It is essential that commanders maximize the use of qualified EOD personnel to minimize the likelihood of collateral damage. Security is the most important condition that rests on all the other sectors. At this stage, EOD's support also focuses on training, counseling and providing assistance to host nation and multinational forces in recognizing and responding to explosive munitions and devices<sup>3</sup>.

Civil assistance is the support provided by the armed forces to civilian authorities in the country

or abroad for domestic emergencies as well as for law enforcement activities and other activities. Civil assistance includes operations that address the consequences of natural or man-made disasters, accidents, terrorist attacks and incidents in or outside the country. Armed forces carry out civil assistance operations when the size and scale of events exceed the capabilities of domestic civilian agencies.

Existing laws on combating terrorist use of explosives on national territory predict that the armed force will aggressively combat the threat of explosive attacks by coordinating the efforts of all institutions in cooperation with critical infrastructure owners and operators and essential resources for discouraging, preventing, detecting, protecting and responding to terrorist attacks with improvised explosive devices.

EOD units are made of experts with extensive technical and tactical training in explosives. They are trained, equipped and properly integrated to attack, defeat and exploit explosive ammunition. Explosive ammunition is defined in the common doctrine as all ammunition containing explosives, materials of nuclear fission and fusion, and biological and chemical agents. These include bombs and warheads; ballistic guides and missiles; artillery ammunition, mortars, rocket and ammunition for small arms; all mines, cartridges and propelled-driven devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related elements with the explosive components in nature. This category also includes home-made explosives, improvised explosives and explosives from the national economy. EOD units are made up of soldiers with the best tactical and technical training that the military and the civilian environment can offer.

EOD structures perform civil support operations, protecting the civilian population, infrastructure and property from the threat of unexploded military munitions and improvised explosive devices. EOD forces respond, render to safety, exploit and remove all categories of explosive devices either in an ongoing operation area (AO) or in a military base or in support of civilian authorities. These operations include conducting EOD procedures in response to requests for assistance from territorial authorities under the immediate intervention authority and in accordance with senior echelon

recommendations. These EOD specific procedures include: identification of ammunition / device, safe procedures (RSP), recovery and disposal of explosive ammunition or explosive device. By its status, the EOD structure is the first entity to respond to a terrorist attack involving explosive material<sup>4</sup>.

At national level there are several centers responsible for terrorist attack intervention, each center being responsible for a particular region. In the event of a terrorist attack with an explosive device, the center responsible for the intervention in the event of such an attack is subordinated to the Anti-Terrorism Control Group (GCA).

The command elements of the EOD forces, in the case of joint operations, are transferred to the commander of the joint forces. National and multinational EOD units in support of land-based war operations are ordinarily under the operational control of one army EOD headquarters due to a common understanding of terminology, training and equipment.

Armed operations executed outside the national territory will take place as part of a joint force that may be part of a larger multinational force. Mixed EOD services can be used to increase effort in areas where there is greater necessity or a different situation from the possibilities offered by a single group. The units in the area may be designated to provide additional administrative and logistic support for joint formations providing EOD services, due to the limited capacity to perform these functions by EOD structures. The common integration of all EOD structures will ensure unity of effort, planning, preparation, execution and evaluation of joint EOD operations.

The primary role of the EOD is to protect life and property or priority assets. EOD gives commanders the opportunity to react quickly to explosive ammunition threats when they occur. The responsibility of the EOD mission applies both at destination and installed operational environments. In a deployed AO, EOD provides support for missions and operations in which the commander requests immediate support against threats with improvised explosive devices.

The EOD provides search and training procedures, on-site assistance, explosion safety assessments, and the development and implementation of EOD emergency responses,

anti-terrorism activities and force protection plans. The ability of EOD to neutralize explosive devices safely is essential for the commander's ability to protect key facilities and infrastructures. Conducting safe neutralization decreases the likelihood of dangerous detonation and the spread of contamination with different chemicals.

EOD offers the ability to plan, direct, and support incident clearance operations by identifying and removing unexploded ordnance (UXO) to facilitate the introduction of data about it in military databases.

EOD supports the army's anti-IED strategy by assisting in creating C-IED staff training exercises. EOD forces can also provide training in the recognition and reporting of explosive munitions, search procedures for explosive devices and their evacuation. This training increases the effectiveness of the program for the protection of friendly forces and civilian population.

