GROUP OF GOVERNMENTAL EXPERTS OF THE STATES PARTIES TO THE 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

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Anti-vehicle mines:

effects on humanitarian assistance and civilian populations

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Contents

1. Introduction

The international community has devoted considerable attention and resources in recent years to address the problem of anti-personnel (AP) mines. Some 124 States have ratified the Convention on the Prohibition of Anti-personnel Mines. It is unique in history that a weapons that was so widely used has been banned by so many states in such a short time. Governments and humanitarian organisations from all over the world are today working to provide relief to the thousands of victims of these weapons, clearing mines and supporting mine awareness programmes.

However, the adoption of a broad international ban on AP mines does not mean that the "landmine problem" is solved. While much of the attention so far has focused on AP mines, the International Committee of the Red Cross (ICRC) has consistently stated that anti-vehicle (AV) mines[1] are also an important part of the problem. In many countries AV mines are used without adequate warning to civilian populations, remain after military operations, are placed to instil fear in civilian populations or are used along roads and railways specifically to block the movement of the people and goods.

This report describes how AV mines affect the work of ICRC and the Red Cross and Red Crescent Movement and presents data and analysis of this problem from other humanitarian agencies and mine clearance organisations. It also assesses the impact AV mines have on civilian populations and war-torn societies. **The report is not a complete global survey on the use and effects of AV mines.** Rather it presents the experience of the ICRC, reports form other organisations and an analysis of the humanitarian implications of these weapons. Information collected from several humanitarian demining organisations and national mine action centres show that the number of AV mines cleared is normally small compared to the number of cleared AP mines.[2] In most of the countries the percentage of cleared AV mines does not exceed 4 % of the total mines cleared. In recent conflicts, it appears that industrial nations have employed anti-vehicle mines on a larger scale than non-industrialised nations. According to demining organisations the AV mines cleared in Kosovo, Kuwait[3], and Nagorno Karabakh counted for 62,2 %, 34.5 % and 70,9 % respectively of the total number of mines they cleared.

While AV mines have generally been used in smaller numbers than AP mines, they have nonetheless had a severe impact upon the lives of people in conflict areas and upon the activities of humanitarian organisations. A single AV mine, or fear of the presence of such mines, can close transport routes for months, or even years, and obstruct the movement of goods, essential relief supplies and people in huge areas. In one reported incident in Mozambique, two villages were isolated from the rest of the province for more than ten years due to the presence of one single AV mine. Such a closure and isolation hampers relief, reconstruction and economic development of war torn societies throughout the world.

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1 [1]It was agreed in an ICRC Expert Group meeting on Anti-Handling devices and Anti-Tank mines in Oslo in September 1998 that it would be more appropriate to use the term "Anti-Vehicle mines" than "Anti-Tank mines" which was considered to be too narrow. Throughout the report the term Anti-Vehicle mines or AV mines is used.

2 [2]See annex 2

3 [3]Centre for research and studies on Kuwait provided the numbers on AV mines cleared in Kuwait

The effects of inadequate warnings, failure to clear after military operations and indiscriminate use of AV mines may most often be indirect. But these effects are significant and severe. They include hunger, poverty, inadequate medical care and the many lives lost from these causes.

2. Impacts on the work of the ICRC and the International Red Cross and Red Crescent Movement

The presence of anti-vehicle mines on roadways affects the work of a humanitarian organisation like ICRC in various ways, directly and indirectly. A survey of ICRC's own operations as well as the operations of the Red Cross and Red Crescent Societies reveals that the organisation was involved in 20 AV mine incidents in 11 different countries during the 1990s[4]. Each of these incidents resulted in the cancellation of relief operations for already vulnerable populations. The presence of AV mines on transport routes in some areas of the world increases the cost of the humanitarian operations tremendously. Transportation costs of relief operations may increase 10 to 20 times when relief goods have to be delivered by air because roadways are dangerous due to mines or the threat of mines. When more money is spent on transport less is available for the procurement of foods, medicines and shelter for civilian populations.

When a humanitarian organisation like ICRC has to suspend its relief operations in emergency zones, the consequences for the civilian population can be tragic. In October 1993 140.000 people in the isolated villages of Tesanj and Maglaj in Bosnia-Herzegovina were reported to be so hungry that they had resorted to eating poisonous mushrooms to stay alive. The area had been cut off from all humanitarian aid for four months when the ICRC was given a green light to go to the villages. But the ICRC convoy, consisting of 14 trucks loaded with blankets and food, had to turn back when the lead ICRC armoured jeep struck an AV mine. The population, which was also in need of medical assistance, had to wait another two weeks before the ICRC or any other humanitarian organisation could enter the area.

