

*2007 Fireline Safety Refresher Training  
Student Workbook*



*Chance Favors the Prepared Firefighter*



Mission Statement:

The intent of annual fireline safety refresher training is to focus line-going personnel on operations and decision making issues related to fireline and all-hazard incident safety. Refresher training will ensure firefighters have information regarding current initiatives, the upcoming fire season, and any policy/guidance changes. Refresher training is provided in order to recognize and mitigate risk, maintain safe practices, and to reduce accidents and near misses.

***<http://www.nifc.gov/wfstar/index.htm>***

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# *INTRODUCTION*

This year's fireline safety refresher training, *Fire Indicators – Chance Favors the Prepared Firefighter*, is intended as an alternative delivery system for annual refresher training required for all personnel participating in fire suppression or prescribed fire activities who may be subjected to assignments on the fireline. Check specific agency policy to determine if this training package meets all refresher training requirements.

## *EXPECTATIONS*

Instructors should facilitate a quality refresher that engages all students no matter their ICS qualification or experience background. This is not a plug-and-play product; student interaction is required. The core topics should be addressed in such a manner that is appropriate for the audience. Classes with a wide array of experience and qualification can be an excellent opportunity for the less experienced to be mentored and for the more experienced to rethink old habits.

**Students requiring a closed-captioned program should notify their facilitator. A closed-caption version of the product is only available in DVD format.**

## *PREREQUISITES*

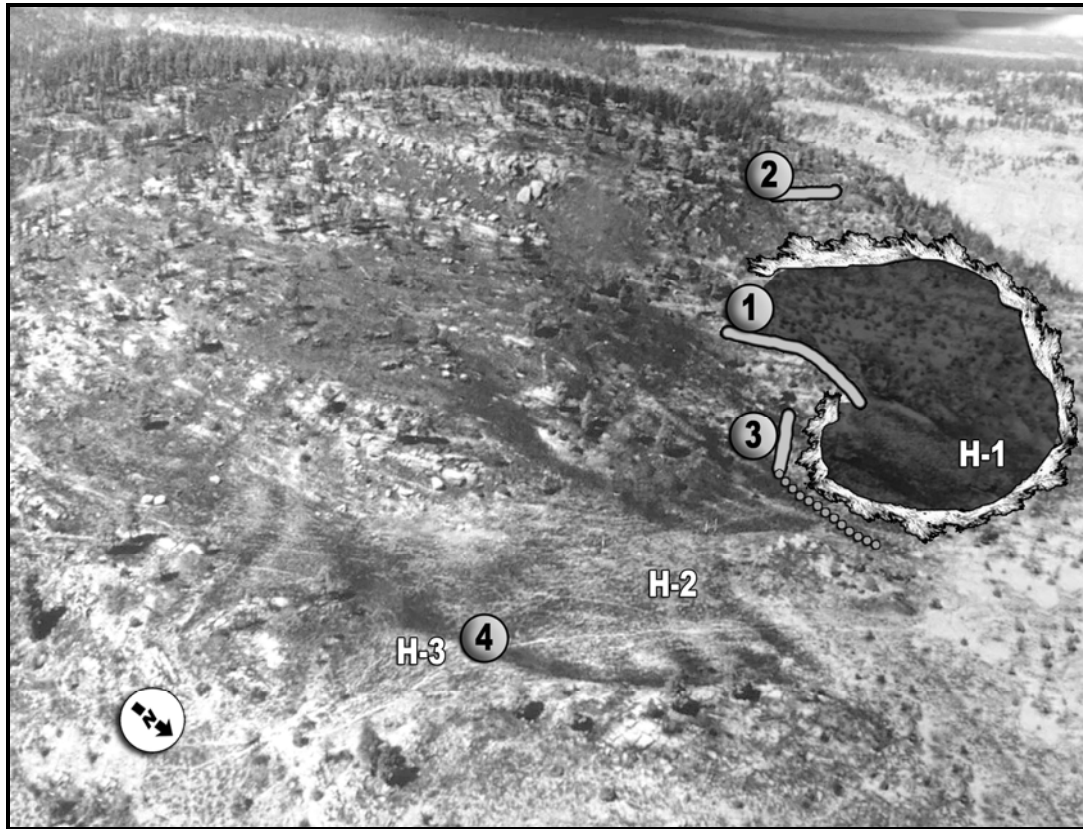
Students should have successfully completed S-130 and S-190 and have at least one season as a firefighter.

## *COURSE OBJECTIVES*

Upon completion of this training, the student will be able to understand and apply basic safety principles for wildland firefighting.

# MODULE 1 – Fire Behavior and Driving Safety

## Exercise 1 – Cart Creek Fire



### Group/Individual Task:

Read the following excerpts from the Cart Creek Investigation Report (included is information the firefighters on the ground may or may not have had), then proceed with the group discussion that follows.

### Weather Forecast:

Partly cloudy with afternoon thunderstorms; temperatures, 90 - 95° F at 5,500 feet and 80 - 85° F at 7,500 feet; RH, 15-20%; winds, SE controlled by topography, gusty in the afternoon

### Cart Creek Investigation Report Excerpts:

#### Topography

The first two-thirds of the distance from the tip of the triangle to the bluffs is relatively flat—average slope of 8 percent. Then the land tips upward gradually for the last 800 feet with a slope of 17 percent just above the fire origin and 45 percent just below the bluffs. The elevation at the top of the bluffs is 6,700 feet, and at the creek junction, 6,000 feet. Two or three shallow swales run north out of the bluffs and disappear in the flat.

### Weather and Fire Danger

The Saturday morning forecast from Salt Lake City, issued at 0930, called for partly cloudy with scattered afternoon showers and thunderstorms. Winds were forecast to be “light and variable at all levels, mostly controlled by topography. Considerable gustiness in late afternoon and near thunderstorms.” This forecast was essentially correct, but the cumulus buildups began slightly earlier than expected. Salt Lake City weather radar began tracking thunderstorm cells shortly before 1100 moving with a 20 – 25 knot (23 – 29 mph) southwest wind. Thunderstorm activity increased throughout the afternoon, resulting in a 1515 flash flood watch for southwestern Utah, but the center of activity shifted gradually south and winds aloft above central Utah swung very gradually towards the west.

In the fire area a storm passed over before noon, producing the lightning that caused the fire, but dropping most of its moisture to the north and east. The fire area itself received no more than a sprinkle, and may have stayed completely dry. By 1230 the sky had cleared and the afternoon remained clear with only scattered cumulus.

From at least noon through 1455, winds at the fire site were light (6 miles per hour or less) and out of the southeast (downslope). This sustained southeast flow at ground level is difficult to explain. Normally afternoon winds in the area are from the south. The winds aloft were southwesterly, and the combination of topography and gradient flow should have produced generally westerly, not easterly wind. Downslope winds could be expected following the thunderstorm, but for them to persist for at least 3 hours when the cells were moving at 20 miles per hour would be most unusual. If the winds came from downdrafts out of a series of cells, one would expect much more gustiness and sudden wind shifts than were evident in the early afternoon. But, whatever the cause, the fire area experienced light, steady southeast winds from noon to 1500.

The local fire danger on Saturday was officially listed as “moderate” with a burning index of 6 and a spread component of only 1. This is misleading, however, since the official fire danger rating station is 400 feet lower than the fire, on the other side of the reservoir, and received considerable moisture from the morning shower. A more representative reading would be that from the Dutch John Airport, at the same elevation as the fire and only 3.5 miles NE of the point of origin. At 1330 the airport weather was temperature – 78°F, relative humidity – 33%, fuel stick moisture – 9%, and wind – SE at 6 mph. At that time the burning index on the flat was 12 and the spread component was 3. On the upper slopes of the fire, the spread component was 5.

### **Group Discussion:**

Assume it is 1450 hours and you are with Squad 4 walking to the fireline. Run through the Risk Management Process in the IRPG, especially Step 2. Pay close attention to all fire behavior indicators not just the basic weather forecast.

Discuss the following questions in your group:

- Given all the information, what is your detailed estimate of potential fire behavior for the remainder of the burning period?
- What factors are you considering when estimating potential fire behavior?

## **RISK MANAGEMENT PROCESS**

(IRPG, page 1)

### **Step 1 Situational Awareness**

Gather Information

- |  |   |
|--|---|
| <input type="checkbox"/> Objective(s)    | <input type="checkbox"/> Previous Fire Behavior |
| <input type="checkbox"/> Communication   | <input type="checkbox"/> Weather Forecast       |
| <input type="checkbox"/> Who's in Charge | <input type="checkbox"/> Local Factors          |

Scout the Fire

### **Step 2 Hazard Assessment**

Estimate Potential Fire Behavior Hazards

- Look Up/Down/Around Indicators

Identify Tactical Hazards

- Watch Outs

What other safety hazards exist?

Consider severity vs. probability?

### **Step 3 Hazard Control**

Firefighting Orders → LCES Checklist – MANDATORY

- Anchor Point  
 Downhill Checklist (if applicable)

What other controls are necessary?

### **Step 4 Decision Point**

Are controls in place for identified hazards?

NO – Reassess situation      YES – Next question

Are selected tactics based on expected fire behavior?

NO – Reassess situation      YES – Next question

Have instructions been given and understood?

NO – Reassess situation      YES – Next question

### **Step 5 Evaluate**

Human Factors:      Low experience level?  
                                    Distracted from primary tasks?  
                                    Fatigue or stress reaction?  
                                    Hazardous attitude?

The Situation:      What is changing?  
                                    Are strategy and tactics working?

# MODULE 1 – INTRODUCTION

## Firefighting Hazards

### Exercise 2 – Cart Creek Fire

#### **Group/Individual Task:**

Read the following excerpts from the Cart Creek Investigation Report, and then proceed with the group discussion that follows.

