HMA Global SOPs 2018

CHAPTER 3: RELEASING LAND

Release date: July 2018

Making a decision over when suspected hazardous areas (or parts of suspected hazardous areas) should be released to the community can be intimidating. The procedures in this Chapter provide a set of fixed rules to be applied for the varied ways in which land may be released. If the decisions are later found to have been inappropriate, the strict application of these rules relieves those taking the decisions of any responsibility for the error. However, when any error becomes apparent, the rules must be adjusted without delay to prevent the error being repeated.

Users of this SOP must check that they agree with the parameters of the fixed rules before adopting them. I would start from the parameters that are given anywhere in the world, but I would certainly change them in many places.

Three examples of parameters that may need to be changed are listed below.

1. *When a National Mine Action Authority (NMAA) imposes its own rules they should be given precedence unless the NMAA accepts the use of the rules elaborated herein.*
2. *When a rule states a distance within which some conditions must apply, that distance should be amended based on experience in the region where the SOP will be applied.*
3. *When the minimum conditions necessary for a land classification are listed, those lists should be extended whenever that is necessary to give the end-users of the land the required confidence in the classification.*

CHAPTER 3: RELEASING LAND

These generic and global SOPs have been available since 2007. This Chapter has been updated and significantly changed for this 2018 release. Definitions that are necessary to understand this SOP are included at the start of the Chapter.

Contents

1. Glossary

The terms defined below are listed in alphabetical order. Terms not used in this SOP may be included for clarity. A full Glossary of terms used throughout the Global SOPs is included in the introductory Chapter.

Accident (Demining accident): following ordinary use of the term, an HMA 'accident' is any damaging or injurious event that occurs during working hours. This includes road traffic accidents and other events that give rise to injury which do not involve explosive hazards. Whenever an accident involving explosive hazards occurs (whether injurious or not), a detailed and objective accident report must be compiled and shared. Demining accident reports must be appended to the Field Risk Register and the appropriate risk mitigation strategies recorded. See also the entry for 'Incident (demining incident)'.

Area Cancelled: the 'Area Cancelled' is the area(s) of land Cancelled during a task, or before starting a task, without any formal demining procedures being conducted on the land. Cancelled land must be released as 'Presumed Clear'.

Area Cleared: the area 'Cleared' is a defined area (or areas) that has been subjected to one or more demining Search & Clearance procedure(s) which guarantee(s) that a thorough search to the required depth has been conducted over the entire area(s). In all areas released as 'Cleared', the task supervisors must have full confidence that no explosive hazards remain to the specified search depth and must be prepared to demonstrate their confidence by walking or driving over the area. When no explosive hazards are located during Search & Clearance of an area, the area may still be released as 'Cleared' even though there were no explosive hazards to 'Clear'.

Area preparation: 'area preparation' involves the passage of a tool over a wide area to remove vegetation and/or prepare the ground surface before other demining procedures are conducted. The processing tool is generally attached to a machine that is suitably protected so that it can be safely driven over the area (often by remote control). Depending on need, the reliable depth of any ground processing may be important but is not critical because a ground engaging machine must always be followed by thorough Search & Clearance procedures if the land is to be released as 'Cleared'.

Area Reduction: 'Area Reduction' involves the Search & Clearance of a percentage of the ground in a manner that gives confidence that the larger area presents no threat from explosive hazards (there is No Threat Evidence, NTE). Area Reduction must not put the end-users or demining staff at greater risk than when full Search & Clearance demining procedures are used. Those making the decision to release land by Area Reduction must be prepared to demonstrate their confidence in the lack of explosive hazards by walking or driving over the area to be Reduced. Reduced areas must be released as 'Presumed Clear'.

Area Released: the sum of the areas 'Searched & Cleared', Reduced, Verified and Cancelled equal the area Released, which will usually be the entire task area.

Area Verified (Area Verification): an 'area Verified' is a part of a task area for which there is no evidence of any explosive hazards being present (No Threat Evidence, NTE) and on which one or more demining procedure(s) has been carried out. What is being 'Verified' is the belief that there is NTE in the area. The entire area Verified must be processed in a manner that increases confidence that formal Search & Clearance is not required in that area. Because there is NTE, the demining procedures used for area Verification need not equal thorough Search & Clearance of the area. If any evidence of hazards is discovered during area Verification, the status of the area changes and appropriate Search & Clearance procedures must be conducted. Those who make the decision that area Verification is all that is required must be prepared to walk or drive over the land that they have decided does not need to be thoroughly searched. After the area Verification, if No Threat Evidence has been found, the land may be released as 'Presumed Clear'.

BAC - Battle-Area-Clearance: 'BAC' is a visual search process that raises confidence that an area is free from explosive hazards on the ground surface without applying any subsurface search procedures. BAC cannot be used where the Task Assessment determines that there may be any buried explosive hazards that are pressure or movement sensitive. When there may be any other buried explosive hazards (such as common UXO), BAC must be followed with a reliable sub-surface Search & Clearance procedure. Areas subjected to BAC may be recorded as 'Surface Cleared'.

BACS – Battle-Area-Clearance Subsurface: 'BACS' is a search process involving the use of metal-detectors that raises confidence that an area is free from explosive hazards without applying procedures that would locate hazards with a small metal content. BACS cannot be used where the Task Assessment determines that there may be any anti-personnel mines, pressure or movement sensitive devices, or buried minimum-metal explosive hazards. The metal-detectors used must be able to reliably locate all of the anticipated hazards in the area. When used as described, areas subjected to formal BACS procedures may be recorded as having been 'Cleared of hazards with a large metal content to a specified depth'.

Clear (Presumed Clear): when applied to land, the word 'Clear' is used to describe land where there is no evidence of there being any explosive hazards (No Threat Evidence, NTE). When this is a result of the explosive hazards having been removed/destroyed during Search & Clearance, the area must be described as having been 'Cleared'. When land has been released by area Reduction, Verification or Cancellation, it has not been 'Cleared' but can be 'Presumed Clear' because there is no evidence of it being likely to be contaminated with explosive hazards (No Threat Evidence, NTE). The distinction between the use of 'Presumed Clear' and 'Cleared' is important because it can be critical in cases of litigation.

Clearance: 'clearance' is the removal or destruction of explosive hazards. Most in the industry describe what they do as 'clearance'. In fact what most field people are doing most of the time is preparing ground and searching. If there are no explosive hazards there, there is nothing to be 'cleared' so clearance cannot be happening. In these SOPs, the activity of searching for and removing or destroying explosive hazards is referred to as Search & Clearance despite the fact that, at some times, no hazards will be found and no 'clearance' will be required.

Cleared (land): 'cleared land' is a defined and mapped area that has been formally searched to a required depth and on which all explosive hazards have been removed or destroyed. An area can only be declared 'Cleared' after it has been subjected to disciplined Search & Clearance procedures that ensure the discovery and removal of all explosive hazards to a specified depth over the entire area. That depth must be determined during the Task Assessment and should be varied if devices are discovered at greater depths as work at the task progresses. If the depth that can be reliably searched using any one demining procedure is less than the requirement, additional search procedures must be used to gain confidence that thorough Search & Clearance to the required depth has been achieved before the area can be declared 'Cleared'. Following Quality Management principles in pursuit of efficient land release, if no explosive hazards are found, an investigation should be made into why the task documentation indicated that the area was contaminated with explosive hazards when it was not.

Confidence building: 'confidence building' describes one or more demining procedure that does not search ground to the standard required for it to be declared 'Cleared' but does give confidence that there is No Threat Evidence (NTS) present, so Search & Clearance is not required in the area. As with all land to be released, the minimum level of confidence required is that those who make the decision to release the land must be prepared to walk or drive over it. See also the entry for 'Verification'.

Confirmed Hazardous Area (CHA): in the IMAS, a 'CHA' is an area where the evidence that there are explosive hazards present has been confirmed. Unfortunately, with the exception of known, mapped and marked minefields and unless the hazards are visible, 'confirmation' can usually only happen after the hazards have been found. An explosive accident having occurred in an area does not 'confirm' the presence of other explosive hazards in the area although it may make the presence of other hazards 'probable'. In these SOPs, the expression 'High Probability Area' (HPA) is used to describe an area where there is evidence that makes it probable that explosive hazards are present. This covers places with visible hazards, known minefields, and all other areas where there is evidence that explosive hazards are probably present.

Defined Hazardous Area (DHA): in previous versions of the IMAS, a 'defined hazardous area' was defined as an area that is mapped and that must be subjected to thorough Search & Clearance. The perimeters of DHA were supposed to be precisely defined during Technical Survey. Accurately defining the perimeter of any hazardous area is only realistically possible after thorough search beyond that perimeter has been completed so the term DHA has been removed from the IMAS. DHA is not considered to be a practical pre-search concept so is not used in these SOPs.

Deminer (Searcher): a 'deminer' is a person engaged in Search & Clearance tasks in areas that may be contaminated with explosive hazards. A deminer must always be trained and qualified to carry our procedures related to searching. A deminer may also have EOD training, but does not have to be trained to appraise and manage the explosive hazards that are found. Persons with EOD training are called ‘EOD specialists’ and must also be trained as deminers/searchers.

Demining procedure(s): see the entry for ‘procedure’.

Device(s): the term ‘device’ may be used to describe any explosive hazard**.**

Explosive hazard: the term **‘**explosive hazard’ is used to describe mines and ordnance whether fuzed, fired or otherwise, and all explosive devices whether mass-produced or improvised. It also covers hazardous parts of these devices, including detonators, propellants and pyrotechnics. Following the usage in international treaties and conventions, the IMAS distinguish between ‘mines’, ‘submunitions’ and ‘Explosive Remnants of War’ (ERW) and treats them separately. This is confusing because, in normal language, ‘mines’ and ‘submunitions’ are also ‘ERW’. Rather than trying to reclaim the commonsense meaning of ERW, the term ‘explosive hazard’ is used in these SOPs.

High Probability Area (HPA): a ‘High Probability Area’ is a part of a task where there is a high probability that explosive hazards are present. This may be called a Confirmed Hazardous Area or CHA by other agencies. The threat in a High Probability Area is the same as that in a Low Probability Area when the same explosive hazards may be present. Typical HPA include mapped and marked minefields, areas where mines are visible, defensive positions, areas where there have been multiple explosive accidents, and areas where the presence of hazards has been reliably reported.

Incident (Demining incident): avoiding the confusion between ‘accident’ and ‘incident’ apparent in the IMAS, in these SOPs a ‘demining incident’ is the discovery of one or more explosive hazard(s) on land that has been declared ‘Cleared’ or ‘Presumed Clear’ and released to the end-users as part of land release. The rigorous and honest investigation of demining incidents is necessary to ensure that errors are identified and corrected in pursuit of the primary goal of HMA. Demining incident reports must be appended to the Field Risk Register and the appropriate risk mitigation strategies recorded. See also the entry for ‘Accident (demining accident)’.

