Big Issue, Big Problem?

MANPADS

Nicaraguan soldiers parade shoulder-launched Russian-made SA-7 MANPADS during the celebration of the army's 24th anniversary in Managua in September 2003.

Man-portable air defence systems, or MANPADS, have recently gained unprecedented media attention in the context of international terrorism. This chapter provides a broad overview of MANPADS and counters some of the misinformation often associated with these weapons.

MANPADS are small, light missile-launching weapons, designed to be fired by an individual against aircraft. Having gained attention since 2001, due to attacks against both civilian and military planes, MANPADS are now a hot topic of conventional weapon control. While the threat they pose to military aircraft has been substantiated, it is the danger to *civilian aircraft* that has been most widely publicized. How great is this peril, and how is the international community responding to it?

MANPADS are among the most sophisticated light weapons. Most feature a tube-like launcher containing a rocket-propelled, guided missile that is fired from the shoulder. In general, MANPADS are becoming more accurate, more destructive, more versatile, and more difficult to combat. The latest models are impervious to traditional flare countermeasures.

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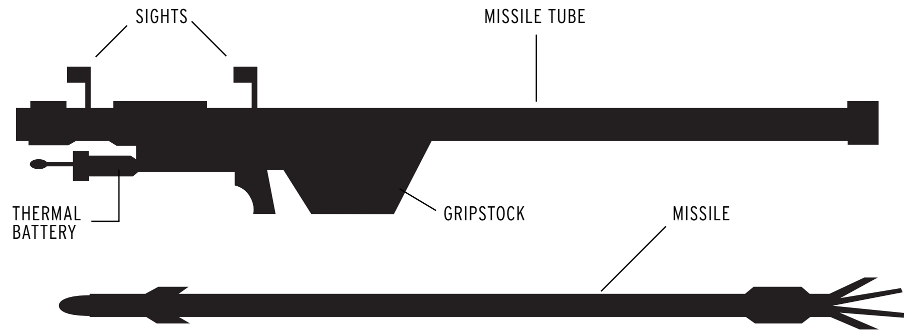
Figure 3.1 Main elements of a MANPADS: Soviet SA-7b



Note: Not all MANPADS follow this design. MANPADS such as the Swedish RBS 70 and the French Mistral are mounted on pedestal launchers.

Around 15 producers manufacture MANPADS in at least 15 countries. Production is no longer limited to established companies in the high-tech arms industry. Producing countries now include Egypt, North Korea, Pakistan, and Vietnam, and developing countries' demands for affordable anti-aircraft systems are likely to ensure many more orders for MANPADS in the near future.

It appears that the global stockpile of MANPADS has been grossly overestimated in a number of recent reports. In contrast to claims that 500,000 MANPADS units can be found worldwide, research indicates that around 500,000 missiles, but fewer than 100,000 complete units, have been produced to date. This is a crucial distinction to make, because only complete units—missiles plus launchers—are functional. A number of these weapons will no longer be serviceable, owing to age, damage, or destruction, but it is difficult to determine how many. Included in the 100,000 is an unknown quantity of systems in the hands of non-state groups, some of which have been identified as terrorist organizations. To date, at least 13 such groups are *known* to possess MANPADS, with a further 14 groups *reported* to possess them.

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Most traditional countermeasures are ineffective against the latest systems, but a number of factors limit the chances of a MANPADS attack on an aircraft being successful. While recent reports have claimed a short shelf-life for MANPADS, evidence suggests that it may be longer than previously supposed. A useful life of more than 20 years for some components may be a conservative estimate. Perhaps the most realistic limitation is the complexity of using and maintaining MANPADS. While global flows of information arguably aid potential users, successfully targeting an aircraft requires training unavailable to most. In the case of MANPADS, the proliferation of knowledge is as important as the proliferation of the weapon itself.

