Photo: Ben Lark

BOOK I: WEAPON CONTAMINATION ENVIRONMENT

The decision whether to implement activities depends on the environment, which is often complex
This book provides an overview of the key issues to consider as a basis for operational decision making

ICRC

Preface

This manual has been written to act as the ICRC's institutional reference and to provide guidance for those working in weapon-contaminated areas. This includes to a greater or lesser extent any situation where the persisting presence of contamination continues to impact people physically, socially or economically.

The manual consists of three books and is based on the "Preventive Mine Action Operations Framework", approved by the ICRC in 2005. It outlines a broad and flexible approach which includes rapid response, multisectoral approach (the application of assistance and protection to reduce impact) and cooperation/capacity building.

This manual was primarily written by Ben Lark and Lena Eskeland with important contributions from many people working both at headquarters and in the field, in particular Boris Cerina, Robin Coupland, Herbi Elmazi, Patrick Fruchet, Ute Hofmeister, Srdjan Jovanovic, Matthieu Laruelle, Kathleen Lawand, Lou Maresca, Morris Tidball-Binz and Andy Wheatley. External contributions were made by Stuart Maslen of the Geneva International Centre for Humanitarian Demining, and photographs were provided by Chris Clark, the Danish Demining Group, Tim Lardner, Ben Lark, Matthieu Laruelle, Chris North and Andy Wheatley.

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CONTENTS – BOOK I

WEAPON CONTAMINATION AND ITS CONSEQUENCES

1

Developing effective mine action activities, requires a basic understanding of ordnance types, the wounds they cause and their probable physical, social and economic impact.

1.1 Landmines and ordnance

Weapon contamination refers to landmines and explosive remnants of war (ERW). ERW consists of both unexploded ordnance (UXO) that has been fired but has failed to explode, and abandoned ordnance (AXO).[1] Abandoned ordnance is left behind by combatants because it is too difficult to move, or because it has simply been forgotten or abandoned in the heat of battle. Mines are deliberately scattered or planted with the intention of inflicting casualties, channelling forces for tactical reasons and precluding access to certain areas. Unexploded ordnance, on the other hand, should be considered as the unplanned consequence of the use of weapons systems – with the exception of munitions dropped or planted with an anti-disturbance element deliberately incorporated with the express intention of hampering clearance operations.

The reasons for ordnance failure may include manufacturing faults, poor storage, use of out-of-date ammunition, failure to properly set fuses, incorrect firing procedures, soft terrain or terrain which the ordnance was not designed for and heavy rain. This list is not exhaustive, but gives some idea of the range of reasons why unexploded ordnance is created.

This following section gives an overview of the main categories of landmines and ordnance. It is important to remember that new weapons systems, explosives and delivery systems are constantly being developed, especially now that the typical tactical requirements have changed from the more conventional "industrial war" scenario to smaller less conventional engagements, or "war amongst the people".

Fuses

Fuses are the first element in the explosive train which is the sequence of events that culminates in the detonation of ordnance or landmines. For example, a flame will not cause plastic explosive to explode, but it will light a fuse which will detonate the initial or primary explosive that will trigger a secondary high explosive and cause it to detonate.

Examples of anti-personnel mine fuses.

For safety reasons, most widely used high explosives are difficult to detonate. A primary explosive of higher sensitivity is therefore used to trigger a detonation of the main body of the explosive. Although the primary explosive itself is generally a more sensitive compound, it is only used in small quantities, normally as an integral part of a fuse. Without a fuse, most ordnance and landmines are relatively safe. However, fuses are often found in battle areas and can pose a serious threat if handled. Some types of fuse pose a particular threat to children who sometimes mistake them for pens.

1 Througout the manual, different combinations of these terms may appear. Please note, however, the technical differences outlined in this chapter, and the different legal rules that apply (See Chapter 2 for more details, and also Book III).

Improvised explosive devices (IED)

Manually placed explosive devices, home-made and adapted in some way, possibly including manufactured ordnance (for instance artillery shells or air-dropped bombs). *See Book III for more details on the law related to this.*

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1. *Shaped charge IED designed to cut through armour plate made from a wine bottle and plastic explosive. Shaped charges are designed to cut through armour plate and included in most armour piercing ammunition.*

2. *The shaped charge has punched a hole through a sheet of steel. This shaped charge technique is used in anti-tank ordnance including projectiles and cluster munitions and some anti-vehicle mines.*

3. *Improvised directional fragmentation munition, found in Bosnia-Herzegovina.*

Directional fragmentation munitions are often improvised. Commonly known as claymores, these are placed above ground and fire an arc of fragments to a range of approximately 50 metres when initiated. If command-detonated, munitions do not fall within the legal definition of anti-personnel mines and are thus not prohibited. Improvised command-detonated directional mines such as the one in the picture below are commonly used in conflicts involving non-State actors.

3

Improvised explosive devices may also be made from artillery shells, air-dropped bombs or any other ordnance.

Booby-trap

Explosive or non-explosive device, deliberately placed to cause casualties when an apparently harmless object is disturbed or a normally safe act is performed, like opening a door or turning on a television. *See Book III for more details on the law related to this.*

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1. *A simple booby-trap – a hand grenade attached to the bottom of a car, with a wire stretched from the grenade pin to the car wheel.*

2. *When the wheel turns, the wire will tighten, pulling the pin and causing the grenade to explode.*

Small arms, light weapons and ammunition

Small arms are assault rifles, machine guns, hand grenades and other military weapons designed to be carried and used by an individual combatant. The definition also includes commercial firearms such as handguns and hunting rifles. The term light weapons refers to portable weapons designed for use by several persons serving as crew, such as heavy machine guns, mounted grenade-launchers, portable anti-aircraft guns, portable anti-tank guns, portable launchers of anti-tank missiles, and mortars. Their ammunition includes cartridges, shells, missiles, rockets and grenades and other projectiles fired by small arms and light weapons. These are covered in the following sections.

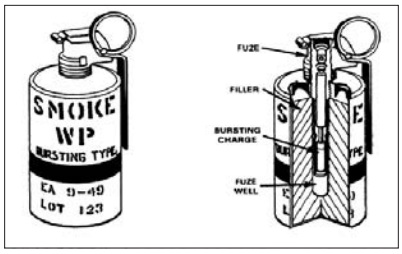
Small arms and light weapons, together with their ammunition, constitute a hazard in post-conflict situations for a variety of reasons. Though efforts to disarm ex-combatants and remove surplus weapons are usually undertaken, large numbers of weapons frequently remain in the hands of both ex-combatants and civilians as well as in abandoned weapons caches. These are often acquired or held for purposes of protection and self-defence where criminality is rife. They may also end up on the illegal market and therefore be easily obtainable for criminal or political purposes. High levels of armed violence conducted with readily available small arms characterize many post-conflict environments. Accidents involving small arms and ammunition are also common, for example due to tampering, accidental discharge or in some areas celebratory shooting. Small-arms ammunition can be particularly attractive to children who may cause it to detonate by striking the base or throwing it into a fire. Either activity can cause death or injury. Children may also separate the bullet from the case to extract propellant which when lit can cause burns.

Incendiaries and pyrotechnics

Incendiaries and pyrotechnics are materials such as napalm, thermite or white phosphorus and can be used for starting fires, as anti-personnel weapons, for illumination and to produce smoke. These substances can be dispensed by mortar, artillery, grenade, air-dropped bombs, rockets, etc. Use of such weapons in an anti-personnel mode is prohibited under international law.

White phosphorus is a manufactured compound of the chemical element phosphorus. It has been extensively used by the military as a smoke-screening agent, a target marker, an illuminator and as an incendiary weapon. It is waxy yellow or white in colour. White phosphorus, commonly known as "WP" or "white phos." spontaneously ignites when exposed to oxygen, and will continue burning until all the available oxygen is gone. When it ignites, it flares in spectacular bursts with a yellow flame and produces dense white smoke. It can be delivered by aerial bomb, artillery, mortar and grenade.

Napalm is a "fire bomb fuel gel mixture". It does not burn spontaneously and is ignited by an "ignitor" which forms part of the bomb. During its history, it has been manufactured in various mixture combinations, and can be generally thought of as "jellied gasoline". Early forms were used in the First World War but it was further developed by the United States of America during the Second World War and, in this formulation of a powdered aluminium soap of naphthalene mixed with palmitate, a fatty acid, it became known as "napalm" (the "na" and the "palm" of these two chemicals). Essentially, napalm is a sticky substance which burns at high temperatures and, if its target is flammable, ignites it. The napalm infamously used during the Vietnam war was a further development (called napalm-B), and was generally delivered by aerial bombs.



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1. *A white phosphorus grenade used primarily to produce smoke, but which in reality can also be used as an anti-personnel weapon, particularly against people in buildings or military positions.*

2. *A trip flare, used to protect military positions by illuminating areas when a tripwire is disturbed.*

3 *Napalm in use.*

Cluster munitions

Cluster munitions can be dropped from aircraft, or fired from mortars, artillery or rocket systems. In each case the clamshell, projectile or rocket splits or releases at a pre-selected altitude, spreading many smaller sub-munitions over the targeted area. The number of sub-munitions or bomblets dispersed depends on the type of ordnance. This results in saturation of the targeted area. Sub-munitions may have anti-armour, anti-vehicle or anti-personnel effects or a combination of these.

If incorrectly fused, fired or dropped, the target area can increase or change shape with the very real possibility that areas outside the defined target area are hit – areas in which there may well be non-combatants. In modern conflicts combatants are increasingly mixed with the population, rendering area weapons indiscriminate in their effect.

The failure rate of sub-munitions varies, depending on issues such as correct use and the type of terrain. Failed sub-munitions may either penetrate the ground, rest on the surface or hang on trees, foliage or infrastructure. They therefore pose a double threat and in any strike area the sub-surface must be checked at the same time as the surface, foliage and infrastructure. Failure to do so may result in deaths and injuries as people dig foundations or fields in later years. Removing only the surface contamination means that visible signs of a strike area are erased, posing a serious risk to those using the land in the future. Sub-munitions are generally very powerful and if they have not functioned as designed, very sensitive. They are a particular danger to children.

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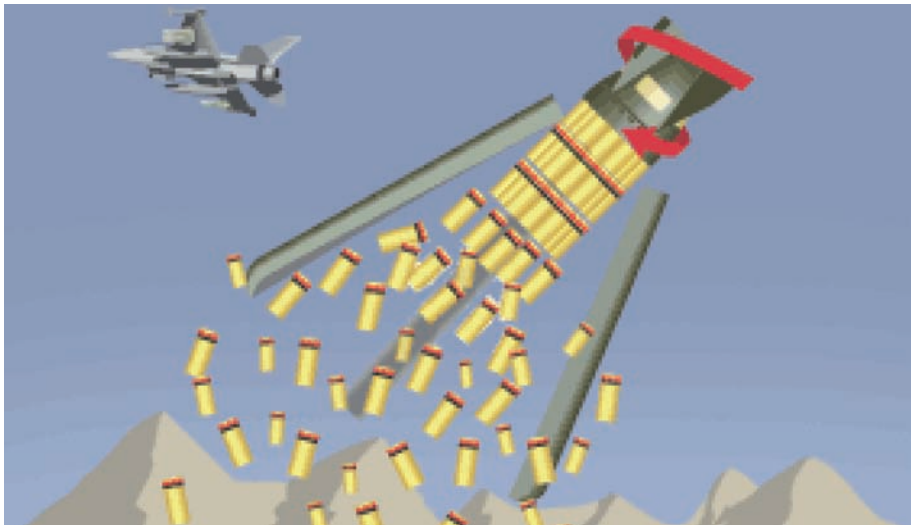

5

1. *A cluster munition fired by 155 mm artillery, armed and very dangerous.*

2. *The same type hanging in a tree by its drogue ribbon. If it falls, it may well explode. Cluster munitions such as this pose a serious threat, particularly to farmers harvesting crops.*

3. *An air-dropped cluster munition (BLU97) which has failed to explode.*

4. *Comparison between air-dropped humanitarian rations used in the 2002 Afghan conflict and air-dropped cluster munitions (BLU97). There was concern that the similarities between the two, when dropped in the same areas would lead to accidents and the colour of the food parcels was eventually changed.*

5. *Diagram showing the dispersal of BLU 97 cluster munitions from their container, having just been released by an aircraft.*

This chart was developed by Human Rights Watch: it is a summary of the main cluster munition types that pose a threat to civilians both during and after conflict .

A DIRTY DOZEN CLUSTER MUNITIONS

Human Rights Watch believes that all inaccurate and unreliable cluster munitions should be prohibited. The dirty dozen below are not the only objectionable types of cluster munitions but are singled out because they are either among the most widely used, have caused the most civilian harm, or pose the greatest threat to civilians due to their high failure rates and inaccuracy.

	155mm Projectiles		Rockets		Bombs						Aerial Dispensers	
	M483A1 & M864	M395 & M396	M26 MLRS	M87 Orkan	Rockeye	CBU-87 CEM	RBK Series	BL-755	CB-500	CBU-58B	Beluga	KMG-U
Synonymous names	DM-602 DM-612	CME DM-632 DM-642 DM-652 DM-662 KaG-88 KaG-90 L20A1	--	Ababeel-50	Mk.-7 Mk.-20 CBU-59 CBU-78 CBU-99 CBU-100	CBU-103	RBK-250 RBK-275 RBK-500	RBL-755	CB-130 CB-250	--	BLD-66 BLG-66	--
Producers	Germany Pakistan Turkey US	Argentina India Israel Germany Romania Switzerland US	South Korea US	Bosnia-Herzegovina Iraq Yugoslavia	US	US	Former USSR	UK	Chile	US	France	Former USSR
Submunition number & type	88 or 72 grenades: M42 M46 DM-1348	63 or 49 grenades: M85 DM-1383 DM-1385	644 M77 grenades	288 KB-1 grenades	247 Mk.-118 bomblets	202 BLU-97 bomblets	Variable payload of AO-2.5, AO-1SCh, PTAB 2.5/M, OFAB 2.5, ShOAB-0.5 bomblets	147 bomblets	240 PM-1 bomblets	650 BLU-63 bomblets	152 BLG-66 bomblets	Variable payload of AO-2.5, ODS-OD, PTAB 2.5, PTAB-1M bomblets
Reported submunition failure rate (operational failure rates may be higher)	3-14% based on testing	1.3-2.3% based on testing	5-23% based on testing	Not Known	2% based on testing; operational failure rates higher	4-6% based on testing	Not Known	Average of 6.4% based on 15 years of tests	Not Known	Not Known	Not Known	Not Known
Submunition Photo												
Locations used	Iraq Kuwait Lebanon Western Sahara	Iraq Lebanon	Iraq Kuwait Lebanon	Albania Bosnia-Herzegovina Croatia Iraq	Albania Iraq Kuwait Syria Yugoslavia Vietnam	Afghanistan Albania Iraq Kuwait Yugoslavia	Afghanistan Chechnya Tajikistan	Albania Croatia Eritrea Falklands(Malvinas) Iraq Kuwait Yugoslavia	Eritrea Ethiopia Iraq Sudan	Cambodia Iraq Kuwait Laos Lebanon Western Sahara Vietnam	Chad Iraq Kuwait Sierra Leone	Afghanistan Chechnya Tajikistan
Removed from Service (Cluster munition stockpile amounts indicated where known)	Belgium Germany Netherlands (120,000) UK	Denmark	Netherlands (16,000)	--	Argentina Australia Canada Denmark (200) France Norway	--	Czech Republic Poland	Belgium Germany Netherlands Portugal Switzerland	--	US	Argentina France	Czech Republic Poland
Under Review	Canada	Norway (53,000)	France Germany	--	--	--	Hungary	--	--	--	--	Hungary
In Service (Cluster munition stockpile amounts indicated where known)	Bahrain (1,000) Greece Israel Jordan (28,704) South Korea Morocco Netherlands (54,000) Pakistan Turkey US (3.3 million)	Argentina Austria Finland Germany Greece India Italy Israel Romania Switzerland UK (59,364) US (5,000)	Bahrain (1,578) Egypt (2,910) Greece Israel (18,000) Italy Japan South Korea Turkey UK US (369,576)	Bosnia-Herzegovina Croatia Iraq Serbia	Egypt (1,300) Greece Honduras (120) Indonesia Israel Jordan (150) South Korea Morocco (800) Oman Pakistan (200) Spain Thailand (500) Turkey (3,304) US (58,762)	Egypt (760) Greece Italy Japan South Korea Netherlands Oman Poland Saudi Arabia (1,200) Turkey UAE US (109,508)	Belarus Bulgaria Croatia Cuba Guinea Bissau India Iraq North Korea Libya Romania Slovakia Syria Ukraine	India Iran Italy Nigeria Oman Pakistan Saudi Arabia Serbia Thailand UAE UK	Chile Eritrea Ethiopia Iraq Sudan	Israel Morocco (1,752) Saudi Arabia (1,000)	Greece India	Algeria Angola Cuba India Iran Iraq North Korea Libya Mongolia Romania Slovakia Sudan Syria Ukraine Yemen

