

LESSON ONE

FIREFIGHTER I

Fire Hose, Appliances and Streams

DOMAIN: PSYCHOMOTOR

LEVEL OF LEARNING: APPLICATION

MATERIALS

IFSTA Essentials 5th edition or Jones and Bartlett Fundamentals of Fire Fighter Skills 2nd Edition or Delmar Firefighter's Handbook 3rd Edition; class A Pumper; overhead or laptop computer and multimedia projector; projection screen; NFPA 1901, Standard for Pumper Fire Apparatus; requirements for 9s Rated Fire Departments.

NFPA 1001 JPRs, 2008 edition

5.3.8 Extinguish fires in exterior Class A materials
5.3.10 Attack an interior structure fire

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Firefighter I candidate shall correctly describe and demonstrate the applications of hose, nozzles, adapters and tools carried on a pumper.

ENABLING OBJECTIVES

1. The Firefighter I candidate shall correctly define in writing the use of hose by category and define its construction.
2. The Firefighter I candidate shall correctly identify in writing a fire stream and the flow pattern characteristics produced by various types of nozzles.

LESSON ONE

FIREFIGHTER I

Fire Hose, Appliances and Streams

MOTIVATION

Fire hose, nozzles and appliances are among the most basic equipment used by firefighters, but individual application with these firefighting tools is sometimes misunderstood resulting in incorrect and unsafe use. Firefighters should develop a good understanding of the application of each size and type of hose and nozzles carried on their pumper. This knowledge will provide a more efficient fire fighting operation, resulting in less water damage and vastly enhanced safety.

PRESENTATION

ENABLING OBJECTIVE #1

The Firefighter I candidate shall correctly define in writing the use of hose by category and define its construction.

1. Discuss how hose is classified by its use.
2. Fire hose is identified and placed in four categories. List and discuss each of these.
 - a) Attack hose – Any hose that is used to directly control and extinguish fire.
 - b) Relay-supply hose – Designed to move large volumes of water at low pressure.
 - c) Intake hose – Connects pumpers or a portable pump to a nearby water source.
 - d) Extinguisher hose – Used on large extinguisher units, that may be stationary, wheeled, or mounted on a vehicle.
3. Describe the use and construction of forestry hose.

- a) A single-jacket, small diameter hose used to combat fires in forest and other wildland settings.
 - b) Made in both lined and unlined versions.
 - c) Small size and lightweight.
4. Discuss the four classifications of hose based on the method of construction.
 - a) Woven jacket.
 - b) Rubber covered (1" diameter hose with 1" couplings is considered booster hose.)
 - c) Braided.
 - d) Wrapped.
 5. Discuss how hose couplings are constructed.
 6. Describe the three basic types of hose couplings.
 - a) Threaded couplings.
 - b) Sexless couplings. Storz type.
 - c) Snap couplings.

Reference:

Delmar Handbook 3rd edition, pages 255-258

J&B Fundamentals 2nd edition, pages 472-474, 466-474

IFSTA Essentials 5th edition, pages 631, 633, 638-641

NOTE: Short sections of scrap hose make excellent props for this portion of the lesson plan. Scrap pieces of fire hose can usually be obtained from distributors or manufacturers.

PRESENTATION

ENABLING OBJECTIVE #2

The Firefighter I candidate shall correctly identify in writing a fire stream and the flow pattern characteristics produced by various types of nozzles.

1. Discuss the major components of nozzles.
 - a) Illustrate nozzle control valves such as ball, slide, and rotary control valves.
 - b) Tips such as fog, smoothbore and special purpose.
 - c) Play pipe usually with double handles and tapered.

- d) Stream straighteners that improve laminar flow to nozzle tip.
 - e) Accessories such as pistol grips and large double handles.
2. Discuss the construction of master stream nozzles.
- a) Illustrate nozzle control valves such as ball, slide, and rotary.
 - b) Ball valve control and seat.
 - c) Slide valve control.
 - d) Nozzle tips typically stacked, smooth bore, or fog.
 - e) Playpipes accelerate flow of water to the tip.
 - f) Stream straighteners increase reach and conformity of jet.
 - g) Operating Nozzle Pressures. 80 psi for smooth bore and 100 psi for fog.