#### **Cart Creek Investigation Report Excerpt:**

##### Fire Behavior

To recapitulate a bit, from first attack to the time of the accident, the manned section of the Cart Creek Fire was backing uphill on a 17 to 45 percent slope in sage-grass fuel. The weather forecast called for winds to be controlled by topography with considerable gustiness in late afternoon. However, the actual winds were blowing lightly but steadily downslope. Even so, parts of the fire were too hot to work directly at the edge of the flames, and line was being built 5 – 10 feet from the fire edge.

From the arrival of the first firefighters at 1235 until approximately 1430 to 1445, fire behavior remained constant and fuel controlled. Fire intensity increased proportionally to the fuel volume and flames were 6 - 18 inches high on the flat, about 2 feet high at midslope, and quite variable in the brushy patches below the bluff. Spread rate of the backing fire was controlled by fuel continuity and the amount of grass in the grass-sage-brush mix. Consequently, the fire on the flat moved eastward faster than it did on the brushier slopes.

Some time around 1440 things began to change. Martin's squad (Squad 3) had to move their line further back from the fire twice in 10 minutes because the original line "got too hot for comfort" even though there was no change in fuel or slope. The reasonable inference is that the steady southeast wind that had been blowing for the past few hours was beginning, not to shift, but to weaken. The fact that the lower helispot (H-2) was moved further east (H-3) some 15 – 25 minutes before the flames shifted is also evidence that the fire on the flat was either quite a bit to the east of the fire flank on the middle slope, or that the fire on the flat was beginning to burn more intensely, or both.

On Wednesday, July 20, the investigation team observed test fires in unburned islands within the fire area. Weather was reasonably comparable to that of Saturday the 16<sup>th</sup> although the wind was 6 miles per hour from the northwest rather than the southeast. In these fuels the difference between fire head and rear under a 6 mile per hour wind were dramatic. Flames at the head were 6 – 8 times the length of those at the rear and the flame angle at the head was less than 30 degrees from the ground surface while that of the rear was nearly 45 degrees. Spread rate differences could not be measured since no islands were large enough for fires to reach equilibrium, but theoretically, using the grass fuel model, one would expect the difference to be a factor of at least 20 -25.

At 1455 on July 16 the downslope wind gave out. It was probably replaced by a light upslope wind of 6 miles per hour or less, but this is not certain. Although many of the witnesses reported "a sudden change of wind," it developed during the interviews that none of them, with two exceptions, had felt any wind. All had inferred a wind switch by observing the change in



direction of the flames. The timing of the reports of the two eyewitnesses who felt strong winds was such that the winds could have been fire induced. Based on the test fire observations on Wednesday, a wind change from 6 miles per hour downslope to 6 miles per hour or less upslope on the 17 percent slope would, within seconds, change the flame lengths from 2 – 3 feet to 14 – 21 feet and start an exponential acceleration in rate of spread. That is what happened. The entire east flank of the fire picked up and moved southeast as a wall of flames. The lower edge of the line, being in flashier fuels and somewhat farther east to begin with advanced most rapidly, while the upper edge of the fire, being in heavier fuels and on a steeper slope moved more nearly southerly than southeasterly. Flames funneled through the heavier fuels in the swales and created an intense concentration of heat, first on the west side and later on the east side of the rocky toe over which Noel and Campbell (from Squad 4) tried to escape. Along the bluffs fire behavior was more erratic as the full sweep of the fire induced, as well as any “natural,” winds eddied against the broken bluffs. Some patches of brush burned hot and clean, some escaped completely. The pattern seemed to be random.

Although the possibility that this abrupt change in fire behavior was caused by a cumulus downdraft cannot be completely ruled out, it is very unlikely. The wind shift was not really sudden; there were signs that the downslope wind was weakening at least 15 minutes before the flames shifted direction. It is most likely that the weather forecast for winds “. . .mostly controlled by topography. Considerable gustiness in the last afternoon . . .” was simply a bit late in being realized. Fire behavior on the Cart Creek Fire can best be classified as unusual but not abnormal for the fuel, weather, and topography involved.

**Group Discussion:**

Discuss the following questions in your group:

- Was your predicted fire behavior from the previous exercise close to the fire behavior that actually transpired?
- Given the excerpt regarding fire behavior from the Cart Creek Fire Investigation Report, what do you think were the key influences that caused the dramatic change in the fire behavior that actually took place?

2006 Fatalities, Entrapments and Serious Accidents As Reported by the Safety and Health Working Team		
<u>TYPE</u>		<u>FATALITIES</u>
Entrapment and Burnover	67 Personnel—19 shelters deployed	7
Engines, Dozers, and Vehicles	20 Accidents—14 rollovers, 4 run overs, and 2 others	4
Aircraft	3 Accidents	8
Snags	1 Accident	1
Heart Attack	3 Incidences	3
Fall	1 Incidence	1

# MODULE 1 – Fire Behavior and Driver Safety

## Exercise 3 – Driving Safety (Optional Exercise)

### Group/Individual Task:

Review the following statements in class and discuss in your groups or read independently on your own.

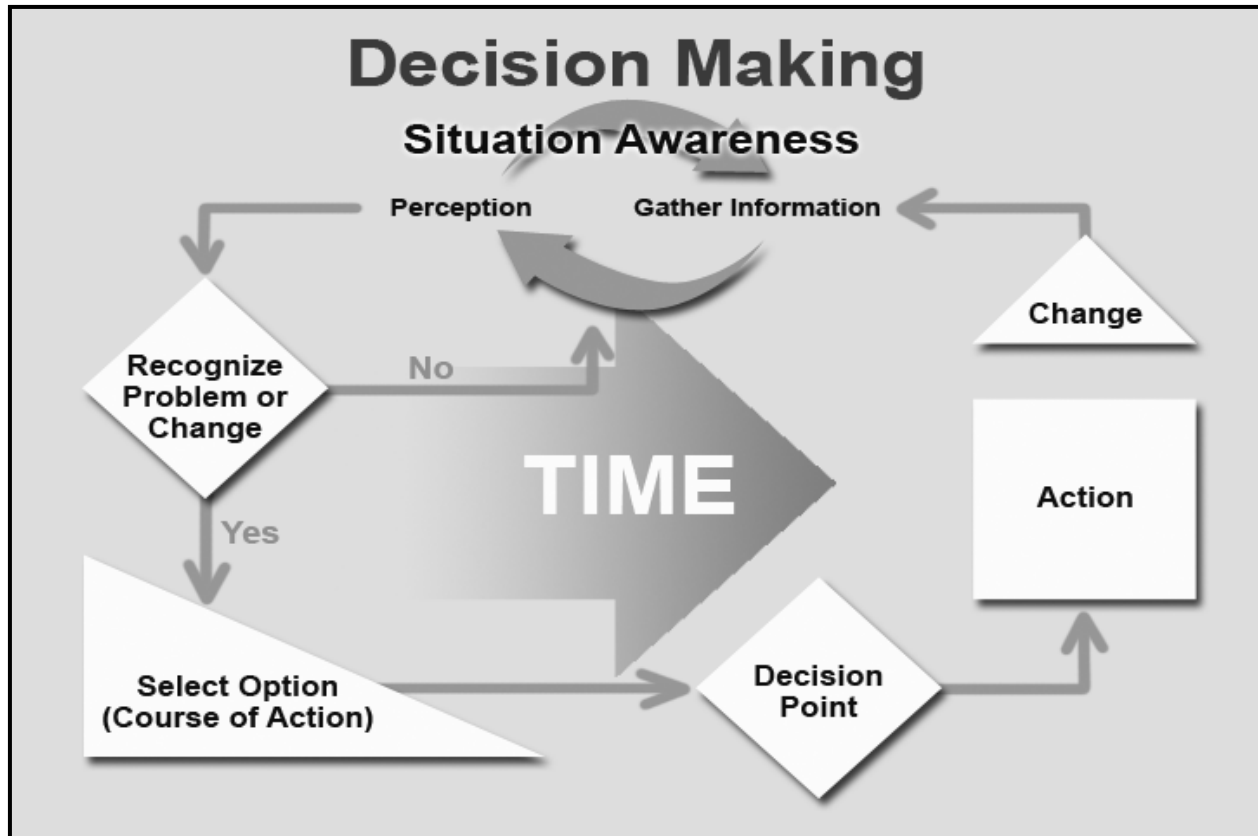
- The vehicle accidents reported in 2006 revealed, incredibly, that many firefighters were not wearing seatbelts.
- Driving is one of the most hazardous tasks we perform when assigned to fires. Vehicle operators should strive to develop proper defensive driving techniques. Take a good hard look at your driving habits. Are you training yourself to do the right things the right way? Are you using your seat belt, checking your mirrors, maintaining safe following distances, and not exceeding the capabilities of your equipment?
- Inattentiveness is a major contributing factor in motor vehicle accidents. Inattentiveness stems from fatigue, daydreaming, eating, drinking, reading, writing, talking, adjusting the radio or other telematic systems. Some techniques for maintaining your attention while driving include:
  - Drive only when you are alert and well rested. Avoid driving between 1000 hours and 0600 hours. Take 15 minute breaks every 2 hours.
  - Practice situational awareness when driving; be aware of what is happening in front, behind, and on both sides of your vehicle. Never drive when taking medications that make you drowsy.
  - Avoid using cell phones, radios, GPS units, CD players or computers while driving. Have a passenger operate them or pull off the road and park.
  - Avoid eating and drinking while driving.
  - Constantly move your vision, check mirrors and distant road conditions.
  - When talking to passengers, keep your eyes on the road. Avoid conversations of a serious, confrontational, argumentative, or technical nature.
  - Do not be in a hurry.
- Safe driving starts with a safe vehicle. Perform pre-operations inspections and maintain a routine maintenance schedule.
- Know your vehicle's operational capabilities and limitations.

# MODULE 2 – Indicator Training

## Part One: The Decision-Making Model

### Independent Exercise:

Read the information provided below and on the following page regarding the decision-making model. This information will be helpful when completing Part Two.



### Situation Awareness

The first process in the decision-making model is the Situation Awareness (SA) cycle. SA is a cycle because of its dynamic nature—constantly changing and getting updated. This cycle continues as long as you are awake.