HUMAN RIGHTS WATCH

Landmines

The use of anti-personnel mines has been stigmatized since the introduction of the campaign to ban landmines and the advent of the Ottawa Convention. Anti-personnel mines (APM) are however still in the arsenal of several armies and continue to contaminate former conflict areas, even where clearance has been under way for some years. They have been used in the past by regular armed forces and non-State actors. For some armed non-State actors, they remain a weapon of choice. APM are used in different ways depending on the context and the situation of the user. Armed forces may use them to protect their fronts and flanks and also to give extra protection around outposts or roadblocks where there was a risk of being attacked by surprise from the side or rear. They have also been used to protect individual temporary positions, for instance an overnight position for a patrol. In these cases and in situations of less organized fighting over several years, this type of use has resulted in many small areas containing just a few mines. This is much harder to deal with than a "minefield" laid by engineers to a pattern. Mines have been used by non-State actors either to cover their retreat when pursued by more powerful forces or to sow fear and uncertainty through random use in areas occupied by military forces. APM have also been used to block access to water or other basic needs. *See Book III for more details on the law related to this.*

Anti-personnel mines are divided into three categories, blast, bounding fragmentation and directional fragmentation. They are often improvised by armed non-State actors – examples of this are the "johnny mine" found in Sri Lanka and many of the mines found in Myanmar and Colombia.

Blast mines are usually buried just beneath the surface and therefore normally cannot be seen. They are designed to explode when pressure is applied to the top of the mine and depending on the explosive content will destroy one or both legs either above or below the knee. If a victim then falls onto another mine, they may also destroy one or two arms. In addition, dirt and debris from the explosion will be driven into the body.

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1. *Surface laid PMA 2 AP mine, partially concealed by grass.*

2. *T72 blast mine laid a centimetre under the surface, excavated by deminers.*

3. *Typical blast mine crater. The crater is fairly small as the blast propagates upwards. The edge of the crater is tinged grey, the result of chemical and heat residue from the explosion.*

   The presence of small craters such as this is an indication of anti-personnel mine contamination.

1

1. *PROM bounding fragmentation mine – one of the most dangerous mines found in the former Yugoslavia.*

2. *Valmara 69 bounding fragmentation mine emplaced. The fuse can be seen protruding above the ground. It may be connected to a tripwire.*

Bounding fragmentation mines are either buried just below the surface with the fuse protruding or are laid on the surface. The fuse may or may not be connected to a tripwire. Walking into the tripwire or hitting the fuse will cause the body of the mine to fire an explosive canister to hip height where it will explode. Fragments are thrown over a 360 degree radius, to a distance of up to 50 metres. The likelihood of death and severity of injury depend on the distance from the mine and the presence of solid objects between the explosion and the victim.

2

Directional fragmentation mines are placed above ground and fire an arc of fragments to a range of approximately 50 metres when a tripwire is hit. *See also "Improvised explosive devices".*

Fragmentation stake mines: a fragmentation body is mounted on a stake implanted in the ground. The mines are normally tripwire initiated and spread fragmentation over 360 degrees up to a range of 50 metres, depending on the type of mine.

Anti-tank (vehicle) mines

More commonly known in the humanitarian world as anti-vehicle mines (AVM), the presence or suspected presence of these items can restrict the use of land and access along routes. Anti-tank mines are designed to destroy armoured fighting vehicles, either by blast or by penetration of the tank's skin. They are normally buried and initiated through pressure or through the movement of a tilt rod protruding above the ground.

In many cases the pressure required to initiate an anti-tank mine can be provided by livestock, carts, tractors or vehicles. Mines can also be initiated by vehicles pressing against a tiltrod. Anti-vehicle mines are also sometimes used to boost the power of anti-personnel mines, by placing them directly underneath. The level of destruction varies according to the type of mine, the depth the mine was buried, the type of soil and the part of the vehicle closest to the mine when it explodes.

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1. *Anti-vehicle mine with tiltrod initiation. This will detonate the mine if pushed. It increases the risk of triggering by livestock or civilians.*

2. *An anti-vehicle mine uncovered by deminers. It has been laid at a depth of about 20 cm.*

3. *Anti-vehicle mine crater, with a pen to show scale. As with the AP crater, note the grey tinge around the edge, the result of the chemical reaction and heat from the explosion.*

4. *Anti-vehicle mine laid under snow.*

There is no easy and reliable way to check whether a route is free of anti-tank mines which is one of the reasons why even the rumour of a single mine on a road can block the route. The fact that vehicles have previously driven safely down a road is no indication that it is free of mines. The maps below are from Angola (Kwanza Sul and Malange provinces) and show roads that have not been surveyed, threat-reduced or cleared by recognized clearance organizations and therefore not used by the ICRC (2007).


MALANJE
MARCH 2007
Quinguingue
Quihuhu
Tembo Aluma
Massango
Cambombo
Cateco Cangola
Cuale
Uíge
Marimba
Miconda
Caombo
Cambo
Lemba
Kiwaba Nzogi
Milando
Cunda dia base
S. Maria
N'dalatando
Quinge
Mufuma
Calandula
Quizenga
Ngola Luigi
Quela
Cota
Cambaxe
Cacuso
Damba
Xandel
Lombe
Cambondo
Saurimo
Caculama
Ngangasol
Npungo Andongo
Malanje
Caxinga
Cangando
Cangandala
Tala Mungongo
Cambundi Catembo
Dumba Cambango
Donbo
Luquembo
Bembo
Quirima
Quimbango
Sautar
Cuemba

Grenades

Hand grenades and rifle grenades can pose a serious post-conflict risk.

1

Hand grenades (1) are simple devices which as their name implies, are thrown by hand and have an anti-personnel (fragmentation), smoke, illumination or blast (stun) effect. They normally consist of a main body, a fuse and a safety device held in place with a pin. They often lie abandoned in former battle areas and are generally attractive to children. They have also been used for the purpose of robbery, revenge or extortion.

2

Rifle grenades as the name implies are fired from an attachment on a rifle. Their fusing mechanisms are such that unexploded rifle grenades can be very sensitive if disturbed.

3

2. *40 mm grenade designed to be fired from a grenade launcher or an attachment on a rifle. These can be very sensitive if disturbed and are attractive to children. This one has not been fired.*

3. *Rifle grenades designed to be fired from the end of the barrel of a rifle. Also potentially very sensitive.*

Mortars

Mortars are an extremely common weapon and can be found in most conflict situations. They fire "mortar bombs" over relatively short ranges and are normally man-portable. The bombs most commonly used contain high explosive, illumination or smoke. They are nose fused and have to be struck on the nose to explode. Mortars are a source of scrap metal and are sometimes used by people as counterweights for wells or hammers. If the mortar has been fused (had the fuse attached), it is significantly more hazardous. Un-fused mortar bombs are relatively safe unless attempts are made to salvage their explosive content or metal casings.

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1. *Mortar, complete with fuse and extra propellant charge to increase range (green plastic bands next to tail fin). These also pose a threat to civilians as they are sometimes used to start fires for cooking, etc.*

2. *Mortar which was possibly fired but failed to explode. Badly corroded and therefore more unstable.*

Projectiles

Projectiles are fired from direct fire weapons such as tank guns or indirect fire weapons such as artillery. Direct fire refers to when you can see the target and fire directly. Indirect fire refers to firing at a target which cannot be seen, often by map coordinates and often with an observer who can see the target correcting aim by radio.

Projectiles are streamlined in shape with a pointed nose that may contain the fuse. Alternately, the fuse may be contained at the rear of the projectile. A percentage of projectiles will fail to function, depending on the condition of the ordnance, the training of the gun crew and the terrain into which they are firing. Projectiles may contain high explosive, cluster munitions, illumination, smoke or, in rare cases, noxious chemicals. Anti-tank projectiles contain little or no explosive, but are designed to penetrate armour plate through the application of kinetic energy. In some of these projectiles, the metals used are dense and extremely strong, including depleted uranium and tungsten carbide.

Many projectiles have components made of high value metal, including tungsten carbide and copper which is used to seal the space between the barrel and the shell and is known as the driving band. In post-conflict situations, it is rare to see an expended shell with its driving band intact as it will normally be the first battlefield debris to be scavenged.

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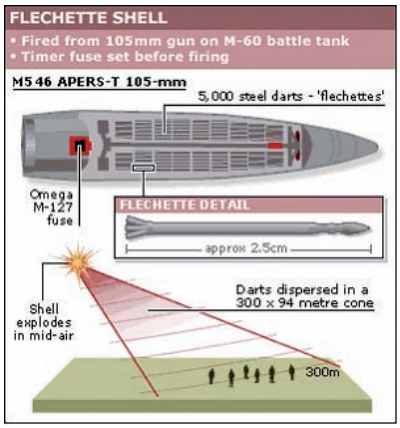

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1. *155 mm projectile, cluster munition carrier.*

2. *Two projectiles not yet fired and a larger calibre shell fired.*

3. *Diagram of anti-personnel tank projectile, using flechette darts to achieve anti-personnel effect.*

Depleted uranium

> Depleted uranium (DU) is a heavy metal that is also slightly radioactive. It is the product that remains once most of the highly radioactive isotopes have been removed for use as nuclear fuel or in nuclear weapons. DU is used in armour piercing munitions and also in some tanks as armour. Because of its density, the military utility of DU is its armour piercing capabilities, not its slight radioactivity. DU is used in tank ammunition and also aircraft mounted cannon.

> There is disagreement over the health effects of DU. Once fired, when the DU projectile (penetrator) strikes a vehicle or structure, it turns into a uranium oxide dust. Ingestion or inhalation of this dust poses a health risk.

> Do not walk in close proximity to armoured vehicles which have been destroyed or bunkers/infrastructure which have obviously been hit by projectiles. Do not pick up any penetrators that have failed to hit their target and are lying on the ground.

Guided missiles

Guided missiles may be found either on launchers, in their transport packaging or fired. Scattered components do not have the shapes normally associated with ordnance but may contain explosives. Unfired missiles will generally be within an outer firing sleeve which may appear attractive. Missiles on their launchers may contain fuel which can be extremely toxic.

Missiles that have been fired but failed to explode will have flown at least part of the desired mission and then impacted. This normally results in some breakage of the body of the missile and the scattering of components. These will include the warhead and the fusing mechanism, and may include unburnt propellant, thermal batteries, flares and pyrotechnic generators.

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1. *Surface to air missiles on their trailers on the outskirts of Baghdad. These pose a threat to people as in addition to the explosive in the warhead, extremely dangerous chemicals are present in the fuel.*

2. *A wire guided anti-tank missile, which was fired but failed to hit a target.*

Rockets

A rocket is an explosive device containing its own means of propulsion as well as explosives. An unfired or malfunctioned rocket motor can pose a threat to civilians as well as the warhead.

Where a rocket has been fired but has failed to explode, some breakage of the body normally occurs on impact; debris will include the warhead and the fuse and could include unburnt propellant. Rockets are often fired in salvos and, designed to saturate an area. These are commonly known as multi-launch rocket systems (MLRS), Katyusha (after the famous Soviet Second World War system) or by a number of other names. Possible warheads include standard high explosive, fragmentation as well as cluster munitions.

1. An unexploded MLRS rocket.

Rocket-propelled grenades (RPG) (2) are shoulder-launched light infantry weapons. The main types of warheads include fragmentation used against human targets and armour piercing against vehicles. They are often left behind in battle areas, either having been fired or just abandoned. They are internally fused and if they have been fired but have not exploded they may be particularly dangerous if disturbed.

2

Aircraft bombs

Aircraft bombs that have been dropped and have failed to explode pose a relatively low risk to the population as long as they are not tampered with. Air-dropped bombs vary in size, but generally have enormous destructive power. Attempts to extract the explosive filling or to recycle the bodies as scrap metal can result in a bomb exploding.

Air-dropped bombs may be fitted with a package that allows the bomb to be steered to its target, either through remote designation of the target by laser or through a video camera fitted to the nose of the bomb. Aircraft bombs may penetrate deep into the ground, European cities bombed during the Second World War are still to some extent contaminated with sub-surface bombs.

1

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3

1. *Tail fins for air-dropped bombs. These are kept separately and fitted before the bomb is loaded on the aircraft. They have no explosive content.*

2. *An unexploded bomb lodged inside the ruins of a house. This poses a potential threat during reconstruction.*

3. *A bomb which has hit the ground, penetrated the ground, travelled a considerable distance and then re-emerged some distance away from the impact point.*

1.2 Patterns of weapon contamination

Armed conflicts result in abandoned and unexploded ordnance contamination and sometimes landmines. In the heat of battle ordnance is abandoned or fails to explode when fired, launched or dropped. Landmines are laid and their location forgotten, marking is destroyed and there is often no time or opportunity to remove them. The result is a complex mixture of explosive pollution, most of which will have a lifespan of many decades. For example, the majority of ordnance found every day on the former First World War western front is still live and dangerous. This section gives an overview of the characteristics of weapons-related contamination resulting from different patterns of armed conflict or other situations of violence.

