

LAO PDR NATIONAL UXO/MINE ACTION STANDARDS (NS)



Chapter Seven UXO Clearance Operations

National Regulatory Authority for
the UXO/Mine Action Sector in Lao PDR

15 October 2012

Contents

Contents.....	2
Amendment Record	4
UXO Clearance Operations.....	5
1. Introduction	5
2. Scope of this NS	5
3. Compliance with Humanitarian Principles.....	5
4. Mined Areas	5
5. General Responsibilities of Clearance Organisations	6
6. Supervision of UXO Clearance Tasks	6
6.1. Qualifications	6
6.2. Clearance Supervisors	6
7. Planning and Management of UXO Clearance Operations.....	7
7.1. General Requirements.....	7
7.2. EOD Roving Tasks	7
7.3. Area Clearance Tasks	8
7.4. Ongoing Review of Need for Area Clearance	8
7.5. UXO Clearance Operations Adjacent Previously Released Land.....	8
8. Movement on UXO Clearance Sites Prior to Clearance	8
9. UXO Clearance Operations Preliminary Requirements	9
9.1. Training	9
9.2. Medical Support.....	9
9.3. Communications.....	9
9.4. Personal Protective Equipment.....	9
9.5. Clearance Worksite Preparation	9
10. Work Routines.....	10
10.1. Daily Work Routines	10
10.1.1. Provision of Essential Emergency Support.....	10
10.1.2. Responsibilities of Supporting Bases/Headquarters	10
10.1.3. Exceptions to Work Routines	10
10.2. Rest Days	10
10.3. Work Schedules	10
11. Clearance Requirements.....	11
11.1. Depth of Clearance.....	11
11.2. Area to be Cleared.....	12
11.3. Quality of Clearance	12
12. Safety Distances	12

13.	Locating Mines During UXO Clearance Operations.....	13
14.	Clearance Drills and Procedures.....	13
14.1.	Use of Detection Equipment	14
14.2.	Handover Drill for Two-Person Teams.....	14
14.3.	Non Standard Situations.....	14
14.4.	Marking and Recording.....	15
14.5.	Standard Operating Procedures (SOPs).....	15
15.	Disposal of UXO.....	15
16.	Testing of Metal Detection Equipment.....	15
17.	Clearance Technician’s Equipment	16
18.	Progress Reporting	16
19.	Completion Surveys	16
20.	Clearance Worksite Documentation	16
21.	Visitors	16
22.	Community Liaison.....	17
	Annex A Example of Site and Safety Brief.....	19
	Annex B Example of a Visitor’s Indemnity Form	21

UXO Clearance Operations

1. Introduction

UXO clearance operations in Lao PDR may involve either EOD roving tasks or area clearance tasks. EOD roving tasks target items of UXO, not areas of land. Area clearance is the systematic clearance of UXO contaminated areas where the hazards are known not to include mines. Depth of area clearance is dependent on the intended land use.

The Lao PDR National Regulatory Authority (NRA) is the authority responsible for the overall management of UXO/mine action within Lao PDR. This responsibility includes establishing procedures for UXO clearance operations and ensuring clearance requirements are met.

2. Scope of this NS

This chapter covers the minimum requirements for the conduct of UXO clearance operations within Lao PDR. This includes any clearance carried out as part of the survey process described in **Chapter 6 of NS, Survey**.

The requirements included in this chapter of NS only apply to UXO clearance operations; they do not apply to mine clearance operations. The requirements for the conduct of mine clearance operations in Lao PDR are included in **Chapter 12 of NS, Mine Clearance Operations**.

3. Compliance with Humanitarian Principles

All UXO/mine clearance is to be carried out in accordance with the humanitarian principles of:

- a. Protection, care and respect for human beings, which includes:
 - (1) Protecting life and health.
 - (2) Preventing and reducing suffering.
 - (3) Respect for human beings.
- b. Neutrality. Not taking sides in any hostilities or in controversies based on political, racial, religious or ideological identity. Transparency and openness are important to remaining neutral.
- c. Impartiality. Assistance is provided to all those who are suffering without discrimination. However, important to this principle is that those with the most need should be assisted first.

