

Firefighter Training

S-130



Student Workbook
IN HOUSE TRAINING LLC

Course Objectives

Students will be able to:

- Describe the standards, tools and equipment, and various methods used in fireline construction.
- Describe the methods for extinguishing a fire with or without the use of water.
- Demonstrate the ability to construct fireline to required standards using various methods, tools and equipment, and techniques.

S-120 Course Introduction

3

Measurement of Objectives

Achievement of course and unit objectives is measured using one or more of the following methods:

- Class or group discussion
- Instructor or coach observation and feedback
- Knowledge checks
- Knowledge assessment
- Skill assessment
- Course Evaluation Task Sheet

S-120 Course Introduction

4

Course Overview

- Unit 1: Briefings
- Unit 2: Demands of the Position
- Unit 3: Personal Equipment
- Unit 4: Resources and Organization
- Unit 5: Risk Management
- Unit 6: Case Study
- Unit 7: Suppression
- Unit 8: Tools and Equipment
- Unit 9: Handline Techniques

S-120 Course Introduction

5

Course Overview

Unit 10: Water Use

Unit 11: Firing Devices

Unit 12: Mopup

Unit 13: Wildland Urban Interface

Unit 14: Fire Environment Hazards

Unit 15: Radio Communications

Unit 16: Fire Shelters

Unit 17: Case Study

Unit 18: Incident Exercise

S-130 Course Introduction

6

Student Course Materials

- Incident Response Pocket Guide (IRPG), PMS 461
- Notebook
- S-130 Student Evaluation Task Sheet
- NWCG Glossary of Wildland Fire, PMS 205

S-130 Course Introduction

7

Evaluating Student Performance

S-130 Student Evaluation Task Sheet

- Completed throughout the class.
- Reviewed by instructors at the end of the class.
- Modeled after NWCG Position Task Books.

S-130 Course Introduction

8

Course Objectives

Students will be able to:

- Describe the purpose of the Standard Firefighting Orders and Watch Out Situations.
- Describe what the Lookouts, Communications, Escape Routes, and Safety Zones (LCES) system is and how it relates to the Standard Firefighting Orders.
- Describe the various communication methods and tools used for collecting, producing, and distributing information.

S-130 Course Introduction3

Course Objectives

Students will be able to:

- Describe the standards, tools and equipment, and various methods used in fireline construction.
- Describe the methods for extinguishing a fire with or without the use of water.
- Demonstrate the ability to construct fireline to required standards using various methods, tools and equipment, and techniques.

S-130 Course Introduction10





S-130 Unit 1: Briefings

S-130 Unit 1: Briefings1

Objectives

Students will be able to:

- Describe briefings and their purpose.
- Describe some of the common briefing components and their purpose.
- Describe the elements of the briefing checklist and their purpose.
- Describe the concept of debriefings, After Action Reviews (AARs), and their purpose.

5-130 Unit 1: Briefings 2

- Describe briefings and their purpose.

- S-130 Unit 1: Briefings 2

[illegible]

5-150 Units 1: Briefings

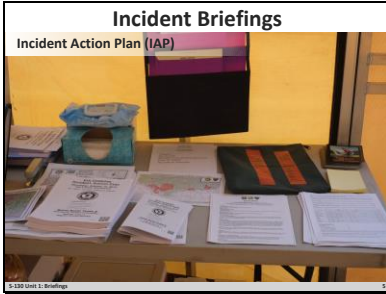


Briefing Checklist



©-150 (04) 1: Briefing













Knowledge Check

Name the 4 primary questions asked in an AAR.

Answer:

- What was planned?
- What actually happened?
- Why did it happen?
- What can we do next time?

A group of firefighters in yellow gear and helmets are gathered around a green vehicle in a field. They are looking at something on the ground, possibly a document or a piece of equipment.

3-120 Unit 1: Briefings 13

Objectives

Students will be able to:

- Describe briefings and their purpose.
- Describe some of the common briefing components and their purpose.
- Describe the elements of the briefing checklist and their purpose.
- Describe the concept of debriefings, After Action Reviews (AARs), and their purpose.

S-130 Unit 1: Briefings14





S-130 Unit 2:
Demands of the Position

S-130 Unit 2: Demands of the Position3

Objectives

Students will be able to:

- Define and discuss Arduous Fitness Rating and work environment.
- Explain the risk associated with working in an arduous environment.
- Describe the benefits to maintaining personal health, fitness, and nutrition.

S-130 Unit 2: Demands of the Position2





Knowledge Check

From the list below, identify the symptom that is most closely associated with heat related injuries.

- Sudden bursts of energy
- Ability to maintain focus
- Mental status change
- Strong pulse



3-120 Unit 2: Demands of the Position 5

Knowledge Check

Based on the Fire Fit video, which ring of the human performance model is missing from the list below?

Physical

Environmental

_____?

Psychological

Physical
Environmental
_____?

Psychological

A photograph showing a group of people, mostly men, standing in a line on a dirt path. They are wearing various clothing, including jackets and hats. In the background, there are hills and some trees. The image is part of a presentation slide.

Physical
Environmental
_____?

Psychological

A photograph showing a group of people, mostly men, standing in a line on a dirt path. They are wearing various clothing, including jackets and hats. In the background, there are hills and some trees. The image is part of a presentation slide.

Physical
Environmental
_____?

Psychological

A photograph showing a group of people, mostly men, standing in a line on a dirt path. They are wearing various clothing, including jackets and hats. In the background, there are hills and some trees. The image is part of a presentation slide.

Physical
Environmental
_____?

Psychological

A photograph showing a group of people, mostly men, standing in a line on a dirt path. They are wearing various clothing, including jackets and hats. In the background, there are hills and some trees. The image is part of a presentation slide.

Physical
Environmental
_____?

Psychological

A photograph showing a group of people, mostly men, standing in a line on a dirt path. They are wearing various clothing, including jackets and hats. In the background, there are hills and some trees. The image is part of a presentation slide.

