2010 Fireline Safety Refresher Training

Century of fire

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/

Notes to Facilitator

Introduction

Annual Fireline Safety Refresher Training is required for all personnel participating in wildland fire who may be subject to assignments on the fireline. Check specific agency policy to determine if this training package meets refresher training requirements of all the attendees.

Expectations

*****THIS IS NOT A PLUG AND PLAY PRODUCT. FACILITATOR PREPARATION AND STUDENT INTERACTION IS REQUIRED*****

Instructors should facilitate a quality refresher that engages all students no matter their ICS qualification or firefighting experience. The success of this program is dependent on your ability to stimulate meaningful discussion during group exercises. Classes with a wide array of experiences and qualifications can provide an excellent opportunity for the less experienced to be mentored and for the more experienced to rethink old habits.

Facilitator/Instructor Prerequisites

Lead instructors must be at least Single Resource Boss (SRB) qualified, and unit instructors must be at least Firefighter Type 1 (FFT1) qualified or a subject matter expert on the material in the unit.

Student Prerequisites

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

Course Objective

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

Course Components

The course package consists of a video (DVD), Facilitator Guide, and Student Workbook.

Equipment and Materials

A list of equipment and other material required for course presentation includes:

- Training room
- TV and DVD/VCR player (VCR may be needed for optional videos)
- Course package—DVD, Facilitator Guide, Student Workbook (print one workbook for each student). The Facilitator Guide and Student Workbook are available at: **http://www.nifc.gov/wfstar/hottopics/refresh_video.html**
- ***Incident Response Pocket Guide***—2010 Version, NFES #1077; one for each student
- Sign-in sheet
- Paper and pencil for each student
- Flip chart(s) with paper and marking pens
- Optional: Download modules from WFSTAR website
- Optional: *Using Your Fire Shelter* video, NFES #1568
- Optional: *New Generation Fire Shelter* video, NFES #2711
- Optional: *The New Generation Fire Shelter* booklet, NFES #2710
- Optional: Internet access
- Evaluations

Administration

The facilitator is responsible for identifying necessary equipment, materials, and supplies. The facilitator is also responsible for recording attendance and assuring that evaluations are completed and returned:

ON THE WEB:	http://www.nifc.gov/wfstar/contact_comments.html
BY MAIL:	NWCG Training Development Attn. Scott Anderson 3833 S. Development Avenue Boise, ID 83705
BY FAX:	(208) 387-5378
BY E-MAIL:	Scott_Anderson@nifc.blm.gov

If all modules are utilized, the length of this program is approximately five hours, depending on time allowed for exercises. Additional time will be needed for the fire shelter deployment practice.

The 2010 Fire Refresher was built for firefighters, by firefighters.

Facilitator's Run Sheet

- **View the DVD before your classroom presentation.**
- **Be prepared to facilitate classroom discussions on each topic.**
- **2010 Incident Response Pocket Guide**
  - The 2010 edition of the IRPG reflects feedback from the first national comprehensive review of this publication since it was initially put into service in 1999. To denote this, the cover color has been changed to orange. There are a number of changes and corrections from the previous 2006 edition. **PLEASE EMPHASIZE THESE CHANGES TO STUDENTS!!**
  - The DVD will review parts of the 2010 IRPG in the Introduction and be referenced throughout the modules. In the student workbooks, the Revision Summary is on page 7.
  - The 2010 IRPG can be ordered through the Great Basin Cache, however the cache will be closed from the beginning of March through the end of April due to reconstruction. No orders will be accepted during this timeframe. It is also available on the NWCG website under publications.
- You are responsible for meeting the objectives of the Fire Refresher for your agency. For more information, refer to **http://www.nifc.gov/wfstar/policies.html**. According to *Interagency Standards for Fire and Fire Aviation Operations – 2010*, Annual Fireline Safety Refresher Training must include the following core topics:
  - **Avoiding Entrapments** – Use training and reference materials to study the risk management process as appropriate to the participants, e.g., LCES, Standard Firefighting Orders, Eighteen Watch Out Situations, Wildland Fire Situation Analysis (WFSA) direction, Fire Management Plan priorities, etc.
  - **Current Issues** – Review and discuss identified "hot topics" as found on the current Wildland Fire Safety Training Refresher (WFSTAR) website. Review forecasts and assessments for the upcoming fire season and discuss implication for firefighter safety.
  - **Fire Shelter** – Review and discuss last resort survival. Conduct "hands-on" fire shelter inspections. Practice shelter deployments in applicable crew/module configurations. No "live fire" exercises for the purpose of fire shelter deployment training will be conducted.
  - **Other Hazards and Safety Issues** – Choose additional hazard and safety subjects, which may include SAFENET, current safety alerts, site/unit specific safety issues and hazards.
- The class should be set up to facilitate discussions with no more than 6 students per group.
- Ensure that all students have a copy of the *Student Workbook* (SW) and the *Incident Response Pocket Guide – 2010 Version*.
- Provide for class breaks as necessary. Breaks have not been incorporated into the modules.
- Useful websites are included on page 43 in the Student Workbook and 51 of the Facilitator Guide, intended to be torn out for future reference.
- Hand out evaluations prior to administering the program and remind students to evaluate each module as it is completed.
- Estimate Time Reports at the end of each module do not include optional or supplementary material.

DVD Operating Instructions

Hardware Requirements: The preferred method of delivery is through the use of a DVD player. If you are projecting from a laptop, you will need at least a Pentium 4 processor.

IMPORTANT NOTE:

The DVD has been formatted to return to the main or specific module menus after completion. A Main Menu option is available from each module menu.

For your convenience, the program has been broken into nine short modules. Descriptions of the modules are listed below.

Module Description	Page Number	DVD Length	Total Module Length
1) Introduction	FG-7 SW-3	3 minutes	3 minutes
2) The Fires of 1910	FG-8 SW-8	30 minutes	30 minutes
3) Is Your LCES Adequate	FG-12 SW-11	8 minutes	34 minutes
4) Human Factors – The Gap	FG-18 SW-17	9 minutes	20 minutes
5) Fit For Fire	FG-20 SW-18	11 minutes	27 minutes
6) Weather and Wind Warnings	FG-25 SW-24	13 minutes	30 minutes
7) The Fire Triangle	FG-30 SW-26	12 minutes	33 minutes
8) Helicopter Operations	FG-35 SW-29	13 minutes	38 minutes
9) Troubleshooting the Amazing Mark III Pump	FG-39 SW-31	11 minutes	26 minutes
10) 2004 Module: Downhill Line Construction	FG-43 SW-37	14 minutes	47 minutes
Conclusion/Fire Shelter	FG-49 SW-42	34 minutes	34 minutes

Module 1- Introduction

Overview

Objective: Introduce course topics to students, review 2009 season statistics and discuss reference material.

Purpose: Introduce course and material covered.

Method: Students will watch a video and participate in a facilitator led class discussion.