Land release, releasing land: land that is designated a task area may only be ‘released’ after either being declared ‘Cleared’ or ‘Presumed Clear’. An entire task, or parts of the task area, can be released as ‘Searched & Cleared’, ‘Reduced’, ‘Verified’, or ‘Cancelled’ (see Chapter 3 for detailed explanations of these terms).

1. Land that is ‘Searched & Cleared’ of all explosive hazards to a known depth is declared ‘Cleared’.
2. Land that is ‘Reduced’ by processes that result in confidence that thorough ‘Search & Clearance’ is not necessary because there is No Threat Evidence (NTE) in the area can be declared ‘Presumed Clear’.
3. Land that is ‘Verified’ as having NTE in the area can be declared ‘Presumed Clear’.
4. Land that is ‘Cancelled’ as having NTE in the area can be declared ‘Presumed Clear’.

Low Probability Area (LPA): a ‘Low Probability Area’ is a part or parts of the task where it is possible that there are explosive hazards but there is not enough evidence of their presence to make it probable. Typically, land bordering a High Probability Area is a Low Probability Area. The threat in a Low Probability Area is the same as that in a High Probability Area when the same explosive hazards may be present.

No Threat Evidence (NTE): any land that is not suspected of being contaminated with explosive hazards presents ‘No Threat Evidence’ (NTE) because there is no evidence that there may be explosive hazards there. The term should also be applied to any part of a task area where, after a Technical Survey and/or during subsequent demining activity there is found to be no evidence of the presence of explosive hazards. Areas processed using proven Search & Clearance procedures during a Technical Survey may be recorded as ‘Cleared’. Parts of a task that are Reduced, Verified or Cancelled as a result of demining activity must be recorded as presenting No Threat Evidence, so ‘Presumed Clear’.

Presumed Clear: See the definition for ‘clear’.

Procedure(s), demining procedure(s): ‘demining procedures’ are activities conducted on land that may be contaminated with explosive hazards as part of preparing it for land release. Searching with metal-detectors or MDDs are demining procedures. Cutting undergrowth or ground processing with a demining machine are also demining procedures. One or more procedure can be applied to process the same ground to give confidence that the area can be released. Not all procedures, or combinations of procedures, constitute full Search & Clearance and so guarantee that no explosive hazards remain to the required depth in the area. This is not important when there is found to be No Threat Evidence in an area and it can be reliably 'Presumed Clear'.

Risk Register: a 'Risk Register' is a record of identified risks and the strategies adopted to manage them by reducing them (risk mitigation) or by avoiding them. Derived from as broad an evidence base as possible, it informs risk management decisions and allows experience to be shared and retained when staff move on. Two registers should be kept, a 'Programme Risk Register' and a 'Field Risk Register'.

Safety distance: the 'safety distance' is the distance at which all staff must be from a deliberate detonation in order to avoid injury. This is also the distance at which staff must be from a demining procedure that may predictably detonate some devices (such as processing the ground surface using a machine). See also the entry for 'working distances'.

Search & Clearance (Searched & Cleared): 'Search & Clearance' refers to the disciplined use of demining procedures that are reliably able to locate all anticipated explosive hazards to a specified depth beneath the ground surface and the removal/destruction of those hazards over an entire recorded area. Only areas that have been Searched & Cleared can be released as 'Cleared'.

Search depth: the 'search depth' is the depth beneath the ground surface to which reliable search for explosive hazards must be conducted. Unless otherwise directed by the NMAA or client, the search depth should be agreed during task planning and must be increased as soon as any evidence suggests that the hazards may be at a greater depth than was originally believed.

Searcher: See the entry for 'Deminer'.

SUA or UAV: The term 'Small Unmanned Aircraft '(SUA) is preferred by the Civil Aviation Authorities in Europe and so is used instead of Unmanned Arial Vehicle (UAV). In this context, the terms are treated as synonyms. An SUA is an aircraft with a Maximum Take Off Weight (MTOW) of 7 kg or less. It may have rotors, fixed wings or gas lift in any combination and is controlled remotely by a pilot in real time or following a pre-programmed flight path.

Suspected Hazardous Area (SHA): at the start of a demining task, the entire task area is often referred to as a 'Suspected Hazardous Area (SHA)'. After a Technical Survey has been conducted and more becomes known as the task progresses, parts of the SHA should be designated Low Probability Areas (LPA) and High Probability Areas (HPA) where the 'probability' refers to the probable presence of explosive hazards. HPA and LPA designations and the Task Release Plan should be reviewed and revised as soon as more as soon as more evidence about the contamination in the SHA is gathered. As areas with No Threat Evidence are identified, they may be Reduced, Verified or Cancelled, as appropriate.

Task Folder: the NMAA (or other authority) should provide a 'Task Folder' containing all relevant survey data about the task being undertaken. Information gathered during this organisation's internal Task Assessment will be added to the Task Folder to allow an informed Task Risk Assessment to be made. The Task Folder and the Task Assessment also provide an evidence base on which to make a preliminary Task Release Plan. The Task Folder may include agreements about the demining assets and procedures that must be used at the task.

Task Release Plan: the **'**Task Release Plan' is the schedule of all demining activities that will take place in a demining task area. It includes maps of HPA and LPA showing all areas that will be released as 'Cleared', Reduced, Verified or Cancelled. All Task Release Plans should be revised regularly as work progresses and more becomes known about the task area. This is essential to allow the work to be conducted efficiently, so protecting the donor/client from unnecessary costs. When the Task Release Plan must be approved by the NMAA, a provisional Task Release Plan sent to them before work starts should cover as many of the variations that may be required as can be reasonably predicted. When further revisions are required, the NMAA should appraise revised Task Release Plans without delay. When the revision is necessary to keep risk within tolerable limits, the NMAA should approve its immediate implementation pending the results of their formal appraisal.

Task Risk Assessment (TRA): a 'Task Risk Assessment' is a process designed to evaluate and manage risk before and during field tasks. A TRA takes account of all available information about conditions in the task area, the hazards present and the demining procedures that are available to be used. As work at the task progresses and more information becomes available, the TRA must be revised so that the work is always conducted in a manner that minimises the main risks during HMA field activities. The main risks are the risk of leaving explosive hazards in areas that will be released (demining incidents) and the risk of demining staff suffering explosive related injury (demining accidents).

Technical Survey: a 'Technical Survey' involves using demining Search & Clearance procedures over parts of a task area in order to try to determine parts that are High Probability Areas (HPA), parts that are Low Probability Areas (LPA), and parts where there is No Threat Evidence (NTE). A Technical Survey should precede wide-area Search & Clearance at all tasks where a Technical Survey has not already been conducted. When staff walk over the ground during the survey, the ground on which they walk must have been declared 'Cleared' or 'Presumed Clear'.

Tolerable Risk: a 'tolerable risk' is the risk remaining after having taken all reasonable measures to avoid the risk event and/or to minimise its undesirable consequences. The International Standards Organization (ISO) and the IMAS define 'tolerable risk' as "risk which is accepted in a given context based on current values of society". Every industry is intended to interpret that definition appropriately in their own working context. It would be inappropriate to adopt the high-risk mindset that may prevail in a post-conflict context because the current humanitarian values in peaceful and secure societies are the values of HMA and of those paying for the work. These are also the values that will be used to define what is 'tolerable' during any litigation that may follow accidents or incidents.

Wide-area: in these SOPs, the term 'wide-area' is used to describe large land areas over which Search & Clearance will be conducted. The breach lanes that are 'Cleared' during a Technical Survey are not conducted over wide-areas, but parallel breaches can be combined to provide wide-area Search & Clearance.

Working distance: the 'working distance' should make it unlikely that more than one person will be injured in a demining accident. Working distances can generally be shorter than safety distances because demining accidents are rare and injuries to a second worker rarer still. Reduced working distances can increase safety by improving the ease of supervision which ensures that procedures are conducted correctly and risks are appropriately managed. See also the entry for 'safety distances'.

1.1 Should, Must, and Shall

Throughout these SOPs the distinction between the terms 'should' and 'shall' that is used by the International Standards Organisation (ISO) and in the International Mine Action Standards (IMAS) is adopted.

When 'shall' or 'must' is used, everyone working to these SOPs must comply with the requirements as they are written. No variation is permitted.

When 'should' is used, everyone working to these SOPs must follow the requirements unless they have a reason to vary them that has been approved by the senior staff with operational responsibility. Variations must be recorded in writing in the Task Release Plan and the person(s) making the variation must be identified.

2. Introduction

Making decisions over criteria by which to release land is daunting because there is no way of achieving total confidence that there are no explosive hazards in an area without searching it thoroughly a number of times. This is true even in areas where there has been no combat and there is no reason to believe that explosive hazards may be present. Even after an area has been thoroughly searched using proven procedures, there is only confidence that there are no detectable explosive hazards within the depth searched.

The criteria for releasing land described in this Chapter are based on the desire to achieve all ‘reasonable confidence’ that an area presents no threat to the end-user. Some residual risk remains, just as it does after an area has been formally Searched & Cleared using proven procedures and there may be explosive hazards beneath the search depth used in the area. The aim is always to ensure that the residual risk is small enough to be ‘tolerable’.

The NMAA may define ‘tolerable risk’ in their country and when their requirements are stricter than those used here (detailed in Chapter 14), the NMAA’s requirements must take precedence.

3. Before conducting any work at a task

The main purpose of Humanitarian Mine Action (HMA) is the release of land that was formerly believed to be contaminated by explosive hazards. When there is evidence that hazards are present, the land must be searched and all hazards to a pre-defined depth removed or destroyed before the land can be declared ‘Cleared’ to International Mine Action Standards. This must be done in a way that ensures the safety of end-users and deminers at the same time as being as cost-efficient as possible. Unless otherwise required by conditions of contract, demining resources should only be used on the Search & Clearance of genuinely hazardous areas. Because most of any Suspected Hazardous Area (SHA) is not actually contaminated with explosive hazards, full Search & Clearance of the entire task area will normally be the last choice at any SHA unless otherwise dictated by the NMAA or client.

Many areas in the world have been surveyed with a General Mine Action Assessment (GMAA or Level 1) survey and/or a secondary Landmine Impact Survey (LIS). These may have led to a Dangerous Area Report, Mined Area Report, and/or a Landmine Impact Survey report for each SHA. Following the release of the land release IMAS in 2009, many countries have conducted a detailed Non Technical Survey (NTS) intended to reduce the number and size of recorded SHA and define some areas as Confirmed Hazardous Areas (CHA). When this has been reliably conducted, it may replace some of the task assessment requirements in this SOP but this organisation will be liable for any errors so any previous assessment must be checked.

