

**NATIONAL COMMITTEE FOR DEMINING AND REHABILITATION**

**NATIONAL TECHNICAL STANDARDS AND GUIDELINES**

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## **Foreword**

The National Technical Standards and Guidelines (NTSG) for Demining in Jordan are essential to enable the National Committee for Demining and Rehabilitation (NCDR) to plan and assess the demining operations within Jordan. The aim of this document is to provide demining organisations with a reference for the conduct of field operations. It has been produced using experiences gained locally and incorporates lessons and best practices learned in other theatres worldwide.

Variations in procedures and methods of operation are to be expected amongst the different organisations. Therefore, these Guidelines provide an example of practices accepted by the NCDR, and will provide the basis for the accreditation process which is required of all operators.

One of the main aims of this document is to be a compact ‘user friendly’ tool that allows the greatest operational flexibility to clearance organisations, while introducing a minimum level of conformity.

This document is not intended to replace or replicate Standard Operating Procedures (SOP) nor does it absolve demining organisations from the responsibility of producing their own SOPs. Conversely, these Guidelines and Technical Standards are intended to be used as an aid in developing SOPs, by detailing the minimum standards and accepted methods for conducting mine clearance operations in a safe and efficient manner.

All demining organisations conducting demining related activities in Jordan shall ensure that their Standing Operating Procedures (SOP) conform to the NTSG.

Finally, this document is designed to be a “living” text. The procedures and practices described will be continually reviewed in order to ensure they remain relevant to the current mine and UXO situation, and keep up with advances in technology.

**Mohammad Breikat**

**National Director**

**National Committee for Demining and Rehabilitation**

September 2015

## Terms & Definitions

The term '**National Committee** for Demining and Rehabilitation (NCDR)' refers to the institution in Jordan charged with the regulation, management and coordination of mine action in Jordan.

The term '**demining organisation**' refers to any organisation (government, REC, NGO or commercial entity) responsible for implementing demining projects or tasks. The demining organisation may be a prime contractor, subcontractor, consultant or agent.

The term '**demining sub-unit**' refers to an element of a demining organisation, however named, that is operationally accredited to conduct one or more prescribed demining activities, such as manual mine clearance, mechanical or MDD assistance to clearance operations.

**Accreditation** is the procedure by which a demining organisation is formally recognised as competent and able to carry out particular demining activities. Each accreditation shall refer to the capabilities required to carry out a particular activity such as Survey, manual clearance, Mine Detection Dogs clearance, Community Liaison or mechanical clearance systems. The granting of such accreditation assumes that the capability will not change beyond the scope or intention of the original accreditation.

**Detonation:** this method is used with high explosive (HE) filled APM. Small quantities of other natures - smoke, pyrotechnics, lachrymatory can also be destroyed by inclusion in mixed stacks during large-scale demolitions. The quantities of such items included in a mixed stack have to be kept down to a small percentage of the overall stack. Detonation is the preferred option for UXO items recovered from a minefield.

**Burning:** this is generally used with propellant (bagged or loose), smoke and pyrotechnic munitions but is suitable for certain plastic-bodied APM. It can also be used as an alternative to detonation for certain explosives, i.e. composition exploding (CE), tri nitro toluene (TNT), nitro glycerine (NG) based explosives and gun powder (GP), but detonation is the cleaner method.

The words “shall”, “should” and “may” are used to indicate the intended degree of compliance.

a) **Shall** is used to indicate requirements, methods or specifications that are to be applied in order to conform to the standard.

b) **Should** is used to indicate the preferred requirements, methods or specifications.

c) **May** is used to indicate a possible method or course of action.

The term “**Land Release**” describes the process of applying all reasonable effort to identify, define, and remove all presence and suspicion of mines/ERW through non-technical survey, technical survey and/or clearance.

The term “**Suspected Hazardous Area**” refers to an area where there is reasonable suspicion of mine/ERW contamination on the basis of indirect evidence of the presence of mines/ERW.

The term “**Confirmed Hazardous Area**” refers to an area where the presence of mine/ERW contamination has been confirmed on the basis of direct evidence of the presence of mines/ERW.

The term “**Non-technical Survey**” refers to the collection and analysis of data, without the use of technical interventions, about the presence, type, distribution and surrounding environment of mine/ERW contamination, in order to define better where mine/ERW contamination is present, and where it is not, and to support land release prioritization and decision-making processes through the provision of evidence.

The term “**Technical Survey**” refers to the collection and analysis of data, using appropriate technical interventions, about the presence, type, distribution and

surrounding environment of mine/ERW contamination, in order to define better where mine/ERW contamination is present, and where it is not, and to support land release prioritization and decision making processes through the provision of evidence.

**The term “All Reasonable Effort”** describes what is considered a minimum acceptable level of effort to identify and document mined areas or to remove the presence or suspicion of mines/ERW. “All reasonable effort” has been applied when the commitment of additional resources is considered to be unreasonable in relation to the results expected.

### **Cancelled land (m<sup>2</sup>)**

A defined area concluded not to contain evidence of mine/ERW contamination following the non-technical survey of a SHA/CHA.

### **Reduced Land (m<sup>2</sup>)**

A defined area concluded not to contain evidence of mine/ERW contamination following the technical survey of a SHA/CHA.

### **Cleared land (m<sup>2</sup>)**

A defined area cleared through the removal and/or destruction of all specified mine and ERW hazards to a specified depth.

**Battlefield** refers to an area in which ERW including UXO and AXO have been found. This may include former battle areas, defensive positions and sites where air delivered or artillery munitions have been left, fired or dropped.

**Battle Area Clearance (BAC)** the systematic and controlled clearance of hazardous areas where the hazards are known not to include mines.

## **Land release policy in Jordan**

In order to ensure the most effective and efficient use of mine action resources in Jordan the NCDR encourages the use of land release process. The NCDR recommends that three main activities should be used to release land that has been recorded as suspected of containing a mine/ERW hazard:

- Land can be released through clearance. The physical processing of a specified area to a specified depth using manual demining resources or a combination of manual and mine dogs or machines in accordance with NTSG chapter 9 – clearance requirements.
- Land can be released through technical survey. The detailed topographical and technical investigation and verification of an area suspected to contain a mine/ERW hazard in order to determine any area requiring clearance and or to release area that does not contain a mine/ERW hazard. Technical survey is discussed in NTSG chapter 8.
- Land can be released through non-technical survey. The process of collecting and analysing new and/or existing information about an area suspected of containing a mine/ERW hazard normally without physical intervention into the area.. Non-technical survey is discussed in NTSG chapter 7.

Land Release in Jordan will apply the following principles which will be clearly defined in the NTSG and accredited standard operating procedures (SOPs):

- A formal well documented and recorded process for investigation into the mine/ERW problem;
- Well defined and objective criteria for the reclassification of land;
- A high degree of community involvement and acceptance of decision making;
- A formal process of handover of land after the release of land;
- An ongoing monitoring mechanism after the handover has taken place.

The NCDR accepts that no liability will rest with an operator for land that is released from suspicion as long as the process of releasing the land (whether through non-technical survey, technical survey or clearance) has conformed to the NTSG, and the accredited SOPs.

## Liability policy in Jordan

Any demining organization working in Jordan must get insurance for employees and third party insurance in a Jordanian Insurance company.

Basically the liability of hazards of mines is a state (JAF) role ; but (JAF) can shift liability to the demining organization in the following cases:

- If there is a temporary control (guarding) of the organization on the accident location. ( when the organization remove the mines from land , transport, storage till destruction or handover the mines to other parties)
- If the victim is an official employee of the organization.

Any accident happened due to negligence and against the NTSG, is a responsibly of the demining organization.

### Liability concerns for land released by Non-Technical Survey:

Detailed NMAS &SOPs, QA and QC, right constellation of teams and training.

### Liability concerns for land released by Technical Survey:

Detailed NMAS &SOPs, QA and QC (internal and external), right constellation of teams and training, right equipment (tool) to be used, delegation of responsibilities to the operator, appropriate use of information available.

### Liability concerns for land released by clearance:

Detailed NMAS &SOPs based on the local conditions, QA and QC (internal and external), training, right equipment (tool) to be used, delegation of responsibilities to the operator, appropriate use of information available, NTS and TS carried out correctly, appropriate clearance depth

Various possibilities for liability mitigation:

- Fencing and marking;
- Information;

- Clearance and follow-on;
- QM including QA and QC;
- Sampling;
- Documentation;

If explosive hazards are found in areas that have been released, liability disputes should, generally, be settled based on how well demining operators have implemented the land release process that is normally enshrined in national standards. The appearance of an explosive hazard does not automatically imply that the operator should be held liable.

The demining organization will not generally be liable for missed mines or accidents if an investigation shows that the agreed land release policy has been implemented appropriately and thus that the operator has made all reasonable efforts to ensure that the area was safe before release.

## **Conclusions**

The extent of civil liability for any negligence on the part of mine action operators should be clarified in national standards (and arguably also national legislation).

Generally speaking, the liability of demining operators is based on negligence, though in some legal systems there is strict liability for carrying out dangerous activities. Both options are viable solutions.

Legislation providing for the strict liability of the State in all cases, or in cases where the State has declared certain territories as mine-free, would avoid the generally complex assessment of negligence/reprehensible conduct. Therefore, overall this may be most cost-effective.

NMAAs should have well established standards for handing over of cleared land. Such standards should define at what exact point the responsibility of the operator is handed over to the authority.

National standards should be detailed to the level of information that is to be collected and reviewed as a part of the handover of cleared land. Such standards should also include how and for how long such information should be stored.

There should be clear rules for compensation including procedures and levels of compensation following any accidents occurring in areas that have previously been cleared and subsequently accepted and handed over to the authority.

## Amendment Record

The management of NTSG amendments are subject to formal review on regular basis by NCDR; however this does not preclude amendments being made within these three-year periods for reasons of operational safety and efficiency or for editorial purposes.

As amendments are made to this NTSG they will be given a number, and the date and general details of the amendment shown in the table below.

As the formal reviews of NTSG are completed new editions may be issued. Amendments up to the date of the new edition will be incorporated into the new edition and the amendment record table cleared. Recording of amendments will then start again until a further review is carried out.

The most recently amended NTSG will be made available by NCDR.

Amendment No	Date	Amendment Details

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## **1. Chapter 1: Guidelines for Registration and Accreditation**

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### **1.1 References**

This document has been developed with reference to the following documents:

IMAS 04.10 Glossary of Mine Action Terms, Definitions and Abbreviations

IMAS 07.30 accreditation of demining organizations

IMAS 07.40 monitoring of demining organizations

IMAS 09.40 Guide for the use of Mine Detection Dogs.

IMAS 10.20 worksite safety

### **1.2 Scope**

This chapter describes the process and requirements for gaining and maintaining accreditation to manage and conduct land release activities such as non-technical survey technical survey and clearance operations, including training in Jordan.

### **1.3 Introduction**

The accreditation process is essential to enable the NCDR to promote a common and consistent approach which will encourage demining organisations to develop and demonstrate a broadly similar quality of management practices and operational capabilities, regardless of their size or experience.

The accreditation process shall only be conducted for organisations that or registered in Jordan. The accreditation process is the procedure by which a demining organisation is recognised as competent and able to plan and manage demining activities safely, effectively and efficiently. For examples of the documents required for registration refer to Annex A.

This chapter will outline the requirements for accreditation. Please note that this document only refers to clearance and related operations. It does not cover the process for Accreditation for MRE.

#### **1.4 Statutory Requirements**

In accordance with the requirement of the Government of Jordan, no demining organisation shall be permitted to manage and conduct land release activities within Jordan without first receiving organisational and operational accreditation from the NCDR.

In accordance with the law and requirements of the Government of Jordan, any demining organizations with an office in Jordan shall be required to register with the Ministry of industry and trading. Organisation seeking accreditation to operate in Jordan shall register with the mentioned Ministry as soon as they receive an organizational (provisional) accreditation to proceed with establishing their office in Jordan.

#### **1.5 Concept of Accreditation Procedure.**

All matters dealing with Accreditation will be dealt with via a body known as the Accreditation Board. The board will be made up of members of the NCDR.

The Accreditation Board will comprise of the following:

- Operation Manager.
- Quality Management Team Leader.
- Financial Manager.
- Technical Expert ( if required)

Subject to a successful application, the Accreditation Board will approve accreditation of a clearance organisation. The NCDR will then issue the clearance agency with accreditation organizational and operational accreditation.

#### **1.6 Independence, Impartiality and Integrity**

NCDR shall take all reasonable steps to ensure that its personnel engaged in the accreditation of demining organisations shall be free from any political, commercial, financial or other pressures which might affect their judgement.

NCDR will ensure that its accreditation body do not engage in any activities that may conflict with their independence of judgement and integrity in relation to their inspection, evaluation or monitoring activities. In particular, staff involved in accreditation will be prohibited from becoming directly involved in organisations that design, manufacture, supply, install, use or maintain services or equipment for mine action organisations intending to operate in Jordan.

All interested demining organisations have the right to seek accreditation to conduct land release activities in Jordan. NCDR shall conduct this accreditation in an impartial, independent and non-discriminatory manner.

### **1.7 Confidentiality**

NCDR shall ensure confidentiality of information obtained in the course of its accreditation of demining organisations. NCDR shall only release details of accreditation proceedings to those parties directly involved in the requesting, processing and monitoring of accreditation.

### **1.8 Maintenance of Records**

NCDR shall prepare and maintain records of all assessments and inspections and share these with the agency involved. All records shall be safely stored for a period of at least five years, held secure and in confidence to the applicant, unless otherwise required by law.

### **1.9 General Principles**

#### **1.1.1 Basic Considerations**

The basic considerations for granting accreditation to conduct land release activities within Jordan are that:

- a) The applicant shall be competent to apply the provisions of NTSG.
- b) Organisational accreditation will only be retained to a demining organisation so long as it remains in conformity with the NTSG.

c) Operational accreditation will only be granted to sub-units of the parent organisation identified at the time it applies for accreditation.

### 1.9.2 Components of Accreditation

Accreditation in Jordan comprises two complementary components:

a) Organisational Accreditation. Organisation accreditation is the process by which a mine action organisation is formally assessed and recognised as competent to manage land release activities.

b) Operational Accreditation. Operational accreditation is the process by which a demining organisation is formally assessed and recognised as competent to conduct specific land release activities within Jordan. Each operational accreditation shall refer to the capabilities required to carry out a particular activity such as non-technical survey, technical survey, clearance (manual, or manual supported by mechanical or Mine Detection Dog). Operational accreditation will be granted on the basis that that the capability for which it is granted does not change beyond the scope or intention of the original accreditation.

Operational accreditation is awarded in two stages. The first stage involves a provisional desk assessment based on documentary evidence presented such as organisational charts, management qualifications, SOP, etc. The second stage involves an on-site assessment to confirm that people, equipment, materials and procedures are being used as intended, and that land release activities are being conducted in a safe, effective and efficient manner.

## 1.10 **The Accreditation Process**

The accreditation process used in Jordan is:

### 1.10.1 Application for Accreditation

Demining organisation is to submit an application for accreditation to NCDR. Shown in Annex A.

### 1.10.2 Desk (Provisional) Assessment of the Application

On receipt of the application and accompanying documentation from the organisation, the NCDR shall confirm receipt of the application within five working days and commence the desk (provisional) assessment of the application. As necessary, it may request the applicant to provide additional information. NCDR shall require the following documents:

For a desk (provisional) assessment:

- a) Organisational structure and proposed representation in-country; including arrangements for the use of sub-contractors and joint ventures.
- b) Formal qualifications and practical experience of its management team.
- c) Previous experience in land release activities for which accreditation is sought.
- d) Planning and project management capabilities.
- e) Quality Management (QM) systems.
- f) Logistic management system; including equipment procurement, evaluation, maintenance and repair.
- g) Information management systems.
- h) Personnel skills development programmes.
- i) Environment, Health and Safety (EH&S) policy.
- j) Financial situation and systems.
- k) Any outstanding or pending legal action.
- l) Insurance cover including staff medical insurance and third party liability cover.
- m) Other accreditation, such as ISO 9000 or other country accreditation.

For operational accreditation, NCDR shall require the following information:

- a) Organisational structure of each sub-unit and asset-type.
- b) Qualifications and experience of the supervisory, operational and support staff for the parent organisation and each sub-unit and asset-type.

- c) Operational procedures for each sub-unit and asset-type; including any additional worksite safety and EH&S procedures and practices.
- d) Equipment capabilities such as equipment performance and supportability.
- e) Previous accreditation gained which demonstrates the safety, effectiveness and efficiency of its operational capabilities.
- f) Other additional requirements relevant to the specific technology to be used by the applicant.

If the NCDR is not satisfied that all the requirements for accreditation have been met, the demining organisation will be so informed within 10 working days. Detailed and comprehensive reasons for the rejection of the application will be provided and the applicant will be given the opportunity to take corrective action. If the applicant is unable or unwilling to implement the necessary corrective action within a reasonable timeframe, as determined by the NCDR, the application shall be terminated and the applicant informed that no further consideration will be given to the application.

### 1.10.3 On-site Assessment

The purpose of the on-site assessment is to confirm that the management practices and operational procedures proposed by the organisation in its application are being applied in a safe, effective and efficient manner.

The on-site assessment shall be carried out by NCDR and shall include:

- a) Visits to management, logistic and administrative offices or facilities including explosive storage areas, medical facilities and equipment maintenance areas.
- b) Visits to all sub-unit locations including worksites and supporting workplaces.
- c) Observation of the training of sub-units.
- d) Observation, if appropriate, of the field testing and evaluation of manual, mechanical and MDD assets.
- e) Observation of mine action activities.

If NCDR is not satisfied that all the requirements for accreditation have been met, the organisation shall be informed as soon as possible. Deficiencies shall be identified and the necessary remedial action discussed and agreed between the NCDR and applicant. The applicant shall then be required, within a reasonable time as determined by the NCDR, to implement the agreed remedial action and demonstrate its full compliance with the NCDR requirements. If the applicant is unable or unwilling to do so, the application for accreditation shall be terminated.

#### 1.10.4 Provisional Accreditation

There will usually be a delay between the desk (provisional) assessment and the on-site assessment. In such situations, and providing the desk (provisional) assessment was satisfactory, the NCDR will issue the applicant with a provisional accreditation. This provisional accreditation will allow the applicant to register and establish its offices until such time as the on-site assessment is conducted.

#### 1.10.5 Duration of accreditation

Once satisfied that all requirements for accreditation have been met by the applicant, the NCDR will issue the organisation with a Certificate of Accreditation. Unless there are changes as described below, the Certificate of Accreditation shall remain valid for a period of one year.

#### 1.10.6 Accreditation of Specific Assets and Activities

the use of some specific survey or clearance assets and the conduct of some specific land release activities require additional assessment. These assets and activities are:

- a) Mechanical assets.
- b) Mine Detection Dog (MDD) teams.
- c) Abandoned Explosive Ordnance.

### 1.10.7 Mechanical Assets

In addition to the assessment described previously , there will be assessment of the following elements of mechanical assets:

- a) For mechanical assets to be employed in a ground processing role, the performance of the asset in destroying, detonating, collecting, removing or otherwise disabling mines and, if applicable, UXO shall be assessed too.
- b) The nature of the residual threat, in terms of hazardous items, remaining from the employment of the mechanical asset in a ground processing role and the means and manner of countering this residual threat.
- c) The safety of the asset; in terms of the operator, supervisors and other personnel required to be at the mechanical demining worksite.
- d) The operational procedures for the employment of the mechanical asset; including management, supervisory, logistic and other support systems.
- e) The suitability of the mechanical asset in relation to its operating environment.
- f) The operational procedures for integrating the mechanical asset with other demining operations such as manual clearance or MDD.

### 1.10.8 MDD Teams

Detail on the accreditation of MDD teams is provided in Chapter 11. However, in addition to the assessment described previously, there will be assessment of the following elements of MDD teams:

- a) The qualification and operational experience of individual MDD handlers.
- b) The performance of individual MDD teams in the range of operational accreditation tests required by Chapter 11
- c) The operational procedures for employment of the MDD teams; including the management, supervisory and support systems.

- d) The systems for providing appropriate kennelling, veterinarian and other logistic support to the MDD team.
- e) The operational procedures for integrating the MDD teams with other survey and clearance operations such as manual clearance and mechanical operations.

#### 1.10.9 Abandoned Ordnance Disposal

- a) In processing the accreditation of demining organisations involved in the large-scale destruction of AXO or national stockpiles, the NCDR will also consider:
- b) Technologies and methodologies to be employed by the applicant.
- c) Environmental impact of these technologies and methodologies and their compliance with relevant Government of Jordan legislation.
- d) Applicant's ability to conform to the requirements for the storage, transportation and handling of explosives and munitions as required in Chapter xx
- e) Applicant's plans for the security and accounting of munitions to be disposed of.

#### 1.10.10 Extension or Modification of Accreditation

The NCDR has the responsibility to extend or modify existing accreditations as necessary.

#### 1.10.11 Extension of Existing Accreditation

Each accreditation shall be automatically reviewed by the NCDR approximately three months before its date of expiration. Provided the demining organisation continues to undertake those activities described in its current Certificate of Accreditation, and provided it continues to conform to all NCDR requirements for accreditation, the existing accreditation will be extended for a further term subject to the requirements of the NCDR.