4. Mined Areas

Mine clearance operations; the systematic locating and clearing of hand laid mines in known or suspected mined areas, are only to be carried out by personnel with the appropriate training and equipment and specific mine clearance operating procedures.

When UXO clearance teams, including survey teams, encounter known or suspected mined areas, these areas are to be avoided. Details of mined areas are to be reported by the clearance organisation concerned to NRA head office and the NRA provincial office. The **Mined Area Report** is to be used.

The requirements for mine clearance training are included in **Chapter 3 of NS, Training and Qualifications** and the **NRA Training Standards for Lao PDR**. The requirements for equipment and procedures are included in **Chapter 12 of NS, Mine Clearance Operations**.

5. General Responsibilities of Clearance Organisations

General responsibilities of clearance organisations operating in Lao PDR include:

- a. Advising communities on the possible consequences of any risky behaviour identified and provision of alternatives or strategies to minimise risks.
- b. Encouraging the participation of local communities in defining clearance needs and priorities and conveying these to NRA provincial and district offices.
- c. Encouraging the cooperation of local communities in assisting the UXO clearance effort by providing information on UXO hazards to the relevant authorities and UXO/mine action organisations. This will also include advising communities of the systems and procedures for the reporting of UXO.

Note: The NRA is responsible for ensuring the establishment and maintenance of systems for the collection and reporting of UXO/mine action related information and for notifying all information gathering stakeholders of these systems. See **Chapter 24 of NS, Information Management**. This responsibility includes ensuring that reports are followed up on and feedback on the status of the report is provided to the community.

- d. Reporting details of new UXO/mine victims to NRA head office and the NRA provincial office and, where possible, UXO/mine Victim Assistance (VA) organisations operating in Lao PDR. The **UXO/Mine Accident Report** and **UXO/Mine Victim Report** are to be used.
- e. Advising UXO victims of the assistance able to be provided by UXO/mine VA organisations operating in Lao PDR.
- f. Coordinating with all relevant stakeholders and participating at NRA UXO/mine action sector and UXO/mine clearance sub-sector meetings and working groups. This includes contributing to the development of the sector and sub-sector strategic plans.

6. Supervision of UXO Clearance Tasks

6.1. Qualifications

The minimum qualification to supervise an individual UXO clearance task is a level 2 clearance technician and the minimum qualification to supervise multiple UXO clearance tasks is a level 3 clearance technician. These levels are in accordance with the levels of EOD qualification included in **Chapter 8 of NS, Explosive Ordnance Disposal (EOD)**.

Clearance organisations are to ensure that task supervisors have the required minimum qualifications before being placed in supervisory roles.

6.2. Clearance Supervisors

For UXO area clearance operations in Lao PDR there is to be as a minimum, 1 clearance supervisor for every 8 work locations on a clearance site. For the purpose of these NS a work location is a point on the ground where 1, 2 or 3 (in the case of large loop detection) clearance personnel are working together.

A level 3 clearance technician must always be available either on-site or on-call to a level 2 clearance technician supervising a UXO clearance task subject to the following conditions:

- a. When one or two level 2 clearance technicians are supervising a/parts of a UXO clearance task a level 3 clearance technician is to be either on-site or on-call. If the level 3 clearance technician is on-site, he/she may be involved in directly supervising 8 work locations thus reducing the number of level 2 clearance technicians required on-site to one.

Note: If a situation occurs where the level 3 clearance technician is called to a site, then activities directly related to the call should be suspended pending arrival of the level 3.

Note: When two level 2 clearance technicians are supervising parts of the same clearance task and no level 3 clearance technician is on site, one of the level 2 clearance technicians is to be designated as the lead supervisor.

- b. When three or more (up to a maximum of eight) level 2 clearance technicians are supervising parts of the same UXO clearance task, a level 3 clearance technician must also be on-site and is not to be directly involved in task supervision.

Note: A level 4 clearance technician may be used in place of a level 3 clearance technician under the conditions described in section 6.2 above.

7. Planning and Management of UXO Clearance Operations

Due to the extent of UXO contamination in Lao PDR and the relatively limited resources available to clear this contamination, UXO clearance operations must be planned and managed to get the maximum benefit from the available resources in terms of releasing UXO contaminated land for use or reducing or removing the risk to communities. In order for this to occur there are certain requirements that are to be followed in the planning and management of UXO clearance operations. These are discussed below.