Life and Work Balance



A photograph of a traditional Japanese onsen (hot spring) complex. In the foreground, there is a large, dark wooden building with a thatched roof, likely a bathhouse or a place to change. To the right, a wooden walkway leads to a hot spring pool. The water is calm, reflecting the surrounding greenery and the building. In the background, a dense forest of tall evergreen trees covers a hillside. The sky is overcast. The overall atmosphere is peaceful and natural.

© 2007-2008 2: Demands of the Position

[illegible]

Objectives

Students will be able to:

- Define and discuss arduous fitness rating and work environment.
- Explain the risk associated with working in an arduous environment.
- Describe the benefits to maintaining personal health, fitness, and nutrition.

S-130 Unit 2: Demands of the Position2





S-130 Unit 3:
Personal Equipment

S-130 Unit 3: Personal Equipment3

Objectives

Students will be able to:

- Describe the purpose of required PPE and identify all the required components.
- Discuss personal and line gear use, differences, and contents.

S-130 Unit 3: Personal Equipment2

Personal Protective Equipment (PPE)



5-120 Unit 5: Personal Equipment

3

Required Fireline PPE



5-120 Unit 5: Personal Equipment

4

Knowledge Check

What three mandatory criteria must be met according to the wildland fire boot standard?

Boots must be a minimum of 8-inches high.

Boots must be leather lace up style.

Boots must have a lug style melt-resistant sole.



5-120 Unit 5: Personal Equipment

5

Line Gear



Personal Gear



Knowledge Check

What is the difference between line gear and personal gear?

Line gear is a backpack meant to carry enough gear to sustain a firefighter with all that is needed for 12–16-hour operational period.

Personal gear is a larger bag meant to carry all necessary gear to sustain a firefighter for a 14–30-day assignment.

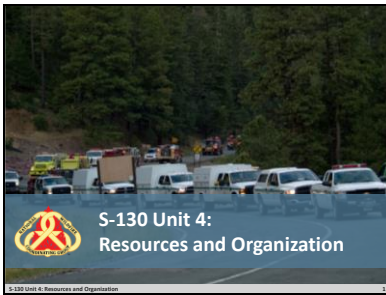


Objectives

Students will be able to:

- Describe the purpose of required PPE and identify all the required components.
- Discuss personal and line gear use, differences, and contents.

S-130 Unit 3: Personal Equipment2



S-130 Unit 4:
Resources and Organization

S-130 Unit 4: Resources and Organization3

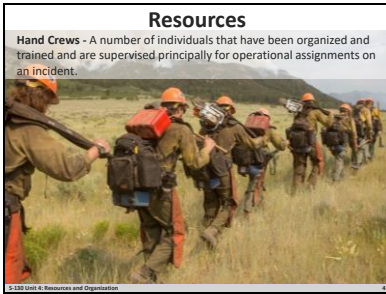
Objectives

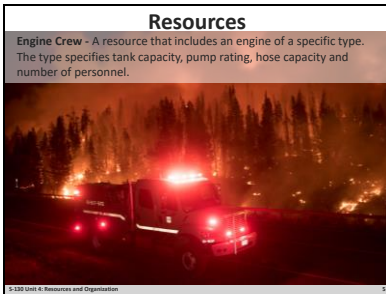
Students will be able to:

- Identify different types of common fire resources.
- Describe the chain of command and span of control concepts that apply to common crew configurations.
- Identify a position above FFT2 in most common crew configurations.

S-130 Unit 4: Resources and Organization2







Resources

Helitack Crew - A crew of firefighters specially trained and certified in the tactical and logistical use of helicopters for fire suppression.



S-130 Unit 6: Resources and Organization

Knowledge Check

What position is found between FFT2 and CRWB for most common crew configurations?

FFT1 or Squad Boss



S-130 Unit 6: Resources and Organization

Chain of Command

A series of management positions in order of authority.



S-130 Unit 6: Resources and Organization







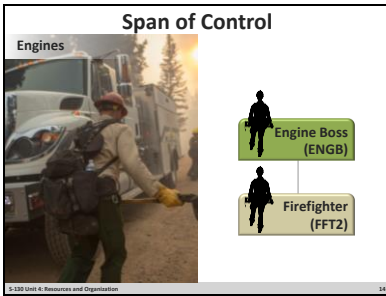
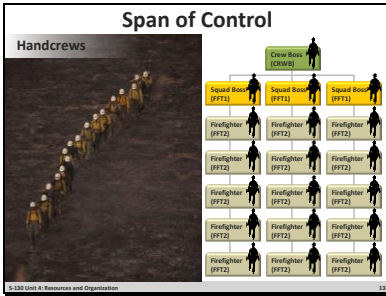
Span of Control

The supervisory ratio of three to seven individuals, with five-to-one being optimum.



3-132 Unit 6: Resources and Organization 12

S-130 Unit 4: Resources and Organization 12

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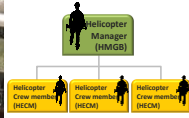
Span of Control

Helitack

Organizational Chart:

- Helicopter Manager (HMGB)
 - Helicopter Crew member (HECM)
 - Helicopter Crew member (HECM)
 - Helicopter Crew member (HECM)

5-130 Unit 4: Resources and Organization



5-130 Unit 4: Resources and Organization

1

Span of Control

Incident



A photograph showing four firefighters in yellow shirts and helmets standing outdoors in a wooded area. They are engaged in a discussion, with one firefighter on the right holding a clipboard and looking at it. The other three are looking towards him. They are wearing various pieces of firefighting equipment, including helmets, sunglasses, and tools like a pike pole.

© 200 Unit 6: Resources and Organization



5-130 Unit 4: Resources and Organization

1

Knowledge Check

What is the definition of chain of command?

A series of management positions in order of authority.

© 2018 Unit 4: Resources and Organization

17

A series of management positions in order of authority.



5.138 Unit 4: Resources and Organization 17

A firefighter in a yellow jacket with "MONTANA" on the back is talking to a man in a yellow jacket. The firefighter is wearing a blue cap and has a braided ponytail. The man is wearing a yellow jacket and has a beard. They are standing outdoors in front of a fire truck.

