



FIRE PROTECTION TRAINING

Procedures Handbook 4300

FIREFIGHTER SAFETY

TOPIC: THE NEW GENERATION FIRE SHELTER

TIME FRAME: 1:00

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: Given a written examination

Behavior: The student will confirm a knowledge of the care and maintenance of the fire shelter and list considerations concerning its use

Standard: With a minimum 80% accuracy

MATERIALS NEEDED:

- Writing board with markers/erasers
- Fire shelter
- Video or DVD “The New Generation Fire Shelter” PMS 411
- VCR or DVD player/television

REFERENCES:

- Pamphlet; “The New Generation Fire Shelter”, NWCG, 2003, NFES 2710
- DVD, Fire Shelter Video and Publication Library, USDA Forest Service 0851-2D10-MTDC, 2008

PREPARATION:

The fire shelter has been required equipment for firefighters since 1977. Since that time, fire shelters have saved the lives of more than 300 firefighters. Department policy requires that all firefighting personnel carry fire shelters while actively involved in wildland fire suppression duties. We all must know when, where and how to use them.



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PRESENTATION	APPLICATION
<p>I. TERMINOLOGY</p> <ul style="list-style-type: none">A. Carrying caseB. Field instructionsC. Plastic packageD. Yellow pull strap (Regular size)E. Orange pull strap (Large size)<ul style="list-style-type: none">1. Pull strap with have the word “LARGE” printed on the strapF. Red pull tab ringsG. Fire shelter<ul style="list-style-type: none">1. Basic dimensions for the regular size – 86 inches long x 15 ½ inches high x 31 inches wide2. Basic dimensions for the large size – 96 inches long x 28 inches high x 33 inches wide3. Aluminum outer layer bonded to woven silica cloth4. Aluminum foil inner layer laminated to fiberglass5. Perimeter floor6. Hold down straps sewn into floor <p>II. USE GUIDELINES</p> <ul style="list-style-type: none">A. Fire shelter must be readily accessible <p>NOTE: Hand out Student Information Sheet #1:, Notes From Crews That Had To Deploy Shelters</p>	



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<ul style="list-style-type: none">1. Carry on web gear waist belt<ul style="list-style-type: none">a) Vertical position when carried on either hipb) Horizontal position when carried in back<ul style="list-style-type: none">1) Without use of a back packc) Do <u>NOT</u> carry inside of back pack<ul style="list-style-type: none">1) Difficult to see2) Difficult to reach/removed) Carrying case with Velcro tabs toward top or side (facing forward)2. The shelter may be carried in the fire shelter pouch that is a feature of some fireline packs3. A chest harness may be used by dozer operators when operating dozers <p>B. When to use</p> <ul style="list-style-type: none">1. Shelters were designed to provide personal protection in emergency situations when unpredicted conditions result in firefighter entrapment on wildland fires<ul style="list-style-type: none">a) They were <u>not</u> designed to encourage violations of proven safety practices or safety policiesb) They shall <u>not</u> be used to commit firefighters into highly dangerous work environmentsc) Know and follow your 10 Standard Fire Orders and the 18 Situations That Shout "Watch Out", and Lookouts, Communications, Escape Routes, and	



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<p>Safety Zones (LCES). Even when they are followed closely, the unexpected can happen</p> <ol style="list-style-type: none">2. Airway and lung damage is the major killer of wildland firefighters<ol style="list-style-type: none">a) <u>PROTECT YOUR AIRWAY</u> at all timesb) The properly deployed shelter contains a volume of cooler, breathable airc) The air next to the bare dirt will be cooler and more breathable3. Intense radiant heat is the biggest factor in thermal burns of the skin and is a factor in wildland firefighter deaths<ol style="list-style-type: none">a) The shelter will reflect 95% of radiant heatb) The remaining 5% of radiant heat is absorbedc) The temperature will rise slowly inside the shelter, but it will still be considerably below outside temperature4. The fire shelter is to be used only as <u>a last resort</u> when escape is not possible <p>NOTE: <u>Emphasize</u> #4 above!</p> <p>C. Where to deploy your fire shelter</p> <p>NOTE: Hand out Student Information Sheet #2: "Don't Panic"</p> <ol style="list-style-type: none">1. Move to the nearest designated Safety Zone	<p>What is the primary cause of death in burnovers?</p>