Armed conflict between armed forces

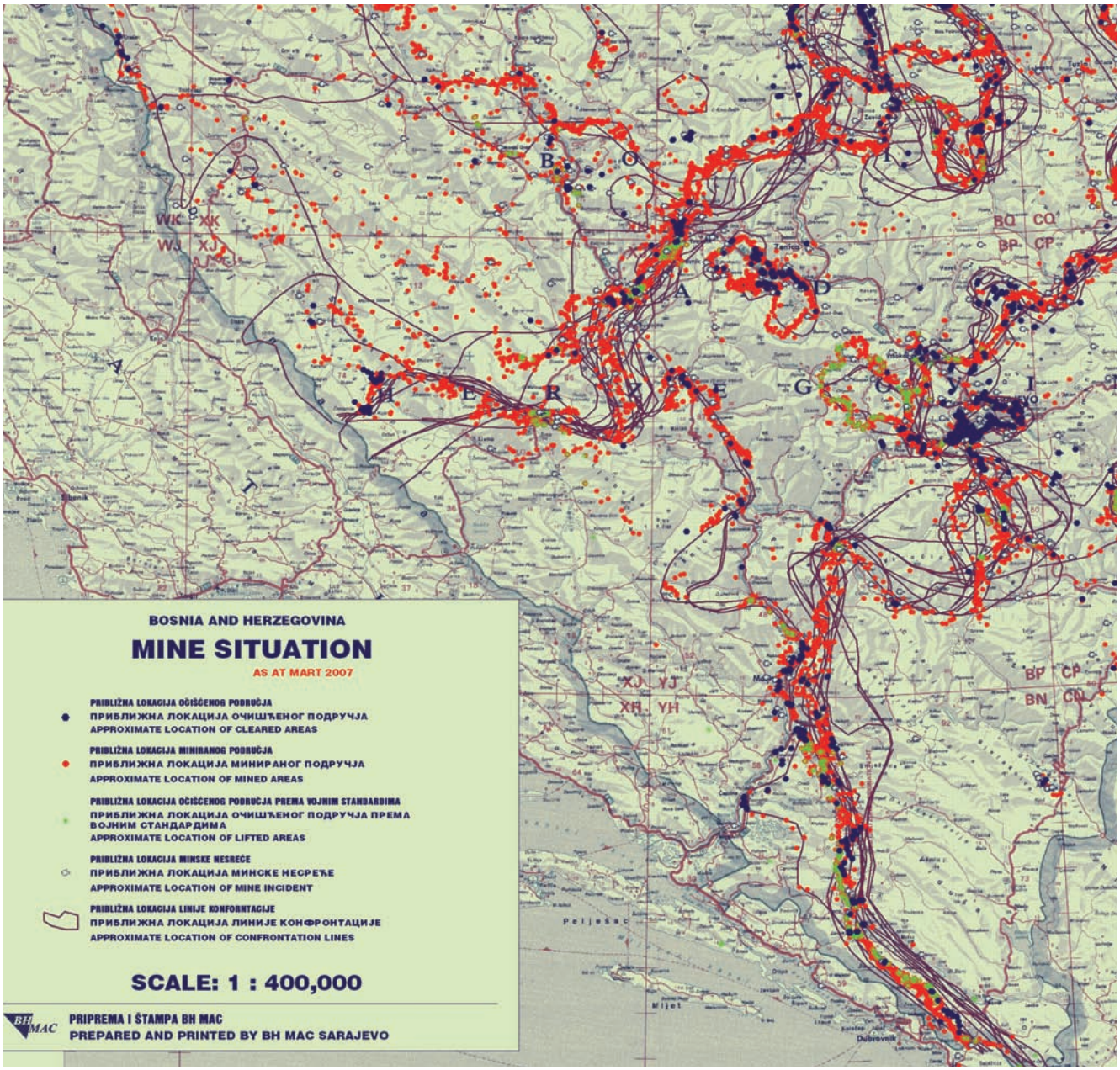
The pattern of contamination will depend on the level of sophistication of the armed forces, the nature of the fighting, and its duration. The use of airpower, multi-launch rocket systems or artillery may result in the use of cluster munitions. Large air-dropped bombs, air to surface and possibly cruise missiles may also be deployed; although these are powerful, they tend not to pose a great threat in the immediate post-conflict period as their fusing systems are not sensitive. However, in the medium and long term they may start to kill or injure people as they become a source of scrap metal or explosives that can be salvaged and sold.

Anti-vehicle mines may be encountered if one or both armed forces have stayed in static defensive positions for any period of time and may possibly have been used to protect vulnerable flanks during an advance. Anti-personnel mines may have been used to protect defensive positions, checkpoints and units as they withdraw or halt during an advance. They may also be used to slow down the enemy during a withdrawal.

In an ideal situation, according to the law, mines laid by armed forces should have been mapped and a record kept – they may even have been marked. This is however not always the case. The length of the conflict will also influence whether maps are available and how much use they may be. In Bosnia-Herzegovina many minefields were mapped at the beginning of the conflict, but as the conflict developed, forces moved, mines were laid, cleared and re-laid and those who laid mines were killed or went missing. As a result mine maps were of limited use to clearance organizations in the aftermath of the conflict.

In a conflict between armed forces, there will often be defined front lines which may or may not move. These front lines often correspond to the main lines of contamination. The map of Bosnia-Herzegovina opposite clearly illustrates this.

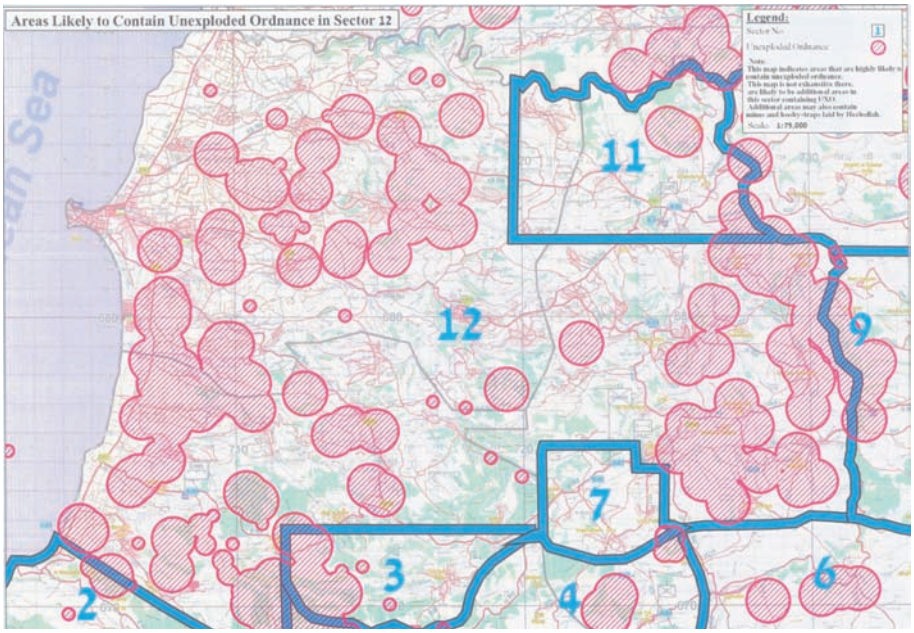
Bosnia-Herzegovina contamination map



Depending on the intensity of fighting, there will be unexploded ordnance left in the battle area. This will normally comprise a mixture of mortars, grenades, rockets, shells and other projectiles. If armoured vehicles have been used in direct conflict, it is possible that depleted uranium (DU) projectiles may have been used. Certain ground attack aircraft and helicopters are armed with weapons that can fire a DU projectile. There is conflicting information on the health dangers posed by DU.

Where conventional armed forces have been engaged, strike data will most likely have been maintained as modern artillery, rocket and aircraft systems are computer operated. This data should be available after the conflict. It will include details of target coordinates, types and number of ordnance used including the fill. Provision of such data to the

authorities responsible for clearing contamination is a requirement for signatories of Protocol V of the Convention on Certain Conventional Weapons. This would normally be either the United Nations or national authorities. *See Book III*.



This map was provided to the United Nations by the Israeli Defense Force after the August 2006 conflict. The areas shown as possibly contaminated are far too large to be of any use to clearance teams and there is no information on the amounts or types of ammunition fired or mines laid. In practical terms, this type of map is of little use.

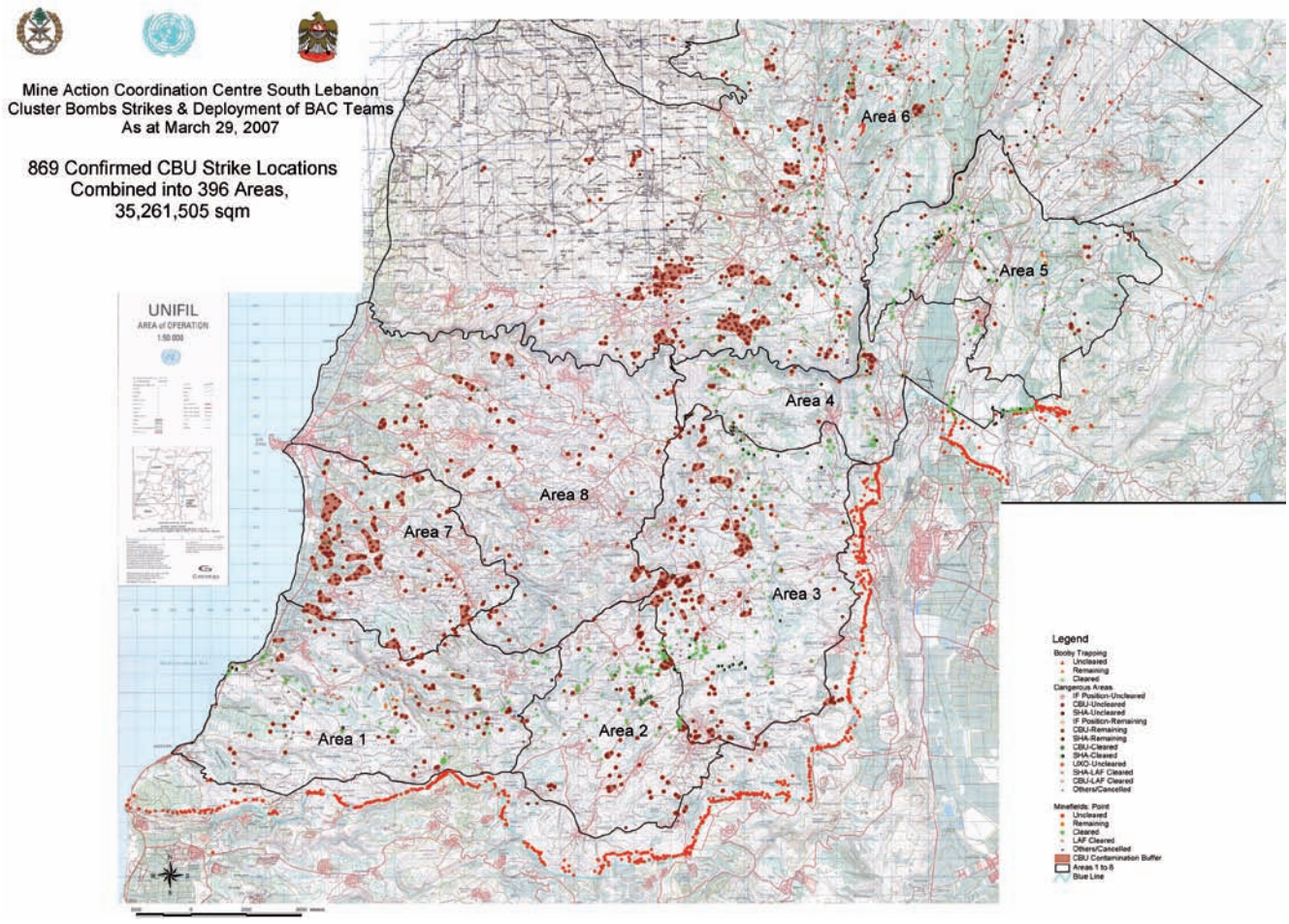
In addition to unexploded ordnance, there may also be abandoned ordnance. This can be hazardous to the population as packing cases and propellant represent a potential source of fuel or playthings for children – this was a particular problem in southern Iraq in the aftermath of the 2003 conflict. Propellant was used to light fires and was on sale to children in the markets as a toy. Grenade fuses are often abandoned in trenches and are extremely dangerous to children who often mistake them for pens. A fuse of this type is capable of destroying a child's hand, burning, blinding and causing fragment wounds to the chest.

Air and artillery campaigns

Campaigns that seek to destroy the capability of an enemy remotely through the application of air power, artillery rockets and missiles are becoming more common. Although there may be small scale ground incursions during such a campaign or occupation after the objectives have been achieved, the main threat comes from unexploded ordnance. Two recent examples are Kosovo and Lebanon.

The types of ordnance used will to a large extent determine the residual threat. Experience has shown that if cluster munitions are used, they tend to pose a serious post-conflict problem. Iron bombs or non-cluster artillery shells are less likely to have a serious humanitarian impact as they are unlikely to explode unless seriously tampered with. This may happen if there is great economic need in the area, forcing people to salvage the metal and explosives. The use of any of these weapons in proximity to civilians poses a threat, but is particularly true of cluster munitions which are "area weapons". This means that they are used to saturate a large area and have sometimes been used where the precise location of a target is not known, although it may be in proximity to civilian areas. Current models (2006) all have high failure rates.

The contamination map below was compiled by the South Lebanon UN mine action coordination centre from survey and clearance data. It clearly shows the extent of the contamination.



As can be seen from the above map of contamination resulting from the August 2006 conflict in Lebanon, contamination does not conform to lines of defence. Rather it is located on routes, junctions and infrastructure such as bridges. It is also concentrated around villages in the south, where it was believed Hezbollah was launching rockets into northern Israel.

Ordnance dropped or fired into areas which civilians have fled from are still likely to have an impact after the conflict. As people return to rebuild their houses, unexploded ordnance is likely to be present in amongst house debris.

Key factors in the volume of unexploded ordnance are the age and condition of the ordnance and the level of military training of those doing the firing. Badly stored or out-of-date ordnance or ordnance incorrectly prepared for firing/dropping is more likely to fail (for example the BLU 63 sub-munitions used in Lebanon in 2006, mainly manufactured in the 1970s). Selection of ordnance that was designed for a different type of terrain may also fail: for example the BLU 117 Rock eye sub-munitions used in the first Gulf War were not designed for desert conditions and regularly failed to detonate on impact.

Armed conflicts involving armed non-State actors

Armed non-State actors are often short of weapons and what they do have is fairly light. It is rare that they will use anything bigger than a mortar or small artillery piece. To make up for this, armed non-State actors are likely to use improvised explosive devices, or landmines, to ambush, cover withdrawals and to close routes. Anti-vehicle mines may be laid and then, if they fail to find a target, lifted and used again. One suspected anti-vehicle mine can close a route. It is extremely difficult and time consuming to check and clear roads of mines. Such use of mines poses a threat to all other vehicles, including those used for humanitarian purposes, as mines laid for a military target may be initiated by any other vehicle that passes down the route at the "wrong time".

To make up for their relative lack of heavy weapons, lightly armed groups are likely to use improvised explosive devices and mines. This can result in the use of unstable home-made explosives used in improvised devices such as the Nepalese "socket bomb", which are left lying around a battle area after a clash has taken place. The same has been true in the West Bank and Gaza, where Palestinians have fought with the Israeli Defense Force (IDF), often using improvised command detonated mines and booby traps to counter IDF soldiers in urban areas. As fighting continues, these can be abandoned and/or buried in rubble, posing a lethal threat to those returning home after the conflict.

Landmines are sometimes used in these situations to slow down pursuing regular armed forces as lightly armed groups withdraw. Landmines are heavy to carry and this means that they are normally laid in small groups on routes or around places such as water points which the military may need. In post-conflict times, the location of these mines will often be forgotten, especially if a conflict has run for several years and the mine layers are dead or have simply forgotten. In some cases, mines will be retrieved as they have a value.

Fighting in urban areas

Fighting in urban areas or refugee camps in built-up areas can result in a complex and sensitive contamination situation. Often non-State actors will have used IEDs to bridge their disadvantage against regular military forces. These IEDs may be an integral part of front-line positions and be buried in rubble or damaged during fighting. The end result can be an unstable mixture of rubble and relatively unstable explosive devices. In addition, the factories or locations where the devices were made may be in the same vicinity and if partially destroyed or abandoned may also pose a threat to the population. The presence of such factories will therefore most probably be a sensitive issue.