#### 1.10.12 Modification of an Existing Accreditation

There are three occurrences within a demining organisation that will act as a trigger for the NCDR to review and, if necessary, modify an existing accreditation. These are:

- a) Modification of the current management system.
- b) Modification of current operational procedures.
- c) An increase in the number of sub-units.

#### 1.10.13 Modification of the Current Management System

If an organisation intends to make significant changes that may impact on its capability to manage land release activities, the NCDR will determine whether a review of the existing accreditation is warranted. If a review is necessary, it may take the form of a desk assessment, an on-site assessment or both. If such a review is conducted, the NCDR will further determine whether it is necessary to modify the existing Certificate of Accreditation for the mine action organisation.

All accredited mine action agencies are to notify the NCDR as soon as practicable of any proposed changes to its management system.

#### 1.10.14 Modification of Current Operational Procedures

If an organisation intends to modify the operational procedures of one or more of its sub-units, or if it intends to introduce a new or modified operational asset, the NCDR will again determine whether it is necessary to review the organisation's existing accreditation. Minor changes that are consistent with NTSG will require no further action. Significant changes may warrant a desk or on-site assessment. If these changes are of such magnitude that they impact on the validity of the existing accreditation, the NCDR shall give consideration to requesting organisation to request a new accreditation more appropriate to the modified operational procedures.

Again, all accredited demining organizations shall notify the NCDR as soon as practicable of any proposed changes to its operational procedures. If the proposed change involves the introduction of a new or modified operational asset, the organization shall provide NCDR with detail of:

- a) The capabilities of the new or modified asset.

- b) The management, supervisory and operational structure of the new or modified asset.
- c) The management and support requirements of the new or modified asset.
- d) The operational procedures for employing the new or modified asset.
- e) The results of previous evaluations or assessments of the new or modified asset in Jordan and elsewhere.

#### 1.10.15 Increase in the Number of Sub-units

If an organisation intends to increase the number of its sub-units, the NCDR will determine whether a review of the organisation's existing accreditation is warranted. If a review is necessary, it may take the form of a desk assessment, an on-site assessment or both. A significant increase in the number of sub-units, as determined by the NCDR, may cause the NCDR to direct the organisation to request new accreditation to more accurately reflect the changed situation.

All accredited demining organization shall notify the NCDR as soon as practicable of any proposed increases in the number of its mine action sub-units.

#### 1.10.16 Restrictions or Limitations on Accreditation

The NCDR may apply restrictions or limitations on any accreditation of a mine action organisation that it considers necessary in the interests of safety or operational efficiency.

#### 1.10.17 Suspension or Termination of Accreditation

The NCDR has the authority to suspend or terminate the accreditation of a mine action organisation should it be warranted.

#### 1.10.18 Suspension of Accreditation

In certain circumstances, the NCDR may choose to suspend the accreditation of a mine action organisation or one or more of its sub-units for a limited period. Typical circumstances include:

a) Monitoring identifies non-compliance with the requirements of the accreditation agreements which, while significant, is not sufficiently serious to warrant termination of the accreditation.

b) Failure by the organisation to disclose changes to management systems, operational procedures or increases in the number of sub-units.

In the event of suspension of accreditation, the demining organization shall be given a finite period, chosen at the discretion of the NCDR, to remedy the deficiencies. The specific deficiencies identified the remedial action to be undertaken, the timeframe in which the remedial action is to be completed and the means by which the NCDR will assess conformance with the required remedial action shall be detailed in a formal Notice of Suspension issued to the mine action organisation by the NCDR.

Once NCDR has confirmed that the required remedial action has been undertaken, it shall formally notify the organisation that suspension has been removed. Failure by the demining organisation to complete the required remedial action within the required timeframe shall result in termination of the accreditation.

#### 1.10.19 Termination of Accreditation

The NCDR may terminate the accreditation of an organisation if:

- a) An accredited organisation requests termination of the accreditation.
- b) An accredited organisation is declared bankrupt or otherwise goes out of business.
- c) The requirements of relevant Jordan standards or laws are changed and the organisation is unable or unwilling to conform to these new standards or laws.
- d) An organisation that has been issued with a Notice of Suspension fails to complete the required remedial action within the timeframe stipulated.
- e) Repeated suspension of a mine action organisation.
- f) Monitoring reveals non-compliance with the accreditation agreement that is of a serious nature. Serious non-compliance includes:

- Violations of environmental, health and safety requirements.
- Repeated failure to apply accredited management systems or operational procedures.
- Refusal to allow monitoring or inspection by the NCDR or its representatives.
- Interference with monitoring or inspection by the NCDR or its representatives.
- The premature release of cleared land.
- Repeated suspension of accreditation.

Annex

A

APPLICATION FOR ACCREDITATION

*TO CONDUCT land release activities in Jordan*

(Name of Organisation)

I (insert name of authorised representative of the applicant organisation)
hereby apply on behalf of (insert full official title of applicant organisation)
for accreditation to conduct the following types of mine action activities within Jordan:

Manual Demining	EOD Operations
Mechanical Operations	Abandoned Ordnance and Stockpile Destruction
Mine Detecting Dog operations	Non - Technical Survey
Technical Survey	Other (Specify)

The details of the applicant organisation are:

Registered Address in Jordan:	
Mailing Address:	
Telephone Number:	

Facsimile Number:	
Email Address:	
Website URL:	
Charity Registration Number: (For NGOs)	
Registered Business Number:  (For commercial companies)	
Registered Address of Head Office:  (If different from the above)	

I certify that the information contained in this Application for Accreditation is accurate.

Signature:

Date:

For NCDR Office Use Only:			
Application Reference Number:			
Provisional Accreditation Granted:		Reference Number:	
Certificate of Accreditation Granted:		Reference Number:	

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## 2. Chapter 2: Management of Training

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### 2.1 Introduction

Training should be developed in response to confirmed needs and so a training needs analysis should be conducted first. Training should then be delivered by qualified trainers taking into full consideration the different needs of the students e.g. gender and diversity issues. To ensure good quality training **NCDR** should set national guidelines for the management of training, to monitor the progress and delivery of training and to assess the outcome. The **NTSG** should specify the requirements for the management of training.

Training can be carried out in two ways, informal or on-the job training, and formal training. On-the-job training is normally carried out with small numbers of staff or on a one-to-one basis. It tends to be ongoing and provided on an 'as required' basis by more senior staff. Formal training is normally delivered to a group of trainees over a finite period of time in the form of, for example, a training course or a workshop. Formal training may be directly conducted by mine action organizations themselves; or by NCDR staff.

### 2.2 Scope

This standard provides guidelines for training for mine action staff in Jordan. It specifically applies to training conducted by NCDR or by mine action organizations working in Jordan for personnel to carry out mine risk education (MRE), explosive ordnance disposal (EOD) and operations including survey, marking, clearance, monitoring and evaluation, and quality control activities.

### 2.3 References

The reference for this standard is based on IMAS 06:10 Management of training.

### 2.4 General requirements

The **NTSG** should establish procedures for the management of training within their programs. Such procedures should be laid out in national standards and cover the following requirements:

- a) Training should be based on a Training Needs Analysis;
- b) Training should be included in strategic and annual planning as part of the Development of national capacity;
- c) Training should be properly designed and developed and guided by comprehensive Training Management Packages (TMP);
- d) Unless training is carried out centrally under the control of the NCDR, mine action organizations should be required to submit their TMPs to the NCDR for approval prior to any training taking place.

Note: During the accreditation process, mine action organizations should be required to submit details of their management training schemes and employee skills development programs.

- e) Training should only be delivered by capable trainers. The NCDR should specify how qualifications will be checked;
- f) Evaluation and testing of training should be carried out;
- g) Training should be subject to internal and external monitoring; and
- h) Training administration procedures should be developed.

## 2.5 Training Needs Analysis (TNA)

The primary intention of conducting training for mine action staff is to acquire basic, or enhance existing, knowledge, skills, and competencies in order to satisfactorily fulfil the duties and responsibilities assigned to them. In ideal circumstances, mine action organizations should already know the need for training they undertake. When it is not known, a TNA should be carried out prior to developing and conducting any training. A TNA will help to:

- a) Confirm whether training is needed;
- b) Determine content and scope of training;
- c) Determine desired training outcomes;
- d) Establish a basis for measuring success.
- e) Determine causes of poor performance in the organization;

f) Gain management support;

A wide variety of methods, such as questionnaires, focus group discussions, interviews, analysis of job performance should be used to conduct a TNA.

The need for training should be based on the actual requirements of the potential trainees in the training, *and* on the organizational context in which they are to apply what they have learned.

'Actual requirements' refers to the Knowledge, Skills and Attitudes (KSA) required performing the job. 'Organizational context' points to aspects within the organization that limit performance of individual staff members, such as poorly written Terms of Reference, or a lack of leadership.

A TNA helps to analyze which performance issues are caused by a lack of KSA on the part of a staff member, and which are due to constraints in the organizational context. Those that are caused by a lack of appropriate KSA on the part of staff members can be addressed through training, whereas those caused by constraints in the organizational context will have to be resolved through other means. Without a TNA, an organization may be inclined to train their staff members, without realizing that the real issue limiting performance lies in the organizational context.

A TNA should follow the following steps:

## 2.6 Step 1: Organizational analysis

This analysis should consider the major organizational performance issues and the expected contribution the training is to make. From this analysis it should be clear which issues can be dealt with through training, and which require a change in the functioning of the organization, such as a change in strategy, staffing or management systems. If the TNA indicates that performance is being limited by issues within the organization, the organization should devise a plan for addressing these issues.

If the TNA indicates that training *can* contribute to increasing organizational performance, the organizational analysis should indicate which position (s) requires training.

## 2.7 Step 2: Task analysis: identifying performance discrepancies

This analysis is a skill audit and should involve the following:

- a) A detailed examination of the duties and responsibilities of each position under review;
- b) Determination of the separate tasks to be fulfilled the duties and responsibilities related to each position;
- c) Determination of the Knowledge, Skills and Attitudes (KSA) required for each of the tasks to be satisfactorily carried out; and
- d) Determination of the current level of KSA of each staff member in positions for which performance needs to be enhanced, i.e. *'what staff is doing now'* (actual performance on task and related KSA).

The result of the task analysis should be a summary of tasks and related KSA required for a staff member to satisfactorily fulfil the duties and responsibilities of a particular position.

## 2.8 Step 3: Identify training needs

Training needs should be formulated based on the difference between *'what staff is doing now'* and *'what they should be doing'* (i.e. required performance). The resulting training needs can be divided in larger overarching training needs, such as 'How to conduct mine clearance operations', but should also be broken down into smaller training needs, such as 'How to operate current metal detectors safely', 'How to set up separate MRE sessions for men and women' and 'How to do gender sensitive community mapping'.

After the TNA has been completed, and if training is found to be the suitable response to the performance issues, the training shall be designed and prepared.

## 2.9 Training design and preparation

To design and prepare training adequately it is necessary to:

- a) Decide what type of training will best meet training needs;
- b) Establish objectives for the training, sessions and possibly, lessons;

- c) Design session plans; and
- d) Decide on a method for evaluating and testing the training.

## 2.10 Types of training

### 2.10.1 Formal training

Formal training is normally delivered in the form of a training course or workshop, to a group of trainees, for a finite period, often in a location away from an operational worksite. Formal training should be designed and prepared according to the four tasks in Clause 6.1. Three levels of formal training are discussed below.

### 2.10.2 Basic training

Basic training aims to give a recruit the KSA required for each of his/her tasks to be satisfactorily carried out. This type of training is applicable for newly recruited staff e.g. a basic demining course for newly recruited demines.

### 2.10.3 Refresher training

Refresher training aims to update and/or maintain KSA levels over time. This type of training can be used on a regular basis, after periods of absence from a task or when there are signs that KSA levels have dropped. These signs may be identified through routine monitoring and inspection or as a result of an incident.

### 2.10.4 Continuation training

Continuation training is training that builds on previous training and provides additional KSA. This type of training is applicable when there are changes to work methods, procedures and equipment or when staff is being given additional skills to advance their careers. The decision to choose one level of training over the other should be informed by the training needs, but also by:

- a. The position, tasks and related KSA;
- b. The number of trainees involved; and
- c. The availability of human (trainers), physical (training equipment and facilities) and financial resources necessary to design prepare and deliver the training.

## 2.11 Training, session and lesson objectives

Training should be designed with specific and measurable training objectives. A training objective is a brief, clear statement of what a trainee should know or be able to do at the completion of the training. They serve to guide the design of the training content and methods and provide a means against which the results of the training can be compared. Training objectives should be based on the training needs established by the TNA, and describe the KSA a trainee should gain as a result of training.

Each training objective should be then broken down into a number of specific and measurable session objectives. Session objectives describe the specific KSA that should be acquired by trainees in one session. For example: for the training objective, 'facilitate mine/ERW community mapping with affected communities', three session objectives can be formulated; one related to knowledge, one to skills and the other to attitudes. A session should generally last no more than half a day and be comprised of several lessons. Attitude objectives should be used where there is a need for trainees to conform to certain standards of behaviour, such as for example safety. Attitude objectives cannot be tested, they can only be assessed. For a training subject such as safety there should be two complementary enabling objectives. The first would involve an understanding of safety requirements, which can be tested but the second, the attitude objective, would involve

'Demonstrating' an attitude towards safety. There could be some specific indicators provided for 'safe' and 'unsafe' behaviour and criteria for passing and failing, but the assessment would involve observing trainees throughout training to ensure that they do demonstrate safe behaviour.

## 2.12 Training Test

The last step in preparing for the training should be the development of training tests. These tests should be applied at the end of the training, by which time the training objectives should have been achieved. For practical tests or on-the-job assessments, the conditions should be safe and as close to the conditions a trainee could expect on the job as possible. The final part in the development of training objectives is the determination of results statements, which describe how a trainee can demonstrate that the training

and/or session objective (s) has/have been achieved. A result statement may simply be a pass mark for a written test, or the successful completion of a practical test. In demining training, safety is often relevant in this test. The conditions and results statements for the evaluation should be listed on a training test plan.

Trainers can also include remarks on administrative or other details on this form. Provision should be made for the retesting of trainees who do not pass an initial test. Details of the management of training tests and possible re-test should be included in the Training Administration Procedures. If a trainee fails an initial test, they should be given a short period of extra training and then be given another test to complete. The fact that a retest was required should also be included on the training report for that individual. If the trainee fails the re-test, alternative arrangements may be made. These may include OJT for the trainee, followed by participation in a future training on the same subject.

While testing the achievement of the training objectives at the end of the training is important, the trainer should also conduct 'confirmatory testing' throughout the training. This involves checking that the trainees have understood the lesson and are on their way to complete the objective to the standard required. This type of testing should be prepared by the trainer as part of lesson planning.

### **2.13 Training Management Package (TMP)**

A TMP is a set of documents that provide all the information necessary to run formal training. The NCDR should specify what should be included in a TMP within their programs. A TMP should include, where relevant:

- a. Training, session and lesson objectives;
- b. Set of session plans and schedule;
- c. Description of activities and practical exercises;
- d. Practical exercises;
- e. Training testing tools;
- f. Power point presentations and overhead sheets;
- g. List of training equipment;
- h. List of training aids;

- i. Hand-outs;
- j. Reference materials; and
- k. Training administrative procedures (see section 10 below).

A comprehensive TMP should permit a trainer to efficiently and effectively plan and deliver formal training and at the same time should provide the manager with a concise overview of the entire training.

When mine action organizations run their own training, the TMPs should be submitted for approval to the NCDR in accordance with the procedures set by the NCDR.

#### **2.14 Qualifications and experience of training staff**

Mine action organizations should ensure that all trainers have the appropriate qualifications and experience necessary to provide effective and technically sound training.

The NCDR may require mine action organizations to submit trainers' Curriculum Vitae (CV) for approval prior to training, unless the qualifications and experience of the trainer have already been covered as part of the accreditation process.

#### **2.15 Monitoring of training**

##### **2.15.1 General**

Monitoring of training should be conducted to ensure that the training is effective and technically sound, that it is being conducted in accordance with the TMP and that it achieves the stated objectives. Plans for internal and external monitoring of training should be included in the training administrative procedures. Monitoring of training can be done internally by the person, or the organization responsible for the training e.g. training provider, training organizer or training manager, and/or externally by a person, or an organization other than the training provider/organizer.

Whether monitoring is conducted internally or externally, it should:

- a) Be specific in where the training does or does not meet the on-the-job requirements and what has to be included or changed to improve the training;

- b) Include comment on the good and bad points of training.
- c) Obtain input from a wide range of personnel, including past trainees who can provide comment on where the training met or failed to meet on-the-job conditions.

### 2.15.2 Internal monitoring

Internal monitoring of the training may include:

- a) Assessing trainees perceptions of the training through a process of trainee self assessment and feedback during the training; and
- b) Visiting the site of operations to observe the conditions under which the trainees apply acquired KSA in their work and; to discuss with supervisors and co-workers how the trainees are able to fulfil the requirements of the position. It may also be possible, to obtain comment from past trainees on assimilating acquired KS

### 2.15.3 External monitoring

External monitoring may include:

- a) An interview with the trainees at the end of the training to discuss the completed training. Topics covered during these interviews should include:
  - 1. Training administration;
  - 2. Training content and likelihood of assimilation of acquired KSA;
  - 3. Instructor knowledge and skills;
  - 4. Training equipment;
  - 5. Training facilities; and
  - 6. Trainee support;
- b) Periodic assessment of the general training skills and methods of trainers. This assessment should be conducted on a regular basis and should consider whether TMPs are being followed, the quality of theoretical and practical aspects of the training, and whether trainees are achieving expected results in accordance with objectives;
- c) visiting the site of operations to observe the conditions under which the trainees apply acquired KSA in their work, to discuss with the end-users, i.e. supervisors, or co-

workers how the trainees are able to fulfil the requirements of the position, and possibly, to obtain comment from past trainees on the assimilation of acquired KSA.

- d) Unsolicited comment from end users either in writing or verbally; and
- e) Discussions at meetings or working groups.

The findings of external monitoring visits should be formally presented to the trainers and the organization delivering the training. Where internal and/or external monitoring identifies deficiencies in training, the trainer should make the necessary adjustments to the training.

Adjustments, however, should not be automatically made on the basis of information from one source alone.

## **2.16 Training administration procedures**

### **2.16.1 General**

Training administration procedures should be included in the TMP. Examples of some of the detail that may be included in these procedures are:

- a) Trainer requirements including specific knowledge and skills;
- b) Translator support;
- c) Accommodation requirements;
- d) Transport requirements including safety vehicles;
- e) Medical support;
- f) Communications;
- g) Procedures for the management of re-tests;
- h) Procedures for any pre-assessment of students who may already have the KSA covered in a lesson; and
- i) Internal and external monitoring requirements; and examples of training documentation such as student duty lists, equipment issue forms and sample training reports.

In some cases, the NCDR may stipulate the inclusion of certain requirements included in administration procedures.

### 2.16.2 Criteria for the selection of trainees

The mine action organization should ensure that staff selected to attend training are suitable and have the prerequisite knowledge and skills necessary for them to assimilate the KSA to be taught on a particular training. When preparing selection criteria, the mine action organization should ensure that the criteria includes elements to encourage women trainees, and does not discriminate against people with disability who are suitable and have the prerequisite qualification. Where possible, gender balance should be ensured in selection of trainees.

### 2.16.3 Training equipment and materials

Equipment and materials used during training should be gender sensitive and should reflect the same as those used on actual operations as much as possible.

### 2.16.4 Training mines and ERW

The use of training mines and ERW shall be strictly controlled to avoid accidents/incidents. The use of inert, drill, instructional or replica mines and ERW shall be in accordance with the requirements of safety, Storage, transportation and handling of explosives.

### 2.16.5 Training facilities and areas

Training shall be conducted safely without risk of harm to the trainees, trainers or local population. Separate training sessions for women and men might be needed in certain contexts in order to guarantee the meaningful participation of all groups. If an initial training is conducted in the field, it should be in areas known or proven to be safe. After initial training is complete, and a satisfactory level of competence has been achieved, it may be permissible to continue further training in hazardous areas. Such training should only be conducted under close supervision and only with the approval of the NCDR.

### 2.16.6 Management of training records

For each training course or period of OJT, records should be maintained by the organization that conducted the training. Training records should include details of the

training received, who received it, who were the instructors and the standard achieved by each individual trainee. A training report should also be issued to each trainee. The organization conducting the training should maintain records of training for the life of the program. Records of training are to be made available to the NCDR on request.

## **2.17 National Mine Action Authorities (NCDR)**

### **2.17.1 The NCDR shall:**

- a) Establish and maintain national standards, regulations and procedures for the management of training within their programs. These procedures should be consistent with the relevant national and international standards, regulation and requirements.
- b) Approve TMPs and the CVs of trainers before training begins, when these have not already been covered as part of the accreditation process.
- c) Perform periodic external assessment of training conducted by the mine action organizations to ensure the training is in accordance with the TMP and the national standards.