The incident reported above is by no means unique. In a similar incident in October 1995 the ICRC had to suspend the delivery of 80.000 litres of water to 100.000 people in the Bubanza province of Burundi when they encountered an anti-vehicle mine on the road. In Angola ICRC operations were suspended or halted on average once per week between 1990 and 1994 and between 1999 and 2000 because of AV mines[5]. In addition the ICRC delegation in Angola reports that supervision of health centres in the Huambo area had to be regularly suspended in 1999 and 2000 because of the threat of AV mines.

When AV mines are used to block roadways, ICRC is prevented from fulfilling its internationally recognised mandate to help the most vulnerable in situations of armed conflict. When vital relief is not delivered to those in need because the target population can not be reached it must be assumed that suffering, death and starvation increases among civilians who often depend upon international assistance for aid. While it is clear that a temporary suspension of aid is to be expected in conflict zones, the long-term denial of assistance to civilian populations is contrary to international norms contained in the fourth Geneva Convention of 1949 and the 1977 Protocols Additional to the Geneva Conventions.

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4 [4]See annex 1
5 [5]Report from ICRC Luanda, 5 August 2000

AV mines also represent a significant direct threat to ICRC and National Society staff. Sixteen ICRC or National Society staff members were killed and 63 injured in AV mine incidents between 1990-2000.[6] One of the most severe AV mine incidents took place in the former Zaire in 1996. Three relief workers were killed and 30 injured when the bus that was transporting them detonated an AV mine near Goma. All the victims worked for the Zairian Red Cross and were assisting the International Federation of Red Cross and Red Crescent Societies in refugee camps. Three of the injured required amputations.

Another severe incident occurred in January 1993 when an ICRC vehicle together with a group of volunteers from the Senegalese Red Cross were going to assess the needs of 15.000 displaced persons in Casamance. A Senegalese Red Cross land cruiser detonated an AV mine on the roadway. Seven people died and four were seriously injured in the explosion. Less than two weeks later in Somalia an AV mine exploded under an ICRC land cruiser. Five ICRC staff members were killed on the spot and three were injured. According to local sources the AV mine had probably been there since 1989. After these two tragic incidents the ICRC issued a press release in which the organisation expressed its "preoccupation with the abundant and indiscriminate use of landmines around the world" and said it "strongly condemns the use of these blind weapons".[7]

3. Impacts on the work of other humanitarian organisations

The effects of AV mines on the work of other humanitarian organisations and agencies are naturally similar to those described in the previous section. The incident reports and analysis provided here reinforce the ICRC's own experience and provide further insight into the nature of AV mine problem. The information presented was contributed in the course of an ICRC survey of a variety of UN and non-governmental organisations carried out in early 2000.

3.1 World Food Program (WFP)

The World Food Program reported on numerous incidents involving AV mines, sometimes killing or seriously injuring WFP staff. The incidents described below represent only a small selection of the reported incidents:

Angola 2000
The WFP Emergency Report No 12, 2000 announced that: *"On 18 March a WFP car transporting WFP staff and a MINARS delegate supporting food distribution to displaced people in Cuvelai hit an antitank mine. The car was equipped with a ballistic blanket, which is thought to have reduced the impact of the detonation substantially. However the driver, [name ommited], a WFP national staff, was severely injured and lost his legs in the accident. At the end of February, a Security Assessment Mission had confirmed that the security situation had improved and that humanitarian aid could resume in this newly opened area of Cunene Province."*[8]

6 [6]In addition in 1993 one Oxfam staff was killed and three injured while travelling in an ICRC convoy.
7 Details in annex 1
8 [7]ICRC press release " Le CICR condamne l'utilisation aveugle des mines", 9 February 1993.
9 [8]WFP Emergency Report No.12 of 2000.

1 WFP reported that food distribution to 1000 displaced people in Cuvelai was immediately suspended pending an outcome of a UN investigation. The WFP Representative in Angola said to IRIN news agency after the incident that "Our employees risk their lives every day in the service of the hungry and destitute of this world". "To lay mines near civilian population is completely inhuman. The victims are almost always innocent people who present no threat to the warring parties."[9]

Rwanda 1998
When a 40 ton WFP food convoy hit a landmine 4 September 1998 in North West of Rwanda, all WFP operations and by extension all UN operations in Ruhengeri Prefecture were suspended for a period of one month. Investigations of the incident made WFP suspect that the mine was directly targeted at them, in order to prevent WFP from delivering food to the internally deplaced people (IDPs) in the region. It is difficult to estimate the effect of the suspension of the relief operations on the civilian population, but WFP was the only source of food for the 150.000 IDPs at that stage and the effect was surely felt by the displaced populations.[10]

Kosovo 1998
In Kosovo, the World Food Programme and UNHCR suspended operations in the Obrinje area for three months after an ICRC vehicle had hit a landmine on the road to Obinje in September 1998.[11] The road where the ICRC accident took place was the only possible transport route into the area.

