



LMAS 10.50

STORAGE, TRANSPORTATION AND HANDLING OF EXPLOSIVES

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Note:

This document is current at the date shown on this page. The Local Mine Action Standards (LMAS) are subject to regular revision, so users should ensure that they are using the latest version of each document in the standards. The most recent versions of LMAS are available with office of Rabouni.

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Foreword

Critical safety, control and quality elements of the International Mine Action Standards (IMAS) have been retained in the Local Mine Action Standards (LMAS), so ensuring that they maintain the principles agreed in IMAS guidelines.

The work of preparing, reviewing and revising LMAS is conducted by a technical committee with the support of international, governmental and non-governmental organisations in Western Sahara, East of Berm (EoB).

In the LMAS, the following words are used to indicate the intended degree of compliance and are to be reflected in Mine Action Organisation Standard Operating Procedures (SOPs):

'Shall', 'will' and 'must' are used to indicate requirements, methods or specifications that are to be applied in order to conform to the standard;

'Should' is used to indicate the preferred requirements, methods or specifications.

'May' is used to indicate a possible method or course of action.

In LMAS:

The term "Demining Organisation" refers to any organisation (government, NGO or commercial entity) responsible for implementing demining projects or tasks. Demining Organisations include headquarters and support elements.

The term "Mine Action Organisation" refers to any organisation (government, military, commercial or NGO/civil society) responsible for implementing mine action projects or tasks. The mine action organisation may be a prime contractor, subcontractor, consultant or agent.

For the purpose of the LMAS, the words "Demining Organisation" and "Mine Action Organisation" are interchangeable and used to describe the same body.

1. Introduction

The need to reduce risk and to provide a safe working environment is a fundamental principle 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 when applicable provision of effective Personal Protective Equipment (PPE) and clothing.

This standard provides details of the minimum specifications and guidelines for the safe storage, transportation and handling of explosives and where applicable and/or appropriate for ammunition, ordnance and ERW, and in accordance with International Ammunition Technical Guidelines (IATG"s).

The detail within this standard also applies throughout to the safe handling, transportation and storage of ammunition, ordnance and ERW. However, for purposes of brevity these terms are not used again and the term "**explosives**" whilst being specific also applies to these natures in this standard.

Whenever and/or wherever possible and/or practicable, these specifications and guidelines shall be followed, adhered to and implemented by Mine Action Organisations.

When used within this standard, the term “**explosives**” refers to all items of an explosive nature including but not restricted to bulk explosives, detonators, detonating cord, safety-fuse, all types of igniters, ammunition, ordnance, ERW.

These specifications and guidelines do not exclude application of future national rules and regulations concerning storage, transporting and handling explosives.

2. Requirements of Responsible Personnel

All persons charged with, responsible for or involved in the storage, transportation and handling of explosives shall have received appropriate training, shall be suitably qualified and experienced and shall be familiar with the details and guidelines of this standard.

Persons responsible in whatever capacity for the storage, transportation and/or handling explosives shall be in good health.

Persons not qualified to store, transport or handle explosives, may carry, load and unload dangerous materials into vehicles or storage under the supervision of a qualified person, provided they are verbally briefed on safety measures prior to handling explosives.

All transportation and storage of explosives, temporarily or permanent shall be recorded in a log book showing the amount of explosives transported or stored and the amount of explosives being used.

A qualified person responsible and accountable for the storage, transportation and handling of explosives shall always be appointed by Mine Action Organisations. Records are to be kept and made available for inspection by the SMACO.

3. Environmental Requirements

The environmental requirements (temperature, humidity and vibration) of explosives vary, and are dependent on their intended storage conditions (including shelf life), transportation, handling and use.

The performance of explosives may be unpredictable and the safety shall be reduced if the manufacturers' environmental conditions are not met.

In general, explosives should be:

- a. Kept dry and well ventilated.
- b. Kept as cool as possible and free from excessive or frequent changes of temperature.
- c. Protected from direct sunlight.
- d. Kept free from excessive and constant vibration.