### **2.17.2 Mine Action Organizations**

The organizations conducting mine action training shall;

- a) Ensure that capacity development forms an essential part of their work and the work of Technical Advisors providing support to any training.
- b) Produce comprehensive TMPs.
- c) Ensure that their TMP is in compliance the organization's SOPs and with the national standards.
- d) Ensure that training is based on a Training Needs Analysis.
- e) Ensure training activities, whether formal or on-the-job, are written into the strategic and work plans of the organization.
- f) Submit TMPs to the NCDR for approval prior to any training taking place, unless the training is carried out centrally under the control of the NCDR.
- g) Conduct internal monitoring and evaluation as an essential part of the training.
- h) Maintain records of training for the life of the program. If the organization ceases to work in a particular country, the training records shall be transferred to the NCDR.

- i) Ensure the training is being delivered by qualified and experienced trainers and that the needs of both men and women are being addressed. In some circumstances it may be necessary to use male and female trainers.

### 3. Chapter 3: Quality Assurance

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#### 3.1 References

This document has been developed with reference to the following documents:

IMAS 07.30 Accreditation of Demining Organizations

IMAS 07.40 Monitoring of Demining Organizations

IMAS 09.10 Clearance Requirements

IMAS 09.20 Guidelines for the use of Sampling procedures

#### 3.2 Introduction

This standard adopts a two-stage approach.

- Stage 1: Quality Assurance (QA)
- Stage 2: Quality Control (QC)

QA involves the accreditation and monitoring of the clearance organisation before and during the clearance process. QA is a measurement of agency compliance with agency SOP. This process is beneficial to both the demining organisations and the NCDR as it compliments the internal QA of the agency. QA will be conducted through a process of both announced and unannounced QA visits; however the emphasis will be placed on announced QA incorporated into a published QA plan.

QC involves the process of an inspection of cleared land before it is formally released to the beneficiary for use. QC checks will vary depending on the clearance technique such as mechanical options, manual clearance, MDD clearance and factors such as the mine/UXO threat and the soil conditions.

This combined application of quality assurance (before and during the clearance process) with post-clearance quality control will contribute to achieving an acceptable level of

confidence that the land is safe for its intended use. The NCDR may request that agency release clearance assets to assist in the QC of their task sites.

It is paramount that the implementation of QA and QC is impartial and judicious. Throughout the humanitarian demining process, QA is a continuous activity accomplished through QC (inspection), training, supervision and development of procedures.

QA must enhance the overall mine/UXO clearance process and not slow it down unnecessarily.

### 3.3 QA Framework

The basic framework for meeting NTSG and determining the degree of QA is as follows:

- Adherence to approved training programme.
- Adherence to the NCDR NTSG.
- Adherence to individual SOPs accredited and approved by the / NCDR.
- Discipline in the danger area.
- Levels of supervision and the associated internal QC checks.
- The mine/UXO threat.
- The final use of the land will determine the depth of clearance

### 3.4 QA for Clearance Operations

Manual clearance operations fall into two categories; clearance with metal detectors and excavation. For manual clearance effective QC will provide the majority of the overall QA process.

For clearance by MDDs a combination of QA and QC will be conducted as it is equally important to observe the dogs working as sampling the ground upon completion.

### 3.5 Mechanical Assistance to Clearance Operations

QA is an integral part of mechanically clearance operations and the type / quantity of QA will be dependent on the machine's role, terrain and available assets. In support of manual clearance, mechanical clearance can be used to prepare the ground prior to deploying a manual clearance team.

### 3.6 NCDR QA Task Inspection

The NCDR QA team shall conduct on site inspections to ensure that the demining organisation is conducting operations in accordance with its SOP and the NTSG (National Technical Standards and Guidelines). During the visit the QA Officer shall complete a QA Evaluation report and brief the task supervisor, team leader or senior member on his findings. The Supervisor shall be asked to complete relevant sections of the form and the organisation shall be given a copy at a later date.

An example of a current Quality Assurance Evaluation Form can be obtained from NCDR.

### 3.7 Terminology for Level of Compliance

QA Assessment: Level of Compliance to Organisation SOP and NTSG

HIGH <input type="checkbox"/>	MEDIUM <input type="checkbox"/>	LOW <input type="checkbox"/>	FAIL <input type="checkbox"/>
Good	Satisfactory	Warning	STOP

Low: As a result of one or more Non-compliances. A verbal warning shall be given and written in the Comments and Recommendations table. It is at the discretion of the QA Officer whether to STOP operations and/or stipulate a period of time by which the compliance must be corrected, however, any serious Non-conformity shall be corrected immediately.

Fail: As a result of one or more Critical Non-compliances work shall stop. The reason shall be explained by the QA Officer and written in the Comments and Recommendations table. Activities shall be suspended pending compliance and if necessary, a review by the NCDR and the organisation will take place.

### 3.8 Non-conformities

The definition of critical Non-conformities must take into account the clearance methodology used by the demining organisation. For example, it would clearly be inappropriate to use residual metal fragments as a critical Non-conformity if excavation method were to be used as part of the primary clearance technology.

### 3.9 Example of Critical Non-conformities

Missed mines / UXO, disregard for safety (no medic, safety vehicle or communications, not wearing PPE), failure to comply with TO, inadequate supervision or failing to comply having already receiving a warning.

### 3.10 Special Monitoring

It may be decided that Special Monitoring of the demining organisation by the QA Officer or additional personnel is necessary for the following reasons:

- It is concluded, after one or more QA assessments are conducted that, the organisation is not operating in compliance with their SOP and the NTSG. This may result in the organisation receiving a verbal warning or work being stopped. The QA Officer shall ensure that the cause of the Non-compliance is corrected and that operations are consistent with the SOP. This may require the QA Officer conducting more frequent inspections and devoting additional time with the organisation concerned.
- Starting a task in an unfamiliar area.
- Working on a difficult or hazardous task (E.g., undulating ground, rocky, highly vegetated, residential, trip-wires, and improvised mines).
- When inexperienced or new key personnel are managing a task.
- Handover to NCDR staff as part of the capacity building process.
- Commencing operations after a lengthy period away from operations or after completing a training course.
- Introduction of new demining procedures or equipment.
- Conducting field trials with equipment and machines.
- Multiple assets working at a task.
- Commencing operations following a demining accident.

### 3.11 Sampling

NCDR QA teams will do the inspection of cleared land. This inspection forms part of a management process which aims to verify the quality of clearance, and to establish sufficient confidence that the demining organisation has removed and/or destroyed all

mine and UXO hazards from the specified area to the specified depth, in accordance with the clearance requirements outlines in Chapter 7 – Clearance Requirements.

The effectiveness and validity of inspection by sampling requires the clearance process to be 'continuous and under control'. A 'continuous' process implies that each lot presented for inspection should include land, which has been cleared under similar conditions; i.e. by assets with similar capabilities, using similar operational procedures and with similar equipment.

The procedures and equipment used by the inspection body to inspect the samples of cleared land should be agreed with the clearance organisation as part of the contract or agreement. Any major changes to sampling or inspection procedures (such as the introduction of mechanical sampling) should be agreed between the NCDR and demining organisation prior to the start of inspection. The NCDR and the demining organisation should agree a mutually acceptable time limit within which the sampling inspection must take place.

A 'lot' should be considered as 'cleared' only if all the samples in the lot are found to be free of mines or UXO down to the depth specified in the task order. Where any sample in the lot is found to contain one mine or UXO, this will constitute a 'critical Non-conformity', and the lot containing that sample should be declared to have failed the inspection.

Cleared land may contain other indicators of potential Non-conformity, such as residual metal fragments following detection by metal mine detectors, or residual traces of explosives following detection by explosives detectors. Such cases could indicate a potential critical failure of the demining process (equipment, people or procedures), and again constitute a critical Non-conformity. The conditions for acceptance or Non-acceptance of all categories of Non-conformity should be agreed between the NCDR and the demining organisation prior to the start of clearance.

### 3.12 Corrective Action

The NCDR will determine the corrective action to be taken on lots that are rejected pending the findings and recommendations of an incident investigation as outlines in Chapter 9 – Mine / UXO incident investigations.

The demining organisation should investigate every critical Non-conformity, shall provide the inspection body with reasons for each critical Non-conformity, and shall provide a programme of corrective action. If a lot fails re-inspection following corrective action, the inspection body may require the lot to be cleared again using a different sub-unit, using different operational procedures and with different equipment; if these alternate methods exist. If no acceptable reason is given for a critical Non-conformity, either by the clearance organisation or by the inspection body, the inspection body should require the lot to be marked and fenced until the reasons for the Non-conformity can be established.

Lots should not be offered for re-inspection until the demining organisation has taken corrective action as agreed in accordance with the NCDR QA team. The QA team should specify whether normal or tightened inspection shall be used for re-inspection.

The sample plan, the methods used for inspection, and the results should be recorded by the NCDR team, including the location, depth, types of hazard and other Non-conformities. Details of all corrective action shall also be recorded. All records shall be passed to the NCDR operations department.

### 3.13 Responsibilities

NCDR shall:

- Establish a system for the monitoring of demining organisations which complements the procedures for accreditation and post-clearance inspections
- Specify the national standards and provide guidelines for the monitoring of demining organisations;
- Monitor the work of Demining organisations,
- Ensure that the monitoring system is being applied in a fair and equitable manner,

- Ensure that monitoring does not interrupt or delay demining projects.
- The organisation undertaking demining shall:
- Apply management practices and operational procedures which aim to clear land to the requirements specified in Task Orders (TO).
- Maintain and make available documentation, reports, records and other data on demining activities to the NCDR.
- Provide the NCDR with access to all sites, buildings and other facilities which need to be visited as part of the monitoring requirement.
- Provide clearance assets where necessary to assist in the QC of agency Task sites

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## 4. Chapter 4: Health and (Occupational) Safety

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### 4.1 References

This document has been developed with reference to the following documents:

IMAS 10.20 Demining Worksite Safety

IMAS 10.30 Personal Protection Equipment -- PPE

IMAS 10.40 Medical Support to Demining Operations

IMAS 10.50 Storage, Transportation and Handling of Explosives

IMAS 10.60 Reporting and Investigation of Demining Incidents

Jordan Law of Explosive Material (1953)

TNMA 10.20 Calculation of Explosion Danger Areas

### 4.2 Scope

This chapter provides specifications and guidance on the development and implementation of policy and documented procedures and practices which aim to establish and maintain a safe demining worksite. This chapter broken into 3 parts:

Part 1: Personal Protective Equipment (PPE) requirements

Part 2: Work Site Requirements

Part 3: Transport and Storage of Explosives

### 4.3 Objective

To ensure that all clearance operations are conducted with the minimum exposure to risk and enhance the safety and quality of all clearance operations.

### 4.4 introduction

The needs to manage risk and to provide a safe working environment are fundamental principles of mine action management. Risk reduction involves a combination of safe working practices and operating procedures, effective supervision and control,

appropriate education and training, equipment of inherently safe design, and the provision of effective personal protective equipment and clothing.

Given the wide range of operational settings and mine action activities, it is not possible to provide a precise and complete set of specifications or provisions that apply to all mine action worksites. Thus, mine action organisations should develop and maintain management procedures and processes that will enable Safety and Occupational Health (S&OH) risks in the worksite to be identified, evaluated and reduced in a systematic and timely manner.

## **4.5 Chapter 4, Part 1: Personal Protective Equipment (PPE)**

### **4.5.1 General**

This Chapter provides specifications and guidance to demining organisations on the minimum requirements of personal protective equipment (PPE), including protective clothing, for use in mine action.

The levels of PPE provided for use in hazardous areas shall be based on a number of factors including: the local risk(s), operational procedures and practices, and local environmental conditions.

Training must be provided on the proper use, maintenance and storage of the PPE in use within the demining organisation. Facilities should be provided for its proper storage and carriage. Equipment must be examined on a regular basis to ensure that it is suitable for use.

All employees involved in demining should be provided with comfortable and serviceable clothing and footwear appropriate to the task and Jordanian conditions.

As a minimum, deminers and MDD handlers must wear “combat” style boots, trousers and long sleeve shirts. Where possible these should be made of natural materials. Personnel involved in burning activities should wear flame proof clothing where possible and as a minimum must wear cotton material rather than synthetics

Although this standard lays down distances at which the PPE must be effective it must be emphasised that this does NOT imply to deminers that they will be safe at such distances. Distance itself is an excellent attenuator of blast effects and the further away from an undesired explosive event the better!

#### 4.5.2 Blast / Fragmentation Protection

PPE should be capable of protecting against the effects of last blast and fragmentation appropriate to the activity performed in accordance with SOPs.

The frontal protection ensemble provided to employees, whether required to kneel, sit or squat shall be designed to cover the eyes, throat (frontal neck), chest, abdomen and genitals. Equipment provided to reduce the risk from such hazards shall include, as a minimum:

- Frontal protection, appropriate to the activity, capable of protecting against the blast effects of 240 gm of TNT at 30 cm from the closest part of the body.
- Face protection capable of retaining integrity against the blast effects of 240 gm of TNT at 60 cm, providing full frontal coverage of face and throat.
- Ballistic body armour and face protection should have a STANAG 2920 v50 rating (dry) of 450m/s for 1.102g fragments. Where such a rating has not been obtained equipment may still be approved for use subject to in country trials monitored by the NCDR.
- Hand tools should be constructed in such a way that their separation or fragmentation resulting from the detonation of an AP blast-mine incident is reduced to a minimum. They should be used with appropriate hand protection such as a hand-shield or gloves. Hand tools should be designed to be used at a low angle to the ground and should provide adequate stand-off from an anticipated point of detonation.

## 4.6 Chapter 4, Part 2: Work Site Requirements

### 4.6.1 General

The demining worksite shall be designed to:

- Provide a clearly visible separation of hazardous areas including fragmentation and evacuation safety areas, cleared areas, un-cleared areas and unknown areas of and around the worksite.
- Control the movement of deminers, MDD handlers and visitors (including members of the public) at the worksite.
- Limit the number of deminers and visitors allowed into the fragmentation and evacuation safety areas.
- During the controlled disposal of mines and UXO, take all reasonable precautions to exclude deminers, MDD handlers, visitors and members of the local population from the fragmentation and evacuation safety areas, or provide suitable protection inside buildings, bunkers or mobile structures.
- Include measures to prevent structural and environmental damage.

### 4.6.2 Marking Of Hazardous Areas

Safe and hazardous areas within the worksite shall be separated by providing clear and consistent marking. See Chapter 6 – Site Layout and Marking Systems for further information.

### 4.6.3 Medical

See Chapter 5 – Task Site requirements for further information

### 4.6.4 Communications

See Chapter 5 – Task Site requirements for further information

### 4.6.5 4.6.5 Safety distances for the disposal of mines and UXO

Demolition minimum safety distances	
Type of munitions	(Open area – metres)
AP mine – Blast	100

AP mine – Fragmentation/bounding/directional	200
AT mine – Blast	300
AT mine - Shaped charge (A shaped charge jet can travel up to 1800m in free air.)	1,800
Off route mine	1,000
Mortar up to 82 mm	300
Shell up to 80 mm	300
Shell up to 160 mm	600
Shell above 160 mm	1,000
Rocket up to 88 mm	300
Hand and rifle grenade	200
<p>Buried boosted charges estimated at 10 kilograms have a safety distance of 500 metres. 100 metres should be added for each additional 10 kilogram charge.</p> <p>Organisations should seek the advice of a qualified and experienced EOD operator to determine safety distances for all munitions other than those detailed above. All safety distances shall be specified in documented SOPs.</p> <p>Protective measures may be used to allow distances to be reduced.</p>	

#### 4.6.6 Operational Staff

All personnel involved in clearance operations shall:

- Take all reasonable care for their safety and that of other persons on the worksite.
- Comply with instructions given for their own conduct and safety, especially those contained in SOP.

- Comply with NTSG on conduct and safety on worksites.
- Report forthwith to their superior any situation, which they have reason to believe could present a worksite hazard, which they cannot themselves correct.

#### 4.7 Mechanical Site Safety

A mine clearance site that incorporates both mechanical and manual mine clearance procedures will require strict control and greater safety distances than those used for manual and MDD mine clearance.

When using flails and inspecting the area afterwards through clearance or visual inspection, all found mines or mine parts that include the fuse are to be destroyed in situ. Under no circumstances are these objects to be remotely moved or neutralised and recovered because of the possible unstable nature of the mine, firing train or firing train component.

When operating a remote controlled clearance machine the operator is to be no closer than 50 metres (AP threat) to the machine, minimum PPE requirements are visor, helmet and apron. At no time is the operator to be directly in front of or behind the machine.

When operating a remote controlled clearance machine from inside a protected vehicle the minimum safety distance will be determined by the level of protection provided. The manufactures guide for the vehicle should be referred to.

These distances maybe reduced if there is adequate protection available from blast and fragmentation and essential personnel required for supervision are wearing full PPE. The safety distance shall be increased when necessary. Any reduction in safety distances must first be authorisation by the NCDR.

#### 4.8 Demining Incidents

Procedures for the response to a demining incidents and accidents shall be established and formally documented as SOPs. The SOPs should include:

- The organisation and capabilities needed to respond to a demining incident, including the procedures, training, equipment and material.

- Procedures for the investigation, analysis and corrective action to be taken following a demining incident.

## 4.9 Chapter 4, Part 3: Transport, Storage and Handling of Explosives

### 4.9.1 Reference

Jordanian Law of Explosive Materials (No 13 dated 17/1/1953, Paper 1131).

### 4.9.2 Certification

The NCDR will provide certification for certain people within demining organisations to take responsibility for the transport, storage, security and handling of explosive materials.

### 4.9.3 Standard Operating Procedures

All procedures and requirements required for the transport, storage and handling of explosives are to be fully explained in step-by-step detail in the clearance organisations SOP.

Internal agency QA should ensure compliance to agency SOP, which should reflect the principles of Jordan's Law for the transport, storage and handling of explosives.

### 4.9.4 Coordination

The NCDR will be the focal point for the coordination the security of explosive materials in transit and storage with the military.

### 4.9.5 Inspection

The NCDR will inspect explosive storage facilities and the use of explosives as part of the QA process.

### 4.9.6 Reporting

Agency reporting must contain details of explosive use on a monthly basis.

## 5. Chapter 5: Task Site Requirements

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### 5.1 References

This document has been developed with reference to the following documents:

IMAS 07.40 Monitoring of Demining Organizations

IMAS 10.20 Demining Worksite Safety

IMAS 10.40 Medical Support to Demining Operations

### 5.2 Scope

This chapter covers the requirement for all mine and UXO clearance operations.

### 5.3 Objective

To ensure that demining activities are carried out with the necessary personnel, equipment and procedures in place.

### 5.4 Introduction

4.9.7 Before work can start at any site the supervisor or person in charge must satisfy themselves that the on-site requirements are all in place. These include;

- Communications
- Medical support
- Documentation / Records

### 5.5 Communications

An effective communications network is essential for the safety of all clearance operations and necessary to ensure an effective and safe mine/UXO clearance operation. Mine/UXO clearance activities must not be undertaken without suitable and effective communications between the personnel on site and the support elements.

There are several levels of communications necessary to ensure that mine/UXO clearance, management and support personnel are able to communicate as and when required. All levels are to be defined in the agency's SOP.

The communications means are to be staffed during all operational activities and should also cover the travel periods to, from, and in between the sites.

Three communication networks may be employed in Jordan.

- **National Network:** This is the operational network between the NCDR, Regional Offices and all mine/UXO clearance organisations. This structure is composed of landline telephone and mobile telephone systems in conjunction with email.
- **Regional Network:** This network provides mine Action assets with the means to communicate with all other mine clearance organisations in the region. This structure will normally comprise of VHF / UHF radios operating either through a repeater system or on line of sight.
- **Site Network:** This network provides a link on task-sites between Team Leaders, Section Commanders, medical assistants and other radio users at task-sites. This structure will normally comprise of VHF radios operating either through a repeater system or on line of sight. Network frequencies may be duplicated in all regions as radio equipment used at this level has a limited transmission distance.

## 5.6 Licences and Frequencies

Most radio equipment will require a licence to import and operate. The specification of all radios must be checked with the Telecommunication Regulatory Commission (TRC) in order to determine the licensing requirement.

The TRC will also issue relevant frequencies upon request. If necessary this process will be facilitated by the NCDR.

## 5.7 Medical Support to Demining Operations

No mine/UXO clearance operations will commence without an acceptable medical support and casualty/medical evacuation plan that everyone involved fully understands, and has practised.

If the medical cover stipulated in this chapter is removed or unavailable, clearance will cease immediately until it has been restored.

Teams will exercise casualty evacuation at least weekly and upon changing worksites. Additionally the proposed case vac route must be confirmed as open daily. These exercises will be recorded in the clearance task log.

