FIRE SAFETY TRAINING

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Fire Terms -- 1

- **Anchor Point** The point from which a fire line is begun. Usually, a natural or man-made barrier that will prevent fire spread and the possibility of the crew being "flanked" while constructing the fire line. Examples are ponds, streams, roads, rock piles, outcroppings and the railroad track.
- **Blowup** A dangerously rapid increase in fire spread, caused by any one or more of several factors: strong or erratic winds, up-hill slopes, large open areas and easily ignited fuels.
- **Brush** Bushes and small trees of little or no commercial value.
- **Contained Fire** A fire whose progress has been stopped but for which the control line is not yet finished.

Fire Terms -- 2

- **Control Line** The combination of natural or constructed barriers that ultimately contain the fire. Not to be confused with fire line.
- **Direct Attack** To attack the fire directly at or close to the burning edge.
- **Drift Smoke** Smoke that has drifted from its area of origin and is not columnar.
- **Duff** Matted, partly decomposed leaves, twigs and bark beneath trees and brush.
- **Finger** Long, narrow extensions from the main body of the fire.

Fire Terms -- 3

- **Fire Break** Any natural or man-made barrier that stops or slows the advance of a ground cover fire.
- **Fire Flank** The sides of a ground cover fire.
- **Fire Line** A line (hand or wet) used to control the spread of a fire.
- **Fire Perimeter** The edge of the fire.
- **Fire Season** Time of year when ground cover fires are most likely to happen.

Fire Terms -- 4

- **Flanking** Attacking the sides of the fire from a less active area or from an anchor point, the intent being to have the two lines meet at the head.
- **Flash Fuels** Ground cover fuels that are easily ignited and burn rapidly. Examples are grass, leaves and pine needles.
- **Ground Cover Fire** Fire involving any natural vegetation, particularly near or on the ground.
- **Hand Line** The fire line constructed using hand tools.
- **Head** The most active part of a ground cover fire; the forward advancing part.

Fire Terms -- 5

- **Heavy Fuels** Massive fuels such as logs, snags and large limbs. Heavy fuels are not easy to ignite; once ignited, they burn slowly and hot.
- **Hose Lay** The layouts of hose from a fire pump to the place where the water is to be used.
- **Incident Commander** A person in charge of all suppression operations of a ground cover fire.
- **Indirect Attack** Controlling the fire by having the control line some distance from the approaching fire.
- **Initial Attack Action** The size up and suppression measures done by the first-arriving crew or crews.

Fire Terms -- 6

- **Light Fuels** Flash Fuels
- **Local Wind** A wind whose speed and direction is influenced by local conditions such as topography, fires and weather fronts.
- **Moderate (Medium) Fuel** Brush, sticks, small logs.
- **Mop up** All measures taken to make a fire "safe" after it has been controlled; including trenching, felling snags and patrolling control line.
- **ODF** Oregon Department of Forestry

