



NMAS 09.30

Explosive Ordnance Disposal

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Edition 2.1

Lebanon Mine Action Center-LMAC

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Warning

This document has been released on the date shown on the cover page. The National Mine Action Standards (NMAS) of Lebanon are subject to regular review and update, so users are advised to consult the most recent version. To ensure that you have access to the current version, contact the Lebanon Mine Action Center (LMAC) through the www.lebmac.org website or by sending an email to info@lebmac.org.

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Foreword

The National Mine Action Standards (NMAS) of Lebanon were first developed in the form of Technical Standards and Guidelines (TSG). These TSG were edited into the first edition of the NMAS in 2010 and were written to comply with the first edition of the International Mine Action Standards (IMAS). Since then, the scope of the IMAS has been expanded to include more components of mine action and amended to mirror the most recent changes to standards as required in today's operations. These changes, as well as changes in the local context of Lebanon, have necessitated a review and update of the NMAS.

As detailed in the National Mine Action Policy of 2007, the Lebanon Mine Action Center (LMAC) has the responsibility to execute and coordinate the Lebanon Mine Action Program (LMAP) on behalf of the Lebanon Mine Action Authority (LMAA), including the development and amendment of standards. Such standards shall be developed in a participatory approach that shall involve international, governmental, and nongovernmental organizations.

The NMAS shall be reviewed as needed to reflect amendments in the IMAS as well as incorporate changes to international obligations and local requirements. Such revisions shall be made available on the LMAC's website www.lebmac.org or can be obtained through contacting the LMAC via the email info@lebmac.org.

Acronyms

AXO	Abandoned eXplosive Ordnance
CLO	Community Liaison Officer
EO	Explosive Ordnance
EOD	Explosive Ordnance Disposal
ERW	Explosive Remnants of War
FFE	Free From Explosives
IA	Implementing Agency
IED	Improvised Explosive Devices
IMAS	International Mine Action Standards
LMAA	Lebanon Mine Action Authority
LMAC	Lebanon Mine Action Center
LMAP	Lebanon Mine Action Program
NMAS	National Mine Action Standards, Technical Standards and Guidelines
RSHDL	Regional School for Humanitarian Demining in Lebanon TSG
UXO	UneXploded Ordnance

Introduction

Over long decades of external aggressions and civil war, various areas of Lebanon have become contaminated with different types of explosive hazard, including anti-personnel and anti-tank mines, sub-munitions, IEDs and varied other Explosive Remnants of War (ERW) in the form of Unexploded Ordnance (UXO) and Abandoned Explosive Ordnance (AXO). In addition to the threat of injury and death that these pose, the livelihoods of thousands of people residing in contaminated areas have been adversely affected.

Bearing the responsibility to clear the country of the impact of all explosive hazards, the Government of Lebanon (GoL) has assigned responsibility for coordinating and implementing Humanitarian Mine Action (HMA) operations to the Lebanon Mine Action Center (LMAC). The LMAC's duties include being responsible for the coordination of the National Mine Action Standards (NMAS) in which all relevant pillars of mine action are addressed.

The requirements for EO search and clearance are covered under other relevant NMAS and must be complied with alongside the provisions described in this document.

Explosive Ordnance Disposal

1. Scope

This NMAS provides standards to ensure that all Explosive Ordnance Disposal (EOD) operations in Lebanon are carried out safely, competently, efficiently, and effectively. However, it does not provide standards for the disposal of chemical, biological, radiological or nuclear (CBRN) hazards or for the management of other munitions with other highly toxic or carcinogenic components.

2. References

A list of normative references is provided in Annex A.

Normative references provide cross-referencing to other standards referred to in this NMAS, and which form an integral part of the provisions of this standard.

3. Key Terms and Definitions

The following key terms and definitions are used in this NMAS:

- *Demining organization*: an organization, national or international, accredited by the LMAC to conduct humanitarian demining activities in Lebanon. Demining organizations may also be referred to as *Employers* or *Implementing Agencies (IAs)*.
- *Demining team*: a team of professionals approved and accredited to conduct one or more demining activities, such as technical survey, non-technical survey, area search and clearance operations and EOD spot tasks.
- *Explosive Ordnance (EO)*: all munitions or parts of munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket and small arms ammunition; all mines, torpedoes and depth charges; pyrotechnics; cluster munitions and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related items or components that are explosive in nature (adapted from IMAS, 2nd ed., 2014).
- *Explosive Ordnance Disposal (EOD)*: the identification, evaluation, render safe, recovery and disposal of EO. EOD may be undertaken as a routine part of demining operations; upon discovery of ERW; to dispose of ERW discovered outside hazardous areas (this may be a single item of ERW, or a larger number inside a specific area); or to dispose of explosive ordnance which has become hazardous by deterioration, damage, or attempted destruction.