Angola 1995
A WFP convoy hit a landmine on the Luanda Malange corridor west of Malange August 31. No one was injured. Demining experts from Norwegian People's Aid estimated that the mine had been laid 2-3 years previously.[12]

Sudan 1990-1999
The WFP reports officer for Southern Sudan reports that between 1990 and 1999 there were seven incidents involving AV-mines in the southern sector of Operation Lifeline Sudan that involved WFP both directly (WFP staff) and indirectly (i.e. a WFP-contracted operator).[13]

❖ In 1999 WFP had problems transporting food aid near the Ugandan-Sudanese border as a result of a stretch of mined roadway at the border. During 1999, the rains worsened the condition of this stretch of road as the gullies on the side could not be repaired since the road sides were mined. The road surface deteriorated to the point that WFP convoys faced serious difficulties in moving safely along this route.

❖ In 1996/1997 the WFP was not able to deliver food aid to the town of Bahr el Ghazal because of mined roads.

10[9] IRIN press report " WFP employee critically injured in landmine blast", 21 March 2000

11[10] Information provided by Jannie Armstrong, Reports Officer, WFP Rwanda and WFP Press release, 5 September 1998.

12[11] WFP Emergency Report No. 45 of 1998

13[12] WFP Emergency Report No. 36 of 1995

14[13] The collection of incidents that follows are all reported by Anna Shotton, WFP/OLS Southern Sector Reports Officer.

❖ In 1994 a WFP vehicle was blown up by an AV mine in Kapoeta County, Eastern Equatoria during an exploratory mission in the area. The WFP driver lost his foot in the explosion.

❖ For 10-15 years a stretch of road from Mvollo to Wullu in Rumbek was closed due to mines. This meant that WFP had to use a long detour which added one day to the journey time, which increased transportation costs for the organisation. In 1999 the road was reportedly de-mined.

3.2 UN Mine Action Service (UNMAS)

The United Nations Mine Action Service (UNMAS) wrote in a joint assessment mission report on Burundi that "in 5-6 provinces, landmines[14] on dirt roads, or the suspected presence of landmines on dirt roads, make it impossible to distribute food where the beneficiaries are. Distribution must be undertaken using asphalt roads, and the beneficiaries have to walk long distance[s] to food distribution points". The report states that between November 1996 and July 1998 approximately 50 "anti-tank and 10 anti-personnel mine incidents were reported to the UN Security Cell. [15]

3.3 UN Office of the Coordinator of Humanitarian Affairs (OCHA)

In a 2000 report on Angola OCHA reported that "more than 70 % of all humanitarian assistance is currently transported by air due to restricted surface routes. Reliance on air transport creates certain difficulties, however, including high delivery cost for humanitarian assistance. In addition, airstrip damage in Kuito and Huambo delays deliveries, putting hundreds of thousands of people at further risk."[16]

3.4 UN Department of Humanitarian Affairs

In a 1996 report the former UN Department of Humanitarian Affairs wrote that in Tajikistan AV mines were affecting the nation by "restricting access for humanitarian and development support to significant areas of the country".[17]

3.5 UN High Commissioner for Refugees (UNHCR)

According to a security officer at UNHCR "AV mines make the provision of relief supplies harder to bring to the beneficiary population. Either the relief supplies will not be delivered, they will be delayed while mine clearing operations are conducted, or they will be brought in by air at a commensurately higher cost to the operation (donor)."[18]

15[14] Even though the report does not specify that they are talking about AV MINE, it is pretty obvious from the context that it is referring to AV Mines.

16[15] *UNMAS Joint Assessment Mission Report*, Burundi, August 24 1998

17[16] OCHA 2000 Mid-Term Review of the UN Consolidated Inter-Agency Appeal for Angola (Jan-Jun 2000), 17 July 2000.

18[17] DHA, *UN Consolidated Inter-agency Donor Alert on Urgent Humanitarian needs in Tajikistan*, 13 Nov. 1996

19[18] Information provided by John Logan, Security Officer UNCHR.

