

APPENDIX A

SAFETY MESSAGES

10 STANDARD FIRE ORDERS

- F**ight fire aggressively but provide for safety first.
- I**nitiate all action based on current and expected fire behavior.
- R**ecognize current weather conditions and obtain forecasts.
- E**nsure instructions are given and understood.
- O**btain current information on fire status.
- R**emain in communication with crewmembers, your supervisor and adjoining forces.
- D**etermine safety zones and escape routes.
- E**stablish lookouts in potentially hazardous situations.
- R**etain control at all times.
- S**tay alert, keep calm, think clearly, act decisively.

LCES CHECKLIST

(Lookouts, Communications, Escape Routes, and Safety Zones)

1. All personnel need to be informed.
2. Update throughout the shift.
3. Lookouts/Communications:
 - Competent and trusted individual(s)?
 - Radio and frequencies?
 - Watch or timepiece?
 - Map and communication plan?
 - Knowledge of crew location?
 - Good vantage and safe location?
4. Escape Routes:
 - Scouted?
 - Walkable?
 - Timed?
 - Clearly identified and communicated?
 - Away from fire head?
5. Safety Zones:
 - No shelters needed
 - Clean burn
 - Vehicles
 - Natural or man-made clearing
 - Scouted?
 - Timed?
 - Close enough?
 - Large enough?
 - Consider # of people
 - Consider fuels/flame length
 - Terrain?
 - Avoid saddles; chutes ; box canyons
 - Snags or rolling rocks?

18 WATCH OUT SITUATIONS

1. Fire not scouted and sized up.
2. In country not seen in daylight.
3. Safety zones and escape routes not identified.
4. Unfamiliar with weather and local factors influencing fire behavior.
5. Uninformed on strategy, tactics and hazards.
6. Instructions and assignments not clear.
7. No communication link with crewmembers' supervisor.
8. Constructing fireline without safe anchor point.
9. Building fireline downhill with fire below.
10. Attempting frontal assault on fire.
11. Unburned fuel between you and the fire.
12. Cannot see main fire; not in contact with anyone who can.
13. On a hillside where rolling material can ignite fuel below.
14. Weather is getting hotter and drier.
15. Wind increases and/or changes direction.
16. Getting frequent spot fires across line.
17. Terrain and fuels make escape to safety zones difficult.
18. Taking a nap near the fireline.

ODF MINIMUM COMMUNICATION STANDARD FOR EVERY FIREFIGHTER

- N** Name and means to contact immediate supervisor.
- A** Anticipated weather and fire behavior.
- I** Incident and Division objectives and individual assignment.
- L** Location of escape routes and established safety zones.
- S** Safety considerations for the shift.

COMMON DENOMINATORS ON TRAGEDY FIRES

1. Most incidents happen on smaller fires or on isolated portions of larger fires.
2. Fires respond quickly to shifts in wind direction or wind speed.
3. Flare-ups generally occur in deceptively light fuels.
4. Fires run uphill surprisingly fast in chimneys, gullies and on steep slopes.

12 STANDARD AVIATION QUESTIONS THAT COULD SAVE YOUR LIFE

1. Is this flight necessary?
2. Who is in charge?
3. Are all hazards identified, and have you made them known?
4. Should you stop the operation or flight due to:
Communications?
Weather?
Personnel?
Confusion?
Turbulence?
Conflicting Priorities?
5. Is there a better way to do it?
6. Are you driven by an overwhelming sense of urgency?
7. Can you justify your actions?
8. Are there other aircraft in the area?
9. Do you have an escape route?
10. Are any rules being broken?
11. Are communications getting tense?
12. Are you deviating from the assigned operation or flight?

The twelve questions listed above should be committed to memory and applied to all aviation operations at all times.

If any questions cause you concern, it becomes your responsibility to discontinue the operation until you are confident that you can continue safely.

Aviation safety is a personal responsibility.

Your life and the lives of others depend upon your decisions!

DOWNHILL/INDIRECT LINE CONSTRUCTION GUIDELINES

Downhill/Indirect line construction in steep terrain and fast burning fuels should be done with extreme caution.

Direct attack methods should be used whenever possible.

