

# Ten Standard Fire Orders

- Fire Orders
  - Fundamental directives that all wildland firefighters, from the IC to the EMTF/EMPF, should base their decisions on to fight fires aggressively and provide for safety.
  - Developed in 1957 by the USFS to study ways to prevent firefighter injuries and fatalities such as those resulting from the 1956 Inaja Fire
  - A review of firefighter fatality fires and near misses from 1937 through 1956

# Ten Standard Fire Orders

- Configured in 1970's to form the acronym FIRE ORDERS
- Re-configured into logical hazard control system in 2003
  - Fire Behavior – 3 orders
  - Fireline Safety – 3 orders
  - Organizational Control – 3 orders
  - If the first 9 orders are considered – last order; “Fight fire aggressively while providing for safety”

# Ten Standard Fire Orders

- The importance of the fire orders cannot be overstated. Firefighters can find the fire orders listed:
  - Front cover of the FIRESCOPE ICS 420-1 Field Operations Guide (FOG)
  - On the back cover of the Incident response Pocket Guide (IRPG 2014)

# Ten Standard Fire 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 insure they are understood.
9. Maintain control of you forces at all times.
10. Fight fire aggressively, having provided for safety first.

# 18 Watch Out Situations

- Developed shortly after the Ten Standard Fire Orders and are more specific and cautionary than the fire orders
- Describe situations that shout “Watch Out” to firefighters and expand on the Ten Standard Fire Orders
- The 18 Watch Out Situations are as important for the FEMT/FEMP to know as the fire orders and can be found in the back cover of both the FOG and IRPG 2014

# 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 crewmember/supervisors.
8. Constructing line without a 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.

# Downhill Line Construction

- Provide guidelines for constructing downhill or indirect line in steep terrain or fast burning fuels
- The Downhill Indirect Line Construction Guidelines can be found in the IRPG 2014 page 9

# Common Denominators of Fire Behavior on Tragedy Fires

- Developed in the mid 70's and identified four common denominators of fire behavior that caused fatalities and near-misses on wildland fires
- The Common Denominators of Fire Behavior on Tragedy Fires can be found in IRPG 2014 page 5



# Lookouts, Communications, Escape Routes & Safety Zones LCES

- A simple approach to fireline safety and focuses on the essential elements of the Ten Standard Fire Orders.
- It is NOT intended to replace the Fire Orders only to compliment them
- May be found in the 2014 IRPG on page 7<sup>9</sup>

# Lookout

- A qualified individual trained in observing the wildland fire environment and recognizing behavior changes
- Must be in a location to be able to observe the firefighters working while watching what the fire is doing
- Must have situational awareness by focusing only on the Lookout responsibilities

# Communications

- Constant communications must be maintained through all levels and responsibilities of the assignment
- All pertinent info such as action plans, status reports, safety concerns, weather or fire behavior concerns must be communicated between subordinates and supervisors
- Communication and discipline must be maintained at all times.

# Escape Routes

- Identified and made known to all personnel
- Must be clear and not overly extended to allow quick, easy movement without the need to run great distances
- Alternate escape routes should be identified in the event an advancing fire cuts off main routes.

# Safety Zones

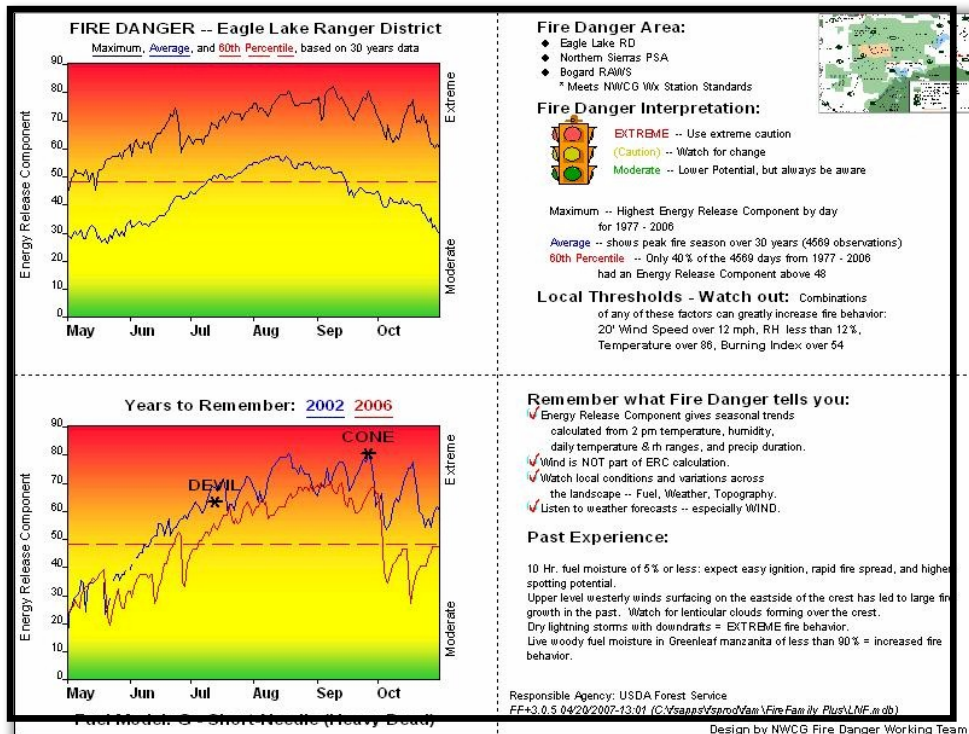
- A preplanned area of sufficient size and suitable location where firefighters can egress to in the event of an advancing fire and remain without the need to use fire shelters.
- Should be located where firefighters can realistically move to quickly and not be hindered by obstacles or great distances.
- May need to identify new safety zones as they advance along the fireline.

