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ERW in the Republic of Serbia

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As a result of operations conducted during the Balkan Wars, World Wars and Yugoslav Wars, Serbia remains affected by numerous pieces of unexploded ordnance. The author explores the magnitude of UXO contamination and reveals the extensive process by which it is removed from and destroyed within southern Serbia, an area that has been plagued by explosive remnants of war for the past century.

by Dragan Jovanović [Serbian Ministry of Interior]

In the 20th century, several wars were waged on the lands of the Republic of Serbia. As a consequence of these wars, a large presence of explosive remnants of war exists in Serbia. The marking, clearance, removal and destruction of ERW presents a complex problem due to the various types of unexploded ordnance, which differ in construction, size and origin. These pieces of UXO derive from the First Balkan War (1912–13), Second Balkan War (1913), World War I (1914–18), World War II (1939–45), Yugoslav Wars (1991–95) and the NATO bombing of Yugoslavia (1999).

Large numbers of ERW continue to be found in new locations within Serbia, presenting an ongoing threat to the population and the environment. When found in developing regions, ERW slow or halt construction. In addition, farmers cannot use land for agricultural development.

The full extent of the ERW contamination in Serbia is unknown. A General Survey (an investigation of landmine locations where affected and unaffected areas are catalogued) has not established the scope of the problem. A study is needed to define the contaminated areas, determine the types of ERW expected to be found, establish the type and purpose of the land, determine the social and economic consequences, and identify clearance priorities, available resources and incident statistics.

All activities related to the clearance and removal of ERW in Serbia are planned, implemented, controlled and verified in accordance with international standards, Serbia's legislation, and lessons learned from neighboring countries, while maintaining the unique differences of Serbia in mind.

Operational capacities for clearance and removal of ERW in Serbia involve specialized teams of the Serbian Armed Forces for military locations and the Ministry of Interior–Sector for Emergency Situations Explosive Ordnance Disposal teams for civilian sites. There are also several commercial companies registered that conduct humanitarian demining.

A BLU-97 bomblet submunition is found in Niš, Serbia.
All photos courtesy of the author.

Extent of ERW in Serbia

Based on the type of ERW, period of occurrence and the degree of danger to the population, ERW problems are classified as one of the following categories:

- Single items of UXO that are found accidentally
- Areas contaminated with cluster munitions from the period of NATO intervention
- Unexploded aerial bombs and missiles from NATO intervention and WWII
- Areas contaminated as a result of accidental detonation of ammunition depots stemming from the periods of WWII, the NATO intervention and after the NATO intervention
- Locations massively contaminated with UXO as a result of intensive combat operations in WWI and WWII
- Areas contaminated with anti-personnel and anti-tank mines

UXO. Single items of UXO that are found accidentally are those found by citizens during agriculture, construction or other activities. These items of UXO also can be found in forests, junk yards and even in urban settings near public buildings, residential neighborhoods, roads and schools. When UXO is found, it is reported to the Sector for Emergency Situations. These pieces of UXO are removed and destroyed by the Ministry of Interior EOD teams.

Cluster Munitions. Unexploded cluster munitions are found in several hundred micro-locations within 16 Serbian municipalities (Brus, Bujanovac, Čačak, City of Niš–Medijana and Crveni Krst municipalities, Gadžin Han, Knić, Kraljevo, Kuršumlija, Leposavić, Preševo, Raška, Sjenica, Sopot, Stara Pazova and Vladimirci).

Preparing for destruction of UXO in Kraljevo, Serbia.

To determine the extent of contamination for suspected cluster munitions, a General Survey began in 2007 for those areas suspected of being contaminated with cluster munitions. Each suspected hazardous area is assigned a risk level, areas are marked and each SHA that requires further processing is estimated. So far, it has been determined that cluster munitions are located in 260 high-risk micro-locations, totaling an area of 14.32 square kilometers (5.53 square miles). In addition, 144 suspicious micro-locations were identified, comprising 8.4 square kilometers (3.2 square miles). These locations are subject to an additional survey, proposed to be carried out in 2011.

