



Fire Protection Training

Procedures Handbook 4300

FIREFIGHTER SAFETY

TOPIC: FIRE SHELTER

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: A written examination

Behavior: The student will describe the care and maintenance of the Fire Shelter and list considerations concerning its use

Standard: With a minimum 70% accuracy

MATERIALS NEEDED:

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Fire shelter
- Video "Your Fire Shelter - Beyond the Basics"
- Video "Deploy a Forest Fire Shelter", Joint Apprenticeship Committee
- VCR/television

REFERENCES:

- Pamphlet; "Your Fire Shelter" – USFS, 1995
- Video; "Your Fire Shelter - Beyond the Basics" – USFS
- County of Los Angeles Fire Department Training Unit

PREPARATION:

The fire shelter is a valuable tool in saving human lives. By the end of 1995, the forest fire shelter had been credited with saving 250 lives. 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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FIRE SHELTER

PRESENTATION

APPLICATION

I. TERMINOLOGY

- A. Carrying case
- B. Field instructions
- C. Plastic package
- D. Red pull tab rings
- E. Fire shelter
 - 1. Perimeter skirts or side flaps
 - a) Basic dimensions – 6 ½ feet long X 3 feet wide X 3 feet high
 - 2. End flaps
 - 3. Aluminum outer layer
 - 4. Glass cloth inner layer
 - 5. Hold down straps

II. USE GUIDELINES

- A. Fire shelter must be readily accessible

NOTE: Hand out Student Information Sheet #1: 4306.15.sin,
Notes From Crews That Had To Deploy Shelters

- 1. Carry on web gear waist belt
- 2. On either hip
 - a) Do NOT carry in back pack
 - b) Do NOT carry on belt in back
 - 1) Difficult to see
 - 2) Difficult to reach/remove

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- c) Carrying case snaps toward top
 - d) Will not fall out if snaps open accidentally
- B. When to use
1. Shelters were designed to provide personal protection in emergency situations when unpredicted conditions result in firefighters being trapped in wildland fires
 - a) They were not designed to encourage violations of proven safety practices or safety policies
 - b) They shall not be used to commit firefighters into highly dangerous work environments
 - c) Know and follow your 10 Standard Fire Fighting Orders and the 18 Situations That Shout "Watch Out", and Lookouts, Communications, Escape routes, and Safety zones. Even when they are followed closely, the unexpected can happen
 2. Airway and lung damage is the major killer of wildland firefighters
 - a) PROTECT YOUR AIRWAY at all times
 - b) The properly deployed shelter contains a volume of cooler, breathable air
 - c) The air next to the bare dirt will be cooler and more breathable

What is the primary cause of death in burnovers?

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3. Intense radiant heat is the biggest factor in thermal burns of the skin and is a factor in wildland firefighter deaths
 - a) The shelter will reflect 95% of radiant heat
 - b) 5% of the heat is absorbed.
 - c) The temperature will rise slowly inside the shelter, but it will still be considerably below outside temperature
4. The fire shelter is to be used only as a last resort when escape is not possible

NOTE: Emphasize #4 above!

C. Where to deploy your fire shelter

NOTE: Hand out Student Information Sheet #2: 4306.15 sin, Don't Panic

1. Move to the nearest designated safety zone
2. If moving to a safety zone is not possible due to fire conditions
 - a) Select an area that is clear of heavy fuels, snags, power lines, rolling rocks, etc. and/or construct a deployment area
 - 1) Minimum area per person is 4' x 8' cleared down to mineral soil
 - 2) Area ideally will be as large as can be constructed in the time available
 - b) Do not select a deployment area which is located in a chimney, or saddles or where the crew will be exposed to heat or flame contact

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- c) Select the best specific spot.
 - 1) Depressions in ground
 - 2) Behind large rock outcroppings
 - 3) Behind dozer piles
 - 4) In dozer trench
- d) Select an area where the entire crew can deploy together, if possible
 - 1) Individual shelters provide mutual heat shielding
 - 2) Better control of crew
 - 3) Higher crew morale
 - 4) Better communications
- e) On steep slopes (75% or greater) cut toe holds or trenches to stand in to help maintain footing/stability
- f) Deposit hazardous items away from deployment area
 - 1) Chain saws, fuel and fusees must be a minimum of 30 feet away from the nearest shelter
 - 2) Side hill or down wind from the deployment area
 - 3) Fuel container may melt and spill contents
 - 4) Fuel and fusees may contribute to intensity of fire