Content: 2009 Fatalities, Entrapments and Serious Accidents, 2009 Wildland Fire Statistics, 2009 Safenet and Safecom–Contributing Factors, 2010 IRPG information

Facilitator Quick Checklist

<u>The following are the most important tasks that should be considered before implementing this module:</u>

- ✓ **Preview video**
- ✓ **Review IRPG information on Runsheet (pg 5)**

Time	Facilitator Tasks	Refer To
3 min	• **Play DVD Module 1: <u>Introduction</u>**	**DVD 1**
	• **Inform students that in their student workbooks are tables and charts with 2009 fire season statistics.**	**SW pg 4**
Estimated Time: 3 min	• **Review IRPG and inform students about IRPG crossword in back of student workbook, page 41.**	**SW pg 41**

Module 2- The Fires of 1910		
Overview		
	Objective: Students will view a documentary of the fires of 1910 and develop an understanding of where fire management began. **Purpose:** Reviewing the history of fire management will help us understand where our business comes from and help us decide where we want it to go. **Method:** Students will watch a video and participate in a group discussion. **Content:** The Fires of 1910 featuring Stephen Pyne, and Timothy Egan	
Facilitator Quick Checklist		
	<u>The following are the most important tasks that should be considered before implementing this module:</u> ✓ **Preview the DVD** ✓ **Decide if you'll discuss any topics from the video**	
Time	**Facilitator Tasks**	**Refer To**
1 min	• **Introduce objectives and method (optional) listed above.** 	

Time	Facilitator Tasks	Refer To
30 min	• **Play DVD Module 2: <u>The Fires of 1910</u>**	**DVD 2**
10 min	• **A Timeline of significant events from the DVD video is provided below. It is intended to be used as a reference for discussion topics.** 1901 - Theodore Roosevelt becomes the U.S. President. 1904 - The Yale School of Forestry graduates the nation's first foresters. 1905 - The inaugural year of the Forest Service. Gifford Pinchot is appointed to Chief Forester. 1908 - Ranger Ed Pulaski is hired by the Forest Service in Wallace, Idaho at the age of 38. Roosevelt declines re-election. William H. Taft becomes President. 1910 - Before the Blowup - Taft fires Pinchot for insubordination. - In August, President orders over 1800 soldiers to assist with firefighting efforts in the Northern Rockies bringing the total amount of firefighters to 10,000. - August 17th, *The Missoulian*, reports the town of Wallace, Idaho made a desperate attempt to create rainfall by igniting dynamite for sixty straight hours, but with no success.	**SW pg 8**

- The Blowup
  - August 20th, 1910 - The wind begins to blow several hundred fires located throughout the region, into five or six massive fires. Hurricane force winds of over seventy miles per hour, roared throughout the mountains, blowing through firelines and towns. Marshall law is declared by the mayor of Wallace.
  - Evacuation trains loaded with thousands of scared people from the towns located along the tracks, went through flames and over burning bridges while escaping to Missoula, MT and Spokane, WA.

- After the Blowup
  - The fires make the news worldwide. Ash from the fire was deposited across the Atlantic.
  - Rain and snow fell effectively ending the fire season.
  - Public sentiment shifted towards the Forest Service.
  - Congress commits millions of dollars to help with forest rehabilitation and future fire suppression efforts.
  - Individual firefighter compensation had to be applied directly to Congress.

Fatalities

(list does not include all fatalities from fire)

- Ed Pulaski's crew on Placer Creek - 6 firefighters + 2 horses

- John Bell's crew at Beauchamp homestead - 10 firefighters

- Debbitt's crew at Setzer Creek - 28 firefighters

- James Danielson's crew at Steven's Peak - 1 firefighter

- S.M. Taylor's crew at the Bullion Mine - 8 firefighters

- William Rock's crew at Setzer Creek - 1 firefighter

- Lee Hollingshead crew on the West Fork of Big Creek -18 firefighters + 5 horses

Ranger Ed Pulaski never received any compensation for his injuries that plagued him for the rest of his life. He did later win an essay contest with his account of the fires titled "Surrounded by Forest Fires". He used the prize money for more medical treatments. Pulaski retired after over twenty years with the Forest Service.

His legacy lives on through the tool he developed, the Pulaski, which firefighters across the nation continue to swing every fire season.

Estimate Total Time: 40 min

Facilitator's Notes

Listed in the Student workbooks are two books that were used to build this module. They are recommended for further information about the Fires of 1910.

"The Big Burn"
by Timothy Egan

"Year of the Fires: The Story of the Great Fires of 1910"
by Stephen J. Pyne

SW pg 10

Module 3- LCES

Overview

Objective: Given the video, students will make realistic considerations regarding the adequacy of LCES taking into consideration fire behavior and changing conditions.

Purpose: Provide an opportunity to examine the original intent of the LCES and how fire behavior and changing conditions should be taken into consideration when maintaining LCES.

Method: Students will watch a video featuring Brad Mayhew and participate in Tactical Decision Game.

Content: LCES, featuring Brad Mayhew

Facilitator Quick Checklist

<u>The following are the most important tasks that should be considered before implementing this module:</u>

- ✓ **Preview the LCES Module on the DVD**
- ✓ **Preview the LCES animation and 1800 timebox image.**
- ✓ **Look over Ideas for Talking Points or Discussion for Scenario**
- ✓ **Decide if you'll start with the supplemental reading material: "LCES: the original document" (in SW pg 15)**

Time	Facilitator Tasks	Refer To
1 min	• **Introduce objectives and method (optional) listed above.**	

Time	Facilitator Tasks	Refer To
(5 min)	• **Supplemental Pre-Reading: "LCES: the Original Document"**	**SW pg 15**
8 min	• **Play DVD Module 3: <u>Is Your LCES Adequate</u>**	**DVD 3**
2 min	• **Break students into groups of 3 or 4 for exercise.**	
1 min	• **Explain how TDGs work** TDGs are intended to focus on one objective and be put under time constraints as to simulate real world decision making. For more information on how to administer TDGs refer to: http://www.fireleadership.gov/toolbox/TDG_Library/tdgsreferences.htm	

Time	Facilitator Tasks	Refer To
1 min	• **Read the following information to the students for TDG Scenario and Conditions:** **It is late July and you are in Western Montana on the Kootenai National Forest. You are the Engine Boss/ICT5 on a Type 4 Engine (12). You have two firefighters on your crew, one of which is a rookie and the other has 3 solid years of fire experience. Your engine has responded to a smoke report in the Steep Creek area. This fire is a lightning start and is burning in a thick lodgepole stand, with heavy blow down and steep slopes. The fire is located just 400 yards above the road on a southwest aspect and the hike into it takes about twenty minutes. There is an old helispot several hundred yards above the fire. At 1500, when you arrived at the fireline, you called dispatch with your size-up based on the following conditions:** **<u>Conditions at 1500</u>** **Temperature……..…85º** **RH…….....20%** **Wind Speed and Direction….Calm** **Sky……..Partly Sunny, 30% cloud cover** **Slope…… 45º** **Flame lengths…….1 foot** **Fire Size…….¼ acre**	**SW pg 11**
1 min	• **Click on "Run Exercise" for Assignment #1**	**DVD**