NOTE: Fire streams are classified into one of three sizes: Low volume streams are considered to be 40 gallons per minute or less. Hand line streams are considered to be 40 gpm up to 350 gpm. Master streams are considered to range from 350 GPM and up.

3. Discuss the types of hand line nozzles as they relate to the type of fire stream.
- a) Solid stream.
 - b) Fog stream.
 - c) Broken stream.
4. Define fog stream and describe the mechanical principles of various fog stream nozzles.
- a) Periphery.
 - b) Deflection.
 - c) Impinge.
5. Describe and discuss constant flow nozzles.
- a) Specific gallonage, specific pressure regardless of pattern setting.
 - b) Nearly all fog nozzles are designed to operate at a nozzle pressure of 100 psi.
6. Discuss and describe the adjustable gallonage nozzles.
7. Describe and discuss variable flow nozzles.
- a) Rotary control nozzles, operate similar to a standard garden hose nozzle.

- b) Variable pattern nozzle (Mystery Nozzle).
 - c) With automatic nozzles or constant pressure nozzles, the pump pressure or flow can change, but the nozzle pressure will remain the same.
 - d) Constant nozzle pressure at 100 psi.
8. Describe and discuss the use of solid stream nozzles.
- a) As a rule 80 psi on master streams.
 - b) As a rule 50 psi should be used as the nozzle pressure for solid stream hand lines.
9. Describe and discuss Special Purpose nozzles.
- a) Cellar nozzles.
 - b) Water curtain nozzles.
 - c) Piercing nozzles.
 - d) Chimney nozzles.
 - e) Low velocity fog nozzles.
 - f) High-pressure fog nozzles.
10. Ask candidates to define a fire stream.
11. Discuss the four basic elements needed to have an effective fire stream.
- a) Reliable water supply.
 - b) Fire apparatus equipped with a fire pump.
 - c) Appropriate fire equipment such as hose, nozzles, etc.
 - d) Trained personnel.
12. Define a water hammer.
13. Discuss how a water hammer can cause damage to the water system and to fire department apparatus.
14. Discuss methods to prevent a water hammer and encourage candidates to be aware of a water hammer on the fire ground. Emphasize opening and closing nozzles slowly.
15. List the appliances and adapters required on a pumper.
16. List the tools that are required by NFPA 1901 and the 9S rating for Rural Fire Departments in North Carolina.
- a) Spanner wrenches, hydrant wrenches.
 - b) Rubber mallet.
 - c) Two shovels.

- d) Crowbar or Halligan tool.
17. Using the available or required adapters describe and discuss their intended uses.

Reference:

Delmar Handbook 3rd edition, pages 325-329

J&B Fundamentals 2nd edition, pages 479-482, 516-520

IFSTA Essentials 5th edition, pages 643-652, 724-733, 769-772

APPLICATION

This application will require the assistance of two additional instructors. Establish three application stations. The first station will identify the type, design, operation, required nozzle pressure and flow for a given selection of nozzles and tips; the second station will have the firefighter candidate to demonstrate opening, closing, adjusting the pattern and flow setting on selected fog nozzles; and the third station will have the firefighter candidate demonstrate the use of selected adapters and hose appliances, 'wyes and siamese."

SUMMARY

Review the types of hose, nozzles, adapters and hose appliances carried on a pumper, and re-examine the design and operation of the various nozzles carried on a fire department pumper.

Review the definition and types of common fire streams, and discuss the cause and prevention of water hammer.

LESSON TWO

FIREFIGHTER I

Fire Hose, Appliances and Streams

DOMAIN: PSYCHOMOTOR

LEVEL OF LEARNING: APPLICATION

MATERIALS

Class A pumper; two story structure; IFSTA Essentials 5th edition or Jones and Bartlett Fundamentals of Fire Fighter Skills 2nd Edition or Delmar Firefighter's Handbook 3rd Edition; overhead projector or laptop computer and multimedia projector; projection screen.

NFPA 1001 JPR, 2008 edition

5.3.10 Attack an interior structure fire

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Firefighter I candidate when given various evolutions shall correctly demonstrate advancing a charged hose line,

and shall correctly identify precautions to be followed while advancing hose lines into a fire.

