

December 2001

Memorandum for Delegates to the CCW Review Conference

Subject: Low Metal Content Antivehicle Mines

During the last review of the 1980 Convention on Certain Conventional Weapons (CCW) a proposal was tabled that mines should meet a minimum detectability standard of a signal equivalent to eight grams of a coherent mass of iron on commonly available mine detection equipment. This requirement was adopted for antipersonnel mines in May 1996, but consensus was not reached for applying it to antivehicle mines.

A proposal initially submitted by the United States in December 2000 and currently co-sponsored by Denmark, Finland, Germany, Hungary, Japan, Poland, Slovakia and the United Kingdom reintroduces a detectability standard for mines other than antipersonnel mines (antivehicle mines). This initiative is a positive recognition of the humanitarian threat posed by all types of mines. Antivehicle mines continue to pose a danger to the civilian population, humanitarian workers, and deminers in mine affected areas.

Human Rights Watch supports a prohibition on the use and transfer of low metal content antivehicle mines.

Should States Parties agree to adopt a new protocol with provisions regulating the detectability of mines other than antipersonnel mines, the following elements should be incorporated:

- A minimal, if any, compliance deferral period for immediate impact.
- A transparency measure to establish existing types and technical characteristics of low metal content antivehicle mines.
- A transparency measure declaring how existing low metal content antivehicle mines are modified to comply with the detectability requirement; this will assist post-conflict mine clearance operations.
- Notification to the Depository, on a voluntary basis if necessary, of historical transfers and exports or acquisition of low metal content antivehicle mines to facilitate universalization of the new norm.

Countries that Have Manufactured Low Metal Content Antivehicle Mines

Thirty-two countries have manufactured at least eighty-five different types of low metal content antivehicle mines. Six of these countries are not party to CCW: Albania, Chile, Egypt, Iran, North Korea, and Singapore. Twenty-six States Parties to Amended Protocol II have manufactured low metal content antivehicle mines in the past. See Annex 1 for the data tables that identify states that are reported to have produced low metal content antivehicle mines.

Information regarding the size and composition of any country's stockpiles of these mines is generally not publicly available nor is there any transparency requirement for such data in any international treaty or agreement. Other countries may stockpile these types through licit and illicit exports and arms sales activities. One recent example occurred on May 7, 2001 when the Israeli Navy apparently seized a ship containing weapons that was reportedly headed to Gaza; among the weapons seized were sixty-two TMA-5 and eight TMA-3 low metal content antivehicle mines, both of Yugoslavian manufacture.

A Unilateral Commitment by the United States

After the adoption of CCW Amended Protocol II in May 1996, which established a detectability standard of 8 grams of iron equivalent for antipersonnel mines, the head of the U.S. Delegation, Michael Matheson, stated that "...the U.S. has unilaterally decided not to transfer antitank mines which fail to meet this detectability standard, and has invited other states to follow suit." The article-by-article analysis of Amended Protocol II, submitted to the Senate by President Clinton on January 7, 1997, states on page 16: "As a unilateral matter the U.S. will nonetheless observe a ban on transfer of antitank mines which fail to meet this detectability standard." The U.S. M19 antitank mine falls within the terms of the ban, containing just 2.86 grams of metal; 1.68 grams of this total is iron.

However, it is unclear whether a ban on the transfer of the M19 antitank mine has ever been implemented, as to date the Department of State has apparently not issued instructions to do so. Human Rights Watch raised this issue in a meeting with officials from the Department of Defense in May 2000, in correspondence with officials of the Department of State in October 2000 and April 2001, and in meetings with the U.S. CCW delegation in December 2000, April 2001, and August 2001. No formal reply to these inquiries has been received.

Based on an analysis of Commodity Command Standard System information obtained from the U.S. Army Operations Support Command under the Freedom of Information Act by Human Rights Watch, it does not appear that the U.S. has transferred any M19 antitank mines as part of a Foreign Military Sales agreement since 1998. Human Rights Watch has not been able to determine whether transfers of M19 mines occurred between 1996 and 1998. It is also not known whether the U.S. has provided M19 antitank mines to other countries since May 1996 under other programs authorized by the Arms Export Control Act of 1976 or the Foreign Assistance Act of 1961. See the next section for the details on the 216,073 M19 antitank mines transferred by the United States between 1969 and 1987.

Additionally, it is not known whether this transfer ban applies to production licenses. According to *Jane's Mines and Mine Clearance, 2000-2001*, the M19 antitank mine has been produced in the past under license by Industrias Cardoen in Chile, MKEK in Turkey, and the Daewoo Corporation in South Korea. The mine has also been copied by and produced in Iran. The same source reports that the Hanwha Corporation currently produces the M19 antitank mine in South Korea.

In a related matter, on April 17, 2000 the U.S. Army Operations Support Command issued a "sources sought" announcement (Commerce Business Daily cite W-108 SN445670) to procure and supply various foreign and U.S. ammunition items to an unnamed country in the Middle East as part of a possible Foreign Military Sales agreement. Listed was a requirement to obtain and transfer 1,650 "mine antitank MK-111 TS Belgium." While international reference publications do not list an antitank mine manufactured by Belgium with this exact nomenclature, it seems entirely possible this mine is a low metal content Belgian PRB-M3 antivehicle mine. This nomenclature has been transliterated by international sources in a number of ways: M-III, M-111, PRB-III.