Time	Facilitator Tasks	Refer To
3 min	• **Read the following information to students for Assignment #1. Give them 3 minutes to discuss solutions among groups.** Your assignment is to establish a plan to ensure adequate LCES for the current conditions before beginning work on the fire. Take 3 minutes to develop your plan of action and prepare instructions to your crew.	**SW pg 12**
	Facilitator's Notes **(Do Not Share With Students)** The dilemma for this TDG is that the player must make a decision on how to establish adequate LCES for this fire. In addition the player must brief his crew with each element of LCES. After discussing the options for LCES in the different groups, move on to Assignment #2, with new conditions.	
3 min	• **Facilitate class discussion on solutions…keep in mind, there are no "right" or "wrong" answers.** **Ideas for Talking Points or Discussion for Scenario** ➢ *What is considered "on scene"? When you reach the fireline or when you get out of your vehicle?* ➢ *When should LCES first be initiated?* ➢ *How do you know when to update your LCES?*	

Time	Facilitator Tasks	Refer To
	• **Click on "Go to 1800" for Assignment #2.**	**DVD**
3 min	• **Read the following information to the students for TDG Scenario and Conditions for Assignment #2:** **Now it is 1800 and you have stepped back from your fire to reassess the current conditions. You have a helicopter on scene that has dropped off 3 additional firefighters. The following is what you observe.** **<u>Conditions at 1500</u>** **Temperature…….…….92º** **RH……...…….11%** **Wind Speed and Direction……Light, upslope, 8-10 SW** **Sky…….……Thunderstorms** **Slope……..…45º** **Flame lengths…….....3 foot** **Fire Size……...….1/2 acre with 20x20 spot** **Resources on Scene……..1 engine with 3crewmembers** **1helicopter with 3 crewmembers**	**SW pg 13**
3 min	• **Read the following to students. Give the groups 3 minutes to discuss answers.** Your assignment is to reassess your LCES and determine if each element is still adequate. Decide which elements need changed and communicate these changes to the resources on scene.	

Time	Facilitator Tasks	Refer To
	Facilitator's Notes **(Do Not Share With Students)** The dilemma for this TDG is that the player must make a decision on the adequacy of their LCES. Should they feel that any elements are inadequate; a new decision must be reached and communicated to the resources on scene.	
3 min	• **Facilitate class discussion on options. See talking points listed in Facilitator Notes below. Below are some ideas for talking points or discussion on Assignment #2.** **Ideas for Talking Points or Discussion for Scenario** → *How should the helitack crew approach the fire?* → *Was there any consideration for using helicopter for a lookout?* → *Should aviation resources be used for lookouts?*	
5 min ***Estimate Total Time: 34 min***	• **Conduct an AAR using the IRPG. Remember to focus on the training objective.**	**IRPG pg xii**

Module 4- Human Factors – The Gap		
Overview		
	Objective: Students will analyze individual experiences to better understand differing points of view, often seen as an "error" in decision making during fires. **Purpose:** To provide an opportunity to see differing points of view during decision making processes. **Method:** Students will watch a video and reflect upon and discuss personal experiences. **Content:** Human Factors – The Gap, featuring Ivan Pupilidity; Human Performance Specialist	
Facilitator Quick Checklist		
	<u>The following are the most important tasks that should be considered before implementing this module:</u> ✓ **Preview DVD module** ✓ **Preview Talking Points for discussion**	
Time	**Facilitator Tasks**	**Refer To**
1 min	• **Introduce objectives and method (optional) listed above.**	
9 min	• **Play DVD Module 4: Human Factors – The Gap**	**DVD 4**

Time	Facilitator Tasks	Refer To
10 min	• **Facilitate class discussion on the following talking points…keep in mind, there are no "right" or "wrong" answers.** **<u>Talking Points</u>** **Describe an incident where your perceptions of events were different than your fellow co-workers.** **What are some reasons you have been reluctant to provide information to a supervisor following an incident that raised some concerns?** **What are some examples of "the gap" that you've seen at your unit or while working on or in support of fires?** **What are some "vague" or "not well defined" words or phrases that we use as firefighters or in support of fire?**	**SW pg 17**
Estimate Total Time: 20 min		

Module 5- Fit for Fire

Overview

Objective: Students will recognize and set goals for personal improvement of overall wellness.

Purpose: For students to improve upon their current overall wellness levels.

Method: Students will participate in a self-evaluation, watch a short video and then re-evaluate their exercise answers.

Content: Fit for Fire, featuring Joe Domitrovich, Project Leader at Montana Technology and Development Center ; Dr. Charlie Palmer, University of Montana Assistant Professor; Department of Health and Human Performance

Facilitator Quick Checklist

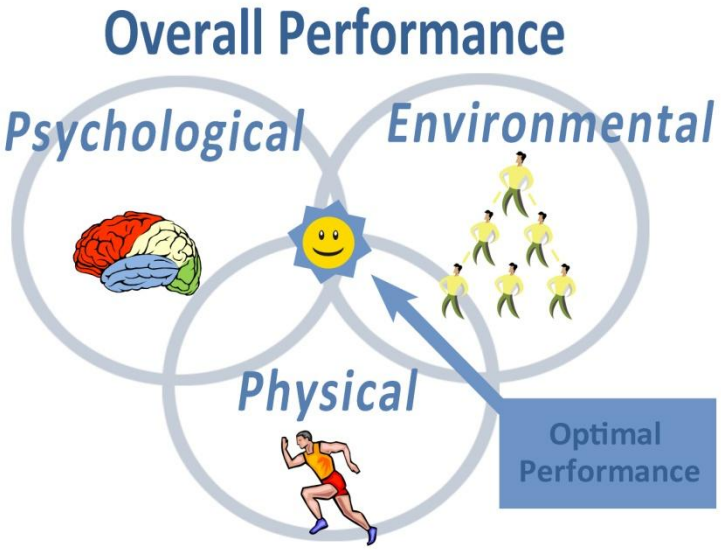
The following are the most important tasks that should be considered before implementing this module:

- ✓ **Preview the student exercise that comes before AND after the video**
- ✓ **Preview the Fit for Fire DVD module**
- ✓ **Read the Facilitator's Notes carefully to ensure privacy is carried out throughout this module.**
- ✓ **Read "Feeding the Wildland Firefighter" article**
- ✓ **Decide whether or not if you'll use the reading material, "Feeding the Wildland Firefighter" as a requirement or a supplemental.**

