

# 12

## **Man-portable Air Defence Systems (MANPADS)**

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### **Overview**

Man-portable air defence systems have received increasing political attention in recent years, because of the demonstrable risk that they pose to both military and civilian aircraft. They have been catalogued in some of the most poorly secured national stockpiles. In many more cases, questions remain about their numbers and the security measures in place to protect them from diversion. Because of the threat they pose and the fact that they have become a highly politicized issue, MANPADS have been one of the driving forces behind a number of international initiatives to secure, stabilize, or destroy surplus stocks. Although MANPADS remain a problem in their own right, they have helped focus the lens of international scrutiny on the dangers associated with surpluses of all varieties of conventional munitions.

### **The problem with MANPADS**

MANPADS pose no greater risk from the perspective of stability and safety than any other light weapon. Explosive risk is generally perceived to be small in comparison to larger weapons systems. Their chief danger lies in their potential for diversion from national stockpiles (CHAPTER 15).

The weapons are attractive to non-state actors because they offer a means to reduce power asymmetries between themselves and conventional state forces. As Table 12.1 illustrates, the majority of recent attacks have been against military targets. These attacks have resulted in the deaths of over 150 people and the loss of assets and transport-associated revenues worth hundreds of millions of dollars.

Table 12.1  
**MANPADS attacks on aircraft, 2002–07**

Date	Location	Aircraft	System used	Result	Mil./ civ.	Deaths
19/08/2002	Khankala, Chechnya	Mil Mi-26	Igla (SA-16/18)	Hit	Mil.	127
28/11/2002	Mombasa, Kenya	Boeing 757	Strella (SA-7)	Missed	Civ.	0
02/11/2003	Falluja, Iraq*	Boeing CH-47	Unknown	Hit	Mil.	15
22/11/2003	Baghdad, Iraq	Airbus A300	Strella (SA-7)	Hit	Civ.	0
09/12/2003	Baghdad, Iraq	McDonnell Douglas C-17	Unknown	Hit	Mil.	0
08/01/2004	Baghdad, Iraq	Lockheed C-5	Unknown	Hit	Mil.	0
27/06/2005	Mishahda, Iraq*	Boeing AH-64	Unknown	Hit	Mil.	2
06/05/2006	Basra, Iraq	Westland Lynx	Unknown	Hit	Mil.	5
10/01/2007	Buhruz, Iraq**	Sikorsky UH-60	Strella (SA-7)	Missed	Mil.	12
02/02/2007	Taji, Iraq	Boeing AH-64	Unknown	Hit	Mil.	2
07/02/2007	Al-Karma, Iraq	Boeing CH-46	Unknown	Hit	Mil.	2
23/03/2007	Mogadishu, Somalia	Ilyushin 76	Unknown	Hit	Civ.	11
13/08/2007	Sulaimaniya, Iraq*	McDonnell Douglas MD-83	Unknown	Missed	Civ.	0
<b>Total deaths</b>						<b>176</b>

\* Unverified by military sources.

\*\* Unclear whether the aircraft was actually struck by the missile, or small arms fire alone was responsible for the crash.

Sources: BBC (2003; 2005); Chivers (2007); Kramer (2004, p. 34); Knights (2007); UKMoD (2006, p. 21)

All of the attacks listed in Table 12.1 were conducted by non-state actors. Although MANPADS are notoriously difficult to use successfully without comprehensive training, these attacks illustrate that they are used, and to deadly effect.

The impact of MANPADS use may pale into insignificance beside the loss of life in depot explosions (CHAPTER 13), or armed criminality fuelled by the

diversion of small arms (CHAPTER 15), but a successful MANPADS attack against a civilian airliner could claim many hundreds of lives and affect national economies. Civilian aircraft are particularly vulnerable, particularly when landing at or taking off from airports, where they may be in range of MANPADS strikes for 20–30 kilometres or more (Savill, 2006). These factors often mean that non-state groups will go to great lengths to acquire MANPADS, giving their diversion an international rather than local dimension.

Between 9 and 13 non-state groups have obtained MANPADS, and the number may be double that (Hunter, 2001; USGAO, 2004, p. 11). US intelligence agencies have declined to release information on the number of illicitly proliferating MANPADS, and this information remains classified (USGAO, 2004, p. 11).

## **MANPADS diversion and ineffective stockpile management**

The Small Arms Survey notes that MANPADS are in the national stockpiles of over 100 state armed forces (Bevan, 2004, p. 78). These states include developing countries with highly insecure stockpiles; states that are recovering from armed conflict; and collapsed states, such as Somalia.

MANPADS, like other small arms and light weapons, pose a particular threat of diversion because they are small, light, and easily concealed. They are designed as an infantry defence against aircraft and, for this reason, they are deployed as self-contained systems, consisting of weapon, ammunition, and guidance system within a rugged weatherproof case.

These features facilitate illicit acquisition and use, for the following reasons. First, thefts can be rapid and relatively discrete, because the system is designed to be portable. Second, due to the small size of systems, illicit transfers—including international transfers—may be difficult for state authorities to detect. Third, and critically, weapons can quickly be made ready to fire by trained unauthorized users.

