AV-8B Harrier II [Night Attack] - 2003

United States



Type: Attack
Min Speed: 350 kt
Max Speed: 570 kt
Commissioned: 2003
Length: 14.5 m
Wingspan: 9.3 m
Height: 3.6 m
Crew: 1
Empty Weight: 6340 kg
Max Weight: 15980 kg
Max Payload: 0 kg
Propulsion: 1x F402-RR-406A/Pegasus 11-21 Mk.105

Sensors / EW: - AN/AAR-51 - Infrared, Infrared, Target Tracking and Identification Camera, Max range: 148.2 km
- Generic LLTV - (2nd Gen, Weapon Director & Target Tracking And Identification) Visual, LLTV, Weapon Director & Target Tracking and Identification, Max range: 148.2 km
- AN/ALR-67(V)2 - (2nd Gen, Weapon Director & Target Tracking And Identification) ESM, RWR, Radar Warning Receiver, Max range: 222.2 km

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Weapons / Loadouts:
- 330 USG Drop Tank - Drop Tank.
- AN/ALQ-164 DECM Pod - Sensor Pod.
- AIM-9M Sidewinder - (1984) Guided Weapon. Air Max: 18.5 km.
- Mk82 500lb LDGP - (1954) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- Mk83 1000lb LDGP - (1954) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- AN/AAQ-28(V)1 Litening II Pod [FLIR + LRMTS, 50k ft] - Sensor Pod.
- AGM-65E Maverick Laser - (1986) Guided Weapon. Surface Max: 14.8 km. Land Max: 14.8 km.
- GBU-12D/B Paveway II LGB [Mk82] - Guided Weapon. Surface Max: 7.4 km. Land Max: 7.4 km.
- GBU-16B/B Paveway II LGB [Mk83] - (USN) Guided Weapon. Surface Max: 7.4 km. Land Max: 7.4 km.
- GBU-32(V)2/B JDAM [Mk83] - (USN, 2001) Guided Weapon. Land Max: 24.1 km.
- CBU-59/B APAM [717 x BLU-77/B Dual-Purpose Bomblets] - (Mk7 Dispenser) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- CBU-78/B GATOR [45 x BLU-91/B Bomblets + 15 x BLU-92/B Mines] - (Mk7 Dispenser) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- Mk20 Rockeye II CB [247 x Mk118 Dual Purpose Bomblets] - (1969, Mk7 Dispenser) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- Mk77 Mod 1/2/3/4/5/6 500lb Incendiary Bomb - (USMC, 195x-2003) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.

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OVERVIEW: The McDonnell Douglas (now Boeing) AV-8B Harrier II is a single-engine ground-attack aircraft that constitutes the second generation of the Harrier Jump Jet family. Capable of vertical or short takeoff and landing (V/STOL), the aircraft was designed in the late 1970s as an Anglo-American development of the British Hawker Siddeley Harrier, the first operational V/STOL aircraft. Named after a bird of prey, it is primarily employed on light attack or multi-role missions, ranging from close air support of ground troops to armed reconnaissance. The AV-8B is used by the United States Marine Corps (USMC), the Spanish Navy, and the Italian Navy. A variant of the AV-8B, the British Aerospace Harrier II, was developed for the British military, while another, the TAV-8B, is a dedicated two-seat trainer.

Typically operated from small aircraft carriers, large amphibious assault ships and simple forward operating bases, AV-8Bs have participated in numerous military and humanitarian operations, proving themselves versatile assets. U.S. Army General Norman Schwarzkopf named the USMC Harrier II as one of the seven most important weapons of the Gulf War. The aircraft took part in combat during the Iraq War beginning in 2003. The Harrier II has served in Operation Enduring Freedom in Afghanistan since 2001, and was used in Operation Odyssey Dawn in Libya in 2011. Italian and Spanish Harrier IIs have taken part in overseas conflicts in conjunction with NATO coalitions. During its service history, the AV-8B has had a high accident rate, related to the percentage of time spent in critical take-off and landing phases. USMC and Italian Navy AV-8Bs are to be replaced by the Lockheed Martin F-35B Lightning II, with the former expected to operate its Harriers until at least 2030.