The minimum medical requirement is as follows:

- One trained Medic with their equipment will be sited within 5 minutes walking distance of each clearance site.
- The medic must have immediate access to a serviceable evacuation vehicle and a trained driver, which, during operational hours is used for no other purpose. The vehicle must be suitable to transport a casualty quickly and safely to the nearest appropriate medical facility, identified Helicopter Landing Site (HLS) or airstrip. As a minimum it must be fitted with an orange warning beacon. No other markings or sirens are necessary. The vehicle must be equipped with means to communicate on the regional network. The vehicle must have enough fuel (at least ½ a tank) to reach its planned destination and no outstanding maintenance problems.
- In the case of survey teams a Medic must be within 5 minutes of the team and must have radio communication should assistance be needed.
- The Medic on site must be equipped with the medical facilities that are sufficient to stabilise expected trauma injuries at the location. The compulsory minimum medical equipment is listed at Annex a Table 1.

Organisations are responsible for ensuring that a casualty is transported as quickly but safely to the nearest appropriate medical facility. A list of NCDR recommended medical facilities and contact is at Annex B.

The objective must be to stabilise the casualty within 15 minutes from the time of injury and ensure that sufficient medical supplies, expertise and manpower are available to maintain the casualty throughout the intended evacuation period.

All organisations are to clearly state in their SOP the intended means of evacuation of casualties. Where this changes from different site locations, this must also be clearly shown. Where a vehicle is used it must be able to carry at least one stretcher and be equipped with communications and other equipment according to Annex a Table 3.

A list with the contents of the medical trauma injury kit is to be included in the organisation's SOP. The method of evacuation in the event of an accident must always be specified and understood by all and should be by the safest and expeditious method available to an appropriate medical facility.

Evacuation by air (if available) should be considered if the CASEVAC by road is expected to take more than 90 minutes or that the injuries may be as worsened because of road movement.

## 5.8 Documentation/Records

The following documentation and records will be present at each worksite and are to be maintained by the Supervisor/Team Leader:

Relevant SOP. Current copy, including all amendments.

Supervisor/Team Leader's Operations File. The Supervisor is to have an Operations File containing the following documentation. The Operations File is to be onsite during all mine clearance activities.

- Minefield Record / Survey report.
- QA Record Sheet. Record of all internal and external QA/QC checks that have been conducted on site.
- Visitors Log. Log to be completed by all visitors to worksite.
- Visitors Briefing. Copy of the site briefing given to visitors.
- Briefing Board / Map
- CASEVAC Plan. Plan drawn up for current worksite.
- Medical Information. Name list of all members' attendance including ID number and allergies.

## 5.9 Annexes

### Annex A to Chapter 5 Medical Equipment

Table 1: Compulsory Minimum Equipment for Trauma Care Pack

Item	QUANTITY
AIRWAY EQUIPMENT	
Manual ventilation bag with oxygen reservoir + mask	1
Hand held suction unit with oral catheter	1
Oral airway disposable various sizes 2,3,4	1 each
CANNULATION AND INJECTION EQUIPMENT	
Protective eyewear	1
Sharps disposal container	1
Intravenous Cannula size 14G,16G,18G,20G	2 each
I.V administration set	4
Medical adhesive tape 2.5 cm	1
Venous tourniquet	1
Alcohol swabs	25
Syringe 5ml	5
Syringe 10ml	5
Needle 21G	10
Water for injection or NaCl 0.9% 10ml	10

Medical gloves	10 pair
<b>TRAUMA SUPPLIES</b>	
Triangular bandages	2
Sterile dressings (10cmx10cm or 10cmx20cm)	10
Bandage 10cm	5
Bandage 15cm	5
Large multi-trauma abdomen/chest dressing	2
Burn dressings	2
Eye pads	8
Pressure dressing / field dressing	4
Antiseptic solution	100 ml
<b>SPLINTS</b>	
Upper limb splint (e.g., Sam, Kramer, cardboard)	1
Lower Limb Splint (e.g., wooden, cardboard)	1
Cervical stifneck collar set or adjustable stifneck collar	1
<b>OTHER ITEMS</b>	
Universal scissors (paramedic shears)	1
Dressing scissors	1
Kelly forceps	1
Dressing Forceps	1

Stethoscope	1
Blood pressure manometer.	1
Casualty triage tags (set 5)	1
Gauze Pads, medium	25
Torch (preferably penlight)	1
Adhesive medical tape	1 roll
Sterile scalpel	1
DRUGS	
Inj. Naloxon 0.4 mg/ml (if using opioid)	2 x 1 ml.
Inj. Anti-emetic drug (if using opioid)	2 amp.
Ringer lactate 1000ml	2
Normal saline 0.9% 500ml	2

Table 2 Recommended Additional Medical Equipment

ITEM	QUANTITY
Non-rebreathing oxygen mask with reservoir bag	2
Oxygen supply for 120 mins at 8 litre/min	
Oxygen manometer and regulator with minimum flow of 8 litres/minute	1

Laryngoscope set	1
Nasopharyngeal airways various sizes	1
Endotracheal tubes sizes 7,8 (cuffed)	1 each
ETT Guide stylette	1
Magill forceps size 8	1
Magill forceps size 9	1
Tube check	1
KY Gel tube	1
Chest decompression set	1
Convenience bag	1
Emergency blanket	2
A Sherman chest dressing	1
I.V dressing	10

Table 3 Minimum Medical Equipment for Evacuation Vehicle

Minimum Medical Equipment for Evacuation Vehicle	QUANTITY
Stretcher with straps	1
Spinal Board (or similar device)	1
Blanket	2
Water container	25 litres

Proven communications	1
Fire Extinguisher	1
Head Block set	1

Annex B to Chapter 5 Recommended Medical Facilities and Contact Details

Ser	General Location	Hospital	Telephone Number
1	Amman	Al Hussein Medical City	06 5856856
2	Al Aqaba	Prince Hiai	03 2016711 / 03 2016712
3	Al Karak	Prince Ali	03 2386374
4	Al Mafraq	Al Mafraq Hostipal	02 6231176 / 02 6231467
5	Al Ramthah	Al Ramthah	02 7384338 / 02 7384358
6	Irbid	Aidon	02 7104682 / 02 7103659
7	Irbib	King Abdullah	

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## 6. Chapter 6: Site Layout and marking systems

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### 6.1 References

This document has been developed with reference to the following documents:

IMAS 10.20 Demining Worksite Safety

IMAS 08.40 Marking of Hazards

IMAS 10.20 Demining Worksite Safety

### 6.2 Scope

This chapter covers all mine / UXO clearance operations.

### 6.3 Objective

To ensure that all clearance and disposals are conducted on a safe and organised site.

### 6.4 introduction

The design of mine and UXO hazard marking systems should take account local materials freely available in the contaminated area 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, value or practical use for purposes other than mine and UXO hazard area marking. If material of any value is used, then it is likely to be removed.

This standard will concentrate on three broad areas:

- Marking of Suspect Hazardous Areas
- Site preparation and Layout
- Marking System employed in clearance operations

## 6.5 Marking of Suspect Hazardous Areas

Mine/UXO area marking has been categorised into three levels, from which a variety of situations can be effectively addressed.

- Emergency marking
- Semi-permanent fencing
- Permanent fencing.

Emergency marking: A suspect mine/UXO area is usually marked immediately to provide a visual warning of the presence of mine/UXO. This type of marking will, whenever possible, use the existing “mine” signs that clearly indicate the danger. Several different mine signs may be used (See Annex A for details). Emergency marking should be clearly recognisable from a distance of fifty metres, and be able to endure all the elements for six months. Local type mine/UXO marking, such as crossed sticks and stone piles, will always be recognised as a form of marking, people who do not have the resources to install a formal mine-marking boundary often install it.

Semi-permanent fencing is a more permanent and visual barrier surrounding a mine/UXO area. These signs should be visible from a distance of fifty metres and be visible sign-to-sign in heavily vegetated or undulating ground. The barrier must be in accordance with the specifications detailed in the section marking systems employed in clearance operations outline latter in this chapter. Semi-permanent marking should endure the elements for six months to one year.

Permanent fencing is normally preceded by Technical Survey and is for areas where it is not possible to conduct mine/UXO clearance operations in the immediate future. Permanent marking should be a physical and visual barrier to the movement of humans and livestock. It will consist of metal pickets, barbed wire and mine warning signs. This type of marking should endure the elements for one to five years.

## 6.6 Site Preparation and Layout

The nature of the ground will determine the layout of any work site, however a consistent arrangement with correct marking will increase the safety of those involved in the mine

clearance operation. The standardisation of all clearance marking systems is paramount; the following features are essential requirements for all mine/UXO clearance sites.

## 6.7 Designated Areas

**Control Point:** A command post from which a commander can control the operation. The control point may also act as an administration and briefing area and is the point at which all visitors shall arrive. Ideally it should be on level, well-drained land and have vehicle access and preferably some shade. The location of the control point shall be 100 metres without adequate protection.

**Clearance Lane:** This has also been known as a Working Lane and is the lane where clearance personnel are working. The clearance lane width is maintained using a base stick during clearance and shall be clearly marked along the edges with red topped posts or rocks at a minimum of 2 metres intervals and at all turning points. The clearance lane shall be a minimum of 1 meter wide and a maximum of 5 metres in length before the width is increased to a minimum of 2 metres. Therefore, the maximum distance for a 1 metre wide clearance lane shall be 5 metres. To increase safety, it is recommended that clearance lanes are widened to 2 metres as soon as possible and it is mandatory that they are widened to a minimum of 2 metres in circumstances where personnel are required to traverse rocks, undulating ground and other obstacles which may cause additional difficulties when walking, lose of balance or contribute to them stepping into an un-cleared area. This must be made a priority.

**MDD Box:** is an un-cleared surface, most often formed like a rectangular square, framed on four sides with manually cleared clearance lanes; the box is an area intended for operations with MDD teams. The box will have a maximum length of 50 meters and a maximum width of 10 meters.

**Control lane:** There maybe a requirement to identify a route through a clear area to the worksite or control point/admin area. White or unpainted posts or stones may be used to mark this.

**Vehicle Park:** This should be close to the Control Point and large enough to accommodate the mine/UXO clearance organisation's vehicles and visitor's vehicles. It is situated a

minimum of 100 metres from any mined area. All vehicles should be positioned in the park so they do not have to manoeuvre to depart in the event of an emergency.

**Stores and Equipment Area:** Where all equipment is securely stored. Usually part of, or adjacent to, the Control Point.

**Medical Area:** A static medical point, normally close to the control point. The medical area is to be occupied at all times during mine/UXO clearance operations, by a qualified medic. The medic is to ensure that the area is properly equipped at all times. The area should be flat, dry and shaded. The area may be combined with the control point or stores area but must be easily accessible from the minefield. The location of medical area is to be within 5 minutes of the furthest point of work in the mined area.

**Explosives Area:** When not in use all explosives shall be stored in a secure and marked explosives storage area. The explosive area must be sited between the Non-operational area (control point/stores area etc.) and the minefield. This area will be a minimum of 50 metres away from other areas. Exemptions from this minimum distance may be approved in cases where security is an issue; approval is to be requested from the NCDR. Explosives and accessories will be kept dry, shaded and separate from all other administration areas.

**Rest Areas:** Rest areas are to be used by deminers and MDD handlers during their breaks. Sufficient space should be allowed for resting, preparing / storing certain equipment, and other necessary reasons. The area should be dry and shaded if possible. The minimum distance from the rest area to the nearest operative in the minefield is used as the basis for the following calculations:

- Personnel in rest area not wearing PPE when demining operations underway.
- Personnel in the rest area wearing PPE when demining operations underway.
- Personnel in rest area when no demining operations underway:

Note: The distance may also be reduced when there is adequate protection from blast and fragmentation between the rest area and minefield (E.g., hill). In all circumstances, the rest area shall be located a minimum of 100 metres from un-cleared areas.

**Metal Collection Pit:** This should be marked and shall be located in a safe area and at a convenient distance from working deminers. All metal removed from the mined area including inert mines/UXO should be placed within the metal collection pit. Prior to completion or suspension of the task, the contents of the metal contamination pit shall be buried and marked or removed to another area for disposal.

**Latrine:** To prevent people inadvertently straying into mined areas, and for hygiene purposes, a latrine should be designated for each clearance area. Latrines should be located in the vicinity of the rest area and should be adequate for the number of personnel on the site.

**Demolition Area:** A location cleared for the disposal, by explosive demolition, of mines and unexploded ordnance.

**Sentry Points:** Sited at mine/UXO clearance sites when required, particularly on route, road and verge clearance tasks. It will have radio communications with the senior person on site.

## **6.8 Site Reference Points**

**Reference Point:** A fixed point of reference outside the hazardous area. It should be an easily recognised feature (such as a building, cross-roads or a bridge) which is used to assist in navigating to one or more benchmarks. The Reference Point description, location and the safe route to the Bench Mark should be included in the survey report.

There maybe a requirement to identify Intermediate Points when the Reference Point is located at a vast distance from the Bench Mark, the terrain is featureless, there are a number of obstacles or multiple changes in direction along the route.

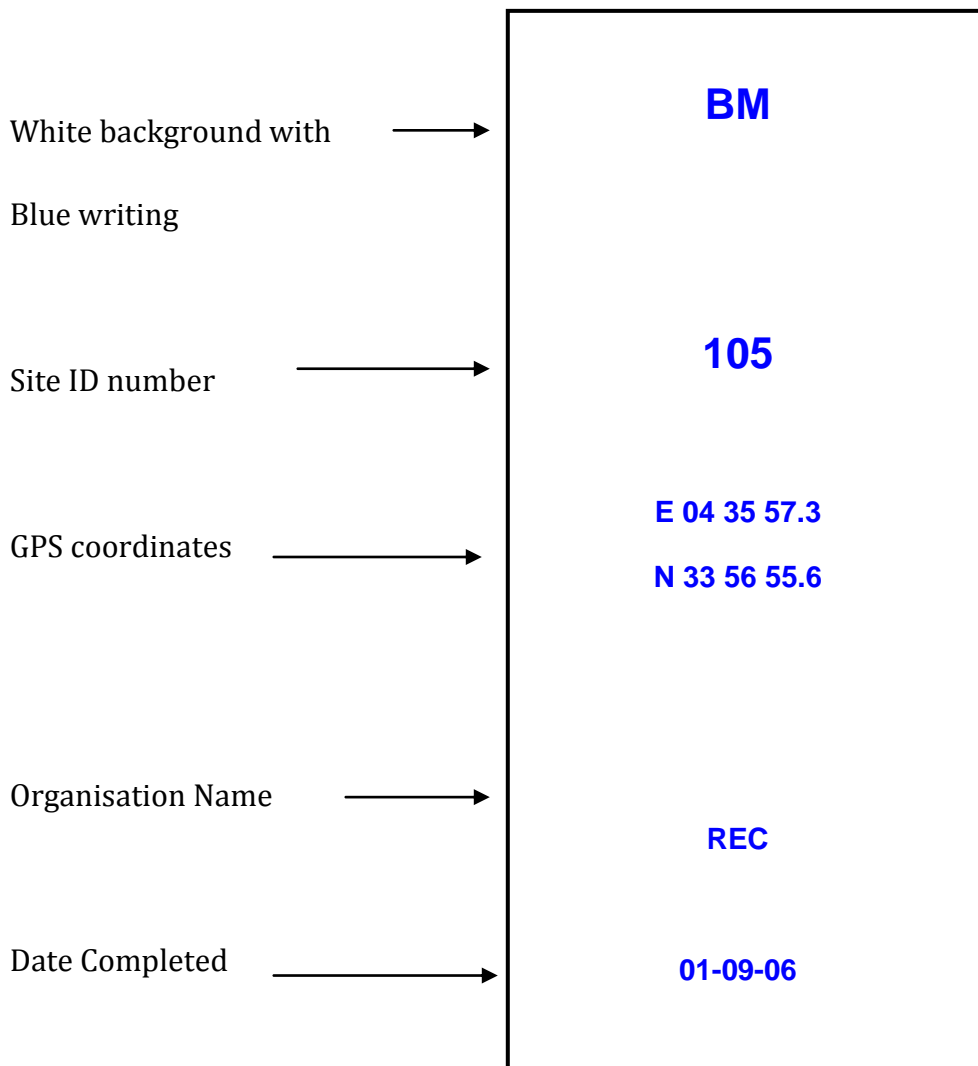
**Benchmark:** A fixed point of reference used to locate a marked and recorded hazard or hazardous area. It should normally be located a short distance outside the hazardous area.

**Benchmark Construction:** A benchmark may be a natural object or manmade and the following regulations shall apply:

- It shall be enduring and when constructed, shall extend deep enough into the ground with a solid foundation to support the weight.
- It shall be clearly visible in normal daylight at a distance of 30 metres from a safe direction of approach.
- The Bench Mark description and its direction from the Reference Point shall be recorded.
- A metal picket or similar shall be driven flush with the ground at the base of the benchmark.
- It shall be marked with a distinctive White background with the necessary information written in Blue.

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Figure 1: Benchmark Information



Start Point: This is also known as a Datum Point, it is a clearly identifiable fixed marker and the point where clearance begins. All minefield measurements are taken from the Start Point and depending on the location of cleared mines / UXO; it may be decided to position additional Start Points for ease of mapping during or on completion of clearance. The initial Start Point should be clearly visible from the Bench Mark otherwise Intermediate Points shall be located for ease of navigation.

Mine/UXO: When a mine/UXO is not dealt with immediately upon being located, it shall be marked by placing a mine marker a minimum of 100 mm before it. The clearance lane will then be closed off and a new lane commenced. Before the end of the working day these mines/UXO are to be destroyed unless prior approval has been granted from the NCDR. Alternately, the mine may be dealt with in situ and clearance in this lane may then continue.

The table below shows minimum distances to be employed between personnel in a minefield clearance area. Any reduction to these distances must be authorised by the NCDR.

MINIMUM DISTANCES FOR A MINE CLEARANCE WORK SITE			
Serial	Situation	Minimum Safety Distance	Remarks
(a)	(b)	(c)	(d)
1.	Working Personnel in adjacent lanes on blast Anti personnel mines.	25 metres*	
2.	Working Personnel in adjacent lanes on Anti tank	50 metres	

3.	Explosive storage point and mined area.	50 metres	
4.	Vehicle park and mined area.	100 metres	
5.	Briefing area and dangerous area.	100 metres	
* In any instances where the risk of fragmentation is low clearance organisations may in consultation reduce this distance to 15m			

Table 1: Minimum Distance for a Mine Clearance Site

## 6.9 Demolition Safety Distance

Refer Chapter 4

Any item over 155mm diameter shall be destroyed by an EOD team

## 6.10 Marking To Be Used During Clearance Operations

Demining organisations shall develop and utilize a temporary marking system for use in clearance operations. Apart from the need to delineate the boundary of the hazard area as set out above, this temporary marking should allow all persons moving around the site to identify, as a minimum:

- The location of mines or UXO discovered during the clearance process, in order to help managers identify any pattern in the minefield
- Areas that have been cleared that day by deminers, in order to allow managers to monitor progress and productivity
- Areas that have been cleared that day by Mine Detection Dogs in order to allow managers to record progress and productivity

- Areas that have been quality control (QC) checked. This may include a system to differentiate between different levels of quality control such as section commander, site manager, etc.

Note: The area between the last QC marker and any accident site shall be considered un-cleared for the purposes of casualty evacuation and accident investigation.

Where stones are used they shall be of a size and colour combination to make them stand out from the background – this is especially important for black, white and yellow painted stones.