All existing survey data must be collected and referred to after accepting a task at a particular hazardous area, whether it is called a SHA, CHA, or DHA. Unless the operations manager has decided that any survey conducted by another organisation is completely reliable, a Task Assessment Team must check and update the information before demining assets are deployed to the task. The Task Assessment Team works under the direction of the operations manager and it is the operations manager’s responsibility to ensure that all relevant data is gathered and made available in a Task Folder before the team is asked to assess the task.

A supervisor from the demining team(s) that will work at the task should be included in the Task Assessment Team. The work of the Task Assessment Team will lead to the writing of a Task Risk Assessment (TRA) and a provisional Task Release Plan that must be approved by the operations manager before demining assets are deployed. All task planning must be ‘provisional’ because it must be revised as work is conducted and more becomes known about the task. Task Assessment is described in more detail in Part 5 of this Chapter. The making of a formal TRA is described in Chapter 14 of these SOPs.

The NMAA may require that Task Release Plans have their prior approval before being implemented.

4. Releasing tasks

When there is a national land release strategy the requirements of that strategy should be given precedence. When there is no national land release strategy, land that is designated a task area may only be 'released' after either being declared 'Cleared' or 'Presumed Clear'. An entire task, or parts of the task area, can be released as 'Searched & Cleared', 'Reduced', 'Verified', or 'Cancelled'.

1. Land that has been thoroughly Searched & Cleared of all explosive hazards to a depth beneath the ground surface that would reliably locate all anticipated explosive hazards can be released as 'Cleared'.
2. After Search & Clearance procedures have been applied in a percentage of the area without locating any evidence of explosive hazards and there is confidence that further Search & Clearance is not necessary because there is No Threat Evidence (NTE) in the area, it can be released as Reduced by percentage search and 'Presumed Clear'.
3. When the entire area has been subjected to one or more demining procedures that do not constitute thorough Search & Clearance but which result in confidence that there is NTE, the absence of evidence has been Verified and the area can be released as 'Presumed Clear'.
4. When the Task Assessment concludes that there is NTE in the area and it can be released without deploying any demining assets, it can be Cancelled and released as 'Presumed Clear', as long as the end-users of the land accept that decision.

In efficient demining, parts of many task areas will be Reduced, Verified or Cancelled. Decisions over where it is appropriate to do this are based on evidence that is extended as work progresses so the provisional Task Release Plan must be revised regularly as more information is gathered.

After conflict, it is often not possible to remove all risk of mines and explosive hazards without searching and clearing the entire country. But over most of the country there is no evidence that explosive hazards are present, so the land is not Searched & Cleared. The same is often true of recorded Suspected Hazardous Areas (SHAs) that are presented as tasks. Often most of the SHA presents NTE and does not need to be processed with wide-area Search & Clearance procedures. When a task is presented as a Confirmed Hazardous Area (CHA), the area may or may not be better defined and some of the area may still present NTE and should not be Searched & Cleared unnecessarily.

By assessing the task before deployment and devising a Task Release Plan based on evidence, some tasks or parts of a task may be Cancelled without any demining action taking place.

By starting demining using a Technical Survey, in many cases it is possible to plan to release the area without applying full Search & Clearance procedures over most of the land. One notable exception to this occurs when there is evidence of the presence of random or 'nuisance' minefields or scattered explosive hazards, in which case the whole area often needs to be Searched & Cleared to ensure the safety of the end-users of the land.

4.1 Releasing land by Search & Clearance

All parts of a task can be released after proven demining Search & Clearance procedures have been used over the entire area, searching it to an agreed depth and removing/destroying all explosive hazards found. This is simple and effective but it often involves searching large areas of land where there are no explosive hazards, so it may involve spending more time and money at a task than is necessary.

The Search & Clearance procedures that may be used are listed below.

1. Manual demining using appropriate metal-detectors in a disciplined search (released as 'Cleared').
2. Manual demining using area-excavation procedures (released as 'Cleared').

3. Search using proven Mine Detecting Dogs (MDD) supported by manual demining procedures (released as ‘Cleared’).
4. Battle Area Clearance (BAC) procedures (released as ‘Surface Cleared’).
5. Battle Area Clearance Subsurface (BACS) procedures (released as ‘Cleared of hazards with a large metal content to a specified depth’).

The above Search & Clearance procedures are detailed in Chapters 6 and 8 of these SOPs.

The Search & Clearance procedures may be assisted by preparing the area using machines. This can often increase the speed of Search & Clearance significantly by removing undergrowth or loosening the ground surface. Appropriate area preparation using machines may also reduce risk to those following by removing tripwires and breaking or initiating exposed fuzes.

Mechanical ground processing may leave level ground which was not level before the machine was used. This can mean that dips in the ground have been covered with loose earth under which the original ground surface has not been processed to the required depth. Machines should not be used to process the ground surface in places where this is likely to occur.

Ground that has been processed by a machine is usually mixed with air. This leaves the ground surface higher than it was before it was processed. The search depth used after the machine should be increased by the raised height of the ground surface. When this has not been measured, it should be presumed to be at least 25% of the depth to which the machine processed the ground.

4.1.1 When Battle Area Clearance (BAC) can be used

The Task Release Plan may determine that parts of a task can be ‘Surface Cleared’ by BAC when all of the following conditions apply.

1. There must have been no reports of mine accidents to people or livestock within 100 metres.
2. There is no record of a minefield within 100 metres.
3. No mines have been discovered within 50 metres.
4. There is evidence that the area was a battle area or there are reports of surface explosive hazards (such as UXO).
5. The end-use of the land will not be agriculture, or the erection of buildings.
6. The area has not been subjected to mechanical ground processing, (mechanical ground processing should not be used when the procedure may bury hazards).
7. In areas with vegetation, either a machine has been used to remove the vegetation or the BAC procedures will include vegetation removal. Any machine that is used must have been adjusted so that the processing tool has not disturbed the ground in a way that could have buried hazards.
8. There is no visible evidence of mines after the vegetation has been removed.
9. No mines or any evidence of mines (such as tripwire-stakes, tripwires, parts of mine casing or the packaging, fuze clips and arming pins associated with mines) are found during the BAC.

☠ **NOTE:** *If any evidence of mines or any other movement or pressure sensitive explosive hazards that may be initiated during BAC is found, the BAC process must stop immediately. The task supervisor must revise the Task Release Plan so that the entire area where these hazards may be anticipated is appropriately Searched & Cleared.*

If UXO/AXO explosive hazards are found during BAC, an EOD specialist deminer must organise their appropriate removal/demolition.

The task supervisor must map the area to be searched and include that map in the updated tasking instruction given to the demining section leader(s) who will control the BAC.

When the BAC has been completed, the perimeter of the BAC area must be accurately recorded on the task map with GPS coordinates recorded for all turning points on its perimeter.

BAC will lead to the removal of all explosive hazards and battle debris that is on the ground surface so the land can be released as 'Surface Cleared'.

4.1.2 When Battle Area Clearance Subsurface (BACS) can be used

The Task Release Plan may determine that parts of a task can be 'Cleared of hazards with a large metal content to a specified depth' using BACS when all of the following conditions apply.

1. There have been no reports of accidents to people or livestock within 100 metres.
2. There is no record of a minefield within 100 metres.
3. No mines have been discovered within 50 metres.
4. In areas with vegetation, a machine has been used to remove the vegetation. The machine must have been adjusted so that the processing tool did not strike the ground.
5. There is no visible evidence of mines after the vegetation has been removed.
6. There may be evidence that the area was a battle area.
7. The deminers are equipped with suitable BACS metal-detectors.
8. No mines or any evidence of mines (such as tripwire-stakes, tripwires, parts of mine casing or the packaging, fuze clips and arming pins associated with mines) are found during the BACS.

☠ **NOTE:** *If any evidence of mines or any other movement or pressure sensitive hazards that may be initiated during BACS procedures is found, the BACS process must stop immediately. The task supervisor must revise the Task Release Plan so that the entire area where these hazards may be anticipated is appropriately Searched & Cleared.*

When UXO/AXO explosive hazards are found during BACS, an EOD specialist deminer must organise its appropriate removal/demolition.

The task supervisor must map the area to be BACS searched and include that map in the tasking instruction given to the demining section leader(s) who will control the BACS.

When BACS as described in Chapter 6 has been completed, the perimeter of the area must be accurately recorded on the task map with GPS coordinates recorded for all turning points on its perimeter.

BACS should lead to the removal of all UXO and large battle debris to a known depth (generally at least 30cm). BACS may be recorded as 'Clearance' as long as the only hazards anticipated in the area would be reliably found using the detectors selected and the procedures ensure full ground coverage to the required depth during the search.

Areas processed by BACS may be released as 'Cleared of hazards with a large metal content to a specified depth'.

NOTE: *When the end-use of the land will be agriculture or buildings will be erected on the land, BACS procedures should be used rather than BAC. When deep foundations will be prepared, the search depth should be appropriate for the anticipated foundations in appropriate parts of the task.*

4.2 Releasing land by post clearance area reduction

Area reduction is often presented as an activity that should occur before wide-area Search & Clearance. In fact, although area cancellation may occur before any demining procedures have conducted, area reduction will generally occur <u>after</u> High Probability Areas (HPAs) have been appropriately searched, so allowing details learned during that process to be included in a revised Task Risk Assessment and Task Release Plan. In areas with patterned explosive hazards such as minefields, for example, it is only possible to assess possible mine movement or pattern reinforcement after Search & Clearance of the mine pattern(s). At that time, task areas previously classed as Low Probability Areas (LPAs) may need to be reclassified as HPA. Similarly, if the anticipated HPA is not where it was expected to be, adjacent areas may need to be reclassified as work progresses.

Generally, when Technical Survey and any necessary wide-area Search & Clearance are appropriately targeted on HPAs, area reduction should occur after the HPAs have been processed and more is known about the whole task area. That is the time to make evidence based decisions about areas that can be safely Reduced, Verified, or Cancelled.

The task supervisor may decide that parts of the SHA that are classed as LPAs in the Task Release Plan can be released by area reduction after a percentage of the ground has been processed in a way that gives confidence that there are no explosive hazards in that part of the task. In many cases, the use of thorough Search & Clearance procedures over discrete areas can give confidence that no explosive hazards are likely to be found in the surrounding areas.

The area reduction procedures involve either:

a) conducting Search & Clearance procedures over a percentage of the land using metal-detector or MDD search procedures; or

b) processing the ground mechanically with follow up Search & Clearance of a smaller percentage of the land.

Only the land actually subject to approved Search & Clearance procedures can be released as 'Cleared'. When there is a high level of confidence that the rest of the land is not contaminated with explosive hazards, it should be released as Reduced and 'Presumed Clear'.

4.2.1 Reduction by percentage search

In statistical terms, searching a part of a task and finding nothing does not increase the probability that there is nothing in the rest of the area. However, searching some of the land (percentage search) can provide evidence that there are no predictably positioned patterns of explosive hazards present.

When there is not complete confidence that there are no explosive hazards in the area(s) that have not been searched, they should be subjected to at least one ground processing procedure before being released.