3.6 Humanitarian NGOs

è When the humanitarian organisations entered Kosovo after the NATO-bombing had stopped, the relief workers were frustrated when they realised that they were not able to reach the people that needed their assistance the most because of mined roadways. " *Relief workers can travel only on main roads already cleared of landmines and it's nearly impossible to reach people in remote areas",* said a senior political analyst from the humanitarian NGO **World Vision**.[19] In the same press release World Vision wrote "*Our staff have been able to hitch rides aboard World Food Program helicopters to bring in small amounts of aid, but how practical is it to run a relief program from helicopters*?". [20]

A **HALO Trust** Land Rover carrying 10 personnel detonated an AV mine at Liambabi, Angola 12 May 2000. 3 People were injured. The vehicle was fitted with a special armoured belly plate which significantly reduced the effects of the explosion to the occupants.[21]

On 10 October 1997 seven humanitarian relief workers were killed and eight other injured when the truck they were riding in detonated an AV mine in the Bubanza province in Burundi. All fifteen worked for an NGO called the **Austrian Relief Program.**

On 20 February 1996, an **International Rescue Committee** vehicle was blown up by an AV mine on the road between the airport and the Kamembe municipal building in Rwanda. The sole occupant of the land-cruiser, the driver, survived, sustaining superficial wounds to his head, arm and knee.

On 17 June 1996 a car belonging to a **Norwegian NGO** blew up on a mine on the road between Kitgum (Uganda) and Labone (Sudan) injuring two people on board. [22]

On 20 March 1996 a **Caritas** bus hit an AV mine in the Gisenyi region in Rwanda. Two Caritas staff were killed and one wounded. [23]

On 25 August 1995 a 16-tonne truck operated by **CARE-Canada** detonated an AV mine injuring two people in Goma, Democratic Republic of Congo. The mine was planted at the entrance to the CARE -Goma compound located on the airport Road[24]

On 5 February 1993 an **OXFAM** car hit an AV mine in the Zambezi province, Mozambique. The car was part of a joint convoy between OSFAM, MSF, ICRC and the Church Council. Two OXFAM employees were killed and three were wounded. [25] (also reported in section 2)

20[19] World Vision, press release dated 29 June 1999

21[20] World Vision, press release dated 29 June 1999

22[21] Report from Halo Trust Angola

23[22] Information provided by ICRC delegation.

24[23] Information provided by ICRC delegation in Rwanda.

25[24] UN/DHA Web site

26[25] Information provided by the (since closed) ICRC delegation in Maputo.

4. Direct and indirect effects on civilian populations

Direct casualties

It is impossible to estimate accurately how many civilians have been victims of AV mines during the last decade or more. Global statistics on AV mine casualties are not available and many existing databases mix together reports on mine casualties caused by AP and by AV mines. Many incidents are not recorded and the incidents reported month after month by media and humanitarian agencies are likely to represent only a small percentage of the actual number. A simple search through electronic databases of several news agencies and of the ICRC's own records from June 1999 through August 2000 brought to light AV mine incidents in which some 100 civilians were killed and 140 injured in the 14 month period.[26] It is notable, however, that these casualties resulted from only 12 incidents - on average 20 casualties per incident as opposed to the one or several casualties normally resulting form AP mine incidents.

The list below presents a selection of reported AV-mine incidents which claimed civilian victims.

➔ 18 August 2000, Namibia
A truck carrying farm workers detonated an AV mine. Two killed and 47 were injured. Ten were reported to be in a critical condition[27].

➔ 18 August 2000, Russian Federation (Chechnya), Grozny
Private car hit an AV mine on road. Two people killed, two critically wounded[28].

➔ 15 June 2000**,** Federal Republic of Yugoslavia (Kosovo), Lepine
A private van hit landmine. Two people killed, one injured.[29]

➔ 16 May 2000, Sudan, Dellami
An AV mine exploded under a vehicle owned by the Sudanese Roman Catholic Church. 14 children killed, 10 seriously wounded[30].

➔ 20 April 2000, Angola, Negage region
30 people killed, 20 wounded when two trucks hit an AV-mine on a busy route in the Negage region.[31]

➔ 16 February 2000, Angola, Bie Province
A mine exploded under a truck carrying passengers and merchandise along the road between Catabola and Camacupa. Many of the survivors lost legs in the explosions, including a young girl who lost both her legs. 10 people died, 22 seriously wounded.[32]

27[26] Period covered: 22 June 1999 -22 August 2000.