- Perception
  - Everyone starts with an initial perception of any given situation. Just as when you came to this training, you had an initial impression—call it a size-up—about the training. Your initial impression was only a starting point.

- Between then and now, you have continuously been updating your assessment—call it your perception. You have been gathering more information and changing your perception about the situation.
- Information Gathering
  - New information potentially changes the initial perception. We gather information through observation and communication.
    - Observation** – Gathering information through the senses—what we see, smell, hear, taste, and touch all fall into this category.
    - Communication** – What people tell you, what you read, and answers to questions you ask.
      - ♦ Paying attention is one part of SA, but even more importantly knowing what to pay attention to—knowing what is important. How well do you extract the important points from your environment?

### **Recognition**

- Most decision making on the fireline entails responding to or adapting to a changing environment. Recognition is when you determine that something needs to be done and you want to impact your environment in some way.
- A variety of situations warrant action: a realization of a problem, recognition of an opportunity, a need for change in tactics, or a change in priorities.

### **Selecting a Course of Action (Option Selection)** (time wedge)

- Selecting a course of action involves understanding the factors, options, and risks associated with those options.
- You weigh the risks and select an option based mostly on your experience. In large measure, your experience and knowledge determine how many options you have and how well you evaluate them.
- When the time pressure is on, experienced decision makers have a natural advantage: they have more slides and thus more options.

### **Decision Point/Action**

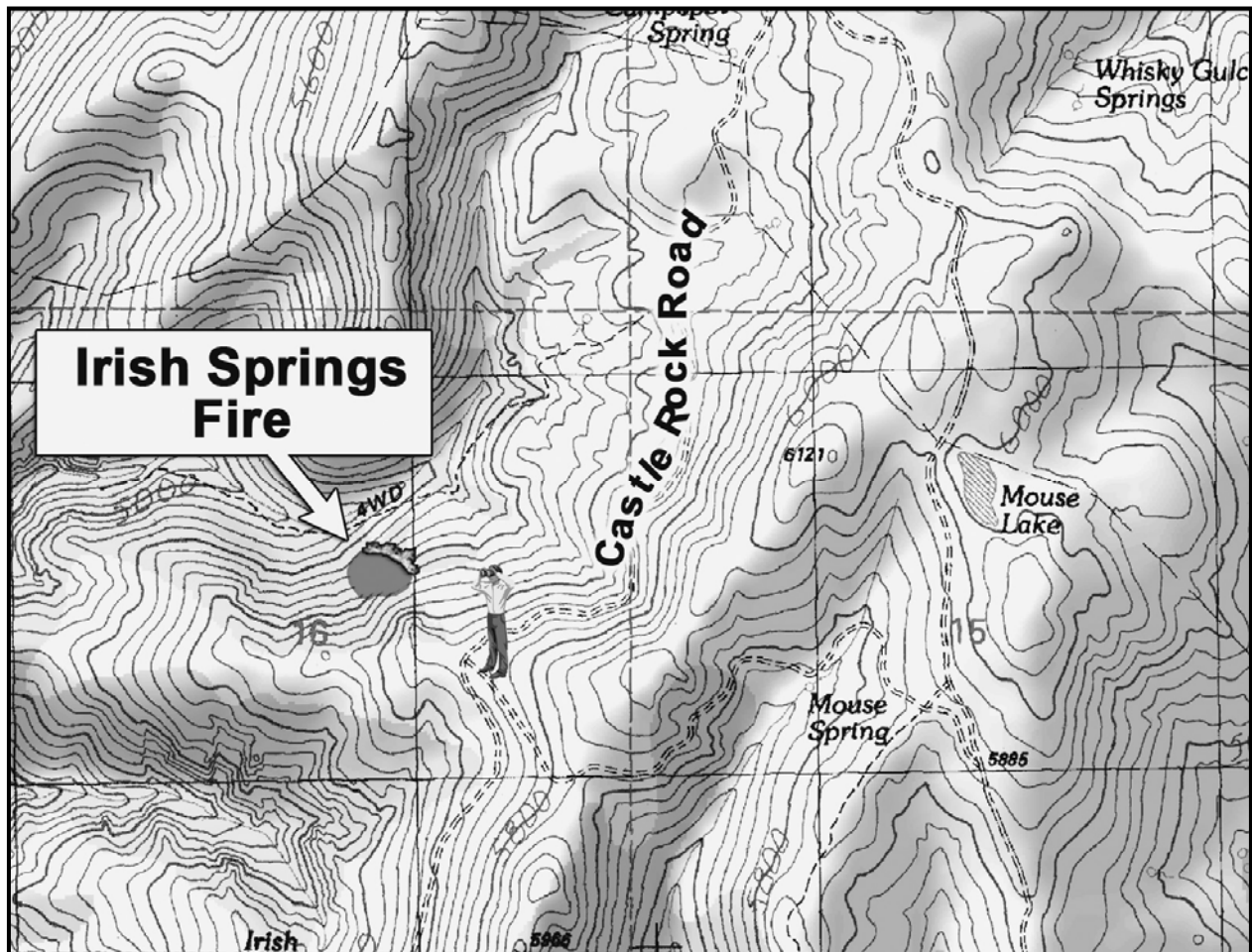
- The final part of the decision process is moving to act. Time marches on. If you decide not to act, the environment does not change.
- Sometimes you may not act on a decision because you determine that more analysis is needed. The cycle returns to SA, but with the benefit of the processing that you did up to this point.

# MODULE 2 - Fire Indicators

## Part Two: The Decision-Making Model and (Irish Springs Fire)

### Group Exercise:

- While watching the Irish Springs fire scenario, individually gather your SA. Use **page 14 of your Student Workbook to capture notes.**
- In your groups, compare your perceptions of the situation and work collectively through the decision-making model to a decision point. Select one person from your group to share the selected course of action and communicate your decision to the class in the form of instructions.



## **FIRE INDICATORS LIST**

### **Group Exercise:**

While watching the Irish Springs case study individually develop your Situation Awareness (SA), recognize and record problems or changes in the environment, and select the options that reflect the most likely outcome.

### **Situation Awareness**

What are some significant indicators relating to the development of SA?

### **Recognition of Problems or Change**

What are some problems or changes that you recognized?

### **Selecting an Option/Possible Courses of Action (time wedge)**

What are some possible courses of action?

How do they relate to the time wedge?

At this point in the Irish Springs Fire, where is the Incident Commander on the time wedge?

### **Decision Point/Action**

What is the most likely outcome and what course of action would you take? Be prepared to communicate your decision in the form of instructions to the class.

# MODULE 3 – Interagency Cooperation—Texas

## Group Discussion:

After reviewing *Common Themes from the Seriously Burned Firefighters Review*, discuss the following questions in your group:

- Should or can wildland firefighting training be more emphasized to rural fire departments? If so, how can you make this happen?
- What lessons learned in Texas can be of value to your local unit?

## COMMON THEMES FROM THE SERIOUSLY BURNED FIREFIGHTERS REVIEW

by  
Hunter Wistrand  
Texas Forest Service (TFS)

As I went around and talked with the different fire departments and firefighters who had been seriously burned over the past 12 months, there were some common themes that kept coming up that bothered me. In my 34 years of experience with wildland fire, safety has been pounded into me as the most important thing to always keep in mind, and that everything we do, we should do as safely as possible, and that no action should be taken with undue risk of injury or fatality. This is not to say that I have not done some very stupid things in the past 34 years and that, looking back, I would certainly do them differently today if given the chance.

There were seven firefighters who sustained third degree burns in five different incidents while doing suppression work on wildland fires this past 12 months. I visited with five of these individuals and all but one of their chiefs. Several common themes kept coming up that I would like to address and, hopefully, we can take forward to help prevent some accidents in the future. I am not foolish enough to believe that we can prevent them all, but even if we prevent a few in the coming years, it will be well worth our efforts. Many of the individuals I visited with were still wearing bandages, and all were scarred for life. My intent with this paper is to prevent firefighters from having to endure the pain and suffering of these seven.

In each visit, I asked the participants what they would do differently to prevent this from happening if they had to do it all again. Two of the departments told me that they would not change a thing and that these kinds of things just happen in our line of work. This kind of thinking scares me. These folks are still going to rehab for their injuries and they say they would not change a thing if they had to do it again.

As always, I can't leave these kinds of things alone so I pressed for more answers. These individuals went on to tell me that they are trained to protect life and property and thus were willing to put themselves at risk in order to accomplish these goals. There were no structures or lives at risk in either of these fires. Grass fields and brush were the only things being protected. This is a mindset I saw in my visits with all of the departments. I believe this mindset is a cultural thing with fire departments in Texas at least and maybe in other states. I know from my

experience with other states that this is not universal thinking by all volunteer fire departments in the United States.

One department told me that they would make one change if they had to do it again. They would not put a rookie on the back of the truck by him or herself. They would always have a more experienced firefighter with them on the back of the truck.

Another department first stated that they would have left sooner, but that they are trained to stay and fight the fire, so they were not sure that they could actually have brought themselves to leave any sooner, given the same circumstances.

### ***COMMON THEMES:***

#### **1. ANCHOR AND FLANK**

If there is any one thing that we in the wildland fire community tend to use that I think has saved the most lives, it is anchoring a fire and building good line around the flanks until you get the head of the fire pinched off. By using this operational tactic the firefighters always have black (burned areas) to use as a safety zone, or they bring fire with them, thus having black nearby to use as a safety zone. I again questioned the departments about this tactic. I had one of those light bulb moments driving home late one night and was thinking about what I was being told. I did not understand what they were trying to tell me until I had visited with about three departments.