NOTE: *Percentage search must not be relied upon in areas where the hazards may be randomly placed in what are sometimes called 'nuisance' minefields or in any areas where explosive hazards may be widely dispersed.*

It may be decided that parts of a task are LPAs at any time during the ongoing revisions of the Task Release Plan. These areas can be Reduced by percentage search when all of the following conditions apply.

1. There must have been no reports of accidents to people or livestock within 50 metres.
2. There is no record of a minefield within 50 metres.
3. No explosive hazards except isolated IEDs or booby traps (the area around which has been Searched & Cleared to a minimum five metre radius) have been discovered within 50 metres.
4. There is no evidence of the area having been a battle area.
5. At least 20% of the total area has been processed using full Search & Clearance procedures. The area processed should cut across the land in a grid that is designed to search at least four metres in every 20 square metre part of the area.
6. Those making the decision to reduce the area are prepared to walk or drive over the area.

☠ **NOTE:** *If any evidence of explosive hazards (including tripwire-stakes, tripwires, parts of mine casing or the packaging, fuze clips and arming pins associated with munitions is found, the task supervisor must immediately revise the Task Release Plan so that the entire area where hazards may be anticipated is Searched & Cleared.*

The task supervisor must map the area to be Reduced, indicating areas that must be processed using the varied procedures, and include that map in the updated tasking instruction given to the demining section leaders or MDD team leaders.

When the percentage search has been completed, the perimeter of the Reduced area must be accurately recorded on the task map with GPS coordinates recorded for all turning points on its perimeter. The area can then be released as Reduced and 'Presumed Clear'.

Percentage search may also be used during QC when 'sampling' the quality of the work by searching some of the ground a second time. Despite the inclusion of this method in the IMAS, it does not actually prove anything about the statistical probability of hazards remaining in the places that were not searched a second time. However, the knowledge that a QC search will be conducted does give an incentive to work thoroughly and so its use can increase confidence in the quality of the work.

4.2.2 Reduction by mechanical ground processing and percentage search

It may be decided that parts of a task that have been classed as LPAs can be Reduced by mechanical ground processing and percentage search.

The task supervisor may decide that an area can be released as Reduced by mechanical ground processing and percentage search when all of the following conditions apply.

1. There have been no reports of accidents to people or livestock within 50 metres.
2. There is no record of a minefield within 50 metres.
3. No explosive hazards except isolated IEDs or booby traps (the area around which has been Searched & Cleared to a minimum five metre radius) have been discovered within 20 metres.
4. A machine has been used to process the ground to the required search depth at the task and there have been no detonations or evidence of explosive hazards.
5. The machine has processed the ground twice, moving in different directions.
6. When there are features in the area that may be more likely to have been mined than open ground, those areas have been 100% Searched & Cleared (examples are around trees, in ditches or trenches and around large rocks or abandoned buildings).
7. At least 10% of the total area has been searched using metal-detector or MDD procedures (which may include BACS when that would reliably find the anticipated hazards). The area processed has cut across the land in a grid that is designed to search at least two metres in every 20 square metre part of the area.

☠ **NOTE:** *If any evidence of explosive hazards is found, the task supervisor must immediately revise the Task Release Plan so that the entire area where hazards may be anticipated is Searched & Cleared.*

The task supervisor must map the area to be Reduced and include that map in the tasking instruction given to the machine's team leader and the Search & Clearance assets that will follow the machine.

When the mechanical ground processing and the Search & Clearance follow-up have been completed, the perimeter of the Reduced area must be accurately recorded on the task map with GPS coordinates recorded for all turning points on its perimeter. The area can then be released as Reduced by percentage search and 'Presumed Clear'.

4.3 Releasing land by area verification

The task supervisor may decide to release parts of the task that have been classed as No Threat Evidence areas by verification when there is no reason to believe that there are any explosive hazards in an area but the end-users of the land lack confidence in this. Area verification can only be conducted when the task supervisors already have full confidence that the area does not need to be Searched & Cleared but this needs to be Verified because the end-users of the land do not share that level of confidence.

The area verification procedures used are either:

a) conducting Battle Area Clearance (BAC) procedures over a percentage of the area; or

b) mechanically processing the ground with percentage BAC follow-up.

The verification procedures can result in end-user confidence that there is no reason to search the ground further. The land can then be released as having been Verified as having NTE, so 'Presumed Clear'.

4.3.1 Criteria for verification by Battle Area Clearance (BAC)

The task supervisor may decide that parts of the task that have been classed as NTE areas may be Verified by BAC when all of the following conditions apply.

1. There have been no reports of accidents to people or livestock within 150 metres.
2. There is no record of a minefield within 100 metres.
3. No explosive hazards except isolated IEDs or booby traps (the area around which has been Searched & Cleared to a minimum five metre radius) have been discovered within 100 metres.
4. There is no evidence that the area was a battle area.
5. In areas with vegetation, a machine has been used to remove the vegetation. The machine must have been adjusted so that the processing tool has not disturbed the ground in a way that could have buried hazards.
6. There is no visible evidence of explosive hazards after the vegetation has been removed.
7. BAC has been conducted over at least 33% of the area in a grid pattern.
8. The end-users of the land accept that its NTE status has been Verified.

☠ **NOTE:** *If any evidence of pressure or movement sensitive hazards is found, the BAC process must stop immediately. The task supervisor must revise the Task Release Plan so that the entire area where hazards may be anticipated is Searched & Cleared using appropriate procedures.*

☠ **NOTE:** *If any UXO/AXO explosive hazards are found during percentage BAC, the task supervisor should revise the Task Release Plan so that the entire area is, as a minimum, searched using BAC procedures*.

The task supervisor must map the area to be Verified and include that map in the tasking instruction given to the demining section leader(s) who will control the BAC.

When the BAC has been completed, the perimeter of the Verified area must be accurately recorded on the task map with GPS coordinates recorded for all turning points on its perimeter.

When appropriate, the actual land searched by BAC may be recorded as 'Surface Cleared'. The rest of the land must be recorded as having been Verified as having NTE and released as 'Presumed Clear'.

4.3.2 Criteria for verification by mechanical ground processing

The task supervisor that parts of the task that have been classed as NTE areas may be Verified using mechanical ground processing when all of the following conditions apply.

1. There have been no reports of accidents to people or livestock within 150 metres.
2. There is no record of a minefield within 100 metres.
3. No explosive hazards except isolated IEDs or booby traps (the area around which has been Searched & Cleared to a minimum five metre radius) have been discovered within 100 metres.
4. There is no evidence that the area was a battle area.
5. There are no features in the area that prevent the machine processing the ground.
6. The machine has processed the entire ground surface to a regular depth of at least 13cm at least once.
7. After the machine, BAC has been conducted over at least 10% of the area in a grid pattern. The BAC process is searching for any evidence of unanticipated hazards that the machine may have exposed. Because there is already confidence that there is NTE, it should be safe for the BAC searchers to walk over the processed ground.
8. The end-users of the land accept that its NTE status has been Verified.

NOTE: *If the machine detonates a device or exposes any evidence of explosive hazards, the decision to verify the land must be immediately revoked and the task supervisor must prepare a new Task Release Plan for that area.*

The task supervisor must map the area to be Verified and include that map in the tasking instruction given to the machine's team leader.

When the machine has processed the ground and the percentage BAC has been completed, the perimeter of the Verified area must be accurately recorded on the task map with GPS coordinates recorded for all turning points on its perimeter.

Mechanical ground processing with percentage BAC follow-up is not 'Clearance' but it can give the end-users confidence that the Verified area has NTE, allowing it to be released as 'Presumed Clear'. The area subjected to percentage BAC follow up must not be recorded as 'Surface Cleared' because the machine will have moved the ground surface and may have buried devices that were originally there. The entire area must be released as having been Verified as having NTE so 'Presumed Clear'.

It is not permitted to follow the machine with percentage BACS and release the percentage searched using BACS as 'Cleared of hazards with a large metal content to a specified depth' because verification should not be conducted in an area where any hazards (large or small) are anticipated, so searching for large hazards does not increase confidence at all. If the machine is followed up using percentage BACS and no evidence of explosive hazards is found, the entire area must be released as having been Verified as having NTE so 'Presumed Clear'.

4.4 Releasing land by Technical Survey

The Task Assessment should have determined High Probability Areas, Low Probability Areas and No Threat Evidence areas within the task area. A Technical Survey involves Search & Clearance of discrete parts of the task in order to gain safe access to other parts and to determine whether areas were correctly identified during the Task Assessment and the provisional Task Release Plan. This process is intended to establish and mark the approximate boundary of any wide-area that contains explosive hazards, identify the types of hazards present and allow an informed estimation of the type and number of devices that may be expected.

Because many recorded hazardous areas are much bigger than the area that actually is hazardous, a Technical Survey should always be conducted when work at a task starts. If a Technical Survey has been completed by another demining agency before the task is accepted, the results of that survey should be confirmed on the ground. If the marking left after any previous Technical Survey cannot be located, a new Technical Survey must be conducted.

The Task Assessment Team must define the precise areas (usually a pattern of breach lanes) to be made during a Technical Survey and the demining procedures that will be used to Search and Clear those breaches. The task supervisor must ensure that the assets required for a Technical Survey are first to arrive at a task site. Generally, they will be followed immediately by wide-area Search & Clearance of any High Probability Areas (HPA) that are identified.

The Search & Clearance procedures that are used in a Technical Survey depend on the demining assets that are available to be used and on whether or not a pattern of hazards is anticipated.

4.4.1 Technical Survey pattern in High Probability Areas (HPA)

High Probability Areas (HPA) are parts of the task area where the Task Assessment has shown that there is compelling reason to believe that there are hazards. These may be called ‘confirmed’ or ‘defined’ hazardous areas (CHA or DHA) by other agencies. HPAs should have been identified during the Task Assessment and marked on the map of the task area that is included in the provisional Task Release Plan.

Generally, a Technical Survey should begin with the Search & Clearance of access lanes and a breach pattern. If no lines or patterns of hazards are located, that does not prove that there are not randomly placed hazards in the area. If single hazards are located, that often implies that there will be more hazards in the unsearched area.

When no explosive hazards are located, the breach pattern must be clearly marked on the ground. The Technical Survey Team or the subsequent demining team must extend the searched grid by searching adjacent breaches until enough of the area has been searched to give the task supervisor total confidence to walk on the remaining area. The task supervisor should then consider whether the remaining area meets the criteria for Reduction, Verification or Cancellation.

When single mines or submunitions are located, the adjacent area must be searched to try to find a pattern. If no pattern is located, the Technical Survey team must record the area for subsequent Search & Clearance (or conduct wide-area Search & Clearance themselves). When one or more randomly placed explosive hazards are found, it is known that there may be randomly placed hazards in that area, so the surrounding area must be searched.