28[27] UN Integrated Regional Information Network " Deteriorating Security Situation", August 21 2000

29[28] Itar-Tass "Two killed, two wounded in landmine blast in Chechnya", 18 August 2000

30[29] Reuters " Kosovo mines kills two", 15 June 2000

31[30] Reuters " Landmine kills 14 children in Sudan", 20 May 2000.

32[31] Information provided by ICRC delegation in Luanda.

33[32] AFP " 10 dead, 22 wounded in Angola as anti-tank mine explodes", 17 February 2000

➔ 10 December 1999, Angola, Huambo Province
Seven people were killed and 16 seriously injured when an AV mine exploded under a bus. The blast occurred near the town of Vila-Nova in Huambo province when the bus ran over an AV mine. [33]

➔ 2 December 1999, Georgia, Abkhazia
Five people were killed when their car hit a landmine in a village in Abkhazia. All the occupants in the car were killed in the explosion.[34]

➔ 13 August 1999**,** Somalia, Buur-eylo village in Bay Region
At least 23 people were killed and four others wounded after a Toyota pickup detonated an AV mine.[35]

➔ 22 June 1999, Georgia, Abkahzia
Two people were killed and 13 others wounded when a crowded bus hit an AV mine. Two children were among the wounded.

➔ 4 August 1997, Burundi, Cibitoke Province
An AV mine exploded under a minibus carrying 29 people. Nine people killed, nine injured. [36]

➔ 25 March 1997, Burundi, Bujumbura
Three people died and about 10 others were injured when two AV mines exploded in separate incidents in the Burundian capital. One of the blasts occurred when a bus drove over a mine in a street in the northern part of the city centre, while in the other incident a truck was blown up along the road to Bujumbura's airport. [37]

➔ 19 March 1996, Rwanda, Cyangugu
An AV mine exploded under a minibus. 8 people died, 22 wounded.[38]

Indirect effects

As indicated previously, one of the most destructive impacts of the presence of AV mines is that they can isolate entire towns, villages or regions - often for long periods due to the cost, slow pace and dangers of clearance operations. In addition to preventing humanitarian assistance, economic development and reconstruction of war torn societies can be set back for years as normal economic and social interaction is obstructed. Particularly in areas where only one access road exists a single mine can bring severe hardship and economic distress to a whole district.

34[33] Reuters " Seven civilians killed by mine in Angola" 10 December 1999.
35[34] AFP " Landmine kills five in Abkhazia", 2 December 1999
36[35] AFP " At least 23 killed by landmine in southern Somalia", 13 August 1999
37[36] IRIN emergency update no 233 on the Great Lakes, 1997.
38[37] IPS " Landmine explosions shake Bujumbura", 25 March 1997.
39[38] ICRC Rwanda

According to 1998 estimates by the Mine Clearance Planning Agency for Afghanistan (MCPA) mined roads in Afghanistan had remained unusable for an average period of about 9 years.[39] Due to dangerous, long or difficult routes, the cost of transportation and goods increased significantly and many areas had experienced restrictions in the delivery of goods. Extended travel times take time away from people which could otherwise be engaged in productive work. According to the MCPA study the closure of roads in Afghanistan had resulted in a loss of more than 26,2 million US$ per year for the local economy.[40]

The situation in Afghanistan is not unique. During the civil war in Mozambique, very few AV mines where reportedly laid by the warring parties. Still, the presence of only a few AV mines caused great suffering and had a serious effect on development and reconstruction after the war ended. One part of the road linking two district capitals, Milange and Morrumbala, was not used for 10 years because the locals suspected it had been mined. The alternative temporary road was flooded every rainy season which meant that the towns of Chire and Morire were cut off from the rest of the country for long periods during 10 years. When the demining organisation Halo Trust was asked to clear the road in 1995, they found **one** AV mine.[41] Rehabilitation of the road began immediately after clearance and allowed heavy vehicles to enter an area of famine and neglect. The report of HALO Trust states that the effect of AV mines is "far greater than the numbers might suggest"[42].

The duration of the isolation of an area due to the presence of AV mines can depend on the nature of the conflict and who laid the mines. When mines have been laid by troops who remain in the area they may be removed from the roads within a short period after the hostilities end. However, the process can be delayed for long periods when those who laid the mines have been killed or have moved to another area. One result in such circumstances can be, as Halo Trust writes in a report, that the mines are "cleared" by the civilian population who find themselves forced to start using the mined road again due to economic necessity.