The following guidelines should be followed:

- The decision is made by a competent firefighter after thorough scouting.
- Downhill line construction should not be attempted when fire is presently directly below the proposed starting point.
- The fireline should not be in or adjacent to a chimney or chute that could burn out while a crew is in the vicinity.
- Communication is established between the crew working downhill and crews working toward them from below. When neither crew can adequately observe the fire, communications will be established between the crews, supervising overhead and a lookout posted where the fire's behavior can be continuously observed.
- The crew will be able to rapidly reach a safety zone from any point along the line if the fire unexpectedly crosses below them.
- A downhill line should be securely anchored at the top. Avoid underslung line if at all practical.
- Line firing should be done as the line progresses, beginning from the anchor point at the top. The burned out area provides a continuous safety zone for the crew and reduces the likelihood of fire crossing the line.
- Be aware of and avoid the "WATCH OUT SITUATIONS!"
- Maintain full compliance with "THE STANDARD FIRE ORDERS".

INDICATORS OF HAZARD TREES/ HAZARD TREE ZONES

- ◆ Fire burning in the base or top of a dead or live tree that may indicate the presence of rot, which results in a weakened tree.
- ◆ Tree species present in the work areas that are susceptible to heart rot, (such as true firs), root rot or shallow roots.
- ◆ The presence of conks, broken tops, basal scars, cat faces, numerous down limbs, etc. may indicate rot.
- ◆ Trees with significant lean.
- ◆ Numerous down trees and/or stump holes burning in an area that may indicate a pocket of trees with root rot.

SNAG HAZARD MITIGATION MEASURES

- ◆ Scout for hazard trees and post warning signs.
- ◆ Post lookouts in areas of known or potential snag hazards.
- ◆ Communicate presence of snag hazards and tactics for removal/avoidance to each crewmember.
- ◆ Make each crewmember responsible for speaking out and adjusting tactics when confronted by hazards.
- ◆ Use snag intelligence when evaluating a fire and developing tactics.
- ◆ Employ tactics to avoid snag hazards or minimize exposure to snags.
- ◆ Plan and discuss snag hazards or minimize exposure to snags.
- ◆ Plan and discuss multiple escape routes and safety zones, considering vegetation and terrain.
- ◆ Use field training to brief personnel on the visible indicators of snag hazards.
- ◆ Choose rest locations where exposure to snag hazards is minimized, such as open areas or rock outcroppings.
- ◆ When escaping the path of a falling tree, watch the tree while moving out of the way.
- ◆ Be aware of any deviation in its fall or roll caused by contact, breakage, etc.

SNAG HAZARD ALERT CHECKLIST

- Snags are falling or have fallen in work areas.
- Hazard tree indicators are present in work areas.
- High-risk tree species are present in work areas.
- Crews are working in a hazard tree area at night.
- Crews are working in a hazard tree area and the wind is blowing.
- Crews are working in an area where trees have been burning for some time.
- The operational period or functional briefing did not include a discussion of hazards.
- Crewmembers are taking a break in a hazard tree area.
- Lookouts have not been posted in a hazard tree area.
- Lookouts are not advising the crew of the presence of hazard trees.
- Winds are increasing or are predicted to increase.
- Tree height within fire perimeter equals or exceeds distance to control line.
- Escape routes pass through hazard tree area.

RISKS AND HAZARDS TO MONITOR – LINE

- Condition of crew: acclimated; fatigued
- Fire Behavior
- Radios (adequate number; frequencies)
- Communication plan
- Alternatives/Hand signals
- Communication w/ air operations
- Protective equipment
- Type of crew experience/skill
 - Falling crews
- Qualifications:
 - Crews
 - Overhead (red cards)
- Safe food and water
- Dehydration
- Heat and smoke conditions
- Hypothermia
- Terrain and slope
- Footing hazards
- Power lines
- Fuel type
- Shift assignments (duties)
- Shift length
- Heavy equipment use/spotters
- Lights on heavy equipment
- Hand tool use
- Personnel safety around heavy equipment
- Power saws and pumps:
 - Safe work practices
 - Fueling
- Control strategy/scouting
- Evacuation facilities and plans
- Known local hazards:
 - Fences
 - Barriers
 - HazMat
- State of the Fire
 - Current conditions
- Fire generated hazards
 - Rolling materials
 - Snags
 - Stump holes
 - Bees and wasps
- Night hazards
- Burnout projects/equipment
- Tool condition
- Mop up
- Safety equipment in use
- Insects; bees; snakes
- Poisonous plants
- Supervisory skills
- Fire tactics
- Shift plans
- Air cargo drops
- Retardant drops
- Extreme weather conditions
 - Thunderstorms
- Head lamps/night shift
 - Safety equipment in use
- Escape routes & safety zones
 - Accessible & known
- Proper crew assignments/mix
- Lookouts posted
- Use of water
- Fire orders in use
- Maps
- Resource deployment
 - (Equip/crews/etc.)
- Crowd control
- Hazardous materials
- Booby traps
- Animal protection & attraction
 - Bears, cougars, etc.
- Carbon monoxide exposure
- Span of control: risks & hazards
- Adequate support at spike camps
- Visibility