The problems posed by ordnance stockpiles

Stockpiles of ordnance are an increasing global problem, particularly since the break-up of the Soviet Union. Stockpiles are areas where ordnance of different types is stored, sometimes amounting to tens of thousands of tonnes. Safe storage of ordnance requires constant management and the construction of custom-built storage facilities. In many countries this does not happen and ordnance is stored in the open or in inappropriate structures. Much of the ordnance remaining from the Soviet period is beyond its safe life and is located in facilities that are no longer properly maintained. Stockpiles are sometimes filled beyond their designed capacity and even contain ordnance that is fused and ready to fire. Many of these stockpiles date from the Cold War period and are becoming more dangerous as time passes. Inadequate security of storage facilities increases the risk of theft as well as the danger to those who may enter in search of scrap metal or out of curiosity. During the 2003 war in Iraq, vast stockpiles of arms and ordnance were abandoned and left unsecured within easy access of civilians and armed groups. In southern Sudan there are numerous small stockpiles which are unsecured and in a dangerous state.

It is now beginning to be widely acknowledged that in almost all post-conflict environments, and in many developing countries, the presence of abandoned, damaged or inappropriately stored and managed stockpiles of ordnance and explosives presents a physical risk to communities.

REPORTED STOCKPILE INCIDENTS FROM 2004 TO 2006						
Date	Country	Location	Killed	Injured	Possible cause	Source
Feb 04	North Korea	Seonggang	1000?	NK	Unconfirmed	Biting the Bullet Brief 18, Ammunition Stocks: Promoting Safe and Secure Storage and Disposal, February 2005.
01 Feb 04	Iraq	Karbala	20	0	Not known	NATO MSIAC
19 Feb 04	India	Amritsar	0	30	Not known	NATO MSIAC
25 Feb 04	Phillipines	Quezon City	0	4	Fire	NATO MSIAC
09 Apr 04	Viet Nam	Ho Chi Minh City	1	10	Not known	Biting the Bullet Brief 18
22 Apr 04	North Korea	Ryongchon	54	1200+	Transport	http://globalsecurity.org/military/world/dprk/ryongchon-imagery.htm
06 May 04	Ukraine	Novobogdanovka	5	10	Fire (human error – smoking)	ITAR-TASS, Wednesday, 12 May 2004
11 Jul 04	Afghanistan	Herat	5	34	Sabotage	NATO MSIAC
12 Sep 04	North Korea	Ryanggang	?	?	Unconfirmed	http://blog.marmot.cc/archives/2004/09/12/breaking-news-blast-mushroom-cloud-reported-in-north-korea/

REPORTED STOCKPILE INCIDENTS FROM 2004 TO 2006 (continued)						
Date	Country	Location	Killed	Injured	Possible cause	Source
06 Nov 04	Taiwan	Chisan	3	0	Handling	NATO MSIAC
07 Dec 04	Russia	Chechnya, Achkhoi-Martan	?	?	Fire	http://in.news.yahoo.com/041207/43/2ibqg.html
09 Jan 05	Iraq	As Suwayrah	8	11	Handling / Demolitions	GlobalSecuurity.org, MNF-I/MNC-I 09 Jan 2005. http://www.globalsecurity.org/military/library/news/2005/01/mil-050109-mnfi-mnci18.htm
24 Feb 05	Nigeria	Kaduna	4	44	Fire	Nigeria World News & Archives, 24 February 2005. http://news.biafranigeriaworld.com/archive/thisday/2005/02/24/explosions_rock_kaduna_ammunition_depot.php
04 Mar 05	Côte d'Ivoire	Abidjan	2	1	Handling	NATO MSIAC
31 Mar 05	Cambodia	Andong Chen	6	20	High temperature	EU ASAC
10 Apr 05	Italy	Baiano di Spoleto	0	4	Not known	NATO MSIAC
02 May 05	Afghanistan	Bajgah	29	13+	Illegal storage Sabotage(?)	BBC News, 05 May 2005. http://news.bbc.co.uk/1/hi/world/south_asia/4516291.stm
17 May 05	Russia	Kronstadt	0	6	Handling	http://www.mosnews.com/news/2005/05/17/kronstadtfire.shtml
25 Jun 05	Afghanistan	Rustaq	6	20	Handling / Electrical spark (?)	Deutsche Welle, 27 June 2005. http://www.dw-world.de/dw/briefs/0,1574,1629946,00.html NATO MSIAC
09 Sep 05	Taiwan	Tashu	3	0	Ammunition production	NATO MSIAC
12 Sep 05	Philippines	Taguig City	0	107	Lightning (?)	NATO MSIAC
30 Sep 05	Russia	Kamchatka	0	1	Internal Fire (?)	http://www.trltd.com/trintel/kamchatka_ammunition_depot_explosion.php
25 Nov 05	DRC	Walikale, Nord-Kivu	6	0	Lightning	NATO MSIAC
08 Dec 05	Pakistan	Jhandola	12	50	Handling	NATO MSIAC
28 Jan 06	Kenya	Nairobi	0	0	Electrical fault	NATO MSIAC
07 Feb 06	Pakistan	Dera Bugti	0	0	Fire	NATO MSIAC
23 Mar 06	Afghanistan	Jabalussaraj	2	45	Electrical fire (?)	http://www.chron.com/disp/story.mpl/ap/world/3745288.html
28 Apr 06	Russia	Sergiyev Posad	2	0	Not known. (During demilitarization)	AP 03 May 06
06 May 06	Albania	Tepelena	1	5	Handling (During demilitarization)	http://english.pravda.ru/news/world/06-05-2006/79999-Albania-0
10 May 06	Taiwan	Taipai	2	2	Not known (Ignition?)	http://en.chinabroadcast.cn/811/2006/05/10/53@87230.htm
19 May 06	Sudan	Juba	2	1	Not known	UNDP Sudan
22 Jul 06	Kazakhstan	Karatal	?	?	Fire	Interfax / BBC Monitoring
10 Aug 06	Sri Lanka	Allai-Kantalai	?	?	Not known	http://www.sibernews.com/the-news/tamileelam/blast-destroys-sla-ammunition-store-200608104965/and/or/
19 Aug 06	Ukraine	Novobogdanovka	0	4	Fire	http://www.moscowtimes.ru/stories/2006/08/21/016.html

Chart compiled by the South Eastern Europe Small Arms Centre (SEESAC).

1.3 The physical, social and economic impact of weapon contamination

Physical impact

The most immediate impact of mines and ERW comes from direct physical contact either with the weapon itself or from being within its effective radius if initiated.

Hospital staff working with those wounded by landmines and ERW see a perplexing variety of wounds. They may have little previous experience of such wounds and may not make an accurate interpretation of what they are observing regarding the nature of the weapon. They may also have political objectives in ascribing a certain injury to a particular weapon. For instance, a wound from an explosive device might be described as being from a "cluster bomb"; a large bullet wound may be attributed to use of "Dum-dum bullets", when in fact such injuries are normally caused by standard bullets destabilized in flight by foliage or if they have ricocheted. When carrying out a needs assessment it is therefore essential that the "assessor" be able to interpret the information available. Accepting information at face value, even from medical personnel is not advisable as they may have little knowledge of weapon types and effects.

Different weapons produce different wounds. In addition, each type of weapon can produce a variety of wounds depending on the specific context in which it is used. Burn injuries aside, wounds are produced by transfer to the body of kinetic energy carried by the blast or the projectile; this energy transfer lacerates and crushes tissues. The extent of tissue damage depends on the amount of kinetic energy transferred to the tissues. Obviously, the use of some weapons especially those using large volumes of explosive, might result in a combination of burn injury and tissue damage from transfer of kinetic energy. Blast alone can kill through the pressure wave created by an explosion.

The nature of the wounds and their distribution give valuable clues as to the kind of weapon and how the person came to be injured by it. The ratio between killed and injured is also an indicator of the characteristics of an incident. Knowing which groups are vulnerable to which weapons and why is critical for developing effective mine action activities. The figures below provide guidance on the characteristics of injuries caused by different weapons. When dealing with mortal remains, the reason for death may not be obvious. Fragment wounds can be very small and blast damage to internal organs not visible.

Other information

Anti-vehicle mines tend to injure people by explosive force either directly or indirectly via the floor of the vehicle. There are often closed fractures, especially of the foot and leg. If not wearing seatbelts, occupants in vehicles hit by anti-vehicle (AV) mine explosions can also be thrown violently against the roof or other part of the vehicle, causing trauma.

Burns associated with ordnance tend to result from large explosions (flash burns). They are common amongst the crews of tanks, ships and aircraft hit by missiles. They may result from secondary fires (petrol, houses, etc.).

Large explosions usually wound many people as the large volume of explosive causes injury by blast wave, burning, fragments, secondary fragments from broken glass and blunt trauma (collapse of buildings, etc.). The degree of injury is determined by proximity to the explosion, the blast from which can travel around objects such as buildings or walls. The victim of a blast may not have external injury and there are usually more people wounded than killed.

Bullet wounds are usually single in armed conflict and in executions when the wounds tend to be in the head. Multiple bullet wounds usually indicate shooting at close range with automatic weapons. There is usually a small entry wound and there may be no exit wound; if there is an exit wound, the size is variable. The length of the track is variable; there may be long wound tracks in injuries caused by military assault rifles. The size of the wound is variable according to the mass and velocity of the bullet, its stability in flight and its construction.

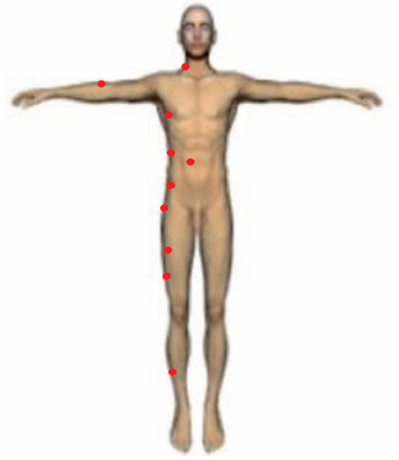


Figure 1 – general wounds from explosive devices

Fragments from most explosive devices will affect any part of the body in a random manner, depending on the situation at the time of the accident. Entry wounds are on the side of the body facing the blast. There may be accompanying wounds from the blast itself depending on the volume and type of explosive and the person's proximity to the device.

People killed by the differential pressure created by the blast wave of an explosion may not have any external injuries, but will have suffered extensive damage to their internal organs.

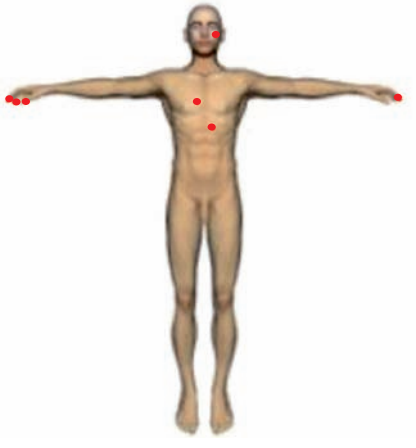


Figure 2 – fuses

Wounds from fuses are caused when fuses are handled, often by children. There is always severe hand injury and frequently injury to the chest, face and eyes. i.e., the parts of the body nearest to the detonation.

Figure 3 – handling small explosive device

If an explosive device such as a small blast mine detonates whilst being handled, it may cause lethal injury. Casualties show severe injuries to the hands, face, eyes and the front of the chest. A typical variant of this pattern is when the knees are injured because the person was handling a device on the ground between his or her knees.

Figure 4 – small blast mine

A blast mine containing a small volume of explosive may cause severe injury or traumatic amputation to only a part of the foot. There are rarely other injuries.

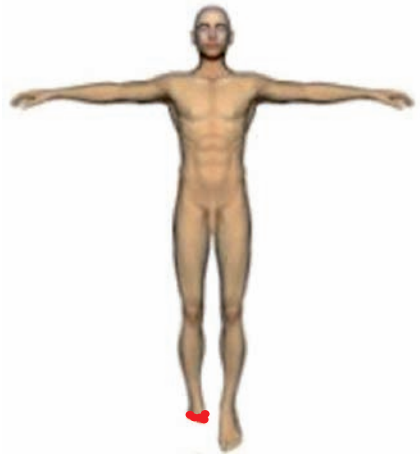
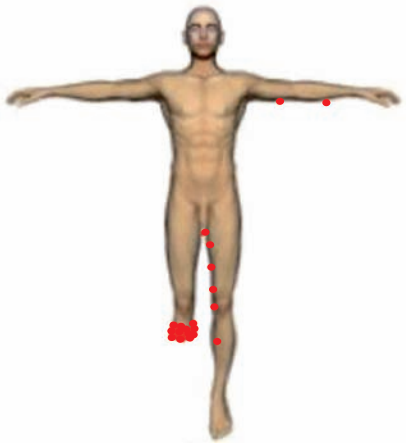


Figure 5 – medium size blast mine

Anti-personnel blast mine injuries are caused by stepping on a buried, blast-type anti-personnel mine; there is usually traumatic amputation or severe injury of the contact foot and leg, with dirt and other debris being forced into the wound. There may be wounds on the other leg and in the area of the groin. The severity of the wound is determined by the amount of explosive in the mine, the depth it was laid and the nature of the ground.



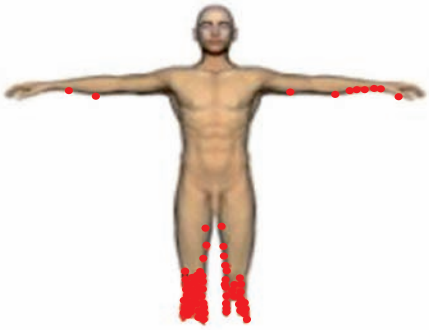


Figure 6 – large blast mine

A blast mine with a larger volume of explosive causes severe damage to both legs and other parts of the body, including the groin. Such injuries frequently result in bilateral above-knee amputation.

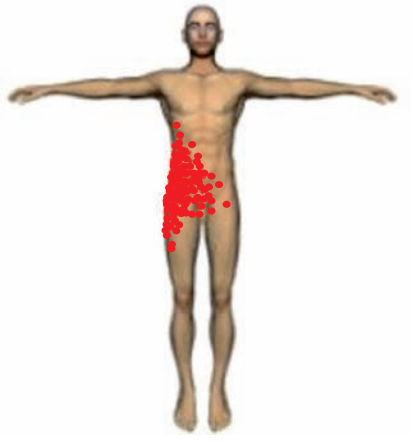


Figure 7 – bounding fragmentation mine

A bounding or directional fragmentation mine will cut a person in half or at least cause serious injury to the mid section of the body. As the distance from the mine increases, the injuries will become more diffuse and will reduce in severity up to the maximum effective range of the device.

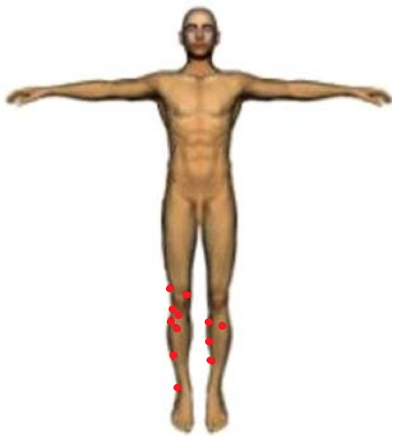


Figure 8 – fragmentation stake mine

Fragmentation stake mines tend to inflict multiple fragment injuries with a predilection for the legs because the devices are usually planted just above the ground.

Human remains in contaminated areas

Human remains are often found in former battle areas. In particular, clearance organizations regularly find remains when clearing minefields or conducting battle area clearance. The protection and correct handling of these remains is essential for identification. The primary concern of clearance operators apart from the quality of their work is safety. Remains are often destroyed or lost during clearance, particularly demining. In addition, clearance operators are sometimes requested to support the recovery of remains from contaminated areas.

