

**13<sup>th</sup> February 2009****MBDA presents a more versatile brimstone**

In 2007 the UK RAF issued an Urgent Operational Requirement for a precision low collateral damage weapon with a man-in-the-loop capability to defeat a wide range of static and fast moving targets in restrictive rules of engagement. Dual Mode BRIMSTONE® (DMB) was contracted on 10th August 2007 to MBDA by MoD DE&S ALM IPT (now SAM IPT) to meet this requirement by introducing an upgrade to the existing BRIMSTONE® seeker and guidance systems.

Now in steady-state production, DMB entered service with RAF 9 Sqn on Tornado GR4 aircraft in support of Operation Telic following a highly successful Operational Evaluation of the capability against a wide range of targets during October and November 2008. DMB now provides UK and coalition armed forces with a unique and transformational strike capability.

Following the first Operational Sortie on 18th December 2008, Flt Lt James Heeps was quoted by UK MoD as saying, "It was an honour for Kenny and I to fly the first operational sortie with this missile; it was the first time a GR4 has been able to check-in with a Joint Terminal Attack Controller with a weapons fit capable of engaging any likely target, including personnel, buildings and particularly, fast-moving vehicles. It was pleasing to see the hard work of industry, 41 Squadron and the relevant IPTs come to fruition."

DMB makes maximum re-use of the existing missiles, requiring only a modification to the existing seeker and revised software. In addition, DMB maintains the existing triple-missile launcher, platform interface and targeting pods to deliver a robust and reliable weapon system with a man-in-the-loop capability to enable use in restrictive rules of engagement. Whilst the RAF's Tornado GR4 utilises the Litening III pod, DMB's SAL capability is STANAG 3733 compliant to ensure maximum compatibility with other platforms and/or future targeting capabilities.

The seeker concept has been developed through MoD and company research funding and is based on the existing BRIMSTONE® millimetric wave radar seeker with the addition of a sensitive Semi Active Laser (SAL) capability and the ability to operate in single mode or a dual SAL and RF guidance mode. The guidance mode is cockpit selectable to enable the missile to engage with precision all types of target.

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The missile fuses the inertial navigation system, digital autopilot and the seeker RF and new SAL guidance modes simultaneously to guide the missile with an unprecedented level of agility, responsiveness and accuracy down to the threat specifically targeted by the platform.

The existing small multi effect tandem shaped charge / blast effect warhead has been demonstrated to minimise collateral damage, enabling the engagement of targets in high collateral risk environments. The flexibility to engage any static and fast moving target with lethal efficiency, and the combination of precision, man-in-the-loop target discrimination and extremely localised effects provides a transformational capability for the RAF, allowing the operator to select a precision effect for the target even when in close proximity to property and non-combatant personnel.

Launched at standoff ranges and altitudes the missile flies supersonically with a minimal signature ensuring a short time to target and without the target becoming aware of the engagement. The good stand-off range also ensures the greatest platform survivability.

With DMB significantly enhancing the Tornado GR4's capability in the Close Air Support (CAS) and Counter Insurgency (COIN) roles and with the Tornado GR4 aircraft soon to be deployed to Afghanistan, MBDA is working together with UK MoD to plan and support the requirement to deploy DMB in support of operation Herrick.

This innovative capability and rapid introduction to service of DMB demonstrates the benefits of joint team working between industry and MoD, to provide rapid cost effective solutions to key capability gaps.

Steve Wadey, Managing Director of MBDA UK added : "The DMB programme demonstrates MBDA's innovation and agility to rapidly deliver this transformational precision strike capability for the RAF in support of front line operations. This unique capability is not only relevant to current front line operations but has significant future potential to be exploited on other fast jets, helicopters and unmanned air vehicles."

## **NOTES TO EDITORS**

### **BRIMSTONE**

The BRIMSTONE® Air-to-Ground Precision Attack weapon which provides the basis for the Dual Mode BRIMSTONE® capability, is the principal anti-armour weapon for the UK Royal Air Force (RAF). Effective against static and moving main battle tanks, armoured personnel carriers, self-propelled guns and mobile air defence vehicles as well as all known and projected armour the weapon is unaffected by countermeasures.

The BRIMSTONE® weapon system comprises a re-usable launcher with three missiles per aircraft 'station' enabling high load-outs and multiple platform

configurations. It is a highly effective, all-weather, autonomous missile system that uniquely offers the capability to engage targets in the deepest parts of the battlefield beyond the range of other systems. Combat aircraft armed with BRIMSTONE® offer reach, speed, flexibility and rapid deployment. This high precision weapon with its advanced warhead design ensures that any collateral damage is minimised.

The BRIMSTONE® missile provides fire and forget launch capability from an effective stand-off range. Once fired, the launch aircraft, which with BRIMSTONE® can carry out multiple kills per pass in single or salvo attack, is free to manoeuvre away from the target area or engage another target. Although designed primarily as an air-launched weapon, variants of the missile can be operated from light armoured vehicles, unmanned air vehicles, naval vessels and other ground-based platforms.

BRIMSTONE® is In-Service on Tornado GR4/4A, entering service on Harrier GR7 and GR9A aircraft in 2009 and is planned to be integrated on the RAF's Eurofighter Typhoon and F-35 JCA aircraft.

Further information on BRIMSTONE® is available on [www.mbda-systemes.com](http://www.mbda-systemes.com) MBDA With industrial facilities in four European countries and within the USA, MBDA has an annual turnover of more than €3 billion and an order book of more than €13 billion. With more than 90 armed forces customers in the world, MBDA is a world leader in missiles and missile systems.

MBDA is the only group capable of designing and producing missiles and missile systems that correspond to the full range of current and future operational needs of the three armed forces (land, sea and air). In total, the group offers a range of 45 missile systems and countermeasures products already in operational service and more than 15 others currently in development.

MBDA is jointly owned by BAE SYSTEMS (37,5%), EADS (37,5%) and FINMECCANICA (25%).