INCIDENT REPSONSE POCKET GUIDE 2014

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TABLE OF CONTENTS

OPERTIONAL LEADERSHIP

OPERATIONAL LEADERSHIP

- The most essential element of successful wildland firefighting is competent and confident leadership.

- In confusing and uncertain situations, a good operational leader will:
  - ✓ TAKE CHARGE of assigned resources.
  - ✓ MOTIVATE firefighters with a "can do safely" attitude.
  - ✓ DEMONSTRATE INITIATIVE by taking action in the absence of orders.
  - ✓ COMMUNICATE by giving specific instructions and asking for feedback.
  - ✓ SUPERVISE at the scene of action

DUTY

Be proficient in your job, both technically and as a leader
- ✓ Take charge when in charge.
- ✓ Adhere to professional standard operating procedures.
- ✓ Develop a plan to accomplish given objectives.

Make sound and timely decisions
- ✓ Maintain situation awareness in order to anticipate needed actions.
- ✓ Develop contingencies and consider consequences.
- ✓ Improvise within the leader's intent to handle a rapidly changing environment.

Ensure tasks are understood, supervised, and accomplished
- ✓ Issue clear instructions.
- ✓ Observe and assess actions in progress without micro- managing.
- ✓ Use positive feedback to modify duties, tasks, and assignments when appropriate.

Develop your subordinates for the future
- ✓ Clearly state expectations.
- ✓ Delegate tasks that you are not required to do personally.
- ✓ Consider individual skill levels and developmental needs when assigning tasks

RESPECT

Know your subordinates and look out for their well-being
- ✓ Put the safety of your subordinates above all other objectives.
- ✓ Take care of your subordinate's needs.
- ✓ Resolve conflicts between individuals on the team.

Keep your subordinates informed
- ✓ Provide accurate and timely briefings.
- ✓ Give the reason (intent) for assignments and tasks.
- ✓ Make yourself available to answer questions at appropriate times.

Build the team
- ✓ Conduct frequent debriefings with the team to identify lessons learned.
- ✓ Recognize individual and team accomplishments and reward them appropriately.
- ✓ Apply disciplinary measures equally.

Employ your subordinates in accordance with their capabilities
- ✓ Observe human behavior as well as fire behavior.
- ✓ Provide early warning to subordinates of tasks they will be responsible for.
- ✓ Consider team experience, fatigue, and physical limitations when accepting assignments

INTEGRITY

Know yourself and seek improvement
- ✓ Know the strengths/weaknesses in your character and skill level.
- ✓ Ask questions of peers and superiors.
- ✓ Actively listen to feedback from subordinates.

Seek responsibility and accept responsibility for your actions
- ✓ Accept full responsibility for poor team performance.
- ✓ Credit subordinates for good performance.
- ✓ Keep your superiors informed of your actions.

Set the example
- ✓ Share the hazards and hardships with your subordinates.
- ✓ Don't show discouragement when facing setbacks.
- ✓ Choose the difficult right over the easy wrong.

COMMUNICATION RESPONSIBILITY

- All firefighters have five communication responsibilities:
  - ✓ Brief others as needed
  - ✓ Debrief your actions
  - ✓ Communicate hazards to others
  - ✓ Acknowledge messages
  - ✓ Ask if you don't know

LEADER'S INTENT

- In addition, all leaders of firefighters have the responsibility to provide complete briefings and ensure that their subordinates have a clear understanding of their intent for the assignment:
  - ✓ Task = What is to be done
  - ✓ Purpose = Why it is to be done
  - ✓ _____ = How it should look when done

End State

HUMAN FACTOR BARRIERS TO SITUATION AWARENESS

Low Experience Level with Local Factors
- o Unfamiliar with the area or the organizational structure.

Distraction from Primary Task
- o Radio traffic
- o Conflict
- o Previous errors
- o Collateral duties
- o Incident within an incident

Fatigue
- o Carbon Monoxide
- o Dehydration
- o Heat stress
- o Poor fitness level can reduce resistance to fatigue
- o 24-hours awake affects your decision making capability like .10 blood alcohol content.

Stress Reactions

- Communication deteriorates or grows tense.
- Habitual or repetitive behaviors.
- Target fixation – Locking into a course of action, whether it makes sense or not, just try harder.
- Action tunneling – Focusing on small tasks, but ignoring the big picture.
- Escalation of commitment – Accepting increased risk as completion of task gets near.

Hazardous Attitudes

- Invulnerable – That can't happen to us
- Anti-authority – Disregard of the team effort
- Impulsive – Do something even if it's wrong
- Macho – Trying to impress or prove something
- Complacent – Just another routine fire
- Resigned – We can't make a difference
- Group Think – Afraid to speak up or disagree

AFTER ACTION REVIEW

- The climate surrounding an AAR must be one in which the participants openly and honestly discuss what transpired. Most importantly, participants should leave with a strong desire to improve their proficiency.
  - An AAR is performed as immediately after the event as possible by the personnel involved.
  - The leader's role is to ensure skilled facilitation of the AAR.
  - Reinforce that respectful disagreement is OK. Keep focused on the what, not the who.
  - Make sure everyone participates.
  - End the AAR on a positive note.