NOTE: *No grid breaching pattern can reliably confirm the absence of explosive hazards in areas where the hazards are not in regular patterns.*

Breach patterns can be either:

a) a grid of 10 metre wide breaches that are 40 metres apart; or

b) a grid of two metre wide breaches that are 8 metres apart.

The grid of searched breaches must be made across the High Probability Area using proven Search & Clearance procedures. The breaches may be mechanically prepared when appropriate. The wider breaches are often the most appropriate pattern to use when machines are available to prepare the ground in advance of manual Search & Clearance.

The breaches should be 8 or 40 metres apart whenever ground conditions permit. When 10 metre breaches are cut at 40 metre distances, 20% of a 50m wide-area has been searched. A 10 metre wide breach is very likely to cut through any pattern of explosive hazards that crosses the area. When two metre wide breaches are cut at 8 metre distances, 20% of a 10 metre wide-area has been searched. When some explosive hazards in a pattern may have detonated or moved, a two metre wide breach is less likely to reliably cut through any pattern of hazards that crosses the area.

A combination of 10 metre wide breaches and two metre wide breaches may be used as long as a total of at least 20% of the area is searched.

Five metre wide Searched & Cleared breaches must be made around the perimeter of the HPA. Whatever the shape of the perimeter, this should ensure that more than 20% of the area will have been searched and will allow the perimeter to be safely marked on the ground.

The grid should be designed to include any features within the HPA where explosive hazards are more likely to have been placed. These include places that would offer cover to an attacker and areas surrounding defensive positions, buildings and battle-damaged equipment. When the grid does not cover these areas, two metre wide breaches must be made to them and an area five metres around them must be Searched & Cleared.

When the grid has been completed and no explosive hazards (or evidence of hazards) have been found, the task supervisor must assess whether it is likely that there are randomly placed explosive hazards in the area. If there is any evidence to suggest that this is likely, either search must continue or the area must be recorded for subsequent wide-area Search & Clearance.

When an anticipated pattern of explosive hazards is discovered, that area should be marked for subsequent wide-area Search & Clearance. A minimum of five metres on either side of a hazard pattern must be Searched & Cleared. That area must be extended in areas where explosive hazard movement or minefield “patching” may have occurred. This means that Technical Survey can rarely define the perimeters of HPA precisely, so the perimeters must be permitted to change as the wide-area Search & Clearance is conducted.

4.4.2 Technical Survey pattern in Low Probability Areas (LPA)

Low Probability Areas (LPA) are parts of the task area where the Task Assessment has shown that there is no compelling reason to believe that there are explosive hazards. LPA will have been identified during the Task Assessment and marked on the map of the task area included in the Task Release Plan.

Although no specific explosive hazards are anticipated, a Technical Survey can be used to try to locate unknown lines or patterns of hazards or to confidently allow safe access to visually inspect the area. To do this, a grid of breaches should be Searched & Cleared across the area using approved Search & Clearance procedures. The breaches may be mechanically prepared when appropriate but the mechanically processed land must be followed up with a proven search procedure and any hazards cleared.

The grid must be designed so that at least 10% of the area is searched. If two metre wide breaches are cut at 18 metre distances, 10% of the area has been searched. If five metre wide breaches are cut at 45 metre distances, 10% of the area has been searched.

Two metre wide Searched & Cleared breaches must be made around the perimeter of the Low Probability Area. When the area is irregular in shape, this should ensure that the area actually searched is more than 10%.

The grid should be designed to include any features within the LPA where explosive hazards are more likely have been placed. These include places that would offer cover to an attacker and areas surrounding defensive positions, buildings and battle-damaged equipment. When the grid does not cover these areas, two metre wide breaches must be made to them and an area five metres around them must be Searched & Cleared.

If no evidence of mines or other sensitive hazards is found during the search but other explosive hazards are found, the potentially contaminated area between the breaches should be defined as a HPA and scheduled for subsequent BAC, BACS or the area Reduction procedures described in this Chapter.

If evidence of mines or other sensitive hazards is found during the search, the area around the finds must be redefined as a HPA and scheduled for wide-area Search & Clearance. The Technical Survey may be continued to try to find any pattern of hazards or the extent of limited contamination such as a submunition strike. The distance from hazards that must be Searched & Cleared is listed in the requirements for area reduction in this Part **** of this Chapter.

4.4.3 Technical Survey pattern in No Threat Evidence (NTE) areas

No Threat Evidence (NTE) areas are parts of the task area where the Task Assessment has shown that there is no reason to believe that there are any explosive hazards. Typically these are parts of the area that local people use and believe to be safe. NTE areas should have been identified during the Task Assessment and must be marked on the map of the task area that is included in the provisional Task Release Plan.

Technical Survey should not be conducted in NTE areas until after the HPA and LPA have been surveyed. When access across NTE areas is needed to reach other areas, two metre wide access lanes should be Searched & Cleared whenever there is any concern about their safety.

When no evidence of explosive hazards has been found during the Technical Survey of surrounding areas (within 100 metres), the NTE areas should be Cancelled (or, when appropriate, Verified) using the procedures described in Parts 3.3 and 3.5 of this Chapter.

When evidence of explosive hazards has been found in the surrounding areas of the NTE, the area extending at least five metres radius from the found hazard(s) must be searched (or recorded for subsequent Search & Clearance) and any remaining area leading up to the discovered hazard should be considered for subsequent area reduction.

4.4.4 Criteria for releasing land after Technical Survey

A task area cannot be released after a Technical Survey unless no evidence of explosive hazards is found, or the area has been processed as described above with all necessary search conducted.

After a Technical Survey, some areas will be recorded as having been Searched & Cleared. Others will usually be scheduled to be Searched & Cleared, Reduced, Verified or Cancelled in an updated Task Release Plan. The perimeter of any Searched & Cleared areas must be accurately marked on the task map with GPS co-ordinates accurately recorded for each Turning Point. When no evidence of explosive hazards was found at the task, the searched area need not be permanently marked on the ground unless the conditions in Part 4.4.5 of this Chapter apply.

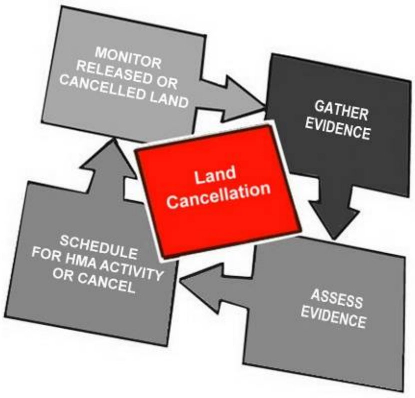
4.4.5 Marking after a Technical Survey

The perimeter of the task area (or as much as can be safely accessed) should have been marked before work started. Any temporary marking should be replaced with semi-permanent marking for each turning point and intermediate point around any Searched & Cleared areas or areas that require wide-area Search & Clearance before the Technical Survey at the task is completed unless it is immediately followed by the recommended wide-area Search & Clearance activities resulting from the survey. When this occurs, temporary marking may remain in place and permanent marking should occur when the task is ready for release.

The perimeter of the areas searched during a Technical Survey must be marked on the task map with GPS co-ordinates accurately recorded for each Turning Point. Each Turning Point must be marked on the ground whenever one or more of the following applies.

1. A Technical Survey is suspended for more than 30 days.
2. Evidence of explosive hazards is found and the Technical Survey is not immediately followed by the full implementation of a Task Release Plan.
3. Another demining agency will continue the task.
4. The NMAA requires that it should be.

4.5 Releasing land by area cancellation



With the NMAA's agreement, in certain circumstances the task supervisor can release a task, or part(s) of a task, by cancellation without any demining assets being deployed.

When the Task Assessment Team visits a task area and can find no reason to believe that there are explosive hazards in the area, the cancellation criteria must be applied. The cancellation criteria are designed to determine whether there is any reason to believe that the reported hazardous area is contaminated by explosive hazards. When there is no reason to believe that there are explosive hazards in an area, it presents NTE so can be 'Presumed Clear' and Cancelled.

A recorded suspected hazardous area that has been Cancelled must not be recorded as having been 'Cleared'. If a reason to believe that the area may be contaminated with explosive hazards becomes known later, the status of the area must be changed and appropriate demining assets deployed.

4.5.1 Area cancellation process

The area cancellation process depends on strict criteria on which a decision to cancel an area can be made. The cancellation criteria are applied in the following four stages.

1. Collecting the existing information about a task.
2. Gathering any new information with a site visit.
3. Analysing all available information.
4. Applying the criteria for cancellation.

The Task Assessment Team may cancel tasks, or parts of tasks, during their assessment as long as the criteria for cancellation are followed and a cancellation report is generated.

The task supervisor may cancel a part of a task as work progresses and it becomes clear that the part is not contaminated with explosive hazards. The task supervisor must analyse all of the information in the Task Folder and in the Task Release Plan before completing a cancellation Report.

4.5.2 Criteria for cancelling part(s) of a task area

The task supervisor can cancel parts of a task area that have NTE without applying any demining procedures when all of the following conditions apply.

1. There have been no reports of accidents to people or livestock within 150 metres.
2. There is no military record of a minefield within 150 metres.
3. No explosive hazards have been discovered within 100 metres.
4. There is no evidence that the area was a battle area.
5. There are no features on the land that may have been defended.
6. Local people have used the area and report no explosive hazard threat.
7. When ground between the No Threat Evidence area and the nearest explosive hazard found has been Reduced and no evidence of explosive hazards was found.
8. When the task supervisor is confident to walk or drive over the land.

If all of these conditions are not met, area reduction by percentage Search & Clearance should be considered and parts may be Cancelled later.

If all of these conditions are met, a Cancellation report should be completed and included in the Task Folder along with a detailed map of the area that has been Cancelled. The perimeter of the Cancelled area must be marked on the task map with GPS co-ordinates accurately recorded for each turning point.

When demining assets have been deployed in Technical Survey or Search & Clearance at other parts of the task, the perimeter of the Cancelled area that borders areas that have been Searched & Cleared, Reduced, or Verified, should be marked with turning points and intermediate marking. The perimeter bordering land outside the task area need not be marked on the ground. The boundary of the permanent marking then records the area that has been subjected to demining procedures. The boundaries of the Cancelled area are recorded by GPS coordinates.

An example of the cancellation report format is included in Chapter 15 of these SOPs.

4.5.3 Criteria for entire task area cancellation

The Task Assessment Team may cancel an entire task area when all of the following conditions apply.

1. All available information about the task has been collected, local people and authorities have been interviewed and:
   - there have been no reliable reports of accidents to people or livestock in the task area;
   - there is no reliable military record of a minefield in the task area; and
   - there are no reliable reports of explosive hazards being discovered in the task area.
2. The task site has been visited by the Task Assessment Team and:
   - there is no evidence that the area was a battle area;
   - there are no features on the land that may have been defended; and
   - there is no strategic reason for the task area to have been mined.
3. Local people have been interviewed and have used the area and report no explosive hazard threat.
4. The Task Assessment Team is confident to confirm their judgement by walking or driving over the land to be Cancelled.

