



# Fire Protection Training

Procedures Handbook 4300

FIREFIGHTER SAFETY

**TOPIC:** Using a Bulldozer As A Refuge

**TIME FRAME:** 20 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A written quiz

*Behavior:* The student will describe the procedures to follow using a bulldozer as a refuge when trapped by fire.

*Standard:* With a minimum of 70% accuracy

**MATERIALS NEEDED:**

- Chalkboard and chalk
- Appropriate visual aids
- Audio visual equipment

**REFERENCES:**

- CDF Academy Heavy Fire Equipment Operator Course Curriculum

**PREPARATION:** Bulldozers and bulldozer operators work side by side with other line construction resources and often lead the way in constructing fire control lines. Hopefully an operator will never become trapped by fire, but in the event that this does happen, a bulldozer can be used as a refuge.

4306.13



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PRESENTATION	APPLICATION
<p><b>I. GROUP PREPARATION</b> (If with other bulldozers or other fireline personnel)</p> <p>A. Stay Together</p> <ol style="list-style-type: none"> <li>1. Keep control of all persons</li> </ol> <p>B. Follow Direction of Bulldozer Operator or Fireline Supervisor</p> <p>C. Notify an "Outside" Person</p> <ol style="list-style-type: none"> <li>1. Fireline supervisor, I.C., or E.C.C.</li> <li>2. Explain situation</li> <li>3. Give accurate description of your location and access to it               <ol style="list-style-type: none"> <li>a. For ground/air support and/or rescue</li> </ol> </li> <li>4. Request necessary assistance</li> </ol> <p>D. Re-evaluate Your Situation</p> <ol style="list-style-type: none"> <li>1. Reach pre-designated safety island</li> <li>2. Use pre-designated escape routes</li> </ol>	<p><b>Instructor Note:</b> Review "The Ten Standard Firefighting Orders," "The Thirteen Fire Situations That Shout Watch Out!" and "Avoiding Fire Entrapment"</p> <p>Retardant/water drops</p> <p>Possible helicopter rescue or transport of injured</p>

4306.13



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<p>3. Weigh risks of staying against risks of escape attempt</p> <p>4. Have you considered all options?</p> <p><b>II. SELF-PREPARATION</b></p> <p>A. Keep Calm-Think Clearly</p> <p>B. Secure Safety Uniform &amp; Equipment</p> <ol style="list-style-type: none"><li>1. Sleeves, cuffs, pant legs, shroud, collars, bandanna, all buttons, zippers, etc.</li><li>2. Goggles, gloves, helmet, and chin strap</li><li>3. Flashlight, radio, canteen<ol style="list-style-type: none"><li>a. Discard flammables-fusees, gas cans, etc.</li></ol></li></ol> <p><b>III. SELECT REFUGE AREA</b></p> <p>A. If Safety Island and Escape Route are unsafe because of Fire Conditions, Select a Refuge Area.</p> <ol style="list-style-type: none"><li>1. Considerations<ol style="list-style-type: none"><li>a. Fire Spread<ol style="list-style-type: none"><li>(1) Direction</li><li>(2) Speed</li></ol></li><li>b. Wind<ol style="list-style-type: none"><li>(1) Direction</li><li>(2) Speed</li><li>(3) Affect on spotting</li></ol></li><li>c. Fuels</li></ol></li></ol>	



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<ul style="list-style-type: none"><li>(1) Clear or open areas are best</li><li>(2) Avoid areas with heavy fuel loading</li><li>d. Topography<ul style="list-style-type: none"><li>(1) Seek<ul style="list-style-type: none"><li>(a) Level areas</li><li>(b) Areas just beyond ridge crest on side opposite fire.</li></ul></li><li>(2) Avoid<ul style="list-style-type: none"><li>(a) Chimneys</li><li>(b) Canyons</li><li>(c) Areas near crest of ridge on fire side of ridge.</li><li>(d) Inside turns on roads</li></ul></li></ul></li><li>e. Barriers<ul style="list-style-type: none"><li>(1) Natural<ul style="list-style-type: none"><li>(a) Slides</li><li>(b) Rock outcroppings</li><li>(c) Streams, ponds, lakes</li><li>(d) Old burns</li><li>(e) Grazed areas</li></ul></li><li>(2) Constructed<ul style="list-style-type: none"><li>(a) Roads</li><li>(b) Parking lots</li></ul></li></ul></li></ul>	

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<ul style="list-style-type: none"> <li>(c) Orchard, vineyards</li> <li>(d) Swimming pools</li> <li>(e) Fuel breaks</li> </ul> <p>B. Refuge Area Preparation</p> <ul style="list-style-type: none"> <li>1. Burn out area as necessary</li> <li>2. Construct safety zone to mineral soil</li> <li>3. Dig a trench and pile dirt toward approaching fire.</li> </ul>	<p>Mound acts as heat shield</p>
<p><b>IV. BULLDOZER PREPARATION AND USE AS A REFUGE</b></p>	
<p>A. Bulldozers without Environmental Cab</p> <ul style="list-style-type: none"> <li>1. Park in trench with blade atop berm</li> <li>2. Set throttle at 1/3               <ul style="list-style-type: none"> <li>a. Avoids starter problems if bulldozer must be moved quickly.</li> <li>b. Check for others in area before moving.</li> </ul> </li> <li>3. Set brakes</li> <li>4. Turn on all lights               <ul style="list-style-type: none"> <li>a. Might help locate you in heavy smoke conditions</li> </ul> </li> <li>5. Turn seat on edge               <ul style="list-style-type: none"> <li>a. To prevent it catching on fire</li> </ul> </li> <li>6. Get off the bulldozer and lie in trench</li> </ul>	

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<ul style="list-style-type: none"><li>a. Use bulldozer fire blanket for added protection</li><li>b. Deploy forest fire shelter</li><li>c. Remain until sure fire has passed</li><li>d. Be alert since other fire personnel may seek refuge with you.</li></ul> <p><b>B. Bulldozers with Environmental Cab</b></p> <ul style="list-style-type: none"><li>1. Park in trench with blade atop berm</li><li>2. Set throttle at 1/3</li><li>3. Set brakes</li><li>4. Turn on all lights</li><li>5. Stay in cab<ul style="list-style-type: none"><li>a. Deploy fire curtains</li><li>b. Use forest fire shelter or any other item (coat, etc.) to provide radiant heat shield</li><li>c. Keep low</li><li>d. Remain until sure fire has passed</li><li>e. Be alert-other fire personnel may seek refuge with you</li></ul></li></ul> <p><b>V. AFTER DANGER HAS PASSED</b></p> <ul style="list-style-type: none"><li>A. Extinguish Any Fire on Clothing and/or Bulldozer</li><li>B. Provide First Aid/Burn Treatment as Necessary</li><li>C. Notify "Outside" Person of your Status/Needs</li><li>D. Gather all personnel together</li></ul>	

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<ul style="list-style-type: none"><li>1. Provide reassurance and support</li><li>E. Continue Assignment or Evacuate as Appropriate</li><li>F. Consider Critical Incident Stress Debriefing for All Personnel</li></ul>	

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## ***SUMMARY:***

Whatever your fireline assignment you will frequently be working in an area near bulldozers. In the event your position is overrun by fire, the bulldozer can be or create a safe haven. It can clear areas rapidly to create a safety island, dig trenches and construct berms which function as heat shields or can be used as a temporary refuge from the fire.

## ***EVALUATION:***

A written quiz.

## ***ASSIGNMENT:***

To be determined by instructor(s).