RISK MANAGEMENT - OPERATIONAL ENGAGEMENT GREEN PAGES

Wildland Risk Management

Situation Awareness- (Sense making) Gather Intelligence

□ Objective(s) □ Weather Forecast •
□ Communication □ Local Fire Factors ·
□ Unity of Command □ Fuel Conditions

Scout the Fire (Know your surroundings)

Hazard Assessment- (Assess the Conditions) Fire Behavior Forecast

□ Look Up I Down I Around Indicators
□ Potential Changes In Alignment

Tactical Hazards

□ Watch Out Situations
□ WUI Watch Outs
□ What other safety hazards exist?

Hazard Control- (Develop your Plan)

Firefighting Orders-+ P.A.C.E.

□ Structure Defense Tactical Action
  Check and Go
  Prep and Go
  Prep and Defend
  Fire Front Following
□ Perimeter Control Tactical Action
  Direct / Anchor and Flank
  Downhill Checklist (if applicable)
  Indirect
□ Medical Evacuation Plan

Decision Point- (Validate I Engage)

□ Are controls in place for identified hazards?
□ Are tactics based on fire behavior forecast?
□ Have instructions been given and understood?

Evaluate- (Observe I Reassess Tactical Actions)

The Situation: Are things changing?
Is your plan working?

Human Factors: Is your experience level low?
Are you focused on primary task?
Are you fatigued or overly stressed?
Is your attitude hazardous?

LOOK UP, DOWN AND AROUND- OPERATIONAL ENGAGEMENT GREEN PAGES

Fire Environment Factors	**Indicators**
Fuel Characteristics Assess	Continuous fine fuels
Fuel Moisture	Low RH and 10-hr. FMC (check local thresholds)
Fuel Temperatures	High temps (>85F)
Terrain	Steep slopes (>50%)
Scout	Chutes/chimneys • Box canyons • Saddles • Narrow canyons
Wind	Surface winds above 10 mph Battling or shifting winds
Atmospheric Instability	High Haines Index
Fire Behavior	Well-developed column Trees torching Frequent spot fires

COMMON DENOMINATORS OF FIRE BEHAVIOR ON TRAGEDY FIRES - OPERATIONAL ENGAGEMENT GREEN PAGES

- There are four major common denominators of fire behavior on fatal and near-fatal fires. Such fires often occur:
  1. On relatively small fires or deceptively quiet areas of large fires.
  2. In relatively light fuels, such as grass, herbs, and light brush.
  3. When there is an unexpected shift in wind direction or in wind speed.
  4. When fire responds to topographic conditions and runs uphill.

- **Alignment of topography and wind during the Burning Period should be considered a trigger point to re-evaluate tactics.**

COMMON TACTICAL HAZARDS - OPERATIONAL ENGAGEMENT GREEN PAGES

Position

- Building fireline downhill.
- Building undercut or mid-slope fireline.
- Building indirect fireline or unburned fuel is between you and the fire.
- Attempting frontal assault on the fire or you are delivered by aircraft to the top of the fire.
- Establishing escape routes that are uphill or difficult to travel.

Situation

- Poor communication due to a rapidly emerging small fire or an isolated area of a large fire.
- Suppression resources are fatigued or inadequate.
- Assignment or escape route depends on aircraft support.
- Night-time operations.
- Wildland-Urban Interface operations.

LCES- OPERATIONAL ENGAGEMENT — GREEN PAGES

Lookout(s)
- Experienced, competent, trusted
- Enough lookouts at good vantage points
- Knowledge of crew locations
- Knowledge of escape and safety locations
- Knowledge of trigger points
- Map, Weather Kit, Watch, IAP

Communication(s)
- Radio frequencies confirmed
- Backup procedures and check-in times established
- Provide updates on any situation change
- Sound alarm early, not late

Escape Route(s)
- More than one escape route
- Avoid steep uphill escape routes
- Scouted for loose soils, rocks, vegetation
- Timed considering slowest person, fatigue, and temperature factors
- Marked for day or night
- Evaluate escape time vs. rate of spread
- Vehicles parked for escape

Safety Zone(s)
- Survivable without a fire shelter
- Back into clean burn
- Natural features (rock areas, water, meadows)
- Constructed sites (clear-cuts, roads, helispots)
- Scouted for size and hazards
- Upslope?, Downwind?, Heavy Fuels? >More heat impact >Larger safety zone

SAFETY ZONES- OPERATIONAL ENGAGEMENT — GREEN PAGES

- A safety zone is an area where a firefighter can survive without a fire shelter. Considerations for effective safety zones:
  - ✓ Take advantage of heat barriers such as lee side of ridges, large rocks, or solid structures.
  - ✓ When possible, burn out safety zones prior to arrival of fire front.
  - ✓ Avoid locations that are upslope or downwind from the fire; chimneys, saddles, or narrow canyons; and steep uphill escape routes.
  - ✓ Not intended for structure protection.

