Cluster Munitions and ERW in Lebanon

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unexploded cluster submunitions may be on the ground. However, this has not stopped many Lebanese from returning to their homes.

As soon as the ceasefire went into effect on August 14, large parts of Lebanon were covered by the 900,000 displaced Lebanese residents packed up their belongings and headed home to find access to houses and farming fields blocked by UXO, most frequently by bombshells, or cluster-bomber shells. According to Andy Gleeson, Program Manager in Lebanon for Mines Advisory Group, residents moved back to their villages for two reasons:

1. They wanted to assess the damage and protect what remained of their property, so they lived in their front yard if required for water supply.
2. Hodhod had only 13,000 houses per lost house to pay for 12 months rent, after which government paid US$5,000 per lost house.

If you’re not home, you miss out on the payments,” said Gleeson.

Children in Danger

As of October 8, 2006, 770 cluster-bomb-strike locations had been identified in the south and, according to UNICEF, there were 320 affected communities with each community having around 300 to 350 tons of unexploded ordnance in some areas and more in other areas. As of October 15, 2006, there were 20 reported fatalities and 120 reported injuries from all types of unexploded ordnance in Lebanon. Children accounted for four of the fatalities. 42 per cent of the injuries, according to UNICEF, was from lack of water, and the release of chemicals and dust, which have badly polluted the area.

As families return home, UXO has posed a major problem to children, who sometimes mistake unexploded bomblets for toys.

The United Nations Mine Action Service and the United Nations High Commissions for Refugees have partnered to provide mine-awareness training for children from villages near Tyre, where they have encountered clusters bomblets in their daily basis. They were shown photos of the kinds of UXO scattered around Lebanon, which included large, long-range bombs, especially for children who are innocent, who want to play and are totally unaware that small little toxins can be so harmful.

Dalya Farhat, UNMCCSL—SL’s Media and Clearance Officer.

In addition to the dangers of UXO, upon return, children have faced the threat of disease, especially waterborne diseases of chemicals and dust, which have badly polluted the area, causing serious health issues.

Who is Helping?

Since the conflict ended, the main goal of the United Nations and other international organizations is to work towards making southern Lebanon clear of cluster submunitions and to provide humanitarian assistance in reconstruction and recovery. UNMCCSL and the National Demining Office are coordinating clearance efforts which have so far resulted in 45,000 cluster bomblets being cleared and destroyed.

Clearance, explosive ordnance disposal and information-gathering are being carried out in part by the Lebanese Army, the United Nations Interim Force in Lebanon, Mines Advisory Group, BACTEC and the Swedish Rescue Service Agency. Lebanon is also now food-secure and its commercial sector has rebounded sooner than expected.

World Food Programme. WFP has reached more than 700,000 people since it started its emergency operation in July, targeting approximately 350,000 of the most affected people in Lebanon, the majority of them in southern Lebanon. In all, WFP has distributed more than 7,250 metric tons (7,991 U.S. tons) of food (an estimated 400,000 monthly rations) and helped the government of Lebanon import 12,300 metric tons (13,558 U.S. tons) of wheat during the blockaded period. The WFP also assisted the United Nations in transporting relief supplies such as fuel, shelter materials, water, and hygiene and medical equipment.

UNHCR/UNMAS. The partnership between the United Nations High Commissions for Refugees and the United Nations Mine Action Service has focused primarily on helping the residents return to a safe environment. It has provided tents, blankets, mattresses, plastic sheeting and cooking kits to the most heavily damaged villages.

As of the end of the conflict, UNHCR supported UNMCCSL—SL with warehousing facilities and five 6x4 trucks for rapid deployment of the mine-action teams in Lebanon.

UNHCR has also been working with the Lebanese government to find the best ways to repair houses.

UNIFIL. UNIFIL has supported the National Demining Office’s Mine Risk Education Centre to implement a campaign on radio and television and in print media to increase civilian awareness—especially in children—about the dangers of UXO. UNIFIL distributed 100,000 leaflets at army checkpoints as well.

UNIFIL has also provided over 300,800 liters (79,463 gallons) of bottled water to communities in southern Lebanon. It has also distributed 385 water kits containing collapsible containers, and purification tablets, vaccination against measles to 16,500 children, vaccination against polio to over 9,000, and vaccination against tetanus to 9,000.

UNIFIL. The U.N. Interim Force in Lebanon has provided efforts to counter the shortage of clean water in the south with the Indian and Ghanian battalions distributing 100,000 liters (24,147 gallons) to the villages of El Khiam, At Tayyreh, Kfar Kila, Tblin and Haddathah.

UNIFIL has also created peace in need of medical care, and the Indian battalion provided veterinary assistance to many animals.

UNIFIL is working to clear unexploded ordnance, mainly cluster bomblets, and a demining team from its Chinese contingent disposed of over 1,265 pieces in one week.