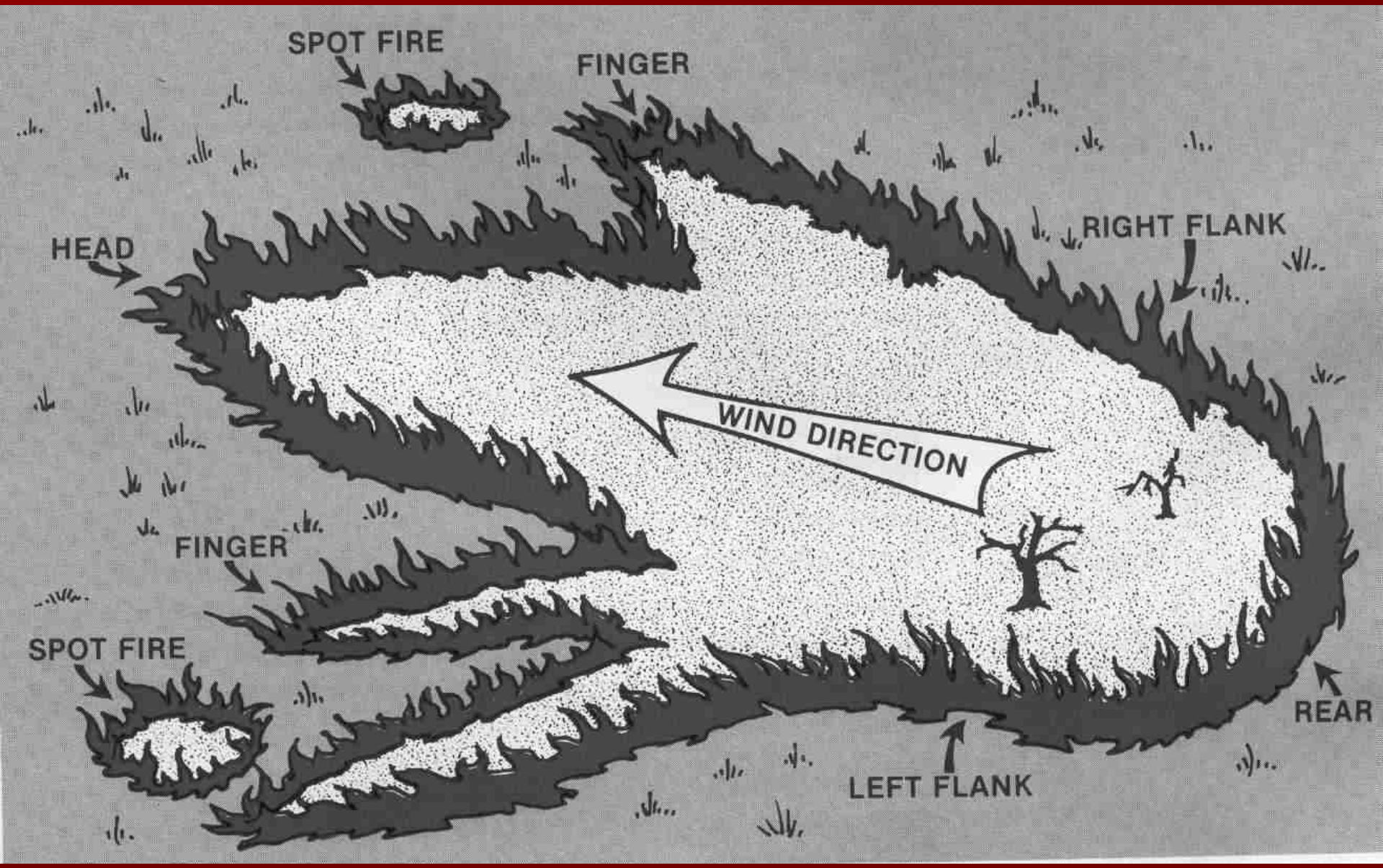
Fire Terms -- 7

- **Progressive Method** A method of constructing a fire line, in which each member of a hand crew takes a few strokes to clear fuel or widen the break, advances a specified distance, takes a few strokes, advances, and so on.
- **Progressive Hose Lay** A method used when fire apparatus cannot drive along the fire's edge. The operation consists of laying hose from a fire pump to the fire's edge, extinguishing fire in that area, connecting another section, advancing and extinguishing more fire.
- **Rear** The part of the fire opposite the head; the slowest burning part of the fire.

Fire Terms -- 8

- **Snag** A standing dead tree.
- **Spot Fire** A fire caused by flying sparks or embers landing outside the main fire.
- **Surface Fire** A fire burning surface fuels such as fallen leaves and needles, duff, stubble and grass.
- **Wet Line** A fire line constructed by wetting down burnable material in advance of a fire

Fire Terms -- 9


SPOT FIRE
FINGER
HEAD
RIGHT FLANK
WIND DIRECTION
FINGER
SPOT FIRE
REAR
LEFT FLANK

Standard Firefighting Orders --1

- Keep informed of fire weather conditions and forecasts.
- Know what your fire is doing at all times; observe personally or use scouts
- Base all actions on the current and expected behavior of the fire
- Have escape routes for everyone and make them known.
- Post a lookout when there is a possible danger

Standard Firefighting Orders -- 2

- Be alert, keep calm, think clearly, act decisively.
- Maintain prompt communication with your personnel, your boss, adjoining forces, AND Sumpter Depot.
- Give clear instructions and be sure they are understood
- Maintain control of personnel at all times.
- Fight fire aggressively, but provide for safety first.

Watchout Situations -- 1

- The wind begins to blow or increase or change direction.
- The weather is getting hotter and drier.
- The crew is on a line in heavy cover with unburned fuel between it and the fire.
- Attempting a frontal assault on a fire with hose lines
- Getting frequent spot fires over the line.

Watchout Situations -- 2

- The crew cannot see the main fire and is not in communication with anyone who can see it.
- An Assignment or instructions that have been given that are not clear.
- Considering taking a hose line across unburned fuel to catch the head of the fire or a spot fire.
- You're starting to feel fatigued, weak, light-headed or prickly.