4. Storage Requirements

If Mine Action Organisations construct their own explosive stores then the general requirements for the design of magazines and containers used for the storage and transport of explosives given in IMAS 10.50 and relevant IATG's shall be applied. In summary: ²

- a. All storage facilities require adequate ventilation to prevent dampening and heating of stored explosives. Climatic conditions, size of magazine and location shall determine the amount of ventilation required.
- b. No indoor storage facility shall be located in a residence, dwelling or an office building.

- c. Permanent and/or main storage facilities shall be fire-resistant, theft resistant, weather resistant and ventilated. Consideration should be given to ground and local features during the design and siting of such structures.
- d. Portable storage facilities, such as a skid-mounted container, trailer or semi-trailer shall be theft-resistant, fire-resistant and weather-resistant.
- e. The magazine should be constructed of steel with an interior lining of timber. Magazines of less than one cubic metre in size should be fixed to the ground to prevent theft of the entire magazine.
- f. A day box is used for the on-site storage of explosives required for daily mine/ERW clearance operations. It shall be:
 - Weather resistant and able to be locked.
 - Wherever possible or practical it should be of steel construction but may be wooden boxes or other appropriate containers.
 - They shall contain no more than **10 kg of explosives** and or (including) appropriate quantity of initiating means to fire the given quantity of explosives.
 - Detonators and/or other means of initiation shall be stored and carried in a separate box from explosives.
 - A detonator box shall be metal or wooden. It may also be used to store detonators in when at the demining worksite. Detonators carried shall not be carried loose within the detonator box but shall be packaged. Electric detonators should be stored and carried in closed metal containers to shield them from electrical hazards.
- g. Mine Action Organisations are responsible for maintaining storage facilities and a protection zone around it according to the prescribed technical norms. They are also to provide physical protection of the facility.
- h. Vehicles shall not be left loaded with explosives at any time unless they are under continuous security guard and shall not be used as overnight storage facilities.

5. Storing Explosives

The following are the minimum general rules and guidelines for the storage of explosives:

- a. Permanent and/or main storage facilities shall have ventilation, installed in such a way that it cannot be closed, blocked or allow water to penetrate.
- b. Permanent and/or main storage facilities shall be fitted with lightning conductors.
- c. Permanent and/or main storage facilities shall have separate rooms or a substantial barrier for separating explosives and detonators/blasting caps.
- d. In all circumstances, where possible explosives shall be stored in their original packaging.
- e. All boxes shall be placed at least 100mm above the floor, e.g. on wooden pallets.
- f. When boxes are stacked the height shall not exceed 1.5 metres. The space between the top of the boxes and the ceiling shall not be less than 600mm.
- g. When stacked on shelves boxes shall be at least 100mm away from the upper shelf, and 500mm away from the walls of the room.
- h. When stacking boxes the width of the base shall be more than the height of the stacked boxes.

- i. Blasting caps and electric detonators may be stacked only if packed in boxes and on wooden shelves maximum two layers on a shelf. Total height of stacked boxes shall not exceed 1.4 metres.
- j. If portable lanterns or pocket torches of any description are required they shall be switched on before entering the store. The person holding the torch shall not handle explosives or detonators or blasting caps.
- k. Materials used for packaging explosives shall be destroyed and not discarded after use.
- l. Fire extinguishers shall be available in storage facility.

6. Additional Measures for Storing and Handling of Explosives

The following shall be implemented and adhered to by Mine Action Organisations:

