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Fact Sheet

Bureau of Political-Military Affairs and Bureau of International Security and Nonproliferation
Washington, DC
September 20, 2005

The MANPADS Menace: Combating the Threat to Global Aviation from Man-Portable Air Defense Systems

Man-portable air defense systems (MANPADS) in the hands of criminals, terrorists, and other non-state actors pose a serious potential threat to passenger air travel, the commercial aviation industry, and military aircraft around the world. The United States and other concerned countries have recognized and taken steps to counter the emerging MANPADS threat to the international community. After the November 2002 attempted shoot-down by terrorists of a civilian airliner in Mombasa, Kenya, the United States redoubled its efforts to keep MANPADS from falling into the wrong hands and is working closely with numerous countries and international organizations to keep the skies safe for all. This cooperation has led to the destruction of over 17,000 excess or illicitly held MANPADS so far.

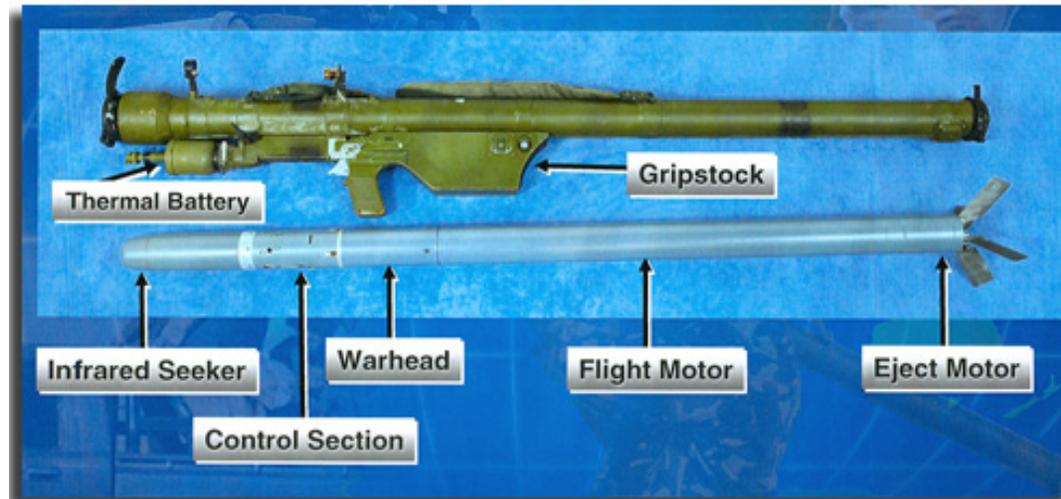
This fact sheet provides a brief description of MANPADS, their origins, examples of MANPADS attacks on civilian aircraft, and highlights some of the United States' efforts to work with other countries to counter the threat.

What Are MANPADS?

Man-portable air defense systems (MANPADS), commonly described as shoulder-fired anti-aircraft missiles, are short range surface-to-air missiles that can be carried and fired by a single individual or carried by several individuals and fired by more than one person acting as a crew. Most MANPADS consist of: 1) a missile packaged in a tube; 2) a launching mechanism (commonly known as a "gripstock"); and 3) a battery. The tubes have an aiming device, which protect the missile until it has been fired, and are normally disposable. The missiles themselves usually contain the homing device(s) that direct them towards their aerial target.



A group of Chechen separatists pose with three varieties of MANPADS.



This image identifies the main components of a typical MANPADS.

MANPADS (tube with missile within), typically range from about 4 feet to 6 1/2 feet (1.2 to 2 meters) in length and are about 3 inches (72 millimeters) in diameter. Their weight, with launcher, ranges from about 28 pounds to just over 55 pounds (13 to 25 kilograms). They are easy to transport and conceal. Some of the most commonly proliferated MANPADS are about the size and weight of a full golf bag and can easily fit into the trunk of an automobile.