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- 5) Smoke produced may be irritating or toxic
- g) Leave hand tool outside of shelter
 - 1) When deployed as a crew, tools will be left in a designated area
- D. Deploying your fire shelter
 - 1. Check all personal safety equipment to see that it is properly worn and well secured. Keep gloves on!
 - a) Use buddy system to double check
 - 2. Prepare yourself mentally to stick it out. It may get hot inside, but not nearly as hot as outside
 - 3. Enter shelter so feet are toward approaching fire
 - 4. Take drinking water into the shelter
 - 5. Do not take hand tool into the fire shelter
 - a) Interferes with proper deployment
 - b) Interferes with anchoring shelter
 - c) May cause injury
 - d) May damage or cut shelter
 - 6. Allow sufficient time to deploy, but do not deploy too early
 - a) Escape may be a viable option
 - b) Shelter is less susceptible to damage and loss while packed in the case

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- c) Strong winds created at deployment site may carry shelter off
- d) Interferes with deployment area preparation/clearing
- 7. Be prepared for the unexpected:
 - a) Difficult to deploy with gloves on
 - b) Red pull tab rings may break
 - c) Plastic packaging may have melted
 - d) May be overrun so quickly that deployment area preparation is not possible
- E. Once inside your shelter:
 - 1. Make certain the shelter is completely spread to its fullest

NOTE: Hand out Student Information Sheet #3: 4306.15 sin, Instructions

- 2. Shelter should not touch your body except where you are holding it in contact with the ground
- 3. Push shelter top up and out making it look like a pup tent
- 4. Hold ground seal (end and side flaps) firmly with hands and feet
 - a) Flame front passage will create strong winds
- 5. You may place a DRY bandanna over your nose and mouth
- 6. Keep your face on the ground

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7. Have a full canteen for drinking
 8. If the air inside the shelter becomes hot
 - a) Push the end flap slightly to one side and dig a hole to put your face in
 - b) Force yourself mentally to stick it out
 - c) Take shallow breaths through your mouth, and dry bandanna
 9. Communicate with your neighbors
 10. The fiberglass cloth backing may begin to separate from the aluminum shell
 - a) This will not compromise the effectiveness of the shelter
 - b) Limit your movement to protect shelter
 11. Small tears and pinholes in the fire shelter are common. It is still in good condition
 12. Drink water, often, to avoid dehydration. Do not put water on your bandanna or clothing
 13. Remain in your shelter until you are told to come out by your supervisor
 - a) If deployed by yourself, wait until
 - 1) The shelter is cool to the touch
 - 2) The wind and flames have died down
 14. Remain together as a crew when you leave your shelter
- F. After the deployment

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1. If the burnover was serious in terms of injuries
 - a) Check yourself and others for injuries
 - b) Request help and assure that help is on the way
 - c) Move to safety and render aid to the injured
 - d) Leave all items possible undisturbed to assist in an accident review
 - 1) Purpose of review is to gather facts for training or equipment design modification
2. If the burnover was not serious or the personnel have to leave the area before help arrives:
 - a) Salvage your used shelter
 - b) Salvage your tools
 - c) Depart area

Why is a post incident review conducted?

III. CARE AND MAINTENANCE:

- A. Periodically check carrying case for
 1. Damage
 2. Field instruction sheet
- B. Periodically check shelter for
 1. Unopened seal on plastic bag.
 - a) Do not open shelter to inspect!

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- 1) Shelters that have been opened will not be used on the fireline
- 2) This differs from NWCG inspection guidelines
- b) Opened shelters will be used for training only
2. Inspect condition of shelter
 - a) Look through clear plastic bag
 - 1) Heavy gray deposits on plastic indicates deterioration
 - 2) Bent or squashed indicates abuse
 - 3) Failure of the aluminum outer shell
 - Any hole larger than dime makes shelter unserviceable
 - b) Notify your supervisor if these conditions exist
- C. To prolong the life of a shelter
 1. Do not sit on them
 2. Do not lean or lay on them
 3. Do not stack heavy objects on them
 4. Do not allow them to get wet
 5. Use of a hard protective liner is recommended

What indicates deterioration of the shelter?

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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 order to prepare yourself for the upcoming exam. Study for the next session.