5-130 Unit 4: Resources and Organization

1

Knowledge Check

Span of control is _____?

Select one:

- A. Supervising individuals on a module.
- B. The most people a supervisor can manage.
- C. The supervisory ratio of three to seven individuals, with five-to-one being optimum.

© 2008 Unit 4: Resources and Organization

18

Select one:

-

5-130 Unit 4: Resources and Organization

18



5-130 Unit 5: Risk Management

2

Objectives

Students will be able to:

- Describe the 10 Standard Firefighting Orders and provide examples of their application.
- Describe the 18 Watch Out Situations and provide examples of their application.
- Identify the common denominators of fire behavior on tragedy fires.

S-120 Unit 5: Risk Management

Students will be able to:

- S-130 Unit 5: Risk Management

2

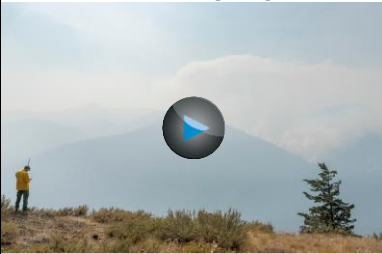
Objectives

Students will be able to:

- Define Lookouts, Communication, Escape Routes, and Safety Zones (LCES) and describe factors that influence escape time and safety zone size.
- Describe how LCES is related to the 10 Standard Firefighting Orders and 18 Watch Out Situations.
- Identify elements of risk management in the Point Fire case study.

S-120 Unit 5: Risk Management3

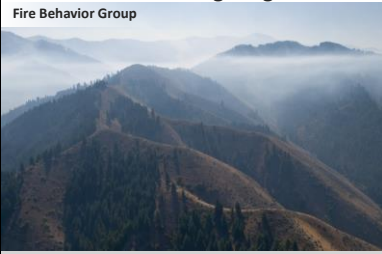
10 Standard Firefighting Orders



S-120 Unit 5: Risk Management4

10 Standard Firefighting Orders

Fire Behavior Group



S-120 Unit 5: Risk Management5



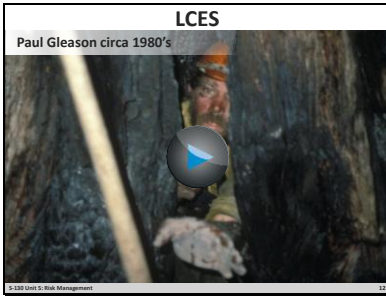
















Objectives

Students will be able to:

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- Describe the 18 Watch Out Situations and provide examples of their application.
- Identify the common denominators of fire behavior on tragedy fires.

S-130 Unit 5: Risk Management

15





S-130 Unit 6: Case Study

S-130 Unit 6: Case Study

1

Objectives

Students will be able to:

- Discuss elements from topics in units 1 through 5 that are present in the case study.

S-130 Unit 6: Case Study

2

The South Canyon Fire: Part 1



S-130 Unit 6: Case Study

1



S-130 Unit 7: Suppression

S-130 Unit 7: Suppression

2

Objectives

Students will be able to:

- Describe the three methods of breaking the fire triangle.
- Describe the two fire suppression strategies on a fire.
- Describe suppression techniques and explain their uses.
- Describe the concept of blackline.

S-130 Unit 7: Suppression

2

Objectives

Students will be able to:

- Describe four types of fire control line and four threats to existing control line.
- Describe the proper follow up procedures for securing Heavy Equipment fireline.
- Describe the safety procedures practiced when working around engines, heavy equipment, and aerial retardant/water drops.

5-132 Unit 7: Suppression

5

- Describe four types of fire control line and four threats to existing control line.
- Describe the proper follow up procedures for securing Heavy Equipment fireline.
- Describe the safety procedures practiced when working around engines, heavy equipment, and aerial retardant/water drops.

Fire Triangle Review



A diagram of the Fire Triangle, which is an equilateral triangle with a black border. Inside the triangle is a photograph of a fire. The left side of the triangle is labeled "Oxygen" in blue text. The right side is labeled "Heat" in red text. The bottom side is labeled "Fuel" in black text.



Fireline Construction Standards

Fireline - The part of a containment or control line that is scraped or dug to mineral soil.



The image shows two firefighters in yellow protective gear working in a wooded area. They are using tools to dig a trench, which is a fireline, into the ground. The trench is being dug through a layer of organic material (like leaves and twigs) to reach the mineral soil underneath. The firefighter in the foreground is wearing a yellow jacket and green pants, and is using a tool to dig. The firefighter in the background is also wearing yellow gear and is also digging. The ground is covered with a layer of organic material, and the trench is being dug into it. The background shows trees and more organic material.

5-152 (Unit 7) Suppression

5-130 Unit 7: Suppression

[illegible]













Strategies for Attack

Direct Attack - Any treatment applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from unburned fuel.



S-130 Unit 7: Suppression 12

Strategies for Attack

Indirect Attack - A method of suppression in which the control line is located some considerable distance away from the fire's active edge..



S-130 Unit 7: Suppression 13

Knowledge Check

Based on the picture below, which strategy of attack is being used?

Answer:

Direct Attack



S-130 Unit 7: Suppression 14







Suppression Techniques

Scratch line - An unfinished preliminary control line hastily established or constructed as an emergency measure to check the spread of fire.



S-130 Unit 7: Suppression18

Suppression Techniques

Fireproofing Fuel - Covering some fuels outside the control line with dirt or spraying them with water and foam.



S-130 Unit 7: Suppression19

Suppression Techniques

Burning Out - Setting a fire inside the control line to consume the fuel between the fire and the control line.



S-130 Unit 7: Suppression20





















Knowledge Check

Name two conditions that pose a threat to the integrity of existing control line.