With the commander's approval, EOD forces train the foreign army in the identification and safe clearance of munitions. EOD provides advice to foreign citizens in support of humanitarian demining operations.

Upon completion of an EOD intervention, the EOD Team Commander may create a chart detailing specific incident information. These "storyboards" include photographs, cardinal instructions, emplacement methods, explosive ammunition type and size, device functioning and composition, and other relevant information. This information can also be used by courts, both foreign and domestic, to help prosecute those responsible for the attacks with explosive devices.

EOD maximizes combat effectiveness and facilitates understanding of the situation in a timely manner by collecting, processing, exploiting and analyzing the components associated with the tactical and technical intelligence of explosive ammunition. Technical intelligence derives from the exploitation of foreign material produced for strategic, operational and tactical commanders. The collection process begins at the site of the incident by conducting safe procedures (RSP), site exploitation, or post-blast analysis. EOD determines the movement, burning and functioning of explosive ammunition, collects the loaded cryptographic and biometric materials and analyzes the occupation and location techniques. The EOD will then develop

and integrate the intelligence reports, contribute to the development or modification of the RSP, and prepare information for the fighting forces in order to evacuate to organizations that have extra exploitation capabilities. The information collected on explosive ammunition supports the counter-indicated efforts by targeting, fighting the enemy TTP, assisting in the development and refinement of electronic warfare countermeasures or exploiting the electromagnetic spectrum associated with the explosive device.

Faced with adaptive challenges in an era of persistent conflict, it is imperative that the army produce leaders and forces with a high degree of operational adaptability. Achieving the required level of operational adaptability requires the army to rely on two major responsibilities in broad spectrum operations; weapon maneuver and security of the area of responsibility.

Armed forces perform combined maneuvers to obtain physical, temporal and psychological advantages over an enemy. Armed forces establish and maintain security on a large scale to strengthen the gains and ensure freedom of movement and action. Armed forces use weapon maneuver and wide area security to harness, preserve and exploit the initiative. Armed forces capable of efficient maneuver, both at the operational and tactical levels, give commanders of friendly forces the ability to discourage conflicts, prevail in the war, and succeed in a wide range of unforeseen situations.

EOD supports freedom of movement and maneuver by ensuring safety and eliminating threats posed by explosive ammunition that limits or prevents the commander's ability to move his forces.

The commander of the maneuver forces can command a tactical mobility operation such as field clearing to remove explosive ammunition and to facilitate mobility on a critical route or area. In order to be able to clear the ground, the commander of the forces must eliminate both the enemy forces and the organized resistance in an assigned area. The force does this by destroying, seizing or forcing the withdrawal of enemy forces so that they are not able to interfere with the unitary missions of their own forces. EOD forces can be used to support maneuvering forces or to clean the terrain of explosive elements. The commander of the EOD forces provides recommendations to the maneuver

commander on the organization, procedures and support requirements for cleaning operations.

Commanders of EOD structures in mobility operations are tasked with neutralizing improvised explosive devices. Successful use of IEDs by the enemy is the end product of a network of enemy activities called the IED network. EOD's ability to secure explosive munitions, including IEDs, leads to the collection of legal and technical information that makes it easier to attack those individuals or groups involved in the IED network.

Planning a successful countering improvised explosive devices (C-IED) operation is a complex task involving all the forces of the conflict force and is based on a framework designed to ensure the free movement of its own forces and allow commanders and staff to plan and take proactive measures to identify and defeat IED attacks before being successfully employed in other operations. At each level of war there are key C-IED activities that influence operational planning. These activities must be viewed individually as well as in the context of their relationship with the other activities that allow a C-IED effort. C-IED operations should adopt a holistic approach that includes solutions for obtaining information, training, operations, materials, technologies, policies and resources to address all the fundamental elements of ensuring freedom of movement, including prediction, detection, prevention, neutralization and elimination. To a greater extent, this approach should be considered in terms of a common interdiction, which includes ensuring mobility as well as many other factors of war. C-IED operations are carried out in all phases of a military operation (modeling, deterrence, initiative, stability and support to civil authorities) and must be carried out on several lines of effort, each to begin conditionally and then all to continue in parallel during a campaign.