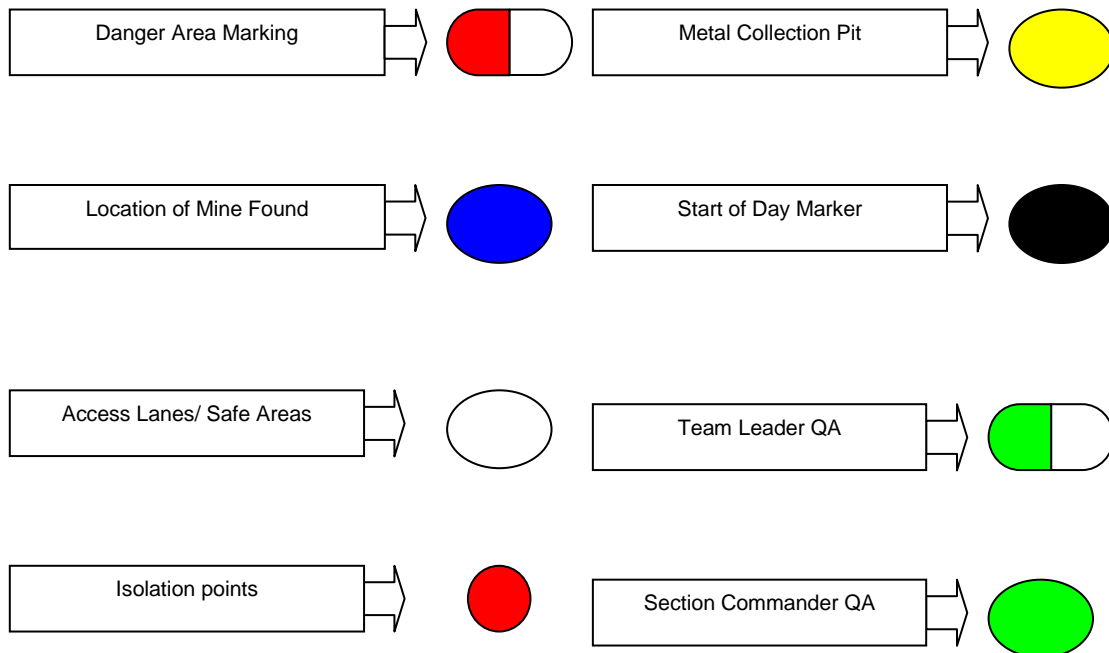


Figure 2: Marking system using coloured stones or pickets

## 6.11 Annexes

### Annex A: Hazard signs - minefield and mined areas

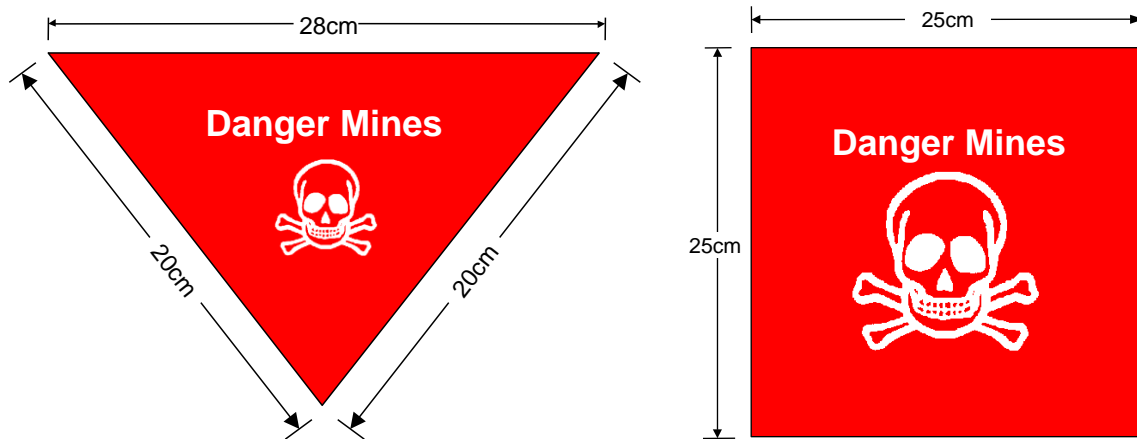


Figure 1: Hazard sign

#### Notes:

Flexibility in the design and layout of hazard signs is permissible in accordance with the direction given in the remainder of these notes.

The sign should have a red or orange background with a white symbol for danger. The universal symbol for danger is the skull and crossbones

The words 'Danger Mines' (or 'Danger UXO' depending on the predominant hazard) should appear on the sign in Arabica (and where possible English).

The rear surface of the sign should be white.

Dimensions should not be less than indicated on the diagram.

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## 7. Chapter 7: Non-Technical survey

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### 7.1 Introduction

Non-technical survey is typically the starting point for the assessment of land, its categorisation as a suspected or confirmed hazardous area (SHA/CHA), and the associated processes of cancelling, reducing or clearing land for productive use. It involves a thorough investigation of new information about possible mine/ERW contamination, or a previously recorded hazardous area, generally without the use of mine action assets inside the suspected area.

Non-technical survey is usually considerably less costly than technical survey and clearance, yet it can have the greatest impact, in terms of square metres, of all the activities associated with the definition and management of contaminated land.

The term non-technical survey encompasses all non-technical means, including desk assessments, analysis of historical records and a wide range of other information gathering and analysis functions, as well as physical visits to field locations. All elements of the non-technical process revolve around identifying, accessing, collecting, reporting and using information to help define where mines/ERW are to be found, as well as where they are not, and to support land cancellation, reduction and clearance decision making processes.

### 7.2 Scope

This standard establishes principles and provides guidance on the conduct of Non-technical survey in the land release process and details responsibilities and obligations of the mine action organisations involved in Jordan

### 7.3 References

A number of IMAS's are listed below to which reference is made in this standard and which form part of the provisions of this standard.

- IMAS 08.10 Non-technical survey.
- IMAS 04.10 Glossary of terms and definitions

#### 7.4 Purpose of non-technical survey

The overall purpose of non-technical survey is to use all appropriate non-technical means, including visits to field locations, to identify, collect, analyse and report information/evidence in order to:

- make recommendations about the definition of SHAs/CHAs;
- make recommendations about cancellation and/or subsequent reduction/clearance of areas;
- support priority setting processes; and
- Contribute to efficient and effective planning of subsequent technical interventions.

Detailed aims of non-technical survey include:

- to assess whether areas are contaminated by mines/ERW;
- to define SHAs where analysis of indirect evidence of the presence of mines/ERW justifies doing so;
- to define CHAs where direct evidence of the presence of mines/ERW justifies doing so;
- to cancel all, or part of, the area of SHAs/CHAs where there is no evidence of mine/ERW contamination;
- to identify socio-economic and threat factors that may be relevant to decisions about priority setting;
- to record, accurately and comprehensively, direct evidence of the presence of mines/ERW;
- to collect, as accurately and reliably as possible, available information about the characteristics and distribution of contamination that may assist in the effective and efficient planning of follow-on technical interventions, such as targeted technical survey and clearance;
- to collect, as accurately and reliably as possible, available information about accidents and incidents to people and animals;

- to collect information about physical changes to the environment, such as deposition of soil by flooding and wind, erosion, landslides etc. that may have modified the local situation after contamination was laid/deployed; and
- to collect information about the physical circumstances at the site, such as access routes, vegetation, soil, topography, infrastructure, agriculture, the local security situation, and other factors that may be relevant to decision-making processes.

### 7.5 Non-technical survey output

The outputs of the non-technical survey process should be based upon analysis of the findings of the survey, in the context of other information about the type, nature and distribution of contamination within the theatre of operations, and should include:

- a) Reports, detailing what non-technical survey activity was conducted, and where, forming inputs to subsequent planning processes and as evidence demonstrating the application of “all reasonable effort” in identifying, defining and removing all presence and suspicion of mines/ERW;
- b) Recommendations for the definition of SHAs/CHAs, including, where appropriate and justified on the basis of “all reasonable effort”, the cancellation of some or all of the area of existing SHAs/CHAs;
- c) Recommendations for further non-technical or technical action, including, where appropriate, details of recommended asset types and methodologies; and
- d) Data and information for analysis by other authorities, agencies and organisations.

Circumstances at the time of the survey, and the needs of other stakeholders, may require the delivery of other outputs. Non-technical survey managers should ensure that any such additional requirements are identified before the survey takes place and are reflected in the planning, conduct and documentation of the survey.

## 7.6 Requirements for recording SHA and CHA

### 7.6.1 Cancellation

A condition for the cancellation of an area through non- technical survey is that “all reasonable effort” has been applied up to and including the non-technical survey and that it can be demonstrated with high confidence that there is no evidence of mine/ERW contamination in the area. For absence of evidence to be taken as justification for cancellation it must be shown that, had contamination in fact been present, the totality of efforts applied could reasonably have been expected to identify evidence in relation to the area.

### 7.6.2 Area cancellation criteria

An area or parts of it can be cancelled during Non-Technical survey when there is sufficient evidence that the area contains no mine and/or ERW hazards. Conversely, an area can be recorded as CHA when there are sufficient evidence that the area contains mines and ERW hazards. For example, clear evidence of mines and ERW or evidence of accidents.

To cancel parts or all of a SHA in Jordan through a Non-Technical survey process, the following criteria as minimum shall be met and the decision to cancel the land is agreed by the beneficiaries of the land and NCDR QM team:

- There has been no evidence of armed conflicts or activities in the area;
- There has been no obvious tactical reason for using mines in the area;
- The land has been used by people and/or animals for a three years with no evidence of mines and ERW;
- There has been no mine and ERW accidents in the area (including animal accidents); and
- The local community or the landowner indicates that the area posing no hazard.

- No original data on mine laying exists.
- No previous fortification facilities/barriers showing mine/ERW existence.
- No detonation in areas exposed to fire.
- No indicators of mines (marking, casing material etc.)
- The above criteria are confirmed by survey teams and through conversations with local authorities.
- No probability of moving mines from mined area to this area

### 7.7 All reasonable effort

The term “all reasonable effort” is widely used in many industries and legal systems. It refers to the level of effort required to be expended to achieve a desired level of confidence in the output of a system.

Non-technical survey may be the only activity applied to an area, or it may be one amongst a number of activities within a wider process of land release. To satisfy the requirement to demonstrate that “all reasonable effort” has been applied to identify, define, and remove all presence and suspicion of mines/ERW, non-technical survey should not only apply “all reasonable effort” in its own right, but should also apply “all reasonable effort” in relation to all other associated activities within the land release process.

### 7.8 Evidence-based decision making process

Decisions about defining SHAs and CHAs and progressing through the land release process efficiently and effectively should be taken on the basis of available evidence. The quality, quantity and detail of available evidence will determine to a great extent the quality and reliability of decisions.

a) Evidence relating to types of contamination present in the theatre of operations, tactics associated with their use, and the effect of time on their condition, distribution and delectability;

- b) Evidence collected during non-technical surveys, including desk assessments;
- c) Evidence relating to what was discovered during survey and clearance operations at other sites and areas;
- d) Evidence about the reliability of different information sources;
- e) Evidence about the relationship between findings and recommendations arising from other surveys and what was subsequently discovered during technical interventions;
- f) Evidence relating to accidents and incidents on previously cancelled, reduced or cleared land;
- g) Evidence arising from quality management systems about processes and their products associated with mine/ERW programmes; and
- h) Evidence arising from monitoring and evaluation of land-release programs, including non-technical survey.

## 7.9 Sources of information

### 7.9.1 General

Survey organisations should ensure that all relevant evidence sources are identified and that information from these sources is appropriately collected and recorded.

The survey should be structured in such a way that both male and female informants who have specific knowledge about potentially mine/ERW contaminated areas are interviewed as part of the process. Where appropriate separate meetings should be arranged with households, family groups, female informants and children respectively, as these groups might be prevented from participating fully in mixed group meetings.

It may prove difficult to return to the same informants many times for information about new areas, and repeated visits may lead to 'survey fatigue'. Plans for the systematic collection of

Information should include measures to address these issues, recognising the great value of survey information.

### 7.9.2 Assessment and classification of sources

An evidence-based assessment of information sources should be carried out on the basis of:

- a) Relevant experience gained in non-technical operations elsewhere in the country/region and in other countries;
- b) an understanding of historical, social, economic, and cultural factors relating to the retention and reporting of information by different information sources;
- c) Comparisons between different information sources;
- d) Comparisons between information received and evidence discovered during subsequent technical interventions (where such interventions take place);
- e) Review of information sources in light of the results of monitoring of land following cancellation, reduction or clearance; and
- f) Other relevant information specific to local circumstances and conditions.

Where authorities, agencies and organisations choose to develop classification systems in relation to different information sources, they should do so on the basis of objective evidence, rather than subjective considerations.

Classification systems should be reviewed at appropriate intervals to ensure that they reflect the up to date results of analysis of evidence from all relevant sources.

Where classification systems are established, the following broad classifications should be considered:

- g) Direct physical evidence of the presence of mines/ERW, observed and recorded by survey team members;
- h) Indirect physical evidence of the presence of mines/ERW observed and recorded by survey team members;

- i) Information from historical sources and records shown to be reliable and accurate through comparison with direct evidence obtained at other sites/areas;
- j) Information from people and institutions offering first-hand sources of information. Such sources of information may include men, women and children in the affected communities, military, police, mine victims and others who observed mine laying or accidents etc.;
- k) Information from people and institutions offering second-hand sources of information. Such sources did not observe or take part in laying or deployment/use of mines/ERW, but may have been told about the hazard by first hand sources;
- l) Information from historical sources and records, the reliability and accuracy of which have not been assessed, or where assessment indicates unreliability or inaccuracy; and
- m) information from other people and institutions who did not observe or take part in the laying or deployment/use of mine/ERW, but who have been told about the hazard by other parties that cannot be confidently identified as first-hand sources;

### 7.10 Land and road use

The fact that land, or a road, is in use by local communities is a factor that may be taken into account when assessing new information, or when considering the cancellation of part or all of existing hazardous areas.

In assessing the confidence that should be associated with such information, a systematic approach should be adopted, taking into account:

- a) An understanding of the type, nature and distribution of any contamination present elsewhere within the region, and especially within the immediate vicinity;
- b) A clear and accurate definition of which land/road is being assessed, which is in use and which is not;
- c) How the land/road has been used, including the depth of any intrusive activities, and the density and intensity of human and mechanical traffic;

d) How long the land/road has been used for, and whether different densities and intensities of activity have taken place at different times;

e) The results of monitoring of other areas that have been similarly assessed;

Whenever it is useful and effective to do so, subsidiary zones or sections should be defined to identify different areas that have been subject to different use or that have different usage histories.

### 7.11 Sub-division of hazardous areas

Hazardous areas (SHA/CHA) should be subdivided whenever it is useful to do so in order to identify, define and describe more clearly:

a) The presence of different contamination types or combinations of types;

b) Different confidence levels associated with sources of evidence, and the analysis of that evidence;

c) Areas suitable for different technical assets types and/or methodologies;

Hazardous areas should be defined and described in enough detail, and with subdivisions where appropriate, to assist in the efficient and effective subsequent deployment of resources to conduct further technical and non-technical activity, leading to reliable and confident cancellation, reduction and/or clearance of land for productive use.

Sub-divisions should be used to guide and assist in the planning of targeted technical survey.

Sub-divisions should be further reviewed during the conduct of technical interventions, in light of new evidence as it is encountered.

### 7.12 Survey team requirements

Non-technical survey should be carried out by competent staff, using suitable equipment (accredited where appropriate), in compliance with prevailing safety and operational

standards, and in accordance with approved methodologies satisfying the requirements of NCDR.

Non-technical survey teams should include sufficient resources, skills, knowledge and capabilities to carry out non-technical activity effectively and efficiently, and in particular to be able to engage in communication with local authorities, other interested parties and all sources of information, including women, girls, boys and men.

### 7.13 Documentation

The information that is collected, recorded and reported by non-technical survey teams is an essential component of the land release process. If the quality of the data or information gathered during the non-technical survey is poor, or if high quality data is poorly recorded and reported, then the land release process will be inefficient and may lose credibility with stakeholders.

Authorities, organisations and agencies should ensure that non-technical survey documentation satisfies quality requirements and reflects the needs of all information users. Appropriate quality management systems (including QA and QC of information aspects) should be established and implemented in relation to the collection, recording, reporting and analysis of information associated with non-technical survey. Any shortcomings in the quality of non-technical survey data, information and documentation should be investigated and appropriate corrective and preventive action taken.

### 7.14 Community involvement

Local participation should be fully incorporated into the main stages of the land release process, including non-technical survey, in order to ensure that land is used appropriately after it has been released. Community involvement should include men, women and children living or working in or near the suspected area and where appropriate, owners of land.

A process to monitor land following its cancellation, reduction or clearance should be established. Monitoring should be properly planned and agreed between the different

parties to help measure the impact of cancelled land on local life and to clarify issues related to liability and land status in case of any subsequent mine/ERW accidents.

## **7.15 Responsibilities and obligations**

### **7.15.1 NCDR shall :**

a) Develop national standards for non-technical survey consistent with the land release policy;

b) Accredite organisations to undertake non-technical survey;

c) Prepare and publish standards and guidelines for non-technical survey including:

- Quality management to be applied to non-technical survey contracts and agreements
- Documentation for non-technical survey
- Accuracy requirements for positional data

d) Utilise the information collected through the non-technical survey process to understand better the nature, extent and distribution of contamination, and to prepare tasking orders and annual works programmes;

e) Define liability issues relating to survey/clearance operators, individuals undertaking non-technical survey, and the local community, in accordance with national legislation; and

f) Monitor the quality of land release outputs through non-technical survey.

### **7.15.2 Survey Organisation**

The organisation undertaking a non-technical survey shall:

a) Gain (from the NCDR) accreditation needed to conduct non-technical survey;

b) Apply the national standards for non-technical survey.

c) Develop SOPs for the implementation of non-technical survey;

- d) Collect the necessary information as required by the non-technical survey documentation;
- e) Where applicable, conduct a formal handover of assessed sites to organisations conducting follow-on activities;
- f) Maintain and make available documentation as specified by the NCDR.
- g) Consult closely with men and women in the affected communities, as required, with regards to all decisions made by non-technical survey.

## Annex a Non-Technical survey Report

### General

Polygon ID	Coordinates		
Task ID		Start Date	
MFs ID		End date	
Section/s ID		Team ID	
Laid AP(IF)		Missing AP before NTS	
Laid AT(IF)		Missing AT before NTS	
Accidents			
Data resources		Credibility	
Total area of SHA			Report Date
percentage of SHA			

### Informants

Informants	Information

### QA report

Notes	QA Team	Recommendations
	Supervisor	
	Signature	

QC report

Notes	QC Team	Recommendations
	Supervisor	
	Signature	
Procedures		

Recommendations

	Coordinates			
Further NTS				
Cancelled				
CHA	NM			
	M1			
	M2			

Survey Team Leader signature

QM Team leader Signature

NCDR /OPS Manager

Annex B

Illustration of Non-Technical survey



Figure 1 – The picture illustrates a possible SHA generated during an impact survey or other claim of presence of hazard.

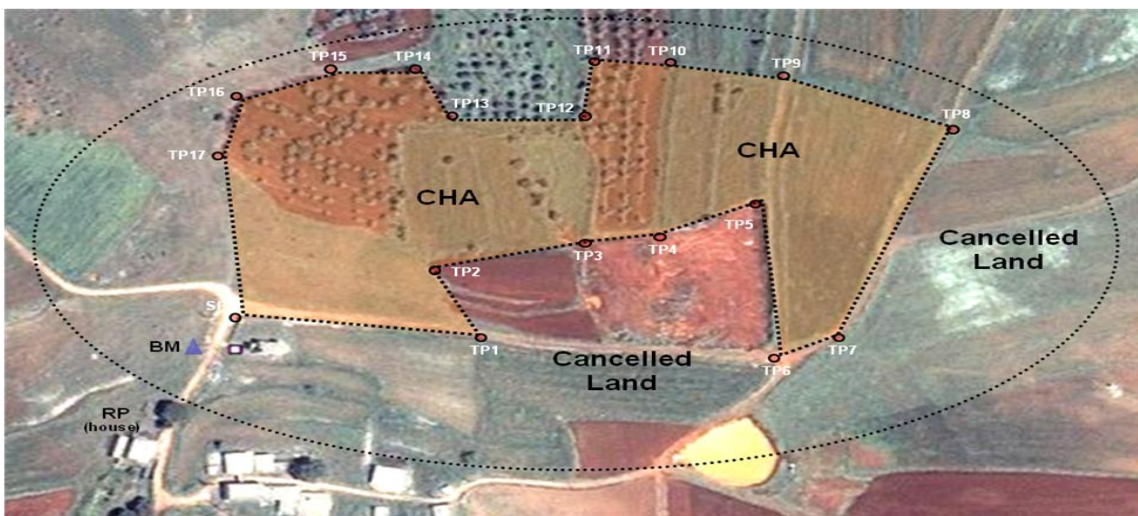
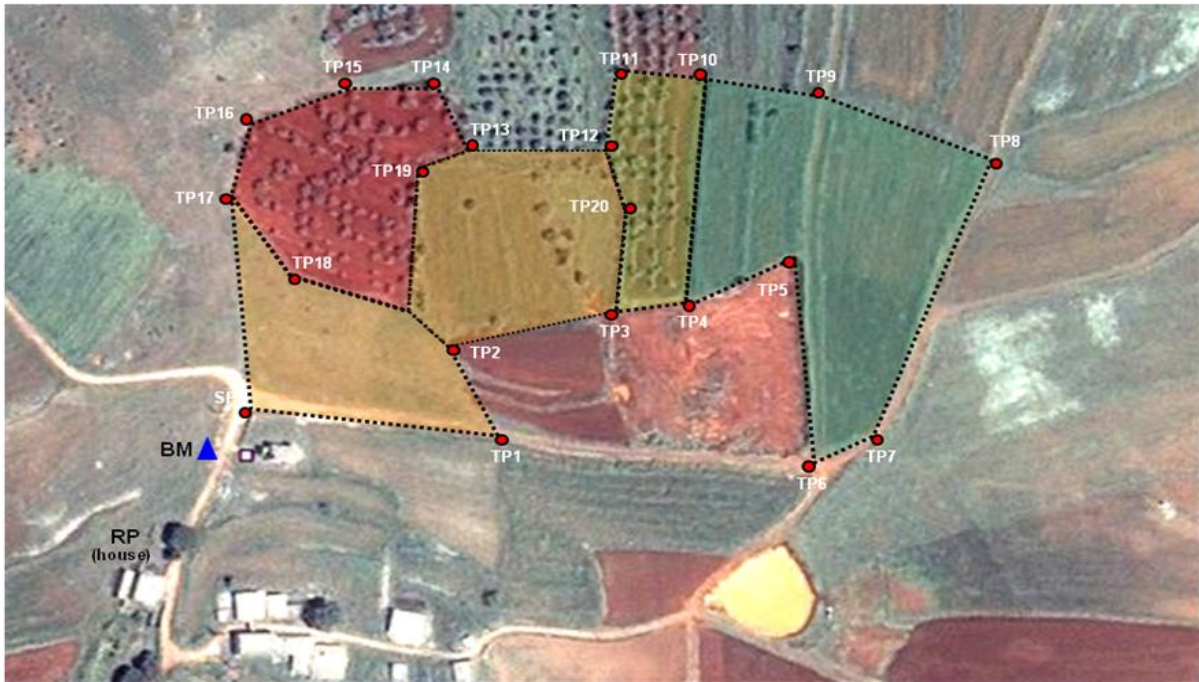


Figure 2 – This picture illustrates a possible conclusion of an initial non-technical survey. Based on further evidence the area outside the CHA has been cancelled and the CHA has been marked, for mapping purposes only and not physically on the ground, with a Reference Point (RP), Bench Mark (BM) and Turning Points (TP).



