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Principles and procedures for open burning and open detonation (OBOD) operations

Director,
United Nations Mine Action Service (UNMAS),
DC2 0650, United Nations,
New York, NY 10017,
USA

E-mail: mineaction@un.org
Telephone: (1 212) 963 1875
Fax: (1 212) 963 2498

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Chief
United Nations Mine Action Service (UNMAS)
United Nations, FF-363, New York, NY 10017, USA
E-mail: mineaction@un.org
Telephone: (1 212) 963 1875
Fax: (1 212) 963 2498

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Foreword

In July 1996, international standards for humanitarian mine clearance programmes were proposed by working groups at a conference in Denmark. Criteria were prescribed for all aspects of mine clearance, standards were recommended and a new universal definition of 'clearance' was agreed. In late 1996 the principles proposed in Denmark were developed by a UN-led working group into *International Standards for Humanitarian Mine Clearance Operations*. A first edition of these standards was issued by the UN Mine Action Service (UNMAS) in March 1997.

This IMAS reflects changes to operational procedures, practices and norms that have occurred over the past three years. The scope of these standards has been expanded to include the other components of mine action, in particular those of mine risk education, victim assistance and stockpile destruction.

The United Nations has a general responsibility for enabling and encouraging the effective management of mine action programmes, including the development and maintenance of standards. UNMAS is the office within the United Nations Secretariat responsible for the development and maintenance of international mine action standards (IMAS).

The work of preparing, reviewing and revising these standards is conducted by technical committees, with the support of international, governmental and non-governmental organisations. The latest version of each standard, together with information on the work of the technical committees, can be found at www.mineactionstandards.org. IMAS will be reviewed at least every three years to reflect developing mine action norms and practices, and to incorporate changes to international regulations and requirements.

Introduction

The destruction of anti-personnel mine (APM) stockpiles is logistically complex due to the quantities involved. The physical destruction techniques available range from the relatively simple open burning and open detonation (OBOD) techniques to highly sophisticated industrial processes. In many cases, OBOD will be the only practical, viable or affordable technique available. Therefore, this IMAS seeks to establish the principles and procedures for the safe conduct of large-scale destruction operations using OBOD techniques.

Procedures and principles for OBOD operations

1 Scope

The purpose of this IMAS is to explain the principles and procedures for the conduct of large-scale OBOD operations. It includes recommendations as to the layout of demolition grounds and the contents of SOPs in order to ensure a safe system of work.

Although this IMAS provides guidance for the destruction of national stockpiles of anti-personnel mines (APM) by OBOD, it does not cover the destruction of field stocks of APM that have arisen as a direct result of demining operations. These should be destroyed in accordance with the principles contained in IMAS 09.30, however the principles and procedures for the demolition ground are equally as applicable for field destruction operations and can be amended by the demining organisation for use during such operations.

This IMAS should be read in conjunction with IMAS 04.10, 09.30, 10.10, 10.20, 10.50 and 11.10:

- a) IMAS 04.10 provides a complete glossary of all the terms and definitions used in the IMAS series of standards;
- b) IMAS 09.30 provides specifications and guidance for explosive ordnance disposal;
- c) IMAS 10.10 covers the general principles of safety and occupational health. These apply as equally to demilitarisation operations as they do to demining operations;
- d) IMAS 10.20 covers demining work-site safety;
- e) IMAS 10.50 provides specifications and guidance for the storage, transportation and handling of explosives; and
- f) IMAS 11.10 provides a guide to the factors to be considered and available technologies for the stockpile destruction of APM.

2 References

A list of normative references is given in Annex A. Normative references are important documents to which reference is made in this standard and which form part of the provisions of this guide.

3 Terms and definitions

The subject of stockpile destruction can be technically complex and it is important to understand the terminology in current use. Often terms are used interchangeably, which leads to confusion.

A list of terms and definitions used in this standard is given in Annex B. A complete glossary of all the terms and definitions used in the IMAS series of standards is given in IMAS 04.10.

4 Priorities and principles

The destruction of ammunition and explosives is a potentially hazardous task. The risks are minimised if the correct procedures are followed. If they are not, the possibility of serious accident becomes very high.

4.1 Priorities

The priorities that shall always be observed are:

4.1.1 Safety

The safety of both personnel and property is paramount. If a method is not safe it shall not be used.

