Date: February 22, 2018

To: State Board of Fire Services

From: Jim Eastman, Fire Service Training Specialist, State Fire Training

SUBJECT/AGENDA ACTION ITEM:
FSTEP Incident Safety Awareness for Hired Vendors (2017)

Recommended Actions:
Informational only

Background Information:
CAL FIRE Hired Equipment Information
At times when the equipment needed to control an emergency incident exceeds the resources of the California Department of Forestry and Fire Protection (CAL FIRE), the department hires the equipment and services of the private sector to supplement its own resources. In so doing, CAL FIRE attempts to obtain those resources that exactly meet the resource needs of the Incident Commander, at a price that is fair to the contractor and which represents a prudent expenditure of state taxpayer funds.

CAL FIRE’s internet website contains excerpts from the policies, procedures, and payment rates used by CAL FIRE. These policies define the terms and conditions for entering into an Emergency Equipment Rental Agreement (EERA) with CAL FIRE. These terms and conditions reflect the business needs of CAL FIRE, and as such, these are the business rules of CAL FIRE. These policies, procedures, and rates are not laws or regulations, although in some cases they reflect the requirements of applicable laws and regulations.

The intent of the course titled “Incident Safety Awareness for Hired Vendors” is to provide a minimum safety standard level of all prospective contractors that enter into an EERA with CAL FIRE. No contractor is guaranteed any amount of business as a result of entering into an EERA with CAL FIRE. CAL FIRE uses established guidelines to distribute assignments for incident fire suppression and support equipment. The intent of these guidelines is to maintain fair business practices and distribute assignments with as many vendors as possible while being fiscally responsible with state taxpayer funds.

“The Department of Forestry and Fire Protection serves and safeguards the people and protects the property and resources of California.”
CAL FIRE incident commanders determine what equipment is needed to support an incident logistically and operationally to accomplish incident objectives. Vendors are not participants in the processes in determining incident equipment or personnel needs.

During 2010 a cadre was formed to look at developing minimum performance standards for personnel that may be considered for hire to fulfill the incident needs determined by an incident commander. This class annual requirement was supported by both state and federal agencies that draw from the same list of “Hired Vendors”.

It was identified and determined that this level of training be maintained on an annual basis to ensure a performance standard of hired vendors when requested from the public sector to serve supporting roles on and during incidents.

**Cadre Leadership:**
Jim Eastman, Cadre Leader with State Fire Training, and Allison Shaw, Cadre Editor with Sacramento State University.

**Development Cadre Members:**
Members of the cadre included current instructors of the curriculum along with representatives of the United States Forest Service. Members included: Matthew Sully, Hired Equipment with CalFire; Mark Rakestraw, Instructor with MDR Northstate Fire Training; Sue Zahn, Operations Contracting Program Manager with United States Forest Service; Cheryl Raines, Incident Business Management Specialist with United States Forest Service; Chad Lawson, Instructor and Director of Fire Science with Lassen Community College; David Trussell, Instructor Big D Fire Training and Lassen Community College (ret).

**Analysis/Summary of Issue:**
Following is an analysis of the new Incident Safety Awareness for Hired Vendors course being developed.

1. The legacy course for Fireline Safety Awareness for Hired Vendors was developed in 2010 and released January 2011. This course has not been updated since that time. The new course, Incident Safety Awareness for Hired Vendors was compiled and organized through the cooperative efforts of numerous professionals within and associated with the California fire service including the United States Forest Service and CalFire. We gratefully acknowledge those individuals who served as principal developers for this document.

2. This new course provides an awareness level training of the requisite knowledge, skills, and abilities for those responsible for their personal actions when requested at times when private sector equipment is needed to be utilized at an emergency incident that exceeds the resources of the California Department of Forestry and Fire Protection (CAL FIRE), the California Fire Service in a major incident, and/or neighboring allied public safety agencies including the United States Forest Service.

3. This course has been updated to not only respond to major incidents such as wildland urban interface, but has been updated to respond to all risk incident types that may occur throughout the fire service or allied public safety agencies.

4. This course utilizes the baseline curriculum that was originally developed in 2010. The course materials were updated to include Terminal Learning Objectives (TLO’s) and Enabling Learning Objectives (ELO’s).
5. This course also requires all instructors to maintain relevancy and recency with respect to historical incidents that have occurred in the past year and up to three years within California. This is designed to properly enforce instructors with the responsibility to maintain course objectives and relevancy with major incidents that have occurred during the past year.

It is the recommendation of the cadre to require the annual attendance and completion of this course to re-qualify civilian personnel that will perform at any “all hazard” type incidents when requested as Hired Vendors. Establishing this minimum safety standard supports that theory all agency assigned personnel, sworn or hired, with the goal that “Everyone Goes Home”.
FSTEP Incident Safety Awareness for Hired Vendors
Implementation Plan

This document is intended to provide information for all State Fire Training (SFT) stakeholders on the update of a retiring of a Fire Service Training and Education Program (FSTEP) course titled Fireline Safety Awareness for Hired Vendors (2011). A new course has been updated to include “all-risk” elements, along with recency and relevancy objectives to be designed into the annual redelivery of the curriculum for maximum safety. This course will be identified as Incident Safety Awareness for Hired Vendors (2017).

The new course is designed for annual attendance, usually prior to start of the fire season. The course completion card is valid for one year. The requirement for annual attendance and completion of this course to re-qualify civilian personnel that will perform at any “all hazard” type incidents when requested as Hired Vendors. Establishing this minimum safety standard supports that theory all agency assigned personnel, sworn or hired, with the goal that “Everyone Goes Home”.

Incident Safety Awareness for Hired Vendors course is designed for hired vendors working with the CAL FIRE or the United States Forest Service on any active “all risk” incident with major focus on wildland fires, including water tender operators, heavy equipment with water operators (Skidgine), dozer operators, crew bus drivers, vehicle drivers, mechanics, fallers, swampers, and chain saw operators.

The purpose of the course is to educate hired vendors who plan to engage in “all risk” incidents, wildland fire suppression and other incident support activities, how to recognize and mitigate risk, and maintain safe and effective practices while working under agency supervision on an incident. Upon successful completion of training, participants will receive a course completion card valid for one (1) year from date of issue.

Updated Course for Incident Safety Awareness for Hired Vendors

<table>
<thead>
<tr>
<th>Incident Safety Awareness For Hired Vendors 2017 (8 Hours)</th>
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FSTEP Incident Safety Awareness for Hired Vendors Change Timeline

<table>
<thead>
<tr>
<th>Fireline Safety Awareness 2011</th>
<th>July 1, 2018</th>
<th>Incident Safety Awareness 2017</th>
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<tbody>
<tr>
<td>Transition Period</td>
<td>Full Implementation</td>
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Effective June 30, 2018, Fireline Safety Awareness for Hired Vendors (2011) course will no longer be delivered and the curriculum will be retired.

INSTRUCTOR REQUIREMENTS ................................................. Effective July 1, 2018

Current registered instructors of the Fireline Safety Awareness for Hired Vendors (2011) are authorized to instruct the FSTEP Incident Safety Awareness for Hired Vendors (2017). Instructors will be informed of the new course materials as they request class approval and notified utilizing State Fire Training ENEWS.

New instructors for the FSTEP Incident Safety Awareness for Hired Vendors (2017) shall meet current SFT requirements for Qualified Instructors.