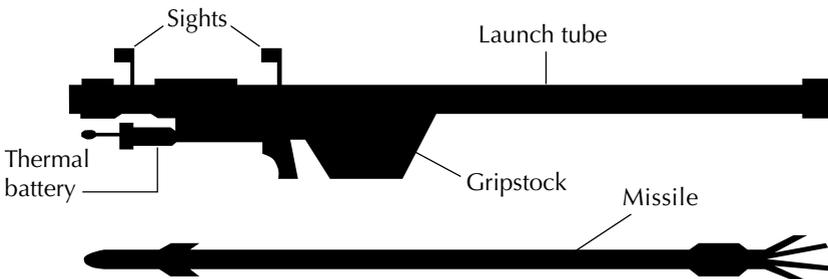
It is important to recognize, however, that these ‘diversion-facilitating’ features are conditioned by a number of factors that deter theft. These include: the high value of the systems, which *may* induce some states to better secure them; and the limited number of applications for the weapons (in contrast to small arms, for instance), which means that demand is relatively low in most contexts.

These factors, however, have not deterred numerous instances of theft. For example, dozens of MANPADS have been diverted from unsecured Eastern European surplus stockpiles to war zones across sub-Saharan Africa—ranging from the arsenals of UNITA in Angola to those of LURD in Liberia. Such transfers have involved major international arms traffickers, such as the infamous Victor Bout, and this international dimension to illicit MANPADS trade is important to note (see UNSC, 2000; 2003).

## MANPADS stockpile security

As with all munitions, protecting MANPADS from diversion is contingent on basic accounting practices (CHAPTER 5) and on the physical security of stocks (CHAPTER 7). These measures are outlined elsewhere in this volume in considerable detail, but it is worth considering some measures that are applicable to MANPADS.

Figure 12.1  
**Anatomy of a MANPADS**



Source: Bevan (2004, p. 79)

MANPADS consist of several detachable components, including the missile, launch tube, and gripstock (see Figure 12.1). These features permit the separate storage of MANPADS components, which can substantially reduce the potential for an entire system to be diverted if the security of a single storage unit is compromised and its contents stolen. As the US military notes, weapons that are stored in ready-to-fire configuration present the most imminent security risk

when diverted (USDoD, 1989, p. 32). It is therefore preferable to minimize the number of situations in which MANPADS (and similar weapons systems, such as anti-tank guided weapons) are stored in this manner (CHAPTER 5). With this in mind, the *OSCE Handbook of Best Practices on Small Arms and Light Weapons* notes: 'Where the design of MANPADS permits, missiles and firing mechanisms (gripstocks) should be stored in separate storehouses and in locations sufficiently separate so that a penetration of one site will not place the second site at risk' (OSCE, 2006, p. 32d).

The Wassenaar Arrangement's *Elements for Export Controls of MANPADS* also notes the desirability of recipients making provision for separate storage as one of the criteria for export (WA, 2003, para. 2.9).

## Progress to date

Over the past decade, the United States and like-minded states have pursued several important initiatives aimed at improving the security of MANPADS stocks. In 2000 members of the Wassenaar Arrangement adopted the *Elements for Export Controls of MANPADS*—the first multilateral agreement aimed at curbing the illicit trade in MANPADS. While primarily focused on export controls, the *Elements*—and particularly an expanded version adopted in 2003—also identify several important stockpile security standards that exporters are expected to require of their clients (WA, 2003). These standards are similar to decades-old US requirements for importers and co-producers of Stinger missiles, which include, among other requirements, separate storage of missiles and launchers, 24-hour surveillance, and monthly 100 per cent physical inventories.

Versions of the *Elements* have been adopted by members of several other multilateral forums, and have been endorsed by dozens more countries through UN General Assembly resolutions. Along the same lines, in 2006 the OSCE adopted the first multilateral best practice guide on MANPADS stockpile management and security procedures. The document contains detailed guidelines on all aspects of stockpile security, including physical security, access control, handling and transport, and inventory management and accounting (OSCE, 2006).

Recognizing that many countries lack the know-how and resources to bring their practices in line with emerging international standards, several

donor states have launched assistance programmes aimed at helping foreign militaries to improve their stockpile security practices and 'rightsize' their MANPADS arsenals through the destruction of surplus or obsolete missiles. US assistance programmes alone have facilitated the destruction of over 21,000 surplus, obsolete, and poorly secured MANPADS, and improved security practices at depots containing thousands more missiles (Johnson, 2007; Schroeder, 2007).

One spin-off of increasing attention to MANPADS security has been the concurrent securing of stocks of other varieties of weapon—notably small arms and light weapons—during MANPADS-specific assistance programmes. MANPADS initiatives have attracted attention and resources to key small arms and light weapons threat reduction programmes, including those that help secure and reduce foreign stockpiles by destroying surplus weaponry. Since 2003, funding for the US State Department's Small Arms/Light Weapons Destruction Programme has nearly tripled, increasing from USD 3 million in the 2003 fiscal year to USD 8.6 million in the 2007 fiscal year (USDoS, 2004; 2007a). The MANPADS threat has featured prominently in budget justifications for the programme, and most of the additional funding has gone towards MANPADS-specific projects.

## Conclusion

MANPADS remain a threat to military and civilian aircraft. Although they have received probably the greatest attention of any variety of conventional weapon, national stocks of MANPADS remain uncounted and unsecured in many states. The MANPADS issue has cast a spotlight on the management of conventional arms and ammunition, however. Measures taken to address insecure stocks of MANPADS have also been broadened to encompass other types of weapons and ammunition within the same facilities. Despite the threat they pose, however, it is a relatively minor one in contrast to insecure conditions prevalent in stockpiles of conventional arms and ammunition. ■

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