AV mines are not only laid on roads. AV mines have also been laid in agricultural areas which prevents farmers from ploughing their fields. One consequence can be that formerly self sufficient communities become reliant on aid, because they have no means of supporting themselves. If aid is not available, the community will suffer or may relocate. HALO Trust reported three AV-incidents involving tractors within one small community. Since the tractors were communally owned assets, these accidents had "deep and lasting effects" according to the report which also states that:

In areas where road access has been cut off by AV mines the population can not trade, can not purchase supplies and do not have access to medical facilities. Aid agencies will concentrate their efforts in other areas where the needs are similar but access and conditions for working are easier. Over time communities will drift away to larger and more prosperous community centers leaving behind ghost villages. At best people have to walk miles to collect any basic provisions which they can not produce themselves.[43]

40[39]UN Mine Action Programme for Afghanistan, report by MCPA, “Socio-Economic Impact Study of Mine Action Operations – Afghanistan”, October 1998

41[40]Ibid

42[41]Information provided by Tom Dibb, HALO Trust

43[42]Ibid.

44[43]Tom Dibb, Halo Trust in letter to ICRC.

5. AV mines and international humanitarian law

1. The use of AV mines is subject to the general rules on the protection of civilians contained in international humanitarian law. Namely, all feasible precautions must be taken to protect civilians from the effects of weapons and they may not be used against individual civilians or civilian populations. The indiscriminate use of weapons is prohibited. These general rules form part of customary international law that applies to all parties to armed conflicts, whether or not they have adhered to particular treaties.

The most recent specific application of these rules to AV mines is in Protocol II of the 1980 United Nations Convention on Certain Conventional Weapons (CCW) (as amended in 1996). The general rules (above) are repeated in amended Protocol II and apply to all mines, booby traps and similar devices.

Protocol II requires (under article 3.10) that a variety of factors must be weighed before the use of AV mines, including:

- the short- and long-term effect of mines upon the local civilian population for the duration of the minefield;
- the availability and feasibility of using alternatives; and
- the short- and long-term military requirements for a minefield.

In addition, Parties to a conflict must take all feasible precautions to protect civilians from the effects of AV mines[44]. Such precautions may include, for example, fencing, signs, warning and monitoring (Article 3.10).

In addition effective advance warning shall be given of any emplacement of mines, booby-traps and other devices which may affect the civilian population, "unless circumstances do not permit" (article 3.11).

Protocol II requires parties to a conflict to record the location of all AV mines except remotely-delivered AV mines (article 9). The estimated location of remotely-delivered AV mines must be recorded and (when feasible) the location of such mines marked on the ground. The Protocol requires "to the extent feasible" that remotely-delivered AV mines be equipped with a self-destruction or self-neutralisation feature as well as a back-up self-deactivation feature. Time limits for the activation of these features are not set by the Protocol. All mines, minefields and mined areas must be cleared, removed, destroyed or maintained "without delay after the cessation of active hostilities" (article 10).

Amended Protocol II entered into force 3 December 1998 and applies in both international and non-international armed conflicts. As at 1 July 2002 it had been ratified by 65 States. During the 1995-96 CCW Review Conference there was considerable support for more stringent restrictions on anti-vehicle mines. However due to the higher priority given to AP mines and the lack of time to achieve consensus on new AV mine restrictions additional limitations were not possible at the time.

45[44]Feasible precautions are "those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations".

6. Conclusions and Recommendations

Anti-vehicle mines constitute a significant and widespread humanitarian problem. The *most dramatic* consequences of AV mines are the countless deaths and injuries of civilians attempting to go about their lives - in crowded buses, on the backs of trucks, and on dirt and mud tracks in dozens of war torn countries. However, we believe that the *most severe* effects of AV mines are the long-term denial to already vulnerable populations of food, medicines, vaccines and shelter. The effects are seen in the attempts at post-conflict recovery which are crippled by the limitations of movement and therefore on the resumption of economic activity. The results are hunger, disease and poverty.

In far too many instances humanitarian agencies are forced to abandon civilian populations or delay humanitarian relief due to the presence or suspected presence of AV mines. Consequently, the humanitarian assistance, which civilians have a right to expect under the Fourth Geneva Convention of 1949 and the Additional Protocols of 1977, is simply not available. In addition, the blockage of transport routes with AV mines dramatically increases the cost of international assistance operations by forcing supplies to be sent by air instead of surface transport.

Efforts to prevent the enormous human suffering caused by anti-vehicle mines should focus on **increasing adherence to and faithful application of Protocol II of the 1980 Convention on Certain Conventional Weapons**. Unless used strictly in a manner which ensures that they do not endanger civilians the use of AV mines could constitute an indiscriminate attack. If these weapons are to continue to be considered as legitimate weapons of war concerted efforts are needed to ensure that they are used in a manner which will effectively exclude civilians from areas where AV mines are present and designed to minimise risk to civilians.

