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# MANPADS

## NOTE

*This paper supersedes 23POS03, of the same name.*

## BACKGROUND

The threat from Man-Portable Air Defence Systems (MANPADS) is not a new one for civil aviation. MANPADS have existed for over 60 years and are found in the arsenals of more than 100 countries. The first reported attacks using MANPADS occurred in the 1970s. Since then, more than 60 civilian aircraft have been hit by MANPADS, resulting in over 1,000 deaths worldwide, as reported in [RAND's research report of 2019](#).

## DESCRIPTION

MANPADS, being man-portable, are light and small, very short-range surface-to-air missiles used to intercept fixed- and rotary-wing aircraft in flight and during approach or take-off phases. They are mainly shoulder-fired and designed to be used by one person or a small team. They can be used from various locations (e.g., ground, boats, flats, mountain terrain) and can be easily hidden.

In general, they carry around less than 3kg of explosives, can operate up to an altitude of 26,000ft and have a short flight time before they are armed. In terms of detonation, most systems have a proximity sensor causing the warhead to explode and scatter shrapnel over a wider area when approaching the target. The latest systems can also track a laser to target and are even flown using First-Person View (FPV).

Defence systems fitted to military aircraft have been gradually enhanced to counter ground-to-air weapons such as MANPADS. However, most civilian operators do not carry that same technology and protection. In addition, MANPADS development has largely focused on defeating these countermeasures, ensuring the warhead remains on target.

## PROLIFERATION

Current and emerging conflicts have been leading to a proliferation of all types of weapons, including MANPADS. They have also increased the number of well trained and experienced users, which in turn has increased the likelihood of a successful shot.

Moreover, the resolution of some of these conflicts has presented an opportunity for trafficking, as the stocks of MANPADs are no longer used for military purposes.

Although the vast majority of MANPADS are kept securely in State-owned facilities, it is now estimated that several thousands of MANPADS are in the hands of non-State actors, having been acquired, for example, by illicit transfers, purchase on the black market, or through theft. Most components of MANPADS have a long shelf life, which keeps them dangerous for a significant amount of time after production.

### INTERNATIONAL RECOGNITION OF THE PROBLEM

The threat to civil aviation represented by MANPADS is well recognized by ICAO through several documents, including Annex 17, the Security Manual (Doc 8973), the Aviation Security Global Risk Context Statement (Doc 10108), the Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones (Doc 10084), and the MANPADS information and airport vulnerability assessment Guide (ICAO Toolkit, 2015). ICAO has identified MANPADS as a critical threat and has been urging States to implement strict and effective controls on the import, export, transfer or storage of MANPADS as well as the destruction of unauthorized MANPADS on their territory.

Several international initiatives have also emerged to control the proliferation of weapons and to recover weapons held illegally for malicious purposes. For example, the United Nations has set up a programme to prevent, combat, and eradicate the illicit trade in light weapons in all its aspects and stress the need for transparency in arms control.

### POSITION

The MANPADS threat should be treated as an increasing concern, even outside conflict zones. Preventing the proliferation of MANPADS is the most effective countermeasure. States should continue to develop national programmes and policies to set up mitigation strategies against the MANPADS threat by conducting vulnerability assessment of airports, controlling global exports and providing transparency of where and when the weapons systems are sold or destroyed. National Agencies should share information on the presence and availability of MANPADS worldwide.