



## 747 VLAT – Tanker 944 Operation Mission Profile

### TECHNICAL INFORMATION:

- **Aircraft:** Boeing 747-400
- **General Dimensions:**
  - Wingspan: 211 feet/64.3 m
  - Length: 231 feet/70.4 m
- **Speed:**
  - Long-range high-speed cruise (above 10,000 ft): 500 knots (926 km/h)
  - Speed below 10,000 MSL: 250 knots (463 km/h) (by FAA regulation)
  - Drop speed: 145-155 knots (269-287 km/h)
  - Orbit Speed: 150 knots (278 km/h)
- **Normal Mission Endurance:** 2.5 hours
- **Flight Crew:** Three plus and ATGS or observer if needed
- **Special Avionics:**
  - TCAS II (Collision avoidance system) .5 mile (.8 km) to 12 mile (19.31 km)
  - Satcom
  - TAWS (Terrain awareness) and Radar Altimeter
  - GPWS – Ground Proximity Warning System
  - Triple GPS FMS Navigation System
  - ADS-B
- **Maximum Taxi Weight:** 873,000 pounds (395,986 Kg)
- **Fire Fighting Weight:** 650,000 pounds (294,835 Kg)
- **Maximum Landing Weight:** 652,000 pounds (295,742Kg)
- **Operations:** Operates 220,000 (99,790Kg) pounds below maximum certified weight
- Can land with a full load of retardant if the mission is cancelled once airborne.
- **Bases of Operations:** Pre-approved civilian and military bases or approved agency retardant bases with minimum 6,500 ft. (1,981 m) runway approved for 747 operations.

### TERMINOLOGY: USA AND INTERNATIONAL EQUIVALENTS

- Air Tanker/Tanker – Fire Bomber
- Lead/Lead Plane – Bird Dog
- Air Tactical Group Supervisor – Air Attack Officer

### DISPATCH PROTOCOL

- Request 747 VLAT as per agency-established guidelines
- Lead / Bird Dog required for drop supervision
- Dispatch / Resource Order is given to the crew, which contains all pertinent information to safely fly a fire mission
- **Initial response time and reloads:** Normally 30 minutes plus taxi time
- **En-route altitude:** 120 miles (193 km) + to the fire at 18,000 feet (5,486 m) or above. Less than 120 miles (193 km) below 18,000 ft (5,486 m).
- Initial contact with appropriate aerial supervision (Lead/Bird Dog or Air Attack Officer) 40-20 miles (64-32 km) Out.
- **Fire Traffic Area (FTA):** 150 knots (278 km/h)
- **Holding Area:** the same as the other tankers/fire bombers; the left-hand orbit may be flown wider or as assigned by aerial supervision
- **Wake Turbulence:** Standard heavy jet procedures apply. Other aircraft following and in trail of the aircraft must wait 3-5 minutes minimum before reentry into orbit route or drop pattern.



## STRATEGY AND TACTICS

- Standard tanker/fire bomber strategies and tactics apply as established by the controlling agency.
- Aircraft may pressurize with the load onboard, allowing it to cover long distances very rapidly.
- Aircraft does not need to jettison any part of the load in order to land if cancelled prior to arrival at the fire.
- Due to our unique pressurized system, we can perform effective coverage level drops over narrow deep saddles, ravines and basins where other aircraft may not be able to fly into.
- Drops in steep downhill terrain may require splitting the load.
- Level flight into rising terrain is preferred in some scenarios.
- Flight crews and aircraft are oceanic certified for immediate overseas incidents.

## DROP SYSTEM

- **Capacity:**
  - Total Gallons Carried 19,200 (72,680 lt)
  - Total Gallons Dropped 18,600-17,500 (70,409 lt)
- **System Type:** Pressurized Constant Flow
- **T944 Load Equivalents:** Varies based on aircraft comparison, but may range from 2 to 23 times the load delivered
- **Coverage Level:** 1 – 10 gallons per 100 square feet (3.79 – 37.85 lt. in 9.29 square meters)
- **Effective Line Length:**
  - CL 2: 2 miles (3.22 km)
  - CL 4: 1.4 miles (2.25 km)
  - CL 8: 0.6 miles (0.97 km)
- **Line Width:** 125-150 feet (38 – 46m) •
- **Capable of doing split drops**
- **Four nozzles**
- **Agent Type:**
  - retardant, water, water enhancers
  - • Drop Height: 250 to 300 feet (76 – 91.4m) above canopy
- **DROP PROTOCOL**
  - Use of standard target description
  - Apply 3 – 5-minute wake turbulence reentry for any aircraft in trail
  - Standard drop protocol
  - Lead/Bird Dog required for drop supervision
  - Recommend ground personnel/equipment to remain 200 ft (61 m) lateral distance from the fire line or as per controlling agency policy



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