An entire task area may also be Cancelled if the Task Assessment Team find that the GPS coordinates of the task area have been incorrectly recorded and the description of the area in task documentation included in the Task Folder does not match the conditions on the ground. When this occurs, the Task Assessment Team must complete the following activities.

1. Review the Task Folder and try to identify the real position of the recorded hazardous area.
2. Interview available local people and local authorities to try to identify the real position of the recorded hazardous area.
3. Accurately record the boundaries of the area to be Cancelled using GPS and produce a detailed map of the area.
4. Walk or drive over the area to be Cancelled.

If the real position of the hazardous area is discovered, a Landmark and Bench-mark for the real position must be recorded and their coordinates reported to operations manager and the NMAA. The operations manager should ask the NMAA whether the real co-ordinates are recorded as a separate task area. If they are, all details recorded for that area should be forwarded to the Task

Assessment Team. The Task Assessment should then be conducted on the correct area and a Task Risk Assessment and preliminary Task Release Plan produced.

When the four conditions above are met, a cancellation report should be completed and included in the Task Folder along with a detailed map of the area that has been Cancelled. The perimeter of the Cancelled area must be marked on the task map with GPS co-ordinates accurately recorded for each turning point. The Cancelled area need not be permanently marked on the ground unless the NMAA requires it to be. An example of the cancellation report format is included in Chapter 15 of these SOPs.

The task can only be Cancelled with NMAA approval, so the NMAA should assess the cancellation report as a priority and decide whether to accept its conclusions.

4.5.4 End-user acceptance

The use of all land that is released depends on the end-user's confidence in its safety. If end-users do not agree with the cancellation of a task or part(s) of a task, something must be done to the land in order to raise their confidence to the point where they agree that it can be 'Presumed Clear'. This may be achieved by using area verification procedures in the area. Because the land has NTE, it does not need to be Searched & Cleared and will not be recorded as having been 'Cleared', merely as an area Verified as presenting NTE so 'Presumed Clear'.

If any detonations or evidence of explosive hazards is found during verification, the decision to verify the Land must be revoked and the Task Release Plan revised to include Search & Clearance where necessary.

5. Task Assessment Team

A Task Assessment Team should be sent to each task area before demining assets are deployed. The Task Assessment Team should include, as a minimum:

- an operations office representative;
- the task supervisor who will be responsible for the task;
- the MRE specialist from the team scheduled to undertake the task; and
- two Technical Survey trained deminers who may also be trained Small Unmanned Aircraft (SUA) pilots.

A specialist Task Assessment Team may be formed to replace the above.

The operations manager will issue each Task Assessment Team with a Task Folder containing all information about the task that is available. The Task Folder should include aerial pictures or satellite imagery. When approved by the NMAA, appropriately trained SUA pilots may use Small Unmanned Aircraft (SUA) to overfly the area and record detailed camera images as an aid to task planning. When SUA are used, they must be deployed in accordance with the requirements given in Chapter 10 of these SOPs.

6. Making a Task Assessment

A Task Assessment is conducted in the six stages shown below.

STAGE	TASKS	RESPONSIBLE
1. Information gathering	Information from existing survey data and the NMAA must be collected into a Task Folder.	Operations manager (QA by programme manager)
2. Preliminary analysis of information	Analyse the available information to identify missing or conflicting information and decide the level of confidence that can be given to recorded details. List people who should be interviewed and plan questions to ask during the visit to the task area.	Task Assessment Team (QA by operations manager)
3. Visit to the general area	Check existing information and gather new information from all available sources.	Task Assessment Team (QA by operations manager)
4. Visit to the task area	Gather detailed information about the task area. Assess the task in terms of HPA and LPA. Gather information that will make deployment efficient. This may, with relevant permissions, include gathering data from a camera over-flight using SUA.	Task Assessment Team (QA by operations manager)
5. Assessment of the available information and assigning threat levels	The new information should be added to the existing information and the details reassessed. The task area should be divided and an appropriate probability of hazards being present assigned to each part. The boundary between these areas must be marked on a sketch map of the task site.	Task Assessment Team (QA by operations manager)
6. Documentation	Write a Task Risk Assessment and a preliminary Task Release Plan. Copies of these documents must be sent to the operations manager and kept in the Task Folder. When required, the preliminary Task Release Plan should be approved by the NMAA.	Task Assessment Team (QA by operations manager)

6.1 Information gathering

The information about the hazardous area that is available before starting a task varies in quality and quantity depending on the type of survey(s) that gathered it. In order to make informed decisions over the most efficient approach to the task, it is necessary to assess and check the information that is already available. The gathering of existing information is the responsibility of the operations office but the Task Assessment Team should also actively seek new sources of existing information.

Before they make a site visit, the Task Assessment Team must be given a Task Folder containing all existing survey data including how, when and why the information was gathered. The Task Folder should be provided by the NMAA. Other details, such as satellite images or data from other sources, should be added by staff in the operations office.

6.2 Preliminary analysis of information

The Task Assessment Team must meet to review the content of the Task Folder to identify:

- discrepancies or contradictions;
- unanswered questions; and
- people likely to have relevant information.

Background information about the context of the survey (which may have been conducted quickly or when security prevented the movement of survey staff) should also be gathered, along with information about the people who conducted the survey and whether they are available for interview.

Cross-referencing information from different informants is essential. Information from a single source may be entirely correct but should be checked against information from others whenever possible.

Making use of former military combatants as informants at community, provincial and national level should be a natural part in the information gathering process. The cost of finding reliable informants should be carefully weighed against their value in terms of accurate and relevant information. Decisions over the temporary employment of former combatants must be made by the programme manager and approved by the NMAA, which may be able to provide a useful assessment of their credibility as informants.

Adequate time and resources must be allowed for the Task Assessment Team to gather new information. The cost of their work will usually be far less than the cost of deploying demining assets to areas that do not need to be Searched & Cleared.

6.3 Visit to the area of the task

The Task Assessment Team must visit the communities in the task area and the local authorities responsible for the administration of that area. The visit will check the recorded details of the task, gather new information about the task and identify new individuals who may have information of relevance. When previous surveys listed names of local informants, they should be located and questioned.

Whenever possible interviews should be conducted with:

- all persons named in the Task Folder;
- representative(s) of the local administrative authority;
- representatives of the local community;
- people living within 500 metres of the task area or using the land around (or in) the task area; and
- former combatants in the area.

Interviews must be formally conducted using a prepared list of questions that is designed to check existing information and answer questions arising from the study of the Task Folder. Questions and responses must be recorded in writing and added to the Task Folder.

Men, women and children should be interviewed because they use the land in different ways and may have different knowledge of the task area.

Interviews should be conducted so that the people interviewed are not aware of the answers provided by others.

6.4 Visiting the task itself

The Task Assessment Team must make a site visit to the recorded task area. The Task Assessment Team will not normally be equipped to enter a hazardous area, so must keep to known safe-areas when making their assessment. Their site assessment should do as many of the things listed below as possible.

1. Confirm or correct the approximate location and extent of the task boundaries.
2. Record GPS coordinates of the approximate perimeter of the task, taking care not to enter it.
3. Identify and mark/record one or more landmarks outside the task area.
4. Identify and take GPS co-ordinates for the task bench-mark.
5. Record details of the local terrain with digital photographs or aerial photography.
6. Estimate the likely soil contamination with minerals or scrap metal (by using a metal-detector near to the perimeter of the task).
7. Describe ground conditions and the vegetation that is present.
8. Determine whether it is likely that any parts of the task site will be waterlogged.
9. Determine whether it is likely that any parts of the task site will have one or more of the following obstructions:
    - Rocks;
    - Fences and wire;
    - Vehicle wrecks;
    - Ditches/trenches;
    - Abandoned or destroyed buildings; and
    - Fallen trees.

10. Identify the easiest access route to the site.
11. List the suspected explosive hazard types and density.
12. Estimate the probable depth of search required.
13. Identify possible accommodation/campsites with suitable water supply.
14. Identify nearby sources of food and consumables.
15. Identify one or more possible MEDEVAC routes from the task to the nearest hospital(s);
16. Identify schools, churches or local residents where the MRE specialist will explain what is happening and meet local MRE needs.
17. Draft a detailed sketch map of the task site.

A written record covering all of the above (and anything else of relevance) should be included in the Task Folder.

When the NMAA and Civil Aviation Authorities have approved the use of Small Unmanned Aircraft carrying cameras, visual data obtained from a detailed camera over-flight of the task area can be a valuable planning aid. The SUA shall only be operated by suitably trained and accredited pilots. The use of SUA is covered in Chapter 10 of these SOPs.

6.5 The Task Assessment

When the task area, the local authorities and any people living nearby have been visited, the Task Assessment Team must make a Task Assessment based on all of the available information. To ensure that previous assumptions and conclusions are verified or adjusted according to the updated information, the entire Task Assessment Team must analyse the revised information. After analysis, it may be necessary to question people again or find new informants. The team must strive to reach agreement and evaluate the information as objectively as possible.

The experience of the Task Assessment Team is important because their experience of previous demining operations and knowledge about how explosive hazards were typically used in the conflict can be very valuable. Their detailed knowledge of the hazards previously found, the condition of these devices, the areas where they were found, and the depth at which they were concealed, all add value to the assessment.

When their assessment is completed, the Task Assessment Team must produce the following documents.

1. A sketch map of the task area which should show high and low probability levels for different areas and the GPS co-ordinates for the proposed position for the task bench-mark.
2. A Task Risk Assessment (see Chapter 14).
3. A preliminary Task Release Plan.

These documents must be added to the Task Folder before it is given to the task supervisor who will control the demining at the task or the separate Technical Survey team when one is sent in advance.

6.5.1 Sketch map showing probability levels

The sketch map of the task area should divide the area and assign each part one of the three categories shown below. In many cases the task area can be divided into parts with different probability levels, but when not, the entire area can be given a single probability level.

Probability levels	
High Probability Area (HPA)	These are areas where there is a very high probability of there being explosive hazards.
Low Probability Area (LPA)	These are areas where the information is conflicting and the reliability of information is not conclusive. The presence or absence of explosive hazards needs to be confirmed by the use of appropriate procedures.
No Threat Evidence (NTE)	These are areas where there is no indication that any hazard is present.

NOTE: *NTE areas do not have to be known to be safe, but there must be no reason in the available information for anyone to reasonably believe that there are explosive hazards there.*

The sketch map should also show the landmark and the proposed benchmark.

The sketch map should also show the location of one or more task start line(s).

6.5.2 The preliminary Task Release Plan

The Task Assessment Team must write a preliminary Task Release Plan for the task which will be revised as work progresses. This will include a detailed sketch map showing all of the task area and the probability levels provisionally assigned to the separate parts.