The ICRC is periodically requested to provide guidance on these issues at delegation level. In Book III you will find a section entitled *Clearance and human remains* which lays out guidelines for this issue. The guidelines have also been integrated into the International Mine Action Standards (IMAS) as a technical note.

Social and economic impact

Landmines and other ERW can have a wide range of impacts in the short, medium and long terms. Many of these impacts are not immediately obvious and are inextricably linked with other factors that impact on the wellbeing of people. Community members are often forced to take risks because of economic constraints or simply in order to survive, entering areas known to be contaminated, or handling landmines and other ERW. The following chart summarizes the typical patterns of impact.

TYPICAL SOCIAL AND ECONOMIC IMPACTS		
ISSUE	IMPLICATIONS	IMPACT
Water	Access to water sources is blocked by mines or made dangerous by ERW. Access to water infrastructure for maintenance is blocked.	> Access to clean water may become even more problematic during and after armed conflict when sources have been deliberately targeted by mines to deny them to opposing forces or located in military areas mined for other reasons. > Water infrastructure is not maintained, disrupting quality and quantity of water available. (Especially true in urban areas). > Violence or even armed conflict may result from competition for water. > People drawing water – often women and children may be killed or injured. > Dirty water from secondary sources may result in waterborne disease.
Agriculture	Access to fields is blocked or fields are contaminated. Seeds are not available because communication with markets is blocked. Traditional food sources such as mushrooms and herbs may be in contaminated areas.	> People are either forced to take risks or cannot grow sufficient food. > Violence or even armed conflict may result from competition for land. > No food surplus for monetization is produced, affecting local economy, food availability and household security. > Hunters, fishermen and gatherers may be killed or injured. > Food supplements are no longer available, impacting on nutrition. > No food surplus for monetization is produced, affecting local economy, food availability and household security.
Livestock	Livestock is killed. Pasture is contaminated. Routes to pasture are contaminated.	> Economic security of families/communities is reduced. > Herders are forced to enter unknown areas which may be dangerous. > Competition for safe grazing may result in violence or even conflict. > Impact on food security and nutrition levels may result in greater vulnerability to disease.
Shelter	Buildings are contaminated. Access to shelter is blocked by mines or made dangerous by ERW.	> Competition for safe shelter may result in violence or even conflict. > Death and injury may occur while rebuilding destroyed shelter contaminated by UXO.

TYPICAL SOCIAL AND ECONOMIC IMPACTS (continued)		
ISSUE	IMPLICATIONS	IMPACT
Fuel	Traditional fuel sources are contaminated. Access to fuel is blocked by mines or made dangerous by ERW. Fuel infrastructure is contaminated by mines and ERW impeding maintenance or repair.	> People are forced to enter contaminated areas and may suffer death/injury. > No surplus fuel is available for monetization, affecting local economy and household security. > Food cannot be cooked, and water cannot be made potable by boiling. > Health in areas with harsh winters is affected, as heating is not possible.
Children	Although children are NOT the most vulnerable group globally, there are specific implications that should borne in mind: > herding, often carried out by young boys, is globally one of the highest risk activities, and is a major cause of child death and injury. > in some communities, contamination may be randomly located and a constant danger to unsupervised children. > threat to children working on the land, drawing water or gathering herbs/ mushrooms.	> Threat to children increases feeling of helplessness and insecurity in communities. > Pressure is put on adults to supervise children constantly. > Child deaths and injuries occur. > Psychological impact on the children.
Infrastructure	Infrastructure may have been shelled, bombed, booby-trapped or mined to prevent access. Houses, schools and hospitals may have been used as ordnance stores, be booby-trapped or have been used as military positions or as shelter. Likewise, roads may be mined, damaged, etc.	> Damaged infrastructure blocks normalization processes. > It can affect water quality/sewage treatment, thus exacerbating health problems. > Roads and routes are blocked, affecting normalization, the local and national economy and relief activities. > Blocked routes can cause people to move cross country through land not widely known to be contaminated or through areas of insecurity.
Humanitarian access	Routes to affected communities are blocked by mines.	> It is impossible to conduct relief operations, access vulnerable communities, re-establish family links, deliver food, support the return of refugees and the displaced, etc.

TYPICAL SOCIAL AND ECONOMIC IMPACTS (continued)		
ISSUE	IMPLICATIONS	IMPACT
Health	Access to health services is blocked. Access for health workers to communities is blocked. Access to areas for waste disposal and defecation are blocked or made dangerous by mines and ERW.	> Communities do not have access to health care. > In contaminated areas the probability of injury from mines/ERW is high. Access to hospitals for victims is problematic and may cause more casualties. > Build-up of waste inside the village can have health implications.
Education	Access to schools is blocked. The route to the school or the area around it may be contaminated.	> Education is disrupted. > Normalization processes are disrupted. > Going to school becomes a dangerous activity.
Markets and economy	Access to markets for sale of surplus produce is blocked. Access to markets for community to purchase goods is blocked.	> Goods command high prices. > Household security is affected. > Commodities are in short supply.
Economic need	Gathering ERW as scrap metal becomes a source of income. Explosives are extracted for use or sale. Mines are recovered for sale and re-use. Villages provide their own demining services.	> Strong scrap metal markets drive people to take risks collecting ERW. In Cambodia in 2004, the number of ERW victims increased by 20 per cent, largely as a result of increases in the price of scrap metal in the region. > Extracting explosives is dangerous and often carried out inside villages. If there is an accident, it is not just the person extracting explosives who is killed. > Scavenging causes death and injury to those recovering the mines/ERW and increases the availability, thereby encouraging crime. > People providing clearance service without proper equipment or training are likely to be injured or killed.
Family and social structure	Community leaders are killed and maimed. Heads of household are killed and maimed.	> Social systems already under strain are further damaged. > Families break down.
Security	Lack of available land adds to risk of further violence or even conflict. Mines and ordnance are available.	> Competition for limited resources hinders normalization after the conflict. > Insecurity and crime increase. > Explosives from mines and ERW have been used in the past by armed non-State actors to make improvised explosive devices.

TYPICAL SOCIAL AND ECONOMIC IMPACTS (continued)		
ISSUE	IMPLICATIONS	IMPACT
Routes between communities blocked	Links between communities and families are severed. The flow of information is hindered.	> Prices for goods, produce and labour may rise as a result of mine contamination, where roads and paths are blocked and fertile agricultural land is not accessible. > Reconciliation processes are blocked. > Normalization of social system is blocked.

LEGAL CONTEXT 2

2.1 Introduction

The use of landmines and other weapons is governed by the general rules of international humanitarian law (IHL) relating to the conduct of hostilities. These rules limit the right of parties to a conflict to use the methods and means of warfare of their choice. They include the well-established rules of distinction, proportionality and precaution, as well as the prohibition to employ weapons, means and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.

In addition to these general rules, which apply to all weapons and methods of warfare, certain weapons are regulated by specific treaties.

One of the principal treaties in this area is the Convention on Certain Conventional Weapons or CCW.[2] The Convention was adopted in 1980 and entered into force in 1983. The main regulations of the Convention are found in the five protocols attached to the instrument:

> Protocol I prohibits the use of weapons which injure by fragments not detectable by X-rays;
> Protocol II regulates the use of mines, booby-traps and other devices. The Protocol was amended and strengthened in 1996 and the new version is referred to as amended Protocol II;
> Protocol III regulates the use of incendiary weapons;
> Protocol IV prohibits the use of blinding laser weapons;
> Protocol V deals with "explosive remnants of war".

In addition to the relevant rules of the CCW, anti-personnel landmines are regulated by the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (the Ottawa Convention for short). The Convention was adopted on 18 September 1997 and entered into force on 1 March 1999. It completely prohibits anti-personnel mines and is stronger than amended Protocol II in many important areas.

For the purposes of mine action, the most relevant treaties are the following:

> 1996 CCW Amended Protocol II on mines, booby traps and other devices;
> 1997 Ottawa Convention on the prohibition of anti-personnel mines;
> 2003 CCW Protocol V on explosive remnants of war.

States may be party to one or more of these legal instruments. The following text summarizes their main provisions.

2 The full title of the convention is the "United Nations Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects".

2.2 1996 CCW Amended Protocol II on mines, booby-traps and other devices

The application of the Protocol

The amended Protocol applies to both international and internal armed conflicts and to States as well as to armed opposition groups.

The definition of an anti-personnel mine and other weapons

The amended Protocol defines an anti-personnel mine as a "mine primarily designed to be exploded by the presence, proximity or contact of a person and that will incapacitate, injure or kill a person". The word "primarily" is there to ensure that anti-vehicle mines with anti-handling devices are not considered as anti-personnel mines.[3] Anti-vehicle mines are referred to in the Protocol as "mines other than anti-personnel mines" (or MOTAPM).

A booby-trap is defined as any device designed or adapted to kill or injure, and which functions unexpectedly when a person disturbs or approaches an apparently harmless object (e.g. opens a door). "Other devices" are manually emplaced munitions and devices, including improvised explosive devices, which are designed to kill or injure and which are actuated manually, by remote control or automatically after a lapse of time.

General rules

The following general rules apply to mines (both anti-personnel and anti-vehicle), booby-traps and "other devices".

- It is prohibited to direct these weapons against the civilian population or civilian objects.
- It is prohibited to use these weapons if they are designed or of a nature to cause superfluous injury or unnecessary suffering.
- The indiscriminate use of these weapons is prohibited; i.e. they are not or cannot be directed at a military objective; or their use is expected to cause incidental loss of civilian lives which would be excessive in relation to the concrete and direct military advantage anticipated.
- All feasible precautions shall be taken to protect civilians from their effects.
- Effective advance warning shall be given of any emplacement of these weapons that may affect the civilian population.
- These weapons must be removed following the end of active hostilities.
- Records as to where such weapons have been used must be made by the parties to the conflict.
- The parties to the conflict must take measures to protect forces and peacekeeping missions of the United Nations, ICRC missions and other humanitarian missions from the effects of these weapons.

3 For more on this point, see below "The 1997 Ottawa Convention: The definition of an anti-personnel mine".

Specific rules

All anti-personnel mines must be detectable using commonly available mine-detection equipment.

Manually-emplaced anti-personnel mines must be equipped with self-destruction and self-deactivation mechanisms unless they are:

> placed within a perimeter-marked area monitored by military personnel and protected by fencing or other means, to ensure the effective exclusion of civilians from the area;
> and cleared before the area is abandoned.

Remotely-delivered anti-personnel mines must also have self-destruct and self-deactivation mechanisms.

Remotely-delivered anti-vehicle mines must, to the extent feasible, be equipped with an effective self-destruction or self-neutralization mechanism and have a back-up self-deactivation feature.

Booby-traps and "other devices" may not:

> be attached to or associated with a range of items, including: recognized protective emblems or signs; sick, wounded or dead persons; burial sites or graves; medical equipment; toys; food or drink; objects clearly of a religious nature; animals; kitchen utensils or appliances or historic monuments;
> be in the form of apparently harmless portable objects which are specifically designed and constructed to contain explosive material;
> be used in an area containing a concentration of civilians and in which combat is not taking place unless measures are taken to protect civilians from their effects.

2.3 1997 Ottawa Convention on the prohibition of anti-personnel mines

The application of the Convention

The Ottawa Convention has a very broad scope of application. States Parties undertake "never under any circumstances" to use, produce, develop, stockpile, or transfer anti-personnel mines, or to assist, encourage or induce anyone to commit such acts. The Convention therefore applies in all situations, be it armed conflict, peacetime or situations of internal disturbances or tensions.

Although the wording of the Ottawa Convention creates obligations primarily for the States Parties, non-State actors like all other individuals within the territory of a State Party, must respect the Convention's obligations and must not engage in any of the activities prohibited by the Convention.

The definition of an anti-personnel mine

The definition of an anti-personnel mine was a major stumbling block during the negotiation of 1996 Amended Protocol II and was again discussed at length during the negotiation of the Ottawa Convention. The definition that was adopted is broader than the one contained in Amended Protocol II, as it applies to any mine "designed to be exploded by the presence, proximity or contact of a person" and not merely to one that is "primarily designed" to do so. This means that even mines that are termed anti-vehicle or anti-tank by States or private manufacturers may be caught within the ambit of the definition of anti-personnel landmines – and therefore prohibited – if they are designed with so-called "sensitive fuses", i.e. fuses which can be detonated by a person. Examples are mines designed to be exploded by snapping a tripwire or break wire or applying pressure to a tilt rod. A number of States, however, do not accept this interpretation.

Like in Amended Protocol II, anti-vehicle mines equipped with anti-handling devices are not considered anti-personnel mines precisely because they are equipped with such devices.

Other weapons prohibited by the Convention include Claymore-type directional fragmentation devices, but only if activated by tripwire (which turns them into an anti-personnel mine). Claymore-type devices can lawfully be used in command-detonated mode – where they are activated by remote control. In this mode they do not fit within the definition of an anti-personnel mine. It is also widely, although not universally, agreed that improvised or adapted explosive devices functioning as anti-personnel (AP) mines are also prohibited by the Convention.

Specific rules

The use and production of AP mines are always prohibited. The core of the Convention is its prohibition on the use of anti-personnel mines. This covers the new emplacement of anti-personnel mines, including the "refurbishment" of existing minefields, and may also extend to taking tactical advantage of minefields laid by a

State that is not party to the Ottawa Convention. Also prohibited, without exception, is the production of anti-personnel mines.

The stockpiling and transfer of AP mines are prohibited. There is, however, a specific exception for the retention and transfer of anti-personnel mines, including importation, "for the development of and training in mine detection, mine clearance, or mine destruction techniques". In the view of the ICRC and most States, the number of mines retained for such purposes should be in the hundreds and not more than several thousand.

AP mine stockpiles must be destroyed. Once a State has become a party to the Ottawa Convention, it has a maximum of four years to destroy all anti-personnel mine stockpiles under its jurisdiction or control. It is not necessary that the mine or its components be actually blown up – the mine may be dismantled or otherwise disposed of to prevent environmental damage – as long as it is rendered unusable as a mine.

AP mines in mined areas must be cleared. Each State Party is obliged to clear all emplaced anti-personnel mines in mined areas under its jurisdiction or control as soon as possible but not later than 10 years after it becomes bound by the treaty. The State must also "make every effort to identify all areas under its jurisdiction or control in which anti-personnel mines are known or suspected to be emplaced" and must then perimeter-mark, monitor and protect by fencing or other means to ensure the effective exclusion of civilians. It is possible for a State Party to apply for an extension of the deadline for completing the clearance of such AP mines for a period of up to 10 years. States Parties "in a position to do so" (the term is not defined) must provide assistance for the care and rehabilitation, and social and economic reintegration of mine victims, for mine-awareness programmes, for mine clearance and stockpile destruction. In addition, each State Party must exchange and provide relevant information, particularly regarding mine clearance technology.

2.4 2003 CCW Protocol V on explosive remnants of war

The application of the protocol

The Protocol V's framework applies to explosive remnants of war arising from both international and internal armed conflicts. It contains obligations for States as well as armed opposition groups.

The definition of explosive remnants of war

The concept of explosive remnants of war (ERW) covers:

> unexploded ordnance (UXO) – explosive ordnance that should have exploded but failed to do so, and
> abandoned explosive ordnance (AXO) – ordnance which has been left behind or dumped by a party to the conflict.

It does not cover mines, booby-traps and other devices as defined in CCW Amended Protocol II. The latter already contains provisions dealing with the clearance and removal of these weapons.

