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Anti-Vehicle Mines - Experience from Field Operations

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**Introduction**

United Nations (UN) involvement in “modern” humanitarian mine action began in 1989 with the establishment of the Afghanistan programme. Since then, the UN has provided assistance in more than 20 other countries, and has now developed considerable experience and lessons learned regarding the threat posed by mines other than anti-personnel mines (MOTAPM).

This paper will provide the perspective on MOTAPM from field operations. The aim is to promote discussion of this particular issue during the meeting of the Group of Government Experts.

**Humanitarian Impact of MOTAPM**

Humanitarian mine clearance operations are often established as part of an overall response to a humanitarian emergency situation, usually in the aftermath of a conflict that has forced many of the local population to become refugees or internally displaced. The movement of civilian populations into mine-affected areas is a major problem to be overcome, particularly when routes are suspected or known to have been mined. Organised refugee return is often possible only after routes have been cleared, which, despite lending itself to the use of mechanical systems and dogs, is still a time consuming process.

This situation was particularly prevalent in Cambodia, and to an even greater extent in Angola, where MOTAPM still remain a major threat. The UN Angola Verification Mission (UNAVEM) encountered extreme difficulty fulfilling its mandate because more than 7,000km<sup>1</sup> of primary roads were considered unsafe. Today, surveying and route clearance still remains a fundamentally vital task to facilitate the safe return of displaced persons and delivery of food aid in Angola. As recently as 11 July 2002<sup>2</sup>, a road was closed when a food aid truck detonated a mine, which seriously injured one person in the blast. The necessity of delivering aid throughout the country means that calculated risks must be taken, and in this instance a serious situation occurred.

MOTAPM are an effective and difficult weapon to counter when used by combatant groups to disrupt peace-keeping or humanitarian relief operations. In Cambodia in December 1992, two MOTAPM were placed on a route frequently used by UN agencies and civilians alike. On this occasion, six UN police personnel were wounded (two seriously), and two vehicles destroyed, in an incident that severely undermined the confidence of the local population and UN employees alike. It placed even greater pressure on the limited helicopter assets in theatre, as this was one of the few options available to counter the risk of further mine attacks.

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<sup>1</sup> Angola – The Development of Indigenous Mine Action Capacities DHA Study Report, p31.

<sup>2</sup> IRIN Report dated 11 July 2002.

A similar situation occurred in Burundi, when over the period Nov 96 – Jul 98, more than 50 MOTAPM incidents were reported to the UN Security Cell<sup>3</sup>. In addition to the hundreds of people killed and injured in these incidents (many of the vehicles hit were busses and trucks overloaded with people), these incidents severely disrupted the flow of food aid to some 345,000 people<sup>4</sup>. MOTAPM had also been previously used to kill and intimidate aid workers in Burundi. As early as in 1993, the ICRC Head of Delegation was involved in a mine incident. Subsequently, in October 1995, the ICRC was forced to suspend all of its truck-in water supplies to 100,000 people in Bubanza province after a powerful mine damaged one of its water tankers.<sup>5</sup>

More recently, in May 2000, three Kosovo Serbs were killed when a MOTAPM was placed on a road linking Serbian villages near the town of Preoce, Kosovo. The mines were laid despite heavy NATO security presence in the area, and dealt a major blow to confidence in the reconciliation process. The incident forced NATO troops to undertake route clearance operations on a daily basis, in order to deter a similar attack.

Furthermore, during the intervention by the international community into the 2001 unrest in the FY Republic of Macedonia, which threatened to erupt into all out civil war, two European Community observers were killed when their vehicle drove over a MOTAPM whilst undertaking their monitoring duties. The incident highlights the vulnerability of personnel engaged in peace support operations throughout the world, to the devastating effects of MOTAPM when they are used against non-armoured vehicles.

The nature of MOTAPM is that they need not be used in great numbers in order to cause severe damage and disruption to normal activities. Single mines placed in strategic locations can cause entire roads to be closed to movement. The clearance effort required to reopen the route is disproportionately higher than the effort required to create the threat.

### **Effect of MOTAPM on Humanitarian Mine Clearance Operations**

MOTAPM are encountered during mine clearance operations in a majority of the programmes throughout the world. The particular threat they pose has an effect on the conduct of humanitarian mine clearance operations.

