Leadplane Training Lesson Plan

SEAT Operations

12-14-N9065-HO

Objective:

To familiarize and develop the student's proficiency with single engine airtanker (SEAT) operations.

Content:

The Air Tractor 802 is the primary aircraft used in SEAT operations. Other agriculture spray aircraft may be encountered from state contracts and will tend to carry less retardant and will have less performance.

SEAT's with an 800 series call sign will be a type 3 airtanker and can carry up to 800 gallons. SEAT's with a 400 series call sign will be a type 4 airtanker. Most SEAT retardant gates are now inline and are constant flow tanks. The tank systems can be selected to drop a coverage level 1 thru 6.

In route speeds will very but are generally 145 to 165 MPH (126 to 144 knots).

The gallons of retardant each aircraft can deliver will very due to density altitude, fuel load, and departure airport. The gallons will vary from load to load but generally will be close to the maximum capacity. The download amounts don't usually affect the retardant tactics and is not usually a concern.

Working SEAT's in twos or threes is very efficient for suppression activities and can increase efficiency while decreasing leadplane work load.

For sequencing efficiencies and aircraft flight patterns it is helpful to identify a lead SEAT. Identifying the number 2 aircraft, number 3 aircraft, and so on will clarify which aircraft has responsibility for separation from the other aircraft.

SEAT's are manufactured with an airspeed indicator in miles per hour. (Fire Bosses have airspeed indicators in knots per hour) When a SEAT asks for an airspeed it will need to be converted. KPH x 1.15 = MPH and MPH / 1.15 = KPH. If a SEAT asks for 120 on final it will need to be converted to KPH or 105 knots.

SEAT aircraft are very maneuverable and can fly in most terrain depending on pilot experience.

SEAT aircraft can be used to build retardant line but will have more tie-ins and will require more loads due to the lesser gallons carried. Considering that fire line is rarely

straight, SEAT's can be effective when building direct line or doing structure protection. Tie-in overlaps need to be considered since this is where thin areas of retardant may occur and will be susceptible to the fire burning through the retardant line. SEAT's can start and stop the retardant but the second drop is usually an amount that is ineffective. The amount of time it takes to fly the pattern for the second part of the load is usually not worth the drop.

Minimum drop altitude is 60 feet above the fuels for SEAT aircraft. This altitude is based on a coverage level 4 and should be raised up as coverage level is increased. 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.) but the drop altitude should not need to be higher than 100 feet. Coverage levels lower than a 4 are not dropped below 60 feet.

There is no delay for wake turbulence after a SEAT has dropped.

SEAT aircraft generally are most comfortable in orbit at the same altitude. Stacking tankers is usually not done. If there is a situation that may warrant stacking tankers consider grouping tankers at an IP or holding point prior to coming into the operations area. Grouping like aircraft and then clearing them into the operations area is usually a best practice.

SEAT aircraft can operate out of all of the airtanker bases listed in the Interagency Airtanker Base Directory except for Fort Wainwright and Ukiah.

SEAT pilots are carded as a level 2 or level 1 pilot. Level 1 pilots will be more experienced. Level 2 pilots are limited to operations with one other aircraft in the FTA and no aerial supervision.

SEAT's are limited to daylight hours only and must be on the ground prior to 30 minutes past sunset.

For more information on SEAT operations consult the NWCG Standards for Single Engine Airtanker Operations.

There are several different tank and gate systems on the SEAT aircraft. This will be the main reason for differences in line length and the consistency of coverage level.

Completion Standards:

The lesson is complete when the student can explain the uses of SEAT's during fire suppression activities and the best practices for integrating the SEAT's into the FTA. The student must also be able to demonstrate the use of SEAT'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.