In addition, shall have completed following:

- Successfully completed the course
- Introduction to Incident Command System (ICS-100)
- Firefighter Training (S-130)
- Introduction to Wildland Fire Behavior (S-190)
- Intermediate Wildland Fire Behavior (S-290)
- Human Factors in the Wildland Fire Service (L-180)
- ICS for Single Resources and Initial Action Incidents (IS-200.B)
- National Incident Management System - An Introduction (NIIMS 700.A)
- Have a minimum of five (5) years’ full-time paid experience in a federal, state, local or provincial fire agency
- Has responded as a Single Resource or Overhead assignment which has gone through the following: check-in, briefing and demob (completed a Shift Ticket) process on a campaign incident
- Has a working knowledge, skills and abilities working and performing with Incident Command
- Has been assigned to an incident within the last five (5) years (Red Card currency)
- Recommend that a new instructor co-teach with a primary instructor a first course

SFT STAFF COORDINATION

This course replaces former FSTEP course and will realign under FSTEP curriculum.

POTENTIAL AGENCY IMPACTS

Fire agencies utilizing any existing previous course curriculum shall realign with the FSTEP curriculum. All previous curriculum will retire as the new FSTEP course curriculum has been updated to current instructional standards.

After review, fire agencies should update their job specifications and recruitment documentation to reflect this new course for addressing Hired Vendors. Fire agencies should also evaluate how these new courses may impact their existing contract agreements.

Accredited Regional Training Programs (ARTP), Accredited Local Academies (ALA), community colleges and all other local delivery venues need to review the curriculum and seek approval from their curriculum committee/program sponsor, as deemed appropriate.
Incident Safety Awareness for Hired Vendors

Course Plan

Course Details

Description: This course provides an awareness of fireline and incident safety to hired vendors who plan to engage in wildland fire suppression and other incident support activities. It includes an overview of hazards and safety issues, entrapment avoidance, incident organization, fire shelter deployment, and current issues.

Designed For: Hired vendors working with the California Department of Forestry and Fire Prevention (CAL FIRE) or the United States Forest Service (USFS) on any active incident, including water tender operators, heavy equipment drivers or operators, crew bus drivers, vehicles with a driver, mechanics, fallers, and swamplers.

Authority: California Department of Forestry and Fire Protection (CAL FIRE) and United State Forest Service (USFS) agreements

Prerequisites: ICS-100 – Introduction to Incident Command System (recommended)
S-130 – Firefighter Training (recommended)
S-190 – Introduction to Wildland Fire Behavior (recommended)
L-180 – Human Factors in the Wildland Fire Service (recommended)

Corequisites: None

Standard: State Fire Training (SFT) requires every student to attend the entire course, participate in classroom and group discussions, complete and pass all activities, and complete an oral evaluation.

Hours: Lecture: 7:00
Activities/Skills Exercises: 1:00

Hours (Total): 8:00

Maximum Class Size: 40

Instructor Level: Primary instructor
Instructor/Student Ratio:  
1/40 (Lecture)  
1/5 (Fire shelter activity – See Personnel Requirements)

Restrictions: Course completion card is valid for one year from date of issue

SFT Designation: FSTEP
Required Resources

Instructor Resources
To teach this course, instructors need:

  - National Wildfire Coordinating Group (NWCG), NFES, 1077

Demonstrations and Activities

- Topic 2-6
  - An assortment of radios for students to handle and practice using
- Topic 2-8
  - Complete set of wildland PPE to demonstrate proper wear and care
- Topic 4-1
  - CAL FIRE and USFS shift tickets for students to fill out
  - Sample Incident Action Plan (IAP)
- Topic 5-1
  - One Activity 5-1 sheet (page 1) per student
  - One Activity 5-1 sheet (page 2) per evaluator
  - One Activity 5-1 performance evaluation sheet (page 3) per five students
  - One training fire shelter per five students
  - Clipboard
  - Stopwatch
  - Pen

Key Incident Resources
To keep curriculum current, please use the following incidents (or anything more current) as primary learning resources during student discussions:

- Hurricane Katrina (2005, New Orleans, LA)
- Esperanza Fire (2006, California)
- Yarnell Fire (2013, Arizona)
- Beaver Incident (2014, California)
- Soberanes Fire (2016, California)

Online Instructor Resources
The following instructor resources are available online at
http://osfm.fire.ca.gov/training/SFTCurriculum

- Handout 2-7: Basic Regulations Related to Association with Prison Inmates
- Handout 3-1: Parts of a Basic Vegetation Fire (Instructor Copy)
- Handout 3-1: Parts of a Basic Vegetation Fire (Student Copy)
- Activity 5-1: Deploying a “New Generation” Fire Shelter
Handout 5-1: Shelter Deployment Notes from the Field

Student Resources
To participate in this course, students need:

  - National Wildfire Coordinating Group (NWCG), NFES, 1077
  - Provided by instructor

Facilities, Equipment, and Personnel
The following facilities, equipment, or personnel are required to deliver this course:

Facilities
- Standard classroom equipped for 40 students
- Conference board/pads with markers/erasers
- Appropriate audiovisual equipment

Equipment
- Minimum of five “new generation” practice fire deployment shelters

Personnel
- During Activity 5-1: Deploying a “New Generation” Fire Shelter, a single instructor may evaluate students in groups of five or bring in additional skill evaluators to test multiple groups of five simultaneously.
Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective
At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements.

Enabling Learning Objectives
1. Identify facility requirements
   - Restroom locations
   - Food locations
   - Smoking locations
   - Emergency procedures
2. Identify classroom requirements
   - Start and end times
   - Breaks
   - Electronic device policies
   - Special needs and accommodations
   - Other requirements as applicable
3. Review course syllabus
   - Course requirements
   - Student evaluation process
   - Assignments
   - Activities
   - Required student resources
   - Class participation requirements
4. Review course objectives
   - Provides fireline safety awareness training to vendors and operators of private hired equipment
     - Required annually prior to dispatch
   - Provides basic fire behavior and safety information to assist in recognizing potentially unsafe situations
     - Entering unsafe locations
     - Survival standards
   - Does not assist in completing a USFS or CAL FIRE contract
     - Contact a local USFS Contracting Officer and/or local CAL FIRE Unit for more information
   - Does not train in the operation of private hired equipment

Discussion Questions
1. Determined by instructor
Activities
1. Determined by instructor

Topic 1-2: Course Completion Card

Terminal Learning Objective
At the end of this topic, a student, given course completion card information, will be able to identify course completion validity timeframes and display requirements in accordance with CAL FIRE Office of the State Fire Marshal (OSFM) standards.

Enabling Learning Objectives
1. Identify course completion card validity period
   • Valid for one year from date of issue
2. Identify when individuals are required to show a valid course completion card
   • Upon arrival at an incident
   • Failure to provide a valid OSFM course completion card may result in rejection from the incident
   • Rejection from incident may result in loss of pay for any incurred expenses

Discussion Questions
1. Determined by instructor

Activities
1. Determined by instructor

Instructor Notes
1. None

Unit 2: Hazards and Safety Issues

Topic 2-1: Introduction to the Incident Response Program Guide

Terminal Learning Objective
At the end of this topic, a student, given an Incident Response Program Guide (IRPG), will be able to identify the content and layout of the IRPG so that the student can utilize appropriate sections to the instructor’s satisfaction.