Serbia estimates that the area to be cleared is approximately 17 square kilometers. (6.6 square miles). About 182,000 people live in SHAs while about 90,000 live close to the SHA perimeter. In addition, a large number of people use SHAs at their own risk and a number of them even use marked risk areas since many make a living by farming the land.

In Serbia, specific methods and techniques have been developed and used to clear cluster munitions with positive results. Armored construction equipment is used in debris clearance, and demining machines with remote controls are used effectively for the removal of shrubs, small trees, and other vegetation. These things not only make the land safe for civilians, but they improve working conditions and increase the safety of EOD technicians.

Bombs and Missiles. An estimated 180 unexploded aerial bombs and missiles from the NATO intervention have been found in more than 100 military and civilian sites at depths greater than 20 meters (22 yards). Although a General Survey of these sites has not been conducted, existing plans will be implemented when adequate funds are provided. Available data derive from reports collected by EOD teams, in addition to witness interviews and statements. The completion of a General Survey would confirm or reject the existence of bombs reported in witness testimonies.

Ammunition Depots. Between 1941 and 2006 several ammunition depots exploded. According to the available data, an area of about 22 square kilometers (8.5 square miles) at 12 sites in nine municipalities has been polluted with UXO as a result of ammunition depot explosions (City of Belgrade, municipalities of Novi Pazar, Novi Sad, Kraljevo, Požarevac, Paraćin, Smederevo, Valjevo and Vranje). With the exception of the work being currently done in the Paraćin municipality after the 2006 explosions, clearance has not yet been conducted in these areas.

Wars. In areas where intensive war operations, such as Kolubarska Battle and Cerska Battle of WWI and the Battle for the Liberation of Belgrade of WWI, as well as sites that contained the front lines, there are large quantities of unexploded and abandoned explosive ordnance. Five of these sites are located in the municipalities of Doljevac, Kragujevac, Loznica, Obrenovac and Mitrovica Sremska. In the past, no General Survey had evaluated these sites and available data had been collected on the basis of interviews and statements from the witnesses. According to a 2006 survey of the Đerdapska klisura (Iron Gates of the Danube River),

AP and AT mines and UXO are found in the municipality of Šid, Serbia.

near the Prahovo port, 22 sunken warships were found, at least four of which contained UXO, presenting an ongoing danger to people, ships and the environment.

Landmines. In the 1990s, most AP and AT mines were placed along the border with Croatia, in the northern part of Serbia in the villages of Jamena and Morović, within the municipality of Šid. These mines contaminated more than six square kilometers (2.3 square miles). In this region of Serbia, forests are old and the soil is fertile. These landmines obstruct agricultural development and the free movement of the population, and reduce the effectiveness of border police.

The presence of landmines and improvised explosive devices was discovered in late 2009 in the municipalities of Bujanovac, Kuršumlija, Medveđa and Preševo, in the southern part of Serbia, along the administrative line with Kosovo and Metohija. Survey preparations for this area have begun. The mine-affected area of the Bujanovac municipality covers about one square kilometer (0.4 square mile). A General Survey in Kuršumlija, Medveđa and Preševo municipalities has not been completed, but the mine-affected area is estimated to be 1.5 square kilometers (0.6 square mile).

Clearance Operations Progress

The prioritization of ERW removal is decided according to the level of risk to the population.

UXO Threat. UXO that is found accidentally represents a constant threat to civilians, especially children. To protect the population from this threat, the Ministry of Interior EOD teams perform explosive ordnance removal on a daily basis. From 2006 to 2010, EOD teams performed more than 1,600 UXO spot tasks, removing and destroying more than 10,000 items of UXO, 800 kilograms (1,760 pounds) of explosives, 120,000 pieces of pyrotechnic devices and 8,000 other ERW. During this period, EOD teams were in the field for more than 700 days and cleared more than 500,000 square kilometers (310,686 square miles).

