

Handout 9 - 3

Investigating Burnovers and Shelter Deployments:
Assessing Personal Protective Equipment
March 2008

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Investigating Burnovers and Shelter Deployments: Personal Protective Equipment Assessment

- Specialists familiar with the technical aspects of personal protective equipment (PPE), especially fire shelters, should examine the PPE used during a burnover. These assessments can help investigators clarify events surrounding a burnover and can help improve equipment, procedures, and training. Missoula Technology and Development Center (MTDC) equipment specialists or individuals recommended by MTDC can:
 - Interview the firefighters who were involved about the use and performance of personal protective equipment (PPE)
 - Examine the entrapment area
 - Analyze the fire shelters and PPE

Technical specialists must be ordered through the National Interagency Coordination Center. To prepare for the arrival of the technical specialists, see **Step 1**.

- Persons who are not trained in the analysis of wildland firefighting PPE should not attempt to analyze PPE used in a burnover or entrapment. If the technical specialists from MTDC are not at the site, PPE can be sent to MTDC for evaluation. To do so, see **Step 2**. Reports based only on offsite examination of materials will be very limited in scope and detail compared to those based on onsite inspections.
- The written report provided by the technical specialist should become part of the investigation record.

Step 1—Before Technical Specialists Arrive

The technical specialists will want to interview those directly involved in the deployment and examine the deployment site and the PPE that was used. You can help by:

- 1) Protecting the site to prevent disturbance, to the extent possible. Fire shelters left onsite can be weighted with rocks or other heavy objects to keep them from blowing away.
- 2) Collecting affected clothing from firefighters who were involved. It is not necessary to collect clothing from coroners. Technical specialists can do this, if necessary.
- 3) Helping make arrangements for the technical specialists to interview firefighters directly involved in the entrapment.
 - a. Arranging to make the firefighters available to talk to the technical specialists. Let firefighters know that the purpose of the interview is to learn as much as possible from the event so that equipment and training can be improved.
 - b. Having union representation available if necessary.

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Step 2—Precautions When Collecting Personal Protective Equipment

Consider the following precautions when collecting personal protective equipment:

- 1) Items may be exposed to body fluids. Anyone coming in contact with these items must follow their agency's protocols against contracting bloodborne diseases.
- 2) Clothing recovered from burned firefighters cannot be laundered. It should be completely air dried in sunlight before being placed in red biohazard waste bags.
- 3) Protective latex gloves should be worn when handling these items, even after they have dried.

Step 3—Supporting Documentation

Include the following photographs and additional information with the equipment sent to MTDC:

- 1) Pictures of the site. Identify where the items of PPE were located and to whom they belonged, if known.
- 2) Pictures of surrounding fuels.
- 3) Pictures of the items found underneath the fire shelter.
- 4) As much information as possible about the deployment. If it is possible to interview victims, try to obtain answers to the questions listed in **Step 4**. If it is not possible to interview victims, try to provide answers to as many of the interview questions as possible, based on the available evidence.

Step 4—Interview Questions

- 1) Firefighter information
 - a. How many seasons of fire experience have you had?
 - b. What was your position on this fire?
 - c. Were you wearing flame-resistant pants and shirt? Leather boots? Hardhat? Leather gloves?
 1. Where did you obtain these items?
 - d. What is your height? Weight?
 - e. Did you have the old style or New Generation fire shelter? If you had the New Generation fire shelter, was it a regular- or large-size shelter?
- 2) Training
 - a. Have you received fire shelter training?
 - a. When did you receive your training?
 - b. Did you view a training video?
 - c. Which video did you watch?
 - d. Did you practice any deployments? If so, in what conditions did you practice?
 - e. Did you read the fire shelter training booklet?
 - b. How did you feel your training prepared you for this deployment?
 - c. Do you have any recommendations for changes in the training?
- 3) Decision to deploy
 - a. How did you determine that you should deploy your fire shelter?

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- 4) Deployment sequence
 - a. When did you remove your fire shelter from your pack?
 - b. When did you remove your shelter from its clear plastic bag?
 - c. Were there any problems with either step?
 - d. What did you do with your pack once your shelter was removed?
 - e. How did you deploy your fire shelter? [for instance, from a standing position or a kneeling position?]
 - f. Was the fire shelter fully deployed?
 - g. Where were you lying (show on map, ground, or photo)?
 - h. Which way was your body positioned? [for instance, where were your feet? Were you lying face down? Were you lying on your back?]
 - i. Did you have any trouble getting into the shelter? Please describe.
 - j. What items did you take into the shelter with you?
- 5) Shelter experience
 - a. Please describe your experience inside the shelter.
 - b. Did you feel heat inside the shelter?
 - c. Was smoke inside the shelter?
 - d. How long did you remain in the shelter?
 - e. Did you change locations during the deployment?
 - f. How did you know when to come out of the shelter?
- 6) Did you receive any injuries? If so what were they? When did they occur?
- 7) Did you notice any problems with the shelter?
- 8) Did you notice any problems with your PPE (pants, shirt, gloves, hardhat, etc.)?
- 9) What can other firefighters learn from your experience?

Step 5—Shipping Equipment to MTDC

- 1) Fire shelters and fire shelter bags, PPE, packs, and personal belongings can be shipped to MTDC for examination.
- 2) Follow the precautions listed in **Step 2**.
- 3) Collect and bag the fire shelters and affected clothing. Label the bags with the name of the user, if known.
- 4) Mark the location where the items were found on a map of the site.
- 5) Send as much of the supporting documentation listed in **Step 3** as possible, along with the equipment.
- 6) Before sending items to MTDC, contact the Center's Fire Shelter Project Leader (Tony Petrilli), Fire Program Leader (Leslie Anderson) at:
Missoula Technology and Development Center
5785 Highway 10 West
Missoula, MT 59808
Phone number: 406-329-3900
If no one is available at MTDC, call the Missoula Interagency Dispatch Center: 406-829-7070.