Specific rules

The Protocol allocates responsibilities for the clearance, removal or destruction of ERW and requires "all feasible precautions" to be taken to protect civilians from their risks and effects.

Among the measures laid down by the Protocol to help alleviate the humanitarian impact of ERW are specific obligations on recording and transmission of information, clearance, the provision of warnings and risk education to affected communities.

Recording
The party that uses explosive munitions that may become ERW, or that abandons explosive ordnance, must record and retain information to facilitate the rapid clearance of these weapons and provide risk education in the affected areas in order to help reduce the consequences for civilians. The information recorded should include the numbers and types of munitions used or abandoned, the location of targeted areas, etc.

Feasible precautions
The party that controls the affected areas must take "all feasible precautions" to protect civilians through warnings, risk education, marking and fencing.

Clearance
After the end of active hostilities, the party that controls the affected areas must survey the affected areas and mark and clear the ERW.

Assistance
When a party does not have control of the area where ERW are located, it must provide financial and material assistance to facilitate the survey, marking and clearance of ERW.

States Parties "in a position to do so" must also provide assistance for the care and rehabilitation, and social and economic reintegration of victims of explosive remnants of war.

Provision of information
The information which has been recorded must be made available to the party in control of the affected area and to relevant organizations dealing with mine action activities.

Although the Protocol's rules apply only to future conflicts, States already affected by ERW when they become a party, are accorded the "right to seek and receive assistance" from other States Parties to address their ERW problem.

MINE ACTION ACTORS 3

A major part of any analysis of the mine action environment is an understanding of the role, capabilities and relationships with and between the various stakeholders. This section gives an overview of the main stakeholders likely to play a role in any mine action scenario.

3.1 The United Nations

The United Nations has been an important player in mine action and the ICRC has regular interaction with different parts of the UN system both internationally and at field level. No less than 14 UN departments, programmes, funds and agencies are involved to varying degrees.

Primary UN actors

> Department of Peacekeeping Operations (DPKO),
> United Nations Mine Action Service (UNMAS),
> United Nations Development Programme (UNDP),
> United Nations Children's Fund (UNICEF),
> United Nations Office of Project Services (UNOPS),

UN actors with an interest in mine action

> World Food Programme (WFP),
> Office for the Coordination of Humanitarian Affairs (OCHA),
> Department of Disarmament Affairs (DDA),
> Food and Agriculture Organization (FAO),
> Office of the Special Adviser on Gender Issues (OSAGI),
> Office of the High Commissioner for Human Rights (OHCHR),
> United Nations High Commissioner for Refugees (UNHCR),
> World Health Organization (WHO), and
> World Bank.

In 2005, the UN's Inter-Agency Coordination Group on Mine Action (IACG-MA) adopted a new policy on mine action for the UN system: "Mine Action and Effective Coordination: The United Nations Inter-Agency Policy". This new policy document updates and replaces the earlier one ("Mine action and effective coordination: the United Nations policy"), endorsed by the IACG-MA in 1998 and amended in 1999. The new policy "recognizes in particular the instrumental role" played by the ICRC – among other organizations – "in raising awareness of the landmine issue and addressing the needs of those at risk".

The earlier policy allocated thematic and operational tasks to the various UN agencies and bodies. This had the benefit of clarity but not necessarily of effectiveness. The new policy seeks to address perceived deficiencies in the UN response by placing primary responsibility for mine action in the collective hands of the "Senior UN Official" (typically, but not necessarily, the UNDP Resident Representative) and the UN Country Team (UNCT).

Under the policy, when confronted with a landmine or ERW problem, the Senior UN Official is "encouraged to seek advice from UNMAS, which refers the matter for

discussion in the IACG-MA". The Senior UN Official may also consult with any competent UN mine action staff already in the country or region. If the problem is of sufficient importance, the Senior UN Official and the UNCT may designate a sectoral lead agency for mine action and assign responsibilities within the UNCT for different aspects of mine action, taking into account the competencies and comparative advantages of the different United Nations partners and the advice received from the IACG-MA.

For new programmes, the planning process typically starts with an overall assessment of the country situation, known as a "General Mine Action Assessment". This assessment uses largely secondary sources, for instance, existing information provided by agencies and organizations familiar with the area and the contamination. If requested, a UN multi-disciplinary assessment team will deploy to the country to validate and update existing information, and to determine at first hand the scale and impact of the landmine contamination. ICRC delegations are encouraged whenever possible to meet with representatives of these missions. The country assessment will determine whether a UN-supported national mine action programme is required, whether such a programme is possible or what other action is required. It may also define the scope of additional information-gathering requirements. A national or "general" survey of contamination may follow.

United Nations cluster system

Mine action comes under the "Protection Cluster", currently headed (2007) by UNHCR, which does not include any technical mine action expertise. This means in effect that responsibility is normally delegated to UNMAS in emergencies.

United Nations Mine Action Service (UNMAS)

UNMAS is a division of the Department of Peacekeeping Operations (DPKO) and is the focal point for mine action in the United Nations system. In this capacity, UNMAS is responsible for coordinating the development and monitoring of the UN's mine action policy and strategy documents. UNMAS also coordinates the development and updating of the International Mine Action Standards (IMAS), undertakes quality assurance of landmine impact surveys and chairs the certification committee for landmine impact surveys.

UNMAS is directly responsible for UN support to several mine action programmes, normally those linked to peacekeeping missions or emergency situations. At field level, the senior staff member in an UNMAS-supported programme is normally called a "Programme Manager" (PM). He or she may be supported by any number of technical advisers (TAs).

In peacekeeping, complex emergency and rapid response settings, UNMAS establishes and manages a Mine Action Coordination Centre (MACC) and conducts operational mine action programming. In such circumstances, UNMAS Programme Managers report to the Senior UN Official in the field and coordinate periodic reporting to the IACG-MA.

In addition, in cooperation with the UN Department for Safety and Security, UNMAS manages the Landmine and ERW Safety Project (LSP). This is a set of briefing and reference materials that aim to enhance the safety of UN, government and NGO staff working in contaminated environments. The LSP is regarded by the ICRC as extremely good and should be used whenever possible for staff briefing and training. The package is available through the mine action sector at ICRC headquarters.

> *In peacekeeping and emergency environments, UNMAS will be the ICRC's main UN interlocutor on mine action. At field level it may be necessary for ICRC staff to have regular interaction with the UNMAS Programme Manager, especially with respect to the management of information concerning mine and ERW victims that may be included, or sought to be included, in any mine action database. The mine action sector at ICRC headquarters is in regular contact with UNMAS in New York, and can be used to facilitate support and dialogue.*

During emergencies, the ICRC mine action sector is an observer on the UN mine action planning team. This team is convened by UNMAS in New York and consists of the main UN and NGO players in any given situation. The ICRC has observer status and seeks to coordinate International Red Cross and Red Crescent Movement mine action response through this structure.

United Nations Development Programme (UNDP)

Through its country offices and the Mine Action and Small Arms Team within its headquarters-based Bureau for Crisis Prevention and Recovery (BCPR), UNDP assists mine-affected countries to establish or strengthen mine action capacity.

UNDP support usually focuses on building the capacity of national mine action structures (Mine Action Centre and/or National Mine Action Authority) to manage and coordinate mine action. There are two main components to their support: technical advice and training. Support is normally given through the secondment of technical advisers (TAs) under either a Chief Technical Adviser (CTA) or a Senior Technical Adviser (STA). Training focuses on funding multi-week senior and middle management courses, currently provided by the Mine Action Information Center at James Madison University in the United States and Cranfield University, Human Resilience Unit in the United Kingdom.

Sometimes United Nations Mine Action Service (UNMAS) and UNDP will both have a presence in a country. For example, currently in Sudan there is both an UNMAS Programme Manager and a UNDP Chief Technical Adviser. This dual presence can be confusing and ICRC staff should be careful to ensure they deal with the organization most relevant to them in any given situation.

> *ICRC interaction with UNDP is essential where UNDP is supporting national mine action planning and capacity building. In most scenarios where capacity building is an issue, at delegation level, UNDP will be the ICRC's most important mine action interlocutor. Interaction may be related to the coordination of National Society capacity building or to a complementary role developing the capacity of national authorities. The mine action sector at ICRC headquarters is in regular contact with UNDP in New York, and can be used to facilitate support and dialogue.*

United Nations Children Fund (UNICEF)

UNICEF principally supports the development and implementation of mine risk education (MRE) projects and "associated humanitarian activities". According to the earlier UN mine action policy, it was the UN focal point for MRE. Its mandate for MRE goes beyond children, although they have been its main focus. Thus, UNICEF often works with national governments to seek to integrate MRE into school curricula. UNICEF's participation in global mine action efforts is coordinated by its Office of Emergency Programmes (EMOPS) at its headquarters in New York. UNICEF country offices coordinate and undertake its mine action efforts in the field.

UNICEF has drafted international standards for MRE projects and programmes within the context of the International Mine Action Standards. Although these are not binding, it is essential that ICRC staff engaged in MRE be aware of the content of the standards. A guide to the IMAS produced by the Geneva International Centre for Humanitarian Demining (GICHD) is an easy-to-use overview of the IMAS on mine risk education and is available in hard copy or on line at: www.gichd.ch. If a country decides to develop national standards for MRE and the ICRC is developing National Society capacity in mine action, the ICRC should be involved together with the National Society.

> *ICRC interaction with UNICEF will typically be necessary only on technical issues where both the ICRC and UNICEF are conducting or supporting MRE, data collection or victim assistance. It may also be necessary if in an emergency, either UNICEF or the ICRC agree to take the lead in MRE.*

United Nations High Commissioner for Refugees (UNHCR)

UNHCR has a low profile in mine action, despite the link between displaced/refugee populations and mines and other explosive remnants of war. It has, however, supported a number of survey, clearance and mine risk education projects and is included in planning UN rapid response.

UNHCR heads the UN protection cluster, so there may be interaction on mine action issues in the future. It remains to be seen what this will mean in practice.

> *ICRC interaction with UNHCR is likely to be restricted to informing the organization where and when the ICRC is intending to provide mine risk education to populations who are being assisted by UNHCR.*

World Food Programme (WFP)

WFP has had a relatively low profile in mine action although its involvement has been growing through its increased support for survey and clearance of roads, warehousing and distribution points. For example, it contracts mine clearance organizations when there is a need for the organization to establish operations in areas contaminated by mines and other explosive remnants of war.

> *ICRC interaction with WFP is likely to be limited as regards mine action. WFP clearance assets and information on dangerous areas and routes may be made available to the ICRC on request.*

Office for the Coordination of Humanitarian Affairs (OCHA)

OCHA has had a limited role in mine action, but works closely with the UN mine action team in its capacity as coordinator of the Consolidated Appeals Process (CAP) to ensure consistency between the CAP and the Portfolio of Mine Action Projects, and on resource mobilization in its capacity as manager of the Central Emergency Revolving Fund (CERF).

Depending on the UN country set-up, OCHA may on occasion be responsible for coordinating mine action.

> *It is unlikely that the ICRC will have reason to interact with OCHA on any mine action issues in-country. In exceptional circumstances, OCHA may be involved in an emergency needs assessment, which would include mine action.*

3.2 International non-governmental organizations (NGOs)

International NGOs continue to play a role in mine action and can normally be found in any new emergency. The ICRC may call on these NGOs for support, notably on clearance. NGOs will usually have relevant data and information for ICRC mine action operations and may have a working relationship with Red Cross/Red Crescent National Societies. The perception of these NGOs within the country and their relationship with political authorities, and non-State actors will influence the degree to which the ICRC interacts with them.

> *The mine action sector at ICRC headquarters is in regular contact with many of these organizations, and can be used to facilitate support and dialogue.*

HALO Trust

The world's biggest mine and unexploded ordnance clearance NGO, whose headquarters are now in Scotland, is the British NGO, HALO Trust. The ICRC has previously requested the cooperation of HALO Trust for mine clearance and has even facilitated funding for them in exceptional circumstances. In Afghanistan, HALO has provided clearance support to the ICRC and Afghan Red Crescent according to the terms of a memorandum of understanding.

Mines Advisory Group (MAG)

The UK-based Mines Advisory Group (MAG) has more than a dozen years of experience in mine action in 20 countries, and implements a range of integrated activities including landmine impact and technical surveys, mine clearance and explosive ordnance disposal, mine risk education and research and development of technologies. A particular focus is placed on community liaison, which MAG can claim to have pioneered.

Norwegian People's Aid (NPA)

Norwegian People's Aid (NPA) is one of Norway's largest NGOs, and was founded in 1939. NPA has been involved in mine action since 1992 when it started mine clearance in Cambodia. The organization has grown considerably since then. Despite earlier involvement in mine risk education, NPA now focuses on mine and unexploded ordnance clearance. NPA sits on the Coordinating Committee of the International Campaign to Ban Landmines (ICBL) and the core group of Landmine Monitor and is responsible for the mine action sections of the Landmine Monitor country reports.

Handicap International (HI Belgium and HI France)

Handicap International (HI) was founded in France and now has sections in several countries, including Belgium, France, Luxembourg, the United Kingdom and the United States. The operational HI organizations are based in Belgium and France: they conduct

demining, victim assistance and mine risk education in a number of countries. HI Belgium has worked closely with the Cambodian Red Cross, jointly developing and managing the Cambodian Mine Victim Information System.

Danish Church Aid (DCA)

Since becoming an implementing agency in 1999, mine action has become the key activity of the Operations Unit at the head office of Danish Church Aid (DCA) in Copenhagen. DCA trains national capacity in various countries where mine action is needed.

Danish Demining Group (DDG)

The Danish Demining Group (DDG) is a clearance NGO established in 1998 as a joint venture between Danish People's Aid, Caritas Denmark, UNICEF Denmark and the Danish Refugee Council. The main aim of DDG is quick implementation of emergency resources followed by the gradual transfer of the resources to national institutions as part of a national capacity-building programme. To maximize the impact of mine clearance, DDG actively seeks cooperation with other development NGOs. In Afghanistan, DDG provided clearance support to the Afghan Red Crescent through a memorandum of understanding.

Mines Awareness Trust (MAT)

Formed in 1999 and registered in the Channel Islands, MAT implements explosive ordnance disposal and mine clearance as part of an integrated approach. MAT is also involved in training mine dogs and the development of mine detection equipment.

INTERSOS

INTERSOS is an NGO committed to assisting the victims of natural disasters and armed conflicts. It was established in 1992, with the active support of Italian trade unions, when a mine action unit was established to carry out mine risk education, victim assistance and mine clearance operations.

Swiss Foundation for Mine Action (FSD)

As a primary task, the Swiss Foundation for Mine Action (Fédération Suisse de Déminage – FSD) focuses on all mine clearance activities: mine and unexploded ordnance (UXO) survey, mapping, marking and clearance. The FSD also assists with the destruction of stockpiles of landmines and conducts mine and UXO safety training for staff of international humanitarian organizations. The ICRC has worked with the FSD in the past, for example in Afghanistan, Albania, Kosovo, Tajikistan and Senegal.

3.3 National non-governmental organizations (NGOs)

National NGOs will vary depending on the country or territory. Some NGOs, notably from Afghanistan have begun their lives as national NGOs and been able, after some years, to work internationally. Their ability to do this depends very much on the specific patronage of interested donors.

National mine action NGOs have developed in several countries, the most notable being Afghanistan where the national programme is implemented almost exclusively by them. Often, small NGOs are established with support from the UN or international NGOs, without enough thought being given to sustainability. Typically they fade away shortly after their international sponsor withdraws.

Very few national mine action NGOs have successfully made the leap to become internationally successful.

