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Mine-risk Education and the Amateur Scrap-metal Hunter

by Allan R. Vosburgh (Golden West Humanitarian Foundation)

In many countries where landmines and unexploded ordnance threaten populations, people ignore warnings about these hazardous explosives to collect explosive remnants of war for the valuable scrap metal they contain. The author discusses a program proposed by the Golden West Humanitarian Foundation to manage this dangerous practice.

These numbers certainly do not mean we should abandon efforts to educate the population about avoiding death and injury from mines and UXO. On the contrary, what it may suggest is new ideas are needed to address specific types of hazards and categories of potential victims, particularly amateur scrap-metal collectors.

According to reports by the Cambodian Mine/UXO Victim Information System, 353 people were injured or killed between January and August 2006 in Cambodia. Of these casualties, 62 percent were men, 8 percent were women, and 30 percent were children under 18 years of age. Fifteen-eighty percent of the casualties were people injured or killed by UXO and 42 percent by landmines.

These numbers indicate a disturbing trend in which casualties are increasing despite greater efforts to eliminate threats. This trend also exists in Vietnam, Laos, and other areas. We think it points to an underlying problem—collecting scrap metal is the new growth industry in these countries.

The Golden West Humanitarian Foundation has taken a pragmatic approach to MRE, generalizing it to become ERW-threat-indicators education. We strongly support education but believe the best way to prevent deaths and injuries is to use education as one element in a program designed to eliminate the ERW threats as quickly as possible.

Sneaky Devices

In central Vietnam and Laos, many deaths or injuries are caused in particular by unexploded cluster submunitions or 40-mm grenades. These unstable, long-lasting munitions are a widespread hazard, frequently concealed by tall grass or shallow dirt. Not only are they hit by farmers’ hoes or plows, exploded when fires are built on top of them and irreducible to children, but these dangerous munitions are often the very devices scrap-metal collectors industriously gather.

In addition, unexploded mortar projectiles can be a threat. Mortar projectiles come in a huge variety of sizes and contain a number of different fillers. In Vietnam, mortar projectiles can be found from 60-mm to 160-mm. Fillers may include a variety of types of high explosives, white phosphorus and other smoke and flares. Fuses may incorporate proximity devices, or use impact, powder-spray or timing mechanisms for initiation. Unfortunately, once the paint and markings are weathered away, it is difficult for the novice to identify the type of filler and, therefore, the explosive threat. Mortars can be small, easy to move and less intimidating than artillery projectiles and bombs. They can also be deadly.

These munitions, submunitions and grenades share a single deceptively characteristic: that can kill victims into a false sense of security: inconsistency. They are often left unexploded or destroyed due to a war-related and permanent mechanical fault in their armament or firing mechanism. However, at other times they are fired unreeled, alluring the victim, or arm but preventing firing. In these cases, items of UXO may require only heat, shock or a few minutes’ worth of time to be disarmed—sometimes years later. Firing mechanisms are complex and designed to accept input from almost any direction. Because these mechanisms are so often damaged and prevented from functioning, people come to believe they are harmless. When a civilian picks one up and it doesn’t kill him or her, that person is more likely to pick up the next one. However, the next missile or the one after that may detonate without warning, killing or seriously injuring both the victim and whoever picked it up and anyon nearby.

Challenges to Conventional MINE-risk Education Practices

So what might the problem be? Why would anyone who has received training pointing out the dangers of interacting with weapons intentionally do it anyway? Is there something about the training that makes it ineffective? Are there other factors at the warnings? Are there ways to enhance the training to make it more practical? The answers to these questions are complex and there are no easy solutions.

Many programs engaged in MRE recognize that people are frequently injured by derritionally trigger explosions in the process of their daily work, but those most resistant to behavioral change are scrap-metal collectors. Scrap-metal trading has become a well-entrenched part of many local economies throughout Southeast Asia. Scrap-metal collectors engage in their dangerous trade for a variety of reasons, but most say they simply need the money they earn from their sale. Studies have shown people are generally well-aware of the dangers they face, but feel compelled to continue the dangerous activity due to the pressures of poverty.