Enabling Learning Objectives
1. Identify the purpose of the IRPG
   • A fire job aid and training reference for operational personnel assigned to an incident
   • A secondary application for all-hazard incident response
   • Does not take the place of individual judgment and expertise
     o Must improve those skills through extensive training, practice, and on-the-job experience
   • A collection of best practices for a limited number of incident situations
   • Not intended to provide a solution to all situations that may incur on an incident
2. Identify the contents and purpose of the “White – Table of Contents” section
   • Operational leadership
- Essential element
  - Confidence
  - Competent
- Provides purpose, direction, and motivation to accomplish difficult tasks under dangerous and stressful situations
- Duty, respect, integrity
  - Bullet points to provide direction and motivation
    - For your crew
    - For yourself
- Communication responsibilities
  - Five responsibilities
    - Brief others
    - Debrief your actions
    - Communicate hazards
    - Acknowledge messages
    - Ask if you don't know
- Leader’s intent
  - Must ensure you have a clear understanding of their intent for your assignment
- Human factor barriers to situational awareness
  - Low experience level with local factors
  - Distractions from primary task
  - Fatigue
  - Stress reactions
  - Hazardous attitudes
- After Action Review (AAR)
  - Participants openly and honestly discuss what transpired
  - Focus on lessons learned
  - Keep comments positive and constructive

3. Identify the contents and purpose of the “Green – Operational Engagement” section
- Risk management
  - Provides a checklist for awareness and control
    - Situation awareness
    - Hazard assessment
    - Hazard control
    - Decision point
    - Evaluate
- Look up, down, and around
  - Provides a table to quickly reference fire environment indicators
    - Fuel characteristics
    - Fuel moisture
      - Relative humidity (RH)
• Fuel temperature
• Terrain
• Wind
• Atmospheric instability
• Fire behavior

• Four significant common denominators of fire behavior on tragedy fires
  o Often occur on small fires or quiet areas of large fires
  o Often occur in relatively light fuel
  o Often occur with unexpected shifts in wind direction or speed
  o Often occur when responding to topographical conditions and uphill runs

• Common tactical hazards
  o Position
  o Situation

• LCES
  o Lookouts
  o Communications
  o Escape routes
  o Safety zones

• Downhill checklist
  o Downhill fireline construction is hazardous
    ▪ Steep terrain
    ▪ Fast-burning fuels
    ▪ Rapidly changing weather

• Wildland/urban interface firefighting
  o Fire behavior
  o Size-up
  o Triage
  o Tactics

4. Identify the contents and purpose of the “Gold – Specific Hazards” section

• Refusing risk
  o You have the right to refuse the risk if you feel an assignment is unsafe
  o You also have the obligation to identify safe alternatives for completing the assignment

• Specific hazards guidelines for situational awareness and hazard control
  o Thunderstorm safety
  o Hazardous tree safety
  o Power line safety
    ▪ Mandatory notifications to supervisor for down power lines
    ▪ Roadside response
  o Unexploded ordinance safety
  o Oil and gas site safety
  o Last report survival
5. Identify the contents and purpose of the “Pink – First Aid” section
   • First aid guidelines
     o Know your location at all times for reporting medical emergencies
     o Do ONLY what you know how to do
     o Keep records of what you do
     o Topics for guidance you may need in a incident situation:
       ▪ CPR
       ▪ Heat-related injuries
       ▪ Burn injuries

6. Identify the contents and purpose of the back cover
   • Inside
     o Briefing checklist
       ▪ Operational vendors must attend briefings to obtain information needed to complete operational assignments
       ▪ Provides a checklist to ensure vendors don’t miss critical details in the briefings
       ▪ Bring questions or concerns to your supervisor
   • Outside
     o The 10 Standard Firefighting Orders and 18 “Watch Out” Situations are so important to survival that the IRPG has a quick reference for ease of review

Discussion Questions
1. Determined by instructor

Activities
1. Given an IRPG, verbally quiz students on where to find specific items within the IRPG.

Instructor Notes
1. Provide each student with a copy of the IRPG to keep.
2. Most of the content touched on during the IRPG overview is covered in more detail elsewhere in this course. The goal of this topic is to familiarize students with the IRPG’s structure and content, not to deal with specifics.

Topic 2-2: Fire Behavior and Fire Weather

Terminal Learning Objective
At the end of this topic, a student, given an overview of fuels, topography, and weather, will be able to identify different types of fire environmental hazards and indicators of hazardous conditions when implementing the risk management process.

Enabling Learning Objectives
1. Describe fuel characteristics
   • Continuous fine fuels
     o Rapid rate of spread
     o A common denominator of fire behavior on tragedy fires
   • Heavy loading of dead and downed fuels
     o Intense burning conditions
• Ladder fuels
  o Potential for surface fires to move up into trees (torching and/or crown fire)
• Tight crown spacing
  o Potential for fire to carry from crown to crown
• Special conditions
  o Firebrand sources
  o Snags
  o Preheated canopy
  o Frost and bug kill
  o Unusually fine fuels
  o High dead-to-live fuel ratio

2. Describe fuel moisture
• A measure of the amount of water in fuel vegetation available to a fire
• Determines if fuels are ready to burn and spread rapidly
• Fuel moisture changes throughout the 24-hour daily cycle
• Fuel moisture changes throughout the season
• Drought conditions vary in different geographical areas over time
• Relative humidity (RH)
  o Plays a key role in fuel moistures and fire behavior
  o Low RH = dryer fuels
  o Fine fuels are more rapidly influenced than other fuels
  o Be aware when atmospheric conditions are getting hotter and drier

3. Describe fuel temperature
• Effects fuel flammability and potential for rate of spread
• Varies with the 24-hour daily cycle and topographic changes
  o Slope, aspect, and direct sunlight influence fuel temperature and flammability

4. Describe how topography impacts fire behavior
• Steep slopes
  o Rapid rates of fire spread
  o Rollouts and ignition of fuels below
• Chutes
  o V-shaped ravines where hot air and gases travel rapidly
  o Potential for very rapid rates of fire spread
• Chimneys
  o Continuous topographic features that create turbulent updrafts causing a “chimney effect”
  o Potential for very rapid rates of fire spread
• Box canyons
  o Deep-sided dead-end canyons with little chance of escape
  o Potential for very rapid rates of fire spread
• Saddles
• Rapid rates of fire spread
  o Fires are often accelerated through saddles because of wind channeling and less topographic resistance

- Narrow canyons
  o Rapid rates of fire spread and/or erratic fire behavior
  o Radiant or convective spotting can cause multiple spot fires
  o Slope reversal can cause rapid upslope runs on opposite slopes

- Ridges
  o A chain of mountains or hills that form a continuous elevated crest
  o Can experience more wind due to elevation above surrounding land

5. Describe how wind impacts fire behavior
- Winds can change frequently and are difficult to predict
- Primary factor that influences fire spread in both rate and direction
- A very common denominator of fire behavior on tragedy fires
- Know what your fire behavior and winds are doing at all times
  o Pay attention to weather forecasts
  o Throw dust in the air or tie a piece of flagging to your equipment to determine wind direction

