



Asia-Pacific Economic Cooperation

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**2004/STAR II/ATS/012**

## **Threat posed to Civil Aviation by Man-Portable Air Defence Systems (MANPADS)**

Submitted By: ICAO



**2<sup>nd</sup> Conference on Secure Trade in APEC Region  
(STAR-Air Transportation Security)  
Viña del Mar, Chile  
05-06 March 2004**



# **Threat posed to civil aviation by Man-Portable Air Defence Systems (MANPADS)**

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# Topics

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- Background
- Technical measures
- Limitations of technical measures
- Preventive measures
- Conclusions

# Background

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First reported attempt to use MANPADS against a civilian aircraft was in 1973, in Rome. Perpetrators were arrested before they could launch their weapon against an EL AL aircraft.



- ➔ In 1975, MANPADS were used to attack an EL AL jet at Orly Airport in Paris. Instead, the missile struck a Yugoslav DC-9 aircraft.
- ➔ It is estimated that since the 1970s, at least 42 civilian aircraft have been hit by MANPADS, with 29 of them going down.
- ➔ In November 2002 an Arkia Airlines aircraft was nearly shot down by MANPADS over Mombasa.

BBC NEWS 24



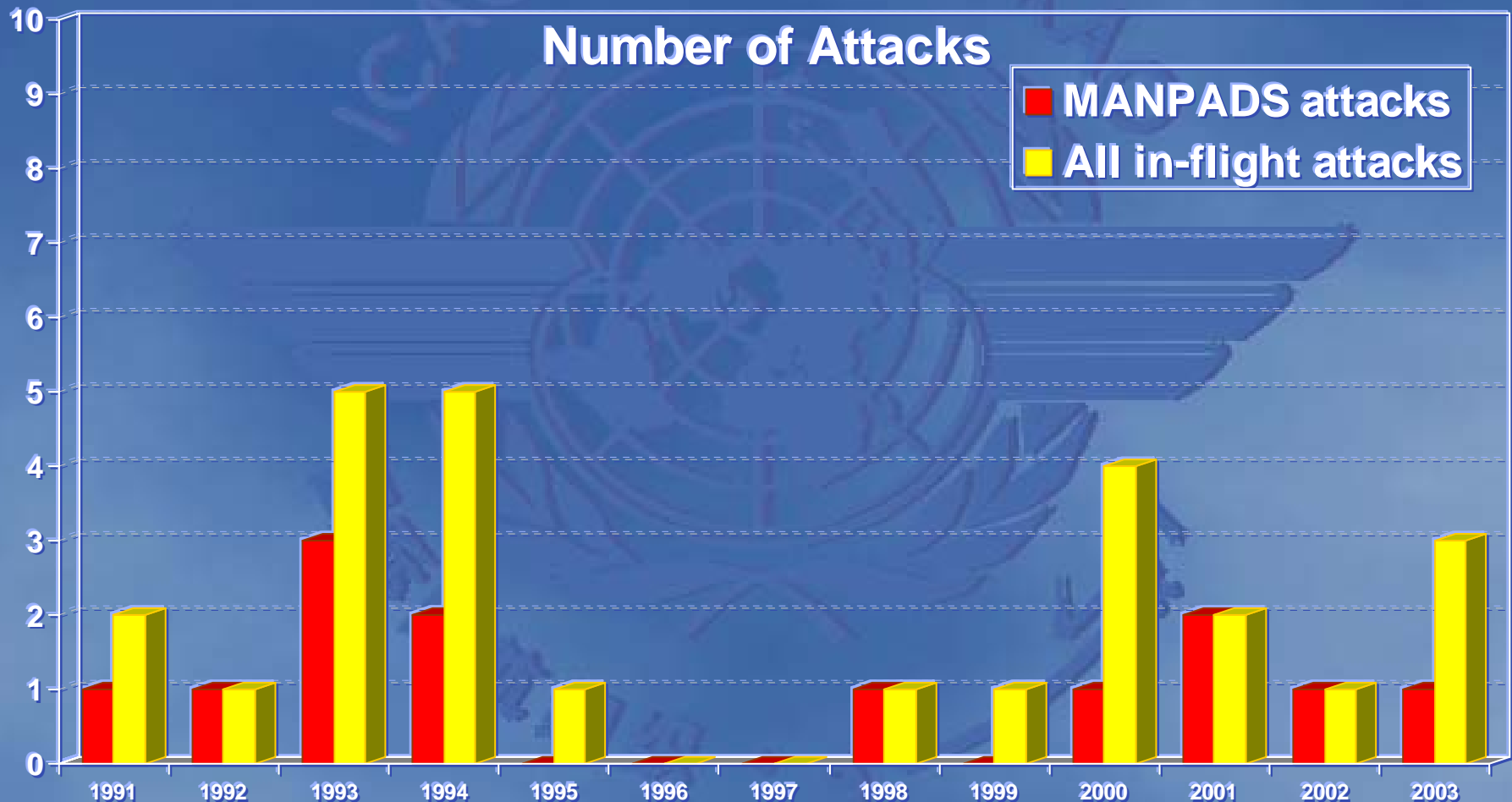
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# MANPADS attacks against civil aircraft since 1991



# Technical measures

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➔ ICAO Doc 8973, Appendix 16 contains technical recommendations and procedures to minimize the risk of an aircraft being hit by MANPADS. These measures relate to:

- Aircraft equipment
- In-flight procedures
- ATS procedures
- Ground procedures

Supplementary guidance material available to ICAO Contracting States via secured website.

# Technical measures (continued)

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- ➔ Annex 8 (Airworthiness) has also been amended to include certification requirements which focus on protecting the cockpit of the aeroplane by strengthening its structure and on improving aeroplane systems survivability in the event of explosion. These measures, however, are intended principally to minimize damage from bomb explosions inside aircraft (bomb in cabin and/or cargo), and not MANPADS. These provisions will not be applicable until 2006.

# Limitations of technical measures

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- The measures are reactive and defensive, and cannot guarantee that an aircraft will be safe from attack;
- Operational constraints such as poor Mean Time Between Failures (MTBF) of equipment;
- Financial constraints such as the high cost of acquiring anti-missile devices;

# Limitations of technical measures

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- Adequacy of existing equipment against “next generation” MANPADS designed to bypass anti-missile devices; and
- Safety issues involved when a large aircraft such as Boeing 747 must make “aggressive” manoeuvres at low altitudes within the normal air traffic system.

# Preventive measures

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- ➔ The following preventive measures must complement existing technical measures in order to effectively manage the threat posed by MANPADS:
  - *Non-proliferation.* States must implement responsible export control policies to reduce the threat posed by MANPADS as called for by ICAO Assembly Resolution A32-23;

# Preventive measures (cont)

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- *Counter-terrorism.* Application of random levels of aviation security commensurate with the level of threat. ICAO has issued an advisory to all Contracting States encouraging governments to conduct appropriate threat assessments and, where necessary, develop contingency plans for addressing the MANPADS threat; and

# Preventive measures (cont)

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- *Regional cooperation.* Regional threat requires a regional response. States within a region should assist one another, in training and threat assessments for example, so that pertinent and cost-effective responses could be jointly developed.

# Conclusions

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- ➔ The risk of MANPADS cannot be eliminated, rather it must be managed.
- ➔ Non-proliferation, counter-terrorism and AVSEC contingency plans jointly constitute the most effective means of countering the MANPADS threat.
- ➔ International and regional cooperation is vital in ensuring that measures are carried out in an efficient manner.

# Cooperation



**Working together**