4.1.2 Security

Both the items destroyed and the explosives used to destroy them are attractive to terrorists and criminals. The security of target and donor explosives shall be ensured at all times.

4.1.3 Accounting

This links with security. Any loss shall be promptly identified, investigated and reported.

4.1.4 Speed of Work

This shall never be achieved at the expense of the first three priorities.

4.2 Principles

There are many different detailed disposal procedures but certain principles apply to all disposal tasks.

4.2.1 Know the ammunition

Know in detail both the item being destroyed and the explosives used to destroy it. Unless the design characteristics of both are known, it will not be possible to determine a safe and effective means of disposal.

4.2.2 Plan the task carefully

Do not leave the planning until arrival at the disposal site. Work out the programme and procedures in detail well in advance.

4.2.3 Create a safe working environment

Create and maintain a safe working environment so that it is safe for the Demolition Party, other personnel, property, livestock, vehicles and equipment.

4.2.4 Give and obey directions precisely

The disposal site is no place for ambiguity or misunderstanding. Directives must be clearly understood by all personnel.

4.2.5 Observe all the safety precautions and use only the approved methods.

Do not take short cuts, they kill.

4.2.6 Clear the disposal area prior to departure

No disposal task is complete until the demolition area has been cleared of all hazards and contamination. Implicit in this is also the clearance of all rubbish and litter.

4.3 Summary

Almost all known accidents that have occurred would not have happened had the priorities and rules given above been obeyed. After every accident the Officer in Charge (OIC) Disposals concerned shall be called upon to explain why it was not prevented.

5 Authority for disposal

The responsibility for authorising APM disposals is vested in the national authority.

No APM disposal should take place without the prior approval of the national authority. The exceptions to this rule are:

- a) APM identified during surveillance or repair tasks, which the local Ammunition Officer considers to be dangerous; and
- b) Blinds and stray ammunition - which by definition are potentially dangerous. (See IMAS 09.30 - EOD for further details).

Foreign ammunition should be destroyed using the appropriate procedure based on sound first principles. Should no procedure exist, then instructions for its disposal must be requested from the national authority. Foreign ammunition is not to be broken down without the specific authority and instructions from the national authority.

6 Persons authorised to carry out disposals

The national authority determines which persons are authorised to carry out disposals of APM.

7 Methods of local disposal - general

There are three methods of local destruction:

- a) detonation;
- b) burning; or
- c) incineration.

The method used with a particular APM will obviously depend upon its type of explosive filling and design.

7.1 Detonation

This is used with HE filled APM. Small quantities of other natures - smoke, pyrotechnics, lachrymatory - can also be disposed of 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.

7.2 Burning

This is generally used with propellant (bagged or loose), smoke, pyrotechnic and lachrymatory stores but is suitable for certain plastic-bodied APM. It can also be used as an alternative to detonation for certain explosives, ie CE, TNT, NG based explosives and GP - but detonation is the cleaner method.

7.3 Incineration

Is a specialised form of burning authorised for certain small APM with minimal explosive content.

7.4 General

If the explosive filling of an APM is known, then this is the first step towards determining the best method of its disposal. Note that even at this basic stage the first principle (clause 4.1.1) applies.

8 Siting of disposal sites

8.1 Definition

A disposal site is in an area authorised for the destruction of ammunition 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.

Note: The national authority shall approve and formally licence disposal sites within ammunition depots only after professional ammunition technical advice.

8.2 Hazards of detonation

The hazards created by detonation are:

- a) flash and heat;
- b) blast and noise;
- c) ground shock;
- d) fragments; and
- e) toxic smoke/fumes.

8.2.1 Flash and heat

These effects are localised but still significant. Flash could injure the eyes, but the reddish flash produced by most detonations is unlikely to do so. Heat will start fires if combustible materials are present: dry grass, undergrowth, trees or peaty soil.

8.2.2 Blast and noise

These have greater range. Blast can cause injury or damage - but persons and equipment would have to stand unprotected and reasonably close to a detonation to be affected by blast. Injury and damage are far more likely to be caused by fragments.

Noise presents a greater problem. At close range it can cause ear damage and at a greater range it will have a nuisance effect that will generate complaints from the general public.

8.2.3 Ground shock

The main effect will be on persons and equipment relatively close to the detonation - although rock strata can sometimes transmit the effect for considerable distances. It is another potential source of public nuisance and complaint.

