Press Information

June 2014

ASRAAM

ASRAAM is the most modern air-to-air missile designed to dominate the Within Visual Range combat mission. The concept behind ASRAAM is to give the pilot the ability to engage the enemy, fire and get away without risking himself or his aircraft in a dogfight. ASRAAM's unique capabilities enable it to defeat all short-range missiles, existing or planned, in close-in combat.

The missile system performance is attributed to a revolutionary design concept and state-of-the-art technology providing fast reaction time from button press to end game performance and giving ASRAAM the highest speed of any short-range missile.

ASRAAM's high speed is achieved by means of a combination of low drag and rocket motor size. By using a 166mm (6.5ins) diameter motor, compared with other missiles which use a 127mm (5ins) motor, ASRAAM has more propellant and can maintain a high speed throughout its flight time.

Designed to out manoeuvre target aircraft in within visual range engagements and to allow launch at high off-boresight angles during such engagements; ASRAAM is a highly agile missile. The exceptional manoeuvrability is provided by a sophisticated control system using innovative body lift technology coupled with tail control.

ASRAAM provides the pilot with the ability to effectively engage targets from gun range to near Beyond Visual Range. The pilot can identify the threat passively and cue the missile using a Helmet Mounted Display, Infra-Red Search and Track (IRST) or radar, or it can be cued using third party targeting. The missile imaging infrared seeker allows ASRAAM to fly out to the target passively.

ASRAAM's maximum range is uncontested, and no other short-range air-to-air missile comes near to this capability, providing the ability to passively home beyond the limits of visual range and well into the realm traditionally thought of as Beyond Visual Range.

ASRAAM can be employed in 3 ways:

- For normal engagements of targets in the forward hemisphere, the "lock before launch" capability is used.
- Engagement of targets beyond the seeker acquisition range is made possible using the "lock after launch" capability with target data provided by the aircraft sensors or a third party.
- For close-in combat the aircraft sensors can give target positional data to the missile beyond the seeker off-boresight limits of +/- 90 degrees. This gives the pilot the additional ability to fire an "over-the-shoulder" shot using the "lock after launch" capability of the missile. In this scenario, the pilot can locate targets behind the aircraft using, for example, the Helmet Mounted Display (HMD) or third party targeting. In this case the missile will launch and fly onto the vector provided by the aircraft, and the seeker will acquire the target, engage and destroy it.

MBDA MISSILE SYSTEMS

ASRAAM's advanced Imaging Infra-Red (IIR) seeker provides the missile with a significant target acquisition capability, even in highly cluttered environments. Missile firings have demonstrated ASRAAM's ability to engage a target in the most severe clutter and countermeasures environment. The missile is software based, allowing for future upgrades.

ASRAAM is a rail-launched missile, compatible with any aircraft currently carrying Sidewinder or AMRAAM.

Programme status

ASRAAM was developed under a UK MOD contract to equip the RAF Tornado and Eurofighter Typhoon combat aircraft. This weapon system will also be fitted to the F-35 Joint Strike Fighter for the UK RAF and Royal Navy. The Royal Australian Air Force also operates ASRAAM on their F/A-18 Hornet aircraft. The Hornet is the first American-built fighter to be equipped with a European air-to-air missile.

The missile system entered service with the UK RAF in September 2002 and with the Australian RAAF in 2004. ASRAAM saw operational service with the RAF during the Gulf conflict in 2003 and is currently deployed on the RAF Typhoon and GR4 as part of Operation UNIFIED PROTECTOR. At the end of 2008, the RAAF successfully carried out an in-service "Lock After Launch" firing of ASRAAM at a target located behind the wing-line of the F/A-18 "shooter". The target was hit by direct impact and the exercise marked a world first for an infra-red guided missile.