- Separation distance between the firefighter and the flames should be at least ____ times the maximum continuous flame height. Distance separation is the radius from the center of the safety zone to the nearest fuels.

four

Flame Height	Separation Distance (firefighters to flames)	Area in acres*
10 ft.	40 ft.	1/10 acres
20 ft.	80 ft.	½ acres
50 ft.	200 ft.	3 acres
100 ft.	400 ft.	12 acres
200 ft.	800 ft	46 acres

DOWNHILL CHECKLIST- OPERATIONAL ENGAGEMENT GREEN PAGES

- Downhill fireline construction is hazardous in steep terrain, fast-burning fuels, or rapidly changing weather. It should not be attempted unless there is no tactical alternative. When building downhill fireline, the following is required:
  1. Discuss assignments with crew supervisor(s) and fireline overhead prior to committing crew(s).
  2. Decision is made after proposed fireline has been scouted by supervisor(s) of involved crew(s).
  3. Coordinate LCES for all personnel involved.
  4. Use direct attack whenever possible. If not possible, the fireline should be completed between anchor points before being fired out.
  5. Fireline will not lie in or adjacent to a chute or chimney.
  6. Starting point will be anchored for crew(s) building fireline down from the top.
  7. Monitor bottom of fire; if potential exists for the fire to spread, take action to secure the fire edge.

WILDLAND URBAN INTERFACE FIREFIGHTING- OPERATIONAL ENGAGEMENT GREEN PAGES

- Do not commit to stay and protect a structure unless a safety zone for firefighters and equipment has been identified at the structure during size-up and triage. Move to the nearest safety zone, let the fire front pass, and return as soon as conditions allow.

Fire Behavior Prediction

- ✓ Base all actions on current and expected fire behavior – do this first!
- ✓ An estimate must be made of the approaching fire intensity in order to determine if there is an adequate safety zone and time available before the fire arrives.
- ✓ Due to the dynamic nature of fire behavior, it is imperative that firefighters consider the worst case and build contingency actions into their plan to compensate for the unexpected.

Structure Size-up

Site Considerations

- ✓ Adequate safety zone based on fire behavior prediction.
- ✓ Adequate lookout and communication capability.
- ✓ Adequate defensible space based on surrounding wildland vegetation.
- ✓ Avoid narrow canyon bottoms, mid-slope with fire below, and narrow ridges near chimneys and saddles.

Tactical Challenges and Hazards:

(Firefighters with a safety zone can safely defend structures with some challenges)

- ✓ Narrow roads, unknown bridge limits, and septic tank locations.
- ✓ Ornamental plants and combustible debris next to structure.
- ✓ Wooden siding and/or wooden roof materials.
- ✓ Open vents, eaves, decks, and other ember traps.
- ✓ Fuel tanks and hazardous materials.
- ✓ Powerlines
- ✓ Limited water sources.
- ✓ Property owners remaining on-site.

STRUCTURE DEFENSE TACTICAL ACTION

Check and Go- Non-Defensible

Sizeup: Structure has significant tactical challenges.

Tactics: Firefighters not able to commit to stay and defend structure. If time allows perform a rapid assessment to ensure that people are not present in the threatened structure (especially children, elderly and invalid). Set trigger point for safe withdraw. If possible re-engage after the passage of the fire front. (Fire Front Following)

Prep and Go- Non-Defensible

Sizeup: Structure has some tactical challenges.

Tactics: Firefighters not able to stay and defend structure. If time allows, rapid mitigation measures may be performed. Set trigger point for safe retreat. *Remember pre-incident preparation is the responsibility of the homeowner.* Re-engaging after the passage of the fire front will be necessary to defend the structure. (Fire Front Following)

Prep and Defend-Defensible
Sizeup: Structure has some tactical challenges. Tactics: Firefighters needed onsite to implement structure defense tactics during fire front contact. Implement P.A.C.E.-TRA's and a deployment site must be present.

Fire Front Following
Sizeup: Insufficient time to safely set up ahead of the fire or anticipated fire intensity would likely cause injury to firefighters.

Tactics: Come in behind the fire front to take action on a structure. Many structures do not burn until after the fire front has passed.

Standalone-Defensible
Sizeup: structures very few tactical challenges but is in the fire area.

Tactics: Firefighters may not need to be directly assigned to protect structure as it is not likely to ignite during initial fire front contact. However, no structure in the path of a wildfire is completely without need of protection and a Tactical Patrol should be assigned to monitor the area.

Tactical Patrol
Sizeup: Many structures don't burn until after the fire front has passed. Other structures may be some distance from the fire front but are subject to ember cast, spot fires or creeping ground fire.

Tactics: Situational awareness, mobility and continuous monitoring of the assigned area for spot ftres and flare-ups. Look for secondary ignitions on roofs, in attics, burning power poles and take action on incipient fires.