7.1. General Requirements

Except for commercial UXO clearance, all UXO clearance operations are to be planned and conducted to meet the current priorities of the Government of Lao PDR (GOL).

Note: All land identified for clearance should either be high priority/high value in accordance with Lao PDR's Millennium Development Goal 9; priority in accordance with the current UXO Sector Strategic Plan or some other priority as specified by the NRA.

Selection of land for clearance within provinces will be coordinated by NRA provincial offices after consultation with all stakeholders including UXO-affected communities and UXO clearance organisations.

7.2. EOD Roving Tasks

EOD roving tasks should only be carried out for UXO that are affecting the use of land or posing a risk to communities. If marking and UXO/Mine Risk Education (UXO/MRE) can reduce the risk, then this option should be considered.

Note: Prior to any marking of UXO being carried out an assessment is to be made by the clearance organisation concerned as to the likelihood of the UXO being touched or moved as a direct result of the marking. Guidance on this assessment is included in **Chapter 4 of NS, Marking Systems**.

EOD roving tasks may be carried out on **areas of land** required for use when the UXO contamination is of a type and extent that full area clearance is not required. Such situations may occur if the contaminated area just contains land serviced ammunition, which is often only on the surface. The type and extent of contamination should be determined through the survey process described in Chapter 6 of NS, Survey.

7.3. Area Clearance Tasks

In addition to meeting GOL priorities, land should only be identified for clearance if it is known or suspected as being contaminated and is to be used within 6 months of clearance being completed.

All area clearance tasks are to be subject to the survey process described in **Chapter 6 of NS, Survey**.

Note: These requirements do not apply when the requirements for UXO clearance are specified in a commercial contract or other formal agreement.

7.4. Ongoing Review of Need for Area Clearance

Despite the application of the survey process described in **Chapter 6 of NS, Survey**, there may be some area clearance tasks that for whatever reason are designated for full clearance when they do not require full clearance for the land to be safe for the intended use. This situation will only become evident once full clearance has started and the locations and patterns of UXO contamination become known. All UXO area clearance supervisors and managers are to be aware of the likelihood of this situation occurring and be constantly alert for it.

When the situation does occur, area clearance task supervisors and managers are to review the requirement for full clearance in accordance with the guidelines in **Chapter 6 of NS, Survey** and if necessary reduce areas needing full clearance and release land where there is no evidence of UXO contamination.

7.5. UXO Clearance Operations Adjacent Previously Released Land

Organisations that carry out UXO clearance operations adjacent to previously released land are to identify the common boundary between the two areas. The new work is then to be carried out in a manner that ensures that there is no unprocessed land left between both areas of land.

If there is some uncertainty about the exact location of the boundary of the previously released land, the new work is to include a suitable sized buffer zone that ensures that no unprocessed land remains between the two areas. Completion surveys for the new work are to show the full extent of work carried out including any buffer zone applied.

The provisions of this section do not apply to commercial UXO clearance; however commercial UXO clearance organisations are encouraged to support the concept to avoid unprocessed gaps between separate areas of released land.

8. Movement on UXO Clearance Sites Prior to Clearance

For UXO clearance operations conducted in Lao PDR it is permissible for clearance personnel to enter and move around the task area prior to clearance being carried out. It is also permissible for marking to be established around the site and for vegetation to be cleared. However, this is only permissible under the following conditions:

- a. The site has been confirmed as not having any hazards that would pose a risk to personnel such as mines, tripwires or high risk UXO. This confirmation may be by survey, local knowledge, current land use or other reliable information.
- b. Personnel moving on the site are to inspect the ground in front of them when moving around to avoid disturbing any surface UXOs.
- c. No digging or driving pegs into the ground is to occur unless the area has been checked with a metal detector and confirmed as clear first.

9. UXO Clearance Operations Preliminary Requirements

Prior to any UXO clearance operations commencing there are certain preliminary requirements that must be in place. These include have properly trained and qualified personnel; having medical support in place; having functional communication systems available on-site; having essential personal safety equipment available on-site; and if required, having the clearance worksite properly established. The preliminary requirements are discussed in more detail below.

