

GA-ASI's SeaGuardian: ASW, ATLC and All-Weather Performance



In October 2017, GA-ASI demonstrated remote detection and tracking of submerged contacts. The MQ-9A used sonobuoys to gather acoustic data and track underwater targets. The demonstration successfully paired sonobuoy receiver and data processing technology onboard the MQ-9A



GA-ASI's Certifiable Ground Control Station (CGCS) will be used to fly the MQ-9B. In October 2018, the CGCS completed its first flight.

SeaGuardian is the maritime version of the MQ-9B SkyGuardian from General Atomics Aeronautical Systems, Inc. (GA-ASI). MQ-9B is the world's most advanced Remotely Piloted Aircraft (RPA). MQ-9B has been selected as a sole source RPA for the UK Royal Air Force (RAF) as the Protector RG Mk1 and for the country of Belgium.

MQ-9B boasts a long list of features. SATCOM Auto Takeoff and Landing Capability (ATLC) is part of the package, designed to help minimise the aircraft's launch and recovery footprint and reduce manning and equipment requirements at a Forward Operating Base (FOB). This capability allows aircrew on a Main Operating Base (MOB) to land, taxi and launch the aircraft from a separate FOB, requiring only a small team equipped with a ruggedised laptop at the FOB.

MQ-9B is a ground-up redesign of earlier variants. This was done in order to earn certification to fly in non-segregated airspace and integrate seamlessly with manned aircraft. GA-ASI expects MQ-9B to achieve certification in the early 2020s, when the aircraft initially will meet NATO STANAG-4671 airworthiness standards, and subsequently will meet commercial airworthiness certification standards in cooperation with the US Federal Aviation Administration (FAA).

The Detect and Avoid (DAA) system that GA-ASI has developed for the aircraft is made up of a radar, Traffic Collision Avoidance System (TCAS), Automatic Dependent Surveillance-Broadcast (ADS-B), and the ability to blend



The GA-ASI-developed Detect and Avoid (DAA) system is made up of an Air-to-Air Radar, TCAS II, ADS-B IN/OUT, and a Conflict Prediction and Display System. The DAA system provides pilots with real time situational awareness about proximate traffic and real time guidance to 'remain well clear'.

that surveillance onboard in support of alerting and maneuvering guidance to the pilot in the Ground Control Station (GCS). It enables the RPA to detect other platforms and safely remain well clear in coordination with air traffic control.

Both MQ-9B SeaGuardian and SkyGuardian are capable of all-weather day/night operations. The cold weather engine start capability allows ground operations down to -41°C. It also has an Electro-explosive De-icing system (EEDS) for wing leading edges, anti-ice heated engine inlet, heated pitot tube and static ports, and lightning protection.

GA-ASI is also developing an Anti-Submarine Warfare (ASW) capability. In October 2017, GA-ASI demonstrated remote detection and tracking of submerged contacts using an MQ-9A RPA. The MQ-9A used sonobuoys to gather acoustic data and track underwater targets. The data was transmitted to the MQ-9A, processed onboard, and then relayed to the aircraft's GCS. The demonstration successfully paired sonobuoy receiver and data processing technology onboard the MQ-9A.

Future developments are planned that include MQ-9B SeaGuardian's ability to carry and dispense sonobuoys and to transmit the acoustic data via BLOS SATCOM.

Courtesy: GA-ASI