Structure Protection Tactics

Rapid mitigation measures
- ✓ Remove small combustibles immediately next to structure.
- ✓ Close windows and doors, including garage (leave unlocked).
- ✓ Clean area around fuel tank and shut off tank.
- ✓ Charge garden hoses.
- ✓ Apply CAF, foam, or gel retardants if available.

Equipment and water use
- ✓ Mark entrance to indicate a staffed location if it is not obvious.
- ✓ Charge hose lines.
- ✓ Long hose lays are not recommended.
- ✓ Keep 100 gallons of water in reserve.
- ✓ Identify a backup water source.
- ✓ Identify powerlines for aerial resources.
- ✓ Never rely on water for firefighter safety.

Patrol following the fire front
- ✓ Many structures do not burn until after the fire front has passed.
- ✓ Move to closest safety zone and let fire front go through.
- ✓ Return as soon as conditions allow safe access to structures.
- ✓ Secondary ignition is usually due to residual spot fires or creeping ground fire.
- ✓ Take suppression actions within your capability.
- ✓ Call for assistance if needed.

HOW TO PROPERLY REFUSE RISK- SPECIFIC HAZARDS GRAY PAGES

- **When an individual feels an assignment is unsafe they also have the obligation to identify, to the degree possible, safe alternatives for completing that assignment. Turning down an assignment is one possible outcome of managing risk.**

- A “turn down” is a situation where an individual has determined they cannot undertake an assignment as given and they are unable to negotiate an alternative solution.

- The turn down of an assignment must be based on an assessment of risks and the ability of the individual or organization to control those risks. Individuals may turn down an assignment as unsafe when:
  1. There is a violation of safe work practices.
  2. Environmental conditions make the work unsafe.
  3. They lack the necessary qualifications or experience.
  4. Defective equipment is being used.

- ✓ The individual directly informs their supervisor they are turning down the assignment as given. Use the criteria outline in the Risk Management Process (Watch Out Situations, etc.) to document the turn down.
- ✓ The supervisor notifies the Safety Officer immediately upon being informed of the turn down. If there is no Safety Officer, the appropriate Section Chief or the Incident Commander should be notified. This provides accountability for decisions and initiates communication of safety concerns within the incident organization.
- ✓ If the supervisor asks another resource to perform the assignment, they are responsible to inform the new resource that the assignment was turned
- ✓ down and the reasons why it was turned down.
- ✓ If an unresolved safety hazard exists or an unsafe act was committed, the individual should also document the turn down by submitting a SAFENET (ground hazard) or SAFECOM (aviation hazard) form in a timely manner.

THUNDERSTORM SAFETY- SPECIFIC HAZARDS GRAY PAGES

- Approaching thunderstorms may be noted by a sudden reverse in wind direction, a noticeable rise in wind speed, and a sharp drop in temperature. Rain, hail, and lightning occur only in the mature stage of a thunderstorm.

Situation Awareness

- Observe the ____rule: If you see lightning and hear the thunderclaps follow in less than 30 seconds, take the storm precautions identified below. Do not resume work in exposed areas until 30 minutes after storm activity has passed.

  30/30

Hazard Control:

- ✓ Take shelter in a vehicle or building if possible.
- ✓ If outdoors, find a low spot away from tall trees, wire fences, utility lines and other elevated conductive objects. Make sure the place you pick is not subject to flooding.
- ✓ If in the woods, move to an area with shorter trees.
- ✓ If only isolated trees are nearby, keep your distance twice the tree height.
- ✓ If in open country, crouch low, with feet together, minimizing contact with the ground. You can use a pack to sit on, but never lay on the ground.
- ✓ If you feel your skin tingle or your hair stand on end, immediately crouch low to the ground. Make yourself the smallest possible target and minimize your contact with the ground.
- ✓ Don't group together.
- ✓ Don't stay on ridge tops, in wide open areas, or near ledges or rock outcroppings.
- ✓ Don't operate landline telephones, machinery, or electric motors.
- ✓ Don't handle flammable materials in open containers or metal hand tools.

POWERLINE SAFETY- SPECIFIC HAZARDS GRAY PAGES

Down Powerlines

- ✓ Communicate: Notify all responders of down electrical lines. Obtain radio check-back.
- ✓ Identify: Determine hazard by visually tracking lines, two poles in each direction, from the downed wire.
- ✓ Isolate: Flag area around down wire hazards; post guards.
- ✓ Deny entry: Delay firefighting actions until hazard identification and flagging is complete.
- ✓ Downed line on vehicle: Stay in vehicle until the power company arrives. If vehicle is on fire, jump out with both feet together. Do not touch the vehicle. Keep feet together and shuffle or hop away.
- ✓ Always treat downed wires as energized!