- a. A trained and qualified person shall be responsible for managing the receipt, storage, guarding and issuing of explosives at all levels.
- b. Only authorised persons shall enter the storage facility and where appropriate and relevant shall be escorted at all times.
- c. All smoking materials, including cigarettes, matches, lighters etc. and any object or item that might cause fire are prohibited from the storage facility. At the entrance to the facility there shall be a warning sign stating NO SMOKING OR SMOKING MATERIALS ALLOWED BEYOND THIS POINT.
- d. Clothing and shoes of all workers in a warehouse shall be in accordance with rules on storage of explosives. Shoes shall be manufactured in such a manner as not to cause sparks.
- e. The storage facility shall not be used for anything other than storing explosives. It should be kept free from any other tools, equipment of items and should at all times be kept as clean and tidy as is practicable.
- f. The facility shall be secured at all times except when it is being ventilated then it should be guarded.
- g. Facilities should be constructed in such a way as to provide protection from static electricity.
- h. If thunderstorms are predicted all work in and around the facility shall stop and personnel shall go to a safe place.
- i. In the event that the facility requires repairing, all explosives and explosive accessories shall be removed before repairs are started.

7. Requirements when Preparing to Transport Explosives

The following shall be implemented and/or adhered to when preparing to transport explosives by vehicle:

- a. Persons responsible for the transportation of explosives shall ensure that suitable communications systems are available that will allow for communication from the vehicle to the organisation throughout the complete journey.
- b. That an appropriate communication plan (covering as a minimum a radio check prior to leaving the start location and informing on arrival at destination) is in place for the journey.

- c. That a route card is prepared covering the complete journey.
- d. That the driver and drivers assistant are aware of all actions to be taken covering all possible eventualities during the journey i.e. breakdown, accident, robbery, etc.
- e. Explosives shall not be transported unless securely packed in appropriate boxes. Boxes or individual packages shall have specific identification marks on them.
- f. Each box shall be marked with the applicable hazardous classification code as per IATG 01.50.
- g. Boxes shall be closed and made waterproof in order to prevent any loss or spilling and moisture ingress during transport. If the vehicle is not a covered vehicle, boxes shall be covered with a waterproof cover.
- h. Detonators shall be securely packed in a separate metal box from explosives.
- i. Boxes containing detonators shall be carried in a separate compartment of the vehicle from boxes containing explosives. **UNDER NO CIRCUMSTANCES ARE DETONATORS TO BE CARRIED IN THE SAME BOX AS EXPLOSIVES.**
- j. Detonators and explosives shall be loaded on to the vehicle in such a way that they do not move about during transportation.
- k. Boxes, pallets and other packaging for transport of explosives shall be evenly distributed over the whole deck area, and may be loaded up to the height of the sides of the truck. All individual packaging and boxes with explosives shall be loaded and fixed to prevent spillage from boxes and turning over or impact inside boxes.

8. Requirements for Vehicles used for the Transport of Explosives

Vehicles employed to transport explosives shall be roadworthy, well maintained, and in good working order. Persons in charge of the transport of explosives shall check the following prior to any movement of vehicles carrying explosives: **a.** The vehicle is marked appropriately.

- b.** The driver and driver's assistant are briefed about the type of explosives to be transported as well as their destination and the route they are to take
- c.** The type and quantity of explosives and conditions of roads to be travelled on shall be considered when deciding the type of vehicle to be used.
- d.** If vehicles carrying explosives are travelling in convoy, then the distance between vehicles shall be a minimum of 100 metres.

All vehicles that are employed for the transport of explosives should also carry the following equipment:

- a.** At least two appropriate fire extinguishers, one for the vehicle engine and one for the load, extinguishers shall be charged with a content that shall efficiently extinguish an explosives fire.
- b.** Two hand-torches.
- c.** Two warning triangles for marking the vehicle when stationary on the road.
- d.** Vehicles transporting explosives shall be fitted with an earthing -strap to take away static electricity from the vehicle to the ground.

9. Procedures in the Event of a Traffic Accident

In the event of an accident that does not allow for the transport of explosives to continue, the crew shall immediately inform their organisation's headquarters.