Time	Facilitator Tasks	Refer To
	Facilitator's Notes **(Do Not Share With Students)** This module is designed with an exercise BEFORE the video. It's important in this module for the students to be completely honest with themselves on improving their overall wellness. In order to do this, the first exercise has them take a look at their well being, strengths and weaknesses. They will hopefully take other ideas into consideration after watching the video. In addition, none of the information in the exercises is to be shared with the facilitator, or classmates. This is a self evaluation designed for self improvement without embarrassment or fear of discussing answers with others.	
1 min	• **Introduce objectives and method (optional) listed above.**	
	• **Inform students of "Feeding the Wildland Firefighter" article. This can be used as a supplemental or requirement for this module.**	**SW pg 19**
6 min	• **Explain that the following exercise is a <u>Self-Evaluation</u> and answers will not be shared with ANYONE. Explain that the exercise is on page 18 of student workbooks and they are not to go ahead to the further exercises until watching the video.**	**SW pg 18**

Time	Facilitator Tasks	Refer To
	Self Evaluation Exercise #1 **Write down your strengths as they apply to your current fitness, wellness and performance levels.** _____ _____ _____ _____ **What areas of fitness, wellness and performance levels do you think you need to work on?** _____ _____ _____	**SW pg 18**
11 min	• **Play DVD Module 5: <u>Fit for Fire</u>, when students are finished with the previous exercise.**	**DVD 5**
	• **Refer students to pages 22 and 23 to do Self Evaluation Assignments #2 and #3. As a reminder, these answers are not to be shared with anyone.**	**SW pgs 22-23**

Time	Facilitator Tasks	Refer To
	Self Evaluation Exercise #2	
3 min	**After watching the video, are there any additional fitness, wellness and performance levels that you can add to your list of strengths?** _____ _____ _____ _____	SW pg 22
3 min	**Did the video trigger any thoughts as to additional psychological, environmental or physical weaknesses you can work on ?** _____ _____ _____ _____	
	Self Evaluation Exercise #3	
3 min	**From the above self study exercises, set 2 or 3 long term goals to work towards improving your overall wellbeing and performance levels. If necessary, set some short term targets to achieve those goals.** _____ _____ _____ _____	SW pg 23

Time	Facilitator Tasks	Refer To
10 min **(optional)**	**Facilitator's Notes** **(Do Not Share With Students)** Some students may want to share ideas for self improvement whether it be in personal relationships, physical fitness or any of the other topics that have been addressed in this module. In order to accommodate for this, the facilitator may want to open the door for discussion to see where it leads …..or doesn't lead. **Ideas for Talking Points or Discussion for Scenario** → *Was anyone surprised that after watching the video by how many aspects of life are incorporated into overall wellness?* → *What ideas does anyone have for balancing family and work? Fire veterans, this is time to help out the younger generation.* → *Why is this topic so difficult to talk about***?**  	
  Estimate Total Time: ***27 min***		

Module 6- Weather and Wind Warnings

Overview

Objectives: Students will be able to:

1. List five visual indicators preceding a wind event

2. Describe how situational awareness and safety are interconnected with weather observations and weather forecasts.

Purpose: To emphasize that firefighters must assume personal responsibility for safety through attentiveness to predicted wind events and changing conditions.

Method: Students will watch a video and participate in a group exercise.

Content: Weather discussion featuring Heath Hockenberry, National Fire Weather Program Manager

Facilitator Quick Checklist

<u>The following are the most important tasks that should be considered before implementing this module:</u>

- ✓ **Preview the Weather Module on the DVD**
- ✓ **Preview questions and answers to Assignments #1 & #2**

Time	Facilitator Tasks	Refer To
1 min	• **Introduce objectives and method (optional) listed above.**	
13 min	• **Play DVD Module 6: <u>Weather and Wind Warnings</u>**	DVD 6
7 min	• **Ask students to turn to page 24 in the student workbooks, read instructions and do Assignment #1.** **INSTRUCTIONS** **(from student workbook)** **The following are some pictures of cloud formations. For Assignment #1, below each picture, describe what future weather patterns the clouds could indicate. In addition, predict the type of fire behavior that could be expected from the possible resulting wind event from each cloud formation. Answer the question for Assignment #2 if suggested by your facilitator.** **<u>EXAMPLE</u>** **Indicates cool air aloft, possibly instability, could lead to active fire behavior**	SW pg 24

Time	Facilitator Tasks	Refer To
5 min	• **The following are suggested answers for each cloud formation. When the students have finished their answers in groups, discuss each by asking for volunteers or choosing different groups for each picture.** **Assignment #1 Suggested Answers** **No significant weather or fire behavior expected** **Atmosphere unstable, monitor for further development and increased fire activity** **Continued on Next Page →**	**SW pg 24**

Time	Facilitator Tasks	Refer To
	 Afternoon or evening thunderstorms, drastic increase in fire behavior **Strong downdraft winds, lightning, heavy rain, possible hail. Distant terrain channeled winds, dramatic increase in fire behavior, or** **Indicates leading edge of strong winds in advance of thunderstorm, expect strong winds and increased fire behavior** **Weak instability, possible virga with gusty winds. Cloud density usually inhibits further convection, could see increased fire behavior**	**SW pg 24**

Time	Facilitator Tasks	Refer To
3 min	• **Assignment #2 is a question reflecting on the video and personal experience. Use this question for a group assignment or just a discussion topic among the class as a whole.**	**SW pg 25**
3 min	**Assignment #2 Suggested Answers** **Cloud formations are very good indicators for predicting changes in weather and wind. What other types of indicators can you notice while in the field that would precede a wind event?** **<u>Swaying tree tops, smoke movement (horizontal vs. vertical), direction of floating or blowing embers, leaves and grasses blowing, blowing dust or dust devils, fire whirls, blowing ash</u>** 	**SW pg 25**
  Estimate Total Time: 32 min		

Module 7- The Fire Triangle		
Overview		
	Objective: Students will be able to list the details of the three components of the fire triangle as they relate to a fire scenario. **Purpose:** To review the basics of the fire behavior and the fire triangle. **Method:** Students will watch a video and participate in an analysis of the fire triangle components of a fire scenario. **Content:** Fire Behavior featuring Tami Parkinson	
Facilitator Quick Checklist		
	<u>The following are the most important tasks that should be considered before implementing this module:</u> ✓ **Preview the DVD** ✓ **Decide whether you'll use the Smith Meadows or Weasel Ridge Scenario (or both) for the exercise.**	
Time	**Facilitator Tasks**	**Refer To**
1 min	• **Introduce objectives and method (optional) listed above.**	
8 min	• **Play DVD Module 7: <u>The Fire Triangle</u>.**	**DVD 7**