6. Describe types of wind
- Strong surface wind
  o Usually ≥ 10 mph
  o Rapid rates of fire spread
  o Spotting
- Sudden calm
  o Wind shifts or other changes in weather can increase potential for hazardous fire conditions
- Battling or shifting winds
  o Potential wind reversals
  o Expect these winds if you see
    ▪ Wavering smoke column
    ▪ A cold front passage
    ▪ Wind blowing through saddles
    ▪ Wind at a drainage confluence
    ▪ Local wind effects
- Winds specific to local regions
  o Foehn
  o Local geographic

7. Describe how atmospheric instability impacts fire behavior
- Unstable air mass indicators
  o Vertical air movement
  o Smoke rising straight up
  o Good visibility
o Approaching cold front
  ▪ Winds will shift and increase
  ▪ Expect dangerous conditions due to stronger winds and changing wind direction
  ▪ Possible thunderstorm approaching

- Unstable air masses create potential for rapid rates of fire spread/fire growth
- Stable air mass indicators
  o No vertical air movement
  o Smoke traveling horizontally
  o Thermal belt
    ▪ Hot air sandwiched between two cold air masses
  o Inversion layer
    ▪ Hot air trapped underneath cold air
    ▪ A lifting/breaking inversion layer indicates transition from stable to unstable conditions

8. Describe fire behavior
- Leaning smoke column
  o Rapid rates of fire spread
  o Spotting
- Sheared column
  o Strong winds aloft
  o Spotting
  o Increase in fire behavior
  o Avoid working under a sheared column
- Well-developed column
  o Intense burning and unpredictable fire spread
  o Can create a plume-dominated fire
- Changing column
  o Column changing to a darker color
  o Rotating or splits indicates fire behavior
  o Strong downburst (collapsing columns)
  o Increasing fire intensity
- Tree torching
  o Possible transition from a surface fire to a crown fire
  o Expect extreme fire behavior conditions if single-tree torching progresses to groups of trees torching
- Smoldering fire
  o Will become more active
  o Changes in fires environmental influences
  o Possible increased flame lengths and rate of fire spread
- Fire whirls
  o Indicate changes in fire environment
Fire is developing vertically and building intensity
- Expect increased fire activity
- Potential for fire to move from a surface fire to a crown fire
- Spotting
  - Frequent spot fires
    - Indicate changes in fire environment
    - Increase in fire spread and complexity
    - Anticipate increased fire behavior hazards

Discussion Questions
1. What will a well-developed column do?
2. What is a Foehn wind?
3. How does an inversion layer impact fire behavior?

Activities
1. Determined by instructor

Instructor Notes
1. ELO 6 – Reference the “Beaufort Scale for Estimating Wind Speed” in the IRPG

Recommended Resources
2. Look Up, Look Down, Look Around Student Workbook, NWCG, NFES 1611, 2009 edition, pages 0.2-8.3

Topic 2-3: The 10, 18, and LCES

Terminal Learning Objective
At the end of this topic, a student, given an Incident Response Pocket Guide, will be able to identify the 10 Standard Firefighting Orders, the 18 Situations that Shout “Watch Out”, and lookouts, communications, escape routes, and safety zones (LCES) according to the information contained in the IRPG.

Enabling Learning Objectives
1. Identify the purpose of the 10 Standard Firefighting Orders
   - Guidelines to identify, communicate, and avoid hazardous fire situations
     - Must understand and follow these orders
     - Don’t bend them; don’t break them
   - Indicative of the most common dangers to fire personnel
     - Developed through studies of firefighter fatalities
     - In every wildland firefighter line-of-duty death (LODD), one or more of these orders was ignored
2. Identify the 10 Standard Firefighting Orders
   - Fire behavior
     - 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
• Fireline safety
  o 4: Identify escape routes and safety zones and make them known
  o 5: Post lookouts when there is possible danger
  o 6: Be alert; keep calm; think clearly; act decisively
• Organizational control
  o 7: Maintain prompt communication with your forces, your supervisor, and
    adjoining forces
  o 8: Give clear instructions and be sure they are understood
  o 9: Maintain control of your forces at all times
• After following 1-9
  o 10: Fight fire aggressively, having provided for safety first

3. Identify the purpose of the 18 Situations that Shout “Watch Out”
• Describe situations that expand the 10 Standard Firefighting Orders
• Indicate that fire potential may be changing
• Describe personnel actions that increase risk

4. Identify the 18 Situations that Shout “Watch Out”
• 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 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 the fireline

5. Identify the purpose of LCES
• Acronym is used by fire personnel to reference critical survival components
  o A compilation of the 10 orders and 18 situations
• Applies to all firefighters and personnel on the fireline, including private vendors
• Must be established and known to all personnel before it is needed

6. Identify the components of LCES
• Lookouts
• Communications
• Escape routes
• Safety zones

Discussion Questions
1. Determined by instructor

Activities
1. Determined by instructor

Instructor Notes
1. None

Recommended Resources
2. Essentials of Firefighting, ISFTA, 5th edition, page 806
6. CAL FIRE Training Handbook, Section 4300

Topic 2-4: Risk Management

Terminal Learning Objective
At the end of this topic, a student, given hazards and risk management tools, will be able to implement the risk management process as outlined in the Incident Response Pocket Guide.

Enabling Learning Objectives
1. Describe the components of the IRPG Risk Management checklist
   • Identify Hazards (Situation Awareness)
     o Gather information about factors and indicators to increase situational awareness
     o When an indicator reaches a critical level, look for additional indicators
       ▪ Indicators usually accumulate and compound
   • Assess Hazards
     o Use these indicators to estimate potential fire behavior hazards
     o Maintain good situational awareness
     o Always look up, look down, and look around for factors and indicators
   • Develop Controls and Make Risk Decisions
     o 10 orders
     o 18 watch-out situations
     o LCES
     o Anchor point
   • Implement Controls
     o Controls in place for identified hazards and being implemented by personnel
     o Controls integrated into operational plan
     o Controls understood at all levels
• Supervise and Evaluate
  o Human factors
  o Continually evaluate the situation
  o Monitor the indicators to determine what is changing
  o Indicators can signal dangers or opportunities
  o Significant changes can restart Risk Management process

2. Describe decision points
   • Any pre-identified condition that may change operational strategies and tactics

Discussion Questions
1. Determined by instructor

Activities
1. Determined by instructor

Instructor Notes
1. None

Recommended Resources
2. Look Up, Look Down, Look Around Student Workbook, NWCG, NFES 1611, 2009 edition, pages 0.2-8.3

Topic 2-5: Fireline Hazards

Terminal Learning Objective
At the end of this topic, a student, given an overview of fireline hazards, will be able to identify fireline hazards and strategies that potentially impact hired vendors on an incident.