In addition to the above terms, NMAS 04.10 provides a glossary of terms and definitions used across all standards.

As in the IMAS, the terms 'shall', 'should' and 'may' are used across all standards to indicate the required degree of compliance. For any organization working in Lebanon, the use of 'shall' indicates a compulsory requirement. The term 'should' indicates the national preference which may be varied with LMAC approval. The term 'may' indicates a suggestion that is not obligatory.

4. General Provisions

EOD operations can be part of TS, area search and Clearance, Battle Area Clearance (BAC) and IED disposal. EOD work may also be conducted on spot-tasks where single items of EO have been discovered, or caches of collected UXO or AXO need to be destroyed. EOD is the disposal of all EO found in or near hazardous areas.

Conducting EOD activities safely requires a guaranteed minimum level of expertise, so all persons engaged in EOD, whether army personnel or staff working for tasked IAs, shall be EOD trained and hold LMAC approved certification.

EOD operations may be undertaken as part of area search during TS or Clearance tasks (involving all kinds of EO). When this occurs, IAs shall abide by the provisions of all relevant MAS regarding clearance requirements.

At all times, the disposal of EO should have prior authorization from the LMAC.

In general, EOD operations shall involve the following considerations:

- a formal risk assessment of the EO hazard, including an identification of the item and its condition;
- the presence of appropriate and LMAC approved Standard Operating Procedures (SOPs) for neutralization, disarming, destruction, and disposal of the relevant EO;
- the engagement of well-trained and qualified personnel; and
- the use of effective and safe equipment.

Following completion of the an EOD operation, IAs shall submit a UXO-EOD Completion Report to the LMAC in the required format.

5. EOD Qualifications

5.1 Levels of EOD Qualifications

Depending on the type of EO hazard found and the level of risk, different qualifications are required for safe and effective EOD operations. The following levels shall apply in Lebanon:

- EOD Level 1 certification: indicates that individuals are qualified to locate, expose, and, when possible, destroy in-situ single items of mines and ERW that have featured in their training.
- EOD Level 2: indicates that individuals are qualified to appropriately determine when it is safe to move, transport, and dispose of single or multiple items of mines and ERW that have featured in their training. A minimum Level 2 qualification is required for persons dealing with the destruction of sub-munitions.
- EOD Level 3: indicates that individuals are qualified to conduct render-safe procedures and dispose of any other type of EO that has featured in their training.
- EOD Level 3 plus: indicates that individuals possess additional specialist skills on top of the EOD skills levels 1, 2, and 3. These skills may qualify them to address other specific hazards, such as depleted uranium, guided weapon systems, intact cluster munitions, underwater EOD hazards, or chemical EOD hazards.

5.2 Quality EOD training and certification

EOD training leading to certification shall be made available to persons working in Lebanon either through outsourced training conducted abroad or through training provided by the Regional School for Humanitarian Demining in Lebanon (RSHDL). In all cases, the certification awarded shall list the skills in which the individual has been trained, including the specific types of munitions which the individual has been trained to destroy or neutralize.

To maintain their competency level, certified EOD operators who are not engaged in the field should receive 'continuation' training updates as required.

6. EO Disposal (EOD)

All EOD activities shall be implemented in close coordination with and with the approval of the LMAC. The preferred method of EOD is in-situ destruction. However, in many situations other ways of managing EO may be more appropriate. Each situation shall be assessed by an appropriately qualified EOD operator who shall inform the LMAC of the proposed approach to EOD. Any variation to the destroy-in-situ preference always requires authorization from the LMAC. Authorization may be granted on a case-by-case basis, or by authorizing multiple similar EOD approaches in multiple similar hazard scenario.

At all times during EOD work, the safety of the environment shall be considered in accordance with NMAS 10.70.

6.1 EO Destruction

All EO located should be destroyed in-situ unless otherwise approved in writing by the LMAC. When authorized, EO hazards may be moved to an authorized disposal site after appropriate render-safe procedures have been conducted.

Prior to the destruction of any EO, any likely damage, including the effects of resulting contamination and other environmental/social impacts, shall be appropriately assessed.

During all demolitions, the Community Liaison Officers (CLOs) should coordinate with the local communities and LAs to avoid causing undue alarm whenever appropriate.

6.2 EO Neutralization and Disarming

With LMAC approval, specified EO types may be rendered safe or disarmed prior to transportation to a suitable disposal location. Approval shall not be granted to any IA that cannot prove that the staff involved are appropriately qualified to conduct render safe procedures. IAs that do not have a certificated and approved EOD capacity shall mark, identify, and report the EO to the LMAC who will then arrange an appropriate EOD response.