ENABLING OBJECTIVES

1. The Firefighter I candidate shall correctly demonstrate advancing an uncharged and charged 1 1/2 in. or larger attack hose line into a structure.
2. The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line up a ladder and demonstrate its operation.
3. The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line to a second floor landing.
4. The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line to upper floors by means of inside and outside stairways.
5. The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line to lower floors by means of inside and outside stairways.
6. The Firefighter I candidate shall correctly demonstrate carrying a 100 ft. uncharged 1 1/2 in. attack line into a building, connecting it to a standpipe, and advancing the line.

OBJECTIVE PAGE

LESSON TWO

FIREFIGHTER I

Fire Hose, Appliances and Streams

MOTIVATION

Most fire ground tactical operations will require that fire hose be advanced by hand to attack positions. This task will require a fair amount of physical agility and stamina even under the best conditions. A typical fire ground operation that firefighters are faced with has many unnatural obstacles and life threatening situations. Physical demands can become intense, especially, when fire hose must be advanced to locations above or below ground level. By learning certain techniques for carrying, placing and securing hose lines in a more efficient operation and a safer environment for firefighters is assured.

PRESENTATION

ENABLING OBJECTIVE #1

The Firefighter I candidate shall correctly demonstrate advancing an uncharged and charged 1 1/2 in. or larger attack hose line into a structure.

1. Explain the responsibilities of the three functional positions of an attack line.
 - a) Nozzlemans: leads the attack crew in the absence of a line officer, determines the method of attack, operates the nozzle, controls speed of advancement and retreat, communicates directions to crew members.
 - b) Back-up man: assists in locating hazards, directly supports nozzlemans in the control of hose and nozzle, communicates information between nozzlemans and slackman.

- c) Slackman: insures that adequate hose is available for advancement; prevents kinks at doorways, stairways, landings and obstacles; controls the retreat of hose line; watches for the development of hazards behind the hose crew.

NOTE: Under no circumstances should a fire attack be initiated with less than two persons on an attack line. This goes against the "buddy system and presents an unnecessary health and safety risk.

2. Describe the location of the firefighters on the attack line.
3. Review the indicators of backdraft and flashover and remind candidates of the need to ventilate.
4. Describe safety procedures for approaching a structure under fire conditions.
 - a) Approach at angles to doors and windows.
 - b) Use walls as cover when approaching or attacking.
 - c) Stay low.
5. Discuss the need to flow the attack line, check g.p.m. setting and nozzle pattern prior to entry.
6. Explain how to use walls for orientation and as a shield from falling debris or collapse.

Reference:

Delmar Handbook 3rd edition, pages 287-293, 636-639
J&B Fundamentals 2nd edition, pages 405-406, 501-510
IFSTA Essentials 5th edition, pages 118-120, 122-125, 673

PRESENTATION

ENABLING OBJECTIVE #2

The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line up a ladder and demonstrate its operation.

1. Explain that only uncharged hose lines should be advanced up ladders for reasons of safety and speed.

2. Discuss how the height to be reached will dictate the number of firefighters needed. A rule of thumb is one firefighter per section of ladder needed.
3. Describe the carry position of the hose and nozzle on the nozzleman, and the use of hose tools for climbing the ladder.
4. Describe the carry position of the hose on the backup person(s), and the use of hose tools for climbing the ladder.
5. Stress the importance of firefighters using a leg lock or a ladder belt to secure themselves to the ladder.
6. Describe how the hose should be secured to the ladder prior to flowing water.

Reference:

Delmar Handbook 3rd edition, pages 296-303

J&B Fundamentals 2nd edition, pages 510-512

IFSTA Essentials 5th edition, pages 675-676

PRESENTATION

ENABLING OBJECTIVE #3

The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line to a second floor landing.

1. Give examples that would require hose lines to be advanced to exterior landings.
 - a) Apartment buildings.
 - b) Shortest distance to the fire.
 - c) Most accessible location to position an attack.
2. Discuss how hose may be extended to these areas by means of a ladder.
3. Describe and demonstrate how hose can be hoisted by means of a rope and hose roller.
4. If applicable, discuss how aerial equipment can be used to advance hose lines to exterior landings and windows.