There are three main types of MANPADS classified primarily by their guidance systems or "seekers": 1) Infrared (IR) that hone in on an aircraft's heat source, usually the engine's exhaust plume; 2) Command Line-of-Sight (CLOS) whereby the MANPADS operator visually acquires the target aircraft using a magnified optical sight and then uses radio controls to guide the missile into the aircraft; and 3) Laser Beam Riders in which the missile flies along the laser beam and strikes the aircraft where the operator has aimed the laser.

MANPADS are intended to be used by legitimate national military forces to protect their troops and facilities. Typically, they are deployed by troops defending themselves or an installation from aerial attack. With their relatively short range, MANPADS are generally the last missile-based air defense and are often deployed in tandem with gun-type systems that seek to defeat attacking aircraft by destroying them with a barrage of projectiles.

MANPADS can strike aircraft flying at altitudes up to approximately 15,000 feet (4572 meters) at a range of up to 3 miles (4.82 kilometers).

MANPADS should not be confused with rocket-propelled grenades (RPGs). RPGs are also portable and shoulder-fired. However, RPGs are designed primarily to be used against ground targets and are usually ineffective against aircraft that are in flight. Some RPG attacks on low-flying aircraft have been mistaken for MANPADS attacks.

Who Makes MANPADS?

Approximately 20 countries have produced or have licenses to produce MANPADS or their components. These

include Bulgaria, China, Egypt, France, Germany, Greece, Iran, Japan, the Netherlands, North Korea, Pakistan, Poland, Romania, Russia, Serbia and Montenegro, Sweden, Turkey, the United States, and the United Kingdom.

It is estimated that over 1 million MANPADS missiles have been manufactured worldwide to date. The United States believes that most of these systems are in national inventories or that they have been destroyed, but in many cases, these systems have not been accounted for.

Who Possesses Them?

MANPADS are found in the stockpiles of most countries around the world, including those of manufacturing nations. But several thousand may be outside of the control of governments. The number of MANPADS remaining in the global inventory is difficult to estimate with more precision because the destruction of MANPADS systems is not always publicized and a system's shelf life depends heavily on how it is stored and maintained.

The United States has strict controls over its MANPADS and exercises diligence when selling them to legitimate governments in order to ensure that they are properly secured and not sold or transferred to others without legal consent.

Given the unique threat posed by MANPADS to aviation due to their potential lethality, relatively small size and portability, U.S. policy supports a ban against the transfer of MANPADS to non-state end users.

When Have MANPADS Been Used Against Civil Aviation?

In 2003, the U.S. Department of State estimated that since the 1970s, over 40 civilian aircraft have been hit by MANPADS, causing about 25 crashes and over 600 deaths around the world. The following is a partial list of reported incidents involving civilian aircraft. This list includes one additional example of an incident subsequent to the 2003 Department of State estimate, in which a civilian aircraft was shot at by non-state actors using MANPADS. All of the incidents listed below, except the Mombasa incident, took place in zones of conflict.

- **September 3, 1978**

An Air Rhodesia Viscount passenger airliner crash landed after being hit by a MANPADS fired by Zimbabwe Peoples Revolution Army rebels. Four crew members and 32 of the 54 passengers were killed in the crash. 10 survivors were shot to death afterwards.

- **December 19, 1988**

Two Douglas DC-7 spray aircraft, chartered by the U.S. Agency for International Development to eradicate locusts, en route from Senegal to Morocco, were struck by MANPADS fired by POLISARIO rebels in the Western Sahara. One DC-7 crashed killing all 5 crew members. The other DC-7 landed safely in Morocco.

- **April 6, 1994**

A Dassault Mystere-Falcon 50 executive jet carrying the Presidents of Rwanda and Burundi and its French flight crew was shot down over Kigali, killing all aboard and sparking massive ethnic violence and regional conflict.

- **October 10, 1998**

A Boeing 727 airliner was downed over the Democratic Republic of the Congo by Tutsi rebels, killing 40.

- **December 26, 1998**

A United Nations-chartered Lockheed C-130 Hercules transport was shot down over Angola by UNITA rebels, killing 14.

- **January 2, 1999**

A United Nations Lockheed C-130 Hercules transport was shot down over Angola by UNITA rebels, killing 9.