Watchout Situations -- 3

- You took off on initial attack without notifying Butte Falls Depot and the Passenger Train of the situation.
- You started fighting the fire without first checking in with the Fire Train Engineer or, on a larger fire, the Incident Commander.

Fire Train Operation

- On Duty 1 hour before first run of the day.
- Check:
  - Hand Tools
  - Hoses and Appliances
  - Pump Engine
  - Water Supply
  - Motor Car Engine
  - Motor Car Brakes
  - Coupling, etc.
  - Radios, including Portable

Fire Train Check List -- 1

- **Fuel, Water and Oil in the A-4 Motor Car**
- **A-4 starts, runs and stops safely**
- **Radios:**
  - **Test radio in A-4**
  - **Bring portable radio from Yard Office**
- **First Aid Kit**
- **Plenty of Drinking Water**
- **Fire car tank water level – ¾ full (Do not fill completely)**
- **Fuel for pump**

Fire Train Check List -- 2

- **Gas can full**
- **Hoses:**
  - **2 – Preconnects: 100′ rolls of 1″ hose, on top of tank, connected to discharge ports, with nozzles.**
  - **2 – Rolls of 1 ½″ hose**
  - **4 – 100′ rolls of 1″ hose**
- **Hose Fittings:**
  - **2 – 1 ½″ x 1 ½″ Gated Wyes, each with a 1″ reducer, on discharge ports**
  - **1 – 1 ½″ x 1″ Gated Wye (loose, in tool bin)**
  - **1 – 1 ½″ x 1 ½″ Gated Wye (loose, in tool bin)**
  - **1 – 1″ Nozzle (loose, in tool bin)**
  - **2 – 1 ½″ Nozzles (loose, in tool bin)**

Fire Train Check List -- 3

- **Hand Tools -- Note: Fire Tools are painted red and stay with the Fire Train unless being used on a fire or fire related training.**
- **Caution: Tools are sharp and are to be re-sharpened after use.**
  - **2 Shovels**
  - **2 Pulaskis**
  - **2 Hazel Hoes**
  - **2 McClouds**
  - **1 Brush Cutter (caution, blade is sharp)**
- **3 – Bladder Bags, full of water, check pump action**
- **3 -- Helmets**
- **3 -- Goggles**

Fire Train Check List -- 3

- **Tool box with tools and additional fittings**
- **Test run pump to assure that it starts and runs correctly**
  - **Turn on gas with valve on bowl under fuel tank**
  - **Choke is on pump panel**
  - **Run up to 125 psi**
  - **Test discharge ports – Caution, do NOT charge preconnects!**
  - **Run for 5 minutes**
- Note: All hose was tested on June 29, 2010 to 175 psi. Do not exceed 150 psi in use.

Fire Train Operation

- Depart The Landing after Excursion train
- Run around excursion train at Obenchain Rd.
- Follow excursion train back to the Landing.
- Repeat Procedure

Fire Train Operation

- Keep a lookout on both sides of the tracks as well as between the rails
- Watch for
  - Smoke
  - Flame
  - Anything that doesn't look right
  - Anything that fell off the Steam Train
- Often you'll smell a fire before there's any visual clue.
- If there's a breeze, pay special attention to the down wind side of the track.

Reporting a Fire

- Upon the discovery of a fire or smoke along the right of way:
  - Contact Sumpter Depot by Radio:
  - "Emergency, Emergency, Emergency. We have a fire/smoke at MP ____."
  - Also call 911.
  - Note: If you're unsure of the exact mile point, use a reference such as The Cemetary.

Reporting a Fire

Give a **Size-Up**: Briefly describe what you've found, where it is and a little bit about the fuel, terrain and the character of the fire or smoke.

"We have a smoke fifty feet south of the tracks in light fuel. The smoke is light gray in color and not very dense.

<or>

"Flames spotted 100 feet south of the track in a wooded area. Smoke is dark and thick."

