



FIRE PROTECTION TRAINING

Procedures Handbook 4300

FIREFIGHTER SAFETY

TOPIC: Airtanker Retardant Drop Safety Precautions

TIME FRAME: :15

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: Given a written quiz

Behavior: The student will confirm knowledge the safety precautions to be used when working a wildland fire with airtankers assigned

Standard: With a minimum of 80% accuracy according to this lesson plan

MATERIALS NEEDED:

- Writing board and pens
- Audio visual equipment
- Appropriate visual aids
- Handouts

REFERENCES:

- CAL FIRE Air Attack Management, 2000
- Teie,(2005) Firefighter's Handbook on Wildland Firefighting, 3rd Edition, Chapter 7, Page 262
- IFSTA, (2003) Wildland Firefighting for Structural Firefighters, 4th Edition, Chapter 8 pp. 331-333
- NFES 2048 10 Principles of Retardant Application PMS 440-2

PREPARATION:

Aircraft offer a modern, sophisticated fire attack tool. Air resources are available for use on wildland fires, especially when high value improvements or natural resources are threatened. Working around these aircraft can be extremely dangerous. It is essential that firefighters be aware of the safety precautions that must be observed when working with these resources.

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AIRTANKER RETARDANT DROP
SAFETY PRECAUTIONS

PRESENTATION	APPLICATION
<p>I. AIRTANKERS</p> <p>A. Terminology</p> <ol style="list-style-type: none">1. Airtanker2. Air drop3. Vortex turbulence4. Fire retardants5. Water enhancers (aka “gels” or elastoners)6. Retardant line7. Pre-treatment of fuels8. Direct attack9. Dry run <p>B. Airtanker drops are no longer identified as split, trail, or salvo, instead retardant delivery is identified by coverage levels -.5 through 6</p> <ol style="list-style-type: none">1. Coverage level 1 is 1 gal/100 sq. ft., coverage level 2 is 2 gal/100 sq. ft. and so on2. Coverage level rule of thumb<ol style="list-style-type: none">a. .5 to 2 is used for short grassb. Coverage level 3-4 used for brushc. Coverage level 6 used for timber <p>C. Aircraft are used on wildland fires with the intention of attaining prompt containment.</p> <ol style="list-style-type: none">1. Aircraft are most effective when<ol style="list-style-type: none">a. Making fast initial attack on small fires	

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<ul style="list-style-type: none">b. Followed up by fast, aggressive ground action2. Airtankers are used for making fire retardant dropsD. Safety rules regarding airtanker operations were developed for use by all personnel working on the fireline<ul style="list-style-type: none">1. Air operations are directed by an air tactical group supervisor2. The air tactical group supervisor flies above the fire and directs the pilots where their drops are to be made3. Air operations are coordinated with the incident commander or operations chief	
<p>II. SAFETY OF GROUND FORCES</p> <ul style="list-style-type: none">A. Ground forces should be warned when drops are to be made in their area<ul style="list-style-type: none">1. A "dry run" or high pass may be made over a portion of the fire, to indicate that a drop will be made in 1 to 3 minutes2. Once initial drops are made in an area, further dry runs are unnecessaryB. Conduct of ground personnel<ul style="list-style-type: none">1. On initial runs, wave arms to indicate your presence2. Fireline supervisor should advise aircraft of ground personnel locationsC. Low air drops can<ul style="list-style-type: none">1. Knock a person down	

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<ul style="list-style-type: none">2. Throw you against rocks, trees, and other objects3. Uproot trees4. Create flying or falling objects5. Seriously damage equipment<ul style="list-style-type: none">a. A low drop of 25 to 40 feet totally destroyed a BLM engine and seriously injured 2 men when 150 gallons of retardant was dropped from an air tanker at a speed of 180 MPHD. Vortex turbulence is caused by air slipping off the wing tips of any aircraft in flight<ul style="list-style-type: none">1. Causes air voids behind wings2. Causes horizontal whirlwinds with velocities of 25 MPH or more3. Can cause sudden, violent and erratic changes in fire behavior such as spot fires, flare-upsE. If You Are About to be Dropped On:<ul style="list-style-type: none">1. Move out of the target area if there is time2. Avoid deploying under or near power lines3. Stay away from dead snags4. Stay away from LARGE, OLD TREES<ul style="list-style-type: none">a. Limbs or tree tops may break off and cause injury	<p>Information Sheets #1 and #2</p>

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<ul style="list-style-type: none">5. NEVER STAND IN THE PATH OF AN AIR DROP. This greatly increases your chances of injury<ul style="list-style-type: none">a. The most dangerous area is the center 15-20 feet of the drop pattern6. If possible, find something solid and get behind it. Lie on your stomach facing the incoming air drop7. If in the open, immediately lie on your stomach facing the incoming air drop<ul style="list-style-type: none">a. Helmet, chin strap, and goggles onb. Feet spread apart, toes outward for better stabilityc. Cover your face if possibled. Hold tools firmly out to the side and away from your bodye. Use free hand to hold helmet on headF. After the retardant drop has been made:<ul style="list-style-type: none">1. Exercise caution, most retardants are slippery<ul style="list-style-type: none">a. Watch your footingb. Wipe off your hand tools, especially the handles	<p>Have a student demonstrate the proper procedure for preparing to be dropped on</p>

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<ul style="list-style-type: none">2. Dropping retardant on surfaced roads creates a hazardous condition. Roads should be washed down as soon as possible3. Retardant should be washed from equipment and structures as soon as possible to prevent corrosion4. Retardant may also damage agricultural or ornamental vegetation <p>III. GROUND HAZARDS THAT AFFECT AIRCRAFT</p> <p>A. Aircraft should be advised of</p> <ul style="list-style-type: none">1. Power and/or utility lines, poles and towers2. Aerial cables (logging operations)3. Antennas4. Other aircraft in area5. Snags hidden in smoke	

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SAFETY PRECAUTIONS

SUMMARY:

Aircraft can be valuable tools in combating wildfires. It is, however, extremely important that all ground crews understand and follow safety precautions when working with aircraft.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).