#### **Mechanical Clearance**

Mechanical clearance systems are an important tool used to increase the speed of minefield clearance operations. In particular, machines are used to prepare areas for manual clearance by removing vegetation, and in an area reduction role to define the extent of the mined area. However many machines have limited survivability against the effect of a MOTAPM blast, and this thereby limits the employment of the equipment.

This particularly applies to mines that have an integral shaped charge, which is designed to penetrate armoured protection. Mines such as the TMRP-6<sup>6</sup>, which is regularly encountered in the Balkans, pose a significant threat to the safety of the operator, and will cause significant damage, if not destroy most machines.

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<sup>3</sup> UNMAS Inter Agency Assessment Report, Burundi, dated 24 Aug 98, p2.

<sup>4</sup> Ibid. p3

<sup>5</sup> Ibid. p5

<sup>6</sup> The TMRP – 6 has a Misznay Schardin warhead which can penetrate 40 mm of armour plate at 0.8m

## Minimum Metal Mines

Many of the modern MOTAPM are of the minimum metal type, which, if laid without “detector discs” are very difficult to locate with metal detectors, and increases the likelihood of mines being missed. This can lead to the use of “prodding” or “sapping drills”<sup>7</sup>, which dramatically increases the time taken to conduct the clearance. Minimum metal MOTAPM are commonly encountered throughout the Balkans, Afghanistan, Angola and the Caucasus.

## Anti-Handling Devices

Although it is common practice to destroy mines in-situ during humanitarian mine clearance operations, on some occasions it is preferable to neutralise or disarm mines for removal and bulk destruction in a centralised demolition area. Some reasons for this include:

- When dogs are going to be utilised for quality assurance purposes across the cleared area, destroying mines in-situ can contaminate the area with small fragments of explosives.
- The destruction of metal cased MOTAPM can contaminate the area with metal fragments, making the use of metal detectors more difficult and thereby slowing down operations.
- When destruction of mines, particularly MOTAPM which can contain up to 10 kg of explosive, will cause significant damage to farmland or infrastructure such as roads, buildings or bridge abutments.
- When explosives are in short supply making bulk demolition the most efficient destruction technique.

MOTAPM, which can be fitted with anti-handling devices<sup>8</sup>, pose a particular threat to the demining personnel, and must be pulled from a safe distance before being removed. Such procedures are time consuming, as safety reasons dictate that clearance activities in the close proximity must be stopped whilst the mine is pulled.

Furthermore, anti-handling devices also pose a potential threat to the civilian population in that they can cause the mine to actuate if picked up by the unwary. Indeed, given the fact that the anti-handling threat is widely recognised amongst military organisations, the most likely people to fall victim to these devices are civilians, who in many countries are forced to clear mines out of sheer necessity.

## Conclusions

MOTAPM pose a significant humanitarian threat in the field. They have a documented history of causing death and injury to civilians, aid workers and peace-keepers throughout the world. They are easily employed and capable of causing enormous disruption to normal life, as well as severely impeding the already difficult task of post-conflict reconstruction.

The threat posed by MOTAPM has an effect on the conduct of humanitarian mine clearance operations.

- The mines are powerful enough to seriously damage mechanical systems, which are an essential part of integrated clearance operations. Any reduction in the ability to employ machines increases the time required to complete the task.
- The threat posed by anti-handling devices has an impact on clearance techniques and increases the time required to clear minefields. Further, the military utility of anti-handling devices is

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<sup>7</sup> Prodding drills involve pushing a probe into the ground on an angle at regular intervals in order to locate buried mines, whilst sapping drills involve the complete excavation of the soil down to a pre-determined depth.

<sup>8</sup> Defined as a device intended to protect a mine and which is part of, linked to, attached to or placed under the mine and which activates when an attempt is made to tamper with the mine.

questionable, and they pose a potential humanitarian threat.

- Minimum metal MOTAPM are a serious impediment to efficient clearance operations and increase the possibility of mines being missed by clearance personnel.
  - Unmarked and unrecorded MOTAPM cause significantly larger areas to be cleared than is actually required.
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