Time	Facilitator Tasks	Refer To
	• **EMPHASIZE TO STUDENTS: It is important to note that there are two DIFFERENT triangles addressed in this module. The <u>Fire Triangle</u> consists of Heat/Oxygen/Fuel and the <u>Fire Behavior Triangle</u> consists of Weather/ Topography/ Fuels.**	**SW pg 28**
	• **After watching the video it will go to an "Exercise Screen" and the facilitator can choose from the two scenarios.**	**DVD**
	<u>Facilitator's Notes</u> **The video has two exercises to select from: *Smith Meadows Fire* and the *Weasel Ridge Fire*. You may choose to complete both exercises but if only one is going to be utilized you should select the scenario that is most appropriate for the fuel types in your area. *Smith Meadows* is a grass/sage fire while *Weasel Ridge* is a timber fire with mixed conifer fuel type.** 	

Time	Facilitator Tasks	Refer To
1 min	• **Read instructions for one or both of the following scenarios .** **<u>Instructions for Smith Meadows:</u>** **Situation:** You are a member on a handcrew that is flying in to the Smith Meadows fire. You will be getting a brief aerial size-up prior to landing near the fire. Over the radio, you will receive a fire weather forecast as well as a brief summary of the resources that are enroute to the fire. **<u>Instructions for Weasel Ridge:</u>** **Situation:** You are a member on 5-person helitack crew. You are enroute to the Weasel Ridge fire and will receive a brief aerial size-up of the fire. You are the first resource on scene and the size-up information will be given to you on the video.	**SW pg 26** **SW pg 27**
3 min	• **Play appropriate video for the scenario you chose.**	**DVD**
10 min	• **Instruct students to turn to page 26 in the SW and complete the Fire Behavior Triangle exercise.**	**SW pg 26 or 27**
	• **Facilitate class discussion on solutions. Keep in mind, there may be more than one correct answer. Suggested answers are shown below.**	

Time	Facilitator Tasks	Refer To
	SMITH MEADOWS FIRE SCENARIO **(grass/sage)** **Weather** ○ **Wind (direction, speed, etc): gusty** ○ **Temperature: lows 40°-50° valleys 45°-44° ridges** ○ **Relative Humidity: max 60%-90%** ○ **Precipitation: chance thunderstorms** ○ **Atmospheric Stability: unstable** ○ **Other: Fire Wx Watch for t-storms/gusty winds** **Topography** ○ **Sloped/Flat: flat** ○ **Aspect: none** ○ **Valley/Ridge/Draw/Other: ridgetop** **Fuels** ○ **Loading: ??** ○ **Size and Shape: ??** ○ **Arrangement: continuous grass, sparse sage** ○ **Moistures: ??** **Were you able to identify all the components of the Fire Behavior Triangle? If not, how would you gather the missing information?** **ANSWERS WILL VARY** **Which of the three parts (Weather/Topography/Fuel), would be the most challenging to address while making a tactical decision on this fire? Why?** **ANSWERS WILL VARY**	**SW pg 26**

Time	Facilitator Tasks	Refer To
	WEASEL RIDGE FIRE SCENARIO **(timber)** **Weather** ○ **Wind (direction, speed, etc):** **??** ○ **Temperature:** **75°-85°** ○ **Relative Humidity:** **15%-25%** ○ **Precipitation:** **None in past 24 hours** ○ **Atmospheric Stability:** **unstable based on smoke and cloud formations** **Topography** ○ **Sloped/Flat:** **upper 1/3 of 40% slope** ○ **Aspect:** **SE** ○ **Valley/Ridge/Draw/Other:** **near ridgetop** **Fuels** ○ **Loading**: **??** ○ **Size and Shape: ??** ○ **Arrangement**: **patchy timber with light continuous understory** ○ **Moistures**: **high fuel moistures for lighter fuels, normal for timber** **Were you able to identify all the components of the Fire Behavior Triangle? If not, how would you gather the missing information?** **ANSWERS WILL VARY** **Which of the three parts (Weather/Topography/Fuel), would be the most challenging to address while making a tactical decision on this fire? Why?** **ANSWERS WILL VARY**	**SW pg 27**
  Estimate Total Time: 33 min		

Module 8- Helicopter Operations

Overview

Objective: Students will be able to identify four ways they can make air-to-ground communication clearer, more concise, and faster, thus minimizing accident risk for firefighters and aviation resources.

Purpose: Preparing students to communicate in a way that maximizes the efficiency of helicopter operations.

Method: Students will watch a video and participate in a communications exercise.

Content: Helicopter Operations, featuring Cathy Barta and John Quackenbush

Facilitator Quick Checklist

<u>The following are the most important tasks that should be considered before implementing this module:</u>

- ✓ **Preview the Aviation Communication DVD Module**
- ✓ **Read the communication passage and instructions for implementation. Note the suggested answers provided.**

Time	Facilitator Tasks	Refer To
1 min	• **Introduce objectives and method (optional) listed above.**	

Time	Facilitator Tasks	Refer To
13 min	• **Play DVD Module 8: <u>Helicopter Operations</u>**	DVD 8
1 min	• **Refer students to the Communication Exercise on page 29 in student workbook.**	SW pg 29
1 min	• **Introduce the activity (see below), then read the following communication passage aloud to class. Explain that they'll be rewriting the paragraph to reflect clearer, concise communication.** **<u>Introduction</u>** **John is a new firefighter and this is his first time calling in bucket drops. He's very excited for this mission, but needs some advice and help about clear, concise communications. Rewrite the following paragraph as if you were John contacting a non-local helicopter pilot for the first time for bucketwork. Eliminate all the "unnecessary information," and keep the communication as short and concise as possible.**	SW pg 29

Time	Facilitator Tasks	Refer To
	<u>Activity</u> **"Hey pilot on November Two Nine Five Mike, I am the guy standing down here with my crew on the top of the fire with the pink, uh, flagging on the top of my tool, it's a combi tool and I'm going to be your dude on the ground and my name is John Tucker so you can talk to me when we are communicating. You're at my twelve o'clock. Well, it's more like 1 o'clock now since you're moving around a little. I need you to get us some water on this hot spot, I mean, uh, stumphole and it's right here next to me, so if that bucket's full now, let's just put her on this stumphole and that would help us out a lot. I can put an orange panel down if that'll help. Do you see me? I'm on channel 2. I gotcha at my 6 o'clock now."**	**SW pg 30**
8 min	• **Allow students time to rewrite the paragraph using clear and concise text. This paragraph is in the student workbook**	**SW pg 30**
8 min	• **Ask for volunteers to read their paragraphs. Try to get at least 3-4 volunteers to participate.**	
5 min	• **After each paragraph provide constructive feedback. Facilitate class discussion on solutions…keep in mind, there are no "right" or "wrong" answers.**	

Time	Facilitator Tasks	Refer To
	<u>Ideas for Talking Points or Discussion</u> → *Was the unnecessary information eliminated?* → *Did the pertinent information flow in logical order?* → *Was the information clear, concise, and to the point?*	
 Estimate Total Time: 38 min	• **The following are some suggested paragraph solutions. You may or may not need to reference them, but they are provided for a backup if you aren't getting volunteers or are struggling with possible solutions.** 95 Mike, Tucker, on 165.225…I'll be your ground contact for this fire. I'm on the left flank at the top of the hill, waving my tool with flagging, do you have me in sight? For the first mission, we'd like a bucket drop on a stumphole here near me, I've laid out an orange panel for you exactly where we'd like it. **OR** 95 Mike, Tucker on 165.225. This is your ground contact, Tucker, establishing communication. Are you ready for your first mission? We have a stumphole in the ground we'd like a bucket dropped. It's on the left flank of the fire near the edge of the fireline. There's an orange panel near it. I'm also standing there waving my tool with pink flagging. I've directed the rest of the crew to clear the area.	