In addition to the rules contained in Protocol II as amended, further consideration should be given to additional measures:

1. **Requiring that all AV mines**, including those emplaced by hand, **should be detectable and equipped with either self-destruct or self-neutralisation features**. The greatest proportion of anti-vehicle mine incidents in recent years has been from hand-emplaced anti-vehicle mines which remain after conflicts or which are left on roadways by previously warring factions in an effort to disrupt relief and recovery operations. Limiting the lifetime of such mines to the minimum necessary to achieve their military purpose would be an significant contribution to reducing their human costs.

2. **Requiring that remotely delivered AV mines contain self-destruct features** is particularly important. Although remotely delivered (or scatterrable) AV mines have been used in only a limited number of recent conflicts their use is expected to increase rapidly with the spread of this technology. If such mines are not self-destructing their proliferation could cause humanitarian problems many times more severe than those caused by AV mines currently in use.

ANNEX 1

AV mine incidents involving the ICRC, International Federation and National Societies 1990-2000

YEAR	DATE	PLACE	DESCRIPTION
2'000	1990's	GEORGIA (Abkhazia)	ICRC operations suspended several times per year due to presence/suspected presence of AV-mines. Deliveries of food and hospital medical supplies to hospitals were delayed. Programmes in some areas are not possible because of AV mines AV mines discourage (a) public transport services, (b) traders from going to certain areas to purchase agricultural products directly from farmers and (c) local population from transporting their goods to market.
1999	8 October 1999	ANGOLA (SAMMISSASA)	Mission goal: Food distribution. AV mine exploded on ICRC truck on the road to Raimundo/Petrolio. Driver in state of shock; truck damaged on the second axle. Immediate consequences: • Reassessment of all the "dangerous" distribution points • Without exceptions no field trip allowed before 09h00 • No more use of secondary roads or roads not used by private trucks • People in places "off limits" had to walk a few kilometres to get the assistance
1998	30 September 1998	YUGOSLAVIA (LIKOVAC)	Mission goal: Medical field trip to access and treat wounded in the Drenica region. AV mine exploded on ICRC landcruiser on the road between Gornje Obrinje and Likovac One dead and two seriously wounded. Immediate consequences: • Immediate suspension of all field activities outside Pristina by the sub-delegation • Area with suspected mine fields was immediately put off limits
1996	7 September 1996	ZAIRE (GOMA)	A bus transporting 33 Zairian Red Cross volunteers working for the IFRC in the refugee camps triggered an AV mine seven kilometres from Goma Airport. Three killed and 30 seriously injured. All the victims were working for Zairian Red Cross. Three of the injured required amputations. Operations were halted and the refugees in need were not given assistance.
	28 August 1996	ZAIRE (ESCARPMENT)	Mission goal: Relief team reaching isolated population by road. AV mine found on the road. Mission was postponed.
	July 1996	ANGOLA (MUNGO)	Mission goal: Relief team reaching isolated population by road. AV mine found on the road. Mission was postponed until cleared (next day).
1995	28 October 1995	BURUNDI (BUJUMBURA)	An ICRC truck hit an AP mine on the way to Mpanda near Bujumbura. When deminers examined the road after the incident they found AV mines on the road. The truck which was to deliver 80.000 litres of water to 100.000 people in the Bubanza province had to turn back and all operations in the area were suspended.
	27 September 1995	ZAIRE (GOMA)	A bus from the International Federation of Red Cross Societies (IFRC) carrying 50 medical workers ran over an AV mine eight kilometres outside Goma. Thirteen people were injured. All of them were medical personnel of the Zairan Red Cross. IFRC decided to restrict its movement in the area to a minimum after the incident.