8.2.4 Fragmentation

These are the real killers. In practice the size of the “danger area” is determined by the maximum range of fragments. All persons, property and equipment that is within this range and which is not adequately protected is in hazard.

8.3 Properties of demolition grounds

To overcome the above hazards, demolition grounds require the following properties:

8.3.1 Isolation

This is the most important requirement. They must be as remote as possible from man and all his artefacts.

8.3.2 Deep soil

Free of rocks and stones with no peat, (which could burn underground).

8.3.3 No secondary fire hazards

Demolition grounds should not be located over pipelines, over power cables or near fuel storage areas.

8.3.4 No radio/radar transmitters

Major demolitions are normally initiated using electric cable or radio control (RC) systems, and as such, are vulnerable to external electro-magnetic force (EMF) influence. Consequently, demolition grounds shall not be situated near radar installations, radio transmitters or near high-voltage power lines.

8.3.5 High ground

High ground reduces the effects of blast and ground shock and is also relatively well drained. The latter property aids digging. However, high ground also tends to increase fragment range.

8.4 Hazards of burning

The hazards created by burning APM are:

- a) intense heat;
- b) Intense light; and
- c) toxic fumes (occasionally).

but, there are no blast, ground shock or fragmentation hazards unless the demolition burns to detonation.

8.4.1 Properties of burning grounds

To counter these hazards burning grounds require the following properties:

- a) no secondary fire hazards;
- b) an adequate water supply;

- c) sufficient isolation to prevent heat or fume casualties; and
- d) sandy soil with no peat.

An isolated, sandy, barren area is the most suitable site, but avoid sites near high cliffs, these encourage rising hot air currents that can carry burning debris considerable distances.

9 Approval of disposals sites and SOPs

Formal approval, (commonly referred to as licensing), of the disposal site and its associated SOPs shall be given by the national authority prior to the commencement of disposal activities on a site. Such approval shall be based on consideration of the following factors:

9.1 Reference to publications

All SOPs are in effect the local interpretation of regulations issued by higher authority. The SOPs should open by listing all such regulations (and any related local SOPs).

SOPs should not reproduce large slabs of information contained in other publications. Rather they should concentrate on detailing how these regulations are to be applied under local conditions.

9.2 Maps and grid references

Maps shall be sent to the national authority with the draft standing orders. These shall include:

- a) a map of the area upon which the grid reference, name and area of the site are marked. This information should be repeated in the body of the SOPs; and
- b) a larger scale sketch map of the disposals site showing its layout (a schematic layout is at Annex D). This sketch map shall be included as an Annex to the SOPs. The layout of the disposals site is worked out with careful regard to safety and once approved by the national authority shall be mandatory. Any required changes shall be re-approved by the national authority.

9.3 Locations of sentries and Observation Posts

Sentries have to be so sited that they control all access routes into the disposal site. In ammunition depots sentries will normally be located on the edge of the disposal site in Splinter/Fragment Proof Shelters (SPS). When SPS are not available, eg on open ranges, the sentries have to be located outside the danger area.

9.4 Marking of the site

Disposal sites shall be marked with notice boards sited so that they are visible on all possible approaches. In ammunition depots the disposal site shall also be fenced.

9.5 Location of the firing point

This shall be close enough to blows for the OIC Disposals to be able to hear partial explosions. The firing point is normally inside the danger area and within an SPS.

9.6 Communications

Good communications are essential to safety and the following telephone links are required:

- a) firing point to emergency services. Fire, Medical, Police via the local main (military or civil) exchange;
- b) firing point to sentries; and
- c) sentries to firing point. There shall also be a back up system eg radio, whistles.

The SOPs shall list all the emergency telephone numbers and lay down an accident telephone drill.

9.7 Explosive limits

These are determined by two main limiting factors:

- a) maximum fragmentation range. This determines the danger area and all persons and equipment must be either outside this area or under shelter in SPS. The perimeter of the disposal site shall contain the danger area. The size of the disposals area will therefore limit the permissible size of blows. No blows shall be permitted above the level where fragments may travel further than the perimeter; and
- b) ground shock and noise effect. The local "tolerance" level of the public to the effect of shock and noise on themselves and their property has to be determined and may impose lower limits than the fragment range.