Enabling Learning Objectives
1. Describe fireline hazard terminology
   • Life hazard
     o The existence of a situation or condition that would likely cause serious injury or death to exposed persons
   • Life Hazard Zone
     o An area within the fire perimeter identified as life threatening and hazardous to emergency responders
     o Usually isolated by barriers
   • Life Hazard Lookout
     o A person assigned to safely observe a Life Hazard Zone
2. Identify hazard-related responsibilities of all individuals
   • Always make safety a priority
   • “Mark and notify”
     o Flag any encountered hazard
     o Immediately communicate hazard to fireline supervisor and coworkers
   • Do not enter hazard zones
3. Identify terrain and vegetation hazards
• Falling materials
• Dead snags and live trees
  o Environmental conditions
  o Hazard tree indicators
• Rocks and other rolling materials
  o Personnel or equipment should not work directly above or below one another or in close intervals when working on steep slopes
  o Post a lookout to watch for falling or rolling materials
    ▪ Heavy material supported by combustible material can become dislodged
• Other vegetation hazards
  o Poison oak
  o Nettles
  o Thorns
  o Branches or roots
  o Burned out stumps

4. Identify potentially hazardous insects and reptiles
5. Identify hole and drop-off hazards
• Mine shafts
• Wells, cisterns, septic tanks, cesspools
• Gullies, washouts, cliffs, drop-offs
6. Identify procedures for working with down or sagging power lines
• Initial steps
  o Immediately notify fireline supervisor
  o Identify
    ▪ Always treat down power lines as live until confirmed dead and grounded by utility company
    ▪ Smoke may become charged and conduct electrical current
  o Isolate the area
  o Deny entry
• Working around power lines
  o Minimize operations under power lines
  o Metal fences can energize for a long distance
  o Ground can be energized by downed electrical lines
• Down line on a vehicle
  o Stay in vehicle if possible
  o If you must exit the vehicle:
    ▪ Jump clear
    ▪ Don’t hang on
    ▪ Shuffle or hop to safety
7. Identify hazardous materials
• Encountered more and more frequently on wildland fires
• Can be industrial, agricultural, drug labs, explosives, ordnance, etc.
  o Chemical or ammunition storage
  o Ordnance
    ▪ Most likely found on military and former military sites, shooting ranges
  o Building or vehicle components
  o Illegal drug labs
    ▪ Meth labs, honey oil labs, marijuana
  o Radioactive materials
  o Asbestos
  o Fuels
    ▪ Gasoline, diesel, LPG, etc.

8. Identify procedures for working with hazardous materials
   • Immediately notify supervisor
   • Stay up wind, up hill, and avoid breathing smoke
   • Isolate area and deny entry
   • Warn others in the immediate area

9. Identify procedures for working around heavy equipment
   • Stay at least 100 feet in front or 50 feet behind equipment
   • Only operator should ride on equipment
   • Avoid working below equipment where rolling material could jeopardize safety
   • Working at night can increase the risk due to reduced visibility
   • Establish visual and radio communications prior to engaging operator or approaching equipment
     o Equipment operators have difficulty seeing ground personnel

10. Identify hazards associated with aerial retardant and helibucket operations
    • Safety precautions for retardant and/or water drops from aircraft
      o May dislodge rocks and other heavy materials
      o Creates slippery surfaces and reduced traction
    • Safety precautions for rotary-wing aircraft
    • Safety precautions for fixed-wing aircraft

11. Identify ways to reduce incident-related driving hazards
    • Always drive defensively
    • All occupants will ALWAYS wear seatbelts
    • Reduce speed to prevent rollovers and/or loss of vehicle control
    • Drive slowly and cautiously on dangerous or blind curves and narrow roadways
    • Evaluate road surface and weather conditions
    • Use caution while driving in smoke
    • Utilize safe backing precautions
    • Be aware of load limits on bridges and roads

Discussion Questions
  1. Determined by instructor
Activities
1. Determined by instructor

Instructor Notes
1. None

Recommended Resources
2. *CAL FIRE Health and Safety Handbook 1700*, Section 1738

**Topic 2-6: Radio Operations and Maintenance**

**Terminal Learning Objective**
At the end of this topic, a student, given a radio, will be able to appropriately operate a radio using the correctly frequencies and proper radio communication protocol.

**Enabling Learning Objectives**
1. Identify the purpose of radio communication
   - Understanding radio use, the communications plan, and assigned frequencies helps operators safely accomplish incident objectives
   - Essential to firefighter safety
   - A key component to LCES
2. Identify radio requirements
   - Operator contract determines whether or not radios are required
     - Read and understand contract
   - When radios are required, operator is responsible for programming and operating hand-held or mobile radio while assigned to an incident
   - Radios must be programmable
   - Radios must be narrow-band capable and operate in the 138 MHz to 174 MHz range
     - Any noncompliant radio equipment used on narrow band channels may present a life safety hazard for all users
3. Describe radio frequencies commonly used on an incident
   - Communications Unit Leader provides the Incident Communications Plan (ICS-205) found in the Incident Action Plan (IAP) and specifies the frequencies to be used on the incident
   - Frequency types
     - Tactical channels (Simplex Channel)
       - Single frequency to transmit and receive
- Used for tactical functions, groups, divisions, etc.
- Line-of-sight only
  - Command channels (Repeater Channel)
    - Pair of frequencies (one transmits and one receives)
    - Used for overhead and emergency communication
    - Repeater has to receive and transmit at the same time
  - Air frequencies
    - Air guard is an emergency-only channel
    - Air-to-ground can be used in an emergency

4. Identify appropriate radio protocol
   - Observe strict radio procedures and discipline when using any communication equipment
   - Listen first
     - Don’t “cover” someone
   - Restrict radio communication to official business
   - Use only authorized frequencies and only in authorized areas

5. Identify appropriate radio procedures
   - When transmitting
     - Key microphone and pause for approximately two seconds
       - Hesitation allows radios to link properly
       - Key up, pause, talk
       - Listen for other traffic
   - When receiving
     - If using “Scan” feature, turn it off and switch to the correct channel
     - Answer calling station with call sign
   - Speak clearly and hold microphone a couple of inches from mouth
   - Talk across microphone rather than directly at it
   - Speak in a normal voice, don’t shout
   - Keep conversations brief and to the point
     - 30-second rule
   - Speak professionally
     - Remember everyone is listening
     - Use clear text only
     - No “10” or “12” codes
     - Never use profanity or obscene language
     - Don’t use first names or jargon
   - Acknowledge each transmission
   - End with identifier or call sign
   - Sample transmission: Water Tender E-43 calling Division B
     - First transmission: “Division B, Water Tender E-43 on TAC 3”
       - First reply: “Division B”
Second transmission: “I’ve completed filling the engines at the end of the Smith Road. What are your wishes?”
   ▪ End transmission: “Water Tender E-43 copy.”

6. Identify radio traffic priorities
   • Emergency traffic always has priority over routine traffic
     o Routine traffic should cease until the emergency terminates
   • Order of radio priority
     o Life or death emergency
       ▪ Injuries
       ▪ Life hazards
       ▪ Entrapments
       ▪ Aircraft in trouble
       ▪ Medical aid or the well being of any person
     o First report of a new emergency
     o Initial attack dispatch to a new emergency
     o Routine traffic

7. Describe radio maintenance tasks
   • Always refer to owner’s manual
   • Keep radio clean, dry, and out of extreme heat
   • Start each shift with new batteries
   • Do not place radio in a location where it can be easily lost or stolen
   • Update frequencies as needed

Discussion Questions
1. Determined by instructor

Activities
1. Determined by instructor

Instructor Notes
1. Bring in different radios for students to handle.

Recommended Resources
1. CAL FIRE Academy Emergency Command Center (ECC) Handbook, section 1800, page 34
2. Essentials of Firefighting, IFSTA, 5th edition, pages 943-945

Topic 2-7: Working with Inmate Fire Crews

Terminal Learning Objective
At the end of this topic, a student, given rules and regulations, will be able to work with inmate fire crews in California in accordance with current policies and procedures.

