

FIGHT AND FLIGHT: HYDROPLANE

Wings
High aspect ratio wings span 160 ft and permit an exceptionally high lift to drag ratio of 31 during cruise. The high lift, low drag FX63-100 airfoil and slotted flaps permit landing speeds as low as 58 kts without harming top end performance. The CFD informed winglets reduce drag by up to 5% during cruise.

Structure
The combination of a conventional aluminum spar and rib wing structure with a semi monocoque fuselage with a carbon fiber skin and aluminum stringers permits a light robust structure weighing in at only 34,000 lbs. but permitting the airplane to maneuver at a load factor of 5 with full fuel and payload.

Firefighting Equipment
The airplane can carry up to 8,000 gallons of fire retardant in eight separate tanks and can perform up to four separate drops of 2,000 gallons. Fire retardant is reloaded using an integrated pump with a loading rate of 500 gallons per minute.

H-Tail
The tail provides good control authority and low drag. The position of the vertical stabilizers and horizontal stabilizer in the prop stream results in enhanced control authority at low speeds and high angles of attack.

Power Plant
PW150 turboprop engines spin Dowty R408 props. The power system gives a power to weight ratio of 0.127 hp/lb. resulting in a thrust to weight ratio of 0.3 at takeoff and can propel the aircraft up to 420 kts. Four engines provide a robust system in the case of failure due to smoke or other conditions.

Crew Station and Avionics
The cockpit provides stations for three people: a pilot, a copilot, and a flight engineer. Avionics provide active phugoid damping to allow the exceptionally high lift to drag ratio of the airplane. A civilian model of an AN/APQ-187 ground tracking radar permits operations near the ground in heavy smoke.

- Key Stats**
- Firefighting range: 1126 nmi
 - Ferry range: 4856 nmi
 - Max payload: 72,900 lbs
 - MTOW: 151,618 lbs
 - Drop speed: 125 kts
 - Top Speed: 420 kts
 - Crew: 3
 - Service date: 2030
 - Unit cost: \$230 Million/plane for a production run of 25

Landing Gear
Tricycle landing gear with Oleo shock struts provide excellent ground handling and stability. The aircraft can achieve a balanced field length of 1950 ft in its heaviest configuration due to its combination of light weight, high lift, and high power

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