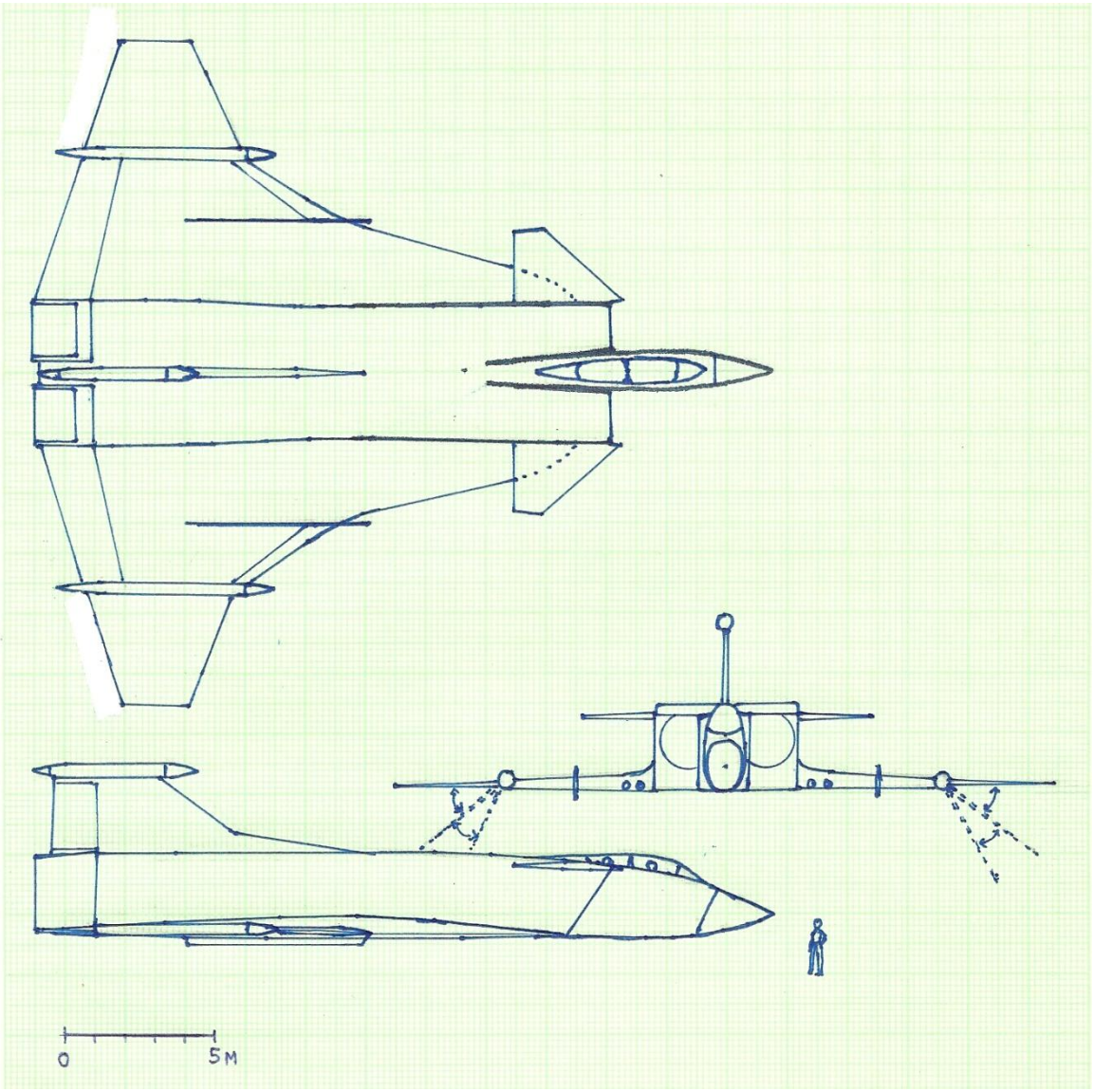
Lockheed F-83 EAGLE



Characteristics :

- Supersonic interceptor/air superiority all-weather fighter and long range strike fighter-bomber.
- Crew : 2 (Pilot, Radar and Weapons Officer)
- Length : 24.6 m
- Span : 22 m (tips level) / 18 m (tips down 70 degrees)
- Height : 7.7 m (from ground)
- Weights : 20,000 kg (empty, operational) / 45,000 kg (interceptor, max internal fuel) / 53,000 kg (max takeoff)