This picture illustrates a possible situation after further information gathering and analysis. The CHA has now been sub-divided into sections based on differing evidence of hazards.

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## 8. Chapter 8 Technical survey

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### 8.1 Introduction

Technical survey is an important means of identifying, confirming and improving definitions of the boundaries of hazardous areas and the nature and distribution of their contents. Well planned and justified technical survey methodologies help ensure that any further interventions are necessary and efficient and may allow the confident release of land without the need for further technical interventions. Technical survey may be carried out as an independent activity or it may be integrated with clearance operations.

The purpose of technical survey is to provide evidence for analysis to support the land release decision-making process. It is an intrusive process, using survey and clearance assets, typically into a suspected or confirmed hazardous area, although it may also be used as a method for the initial investigation of areas under some circumstances. Although technical survey may be a separate activity, it is often integrated with clearance and can be undertaken before, during and after clearance, depending upon the local circumstances and information needs of decision-makers.

Any technical survey methodology should be planned such that it provides a very high level of confidence that if hazard items are present they will be indicated. The performance of survey assets against different hazard types should be monitored, through the collection and analysis of appropriate performance data, to develop evidence-based assessments of confidence levels for the indication of targets.

### 8.2 Scope

This standard establishes principles and provides guidance on the conduct of technical survey in the land release process and details responsibilities and obligations of the mine action organisations involved in Jordan

### 8.3 Normative references

A number of NTSG and IMAS are listed below to which reference is made in this standard and which form part of the provisions of this standard.

- NTSG chapter 7 non-technical survey

- IMAS 08.20 technical survey.
- IMAS 04.10 Glossary of terms and definitions.

#### 8.4 Terms, definitions and abbreviations

The term “**Technical Survey**” refers to the collection and analysis of data, using appropriate technical interventions, about the presence, type, distribution and surrounding environment of mine/ERW contamination, in order to define better where mine/ERW contamination is present,

And where it is not, and to support land release prioritisation and decision making processes through the provision of evidence.

The term “**Targeted Investigation**” refers to the investigation during technical survey of certain areas within a SHA/CHA that are more likely to contain mines/ERW.

The term “**Systematic Investigation**” refers to a systematic process of applying technical survey in a SHA/CHA. It is typically used where there are no areas within the SHA/CHA that are more likely to contain mines/ERW, than others.

The term “**All Reasonable Effort**” describes what is considered a minimum acceptable level of effort to identify and document contaminated areas or to remove the presence or suspicion of mines/ERW. “All reasonable effort” has been applied when the commitment of additional resources is considered to be unreasonable in relation to the results expected.

Note: Unexploded sub-munitions are included in ERW and are therefore, not mentioned separately.

#### 8.5 General Requirements

- a) The technical survey methodology should satisfy safety requirements
- b) No technical survey should be carried out unless an assessment of what is likely to be found in the area has been carried out, making use of all relevant data, information and analysis

- c) The technical survey methodology should provide a high degree of confidence that, if the assessed contamination is present, evidence of its presence will be encountered
- d) Targeted technical survey should be preferred over systematic technical survey
- e) The technical survey methodology should reflect any need to preserve information about the nature and distribution of contamination
- f) Details of what was found and where, and what was done and where, should be recorded and reported with sufficient accuracy to satisfy applicable standards and allow meaningful analysis of the type, nature and distribution of contamination within its surrounding environment
- g) The quality of technical survey should be monitored to allow improvement to technical survey procedures and practice and to establish and maintain confidence in the quality of information provided and land released.

## 8.6 Technical survey process

An SHA is defined on the basis of indirect evidence of the presence of mines/ERW. A CHA is defined on the basis of direct evidence of the presence of mines/ERW. The quality and detail of such evidence will vary from area to area and will determine how accurately, and with how much confidence, the boundaries of SHAs and CHAs can be defined.

The principle of a graduated response indicates that a SHA should normally be subject to non-technical survey before assets are committed to technical survey. Non-technical survey should include the identification and recording of information suitable to help develop targeted, as well as systematic, technical survey.

Planning for technical survey requires:

- a) Review of all available information relating to the area and any SHAs/CHAs
- b) Analysis of contamination characteristics and typical distribution at sites within the region/theatre of operations

- c) Assessment of the types of contamination likely to be present and their likely density and distribution within the area
- d) Confirmation of information collection requirements, as defined in NMAS, as well as any additional requirements specific to the site or circumstances
- e) Consideration of the performance of available assets against the expected contamination types in the technical survey role (which may not necessarily be the same as the performance of those assets in the clearance role)
- f) Identification of areas that would justify targeted investigation
- g) Development of a technical survey approach that satisfies the principles described above

Definitions of fade out and buffer zones should reflect the type of contamination present and the typical distribution and density of associated devices, based on evidence collected during technical survey and clearance operations, as well as information about tactics and use by combatants. Such definitions should be reviewed and updated at appropriate intervals to take into account new evidence collected during field operations.

### **8.7 Information collection, recommendations and reporting**

Information collected during technical survey has three main purposes:

- I. To confirm the presence of mines/ERW and to define more accurately the nature and extent of their distribution;
- ii. For analysis to help decision-makers take valid and efficient decisions within the land release process; and
- iii. To establish and maintain confidence in the reliability of decisions to release land amongst stakeholders, including local people.

The needs of information users (for prioritising, planning etc.) will often be similar, but will also be subject to variation depending upon the specific circumstances associated with the area and with wider considerations at the regional, national or programme level.

A technical survey will not succeed in achieving its aims if it does not satisfy the needs of information users.

During a technical survey the following information should be collected as a minimum:

- a) Details of any evidence of the presence, extent and likely density of mine/ERW contamination;
- b) Details of the type, location, depth and condition of any mines/ERW encountered during the survey;
- c) New evidence confirming, or calling into question, existing recorded evidence;
- d) details of the ground and environment in terms of slope, topography, soil, metal contamination, vegetation, any changes to the ground since hazard items were laid/deployed (such as erosion, deposition of soil by wind/flooding, landslides), nearby infrastructure and weather or climate factors that may be significant.

In addition to the information above, a detailed site plan (sketch, digital map of the area, aerial photograph, etc.) should also be prepared. The plan should include as a minimum:

- e) Exploratory lanes (if used), area covered by technical survey assets, and safe access routes;
- f) Reference points, bench marks, turning points and intermediate points as applicable;
- g) Location of visible mine/ERW contamination and the pattern (if known);
- h) Locations(s) of any mine or ERW found/destroyed earlier, or during the technical survey;
- l) prominent natural features such as high ground, water courses, trees, etc.; and
- j) Prominent man-made features within the area;
- k) Any other information likely to be helpful to information users and analysts;

Data collection should satisfy the minimum data/information collection requirements detailed in IMAS 07.11. Appropriate means, satisfying accuracy requirements specified by the NMAA, should be used to measure and record location and position data.

## **8.8 Output from technical survey**

### **8.8.1 General**

The outputs from a technical survey include:

- a) Definition of any area containing mine/ERW contamination;
- b) Additional information for planning the initial clearance of any area identified as containing mine/ERW contamination;
- c) Evidence (gathered through all reasonable effort) which may be sufficient to determine and demonstrate, to the satisfaction of the land users, that an area is free of mine/ERW contamination; and
- d) Additional information for the establishment of priorities for future action.

### **8.8.2 Recommendations**

The technical survey report may make recommendations about:

- a) Adjustments to SHA/CHA boundaries in light of evidence discovered during the survey;
- b) The suggested depth of clearance for specific areas where mine/ERW contamination is identified; and
- c) The resources recommended carrying out follow-on activities, such as clearance, including assets to be used in specific areas.

## **8.9 Reduction by technical survey**

Land may be released through reduction when it can be shown that “all reasonable effort” has been applied to identify, define and remove all presence and suspicion of

mines/ERW, and that the application of further effort would be unreasonable in relation to the results expected.

For land to be reduced through technical survey it is necessary to show that the efforts applied could reasonably have been expected to identify evidence of the presence of contamination if it had been present. In order to do so authorities, organisations and agencies should be able to show that:

- a) The assessment of expected contamination was reasonable;
- b) The technical survey assets used, and the methodology employed, were appropriate to the potential contamination assessment; and
- c) Areas where no contamination was found could, therefore, be reasonably assessed as presenting no evidence for the presence of contamination.

### **8.10 All reasonable effort**

A condition for the release of land through reduction by technical survey is that “all reasonable effort” has been applied up to and including the survey and that it can be demonstrated with high confidence that there is no evidence of mine/ERW contamination in the area.

### **8.11 Technical survey methods**

#### **8.11.1 General**

Technical survey is a process of collecting information to support decision-making processes at various levels within organisations and programmes.

Different survey assets offer different advantages and disadvantages. When considering which assets and methodologies are appropriate, authorities, planners and operators should carefully consider the importance of preserving information to support subsequent decision-making. High quality information is likely to lead to high quality, and therefore confident, decision-making. In particular, efficient decisions about when to stop technical activity may benefit from the preservation of information about what was found where during the technical survey, and/or subsequent clearance operation.

Assessment of the performance of different assets in the survey role should take into account:

- a) Safety aspects of the asset;
- b) The probability that the asset will indicate the presence of a hazard item;
- c) The extent to which the asset will preserve information associated with hazard items and other aspects of the surrounding environment;
- d) The speed and cost with which the asset can undertake the technical survey function; and
- e) The suitability of the asset in light of the surrounding environment, infrastructure and climate.

The decision to deploy an asset in a technical survey role should be documented in terms of the suitability of that asset against the assessed hazard type.

#### 8.11.2 Targeted and Systematic Surveys

Wherever possible, targeted technical survey should be preferred to systematic technical survey. In areas where it is not possible to conduct a targeted investigation of the area, the form of the systematic investigation should reflect an assessment of the possible type and distribution of contamination items that might be present.

Targeted technical survey should reflect available information about the expected presence of hazard items and take into account analysis of the wider context of contamination within the theatre of operations.

To achieve high levels of confidence in the results of technical survey, the survey methodology should be developed to ensure that:

- a) The definition of any target area is based upon an analysis of available information, and takes into account any appropriate buffer zones;

- b) Survey lanes or routes should not be able to pass through a contamination area without identifying at least one piece of evidence, if contamination is in fact present; and
- c) The separation of survey lanes or routes should not be so great as to allow survey assets to pass either side of a contamination area.

Prior to starting a systematic technical survey, planners should carry out a review of the available information to determine:

- a) Whether it is possible to conduct a targeted survey; or
- b) Whether the collection of additional non-technical information might allow a targeted survey.

The technical survey methodology should be developed to reflect any information about the hazard types that might be present at the site and the type and capability of available survey assets.

The technical survey methodology should define the proportion of the ground requiring investigation (up to 100% in some cases), the width, arrangement and separation of any investigation lanes and any requirement for follow up by other assets.

All survey operations should be subject to frequent review on the basis of the availability of new evidence (or the lack of new evidence) to identify opportunities to achieve land release objectives as efficiently as possible.

### **8.12 Survey team requirements**

Technical survey should be carried out by competent staff, using appropriate equipment (accredited where appropriate), in compliance with prevailing safety and operational standards, and in accordance with approved methodologies satisfying the requirements of this Document.

Technical survey teams should include sufficient resources and capabilities to carry out technical activity effectively and efficiently, and to engage in communication with local authorities and other interested parties.

Technical survey operations should be subject to internal and external Quality Management.

### 8.13 Documentation

The information that is collected, recorded and reported by technical survey teams is an essential component of the land release process. If the quality of the data or information gathered during the technical survey is poor, or if high quality data is poorly recorded and reported, then the land release process will be inefficient and may lose credibility with stakeholders.

Organisations and agencies should ensure that technical survey documentation satisfies quality requirements and reflects the needs of all information users. Appropriate quality management systems (including QA and QC of information aspects) should be established and implemented in relation to the collection, recording, reporting and analysis of information associated with technical survey. Any shortcomings in the quality of technical survey data, information and documentation should be investigated and appropriate corrective and preventive action taken.

Technical survey teams should be given the opportunity to compare the results of their technical surveys with any subsequent information resulting from clearance or other technical interventions.

### 8.14 Technical Survey Criteria

The following criteria shall be achieved in order to release a CHA by Technical Survey

1. (25 %) at least of the CHA that came out from Non Technical Survey shall be processed.
2. The assets used are suitable and accredited.
3. No major notes during QA reports.
4. No evidence of explosive hazards found in the area.
5. If conditions 1, 2, 3 and 4 are applied then, that section could be released.
6. If any dangerous item found , the area shall be enlarged by a 10x10 box .This process is repeated for every found item until no more items are found. Annex "B" shows High Risk Areas and Buffer Zones.

7. If the number of found items is up to (3) items in a certain section of the CHA, the decision is for the Joint committee.

8. If the number of found items exceeds (3) items in a certain section of the CHA, this section to be subjected to full Clearance.

## **8.15 Responsibilities and obligations**

### **8.15.1 NCDR shall**

a) Develop national standards for technical survey consistent with the land release policy;

b) Accredite organisations as fit to undertake technical survey;

c) Prepare and publish standards and guidelines for technical survey including:

i) quality assurance and quality control to be applied to technical survey contracts and agreements;

ii) Documentation for technical survey; and

iii) Accuracy requirements for positional data;

d) Use the information collected through the technical survey process to prepare tasking orders and annual work programmes and to improve overall understanding of the nature and form of contamination;

e) Define liability issues relating to the clearance operator, the individuals undertaking the technical survey, and the local community, in accordance with national legislation; and

f) Monitor the quality of land release outputs from technical survey.

### **8.15.2 The organisation undertaking technical survey shall:**

A. gain (from the NCDR) accreditation needed to conduct technical survey;

- B. applies the national standards for technical survey. In the absence of national standards, the organisation shall apply the IMAS standards, or such standards as are specified in their contract or agreement;
- C. develops SOPs for the implementation of technical survey;
- D. collects the necessary information as required by the technical survey documentation;
- E. where applicable, conducts a formal handover of surveyed sites to organisations conducting follow-on activities;
- F. maintain and make available documentation as specified by the NMAA or Mine Action Centre or equivalent; and
- G. consults closely with both men and women of the affected communities about all decisions made during technical survey.

In the absence of an NMAA or similar authorities, the organisation should assume additional responsibilities. This includes assisting the host nation during the establishment of a NMAA

And Mine Action Centre or equivalent and in framing standards for technical survey, including quality assurance and quality control.

## Annex A

### Technical survey Report

Polygon ID	Coordinates		
Task ID		Start Date	
MFs ID		End date	
Section/s ID		Team ID	
Laid AP		Missing AP before TS	
Laid AT		Missing AT before TS	
Accidents			
Classification from N-Technical Survey		Report Date	

#### Assets used

Asset	Square meters	Notes
<input type="checkbox"/> Rake		
<input type="checkbox"/> MD		
<input type="checkbox"/> MDD		
<input type="checkbox"/> Mechanical		

<input type="checkbox"/> Visual		
<input type="checkbox"/> Combined		
Other		
Total Area Surveyed		
Missing mines	AP	AT
Methodology used		

QA report

Notes	QA Team Supervisor	Recommendations
	Signature	Date

QC report

Notes	QC Team Supervisor	Recommendations
Area Sampled		Signature
TS Process		Date

Recommendations

	Coordinates
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Reduced				
Further TS				
CHA				

Classification of CHA

Presence of Mines	TS Type
NM	LIMITED form of TS to confirm no mines in the area
M1	Usual form of TS (low suspicious of mines)
M2	EXTENSIVE form of TS (high suspicious of mines )

Survey Team Leader signature

QM Team leader Signature

NCDR /OPS Manager signature

## Annex B

### High Risk Areas and Buffer Zones

When investigating an area that contains, or is suspected to contain a hazard, “high risk areas” are often identified and a buffer zone around them is typically applied. The buffer zone is an area cleared around the “high risk area” in order to increase the level of confidence that the “high risk area” does, or does not, contain any hazards.

Buffer zones may also be used around identified hazards (e.g. a single mine) to determine whether the hazard is likely to be an isolated hazard.

The table below provides a list of typical areas of high risk and the buffer zones that may be applied.

Buffer zones are country specific and should be developed and defined by the NCDR.

Type of “High Risk Area” / Identified Hazard	Land	Road	buffer Zone Applied
Single mine	X		8 -10m
Stockpile of mines/ERW	X		10 - 20m
Pathway	X		5 m each side of path
Large tree or copse of trees	X		2 - 8 m
Dikes/canals	X		2 - 8 m
Potential cache areas	X		2 - 10 m
Electrical Pylons	X	X	5 - 25 m
Human/Animal remains	X	X	5 -10 m
Crater		X	5 - 25 m

Fox hole/Fighting pit		X	10 - 15 m
Extended Military position		X	50 - 100 m
Road		X	10m each side of road
Vehicle wreckage		X	15 m
Road bridge		X	50 m, each side of bridge
River crossing point		X	10 - 25 m
Road junction		X	25 - 50 m, each direction

Annex C Samples of Technical survey

<b>Asset</b>	<b>Classification</b>	<b>Percentage of samples</b>	<b>Double check</b>
<b>Manual</b>	NM	25%	
	M1	40%	
	M2	50%	
<b>Flail</b>	NM	25%	
	M1	40%	<b>Visual check</b>
	M2	60%	<b>MDD</b>
<b>MDD</b>	NM	25%	
	M1	40%	
	M2	60%	<b>Double check</b>

## Annex D Dividing a CHA into Smaller Segments

A CHA could in theory be divided into an unlimited number of sectors and several sectors may be given the same classification. While the overall CHA may still be recorded as one CHA, in non-technical survey reporting each of the sub-sectors are unique and will require a separate analysis and quantification of information in the survey report. These sub-sectors will form part of the overall non-technical and technical survey report and the completion report.

If mines are found in one of the sectors a slightly more complex process of re-classifying confidence is required. Several scenarios may occur and the need for technical survey and clearance may occasionally require professional judgement by team leaders. Three basic questions will, however, be used to form a template recommendation for re-classification. These are:

- Were mines found in the previous sector?
- Was the kind of mines expected or unexpected?
- Is the sector considered to be related to the previous sector?

The last question is relevant because it has been acknowledged that sectors within the same CHA may not always be related to each other. In other words, it may not matter what is found in one sector because it has no influence in what may be found in the next.

The following are guidelines for the re-classification of sectors if mines are found in the previous (related) sector:

- Mines not found in previous related sector – decrease survey classification by one level;
- Mines found in previous related sector and the kind was expected – maintain same survey classification as offered by the non-technical survey report;
- Mines found in previous related sector and the kind were not expected – increase the survey classification by one level.

## 9. Chapter 9: Clearance requirements

### 9.1 References

This document has been developed with reference to the following documents:

IMAS 10.10 General Requirements

IMAS 08.20 Technical Survey

IMAS 09.10 Clearance Requirements

### 9.2 Scope

This chapter defines 'clearance', and specifies the quality system (i.e. the organisation, procedures and responsibilities) necessary to determine that land has been cleared by the demining organisation in accordance with its contractual obligations.

### 9.3 Objective

The aim of humanitarian demining is the identification and removal or disposal of all mine and UXO hazards from a specified area to a specified depth. The objective is to promote a culture where the demining community seeks to achieve this target by developing and applying appropriate management procedures, by establishing and continuously improving the skills of managers and deminers, and by procuring safe, effective and efficient equipment.

### 9.4 Introduction

The beneficiaries of humanitarian demining programmes must be confident that cleared land is safe for their use. This requires management systems and clearance procedures which are appropriate, effective, efficient and safe.

Due to nature of minefields in Jordan there are no Technical Survey requirements

The local community should receive regular briefings and explanations during the clearance operation as this acts as a very effective confidence building measure.

## 9.5 Specification of Clearance Quality

Land shall be accepted as 'cleared' when the demining organisation has ensured the removal and/or disposal of all mine and UXO hazards from the specified area to the specified depth.

The specified area to be cleared shall be determined by a Technical survey or from other reliable information which establishes the extent of the mine and/or UXO hazard area.

The priorities for clearance shall be determined by the impact on the individual community balanced against national infrastructure priorities.

The area to be cleared, the clearance depth, and the requirements for monitoring and inspection will be specified by the NCDR, in the form of a Task Order (TO).