Cluster Munitions. During and immediately after the NATO intervention, specialized teams of the Serbian Armed Forces and the Ministry of Interior conducted a visual examination, removal and destruction of thousands of unexploded cluster munitions in most of the contaminated areas. This fast action contributed to human security and significantly reduced the number of victims, especially civilians. This surface clearance, conducted without the use of metal detectors, did not remove or destroy cluster munitions that had penetrated the ground. Additional clearance will be carried out as personnel, material and financial resources become available.

By the end of 2009, in accordance with international standards, cluster munitions in Serbia were cleared from an area of 4.3 square kilometers (1.7 square miles). During 2009 and 2010, six cluster-munitions-clearance projects were executed and an area of 0.93 square kilometer (0.36 square mile) was cleared.

In the period after NATO intervention, specialized teams of the SAF cleared several military micro-locations, totaling an area of more than 1.2 square kilometers (0.46 square mile) and removed and destroyed more than 500 cluster munitions that had penetrated the ground to a depth of more than 50 centimeters (20 inches). These cleared micro-locations are the military airports of Batajnica, Lađevci and Niš. Significant reconstruction took place following clearance. Industrial buildings and a hospital were repaired, residential buildings were built, lifts to transport skiers were reconstructed, a ski resort was built and the civilian part of the airport in Niš was reconstructed.

Unexploded Aerial Bombs and Missiles. Specialized teams of the SAF and the Ministry of Interior, in the period after NATO intervention, conducted a survey, assessment, excavation, deactivation, removal, transportation and destruction of more than 120 unexploded aerial bombs and missiles dropped during the NATO intervention on 53 military and civilian locations. In addition, Ministry of Interior EOD teams performed deactivation, removal, transportation and destruction of 19 unexploded aerial bombs that remained from WWII. Thus far, an area of about 3.9 square kilometers (1.5 square miles) of the river Danube in Novi Sad municipality and Beška community and on the Sava River in Ostružnica community were cleared. Seven aerial bombs weighing from 250 to 1000 kilograms (551 to 2,205 pounds) were found and removed.

An MK-83 is found in Sabac, Serbia.

Ammunition Depot Detonation. Following the ammunition depot detonation on the territory of Paraćin municipality in 2006, specialized SAF teams conducted a visual examination of about 8 square kilometers (3.1 square miles) of the contaminated area and removed and destroyed more than 130,000 pieces of UXO from the surface. In 2009 and 2010, full clearance was carried out on an area of about 1.8 square kilometers (0.7 square mile) through three clearance projects. More than 1,500 items of UXO were found and destroyed, including ammunition and German bombs from WWII. This work will continue in 2011 and 2012.

Clearance. In addition to security, environmental and economic issues, demining in the Croatia–Serbia border area is especially important since clearance contributes to the further strengthening of trust and the improvement of relations between the people of Serbia and Croatia.

The last minefields to contain AP and AT mines, which were laid in the border area with Croatia in the 1990s, were removed in November 2009. A total of 6.2 square kilometers (2.4 square miles) have been demined and the northern part of Serbia has been cleared of mines. These activities were executed through 44 demining projects from 2003 to 2009. The clearance teams found and destroyed 5,139 mines and items of UXO (3,997 AP mines, 842 AT mines and 300 pieces of UXO). The agricultural land from which mines were removed has been returned to the owners and is in use. Local roads, drainage channels and the low-voltage electricity transmission network have improved. In addition, the police can now more efficiently monitor the border, thereby preventing illegal migration and other criminal activities, including human trafficking.

The minefields in the southern part of Serbia have not yet been cleared. Along with the international community, donors will be asked for assistance in mine clearance when appropriate projects are developed. Upon completion, it will be possible to declare Serbia cleared of mines. As a signatory to the *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-personnel Mines and their Destruction* (also known as the Anti-personnel Mine Ban Convention of APMBC) Serbia is working to clear its remaining landmines by 1 March 2014. In May 2007, Serbia's stockpiles were destroyed. The country is no longer a producer of AP mines.

Conclusion

The removal of ERW will create the conditions for increased human security, environmental protection, agricultural production, forest usage, drainage-channel maintenance, reconstruction and construction of tourist and industrial buildings.

Without the help of the international community and donors, Serbia cannot resolve the numerous problems related to full clearance by its APMBC deadline

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