S-3B Viking - 2001

United States



Type: Attack
Min Speed: 180 kt
Max Speed: 440 kt
Commissioned: 2001
Length: 16.3 m
Wingspan: 20.9 m
Height: 6.9 m
Crew: 2
Empty Weight: 12060 kg
Max Weight: 23830 kg
Max Payload: 0 kg
Propulsion: 2x TF34-GE-2

Sensors / EW: - AN/ALR-76 - ESM, ELINT, Max range: 926 km
- AN/APS-137(V)1 ISAR - (S-3B) Radar, Radar, Surface Search, Long-Range, Max range: 370.4 km
- OR-89/AA - (S-3B) Infrared, Infrared, Surveillance Camera, Max range: 55.6 km

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Weapons / Loadouts:
- AGM-65F Maverick IR - (1990) Guided Weapon. Surface Max: 14.8 km. Land Max: 14.8 km.
- 300 USG Drop Tank - Drop Tank.
- Generic Buddy Store - Buddy Store.
- Mk82 500lb LDGP - (1954) 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.
- HYDRA 70mm Rocket - (Mk 66 Rocket, M229 Warhead, M423/7 Fuze) 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.
- Mk84 2000lb LDGP - (1955) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- Mine [Mk62 Quickstrike Mk82] - (1982) Bottom Mine.
- Mine [Mk63 Quickstrike Mk83] - (1982) Bottom Mine.
- Mine [Mk65 Mod 0 Quickstrike 2000lb] - (1984, 90m max depth) Bottom Mine.
- AGM-84G Harpoon ICR - (1998) Guided Weapon. Surface Max: 138.9 km.
- Mk82 500lb Snake Eye - (USN: 1967, USAF: 1970, Retarded) 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.
- 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.
- ADM-141A TALD [Active RF] - (1988) Decoy (Vehicle). Surface Max: 74.1 km. Land Max: 74.1 km.

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OVERVIEW: The Lockheed S-3 Viking is a four-seat twin-engine jet aircraft that was used by the U.S. Navy to identify and track enemy submarines. In the late 1990s, the S-3B's mission focus shifted to surface warfare and aerial refueling. The Viking also provided electronic warfare and surface surveillance capabilities to the carrier battle group. A carrier-based, subsonic, all-weather, multi-mission aircraft with long range, it carried automated weapon systems, and was capable of extended missions with in-flight refueling. Because of the engines low-pitched sound, it was nicknamed the "Hoover" after the vacuum cleaner brand.

DETAILS: The S-3 is a conventional monoplane with a high-mounted cantilever wing, swept at an angle of 15 degrees. The two GE TF-34 high-bypass turbofan engines mounted in nacelles under the wings provide excellent fuel efficiency, giving the Viking the required long range and endurance, while maintaining docile engine-out characteristics.

The aircraft can seat four crew members, three officers and one enlisted aircrewman, with the pilot and the copilot/tactical coordinator (COTAC) in the front of the cockpit and the tactical coordinator (TACCO) and sensor operator (SENSO) in the back. Entry is by an entry door / ladder which folds out of the side of the fuselage. When the aircraft's anti-submarine warfare (ASW) role ended in the late 1990s, the enlisted SENSOs were removed from the crew. In the tanking crew configuration, the S-3B typically flew with only a crew of two (pilot and co-pilot/COTAC). The wing is fitted with leading edge and Fowler flaps. Spoilers are fitted to both the upper and the lower surfaces of the wings. All control surfaces are actuated by dual hydraulically boosted irreversible systems. In the event of dual hydraulic failures, an Emergency Flight Control System (EFCS) permits manual control with greatly increased stick forces and reduced control authority.

The aircraft has two underwing hardpoints that can be used to carry fuel tanks, general purpose and cluster bombs, missiles, rockets, and storage pods. It also has four internal bomb bay stations that can be used to carry general purpose bombs, aerial torpedoes, and special stores (B57 and B61 nuclear weapons). Fifty-nine sonobuoy chutes are fitted, as well as a dedicated Search and Rescue (SAR) chute. The S-3 is fitted with the ALE-39 countermeasure system and can carry up to 90 rounds of chaff, flares, and expendable jammers (or a combination of all) in three dispensers. A retractable magnetic anomaly detector (MAD) Boom is fitted in the tail.

In the late 1990s, the S-3B's role was changed from anti-submarine warfare (ASW) to anti-surface warfare (ASuW). At that time, the MAD Boom was removed, along with several hundred pounds of submarine detection electronics. With no remaining sonobuoy processing capability, most of the sonobuoy chutes were faired over with a blanking plate.

VARIANTS: The ES-3A Shadow was designed as a carrier-based, subsonic, all-weather, long-range, electronic reconnaissance (ELINT) aircraft. All 16 aircraft were modified S-3 Viking airframes, which were modified with numerous additional antennas and antenna housings. The Shadow replaced the EA-3B Skywarrior, and entered fleet service in 1993.

The ES-3A carried an extensive suite of electronic sensors and communications gear, replacing the S-3's submarine detection, armament, and maritime surveillance equipment with avionics racks accommodating the ES-3A's sensors. These modifications had minor impact on airspeed, reducing its top rated speed from 450 KTAS to 405 KTAS but had no noticeable impact on the aircraft's range and actually increased its rated loiter time. Because these aircraft were standoff indications and warnings platforms and were never intended to be part of an ingress strike package, this new speed limitation was considered insignificant.

TYPE: Anti-submarine Twin Engine Jet Aircraft.

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SPECIFICATIONS: Crew: (4) || Length: 53 ft 4 in (16.26 m) || Wingspan: 68 ft 8 in (20.93 m) || Height: 22 ft 9 in (6.93 m) || Max. takeoff weight: 52,539 lb (23,831 kg) || Powerplant: (2) General Electric TF34-GE-2 turbofans, 9,275 lbf (41.26 kN) each.

PERFORMANCE: Max Speed: Mach 0.79, 450 kn (514 mph, 828 km/h) at 20,000 ft (6,100 m) || Cruise speed: 350 kn (405 mph, 650 km/h) || Range: 2,765 nm (3,182 mi, 5,121 km) || Service ceiling: 40,900 ft (12,465 m) || Rate of climb: 5,120 ft/min (26.0 m/s) || Thrust/weight: 0.353.

SENSORS: AN/APS-116 sea search radar || AN/APS-137 Inverse Synthetic Aperture Radar (ISAR) || OR-89 forward looking infrared (FLIR) camera || AN/ARS-2 sonobuoy receiver || AN/ASQ-81 magnetic anomaly detector (MAD) || AN/ASN-92 Inertial navigation system (INS) with doppler radar navigation and TACAN || Up to 60 sonobuoys.

ARMAMENT: Up to 4,900 lb (2,220 kg) on (4) internal and (2) external hardpoints || 500 lb (227 kg) Mark 82 bombs || 1000 lb (454 kg) Mark 83 bombs || 2000 lb (908 kg) Mark 84 bombs || CBU-100 cluster bombs || Mark 50 torpedoes || Mark 46 torpedoes || Mines or Depth Charges || B57 nuclear bombs || AGM-65E/F Maverick missiles || AGM-84D Harpoon missiles || AGM-84H/K SLAM-ER missile || Rocket Pods.

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