The team must also write a preliminary Task Risk Assessment that will be revised as work progresses. This will help to identify the appropriate demining procedures and assets to use. Task Risk Assessments must follow the formal procedure that is described in Chapter 14.

Planning to search as little of the task area as is necessary for its safe release, the Task Assessment Team must provisionally decide the:

- demining procedures to be used in each probability level area;
- required depth of search (which may vary where different hazards are anticipated); and
- sequence in which demining procedures must be used.

The demining procedures and the sequence in which they are used may be critical for cost efficiency and to avoid wasting time, but will often need to revised as work progresses and more becomes known about the task.

In addition to the above, the preliminary Task Release Plan must include the following details.

1. The place where the task bench-mark must be positioned.
2. A sketch of the safe-area site layout, taking account of all features on the ground.

NOTE: *When demining machines will be used, the safe-area site layout must be adjusted to include the wide access lanes and the machine inspection and parking areas that machines require. When MDD will be used, the safe-area site layout must be adjusted to include an MDD test area and MDD rest areas that meet the MDD coordinator's requirements.*

3. A detailed list of all equipment and consumables that will be needed. This must cover the predictable needs of the manual demining team(s) and should cover the predictable needs of all other demining assets that will be used.
4. An estimate of the time that will be needed to complete the task. This should presume that the entire High and Low Probability Areas will need to be processed using wide-area Search & Clearance procedures and so will usually be more time that is actually needed.

7. Technical Survey

Those conducting any Technical Survey must follow the Search & Clearance procedures detailed in Chapter 6. It is never acceptable to conduct a Technical Survey using a reduced standard of Search & Clearance or a revised approach to risk.

Unless a reliable Technical Survey has already been conducted at a task area before the task is accepted, Technical Survey should be combined with wide-area Search & Clearance. This promotes efficiency by preventing having to deploy Search & Clearance assets to the same task area twice.

The demining procedures recommended in the provisional Task Release Plan should begin with Technical Survey to determine which parts of the task are HPA and so will start to be processed using wide-area Search & Clearance procedures. The provisional Task Release Plan must include the positions of one or more start lines that will allow a direct approach to the area(s) where explosive hazards are most likely to be.

The Technical Survey should try to determine:

- where any pattern(s) of explosive hazards is/are located;
- the types of explosive hazards present and their condition;
- the depth of buried explosive hazards; and
- any revisions to the Task Risk Assessment and provisional Task Release Plan that are needed.

If a Technical Survey is conducted separately from wide-area Search & Clearance, a Technical Survey report must be generated. This must include an accurate task map. The areas searched during the Technical Survey must be marked on the ground. The perimeter of the area(s) recommended for further Search & Clearance must be marked on the ground at all Turning Points and Intermediate Points. Perimeter hazard warning signs should remain around the entire task area (or as much of it as can be safely accessed).

If the Technical Survey does not confirm the presence of explosive hazards at the task, the principles for area cancellation detailed in this Chapter should be followed, but hazard warning signs should remain until the NMAA has authorised the release of the land and the removal of the signs.

7.1 Technical Survey teams

Generally, Technical Survey teams are not deployed separately because a Technical Survey is a part of every task. This means that a Technical Survey team is usually a demining team with two or more sections. Subject to the maintenance of appropriate working distances, a Technical Survey may be conducted in part(s) of a task while wide-area Search & Clearance is being conducted in other part(s). However, when appropriate, a Technical Survey team may be sent to a task in advance.

When conducting a Technical Survey in advance, the following rules must be applied.

1. All members of the team must be first aid trained.
2. All deminers in the team must be deminer trained and accredited.
3. At least one EOD trained deminer must accompany the team.
4. The team must be led by a fully trained team leader who may be appointed task supervisor by the operations manager.
5. The team must be accompanied by a paramedic and ambulance.
6. Before starting work, a landmark and bench-mark must be marked and recorded.
7. Before starting work, a MEDEVAC plan must have been made in writing and be known by the paramedic and ambulance driver.
8. If there may be a significant time lapse between the Technical Survey and any subsequent wide-area Search & Clearance, the recording of detailed and accurate maps is essential.

An advance Technical Survey team must explain what they have done and ensure that the local people and the appropriate authorities understand that the land has not been ‘Cleared’ when they leave. When the Technical Survey has found NTE during their work and is recommending that the task be Cancelled, it is the NMAA that must decide whether to accept the recommendation and formally release the land to the end-users without further activity.

When a Technical Survey finds nothing, they need to know when to stop. The criteria for this must be given in the Task Folder for that specific task. When the Task Assessment has already identified HPAs with convincing evidence, it may be necessary for the Technical Survey to search an entire HPA in order to achieve confidence that there are no hazards present. Generally, if the anticipated hazards are found in the HPAs, area reduction should be conducted in the LPAs and the areas with NTE should not be searched at all. However, the classification of High and Low Probability Areas can change as evidence of hazards is found, so the Task Release Plan must be revised as often as necessary. A provisional Task Release Plan that is not revised as work progresses can be an indication that something is wrong with the management of the task.

8. Releasing the land

The final release of the land is generally the responsibility of the NMAA or other government body. The NMAA should conduct any external QC work that they require and arrange for the issue of a handover certificate in a timely manner. When that may take some time, the task supervisor should ensure that the local community know that the deminers are leaving the task and what they have done. The task supervisor must emphasise the residual risk of devices beneath the depth searched and in areas that were ‘Presumed Clear’ so Search & Clearance was not conducted.

Hazardous area warning signs should be left in place until the NMAA formally accept the Completion Report and authorise the removal of signs when scheduling the handover of the land to the end-users. The NMAA accepts any liability for residual risk in the area as soon as they accept the Completion Report. However, if it can ever be shown that this organisation bears some responsibility for an error in the land release process, the programme manager must prioritise the correction of that error.

If an explosive hazard is located on land this organisation has declared Searched & Cleared, the programme manager shall accept responsibility, order an in-depth investigation into how the incident occurred, and ensure that the area is re-searched using proven procedures and enhanced supervision as a priority. When appropriate, other procedures and/or assets should be used to gain complete stakeholder confidence in the quality of the search.

The land release process is a cycle of continuous improvement. If an explosive hazard is found on land that this organisation has submitted for release as ‘Presumed Clear’, the release process involved the NMAA and the end-users agreeing that there was no evidence of explosive hazards in the area so this organisation is not at fault. However, this organisation must assist with the NMAA’s investigation or conduct an internal investigation with a view to discovering the causes and improving the land release process. It must never be presumed that the hazard was placed after the land was released without compelling evidence that this was the case.

Annex A: the land release IMAS

Organisations working in HMA have always Cleared and released land and there is nothing new about general surveys, Technical Surveys and Search & Clearance. The main reason for the new name 'land release' is that the IMAS have introduced what they call 'Non Technical Survey' (NTS) or 'Desk Survey'. This could be more correctly called a 'Non-Technical Assessment', because there is no actual requirement to visit the SHA, much less to survey it.

This IMAS 07.11 states that land release aims to ensure that assets are deployed to "achieve as much as possible, for the minimum cost in the shortest time". It does not mention the primary goal of HMA, but reducing risk to the civil population underpins all of the IMAS so can be safely presumed.

According to the IMAS, land release involves "establishing and improving the definition of where mines/ERW are to be found". The land can be released when there is 'justifiable confidence' that there are no explosive hazards present. This SOP is designed to achieve that with realistic pragmatism. Critical to the land release process is the need to base decisions on hard evidence. All reasonable effort must be made to find whether there is enough evidence that an area is hazardous to justify deploying Search & Clearance assets to it.

'All reasonable effort' is hard to define because what one person considers reasonable, another may not. Unhelpfully, the IMAS explains that "all reasonable effort has been applied when the commitment of additional resources is considered to be unreasonable in relation to the results expected". This explanation is vacuous because it relies on what is considered 'unreasonable', which is not defined anywhere in the IMAS.

What is 'reasonable' is a matter of subjective judgment that may change over time, so what the law thinks is 'reasonable' behaviour in a 'humanitarian' activity is the only definition that really matters.

The photograph shows a tractor that was destroyed by a large AT mine after 'all reasonable effort' had not been applied to Search & Clearance of the owner's land. A professional international humanitarian demining organisation had declared the area Cleared, so a court of law might well think it 'reasonable' for the farmer to have believed his land was safe to use.

Land release and international norms

HMA is partly funded to encourage compliance with international norms and treaties, so the international norms over what is 'reasonable' and 'tolerable' are legally relevant.

When an organisation works in another country, its Health & Safety responsibilities may be subject to the laws in their base country, or even in a third country. There have been two court cases in which an injured deminer has successfully sued an organisation for failing to do 'everything reasonable' to minimise their risk. Both court cases were brought outside the country where the demining accident occurred. In the first case, the deminer brought a legal action in a UK court which led to the award of substantial damages. In the second example, the legal action was brought in the USA, and the demining organisation settled out of court by paying very substantial damages.[1]

[1] *See DDASaccident227 and DDASaccident152 at www.ddasonline.com*

This demonstrates how an organisation's failure to make 'all reasonable effort' to achieve a result that involves 'tolerable risk' is not only in conflict with the primary goal of HMA, it could also cost them significant money.

In another management failure one famous INGO had its accreditation withdrawn in two countries[2] after unnecessary accidents and repeated cases of leaving explosive hazards in areas they said they had 'cleared'.

The organisation was taking a huge reputational risk but was saved when the national authorities involved chose not to make its failings widely known. Their reticence was apparently not intended to protect the organisation involved: it was intended to protect their donors from adverse publicity about how they had allowed their money to be spent.

The photograph shows examples of explosive hazards found after land has been released. All except the BLU-97 (lower left) were clearly visible on the day the land was released, so indicating that the procedures used to search the area were either inadequate or inadequately conducted and supervised. Even the BLU-97 would have been located in any disciplined metal-detector search.

Surveys in HMA

Most first surveys of a country's problem with explosive hazards have been flawed. Early 'Level 1 surveys' did not record the impact the explosive hazards had on the people, so made prioritisation in terms of humanitarian benefit impossible. Later 'Impact surveys' made recording the impact of explosive hazards on the people a priority, but did not gather accurate data about the nature or extent of the explosive hazards. Both kinds of survey recorded huge areas as hazardous. They had to do so because the surveyors were not equipped to safely investigate the extent of the hazardous areas. Although large areas were recorded as hazardous, it was always known that most of that land would not really be hazardous at all.

The introduction of NTS began as an attempt to formalise 'area reduction' and Technical Survey and so reduce the risk of wasting time and money using Search & Clearance procedures where there were no hazards to clear. Change was thought necessary because organisations had varied approaches and some worked for many months where there were no hazards. Others released land as Reduced or Cleared without applying a well founded system and then end-users found that the areas were still hazardous.

