August 2006

Mines and ERW

Bob Kudyba

Follow this and additional works at: http://commons.lib.jmu.edu/cisr-journal

Part of the Defense and Security Studies Commons, Emergency and Disaster Management Commons, Other Public Affairs, Public Policy and Public Administration Commons, and the Peace and Conflict Studies Commons

Recommended Citation
Available at: http://commons.lib.jmu.edu/cisr-journal/vol10/iss1/30

This Article is brought to you for free and open access by the Center for International Stabilization and Recovery at JMU Scholarly Commons. It has been accepted for inclusion in Journal of Conventional Weapons Destruction by an authorized editor of JMU Scholarly Commons. For more information, please contact dc_admin@jmu.edu.
Mines and ERW

Due to the history and nature of conflicts in the Ethiopia/Eritrea area, cleanup presents specific considerations and hazards. The lessons learned by the United Nations Mission in Ethiopia and Eritrea Mine Action Coordination Centre in mine/explosive remnants of war cleanup are presented, as well as recommendations on clearance operations for situations with mixed mine/ERW like that in Ethiopia and Eritrea.

by Bob Kudyba (UNMEE MACC)

Mines and explosive remnants of war continue to affect many parts of the world. One such area is the Horn of Africa, where wars have continued for the better part of the 20th century. U.N. Security Council Resolution 1244 formally established the United Nations Mission in Ethiopia and Eritrea in November 2000. At the same time, the U.N. Security Council formally established a Mine Action Coordination Centre within the United Nations Mission in Ethiopia and Eritrea. The resolution requires the MACC to coordinate and provide technical assistance for humanitarian mine action activities in the TSZ [temporary security zone] and area adjacent to it.

History of the Mine and ERW Problem

The mine and ERW problems of Ethiopia and Eritrea stem from the 1991 war. Eritrea was colonized by the Italians in the 19th century. During the Second World War, Italian and British forces fought a number of battles across Eritrea, culminating in a major siege on the town of Keran in 1941, which lasted nearly three months. These battles were fought in a conventional manner, consisting of aerial bombardments, and small-field armies firing mines and emplacement. Certain areas around Keran are considered hazardous today due to suspected contamination by mines and unexploded ordnance, particularly in the hills surrounding the township. Keran was the scene of a major battle again during the independence war years between 1961 and 1991.

After the Second World War, Eritrea was governed by Great Britain until the early 1900s, when it was handed over to Ethiopia, Eritrea, and the British. This relationship continued until 1993, following a U.N.-monitored referendum in which the population voted overwhelmingly for independence, the situation between Eritrea and Ethiopia was cordial. This relationship continued until several issues arose, including the introduction of a new currency, the birr, which replaced the Ethiopian birr. The situation eventually deteriorated into a war lasting from 1998 to 2000 over demarcated border issues. In 2000, Algeria brokered a peace accord.

This border war was an intense conflict, with both sides employing conventional war strategies that developed into a carefully planned and executed military operation reminiscent of World War I. The war was fought at terrible cost with an estimated 70,000 people killed and thousands more displaced. As a result of this conflict, the entire border area between the states has experienced the devastation of the Federal Republic of Ethiopia and the northernmost province.

Interrelationship between Mines and ERW

The complex nature of Eritrea and the northern areas of Ethiopia remain contaminated with mines and conventional ERW. In a recent incident, a truck driver collecting stones for a building site was killed when his vehicle drove over a landmine on a vacant site just off a main road near the capital, Asmara. This mine was a remnant of the independence war years, quite possibly overlooked when the area was vacated.

In examining the history of the conflicts that have engulfed the region, mines and ERW are intertwined menaces rather than separate entities. It is not safe to just walk out to unexploded ordnance or an abandoned tank and attempt to remove or destroy items without operational combat failure rates of U.S. munitions.27 This is a remarkable admission of failure. As a result of these confrontations, Germany and Belgium are considering a strategy of narrowing the definition of cluster munitions so that a ban excludes advanced models that are not expected to be problematic.28 The United States is not Belgium, but even the U.S. military, having distributed its own radiological report in advance of the CCW, seems to be willing to consider major changes in its arsenal. For the first time in a long time, a significant international restriction on certain cluster munitions appears to be within reach.