Consider before acting

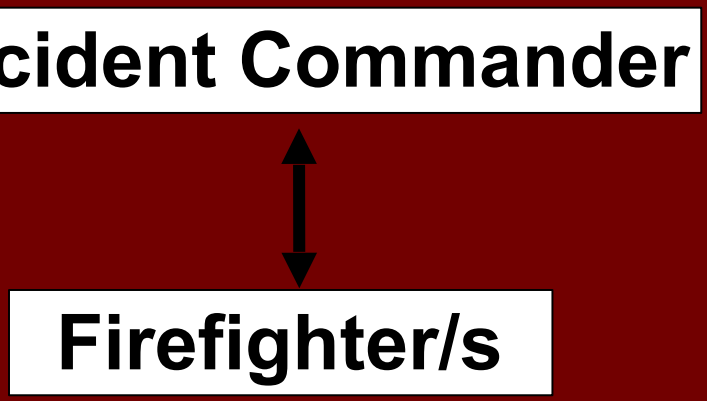
- Can I reach it with a hose line?
- Will a fire stream be effective?
- Is this fire/smoke growing fast?
- Where's the weather moving it?
- Would hand tools be more effective?
- And most important:
- **Can I take action on this fire/smoke SAFELY?**

As you Prepare to Take Action

- Before charging into the woods with a hose and tools, make another Size-Up.
- Is there more smoke?
- Has the color changed?
- Is a column developing?
- What's the wind doing?
- Report any significant change from your original Size-Up
- **Size-Up is an ongoing process**

“Chain of Command”

- The line of authority through which decisions are made, recommendations offered, and work assignments are given.



Incident Command

- **As Fire Train Engineer, you are the Incident Commander. Your responsibilities include:**
- **Above all, SAFETY for yourself, your crew, the Excursion Train and the public.**

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- Provide regular updates by radio.
- **Safe and Effective suppression efforts.**

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- Above all, SAFETY for yourself, your crew, the Excursion Train and the public.
- Calling for additional resources.
- Provide regular updates by radio.
- Safe and Effective suppression efforts.
- **Upon arrival of ODF, Butte Falls Fire, or more experienced BFSRy crews you will be relieved of your job as I/C** **WHEW!**

Incident Command

- Even after being relieved as Incident Commander, you're still the Fire Train Engineer.
- Fully cooperate with ODF and Butte Falls Crews.
- But do not leave the Fire Train until relieved by other BFSRy people. (Unless, of course, staying with the Fire Train would put you at risk.)


Initial Attack
With Hand Tools

Initial Attack -- Hand Tools

- Small Fire – Smother with dirt.
- Establish an anchor point (usually the track) and scratch a line along one flank.
- Scrape trail down to mineral earth or rock.
- Move burning or burnable materials towards the fire if there's a chance of embers along your fire trail.
- ALWAYS work with your partner – stay in visual contact. Keep an eye on each other.
- Incoming crews may take the other flank.
- Work the flanks, not the head

Initial Attack -- Hand Tools (con't.)

- Eliminate limbs over or near the trail.
- May work in conjunction with hose lines.
- Keep an eye on what the fire is doing.
- Watch for spot fires over the fire line.
- Work towards pinching off the fire at the head.
- Continue to monitor widen and improve your hand line.
- All fires must be trailed before being left as "Safe".

Initial Attack -- Hose Lines

- Fire must be close enough to track to reach with hoses. (Lobbing water at a fire is not only ineffective, it can spread the fire.)
- Be prepared to quickly deploy hose and nozzle.
- Establish an Anchor Point (usually the track)
- Work a flank towards the head of the fire.
- Use a 30º fog directed at the base of the flames
- Aim water at flaming material or just ahead of advancing flames

Initial Attack with Hose Lines
(Con't.)

- Apply water parallel with fire line or directed back into the fire.
- Additional crews may use hand tools on the other flank. Watch out for them!
- Continue Size-Up:
  - What and the fire and smoke doing
  - What is the wind doing
  - Report any changes by radio
- Watch for Spot Fires

Firefighting Safety

- As in Railroading, Safety is your Number One Priority in Firefighting.
- When swinging a tool, stay six to ten feet from other firefighters.
- Become familiar with the Ten Standard Firefighting Orders and Watch Out Situations.
- Always work with your partner. Stay together
- Keep a radio with you or your partner.
- Provide updates to Butte Falls Depot and the Excursion Train.

Firefighting Safety (Con't.)