The deminer in the photograph alongside is searching in an area where there are no mines. A Level 1 survey in that country had recorded the area as mined and the NMAA had decided that it must be Searched & Cleared despite the fact that local people regularly gathered hay there and avoided a real minefield close by.

The demining organisation respected the decision of the NMAA but by doing so they wasted donor funds and lost credibility.

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[2] Full documentation of the withdrawal of accreditation is held but is not for publication.

Practical surveys in HMA

However good the previous surveys may have been, it is the organisation that accepts the task that will carry the responsibility for anything that goes wrong so all previous information must be checked.

This SOP requires that a pre-deployment Task Assessment is conducted. All previous survey data is gathered by a team who visit the area, speak to all stakeholders and try to check the veracity of existing evidence while gathering new evidence. With all available and up-to-date evidence gathered, a provisional 'Task Release Plan' is made. The plan identifies parts of the task where there is a high or low probability of there being hazards presents and may also identify areas with no evidence of there being any explosive hazards. This allows the task to start with a targeted Technical Survey as a result of which the Task Release Plan is revised. This ensures that the area(s) that need to be subjected to Search & Clearance are identified and effort is concentrated where it is most needed.

Land is then Reduced or Cancelled post-clearance because the areas to reduce are decided based on hard evidence gained at the task.

The photograph alongside shows a defended rocky outcrop that was used because the defenders could see over a very wide area. Their enemy could have attacked from any direction. No minefield records were available and there were no residents to ask, so no one could estimate how extensive the defensive minefields were or how much UXO/AXO contamination there was before starting Search & Clearance with a structured Technical Survey.

Non Technical Survey (NTS)

In countries that do not have a previous record of hazardous areas, NTS is intended to be a Level 1 survey (assessment). It is designed to ensure that a reported SHA is only added to the database of hazardous areas when there is real evidence that it is hazardous. All recorded sources of evidence are examined and the area <u>may</u> be visited for local people to be interviewed before a decision is made. When a visit to the area is made, a full NTS could gather more information than in previous Level 1 or Impact surveys but this is uncertain because no field survey is required.

In countries with an existing but inaccurate record of SHAs, NTS is used to reduce the size of recorded SHA or to delete their record entirely ('cancel' the record). Removing double-entries or erroneous entries from the record is an uncontroversial part of NTS but the criteria for reducing or cancelling other recorded hazardous areas is problematic.

According to the IMAS, NTS involves examining why areas were first recording as hazardous and reducing or cancelling those records that fail to meet undefined but '<u>evidence-based</u>' criteria. The IMAS does recommend making field visits during NTS but this is not a requirement so records of hazardous areas can be changed or deleted without visiting the area to check or gather evidence.

When the reason for recording the area as hazardous was not recorded, making a decision based on the absence of recorded evidence is questionable because an absence of evidence is not proof that no evidence could be found if it were looked for. The absence of recorded evidence may only indicate poor survey techniques or inadequate data management in the past. When this happens the only evidence may be the fact that a record of a hazardous area exists but the fact that the area was recorded as hazardous is evidence that someone once believed it was.

When there is some recorded evidence but the reliability of the source is not known, there is no evidence on which to base a decision about how reliable the source is.

Currently, no international record is kept of hazards found after land release so there is no way to judge the efficacy of the varied criteria for ‘evidence-based’ land release that are used. For this reason, the principles of NTS (including suggested definitions of the required evidence) are included in the Task Assessment that this organisation must conduct before starting any task because there is an ‘intolerable’ risk that an incorrect decision to reduce or cancel SHA or parts of SHA would lead to civilians suffering.

Inadequate evidence

The criteria in this SOP for making the decision to reduce or cancel land should be adjusted for the working context and agreed by the NMAA. Whatever criteria are used, they will require judgments that may be wrong and must be rapidly revised if they are.

Some people have said that if the recorded SHA is not on land that is being used, its record as an SHA should be Cancelled. While this may appeal to the common-sense of people with no field experience, it is wrong because many people have homes and land that they must use whether or not it is hazardous. People may wait a very long time for deminers to come to their area and while they wait, they manage their risk in the only ways that they can. The fact that the land is being used is not evidence that the land is hazard free. On the contrary, it is often evidence that the Search & Clearance of the land should be prioritised.

The picture on the right shows a woman living on the edge of a minefield (the marking sticks are visible in the foreground).

In search of a simple reason to delete records of SHA, others have argued that when no one lives nearby and the land is unfenced, there is no reason to Search & Clear it.

The unfenced land shown on the right was not formally owned or used, but free-roaming livestock grazed it. These sheep died after initiating a bounding fragmentation mine that was a long way from where anyone was living. The death of the sheep was a serious economic loss to the community and made people go into the hazardous area to look for them.

When land is not formally owned or used, that may be a legitimate reason to make its Search & Clearance a low priority. In that case, the IMAS have always required that the land should be marked as being hazardous to prevent people unwittingly entering the area.

Ownership and regular use are not valid criteria for deleting the record of an SHA. The rural women shown on the right were crossing a nominally unused area that was an unmarked minefield when they somehow initiated an AT mine.

There are no easy or simple rules for SHA cancellation based on whether the land is used or not.

In this SOP, pragmatic criteria for reducing or cancelling all or part of a SHA are suggested and must be revised to better reflect the situation in the context where its is used. The process will very rarely be simple, but it should allow parts of most SHA to be formally Reduced or Cancelled. This will occur when there is real evidence supporting the absence of hazards, which will often be after the work has been started.

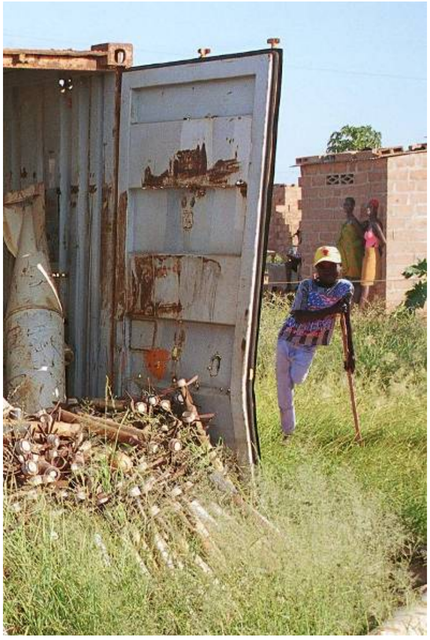
IMAS 07.11 states that, "While fear of the presence of explosive hazards may lead people to avoid an area, fear is not evidence that there are explosive hazards in the area. Fear must be supported by other evidence before an area is recorded as hazardous and HMA assets are used in the area." This sounds 'reasonable' but it does not address the fact that people who are afraid to use land are still not going to use it, so it is not doing 'everything reasonable' to release land for use.

The Ottawa Convention[3] defines a mined area as "an area which is dangerous due to the presence or suspected presence of landmines" (Article 2, para 5). The words 'suspected presence' show that the current wording of the IMAS is in conflict with the Ottawa Convention, which is presumably a mistake.

In this SOP, the use of Verification measures to raise end-user confidence in the safety of land for which there is No Threat Evidence (NTE) shows that this organisation is doing 'everything reasonable' to achieve the release of safe land to the community while still being demonstrably cost-effective and exceeding the requirements of the IMAS.

Mine free land release

IMAS 07.11 also states that: "Land may be released from the suspicion of there being mine or submunition contamination while there is still a suspicion that other ERW is present."



So land could be released as 'mine free' or 'submunition free', but not 'explosive hazard' free.

The boy in the picture alongside is standing beside an abandoned ammunition storage area where there are no obvious mines, so according to this IMAS an HMA organisation could declare the area 'mine free' and release that task.

The absurdity of the notion of 'mine free land release' is demonstrated because no one could possibly know whether there were mines around or inside that storage container without first removing all of the explosive hazards that are visible and then searching the surroundings for mines.

The concept of an area being declared 'mine free' while there is still reason to suspect that other explosive hazards are present is not of any value to any HMA organisation actually engaged in Search & Clearance because HMA has always included the removal/destruction of all explosive hazards in the working area. HMA organisations must do this to be IMAS compliant because the IMAS definition of 'Clearance'[4] is "…tasks or actions to ensure the removal and/or the destruction of all mine and ERW hazards from a specified area to a specified depth".

The reason for the inclusion of this apparently contradictory concept in the IMAS is obscure because, even if an area were 'mine free', HMA is all about reducing the impact of explosive hazards of non-combatants. While civilian mine casualties are common immediately post-conflict, the majority of civilians suffering explosive injuries are not injured by mines, so declaring an area 'mine free' while still contaminated with explosive hazards would miss the point of HMA entirely.

[3] The *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel mines and on Their Destruction*, otherwise known as '*The Mine Ban Treaty*'.

[4] IMAS 04.10 Glossary

Need for data

It is critical that the reasons (criteria) for releasing land should always be reviewed in light of evidence gained after the land has been released.

The monitoring of released land is a critical safety requirement in the IMAS land release concept and requires a cycle of continuous critical analysis and system refinement. The NMAA should keep a detailed and accurate record of incidents in which hazards that are found after land has been released. It should then investigate these incidents in order to discover why their land release criteria and procedures failed, then correct those failings. This is essential for land release to work safely but it is not a requirement in the IMAS so does not have to be done.

The distinction between 'shall' and 'should' in all of the IMAS is the difference between an obligation and a recommendation. To be IMAS compliant, all 'shalls' must be done but anything that 'should' be done is only a recommendation.

It is probable that if all of the recommendations in the IMAS on NTS were followed, the quality of an NTS survey would be higher than in previous HMA surveys. However, an IMAS compliant NMAA can choose which recommendations to follow so the costly checks over the safety of land release criteria, including those for area reduction and cancellation, need not be made.

It is regrettable that the first 'shall' in the Non Technical Survey IMAS occurs near the end when it states that the NMAA shall ensure that liability issues related to the cancellation of land are addressed. There is a real risk of litigation over inappropriate land release and the IMAS seeks to place the liability for that onto the NMAA. However, the fact that the NMAA is not required to adopt all aspects of the land release system makes any failings a failing of the IMAS, not the NMAA. The internal contradictions and inconsistencies within the IMAS make it highly unlikely that a national or international court of law would hold the NMAA responsible when land is inappropriately released.

Any demining organisation that relied on the NMAA being held legally liable for land release failings that the organisation had not corrected would be making a mistake. A court could probably do little more that criticise the IMAS Review Board because it enjoys UN immunity and the adoption of the IMAS is nominally voluntary. However, there are precedents for an international court deciding that the failure of an international HMA organisation to do all that is reasonable to avoid safety errors can be held liable for any costs and compensation involved, including punitive compensation. To avoid legal responsibility, it is incumbent on each demining organisation (including the NMAA when it is able to do so) to identify and correct the failings of the land release IMAS while pursuing their HMA goals.