Ground Tactics

- ✓ Normal tactics apply when fire is more than 100 feet from powerlines.
- ✓ Heavy smoke and flames can cause arcs to ground. Direct attack must be abandoned within 100 feet of transmission lines.
- ✓ Spot fires or low ground fires can be fought with hose lines if heavy smoke or flame is not within 100 feet of powerlines.
- ✓ Always maintain 35 feet distance from transmission towers.
- ✓ Never use straight streams or foam—use a fog pattern.
- ✓ Use extreme caution if engaging in tactical firing operations.
- ✓ Extinguish wooden poles burning at the base to prevent down wire hazards.

Aerial Tactics

- ✓ Communicate locations of all transmission lines to air resources.
- ✓ Aerial drops onto powerlines will cause arcing to ground or arcing to powerline towers and poles.
- ✓ Drops should be parallel to lines and avoid drift making contact on the powerlines.
- ✓ When flying across powerlines, cross at the towers.

ALWAYS!

- ✓ **Look Out** for any powerlines near the incident.
- ✓ **Communicate** location of all powerlines that present a hazard.
- ✓ **Escape Routes** should not be under or near overhead powerlines.
- ✓ **Safety Zones, ICP, and staging areas** should not be located under or near overhead powerlines.

OIL AND GAS SITE SAFETY- SPECIFIC HAZARDS GRAY PAGES

Situation Awareness

Methane (CH4):

- ✓ Toxic, flammable, odorless, and colorless.
- ✓ Unlikely to cause physical problems in open environment, but does pose a fire risk in high concentrations.
- ✓ Beware of enclosed buildings/vehicles if gas is suspected.

Hydrogen Sulfide Gas (H2S)

- ✓ Highly toxic, flammable, and colorless gas.
- ✓ Odor of rotten eggs at low concentrations.
- ✓ Sense of smell rapidly deteriorates at higher concentrations.
- ✓ Exposure indicators include high heart rate, respiratory paralysis, seizures, and rapid incapacitation.

Hazard Control

- ✓ Ensure contact is made with the appropriate authorities before engaging in suppression activities.
- ✓ Ask for H2S monitor/breathing apparatus and adequate briefing.
- ✓ Do not depend of sense of smell for warning.
- ✓ Avoid low lying areas during stagnant air conditions.
- ✓ Anticipate industry traffic on narrow, unimproved roads.
- ✓ Be aware of exposed pipes and utility lines.
- ✓ Park at least 20 feet away from facilities and equipment. Avoid tampering with the oil and gas pumping equipment.
- ✓ Avoid open pits/dumps.
- ✓ Before starting dozer operations, ask your local Dispatch to notify the appropriate utility representative. Don't assume pipelines are buried deeply or directly under their markers.
- ✓ Seek immediate medical care at a hospital if H2S exposure is suspected.

LAST RESORT SURVIVAL- SPECIFIC HAZARDS GRAY PAGES

Escape if you can

- ✓ Utilize all your PPE and act immediately on your best option.
- ✓ Drop your gear (keep your fire shelter, hand tool, quart of water, and radio).
- ✓ You may be able to use the fire shelter for a heat shield as you move.
- ✓ In LIGHT FUELS, you may be able to move through the flames into the black.
- ✓ If you are on the flank of the fire, try to get below the fire.
- ✓ Consider vehicles or helicopters for escape.

Find a survivable area

- ✓ Stay out of hazardous terrain features.
- ✓ Use bodies of water that are more than 2 feet deep.
- ✓ In LIGHT FUELS, you may be able to light an escape fire. In other fuels, you may be able to light a backfire.
- ✓ Call for helicopter or retardant drops.
- ✓ Cut and scatter fuels if there is time.
- ✓ Use any available heat barriers such as large rocks and dozer berms.
- ✓ Consider vehicle traffic hazards on roads.
- ✓ Structures and vehicles may be an option for temporary refuge.

Pick a fire shelter deployment site

- ✓ Find the lowest point available.
- ✓ Maximize distance from nearest aerial fuels, heavy fuels, and snags.
- ✓ Pick a surface that allows the fire shelter to seal and remove ground fuels.
- ✓ Get into the fires shelter before the flame front hits.
- ✓ Position your feet toward the fire and hold down the fire shelter.
- ✓ Keep your face pressed into the ground and protect your airway.
- ✓ Deploy next to each other and keep talking.

Expect

- ✓ Extremely heavy ember showers.
- ✓ Superheated air blast to hit before the flame front hits.
- ✓ Noise and turbulent powerful winds hitting the fire shelter.
- ✓ Heat and fire glow inside the fire shelter.
- ✓ Long deployment times…WHEN IN DOUBT WAIT IT OUT.

HAZMAT ISOLATION DISTANCES - ALL HAZARDS RESPONSE YELLOW PAGES

- Minor event (1 drum, 1 bag, etc.) = 150 feet
- Major event (1 drum or more, etc.) = 500 feet
- Residential and light commercial = 300 feet
- Open areas = 1000 feet
- BLEVE (Boiling Liquid Expanding Vapor Explosion) potential = 2500 feet (one-half mile)
- Stage arriving units 2500 feet upwind
- Position vehicles headed out

STRUCTURE HAZARD MARKING SYSTEM ALL HAZARDS RESPONSE YELLOW PAGES

You may find a 2' x 2' box at the entrance to indicate the condition of the structure. Use orange spray paint or a lumber crayon to mark inside the box.