In case of an accident, the duties of the driver and driver's assistant shall be to:

- a. Extinguish any fires on or in the vehicle without further endangering themselves.
- b. Take necessary measures to prevent any danger to other vehicles or people in the area.
- c. Place warning triangles to the front and to the rear of the vehicle to indicate the vehicle is stationary on the road. This shall apply both night and day.
- d. In daytime the driver should send his assistant a distance of 100 metres with a flag to warn oncoming traffic. At night use lights to warn other vehicles using the same carriageway as the stopped vehicle, ensuring traffic slows down, stops or overtakes safely.
- e. Place signs and lamps a minimum of 50 metres behind the vehicle so that they are visible to other drivers from a distance of at least 150 metres from the stationary vehicle.
- f. After suitably marking the vehicle, and before any officials arrive to make an investigation; the crew should carry out the following:
 - g. Remove from the vehicle all documentation relating to the transport of explosives.
 - h. Prevent spillage of explosives.
 - i. Prevent the approach of bystanders and warn them of the danger.
 - j. Inform the closest local police station, and suggest the necessary action required of the police.
- k. **Note** When investigating officials arrive, inform them of the content and potential danger the cargo could pose to people, property and environment.

10. Additional Safety Measures when Transporting Explosives

The following are additional safety measures for the transport of explosives:

- a. No passengers shall be carried in vehicles transporting explosives. Vehicle crews shall consist only of a driver and a driver's assistant (or supervisor).
- b. No material that may cause a fire may be carried in vehicles transporting explosives.
- c. No repairs that might cause fire by sparking due to impact or violent contact may be carried out.
- d. No smoking is allowed in the driver's cabin or any other part of the vehicle.
- e. The vehicle shall not be left unattended.
- f. The driver shall drive with care and at an appropriate speed for the roads and conditions.
- g. If the explosives are stolen, the organisation or persons transporting the explosives are to take measures to find it and to report the incident to the person in charge of the transport and also inform the local authorities and the SMACO.
- h. Explosives and the means to initiate explosives may be transported together only when the quantity of explosives does not exceed 50 kg, and 100 detonators. This shall only be allowed provided that the detonators are in their originally packed boxes, and that the explosives are packed and loaded separately from the detonators.

11. Safe Storage of Explosives

Those storage facilities under the control of SMACO shall be licensed to store explosives in accordance with IMAS 10.50 and the relevant IATGs.

When storing explosives the following applies:

Ammunition Compatibility Groups: Ammunition and explosives have been grouped into twelve Compatibility Groups (CGs) A to H, J, K, L and S. Group I is omitted to avoid possible confusion between the letter I and the Roman numeral 1. Group S is given a distinctive letter since it corresponds to a unique possibility for mixing in storage and transport. Examples for the Compatibility Groups are given in IATG 01.50. Definitions of Compatibility Groupings are:

- Group A - Primary explosive.
- Group B - Ammunition containing primary explosive.
- Group C - Propellant, explosive or other secondary deflagrating explosive or ammunition containing such explosive.
- Group D - Secondary detonating explosive or black powder or ammunition containing secondary detonating explosive, in each case without its own means of initiation and without a propulsive charge.
- Group E - Ammunition containing secondary detonating explosive, without its own means of initiation, with a propulsive charge.
- Group F - Ammunition containing secondary detonating explosive, with its own means of initiation, with or without a propulsive charge.
- Group G - Pyrotechnic substance, or ammunition containing pyrotechnic substance, or ammunition containing both an explosive and an illuminating, incendiary, lachrymatory or smoke producing substance (other than a wateractivated article or one containing WP, phosphide or flammable liquid or gel).
- Group H - Ammunition containing both an explosive and WP.
- Group J - Ammunition containing both an explosive and a flammable liquid or gel.
- Group K - Ammunition containing both an explosive and a toxic chemical agent.
- Group L - Ammunition containing explosive and presenting a special risk needing isolation of each type.
- Group S - Ammunition so packaged or designed that any explosive effect during storage or transport is confined within the package except when an external fire has degraded the packaging.
- **Warning** CG D applies only when secondary detonating explosive (high explosive) or black powder is properly packed in a dust-tight container. OTHERWISE, CG L applies.
- **Warning** CG D or E may apply to ammunition that is fused or packed together with fuses.
- **Warning** CG F does not necessarily apply to ammunition that is fused or packed together with fuses.
- **Warning** Detonators may be stored or transported with other materials, provided they are adequately segregated.