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The global transfer of MANPADS involves a great deal of capital, yet relatively few weapons. More complete data are available on transfers of MANPADS than of many other types of small arms and light weapons, but some non-state armed groups are thought to be implicated in undeclared state transfers. The scale of illicit trade is unclear, but surely facilitated by the small size of MANPADS. Many of the better-organized and funded groups have undoubtedly received MANPADS in recent years. Crucially, only a very small number of non-state groups demonstrate an interest in using MANPADS against civilian aircraft.

To date, international efforts to control proliferation have been scant. States that are now engaged in military interventions are spearheading efforts to implement MANPADS control. Importantly, Russia took the lead in a 2003 agreement between 11 members of the Commonwealth of Independent States to provide notification on MANPADS transfers. The G8 countries agreed, in June 2003, to implement a number of steps to prevent terrorists from gaining MANPADS, and in October 2003, largely at the behest of the United States, an Asia-Pacific Economic Cooperation pledged to strengthen controls on production, export, and stockpiling. One of the most significant moves was the addition of MANPADS to the UN Register of Conventional Arms. The issue has thus gained momentum in the past two years, but results may depend on whether the threat of MANPADS continues to be demonstrated in the form of attacks.

In fact, MANPADS may be one of the few small arms and light weapon issues in which politicization of the issue might prevent or precede widespread loss of life and infrastructure—but only if the international community continues to act. In the interim, MANPADS remain a big issue, with the potential to be a big problem.

Table 3.2 MANPADS producers and basic specifications

Country	Designation	Producer	Guidance	Range*	Mass-produced since	Derivatives, copies, and licensed production: Country	Designation	Producer
China	HN-5	CPMIEC (exporter)	Passive IR homing	4,200m	–	Pakistan N. Korea	Anza HN-5	AQ Khan Research Labs. State factories
	QW-1 / QW-2	CPMIEC	Passive IR homing	6,000m	1994		Anza 2	AQ Khan Research Labs.
France	Mistral	Matra BAe Dynamics	Passive IR homing	6,000m	1988			
Japan	Type 91	Toshiba	IR and Image Matching	5,000m	1991			
Russia/CIS	SA-7	State Factories	Passive IR homing	4,200m	1968	China Egypt Romania	HN-5 Ayn as Saqr CA-94M	C.P.M.I.E.C. Saqr R.E.I.G.
	SA-14	State Factories	Passive IR homing	5,500m	1978	Bulgaria	SA-14	V.M.Z.
	SA-18	KBM**	Passive IR homing	5,200m	1983			
	SA-16 Igla	KBM**	Passive IR homing	5,000m	1986	Bulgaria N. Korea Poland Singapore Vietnam	Igla-1E Igla-1E Grom Igla-1E Igla-1E	V.M.Z. State factories OBR Skarzysko
	SA-16 Igla-S	KBM**	Passive IR homing	5,000m	2001			
Sweden	RBS-70 / RBS-70 MKII	Saab Bofors	Laser Beam Riding	7,000m	1977	Pakistan	RBS-70	State factories
UK	Blowpipe	Short Brothers (now Thales)	Operator-guided	4,000m	1968			
	Javelin	Short Brothers	Laser Beam Riding	5,500m	1985			
	Starburst	Short Brothers	Laser Command Link	6,000m	1990			
	Starstreak	Short Brothers	Laser Beam Riding	7,000m	1993			
United States	FIM-43 Redeye	General Dynamics	Passive IR homing	5,500m	1967			
	FIM-92 Stinger	Raytheon***	Passive IR/ UV homing	5,000m	1981	Germany Switzerland	Stinger Stinger	Stinger Project Group Stinger Project Group

* Range given is the slant range: the 'line-of-sight' distance between two points, not at the same level, relative to a specific datum.
** Design and export: KBM; Missile and launcher production: V. A. Degtyaryov Plant; homing device production: LOMO.
*** Previously manufactured by General Dynamics.

Sources: Foss (2001); Richardson (2002, 2003); Karniol (1999); Army-Technology (2003); Pyadushkin (2003)