Specifying clearance depths will depend on the intended land use, the perceived mine or UXO threat in the area to be cleared and other environmental factors. For example: Mines and UXO may be on the surface of the ground. In this case, the specification may call for the removal and or disposal only of surface laid mine and UXO hazards.

Clearance in urban areas may require the removal of many meters of rubble as part of the clearance process. Is this applicable to Jordan

Shifting sands in desert areas or coastal areas may require clearance to a depth of 1.0m or 2.0m to locate and destroy mines which were originally laid at a depth of no more than 10cm.

For buried mines and UXO this depth should normally not be less than 150mm below the original surface level.

In most cases the TO shall state that the depth of clearance is 200mm. If this is proved to be excessive the demining organisation may request that this depth is reduced to 150mm. This decision and the reasons for this shall be documented and only come into effect once a new or amended TO has been issued.

The removal and/or disposal of all mine and UXO hazards in the specified area to the specified depth shall be ensured by:

- using accredited demining organisation(s) with operationally accredited capabilities, such as manual clearance, MDD clearance and mechanical systems;
- using appropriate management practices, and applying safe and effective operational procedures;
- monitoring the demining organisation and its sub-units;
- conducting a process of post-clearance inspection of cleared land.

## 9.6 Manual Mine Clearance

Mine/UXO clearance techniques used during each project may differ according to vegetation, terrain, soil content and type of mine/UXO etc.

Currently there are 3 recognised methods of manual clearance in Jordan:

- Detector method of clearance.
- Excavation method of clearance.
- Raking method of clearance

It will depend on the type of soil in the minefield as to whether the detector can be used to assist the demining process. In some minefields, the metallic content may be high and therefore the use of Non-ground compensating detectors will not be possible or suspect. If there is any doubt as to the mine types that are present in the minefield then he must plan for the worst case and begin the task with a Non-detector clearance method. Only when the mine types in each sector of the minefield has been confirmed and the threat assessment completed, can the clearance method be changed to detectors.

## 9.7 Mine Detection Dogs Clearance

Clearance by MDDs should primarily be implemented in areas with High Metal contamination and low-density minefields. MDDs will not be used in areas with heavy vegetation unless mechanical ground preparation has been conducted.

All procedures and drills used in clearance operations are to be fully explained in step-by-step detail in the clearance organisations SOP.

## 9.8 High Metallic Areas

In areas where the metallic content of the soil is high, the metal detector may be ineffective. The detector procedure must then be removed from the mine clearance sequence and replaced with a complete excavation procedure or alternatively MDD clearance to ensure that all mines are located. If excavation method is preferred, the minimum depth to be excavated is 150 mm. The detector should be used to regularly check the contamination level and confirm whether the complete excavation or MDD clearance process can be replaced with the detector procedure.

## 9.9 Action on Locating a Mine

All mines should be destroyed on the day that they are found unless a specific safety hazard prevents this.

Where mines are not destroyed on the day that they are found, they are to be accurately reported in the organisations daily clearance log and destroyed as soon as possible. If they are not destroyed by the end of the working week they are to be reported to the NCDR and an explanation given.

## 9.10 Action on Locating a UXO

The deminer or MDD handler is to stop all mine/UXO clearance activity and notify the supervisor. The supervisor is responsible for all actions relating to the removal or disposal of the UXO. Only qualified EOD personnel should render safe, remove or destroy mines/UXO.

## 9.11 Burning Of Vegetation in Hazardous Areas

Un-cleared areas may be burnt prior to mine/UXO clearance, at the discretion of the supervisor and in co-ordination with local authorities, to increase visibility for the deminers and safety. However, supervisors must exercise good judgement, as burning un-cleared areas may cause damage to neighbouring agricultural land, or alter the stability of unexploded ordnance. A minimum wait time of one-day (24 hours) is to elapse between burning an area and manual mine/UXO clearance-taking place. In all cases, a suitable firebreak is to be constructed and /local Emergency Fire Services (if available) are to be informed of the burning operation.

Note: The NCDR must be informed prior to any burning of un-cleared areas.

### 9.12 Working Hours

No deminer is to work for longer than 60 minutes before taking a break. The working time is subject to the Supervisors judgement in each situation but shall not exceed sixty minutes.

A normal working day for a deminer should not to exceed 9 hours on site. The working week shall not exceed 48hrs.

All employment contracts must comply with Jordanian Labour Law.

### 9.13 Mechanical Assistance to Clearance Operations

Mechanical assets will require a closely monitored followed-up manual clearance and quality assurance. Mechanical assets can be used for the clearance of tripwires and/or vegetation, preparation of terrain to accelerate manual clearance and facilitate clearance by MDDs.

As a primary means of clearance, mechanical mine clearance may not meet national standards and must be augmented by other means to ensure the cleared area is free of all mines/UXO.

All procedures and drills used in mechanically assisted clearance operations are to be fully explained in step-by-step detail in the clearance organisation's SOP. The SOP must include details on the recovery of disabled machines.

### 9.14 Responsibilities and Obligations

The NCDR, shall:

- specify the area to be cleared and depth specified in the TO;
- specify the standards and guidelines for QA and QC to be applied;
- accredit demining organisations as fit to undertake clearance; and
- monitor the demining organisation and its sub-units

- Maintain a registry of cleared and un-cleared land showing the clearance status for each mined area.

The organisation undertaking clearance shall:

- gain (from the NCDR) accreditation to operate as a clearance organisation;
  - maintain and make available documentation of clearance as specified by the NCDR;
  - apply management practices and operational procedures which aim to clear land to the requirements specified in the TO; and
  - Ensure that the mine affected community is fully cognisant of all demining activities in the area and the implications for the community.
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## 10. Chapter 10 Battle Area Clearance

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### 10.1 Introduction

The Land Release process consists of three main activities, Non-Technical Survey, Technical Survey and Clearance. Clearance may involve the clearance of mines and Explosive Remnants of War (ERW) as covered in NTSG 9 or Battle Area Clearance (BAC). BAC operations involve the location and disposal of ERW, including UXO and Abandoned Explosive Ordnance (AXO), over specific areas, which may include battlefields, defensive positions and sites where air delivered or artillery munitions have been fired or dropped.

Battle Area Clearance (BAC) is the systematic and controlled clearance of hazardous areas where the risk is known not to include mines.

### 10.2 Scope

This standard specifies Battle Area Clearance requirements in Jordan. All demining organizations shall comply with this standard to ensure safe and efficient ERW clearance in Jordan.

### 10.3 References

A number of NTSG and IMAS are listed below to which reference is made in this standard and which form part of the provisions of this standard.

NTSG 7 Non- technical survey requirements

NTSG 8 Technical survey requirements

NTSG 9 Clearance requirements

IMAS 04.10 Terms and definitions

IMAS 09.10 Clearance requirement

## 10.4 BAC General

- Depending on the humanitarian priorities and required land use, BAC may involve surface and sub-surface clearance. The requirement for BAC can be in both urban and rural environments.
- BAC operations do not normally include the disposal of large stockpiles of AXO unless these have not been dispersed over a large area, possibly as a result of an explosion nor do BAC operations cover the disposal of stockpiled munitions in national storage facilities.
- BAC should not be conducted in areas where a landmine hazard is expected. Conversely, landmine clearance procedures should not be used, where BAC could be more appropriate, and more efficient.

Note: In some circumstances it may be acceptable for BAC techniques to be applied in areas where it is known that only certain type of anti-vehicle mines may exist but definitely there are no anti-personnel mines. However, this decision shall be taken based on a complete hazard analysis of the specific area.

Explosive Ordnance (EO) dealt with on BAC operations in Jordan can include:

- Munitions in former military positions and temporary ammunition storage locations, or munitions simply dropped or abandoned that have not been prepared for use and are not in a national stockpile.
- Munitions that have been primed, fuzed, armed or otherwise prepared for use but have not been fired, for example, munitions in gun positions or in former defensive positions that were over run.
- Munitions that have been fired, dropped, launched or projected but which have failed to fully function as designed. This includes hazardous components of those UXO that have only partially functioned.
- Booby traps and failed, or abandoned, Improvised Explosive Devices (IEDs) left behind after hostilities have ceased.

## 10.5 Tasking order

NCDR shall develop procedures for the allocation of land release tasks to demining organizations. Where BAC tasks are identified each individual task shall be allocated a unique task number and a task folder is prepared. The information to be provided for a BAC task is to be presented in a task folder which shall be maintained by the demining organisation responsible for the task for the duration of the task. A duplicate task folder shall also be maintained by NCDR. When a demining organization completes a task or a task is suspended, they shall return the task folder to NCDR with all relevant information included. The task folder, as a minimum, shall include maps and report from non-technical and technical surveys.

A BAC task order shall indicate the specified area to be cleared and the required depth of clearance to be achieved by the demining organisation. It should also include:

Any additional activities required, e.g. marking.

The demining resources to be used;

How long the demining organisation is expected to work on the task

Any additional clearance quality requirements; and

The requirements for monitoring and inspection.

## 10.6 BAC requirements

### 10.6.1 Area and depth of clearance

The specified area to be cleared and the specified depth of clearance shall be provided in the task order by NCDR through the conduct of a non-technical or technical survey that uses sources of reliable information and evidence collected during technical investigation or progressive clearance operations. See NTSG xx for non-technical survey and NTSG xx for technical survey. In the absence of reliable information on the depth of ERW hazard, a default depth for clearance in Jordan is minimum 35 cm.

Different depths of clearance may be specified for different areas depending on an assessment of hazard and the future land use.

Specifying clearance depths will depend on the intended land use, the likely ERW hazard in the area to be cleared and other environmental factors. For example:

- a) ERW may be on the surface of the ground. In this case, the specification may call for the removal and or destruction only of surface ERW hazards.
- b) Clearance in urban areas may require the removal of many meters of rubble as part of the clearance process.
- c) In situations where large bombs and missiles or heavy calibre projectiles have been used, the depth of clearance may be several meters.

The required clearance depth can be adjusted as clearance work progresses. Any change shall be agreed between with the NCDR and the clearance organisation, and shall be formally recorded.

#### 10.6.2 Clearance requirements

Clearance requirements for a BAC task are the same as for clearance of mine and ERW task. As such, the following shall be respected during the BAC operations:

- a) ERW clearance shall be undertaken by appropriately qualified EOD personnel using approved demining procedures. EOD operations shall be conducted in accordance with IMAS 09.30 EOD.
- b) Cleared and un-cleared areas shall be clearly marked. All markings of mines and ERW hazards and hazardous areas shall be in accordance with NTSG chapter 9
- c) Procedures for establishment and maintenance of a safe worksite, and safety distances shall be in accordance with IMAS 10.20 worksite safety

- d) Personal Protective Equipment (PPE) shall be provided in accordance with IMAS 10.30 PPE.
- e) Medical support to demining operations shall be provided in accordance with IMAS 10.40.
- f) Storage and handling and transportation of explosive shall be maintained in accordance with IMAS 10.50.
- g) Reporting and investigation of demining incidents shall be made in accordance with IMAS 10.60 reporting and investigation of demining incidents.
- h) Post-clearance documentation and handover of cleared task shall be in accordance with NTSG xx chapter 9
- i) Environment shall be respected in accordance with IMAS 10.70 protection of the environment.

### 10.6.3 Quality requirements

The quality requirements for BAC depend on the category of BAC conducted. The two categories of BAC are surface clearance and sub-surface clearance. A risk assessment, factoring humanitarian concerns and clearance resources shall be performed in order to decide on concurrent or sequential surface and subsurface clearance.

- a) Surface clearance usually relies on visual search, although there may be instances where a detector may be used to aid in the investigation of the areas of vegetation, earth mounds or other suspect areas. Recording of searches, munitions types and locations of items found is important and may assist determining the details of any subsequent sub-surface search. All unless site-specific requirements dictate, all ERW/EO, including Small Arms Ammunition (SAA), and hazardous parts thereof, are to be removed.
- b) Sub-surface clearance can use various detecting or excavation techniques. All specified ERW and hazardous components are removed in accordance with the requirements of the NTSG. Disposal of UXO and AXO should be carried out in accordance with IMAS 09.30 Explosive Ordnance Disposal.

The removal and/or destruction of all or specified UXO hazards, in the specified area to the specified depth should be achieved by:

- using accredited BAC clearance organisation(s) with operationally accredited capabilities, such as manual BAC clearance, and with staff with appropriate levels of EOD qualification and competence, using appropriate management practices, and applying safe and effective operational procedures;
- monitoring the clearance organisation and its sub-units (see NTSG 3.0) ; and
- Post-clearance inspection of cleared land (see NTSG chapter 14).

### 10.7 Safety

The minimum safety distances for BAC operations are dependent on the expected hazard and the type of operation being conducted. The provision of PPE shall be based on a field risk assessment. For surface search no minimum safety distance need be applied provided that suspected items are not touched in any way, i.e. they are located visually and marked, maybe by spray paint or surface markers. However, consideration should always be given to the possibility of booby traps.

For surface clearance investigation of UXO, where there is a risk of movement or disturbance of items of UXO, a safety distance should be considered and the principle of the minimum number of people in a specified danger area applied.

For sub-surface clearance involving excavation a suitable safety distance related to the expected munitions should be assessed and applied. For more information on worksite safety see IMAS 10.20.

### 10.8 Community involvement

Local participation is an essential component of the clearance and land release process. The most appropriate men and women in the community as well as the local authority shall be involved and kept informed. Names and status of the key informants should be recorded for future reference. The local community shall be involved in the formal

process leading to the release of land and included in the formal process of handing over the land.

## 10.9 Documentation

Clearance progress and completion reports and map for each BAC task including the type and quantity of ammunitions removed/destroyed and their location shall be submitted to NCDR in accordance with NTSG xx info management and reporting.

## 10.10 Responsibilities

### 10.11.1 NCDR

- a) NCDR shall maintain the BAC standard and make any adjustments to it as required.
- b) NCDR shall develop and effective and efficient task allocation procedures.
- c) NCDR shall maintain an accurate and effective document management system for electronic and paper records.
- d) NCDR shall accredit demining organizations and their assets.
- e) NCDR shall develop SOPs for and apply external quality management procedures.

### 10.11.2 Demining organisations

Clearance organisations shall:

- a) Be accredited to conduct land release activities in Jordan.
- b) Meet the requirements of the NTSG when conducting land release activities.
- c) Develop safe and effective standing operations procedures for clearance to meet BAC requirements.

## **11 Chapter 11: Mine Detection Dogs (MDDs)**

### **11.1 References**

This document has been developed with reference to the following documents:

IMAS 09.40 Guide for the use of MDDs

IMAS 09.41 Operational procedures for MDDs

IMAS 09.42 Operational accreditation of MDDs

IMAS 09.44 Guide occupational health and general dog care

### **11.2 Scope**

This chapter defines the training/training facilities, test, accreditation and operational use of Mine Detection Dogs.

### **11.3 Objective**

To provide Mine Action organisations with a clear and comprehensive guide to ensure all Mine Detection Dogs are properly trained, tested and accredited prior to operations. Furthermore to ensure that accredited MDDs are operated by qualified handlers and when engaged in field operations follow the procedures in order to meet the quality required in humanitarian mine clearance, Survey, verification and sampling.

### **11.4 Introduction**

Mine dog detection is a system in which dogs are used as main detection tools. Dogs can detect extremely low concentrations of many substances. In fact dogs are capable of detecting concentrations that are several magnitudes lower than the detection threshold of the best technological “sniffers”. This makes dogs very effective detectors if trained and used correctly. Dogs are best used when indicating individual mines or UXO rather than concentrations. As such they should be used for area reduction and delineation of minefield boundaries (Technical Survey), clearance of low-density minefields, verification behind machines and rapid sampling of cleared areas.

Mine Detection Dogs have been used globally within Mine Action for a number of years. In these years, there has been a lot of focus on the development of better methodologies both with regards to training and operations. The end result of this focus is simply reliable MDDs that are properly trained, tested and efficiently used in field operations with a quality end result.

In Jordan, MDDs can be used within four activities: Technical Survey, clearance, verification and sampling.

### 11.5 General Dog Health Care

Good physical and mental health is prerequisites for all types of working dogs. The combination of strength, fitness, endurance, motivation and learning ability is key for a well working mine detection dog. Dogs need to be exercised regularly to remain in top physical and mental condition. Their daily living conditions are important too as proper kennel facilities are required;

Kennel requirements:

- Cage minimum size 4,5 m<sup>2</sup> (3m x 1,5m)
- Clean and healthy environment
- Adequately sized shelter facilities
- Easy to clean floor that can be kept dry
- Constant access to fresh water
- Access to suitable relief and exercise areas

Kennel staff should have basic training in general dog health and kennel care.

Vaccination requirements: Proper vaccination provides immunity against many potentially dangerous viruses and bacteria. It is the responsibility of the Mine Action organisation to contact the Jordanian Ministry of Health in order to retrieve information regarding bacterial and viral threat in Jordan and establish procedures for preventive vaccination and prophylaxis. A contract outlining cooperation with a local veterinarian should also be in place.

## 11.6 Training

In order to achieve the necessary quality and reliability in field operations, MDDs must be trained according to the task they will be performing. The training should focus on two areas; substance detection and search pattern.

Substance detection: The MDDs must be trained to detect the mines and UXO found in the area they will be operating, especially, and all types found in the minefields in the country, generally.

Individual dogs will usually be trained for one search pattern. The search patterns of choice will be: long lead with return search, long lead and short lead.

## 11.7 Training facilities

In order to provide sufficient training for substance detection and search pattern, the minimum requirements must be:

- Training areas and equipment for the various search patterns
- Clean and sterile carousel room for the explosive substances imprinting process
- Sterilisation facilities and equipment for carousel
- Training and test field with a minimum of 50 boxes (10m x 10m) with buried targets (disarmed mines and UXO)

## 11.8 Test and Accreditation

Prior to MDDs being deployed in field operations, each individual dog must pass a test and receive accreditation together with its designated handler. The handler and dog accredited together will be called an equipage. One handler can be accredited with a maximum of 2 dogs.

The Mine Action organisation will request an accreditation test with the NCDR. The NCDR Accreditation Board will then decide upon a suitable time and location for the accreditation test and designate a Test Manager from the Quality Management Team who will be in charge of all preparations and the test itself. The results from the testing shall

then be forwarded to the Accreditation Board which will evaluate the test results and produce a conclusion.

The equipage will receive accreditation if all test targets are identified. If targets are missed, the equipage will have to be re-tested later.

A dog handler must pass the basic mine and UXO clearance course and the dog handler course in order to be qualified and accredited with a dog.

### 11.9 Operations

The Mine action organisation operating with MDDs must submit comprehensive Standard Operational Procedures (SOP) for approval from NCDR. Upon approval of the SOP, the NCDR Quality Management Team will monitor the MDD operations in the field accordingly.

The SOP must in detail describe the use of MDDs within the methodologies: Technical Survey, clearance, verification and sampling. Search patterns used during operations will be: long lead with return search (Technical Survey), long lead and short lead. Required clearance depth will be down to a minimum of 13 centimetres unless otherwise defined in the Task Order (TO).

When a dog has found a mine or UXO it shall indicate by lying down or sitting. The dog shall indicate without being in direct contact with the object. If a dog scratches on target objects during operations, training or test, it shall be taken out of service and retrained.

When a dog has indicated a mine or UXO, the location must be marked and registered by the handler. The equipage will proceed to work in another location while the mine or UXO is dealt with by a qualified deminer.

During operations, daily test boxes must be established in close proximity to the task. Each MDD must pass the daily test in order to be used in operations. The aim of the daily test is to determine whether the dog is capable of detecting the target substance at the specified depth and that it is sufficiently motivated and focused to work on mine and UXO detection. When the dog has proved to be tuned in on the target substance and is

searching and behaving satisfactory, the test will be terminated and the dog can start operations.

Using the search patterns described in paragraph 18, MDDs can either clear safe lanes or boxes. The establishment of boxes that will be cleared by MDDs will be referred to as the boxing system. Between boxes, safe lanes with a minimum of 1 meter must be established. The safe lanes can be cleared manually or by MDDs. The corners of each box shall be clearly marked and the whole area within each box must be visible to the dog handler or the box shall be divided into smaller boxes or lanes. One box can be maximum 10 meters wide and 50 meters long. Note – for boxes longer than 25 meters, the safe lanes in the length direction must be cleared manually.

### **11.10 Methodology Requirements**

Within Technical Survey operations, MDDs can be used either to clear safe lanes by the long lead or return search pattern, or to clear boxes using the long or short lead search. In Technical Survey, one dog search is sufficient.

Within clearance operations, MDDs will be used to clear boxes. For an area to be declared cleared, at least two different dogs must have searched the box.

Within verification operations behind machines, MDDs can be used either to clear safe lanes by the long lead or return search pattern, or to clear boxes using the long or short lead search. Prior to verification operations a threat assessment of the area must be conducted. Based upon the results from the threat assessment, NCDR will in cooperation with the Mine Action organisation decide whether a 1 dog search or 2 dogs search is required. If there is a disagreement with regards to the required number of dogs, NCDR has the final word and will make the final decision.

Within sampling, pattern and method will be agreed between the NCDR Quality Management Team and the MDD Team Leader.