- **Warning** Exception: Detonators that are not mass detonating may be stored with safety fuse, electric squibs, igniters, or igniter cord and as specified in IMAS 10.50.
- **Warning** Compatibility group F CAN are stored in the same magazine as C, D and E, but it shall be well segregated and the entire quantity shall be considered as Compatibility Group F.
- **Warning** Fuses in B with D or E of which fuses are components. The load is treated as Compatibility Group F.
- **Warning** Compatibility Group G SHALL be stored in its standard service packaging for it to be allowed to be allowed to be stored with C, D or E. Otherwise it SHALL be stored separately.

The storage specifications provided in these Guidelines are specifications that apply to the storage of explosives normally used for the destruction of ERW hazards. EOD Units should not presume that these specifications are safe for the storage of munitions awaiting EOD procedures for destruction in a central disposal site or other requirements.

Compatibility Group	A	B	C	D	E	F	G	H	J	K	L	N	S
A	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Green
B	Red	Green	(8)	(1,8)	(1,8)	(1,8)	(3,8)	Red	Red	Red	Red	Red	Green
C	Red	(8)	Green	Green	Green	(2)	(3)	Red	Red	Red	Red	(4)	Green
D	Red	(1,8)	Green	Green	Green	(2)	(3)	Red	Red	Red	Red	(4)	Green
E	Red	(1,8)	Green	Green	Green	(2)	(3)	Red	Red	Red	Red	(4)	Green
F	Red	(1,8)	(2)	(2)	(2)	Green	(3)	Red	Red	Red	Red	Red	Green
G	Red	(3,8)	(3)	(3)	(3)	(3)	Green	Red	Red	Red	Red	Red	Green
H	Red	Red	Red	Red	Red	Red	Red	Green	Red	Red	Red	Red	Green
J	Red	Red	Red	Red	Red	Red	Red	Red	Green	Red	Red	Red	Green
K	Red	Red	Red	Red	Red	Red	Red	Red	Red	Green	Red	Red	Red
L	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	(5)	Red	Red
N	Red	Red	(4)	(4)	(4)	Red	Red	Red	Red	Red	Red	(6)	(7)
S	Red	Green	Green	Green	Green	Green	Green	Green	Green	Red	Red	(7)	Green

Table 1: Compatibility Groups Mixing Rules

When using the table please refer to the following key to the colour codes and the note numbers within each box and what they mean:



Where there is a note number then additional restrictions apply as below.



Items within these two compatibility groups can be mixed in storage. Where there is a note number the rules in the appropriate note apply.



Items within these two compatibility groups can be mixed in storage only if they meet the criteria specified below for the note number in the box.

Note 1: Compatibility Group B fuses may be stored with the articles to which they will be assembled, but the Net Explosive Quantity (NEQ) shall be aggregated and treated as Compatibility Group F.

Note 2: Storage in the same building may be permitted if effectively segregated to prevent propagation.

Note 3: Mixing of articles of Compatibility Group G with articles of other compatibility groups is at the discretion of the National Competent Authority. This only applies to articles in CG 'G' – substances in CG 'G' must be stored separately.

Note 4: Articles of Compatibility Group N should not in general be stored with articles in other compatibility groups except S. However, if such articles are stored with articles of Compatibility Group C, D and E, the articles of Compatibility Group N should be considered as having the characteristics of Compatibility Group D and the compatibility groups mixing rules apply accordingly. **Note 5:** Compatibility Group L articles shall always be stored separately from all articles of other compatibility groups as well as from all other articles of different types of Compatibility Group L.

Note 6: It is allowed to mix 1.6N munitions. The Compatibility Group of the mixed set remains N if the munitions belong to the same family or if it has been demonstrated that, in case of a detonation of one munition, there is no instant transmission to the munitions of another family (the families are then called 'compatible'). If it is not the case the whole set of munitions should be considered as having the characteristics of Compatibility Group D.

