AV-8C Harrier - 1982

United States

Type: Attack
Min Speed: 350 kt
Max Speed: 540 kt
Commissioned: 1982
Length: 14.4 m
Wingspan: 7.7 m
Height: 3.4 m
Crew: 1
Empty Weight: 5535 kg
Max Weight: 11168 kg
Max Payload: 0 kg
Propulsion: 1x Pegasus 11 Mk.103

Sensors / EW: - AN/ALR-45F Compass Tie - (Navy) ESM, RWR, Radar Warning Receiver, Max range: 222.2 km

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Weapons / Loadouts:
- Mk82 500lb LDGP - (1954) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- HYDRA 70mm Rocket - (Mk 66 Rocket, M229 Warhead, M423/7 Fuze) Rocket. Surface Max: 3.7 km. Land Max: 3.7 km.
- 120 USG Drop Tank - Drop Tank.
- Mk20 Rockeye II CB [247 x Mk118 Dual Purpose Bomblets] - (1969, Mk7 Dispenser) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- ZUNI 127mm HVAR Rocket - Rocket. Surface Max: 3.7 km. Land Max: 3.7 km.
- Mk83 1000lb LDGP - (1954) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- AIM-9H Sidewinder - (1974) Guided Weapon. Air Max: 17.6 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.
- Mk82 500lb Snake Eye - (USN: 1967, USAF: 1970, Retarded) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.

OVERVIEW: The Hawker Siddeley Harrier, known colloquially as the "Harrier Jump Jet", was developed in the 1960s and formed the first generation of the Harrier series of aircraft. It was the first operational close-support and reconnaissance fighter aircraft with vertical/short takeoff and landing (V/STOL) capabilities and the only truly successful V/STOL design of the many that arose in that era. The Harrier was produced directly from the Hawker Siddeley Kestrel prototypes following the cancellation of a more advanced supersonic aircraft, the Hawker Siddeley P.1154. The British Royal Air Force (RAF) ordered the Harrier GR.1 and GR.3 variants in the late 1960s. It was exported to the United States as the AV-8A, for use by the US Marine Corps (USMC), in the 1970s.

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The RAF positioned the bulk of their Harriers in West Germany to defend against a potential invasion of Western Europe by the Soviet Union; the unique abilities of the Harrier allowed the RAF to disperse their forces away from vulnerable airbases. The USMC used their Harriers primarily for close air support, operating from amphibious assault ships, and, if needed, forward operating bases. Harrier squadrons saw several deployments overseas. The Harrier's ability to operate with minimal ground facilities and very short runways allowed it to be used at locations unavailable to other fixed-wing aircraft. The Harrier received criticism for having a high accident rate and for a time-consuming maintenance process.

In the 1970s the British Aerospace Sea Harrier was developed from the Harrier for use by the Royal Navy (RN) on Invincible-class aircraft carriers. The Sea Harrier and the Harrier fought in the 1982 Falklands War, in which the aircraft proved to be crucial and versatile. The RN Sea Harriers provided fixed-wing air defence while the RAF Harriers focused on ground-attack missions in support of the advancing British land force. The Harrier was also extensively redesigned as the AV-8B Harrier II and British Aerospace Harrier II by the team of McDonnell Douglas and British Aerospace. The innovative Harrier family and its Rolls-Royce Pegasus engines with thrust vectoring nozzles have generated long-term interest in V/STOL aircraft. Similar V/STOL operational aircraft include the contemporary Soviet Yakovlev Yak-38. A V/STOL variant of the Lockheed Martin F-35 Lightning II is currently under development.

DETAILS: The Harrier is typically used as a ground attack aircraft, though its manoeuvrability also allows it to effectively engage other aircraft at short ranges. The Harrier is powered by a single Pegasus turbofan engine mounted in the fuselage. The engine is fitted with two air intakes and four vectoring nozzles for directing the thrust generated: two for the bypass flow and two for the jet exhaust. Several smaller reaction nozzles are also fitted, in the nose, tail and wingtips, for the purpose of balancing during vertical flight. It has two landing gear units on the fuselage and two outrigger landing gear units, one on each wing tip.[39] The Harrier is equipped with four wing and three fuselage pylons for carrying a variety of weapons and external fuel tanks.

The Kestrel and the Harrier were similar in appearance, though approximately 90 per cent of the Kestrel's airframe was redesigned for the Harrier. The Harrier was powered by the more powerful Pegasus 6 engine; new air intakes with auxiliary blow-in doors were added to produce the required airflow at low speed. Its wing was modified to increase area and the landing gear was strengthened. Several hardpoints were installed, two under each wing and one underneath the fuselage; two 30 mm (1.2 in) ADEN cannon gun pods could also be fitted to the aircraft's underside. The Harrier was outfitted with updated avionics to replace the basic systems used in the Kestrel; a navigational-attack system incorporating an inertial navigation system, originally for the P.1154, was installed and information was presented to the pilot by a head-up display and a moving map display.

The Harrier's VTOL abilities allowed it to be deployed from very small prepared clearings or helipads as well as normal airfields. It was believed that, in a high-intensity conflict, air bases would be vulnerable and likely to be quickly knocked out. The capability to scatter Harrier squadrons to dozens of small "alert pads" on the front lines was highly prized by military strategists and the USMC procured the aircraft because of this ability. Hawker Siddeley noted that STOL operation provided additional benefits over VTOL operation, saving fuel and allowing the aircraft to carry more ordnance.

TYPE: V/STOL Subsonic Ground-Attack Aircraft.

SPECIFICATIONS: Crew: (1) || Length: 46 ft 10 in (14.27 m) || Wingspan: 25 ft 3 in (7.70 m) || Height: 11 ft 11 in (3.63 m) || Max. takeoff weight: 25,200 lb (11,430 kg) || Powerplant: (1) Rolls-Royce Pegasus 103 turbofan with four swivelling nozzles, 21,500 lbf (95.6 kN) Four vertical flight puffer jets use engine bleed air, mounted in the nose, wingtips, and tail.

PERFORMANCE: Max Speed: 730 mph (635 knots, 1,176 km/h) at sea level || Combat radius: 230 mi (200 nmi, 370

km) lo-lo-lo with 4,400 lb (2,000 kg) payload || Ferry range: 2,129 mi (1,850 nmi, 3,425 km) || Endurance: 1 hr 30 min (combat air patrol - 115 mi (185 km) from base) || Service ceiling: 51,200 ft (15,600 m) || Time to climb to 40,000 ft (12,200 m): aprrox. 2 min.

SENSORS: None - Day Attack Only Aircraft.

ARMAMENT: (2) 30 mm (1.18 in) ADEN cannon pods under the fuselage || Hardpoints: (4) under-wing & (1) under-fuselage pylon stations with a capacity of 5,000 lb (2,268 kg) and provisions || Matra rocket pods with SNEB 68 mm rockets || AIM-9 Sidewinders Air-to-air missiles || A variety of unguided iron bombs, BL755 cluster bombs or laser-guided bombs || Reconnaissance pod || drop tanks for extended range/loitering time.

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