The rendering of EO Free From Explosives (FFE) for training purposes shall require the written approval of the LMAC. Approval shall only be granted when the IA has submitted a formal SOP for the FFE of the munition type to the LMAC and the use of the SOP has been approved. Any subsequent FFE activity shall be conducted in accordance with the approved SOP.

In general, neutralization and disarming procedures and restrictions do not apply to AXO unless the AXO has been fused, exposed to extreme temperature and climate changes or otherwise become damaged. AXO incorporated into IEDs that may have an unconventional explosive content shall always be treated as high risk. Most AXO can be removed and transported safely to an approved disposal site. A case-by-case AXO assessment shall be conducted by the tasked IA and its recommended responses sent to the LMAC for approval.

6.3 EO Disposal Sites and Demolition Areas

A disposal site may either be an area appropriately authorized by the LMAC for the destruction of ammunition and explosives found during demining operations by either detonation or burning, or a demolition area designated at a set distance from the working area, and approved by the LMAC. See NMAS 09.32 for guidance on large scale demolitions.

Sites used for destroying EO explosively are referred to as demolition grounds while sites used for burning are referred to as burning grounds. These sites may be co-located at the same disposal site. The LMAC shall formally approve and license all dedicated disposal sites

except when a disposal site is in or adjacent to a worksite and its location is indicated in the approved task Clearance Plan.

6.4 EO Transportation, Handling, and Storage

The transportation, handling, and storage of EO is subject to national laws and the regulations of the Lebanese Armed Forces (LAF). Detailed standards for the transportation, handling, and storage of EO are provided in NMAS 10.50. Any IA wishing to transport, handle, or store any EO shall also present its SOPs covering the render safe, transportation, handling, and storage of neutralized EO to the LMAC and receive approval before conducting the work.

7. Roles and Responsibilities

7.1 Role of the LMAC


The LMAC shall:

- assess and, when appropriate, accredit demining organizations before assigning any EOD tasks to them, in accordance with NMAS 07.12 Guide for the Accreditation of Mine Action Organizations and Operations;
- assess the IA's EOD SOPs and, when appropriate, approve their use;
- oversee and provide certification and quality assurance of EOD qualifications;
- maintain a list of dedicated demolition sites to be shared with demining organizations, and approve and license disposal sites as required;
- monitor the work of demining organizations in EOD to assure quality operations; and
- collect, analyze and store all relevant data related to EOD operations.

7.2 Role of IAs

In their capacity as demining organizations, IAs shall:

- acquire LMAC accreditation to conduct EOD operations;
- comply with the national standards related to EOD;
- provide appropriate and effective Standard Operating Procedures (SOPs) for EOD operations for LMAC approval, including standards for any neutralization, disarming handling and/or transportation they may wish to conduct. These standards shall cover all EO hazards they are likely to encounter in their work; and
- ensure appropriate and timely data gathering, documentation, and reporting.

	LEBANON NATIONAL MINE ACTION STANDARDS	Edition 2.1	NMAS 09.30
ANNEX A: Normative and Informative References			
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The documents listed below constitute normative references which form an integral part of the provisions of this standard.

- Current LMAC and IMSMA reporting formats (request copies from the LMAC);
- NMAS 07.11 Guide for Land release;
- NMAS 09.11 Battle Area Clearance;
- NMAS 09.13 Minefield clearance;
- NMAS 09.31 IED Clearance;
- NMAS 09.33 Guide for the demolition of mines and ERW;
- NMAS 09.32 Guide for large scale demolitions and burning; and
- NMAS 04.10 Glossary of Mine Action Terms, Definitions, & Abbreviations used in the Second Edition of the NMAS.

NMAAS 09.30, Edition 2.1: Amendment Record

The NMAAS are subject to a comprehensive or partial review by the Review Board periodically. Changes in the context as well as safety requirements and efficiency considerations may necessitate amendments to individual NMAAS standards more frequently. If this occurs, such amendments shall be given a number, dated, and detailed in the table below. The amendment should also be indicated on the header under the NMAAS edition number.

Whenever the formal review of the NMAAS is completed, a new edition shall be issued. Amendments that have taken place before the review date shall be incorporated in the new edition and the amendment record table cleared. Consequently, the recording of amendments shall start again until the next review.

The most recent revisions of the NMAAS shall be posted on the Lebanon Mine Action Center (LMAC) website on www.lebmac.org.

Number	Date	Amendment Details
1	March 2020	Minor revisions throughout.