



US Forest Service  
Fire & Aviation Management  
DC-10 Briefing Paper



Updated May 1, 2014

**Topic:** Follow up - DC-10 Very Large Airtanker (VLAT) Operational Considerations

**Issue:** The DC-10 has unique operational considerations including low level supervision, terrain, facilities, and cost.

**Background:** 10 Tanker Air Carrier was awarded a line item for a DC-10 on the Next Generation Large Airtanker Exclusive Use contract and a line item on the Very Large Airtanker (VLAT) Call When Needed contract. These aircraft remain a VLAT in category and require special considerations for use.

**Key Points:**

- **Low Level Supervision:** Aerial supervision is required for this aircraft while dispensing.
  - The 10 Tanker flight crews will not be issued an initial attack (IA) approval card, so a Leadplane or Aerial Supervision Module must be on scene to direct the resource to the intended dispensing locations.
  - The cruising speed of the DC-10 is around 370 knots (TAS) which is greater than Large Airtankers (LATs) and leadplanes. Users/dispatchers need to insure that a LP/ASM will arrive in time to provide aerial supervision.
  - Trainee Leadplane Pilots (LP) under the supervision of an onboard Leadplane Pilot Instructors (LPI) may conduct VLAT operations. All LPIs are now qualified for VLAT operations and will supervise the trainee during these missions.
- **Terrain:** VLATs are less maneuverable than LATs and should be used in less challenging terrain that affords better maneuverability for dispensing.
  - The DC-10 is relatively agile for its size; however the momentum is greater and requires planning by the supervising aircraft to provide a stabilized path for delivery.
  - The VLATs minimum drop height is 200 feet above the top of the vegetation with a target height of 250 feet.
- **Facilities:** The DC-10 weighs between 340,000 and 400,000 lbs. in contract configuration. It has a Dual Tandem wheel configuration.
  - Tanker Base and parking ramps must have a weight bearing capacity sufficient to support the DC-10. Local bases need to insure both the airport and agency engineering have information indicating ramp capacity. Letters documentation and drawings of the ramp structure must be on file at the airtanker base.
  - Congestion at a base may preclude operations due to conflicts with other aircraft types.
  - Air stairs are needed for the crew to enter/exit the aircraft. 10 Tanker is responsible for the payment of the stairs and airtanker personnel are not to operate the equipment.
  - Loading the aircraft will take anywhere from 12-15 minutes with a three pump/hose configuration or 25 minutes with a one pump/hose setup.
  - Simultaneous Loading and Fueling and/or Hot Retardant Loading (HRL) is acceptable only after approval of the corresponding Regional Aviation Officer and the local line officer and being added to the base operations plan. The local airtanker base manager (ATBM) is delegated the decision authority once this is in the base plan.
  - Facilities that accept the DC-10 will need to provide offload capacity of at least 10,000 gallons.
- **Cost:** The FS funds the availability of \$27,285 per day. The rate is on par with Next Gen LATs awarded under this contract.
  - The dry flight rate is \$12,750/hour when the aircraft is fully loaded with retardant to 11,600 gallons. When the aircraft is carrying 5500 gallons or less the rate drops to \$4598/hour. After 150 hours of use, a further price adjustment occurs.
  - The DC-10 has an hourly fuel consumption of 2275 gallons when carrying 5500 gallons or less and 2550 gallons per hour when fully loaded. The Forest Service utilizes the Aviation Into-plane Reimbursement (AIR) cards sponsored by the Defense Logistics Agency (DLA) for purchasing fuel. This provides the government a cost savings of about \$1.50 per gallon from the retail rate.
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# VLAT to Large AT (P2V) Comparison

## 100 Nautical Mile Dispatch (2013)

### 1 Full Load from DC-10

11,600 Gallons of retardant:	\$23,200
1 hour of flight time (round trip):	\$12,500
FS Paid fuel (dry flight rate):	\$15,300
FS Paid Daily Availability (est. 2 hours):	\$6,000

**Total User Cost : \$35,700**

**User Costs / Gal = \$3.00**

Total cost is \$57,000 per load or \$4.90/gallon

### 4 P2V Loads to Equal 1 DC-10 Load

8,320 Gallons of retardant:	\$16,640
FS Paid Daily Availability (est. 2 hours):	\$12,000
4 hours of flight time:	\$33,980

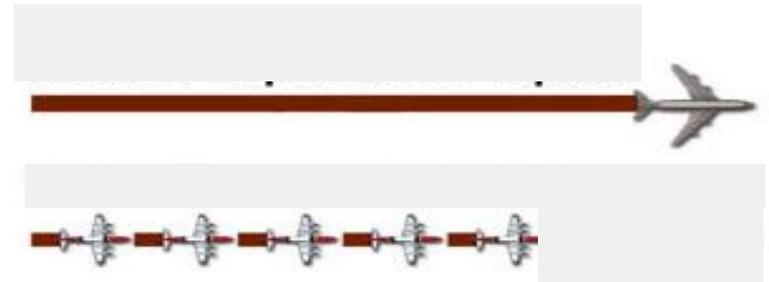
**Total User Cost : \$50,620**

**User Costs / Gal = \$6.10**

Total cost is \$62,620 per 4 loads or \$7.50/gallon

1 VLAT (DC-10) Drop on Large Fire  
at Coverage Level 4 = 1650 feet

4 Drops from P-2V = 1650 feet  
3 Drops from MAFFS = 1700 feet  
3 Drops from DC-7 = 1600 feet



VLAT normally responds to one fire

4 P-2Vs can respond to different fires