



AMPS - Airborne Missile Protection System





AMPS



Where **Innovation** Meets **Performance**

The Threat

Military aircraft, VIP aircraft and commercial airliners are all exposed to the growing threat of Surface to Air Missile (SAM) attacks, mainly from MANPADS (Man Portable Air Defense Systems). Since the 1970s, more than 700,000 shoulder-launched missiles have been manufactured without an accurate accountability of their distribution. Over the last decade, more than 100 helicopters and transport aircraft have been shot down in Iraq and Afghanistan using such ground-based weapons, including scenarios with simultaneous firing of multiple MANPADS.

Airborne Missile Protection System

The Airborne Missile Protection System (AMPS) family of solutions is provided in cooperation between **AIRBUS Defence and Space (DS)** and BIRD Aerosystems. It is designed to automatically detect, verify, and foil SAM attacks through the effective use of countermeasure decoys (Flares and Chaff) and by Directional Infrared Countermeasures (DIRCM) that jam the missile's IR seeker and protects the aircraft.

AMPS is fully operational on military and VIP aircraft. The system is certified by leading aircraft manufactures including **AIRBUS Helicopters** and **MIL Design Bureau** that has issued several Service Bulletins (SB) for the installations on Mi-8/17.

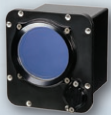
Significantly, AMPS has also evolved into a standard system for NATO, having been selected and installed on Military, VIP and civil platforms used by NATO members, the United Nations (UN) Air Operations, the US and Canadian governments and other Air Forces around the world.

AMPS Configurations

AMPS is installed with a wide variety of detection sensors offering complete protection against any available ground to air threat:

- **AMPS-M** - Protects aircraft against Shoulder Launched Missiles (MANPADS)
- **AMPS-MV** - Protects civil and VIP aircraft against MANPADS attacks using enhanced configuration that eliminates the False Alarm
- **AMPS-ML** - Protects aircraft against MANPADS and Laser threats
- **AMPS-MLR** - Protects against MANPADS and Laser threats in addition to radar guided missiles

AMPS-M Description



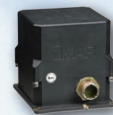
MILDS detects the missile immediately upon launch



MCDU receives the validated threat and activates the optimized countermeasure program



CFDS releases flares to counter the missile



IMU reports the aircraft movement for improved target validation



Fully Autonomous

AMPS-M operates in fully autonomous mode and provides complete protection with minimal pilot intervention. The heart of the system is BIRD's Mission Control & Display Unit (MCDU) that receives an indication/alarm of a missile launch and an incoming missile from the AIRBUS DS AN/AAR-60 (MILDS®) UV sensors and initiates the optimized countermeasure dispensing program while providing visual and audio alerts to the aircraft crew.



AMPS-M provides full threat coverage, very low false alarm rate and maximum warning time for the deployment of appropriate countermeasures. Ensuring the highest level of protection for crew and aircraft.

AMPS-M Main Advantages:

- Fully autonomous system from detection to protection
- Multi-threat handling – up to 8 simultaneous threats
- Combat proven and operational in Afghanistan, Iraq, Libya and Somalia
- Small number of compact, light-weight units allowing easy installation on all aircraft
- Stand alone configuration – no interfaces required to mission or avionic systems
- Full integration with MWS, MACS, RWR, LWR, CFDS, DIRCM (only one display and control for the whole system)
- Short installation and integration time



High Performance MWS – AN/AAR60 MILDS®

- Extremely low clutter thanks to the selected spectral band
- High spatial resolution providing discrimination between fixed and moving sources and accurate approach direction
- High probability of detection and lowest possible false alarm rate
- No emissions from the sensors (stealth)
- No cooling, short activation time
- No interference from IR light and laser
- Low weight and low power consumption



Wide Deployment

BIRD provides its customers with a turn-key solution that includes the installation, integration and support for the AMPS system.

AMPS is operational in many countries around the world including France, Germany, Spain, Italy, Australia, India, Colombia, Czech Republic and others. The system is installed on many different aircraft including: EC135, EC635, EC145, BK117, EC155, Cougar, EC225, Mi8, Mi17, UH60, S-92, CH53, B412, Huey, B407, B200, B350ER, P3C, C130 and more.

The AN/AAR60 MILDS UV sensors that detect the incoming missiles have been selected and installed on over 2000 helicopters and fixed wing aircraft of the following types:

A129, AB205, AB212, AB412, AH1, B200, B350ER, B407, BK117, C130, CH-47, CH-53, Cougar, EC 135, EC 145, EC 155, EC 225, EC 635, EH-101, KUH, Mi-17, Mi-8, NH90/Tiger, P3C, Puma, S70, S92, SH3D, SH60J and K, Surion, UH1, UH60, ZS532; A340, B200, B350, C130, C160, C27J, Cessna, CN235, CN295, P3C, P-X, C-X and more.



AMPS ensures the safety of flight for hundreds of aircraft operated in the most demanding operational theaters such as Afghanistan, Libya, Iraq and Somalia.





BIRD Aerosystems Company Profile

BIRD Aerosystems is a privately owned company established in 2001 and based in Israel. BIRD specializes in the development and deployment of two main product lines: Airborne Missile Protection Systems (AMPS) and Airborne Surveillance, Information and Observation (ASIO) solutions.

The company combines in-depth knowledge of the modern airborne operational requirements along with continued technological innovations to drive the development of new and advanced airborne products and solutions.

BIRD cooperates with its customers to provide turn-key programs that include operational analysis, system design, system integration and installation, project management, extended product support, and a broad range of system engineering activities including ground testing, flight testing and system certification.

BIRD enjoys extensive cooperation with several leading international companies for the worldwide development and marketing of the AMPS and ASIO solutions which are in operational use today by many countries and customers around the world including NATO forces, UN air operations, the US Government and many others.

BIRD is a company that has the necessary experience and scope to contend with the most complex operational requirements and design challenges while being able to provide personalized attention to even the most demanding customers' requirements.



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