Note 7: A mixed set of munitions 1.6N and 1.4S may be considered as having the characteristics of Compatibility Group N.

Note 8: Detonators in CG 'B' can be stored with these CGs if the detonators are contained within a brick or sandbag built detonator bay.

The Mixing Rules in this Appendix only apply to serviceable ammunition.

12. Inert, Drill, Instructional or Replica Mines and Ammunition

Inert, drill, instructional or replicas of mines and ammunition shall be handled, stored and accounted for accurately, in order to:

- a. Avoid accidents.
- b. Avoid incidents of mistaken identification leading to unnecessary clearance operations or render safe procedures.
- c. Ensure the security of drill and inert mines and ammunition.
- d. Ensure that drill and inert mines and ammunition are not subjected to unnecessary damage, which can be expensive.

12.1 Modification

All authorised breakdown or modification of live mines and ammunition into inert, drill, instructional or replica items shall be carried out by appropriately qualified and authorised EOD personnel. As such operations carry a high degree of inherent risk, the authorisation for such activities shall be the responsibility of the senior incountry representative of the Mine Action Organisation. Such operations shall only be carried out by a Level 4 EOD technician.

WARNING: Drill and replica mines and ammunition are readily available on the commercial market. They are made up from empty components, either obtained direct from the original manufacturer or specifically made for the purpose. These should be used as the first choice.

Locally manufactured drill and instructional mines and ammunition should only be used as a last resort.

Mine Action Organisations shall not indulge in the production of Free From Explosives (FFE) ammunition and explosives as souvenirs.

12.2 Storing

The following applies when storing inert, training or other non-live/FFE items:

- a. Inert, drill, instructional and other replicas of mines and ammunition **shall not be stored** with live ammunition. They shall be stored in a separate location.
- b. Mines and ammunition that have been subjected to render safe procedures, and have been certified as FFE, shall be stored in the same manner as drill and inert ammunition.
- c. Inert, drill, instructional and other replicas of mines and ammunition shall not be stored in the same containers as live ammunition. They shall be stored in a separate container, which shall be clearly marked INERT or DRILL in English and the local language. All other markings shall be eradicated from the container to ensure that there is no possibility that it could mistakenly be identified as containing live ammunition.

12.3 Movement

The following applies when moving and/or transporting inert, training or other non-live/FFE items:

- a. Inert, drill, instructional and inert replicas of mines and ammunition shall not be moved in the same containers as live ammunition. They shall be moved in a separate container, which shall be clearly marked INERT or DRILL in English and the local language. All other markings shall be eradicated from the container to ensure that there is no possibility that it could be mistakenly identified as containing live ammunition.
- b. It is recommended that inert, drill, instructional and other replicas of mines and ammunition are not moved on the same vehicle as live ammunition wherever possible, but it is accepted that local circumstances may not allow for this.

12.4 Marking

The following applies when marking inert, training or other non-live/FFE items:

- a. All items shall be clearly marked on all sides as either “**INERT**” or “**DRILL**” as appropriate in English and the local language. This ensures that they can be clearly identified from all angles, and therefore do not inadvertently or accidentally become the focus of a clearance operation or render safe procedure.
- b. All items shall also be marked with a unique serial number. This unique serial number should be in the following format: (Location/3 digits/type).

12.5 Safety

If an individual is in any doubt as to the explosive status of a mine or item of ordnance, then it shall be treated as live, and technical demining or EOD advice shall be immediately requested. The following also applies:

- a. Mine Action Organisations should not breakdown, modify or tamper with mines and ammunition, unless it is done in the course of inspection, modification or disposal in accordance with the appropriate technical procedures.
- b. Technical procedures for the breakdown or modification of live mines and ammunition into inert, drill, instructional or replica items shall be developed by appropriately qualified EOD personnel.
- c. Registration & Accounting for Inert or Drill Mines & Ammunition.
- d. The Mine Action Organisation shall maintain a master register of all inert, drill, instructional or other replica mines and ammunition that it has responsibility for. This register shall include the following information:
 - Serial number
 - Type of mine/ERW
 - Current location

12.6 Free From Explosive (FFE)

The Mine Action Organisation shall operate an appropriate accounting system to ensure accountability and traceability for all inert, drill, instructional or replica mines and ammunition in its possession. It is recommended that this is based on their live ammunition accounting system.