- Advise incoming crews of your current size-up and all known hazards.
- Know your physical abilities and limits.
  - Make a reasonable effort to control the fire
  - But, don't risk going down and requiring rescue.
- Bring drinking water – LOTS of it!
- In the excitement, follow all BFSRy Safety Rules.
  - Make sure the Fire Train is secured
  - Make sure the Train knows your location

Larger Fires

- In the early stages, fire doubles in size every minute. Efficient initial attack can prevent small fires from becoming large fires. But, sometimes stuff happens. When it does, keep calm and be ready to deal with a larger fire.
- You may find a fire you cannot deal with directly.
  - Burning too hot
  - Moving too fast
  - Don't feel equipped to attack it safely

Deer Creek Fire
Selma, Oregon

Larger Fires

- Notify Butte Falls Depot of your situation and to order additional resources (HELP!) if there's any doubt you can't handle a fire.
- You can still provide valuable size-up information:
  - From a safe vantage point upwind from the fire
  - After making sure the Fire Train is parked safely.
  - To Butte Falls Depot and incoming crews.
- Once ODF and/or Butte Falls crews arrive, make contact and tell them all you know about the incident, including any hazards.

Larger Fires

- ODF or Butte Falls may give you a new assignment.
- The Fire Train Engineer remains responsible for the Fire Train until relieved by BFSRy people. Advise incoming crews of this fact.
- The Incident Command System (ICS) may be implemented and BFSRy personnel may be part of a Joint Command.
- It's likely that BFSRy crews and the Fire Train will be released from the fire once sufficient ODF and Butte Falls crews arrive.

Excursion Train - Considerations when a fire is reported

Excursion Train Procedures

- The Number One priority is passenger and train crew safety.
- Next is securing the equipment and keeping it in a safe location.
- If a fire or smoke is spotted by the Excursion Train, report it and give a Size-Up as per instructions for the Fire Train.
- It may be necessary to back up to stay in a safe zone. **Notify the Fire Train of this move. Be sure to have a qualified crew member "watching the shove."**

Excursion Train Procedures

- Notify Butte Falls Depot of the Size-up, your location, and whether you're continuing or reversing.
- Firefighting operations take priority over passenger operations.
- However, if the train is caught between the fire train and the fire, the steam train must be allowed to get to safety.
  - Even if it keeps the Fire Train from the fire
  - **Good communication is critical**.

Excursion Train Procedures

- Excursion Train crew members, who are not needed to safely operate this train may be released by the Conductor to join firefighting efforts.
- Secure the train in a safe location – usually the Butte Falls Depot.
- Keep Butte Falls Depot advised of all movements, size-ups and crew releases.
- Maintain communication with the Fire Train until tied up.

BFSRy Fire Support

- Butte Falls Depot:
  - Relay point for radio traffic from Fire Train.
  - Report ALL fires to ODF
  - Possible end point for Excursion Train that day
  - Keep passengers informed of situation

BFSRy Fire Support

- Butte Falls Yard:
  - Monitor radio and relay information as necessary
  - Additional firefighters
  - Additional hose, tools and equipment
  - Bring WATER for fire crews

After the Fire

- Once contained, fires must be completely trailed.
  - ODF will give the particulars
  - Usually 3’ wide to mineral earth or rock
  - Right to the edges of the burn
  - With no unburned material inside the perimeter
  - With no overhanging limbs or brush.
- The Incident Commander or BFSRy official will release the Fire Train.

After the Fire

- After being released, the Fire Train Crew must:
  - Clean, dry, inspect and roll hose
  - Clean, inspect and sharpen hand tools
  - Check and Replenish fuels and lubricants
  - Refill the water tank
  - Clean and refill bladder bags
  - Clean hose appliances
  - Clean and inspect motor car and trailer
  - Inventory equipment and replace as needed

FIRE PREVENTION

Places for Fires to Start Besides in the Forest

- The Excursion Train
- Station Platforms
- Back Shop
- Oil House
- Car Shop
- Restoration Shop
- Any car with a stove (Cabeese, Coaches)
- Wood Yard
- Anywhere on the grounds

Potential Sources Include:

- Sparks from the Locomotive
- Careless Smokers
- Linseed oil soaked rags
- Welding and Cutting Metal
- Over-firing car heaters
- Electrical problems
- Sparks from mechanical sources

Basically Anytime You Mix

- **Fuel +**
- **Oxygen +**
- **Heat =**
- **FIRE**

So, How to Prevent **FIRE** In or ON:

- The Excursion Train
- Station Platforms
- Back Shop
- Oil House
- Car Shop
- Restoration Shop
- Any car with a stove (Cabeese, Coaches)
- The Wood Yard
- Anywhere on the grounds

How to Limit **FIRE** from:

- Sparks from the Heisler
- Careless Smokers
- Linseed oil soaked rags
- Welding and Cutting Metal
- Over-firing car heaters
- Electrical problems
- Sparks from mechanical sources
- Other Sources


YOU WILL NOT SMOKE
ON MY TRAIN!