- ☐ Structure is safe for Search and Rescue (SAR) with minor damage, or structure is fully collapsed.
- ⧄ Structure is significantly damaged with some safe areas, but other areas which need to be shored up or braced. Falling and collapse hazards need to be removed.
- ☒ Structure is unsafe and may collapse suddenly.
- ⬅ Entrance is located in direction of the arrow.

HM Hazardous material is present.

This information should be found outside the upper right portion of the box:

- ✓ Specialist ID
- ✓ Time and date of assessment
- ✓ Hazardous materials identified

SAR teams should also mark structures as they conduct operations.

- / Single slash (2' long) indicates SAR Team is currently in structure conducting operations.
- × Cross/slash (2' x 2') indicates SAR Team has left structure/area.

This information should be found in the four quadrants of the cross slash:

- SAR Team ID — Left quadrant
- Time and date team left structure — Upper quadrant
- Personnel hazards — Right quadrant
- Number of victims still inside — Lower quadrant

Structure ("X" indicates no victims remaining)

HELICOPTER PASSENGER BRIEFING AND PPE – AVIATION — BLUE PAGES

➢ Pilot or designated Helitack must brief all passengers prior to flight.

Personnel Protective Equipment

- ✓ Nomex clothing (long-sleeved shirt and pants, or flight suit).
- ✓ Approved helicopter flight helmet or hardhats for fire crew transport from managed sites.
- ✓ All-leather boots.
- ✓ Hearing protection.
- ✓ Eye protection.
- ✓ Nomex or leather gloves.

Approach and Departure

- ✓ Stay clear of landing area during approach/departure.
- ✓ Always approach/depart from the downslope (lower) side as directed by pilot/helitack.
- ✓ Approach/depart helicopter in a crouch position.
- ✓ Do not run.
- ✓ Keep in pilot's view at all times.
- ✓ Do not reach up or chase after loose objects.
- ✓ Never approach the tail section of the helicopter.
- ✓ NO SMOKING within 50 feet of the aircraft.

HELICOPTER LANDING AREA SELECTION – AVIATION — BLUE PAGES

Choosing a Landing Area

- ✓ Locate a flat area clear of people, vehicles, and obstructions such as trees, poles, and overhead wires.
- ✓ The area must be free of stumps, brush, posts, large rocks or anything over 18 inches high.
- ✓ Consider the wind direction. Helicopters land and take off into the wind.
- ✓ Any obstruction should be relayed to the helicopter crew on initial radio contact.
- ✓ Remove or secure any loose items in and around the landing area such as trash, blankets, hats or equipment.
- ✓ Wet down the landing area if dusty conditions are present.
- ✓ Address LCES prior to staffing existing or proposed helicopter landing areas.

Fixed Helispots

- Type I Helicopters:
  Safety circle: 110′
  Touchdown pad: 30′ x 30′, clear and level
- Type II Helicopters:
  Safety circle: 90′
  Touchdown pad: 20′ x 20′, clear and level
- Type III Helicopters:
  Safety circle: 75′
  Touchdown Pad: 15′ x 15′ clear and level

AERIAL RETARDANT SAFETY – AVIATION — BLUE PAGES

- Clear personnel out of target area prior to drops. If you can't escape:
  - ✓ Hold your hand tool away from your body.
  - ✓ Lie face down with head toward oncoming aircraft and hardhat in place. Grasp something firm to prevent being carried or rolled about by the dropped liquid.
  - ✓ Do not run unless escape is assured.
  - ✓ Get clear of dead snags, tops, and limbs in drop area.
  - ✓ Working in an area covered by wet retardant should be done with caution due to slippery surfaces.

DIRECTING RETARDANT AND BUCKET DROPS – AVIATION — BLUE PAGES

- **Give general location** on incident to aerial resource – division/head/heel/flank.
- **Finalize location** with:
  - Clock position from pilot's perspective.
  - Description of prominent landmarks.
  - Target position on slope – lower 1/3, upper 1/3, mid-slope, top of ridge, etc.
  - Utilize signal mirrors whenever possible.
  - Utilize panels or flagging to mark target as needed.
- **Describe target** from your location and explain mission. The pilot will decide drop technique and flight path.
- **Know the pilot's intentions**. Clear the area to avoid direct flights over ground personnel and equipment.
- **Give feedback** to pilot about drop accuracy. Be honest and constructive. Let pilot know if drop is early, late, uphill, downhill, on target, too high, too low, etc. Report low drops immediately.