*The anchor and flank tactic does not work for VFDs!!!!!!!!!!!!!!!!!!!!* [VFD refers to Volunteer Fire Departments]

In order for this tactic to work well, one has to either go along the fire's edge and build line or build line indirect (away from the fire's edge) and burn out. VFDs in Texas cannot or will not do this. VFDs standard operating procedure is to use an engine and always work on the engine or in very close proximity to the engine (the length of the red line hose). In most of Texas there are brush fields, rocks, or other topography reasons that make it impossible for fire trucks to follow the fire's edge. And most firefighters with VFDs are not trained well enough to know how to build indirect firelines and burn off as they progress with line building.

*Thus, it is my conclusion that this operational tactic, that I think is the cornerstone of safe operations in the wildland fire community, will not work for VFDs.*

From my discussion with these departments, it appears to me that the standard operating procedure for VFDs on wildland fire is to attack the fire from wherever they can drive to it. If there are portions of the fire to which they cannot drive, they just wait until the fire progresses until they can. It is my opinion that this tactic is what caused these seven firefighters to be injured.

By using the tactics of attacking fires only where they can be driven to or by waiting for a fire to get to you, firefighters are left in situations where they can be surrounded by fire or left attacking the heads of fires (which is always risk). When you wait on a fire to get to you, you never know



how fast it will come, and often there is not fireline to hold it once it gets to you. Thus, the firefighter is in a defensive rather than offensive mode of operation.

So what is the solution? I know that we (the TFS) can do a better job of identifying the problem to the VFDs and making them aware of the risks they are putting themselves in when they use the “Driving Attack” operational tactic.

## 2. UNBURNED FUEL BETWEEN THE FIREFIGHTER AND THE FIRE

In all of the burn injuries but two, there was unburned fuel between the firefighter and the main fire. Unburned fuel burning at a rapid rate is what caused the firefighters to sustain their injuries. In all of these cases, the firefighters stated that they had never seen fires spread so fast. The wind conditions, humidity, and fuel moistures were all right for creating fast-spreading fires on all of these incidents, and the firefighters involved did not recognize the extreme conditions.

## 3. RIDING ON THE OUTSIDE OF APPARATUS AND COMMUNICATIONS

Four of the seven serious burn incidents occurred when the firefighters were riding on the outside of the engines. Riding on the outside of the engines spraying water is a common occurrence in this “Driving Attack” operational tactic. All four were wearing either wildland firefighter protective clothing or bunker gear. The burns were sustained both where the protective clothing was in contact with the skin and the heat penetrated the cloth, or where the skin was not covered (wrist, hands, face, ears, etc.).

Three of the four did not have communications with the driver of the apparatus and thought that direct communications may have helped them avoid being burned. It is my opinion that direct communications by some means should be provided between the driver and the firefighter on the outside of the apparatus.

## 4. WILDLAND FIRE TRAINING

The majority of the departments I visited stated that most of the department’s fire runs were a result of wildland fire calls, yet when I asked about their training for their personnel, they immediately talked about their training at the Texas Engineering Extension Service’s Municipal Fire School at the Brayton Fire Field in College Station and showed pictures of them in training. I believe that their fire training consists mainly of structure and hazardous material training with a little wildland fire training sprinkled in, yet most of the fires they respond to are wildland fires. Is it time to ask the question, “If more than 50% of your fire calls are wildland fire, shouldn’t more than 50% of your fire training be in wildland fire suppression?” But before we ask this question, we must be ready to respond to their request for assistance in the training field.

## ***CONCLUSION***

My recommendations are as follows:

1. We teach the dangers of having unburned fuel between the firefighter and the fire's edge.
2. We teach that the majority of volunteer firefighter fatalities are caused by heart attacks and vehicle accidents. While heart attacks may not be prevented in our activities on any given day, vehicle accidents are certainly preventable by defensive driving and knowing the capabilities of the vehicle we are operating.
3. We teach to always attack from the black if you are not going to anchor and flank. Give away or sell T-shirts that are black in color with safety yellow lettering "Attack from the Black" to our comrades in the VFDs.
4. We teach VFDs the importance of fire weather information. VFDs need to teach their dispatch offices how to obtain current weather information that will be of assistance to them and have this information broadcast to the responding units going to a wildland fire.
5. We teach the importance of good communications between the driver and firefighters riding on the outside of an apparatus.
6. We teach that no acre of vegetation or any house is worth anyone in our business getting injured or dying.
7. We teach that if you get burned or, worse yet, killed on a wildland fire, you have probably just ignored several warning signs that something bad was getting ready to happen and that several standard safety procedures in wildland fire suppression were being violated.

## **Hunter Wistrand Biography**

Hunter Wistrand retired from the USDA – Forest Service in 2001 after 29 years of service. His career included positions in the states of TX, AZ, NM, and FL. He has served on several Type 1 and 2 Southern and Southwest geographical area Incident Management Teams since 1980.

Wistrand currently works for the Texas Forest Service on a part-time basis and teaches fire training courses across the nation on a contractual basis.

## **"Attack from the Black" DVD Ordering Information**

To purchase a copy of the Texas Forest Service DVD "Attack from the Black" contact Dave Hannemann at [dhannemann@tfs.tamu.edu](mailto:dhannemann@tfs.tamu.edu).

**Items to Cover in the Pre-Season, Pre-Planning Meeting**  
(Non-inclusive list)

**Operating Procedures:**

- Protection Organization – coordination centers and summary of agencies protection limitations and capabilities
- Fire Notification and Action – prompt notification of taking suppression action
- Dispatch Operating Plan – each agency develops their own
- Aircraft Policies – use and availability
- WFSA – must be completed immediately if declared escape fire
- Command and Organization – IC determination and use
- Communications – list of frequencies, contacts
- Media and Public Relations – each agency separate or unified press releases
- Security and Access – incorporating of local law enforcement
- Emergency Medical Services – EMT, ambulance
- Qualifications/Minimum Recommendation
- Protective Equipment and Physical Fitness
- Cooperation of Resources – training, prevention efforts, fire investigation
- Mutual Aid Agreements – with or without reimbursement
- EERA – Emergency Equipment Rental Agreement process

**Billing Amounts and Procedures:**

- Reciprocal fire protection zones
- Severity requests
- Fire preparedness
- Emergency fire suppression
- Administrative surcharges

**Special Management Considerations:**

- Repair of Suppression Damage – responsibility of each agency
- Waivers – claims for loss, damage, injury against other agency

# MODULE 4 – Communications and Extreme Fire Behavior

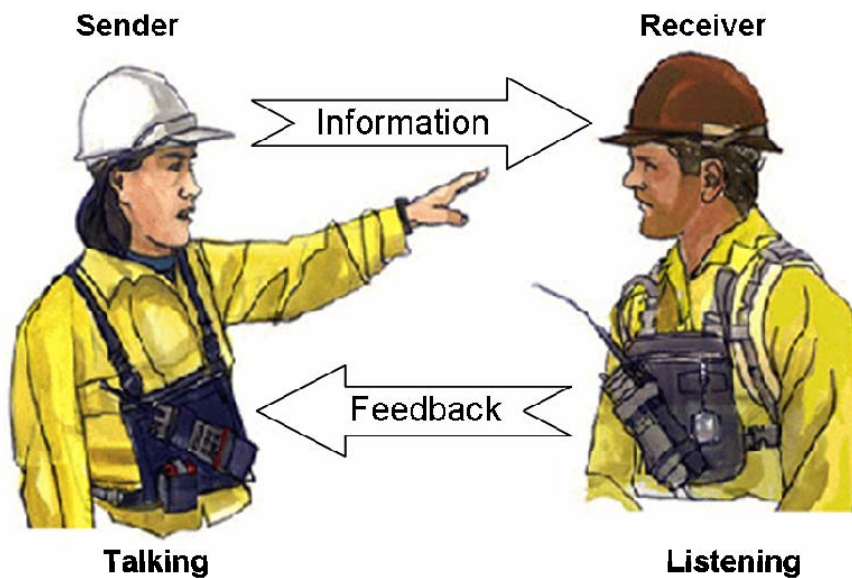
## Part One: Communications

### Communication

Communication is the exchange of information and ideas. Effective communication occurs when others understand precisely what you are trying to tell them, and you understand exactly what they are trying to tell you.

### Communication Model

Communication requires a sender and a receiver. In a conversation, the sender is the speaker and the receiver is the listener. Communication cannot occur if both sides are talking or listening at the same time.



The message that you communicate is not just the words you speak. The packaging of your communication—your tone, voice, body language, and gestures all combine to communicate your message to the listener.

For communication to be effective, the role of the sender and receiver must switch frequently. After receiving a message, the listener acknowledges the message by providing feedback. Feedback can be sent verbally or non-verbally.

**(Text from L-380 and reprinted with permission from Mission-Centered Solutions)**

## COMMUNICATION RESPONSIBILITIES

(IRPG, page ix)