Enabling Learning Objectives
1. Describe potential association with prison inmates
• Standard practice to utilize inmate fire crews on many types of incidents
• Civilian and inmate interaction generally only occurs during meals, but inmates may be asked to work on the fireline to complete an assignment
• Failure to conform to rules, policies, procedures, and laws may unnecessarily place operator and/or inmate in a position where disciplinary or legal action will be taken

2. Identify basic regulations related to association with prison inmates
• Inmates should be under direct supervision of a fire captain or correctional officer at all times
• Custodial agency is the agency with supervision responsibilities while the inmates perform assigned tasks
  o California Department of Forestry and Fire Protection (CAL FIRE)
  o California Department of Corrections and Rehabilitation (CDCR)

Discussion Questions
1. Determined by instructor

Activities
1. Determined by instructor

Instructor Notes
1. ELO 2 – Use Handout 2-7: Basic Regulations Related to Association with Prison Inmates to teach this objective. Provide students with individual copies.

Recommended Resources
1. CAL FIRE CDC Camp Operations Handbook 6400
2. California Code of Regulations, Title 15, Sections 3400, 3401, and 3415

Topic 2-8: Wildland Personal Protective Equipment

Terminal Learning Objective
At the end of this topic, a student, given wildland personal protective equipment (PPE), will be able to identify the components, use, care, and maintenance of wildland PPE before, during, and after an incident.

Enabling Learning Objectives
1. Identify the components on a wildland PPE checklist
   • Safety helmet with chin strap (hard hat)
   • Goggles
   • Gloves
   • Fire resistant (Nomex) shroud
   • Fire resistant (Nomex) shirt
   • Fire resistant (Nomex) pants
   • 100% cotton t-shirt
   • Lug-soled work boots with 8” high top
   • Work pants
   • Fire shelter for fireline assignments
   • Web gear
• Canteen of water
  o One gallon minimum
2. Identify the safety elements of wildland PPE
• Clothing is fire resistant, not fireproof
• Nomex clothing is the recommended fire resistive material
• PPE is most effective when properly worn
  o Air between skin and undergarment is a critical part of insulation
  o Air between undergarments and Nomex (shirt and/or pants) is also critical to proper insulation
• Safety helmet with chin strap (hard hat)
  o Adjust headband and head strap
  o Equipment owner is responsible for ensuring equipment is properly adjusted
• Goggles
  o Pull rubber strap to secure, but keep comfortable
  o Be sure lens is clean
  o Glasses are not a substitute for goggles
• Gloves
  o Gloves
    ▪ CAI FIRE: made of fire-resistant leather and long Nomex material wrist gauntlet
    ▪ Federal: one pair of heavy-duty leather per person
  o Protect from
    ▪ Mechanical damage or trauma
    ▪ Heat
• Fire resistant (Nomex) shroud
  o Have immediately available
  o Must be fastened in front of face when on the fireline
  o Wear down during suppression activities
  o Do not roll the shroud up between the suspension system and helmet
    ▪ Defeats the separation principle that provides for maximum cushioning of impact on shell
    ▪ Cuts down on ability to release heat from around the head
  o Bandannas cannot be worn as a substitute for fire resistant shrouds
• Nomex shirt
  o Sleeves rolled down and fastened
  o Wear outside the pants, not tucked in
  o Zip it up
• Nomex pants
  o Must fit properly over work pants
• Cotton clothing
  o Wear a cotton t-shirt under Nomex shirt at all times
  o Fire resistant clothing offers no insulation
Cotton t-shirts and other undergarments are crucial in reducing exposure to radiant heat burns

- Work pants
  - 100% cotton recommended, do not wear a blended fabric such as polyester
- Wear fire shelter, web gear (if worn), and canteen outside Nomex shirt
  - Fire shelter must be readily accessible at all times
- All wildland PPE components must be with the equipment operator on the fireline, even when not in use
- Physical fitness and training exercises while wearing PPE help the body acclimate to the added body heat caused by fire-resistant fabrics
  - Because of the added body heat caused by these fabrics, it is important to replace electrolytes and body fluids
  - Proper hydration is critical

3. Describe how to care for and maintain wildland PPE

- Proper laundering
  - As specified on manufacturer's care label
  - Wash separate from other types of clothing
  - If there is no legible label, launder as indicated below
    - No starch or bleach
    - Machine wash, warm
    - Tumble dry on low heat
- Safety helmet
  - Do not clean helmet and components with solvents
  - Use soap and water
  - Do not modify
- Goggles
  - Keep lens clean and avoid scratches
  - Clean with water and non-abrasive cloth
- Replace worn-out or damaged PPE
  - Free of tears and loose stitching
  - Burn marks and burn holes
  - Soiled with petroleum products (i.e. diesel, oil, gasoline)

4. Describe how to properly store wildland PPE

- Store Nomex in vehicle and only wear when on the fireline
- Store clean Nomex in a dry, well ventilated storage area when not in use
- Do not store dirty or soiled Nomex
  - Leave on equipment until it can be cleaned
- PPE is usually not allowed to be checked out or traded out at an incident
- When authorized to check out PPE from Supply, operator is responsible for all items issued and will be charged for any item not returned

Discussion Questions

1. Determined by instructor
Activities
1. Determined by instructor

Instructor Notes
1. Bring in a full set of wildland PPE to demonstrate proper wear and cleaning techniques.

Recommended Resources
1. *Hiring and Utilization Guide*, CAL FIRE, Sections 7761.4.3 and 7761.4.4, http://cdfdata.fire.ca.gov/incidents/incidents_hiredequipment

Unit 3: Entrapment Avoidance

Topic 3-1: Incident Mapping and Strategies

Terminal Learning Objective
At the end of this topic, a student, given appropriate maps, will be able to identify parts of a vegetation fire and fireline hazards and strategies that potentially impact hired vendors on an incident.

Enabling Learning Objectives
1. Identify the parts of a vegetation fire
   - Origin or point of origin
     - Area where the fire started
     - The point from which it spread
   - Heel
     - The rear of a wildland fire opposite of the head
     - At or near the point of origin
   - Head
     - Area where rate of spread is the fastest
     - A fire can have more than one head
   - Flank
     - Sides of a wildland fire
     - Roughly parallel to the main direction of fire spread
     - Every fire has two flanks or sides which separate the head from the heel
     - Left flank and right flank are identified by standing at the point of origin, facing the fire's head
   - Island
     - An area of unburned fuel within the fire's perimeter
   - Finger
     - Long narrow strips of fire extending from the main portion of the fire perimeter
     - Fingers can form new heads
• Hot spots
  o A particularly active part of the fire
  o Spots along the fire perimeter that are burning more intensely than other parts of the fireline

• Spot fire
  o A fire outside the main fire perimeter ignited by sparks or hot embers
  o Hazardous to personnel and equipment
  ▪ Operators may become trapped between the main fire and spot fire

• Burn or black
  o Burned area inside the fire’s perimeter
  o Generally considered the safest part of the fire

• Green
  o Unburned fuel inside or outside the fire’s perimeter
  o Does not necessarily indicate a safe area

• Pocket
  o Area of unburned fuel between two fingers, or between a finger and the main body of the fire

2. Describe fireline strategies
• Size up
• Fireline safety considerations
  o Identify fireline supervisor
  o Make sure plan and incident objectives are clear and understood
  o Initiate risk management process

• Strategies
  o Direct attack
  o Indirect attack

3. Identify common symbols found on incident maps
• Incident command post (ICP)
• Incident base
• Staging area
• Spike camps
• Drop point
• Helibase
• Heliwell
• Water source
• Division break
• Branch break
• Hazards

Discussion Questions
  1. Determined by instructor
Activities
1. Distribute Handout 3-1: Parts of a Basic Vegetation Fire (Student Copy) and have students fill it in during lecture portion.

