

A marvel of technological ingenuity, Thunderbird 1's retractable wings and atomic rocket propulsion systems are compactly incorporated into the craft's slim streamlined fuselage and rear-mounted booster assembly.



Swing-wing capability: variable wing geometry allows Thunderbird 1 to operate at optimum efficiency in upper and lower atmosphere.



Propulsion and equipment

- 1 Topside stabilising fin.
- 2 Ramjet thrust pipe.
- 3 Heat exchanger: molten metal circulated from reactor passes heat which exhausts at ramjet thrust pipe.
- 4 Ramjet air intake.
- 5 Turbojet cooling vanes.
- 6 Centrally mounted variable-mode engine operates as a sustainer rocket for take off and as a gas turbine engine in flight.
- 7 Turbojet heat exchanger.
- 8 Turbojet turbines.
- 9 Air intakes pass air to compressor and heat exchanger.
- 10 Landing leg retraction pivot.
- 11 Rear landing leg.
- 12 Landing leg inflight storage well.
- 13 Booster rocket primary fuel tanks.
- 14 Graphite and Cahelium-shielded atomic fusion reactor.
- 15 Reactor surface cooling pipes.
- 16 Secondary reactor shielding.
- 17 Reactor section cooling vents, interspersed with jet nozzle outlets.
- 18 Pitch and yaw jets.
- 19 Fuel feed lines.
- 20 Hydraulic lift supports allow the underside of the cargo bay to be lowered to ground level.
- 21 Lift support adjustment rams.
- 22 Transit clamps ensure that the two hover-jets, the additional cockpit bucket seats and the mobile control unit are undamaged and secure during TB1's varying flight configurations.
- 23 Reactor section lower hull doubles as a cargo deck floor for the mobile control unit, hover-jets and other equipment.
- 24 Mobile control unit is clamped into position during flight.
- 25 Wing-tip light.
- 26 Turbojet fuel tanks.
- 27 Landing leg and hatch deployment actuators.
- 28 Support strut retraction hinge.
- 29 Landing leg support strut.
- 30 Upper landing leg section, incorporating support strut slide and lock groove used when leg is deployed.
- 31 Landing leg lower telescopic section.
- 32 Starboard landing pad is stored flat within the wing during flight.
- 33 Vertical take-off jet fuel tanks.
- 34 Variable-mode vertical take-off rocket and hover jet.
- 35 Auxiliary motors and batteries.
- 36 Fuselage reffridgeration unit.
- 37 Wing carry-through box containing wing hinge.
- 38 Starboard wing configuration protection blister.
- 39 Wingroot attachment spars.
- 40 Hydraulic rams controlling wing retraction/deployment functions.
- 41 Remote control hover camera uses anti-gravity technology to enable the operator to view a disaster zone from Thunderbird 1's cabin.
- 42 Sonar tracking system electronics pod.
- 43 Sonar tracking system deployment cable drum.
- 44 Sonar tracking array each with three retractable antennae. The system is used to register life signs under water, and to measure depths and distances.
- 45 Sonar tracking bay doors.