# Temporary Refuge Area (TRA)

- A preplanned area where firefighters can immediately take temporary refuge or relief without using a fire shelter in the event emergency egress to a safety zone is compromised.
- A TRA is not a substitute for a safety zone.

# Fire Danger Pocket Card

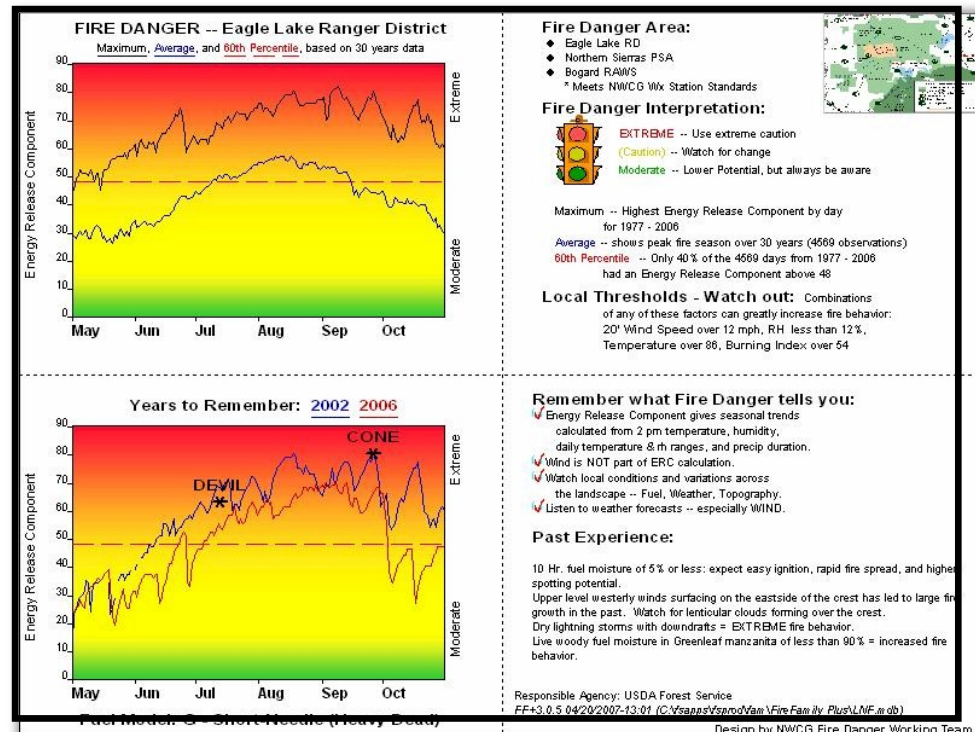
- Fire Danger Pocket Cards



- May be available at the incident
- Great information when assigned to areas where you have limited local knowledge

# Fire Danger Pocket Card

- Why are Pocket Cards important?





# Fireline Hazards

- IAP – Safety Message
- Firing Operations
- Snags & Tree felling Operations
- Fireline Explosives
- Dozers
- Aircraft
- Power Lines
- Lions, Tigers and Bears...

# Vehicle Safety

- Travel
  - Driving limitations
- Vehicle Placement
- “Arrive Alive”

# Personal Safety

- Full use of PPE' s
- Follow your  
Departments  
standard for  
personal protective  
gear

# Personal Safety

- **FITNESS**

- It is up to **YOU** to be ready
- Be prepared
- EMTF/EMPF assignments may involve hiking the fireline
- Exercise and hike with fireline pack prior to going available for assignments
- You are expected to have an arduous rating to be available for deployment
  - US Forrest Service Pack Test – roughly 45 lbs pack / 3 miles / under 45 minutes
  - 12 METs (metabolic equivalents) during fitness testing

# Personal Safety

- **ACCLIMATIZATION**

- It takes 5 to 10 days of heat exposure to fully acclimate to a climate
- Gradual increases in work/exercise duration in hot conditions
- Fluid replacement
- Adequate rest
- Let your body “break in” before your first assignment.

