SLNMAS 05

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Marking
Mine and ERW hazards

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Warning

This document is current with effect from the date shown on the cover page. As the Sri Lankan National Mine Action Standards (SLNMAS) are subject to regular review and revision, users should consult the Sri Lankan National Mine Action Centre.

Contents

Introduction

The marking of mine and UXO hazards is undertaken to provide a clear and unambiguous warning of danger to the local population, and where possible to install a physical barrier to reduce the risk of unintentional entry into hazardous areas.

The marking of mine/ERW hazards is just as important as the clearance of the hazard and MRE. The proper marking of the hazardous areas also assist in the prevention and reduction of mine/ERW incidents under the local population. The constant monitoring and maintenance of the marking is however very important.

The longer a hazardous area will remain hazardous before any clearance is being done the more permanent the marking shall be.

Marking - Mine and ERW hazards

1. Scope

This SLNMAS specifies the minimum requirements for the marking of mine and UXO hazards and hazardous areas in Sri Lanka.

It does not specify marking systems used by organisations during demining operations. Standards and guidelines for marking systems used during demining are addressed in SLNMAS 04.20 (Technical survey), SLNMAS 04.30 (Manual Demining), SLNMAS 04.40 and (Mechanical demining).

2. Hazard marking systems in Sri Lanka

The design of mine and UXO hazard marking systems shall take account of local materials freely available in the contaminated region and the period for which the marking system will be in place.

It is generally accepted that materials used in marking systems should have little, if any, intrinsic value or practical use for purposes other than mine and UXO hazard area marking. Materials with an intrinsic value, which are combustible, or have any other potential local use, are likely to be removed. Indeed, under certain circumstances, all signs may be tampered with unless precautions are taken.

Where marking systems are erected close to residential areas it is important that the community liaison teams and other MRE teams communicate the reason for the markings and also the importance of the markings to the population to prevent tampering. Efforts to convince the village population to maintain the marking system should also be done.

The placing of the marking systems in Sri Lanka is the responsibility of the demining organisations. MRE organisations are not authorised to erect any markings of a hazardous area. In the case where a MRE organisation identifies a hazardous area or being informed of such an area they are responsible to report it to the nearest demining organisation. The demining organisation shall then be responsible to confirm the area through a non-technical survey and if necessary record and mark the area as a Confirmed Hazardous Area.

Where single ERW is indicated to MRE organisations by the population they shall be responsible to mark it using yellow mine tape. MRE organisations shall ensure that their teams carrying a minimum of 20 meters of yellow mine tape when conducting MRE visits.

2.1. Signs and markers

A hazard sign is a permanent or a semi-permanent notice giving information in a written and/or symbolic form which, when placed as part of a hazard marking system, is designed to provide warning to the local population of the presence of mines and ERW. Examples of the hazard signs used in Sri Lanka see figure 1 below. The words should represent the predominant hazard (mines or ERW) and the symbol should indicate 'danger' in a form which will be recognised nationally and locally.

Figure 1: Mine sign

Notes:

i. The sign shall have a red background with a white symbol for danger. The universal symbol for danger, the skull and crossbones, in white shall be used in the middle of the sign.
ii. The words "Danger Mines" in English, Tamil and Singhalese shall appear on the sign.
iii. The rear surface of the sign shall be white.
iv. The dimensions should not be less than indicated on the drawing.

Signs and hazard markers shall be clearly visible in daylight at a distance of 30m, and from adjacent signs and markers. If markers are masked by vegetation or terrain, the use of a physical barrier should be considered.

Figure 2: Yellow mine tape used in Sri Lanka

Signs and hazard markers should not be constructed of munition casings, materials that may have contained explosives, or discarded weapon systems.

2.2. Marking systems

There are three general categories of marking systems:

a. Permanent marking systems should be used to mark the perimeter of mine and ERW hazard areas which are not be scheduled for clearance in the near future. They should employ a combination of markers, signs and physical barriers.

b. Temporary marking systems may be used to mark the perimeter of a mine and ERW hazard area in preparation for clearance operations. They should include the use of physical barriers.

c. Improvised marking systems are generally placed or erected by the local population. They may also be used by demining organisations when materials are not available to construct temporary or permanent marking systems.

2.2.1. Permanent marking system specifications

The permanent mine and ERW hazard marking system includes a combination of markers, signs and physical barriers that clearly identify the boundary of the mine and UXO hazard area.

The hazard marking shall be clearly visible, see Clause 2.1 above. The markers and signs clearly identify which side of the marked boundary is considered to be within the mine and ERW hazard area and which side is considered to be safe.

In Sri Lanka two types of permanent markings are erected. Please see Figures 3 and 4. The permanent marking indicated in Figure 4 allows for the free movement for cattle and other animals underneath the fence.