Module 9- Troubleshooting the Amazing Mark III Pump

Overview

Objective: Students will be able to identify and discuss the three main components of the module: set up, operation, and maintenance of Mark III pumps.

Purpose: To maximize the efficiency of Mark III pumps and avoid problems that requires time-consuming troubleshooting.

Method: Students will watch a video and participate in an exercise.

Content: Mark III Pump Operations, featuring Thom Taylor and Mark Noyes

Facilitator Quick Checklist

<u>The following are the most important tasks that should be considered before implementing this module:</u>

- ✓ **Preview the Mark III Pump DVD module**
- ✓ **Review the True/False Statements**
- ✓ **Gather Mark III pump and accessories if doing the pump setup exercise.**

Time	Facilitator Tasks	Refer To
1 min	• **Introduce objectives and method (optional) listed above.**	

Time	Facilitator Tasks	Refer To
4 min	• **Encourage students share their Mark III pump stories.**	
1 min	• **Have students reference the Mark III information pages in the New 2010 IRPG.** ***Emphasize that this information is <u>new</u> to the IRPG.***	**IRPG pgs 93-95**
11 min	• **Play DVD Module 9: <u>Troubleshooting the Amazing Mark III Pump</u>**	**DVD 9**
4 min	• **Read directions for exercise.** **<u>DIRECTIONS</u>** **Open Student Workbooks to page 31. Decide if each of the following statements is True or False and write at "T" or "F" in the blank provided. Use the Portable Pump Instructions (SW) and 2010 IRPG for reference.**	**SW pg 31** **IRPG pgs 93-95**
2 min	• **Review the suggested solutions. Recommended answers are as follows, but some may be open for discussion.**	**SW pg 33**

Time	Facilitator Tasks	Refer To
4 min	**Assignment** **T or F** **F** — It's okay to run Mark III's without water. **T** — Correct Mark III fuel mixtures depends on the region you're working in. **T** — It's okay to prime the pump head with a bucket if there is no hand primer available. **T** — Mark III pumps need one squirt of grease about every 8 hours. **F** — It is necessary to choke an already warm engine when restarting. **F** — It is not necessary to let the pump warm up before moving throttle to the run position. **T** — It is a good idea to let engine idle for one to two minutes before shutting down. **T** — The yellow cut out switch is important for stopping the engine and preventing damage should over speeding occur. **T** — A wet sparkplug might indicate a flooded engine. **T** — The connection between the suction hose and the pump can be "hand-tight" for the pump to work properly. **T** — General rule of thumb, let the pump warm up for at least 2 minutes before going to full throttle **F** — Most Mark III kits do not come with earplugs. **T** — Disconnecting the fuel line is part of the deflooding procedure. **T** — A copper gasket and plug seals the bottom of the crankcase. **T** — One proper procedure for shutting down a Mark III pump is to throttle-down, disconnect the fuel line and let the pump die on its own.	**SW pg 31**
 Estimate Total Time: 26 Min		

	• **Advise students that SW pages 33-36 High Pressure Portable Pump Information Reference Guides are intended to be torn out and used as a guide for future reference. The new guides will be coming this spring in the Mark III kits (NFES 0871).**	**SW pgs 33-36**
Additional Time 20 min	• **As a supplement to this module, consider setting up a Mark III pump as a field exercise. The following are a variety of ideas for implementing the set-up.** ***Have one or two volunteers setup the pump while you (or they) explain what they're doing. It might be a good idea to have someone in mind in the class prior to exercise. If need be, bring a capable person in from outside the class to help.*** ***Distribute pieces (check/bleeder, suction hose, hose curl or pigtail, etc.) of the pump kit to the students. Each person is responsible for putting their piece into place during the setup process.*** ***(You can even break it down to where ONE person is in charge of the choke, ONE person is in charge of the pull start, etc. Each person with a piece of the pump can only position or utilize <u>their</u> piece or device)*** ***While a volunteer is putting the pump together, point out all the problems that could arise from improper assembly. For example, while connecting suction hose, explain that "hand tight" is not sufficient, and a wrench <u>must</u> be used to ensure there is no air leakage. Other examples would be ensuring proper fuel mixture ratio, how to avoid "flooding" the pump and showing importance of using check/bleeder or cracking the recirculation nozzle to avoid cavitation.***	

Module 10- 2004 Module: Downhill Line Construction

Overview

Objective: Given a fire scenario, students will determine tactical decisions relating to a downhill line construction assignment.

Purpose: To provide an opportunity to analyze a decision making process from a real life fire scenario.

Method: Students will watch a video featuring the Loop Fire Incident and participate in two exercises.

Content: Loop Fire Incident

Facilitator Quick Checklist

<u>The following are the most important tasks that should be considered before implementing this module:</u>

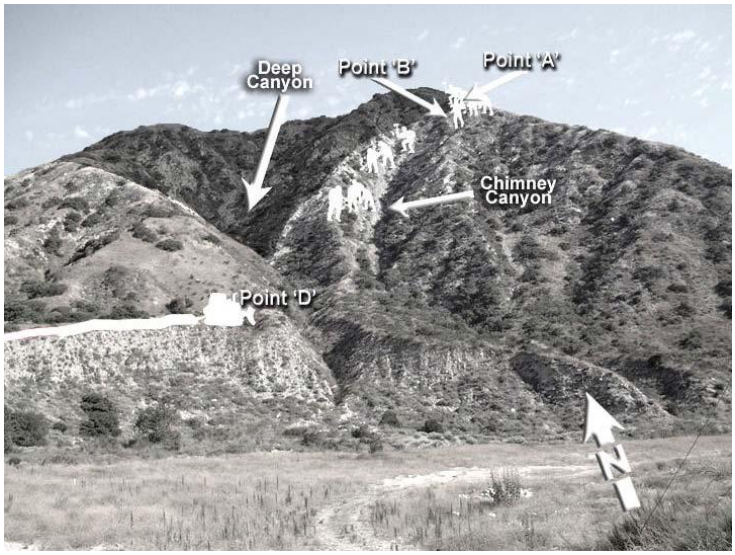
- ✓ **Preview the DVD Supplemental Module**
- ✓ **Read over questions and suggested solutions.**

