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www.williamsfoundation.org.au

Chairman:
Air Marshal E.J. McCormack AO (Retd)

Executive Officer
Wing Commander L.J. Halvorson MBE (Retd)

PO Box 5266
KINGSTON ACT 2604

chairman@williamsfoundation.org.au
ABN 25 204 613 891

The Manpads Threat Resurfaces

The world's airlines continue to face numerous, well-documented challenges arising from the volatile global economic and political environment. Thus, we continually see company restructuring, fleet and route rationalisation, increased code-sharing, staff cutbacks, and so on.

Another challenge of an entirely different hue that has largely been swept under the carpet for the past five years may well rear its very ugly head in the near-future. And that is the threat of the shoulder-fired anti-aircraft missiles known as man-portable air defence systems (Manpads). The catalyst for the reappearance of this danger has been the revolutionary war in Libya. There are reports that following the disintegration of the Gaddafi regime, hundreds of Manpads may have been looted from the former dictator's armouries. This should be a matter for serious concern.

Manpads are relatively small, simple, heat-seeking missiles designed to shoot-down aircraft. They are easy to transport, prepare, aim and fire. The Russian-built SA-7 and SA-14 Manpads, for example, are light enough for one or two people to carry and fire, and both missiles take less than a minute to assemble, aim and launch.

A Manpad typically has a range of five kilometres, a ceiling of 4000 metres, and a speed around mach 2.0. When combined with the slow climb and descent rates of airliners, those parameters establish a threat envelope around airports about 80 kilometres long, 10 kilometres wide and 4000 metres high. At a major hub, a dozen or more wide-bodied jets might be inside that envelope at any one time. The difficulty of detecting and then neutralising a Manpads threat within the heavily urbanised areas that surround many airports is self-evident.

The best-known use of Manpads occurred during the Soviet invasion of Afghanistan from 1979 to 1989. At one stage the Soviets appeared likely to defeat the local *mujahideen* guerillas, largely because of the firepower and manoeuvre advantage they enjoyed from attack helicopters. However, the US provided the *mujahideen* with Stinger Manpads and some 270 Soviet helicopters were shot-down, a dramatic effect that severely limited the employment of rotary-wing aircraft and changed the course of the war.

Manpads have also been fired at large military transport/civil airliner aircraft types. In January 2004, a USAF C-5 airlifter taking-off from Baghdad was hit by a surface-to-air missile; similarly, in December 2003, a C-17 was hit. Both aircraft sustained considerable damage but landed safely. In November 2003, two SA-14s were fired at a DHL Airbus A300 cargo jet: one missile hit the A300's left wing, which caught fire; again, the pilots managed to land safely. In all, about 20 attempts have been made to shoot-down civilian aircraft with Manpads in Iraq in recent years; additionally, a substantial number of US Army helicopters have been shot down by SA-7s and rocket-propelled grenades.

The Manpads threat has not been confined to Iraq. Two SA-7s were fired unsuccessfully at an Israeli B-757 taking-off from Mombassa, Kenya, in 2002; while overall, in the past 35 years, some 40 missiles have been launched against civil aircraft around the world, leading to 28 crashes and around 800 fatalities.

The surprising thing is that more attacks have not been made. Hundreds of thousands of shoulder-fired missiles have been manufactured in the past three decades; and Russian authorities have warned that 'tens of thousands' of Manpads may have been stolen in the chaos that followed the disintegration of the USSR. An SA-7 reportedly costs a mere $5000 on the international arms black market.

Airlines and aircraft manufacturers preoccupied with the bottom line have been reluctant to invest in anti-Manpads systems. Options include fitting airliners with military-style anti-missile defence systems (flares, lasers); minimising the efflux and vulnerability of hot spots (engines, APUs, etc); relocating critical structural components away from hot spots; improving fire suppression systems; and so on. Presently, however, aircraft insurance costs are less than implementing such measures and little has been done.

The main response to the Manpads threat has come from US government agencies, which have quietly sought to buy-up and destroy illegal stockpiles. The US State Department reportedly has destroyed more than 30,000 Manpads in 30 countries in the past eight years. Proscription has also been tried, with efforts being made to establish an international control regime. But attempts to control arms flows have generally been unsuccessful; and anyway, in this case, the horse would appear to have already bolted.

The concern now must be that the chaos in Libya will have replenished illegal arms merchants' supplies. Recent WikiLeaks documents have indicated that Yemen – an al-Qa'ida stronghold – has a secret supply of Manpads; while Israeli prime minister Benjamin Netanyahu has claimed that the terrorist organisation Hamas also has a stockpile. Airline companies and aviation regulation authorities will have some very unpleasant questions to answer should, say, a wide-bodied jet be lost to terrorists using these cheap, simple, effective and, apparently, readily-available weapons.

Alan Stephens