The Future

An estimated 12 to 15 months will be needed to clear the cluster bomblets from southern Lebanon, but it will take considerably longer for the residents of Lebanon to return to their normal lives. Despite the difficult circumstances in Lebanon, the United Nations and other international organizations working alongside the government of Lebanon are striving to clear the unexploded cluster munitions and provide the humanitarian assistance the residents need.

Jan Egeland, Under-Secretary-General for Humanitarian Affairs, says, “The civilian population of Lebanon and the people of southern Lebanon are striving to clear the unexploded cluster munitions and provide the humanitarian assistance the residents need.”

UNHCR/UNMAS. “There is a campaign on radio and television, as well as in print media to increase civilian awareness—especially in children—about the dangers of UXO. UNICEF distributed 100,000 leaflets at army checkpoints as well. UNIFIL has also provided over 300,800 liters (79,463 gallons) of bottled water to communities in southern Lebanon. It has also distributed 385 water kits containing collapsible containers, and purification tablets, vaccination against measles to 16,500 children, vaccination against polio to over 9,000, and vaccination against tetanus to 9,000.”

For additional information on the use of cluster munitions in the recent Israeli/Hezbollah conflict, see the MACC fact sheet on page 113.

See Endnotes, page 110.

Cluster Munitions and ERW in Lebanon

The recent 34-day conflict between the Lebanese armed faction Hezbollah and Israel from July 12 to August 14, 2006, saw extensive use of surface-launched munitions and air-dropped munitions (to a lesser degree), resulting in war-time casualties for military and civilian actors in both Lebanon and Israel. Since the ceasefire agreement, international post-conflict attention has become focused on Lebanon due to the large number of explosive remnants of war left behind the conflict. In particular, cluster munitions are proving problematic for post-conflict reconstruction activities in Lebanon due to their apparent high failure rate and the potential threat they pose to returning civilians, aid workers and military personnel. This article examines cluster munitions and the impact of their presence in Lebanon.

by Daniele Ressler and Elizabeth Wise [ Mine Action Information Center ]

Early cluster munitions were used in World War II and were later deployed extensively by U.S. forces in Southeast Asia during the American/Vietnam War. Billions of tons of cluster submunitions were dropped on Laos, Cambodia and Vietnam—90 million on Laos alone. Cluster munitions were further used extensively during the Gulf War and the conflicts in Kosovo, Yugoslavia and Iraq in 2003 (United States and United Kingdom).

A cluster weapon consists of a munitions container deployed by a weapon-delivery system such as a bomb dropped by aircraft, rocket launcher or artillery projectile, which then releases smaller munitions in mid-air that are spread over a particular area. These smaller submunitions, or submunitions, are designed to explode on impact or close to the time of impact. Typically the device systems are designed to carry and deploy hundreds of submunitions at a time. Submunitions are also called bomblets, bomblets, BLOS (bomb live units) or grenades.

Cluster munitions can be delivered by air or surface. Air-dropped cluster dis- pectors (a cluster bomb) are released from airplanes, and after a specified amount of time or distance, the dispenser opens to allow submunitions to fall to the ground. Surface-launched munitions are delivered by artillery launchers on the ground that fire over a long range to detonate either in the air or on impact. In the case of cluster munitions, the munition consists of a payload of submunitions that are released after the dispenser is in flight, to drop over the target area.

During a conflict, cluster weapons are used by the military for attacking an area where the target may be moving, such as a military convoy, either to attack and destroy the enemy by dropping explosive bomblets (impact) or to prevent or postpone enemy movement from or to an area by dropping devices that essentially function

Cluster munitions can be dropped from the air or on land. BLOs can be scattered from the ground as were used in the 2006 conflict between Hezbollah and Israel.
Controversy about Cluster Munitions

The dual rate for cluster submunitions varies dramatically; reported failure rates can range from 17 to 40 percent.10 Under 2 percent to over 30 percent.11 The potential- ly high failure rate of some cluster submunitions is one reason they are controversial. The range in failure rate is extreme in part because submunitions and their warheads and their parts vary greatly, particularly in that regions, warheads and their other countries to hal the production, use and sale of four such munitions: the CBUs, the M87B2, CBU-95/WC9M10- containing Bouncing Bet, and the CBU-87/B2 with the BLU-97 with 40mm cluster bomb units.12

3. Rights Watch has been developing a list of the “worst offenders” cluster munition users known to us which is currently under development. A long list of potential sacrificial villages.

4. For the purpose of this article, the United States and the United Nations has been identified as the “worst offender” by Human Rights Watch.

5. The United Nations estimates the Israeli Defense Forces fired up to 6,000 bomblets, rockets and artillery shells into Lebanon.