The Solution

The apparent failure of various kinds of education to change this risky behavior signals a need for a change in our MRE approach. Perhaps instead of spending all our energies trying to eliminate risky behavior, we should be trying to find new ways to make this inevitable behavior safer. This proposed approach will undoubtedly find many opponents who feel we are simply encouraging more risky behavior; however, at Golden West we believe in taking a pragmatic approach to behavior that we think will continue with or without our intervention. The Golden West believes we must successfully combine our experience with Explosive Remnants of War Indicators Programs and our popular Explosive Harvesting System into a concept that addresses the growing number of scrap-metal-related casualties. Educating people and providing a more robust explosive ordnance disposal response will make ERW reports hopeful encourage the public to make more reports. Rather than use training to eliminate threats from the most dangerous items (primarily submunitions, grenades and mortars), there might be ways to develop an exchange system for the less hazardous ones.

A New Response to Scrap-metal Collection

In this concept, expanded explosive ordnance-disposal teams respond to UXO reports from civilians, assess the threats and return hazardous items to be sold as scrap. For questionable items that cannot be safely removed, a fee equal to the weight of the usable metal would be paid by the team to the owner. The system of reporting would be changed so that UXO items would be transported to a small-exploration-processing facility for treatment (when feasible) and the metal parts sold to the redeeming UXO. The process would then be repeated until the hazardous part of the metal collection is small enough for processing or lost during treatment would be considered a program cost.

A buy-in-place procedure for small items (like individual submunitions or grenades) can use “developer” damage-mitigation methods such as Ms. BIP. Larger items may be controlled by chipping, sandbags or digging. Whenever possible, items will be moved away from occupied areas prior to any procedures being initiated.

An enabler program for safe procedures will be applied; no complex procedures will be attempted or absolutely no procedures that include any degree of risk to operators will be conducted. Safety will never be compromised in the interest of scrap metal. Only items the senior EOD

Table 1: Examples of options for different threats.

<table>
<thead>
<tr>
<th>Status</th>
<th>Action</th>
<th>Reimbursement</th>
<th>Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>No hazard: contains no explosive</td>
<td>None</td>
<td>None</td>
<td>Turn over to finder for sale</td>
</tr>
<tr>
<td>Extreming hazard: unexploded contains explosive (do not move)</td>
<td>None</td>
<td>None</td>
<td>Destroy on site</td>
</tr>
<tr>
<td>Dangerous: sized and contains high explosive (transportation hazard)</td>
<td>Attempt render-safe procedures</td>
<td>Treatment facility or BIP</td>
<td></td>
</tr>
<tr>
<td>Dangerous: unexploded, contains explosive (no transportation hazard)</td>
<td>Transport to safe holding area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As determined by EOD only.

Team Leader considers safe to transport will be moved off the site. These items will then be independently inspected by EOD personnel prior to being brought into any safe holding area.

Remittances will be established as a reward system for reporting and items undetected, and as a safe means for
people to obtain needed money in exchange for suspect items. There will no longer be an excuse that they had no choice because we are providing a choice. People do not need to endanger their families, neighbors or themselves to make a little extra money.

The senior EOD Team Leader will be provided with small amounts of cash to do on-the-spot reimbursements for dangerous items removed by the team. Scrap resulting from processing of munitions will be sold and any profits reinvested in the program. Any recovered explosives will be used to support disposal of other unusable munitions. There will be a strict system of accounting for funds. The physical inventory of munitions in the program's safe holding area validates the expenditure of funds. Despite the closed-loop character of the program's safe holding area validates the expenditure monitored via closed-circuit TV. With some modifications, Disposal tools will be appropriate for use in the demilitarization facility. When fuses cannot be safely removed, projectiles can be cut behind the booster or fuze base. Once the forward part of the projectile is removed, the explosive can be reaunched and the fuze portion bummed in a portable demilitarization furnace. Once the explosive charge is removed, the metal is added to the scrap to be sold. No fuses containing primary explosives will be held and all will be melted with heat or destroyed by detonation.

The key to this program will be well-trained, competent EOD and demilitarization personnel. They must be willing to submit to a stringent training and quality assurance/quality-control program, and concentrate on safety at all times. All the skills needed to make an EOD team effective can be taught or reinforced by this program. Large areas of land can be cleaned of the most dangerous items in fairly short order by these teams. While the teams will do no subsurface clearance past shallow-buried projectiles, the surface clearance will pay big dividends.