There is no indication that a formal solicitation was issued, a contract awarded, or a Foreign Military Sales agreement executed for the procurement of these mines. However, the fact that it was contemplated and a preliminary tender was released to industry does raise questions regarding the implementation of the unilateral commitment made in May 1996 to not transfer antivehicle mines not meeting the detectability standards of Amended Protocol II.

The Value of Historical Data in Promoting Universality

Between 1969 and 1987, the United States transferred 216,073 M19 low metal content antitank mines to thirteen countries as part of the Military Assistance and Foreign

Military Sales Programs. Information on transfers prior to 1969 is not available. Human Rights Watch obtained this information in August 1994 through a Freedom of Information Act request to the Defense Security Assistance Agency concerning U.S. landmine deliveries. Details of these transfers are presented in the following table:

Recipient Country	Number of Transferred	Year of Transfer
Cambodia	6	1972
Chad	240	1987
Colombia	2,000	1974
Honduras	102	1983
Iran	29,205	1972-1974
Israel	40,015	1974
Lebanon	4,000	1983-1984
Saudi Arabia	85,334	1977
Singapore	12	1974
South Korea	49,962	1970-1972
Thailand	5,088	1977-1980
Tunisia	100	1970
Turkey	9	1969

Transfers of M19 Antivehicle Mines by the United States, 1969-1987

Except for Saudi Arabia and Singapore, all of these recipient countries are mine affected. Eight of these countries are not party to CCW: Chad, Honduras, Iran, Lebanon, Saudi Arabia, Singapore, Thailand, and Turkey. The M19 antitank mine is reported to have been used in Afghanistan, Angola, Chad, Cyprus, Jordan, Iran, Iraq, Lebanon, South Korea, Western Sahara, and Zambia.

Annex 1: Data Tables

The following tables identify the countries, the types of low metal content antivehicle mines they are reported to have produced, and any technical details available. Many of the antivehicle mines listed contain secondary or multiple fuze wells for the attachment of pressure-release and pull-release antihandling devices such as anti-lift devices or anti-tampering fuzes. This list has been modified since its initial release in December 2000 because several countries addressed this issue in responses to Human Rights Watch or through the International Campaign to Ban Landmines' Landmine Monitor research network.

Country of Manufacture	Mine Nomenclature	Case Material	Metal Content	Fuze Wells	Notes
Albania	(Unknown)	Wood		1	TNT filled wooden box with simple "rocker" fuze
Argentina	FMK-3	Glass reinforced polyester resin		1	Used in Falklands/Malvinas
	FMK-5	Plastic		1	Packed with separate metal ring for aid in detection
Austria	PZ MI 75	Plastic	0.5 g.	2	Reported to have been exported
	Model 67	Plastic			
Belgium	NR 141	Plastic		1	
	NR 201	Plastic		2	
	PRB 408	Plastic		7	
	PRB M1	Plastic		2	
	PRB M2	Caseless		2	
	PRB M3	Plastic		1	Used in Afghanistan, Angola, Chad, Eritrea, Ethiopia, Iraq, Rwanda, Somalia, Zambia
	PRB M3A1	Plastic		3	Used in Eritrea, Ethiopia, Somalia
Brazil	AET-1	Plastic		1	Possible copy of Belgian PRB M3
	T-AB-1	Plastic			
Bulgaria	PTM-80P	Plastic		1	Copy of Soviet TM-62P3
	TM-62D	Wood		1	Detectability based on fuze used including MVCh-62; used in Egypt, Mozambique, Namibia, Zambia
	TM-62P	Plastic		1	Used in Egypt, Mozambique, Zambia
Chile	M19	Plastic	2.86 g.	3	Licensed copy of U.S. M19
	MAT 84 F5	Plastic		2	
China	Type 69 Type 72 Type 81	Plastic		1	All of similar plastic body construction only differentiated by type of fuze used. Detectability based on fuze used (Type 69, Type 72, Type 81) used in Angola, Bosnia, Eritrea, Ethiopia, Iraq, Jordan, Somalia, Zambia
Cuba	B MK 1	Plastic	2.0 g.	5	Copy of Italian SACI 54/7
	TMD-44	Wood		1	Metal content based on MV-5 fuze and nails to hold box together, used in Afghanistan and Namibia
	TMP 2	Plastic		1	Copy of SACI 54/5/7/9
Former Czechoslovakia	PT Mi-Ba	Plastic		1	Used in Afghanistan
	PT Mi-Ba II	Plastic	2.89 g.	2	Used in Angola, Eritrea, Ethiopia, Namibia, Somalia
	PT Mi-Ba III	Plastic	2.89 g.	1	Used in Angola, Eritrea, Ethiopia, Iraq, Mozambique, Namibia, Somalia, Zambia