9.1. Training

All personnel working on a clearance worksite and carrying out UXO clearance or support operations are to have been trained or have the required qualifications and experience for the tasks they are expected to carry out in accordance with **Chapter 3 of NS, Training and Qualifications**.

9.2. Medical Support

All medical support to UXO clearance operations requirements, in accordance with **Chapter 16 of NS, Medical Support to UXO Clearance Operations** must have either been carried out in advance or be in place on the clearance worksite. This includes the development, documenting and practicing of an accident response plan.

9.3. Communications

A radio or telephone communication link in accordance with **Chapter 17 of NS, Communications** is to be established and functioning on clearance worksites before any UXO clearance operations commence. If for any reason a radio or telephone communication link is unavailable then UXO clearance operations are not to take place.

9.4. Personal Protective Equipment

When a UXO clearance task requires the use of Personal Protective Equipment (PPE), such PPE is to be available on clearance worksites and used by all personnel involved in the particular task when they move within the danger area while the task is ongoing.

9.5. Clearance Worksite Preparation

Details of the requirements for clearance worksite preparation are covered in **Chapter 5 of NS, Worksite Preparation**.

10. Work Routines

In some cases the urgency of UXO clearance places strong pressures on clearance organisations and individuals to achieve results quickly. Such pressures are understandable; however they must not be allowed to override the controls and monitoring necessary to ensure UXO clearance is conducted as safely as possible.

In recognition of this need, all clearance organisations are to conform to the work routines described below.

10.1. Daily Work Routines

Except as provided in section 10.1.3 below, personnel employed on physical UXO clearance (searching for and excavating UXO) are not to work more than a total of 10 hours in any work day of which no more than 8 hours, excluding breaks, is to be physical clearance. For the purposes of this standard, work includes travel to and from the clearance worksite, testing and maintenance of equipment and includes lunch and rest breaks.

Personnel employed on UXO clearance, including supervisors, are to be given a minimum break of 10 minutes for every 50 minutes of clearance work.

When clearance organisations employ a two-person drill for their UXO clearance operations and the second person is not working during work breaks, these breaks may constitute rest and lunch breaks.

10.1.1. Provision of Essential Emergency Support

In setting daily work routines, clearance organisations and supervisors are to take into account any facilities (hospitals) or services (transport services such as ferries) that are essential to an accident response plan. UXO clearance, including disposal tasks, is not to continue beyond the time when essential emergency support is available. Consideration should also be given to travel times.

10.1.2. Responsibilities of Supporting Bases/Headquarters

Clearance organisations are to ensure that bases or headquarters that are responsible for providing support to an accident response plan have the same work hours as UXO clearance teams in the field i.e. bases and headquarters are staffed from the time teams leave in the morning until they return at the end of a day. This includes having essential communication systems functioning whilst teams are working or moving to and from worksites.

10.1.3. Exceptions to Work Routines

Exceptions to the daily work routine are acceptable in situations where safety would be compromised if work was to stop, or in extreme cases where it would be grossly inefficient to stop work and have to return to complete work on another day.

10.2. Rest Days

Personnel employed on UXO clearance operations are to be given as a minimum 1 day break for every 6 days worked.

10.3. Work Schedules

Provided the requirements for work hours are complied with, work schedules may be set by the clearance organisation to suit such things as:

- a. The conditions, including weather, on the task on any particular day.
- b. Clearance drills and procedures used.
- c. Any specific task requirements.
- d. The provision of essential support such as medical support and communications.

11. Clearance Requirements

The clearance requirements specified in this section only apply to UXO **area** clearance operations on areas of land identified as requiring **full clearance** after being put through the survey process described in **Chapter 6 of NS, Survey**.

Note: Full clearance is where UXO clearance must fully achieve the clearance requirements of depth and quality over the whole area identified, through the survey process, as requiring full clearance.

The clearance requirements specified in this section do not apply to areas of land that have not been subject to area clearance but released for use following the application of the land release and risk management approach described in **Chapter 6 of NS, Survey**. This approach permits UXO clearance organisations to release clearly defined areas of land if, after a comprehensive survey process, they assess that the risk from UXOs, given the intended land use, is acceptable.