Time	Facilitator Tasks	Refer To
1 min	• **Introduce objectives and method (optional) listed above.**	
3 min	• **Play DVD Module 10: Downhill Line Construction**	**DVD 10**

Time	Facilitator Tasks	Refer To
	• **Stop video when instructed to do so.**	
8 min	• **Direct students to page 39 in SW to fill out answers for Assignment #1.**	**SW pg 39**
8 min	• **Facilitate class discussion on solutions…keep in mind, there are no "right" or "wrong" answers. Below are some possible solutions for Assignment #1.** **List the items that are in favor of cold trailing down the "chimney" canyon.** - Relatively short distance to dig line - Fire backing downslope against prevailing wind - Crews and equipment working at bottom of slope with probable tie-in. - Alternative plan would include more acreage, longer line construction, burnout operation. **List the items that are not in favor of cold trailing down the "chimney" canyon.** - Steep terrain with rocky face and chimney - You were provided no information on advanced scouting - No radio, poor communication - Alternate plan was easier and safer	**SW pg 39**

Time	Facilitator Tasks	Refer To
	Describe what decision you would make at this point. Identify what information you were given that influenced your decision. -Use alternate plan ridge (Point A, East along the ridge to road below) as already determined in the pre-attack plan. This decision should include splitting crew and sending one-half of crew down ridge to work back up from anchor at bottom. Dispatch runner back to Del Rosa crew to get advice to Division Boss and to Liaison with LA County of action taken and plan to fire line, along the ridge when line completed and tied across bottom to LA County dozer line.	
2 min	• **Resume video.**	**DVD resume**
	• **Stop video when instructed to do so.**	
8 min	• **Direct students to page xx in SW to fill out answers for Assignment #2.**	**SW pg 40**
8 min	• **Facilitate class discussion on solutions…keep in mind, there are no "right" or "wrong" answers. Below are some possible solutions for Assignment #2**	**SW pg 40**

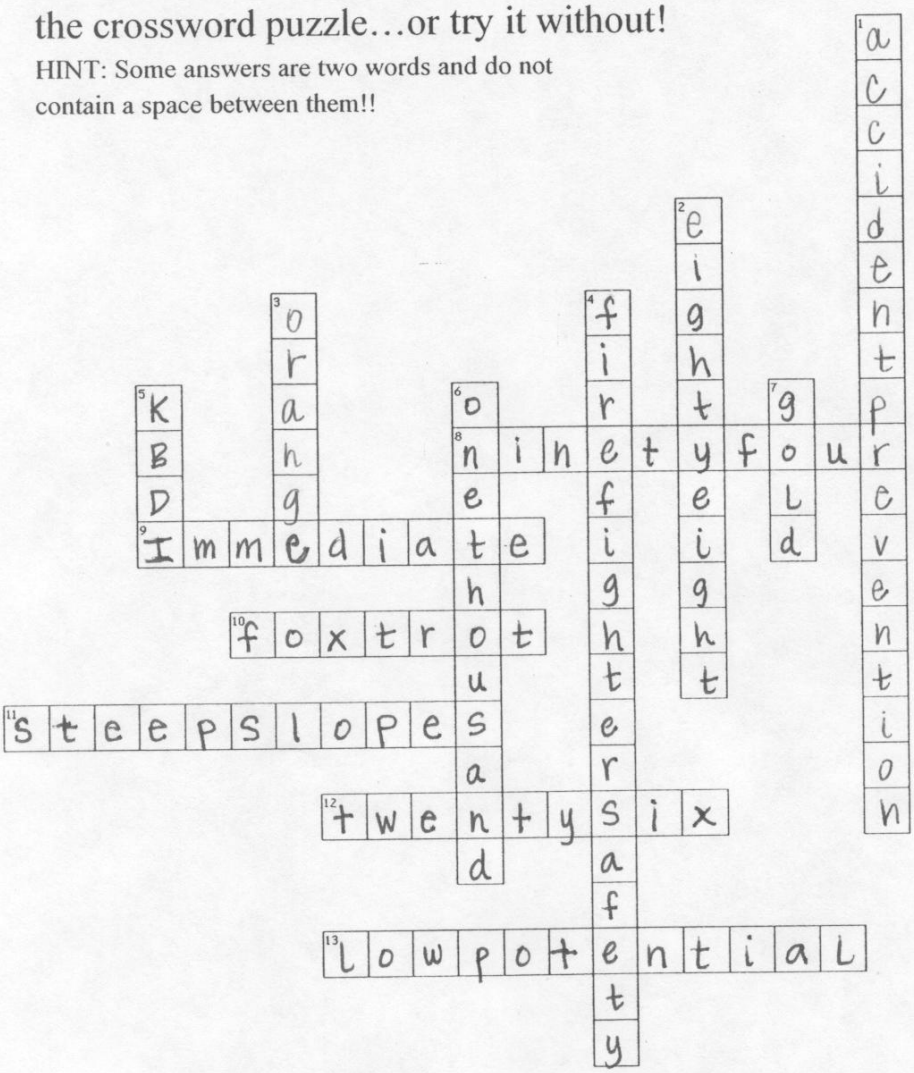
Time	Facilitator Tasks	Refer To
	List the alternative courses of action that were available to King as he sized up the situation at the "diamond." NOTE: Feel free to use the Downhill Checklist in your IRPG even though they were not available to Superintendent King at the time. - Build cold trail line along the fires edge into steep gully and then out to dozer line on far side of gully. - Build indirect line from the "diamond" area along the east edge of the deep gully to a point opposite the dozer line. - Hold the crew at the "diamond" area, out of chimney canyon, send a scout down along the fire's edge into gully, and out, to scout line and make contact with LA Co. crew. - Pull back uphill for new line choice. - Abandon effort, pull out to safe area. **List the fire behavior factors and any other key items for making any decisions (but not necessarily known to King) at this point.** - Topography (chimney canyon, steep sided deep gully with fire edge in bottom) - Fuels – (light, dry, preheated by fire's proximity) - Fire had spotted earlier, spot fires not active - County crews still working toward him from bottom - Fire laying down – static situation	**SW pg 40**

Time	Facilitator Tasks	Refer To
	Identify and justify the course of action you would take at this point. - Hold crew at "diamond" . Send out scout with one foot in the burn to contact lower crew. Have pre-arranged signal and plan to use burned area west from chimney as escape route. If possible, scout to determine plan of tie-in and best method of attack.	**SW pg 40**
9 min ***Estimate Total Time: 47 min***	• **Resume video if time allows. The remaining part of the video is an interview with Gordon King, Superintendent of the El Cariso Hotshots during the Loop Fire Incident in 1966.** 	

2010 IRPG Crossword

Familiarize yourself to the new 2010 IRPG by referencing it to complete the crossword puzzle…or try it without!

HINT: Some answers are two words and do not contain a space between them!!



