

Types and Manufacturers of Remotely Delivered Antivehicle Mines

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Twelve countries are reported to have manufactured at least twenty-seven different types of remotely delivered antivehicle mines: Bulgaria, China, the former Czechoslovakia, France, Germany, Greece, Iran, Italy, Poland, Russia, United States, and Yugoslavia. Except Iran, all of these countries are party to the 1980 Convention on Certain Conventional Weapons (CCW).

Other countries are researching and testing remote delivery systems for mines. India reported in its December 2000 annual national report required under article 13 of Amended Protocol II that it had developed a prototype remotely delivered antipersonnel mine system, including the self-destruct and self-deactivation mechanism required by Amended Protocol II. Pakistan reported in December 1999 that it was developing a remote delivery system for mines.

Ten countries are known to have imported or co-developed remotely delivered antivehicle mines: France, Greece, Italy, Netherlands, Norway, Portugal, South Korea, Spain, Turkey, and the United Kingdom. Spain and Portugal under license produced an Italian designed antivehicle mine that had, as an emplacement option, the capability of being remotely delivered. Except Turkey, all are party to CCW.

The most common delivery systems for these types of antivehicle mines are artillery rockets and helicopters. Aircraft and artillery projectiles are also used to deliver antivehicle mines. However, many of these mines can be delivered in several ways. For example, the German AT-2 can be emplaced by a scattering system mounted on a ground vehicle as well as delivered remotely by an artillery rocket. The U.S. M87/M87A1 Volcano can be emplaced by ground vehicle or by helicopter.

Remotely delivered antivehicle mines have been used in a limited number of conflicts. Soviet forces scattered an unknown number of PTM-1S antivehicle mines from aircraft and helicopters during their occupation of Afghanistan. The United States delivered by aircraft at least 88,965 BLU-91/B Gator antivehicle mines, together with 27,445 BLU-92/B Gator antipersonnel mines, in Iraq and Kuwait during the Persian Gulf War. In other conflicts like the Iran-Iraq War it is not known whether antivehicle mines were remotely delivered or not because of the multiple emplacement methods available for the mines.

The following table (over) lists those countries that have produced remotely delivered antivehicle mines.

Country of Manufacture	Mine Nomenclature	Self-Destruct (SD) Capability	Delivery Method	Notes
Bulgaria	TMD-1	SD (2-96 hrs.)	KNURS-DM 122mm rocket	
China	SATM	Unknown	Rocket; ground vehicle; helicopter	
	Type 72	No	Type 74 284mm rocket; Type 79 305mm rocket	
	Type 84	SD (4-72 hrs.)	Type 84 122mm rocket; Type 89 122mm rocket	
Former Czechoslovakia	PT-Mi-D	SD (3, 12, 24, 48 hrs.)	Krizhna 122mm rocket; MV-3 mine launcher	
France	Mitral	SD	Aircraft; helicopter; rocket; ground vehicle	
	Mi Ac DISP F1	SD	155mm artillery delivered; Minotaur laying system, helicopter	
Germany	AT-2	SD (3, 6, 12, 24, 48, 96 hrs.)	110mm and 227mm rockets; Skorpion ground vehicle	Exported to France, Italy, Norway, United Kingdom
	MIFF	SD	MW-1 aircraft mine scattering system	
	MUSPA	Unknown	MW-1 aircraft mine scattering system	
	MUSA	SD	MW-1 aircraft mine scattering system	
Greece	PYRKAL	SD	155mm artillery delivered	
Iran	YM-II	Unknown	Helicopter	Copy of Italian SB-81
Italy	MATS/2	Unknown	Helicopter	
	SB-81	SD (electronic variant only)	SY-AT scattering system for helicopter	Licensed for production in Spain (as EXPAL SB-81) and Portugal (as M453); Used in Falklands/Malvinas and Western Sahara
	VS-1.6	SD (electronic variant only)	Helicopter	Used in Iraq, Kuwait, Lebanon, Western Sahara
	VS-2.2	SD (electronic variant only)	Helicopter	Used in Iraq and Kuwait
	VS-SATM VS-SATM-1	SD or SN	Helicopter; ground vehicle	
Poland	MN-111	SD	Aircraft; helicopter	
	MN-121	SD	Aircraft; helicopter; rocket	
Russia	PTM-1S (PGMDM)	SD (up to 20 hrs.)	Uragan 220mm rocket; Grad 122mm rocket; helicopter; aircraft	Used in Afghanistan
	PTM-3	SD	VSM-1 helicopter mine scattering system	
	TM-89	Unknown	Helicopter	
United States	M70/M73 RAAMS	SD (4, 48 hrs.)	155mm artillery delivered	Exported to South Korea, Greece, Turkey
	BLU-91/B Gator	SD (4, 48 hrs. or 15 days)	Aircraft	Exported to the Netherlands; Used in Iraq and Kuwait
	M87/M87A1 Volcano	SD (4, 48 hrs. or 15 days)	Helicopter, ground vehicle	M87A1 exported to United Kingdom
Yugoslavia	Yu-S-AT (KB-2)	SD	M87 262mm rocket	

This fact sheet 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.