Full clearance should only occur if land is not safe for its intended use due to the type and extent of UXO contamination.

Clearance requirements include specifications as to the depth of clearance, the area to be cleared and the quality of clearance.

Clearance requirements should be specified by the tasking authority based on the intended land use; however when the tasking authority does not specify clearance requirements, the default depth of clearance, and quality of clearance included in this chapter of NS are to apply.

Clearance organisations carrying out UXO area clearance operations are to develop clearance drills and procedures that ensure that the specified area to be cleared is cleared to the specified depth and to the quality required. In situations where clearance organisations are unable to achieve the clearance requirements, they should cease operations and immediately report the matter to the tasking authority.

11.1. Depth of Clearance

Depth of clearance is to be determined based on the intended land use and the types of UXO likely to be encountered. Different depths of clearance may be specified for different areas on a clearance site.

When depth of clearance is not specified, the default depth of clearance is to be applied. **In Lao PDR the default depth of clearance is 25 cm.**

Note: The default depth is based on the most common use of cleared land, rice farming. The depth is based on an estimated maximum penetration depth of digging or ploughing implements into the ground.

11.2. Area to be Cleared

UXO area clearance operations in Lao PDR should only be considered when land is to be used within 6 months of clearance being completed (see section 7.3 above). If the land use is known then the area should also be able to be specified. Specification of the area identified for clearance should occur during the task allocation process.

Section 7.3 above states that all area clearance tasks are to be subject to the survey process described in **Chapter 6 of NS, Survey**. During this process the original area identified for clearance may change with lesser areas cleared, or in some cases none of the original area cleared. This is acceptable provided the whole area originally identified for clearance has been processed in some way and is released as safe to use.

11.3. Quality of Clearance

As indicated in section 11 above the quality of clearance requirements only apply when full clearance is carried out. The quality of clearance requirements are:

- a. All UXOs equal to or greater in size than a half BLU 26 with a fuze are removed from the ground to the required depth of clearance within the area to be cleared.
- b. All other UXOs smaller than a half BLU 26 with a fuze, including hazardous components of UXOs, located during UXO area clearance operations are to be removed from the ground.

All signals from metal detection equipment are to be investigated to the fullest extent possible, irrespective of the depth, to confirm that the signal does not originate from a UXO.

Note: For the purposes of these NS the half BLU 26 with a fuze is deemed to be the minimum target UXO that poses an intolerable risk to personnel in Lao PDR.

Tasking authorities may specify clearance quality requirements that are more stringent than those stated above.

If during UXO area clearance operations UXO are found that are equal to or greater in size than a half BLU 26 with a fuze, and the UXO type is known or suspected as being difficult to detect by the detection equipment being used, the UXO clearance organisation is to review its procedures and clearance methodologies for the particular site, and apply the reviewed procedures and methodologies so that the quality of clearance specified in this section of NS is obtained.

12. Safety Distances

Safety distances are applied between working personnel on UXO clearance operations and to exclude personnel from within a danger area during UXO disposal operations. Safety distances for UXO disposal operations are included in **Chapter 8 of NS, Explosive Ordnance Disposal (EOD)**.

For UXO clearance operations carried out in Lao PDR it is permissible for personnel carrying out detecting and excavating for suspected UXOs to work:

- a. As individuals with one person doing both detecting and excavating.
- b. In teams of two with one person detecting and the second person excavating.

The minimum safety distance to be applied between individual working clearance technicians (in accordance with sub section a above); or teams of two working clearance technicians, (in accordance with sub section b above); and other personnel on a UXO area clearance site is 10 m.

Once a UXO has been uncovered and identified then safety distances may be adjusted as required by the clearance supervisor taking into account the type of UXO and the action to be taken.

When UXO clearance operations involving searching only, by metal detection equipment or visually, no safety distances apply.

When a UXO clearance task requires more than two persons to perform the task safely, efficiently and effectively, more than two persons may be used, provided that at any time only the minimum number of personnel needed are used.

13. Locating Mines During UXO Clearance Operations

If a mine is located on a UXO clearance site the immediate action is to stop work and withdraw the team to a known safe area. The clearance supervisor should then assess the situation and determine if the mine is a random one or part of a mined area.

