OREGON OFFICE OF STATE FIRE MARSHAL

Foam Firefighting Trailer Field Operation Guide

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Important Contact Numbers & Information

Oregon Emergency Response System (OERS)

- 800-452-0311
- 503-378-6377

BNSF Railroad Emergency Operations Center

- 800-832-5452

Union Pacific Railroad Emergency Operations Center

- 888-877-7267

Oregon Office of State Fire Marshal

- Request Duty Officer: 800-452-0311
- Hazmat Rail Program Coordinator 503-934-8283
- Agency Operations Center 503-373-0001

Request Process for Local Fire Departments

Local fire agencies requesting the need of the foam firefighting trailer should submit their request (via phone call) to the Oregon Emergency Reporting System (OERS). During this call, the caller should state nature of the incident, location, cell phone number, and requesting agencies' information.

Exception: If the requesting agency already has contact with the fire department housing the foam firefighting trailer, they may do so via the normal route through their local 911 dispatch. A call to OERS must still be made as soon as possible to notify OSFM of the foam firefighting trailer request.

Once the request has been made to OERS staff, the OSFM duty officer will be paged and made aware of the situation.

The OSFM duty officer will then make contact with the Incident Commander or designee to coordinate activation of a foam firefighting trailer while also informing this person of the **financial responsibilities if being requested for a non-rail incident.** If requested for a railroad related incident, there will be no cost to the requesting agency.

Next, the OSFM duty officer will then contact the fire department housing the closest foam trailer and notify them of the request for the response of the foam firefighting trailer.

Finally, the OSFM duty officer will then contact the Hazmat Rail Program Coordinator and provide all pertinent incident information for accountability and tracking purposes. In most instances, the Hazmat Rail Program Coordinator would respond to the incident itself in a liaison role.

Equipment and Capabilities

The foam trailers come in two configurations as listed below. Each is supplied with Alcohol Resistant- Aqueous Film Forming Foam (AR-AFFF). The foam firefighting trailers capacity range from 250 gallons, up to 1,100 gallons of foam concentrate.

Application of foam guidelines can be found in NFPA 11: Standard for Low-, Medium-, and High-Expansion Foam as well as the HHFT On-scene Field Guide located on the BNSF website. Here youwill find foam calculations that are necessary when applyinglarge amounts of foam to fires.

Trailer locations and configuration:

- **Eugene Springfield Fire Department (OSFM Hazmat Team #2)**
  - Flatbed trailer, (4) 275 gallon foam totes, foam appliances, no pump
  - Union Pacific Railroad owned
- **Klamath County Fire District #1 (OSFM Hazmat Team #4)**
  - Flatbed trailer, (4) 275 gallon foam totes, foam appliances, no pump
  - Union Pacific Railroad owned
- **Ontario Fire Department (OSFM Hazmat Team #14)**
  - Flatbed trailer, (4) 275 gallon foam totes, foam appliances, no pump
  - Union Pacific Railroad owned
- **Portland Fire and Rescue (OSFM Hazmat Team #7)**
  - Flatbed trailer, (4) 275 gallon foam totes, foam appliances, no pump
  - Union Pacific Railroad owned
- **Salem Fire Department (OSFM Hazmat Team #13)**
  - Flatbed trailer, (4) 275 gallon foam totes, foam appliances, no pump
  - Union Pacific Railroad owned

- **Mid-Columbia Fire and Rescue (The Dalles)**
  - Flatbed trailer, (1) 275 gallon foam tote, foam appliances, (1) fire pump, turret, hard suction, port-a-tank
  - Union Pacific Railroad owned
- **Pendleton Fire and Ambulance Service**
  - Flatbed trailer, (4) 275 gallon foam totes, foam appliances, no pump
  - Union Pacific Railroad owned
- **Redmond Fire Department**
  - Flatbed trailer, (2) 275 gallon foam tote, 2 fire pumps (750 gpm), 2 portable bladder with associated appliances
  - BNSF Railroad owned

NFPA 11: Application Standards
For Low, Medium, & High-Expansion Foam

Formula:

- Length x Width = Determine Area in ft^2
- Area x 0.10 gpm/square foot = Application Rate
- Application Rate x 15 minutes = Total Flow Rate (TFR)
- Total Flow Rate x 0.01 or 0.03 = Amount of Concentrate

Example:

You are called for an incident involving a train derailment that has three tank cars that have ruptured and the product has pooled. The size of the pooled area is 100' x 75'. The foam that your jurisdiction has available along with mutual aid companies is AFFF 1%.

- **Determine Area:** 100' x 75' = 7,500 sq ft
- **Application Rate:** 7,500 sq ft X 0.10 = 750 gpm solution
- **Total Flow Rate:** 750 gpm X 15 min = 11,250 gallons (Total Solution)
- **Amount of Foam Concentrate:** 11,250 Gallons X 0.01 = 112.5 gallons of concentrate (22.5 - 5 gallon totes)

Foam Application Methods & Tactics

Questions Incident Commanders should answer:

- Do I have the necessary amount of adequately trained and protected responders?
- Do I have clarity on the type of fire – spill/pool vs. three dimensional?
- Is the fuel a polar solvent or a hydrocarbon?
- Can I maintain a post suppression foam blanket to prevent re-ignition upon initial application of foam?
- Do I have a large enough sustainable water supply for foam operations?
- Do I have personnel, resources, and totes to contain runoff?