A method of determining the explosive limit for a new disposals area is as follows:

- a) from EOD or ammunition technical advice;
- b) position observers in communication with the firing point at the perimeter and at all sensitive points; and
- c) carry out a series of blows, gradually increasing in net explosive content (NEC) until the theoretical limit is reached. Stop before this point if the observers report that the local "tolerance" level has been reached. Check with the observers on this after each blow.

The end result of the trial shall be an explosive limit, which will ensure that:

- a) a person standing unprotected at the disposals area perimeter is safe from blast and fragmentation. He should also be safe from toxic fumes regardless of the wind direction;
- b) there is no possibility of injury to persons or damage to property outside the perimeter of the disposal site; and
- c) the effect of noise is kept to a tolerable level.

Where it is intended that more than one type of activity will be carried out in a disposal site, eg burns, demonstration, WP and pyrotechnic burning tanks, then a location for each type of activity has to be specified, and separate explosive limits have to be laid down for each type of activity.

9.8 Man limits

The number of persons present shall be the minimum required to ensure efficiency. Certain tasks are subject to mandatory man limits given in the detailed procedures for these tasks.

9.9 Spectators

Spectators shall be allowed at official demonstrations only. Civilian spectators (or their organisations) shall be required to sign a standard indemnity form before the demonstration commences.

9.10 Orders for sentries

These are normally contained in a separate Annex to the local SOPs and shall cover the following points:

- a) their duties. "To keep all approaches to the disposal site under observation and to prevent any intrusions";
- b) reporting. To report to the OIC Disposals any intrusions that they cannot prevent; and
- c) safety. To remain under cover in their SPS when disposals are in progress.

9.11 Contraband

This includes all fire making and smoking materials. These shall be kept under control in a locked container by the OIC Disposals. Smoking shall only take place in a designated area - remote from all explosives - at times decided by the OIC Demolitions.

9.12 Eating and drinking

This has also to be controlled to prevent the ingestion of explosive particles or contaminated materials. Where necessary the OIC Disposals shall ensure that personnel wash and scrub their hands before meal and refreshment breaks.

9.13 Transport discipline

The points to be covered are:

9.13.1 Vehicle routes

These shall be laid down (preferably hard core) and shall not cross firing or telephone cables unless they are adequately buried and protected.

No vehicle shall approach to within 30 metres of the disposal pits or ammunition being unpacked and prepared for disposal.

9.13.2 Unloading and parking

Engines shall be switched off when vehicles loaded or unloaded.

Vehicles shall be parked in a designated parking area outside the danger area during blows.

9.13.3 Segregation of loads

Separate vehicles shall be required for Condition A, Condition D, WP stocks and personnel. A person in charge of loading/unloading shall be nominated.

9.14 Dress

Special dress is called for with certain disposal tasks. In all other cases the dress should be appropriate to the weather conditions. In particular, sentries require adequate protection against bad weather.

9.15 Safety precautions peculiar to the disposal site

Mandatory use of ear protectors by the firing party if the size of blows and the proximity of the firing point to the pits warrants it.

Limitations on WP disposals and burns when the wind direction may carry fumes towards a sensitive area.

9.16 Accident procedures

The mandatory requirements shall be:

- a) the disposals party shall include at least one person trained and equipped to administer first aid;
- b) this person shall stay readily available outside the danger area, or under cover, to deal with casualties; and
- c) there shall be an established casualty evacuation procedure and standby medical cover has to be available.

Following an accident the following procedure shall be implemented:

- a) stop disposals, make safe prepared demolitions, carry out first aid and cas-evac/call on back up medical aid;
- b) inform higher authority. Note all details pertinent to the eventual enquiry; and
- c) render safe and repack all ammunition and explosives that have been unpacked and prepared for disposals - segregate awaiting investigation.

9.17 Records and reports

A permanent disposals diary shall be kept. This shall be completed daily and signed by the OIC Disposals.

10 Planning and preparation

The first step should be to prepare a list of the items awaiting local disposals. Confine the list to those items where local disposal has been approved by the national authority. Do not anticipate approval.

