GROUP OF GOVERNMENTAL EXPERTS OF THE STATES PARTIES TO THE CONVENTION ON PROHIBITIONS OR RESTRICTIONS ON THE USE OF CERTAIN CONVENTIONAL WEAPONS WHICH MAY BE DEEMED TO BE EXCESSIVELY INJURIOUS OR TO HAVE INDISCRIMINATE EFFECTS

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Working Group on Mines Other Than Anti-Personnel Mines

MINEFIELD MARKING METHODOLOGIES
Presented by the Australian Delegation

INTRODUCTION

1. Military forces use Mines Other Than Anti Personnel Mines (MOTAPM) as a means to block, fix, turn or otherwise disrupt an enemy's preferred course of action and as a psychological tool to generate uncertainty in the mind of an enemy commander, his staff and his soldiers.

2. The protection or delineation of a nation's borders may require the establishment of permanent minefields however combat operations may dictate the use of both well delineated minefields, formally marked, and the use of rapidly emplaced systems, with little or no warning of their presence being given. It is widely acknowledged that these and other types of minefields create long term humanitarian hazards both during conflict and once stability has returned.

AIM

3. This paper will discuss common types of minefields, extant methods of marking minefield hazards and proposes for the purposes of discussion a methodology to transition current minefield marking practices to a proposed higher standard system over a timeframe to be agreed as part of future CCW discussions.

BACKGROUND

Minefield types

4. While terminology may vary from nation to nation the general purposes behind a minefield's emplacement are consistent. There are several different types of minefields and for the purposes of this paper they are categorised as follows:

(i) **Tactical**. A tactical minefield is one that forms part of a formation obstacle plan laid to delay, channel or break up an enemy advance.[1] It is generally laid deliberately, in slow time and in advance of anticipated enemy movement. It is often laid according to pattern and is well recorded and marked. Long term border security minefields would broadly fit into this category.

(ii) **Protective**. A protective minefield is employed to assist a unit in its local close-in protection. These are generally laid according to the local short term tactical plan and may be less well marked and recorded than tactical minefields.[2]

(iii) **Nuisance**. A nuisance minefield is designed to delay and disorganise the enemy and to hinder his use of an area or a route.[3] Its primary effect is psychological as it induces an enhanced level of mine awareness or 'mine phobia'. Off-route mines can be counted in this category of minefield.

(iv) **Rapidly emplaced**. A rapidly emplaced minefield is laid without regard to classical pattern and is designed to be either remotely delivered by aircraft, artillery, missile, or ground dispenser or laid by hand. Once laid, it normally has a limited life.[4]

(v) **Phoney**. A phoney minefield is an area free of mines used to simulate a minefield or part of a minefield, with the objective of deceiving the enemy.[5]

Minefield marking methods

5. There are a variety of minefield marking methods available to ensure that both civilians and adversarial forces are made aware of the presence of deliberate tactical and protective minefields. There are variations in doctrine amongst the states party to the CCW discussions concerning MOTAPM that result in formal marking protocols, such as fencing, being removed to provide additional uncertainty to an enemy once conflict has commenced.

6. Historically this action has been predicated on the belief that once conflict commences the civilian population will remove itself from the area of operations until some stability returns. Recent experience in Afghanistan and Iraq would suggest this is not the case. While the onset of conflict should bring a heightened awareness to the local civilian population it none the less creates a more significant humanitarian problem when minefield fencing is removed.

7. It is not possible for most armies to change long established doctrine without giving them the appropriate time to adopt new equipment types, to consider new operational paradigms and to establish new operating procedures. Nations and their armies will only change when they

believe they can adopt new equipment and processes without compromise to their nation's security therefore a transition period is required.

PROPOSED METHODOLOGY

8. While it is desirable to have the highest feasible marking standards in place at the earliest opportunity it may not be realistic for some nations to adjust their doctrine so quickly. As such, it would seem appropriate for a minimum essential standard to be agreed upon and for a transition period to be set that would require states parties to move from the essential to the desirable standard.

9. Noting also the doctrinal variations of the states parties it would also seem appropriate that these desirable and essential characteristics are described in terms of pre-conflict/long term border security, conflict and post conflict standards.

10. Noting also the discussions of the 8th meeting of the GGE, Australia believes the Irish Proposal provides the most suitable model for the desired end state. That is:

(i) As per the Irish Proposal, persistent MOTAPM will not be laid outside of marked and fenced areas. However, MOTAPM may be used without marking areas in the cases of off-route mining, nuisance and remotely delivered minefields.

(ii) MOTAPM used for nuisance mining, off-route mining and remotely delivered minefields are to have the following features:

(a) Self neutralisation, self deactivation and self-destruct features to ensure that after a given timeframe, no more than a specified percentage of the mines will remain.