3.4 Advocacy, research and training institutions

Geneva Call

The Geneva Call describes itself as "... an international humanitarian organization dedicated to engaging armed non-State actors (NSAs) to respect and to adhere to humanitarian norms, starting with the ban on anti-personnel (AP) mines. The Geneva Call is committed to the universal application of the principles of international humanitarian law and conducts its activities based on the principles of neutrality, impartiality and independence."

The Geneva Call has become renowned for its work to encourage NSAs to agree to the prohibition on anti-personnel mines. Twenty-seven armed groups in Myanmar, Burundi, India, Iraq, the Philippines, Somalia and Sudan have agreed to ban anti-personnel mines by signing Geneva Call's "Deed of Commitment for a total ban on anti-personnel mines and for cooperation in mine action". States Parties to the Convention on the prohibition on anti-personnel mines (the Ottawa Convention) regularly cite the signature of the Deed of Commitment by armed NSAs as an important step to ensure universal observance of the Convention's norms. However, as it is still a very small and relatively new organization, the Geneva Call has limited means to determine whether NSAs are respecting their commitments and its impact is far from clear.

The Geneva Call receives significant financial and political backing from the Swiss Ministry of Foreign Affairs. Its ambition is to expand its outreach to NSAs beyond the ban on anti-personnel mines to cover broader issues of IHL and human rights.

Cluster Munition Coalition (CMC)

The CMC is a network of civil society organizations, including NGOs, faith-based groups and professional organizations. It includes large worldwide organizations like Amnesty International and Human Rights Watch, as well as nationally-based organizations such as the Swedish Peace and Arbitration Society.

These organizations share a common goal of seeking to put an end to civilians being wounded or killed by cluster munitions. Members of the CMC network work together on an international campaign calling on governments to stop using cluster munitions and to work towards new international law to deal with this weapon.

The International Campaign to Ban Landmines (ICBL)

The ICBL campaigned vigorously for a total ban on anti-personnel mines. In 1997, following the adoption of the Ottawa Convention, the Nobel Peace Prize was awarded to the ICBL and its then coordinator, Jody Williams. In 1998, the ICBL established the Landmine Monitor, a civil-society-based reporting network to systematically monitor and document nations' compliance with the Ottawa Convention and the level and

impact of contamination globally. The Landmine Monitor is a useful source of data and background information; it complements the existing State-based reporting and compliance mechanisms established by the Ottawa Convention.

> *The ICRC contributes an Appendix to each year's Landmine Monitor. It does not, however, endorse the contents of the Monitor, which can be sharply critical of governments.*

Geneva International Centre for Humanitarian Demining (GICHD)

The Geneva International Centre for Humanitarian Demining provides operational assistance to affected countries, undertakes research into mine action issues, and provides support to international treaties banning or restricting the use of landmines. It houses, for example, the Implementation Support Unit that assists States Parties to the Ottawa Convention and hosts its annual intersessional meetings. The GICHD manages the development and maintenance of the Information Management System for Mine Action (IMSMA) and drafts the International Mine Action Standards (IMAS), which are adopted and issued by the UN. It also conducts evaluations of mine action programmes on request.

Cranfield University (Cranfield Resilience Centre)

The Cranfield Resilience Centre is located at Cranfield University in Shrivenham (United Kingdom). CRC conducts several mine action training courses annually including a multi-week course for mine action middle managers and a two-week course for chief technical advisers. These courses are open to International Red Cross and Red Crescent Movement staff.

James Madison University

The Mine Action Information Center (MAIC) within James Madison University in Harrisonburg, Virginia, USA, is responsible for the Senior Mine Action Manager's Course each year, having won a UNDP tender in 2005. In addition, the MAIC manages an information website on mine action and issues a quarterly journal covering different mine action themes. The ICRC has occasionally contributed to its Journal of Mine Action.

3.5 Commercial companies

There are many national and international commercial companies involved in mine action, primarily mine and explosive remnants of war clearance. Some of these companies also work in the field of private military companies.

Examples of international companies are the US company RONCO, the South Africa company Mechem, the Zimbabwean company MineTech, Armor Group and the UK companies European Landmine Solutions (ELS) and BACTEC. These companies are engaged by governments and the UN for specific tasks and will often have to tender for work in a competitive bidding process. They will often be contracted to carry out major infrastructure clearance (e.g.roads/powerlines) but may also undertake smaller clearance tasks. These days there is often little if any difference between the humanitarian tasks undertaken in mine action by NGOs and commercial companies.

National companies are active in some countries, two examples being Bosnia-Herzegovina and Iran. Companies in Bosnia-Herzegovina compete with NGOs for task funding, while in Iran, they facilitate oil and gas exploration in the contaminated former Iran/Iraq conflict battle areas.

3.6 Police, military, and civil defence

In several countries, the military form the backbone of the demining capacity of the country. In a small number of cases, such as Armenia, Belarus or Rwanda, they are currently the only clearance capacity. In mine action programmes in which the military is predominant, they tend to be reluctant to submit to civilian coordination.

The United States especially has promoted a bilateral military-to-military approach where US Special Forces provide training and support (e.g. funding, equipment) to a host country's military to initiate a demining programme. In the Americas, this approach has been adopted by the Organization of American States. Although it is dangerous to generalize, in situations where a mine action programme has not been under civilian control, achieving success has proved a significant challenge.

In addition, police and/or civil defence forces sometimes play a role in mine and ERW clearance. This tends to be focused on explosive ordnance disposal rather than large-scale mine clearance.

Swedish Rescue Services Agency (SRSA, Swedish civil defence)

The SRSA provides training and response in firefighting, earthquake rescue and other civil emergency situations. It works internationally both in support of the UN and independently in emergencies. The SRSA has developed an emergency mine action capability in the past few years and currently has a memorandum of understanding with the ICRC to provide clearance support when requested.

International Mine Action Training Centre (IMATC)

IMATC is a joint Kenyan and British military training centre established in Nairobi in 2005. The centre provides humanitarian mine action training regionally. The focus is on mine clearance, explosive ordnance disposal and survey. IMATC provides the technical and exercise elements of the ICRC professional mine action training course.

UN Department of Peacekeeping Operations (DPKO) – troops from contributing nations

States seconding troops to UN-mandated military missions may include engineers in these contingents. Often their priorities are related to mission-related tasks. Where there is a serious impact on the population from contamination, they may undertake humanitarian clearance tasks. This is normally under the authority of the UN Mine Action Coordination Centre which will put the troops through an accreditation process and quality assure their work. One should never assume that serving soldiers are automatically able to conduct clearance to humanitarian standards – experience has shown that this is often not the case.

MANAGEMENT TOOLS AND COORDINATION MECHANISMS

4

This section describes the main mechanisms for the coordination and management of mine action. In addition to describing briefly what these are and how they function, it also assesses their importance to the ICRC and how the organization relates to them.

4.1 International management tools

International Mine Action Standards

The International Mine Action Standards (IMAS) are standards issued by the United Nations to guide the planning, implementation and management of mine action programmes. They have been developed to improve safety and efficiency in mine action and, in total, run to many hundreds of pages. The IMAS are not binding unless adapted and released as National Mine Action Standards (NMAS) by a national mine action authority.

The IMAS cover a wide range of issues from the accreditation of mine detection dogs to medical support for demining platoons, from safety and occupational health to survey, from sampling of cleared land to the storage and transport of explosives. The IMAS also provide more general information to the mine action community on existing regulations and treaties which affect mine action, particularly those referring to international humanitarian law, clearance requirements, hazard marking and general safety issues.

The IMAS are a framework for the development of national mine action standards, which can more accurately reflect specific local realities and circumstances in a given country. National mine action standards should therefore take account of the IMAS, but will not necessarily follow the IMAS in every respect. They will differ from country to country depending on the local conditions. On the other hand, where the UN, or some other recognized international body, assumes the responsibilities and functions of a national mine action authority, the IMAS will be applied directly as the national mine action standards.

The IMAS Review Board, responsible for overseeing the review and revision of the IMAS, is composed of representatives of the UN agencies concerned, donors, commercial demining companies, research and development institutions, demining NGOs, national mine action authorities and/or mine action centres and, as required, subject specialists. The Review Board is chaired by a United Nations Mine Action Service (UNMAS) Technology Officer, and a representative of the Technology and Standards Section of the Geneva International Centre for Humanitarian Demining (GICHD) serves as Secretary to the Board as well as being a member.

A higher level IMAS Steering Group, chaired by the Director of UNMAS with representation from UNICEF, UNDP and United Nations Office of Project Services (UNOPS), oversees the work of the Review Board.

> *The ICRC attends meetings of the IMAS Review Board as an observer and is free to provide input at any time. ICRC delegations may need to be involved where national mine action standards are being developed.*

Although the ICRC does not go through the IMAS or NMAS accreditation procedures, it recognizes the standards and applies them voluntarily. National Societies working in their own countries are subject to accreditation by their relevant national mine action authority. The ICRC will provide support to National Societies to help them meet accreditation requirements. The mine action sector at ICRC headquarters can provide support where this is required.

UN Framework for Mine Action Planning and Rapid Response

The UN Framework for Mine Action Planning and Rapid Response (previously known as the Rapid Response Plan or RRP) was produced as part of the UN's five-year mine action strategy in 2001–2002. It was developed in order to facilitate the rapid deployment of mine action capabilities as part of emergency humanitarian or peacekeeping operations.

The plan has an impact on ICRC mine action rapid response, and in emergency situations there is regular contact between UNMAS and ICRC headquarters to ensure that efforts are coordinated. To foster this coordination, International Red Cross and Red Crescent Movement mine action rapid response staff are trained annually in Sweden, at the same time as UN rapid response staff.

> *In any event, the ICRC acts as an observer to the UN Framework process. In an immediate post-conflict scenario, the ICRC will take into account the UN Framework.*

UN Portfolio of Mine Action Projects

Each year, the UN issues a portfolio of mine action projects seeking funding in the subsequent calendar year. The "Portfolio of Mine Action Projects" is a reference tool that provides donors, national authorities, NGOs and advocates with a compilation of UN, government and NGO mine action projects, coordinated at national level. The UN Agency responsible for the Portfolio varies, depending on which agency has the lead mine action role in the country.

The ICRC does not include any of its mine action projects in the Portfolio. Where National Societies take part in a national plan or strategy, their activities should be included in it. This is part of the capacity-building strategy in extended post-conflict and peacetime scenarios. The delegation should approach the relevant UN agency and ensure that it invites the relevant National Society to contribute one or more proposals to the Portfolio.

4.2 Coordination mechanisms

The UN Inter-Agency Coordination Group on Mine Action

The UN Inter-Agency Coordination Group on Mine Action (IACG-MA) is the forum ultimately responsible for:

> coordinating UN mine action policies and strategies at the global level;
> monitoring the threat of landmines and other explosive remnants of war around the world;
> reviewing the UN mine action response in a given country; and
> approving International Mine Action Standards and other guidelines and policies on behalf of the UN system.

The IACG-MA may also set up ad hoc groups to tackle country-specific or thematic issues, which subsequently report back to the IACG-MA. All UN departments, programmes, funds and agencies involved in mine action are members of the IACG-MA, except for the World Bank which acts as an observer. The IACG-MA is chaired by the Under-Secretary-General for Peacekeeping Operations (at the Principals level) and by the Director of the United Nations Mine Action Service (UNMAS) at the working level. The IACG-MA takes decisions by consensus.

> *The ICRC attends meetings of the IACG-MA as an observer.*

Steering Committee on Mine Action (SCMA)

The Steering Committee on Mine Action (SCMA), chaired by the Director of the United Nations Mine Action Service (UNMAS), supports the coordination of UN mine action initiatives with other partners and "promotes consultation and information-sharing on policy issues and operations". In addition to the members of the IACG-MA, the Steering Committee includes representatives of the ICRC, the Geneva International Centre for Humanitarian Demining (GICHD), the International Campaign to Ban Landmines (ICBL) and international mine action NGOs. The SCMA meets at least once a year, normally in Geneva, and may set up ad hoc groups to tackle particular country-specific or thematic issues, which subsequently report back to the SCMA.

> *The ICRC attends meetings of the SCMA as an observer.*

Mine Action Support Group (MASG)

The Mine Action Support Group (MASG) is a donor forum chaired and convened by donor governments. It meets on a monthly basis, generally in New York, to discuss thematic and operational matters of concern to donors. In 2006, the United States was chairing the MASG.

> *Currently the ICRC does not attend meetings of the MASG.*

Landmine Impact Surveys (LIS) and the Survey Working Group (SWG)

Several countries have had Landmine Impact Surveys (LIS). An LIS, which typically takes one year or more to complete, aims to provide a detailed and reliable report of the impact of mine- and UXO-contaminated areas on local communities.

The results of the survey are typically entered into the Information Management System for Mine Action (IMSMA) database for the country. Data analysis and report production and sometimes also the implementation of an LIS is managed by the Survey Action Center (SAC – an NGO based in Maryland, USA) and, in a small number of cases, by the Vietnam Veterans of America Foundation (VVAF), based in Washington DC. The Survey Action Center used to be part of VVAF until a split several years ago.

The LIS process is under review as the surveys are expensive and in most cases have not been used to develop operational planning. The course of the LIS is guided by the Survey Working Group, which is a collection of interested agencies and organizations.

> *The ICRC attends meetings of the SWG as an observer because issues are often raised related to countries where it has operations. If a delegation has concerns about any given LIS, it can contact the mine action sector at ICRC headquarters.*

MINE ACTION COORDINATION STRUCTURES

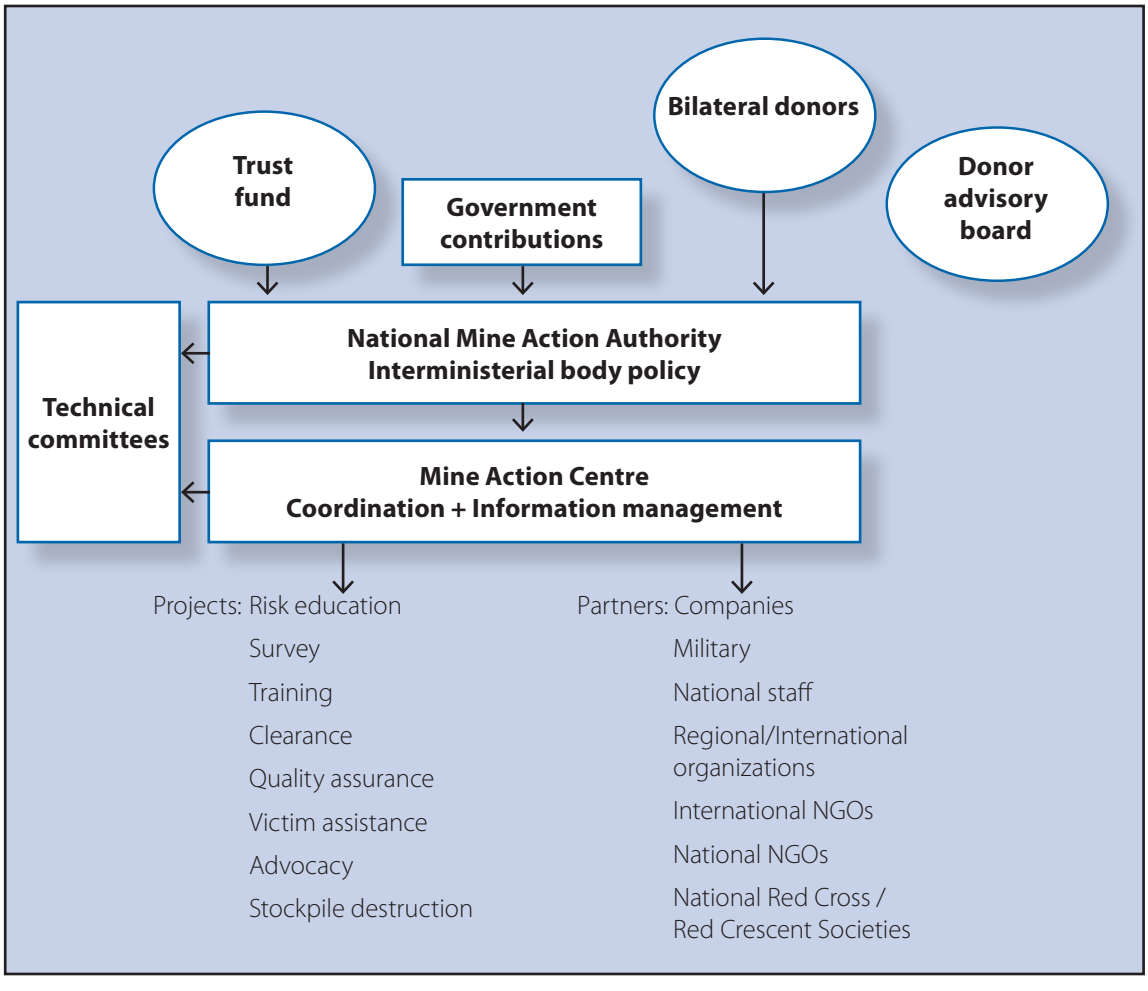
5

Effective coordination is critical to the success of a mine action programme. The International Mine Action Standards issued by the United Nations provide that the country whose territory is contaminated by landmines and/or other explosive remnants of war bears primary responsibility for dealing with the consequences even if it was not responsible for using the weapons that pose the threat. This principle is generally, although not universally, accepted.