- **November 28, 2002**

Terrorists fired two MANPADS at an Arkia Airlines Boeing 757-300 with 271 passengers and crew as it took off from Mombasa, Kenya. Both missiles missed.

- **November 22, 2003**

A DHL Airbus A-300 cargo jet transporting mail in Iraq was struck and damaged by a MANPADS. Though hit in the left fuel tank, the plane was able to return to Baghdad airport and land safely.

What Is the United States Doing to Counter the Proliferation of MANPADS?

Countering the proliferation of MANPADS is a top national security priority of the United States. The White House launched an initiative in late 2002 to prevent the acquisition of MANPADS by terrorists and other non-state actors. At the direction of the White House, the U.S. Department of State, supported by the U.S. Department of Defense, leads the United States' international efforts on this critical issue. Within the Department, the Bureau of Political-Military Affairs and the Bureau for International Security and Nonproliferation have responsibility in this area.

The Office of Weapons Removal and Abatement in the Bureau of Political-Military Affairs manages the United States program to eliminate obsolete MANPADS and to improve the security of MANPADS stockpiles that may fall into the hands of non-state actors, either by assisting countries to better secure their stockpiles or to destroy those MANPADS stocks that are not needed for their defense. Many MANPADS currently retained in national stockpiles are aged and obsolete and relatively ineffective against modern military aircraft, but could still pose a threat to slower-moving civilian aircraft.

The Office of Export Control and Conventional Arms Nonproliferation Policy in the Bureau for International Security and Nonproliferation works to prevent transfers of MANPADS and the technology to produce them to undesirable end-users through bilateral and multilateral engagement, with an emphasis on responsible export controls.

The U.S. Department of Defense supports international negotiations by providing expertise on the proper management and control of MANPADS and enforcing stringent physical security and accountability for MANPADS in U.S. possession. The Department of Defense also established the Golden Sentry program to monitor the end use of MANPADS sold through Foreign Military Sales to ensure that they are not diverted for criminal use. Golden Sentry is supported by the Defense Security and Cooperation Agency (DSCA), the Defense Threat Reduction Agency (DTRA), and the U.S. Army.

Multilateral Efforts. The United States has worked in several international fora to obtain agreement with countries to strengthen controls over the export of MANPADS and stockpile security. Over 95 countries have agreed to

adopt measures that ensure the standards established are put in place.

At the June 2003 G-8 Evian Summit, leaders agreed to a U.S.-initiated MANPADS Action Plan that includes the following measures:

- provide assistance and technical expertise for the destruction of excess MANPADS;
- adopt stringent national export controls on MANPADS and their essential components;
- ban transfers of MANPADS to non-state end-users; MANPADS should only be exported to foreign governments or to agents authorized by a government;
- exchange information on uncooperative countries and entities;
- examine for new MANPADS the feasibility of adding specific technical performance or launch control features that preclude their unauthorized use; and
- encourage action in the International Civil Aviation Organization's Aviation Security Working Group on MANPADS.

In 2005, the G-8 continues to focus on implementation of these measures.

In December 2003, the [Wassenaar Arrangement](#), the first multilateral institution covering conventional weapons and sensitive dual-use goods and technologies, adopted strengthened guidelines for control over MANPADS transfers. These guidelines detail how countries will evaluate exports of MANPADS; conditions they will set for recipients to receive the systems; and how systems will be stored, transported, used, inventoried and inspected.

Similar [guidelines](#) were adopted by the Organization for Security and Cooperation in Europe (OSCE) in May 2004. The Asia Pacific Economic Cooperation Forum adopted these guidelines in November 2004. In June 2005, the Organization of American States 35th General Assembly also adopted similar guidelines in Resolution AG/RES 2145 (XXXV-O/05).

The United States is continuing efforts in all of these and other regional fora to emphasize the need for implementation. The United States has submitted to the Wassenaar Arrangement and the OSCE a detailed paper on how the United States controls MANPADS. It has prompted other member nations to prepare their own such papers.

