



Cambodian Mine Action Standards (CMAS)

Chapter 8

Explosive Ordnance Disposal EOD



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Introduction

Unexploded ordnance (UXO) has many definitions, but for the purposes of Cambodia Mine Action Standards the term applies to all munitions (including SAA) other than landmines, which are included in the clearance objectives of a demining programme and which present a significant risk to human life, property and the environment. UXO may be cleared as part of a mine clearance agreement, or an organisation specialising in explosive ordnance disposal (EOD) may clear them under separate arrangements, as either a part of a donor funded or commercial project. For the purposes of this standard both activities are included as EOD operations.

The majority of UXO found during clearance are small items of ordnance such as sub-munitions, grenades and mortar ammunition. Nevertheless, UXO also includes larger items such as artillery ammunition, air-dropped bombs and cluster munitions. The wide variety of size and complexity of UXO requires special attention to be given to the management of EOD operations.

The aim of this standard is to provide specifications and guidance for the management of EOD operations in Cambodia. It covers general principles and management responsibilities for EOD. It does not provide specific technical guidance for the disposal of particular explosive ordnance.

Explosive Ordnance Disposal

1. Scope

This standard provides specifications and guidelines for the safe conduct of EOD operations as part of a demining programme. It applies to the disposal of conventional unexploded ordnance (UXO), other than mines. Mines are addressed in other CMAS chapters.

2. EOD Procedures and Operations

2.1. General principles

EOD operations involve the detection, identification, field evaluation, render safe, recovery and safe disposal of UXO. EOD may be undertaken as a routine part of clearance operations following the discovery of UXO in or near mined areas, for this reason a detailed Technical Survey must be undertaken and documented with the necessary document being included in the task dossier for subsequent site supervisors to examine. EOD operations may also be undertaken to dispose of UXO discovered outside mined areas. Such operations may involve a single UXO, or a number of UXO at a specified location such as a mortar or artillery gun position. It may also involve a stockpile of ammunition left in a bunker or an ammunition point.

The effective management of demining programmes and UXO Clearance projects, includes where necessary the establishment and maintenance of a capability to conduct EOD in a safe and effective manner. This involves a formal risk assessment of the UXO threat and the development of a safe and effective EOD capability. Such a capability is to include the preparation of appropriate procedures for neutralisation and disarming, the use of well trained and qualified clearance workers and EOD specialists, and the use of effective and safe equipment, stores and supplies. In addition to the above subjects a safe and comprehensive EOD Operators SOP is required.

The development of a safe and effective EOD capability may require the establishment of levels of expertise to cope with a range of operational requirements. As a general principle, operators are only to deal with those items and situations for which they have been formally trained, qualified and licensed. All other cases should be referred to the next higher level of expertise.

2.2. Qualifications

EOD can be carried out at many levels from the neutralisation of large bombs and missiles to the destruction of grenades and sub-munitions. EOD qualifications should be appropriate to the UXO threat and the munitions most likely to be found. The qualifications of all staff shall satisfy the requirements and regulations of the CMAA. As a guide:

- a) A Level 1 (EOD) qualification enables a clearance worker to locate, expose, identify and destroy under supervision single items in situ that the clearance worker has been specifically and formally trained on.
- b) A Level 2 (EOD) qualification enables a clearance worker to locate, identify, move, transport and destroy multiple items on which they have been specifically and formally trained on under appropriate supervision.
- c) A Level 3 (EOD) qualification is for clearance workers who are competent to conduct render safe procedures and final disposal of any type of explosive ordnance with the exception of specialisations listed under Level 4 that the clearance worker has been specifically and formally trained on.

d) A Level 4 (EOD) qualification is for those small number of specialist EOD staff who have been formally trained, and are qualified, to carry out specialist tasks in the following categories:

- Disposal of Guided Weapons,
- Demilitarisation (Breakdown) of Explosive Ordnance,
- Chemical, Biological, Radiological and Nuclear Weapons,
- Improvised Explosive Device Disposal,
- Disposal of weapons with specific fuel hazards
- Large scale bulk disposal of rendered safe UXO and or recovered munitions, and
- Booby Traps and improvised systems that are not IED's.