WORKING WITH AIRTANKERS – AVIATION — BLUE PAGES

Retardant use reminders

- Direct attack with close ground support = Suppressant
- Direct attack with delayed ground support = Retardant with suppressants to hold
- Indirect attack = Retardant
- Minimum retardant drop heights
  - SEAT = 60 ft. AGL
  - Super Scooper (CL 215/415) = 100 ft. AGL

SAFECOM REPORTING SYSTEM – AVIATION — BLUE PAGES

- The purpose of the SAFECOM system is for accident prevention. It is a tool used to encourage the reporting of any condition, observance, act, maintenance problem, or circumstance that has the potential to cause an aviation or aviation-related accident. It can also be used for reporting positive safety actions and mishap prevention measures.

SPOT WEATGHER FORECAST – OTHER REFERENCES — WHITE PAGES

- Spot weather forecasts should always be requested for fires that have the potential for active fire behavior, exceed initial attack, or are located in areas where Red Flag Warnings have been issued.

The basic elements needed for a spot weather request include:

- Name and type of incident (wildland fire, prescribed fire, HazMat, SAR)
- Location by latitude/longitude or by ¼ section
- Incident size
- Elevation (at top and bottom of incident)
- Fuel type
- Sheltering (full, partial, unsheltered)
- Fire character (ground fire, crowning, spotting, etc.)

Weather observations need to include:

- Location on the fire
- Elevation of observation
- Aspect of observation
- Time of observation
- Wind direction
- Wind speed
- Dry bulb
- Wet bulb
- RH
- Dew point
- Sky Conditions (cloud types, dust devils, precipitation, etc.)

BURN INDEX (BI) – OTHER REFERENCES — WHITE PAGES

- Reflects the changes in fine fuel moisture content and wind speed and is highly variable day to day. The BI is more appropriate for short-term fire danger and can be loosely associated with flame length by dividing the BI by ___. The BI is readily affected by wind speed and fine fuel moisture.

  10

WEATHER WATCH/WEATHER WARNING– OTHER REFERENCES — WHITE PAGES

➢ Weather Watch/Weather Warning

✓ A **Watch** is used when the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location, and/or timing is still uncertain.

✓ A **Warning** is issued when a hazardous weather or hydrologic event is occurring, is imminent, or has a very high probability of occurring. A warning is used for conditions posing a threat to life or property.

WIND SPEED RANGES– OTHER REFERENCES — WHITE PAGES

Wind Speed Ranges

Foehn	40 to 60 mi/hr. common; up to 90 mi/hr. reported at 20 ft.
Land breeze	2 to 3 hours after sunset, 3 to 5 mi/hr. at 20 ft.
Sea breeze	10 to 15 mi/hr. at 20 ft.
Up-valley wind	10 to 15 mi/hr., early afternoon and evening at 20 ft.
Upslope winds	as high as 4 to 8 mi/hr. at midflame height
Downslope winds	3 to 6 mi/hr. at midflame height

FIRE BEHAVIOR HAULING CHART– OTHER REFERENCES — WHITE PAGES

Tactical Interpretations from Flame Length

Flame Length	**Interpretations**
Less than 4 feet	Fires can generally be attacked at the head or flanks by firefighters using hand tools. Handline should hold fire.
4 to 8 feet	Fires are too intense for direct attack on the head with hand tools. Handline cannot be relied on to hold the fire. Dozers, tractor-plows, engines and retardant drops can be effective.
8 to 11 feet	Fire may present serious control problems: torching, crowning, and spotting. Control efforts at the head will probably be ineffective.
Over 11 feet	Crowning, spotting, and major fire runs are probable. Control efforts at the head of the fire are ineffective.

STRATEGY – DIRECT ATTACK– OTHER REFERENCES WHITE PAGES

Strategy –Direct Attack

Advantages:
- Minimal area is burned; no additional area is intentionally burned.
- Safest place to work; firefighters can usually escape into the burned area.
- The uncertainties of firing operations can be reduced/eliminated.

Disadvantages:
- Firefighters can be hampered by heat, smoke and flames.
- Control lines can be very long and irregular.
- Burning material can easily spread across mid-slope lines.
- May not be able to use natural or existing barriers.
- More mop up and patrol is usually required.

Strategy – Indirect Attack

Advantages
- Control lines can be located using favorable topography.
- Natural or existing barriers can be used.
- Firefighters may not have to work in smoke and heat.
- Control lines can be constructed in lighter fuels.
- There may be less danger of slopovers.

Disadvantages
- More area will be burned.
- Must be able to trade time and space for line to be constructed and fired.
- Firefighters may be in more danger because they are distant from the fire and have unburned fuels between them and the fire.
- There may be some dangers related to firing operations.
- Firing operations may leave unburned islands of fuel.
- May not be able to use control line already built.