RISKS AND HAZARDS TO MONITOR – CAMP

- Camp layout and location
- Food preparation; storage; water quality
- Cold storage
- Sleeping areas:
 - Noise activities
 - Heat
 - Shade
 - Cold
 - Wet weather protection
 - Traffic
 - Hazardous materials
- Medical plan completed
- Sanitation facilities adequate for:
 - Food handlers
 - Crews
- General camp safety
 - Snags
 - Stumps
 - Ditches
 - Wires over ground
- EMT facilities & first aid well marked
- Lighting/Night hazards
- Overhead safety attitude
- Insects; animals; poisonous plants
- Vehicle parking
- Traffic flow
- Tool and equipment maintenance
- R&R facilities
- Security
- Communications with outside world
- Safety bulletin board
- Showers and cleanup facilities
- Recreational facilities
- Trash removal
- Dust abatement
- Generators (noise)
- Fuel and hazardous materials storage
- Eating facilities
- Tool sharpening and handling
- Weather conditions
- Camp cleanliness
- Qualifications of camp help
- Evacuation plan
- Portable heaters (Salamanders)
 - Refueling
- Portable generators; refueling
- Fire break for camp
- Commissary
 - Carry proper items
- Personnel hygiene needs
- Off-duty personnel activities:
 - Football
 - Swimming
 - Barefoot, etc.

EMERGENCY OPERATIONS SANITATION CHECK LIST

- Call the Oregon State Health Division ESC (Environmental Services & Consultation) Section for assistance and consultation in emergency sanitation.
- Contact the county health department and local licensed water purveyor for assistance in providing an approved drinking water supply.
- Arrange for local garbage and refuse service.
- Only use food preparation and feeding operations that have a valid license to prepare and serve food.
- Where food is prepared in a central kitchen and served on the fireline, insist that proper food temperatures be maintained for perishable foods (45 & 140).
- Provide plenty of hot water and soap for hand washing of all food handlers and food workers.
- Provide adequate food storage facilities that are protected from rodents and flies.
- Locate camp facilities away from swamps, wastewater drainage areas, animal impound areas, garbage dumps, or any other natural hazard.
- Properly dispose of all wastes when leaving the camp.
- When controlling for insects in the camp area, insist that only approved abatement procedures and insecticides are used.
- Do not use septic tank pumpers to pump water from domestic supplies for firefighting.

RISKS AND HAZARDS TO MONITOR – TRANSPORTATION

- Drivers' qualifications
- Vehicle conditions
- Vehicle safety equipment
- Road conditions and maintenance
- Turn-outs and turn-arounds
- Visibility/twilight
- Communications
- Dust abatement
- Length of drivers' shifts
- Vehicle check-in/check-out
- Adequate amount of vehicles;
types
- Traffic patterns and routes
- Pilot vehicles
- Loading of people and tools
- Cargo packaging
- Fueling area/operation
- Vehicle abuse
- Type of equipment and use
- Vehicle cleanliness/windshields
- Parking
- Personnel sleeping near parked
vehicles
- Staging facilities/design
- Transportation plan
- Traffic control/sightseers
- Security
- Emergency evacuation
- Vehicle size and weight
- Identification
- Operations supervision
- Usable maps
- Travel routes understood and
marked
- Drop points marked
- Vehicle maintenance inspection
- Fire behavior near travel routes
- Fatigue/length of shift
- Warning signs and devices
- Spotters for backing situations
- Demobilization/manifesting
- Boat travel
- Livestock use/transportation
- Tool hauling and handling
- Speed limits
- Night driving
- Accident reports
- Physical condition of drivers:
 - Night vision
 - Dust/Smoke
 - Alcohol and drugs
- Transportation matches need:
 - Gear/Power
 - Brakes
- Lights on for safety
- Fire safety & shelter training for
drivers
- Loads: secure; matched to vehicle
- Seat belts
- Drop point location/layout