The Level 4 (EOD) qualification shall clearly indicate the specialist areas of operation for each individual who is formally trained and qualified.

Note 1: Some UXO fall within the guidelines for the above categories of operators, but present a specific or additional threat. Examples are items containing white phosphorous, missiles, or the requirement for bulk demolitions. Special consideration is needed regarding the need for additional training, or specific exclusion from the category of competence.

Note 2: Where particular items are frequently encountered, specific training in the disposal of these items may be given to enable the operator subsequently to deal with them rather than continually refer the problem to the next higher level of expertise.

Note 3: It should be noted that submunitions are particularly hazardous to deal with and should only be dealt with by appropriately trained and qualified personnel of Level 3 or 4.

Note 4: Classification of Supervisor shall be attached to each level only after the operator has been employed in that level for a minimum of three years experience or has been formally trained and qualified at the next level.

Note 5: Classification of Instructor shall be attached to each level only after the operator has been employed as a Supervisor in that level and has been formally trained to teach.

2.3. Neutralisation and disarming procedures

If possible UXO should be destroyed in-situ by detonation. If it is not possible or suitable to destroy UXO in-situ for reasons of safety or for local environmental considerations such as the proximity of buildings or facilities, demining organisations shall render the munition safe by neutralisation and/or disarming, prior to moving it to a suitable location for disposal.

De-mining organisations, with an integral EOD capability, shall prepare detailed SOPs for neutralisation and disarming procedures, which are appropriate to the UXO threat and are consistent with accepted international EOD practice.

Should a demining organisation not have a suitable integral EOD capability, they shall mark, identify and report the UXO to the CMAA. It shall then be the responsibility of the CMAA to provide an appropriate EOD response. This may consist of deploying another operator to deal with the task.

2.4. Destruction procedures

Demining organisations and or UXO Clearance Companies are to prepare detailed SOPs for the effective and safe destruction of UXO. This includes UXO destroyed in-situ, and those UXO or recovered ammunition destroyed in bulk. Special attention must be given to ensuring the containment of blast and fragmentation effects resulting from the destruction of UXO. Sites chosen for bulk destruction shall be located sufficiently far away from populated areas so as to represent no risk. In the event of quantities of EOD scrap being found or created by an operator then detailed SOPs on its removal and eventual destruction must be formulated. This also should include the removal and destruction of found items of SAA.

SOPs are to cover all possible methods of destruction that the organisation may wish to utilise including but not limited to:

- Detonation
- Low Order Techniques including burning in pits and or drums.
- Render Safe Procedures
- Incinerators

Under no circumstances is the use of “Dumping at Sea or River” to be utilised in Cambodia to get rid of UXO and or explosives.

2.5. Transportation, handling and storage of mines and UXO

When UXO or other ammunition (which has been rendered safe) is moved, either for storage or to a site for bulk destruction, demining organisations shall apply national standard CMAS 10.50 for the transportation, handling and storage of explosives.

UXO which is safe to move but has not been rendered safe is not to be transported or stored with demolition explosives or any other hazardous material.

3. Responsibilities and Obligations

3.1. CMAA

The CMAA shall:

- a) Establish and maintain national standards for EOD procedures.
- b) Establish and maintain national standards for the qualification of EOD staff.
- c) Establish and maintain the capability to accredit and license demining organisations and commercial UXO clearance companies involved in EOD operations.
- d) Establish and maintain the capability to monitor the effectiveness and safety of demining organisations and commercial UXO clearance companies involved in EOD operations. This also includes qualification level authorisations and internal training capability.
- e) Establish national systems for EOD incident reporting.

3.2. Demining organisations

Demining organisations shall:

- a) Establish and maintain SOPs for EOD operations which comply with CMAS and other relevant standards and regulations, and which reflect local conditions and circumstances.

- b) Recruit, train and develop the appropriate staff to carry out EOD.
- c) Maintain and monitor training, qualifications and experience of EOD operators, ensuring that only suitably qualified personnel are used for the task.
- d) Apply SOPs for EOD operations in a consistent, effective and safe manner.