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

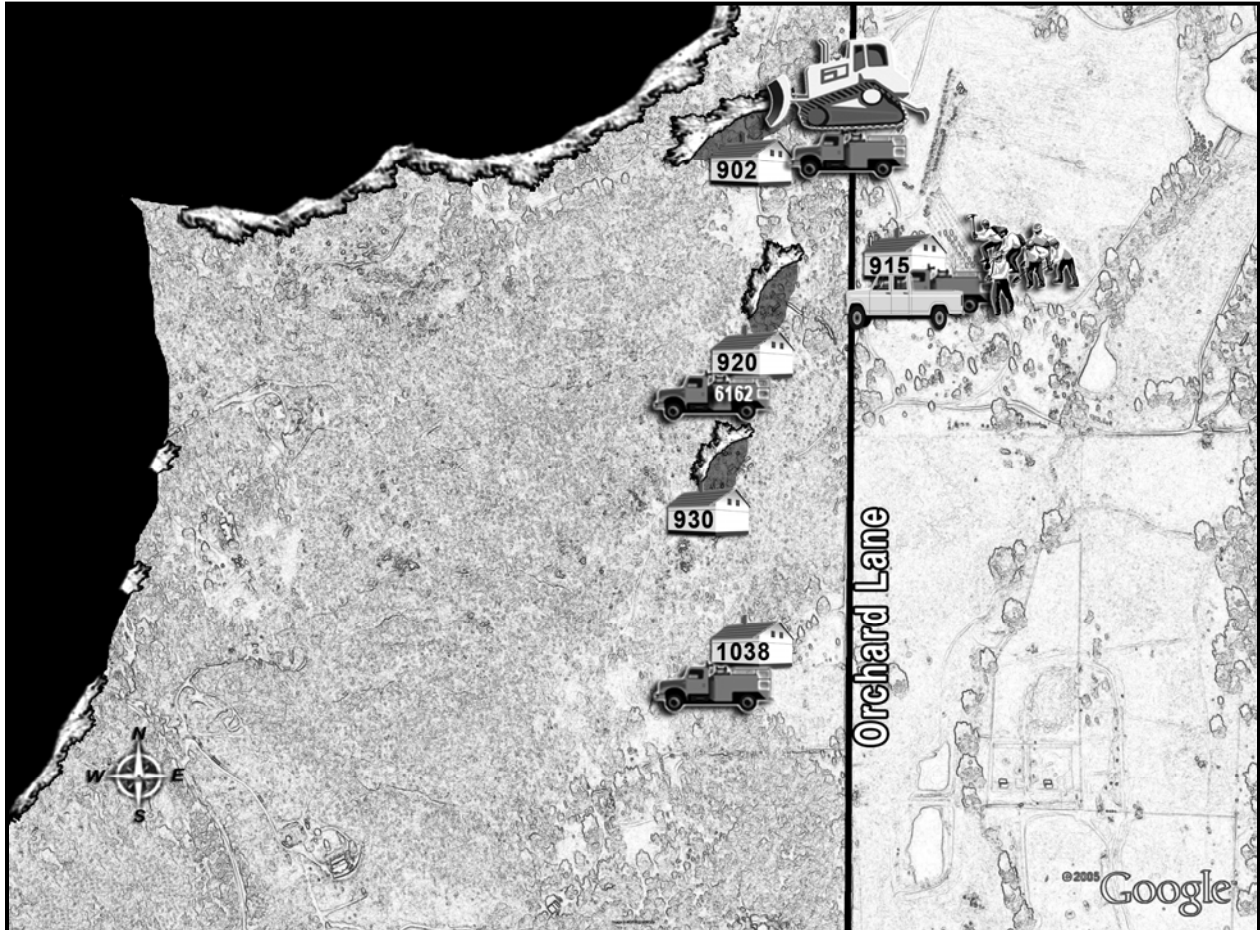
In addition, all leaders of firefighters have the responsibility to provide complete briefings that include a clearly stated "Leaders Intent."

- Task = What is to be done
- Purpose = Why it is to be done
- End State = How it should look when done

<http://www.fireradios.net/>

# MODULE 4 - Communications and Extreme Fire Behavior

## Part Two: Extreme Fire Behavior—The Cedar Fire



### **Group Exercise:**

- Assume you are a crew member on Engine 6162. Given the scenario and the information below, what is your assessment of the current situation? Do you have any concerns you wish to voice to your Captain or do you agree with the plan to continue burning out and defending the structure?

### **Additional Information to Consider:**

- There was a fire weather watch issued by the San Diego National Weather Service at 0930 hours on October 29, 2003, that did not reach the crew of Engine 6162.
- IAP weather forecast for October 29, 2003: Temperature, upper 70s to 80s; RH, 8-20%; ridge top winds, 5-15 mph in the morning becoming southwest to west 15-25 mph in the afternoon; fire danger, very high to extreme.

- During the 36 months prior to the incident, the area received between 50-70 percent of normal precipitation.
  - The elevation of 920 Orchard Lane is 200 feet higher than the ridge to the west and 400 feet above the bottom of the San Diego River drainage.
  - The Task Force Leader had trouble reaching the Division Supervisor on the assigned frequencies.
  - The Engine 6162 crew had only a mobile radio pack in the engine; the Engine Captain carried a handheld radio.
  - The residents of 920 Orchard Lane were not home.
  - The IAP documented the span of control for Division I as 27:1.
  - The Engine 6162 crew was not aware of the firing operations conducted by the CDF Captain and Engineer at 930 Orchard Lane.
  - The strip burning operation below the driveway created approximately 140 feet of black line.
  - The Engine 6162 crew originally identified the meadow (east of Orchard Lane—about 200 yards away and directly across from the bottom of the driveway) as a safety zone prior to being assigned to 920 Orchard Lane.
  - Once at 920 Orchard Lane, Engine 6162’s Captain identified the house as a refuge.
  - Resources assigned to Orchard Lane observed the fire from individual vantage points. There was no dedicated lookout for the Branch, the Division, the Orchard Lane area, the Strike Team, or the Engine 6162 crew.
- What do you think the fire is going to do? Which fire indicators are you using to make your prediction?
  - Communication on the division was poor. What can be done to improve it?
  - Do you have any trigger points established for disengagement or withdrawal?
  - Engine 6162 was not aware of the fire weather watch issued or the firing operation happening around them on Orchard Lane. Assuming you did not have the additional information, would your assessment differ?

# **MODULE 4 – Communications and Extreme Fire Behavior**

## **Part Two: Extreme Fire Behavior—The Cedar Fire (Optional Exercise)**

### **Optional Group/Individual Exercise:**

- Read and discuss the following excerpt, *Safety Issues for Review*, regarding the 10 Standard Fire Orders and 18 Watch Out Situations that were identified as applicable. Using lessons learned from the Cedar fire, what will you do on your local unit to avoid a similar situation?

### **SAFETY ISSUES FOR REVIEW**

(Taken from the California Department of Forestry and Fire Protection  
Green Sheet – Cedar Fire, October 29, 2003)

### **TEN STANDARD FIRE ORDERS APPLICABLE**

- #1. Keep informed on fire weather conditions and forecasts.**  
This needs to be an on-going activity based on all available information. This includes fire weather watches and red flag warnings.
- #2. Know what your fire is doing at all times.**  
This should include the main body of the fire and any fingers and hotspots. If there is any firing taking place in the area, this fire activity needs to be monitored also.
- #3. Base all actions on current and expected behavior of the fire.**  
It is important to consider not only the current and expected behavior, but consideration should be given to the unexpected or possible worst-case scenario.
- #5. Post lookouts when there is possible danger.**  
The presence of a posted, dedicated lookout assigned to the division or area of greatest concern/threat would have allowed for an observation of the fire in the drainage.
- #6. Be alert. Keep calm. Think clearly. Act decisively.**  
Command presence during times of stress is imperative. The leadership demonstrated during this event directly saved lives.
- #7. Maintain prompt communication with your forces, your supervisor and adjoining forces.**  
This needs to be accomplished at all levels within the operation, including the crew level, strike team/task force level, the division/branch level and the operational level. If air resources are moved into and out of an area, this needs to be communicated.



**#9. Maintain control of your forces at all times.**

When positioning, or repositioning resources during a fluid fire environment, it is critical to ensure that all resources are accounted for, and to the greatest extent possible, know the location of their adjoining forces and the tactics being employed.

**#10. Fight fire aggressively, having provided for safety first.**

Aggressive actions generally place fire fighters in close proximity to the fire's edge. Safety mitigations must be part of the immediate plan. In this case safety of the crew was demonstrated by aggressive actions taken at the structure to create a more favorable position, which included a safety zone. When reacting to extreme fire behavior accompanied by a rapidly spreading fire, the safety plan needs to be continually evaluated and updated. It appears that all of the necessary Personal Protective Clothing and Equipment was being worn correctly.

**18 WATCH OUT SITUATIONS APPLICABLE**

**#4. You are in an area where you are unfamiliar with local factors influencing fire behavior.**

Out of area/region crews need to be briefed on local conditions and fire behavior prior to going onto the fireline.

**#5. You are unformed on strategy, tactics and hazards.**

All tactics being implemented both within and adjacent to the assigned division need to be known and communicated to all. This is especially true of firing operations.

**#11. You are in heavy cover with unburned fuel between you and the fire.**

The inability to estimate fire spread in heavy fuels is often cited as a causal agent in fire line injuries/deaths and is directly related to Situation #12.

**#12. You cannot see main fire and you are not in communication with anyone who can.**

The lack of knowledge about exactly where the leading edge of the fire is and what it is doing, places those that cannot acquire that information at considerable risk.

**#15. You notice that the wind begins to blow, increase or change direction.**

While often noticed, if not noticed and communicated in time, any required change in the pre-determined safety plan may not allow for the plan to be communicated and implemented.

**#17. You are away from a burned area where terrain and/or cover makes travel to safety zones difficult and slow.**

The ability to reach a safety zone, as opposed to an area of refuge, needs to be carefully scrutinized, allowing for a reasonable time frame under the worst-case situation.

# MODULE 5 – Crew Cohesion

## Group Tasks:

Using the team building phase definitions below, discuss in your groups under which phase each leader’s action falls. The first one has been done for you. Identify a group spokesperson who will present the leader’s actions for one phase to the class.

### Form (F)

The formation or form phase is when team members are eager to fit in and usually have high expectations. This is the phase you and your crew are going through right now.

### Storm (S)

The development or storm phase can be described as a period when team members are frustrated with the discrepancy between their initial expectations and reality.