# Personal Safety

- **HYDRATION**

- Before – During – After
- While working at least 1 quart per hour
- Do not rely on feeling of thirst
- Utilize water and sport drinks together
- Limit caffeine and alcohol - diuretic effect
- Re-hydrate after work shift
- And don't forget to eat, even if your not hungry! You need the nutrients

# Personal Safety

- Fatigue and Rehab
- Fatigue Management policies
- 2:1 Work to Rest Ratio
- Multi-day assignments

# Camuesa Fire

- Heat Stress and the Fireline EMT Position
- Camuesa Fire, Firefighter Fatality
  - August 27, 1999
  - 28 year old Male
  - Fireline EMT
  - Heat Stroke
- Review Case Study: Camuesa Fire



# Camuesa Fire

- August 27, 1999
- Stephen Joseph Masto - 28 years old
- Firefighter, Santa Barbara Fire Department
- FF Masto was working as a Fireline EMT at a wildland fire, roaming among other firefighters providing first aid to anyone who became injured.
- He was working a 0600 to 1800 hour shift.
- FF Masto was equipped with a portable radio and carried a canteen. FF Masto was wearing wildland fire gear.
- FF Masto did not return to camp at the end of his shift. A search was initiated and he was found dead approximately 12 hours later in steep terrain.
- The cause of death was determined to be heat stroke. There was no evidence of trauma or other medical conditions that contributed to his death.

# Personal Safety – Mental Preplan

- You are about to be over run by fire!
  - Do you have a safety zone?
  - Do you have an escape route?
  - Did you know the established trigger points?
  - Do you know your location at all times?
- Fireline Risk Management Process
  - LCES
  - FIRE ORDERS
  - Watch Out Situations
  - Be “Heads Up Out There”
  - You have the RIGHT to receive a SAFETY BRIEFING prior to initiating your work assignment.

# Helicopter Safety

IRPG Blue Pages

# Aviation Orange Card

(Must be reviewed before every flight)

## Five Steps To A Safe Flight

1. Pilot/Aircraft Date Card – Approved & Current
2. Flight Plan/Flight Following Initiated
3. PPE in Use When Required
4. Pilot Briefed on Mission & Flight Hazards
5. Crew & Passenger Briefing to Include:
  - Aircraft Hazards
  - Fire Extinguisher
  - Seat Belt & Harness
  - Fuel & Electrical Shut-Off
  - ELT & Survival Kit
  - Oxygen Equipment
  - First Aid Kit
  - Emergency Egress
  - Gear & Cargo Security
  - Smoking

(Not Under Seats)

# Safety Briefing

- Helicopter personnel will provide detailed briefings on helicopter safety procedures to all personnel prior to loading
  - Have all PPE Equipment on including:
    - Helmet with chin strap
    - Ear plugs
    - Safety glasses/goggles
    - Gloves
    - Know your total weight with equipment

# Approaching Helicopters

- Always approach or leave from front or from side near front, in full view of pilot
- Stay away from tail rotors at all times
  - Ensure that others do likewise



# Safety Around Helicopters

Rotors can drop 4' feet

Approach from  
Pilots Side

Pitot Tubes –  
Eye Hazard/Hot

Don't go past  
This point

# Approach at a 45° Angle





# Approach at a 45° Angle



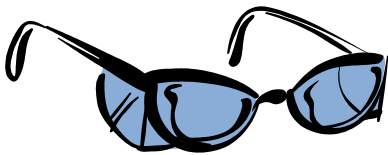
# Never Approach Downhill

- Never approach or leave helicopter up slope from helicopter when rotors are turning



# Incoming Copters

- Do not watch landings, takeoffs, or hovering helicopters unless equipped with eye protection



# Lots of Rotor Wash



# Seatbelts

- When in the Helicopter keep safety harness fastened at all times
- Release belt when directed to by crewmember
- Re-buckle belt behind you when exiting

# Keep your Head low

- When approaching or leaving the helicopter, stoop-walk immediately away to front or side until at least 50 feet away from the rotors



# Tools and Equipment

- Carry all tools horizontally at your side when around helicopters
- Secure all equipment in helicopter