Answers:

- Radiant heat
- Spotting
- Rolling debris
- Creeping



3-130 Unit 7: Suppression 31













Objectives

Students will be able to:

- Describe the three methods of breaking the fire triangle.
- Describe the two fire suppression strategies on a fire.
- Describe suppression techniques and explain their uses.
- Describe the concept of blackline.

5-120 Unit 7: Suppression 38

Objectives

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- Describe four types of fire control line and four threats to existing control line.
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- Describe the safety procedures practiced when working around engines, heavy equipment, and aerial retardant/water drops.

S-130 Unit 7: Suppression

37





S-130 Unit 8:
Tools and Equipment

S-130 Unit 8: Tools and Equipment

3

Objectives

Students will be able to:

- Describe and identify common hand tools.
- Describe the appropriate tool for a specific task based on fuel type and ground cover.
- Describe performing field maintenance, sharpening, and identify tools which need to be put out of service and replaced.

S-130 Unit 8: Tools and Equipment

2

Objectives

Students will be able to:

- Demonstrate proper methods of carrying and passing tools.
- Demonstrate proper tool use and appropriate spacing while using tools during suppression activities.
- Describe the proper placement of the tool while working in an area when tool is not in use.

5-132 Unit B: Tools and Equipment

- Describe the proper placement of the tool while working in an area when tool is not in use.

Cutting Tools

Primarily used for fireline construction, including cutting brush and small trees, grubbing, trenching, and removal of ground cover.



A firefighter wearing a yellow shirt, green pants, a helmet, and a backpack is using a chainsaw to cut through a large, spiky yucca plant. The background shows a dry, hilly landscape with sparse vegetation under a clear sky.

S-120 © Dave B. Topeka and Equipment

Cutting Tools

Single Bit Axe



A single bit axe with a black head and a wooden handle, resting on a log. The handle has a red and blue band near the head. The background shows a forest with trees.

© 2000 Davis & Clark and Equipment







Scraping Tools

Primarily used for fireline construction and mop-up operations by digging, removing loose debris and ground cover by scraping, and trenching



3-120 Unit 8: Tools and Equipment 9

Scraping Tools

Shovel



3-120 Unit 8: Tools and Equipment 10

Scraping Tools

McLeod



3-120 Unit 8: Tools and Equipment 11









Knowledge Check

Name the tool identified in the photo and describe its main purpose.

Tool: Combination Tool Purpose: Primarily a digging tool, but can be used for scraping, smothering, cutting, picking, building a roll trench, and working in between rocks.	5-120 Unit B: Tools and Equipment 16
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Common Equipment

Some equipment is discussed in greater detail in specialized courses as experience is gained.

5-120 Unit B: Tools and Equipment 17











Knowledge Check

According to the IRPG, what is the mixed fuel ratio for high pressure pumps?

Answer:

24:1



5-120 Unit 8: Tools and Equipment 23







Alternative Tools

Rakes

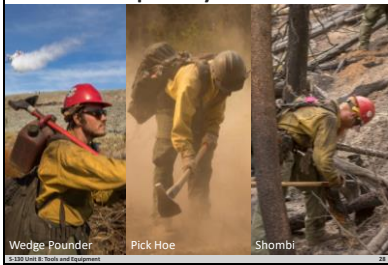
Collapsible Rake

Shrub Rake (Monkey Paw)



Three firefighters are shown using specialized tools. The first firefighter on the left is using a Wedge Pounder, a tool with a long handle and a wedge-shaped head. The middle firefighter is using a Pick Hoe, which has a pickaxe head on one side and a hoe head on the other. The third firefighter on the right is using a Shombi, a tool with a long handle and a curved, hook-like head. All three firefighters are wearing yellow protective gear and red helmets.

Wedge Pounder Pick Hoe Shombi



Specialty Tools



Troop Tool
U.S. Forest Service: Tools and Equipment



Super Pulaski



Rhino

27

[illegible]





Objectives

Students will be able to:

- Describe and identify common hand tools.
- Describe the appropriate tool for a specific task based on fuel type and ground cover.
- Describe performing field maintenance, sharpening, and identify tools which need to be put out of service and replaced.

S-120 Unit 8: Tools and Equipment 32

Objectives

Students will be able to:

- Demonstrate proper methods of carrying and passing tools.
- Demonstrate proper tool use and appropriate spacing while using tools during suppression activities.
- Describe the proper placement of the tool while working in an area when tool is not in use.

S-130 Unit 9: Tools and Equipment

31





S-130 Unit 9:
Handline Techniques

S-130 Unit 9: Handline Techniques

3

Objectives

Students will be able to:

- Discuss establishing an appropriate fireline location using topography, fuel conditions, current and forecasted fire behavior, and incident objectives.
- Define and identify appropriate anchor point to start construction of handline.
- Describe two kinds of coordinated crew techniques used for fireline construction.
- Demonstrate the construction of a cup trench on a steep slope and describe its purpose.

S-130 Unit 9: Handline Techniques

2

Objectives

Students will be able to:

- Describe the purpose of organizing tools in a specific order.
- Demonstrate maintaining a safe working distance from other crewmembers.
- Demonstrate the ability to communicate changing conditions and needs during handline construction using common terminology.
- Define and identify an appropriate line construction end point.
- Describe the reason downhill fireline construction is considered a watch out situation.

S-130 Unit 9: Handline Techniques3

Line Location



S-130 Unit 9: Handline Techniques4

Line Location

Anchor Point - An advantageous location, usually a barrier to fire spread, from which to start constructing a fireline.



S-130 Unit 9: Handline Techniques5



Knowledge Check

Using the IRPG, what are the first two considerations when identifying fireline location?

Answers:

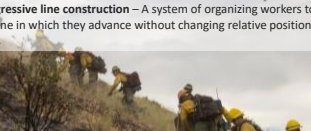
- Firefighter safety
- Use of direct attack whenever possible.

S-130 Unit 9: Handline Techniques 7



Coordinated Crew Techniques

Progressive line construction – A system of organizing workers to build fireline in which they advance without changing relative positions in line.



