

Afghanistan Mine Action Standards - AMAS 06.02

Third Edition
April 2011
Version 2, December 2017

Battle Area Clearance

Directorate for Mine Action Coordination (DMAC)
Post Box : 520 Kabul – Afghanistan
Website: www.dmac.gov.af

CONTENTS

1. INTRODUCTION	3
2. SCOPE	3
3. GENERAL	3
4. BATTLE AREA CLEARANCE REQUIREMENTS AND PRIORITIZATION.....	3
4.1. QUALITY OF CLEARANCE.....	3
4.2. DEPTH OF CLEARANCE	4
5. CLUSTER MUNITIONS (CMS).....	4
6. RECORDING AND REPORTING	5
7. RENDER SAFE PROCEDURES (RSP).....	6

Battle Area Clearance (BAC)

1. Introduction

All contaminated areas within Afghanistan that are known to contain landmine, Explosive Remnants of War (ERW) including Cluster Munitions (CMs) hazards are surveyed and recorded as a Confirmed or Suspected Hazardous Areas (CHA or SHA) in IMSMA. A number of these CHAs and SHAs will be contaminated with landmine hazards, and the requirements for clearance of these areas is detailed at AMAS 06.01. However, many CHAs and SHAs will not contain mines and the threat will be ERW and or CMs, unexploded Land Surface Ammunition (LSA) or unexploded air delivered weapons. Battle Area Clearance (BAC) is the term used to describe the systematic search and clearance of all items of ordnance and munitions within a given area.

2. Scope

This AMAS provides requirements and technical guidelines for the clearance of explosive remnants of war (ERW) and cluster munitions contaminated areas.

3. GENERAL

BAC operations involve locating and disposal of ERW, including UXO, Abandoned Explosive Ordinance (AXO) and Cluster Munitions, but not landmines, over specific areas, which may include battlefields, defensive positions and sites where air delivered or artillery munitions, including cluster munitions, have been fired or dropped. The BAC operations shall only be conducted by the organizations accredited in BAC operations.

Depending on the humanitarian priorities, land use and site specific conditions and requirements, BAC may involve surface and sub-surface clearance, however, the first option should always be the sub-surface clearance in all BAC and CMs tasks. The requirement for BAC can be in both urban and rural environments. BAC operations do not cover the disposal of stockpiled munitions in national storage facilities.

4. Battle Area Clearance Requirements and Prioritization

The priorities for BAC clearance in support of development projects, may specify an exact area to be completely searched/cleared. Different depths of clearance may be specified for different areas depending on the assessment of hazard site and the intended land use. However, for humanitarian BAC tasks, the extent of the area to be cleared should be established at the outset, but can be identified as technical survey progresses. The priorities for clearance shall be determined based on the impact of battlefields on the communities and based on the national mine action plan and AMAS 03.02 of planning and prioritization.

4.1. Quality of Clearance

The requirements for BAC depend on the extent and type of hazards, and the site specific conditions. The two categories of clearance are surface and sub-surface clearance, the clearance organization shall make an appropriate and evidence based decision on the extent of surface and sub-surface clearance to be undertaken in a BAC and CMs tasks. A comprehensive technical survey as per AMAS 05.02 requirements and Field Risk Assessment shall be conducted in each BAC task in order to support decision making process. However, sub-surface clearance should always be the first option in all BAC and CM tasks.

Surface clearance usually relies on visual search, although there may be instances where a detector should be used to aid investigation of areas of vegetation, earth mounds and other limited access suspected areas. Recording of searches, munitions types and locations of items found is crucial and can assist in determining the requirements for sub-surface search

and clearance. At minimum the sub-surface search of 20x20 meter boxes shall be conducted on all direction from the location where ERW or cluster munitions have been identified during the surface search, the boxes should be expanded based on the types of hazards and the worksite requirements.

Unless specific requirements dictate, all safe to move ERW and Small Arms Ammunition (SAA) and hazardous parts thereof, shall be removed and disposed off in a designated demolition site; in accordance with AMAS 06.03 Explosive Ordnance Disposal.

Sub-surface clearance can use various detection tools and excavation techniques. All specified ERW including CM in BAC tasks shall be removed to the required and stated depth. All the ERW and CM contaminated areas are subject to sub-surface clearance, unless technical survey identifies certain parts within a task require only surface clearance. Decision on surface clearance shall be based on the findings of technical survey and field risk assessment. All technical survey reports shall be submitted by clearance organization to related DMAC RO for approval, prior to conduct further clearance operations.

The removal and/or destruction of all or specified ERW including CM hazards, in the specified area to the specified depth shall be achieved by:

- 1) Assigning BAC accredited mine action organisation with operationally accredited capabilities including competent staff with appropriate levels of EOD qualification, using appropriate management practices, and applying safe and effective operational procedures (SOPs) approved by DMAC;
- 2) Monitoring of mine action organisation and its sub-units (see AMAS 03.01) ; and
- 3) Conducting post-clearance inspection of the cleared land.