Select the most suitable disposal method and location:

- a) if the list is confined to small quantities of items with low NEC use a local disposal area (with a small explosive limit);

- b) if the list contains larger quantities of items with NEC in excess of the explosive limit of the local disposal area, the programme will have to take place at a more distant disposals area with a larger explosive limit. These normally have to be selected well in advance;
- c) determine the best method of disposal for each item. This will necessitate knowing the make up of each item. You shall achieve safety and complete destruction of the item and its filling(s);
- d) determine the types and quantities of serviceable explosive required to effect disposal;
- e) breakdown the list of items for disposal into individual serials;
- f) ensure that the total NEC per pit (including serviceable demolition explosives) does not exceed the explosive limit for the disposals area; and
- g) ration out high capacity items between the pits to enhance the effect of the serviceable demolition explosives. The combination of items within blows will influence the method of disposal chosen.

Produce a Demolition Order, the disposals programme and detail:

- a) date, time and location;
- b) nominal roll of personnel in disposals party;
- c) list of APM and ammunition to be destroyed;
- d) list of serviceable explosives required;
- e) breakdown of disposals by serials and pits;
- f) safety and casualty evacuation arrangements;
- g) administration arrangements, (accommodation, food, transport);
- h) route(s) - if applicable; and
- i) list of stores required. Duplicate essential items.

Give notice of disposals as required, in organisation orders and to the general public.

Earmark and check explosives, ammunition and equipment. The equipment should also be tested for serviceability at this point.

Brief personnel who are involved in the disposal programme.

11 Conduct of disposals

Detailed instructions should be given in local technical instructions for particular disposals tasks.

Procedures for the control of disposal activities at the disposal site are given at Annex D.

Annex A (Normative) References

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this part of the standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of the standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid ISO or EN:

- a) IMAS 04.10 - Terms and definitions;
- b) IMAS 09.30 - Explosive ordnance disposal;
- c) IMAS 10.10 - Safety and occupational health, general principles;
- d) IMAS 10.20 - Demining work-site safety;
- e) IMAS 10.50 - Explosives storage, transportation and handling; and
- f) IMAS 11.10 - Guide for the destruction of stockpiled anti-personnel landmines.

The latest version/edition of these references should be used. GICHD hold copies of all references used in this standard. A register of the latest version/edition of the IMAS standards, guides and references is maintained by GICHD, and can be read on the IMAS website: (See www.mineactionstandards.org). National mine action authorities, employers and other interested bodies and organisations should obtain copies before commencing mine action programmes.

Annex B **(Informative)** **Terms and definitions**

B.1.1

burning ground

an area authorised for the destruction of ammunition and explosives by burning.

B.1.2

demolition ground

an area authorised for the destruction of ammunition and explosives by detonation.

B.1.3

destruction

the process of final conversion of ammunition and explosives into an inert state that can no longer function as designed.

B.1.4

disposal site

an area authorised for the destruction of ammunition and explosives by detonation and burning.

B.1.5

explosive ordnance disposal (EOD)

the detection, identification, evaluation, render safe, recovery and disposal of UXO. EOD may be undertaken:

- a) as a routine part of mine clearance operations, upon discovery of the UXO;
- b) to dispose of UXO discovered outside mined areas, (this may be a single UXO, or a larger number inside a specific area); or
- c) to dispose of explosive ordnance which has become hazardous by damage or attempted destruction.

B.1.6

logistic disposal

the removal of ammunition and explosives from a stockpile utilising a variety of methods, (that may not necessarily involve destruction). Logistic disposal may or may not require the use of Render Safe Procedures.

B.1.7

render safe procedure (RSP)