If the mine is assessed as being part of a mined area, work on the site is to cease and the matter reported to the tasking authority.

Details of mined areas are to be reported by the clearance organisation concerned to the NRA head office and the NRA provincial office. The **Mined Area Report** is to be used.

14. Clearance Drills and Procedures

Clearance organisations are to ensure that the drills, procedures and equipment applied are capable of safely achieving clearance requirements. Clearance drills and procedures are to ensure the following requirements are complied with:

- a. The entire area requiring full clearance (including clearance during survey) is systematically searched so that no portion is omitted.
- b. When vegetation affects UXO clearance operations, a vegetation cutting drill is to be used that ensures that vegetation is cut and removed safely. This drill is to be carried out before any detection or excavation.
- c. When metal detection equipment is used, metal detection drills are to be carried out to ensure that the entire area to be cleared is covered. These drills are to also include procedures for pinpointing detections.
- d. Drills for the excavation and uncovering of objects located by either metal detection equipment or visual search are to ensure that excavation and uncovering of detections is carried out in a manner that ensures that the object being investigated is not struck or disturbed in any way.
- e. Metal detection equipment detections are to be investigated to the fullest extent, irrespective of the depth, to confirm that the signal does not originate from a UXO. If metal is removed from the ground during this process, metal detection equipment must be used to recheck the ground for any other evidence of UXOs.
- f. The actions to be taken on locating a UXO are to be covered. This is to include:

- (1) Marking of the UXO.
 - (2) If required, taking action to ensure that the UXO is not exposed to rapid changes of temperature.
 - (3) If necessary, the closing of the lane/box until the UXO is disposed of.
- g. The actions to be taken to identify and dispose of UXO located. This is to include specific responsibilities for the identification, where necessary, recovery and disposal of UXO. Metal detection equipment is to be used to recheck ground after a UXO has been removed.
 - h. Procedures for the marking of lanes or search boxes and the limits of clearance as clearance progresses are to be covered. Marking systems are to be used that ensure that no areas are missed, particularly during breaks (overnight) or changeovers between personnel.
 - i. When metal detection equipment cannot be used, and manual clearance must be carried out, excavation drills are to be used that ensure that the depth of clearance is achieved and that all target UXO are located and uncovered safely.
 - j. Drills are to ensure that there is an overlap, appropriate to the technology and methodology being employed, between adjacent lanes and search boxes.
 - k. Procedures are to include the actions to be taken when a clearance technician or two-person team leaves the work location for a break and for when the operator/team returns to resume work again.

14.1. Use of Detection Equipment

When detection equipment is being used, organisations are to ensure that audio and visual signals from the equipment are able to be clearly picked up by the operator in the prevailing condition on the work site (wind, light and external noises). If operators cannot clearly pick up signals, either detector settings should be adjusted (within acceptable limits) or detector work should be suspended until conditions improve.

14.2. Handover Drill for Two-Person Teams

When two-person teams are used the specific responsibilities of each clearance technician are to be detailed and the procedures for the handover of work between the two operators are to be covered.

14.3. Non Standard Situations

When necessary, clearance organisations are to develop drills and procedures for safely dealing with non standard situations that may occur on UXO clearance tasks. Such situations may include:

- a. Clearance through wire obstacles.
- b. Clearance close to buildings, wire fences and other metal structures.
- c. Clearance through areas covered with large boulders.
- d. Dealing with obstacles on clearance sites, including:

- (1) Old military defensive positions.
- (2) Abandoned/damaged vehicles.
- (3) Entangled wire.
- (4) Water courses, ponds or wells.
- (5) Derelict or collapsed buildings.
- (6) Heaped vegetation.
- (7) Insect constructions. Termite mounds and anthills.
- (8) Burial grounds.

When clearance organisations carrying out UXO clearance operations encounter non standard situations that they are unable to safely deal with, they are to report the matter to the tasking authority.

14.4. Marking and Recording

Procedures are to include systems that accurately record by marking, measurement and the use of scaled drawings, areas that have been cleared and the types of clearance carried out.

14.5. Standard Operating Procedures (SOPs)

All clearance drills and procedures are to be included in clearance organisations SOPs. These are to be approved by the NRA during the accreditation process.