3-120 Unit 9: Handline Techniques

S-130 Unit 9: Handline Techniques 9

Coordinated Crew Techniques

Leapfrog: A system of organizing workers in fire suppression in which each crew member is assigned a specific task such as clearing or digging fireline on a specific section of control line, and when that task is completed, passes other workers in moving to a new location.



S-220 Unit © Wildfire Techniques

S-130 Unit 9: Handline Techniques	10
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Knowledge Check

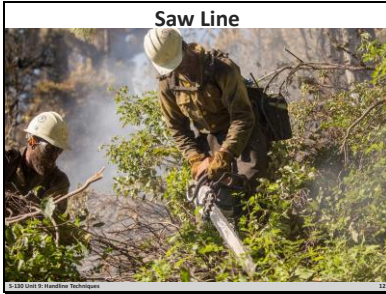
Based on the description below, which crew technique is being identified?

A system of organizing workers to build fireline in which they advance without changing positions in line.

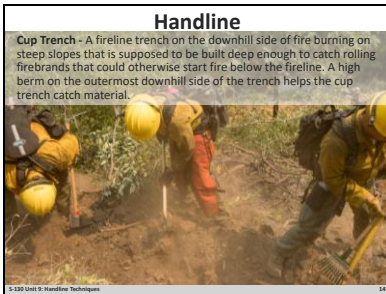
Progressive

5-130 Unit 9: Handline Techniques 11

[illegible]







Spacing



Terminology and Communication



Objectives

Students will be able to:

- Discuss establishing an appropriate fireline location using topography, fuel conditions, current and forecasted fire behavior, and incident objectives.
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- Demonstrate the construction of a cup trench on a steep slope, and describe its purpose.

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- Describe the reason downhill fireline construction is considered a watch out situation.

S-130 Unit 9: Handline Techniques

18





S-130 Unit 10: Water Use

S-130 Unit 10: Water Use

19

Objectives

Students will be able to:

- Demonstrate deploying the two common types of hose lays.
- Demonstrate different water spray patterns and describe when to use them.
- Discuss the proper setup and operation of a portable pump and responsibilities of the pump operator.

S-130 Unit 10: Water Use

2

Objectives

Students will be able to:

- Demonstrate the process of correctly unrolling and retrieving hose.
- Demonstrate deploying the two common types of hose lays.
- Demonstrate different water spray patterns and describe when to use them.

5-130 Unit 10: Water Use

Backpack Pump



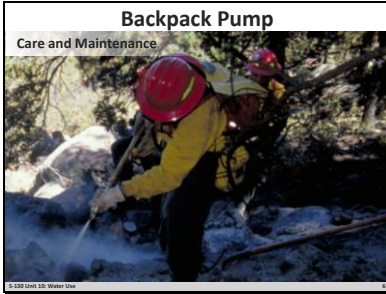
5-130 Unit 10: Water Use

Backpack Pump

Proper Use



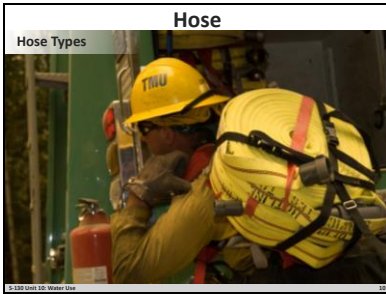
5-130 Unit 10: Water Use













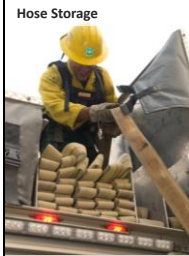
Hose

Hose Storage



5-130 US, Water Cure

12



Fittings and Connections

Couplings



The image displays three black plastic couplings used for connecting pipes. From left to right: 1. Thread Adapter: A coupling with a threaded end on one side and a smooth end on the other. 2. Reducer: A coupling that tapers from a larger diameter on one end to a smaller diameter on the other. 3. Increaser: A coupling that tapers from a smaller diameter on one end to a larger diameter on the other. Each coupling has a side port with a small handle-like protrusion.

Thread Adapter Reducer Increaser

© 2000 United States Water Line

14

Three black plastic fittings are shown side-by-side. From left to right: a Thread Adapter with a male thread on one end and a female thread on the other; a Reducer with two male threads of different diameters; and an Increaser with two female threads of different diameters.

Thread Adapter Reducer Increaser

5-230 (Unit 10) Weather Unit

14



Thread Adapter



Reducer



Increaser

Fittings and Connections

Couplings



Double Female



Double Male

S-130 Unit 10: Water Use

15

Fittings and Connections

In-line Tees



Tee with cap



Tee with shut-off valve

S-130 Unit 10: Water Use

16

Fittings and Connections

Wyes



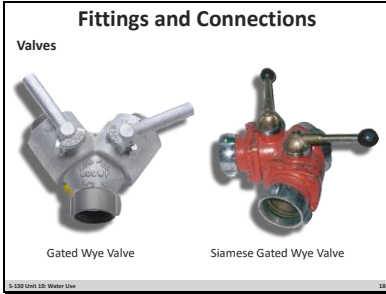
Plain Wye

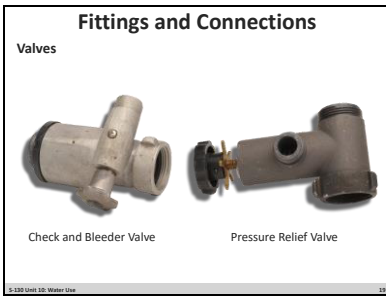


Siamese Wye

5-130 Unit 10: Water Use

17







Intakes



5-130 Unit 10: Water Use

21

Eye protection should be worn by nozzle operators.

True.

S-130 Unit 10: Water Use

22

5-130 Unit 10: Water Use

23

Hose Accessories

Hose Shut off Clamp



5-120 Unit 10: Water Use 24

Hose Accessories

Lightweight Spanner wrench



Universal Spanner wrench



Combination Spanner wrench



5-120 Unit 10: Water Use 25

Hose Accessories



Gravity Sock

5-120 Unit 10: Water Use 26

The image shows two different types of hose end fittings. On the left is a brass hose plug, which is a cylindrical brass fitting with a threaded end and a chain attached. On the right is a black hose cap, which is a black, cylindrical cap with a chain attached. Both are labeled 'Hose Plug' and 'Hose Cap' respectively.