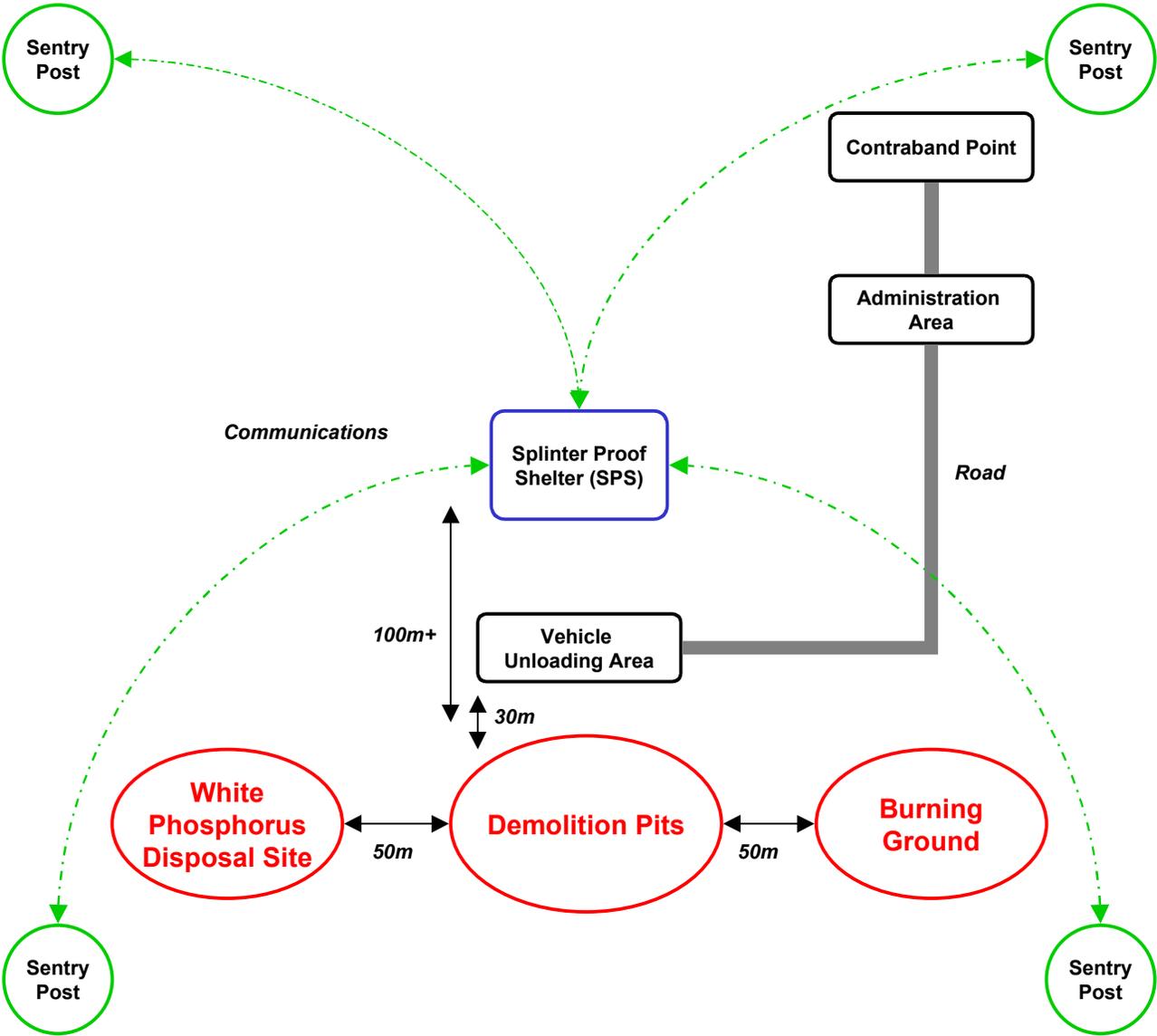
the application of special explosive ordnance disposal methods and tools to provide for the interruption of functions or separation of essential components to prevent an unacceptable detonation.

B.1.8

unexploded ordnance (UXO)

explosive ordnance that has been primed, fuzed, armed or otherwise prepared for use or used. It may have been dropped, fired, launched or projected yet remains unexploded either by malfunction or design or for any other cause.

Annex C
(Informative)
Schematic layout of a disposal site



Annex D (Normative) Control of disposals activity

D.1 On arrival before disposals commence

D.1.1 Contraband

The OIC Disposals shall apply contraband restrictions and advise all personnel of smoking break arrangements.

D.1.2 Briefings and nominal roll

The OC Disposals shall;

- a) check the nominal roll and brief all personnel;
- b) establish the nominated first aid man and his equipment in the first aid point. This must be in an SPS if inside the danger area;
- c) instruct the sentries on their duties and the means of communication. Post the sentries and instruct them to hoist the red flags;
- d) detail the routes for vehicles and personnel; and
- e) detail the parking area. All vehicles shall be parked outside the danger area while disposals are in progress.