### 11.11 Working Hours and Weather Conditions

In operations, MDDs will not work for longer than 30 minutes without a break. The total length of a working day will depend on the season and temperature but a dog can work in operations for a maximum of 5 effective working hours in 1 working day.

Weather conditions must be considered on a daily basis. Factors like humidity, temperature and temperature differences in soil/air, wind and rainfall will affect the capabilities of the dog. A mobile weather station should be used by the Mine Action organisation. The weather station must be operated by trained and qualified personnel.

### 11.12 Responsibilities and Obligations

The NCDR, shall:

- Assist the Mine Action organisation with all procedures connected with the import of Mine Detection Dogs to Jordan
- Test and accredit dogs and handlers
- Specify the area to be Surveyed/cleared/verified and depth specified in the TO;
- Specify the standards and guidelines for QA and QC to be applied;
- Accredit Mine Action organisations as fit to undertake Technical Survey, clearance, verification and support to sampling by the use of Mine Detection Dogs;
- Monitor the Mine Action organisation and its sub-units;
- Maintain a registry of cleared and un-cleared land showing the clearance status for each mined area.

The organisation undertaking operations with Mine Detection Dogs shall:

- Gain(from the NCDR) accreditation to operate with Mine Detection Dogs;
- Establish kennels, training facilities and test/training fields for Mine Detection Dogs;
- Maintain and make available documentation of Technical Survey, clearance and verification operations with Mine Detection Dogs as specified by the NCDR;

- Apply management practices and operational procedures using Mine Detection Dogs which aim to clear land to the requirements specified in the TO; and
- Ensure that the mine affected community is fully cognisant of all demining activities in the area and the implications for the community.

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## 12. Chapter 12: Disposal of Mines and UXOs

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### 12.1 References

This document has been developed with reference to the following documents:

IMAS 09.30 Explosive Ordnance Disposal -- EOD

IMAS 10.50 Storage, Transportation and Handling of Explosives

IMAS 11.20 Open Burning and Open Detonation (OBOD) Operations

### 12.2 Scope

The disposal of mines and UXO is limited to those items located inside designated minefields. Items found outside of these areas are to be dealt with by an REC EOD team.

### 12.3 Objective

To ensure that all Technical activities are of a standard that will enhance the safety and quality of all clearance operations with the minimum exposure to risk.

### 12.4 Methods of Disposal

There are currently three methods of disposal:

- Detonation
- Burning
- Incineration

The method used depends upon its type of explosive filling and design, therefore knowing the explosive filling of an item is the first step towards determining the best method for its disposal.

All procedures and drills used in disposal of mines / UXO are to be fully explained in step-by-step detail in the organisations SOP.

## **12.5 Render Safe Procedures**

Render safe procedures are to be conducted in accordance with the clearance organisations SOPs. The organisation's SOP is to contain Render Safe Procedures for all mines that its clearance personnel are allowed to render safe.

## **12.6 Positioning of Disposal Sites**

A disposal site is an area authorised for the disposal of munitions and explosives by detonation and burning. These in turn are referred to as demolition grounds and burning grounds and may be co-located on a disposal site.

Disposal sites shall be sited to ensure that the hazards associated with disposal operations are reduced to a tolerable level.

All sites must be pre-approved and registered with the NCDR. The NCDR is responsible for licensing disposal sites within Jordan.

## **12.7 Control of Disposal Operations**

The disposal operations supervisor shall apply the fire making and smoking materials restrictions and advise all personnel of smoking break arrangements.

## **12.8 Sentries**

Sentries are critical to the safety of demolitions and are to be positioned at every possible entry point of the cordon, set sufficiently clear of the demolition site and danger areas. Sentries are to be carefully briefed about their duties, in particular about warnings and stand-down instructions. They are to be equipped with communications to reach the supervisor and each other. Radios must not pose a hazard to the demolitions and are to be tested before and after the sentries are posted.

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## 13. Chapter 13: Mine / UXO Incidents

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### 13.1 References

This document has been developed with reference to the following documents:

IMAS 10.60 Reporting and Investigation of Demining Incidents

### 13.2 Scope

The following events are classified as a mine/UXO incident:

- Death or injury to Non-mine/UXO clearance organisation personnel caused by mine/UXO clearance activity, from either planned or unplanned explosions.
- Death or injury to mine/UXO clearance organisation personnel caused by mine/UXO clearance activity, from either planned or unplanned explosions.
- Damage to public or private property caused during mine/UXO clearance operations.
- All unplanned explosions on or near, current mine/UXO clearance sites.
- The location of a mine/UXO in a previously cleared and documented area.
- The theft or loss of explosives.
- All other events that have the potential to cause death, injury or damage (near miss).

### 13.3 Objective

To ensure that all mine / UXO incidents are reported in a timely manner in order to ensure the NCDR can provide any necessary assistance.

### 13.4 Initial Reporting of Incidents

All mine/UXO incidents are to be reported to the NCDR Quality Management Team. An initial report is to be made by telephone as soon as is feasible, but within one hour of the incident occurring.

Following the initial report the organisation is to confirm that:

- The casualty is in suitable medical care and that no further action is required.
- All other mine/UXO clearance sites where the same organisation is operating are shut down and that the scene of the accident is secure as possible, pending the arrival of a NCDR QA officer.

- That all clearance operations utilising the same method of clearance on the same type of mine have been suspended.
- Arrangement and confirmation of a date/time/place to rendezvous with the NCDR QA officer to commence an incident investigation; this is normally the following day.

### 13.5 Preliminary Written Incident Report

Within 48hrs of an incident a draft report is to be submitted to the NCDR operations department. The following information is to be included:

- Narrative report outlining events leading up to the accident.
- Signed statements from all witnesses to the accident, including the casualty (statements may be dictated).
- Narrative report of medical treatment and case vac procedure.
- Immediate action taken following the accident.
- Conclusions and probable cause of the accident.
- Intended follow-up action

Photographs of the scene of the accident, if safe to do so should be provided. If not, the necessary action to make it safe to do shall take place. Sketches and relevant measurements may also be included.

The report may be initially submitted in either English or Arabic, however, within 7 days a translated version must be submitted.

Note: All clearance operations utilising the same method of clearance on the same type of mine are to be suspended until the findings of the NCDR incident investigation have been released.

### 13.6 External Investigations

Upon notification of a mine/UXO accident, the NCDR will convene an official Board of Inquiry (BOI) to investigate the circumstances and cause of the accident and to identify and distribute any lessons learned to avoid a repeat. The BOI will normally be chaired by the NCDR QMTL and will include the following personnel:

- NCDR QA Officer
- Representative from the organisation involved.
- Such outside specialists that may be deemed necessary.

The aim of the BOI investigation is to establish the facts and to make deductions from them. To ascertain the cause of the accident and to make recommendations that may be implemented to prevent any similar re-occurrence.

The BOI report will be presented to the National Director of the NCDR for his comments. Following this it will be signed, bound and produced in two copies for distribution as follows:

- 1 x copy for NCDR Operations Department.
- 1 x copy for mine/UXO clearance organisation, in country, Programme Manager.

As a minimum, the BOI investigation report is to contain the following information:

- Introduction.
- Sequence Documentation and Procedures of Tasking.
- Physical Geography and Weather.
- Site Layout and Marking.
- Management, Supervision and Discipline on site.
- Quality Assurance and Quality Control.
- Communications and Reporting.
- Medical, including injuries sustained.
- Personnel, Team Number and Witness Statements.
- Equipment and Tools.
- Details of the Mine/UXO involved.
- Evidence of re-mining.
- Dress and Personal Protective Equipment.
- Use of Machines.
- Particulars of Deminers Insurance.
- Detailed account of the activities on the day of the accident.

- Summary.
- Conclusion.
- Clear recommendations to prevent reoccurrence.

In addition to the above information the Final Report is to contain the following Appendices:

- Appendix a: Incident Report.
- Appendix B: All relevant visual evidence.
- Appendix C: Schedule of resultant damage.
- Appendix D: All relevant documentation including statements.
- Appendix E: Medical Reports/Summary.

### **13.7 Investigation Report Findings**

Within 72hrs of the incident the NCDR will produce a draft executive summary. This document will outline the principle cause of the incident, finding and recommendations, i.e. whether or not operations can restart.

Once the BOI investigation report is prepared and signed the Programme Manager of the mine/UXO clearance organisation is to be given the opportunity to read and discuss its contents. This is to be conducted in a formal environment with the following personnel in attendance:

- NCDR Operations Manager
- Mine/UXO clearance organisation Programme Manager.
- Other personnel as identified by the mine/UXO clearance organisation Programme Manager.

Should the mine/UXO clearance organisation Programme Manager wish to have any additional comments included in the report they will submit them in writing and they will be inserted into the report portfolio as an annex.

The Programme Manager of the mine/UXO clearance organisation is to ensure that all recommendations are implemented without delay.

The NCDR QMTL is to ensure that a summary of such lessons learned are distributed to all mine/UXO clearance organisations as soon as possible and that a consolidated and updated version is distributed every 3 months.

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## 14. Chapter 14: Post Clearance Procedure

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### 14.1 References

This document has been developed with reference to the following documents:

IMAS 08.30 Post-clearance Documentation

### 14.2 Scope

This chapter outlines the Post Clearance Procedure (PCP)

Objective

To clarify:

- the ownership of any residual risk,
- To determine the legal responsibilities and accountability of the donor, the NCDR and the demining organisation(s) following handover.

### 14.3 General

All post-clearance inspections should be completed and any corrective action carried out; permanent survey markers including turning points and intermediate points should be emplaced and accurately recorded for future reference; and all necessary information such as monitoring and inspection reports should be collated and made available for the formal handover. The process shall ensure that the recipient is fully cognisant of all demining activities in the area and the implications for the end user.

### 14.4 Procedure Requirements

Boundary Marking: The boundaries of the cleared area shall also be marked, both visually and with metal objects buried to the depth of 1 meter at the turning points of the perimeter of the clearance area. The clearance documentation shall record the marking used, and also show how the first turning point marker can be found by use of suitable benchmarks and, if necessary, intermediate markers.

Hazard marking: Land which has not been cleared prior to handover for whatever reason, or cannot be confirmed as cleared, should be clearly marked with permanent hazard marking systems. Ideally, such areas should use physical barriers such as robust fencing to reduce the risk of unintentional entry into the remaining hazardous area(s).

Audit Trail: Information should be collected and recorded in a systematic manner during the clearance operation. Whenever possible use should be made of standard information management systems and GIS, such as IMSMA (as established within the NCDR).

The documentation which is made available for handover must provide sufficient evidence that the clearance requirement has been met. As a minimum the following documentation (copies) will require submission in the form of a portfolio.

Hand over report (See Annex A)

Post clearance documentation:

- Completion report
- Threat Assessment
- Survey report (if applicable)
- Task Order
- Accreditation certificates of assets used
- Concept of clearance operations<sup>1</sup>
- Clearance statistics
- Internal / External QA reports
- details of any incidents and accidents which occurred during clearance;
- Misc reports such as suspension etc

## 14.5 Timings

It is counter-productive for all stakeholders if land that has been cleared remains out of use because of delays in the handover process. NCDR undertakes to complete the

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<sup>1</sup> A summary of the procedures and equipment used to clear the area, including details of reduced and cancelled area(s)

handover process within 28 days of a demining organisation making a formal completion report for a particular worksite and providing all necessary information to facilitate the handover process. In the event that NCDR is unable to complete the handover process and the demining agency has complied with all of its responsibilities in this regard, the demining organisation's obligations for the worksite shall be considered as complete and the land considered as handed over to NCDR by default.

The NCDR shall be custodian of all completion reports, handover certificates and supporting information; demining organisations may retain copies for their own documentation.

#### 14.6 Residual Risk and Liability

For humanitarian operations no residual risk should lay with the demining organisation after the NCDR has formally accepted the cleared land. The handover of the cleared land shall be the mitigation of liability point for the demining organisation.

#### 14.7 Annex A: NCDR Approved handover certificate and formal declaration

LOCATION		
Map name:		Location of Cleared Area. (Description and GRID / UTM).      (Include map and diagram of cleared area, including benchmarks and any intermediate markers)
2. Edition:		
3. Sheet Number:		
4. Scale:		
5. Series:		
6. Local name:		
7. Minefield Serial Number:		
DETAILS OF CLEARANCE OPERATIONS		

Methods and Technology Used for clearance	10. Final Disposal Method of Recovered Mines / UXO:
Clearance depth:	Number and Type of Mine / UXO Cleared
12. Is Area Metal Free?	Quality Assurance Methodology
13. Method of marking turning points and benchmarks	14. Date of completion and hand over.
HANDED OVER ON BEHALF OF DEMINING ORGANISATION	QA/QC OFFICER
I certify that to the best of my knowledge and belief the area specified in this Completion Certificate has been cleared of all mine and UXO hazards to the depth specified in this Completion Certificate.	I certify that the area specified in this Completion Certificate has been independently assessed by monitoring [and QC inspection] to be clear, of all mine and UXO hazards to the depth specified in this Completion Certificate (delete as applicable).

<p>Signature of Demining Organisation Representative.</p>  <p>Name</p>  <p>Appointment</p>  <p>Date of signature</p>	<p>Signature of QA/QC Officer.</p>  <p>Name</p>  <p>Appointment</p>  <p>Date of signature</p>
<p>ACCEPTANCE BY REPRESENTATIVE OF BENEFICIARY (OR CUSTOMER)</p>	
<p>I accept responsibility for the area indicated above.</p> <p>I understand that the specified area has been cleared of mines and UXO hazards to the depth specified in this Completion Certificate.</p> <p>I have been briefed on and recorded the details of any potential residual risk.</p>	<p>Name</p>  <p>Appointment</p>  <p>Date of signature</p>
<p>Signature of the beneficiary/customer representative</p>	
<p>ACTION BY NATIONAL COMMITTEE FOR DEMINING AND REHABILITATION (NCDR)</p>	
<p>I certify that the details of this certificate</p>	



## **15. Chapter 15: Reporting**

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### **15.1 References**

This document has been developed with reference to the following documents:

IMAS 07.40 Monitoring of Demining Organizations

IMAS 10.60 Reporting and Investigation of Demining Incidents

### **15.2 Scope**

All operational reports detailing intensions, progress, suspension, completion and identification of task sites.

### **15.3 Objective**

To ensure that all reports and records are complete in an accurate and timely manner.

### **15.4 Introduction**

16.1.1 Accurate and timely reporting of all mine action activities are a key feature of an effective mine action programme. All mine/UXO clearance organisations are to submit regular reports, in the correct format, to the NCDR.

### **15.5 Reports**

Weekly Intentions Plan. Mine/UXO clearance organisations are to submit weekly plans detailing their operations for the forthcoming week by close of operations every Saturday. This is to allow the NCDR to plan QA monitoring visits to all operational assets. Any amendments to this plan must be reported to the NCDR Operations department.

Monthly Summary Reports. Mine/UXO clearance organisations are to submit weekly summary reports to the NCDR. Organisations will not be credited with clearance figures

stated in the Weekly Reports until the Completion Report has been received and verified. Examples of these reports are shown at Annex A.

**Suspension Report.** A Suspension Report is to be issued by the clearance agency to the NCDR, as a result of a management decision by the clearance organisation to suspend work on any particular worksite. This may be for many legitimate reasons, such as, for example, because of flooding at the worksite. This includes a suspension as a result of an instruction from the NCDR. Any suspension for more than 48 hours is to be reported to NCDR using the suspension report at Annex B

**Completion Report.** Demining programmes require a formal record that clearance is complete and that the hand has been correctly handed over. The handover process is covered in detail in Chapter 11 and is therefore not covered in any more detail in this Chapter. However, there is a need for a means by which demining organisations can declare themselves ready for handover. A simple report format is therefore included at Annex C.

**Dangerous Area / UXO Reports** are to be submitted when organisations identify dangerous areas or items of UXO not previously shown on minefield maps. Dangerous area reports are also useful if they can provide additional information for the records. It is important to show new dangerous areas on minefield maps as soon as possible. Organisations are to submit a written report using the IMSMA format within 72 hrs of identifying the area (See Annex D).

**Mine/UXO Incident/Accident Reports** are to be submitted in the event of an incident involving a clearance organisation. Organisations are to submit a written report within 48 hrs of the event. (See Chapter 10).

## 15.6 Timings

The following information is to be submitted to NCDR within the designated timelines:

Weekly Intentions Report	Weekly, by end of ops every Saturday
Monthly Summary Report	Within five working days of the end of

	the month
Completion/Suspension Report	Within 48 hours of task completion
Dangerous Area / UXO Report	Within 24 hours
Initial Incident/Accident Report	Within 60 minutes of the event
Internal Incident/Accident Report	Within 48 hours of the event

### Annex A: Monthly Progress Report

DEMINING MONTHLY PROGRESS REPORT			
LOCATION			
NCDR Task Number		5. Period covered by this report	
2. Implementing Agency		6. Original planned completion date (from tasking order)	
Planned Start Date:		7. Current estimated completion date	
4. Actual Start Date		Task size in M2	
Description of Activity over the period of the report (attach additional information necessary)			
Area cleared in the period of this report (M <sup>2</sup> )			

No of mines found (by type)	
No of UXO found (by type)	
Reason for any delay in this period	
STATEMENT BY DEMINING ORGANISATION	DEMINING ORGANISATION REPRESENTATIVE
I certify that this report is a true and accurate representation of our activity over the period covered by this report.	Signature
	Name
	Appointment
	Date of signature
ACTION BY NATIONAL COMMITTEE FOR DEMINING AND REHABILITATION (NCDR)	



2. Implementing Agency		6. Original planned completion date (from tasking order)	
Planned Start Date :		7. Current estimated completion date	
4. Actual Start Date		Task size in M <sup>2</sup>	
<b>SUSPENSION INFORMATION</b>			
Date suspension initiated			
Reason for suspension			
Date work resumed			

Action taken to allow resumption	
STATEMENT BY DEMINING ORGANISATION	DEMINING ORGANISATION REPRESENTATIVE
I certify that this report is a true and accurate representation of our activity over the period covered by this report.	Signature
	Name
	Appointment
	Date of signature

ACTION BY NATIONAL COMMITTEE FOR DEMINING AND REHABILITATION (NCDR)	
I certify that the details of this certificate have been registered in the national database and archives	Name
Signature of the NCDR database officer	Appointment
	Date of signature
QC CHECK OF DOCUMENTARY PROCESSES BY NCDR QM TEAM	
	Name
	Appointment
	Date of signature

Annex C: Completion Report

DEMINING COMPLETION REPORT			
LOCATION			
NCDR Task Number		5. Original planned completion date (from tasking order)	
2. Implementing Agency		6. Actual completion date	
Planned Start Date		7. Requested handover date	
4. Actual Start Date		Task size in M <sup>2</sup>	
Description of Activity (attach additional information necessary)			

Number of mines found (by type)	
Number of UXO found (by type)	
Reason for any delay in this task	
STATEMENT ORGANISATION	BY DEMINING ORGANISATION
I certify that this report is a true and accurate representation of our activity over the period covered by this report and that.	DEMINING ORGANISATION REPRESENTATIVE  Signature

	Name   Appointment   Date of signature
ACTION BY NATIONAL COMMITTEE FOR DEMINING AND REHABILITATION (NCDR)	
I certify that the details of this certificate have been registered in the national database and archives	Name
Signature of the NCDR database officer	Appointment   Date of signature
<b>QC CHECK</b>  I undertake to initiate handover procedures in accordance with Jordanian National Standards for Mine Action and will contact the demining organisation to arrange the handover in a timely manner	Name

Signature of the NCDR QM team officer	Appointment
	Date of signature

### Annex D: UXO Report

UXO REPORT			
LOCATION			
NCDR Number  (Completed by NCDR)		4. Agency making report	
2 Contact details of witness who can help locate UXO			
Name		5. Address	
Telephone			
6. Description of UXO (attach additional information if available)			
DO NOT TOUCH UXO IN ORDER TO COMPLETE THIS REPORT!			
Category of UXO		Quantity	
Landmine		Rocket	
Projectile		Aircraft bomb	
Mortar		Small arms	
Grenade		Unknown	
STATEMENT BY REPORTING AGENCY		REPORTING AGENCY REPRESENTATIVE	

7. Signature of person making this report.	8. Name  Appointment  Date of signature
<b>ACTION BY NATIONAL COMMITTEE FOR DEMINING AND REHABILITATION (NCDR)</b>	
11. Tasking Action taken	
12. Signature of NCDR tasking officer	13.. Name  Appointment  Date of signature
<b>ACTION TAKING BY DEMINING ORGANISATION</b>	
<p>I confirm receipt of the above tasking order and confirm that my organisation will take on this task</p> <p>I also confirm that we will comply with the Jordanian National Standards for Mine</p>	<p>16. Signature of demining organisation officer.</p> <p>Name</p>

Action and will employ operating procedures as authorised by the NCDR.	Appointment  Date of signature
NCDR Archiving	
I certify that the details of this certificate have been registered in the national database and archives	21. Name  Appointment
20. Signature of the NCDR database officer	Date of signature
QC CHECK OF PROCESSES BY NCDR QM TEAM	25. Name
24. Signature of the NCDR QM team officer	26. Appointment  27. Date of signature

The End