On February 18, 2005, the United States [announced](#) the start of a NATO Partnership for Peace Trust Fund Project to help Ukraine destroy stockpiles of its excess munitions, small arms, light weapons and MANPADS.

Bilateral Cooperation. United States bilateral efforts are focused on regions and countries where there is a combination of excess MANPADS stocks, poor control, and/or a demonstrable risk of proliferation to terrorist groups or other undesirable end-users. The United States works with countries whose MANPADS might be vulnerable to develop a nonproliferation strategy to reduce stocks, secure remaining weapons, and ensure that the host governments have in place appropriate policies and procedures for controlling exports.

On February 24, 2005, U.S. Secretary of State Condoleezza Rice and Russian Minister of Defense Sergey Ivanov



[signed](#) the "United States-Russia Arrangement on Cooperation in Enhancing Control of Man-Portable Air Defense Systems" in Bratislava, Slovakia to facilitate mutual destruction of obsolete or excess MANPADS, exchange information on controlling MANPADS including improving measures to enhance physical security, and to share information about MANPADS sales and transfers to third countries.

The Office of Weapons Removal and Abatement uses the [Nonproliferation, Anti-terrorism, Demining and Related Project's](#) Small Arms and Light Weapons Destruction Program funds to:

- destroy obsolete MANPADS which have little military value but could be lethal against global aviation in the hands of terrorists;
- improve safety and security of MANPADS that may be needed for legitimate self-defense purposes; and
- improve standards of inventory control and accountability to ensure that remaining stocks are not stolen or illicitly transferred.

Since 2003, the U.S. Department of State has enabled the destruction of over 13,000 MANPADS in 13 countries in Africa, Central America, Eastern Europe, and South East Asia. The total number of MANPADS whose destruction has been facilitated by the United States is over 17,000 to date. The United States has received commitments for the destruction of approximately 6000 more and continues to pursue this initiative worldwide.

A few examples of some successes illustrate the Department of State's extensive efforts. The Office of Weapons Removal and Abatement assisted Bosnia and Herzegovina in destroying its government-held stockpile of almost 6000 MANPADS between 2003 and 2004, helped to destroy 45 MANPADS in Liberia in 2003, helped Cambodia to destroy its entire stock of 233 MANPADS in 2004 as well as better secure other weapons kept for its national defense purposes, and has facilitated Nicaragua's destruction of nearly 1000 of its MANPADS to date.

The Office of Weapons Removal and Abatement's MANPADS destruction programs are supported by the Defense Threat Reduction Agency's Conventional Weapons Branch, that provides technical management and orientation seminars to guide host nation experts in U.S. best practices, assess current host nation practices, and offer tailored advice to countries on how to better secure their MANPADS and other weapons retained for national defense purposes, at little or no cost to the host nation. The Office of Weapons Removal and Abatement can, in some cases, provide technical and financial assistance to implement the Defense Threat Reduction Agency's recommendations. Defense Threat Reduction Agency assistance may also be provided to other countries at the request of Regional Combatant Commanders or other elements of the U.S. Department of Defense.

The Office of Weapons Removal and Abatement

To learn more about the U.S. Department of State's Office of Weapons Removal and Abatement and its programs to combat illicit trafficking in and better security for MANPADS and other small arms and light weapons, and to provide humanitarian mine action assistance worldwide, visit www.state.gov/t/pm/wra.

The Office of Export Control and Conventional Arms Nonproliferation



U.S. Secretary of State Condoleezza Rice and Russian Defense Minister Sergey Ivanov shake hands after signing the United States-Russia Arrangement on Cooperation in Enhancing Control of Man-Portable Air Defense Systems in Bratislava, Slovakia on February 24, 2005.

To learn more about the U.S. Department of State's efforts to prevent the proliferation of MANPADS and other conventional weapons, visit <http://www.state.gov/t/isn/export/ecc/>.

The Defense Threat Reduction Agency

To learn more about the U.S. Department of Defense's Defense Threat Reduction Agency efforts to improve the security of MANPADS stockpiles around the world, visit <http://www.dtra.mil/>.

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