6. However, these and other conflicts, clearance teams have documented tills and unexploded cluster submunitions contributing to Lebanese civil war casualties.

7. It is for this reason that Human Rights Watch and others expressed concern when it was reported that Lebanon had used cluster munitions in Lebanon in the recent conflict: first reported on July 19, 2006, in the town of Bâkaa and then to Lebanon across the country with accelerated use during the last 72 hours of the conflict.13

8. The United Nations estimates the Israeli Defense Forces fired up to 6,000 bomblets, rockets and artillery shells into Lebanon.

9. More than several months after the ceasefire, the United Nations and its clearance groups are continuing to collect data to understand the implications of the conflict. The United Nations initially estimated there may be as many as one million unexploded cluster submunitions in Lebanon resulting from an exceptionally high overall failure rate of about 40 percent for the cluster submunitions fired or dropped in Lebanon during the conflict.14

10. UNOHCHR reported on the next page for information on both.

11. In this way, some consider cluster bomblets to be high-yield antitank ammunition that can become de facto anti-personnel landmines.

12. Israel claims its use of cluster bombs in Lebanon complies with international law.

Legality and Future of Cluster Munitions

The use of cluster munitions is not currently prohibited under international humanitarian law. However, part of IHL prohibits indiscriminate attacks, which employ a method or means of attack that cannot be directed at a specific military objective.15 Additionally, IHL prohibits disproportionate attacks, or attacks that “may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof.”16

In this way, some consider cluster bomblets to be high-yield antitank ammunition that can become de facto anti-personnel landmines. As of October 10, 2006, 12

As of October 8, 2006 there have been 20 reported post-conflict failures and 12 reported incidents of UXO in Lebanon, in nearly all cases from cluster submunitions.17

Four of these failures and 42 of the injuries were children 18 years old or younger.18

The United Nations has estimated it may take 12 to 15 months to clear most of the cluster submunitions and other UXOs in Lebanon.19 Because of the large footprints of cluster bomblets, for each strike location, clearance personnel must verify an area totaling 196,000 square meters (48.5 acres) to locate and destroy all unexploded submunitions.20

The United Nations reported that as of September 26, over 350 Lebanese Army personnel along with some 20 non-governmental organization and commercial companies working under the United Nations Mine Action Coordination Centre of South Lebanon and Lebanon’s National Demining Office, with additional clearance coming from United Nations International Force in Lebanon troops.21

More than 45,000 submunitions have been collected by these organizations as of October 10, 2006.22
Cluster Submunitions Reportedly Found in Lebanon and Israel

As discussed in the adjacent article, early reports soon after the end of the recent conflict in Lebanon have documented that initial findings of unexploded submunitions on the ground in Lebanon include M42x, M46x, M87x and BLU-63x. Human Rights Watch also released an unconfirmed report that states Hezbollah fired Chinese cluster munitions with Type-90 submunitions into Israel during the conflict. Most of the unexploded submunitions or fat reported are surface-launched Dual Purpose Improved Conventional Munitions, with one air-delivered submunition also documented. These submunitions and their cluster weapon dispensers are examined here.

Surface-launched DPICMs Found in Lebanon and Israel

Most of the unexploded submunitions being found in Lebanon are Dual Purpose Improved Conventional Munitions. DPICMs are designed for antitank purposes, anti-armor and, anti-personnel attack. The anti-tank feature results from a “HEAT (High Explosive Anti-Tank) shaped charge in the submunition that allows it to penetrate metal, while the anti-personnel feature occurs via an enhanced fragmentation, case-configuration on the submunition that explodes to create a powerful blast wave displacing the personnel in the open area.

The M42, M46x, M87x and M847 have a ragged ribbon which, when fired, unfurls to stabilize the bomblet. The ribbon will vibrate in the wind, arming the bomblet. If the ribbon does not unfold, or becomes entangled, the bomblet will not be armed, and therefore will not explode on impact, resulting in a bomb that could explode later. Due to the compact size of these bomblets (sometimes compared with the size of a D battery), it is possible for a majority of the duds to become hidden when they land, resulting in UXO that may or may not be hard to see but may also look like a toy to a child.

M42 and M46 (via M483AX1). One type of surface-launched cluster munition found in Lebanon was the M483AX1 155-mm artillery projectile. The M483AX1 is delivered from a Howitzer, a type of cannon artillery that can fire from the ground at high angles. During flight, the nose of the bomblet is blown off by a preset fuse, with the explosion forcing 88 submunitions out of the container to fall out over a target area. The submunitions in the M483AX1 are M42x and M46x. Sixty-four of the submunitions (the M42x) are scored, or notched, to cause them to explode into anti-personnel fragments of metal. The M46x bomblet is scored on five of the eight bomblet cases, and it contains 155 submunitions, each with five bomblet cases. The submunitions in the M483AX1 have a potential failure rate of 2% to 4%. A 4 x 10 bomblets from the M42x submunition are achieved in existing stock piles has produced a submunition that is24 more than 80%.