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<ul style="list-style-type: none">a) In a true Safety Zone, you do not need your shelter to protect you from heat and smoke2. If moving to a Safety Zone is not possible due to fire conditions and you feel that entrapment is imminent and your only option is to deploy your fire shelter<ul style="list-style-type: none">a) Select an area that is clear of heavy fuels, snags, power lines, rolling rocks, etc. and/or construct a deployment area<ul style="list-style-type: none">1) Minimum area per person is 4' x 8' cleared down to mineral soil2) Area ideally will be as large as can be constructed in the time availableb) Do not select a deployment area which is located in a chimney, or saddles or where the crew will be exposed to heat or direct flame contactc) Select the best specific spot (as far as possible from flammable sources)<ul style="list-style-type: none">1) Depressions in ground2) Behind large rock outcroppings3) Behind dozer piles4) In dozer trenchd) Select an area where the entire crew can deploy together, if possible<ul style="list-style-type: none">1) Individual shelters provide mutual heat shielding2) Better control of crew	



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<ul style="list-style-type: none">3) Higher crew morale4) Better communicationse) On steep slopes (75% or greater) dig or cut toe holds or trenches to stand in to help maintain footing/stabilityf) Deposit hazardous or flammable items away from deployment area<ul style="list-style-type: none">1) Chain saws, fuel and fusees must be a minimum of 30 feet away from the nearest shelter<ul style="list-style-type: none">• Fuel and fusees are the most dangerous items you carry2) Side hill or down wind from the deployment area3) Fuel container may melt and spill contents4) Fuel and fusees may contribute to intensity of fire5) Smoke produced may be irritating or toxicg) Leave your hand tool outside of shelter<ul style="list-style-type: none">1) When deployed as a crew, tools will be left in a designated areah) In an emergency egress situation, consider discarding all non-essential gear (such as backpacks)<ul style="list-style-type: none">1) You can move up to 30% faster without your gear	



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<ul style="list-style-type: none">2) In an entrapment situation, you do not have time to think about items in your pack that could be dangerous3) Make sure all gear is tossed far enough that it will not ignite and burn a shelter4) If you do not remove your pack you <u>must</u> remove all the flammable items <p>D. Deploying your fire shelter</p> <ul style="list-style-type: none">1. Check all personal safety equipment to see that it is properly worn and well secured. Keep gloves on!<ul style="list-style-type: none">a) Face and neck shrouds provide additional protection against radiant heat<ul style="list-style-type: none">1) You <u>MUST</u> still protect your airwaysb) Use buddy system to double check2. Prepare yourself mentally to stick it out. It may get hot inside, but not nearly as hot as outside3. Do not drop shelter or allow it to become snagged on brush or blown away!4. Enter shelter so feet are toward approaching fire5. Drinking water may be taken into shelter6. Take hand-held radio into the shelter<ul style="list-style-type: none">a) Never leave radio out of shelter where it can be damaged or destroyed by fire	



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<ul style="list-style-type: none">b) Transmission from inside the shelter maybe difficult but attempt to call for help if you were unable to do so prior to entering the shelter<ul style="list-style-type: none">1) VHF transmission will be weak2) UHF transmission may be non-existentc) If you are unable to transmit from inside the shelter, you will need the radio afterward to advise your supervisor of<ul style="list-style-type: none">1) Deployment2) Injuries3) Location, etc.7. Do <u>not</u> take hand tool into the fire shelter<ul style="list-style-type: none">a) Interferes with proper deploymentb) Interferes with anchoring shelterc) May cause injuryd) May damage or cut shelter8. Allow sufficient time to deploy, but do not deploy too early<ul style="list-style-type: none">a) Escape may be a viable optionb) Shelter is less susceptible to damage and loss while packed in the casec) Strong winds created at deployment site may carry shelter offd) Interferes with deployment area preparation/clearing	