The three C-IED effort lines are<sup>5</sup> the following:

*Network Attack:* The common force that has attributions regarding network attack prevents the emplacement of IEDs by attacking multiple enemy vulnerabilities. Key vulnerabilities in the opponents IED engagement system include: ability to influence local population support, use of techniques, tactics and procedures (TTPs) used to plant previous IEDs; the ability to maintain a supply and distribution chain of IED components; the ability to establish

and modify the IED construction-emplacement process.

*Device Disposal:* The goal of eliminating an IED is to prevent or mitigate its physical effects, cumulative with marginalization or prevent the enemy from exploiting the value of its effects, including propaganda and fear. IED disposal actions begin once the device has been activated and include safe detection, disarmament, and in-depth analysis of its components.

*Training Friendly Forces:* The commander must ensure that forces are properly trained before carrying out an important operation. Fields of particular interest include the development of relevant and current TTPs related to IED, exercises and Standard Operating Procedures (SOPs). Training should be designed to improve individual and collective protection and the ability of the unit to function efficiently in a high-risk of IED use environment. Training should also include those activities that facilitate the establishment and increase of the coalition and partner nation's IED defeat capabilities, including the transfer of C-IED technology to all participating forces.

EOD groups execute command and control (C2) on C-IED activities and operations in support of forces within AOs. EOD forces can execute C-IED missions on all phases of operations, based on mission volume and control range. It should be noted that missions in the final stages will mainly focus on building the capacity of the host nation and training the force. At this point, the attack on the network and device disposal will be of secondary concern, beyond the protection of force.

Armed forces can be simultaneously in multiple environments. The challenge for the EOD commander is to ensure that their capabilities are in the right place at the right time to support the commander in the AO. It is also important that the commander should understand how to use the specialized capabilities offered by the EOD when trying to maximize protection while reducing the high risk of collateral damage.

EOD structures play an essential role in all phases of military operations. While in a conflicting environment, the EOD structures support the commander of friendly forces, by the following abilities: the ability to identify, to be safe, to collect and exploit unexploded ordnance or explosive device; a tactical analysis of enemy

IED TTPs; the ability to carry out the training and guidance of the joint forces, those of the host nation and multinational forces; the ability to perform command and control (C2) for all phases of C-IED operations and EOD forces in the operations area.

Internally, EOD structures provide immediate response to civilian assistance requests, execute force protection, and provide support for C-IED training.

The ability of EOD forces to perform offensive, defensive and stability operations while providing civilian support is essential for broad spectrum operations. Neutralization of explosive ammunition by EOD structures provides significant support to commanders in all the types of operations they execute. Ammunition neutralization / evacuation structures are ready to respond to incidents of explosive ammunition immediately, according to commanders' priorities. EOD structures coordinate directly with combat units to integrate EOD capabilities into all the types of operations they perform.

In conclusion, we can state that besides classical threats, terrorism is a direct threat to the security of citizens of Alliance countries, and modern technology leads to increased terrorists' potential to cause destruction. As a result, the actions of potential Alliance adversaries will have an asymmetric character and will target the exploitation of allies' weaknesses, using a wide range of complex and diverse methods and techniques. From this point of view, we can confidently assert the fact that EOD specialized teams save lives regardless of the type of operation they perform - offensive, defense, stability or support.

The magnitude of the field I have approached and the increasing impact that terrorist attacks have on civilians in big cities as well as allied forces in theaters of operation have led governments and armed forces to develop this branch of tactics, techniques and procedures to counteract this phenomenon. However, we must remember that the development of EOD structure is closely linked to the ability of terrorists to continuously develop their actions, as demonstrated in the theaters of operations in Afghanistan and Iraq. As a conclusion, we can state that EOD structures need to be developed continuously to create a secure environment for both the population of the Alliance's member states and its armed forces.



## NOTES:

1 *ATTP 4-32 Explosive Ordnance Disposal Operations*, Department of the Army, December 2011, accessed at 7 March 2019.

2 *Land Forces Magazine*, nr. 2, Bucharest, 2000.

3 Ioan-Dan Popa (2003), *Acțiunea echipelor EOD (Explosive ordnance disposal) pentru neutralizarea mecanismelor explozive*, The Land Forces Academy Yearbook, nr. 2, Sibiu, p. 2.

4 *Ibidem*, p. 4.

5 Michael Smith (2001), *Calls to honour inventor of bomb disposal device*, <http://www.telegraph.co.uk>., accessed at 7 March 2019.

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