15. Disposal of UXO

All UXO located on areas of land being cleared are to be disposed of by the clearance organisation conducting the clearance in accordance with the requirements of **Chapter 8 of NS, Explosive Ordnance Disposal (EOD)**.

Where practicable, UXO should be disposed of on a daily basis, however in some cases such as during survey, the daily disposal of UXO is not possible. UXOs located during survey may be marked and disposed of at a later date in accordance with the requirements of **Chapter 6 of NS, Survey**.

On no account are UXOs located on areas of land being cleared to be left without being disposed of.

When carrying out UXO disposal on or adjacent to a clearance site where metal detection equipment is used, action should be taken to prevent the contamination of the worksite by fragmentation.

When UXO that exceed the authority limitations of a clearance supervisor are located, the tasking authority is to be notified and EOD support obtained.

16. Testing of Metal Detection Equipment

When metal detection equipment is being used on UXO clearance operations, it is to be tested to ensure that it is functioning properly every time it is turned on and when a new operator takes over the equipment. It is also to be routinely tested during operations.

The capability of standard mine detectors to detect the minimum target UXO at the default depth of clearance is also to be tested each day prior to use. Testing is to be carried out against a Free From Explosive (FFE) sample of the minimum target UXO at the default depth of clearance for Lao PDR (25 cm). The FFE sample UXO is to be of a similar condition in terms of corrosion and weathering to those normally found during area clearance in Lao PDR.

Testing may be carried out in a test box established on the clearance worksite, or some other arrangement that satisfactorily confirms the detection capability of the standard mine detectors used.

17. Clearance Technician's Equipment

Clearance technicians, or pairs of clearance technicians (two-person drill) are to be provided with sufficient equipment of suitable quality to enable them to carry out UXO clearance drills safely and efficiently. Such equipment is to include tools for the routine cleaning and maintenance of the equipment and a suitable durable bag for the carriage of equipment.

Except when working as part of a two-person team, clearance technicians should not have to share equipment.

18. Progress Reporting

Clearance organisations are to submit progress reports on their UXO clearance operations from the previous month in accordance with **Chapter 24 of NS, Information Management**. The format to be used is the Monthly Progress Report, which shows details of what is to be included in the report.

19. Completion Surveys

Clearance organisations completing UXO clearance tasks are to ensure that completion surveys are carried out in accordance with the requirements of **Chapter 6 of NS, Survey**.

20. Clearance Worksite Documentation

Clearance organisations are to maintain certain documentation on worksites in relation to the UXO clearance tasks that they are carrying out. Details of the requirements for clearance worksite documentation are included in **Chapter 24 of NS, Information Management**.

21. Visitors

Clearance organisations are to establish procedures for dealing with visitors to clearance worksites. These procedures are to include:

- a. The requirement for a site brief. As a minimum a site brief is to include:
 - (1) The site layout.
 - (2) The marking systems used.
 - (3) Cleared and uncleared areas.
 - (4) Location of the site medic.
 - (5) The location of toilets and rest areas.

- b. The requirement for a safety brief, which is to include:
 - (1) The requirement to follow all instructions.
 - (2) Restrictions on movement around the site.
 - (3) Visitors are not permitted to touch or pick up items on the ground.
 - (4) Action to be taken in the event of a clearance incident.

- c. Other procedures for the management of visitors which are to include:
 - (1) The requirement for visitors to sign a visitor's log. This is required as part of the clearance worksite documentation.
 - (2) The requirement for visitors to provide their blood group. This is included on the visitor's log.
 - (3) The requirement that visitors be escorted at all times.
 - (4) The restriction on the maximum number of visitors that can be managed at one time.
 - (5) The requirement that visitors be discouraged from remaining in work areas too long as this affects the work of the clearance technicians.
 - (6) The requirement for visitors to sign an indemnity form. This is only required if clearance organisations do not have third party liability insurance.

The procedures covered above may be adapted for non static clearance worksites, however all provisions that are applicable are to be followed.

For the purposes of these standards a visitor is classed as a person that is not part of the clearance organisation undertaking the particular task.

Procedures for dealing with visitors are to be included in clearance organisations SOPs.

Examples of a site and safety brief and visitor's indemnity are included at **Annex A** and **Annex B** to this chapter of NS.