- Wing area : 128 m2 (wings), 15 m2 (canard surfaces)
- Wing loading : 351.56 kg/m2 (interceptor, 45,000 kg) / 414 kg/m2 (max takeoff, 53,000 kg).
- Engines : two Pratt & Whitney TF-58R turbofan-ramjets with 2D vectoring nozzles and thrust reversers. Each TF-58R has a maximum thrust of 117.4 KN / 26,400 lb st (dry thrust) ; 166.3 KN / 37,400 lb st (augmented); 195.7 KN / 44,000 lb st (ramjet at Mach 3+).
- Thrust/weight ratio : 0.75 (augmented thrust, mass of 45,000 kg) / 0.89 (ramjet power at Mach 3+, mass of 45,000 kg).
- Fuel : total maximum of 25,000 kg/31,300 L (all internal, with bomb bay ferry tank). Optional two 5,000 L supersonic drop tanks under wing pylons. Retractable air refueling probe.
- Construction : Stainless steel alloy honeycomb skin panels and structure (to resist high mach thermal stress). Wing tips can lower down to 70 degrees to augment stability at high mach numbers or when flying low level penetration missions.
- **Armament :**
    - One main internal bomb bay (6.8 m x 1.3 m x 1.1 m) for one nuclear fission bomb (Mark 7 THOR), or one AGM-2 HELLHOUND heavy air-surface missile, or up to 3,000 kg of bombs, or one photo-reconnaissance pod, or one internal ferry fuel tank (8,000 L).
    - Seven internal missile bays (4.5 m x 60 cm x 60 cm), each for one AIM-1 COBRA air-air missile /AGM-1 NAGA air-surface missile, or up to 1000 kg of bombs.
    - Four internal 30mm automatic cannons, each with 150 rounds.
    - Four retractable belly rocket pods for total of 64 x 76mm rockets and 18 x 127mm rockets.
    - Two wing pylons, each with underwing pylons for up to 4,500 kg of bombs or one 5000 L drop tank, plus overwing launch rail for AIM-1 COBRA or AGM-1 NAGA missile.
    - I.R and radar decoy launcher in tail.
- **Sensors/electronics :**
    - Air intercept radar in nose.
    - Target illumination and tracking radar (for AIM-1B air-air missiles) in starboard wing nacelle. Operated by RWO.
    - Gunnery radar in nose radome.
    - Tail warning radar.
    - Long range identification e/o telescope with stabilized camera lens in port wing nacelle.

- Surface mapping and navigation radar in chin.
- Radar altimeter.
- Inertial navigation system with cockpit map display unit.
- Heads-up display unit linked with forward-looking e/o camera pack (FLIR + LLLTV), aircraft attitude display and gun sight.
- Four other e/o camera packs giving night view in frontal arc, down-forward and down vertical views.
- Radar warning receiver set.
- Encrypted secure VHF radio.
- Four clear comms radios (2 UHF, 1 VHF, 1 HF) for joint services operations.
- Gun camera, plus bomb damage assessment camera in tail (pointed aft and down).
- TACAN receiver.
- IFF transponder.

- **Performances :**
  - Max speed (clean, at 20,000 m) : Mach 3.96 (2950 mph/4720 kmh).
  - Max low altitude speed (ground level) : Mach 1.6 (1190 mph/1904 kmh).
  - Service ceiling : 28,780 m / 95,000 ft.
  - Interception combat radius (clean, Mach 3.9, max internal fuel) : 630 miles / 1008 km.
  - Subsonic strike combat radius (8,000 kg of internal ordnance) : 1470 miles / 2350 km.
  - Ferry range (max internal fuel, plus two 5000 L drop tanks) : 4400 miles / 7040 km.
- **Variants :**
  - **F-83A EAGLE :** Two-seat supersonic all-weather interceptor/air superiority fighter and long range strike fighter-bomber. In service in USAF in December 1952 ‘C’.
  - **RF-83B PROMETHEUS :** Two-seat supersonic strategic high altitude photo-reconnaissance aircraft. Two of four 30mm cannons, four of seven missile bays and all four rocket launcher pods deleted and replaced by extra internal fuel tanks. Fixed reconnaissance pack in main bomb bay. Typical strategic reconnaissance mission : High altitude subsonic approach/egress runs over open skies using external drop tanks and air refuelings, plus 1,600-mile / 2,560-km Mach 3.5 dash over hostile territories. In USAF service in September 1953 ‘C’.