FIRELINE LOCATION– OTHER REFERENCES WHITE PAGES

Fireline Location
- ✓ The first consideration of line location is firefighter safety.
- ✓ Whenever possible, use direct attack and build line as close to fire edge as conditions safely permit.
- ✓ If indirect attack is required, locate line an adequate distance from the main fire so it can be completed, fired, and held considering the predicted rate of spread of the main fire.
- ✓ Allow adequate time to permit forces to complete the line and conduct any firing operations in advance of severe burning conditions.
- ✓ Make the line as short and straight as practical, using topography to your advantage.
- ✓ Use easiest routes, taking advantage of light fuels, without sacrificing holding capability or significant resource values.
- ✓ Use existing natural and human made barriers.
- ✓ Eliminate potential hazards from the fireline area whenever possible. If hazards must be left in the fire area, locate line a safe distance away.
- ✓ Avoid undercut and mid-slope line in steep terrain.
- ✓ Avoid sharp turns in the line.
- ✓ Encircle area where spot fires are so numerous that they are impractical to handle as individual fires, then burn out the unburned fuels.
- ✓ Lines that run along ridges should be located on the ridgetop or slightly to the lee side away from the main fire.
- ✓ Use the Downhill Checklist when considering building line from top to bottom in steep terrain.

WORKING WITH HEAVY EQUIPMENT– OTHER REFERENCES — WHITE PAGES

- When working around heavy equipment stay at least 100 feet in front and 50 feet behind the equipment. In timber, distances should be increased to 2½ times the canopy height.
- No one but the operator should ride on the equipment.
- Never approach equipment until you have eye contact with the operator, all implements have been lowered to the ground, and equipment is idled down.
- Avoid working below equipment where rolling material could jeopardize your safety.
- Night work is more dangerous due to reduced visibility. Use headlamp and/or glow sticks so the operator can see you.
- Establish visual and radio communication methods prior to engaging.
- Communicate all hazards to the operator (spot fires, firing operations, and obstacles).
- Equipment operators have difficulty seeing ground personnel; take responsibility for your safety and all those around you.

AVERAGE PERIMETER IN CHAINS– OTHER REFERENCES — WHITE PAGES

- One Chain = ___ feet

  66

REPORTING FIRE CHEMICAL INTRODUCTIONS– OTHER REFERENCES — WHITE PAGES

- Reporting is required for all introductions of wildland fire chemicals into waterways, or within __ feet of a waterway if aerially applied.

  300

➢ **Waterway** is any body of water including lakes, rivers, streams and ponds – whether or not they contain aquatic life.

FIRE CAUSE DETERMINATION CHECKLIST– OTHER REFERENCES — WHITE PAGES

Fire Cause Determination Checklist

- Take essential investigation materials to the incident.
- Make notes of all your actions and findings:
  - -Time fire was reported.
  - -Name and identification of reporting party.
  - -En route observations (people and vehicles).
  - -Name and identification of persons or vehicles in vicinity of fire origin.
  - -Record the weather.
- Locate and protect fire origin.
- Search fire origin area for physical evidence of fire cause.
- Protect evidence. Do not remove unless necessary to prevent destruction.
- Make sketches of origin area with measurements of relative locations of all evidence.
- Take photographs from all angles, and close-up views of fire origin area and evidence.
- Turn over all notes, information, and physical evidence to the responsible law enforcement representative, or make your notes part of the official fire record

BRIEFING CHECKLIST– OTHER REFERENCES — WHITE PAGES

Situation

□ Fire name, location, map orientation, other incidents in area
□ Terrain influences
□ Fuel type and conditions
□ Fire weather (previous, current, and expected)
□ Winds, RH, temperature, etc.
□ Fire behavior (previous, current, and expected) Time of day, alignment of slope and wind, etc.

Mission/Execution

□ Command
Incident Commander/immediate supervisor

□ Leader's intent
Overall objectives/strategy

□ Specific tactical assignments

□ Contingency plans

□ Medevac plan
Personnel, equipment, transport options, contingency plans

Communications

□ Communication plan
Tactical, command, air-to-ground frequencies Cell phone numbers

Service/Support

□ Other resources
Working adjacent and those available to order
Aviation operations

□ Logistics
Transportation
Supplies and equipment

Risk Management

□ Identify known hazards and risks

□ Identify control measures to mitigate hazards/reduce risk

□ Identify trigger points for reevaluating operations

STANDARD FIREFIGHTING ORDERS

STANDARD FIREFIGHTING ORDERS

1. Keep informed on fire weather conditions and forecasts.
2. Know what your fire is doing at all times.
3. Base all actions on current and expected behavior of the fire.
4. Identify escape routes and safety zones, and make them known.
5. Post lookouts when there is possible danger.
6. Be alert. Keep calm. Think clearly. Act decisively.
7. Maintain prompt communications with your forces, your supervisor, and adjoining forces.
8. Give clear instructions and be sure they are understood.
9. Maintain control of your forces at all times.
10. Fight fire aggressively, having provided for safety first.

WATCH OUT SITUATIONS

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 or supervisor.
8. Constructing line without safe anchor point.
9. Building fireline downhill with fire below.
10. Attempting frontal assault on fire.
11. Unburned fuel between you and fire.
12. Cannot see main fire; not in contact with someone who can.
13. On a hillside where rolling material can ignite fuel below.
14. Weather becoming 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 fireline.