



To Hell and Back Fire Fighter Instructor Outline

Name: _____ Rank: _____

Employer: _____ Years on the Job: _____

EMT / EMT-A / Paramedic / Fire Fighter / Volunteer Fire Fighter / Career Fire Fighter *(Circle all that apply.)*

Use **To Hell and Back** as a supplement to the PPE section of any fire fighter safety chapter or module that covers fire fighter training.

The objective for classroom instructors is to tailor **To Hell and Back** to your department. It is suggested that instructors gather burn injury data from their department to include with the classroom presentation.

NFPA and OSHA standards are included in FF Training. However, those standards can be expanded upon in a classroom setting. The following outline is only a suggestion for classroom instruction, with an emphasis on PPE.

I. Suggested instructor talking points:

- This engine pulling out of the bay is an everyday occurrence in today's fire service.
- When the alerting system rings throughout every firehouse, men and women like this crew, kick off their shoes and leave them on the bay floor. They head out those doors to render assistance to what ever emergency they are called to assist.
- Every fire fighter expects to return to their shoes when the call is complete. Statistics show that between 100-110 fire fighters per year do not return to fill those shoes.
- We know that fighting fires and engaging in emergency operations is a dangerous occupation.
- We know that some of the fire fighters that do return are left with pain, emotional suffering, and irreversible physical damage due to sustaining burns while engaging in the occupation.
- It is up to administrators, instructors, and mentors to set a good example, and then lead by teaching the proper principles of back to basics fire fighting and reduce the risk of receiving burn injuries.
- In order to fill these shoes each and every day, it is the fire fighters' job to properly don protective equipment supplied by respective departments.
- Understanding the limitations and the proper maintenance of PPE will also assist in the reduction of personal risk in the prevention of burn injuries to first responders.

Use current data from USFA and NFA Web sites stating burn injuries to current date of delivery.



II. Play To Hell and Back

The program begins with fire fighters who have sustained burn injuries. Following the interviews, the *To Hell and Back* documentary plays. To conclude the documentary, the fire fighters come back to the audience to tie the fire service into the documentary.

The following standards are included in FF Training. It is and would be most appropriate for instructors to expand upon these standards during the presentation.

Standards followed in the American fire service

OSHA 29 CFR 1910.132

(selection, approval, maintenance and the proper use and limitations of safety equipment)

NFPA 1500

(The standard on fire department occupational safety and health program)

NFPA 1971

(The standard for fire fighting structural ensemble)

III. Topics for Discussion

Personal protective equipment (PPE) is an essential component of a fire fighter's safety system.

Helmet

- Helmet design must meet the requirements specified in NFPA 1971, standard on protective ensemble for structural fire fighting. The helmet provides protection from trauma to the head and includes ear coverings. The hard outer shell is lined with energy-absorbing material and has a suspension system to provide impact protection against falling objects. The shape of the helmet helps to deflect water away from the head and neck. Face and eye protection can be provided by a face shield, goggles, or both, which are generally attached to the helmet. A chin strap is also required and must be worn to keep the helmet in the proper position. When entering a burning building, the fire fighter should pull down the ear tabs for maximum protection. Helmet shells are often color-coded according to the fire fighter's rank and function.



Protective Hood

- A fire-retardant hood covers any exposed skin between the coat collar and the helmet. Hoods are constructed with flame-resistant materials such as Nomex® or PBI®. Protective hoods are worn over the face piece but under the helmet. Carefully fit the hood around the face piece so that no areas of bare skin are left exposed.

Turnout coat

- Turnout coats have three layers:
 - Protective outer shell, constructed of a sturdy, flame-resistant, water-repellant material such as Nomex, Kevlar®, or PBI.
 - Moisture barrier, which helps prevent the transfer of water, steam, and other fluids to the skin.
 - Thermal barrier, which insulates the body from external temperatures.

The coat's sleeves have wristlets that prevent liquids or hot embers from getting between the sleeves and the skin. Both long and short style turnout coats will protect the body as long as the matching style of pants or coveralls are also worn.

Bunker pants

- Bunker pants have the same three-layer protective system as is found in turnout coats. Constructed in a waist-length design or bib-overall configuration to match long and short turnout coats, respectively. Pants should be large enough to allow you to don them quickly. Personal protective equipment requires a balanced protection system

Boots

- Boots protect the feet and ankles from the fire, keep them dry, prevent puncture injuries, and protect the toes from crushing injuries. Boots can be constructed of rubber or leather. The outer layer repels water and must be both flame- and cut-resistant. Boots must have:
 - A heavy sole with a slip-resistant design
 - A puncture-resistant sole
 - A reinforced toe to prevent injury from falling objects.

An inner liner constructed of materials such as Nomex or Kelvar adds thermal protection.



Gloves

- Gloves protect the hands from heat, cuts, and abrasions. Fire fighting gloves are usually constructed of heat-resistant leather. Required wristlets prevent skin exposure during normal fire fighting activities and are usually made of knitted Nomex or Kevlar. The liner adds thermal protection and serves as a moisture barrier. Fire fighters need to practice manual skills while wearing gloves to become accustomed to them and to adjust movement accordingly.

Respiratory Protection

- Self-contained breathing apparatus provides respiratory protection through an independent air supply. The PPE ensemble for structural firefighting is not complete without adequate respiratory protection. Personal alert safety system (PASS). PASS is an electronic device that sounds a loud audible signal if a fire fighter is motionless for a set time period or if activated by the fire fighter. A PASS can be separate from or integrated into the SCBA unit. Integrated pass devices automatically turn on when the SCBA is activated. Separate pass devices are often worn on the SCBA harness and must be turned on manually.

Limitations of the structural firefighting ensemble

- Each component must be properly donned and worn to provide complete protection. Components must be put on in the proper order and correctly secured. PPE is heavy—nearly 50 pounds—which means that everything you do requires more energy and strength. Because of the vapor barrier, PPE retains body heat and perspiration. Fire fighters in full protective gear can rapidly develop elevated body temperatures, even when the ambient temperature is cool. PPE limits mobility and range of motion. PPE also decreases normal sensory abilities. Just as the protective ensemble is the fire fighter's protector in thermal environments where burns can occur, the skin is the body's only protection from the environment. When it comes to burn injuries, even the slightest mistake can result in a lifetime of recovery. Understanding the physiology of a burn injury and how the skin is damaged will help responders realize the need for protection.

Situational awareness

- Situational awareness should be addressed according to fire department locale.