



# FIRE PROTECTION TRAINING

Procedures Handbook 4300

AIRCRAFT

**TOPIC:** Introduction to CAL FIRE Firefighting Aircraft

**TIME FRAME:** :45

**LEVEL OF INSTRUCTION:** Level I

**BEHAVIORAL OBJECTIVE:**

*Condition:* A written quiz

*Behavior:* The student will list and describe the capabilities and uses of wildland firefighting aircraft.

*Standard:* With a minimum of 80% accuracy

**MATERIALS NEEDED:**

- White board and pens
- Appropriate visual aids
- Audio visual equipment

**REFERENCES:**

- Teie, Fire fighter's Handbook on Wildland Firefighting, 3<sup>rd</sup> Edition, Chapter 7
- Field Operation Guide, ICS 420-1
- CAL FIRE, Aviation Management Procedures Handbook (8300)

**PREPARATION:** Firefighting aircraft are best used on small initial attack fires and require quick reinforcement by ground personnel. As a firefighter tasked with reinforcing aircraft operations, it is helpful to understand the different types, uses and capabilities of CAL FIRE's firefighting aircraft.



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INTRODUCTION TO CAL FIRE  
FIREFIGHTING AIRCRAFT

PRESENTATION	APPLICATION
<p><b>I. FIXED WING AIRCRAFT</b></p> <p>A. Assigned to airbases throughout the state</p> <p>B. Bases are spaced to provide a maximum response time of 20 minutes to any fire within the state</p> <p><b>NOTE:</b> Point out airbases near your initial attack areas, aircraft types and identifiers</p> <p>C. Many bases are operated jointly with the U.S.F.S.</p> <p>D. Aircraft types</p> <ol style="list-style-type: none"><li>1. Air attack<ol style="list-style-type: none"><li>a. The air tactical aircraft from which an air tactical group supervisor (ATGS) coordinates fixed and/or rotary wing aircraft on a fire<ol style="list-style-type: none"><li>(1) OV-10</li><li>b. Staffing is a pilot and the air attack supervisor (BC or FC)</li><li>c. Also used for<ol style="list-style-type: none"><li>(1) Mapping</li><li>(2) Reconnaissance</li><li>(3) Aerial photography</li><li>(4) Supplemental lightning detection</li><li>(5) Special assignments</li><li>(6) Federal agencies use them as "lead planes" to lead air tankers into and through the drop zone</li></ol></li></ol></li><li>2. Air tankers ("Tanker")</li></ol></li></ol>	



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<ul style="list-style-type: none"><li>a. Any fixed wing aircraft certified to deliver retardant or suppressant (foam or gel) on a fire</li><li>b. ICS types<ul style="list-style-type: none"><li>(1) Type I (heavy)<ul style="list-style-type: none"><li>(a) 3000 gallons minimum retardant capacity</li><li>(b) P-3, DC-7, C130 MAFFS</li><li>(c) Very Large Air Tankers (VLAT) 11,000 gals min.<ul style="list-style-type: none"><li>(i) Boeing 747 20,000 gallons</li><li>(ii) Douglas DC-10 12, 000 gallons</li></ul></li></ul></li><li>(2) Type II (medium)<ul style="list-style-type: none"><li>(a) 1800 gallon minimum retardant capacity</li><li>(b) P2V. CL-215/415</li></ul></li><li>(3) Type III (light)<ul style="list-style-type: none"><li>(a) 800 gallon minimum retardant capacity</li><li>(b) CAL FIRE's S-2T / 1200 Gallon Tank</li></ul></li><li>(4) Type IV<ul style="list-style-type: none"><li>(a) 100 gallon minimum retardant capacity</li></ul></li></ul></li></ul>	