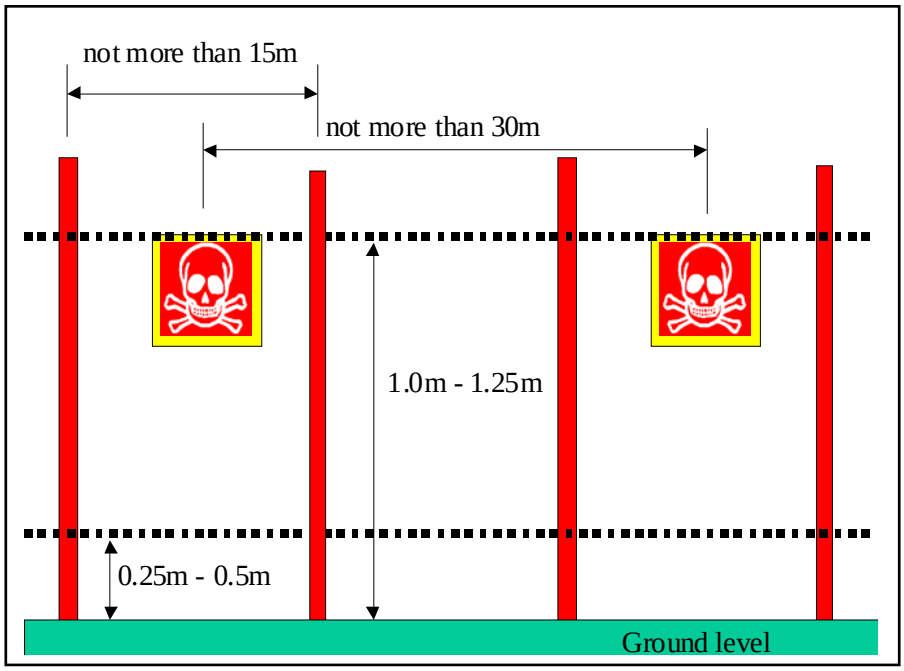

Figure 3: Permanent Marking type 1

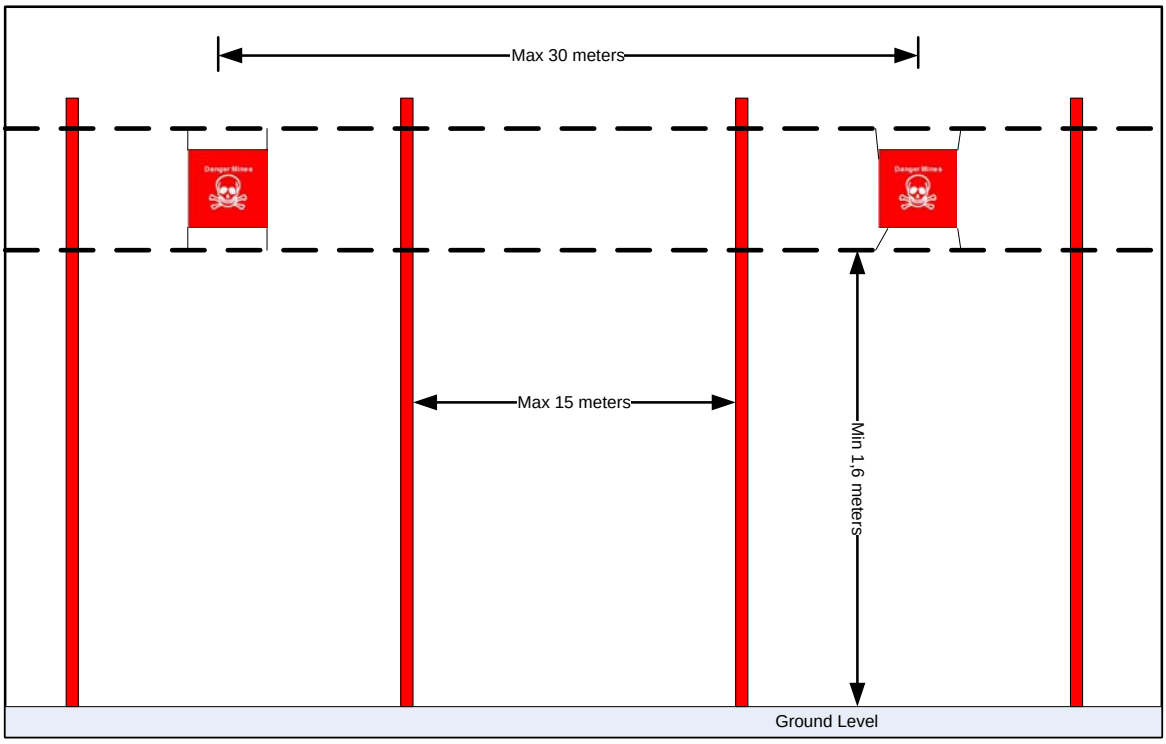

Figure 4: Permanent Marking type 2

Permanent marking shall be fences erected with two strands attached to uprights at levels indicated in figures 3 and 4. The fencing strands shall be either single strand steel wire or barbed wire. The uprights may include trees, buildings or existing structures and posts erected as part of the warning system, and shall be positioned not more than 15m apart.