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<p>9. Be prepared for the unexpected</p> <ul style="list-style-type: none">a) Difficult to deploy with gloves onb) Yellow/Orange pull strap may separate from plastic casec) Red pull tab ring may breakd) Plastic packaging may have meltede) May be overrun so quickly that deployment area preparation is not possible <p>E. Once inside your shelter</p> <ul style="list-style-type: none">1. Make certain the shelter is completely open to the fullest extent possible <p>NOTE: Hand out Student Information Sheet #3: "Instructions"</p> <ul style="list-style-type: none">2. Shelter should not touch your body except where you are holding it in contact with the ground3. Do not pull shelter against you as you would a blanket<ul style="list-style-type: none">a) This reduces the amount of air space in the shelter that is able to absorb radiant heat and increases your chance for injury <p>NOTE: The wearing of the wide brim helmet may increase the air gap between your head and the shelter</p> <ul style="list-style-type: none">4. Push shelter top and sides out so the shelter holds as much air as possible5. Hold ground seal firmly with feet, legs, arms, and hands	



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<ul style="list-style-type: none">a) Flame front passage will create strong winds <p>6. You may place a DRY bandana over your nose and mouth</p> <ul style="list-style-type: none">a) Moist air will cause more damage to your airway than dry air at the same temperature <p>7. Keep your face on the ground</p> <ul style="list-style-type: none">a) Temperatures may be dramatically higher a few inches off the ground than those at the surface <p>8. If the air inside the shelter becomes hot</p> <ul style="list-style-type: none">a) Force yourself mentally to stick it outb) Take shallow breaths through your mouth, and dry bandanna <p>9. Communicate with your neighbors</p> <ul style="list-style-type: none">a) Limit your movement to protect shelter <p>10. Small tears and pinholes in the fire shelter are common. It is still in good condition</p> <p>11. Drink water if you have it to avoid dehydration. <u>Do not</u> put water on your bandana or clothing</p> <p>12. Remain in your shelter until you are told to come out by your supervisor</p> <ul style="list-style-type: none">a) If deployed by yourself, wait until<ul style="list-style-type: none">1) The shelter is cool to the touch2) The wind and flames have died down	



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<p>13. Remain together as a crew when you leave your shelter</p> <p>F. After the deployment</p> <p>1. If the burnover was serious in terms of injuries</p> <ul style="list-style-type: none">a) Check yourself and others for injuriesb) Request help and assure that help is on the wayc) Move to safety and render aid to the injuredd) If possible, leave all items undisturbed to assist in an accident review <p>1) Purpose of review is to gather facts for training or equipment design modification</p> <p>2. If the burnover was not serious or the personnel have to leave the area before help arrives:</p> <ul style="list-style-type: none">a) Salvage your used shelterb) Salvage your toolsc) Depart area <p>III. CARE AND MAINTENANCE</p> <p>A. Check carrying case and shelter when first issued and every 14 days during fire season for</p> <ul style="list-style-type: none">1. Damage2. Field instruction sheet	<p>Why is a post incident review conducted?</p>



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<p>3. Unopened seal on plastic bag</p> <ul style="list-style-type: none">a) Do not open shelter to inspect!<ul style="list-style-type: none">1) Shelters that have been opened will not be used on the firelineb) Opened shelters will be used for training only <p>4. Inspect condition of shelter</p> <ul style="list-style-type: none">a) Look through clear plastic bag for indications of deterioration<ul style="list-style-type: none">1) Extensive edge abrasion2) Clear plastic bag has turned dark gray or black3) Debris in bottom of bag4) Tears along the folded edge<ul style="list-style-type: none">• Remove shelter from service when tears are longer than $\frac{1}{4}$ inch5) Failure of the aluminum outer shell<ul style="list-style-type: none">• Any hole larger than dime makes shelter unserviceable6) Separation of yellow/orange pull strap from plastic bagb) Notify your supervisor if these conditions exist	<p>What indicates deterioration of the shelter?</p>



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<p>B. To prolong the life of a shelter</p> <ol style="list-style-type: none">1. Do not sit on it2. Do not lean or lay on it3. Do not stack heavy objects on it4. Do not allow it to get wet5. Keep shelter away from sharp objects that may puncture it6. Use of a hard protective liner is recommended	



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SUMMARY:

Prior to the time that fire shelters were used extensively, the chances of surviving a severe entrapment were less than 50 percent. With a properly maintained and utilized fire shelter, the chances of surviving a severe entrapment approach 100%. Despite these statistics the shelter shall not be used as a substitute for following sound safety procedures.

EVALUATION:

The student will complete a written exam at a time to be determined by the instructor.

ASSIGNMENT:

Review your notes in preparation for the upcoming exam.