Instructor Notes
1. Use Handout 3-1: Parts of Basic Vegetation Fire (Instructor Copy) as an illustration of initial attack. Then show additional maps from a campaign fire.
   - Maps available at https://inciweb.nwcg.gov
2. ELO 3 – Show examples of different types of symbols on various maps.

Recommended Resources
1. Essentials of Firefighting, IFSTA, 5th edition, pages 803-804
3. Health and Safety Handbook 1700, CAL FIRE, Section 1738
4. Essentials of Firefighting, IFSTA, 5th edition, pages 805-806

Topic 3-2: Entrapment Avoidance

Terminal Learning Objective
At the end of this topic, a student, given a sample scenario, will be able to identify hazards to avoid potential entrapment situations.

Enabling Learning Objectives
1. Describe entrapment avoidance
   - “A process used to improve the safety of personnel on the fireline that emphasizes tools and tactics available to prevent being trapped in a burnover situation” (NWCG)
   - Encompasses decision making through:
     - Risk management
     - Application of LCES
     - Decision points
     - Recognition of escape routes and safety zones
   - Best practice is to recognize entrapment situations and avoid them versus risking the situation of becoming trapped
2. Identify critical safety measures
   - Follow the risk management process
     - Situation awareness
     - Hazard assessment
     - Hazard control
Decision point
  o  Evaluate

Decision points
  o  Geographic point(s) or a specific point in time where alternative actions are warranted
    ▪  Timely implementation of these actions is critical to firefighter safety
  o  Alignment of topography and wind during burning period should always be considered a decision point to re-evaluate strategy and tactics

Common denominators of fire behavior on fatal and near-fatal fires
  o  Relatively small fires or deceptively quiet areas of large fires
  o  Relatively light fuels, such as grass, herbs, and light brush
  o  An unexpected shift in wind direction or in wind speed
  o  Fire responds to topographic conditions and runs uphill

Follow 10 orders; recognize 18 “watch out” situations; know, understand, re-evaluate LCES often

Discussion Questions
  1. Determined by instructor

Activities
  1. Determined by instructor

Instructor Notes
  1. Access internet and introduce students to the "6 Minutes to Safety" website.
     •  http://www.nbwfc.info/lessons-learned/test/
     •  Choose a scenario from the website and discuss the situation and critical issues.
  2. ELO 2 – Refer to pages 1 and 4 in the IRPG.

Unit 4: All Risk

Topic 4-1: Incident Organization

Terminal Learning Objective
  At the end of this topic, a student, given a sample incident, will be able to recognize the expectations of vendors at an incident including dispatch, check in, briefings, and check out procedures.

Enabling Learning Objectives
  1. Identify how Incident Communications selects resources to fill requests
     •  Timeframes
     •  Closest resource
     •  Specific mission requirements
     •  Equipment capabilities
  2. Identify when an operator should respond to an emergency incident
     •  Contractors must not respond to emergency incidents without being requested
       o  Safety concern
       o  Communication concern
Operator may not be entitled to payment

3. Describe dispatch procedures, response requirements, and mobilization activities
   • Appropriate dispatch office will contact vendor with ordering protocol for resources
   • Operator may receive some or all of the following information:
     o Type of equipment requested
     o Number of operators needed
     o Type of assignment
     o Reporting location and contact person
     o Specific fire location
     o Dispatch contact number
       ▪ Local number
       ▪ Incident number
     o Reporting date and time
     o Communication instructions
     o Incident/fire name
     o Resource order number/incident number/request number
     o Travel information
   • Operator should be prepared to provide the following information:
     o Estimated time of departure (ETD)
     o Estimated time of arrival (ETA)
     o Rest over night (RON) justification (if applicable)
     o Contact/cell number for operator(s)
     o Which piece of equipment will be assigned to each request number (if multiple pieces of equipment respond)
   • Operator must notify appropriate dispatch of any change in status or ability to meet assigned report time
     o Notify contact number provided at time of dispatch
       ▪ State hires: Contact ECC (emergency command center) dispatch of hire
       ▪ Federal hires: Contact incident ECC (emergency communication center)

4. Describe check-in procedures
   • There may be several locations for incident check-in
     o Immediate need (fireline) and remote locations (camps, staging areas, helibase, etc.)
       ▪ Contact appropriate fireline supervisor (firelines) or incident commander (IC) (type 3 or 4 incidents only)
       ▪ Contact the staging, spike camp, or helibase manager (remote locations)
         o Sometimes located offsite in a vehicle, trailer, etc.
       ▪ Obtain instructions/briefing prior to assignment
An operator checked-in at an offsite incident command post (ICP), must also officially check-in at base once base is established

- Inspection requirements
  - CAL FIRE: FC-291 Minimum Equipment Requirement Checklist
  - USFS: OF-296 Vehicle/Heavy Equipment Mechanical Inspection
  - Extended attack (incident command post)
    - Report to Plans Section base check-in site
    - Refer to individual agreement for required check-in procedures
      - Inspection requirements
        - CAL FIRE: FC-291 Minimum Equipment Requirement Checklist
        - USFS: OF-296 Vehicle/Heavy Equipment Mechanical Inspection
  - Time, etc.

- Operator may be sent to the line or asked to wait for a briefing

5. Describe briefing procedures and responsibilities

- Two types of briefing
  - Operational briefings
  - Safety briefings

- Operators must attend all briefings (see agreement for specifics)
  - Accountability
  - Safety concerns
  - Communication plan
  - Operational assignments
  - Liability

6. Identify the purpose of an Incident Action Plan (IAP)

- Identifies strategy, tactics, tasks, and timeframes in which to accomplish incident objectives

- Operators should be familiar with IAP to understand briefing discussions

- Each IAP has slightly different specific pages and page order arrangement

7. Identify the general components of an IAP

- Incident Objectives – ICS-202
- Organization Assignment List – ICS-203
- Division Assignment List – ICS-204
  - Separate ICS-204 for each branch, division, and/or group
- Incident Radio Communications Plan – ICS-205
- Medical Plan – ICS-206
- Air Group Summary – ICS-208
- Additional pages
  - Safety message
8. Describe how to end a shift
   • Shift ticket
     o Division or group supervisor completes operator shift ticket
       ▪ Operators may not complete their own shift tickets
     o Operator should not leave assignment until receiving shift ticket
     o Supervisor and operator must both sign shift ticket
     o If a piece of equipment has multiple operators, shift ticket must list each
       operator
     o Fireline or incident supervisor submits shift tickets to Finance
       ▪ Finance audits shift ticket for correctness
       ▪ Finance will not process payment without a shift ticket
   • Work/rest guidelines
     o Minimum 2:1 work/rest ratio
       ▪ For every two hours of work or travel, provide one hour of sleep
         and/or rest within a 24-hour period
     o See individual agreements for break/lunch guidelines during a shift
     o Regardless of hiring agency, commercial drivers must abide by federal
       Department of Transportation (DOT) driving regulations
   • Evaluation
     o Immediate supervisor provides an operator evaluation
       ▪ ICS-225: Incident Personnel Performance Rating Form
       ▪ CAL FIRE 230: Private Vendor Evaluation
       ▪ USFS Agreement Performance Evaluation Form (located within
         exhibits of vendor agreement)

9. Describe demobilization procedures
   • At the end of assignment equipment becomes surplus resource and demobilization
     (demob) process begins
     o Operators are required to check out expeditiously
     o Lengthy departure will be reflected in operator paperwork
   • Report to Demob for departure time
   • Receive ICS-221: Demobilization Checklist
     o Start with Finance to begin payment process
     o Report to each identified section to complete check-out process
     o Return to Finance to complete payment process
   • Return to Demob to submit completed ICS-221
   • When forms are complete, Demob releases vendor from incident

Discussion Questions
  1. Where can a hired vendor find the minimum requirements of his or her agreement?
2. How would incident organization apply to hired equipment operators in non-fire scenarios
   • Earthquakes
   • Floods
   • Multi-casualty incident extending multiple days

Activities
1. Given a shift ticket, have students fill out a shift ticket along with instructor during lecture portion.