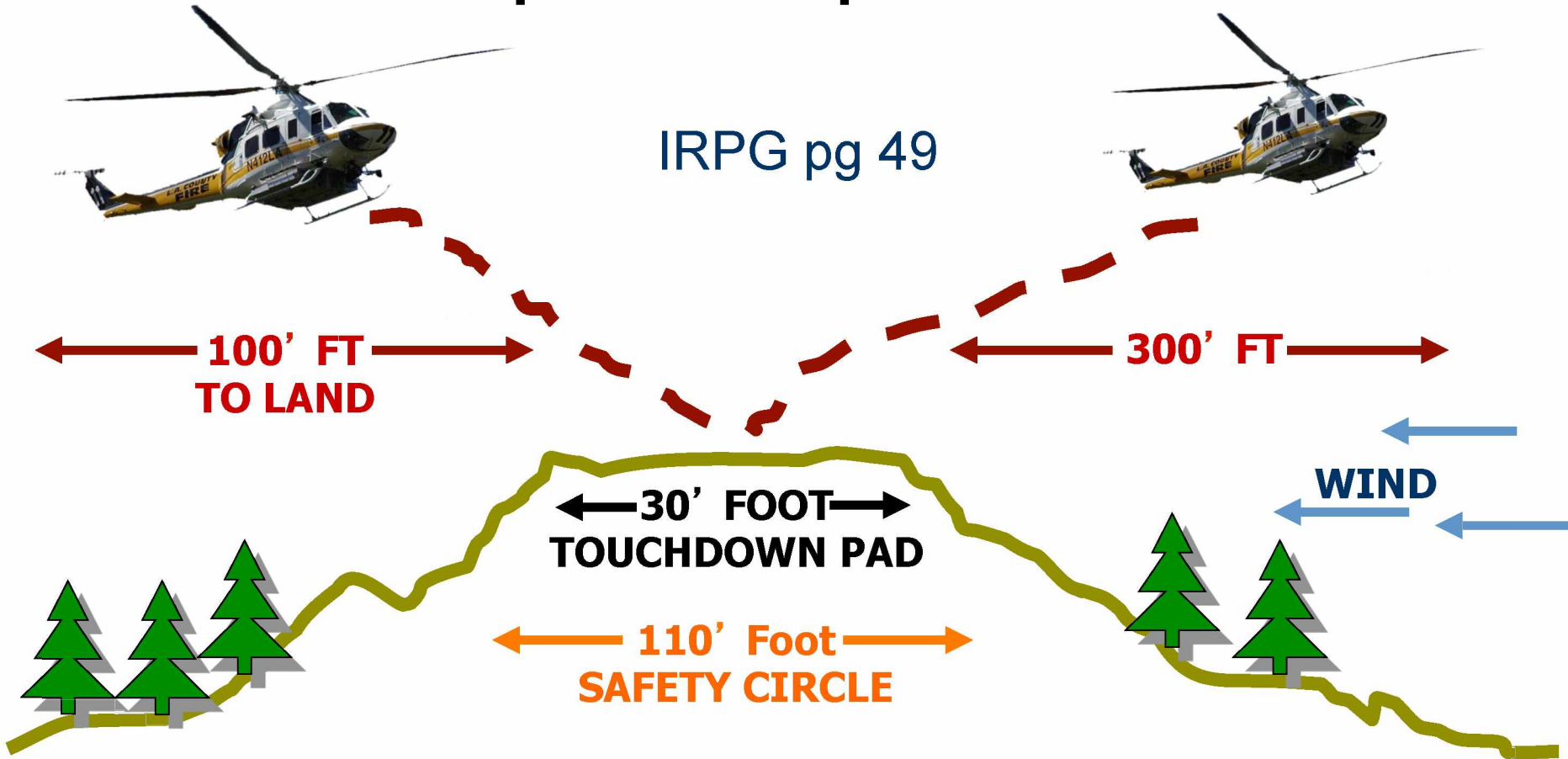


# No Smoking

- Do not smoke within 50 feet of helicopter, fuel storage, or fueling equipment



# Helispot Requirements



HELICOPTER TYPE	SAFETY CIRCLE	TOUCHDOWN PAD
III AND IV	75'	15' X 15'
II	90'	20' X 90'
I	110'	30' X 90'

# Good Clearance around Helispot





**Clear To Start Engine**



**Take-off**  
Right hand behind back, left hand pointing up.



**Hold-Hover**  
Place arms over head with clenched fists.



**Move Upward**  
Arms extended, sweeping up.



**Move Downward**  
Arms extended, palms down, arms sweeping down.



**Move Right**  
Left arm horizontal, right arm sweeps upward to position over head.



**Move Left**  
Right arm horizontal, left arm sweeps upward to position over head.



**Move Forward**  
Combination of arm and hand movement in a collecting motion pulling toward body.



**Move Backward**  
Hands above arm, palms out using a shoving motion.



**Land**  
Arms crossed in front of body and pointing downward with back to wind.



**Shut-off Engine**  
Slash across throat.

# Helicopter Hand Signals

IRPG pg 53

# Watch out for Water Drops



# Think about Vortex' s! (Prop Wash)



# Is this Safe?



# How about This?

