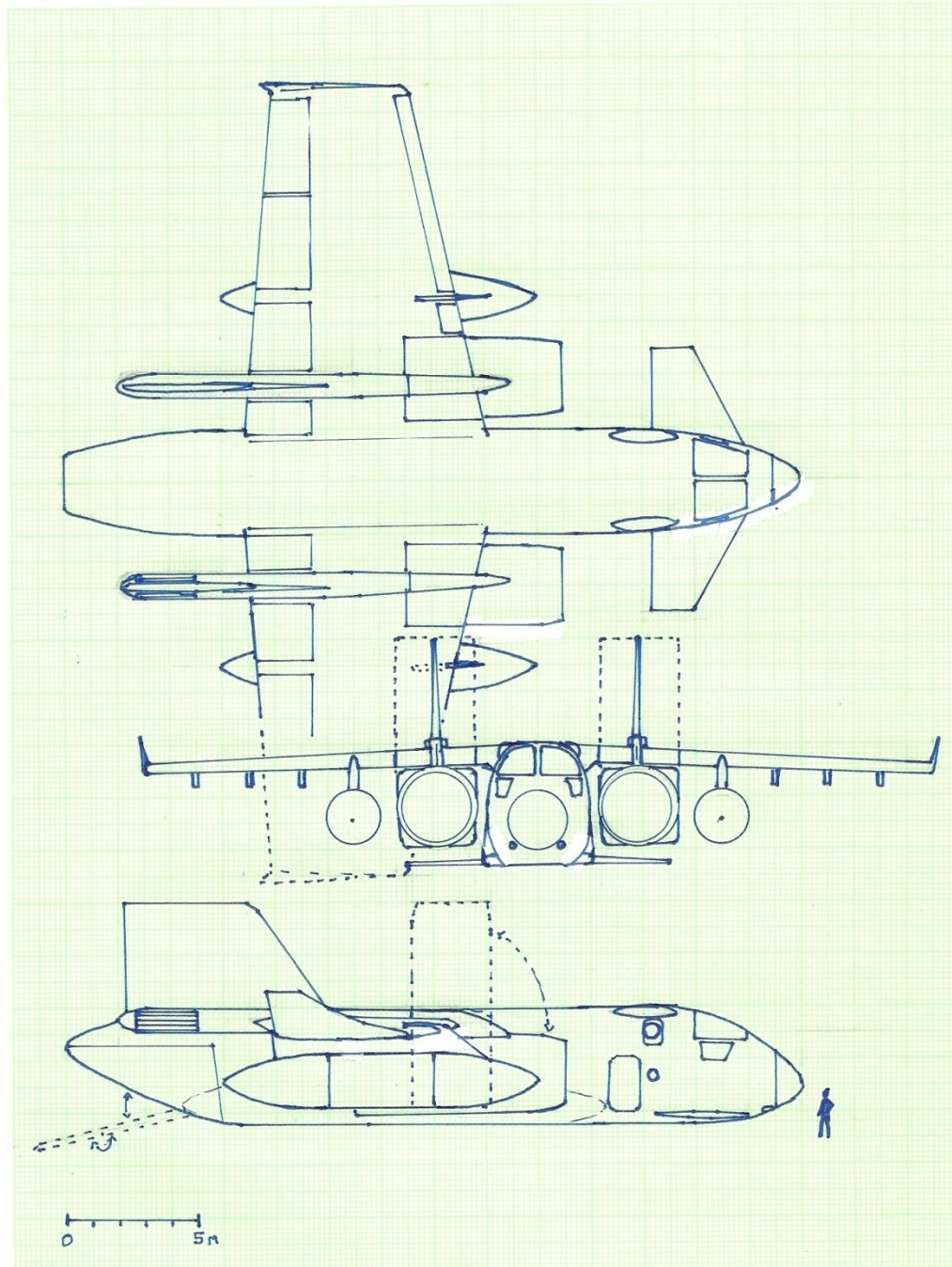


Bell C-10 THUNDERBIRD



Characteristics :

- VSTOL combat search and rescue transport.
- Crew : 7 (Pilot, Copilot, Navigator/Radio, Mission Specialist, Cargo Master, 2 x Observer/Gunner).
- Length : 28 m.