Tactics:

- Offensive actions are conducted in an attempt to extinguish the fire or control any container leaks at their source.
- Defensive actions are conducted to minimize and control the incident so it does not spread, thereby causing additional property damage or threats to the public.
- Non-intervention is to allow the hazardous material or flammable liquid to “vaporize” or “burn off” until the bulk of the material has been completely released or consumed by fire.

Application Methods:

- **Roll-on Method**
  - The Roll-on method directs the foam stream on the ground near the leading edge of the liquid pool in a sweeping motion on fire or requiring vapor suppression. Due to the foams low surface tension, it allows the foam to flow across the fuel. Continue applying the foam until it spreads across the entire fuel surface. Based on the size of the spill this may have to be accomplished from multiple locations.
  - Never gouge the area to be foamed with the foam stream. This will spread the fire and/or cause the area to re-ignite.

- **Bank-down method**
  - This may be employed when an elevated object is near the area requiring foam.
  - The foam stream is directed off the object, allowing the foam to run down onto the surface of the fuel.

- **Rain-down method:**
  - The Rain-down method is used when the other two methods are not feasible because of the size/location of the area requiring foam or the lack of an object to bank the foam from.
  - This method directs the foam stream into the air above the fire and allows the foam to float gently down on the surface.
  - The size of a derailment will make the calculations and foam operations difficult.
  - When dealing with multiple spill fires, the command staff will have to consider dividing the incident into several smaller “bite size” pieces in order to efficiently and effectively use foam.

Financial Responsibility

If a foam firefighting trailer is used on a railroad related incident, there is no cost associated with the response.

If a foam firefighting trailer is used on a non-railroad related incident, the agency requesting use of the trailer is responsible for costs associated with the response to the incident. This includes, but is not limited to:

- Foam replacement within five business days of the incident
- Any damage to trailer, pump, piping, turret, or port-tank
- Any damage to generator, foam expansion nozzles, eductors, or hose
- Any other damage or repair needed outside of normal operation of foam firefighting trailer.

The process to reimburse, replace, or repair will be coordinated through the OSFM between the agency having jurisdiction and respective railroad owning the foam firefighting trailer.

The OSFM will have **no financial responsibility** in any repair or replacement of the above listed items.

Placards and Identification

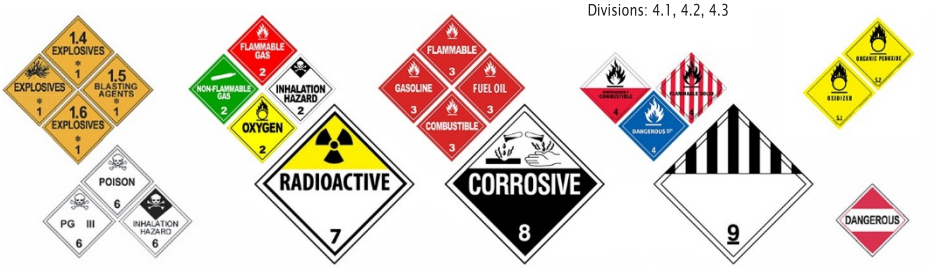
Class 1: Explosives
Divisions: 1.1. 1.2, 1.3, 1.4, 1.5, 1.6

Class 2: Gases
Divisions: 2.1, 2.2, 2.3

Class 3: Flammable Liquid and Combustible Liquid

Class 4: Flammable Solid, Spontaneously Combustible, and Dangerous When Wet
Divisions: 4.1, 4.2, 4.3

Class 5: Oxidizer & Organic Peroxide
Divisions: 5.1, 5.2



Class 6: Poison (Toxic) & Poison Inhalation Hazard

Class 7: Radioactive

Class 8: Corrosive

Class 9: Miscellaneous

Dangerous

Placard with 4-digit UN Number:

Located on lower right-hand side when facing the rail car and on both ends. Report the 4-digit number, hazard class number, and placard color to OERS via dispatch.

Rail Car ID Reporting Mark & Number:

Located on the left-hand side when facing the side of the rail car, in addition to both ends. Report this ID to OERS via dispatch.

Foam Trailer Background

Governor Kate Brown signed HB 3225 into law on July 20, 2015, making it part of Oregon Revised Statute 453.307 to 453.414 relating to the safe transport of hazardous materials. The law provides for the Office of State Fire Marshal (OSFM) to centralize the training, preparedness, and response planning with a specific focus on oil or hazardous material spills or releases that occur during rail transport.

In support of HB 3225, Union Pacific and BNSF railroads voluntarily provided the OSFM with eight foam firefighting trailers to be strategically placed with fire departments along railroad routes that transport High Hazard Flammable Train (HHFT) flammable liquids such as crude oil. These trailers can be utilized in fire suppression efforts during an incident.

These foam firefighting trailers are also available for response on non-rail related incidents. However, if they are used on non-rail related incidents, the agency requesting the trailer will be charged for re-supply of foam and replacement of any equipment damaged as a direct result of use.

This foam firefighting trailer field operation guide will be utilized for the following:

1. Request process for a local agency needing foam trailer response
2. Financial responsibility overview
3. Locations, equipment, and capacities of the foam trailers
4. Contact information

For questions about the Hazmat Rail Program, contact:

Hazmat Rail Coordinator - 503-934-8283

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