22. Community Liaison

As described in **Chapter 5 of NS, Worksite Preparation**, clearance organisations are to establish liaison with local communities prior to a clearance task commencing and brief them on the clearance activities being carried out.

For UXO clearance operations that continue in one location for an extended period, contact with the local communities is to be maintained throughout the work with briefings held at least once a month. Briefings are to advise on progress, to notify of any changes to the operations and to discuss any problems that may arise. Records of briefings of local communities are to be maintained with the clearance worksite documentation.

For the purposes of this standard local communities are the communities who own or control the land on which UXO clearance operations are carried out or are located in the immediate vicinity of UXO clearance operations.

Community liaison as indicated above may not require meetings or briefings for the whole community. Provided the objectives of community liaison are able to be properly achieved the liaison may be carried out through authorities that represent communities for example village leaders.

Annex A

Example of Site and Safety Brief

1. Site Brief

The following is to be included in a site brief:

- a. A brief history of the area around the site to include the effect of UXO contamination on the local community. Any accidents or incidents involving people or livestock should be covered.
- b. The end use of land, including details of donors or other organisations supporting the work.
- c. Clearance plan for the site to include:
 - (1) Area to be cleared.
 - (2) Depth of clearance.
 - (3) Quality of clearance.
 - (4) Methodologies and equipment used.
 - (5) Planned duration of task.
- d. History of clearance on the site to date to include; days worked, area cleared, UXO removed, projected completion date and problems encountered.
- e. Site layout to include:
 - (1) The site layout.
 - (2) The marking systems used.
 - (3) Locations of safety or access lanes.
 - (4) Cleared and uncleared areas.
 - (5) Location of the site medic.
 - (6) The location of toilets and rest areas.

2. Safety Brief

The following is an example of the details that may be included in a safety brief.

During the visit you are to comply with the following rules:

- a. You must obey all instructions given to you by myself or any personnel appointed to escort you.
- b. You must remain with your escort at all times. You are not permitted to move around the site by yourself.
- c. Only walk in the areas indicated by your escort.

- d. Do not touch any items on the ground.
- e. Smoking is only permitted in the rest area as previously indicated.
- f. In the unlikely event of an accident or incident follow the instructions of your escort or myself.
- g. If you have portable telephones or radios you are to turn them of.
- h. While you are on the site the clearance technicians will be required by safety rules to stop work. Please attempt to keep your time on the site itself to a minimum, and to ask questions or carry out any discussion after you have moved off the site. Thank You.

Annex B
Example of a Visitor's Indemnity Form

1. Instructions to Clearance Worksite Supervisors

All authorised visitors who visit a clearance worksite are to be given a site and safety brief. On completion of this brief the visitors are to read the visitors disclaimer and are then to fill in and sign the table shown below. The clearance worksite supervisor is then to sign the block below the table certifying that the site and safety brief has been given, and that he/she is witness to the signatures of the visitors. At the conclusion of the visit copies of the completed forms are to be retained with the clearance worksite documentation.

2. Visitors Disclaimer

All visitors enter the clearance site at their own risk. The *organisation name* will not accept responsibility for any accident or incident that occurs during the visit, for any injury to visitors or damage to visitor's property that occurs during the visit or arising after the visit.

I the undersigned, certify the following:

- a. I have been given a site and safety brief and understand the contents of the site and safety brief and agree to abide by the rules stated.
- b. I indemnify *organisation name* for any accident or incident that may occur during this visit whether by the actions of another visitor, a clearance worksite employee or me.
- c. I further indemnify *organisation name* for any injury to myself or damage to my personal property that may occur during the visit or arising after the visit, as a consequence of the visit. Should an accident or incident occur that causes injury to my person I authorise the clearance personnel to provide whatever medical treatment and evacuation necessary to sustain life and to minimise further injury.
- d. I certify that to the best of my knowledge the information that I have provided in the table below is true and accurate.

Ser	Name & Initials	Organisation	Blood Group	Signature
1.				
2.				
3.				
4.				
5.				
6.				

I certify that the abovementioned visitors have been given a site and safety brief in accordance with the requirements of NS and that the signatures on the table above have been witnessed by me.

Name: Appointment:..... Signature:.....