Mine signs shall be attached as indicated in figures 1 and 2 not more than 30m apart and within 5m of each turning point. If necessary, they may also be attached to uprights. See figure 1 for an example of a mine sign.

2.2.2. Temporary marking systems

Temporary marking systems shall be used to mark the perimeter of a mine and ERW hazard area in preparation for clearance operations or as a temporary measure until it can be replaced by permanent marking. The temporary marking should include the use of some kind of physical barriers. Temporary marking in Sri Lanka shall consist of metal or wooden pickets with a mine sign mounted not lower than 1,2 meters from ground level. The pickets with the signs should be planted not more than 15 meters apart and should be clearly visible from a distance of 15 meters. In case of dense vegetation the distance between pickets should be decreased. See figure 1 for an example of a mine sign.

As a physical barrier mine tape should be strung between the pickets with mine signs. See figure 2 for an example of the mine tape used in Sri Lanka.

See figure 5 below for an example of temporary marking used in Sri Lanka.

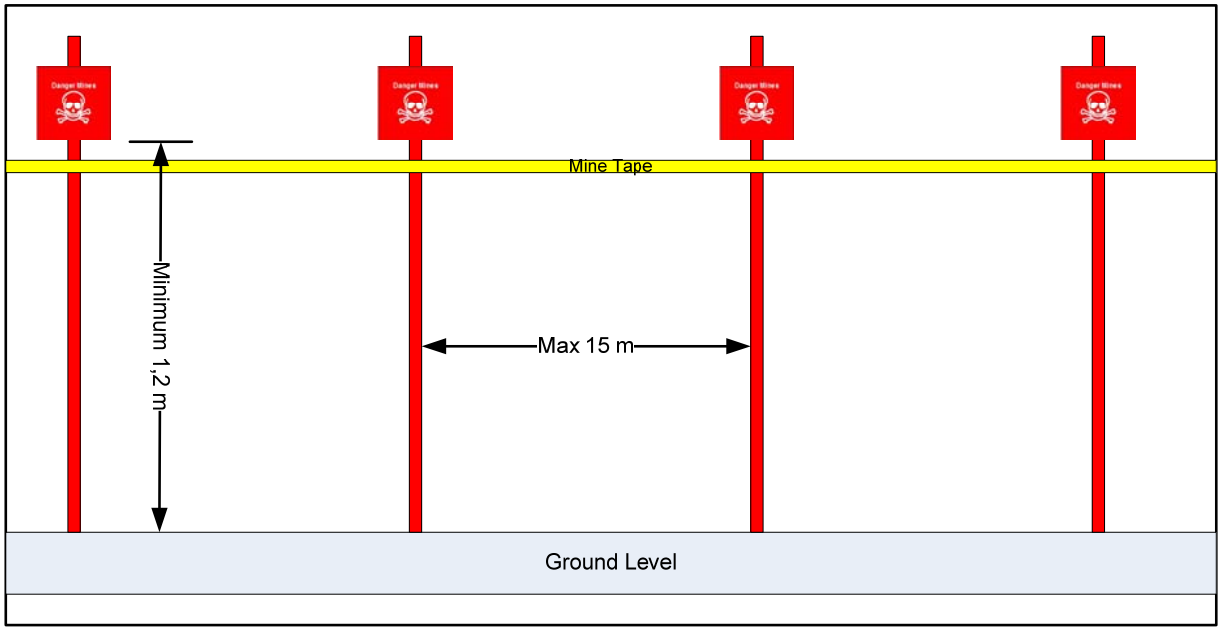

Figure 5: Temporary marking in Sri Lanka

2.2.3. Improvised marking systems

Improvised marking systems should use locally available material. There are currently no standards set for improvised marking systems. Their use should be discouraged and when encountered it should be reported to the NMAC so that adequate marking systems can be established.

3. Marking system maintenance

NMAC and the demining organisations should convince villagers to take ownership of marking systems. This will allow that these marking systems are properly maintained. This should be integrated with national and local mine awareness programmes, and should actively involve the communities at risk.

The demining organisation that constructs the marking system shall:

a. Mark the hazardous area(s) in a manner consistent with this SLNMAS, and

b. Brief the affected communities and local authorities on the marking system. It is necessary to transfer 'ownership' of the marking systems to the communities at risk and to explain the need for its maintenance. This handover should be formally documented upon the completion of the task.

Amendment record

Management of SLNMAS amendments

Amendments to this document will be published periodically. An accurate record of amendments is to be maintained in the table below.

Any comments, suggestions or proposed amendments to this document should be addressed to: The National QA Coordinator, Sri Lanka National Mine Action Centre (SLNMAC), Colombo.

Serial No.	Date	Paragraph		Amendment	Remarks
		Old	New		