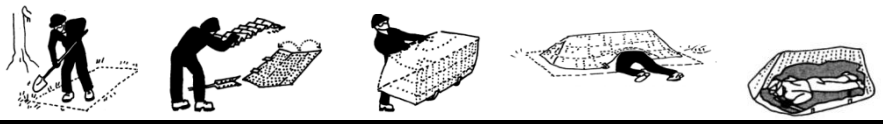
Across

8. page # of Mark III troubleshooting
9. Multi-Casualty Triage System, priority red
10. International Phoenetic Letter F
11. Hazard Tree Safety (third bullet)
12. page number of oil/gas site safety
13. Haines Index 4

Down

1. purpose of SAFECOM system
2. page # of Fireline Location
3. cover color
4. first consideration of line location
5. Keetch Byrum Drought Index acronym
6. loss of 1' draft per ____ feet in elevation
7. new color section

Conclusion/Fire Shelter Exercise		
Overview		
	Objectives: Students will: 1. Review and discuss last resort survival including escape and shelter deployment site selection. 2. Conduct "hands-on" fire shelter inspections and deployments. **Purpose:** To meet the 2010 Interagency Standards for Fire and Fire Aviation Operations or the Wildland Fire and Aviation Program Management and Operations Guide. **Method:** A variety of methods are provided.	
Facilitator Quick Checklist		
	<u>The following are the most important tasks that should be considered before implementing this module:</u> ✓ **Obtain enough practice fire shelters (1 for every 3 people in the class)** ✓ **Decide how students will meet the objectives for fire shelter training. A list of suggested information and videos is provided.**	
Time	**Facilitator Tasks**	**Refer To**
1 min	• **Introduce objectives and method (optional) listed above.**	

Time	Facilitator Tasks	Refer To
3 min	• **<u>Prior to conducting the outside fire shelter deployment practice, ensure that participants complete the course evaluation. Input is crucial to the development of this program.</u>**	**SW pg 45**
10 min	• **The following is a list of optional information and videos you can use to fulfill the requirements for the Fire Shelter portion of the Fire Refresher.** • *Using Your Fire Shelter* video, NFES #1568 • *New Generation Fire Shelter* video, NFES #2711 • *The New Generation Fire Shelter* booklet, NFES #2710 • **Updates, publications, and fire shelter training can be found at: http://www.nifc.gov/fire_equipment/fire_shelter.htm**	
5 min	• **Review the process of visually inspecting a fire shelter and demonstrate the proper technique for deployment.**	
15 min ***Estimate Total Time: 34 Min***	• **Allow students the opportunity to visually inspect fire shelters and practice deploying their own fire shelters.** 	

Want More Information?

The following is a list of websites for further reference. Some of them were used for building the Fire Refresher, and others provide additional information to supplement the individual modules.

Module 1) Introduction

- Safety and Health Working Team Reports
  - http://www.nwcg.gov/teams/shwt/safetygram2.htm
- Annual Wildland Fire Statistics
  - http://www.nifc.gov/fire_info/fire_stats.htm
- SAFENET Main Page
  - http://safenet.nifc.gov/safenet.nsf/SNmain?OpenFrameSet

Module 2) The Fires of 1910

- 1910 Commemoration Information Site
  - http://www.fs.fed.us/r1/projects/1910-centennial/home.html

Module 3) Is Your LCES Adequate

- Brad Mayhew's LCES pocketcard and Fireline Factors website
  - http://www.firelinefactors.com/id30.html
- Fire Leadership Tactical Decision Game References
  - http://www.fireleadership.gov/toolbox/TDG_Library/tdgsreferences.htm
- Wildland Fire Leadership Development Program - Leadership Toolbox (provides resources to assist with instruction using video, sand tables, other methods):
  - http://www.fireleadership.gov/toolbox/toolbox.html

Module 5) Fit for Fire

- Firefighter Fitness Training Program
  - http://www.nifc.gov/FireFit/index.htm

- Publication: Eating for Health and Performance: The Wildland Firefighter
  - http://fsweb.mtdc.wo.fs.fed.us/php/library_card.php?p_num=0651%202833

- Publication: Feeding the Wildland Firefighter
  - http://fsweb.mtdc.wo.fs.fed.us/php/library_card.php?p_num=0251%202323

Module 6) The Fire Triangle

- Current National Forecast Fire Danger Map:
  - http://www.fs.fed.us/land/wfas/fd_cls_f.gif

- Missoula Fire Sciences Laboratory: Fire Behavior and Fire Danger Software
  - http://firemodels.fire.org/

Module 7) Weather and Wind Warnings

- National Weather Service - Fire Weather Home Page
  - http://fire.boi.noaa.gov/

- National Wildfire Coordinating Group list of fire weather web sites:
  - http://www.nwcg.gov/teams/wfewt/biblio/weather1.html

- National Interagency Coordination Center - Predictive Services Weather Page
  - http://www.nifc.gov/nicc/predictive/weather/weather.htm

Module 8) Aviation Communication

- Interagency Helicopter Operations Guide (IHOG), Chapter 4 - Flight Following, Resource, Tracking, and Communications:
  - http://www.nifc.gov/ihog/chapters/2006chapter04.pdf

Other

- Annual Wildland Fire Safety Refresher Training - Archives:
  - http://www.nifc.gov/wfstar/archives.html

- Annual Wildland Fire Safety Refresher Training Video
  - http://www.nifc.gov/wfstar/hottopics/refresh_video.html

2010 Fire Refresher Facilitator Evaluation

Circle the amount of stars for each DVD and Exercise according to its <u>ease of facilitation</u>.

5 ☆☆☆☆☆…….Very easy to facilitate
4 ☆☆☆☆……..….Fairly easy to facilitate
3 ☆☆☆……....Undecided
2 ☆☆……..…. Somewhat difficult to facilitate
1 ☆……..…..Very hard to facilitate

Module 2	**The Fires of 1910**	**Exercise** ☆☆☆☆☆
Module 3	**Is Your LCES Adequate**	**TDG Exercise** ☆☆☆☆☆
Module 4	**Human Factors – The Gap**	**Exercise** ☆☆☆☆☆
Module 5	**Fit for Fire**	**Self -Evaluation Exercise** ☆☆☆☆☆
Module 6	**Weather and Wind Warnings**	**Indicators Exercise** ☆☆☆☆☆
Module 7	**The Fire Triangle**	**Exercise** ☆☆☆☆☆
Module 8	**Helicopter Operations**	**Communication Exercise** ☆☆☆☆☆
Module 9	**Troubleshooting the Amazing Mark III Pump**	**Exercise** ☆☆☆☆☆
Module 10	**2004 Module: Downhill Line Construction**	**Exercise** ☆☆☆☆☆

What is your highest redcard level? _____What is your opinion of the layout and use of the facilitators guide? _____
Additional comments: _____
_____
_____