Reference:
Delmar Handbook 3rd edition, page 293
J&B Fundamentals 2nd edition, pages 481, 507-510

PRESENTATION

ENABLING OBJECTIVE #4

The Firefighter I Candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line to upper floors by means of inside and - outside stairways.

1. Explain that where possible, when advancing hose up stairs, it should be uncharged.
2. Discuss the best ways to transport hose up stairs.
 - a) Demonstrate the shoulder carry.
 - b) Demonstrate the Minuteman Load.
3. Describe how excess hose should be flaked onto the stairs to allow for easier advancement after being charged.
4. Describe how locating firefighters on landings will enhance the advancement of the hose line.

Reference:
Delmar Handbook 3rd edition, pages 293-297
J&B Fundamentals 2nd edition, pages 507-510
IFSTA Essentials 5th edition, page 673

PRESENTATION

ENABLING OBJECTIVE #5

The Firefighter I candidate shall correctly demonstrate advancing a charged and an uncharged 1 1/2 in. or larger attack hose line to lower floors by means of inside and outside stairways.

1. Explain that advancing an uncharged hose line will be easier and quicker but because of heat or fire the hose line may have to be charged.

2. Describe how locating firefighters on landings will enhance the advancement of the hose line.
3. Discuss those precautions that should be taken while advancing the hose line.
 - a) Be prepared to open the nozzle to reduce heat or extinguish rollover.
 - b) Advance the hose line quickly to avoid rapidly rising temperatures.

Reference:

Delmar Handbook 3rd edition, pages 293-297

J&B Fundamentals 2nd edition, pages 507-509

IFSTA Essentials 5th edition, pages 673-674

PRESENTATION

ENABLING OBJECTIVE #6

The Firefighter I candidate shall correctly demonstrate carrying a 100 ft. uncharged 1 1/2 in. attack line into a building, connecting it to a standpipe, and advancing the line.

1. Point out why it is necessary to have hose lines ready for operation on standpipe systems as well as methods to achieve this function.
 - a) Folds.
 - b) Bundles.
 - c) Back packs.
2. Describe the items that should be included in a standpipe package.
 - a) A gated wye.
 - b) A short section of 2 1/2 in. hose 8 ft. to 10 ft. in length.
 - c) A minimum of 100 ft. of 1½ in. or 1¾ in. attack hose.
 - d) A fire service nozzle.
 - e) A set of spanner wrenches.
 - f) A set of sprinkler wedges or tongs.
 - g) An iron pipe - to - national standard thread adapter.
3. Discuss the typical locations of standpipe cabinets.
 - a) Stairwells.
 - b) Hallways just inside the stairwell door.

4. Describe how to connect fire hose to a standpipe.
 - a) Disconnect standpipe hose or remove the cap.
 - b) Verify the threads.
 - c) Check for debris inside pipe.
 - d) Connect a short section of 2 ½ in. hose to discharge.
 - e) Connect a gated wye to male end of 2 ½ in. hose.
 - f) Connect fire hose to gated wye.
 - g) Charge with water.

Reference:

Delmar Handbook 3rd edition, pages 293-296, 298

J&B Fundamentals 2nd edition, pages 512-515

IFSTA Essentials 5th edition, pages 674-675

APPLICATION

This portion of the lesson plan will require additional instructors or evaluators. Divide the class into groups of five firefighters each. When possible establish stations to perform the following tasks: advancing hose lines into a structure; advancing hose lines up ladders; hoisting hose lines to upper floors; advance hose lines up and down stairways and stairwells; connecting hose lines to standpipe and advancing.

SUMMARY

Review the procedures for advancing hose lines into structures and all associated safety considerations.

Reexamine the methods and tools necessary to advance a hose line up a ladder.

Review the techniques of advancing hose lines to exterior landings as well as up and down stairs.

Retrace the procedures for using a building's standpipe system.

LESSON THREE

FIREFIGHTER I

Fire Hose, Appliances and Streams

DOMAIN: PSYCHOMOTOR

LEVEL OF LEARNING: APPLICATION

MATERIALS

IFSTA Essentials 5th edition or Jones and Bartlett Fundamentals of Fire Fighter Skills 2nd Edition or Delmar Firefighter's Handbook 3rd Edition; Class A pumper; overhead projector or laptop computer and multimedia projector; projection screen; area suitable for stretching hoseline, such as a parking lot or long driveway.