DETAILS: The AV-8B Harrier II is a subsonic attack aircraft of metal and composite construction that retains the basic layout of the Hawker Siddeley Harrier, with horizontal stabilizers and shoulder-mounted wings featuring prominent anhedral (downward slope). The aircraft is powered by a single Rolls-Royce Pegasus turbofan engine, which has two intakes and four synchronized vectorable nozzles close to its turbine. Two of these nozzles are located near the forward, cold end of the engine and two are near the rear, hot end of the engine. This arrangement contrasts with most fixed-wing aircraft, which have engine nozzles only at the rear. The Harrier II also has smaller valve-controlled nozzles in the nose, tail, and wingtips to provide control at low airspeeds.

The AV-8B is equipped with one centerline fuselage and six wing hardpoints (compared to four wing hardpoints on the original Harrier), along with two fuselage stations for a 25 mm GAU-12 cannon and ammunition pack. These hardpoints give it the ability to carry a total of 9,200 lb (4,200 kg) of weapons, including air-to-air, air-to-surface, and anti-ship missiles, as well as unguided and guided bombs. The aircraft's internal fuel capacity is 7,500 lb (3,400 kg), up 50 percent compared to its predecessor. Fuel capacity can be carried in hardpoint-compatible external drop tanks, which give the aircraft a maximum ferry range of 2,100 mi (3,300 km) and a combat radius of 300 mi (556 km). The AV-8B can also receive additional fuel via aerial refueling using the probe-and-drogue system. The British Aerospace Harrier II, a variant tailored to the RAF, uses different avionics, and has one additional missile pylon on each wing.

The Harrier II retains the tandem landing gear layout of the first-generation Harriers, although each outrigger landing gear leg was moved from the wingtip to mid-span for a tighter turning radius when taxiing. The engine intakes are larger than those of the first-generation Harrier, and have a revised inlet. On the underside of the fuselage, McDonnell Douglas added lift-improvement devices, which capture the reflected engine exhaust when close to the ground, giving the equivalent of up to 1,200 lb (544 kg) of extra lift.

The technological advances incorporated into the Harrier II, compared with the original Harrier, significantly reduce the workload on the pilot. The supercritical wing, hands-on-throttle-and-stick (HOTAS) control principle, and increased engineered lateral stability make the aircraft fundamentally easier to fly. The AV-8B looks a lot like the original Harrier and it uses the same operating fundamentals. It just uses them a lot better". A large cathode-ray tube multi-purpose display, taken from the F/A-18, makes up much of the instrument panel in the cockpit. It has a wide range of functions, including radar warning information and weapon delivery checklist. The pilots sit on UPC/Stencel 10B zero-zero ejection seats, meaning that they are able to eject from a stationary aircraft at zero altitude.

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TYPE: Subsonic VTOL Attack Aircraft.

SPECIFICATIONS: Crew: (1) || Length: 46 ft 4 in (14.12 m) || Wingspan: 30 ft 4 in (9.25 m) || Height: 11 ft 8 in (3.55 m) || Max. takeoff weight: [Rolling] 31,000 lb (14,100 kg), [Vertical] 20,755 lb (9,415 kg) || Powerplant: (1) Rolls-Royce F402-RR-408 (Mk 107) vectored-thrust turbofan, 23,500 lbf (105 kN).

PERFORMANCE: Max Speed: Mach 0.9 (585 knots, 673 mph, 1,083 km/h) || Range: 1,200 nmi (1,400 mi, 2,200 km) || Combat radius: 300 nmi (350 mi, 556 km) || Rate of climb: 14,700 ft/min (4,481 m/min).

SENSORS: Raytheon APG-65 radar || AN/AAQ-28V LITENING targeting pod (on radar-equipped AV-8B Plus variants).

ARMAMENT: (1) General Dynamics GAU-12 Equalizer 25 mm (0.984 in) 5-barreled Gatling cannon with 300 rounds of ammunition || Hardpoints: 6 under-wing pylon stations holding up to 9,200 lb (4,200 kg) of payload || LAU-5003 rocket pods with CRV7 70 mm rockets || AIM-9 Sidewinder or similar-sized infrared-guided AA missiles || AIM-120 AMRAAM (on radar equipped AV-8B Plus variants) || AGM-65 Maverick || AGM-84 Harpoon || AGM-88 HARM || CBU-100 cluster bombs (CBUs) || Mark 80 series of unguided bombs || Paveway series of laser-guided bombs (LGBs) || Joint Direct Attack Munitions (GBU-38, GBU-32, and GBU-54) || Mark 77 napalm canisters || B61 nuclear bomb || Intrepid Tiger II electronic jammer.

SOURCE: [SCO] Wikipedia http://en.wikipedia.org