5.1 National mine action authorities

The presence of a National Mine Action Authority (NMAA) and its ability to coordinate mine action is critical to the development of National Society activities in post-conflict environments. The typical management structure of a national mine action programme is set out in the chart below.

A common national mine action structure



As explained further below, typically a mine action programme is under the overall control of the national government. This function is often discharged through an interministerial body known as a national mine action authority or NMAA. According to the International Mine Action Standards (IMAS), the NMAA has responsibility for the regulation, management and coordination of a national mine action programme. This means, among other things, adopting a national mine action strategy and plan and overseeing its implementation.

But an NMAA will usually not meet more than once a month and sometimes not more than once every three months. Day-to-day coordination therefore tends to be undertaken by another body – the mine action centre or MAC. The MAC will coordinate (and in a few cases, also conduct) mine risk education, survey and clearance operations. It will sometimes set up additional subsidiary offices (often known as Area Mine Action Offices or Area MACs) to help with the task of ongoing operational coordination.

Relationship of the Movement to national mine action programme coordination and management structures

Where a programme is well managed and coordinated, the role of the International Red Cross and Red Crescent Movement will normally be to support the implementation of the national mine action plan in a way that adds value to the work of others and which is appropriate to the principles of the Movement. In other words, this means seeking to reduce the impact of mines and other explosive remnants of war on the civilian population through a variety of interventions, although, of course, without compromising ICRC or Movement independence or neutrality. In particular, if the ICRC is supporting a National Society, delegations should ensure that the work of the relevant National Society fits into and supports the national strategy and work-plan in an appropriate manner.

The second edition of the IMAS, published on 1 January 2003, lays down the following guidance to States: "The primary responsibility for mine action lies with the Government of the mine-affected State. This responsibility is normally vested in an NMAA, which is charged with the regulation, management and coordination of a national mine action programme. The NMAA is responsible for establishing the national and local conditions which enable the effective management of mine action. It is ultimately responsible for all phases and all facets of a mine action programme within its national boundaries, including the development of national mine action standards, standard operating procedures and instructions".

The NMAA will often be responsible for accrediting – or at least determining the criteria for accreditation – for mine action organizations. National Societies working in their own countries will need to be accredited. The ICRC would not apply, as it normally has a headquarters agreement with the relevant Ministry of Foreign Affairs, and is committed to meet or exceed the applicable standards and requisite criteria for accreditation.

5.2 National mine action centres

At the operational level a Mine Action Centre would normally be established by either the NMAA, or in specific circumstances by the United Nations. The structure of each MAC reflects the national mine action plan, but in general they will be responsible for:

> the coordination or planning of all mine action activities in their area of responsibility;
> the provision of technical advice to the NMAA;
> quality assurance of organizations and activities;
> responsibility for handing over cleared land to beneficiaries;
> the maintenance of mine action records and databases;
> the accreditation of mine action organizations (if delegated by the NMAA);
> the investigation of mine action related accidents and incidents.

It is generally agreed that a National Mine Action Centre should coordinate mine action within any given context. The MAC is normally responsible for producing national mine action standards and accrediting mine action operators. It may also play a greater or lesser role in direct service provision, depending on the context, and would normally be responsible for drafting the national mine action plan, determining national priorities and tasking mine action interventions.

Other activities of MACs include ensuring that the mine risk reduction messages being used by operators in-country are consistent and coherent; carrying out national impact surveys to assist in the appropriate allocation of scarce resources; ensuring that priorities for clearance are consistent with national reconstruction priorities; drafting skeleton standard operating procedures (SOPs); and checking the work of all operators through a quality management system.

Mine action centres have typically been established by a governmental decree or decision, or by the UN. In a number of cases, national mine action legislation has created the MAC, or subsequently formalized its role, responsibilities and structure.

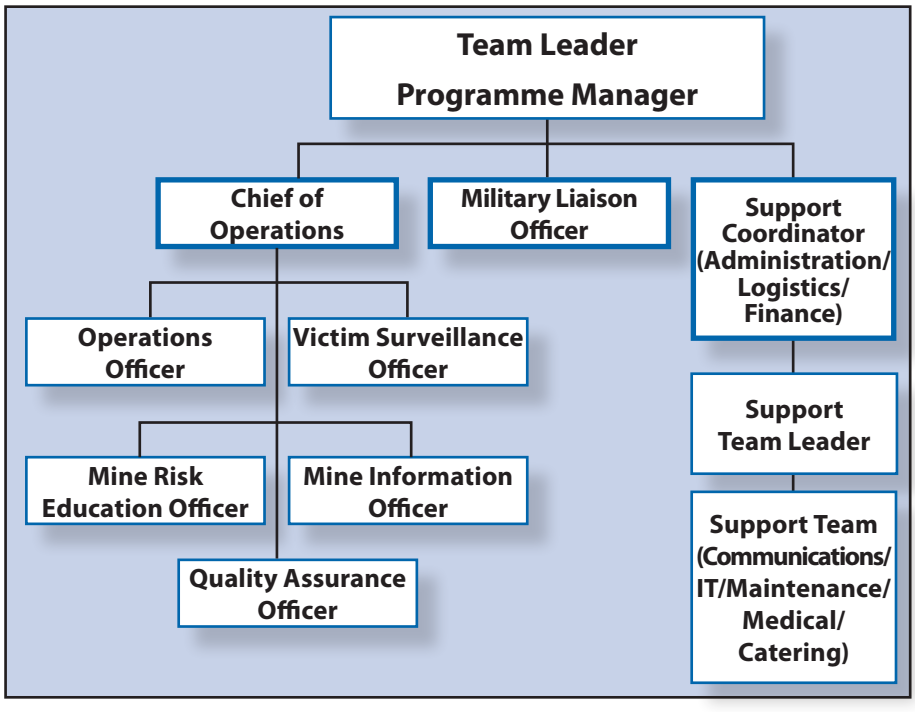
In some cases, the MAC coordinates a large number of operators and controls relatively large amounts of money while in others it is quite modest. In countries such as Cambodia the MAC controlled its own operational demining teams. This approach proved to be less successful, however, as the MAC became too focused on the work of its own teams and was not able to effectively undertake its national coordination functions. It also led to a conflict of interest, whereby the MAC, as the regulatory body, was being both "referee" and "player".

5.3 United Nations mine action coordination centres

The UN will often establish its own mine Mine Action Coordination Centre (MACC) or Mine Action Coordination Team (MACT) as part of its Department of Peacekeeping Operations activities, as part of a UN mission such as UNMIK (Kosovo) and UNMEE (Ethiopia/Eritrea), or in support of the National Authorities. In the case of peace-keeping missions, a MACC or MACT will have responsibility for mine action within the mandated UN mission area. The decision on how closely a delegation coordinates with a MACC will be a management decision, depending on the political and humanitarian situation at the time. It is important that, in as far as possible in these situations, any activities planned by the ICRC within the mission area be coordinated with the UN and do not duplicate other efforts. In these situations, the UN MACC will normally act as the central repository for incident and contamination data. This data, including mapping, should be fully available to the ICRC who in turn, whenever possible, should pass non-sensitive data and information on to the MACC. In such cases, a data-sharing memorandum of understanding should be signed.

Care should be taken to understand MACC/MACT clearance strategies in emergency situations. Misunderstandings can and do arise when a MACC seems to be taking a long time to clear certain areas of mines/ERW. There is normally a good reason for this, which is related to the prioritization of resources against needs. Delegations can provide critical input to this prioritization process by sharing some of the data gathered during field assessments. Delegations must therefore engage as far as the local situation allows. MACCs in these situations may also be the only source of mission planning data or rescue in the event of an accident.

Typical UN MACC structure



As stated earlier, sometimes in an emergency, the UN will provide support to a national mine action authority. Where there are no national authorities or the UN is requested to fill this role, then the MACT will act as the national mine action authority. The following table gives a comparison of the requirements and responsibilities for each approach.

MINE ACTION COORDINATION TEAM (MACT) TASKS	
MACT tasks when the UN assumes responsibility as the National Mine Action Authority	MACT tasks in support of a National Mine Action Authority/ existing coordination agency
> Establish a functioning facility for the coordination body and the follow on organization. > Establish liaison with government, local and military authorities as appropriate. > Establish liaison and reporting with the UN Humanitarian Coordinator or other appropriate UN official. > Coordination with capabilities in country to risk mitigate mine/UXO incidents. > Establishing a functioning coordination mechanism (such as coordination meetings, communications, etc). > Population of a database with known mine information. > Establish and implement an accreditation mechanism. > Implementation of an operational tasking mechanism. > Complete a work plan for the immediate emergency phase. > Establishment of a basic communications network. > Production of project proposals. > Implementation of a standard operating procedures (SOP). > Completion of a national standards framework. > Establishment of a coordinated mine risk education campaign. > Establish a victims identification mechanism, determine information requirements of victim service providers and establish a victim referral mechanism in conjunction with the local authorities and service providers. > Establish a Landmine Safety training regime for the benefit of UN, NGO and international organization staff.	> Establish a functioning facility for the coordination body and the follow-on organization. > Provide support to capabilities in country to mitigate risk of mine/UXO incidents. > Provide support to the functioning coordination mechanisms. > Assist in populating the existing database. > Assist in the establishment of an accreditation mechanism. > Provide support to the operational tasking mechanism. > Assist in drafting a work plan for the immediate emergency phase. > Provide support to the existing communications network. > Assist in the production of project proposals. > Assist in implementing a standard operating procedures (SOP). > Assist in drafting national standards. > Support the existing mine risk education campaign. > Assist in the establishment of a victims identification mechanism, determine information requirements of victim service providers and establish a victim referral mechanism in conjunction with the local authorities and service providers. > Assist in the establishment of a Landmine Safety training regime for the benefit of UN, NGO and international organization staff.

Table from UNMAS "Framework for MA planning and rapid response, 2005".

5.4 Other national mine action structures

The standard two-tier coordination and management structure – mine action authority (policy) and a mine action coordination centre (implementation) has been adopted by the governments of many mine-affected States, yet it is by no means universal. In particular, States that have been assisted by bilateral or regional military-to-military cooperation for the creation of a manual mine clearance capacity within the armed forces have tended to set up a "national demining office" (or similar title) within or under the direct control of the Ministry of Defence. These countries have tended to eschew the need for a national authority, preferring to concentrate on direct implementation of clearance activities.

Glossary of abbreviations

APM	anti-personnel mine
AVM	anti-vehicle mine
AXO	abandoned explosive ordnance
BAC	battle area clearance
BCPR	Bureau for Crisis Prevention and Recovery
CCW	United Nations Convention on Certain Conventional Weapons (1980)
CDC	Center for Disease Control and Prevention
CTA	Chief Technical Adviser
DCA	Danish Church Aid
DDA	Department of Disarmament Affairs
DDG	Danish Demining Group
DPKO	Department of Peacekeeping Operations (United Nations)
DU	depleted uranium
ECOSEC	ICRC Economic Security Unit
ELS	European Landmine Solutions
EOD	explosive ordnance disposal
ERC	ICRC Regional coordination team
ERW	explosive remnants of war
FAO	Food and Agriculture Organization
FAS	ICRC Relations with Armed and Security Forces
FGD	Focus group discussion
FSD	Swiss Foundation for Mine Action
GICHD	Geneva International Centre for Humanitarian Demining
GIS	Geographic Information System
GPS	Global Positioning System
HALO Trust	Hazardous Areas Life-Support Organization
HI	Handicap International
IAC	international armed conflict
IACG-MA	UN Inter-Agency Coordination Group on Mine Action
ICBL	International Campaign to Ban Landmines
ICRC	International Committee of the Red Cross
IDF	Israeli Defense Force
IDP	internally displaced person
IED	improvised explosive device
IHL	International humanitarian law
IMAS	International Mine Action Standards
IMSMA	Information Management System for Mine Action
KAP	Knowledge, Attitude, Practice
LIS	Landmine Impact Survey
LSP	Landmine and ERW Safety Project
MAC	Mine Action Centre
MACC	Mine Action Coordination Centre
MACT	Mine Action Coordination Team
MAG	Mines Advisory Group
MAIC	Mine Action Information Center
MASG	Mine Action Support Group
MAT	Mines Awareness Trust

MDD	mine detection dog
MOU	Memorandum of Understanding
MRE	mine risk education
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NIAC	non-international armed conflict
NMAA	National Mine Action Authority
NPA	Norwegian People's Aid
NSA	non-State actor
OCHA	Office for the Coordination of Humanitarian Affairs
OHCHR	Office of the High Commissioner for Human Rights
OSAGI	Office of the Special Adviser on Gender Issues
PNS	Participating National Society
PPC	Protection of the civilian population
PRA	participatory rapid appraisal
RE	risk education
RPG	rocket propelled grenade
RR	risk reduction
RRA	rapid rural appraisal
RRP	Rapid Response Plan
SAC	Survey Action Center
SALW	small arms and light weapons
SCMA	Steering Committee on Mine Action
SOP	Standing Operating Procedure
SRSA	Swedish Rescue Services Agency
SWEDEC	Swedish Explosive Ordnance Disposal and Demining Centre
SWG	Survey Working Group
TA	Technical Adviser
UN	United Nations
UNCT	United Nation Country Team
UNDP	United Nations Development Programme
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNMAPA	United Nations Mine Action Programme Afghanistan
UNMAS	United Nations Mine Action Service
UNOPS	United Nations Office for Project Services
US	United States of America
UXO	unexploded ordnance
VVAF	Vietnam Veterans of America Foundation
WATHAB	ICRC Water and Habitat Unit
WFP	World Food Programme
WHO	World Health Organization
WP	White phosphorus

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MISSION

The International Committee of the Red Cross is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance. It directs and coordinates the international relief activities conducted by the Movement in situations of conflict. It also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. Established in 1863, the ICRC is at the origin of the International Red Cross and Red Crescent Movement.

ICRC

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