Continuing Debates

From the start, many ICBL campaigners had difficulty condensing technical measures to address high-cluster-munition failure rates. They campaigned against self-destruction, self-destruction and self-destruction and self-neutralization solutions for AAMs and worry that supporting technical fixes now may compromise an absolute principle defended earlier. However, what if major players refuse to join an all-out ban on cluster munitions, even if they support a comprehensive ban on anti-personnel mines?

Controversy also surrounds the debate over what an “acceptable” failure rate might look like. Less than 1 percent failure in a typical cut-off point, but is also arbitrary. A very small percentage of a very large number can still be a humanitarian disaster, albeit a much-reduced danger compared with that produced by a 10- to 30-percent failure rate.

Yet, there may be a harm-reduction imperative to postponing destruction of certain more problematic “worst culprit” munitions, whatever the future holds for a complete ban. There is consensus within the CMIC for a moratorium on use, production and trade of cluster munitions until their humanitarian problems have been resolved—but not everyone has been in favour of prioritizing.26 Does highlighting the bulk of the problem legitimize what remains? Some worry that humanitarian law will be ignored and they have suggested that cluster munitions might be included in a similar manner only if their failure rates are “fixed.” Will militaries rotate to other bombs, causing more casualties, if cluster munitions are banned entirely?

An interesting reverse-onsite framework outlined by Landmine Action (UK) and consistent with one of the conclusions of the McCormack report is that governments should recognize all cluster munitions are assumed prohibited unless users can “opt in” with a guarantee that they will not use munitions that can be used safely. Might that approach fit nicely with the destruction of legacy munitions with the highest failure rates?

A final point: If the failure rates of cluster munitions were reduced to infer next to nil, would there remain a humanitarian problem on a scale sufficient to sustain a campaign for a comprehensive international ban?

See Endnotes,” page 110

Kudyba: Mines and ERW

New E-mail: Kudyba@sympatico.ca
Tel: +1 613 759 4142

Robin Collins has been active in the APAM campaign since 1996 and in the ICLB campaign since 2000. He represented the United Nations Mission in Eritrea, and was Co-chair of the Mine Action Working Group. Currently he is Co-chair of the Mine Action Working Group.

Mines and Explosive Remnants of War

For the first time in a long time, a significant international restriction on certain cluster munitions appears to be within reach.
first establishing the history of the area and what military actions occurred there. This provides a perspective on the history and explosive-ordnance-disposal team operations in the area. Deseconomies conducting clearance operations sometimes encounter UXO and other ERW, including submunitions, landmines, and unexploded ordnance, even if the area is now peaceful. The organization has begun reconnaissance work to locate and identify more landmines in need of clearance.

### Problems Confronting the Clearance Operation

A scenario of this type presents additional problems to the clearing agency. What is perceived as the greater danger—the mined ground or the unattended ERW? In many cases, local inhabitants burning their animals to encountered UXO lying on the ground and resting to throw stones at it, through either accident or by design. Disabled or destroyed tanks and other vehicles with supplies of ammunition present further challenges.

### Clearance Operations

**ERW Encountered within UNMEE**

Most conventional ERW items encountered within the UNMEE’s operations consist of small-arms ammunition, mortars, artillery shells to 155 mm and Rastov Machine-rocked-propelled grenade-type rockets. These items are caused to a number of casualties among the local population living within the TSZ and adjacent areas. Often the casualties are children, who are by nature and play with the items they encounter. These items, although usually small, can inflict quite horrific injuries to the child. A number of submunitions and aerial bombs have also been encountered during field operations. Submunitions have streamers and are an attractive shape and colour that readily attract a child’s curiosity.