12.7 FFE Certificate

All inert, drill, instructional or replica mines and ammunition shall be visually inspected and physically examined by an appropriately qualified EOD Level 3+ technician to ensure that the item contains no explosive, pyrotechnic, lachrymatory, radioactive, chemical, biological or other toxic components or substances.

The EOD Level 3+ technician shall also ensure that all ammunition markings, (designation, hazard division, hazard compatibility code, previous serial numbers, symbols etc.), that refer to the previous live condition of the item have been removed or obliterated.

The EOD Level 3+ technician shall then issue a FFE certificate for the item.

This certificate shall contain the following information: ▪
Unique serial number.

- Date
- Name of inspecting EOD Level 3+ technician
- Brief description of item
- An FFE certification statement

12.8 FFE Statement

The following is a recommended statement and should be written in English and local language:

- I certify that I have visually inspected and physically examined the item referred to on this FFE certificate and confirm that this item contains no explosive, pyrotechnic, lachrymatory, radioactive, chemical, biological or other toxic components or substances. I also certify that I have ensured that all previous ammunition markings have been removed and that the item has been remarked as either DRILL and/or INERT. I am satisfied that it is safe to use for drill, display or instructional purposes.

Note The Mine Action Organisation shall maintain a register of all FFE certificates issued.

Figure 2 below illustrates an example of a FFE certificate. This certificate should be used as a guide however Mine Action Organisations are to use their own logos and formats.

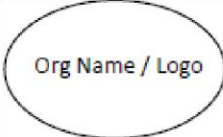

	
<u>Free From Explosive (FFE) Certificate</u>	
Item name:	
Reference number:	
Image:	
	
<p>I certify that I have visually inspected and physically examined the item referred to on this FFE certificate and confirm that the item contains no explosive, pyrotechnic, lachrymatory, radioactive, chemical, biological or other toxic components or substances. I also certify that I have ensured that all previous ammunition markings have been removed and that the item has been remarked as either DRILL and/or INERT. I am satisfied that it is safe to use for drill, display or instructional purposes.</p>	
Inspecting EOD Level 4 Technician	
Name:	
Signature:	Date:

Figure 2: Example of a FFE Certificate

13. Responsibilities

13.1 Local Mine Action Authority (SMACO)

The SMACO shall develop documented regulations for the storage, transportation and handling of explosives, which include:

- a. An accreditation system for Mine Action Organisations. The system should ensure that Mine Action Organisations are competent and equipped to store explosives.
- b. Standards for storage of explosives, including storage of ERW, including when on unexploded sub-munitions clearance sites.
- c. Standards for the carriage of explosives, including warning signs and symbols to be used on vehicles.
- d. Safety distances for the storage and handling of explosives
- e. Minimum requirements for fire prevention.

13.2 Mine Action Organisations

The Mine Action Organisations shall:

- a. Establish and maintain SOPs that comply with the provisions of the LMAS, IMAS, IATG, and other relevant standards or regulations relating to the storage, transportation and handling of explosives.
- b. Operate in accordance with the standards detailed above.

13.3 Mine Action Organisation's Employees

Mine Action Organisations' employees shall:

- a. Comply with instructions given for their own conduct and safety when carrying out the storage, transportation and handling of explosives.
- b. Report immediately to their superior any situation associated with the storage, transportation and handling of explosives which they have reason to believe could present a hazard which they cannot themselves correct. This includes any explosive or explosive items which are found to be missing.

14. General References

- a. International Ammunition Technical Guidelines (IATG).
- b. LMAS 09.30 Explosive Ordnance Disposal, and 10.20 Demining Worksite Safety.