Conclusion

Despite repeated warnings and dedicated MRE programs, casualties from scrap-metal collection continue to increase. It seems warnings aren't enough and high-risk behaviors like collecting scrap metal must be addressed by either technical or economic solutions. This proposed program combines these two elements and helps address root causes through the application of new technologies and incentives. The concept includes provisions for assisting scrap dealers who currently traffic in dangerous munitions. The program may also help eliminate the illegal collection and use of explosives for fishing or other illicit purposes. It certainly is not a total solution, but it may be a leap forward in reducing the climbing rates of injuries and deaths resulting from the scrap-metal business. Costs of this program could easily be offset by real reductions in the fiscal and societal costs resulting from scrap collection and related deaths and injuries. Golden West will develop and implement this program when funding is secured.

The Aftermath of War

The recent conflict between Hezbollah and Israel resulted in many civilian victims and though the fighting has ended, the problems are nowhere near over for the civilians of Lebanon whose country is littered with cluster bomb pieces. This article explains the effects of the conflict on Lebanon's civilians and describes how organizations are trying to eradicate the cluster submunitions problem and provide aid to affected civilians.

by Katie FitzGerald [Mine Action Information Center]

After 34 days of fighting between Israel and the Hezbollah militia in southern Lebanon, the United Nations Security Council adopted Resolution 1701 on August 11, 2006, which was aimed at ending hostilities, and a ceasefire entered into force August 14. Despite only a month of fighting, the conflict greatly disrupted the normal lives of many Lebanese due to the damage to their homes and fields, and the remaining unexploded ordnance—mainly cluster submunitions—that littered the ground.

The conflict killed over 1,500 people, many of whom were Lebanese civilians, and displaced approximately 900,000 Lebanese and 300,000 Israelis. The victims

Many of the victims of this conflict were civilians in Lebanon and Israel. As artillery and missiles were fired by both Hezbollah and Israel, approximately one-quar-ter of the Israelis killed by Hezbollah and the majority of the Lebanese killings by Israeli forces are re- ported to have been civilians.

Little information is available on UXO in Israel, but it is clear that the estimated 1,800 cluster bombs (containing over 1.2 million cluster bomblets) fired into Lebanon have devastated the local infrastructure. Along with houses and fields destroyed, hospitals, schools, bridges, roads, factories, airports and main seaports were also demolished. Particularly affected areas were southern Lebanon, Beirut and the Bekaa Valley. The southern part of Israel was most affected by Hezbollah attacks, which some- times consisted of 150 rockets fired per day. It has been reported Israeli used cluster munitions primarily de-lo- ted by artillery projectiles, followed by Multiple Launch Rocket Systems and a lesser number of aerial cluster bombs. MLRS in par- ticular are believed by many to be highly inaccurate.

The rockets are designed to burst into submunitions at a planned altitude in order to blanket the enemy army and personnel on the ground with smaller explosive rounds. The cluster rounds that fail to detonate—believed by the United Nations to be up to 40 percent for some munitions fired by the Israeli Defense Forces in Lebanon—remain on the ground as unexploded submunitions. In ad- dition to the cluster submunitions, an estimated 15,300 items of unexploded ordnance—including air-dropped bombs of 500 to 2,000 pounds (220 to 900 kilograms), ground- and naval-launched artillery rounds and air-delivered rockets—now litter the ground in southern Lebanon.

In August 30 Reuters AlertNet article, Stephane Jaquent, a United Nations High Commissioner for Refugees representative in Lebanon, said the organization’s top priority following the conflict was the safe return of the approximately one million Lebanese who fled the month-long war. Though U.N., Lebanese Army and non-governmental clearance teams im- mediately started removing bomblets and other UXO, the United Nations and the government of Lebanon have remained seriously concerned about the danger residents could encounter. At the time of writing, the United Nations Mine Action Coordination Centre of Southern Lebanon assessed approximately 85 percent of southern Lebanon for cluster-bomb strikes, and it is estimated that up to one million