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<ul style="list-style-type: none"><li><ul style="list-style-type: none"><li>(b) S.E.A.T. i.e: Air Tractor 802, Trush, Ag Cat</li></ul></li><li>c. Hazards<ul style="list-style-type: none"><li>(1) Steep topography</li><li>(2) High winds</li><li>(3) Deep shadows</li><li>(4) Dense smoke</li><li>(5) Trees or towers</li><li>(6) Powerlines</li><li>(7) Other aircraft</li></ul></li><li>d. Usage guidelines<ul style="list-style-type: none"><li>(1) Best utilized on small initial attack fires</li><li>(2) Plan on one drop each five minutes</li><li>(3) Drops must be followed up by ground forces</li><li>(4) Avoid splitting the head of a fire in two</li></ul></li><li>e. Retardant drops<ul style="list-style-type: none"><li>(1) Types of retardant drops<ul style="list-style-type: none"><li>(a) Salvo</li><li>(b) Trail</li><li>(c) Split</li></ul></li><li>(2) S2-T</li></ul></li></ul>	



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<ul style="list-style-type: none"><li>(a) T=Turbine prop</li><li>(b) Have one 1200 gallon max. tank</li><li>(c) Constant flow door</li><li>(d) Computerized retardant coverage levels</li></ul>	
<p><b>II. HELICOPTER (“COPTER”)</b></p> <p>A. A rotary wing aircraft used for reconnaissance, transport, water drops, helitorch operation, medical evacuation search and rescue, etc.</p> <p><b>NOTE:</b> Point out helicopters near you initial attack area, type and identifiers (including cooperators)</p> <p>B. ICS types</p> <ul style="list-style-type: none"><li>1. Helitanker<ul style="list-style-type: none"><li>a. Fixed tank</li><li>b. Air Tanker Board Certified</li><li>c. 1,000 gallon minimum capacity</li></ul></li><li>2. Type I (heavy)<ul style="list-style-type: none"><li>a. 16 passengers (includes pilot)</li><li>b. 5000 lbs. cargo</li><li>c. 700 gallon bucket</li></ul><p>Examples: Skycrane, Army Guard CH-47 or H-60, Bell 214</p></li><li>3. Type II (medium)<ul style="list-style-type: none"><li>a. Firefighting “work horses”</li></ul></li></ul>	



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<ul style="list-style-type: none"><li>b. 10 passengers (includes pilot)</li><li>c. 2500 lbs. cargo</li><li>d. 300 gallon bucket</li></ul> <p>Examples: Bell 204, 205, 212, UH-1H "Super Huey" (CAL FIRE)</p> <ul style="list-style-type: none"><li>4. Type III (light)<ul style="list-style-type: none"><li>a. 5 passengers (includes pilot)</li><li>b. 1200 lbs. cargo</li><li>c. 100 gallon bucket</li></ul><p>Examples: Bell 206, A-Star, Hughes 500D</p></li><li>5. Type IV (light)<ul style="list-style-type: none"><li>a. 3 passengers (include pilot)</li><li>b. 600 lbs. cargo</li><li>c. 75 gallon bucket</li></ul><p>Example: Hiller 12E3T,</p></li></ul> <p>C. Copter usage guides</p> <ul style="list-style-type: none"><li>1. Utilized to deploy firefighting crews in areas with difficult or remote access</li><li>2. Helitack crew should be supported with water/foam bucket drops</li><li>3. Most effective if water source within 2 minutes of the incident</li><li>4. Helitender are dispatched concurrently with water, food, supplies, and fuel</li><li>5. May have short haul rescue capability</li></ul>	



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<ul style="list-style-type: none"><li>6. May be outfitted with helitorch and/or chemical ignition device system (CIDS)</li><li>7. Medical evacuations</li></ul>	



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## **SUMMARY:**

Aircraft are an essential part of the CAL FIRE wildland firefighting arsenal. Though expensive to acquire, maintain, and operate, they are a cost effective tool when properly ordered, utilized and released.

## **EVALUATION:**

A written quiz.

## **ASSIGNMENT:**

To be determined by instructor(s).