**ERW Item**

- **Recorded in Incident**
- **Quantity Found Following Incident**

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes—2</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 hand grenade</td>
<td></td>
</tr>
<tr>
<td>Chinese wooden HG (type unknown)</td>
<td></td>
</tr>
<tr>
<td>M 75 Yugoslav HG frag</td>
<td>Yes—1</td>
</tr>
<tr>
<td>FG hand grenade</td>
<td></td>
</tr>
<tr>
<td>Russian HG RGK3</td>
<td></td>
</tr>
<tr>
<td>RPG rocket</td>
<td>Yes—2</td>
</tr>
<tr>
<td>A fuse from an RPG rocket</td>
<td>Yes—1</td>
</tr>
<tr>
<td>Anti-aircraft bullet</td>
<td>Yes—1</td>
</tr>
<tr>
<td>PMOZ</td>
<td>Yes—1</td>
</tr>
<tr>
<td>PMN</td>
<td>Yes—2</td>
</tr>
<tr>
<td>TM-46</td>
<td>Yes—5</td>
</tr>
<tr>
<td>TM-57</td>
<td>Yes—1</td>
</tr>
<tr>
<td>Belgian plastic PRBM3</td>
<td>Yes—13</td>
</tr>
<tr>
<td>Czechoslovakian PT-MI-BA III</td>
<td>Yes—1</td>
</tr>
<tr>
<td>Unidentified HG</td>
<td>Yes—3</td>
</tr>
<tr>
<td>Unidentified UXO</td>
<td>Yes—4</td>
</tr>
<tr>
<td>Unidentified AT mine</td>
<td>Yes—24</td>
</tr>
<tr>
<td>Unidentified explosive</td>
<td>Yes—1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>67</td>
</tr>
</tbody>
</table>

**Table 1: ERW Encountered in the UNMEE**

*Source: UNMEE MACC Preliminary Investigation Reports 2001–2005*

**Clearance Operations Recommendations**

As a result of identifying and mitigating the ERW problems in Ethiopia, UNMEE MACC has several recommendations for developing a good-c clearance operation. A thorough investigation is a critical. A great deal of the information can be gleaned from discussions with various parties, including local inhabitants, militia, police and military personnel. Past operational reports from the area will also be of assistance. If the region was the subject of an Impact Survey and/or Technical Survey, it is also extremely important to consult the data presented in these reports. The clearance operation should examine the following:

- **What is the history of the area?**
- **What forces and equipment were involved?** This will give an indication of the types of ERW likely to be encountered. For example, tanks and artillery will mean larger ERW; submunitions can be delivered by artillery. Aerial bombardments would suggest the need to be conscious of larger-scale ordnance, what measures need to be adopted to mitigate the effects of destroying the items.

- **Did the contaminated land change hands?** It is the experience of UNMEE MACC that cleared areas that changed hands resulted in many of the mines left behind. It is also important to be very careful in these cases.

- **What were the items of ERW encountered in operations to date?** This will determine the level of expertise required to deal with likely finds as the clearance operation encounters the items.

- **Determine the level of expertise required to complete the task and deal with any finds in the course of its mission.** It is important that any clearance operation have adequately trained personnel to deal with ERW likely to be encountered during the course of any task.

**Conclusion**

The experience of the UNMEE MACC is that mines and conventional ERW are an unwieldy part of many clearance operations. However, it is essential to factor a worst-case scenario into any plan. The types of ERW encountered will determine the level of expertise required to complete the task and deal with any finds in the course of its mission. Should the item(s) be destroyed in situ or removed? If the item(s) cannot be moved due to lack of specialised equipment, what measures need to be adopted to mitigate the effects of destroying the items?

Abandoned, military vehicles need to be checked for ammunition and other explosive devices. The presence of any potentially hazardous substances needs to be considered.

---

*Bob Kudjaha is currently serving as the Operations Officer for the United Nations Mission in Ethiopia and Eritrea’s Mine Action Coordination Centre, based in Asmara, Eritrea. Prior to joining the United Nations, he served for 27 years in the Australian Army, working in many fields, including EOD and training. He has worked in various capacities in many areas, including Pakistan, the Solomon Islands and northern Iraq, and is now engaged in borderline and unexploded ordnance clearance efforts.*