### Norm and Perform (NP)

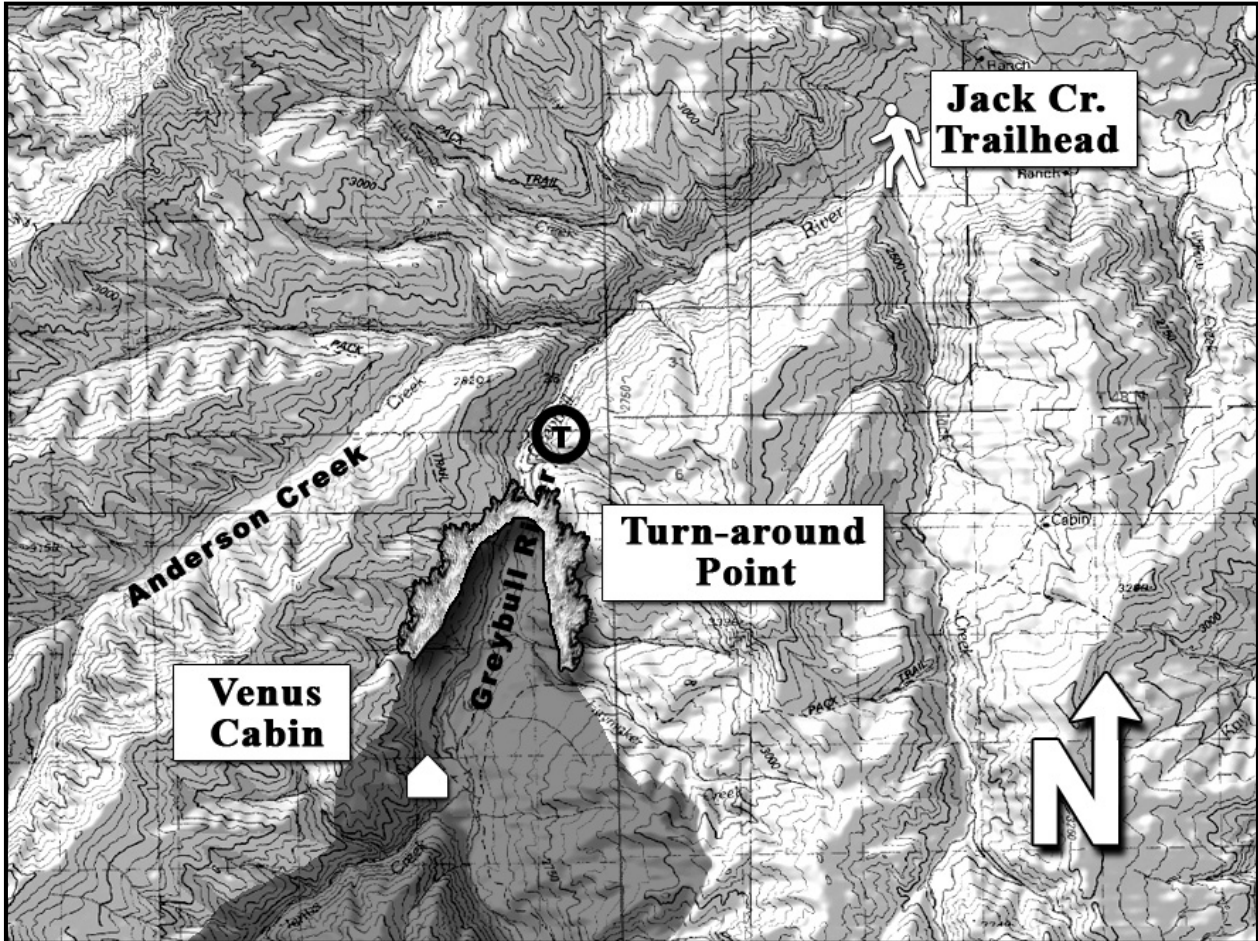
During the performance or norm phase, team members are committed to team vision and values. This is where the team will attain synergy. Synergy is that powerful force that allows a team to outperform itself. The goal of a leader should be a team where the whole equals more than the sum of the parts.

LEADER’S ACTIONS	TEAM BUILDING PHASE
Share decision making autonomy within boundaries.	NP
Give individual recognition.	
Demonstrate unity of command in the leadership team.	
Establish team structure and expectations.	
Maintain focus on team vision and values.	
Drill on team and individual task skills.	
Provide knowledge about each other to emphasize diverse talents and foster trust.	
Define decision making authority.	
Establish good communication process by using clear intent statements, active listening, and After Action Reviews	
Provide new challenges.	
Resolve conflict without overreacting.	
Recognize and celebrate team accomplishments.	
Provide information about process and benefits.	
Encourage initiative and underwrite honest mistakes.	
Develop agreement on roles and standards.	
Communicate team vision and values	
Focus on improving productivity.	

# MODULE 6 - Little Venus Fire Shelter Deployment

## Group Discussion:

In your groups, assess the current situation and address “what ifs” using information you gained from the video and that which is provided on SWB-28. Develop a plan(s) of action for your “what ifs.” Be prepared to communicate your plan of action in the form of instructions to the crew (class).



## Red Flag Warning Information:

*RED FLAG WARNING IN EFFECT FOR THE FIRE AREA FROM NOON TODAY UNTIL 8 PM MDT THIS EVENING. A COLD FRONT WILL MOVE INTO NORTHERN WYOMING THIS MORNING...PRODUCING A SHARP WIND SHIFT TO THE FIRE AREA BY 2 PM MDT THIS AFTERNOON. SOUTHWEST WINDS WILL INCREASE OVER THE FIRE THIS AFTERNOON AND EVENING. DRY LIGHTNING AND STRONG GUSTY WINDS WILL BE THE THREAT. RELATIVE HUMIDITY VALUES WILL BE IN THE 7 TO 15 PERCENT RANGE.*

**Time Line for July 18, 2006  
(Significant events taken from the peer review)**

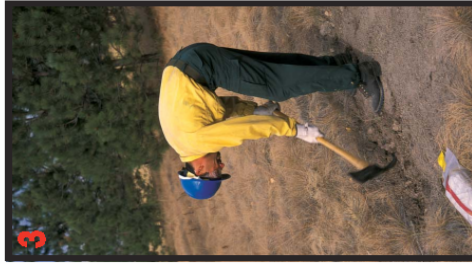
0730	Unawep FUM receives further briefing at S.O. Includes bear safety and pepper-spray training.
1115	Unawep FUM departs Cody for Jack Creek Trailhead.
1315	Unawep FUM meet packer at Jack Creek Trailhead. Group helps load livestock. Lead packer, and a 14 year old boy, prepare to depart, check radio and batteries nearly drained, inform crew that he would keep radio turned off unless he needed to contact someone.
1400	Unawep FUM and packers depart for 8 mile hike to Venus Cabin
1429 -1435	Black Hills suggests to ICP that Unawep and the packers be turned around. Much difficulty in the transmission, a human repeater from Black Hills helps out. ICP asks if Unawep should stage down river from the fire. Black Hills says yes. Black Hills contacts Unawep and relays from ICP that Unawep is to find the packers and stage in the canyon downstream from the fire. Black Hills is unable to confirm that the message was received by Unawep.
1435	Unawep FUM continues up Greybull River to contact the packers and find a safety zone in which to stage.
1550	Unawep FUM arrives at turnaround point, about 4 miles in from trailhead. Takes pictures of fire. Puts on fire clothing. Makes decision to turn around and move back down the trail. Remain there 5 – 10 minutes. Unawep senior leadership tells module to begin moving, three will wait for packer.
1550	One module member begins moving back down the trail.
1555	First pack train comes down the trail (14 year old boy), passes module and then passes single module member.

**Little Venus Fire Shelter Deployment Peer Review Report can be found at:**

[http://www.wildfirelessons.net/documents/Little\\_Venus\\_Deployment\\_Peer\\_Review.pdf](http://www.wildfirelessons.net/documents/Little_Venus_Deployment_Peer_Review.pdf)

## FIRE SHELTER USE INSTRUCTIONS

1. Pick the largest available clearing. Avoid saddles, chimneys, and draws; avoid **anything** that will burn.
2. Wear gloves, hardhat, and if you have one, a face and neck shroud. Throw packs, fuseses, chain saws, and gas far from your deployment site.
3. Scrape away flammable litter—if time permits.
4. Pull the red ring to tear off the plastic bag.



5. Grasp the shake handles (**LEFT HAND, black** lettering—**RIGHT HAND, red** lettering).



6. Shake until the shelter is unfolded.



7. Lie face down in the shelter. Keep your feet toward the oncoming fire. Push out the sides for more protection from the heat. Slip your arms through the holddown straps on the shelter floor. Keep your mouth near the ground.



Shelter is cut away to show body position.

### Remember...

- Do not open the plastic bag until the shelter is needed for emergency use.
- You **MUST BE ON THE GROUND** when the fire arrives!
- After the fire has cooled, pick the safest area and wait for help.
- Watch for falling snags and rolling rocks!

[http://www.fs.fed.us/fire/safety/shelter/shelter\\_index.html](http://www.fs.fed.us/fire/safety/shelter/shelter_index.html)



## Fire Shelter Update 2007

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The New Generation Fire Shelter redesign project started in January 2000. The new shelter system, which includes the fire shelter, training shelter, video and booklet, became available to fire fighters in 2003. Even though the New Generation Fire Shelter is available through GSA and private vendors, a complete transition from the old-style shelter to the New Generation Fire Shelter for all firefighters may take another one to three years.

An interagency Fire Shelter Task Group has been formed. The purpose of the group is to guide the fire shelter program into the future, to involve stakeholder groups in decisions of the fire shelter management, and to ensure that MTDC receives needed support and direction from leadership. Members of the group represent most Federal and State fire agencies. They include hot shots, smokejumpers, Fire Safety Officers, fire training staff, equipment specialists, and NIFC and WVO engineering personnel. The task group is currently developing a transition and communication plan.

The following Tech Tips can be ordered in hard copy through MTDC or can be accessed electronically on the T-D internet site. You will be prompted for a user name (*t-d*) and password (*t-d*).

A 2003 Tech Tip entitled "[New Generation Fire Shelter Developed for Wildland Firefighters \(0351-2313-MTDC\)](#)" provides information on the new fire shelter system. Instructions are included for modifying existing fireline packs to fit the new shelter.

The 2003 Tech Tip entitled "[Fire Shelters Weaken Transmissions From Hand-Held Radios \(0351-2342\)](#)" provides information on the difficulty firefighters may have communicating with hand-held radios while inside fire shelters. Transmissions from the older VHF Bendix-King radios were not weakened as badly as those from the newer UHF Motorola Astro XTS 3000 radios. A table is included that shows how much the transmissions were weakened in different situations.

