A46 – Boeing Growler

A pair of Boeing EA-18G Growlers, A46-305 and A46-306, of No 6 Squadron en route to the Australian International Airshow in Avalon, Victoria, in February 2017. Source: Department of Defence

Boeing EA-18G Growler A46-301 of No 6 Squadron taking off from the United States Air Force's Andersen Air Force Base, Guam, for an air-sea integration mission during the *Regional Presence Deployment*, July 2020. Source: Department of Defence

A Boeing EA-18G Growler from No 6 Squadron flies low above the Kangaroo Point area of Brisbane as part of a display for the annual Riverfire event in September 2018. Source: Department of Defence

Based on the airframe and engines of the Boeing F/A-18F Super Hornet (see entry A44 in the third series) but with the addition of unique electronic warfare sensors and equipment, the EA-18G Growler is an Airborne Electronic Attack (AEA) aircraft capable of providing Force Level Electronic Warfare (EW) support.

The Growler employs a wide variety of onboard systems to disrupt, deceive or deny the enemy's use of a broad range of military electronic systems, including radars and communication equipment. The Growler provides an entirely new dimension to RAAF operations and capability, unique in our region and indeed unique outside the United States Navy (USN). At the handover ceremony for the RAAF's first Growler in July 2015, then Chief of Air Force (CAF) Air Marshal Geoff Brown predicted that the Growler would 'have one of the biggest strategic effects for the Australian Defence Force since the introduction of the F-111 in the 1970s'.

Australia first considered the adoption of an AEA capability during the Force Structure Review in 2008, at which point the government approved a production modification for the last twelve Australian F/A-18F Super Hornets to enable future upgrade to the EA-18G Growler configuration, should strategic circumstances dictate.

In August 2012, following receipt of United States (US) Government advice that Growler production would terminate in 2015, Australia sought to confirm its intention to modify twelve Super Hornets by placing orders for long-lead Growler equipment. In 2013, following the Air Combat Capability Transition Review, this decision was amended to allow the purchase of twelve new-build EA-18Gs in lieu of modifying any of the twenty-four Super Hornets already in service. Subsequent approvals enabled the procurement of training capabilities and new infrastructure.

The Growler's flight performance is similar to that of the F/A-18F Super Hornet, enabling the Growler to conduct escort jamming while embedded with RAAF and coalition strike aircraft, as well as traditional stand-off jamming missions. The nine weapons stations are capable of carrying a combination of 13 600kg (29 983lb) of fuel, EW pods and/or air to air and air to ground weapons. The weapon options enable the Growler to provide both kinetic and non-kinetic Suppression of Enemy Air Defences (SEAD) whilst preserving a self-protect capability against airborne threats.

The wingtip launch rails of the Super Hornet have been replaced by the AN/ALQ-218 wideband receiver and the 20mm cannon has been replaced by an Electronic Attack Unit (EAU) to integrate the aircraft's sensors and electronic attack systems. Combined with the AN/ALQ-99 Tactical Jamming System, the Growler is able to independently detect, locate and jam a wide range of emitters and threats.

A Boeing EA-18G Growler of No 6 Squadron conducting a flypast over Russell Offices, Canberra, during the Chief of Air Force Transfer of Command ceremony, July 2019. Source: Department of Defence

Kinetic suppression capability is achieved with the AGM-88B High-speed Anti-Radiation Missile (HARM) and AGM-88E Advanced Anti-Radiation Guided Missile (AARGM). Captive Air Training Missiles (CATMs) have also been acquired to allow aircrew to train with the sensors integrated into the weapons. Australian Growlers can also be equipped with the AN/ASQ-228 ATFLIR targeting pod (as used successfully by the RAAF's Super Hornets against Islamic State targets in Iraq) which allows the Growler to visually identify and rapidly hand over targets to strike aircraft. RAAF Growlers also have the option to carry the AIM-9X short-range air-to-air missile as required to suit mission objectives and threats.

RAAF Growlers were stored in the US while RAAF crews underwent training with the USN at NAS Whidbey Island. The aircraft were then delivered to Whidbey Island in early 2017 where the squadron undertook initial acceptance and Operational Test and Evaluation (OT&E) activities. The first RAAF Growlers to reach Australia were displayed at the Australian International Air Show at Avalon in March 2017, with all twelve delivered to No 6 Squadron at Amberley by mid-2017. Serial numbers are A46-301 to A46-312.

No 6 Squadron achieved Initial Operational Capability (IOC) in 2018. Final Operational Capability (FOC) is expected in 2022, the lead time being due to the substantial training and support systems required for this new ADF capability.

The Growler's pervasive capabilities across the electronic spectrum mean that the aircraft will interact with almost all current and future ADF platforms and capabilities. The RAAF leveraged from the USN's many decades of AEA experience to build this unique capability and continues to work closely to ensure commonality with USN aircraft upgrades and tactical recommendations. Since IOC, No 6 Squadron Growler crews have also been working closely with No 1 Squadron Super Hornet crews to develop integrated operations in complex warfighting situations.

A No 6 Squadron Boeing EA-18G Growler taxis at last light ready to take-off on a night sortie out of RAAF Darwin during Exercise *Diamond Storm* in May 2019. Source: Department of Defence

Boeing EA-18G Growler aircrew of No 6 Squadron arrive at RAAF Williamtown after conducting a simulated dawn strike as the last sortie with the *Diamond* series of exercises. Source: Department of Defence

Growlers participated in the US Red Flag exercises in January 2018 and 2020 where they were able to effectively integrate with coalition forces in a simulated high threat environment. During the exercise in 2018, one RAAF Growler (A46-311) was damaged beyond repair after an engine compressor catastrophically failed on take-off. Fortunately, the crew escaped with no injuries.

Australia's Growler acquisition includes a Mobile Threat Training Emitter System (MTTES) to allow Growler crews to realistically train to detect, locate and identify emulated transmitters. In December 2016 the US Government announced approval for the sale to Australia of authentic EW systems which will enable Growler crews to train against both real and emulated EW systems at the Delamere Air Weapons Range near RAAF Tindal in the Northern Territory.

For the longer-term sustainment and improvement of the Growler AEA capability, the RAAF will continue to maintain commonality with USN aircraft including input to define plans for the AN/ALQ-249 Next Generation Jammer (NGJ). NGJ will eventually replace the ALQ-99 and provide increased capability against both legacy and emerging threats.

TECHNICAL DATA: Boeing EA-18G Growler

DESCRIPTION:

Two-seat airborne electronic attack aircraft.

POWER PLANTS:

Two 97.68kN (22 000lb) thrust (with afterburner) General Electric F414-GE-400 turbofans.

DIMENSIONS:

Wing span 13.68m (44ft 10.5in); length 18.38m (60ft 3.5in); height 4.88m (16ft 0in).

WEIGHTS:

Empty 15 677kg (34 562lb); max loaded 30 209kg (66 600lb).

ARMAMENT:

AIM-120 or AIM-9X Sidewinder air-to-air missiles, AGM-88 anti-radiation missile; max external weapons load 8029kg (17 700lb).

PERFORMANCE:

Max speed at altitude Mach 1.6 (1700km/h/1056mph); combat ceiling over 15 240m (50 000ft); range (clean) 2361km (1467 miles); ferry range with three 1817-litre (480usgal) external tanks 3074km (1910 miles).