(b) In the future consideration be given to the inclusion of inbuilt command and control features to provide the capability to remotely arm or disarm a minefield.

Marking systems

11. **Immediate Warning**. Immediate markers are used to mark hazards encountered by military or civilian personnel expediently until a long-term or more permanent marker can be established. The basic pre-requisites for these markers could be:

(i) employment and marking means directed at identifying the hazardous areas as quickly as possible;

(ii) man-portability;

(iii) visibility at 50m indicating the location, direction and type of hazard; and

(iv) the marking material(s) have a lifespan of at least 60 days.[6]

12. Immediate markers could include but should not be limited to:

(i) mine tape;

(ii) wire, pickets and signage;

(iii) bollards;

(iv) painting of natural features such as trees and rocks in hazard recognition colours; or

(v) other locally available materials.

13. Appropriate elements of the hazard and marking details would be promulgated to military units and the civil population as soon as is practicable.

14. **Long Term Warning**. Long-term markers are proposed to be used if the hazard is to remain in location for some time or when immediate hazard markers need to be replaced and upgraded.

15. The minimum standard of a long term warning sign might be as follows:

(i) A fence (minimum single strand of barb wire) to waist height with appropriate military mine hazard recognition markers at intervals appropriate to the terrain and vegetation.[7]

(ii) Permanent signage, visible by day and by night, both proximate to the hazard itself and on all identifiable routes into the area in which the hazard is contained.

16. Provision could be made to enhance the standard of the fence by adopting a best efforts approach. This could include but should not be limited to any or a combination of the following options:

(i) A permanent cyclone fence reinforced with barbed wire and anti-climbing measures inclusive with mine hazard markers at specified minimum intervals and type,

(ii) Concertina wire and pickets,

(iii) Concrete barricades,

(iv) Electronic monitoring systems, or

(v) Other locally available materials.

16. **Standards**. As previously noted two standards of mine marking are proposed. Essential characteristics are those marking methods that must be achieved now while desirable characteristics are those methods that are desirable now but that would be considered essential after a set period of time after ratification of an agreed protocol.

17. The proposed marking types to the minimum standard are shown on Table 1 within the annex to this document. This table does not include detail of other actions that would be occurring such as the prioritising and clearance of known mine affected areas following marking or the humanitarian mine awareness education that should occur at the earliest opportunity following the introduction of mines into an area.

18. The proposed mine marking method sets minimum 'best efforts' guidelines to be adhered that are both commonsensical and flexible in application during conflict. For the purposes of initiating discussion they are perhaps overly prescriptive at this stage. However, the method diverges little from current international marking conventions and it does not introduce new types of recognition protocols, but rather stipulates the minimum standard for marking types of minefields. The introduction of new 'smarter mines' would not interfere with the proposed methodology of marking minefields.

19. **Practical difficulties**. As is the situation in many of the areas where there is a humanitarian MOTAPM problem the materials needed for marking may not always be available or affordable or they may be overly attractive for alternate uses.

LIKELY BENEFITS

20. Defining minimum standards for marking mines areas and setting a transition timeline to establish a protocol to mark various types of minefields is a positive step to minimising humanitarian effects of these weapons and an aid to 'cleaning up' affected areas post conflict. Similarly, uniformly recognised minefield marking procedures will assist in decreasing the number of inadvertent casualties caused by MOTAPM.

CONCLUSION

21. This proposal seeks to propose a transition path from current minefield marking practices to a desired end state. Its aim is to minimise the likelihood of inadvertent civilian casualties by increasing the chance of recognition of mine hazards during passage of a route or an area. The intent is not to develop a new marking system but to provide a framework for the development of uniformly recognised best efforts minefield marking procedures that will assist in decreasing the number of inadvertent casualties caused by MOTAPM.

22. Proposing pre-conditions for essential and desirable standards for minefield marking increases the recognisability of mines as a hazard to non-combatants but does not preclude the use of mines as a tactical warfighting weapon.

Notes

1. Primary Standardisation Offices, 1998, *QSTAG 943 - Glossary of Engineer Terminology*, Washington, p. 54.

2. ibid, page 49.

3. ibid, page 47.

4. ibid, page 53.

5. ibid, page 47.

6. Combat Arms Training Centre, 2003, *Land Warfare Procedures - Combat Arms (Combat Engineers) [LWP-CA 2-1-6] Marking of Hazardous Areas and Safe Routes*, Puckapunyal para. 2.15.

7. ibid, para. 2.17.

Bibliography

Army Doctrine Centre, 1997, *Corps Training Note Part 3 - Counter Mobility, Volume 4, "Employment, Recording and Reporting of Stackable Mines"*, Georges Heights.

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