S-130 Unit 10: Water Use

27

Washers and Gaskets

S-130 Unit 10: Water Use

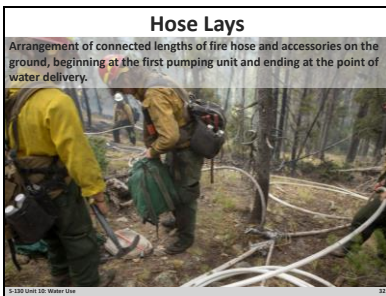
28

S-130 Unit 10: Water Use

22











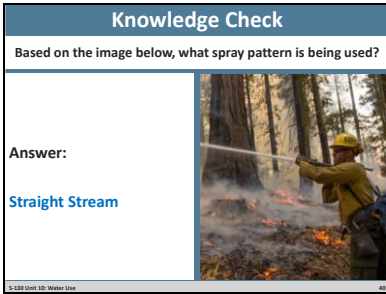


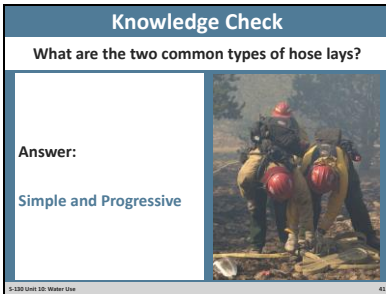












Objectives

Students will be able to:

- Demonstrate the operation and maintenance of a backpack pump.
- Identify commonly used fittings/appliances and hose components, and their proper care.
- Discuss the proper setup and operation of a portable pump and responsibilities of the pump operator.

S-130 Unit 10: Water Use

42



S-130 Unit 11: Firing Devices

S-130 Unit 11: Firing Devices

3

Objectives

Students will be able to:

- Identify commonly used firing devices.
- Describe situations where the use of firing devices may be used.
- Discuss the advantages and disadvantages of the different firing devices.

S-130 Unit 11: Firing Devices

2

Objectives

Students will be able to:

- Describe hazards associated with use of common firing devices.
- Demonstrate safe use and storage of firing devices.
- Identify alternative devices for igniting fuels.

S-120 Unit 11: Firing Devices 3

Firing Device PPE



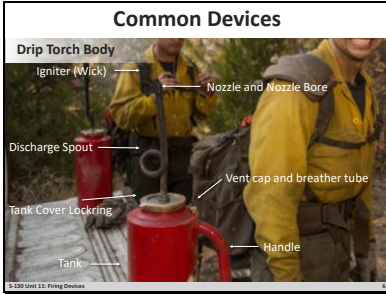
S-120 Unit 11: Firing Devices 4

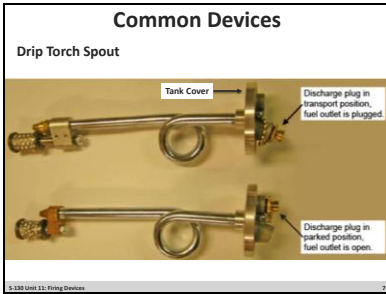
Common Devices

Drip Torch



S-120 Unit 11: Firing Devices 5

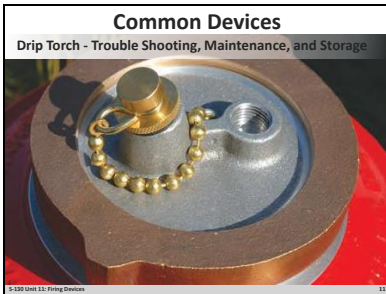




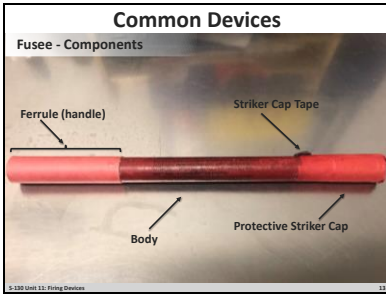


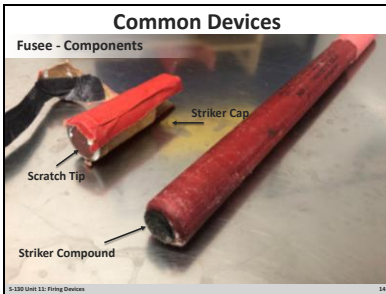




















Knowledge Check

Select the statement that depicts appropriate storage and maintenance of a fusee.

- 1. Always remove the cap before putting fusees in a pack to prepare for ignition.
- 2. Never store fusees near an ignition source.
- 3. Store fusees in the cab of a truck for easy access.
- 4. A fusee is still safe to use if it appears to be damaged.

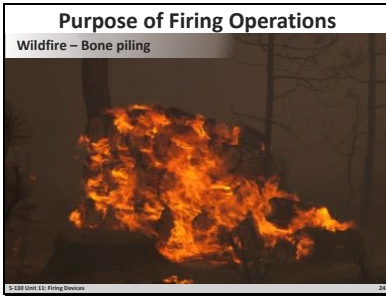
5-100 Unit 11: Flare Devices 19



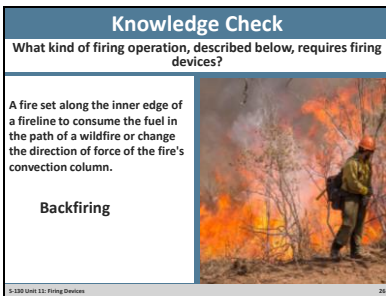
















Objectives

Students will be able to:

- Identify commonly used firing devices.
- Describe situations where the use of firing devices may be used.
- Discuss the advantages and disadvantages of the different firing devices.