	26 September 1995	RWANDA	AV mine exploded on ICRC truck on the road Musebaya-Muko.
	16 April 1995	RUSSIA FEDERATION (CHECHNYA, STARI ATAGI)	Mission goal: To bring relief (food) assistance to the Shatoi valley, cut off by fighting. The APC opening the road for ICRC convoy blew on two mines. The APC was destroyed and one Russian officer wounded, other Russian soldiers slightly wounded. The convoy returned back to Grosny (Mission was postponed).
1993	21 November 1993	YUGOSLAVIA (BIHAC)	Mission goal: Returning empty relief convoy of 5 trucks from Bihac. A Mercedes semitrailer hit two AV mines (the trailer was so damaged that it has never been used again). No casualties. All convoys to the UNPAS and Bihac pocket cancelled until area cleared.
	12 October 1993	YUGOSLAVIA (TESANJ)	Mission goal: Food aid to the Maglaj and Tesanj pockets where about 140.000 people are reported to be so hungry that they have resorted to eating poisonous mushrooms. 14 ICRC trucks loaded with blankets and food. One ICRC armoured jeep leading the convoy struck an AV mine (no casualties). ICRC statement: "the ICRC regrets that it has thus (because of the mine) been prevented from carrying out its humanitarian activities".
	5 February 1993	SOMALIA (LASANOD)	Mission goal: Part of the ICRC veterinary programme: relief programme aimed at rebuilding the livestock-based economy, devastated through war and famine. ICRC land cruiser detonated an AV mine which exploded under the right rear wheel. Five persons killed and three were injured. Results: • The veterinary team will restrict its work to safe areas only • People will have to move to reach veterinary team According to local sources the mine was probably in place since 1989.
	5 February 1993	MOZAMBIQUE (ZAMBEZIA)	Mission goal: Survey visit in the Namarroi district. Purpose was to meet with local officials to evaluate humanitarian assistance. It was to be carried by a team of humanitarian organisations consisting of ICRC, CCM, OXFAM and MSF France. The OXFAM car triggered off an anti-vehicle mine. Two killed (one working for OXFAM, one representative of local government). Three injured (all working for OXFAM)
	25 January 1993	SENEGAL (CASAMANCE)	Mission goal: to assess humanitarian needs A Senegalese Red Cross land cruiser blew on AV mine on the road to Casamance. Seven dead and 4 wounded (all members of the Senegalese National Society).
1992	8 September 1992	SOMALIA (GELIB)	AV mine exploded under ICRC truck. Three injured of which one seriously (amputation of leg).
1991	2 September 1991	SOUTH SUDAN (WAU)	Mission goal: carriage of food. Airplane hit AV mine while taking off. Five ICRC staff wounded
	13 July 1991	ANGOLA (N'HAREA)	Airplane Red 007 hit AV mine while landing.

1990	23 July 1990	AFGHANISTAN	One ICRC land cruiser car struck an AV mine. Two ICRC staff wounded. Immediate consequences: Prohibition to circulate at night.
	29 June 1990	SOMALIA	Truck, mine on airstrip Somali Red Cross also reports 2 incidents, 1 injured and its operations suspended several times per year in 1990s due to AV mines.

ANNEX 2

ANTI-VEHICLE MINES CLEARED BY DEMINING ORGANISATIONS

Organisation	Where	Period covered	AV-mines cleared	AP-mines cleared	% AV mines of total mines cleared
Mines advisory group (MAG)	Vietnam	June 1999-May 2000	2	80	2.4%
MAG	Kosovo	January 1999 - June 1999	1	32	3%
MAG	Angola	January 1999 - April 2000	17	39	30%
MAG	Northern Iraq	January 1993 - May 2000	1'940	79'028	2.4
MAG	Cambodia	October 1992 - April 2000	18	7'626	0.2%
Handicap International	Bosnia/ Herzegovina	May 1997-May 2000	5	285	1.7%
HALO trust	Georgia-Abkhazia	January 1998 - March 2000	88	2'380	3.6%
HALO	Afghanistan	January 1998 - March 2000	221	12'989	1.7%
HALO	Angola	January 1998 - March 2000	133	1'507	8.1%
HALO	Cambodia	January 1998 - March 2000	56	4'139	1.3%
HALO	Chechnya	April 1998 - January 2000	18	44	29%
HALO	Kosovo	June 1999 - March 2000	623	379	62.2%
HALO	Mozambique	January 1998 - March 2000	97	2'553	3.7%
HALO	Azerbaijan-Nagorno Karabakh	May 1995 - June 96	1'377	546	70.9%
HALO	Somalia - Somaliland	November 1999 - March 2000	37	582	6%
UNOPS Mine Action Iraq	Iraq (Dohuk,Erbil, Sulaimnia)	April 1998-May 2000	127	1'979	6%
Cambodian Mine Action Centre	Cambodia, all provinces	November 1993-June 2000	1'748	91'492	1,9%

Centre for research and Studies on Kuwait (source)	Kuwait	As at January 1997	567. 650	1.078.705	34,5%
Instituto Nacional de Remocao de obstaculos e engenhos explosivos, Angola	Angola	January 2000-May 2000	37	471	7,3 %