The 2005 Tech Tip [Large New Generation Fire Shelter Now Available \(0551-2325\)](#) provides information on the new large-size fire shelter. This Tech Tip discusses the differences between the fire shelters, which size firefighters should use, training, and ordering information.



The 2006 Tech Tip [What's New With The New Generation Fire Shelter \(0651-2322\)](#) provides latest information concerning the fire shelter. The Tech Tip discusses topics raised by firefighters about the fire shelter and describes the process to reinforce the PVC shelter bags that were produced before June 2005.





**New Large-Size Shelter:**

The new large-size fire shelter for use by firefighters who find the regular-size shelter to be a tight fit is available through GSA. It is recommended that people more than 6 feet 1 inches in height obtain and carry a large-size fire shelter. The large shelter will provide better protection for larger people by allowing less contact of the shelter material with an occupant's body, by providing more air space between the shelter and an occupant, and by reducing the stress on the shelter material caused when a larger person stretches out inside the shelter. The large shelter fits in the same carrying case as the regular-size New Generation Fire Shelter. The word "LARGE" is stenciled on the orange quick deployment strap of the shelter. Firefighters less than 5 feet 7 inches in height should carry the regular-size fire shelter.

	Old-Style Shelter	Large New Gen	Regular New Gen	
<b>Weight</b>	3.4 lbs	5.2 lbs	4.6 lbs	
<b>Dimensions</b>	8.5" x 5.5" x 3"	9" x 5.5" 4"	8.5" x 5.5" x 4"	Figure 1 - New fire shelter
<b>Deployed</b>	Length - 71" Height - 24" Width - 48"	96" 19.5" 33"	86" 15.5" 31"	 Figure 2 - Cutaway view of new fire shelter

**Recent Development:**

Through development work by MTDC, a higher strength floor material is now being used in production. This creates a shelter design with a stronger one-piece floor that doesn't need seam reinforcements, which in turn lessens weight and bulk. The shake handles have been improved by adding a ¼-inch diameter plastic pipe that allows the shake handle to be held easier with gloved hands. The attachment of the shake handles to the shelter has also been strengthened. An additional line of fiberglass stitching has been added to improve strength of the major seams at low and moderate temperatures. Quartz thread, already present in the seams, maintains its strength in the very high temperatures that can occur during a fire shelter deployment.

**How will adoption of the New Generation Fire Shelter affect wildland firefighters?**

From the perspective of how we train firefighters to use fire shelters, very little has changed. Though the new shelter offers better protection from flames than the old-style shelter, survival of the occupant is more likely if direct flame contact with the shelter is avoided. Even though the new shelter provides increased protection compared with the old-style shelter, firefighters still need to know how to recognize potential entrapment situations and how to avoid them. The same evaluation process that firefighters have been using to identify survivable sites still applies. Teaching firefighters to avoid deploying shelters in or near fuel concentrations, chimneys, and other potentially hazardous areas will continue to remain an important part of fire shelter training.

The New Generation Fire Shelter provides significantly better protection in direct flame than the old-style shelter, but it is not failsafe. In extreme conditions the new shelter may not offer sufficient protection. And, as with the old-style shelter, the high temperature materials used in the new shelter must be treated with care during storage, while being carried on the fireline, and during deployment. Excessive force on the material or contact with sharp objects can cause the cloth to tear. For the best protection, treat your fire shelter with care. More importantly, avoid situations that can lead to entrapment. Plan your actions on the fireline so that you never need to deploy your fire shelter.

### **Use of Original Fire Shelter**

The original (old-style) fire shelter still provides good protection if used as described by existing guidelines. The old-style shelters can be used until the transition to new shelters is complete and as long as they meet the Inspection Criteria outlined in the booklet *Your Fire Shelter, 2001 Edition*. (NFES1570)  
<http://www.nwccg.gov/pms/pubs/fireshell01.pdf>

Inspection of the shelters is critical to the shelter's structural integrity. In July 2006, ten firefighters deployed their fire shelters at the Little Venus fire in order to save their lives. Five of the ten shelters were old-style shelters. Of those five, three shelters had severe damage upon opening; one had a tear 43 inches long! Failure to inspect the fire shelters led to the firefighters carrying these damaged shelters while working fires.

### **Fire Shelter Training Aids**

Fire shelter training materials for either shelter system includes the *Entrapment Avoidance-It's Your Call!* training program (2002), and the *Lessons From the Thirtymile Fire* HTML/PowerPoint training program.

Instructors providing training for persons with original (old-style) fire shelters will need to utilize the *Using Your Fire Shelter* video, 2001 edition (NFES# 1568) to demonstrate the most current original fire shelter information available today. A previous fire shelter training video, *Your Fire Shelter*, 1986 edition (NFES# 1568), shows techniques that are no longer recommended. Since both videos have the same NFES number and similar titles, eliminate the 1986 version from training libraries to prevent confusion.

The *Your Fire Shelter* booklet (NFES #1570) 2001 edition, and the *Avoid the Flames* pamphlet (99-M40-MTDC) can also be used as training materials.

### **Training for New Shelter**

During the spring burning season of 2006, MTDC conducted additional fire shelter field testing inside a prescribed burn. It is critical to receive proper training in the use of the New Generation Fire Shelter before it is taken on the fireline. This requires at a minimum reading the training pamphlet, viewing the training video or DVD, and practicing deployments using a practice fire shelter. The video (and DVD) and pamphlet include information about how the shelter works, how to deploy it, how to select a deployment site, what entrapment experience might be like, how to train to use the shelter, and how to care and inspect the shelter.

NFES#2711, VHS Fire Shelter training video *The New Generation Fire Shelter*  
NFES#2712, same video in DVD format  
NFES#2710, pamphlet, *The New Generation Fire Shelter*

Spanish versions are also available  
NFES 2735, video, VHS, *El Refugio de Proteccion Nueva Generacion* and  
NFES 2736, pamphlet, *El Refugio de Proteccion Nueva Generacion*.

Training materials can be ordered through the Great Basin Cache located at the National Interagency Fire Center (NIFC). All fire shelter training materials are contained within PMS 411. For more ordering information, go to the NWCG publications website:  
<http://www.nwccg.gov/pms/pubs/pubs.htm>

Fire shelters for training can be purchased through GSA's Wildland Fire Equipment Catalog or through private distributors.

- New generation practice fire shelters
- Regular size, complete: NSN 6930-01-499-0605
- Large size, complete: NSN 6930-01-529-8807

**Remember**, fire shelters are not fail safe, carrying a fire shelter should never be considered as an alternative to safe firefighting.



# Incident Response Pocket Guide (Optional Module)

**Independent Exercise:**

Using your 2006 IRPG, answer the following questions as quickly as you can. Write down the answer and the page number (location) where you found the information.

QUESTION	IRPG PAGE #
1. What is your first responsibility if you come upon or are involved in a vehicle accident?	
2. What is the first thing you should do when preparing a home for structure protection?	
3. Define the paracargo danger zone.	
4. A seven (7) acre fire has approximately how many chains of perimeter?	
5. What is the sixth Standard Firefighting Order?	
6. What are the five (5) communication responsibilities of ALL firefighters?	
<b>Extra Credit:</b> Calculate the relative humidity (RH) using the tables in the IRPG given a dry bulb of 90 degrees and a wet bulb of 75 degrees with an elevation from 1,400 to 5,000 feet.	

# Fireline Leadership (Optional Module)

## Individual Task:

Review the material regarding the Developing Leaders in Wildland Fire Web site (<http://www.fireleadership.gov/>). You are encouraged to complete the self-development worksheet (SWB page 37) on your own if the instructor omits this exercise.



Wildland Fire Leadership Values and Principles	
Values	Principles
<b>Duty</b>	Be proficient in your job, both technically and as a leader.
	Make sound and timely decisions.
	Ensure tasks are understood, supervised, and accomplished.
	Develop your subordinates for the future.
<b>Respect</b>	Know your subordinates and look out for their well-being.
	Keep your subordinates informed.
	Build the team.
	Employ your subordinates in accordance with their capabilities.
<b>Integrity</b>	Know yourself and seek improvement.
	Seek responsibility and accept responsibility for your actions.
	Set the example.

For a complete, printable image of this chart, click below:

[Color 8.5x11](#)

[Color 13x23](#)

[Color 24x36](#)

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The Leadership Committee is chartered by the NWCG Training Working Team



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# LEADERSHIP

Developing Leaders in Wildland Fire

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## Leadership Toolbox

### Duty

#### Prepare Your Subordinates

[Professional Reading Program](#)  
[Leadership in Cinema](#)  
[Wharton Leadership Digest](#)

#### Be Proficient

[Staff Ride Library](#)  
[Staff Ride Guide \(pdf\)](#)  
[Online Courses for Leadership Skills](#)

#### Make Sound Decisions

[Tactical Decision Games Library](#)  
[Tactical Decision Games Workbook \(doc\)](#)  
[Sand Table Showroom](#)

#### Ensure Tasks are Completed

[Standard Operating Procedures \(pdf\)](#)

### Respect

#### Know Your Subordinates

[Crew Cohesion Assessment \(pdf\)](#)

#### Keep Subordinates Informed

[Briefing and Intent](#)

#### Build the Team

[L-280 Supplemental Leadership Reaction Scenarios](#)  
[Leadership Training Camp](#)

#### Employ Subordinates Appropriately

[After Action Review](#)  
[AAR Training Package](#)

### Integrity

#### Know Yourself

[Self-Development Plan](#)

#### Set the Example

[Leaders We Would Like to Meet](#)

#### Seek Responsibility

[About Leadership](#)

## Leadership Self Development Plan

### For Wildland Firefighters...a Lifetime of Learning

No matter how long you work in the wildland fire service, being a successful firefighter means being a student of fire. Along your career path you will have many opportunities to learn. A complete leadership development process will include formal training, challenging field experiences, and your own self-directed learning efforts. Use the table below as a guide for starting your self-development plan on the attached worksheet. All links below can be found in the Leadership Toolbox at [www.fireleadership.gov](http://www.fireleadership.gov)