Country of Manufacture	Mine Nomenclature	Case Material	Metal Content	Fuze Wells	Notes
Denmark	PM M/47-II	Wood			
	PM M/52	Plastic		4	Used in Cyprus
Egypt	Mine 3 Mark I	Plastic	2.0 g.	5	Licensed copy of Italian SACI 54/7, used in Somalia
	T.C. 6	Plastic	2.86 g.	2	Copy of Italian TC-6, used in Afghanistan, Somalia
	M/80	Plastic			Copy of Italian TC/2.4
	T/81	Plastic			
Finland	KP 77	Plastic		1	
India	AT 3A	Plastic		1	Copy of British L 9 Barmine
	AT 1A	Plastic		1	
Iran	M19	Plastic	2.86 g.	3	Copy of U.S. M19, used in Afghanistan
	Type 72	Plastic		1	Copy of Chinese Type 72
Israel	NO. 22	Plastic		3	
Italy	MAT/5	Plastic		1	
	MAT/6	Plastic		1	
	SB 81 SB 81/AR	Plastic		1	Used in Iraq, copied by Portugal and Spain
	SH-55	Plastic	5.0 g.	3	Used in Afghanistan, Egypt
	TC/2.4	Plastic		1	
	TC/3.6	Plastic		1	Used in Afghanistan
	TC/6	Plastic		1	Used in Afghanistan, Chad, Ecuador, Tajikistan
	VS/1.6	Plastic			Also produced in Singapore
Japan	Type 63	Plastic		1	
	Type 63B	Plastic		2	
Korea, North	ATM-44	Wood			Larger copy of TMD-44
Korea, South	M19	Plastic	2.86 g.	3	Licensed copy of U.S. M19
Pakistan	P2 Mk. 2	Plastic		2	Uses P2 Mk. 2 AP mine as fuze/booster, packed with detector ring for recovery, used in Afghanistan, Eritrea, Ethiopia, Somalia
	P2 Mk. 3	Plastic		2	Uses P4 Mk. 1 AP mine as fuze/booster, packed with detector ring for recovery, used in Afghanistan, Eritrea, Ethiopia, Somalia
	P3 Mk. 1	Plastic		2	Uses P4 Mk. 1 AP mine as fuze/booster, used in Afghanistan, Somalia
	P3 Mk. 2	Plastic		2	Uses P4 Mk. 1 AP mine as fuze/booster
Peru	MGP.31	Plastic		0	Used in Ecuador
Portugal	M453	Plastic		1	Copy of Italian SB-81 and SB-81/AR, used in Iraq
Romania	MAT-76	TNT and fiberglass resin		1	Used in Angola, Bosnia, Croatia, Iraq, Liberia, Mozambique, former Yugoslavia, Zambia
	MAT-87	Plastic	2.5 g.	1	
Russian Federation	PTM 3	Plastic			
	TM-62 Family	Various		1	Used in Egypt, Mozambique, Namibia, Zambia
	TMD-44	Wood		1	Metal content based on MV-5 fuze and nails in box, used in Afghanistan and Namibia
	TMD-B	Wood		1	Used in Mozambique, also possibly manufactured in Namibia

Country of Manufacture	Mine Nomenclature	Case Material	Metal Content	Fuze Wells	Notes
Singapore	VS/1.6	Plastic			Licensed copy of Italian VS/1.6
South Africa	NO. 8	Bakelite		2	Used in Angola, Namibia, Zambia, Zimbabwe
Spain	C-3-A	Plastic		1	
	C-3-B	Plastic		1	
	SB-81 SB-81/AR	Plastic		1	
Sweden	M/52 M/52B	Plywood, canvas		1	B variant uses a tilt rod
United Kingdom	L9 Barmine	Plastic		1	Now fitted with full width attack mode fuze that has sufficient metal content, earlier fuze may not have sufficient metal content
United States	M19	Plastic	2.86 g.	3	Used in Afghanistan, Angola, Chad, Cyprus, Iran, Iraq, Jordan, Lebanon, South Korea, Western Sahara, Zambia,
Former Yugoslavia	PT-56	Plastic		2	
	TMA-1 TMA-1A	Plastic		2	Used in Bosnia, Croatia
	TMA-2 TMA-2A	Plastic		3 or 4	Used in Angola, Bosnia, Croatia, Namibia, Zambia
	TMA-3	Cast TNT covered in fiberglass		4	Used in Angola, Bosnia, Croatia, Eritrea, Ethiopia, Namibia, Zambia
	TMA-4	Plastic		3	Used in Angola, Bosnia, Croatia, Namibia, Zambia
	TMA-5 TMA-5A	Plastic		1	Used in Afghanistan, Angola, Bosnia, Croatia, Namibia, Zambia
	TMD-1 TMD-2	Wood		0	

Sources

This memorandum was prepared using the following sources: *Jane's Mines and Mine Clearance, 2000-2001*; ORDDATA II, Version 1.0 - a CD-ROM distributed by the U.S. Assistant Secretary of Defense for Special Operations and Low Intensity Conflict; MINEFACTS, Version 1.2 - a CD-ROM distributed jointly by the U.S. Department of State and the U.S. Department of Defense; *Landmine Monitor Reports (1999,2000,2001)* published by the International Campaign to Ban Landmines; and, materials contained in Human Rights Watch's files.