- Span : 30.4 m.
- Height : 9.5 m.
- Weights : 18,000 kg (empty, operational) / 42,000 kg (max for VTOL and hover operations) / 94,000 kg (max CTOL).
- Wing area : 234 m².
- Wing loading : 401.7 kg/m² (at 94,000 kg max CTOL) / 179.5 kg/m² (at 42,000 kg).
- Cargo cabin : 11.5 m x 2.4 m x 2.4 m. Pressurized cabin with 38 folding jumpseats along the sides. Cargo capacity of up to 8,000 kg, including light army vehicles.
- Rear cargo ramp : width of 2.4 m.
- Engines : Two General Electric TF-2000 high-bypass turbofans with 3D nozzles, mounted on pivot points under the wing leading edges. Hot flux diversion ducts bring part of hot engine gases to 3D nozzles aft of wing, to provide balanced lift and attitude control during hovers. Each engine has a maximum dry thrust of 24,500 kg st / 53,900 lbf.
- Thrust/weight ratio : 1.16 (at mass of 42,000 kg) / 0.52 (at 94,000 kg, max CTOL).
- Fuel : Total internal capacity of 68,000 kg / 85,000 L in wings, fuselage and fixed central mission pods section. Optional drop tanks can be hooked to wing pylons. Retractable air refueling probe.
- Construction : Standard aluminum alloy construction, except for hot engine parts (steel alloys).
- **Special mission equipment :**
 - Padded, floating rescue basket (2.1 m x 1.2 m, 1.3 m freeboard, 8 pers / 2 stretchers / 900 kg capacity) hooked by four steel cables to an overhead electric winch inside the fuselage (reeled down through a belly hatch). Can be reeled down by 35 m.
 - Mission pods : Two large nacelles fixed under the wings, outboard of the engines. Each pod consist of three sections (total length of 12 m, diameter of 2.0 m), with center section fixed to pylon and containing quick connectors and a fuel tank. Nose and tail sections are each 4 m long and can be interchanged at will, with a variety of pod types available. Changing mission pods is an easy field job equivalent to loading ordnance on a plane. Existing mission pod types are orientable, remote-controlled white light/I.R. light projector mount; high definition surface search radar; air search radar; electronic warfare jamming pod, air refueling drogue hose drum and dispenser, extra fuel tank (5000 L each); 76mm or 127mm rocket launcher pod; sonobuoy launcher; dipping sonar; magnetic

mine triggering towed decoy; acoustic mine towed decoy; airdroppable inflatable rescue raft; submunition dispenser; M.A.D. towed sensor.

- Battery of fixed belly white lights and I.R. lights pointing down and meant to light up a rescue scene in the dark or in poor visibility.
- Pair of fixed belly U.V. lights to help warm up freezing survivors on the surface if need be.

- **Armament :**

- Two 30mm nose cannons with limited traverse and elevation ($\pm 5^\circ$), each with 150 rounds. Operated and aimed by the copilot.
- Two remote-controlled machine gun turrets (covered by aerodynamic cap in flight) on roof of cockpit section and aimed by the two observers.
- Six wing pylons for a variety of ordnance, including missiles and torpedoes, and for drop tanks.

- **Sensors/electronics :**

- Air search radar in nose radome.
- Surface search radar in belly retractable radome.
- Surface mapping and navigation radar in belly chin radome.
- Gunnery radar in nose.
- Radar altimeter.
- Inertial navigation system with cockpit display unit.
- Heads-up display units for pilot and copilot, 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.
- TACAN receiver.
- IFF transponder.
- Radio DF sets (HF, VHF, UHF).
- Four clear comms radios (2 UHF, 1 VHF, 1 HF) for joint services communications.
- Swivel-mounted e/o night camera packs (FLIR + LLLTV) operated by the two observers/gunners (also used to point machine guns and light projectors).

- **Performances :**

- Max speed : Mach 0.9.
- Typical combat search and rescue radius : 1300 miles / 2080 km, including 20 minutes of hover.

- Range : 5700 miles / 9120 km with 8000 kg payload and max internal fuel.
- **Variants :**
 - **C-10A THUNDERBIRD** : USAF dedicated combat search and rescue aircraft and tactical VSTOL transport. In service in December 1952 'C'.
 - **MC-10A** : Marine Corps VSTOL assault transport. In service in February 1953 'C'.
 - **C-10N** : U.S. Navy carrier onboard delivery aircraft. In service in May 1953 'C'.
 - **CG-10** : U.S. Coast Guard patrol, search and rescue plane. In service in February 1953 'C'.
 - **C-10NP** : U.S. Navy carrier-based anti-submarine patrol aircraft. In service in October 1953 'C'.
 - **Bell THUNDERBIRD** : Civilian, unarmed VSTOL cargo aircraft with extended range and endurance and seats for 48 passengers plus cargo space in centerline of cabin. In US civilian service in March 1953 'C' (first user : Alaska Airlines).
 - **CW-10 RAINMAKER** : Civilian water bomber. Adapted with quick water scooping system (lake/river-skimming) and 16,000 L water tank with opening bottom. Retains rescue basket system. In US civilian service in November 1953 'C' (first user : State of Oregon).