Instructor Notes
1. Bring in an Incident Action Plan (IAP) for students to see.
2. Bring in shift tickets (CAL FIRE and US Forest Service) for students to utilize during the activity.
3. ELO 4 – Bring in sample state and federal inspection and/or minimum requirement checklists for students to see.
4. ELO 8 – Bring in sample ICS, CAL FIRE, and USFS evaluation forms for students to see.

Unit 5: Fire Shelter Deployment

Topic 5-1: Fire Shelter Deployment

Terminal Learning Objective
At the end of this topic, a student, given a “new generation” fire shelter, will be able to deploy a fire shelter within 60 seconds.

Enabling Learning Objectives
1. Describe how to select and prepare a shelter deployment site
   • Select deployment area
     o Away from rolling materials or snags
     o Away from chimneys, draws, and steep terrain
     o Use largest available clearing
     o Use lightest fuel clearing
     o Look for a possible burned over area
   • Clear deployment area
     o Utilize existing clearings
     o Make area as large as time permits
       ▪ Minimum 4’ x 8’ area
     o Dig down to mineral soil
     o Fire out if conditions warrant
     o Dig toe holds on slopes of 75% or more
   • Set all hand tools or equipment aside
     o A minimum of 30 feet away
     o Place downhill
     o Place downwind
2. Describe how to deploy a fire shelter
• Open and remove shelter from carrying case
  o Pull up and out on yellow/orange pull-strap
• Open plastic protective case
  o Hold on to yellow/orange pull-strap with one hand
  o Pull either red pull-ring down to the bottom of the plastic and extend to top of the other side
  o Tear the plastic case
• Completely remove shelter from plastic protective case
• Unfold and extend the shelter to full length
  o Grasp the shake handles without releasing shelter
• Shake out the shelter tri-fold
  o Face the shelter
  o Open to full width, without releasing shelter, until sides, ends, and peak are fully extended
• Step into the shelter
  o Step over lower hold-down straps
  o Turn to face out of the opening
• Position body in the shelter
  o Place feet shoulder width apart, behind the hold-down straps, anchoring lower end of shelter
  o Place body behind upper hold-down straps facing away from on-coming fire
• Crouch down to pull head and upper body into opening
  o Check that entire body is inside the shelter
• Drop to knees on the ground
• Drop forward
  o Lay flat on stomach
• Anchor shelter
  o Position feet toward on-coming fire
  o Push out shelter with one hand to maintain maximum airspace in shelter
  o Anchor inside flaps with head, arms, and legs
  o Create complete seal between shelter and ground
• Maintain position until instructed otherwise

3. Identify when to deploy and exit a fire shelter during an incident
• Deployment
  o If working with a crew, supervisor tells operator when to deploy
  o If working alone, operator makes judgment call
• Exiting the shelter
  o If working with a crew, supervisor will decide when it’s safe to exit
  o If working alone, operator makes judgment call
    ▪ Base decision on sounds and temperature
    ▪ Test with one hand before completely exiting shelter

4. Deploy a fire shelter within 60 seconds
[Short Course Title]

**Discussion Questions**
1. Determined by instructor

**Activities**
1. Activity 5-1: Deploying a “New Generation” Fire Shelter
   - Successful completion of this activity is required to pass this course.
   - A five-to-one instructor to student ratio is required during this activity.

**Instructor Notes**
1. Recommended video clips:
   - Inside the Shelter, Wildland Fire LLC (13:24)
   - How to Deploy a Fire Shelter, The Bulletin (0:43)
   - Refolding Your Practice Fire Shelter, National Interagency Fire Center (3:40)
2. Provide students with a copy of Handout 5-1: Shelter Deployment Notes from the Field

**Recommended Resources**

**Unit 6: Current Issues**

**Topic 6-1: Trending Topics and Lessons Learned**

**Terminal Learning Objective**
At the end of this topic, a student, given trending topics associated with incident safety, will be able to discuss lessons learned with a focus on creating a safer working environment on future incidents.

**Enabling Learning Objectives**
1. Identify hot topics
2. Review annual USFS and CAL FIRE safety reports
   - USFS Safety Journey / Life First
   - CAL FIRE Focus on Safety Annual Report
3. Identify lessons learned
   - “A lesson is truly learned when we modify our behavior to reflect what we now know.”

**Discussion Questions**
1. Determined by instructor

**Activities**
1. Determined by instructor

**Instructor Notes**
1. Review the following websites and select most relevant/appropriate hot topics and lessons learned to present for discussion.
   - [www.nifc.gov/wfstar/indext.htm](http://www.nifc.gov/wfstar/indext.htm)
   - [www.wildfirelessons.net/Home.aspx](http://www.wildfirelessons.net/Home.aspx)
2. Use examples and illustrations for near-miss incidents, injuries, or fatalities to discuss issues relevant to hired equipment and personnel working on or near the fireline or other incidents.

http://wildfirelessons.net/uploads/6mfs/home.html
### Time Table

<table>
<thead>
<tr>
<th>Segment</th>
<th>Lecture Time</th>
<th>Activity Time</th>
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**Course Totals**

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**Acknowledgments**
State Fire Training gratefully acknowledges the following individuals and organizations for their diligent efforts and contributions that made the development and publication of this document possible.

**CAL FIRE**

**Ken Pimlott**  
*Director, CAL FIRE*

**Dennis Mathisen**  
*State Fire Marshal*

**Mike Richwine**  
*Assistant State Fire Marshal*

**Andrew Henning**  
*Acting Chief, State Fire Training*

**Ron Coleman**  
*Chair, STEAC*

**Cadre Leadership**

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*Cadre Leader*  
*Training Specialist III (RA), CAL FIRE*  
*Deputy Chief (ret.), Sacramento Metro Fire Department*

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Training Captain, Artois Volunteer Fire District

Matthew Sully
Fire Captain / Statewide Hired Equipment Committee
California Department of Forestry and Fire Protection

David Trussell
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Director of Fire Science (ret.), Lassen Community College

Susan Zahn
Contract Operations Program Manager, Fire and Aviation Management,
United States Forest Service

Partners

State Fire Training also extends special acknowledgement and appreciation to the Conference and Training Services Unit with the College of Continuing Education at California State University, Sacramento, for its ongoing meeting logistics and curriculum development support, innovative ideas, and forward-thinking services. This collaboration is made possible through an interagency agreement between CAL FIRE and Sacramento State.