D.1.3 Safety checks

The OIC Disposals shall:

- a) check the telephone links both to the exchange and to the sentries. Phone around the system with final warning of disposals, (as required by local instructions);
- b) check the routes are clear of suspect UXO and if any are present treat them as blinds. This shall be checked before and after each blow;
- c) ensure the routes should not cross cable unless these are adequately buried;
- d) nominate a safety vehicle. This is to be equipped with a stretcher and blankets. It is to remain available for the evacuation of casualties throughout the disposals programme;
- e) when disposing of ammunition by burning await the arrival of Fire Brigade cover or establish and test fire fighting parties and equipment;
- f) check the demolition pits (where applicable). OIC Disposals shall check again for suspect UXO before and after each blow. He shall establish a safe and firm route into the pit and firm working areas and create sandbag "steps" and working platforms as necessary;
- g) ensure that personnel do not walk or stand on undercuts; and
- h) where appropriate, eg with nitro-glycerine based explosives, establish hand washing facilities. Give instructions that all persons who handle such explosives shall wash and scrub their hands before they eat or drink.

D.1.4 Unloading of ammunition

The OIC Disposals shall;

- a) order the unloading of ammunition. Serviceable and unserviceable items shall be kept separate. A nominated individual shall control the accounting and issues for each series;
- b) ensure that vehicles avoid soggy ground. Vehicles should keep to hard standing or rubble tracks. Create sandbag "stepping stones" for personnel as necessary;
- c) ensure vehicles shall not approach within 30 metres of the disposal pits or of unpacked ammunition and explosives; and
- d) ensure engines shall be switched off during loading and unloading.

D.2 During disposals

D.2.1 Supervision and control

The OIC Disposals shall remain free to supervise all activity. He shall not become responsible for the activities of one group or area to the exclusion of others.

The nominated person shall remain free to guard the ammunition and explosives. He shall control and account for the issues to pits for disposal.

D.2.2 Safety

D.2.3.1 General

Observe all safety precautions.

D.2.3.2 Preparation of demolition or burn

Safe areas away from the edge of the pits shall be selected for the unpacking and preparation of ammunition and explosives. Serviceable and unserviceable items shall be prepared in separate areas:

- a) protect sensitive items when unpacked. Do not step on or over ammunition or explosives - this includes detonating cord;
- b) do not "dribble" PE or other explosives during preparation;
- c) eliminate all contaminated material; and
- d) avoid the inclusion of packages on stacks as much as possible. Check all surplus packaging for FFE and remove to a central empty package point.

Site undercuts and stack positions in the pits so that the blast and fragmentation/debris effects are minimised and directed away from sensitive areas. As far as possible blow up hill - this facilitates drainage.

Test the firing cables before each blow.

2.3.3 Stack configuration

In terms of the stack configuration, the OIC Disposals should aim for:

- a) minimum use of explosive compatible with complete destruction of the item(s) being disposed of;

- b) make the best use of the explosive fillings of items to effect destruction;
- c) the correct mixture of high capacity and low capacity items etc in mixed stacks;
- d) no air gaps and the minimum of metal/material between explosive fillings;
- e) stacks and their exploding chains are to be stable enough and sufficiently shielded so as not to be affected by detonations in other pits; and
- f) do not place unbagged earth directly onto stacks. Tamp with sandbags - this facilitates digging out partial explosions.

2.3.4 Preparation of detonating cord

Ensure that detonating cord:

- a) is as straight as possible and not crossed over;
- b) has taped junctions of at least 100 mm and spare ends of at least 300 mm. The cut ends should be taped over to prevent moisture ingress, prevent spillage of loose explosive and thereby reduce the risk of a misfire due to detonating cord failure; and
- c) all junctions must be outside the pit and the main lead must extend at least two metres out of the pit. This facilitates dealing with misfires.

D.2.3.5 Tools and explosives

Tools and explosives shall be carried in separate marked boxes. Loose items shall not be carried on the person. Detonators shall be carried in totally enclosed, marked metal boxes.

D.3 At close of work

The OIC Disposals shall:

- a) search the disposal area, ensure that it is FFE and free of all litter contamination;
- b) ensure that empty packages are re-inspected, sealed and marked FFE;
- c) reconcile the closing stocks of ammunition and explosives with the record of what has been destroyed. Do not allow personnel to leave the disposals area until all discrepancies have been satisfactorily investigated and explained;
- d) take a declaration from each person in the disposals party that he has no explosives, ammunition or accessories in his possession before he leaves the disposals area; and
- e) complete and sign the disposals diary.