5-120 Unit 1.1: Firing Devices 29

Objectives

Students will be able to:

- Describe hazards associated with use of common firing devices.
- Demonstrate safe use and storage of firing devices.
- Identify alternative devices for igniting fuels.

S-130 Unit 11: Firing Devices

30





S-130 Unit 12: Mopup

S-130 Unit 12: Mopup

31

Objectives

Students will be able to:

- Describe the cold trail method as it pertains to securing a control line.
- Describe safety considerations present during mop up operations.
- Describe the two mop up methods.

S-130 Unit 12: Mopup

2

Objectives

Students will be able to:

- Demonstrate the process of mopup on a simulated fire.
- Demonstrate the systematic process of conducting a grid to detect heat sources that remain in the black or spot fires in the green.

S-120 Unit 12: Mopup

3

Task, Purpose, End State



A photograph showing two firefighters in yellow protective gear and helmets working on a simulated fire site. They are using tools to clear debris and manage the fire's edge.

S-120 Unit 12: Mopup

4

Securing the Control Line

Cold Trailing – A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hand for heat to detect any fire, digging out every live spot, and trenching any live edge.



A close-up photograph of a firefighter in green gear performing cold trailing. The firefighter is using a tool to dig out live spots and trench the edge of a fire.

S-120 Unit 12: Mopup

5

Mopup



5-120 Unit 12: Mopup

6

Mopup

Dry Mopping



5-120 Unit 13: Mopup

7

Mopup

Wet Mopping



5-120 Unit 14: Mopup

8



Knowledge Check

During mopup, how deep do firefighters need to check for heat when there is a heavy duff layer?

Answer:

Until they reach mineral soil and the source of the heat is removed and extinguished.

S-130 Unit 12: Mopup 10

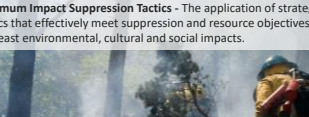
Securing The Fire perimeter

Gridding – To search for a small fire by systematically traveling over an area on parallel courses or gridlines.

S-130 Unit 12: Mopup 11

MIST

Minimum Impact Suppression Tactics - The application of strategy and tactics that effectively meet suppression and resource objectives with the least environmental, cultural and social impacts.



5-130 Unit 12: Wapiti 12

Knowledge Check

Dry mopping requires the use of a backpack pump.

True/False? False	
--	---

True/False?

False



S-130 Unit 12: Mopup

Knowledge Check

What does the acronym MIST stand for?

Answer:

- Minimum
- Impact
- Suppression
- Tactics



Answer:

- Minimum
- Impact
- Suppression
- Tactics

A firefighter wearing a yellow jacket and a blue helmet is using a tool to extinguish a fire on a tree trunk in a forest. The scene is smoky and the fire is visible on the tree.

5-130 Unit 12: Mopup

[illegible]

Objectives

Students will be able to:

- Describe the cold trail method as it pertains to securing a control line.
- Describe safety considerations present during mop up operations.
- Describe the two mop up methods.

S-130 Unit 12: Mop-up

11





S130 Unit 13:

Wildland Urban Interface

S-130 Unit 13: Wildland Urban Interface

1

Objectives

Students will be able to:

- Describe the characteristic of a structure during size up.
- Describe Wildland Urban Interface (WUI) watch out situations.
- Describe the four classifications of structure triage.
- Describe specific actions of structure protection tactics.

S-130 Unit 13: Wildland Urban Interface

2

Wildland Urban Interface

The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.



5-120 Unit 13: Wildland Urban Interface

Fire Behavior Predictions



5-120 Unit 13: Wildland Urban Interface

Structure Sizeup

Site Considerations



5-120 Unit 13: Wildland Urban Interface





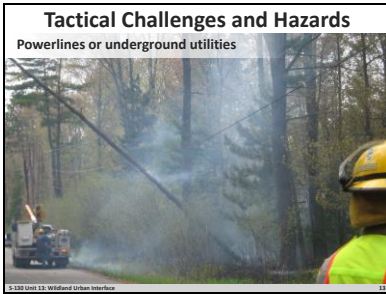














Tactical Challenges and Hazards

Property owners remaining on-site and evacuations



5-120 Unit 13: Wildland-Urban Interface 13

Tactical Challenges and Hazards

Smoke byproducts often laced with chemical compounds not found in pure wildland fires.



5-120 Unit 13: Wildland-Urban Interface 14

Knowledge Check

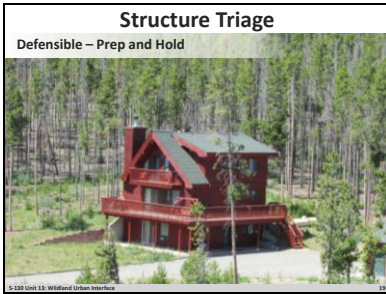
What is the definition of a safety zone?

A safety zone is an area where a firefighter can survive without a fire shelter.



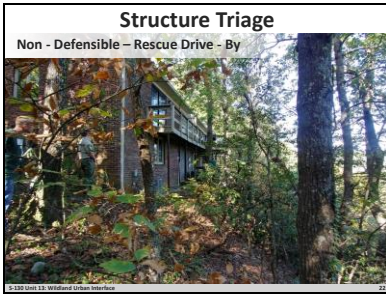
5-120 Unit 13: Wildland-Urban Interface 17

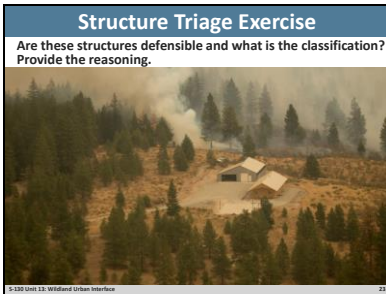












Structure Triage Exercise

Is this structure defensible and what is the classification?
Provide the reasoning.



5-120 Unit 1.3: Wildland-Urban Interface 24

Structure Triage Exercise

Are these structures defensible and what is the classification?
Provide the reasoning.



