

Leadplane Training Lesson Plan

VLAT Operations

12-13-N9065-HO

Objective:

To familiarize and develop the student's proficiency with very large airtanker (VLAT) operations.

Content:

There are two VLAT aircraft identified in the Interagency Airtanker Base Directory. The DC-10 which holds 9,400 gallons of retardant and the 747 which holds 19,200 gallons of retardant. An airtanker is considered a VLAT if it can hold 5000 gallons of retardant or more.

Both of these aircraft are jet powered and due to their size, have specific tanker bases that they operate out of. See the Interagency Airtanker Base Directory.

Due to their increased in route speeds, the limited reload bases are not much of a delay, but it should be noted that the VLAT aircraft do take longer to fill with retardant. Generally plan for longer turnaround times than the LAT and smaller airtankers.

The aircraft are maneuverable enough to fly in most terrain depending on pilot experience. Larger patterns should be planned for due to the 150 knot pattern speed.

VLAT crews are not initial attack rated and must be led by a leadplane or ASM.

Standard FTA procedures apply. Giving the VLAT a $\frac{1}{4}$ to $\frac{1}{2}$ mile final with wings level is a best practice. This is a slightly longer final than the other tankers.

Due to the larger retardant load, VLAT's are a good aircraft to build retardant line with. With less tie-ins, there is less of a risk of thin areas in the retardant line between drops. The VLAT's can start and stop the retardant allowing for multiple passes when building retardant lines that change direction.

Minimum drop altitude is 250 feet above the fuels for VLAT aircraft. Drop testing was done before the 250 foot minimum drop altitude was adopted. The drop height table shows VLAT drop altitudes at 200 feet. Coverage levels lower than a 6 are not dropped below 250 feet. There are a variety of factors that influence the final coverage level on the ground (wind speed, aircraft drop speed, uneven terrain, fuel density, etc.) Steep downhill drops can be difficult for a VLAT while dropping a full load. Dropping part of the load and then starting a second drop at a lower altitude to tag and extend from the first drop will usually produce a better outcome.

There is a 3 to 5 minute delay for wake turbulence after a VLAT has dropped. The leadplane should fly the pattern to check for turbulence prior to allowing other aircraft in the area of the VLAT drop.

Clearing VLAT's in above other tankers should be done with caution since the wake turbulence can descend into other aircrafts orbit. Grouping like aircraft and then clearing them into the operations area is usually a best practice.

Completion Standards:

The lesson is complete when the student can explain the uses of VLAT's during fire suppression activities and the best practices for integrating the VLAT's into the FTA. The student must also be able to demonstrate the use of VLAT's in a fire environment for Phase 2 without the reliance on the evaluator.

Drop Height Table

This table shows the minimum altitude above the height of the fuel to eliminate forward momentum of the retardant which eliminates retardant shadowing on the fuels.

Controller Setting	B747	DC10	CV580	S2	MAFFS2	RJ85	C130	BAe146	MD87	P3A
1	200	200	150	150	150	150	150	150	150	150
2	200	200	150	150	150	150	150	150	150	150
3	200	200	150	150	150	150	150	150	150	150
4	200	200	150	150	150	150	150	150	150	155
6	265	250	170	150	150	155	150	160	170	175
8	265	265	200	180	150	175	185	175	190	200

*737 data was not available at the time of writing.

Drop height may be affected by the ground speed of the aircraft, variations in the height of the terrain, variations in the height of the fuels, wind speed, wind direction, and the steepness of the terrain.