4.2. Depth of Clearance

The depth of clearance in BAC and CMs tasks shall be determined by the clearance organization in consultation with DMAC RO and should be developed through the use of non-technical and technical surveys and other reliable information including technical survey and clearance of the neighboring cleared areas which can establish the depth of ERW hazards expected in the area, and an assessment of the future intended land use. Otherwise minimum clearance depth for searching different caliber ERW items should be adjusted as below:

- a) 50 cm from the original ground surface for 82mm and below;
- b) 100 cm from the original ground surface for items between 82 and 120 mm; and
- c) More than 100 cm to several meters for heavy caliber including air dropped bombs.

The required clearance depth can be adjusted as clearance work progresses. Any change shall be agreed between DMAC RO and the clearance organisation, and shall be formally recorded. The clearance process should be repeated if there is a subsequent change to the land use which requires a greater depth of clearance.

5. Cluster Munitions (CMs)

Cluster munitions are delivered by a wide variety of launch or delivery systems, such as missiles, rockets, projectiles, mortars or aircraft dispensers. The CMs are normally dispensed in one of three ways; base ejection, nose ejection or case rupture. Since sub munitions disperse after ejection, the density of the impact footprint is dependent on the speed and altitude at which the dispenser, projectile or rocket opens.

The CMs currently found in Afghanistan are designed to detonate upon impact. The failure rate of these CMs cannot be accurately determined, unless such necessary strike data is available.

The requirements given in this standard provides the foundation and framework from which each mine action organization shall base detailed clearance procedures. These requirements shall be stated and detailed in related SOPs with clear explanations and if necessary with diagrams and sketches.

Once a cluster munitions strike area has been identified, it shall be surveyed and recorded in IMSMA. All CMs sites shall be prioritized based on the threat to human life and livelihood, and shall be cleared as per the requirements of **section 4.1 and 4.2**.

The methodology for the clearance of cluster munitions strike areas should employ a two phase approach, whereby as a means of rapidly removing the immediate and obvious cluster munitions threat which pose the greatest risk to human lives, a visual search is conducted; Phase I. The visual search is without instruments and may be non-intrusive; it is intended to identify for removing those CMs items in the immediate vicinity of built up areas and places of highest threat.

During the visual search the site supervisor shall ensure that a strict control is maintained and the area is thoroughly investigated. Those items that require to be destroyed in situ shall be clearly marked and the local population warned of the threat, before demolition. If required, protective work to be employed to minimize damages. Close liaison with the local community, local authority and any other organizations working in the immediate vicinity shall be maintained when conducting demolitions particularly in built up areas.

In addition to the removal of the immediate threat, the site supervisor shall determine as accurately as possible and record the coordinates of the center of the cluster strike. This recorded information shall be used during the next phase of clearance which is sub-surface search using detection tools and equipment; Phase II.

The purpose of the Phase II sub-surface search is to properly search the **entire cluster strike area** with detection tools. The information gathered during the Phase I visual search should be used to assist with the Phase II planning of technical survey and clearance including targeted investigation to the cluster strikes and systematic investigation in rest of the CMs task. The aim of this phase is to clear all CMs both surface and sub-surface until fade out has been achieved. The Phase II search shall be conducted immediately after phase I and may be conducted as a combination with Phase I. A site specific clearance depth shall be agreed between the clearance organization and the DMAC RO and shall be formally recorded in the clearance plan for each CMs site, signed by RO.

If any mines, tripwires or suspicion of mines are discovered during the sub-surface search, the task shall immediately be stopped, the relevant safety precautions observed and the facts reported to the DMAC RO. The organization shall then conduct field risk assessment, revise the plan as per the discovered hazards and submit it to RO for further processing and endorsement.

If ammunitions or explosive storage areas or ammunitions dump which had been damaged by direct fire, or an area with high density of ERW, are located during the clearance operations, these areas shall be marked and reported to the DMAC RO, in order to task required EOD teams for clearance.

6. Recording and Reporting

The location of all discovered CMs and confirmed strike marks shall be recorded for future reference, which will ensure a more accurate and defined representation of the strike location and facilitate the subsequent Phase II technical survey and clearance.

A major factor that should always be considered during the disposal of sub munitions is the danger posed by the formation of the jet from the shaped charge. Shaped charge jets have the potential to fly over 1800 meters in free air. Therefore, every attempt shall be made to degrade the performance of this jet. This is usually achieved by placing the donor charge in such a position that it also attacks the integrity of the cone liner. An alternative is to place a

robust barrier in front of the sub munitions to degrade the charge.

7. Render Safe Procedures (RSP)

If mine action organizations are conducting manual disarmament of the fuses then the procedure shall be clearly explained in a step-by-step manner incorporating diagrams and/or photographs. **No RSPs shall be conducted using any procedure that has not been accredited by DMAC.**