5-120 Unit 1.3: Wildland-Urban Interface 25

Structure Triage Exercise

Is this structure defensible and what is the classification?
Provide the reasoning.



5-120 Unit 1.3: Wildland-Urban Interface 26



Knowledge Check

Which structure triage category requires firefighters to stay with a structure?

Answer:

Defensible – Prep and Hold.

5-120 Unit 13: Wildland-Urban Interface 28

Knowledge Check

What is the primary determining factor when sizing up a structure?

Answer:

An adequate safety zone, based on fire behavior predictions.

5-120 Unit 13: Wildland-Urban Interface 29

Knowledge Check

Which of the following is the best example of structure protection tactics?

1. Installing sprinklers on top of cedar shake roofs.
2. Sweeping pine needles off a porch.
3. Opening windows on a cabin.
4. Patrol the area following the fire front passage.



An aerial photograph showing a small cabin with a dark roof situated in a landscape that is mostly covered in brown, charred vegetation. A line of trees and shrubs is visible in the background, and the overall scene suggests a wildfire environment.

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Which of the following is the best example of structure protection tactics?

1. Placing sprinklers on top of cedar shake roofs.
2. Sweeping pine needles off a porch.
3. Opening windows on a cabin.
4. Patrol the area following the fire front passage.



S-130 Unit 13: Wildland Urban Interface

38

[illegible]

Objectives

Students will be able to:

- Describe concerns associated with hazard trees.
- Describe physiological and mental effects of smoke exposure.
- Describe concerns associated with driving.

5-120 Unit 14: Fire Environment Hazards 2

Students will be able to:

- Describe concerns associated with hazard trees.
- Describe physiological and mental effects of smoke exposure.
- Describe concerns associated with driving.

S-130 Unit 14: Fire Environment Hazards

2

Hazard Tree Safety



S-130 Unit 14: Fire Environment Hazards

Smoke Hazards



S-130 Unit 14: Fire Environment Hazards

Knowledge Check

What component of smoke poses the greatest health risk to fireline personnel?

Answer:

Particulate Matter



S-130 Unit 14: Fire Environment Hazards

Knowledge Check

List the four signs and symptoms of short-term smoke exposure presented in the video.

Answer:

- Coughs
- Colds
- Fatigue
- Bronchitis (camp crud)



3-120 Unit 14: Fire Environment Hazards6

Smoke Hazard Mitigation



3-120 Unit 14: Fire Environment Hazards7

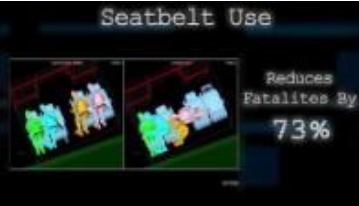
Driving Safety



3-120 Unit 14: Fire Environment Hazards8

Driving Safety

Seatbelt Use



Reduces
Fatalities By
73%

S-130 Unit 14: Fire Environment Hazards

1



S-130 Unit 15:
Radio Communications

S-130 Unit 15: Radio Communications

1

Objectives

Students will be able to:

- Discuss the various tools used for communications and how they function.
- Discuss basic radio functions and demonstrate proper radio communication procedures.

S-130 Unit 15: Radio Communications

2

The Maze of Communications



S-130 Unit 13: Radio Communications

3

Knowledge Check

True or False?

Tactical information should be communicated via cell phone and not a radio frequency?

False.
Tactical information should be communicated via radio frequency so that others on the incident can hear.



S-130 Unit 13: Radio Communications

4

Basic Radio Use



S-130 Unit 13: Radio Communications

5





Objectives

Students will be able to:

- Describe deployment site characteristics and how they differ from a safety zone.
- Discuss the purpose of fire shelters and how to correctly deploy.
- Describe the necessity of using a practice shelter.
- Discuss the inspection and care of the fire shelter.
- Discuss the correct deployment procedures for the fire shelter.

S-130 Unit 16: Fire Shelters



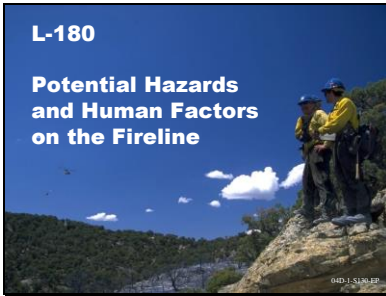


Objectives

Students will be able to:

- Describe deployment site characteristics and how they differ from a safety zone.
- Discuss the purpose of fire shelters and how to correctly deploy.
- Describe the necessity of using a practice shelter.
- Discuss the inspection and care of the fire shelter.
- Discuss the correct deployment procedures for the fire shelter.

5-120 Unit 16: Fire Shelters 5



Unit 4D Objectives

1. Define safety.
2. Define Situation Awareness and describe why it is important.
3. State the five communication responsibilities.
4. Identify potential hazards in the fire environment.
5. Define the Risk Management Process and describe why it is important.
6. Describe actions that foster teamwork.

04D-2-S130-EP

Categories of Hazards

Subjective hazard – one has control over	Objective hazard – one has no control over
	

04D-3-S130-EP

Hazards

1. Fire Environment Hazards
2. Human Related Hazards
3. Other Environmental Hazards
4. Biological Hazards
5. Equipment Hazards
6. Vehicle Hazards

0463-4-5130-03P

- 0405-S-6130-EP

Hazards, Continued

7. Aircraft Hazards
8. Base Camp Related Hazards
9. Wildland/Urban Interface Hazards
10. Tree and Snag Hazards

04D-6-5130-EP

- [illegible]

Risk Management Process

- Step 1 – Situational Awareness
- Step 2 – Hazard Assessment
- Step 3 – Hazard Control
- Step 4 – Decision Point
- Step 5 – Evaluate

040-7-5130-EP

Teamwork

1. What are some successful teams you have seen or been involved with prior to today?
2. What were some characteristics of successful teams you have seen or been involved with?
3. What are some characteristics of unsuccessful teams you have seen or been involved with?
4. Why is teamwork so important to firefighting?

040-8-5130-EP