M85 (via M395/396). Two other types of cluster munitions used in Lebanon are the M395 and M396 155-mm artillery projectiles. These two Israeli-produced submunitions contain 63 and 49 M85 submunitions, respectively. The range of the M395 is 25 kilometers (15.4 miles) and the M396 has an extended range to 30 kilometers (18.6 miles). These 49/395/396 are similar in ballistic performance to the M483SX1. Unlike the U.S. model, however, reported submunition failure rates in testing are much lower at 1.3 to 2.3 percent. This lower rate is due to the addition of a self-destruct device and a highly sensitive impact fuse. However, by September 13, 2006, the UNMACC-SL reported that out of a total of 5,849 submunition duds they had located and destroyed, 27% were M85 submunitions.

Steve Goosse of HRW noted that the number of M85 duds was strikingly high for a submunition with a self-destruct feature that claims to dramatically reduce the failure rate. However, Colin King, international landmine and explosive ordnance disposal consultant, reports that in Lebanon, initial findings suggest that rather than one type of M85, clearance teams are actually finding three variations of the M85 with completely different designs. Two of these are variations of the dual-purpose submunition, but the third type also used does not have this feature. While both the self-destruct and non-self-destruct variants have been unexploded, further research is needed to determine their individual failure rates, the condition they were left in and why each variant failed to explode and/or self-destruct. This also implies that it is problematic for reports to refer to the M85 "without specifying which variant is mean..."

M77 (via MLRS). Essentially the most lethal method for delivering cluster munitions from the ground to a target is the Multiple Launch Rocket System. Beginning in the 2000s, this rocket system can hit a target from a mobile platform to 38 kilometers (20-23.5 miles) away. The M77 can fire 12 rockets in 60 seconds. Each rocket releases 644 M77 dual-purpose anti-armor and anti-personnel bomblets and can saturate a target 200 meters (650 feet) in diameter with these submunitions. Submunitions have HEAT warheads that can penetrate up to 10 centimeters (four inches) of steel while shrapnel can travel over seven meters (eight yards) in any direction. This average dual rate of the M77 bomblets is 5 percent according to U.S. tests; British military tests put it at 3 to 8 percent. This means that as a probable minimum (with a 5-percent failure rate), 32 bomblets from one rocket will not explode on impact, and have the potential to explode later. If an MLRS shoots 12 rockets in 60 seconds, at least 388 unexploded submunitions can be expected to be left on the ground over the targeted area during that minute. The Type-90 (via Type-81). According to an unconfirmed Human Rights Watch report, Hezbollah fired into Israeli Chinese-made artillery rockets called Type-81s that were previously unissued by an armed force anywhere in the world. The Type-81 is a 122-mm cluster munition rocket that contains 90 submunitions. Submunitions are called Type-90s (also known as M2D2s) and are dual-purpose: as they explode on impact, or they have the potential to explode later. If an MLRS shoots 12 rockets in 60 seconds, at least 388 unexploded submunitions can be expected to be left on the ground over the targeted area during that minute.

Air-dropped Submunitions in Lebanon

BLU-63 (via CBU-58/59). CBU-58/59s are aerial cluster bomb clusters containing 650 BLU-63 bomblets, developed in the early 1970s and supplied by the United States. These unexploded bomblets are half-like submunitions three inches (7.5 centimeters) in diameter with a wound steel casing that can produce 280 fragments on impact for an anti-personnel-effect. While a reliable dual rate is not known, HRW observers reported in the recent conflict seeing one canister stamped with load date of September 1973 and two catastrophic failures, where “the weapon completely failed to function and none of the bomblets was dispersed or exploded.” Unexploded BLU-63 bomblets were also found in Lebanon after Israel’s cluster bomb attacks in the conflicts in 1978 and 1982.

Conclusion

The Monnetrin Central Committee has used the phrase “drop today, kill tomorrow” to describe the danger cluster munitions UXO can pose for civilians. “It is clearly the case in post-conflict Lebanon, where unexploded cluster submunitions are already killing civilians. However, not all cluster munitions are created equal, and this issue is complex.” The debate continues with some defending the use of cluster munitions, others advocating for improvements in technology or stronger legal regulation and still others denying any use at all. What is undeniable is that cluster submunitions should have resulted in explosive remnants of war that continue to injure innocent civilians. There may be more than one solution to the problem of cluster munitions, but it demands an answer and should not be ignored. In the absence of effective submunitions, the M85 submunition in the recent Israeli/Hezbollah conflict, the M483AX1 submunition in Lebanon and the Type-81 submunition in the Lebanon/Israel conflict all need to be further researched to determine their individual failure rates.

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