**Self-Development Plan**

[Worksheet](#)

Leader Level	Development Goals
<p><b>New Leader</b> IC Type 5, Squad Boss, Support Function Operators/Managers/ Recorders/Specialists</p> <ul style="list-style-type: none"> <li>• Learns from others</li> <li>• Becomes competent at fundamental skills</li> <li>• Asks questions</li> </ul>	<p>Read and discuss <a href="#">Leaders We Would Like to Meet</a>                      Read at least two books from the <a href="#">Professional Reading Program</a>                      Attend the <a href="#">L-280 Followership to Leadership course</a>                      Attend the next formal S-course in your ICS function                      Do a <a href="#">Crew Cohesion Assessment</a> for your crew                      Seek a temporary assignment on a different type of fire crew</p>
<p><b>Leader of People</b> IC Type 4, Single Resource Boss, Strike Team Leader, Support Function Unit Leaders, Prescribed Fire Ignition Specialist, Supervisory Dispatcher</p> <ul style="list-style-type: none"> <li>• Assumes responsibility and develops own ideas</li> <li>• Demonstrates expertise</li> <li>• Develops credibility and a reputation</li> </ul>	<p>Read and discuss <a href="#">Communicating Intent</a>                      Read at least two books annually from the <a href="#">Professional Reading Program</a>                      Attend the <a href="#">L-380 Fireline Leadership course</a>                      Attend the next formal S-course in your primary ICS function                      Attend an entry level S-course in another ICS function                      Be the lead instructor for a fire training course at your home unit                      Become a proficient facilitator of <a href="#">After Action Reviews</a></p>
<p><b>Leader of Leaders</b> IC Type 3, Division Supervisor, Prescribed Fire Burn Boss, Dispatch Coordinator</p> <ul style="list-style-type: none"> <li>• Provides direction in situations with significant consequences</li> <li>• Demonstrates a breadth of expertise</li> <li>• Shares ideas for the broader organization</li> </ul>	<p>Read and discuss <a href="#">Powell on Leadership</a>                      Read and discuss <a href="#">Sun Tzu on Leadership</a>                      Read at least three books annually from the <a href="#">Professional Reading Program</a>                      Attend the <a href="#">L-381 Incident Leadership course</a>                      Attend formal training in your primary and secondary ICS functions                      Write an article for an agency or professional publication                      Become a proficient facilitator of <a href="#">Tactical Decision Games</a></p>
<p><b>Leader of Organizations</b> IC Type 1, IC Type 2, Incident Management Team Command and General Staff, Prescribed Fire Manager</p> <ul style="list-style-type: none"> <li>• Anticipates and plans for future operations</li> <li>• Influences organizational decisions</li> <li>• Mentors promising people for key roles in the organization</li> </ul>	<p>Read the monthly <a href="#">Wharton Leadership Digest</a>                      Read at least four books annually from the <a href="#">Professional Reading Program</a>                      Attend the <a href="#">L-480 IMT Leadership course</a>                      Attend formal training in your primary and secondary ICS functions                      Attend an NWCG Working Team meeting as a guest                      Be a lead instructor for a national level fire training course                      Design and conduct a <a href="#">Staff Ride</a></p>

# Leadership Self Development Plan

For Wildland Firefighters...a Lifetime of Learning

Self Development Plan

[Introduction](#)

**Next level of leadership:** Leader of People | Leader of Leaders | Leader of an Organization

Time Horizon for Plan:

**Directed Reading and other Self-Study** ([www.fireleadership.gov](http://www.fireleadership.gov)):

**Training** (Next Wildland Fire L- and S-Courses):

**Details** (Temporary assignments with new or increased responsibility):

**Mentor** (Identifying and asking a role model to provide guidance):

**Outside Activities** (Little League coach, Big Brothers/Big Sisters program, etc.):



**LEADERSHIP TOOLBOX REFERENCE**  
**Leadership Self-Development Plan**  
**June 2003**

# Tree Falling Hazards (Optional Module for Tree Fallers)

## HAZARD TREE SAFETY

(IRPG, page 80)

### **Environmental conditions that increase snag hazards:**

- Strong winds
- Night operations
- Steep slopes
- Diseased or bug-kill areas

### **Hazard tree indicators:**

- Trees have been burning for any period of time
- High risk tree species (rot and shallow root system)
- Numerous downed trees
- Dead or broken tops and limbs overhead
- Accumulation of downed limbs
- Absence of needles, bark or limbs
- Leaning or hung-up trees

**In addition to suppression and mop-up operations, assess hazard trees when you take breaks and choose campsites.**

## **PROCEDURAL CHAIN SAW OPERATIONS**

(IRPG, page 81)

Procedural approach to cutting operations begins with assessing the situation, completing a hazard analysis, and establishing cutting area control.

### **Situational Assessment**

- Observe tree characteristics
- Determine soundness or defects
- Analyze the tree base
- Check surrounding terrain
- Examine work area

### **Hazard Analysis**

- Overhead hazards
- Ground hazards
- Environmental hazards
- Mental and physical hazards

### **Felling Operation Controls**

- Establish a lookout to observe the tree at all times
- Check for nearby hazard trees
- Assess lean(s) & lay
- Swamp out base
- Brief swamper
- Face tree with adequate stump shot
- Give warning yell
- Look up while cutting
- Complete back cut
- Use wedging procedure
- Use escape route and safety zones
- Analyze stump

[www.fs.fed.us/fire/safety/council/newsletters/may06/may06.html](http://www.fs.fed.us/fire/safety/council/newsletters/may06/may06.html)

# NOTES



# INTERNET WEB SITE LINKS

## [www.fire.blm.gov/training/blmtrng/refresher.html](http://www.fire.blm.gov/training/blmtrng/refresher.html)

Web site for 2001, 2002, 2003, 2004, 2005, 2006, and 2007 Fireline Safety Refresher (Student Workbook and Facilitator Guide)

## [http://www.nifc.gov/safety\\_study/index.htm](http://www.nifc.gov/safety_study/index.htm)

- ◆ Six Minutes for Safety
- ◆ SAFENET
- ◆ Radio Education and Information
- ◆ Accident Investigation Resources
- ◆ FireFit

## [www.nifc.gov/references/index.html](http://www.nifc.gov/references/index.html)

- ◆ Interagency Standards for Fire and Fire Aviation Operations, 2007

## [www.nifc.gov/wfstar/index.htm](http://www.nifc.gov/wfstar/index.htm)

(Also accessed through the Safety link on the NIFC home page)

- ◆ Wildland Fire Safety Training Annual Refresher (WFSTAR)

### What's New for 2007

- 2007 Annual Fireline Safety Refresher Video
- Fire Fit
- NWCG Annual Fireline Safety Refresher Requirements
- Human Factors
- Additional Tactical Decision Games
- Fire Behavior Assessment for Fireline Safety (FLAME)

### 2007 National Emphasis Topic:

- Conducting Effective Briefings

### 2007 Hot Topics:

- Firing/Ignition Techniques
- Hazard Tree/Tree Felling
- Working Around Equipment
- All-Hazard Incident Assignments

### Fire Shelter Update 2007:

[http://www.nifc.gov/wfstar/archives/fire\\_shelter.html](http://www.nifc.gov/wfstar/archives/fire_shelter.html)

## [www.nwcg.gov/pms/pms.htm](http://www.nwcg.gov/pms/pms.htm)

- ◆ Qualifications – PMS 310-1
- ◆ Taskbooks
- ◆ ICS Training and Forms
- ◆ Job Aids

## [www.nwcg.gov/pms/pubs/pubs.htm](http://www.nwcg.gov/pms/pubs/pubs.htm)

- ◆ National Fire Equipment System Catalog – Part 2 Publications 2005 Edition, Publications Update (February 2006)
- ◆ Using Your Fire Shelter Video (2001), NFES 1568
- ◆ Your Fire Shelter Booklet, 2001 Edition, PMS 409-2, NFES 1570
- ◆ Incident Response Pocket Guide, PMS 461, NFES 1077
- ◆ Fireline Handbook, PMS 410-1, NFES 0065
- ◆ Interagency Standards for Fire and Fire Aviation Operations - 2007, NFES 2724
- ◆ New Generation Fire Shelter Booklet (2003), NFES 2710, PMS 411
- ◆ New Generation Fire Shelter Video (2003), NFES 2711
- ◆ New Generation Fire Shelter DVD (2003), NFES 2712

## [www.firelineleadership.gov](http://www.firelineleadership.gov)

Interagency Wildland Fire Leadership Development Program's Web site  
(Leadership Toolbox includes information regarding Staff Rides, STEX/TDGS, Self-Development Plan)

## [www.wildfirelessons.net](http://www.wildfirelessons.net)

Wildland Fire Lessons Learned Center's Web site

- ◆ Library – contains thousands of reports and other documents sent in by wildland fire professionals from around the world
- ◆ Case Studies

## [http://coloradofirecamp.com/cedar\\_fire/index.htm](http://coloradofirecamp.com/cedar_fire/index.htm)

Resources related to the Cedar Fire

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

## **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 crew members 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 the 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.

# ANNUAL FIRELINE SAFETY REFRESHER COMMENTS

Today's Date: \_\_\_\_\_

How many seasons have you worked as a firefighter? \_\_\_\_\_

How many season have you worked in support of fires \_\_\_\_\_

What agency do you represent? \_\_\_\_\_

What is your current function in fire suppression?

- Line Firefighter
- Fireline Supervisor
- Other IMT Section

- Fire Support Personnel
- FMO/Resource Advisor/  
Agency Administration

What will you do differently after viewing this refresher? (Refer to specific modules, if appropriate.)

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What topics would you like to see in future refresher programs?

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Feel free to provide additional comments on the back.

Facilitator, please return this form to the address below. Comments by e-mail are welcome.

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