NFPA 1001 JPRs, 2008 edition

- 5.3.10 Attack an interior structure fire
- 5.3.15 Connect a fire department pumper to a water supply
- 5.5.2 Clean, inspect, and return fire hose to service

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Firefighter I candidate when given the appropriate size hose shall correctly demonstrate loading, rolling, coupling and uncoupling, carrying, and extending fire hose as well as replacing a burst section of fire hose.

ENABLING OBJECTIVES

1. The Firefighter I candidate when given the proper equipment shall correctly identify and demonstrate at least three types of hose loads and finishes.
2. The Firefighter I candidate when given the proper equipment shall correctly demonstrate techniques for coupling and uncoupling, extending, and carrying fire hose as well as replacing a burst section of fire hose.

LESSON THREE

FIREFIGHTER I

Fire Hose, Appliances and Streams

MOTIVATION

For firefighters operating on the fire ground, time is important. It is necessary for each firefighter to have a good working knowledge of hose loads used in their department as well as other available alternatives. The ability to quickly lay supply lines, attack lines, and where necessary, extending those lines will increase the effectiveness and speed of fire suppression operations. The ability to rapidly deploy hose line depends on how the hose was loaded on the apparatus. It is extremely important that the firefighter understand how hose is loaded on the apparatus. If loaded incorrectly the delay could be costly in terms of property damage or loss of life. Loading fire hose is not an exciting aspect of fire fighting, however being able to deploy fire hose in a rapid and professional manner is.

PRESENTATION

ENABLING OBJECTIVE #1

The Firefighter I candidate when given the proper equipment shall correctly identify and demonstrate at least three types of hose loads and finishes.

SUPPLY LINES

1. Ask candidates to name the different types of hose loads used, especially those in their department.
2. Demonstrate and explain the Accordion Load.
3. Discuss the advantages and disadvantages of the Accordion Load.

4. Demonstrate and explain the Horseshoe Load.
5. Discuss the advantages and disadvantages of the Horseshoe Load.
6. Demonstrate and explain the Flat Load.
7. Discuss the advantages and disadvantages of the Flat Load.
8. Define the term hose load finishes.
9. Demonstrate and explain the two categories of hose load finishes.
 - a) Straight finish. For forward lays.
 - b) Reverse horseshoe finish. For reverse lays.

NOTE: Emphasize the use of a Dutchman (reverse fold) on any hose load where the orientation of a coupling could cause the hose to snag in the hose bed during deployment.

ATTACK LINES

10. Describe and explain a preconnected flat load.
11. Discuss the advantages and disadvantages of the pre-connected flat load.
12. Describe and explain a triple layer load.
13. Discuss the advantages and disadvantages of the triple layer load.
14. Demonstrate and explain the minuteman load.
15. Discuss the advantages and disadvantages of the minuteman load.

Reference:

Delmar Handbook 3rd edition, pages 272-287
J&B Fundamentals 2nd edition, pages 492-505
IFSTA Essentials 5th edition, pages 655-663

APPLICATION

Using a fire department pumper, lay out the supply hose which is presently loaded and re-pack the supply lines with a different method. Continue this rotation until all methods have been demonstrated.

Extend two attack lines of different sizes from the pumper. Re-pack these lines with a different method and re-extend. Continue this rotation until all methods have been demonstrated.

PRESENTATION

ENABLING OBJECTIVE #2

The Firefighter I candidate when given the proper equipment shall correctly demonstrate techniques for coupling and uncoupling, extending, and carrying fire hose as well as replacing a burst section of fire hose.

1. Describe various fire ground situations when it would be necessary to extend a hose line.
2. Explain and demonstrate the following methods for carrying fire hose.
 - c) Demonstrate an Accordion Shoulder Carry of a single section by a single person and of multiple sections by multiple persons.
 - d) Demonstrate a Horseshoe Shoulder Carry of a single section by a single person and of multiple sections by multiple persons.
2. Demonstrate the various techniques for coupling and uncoupling fire hose.
 - a) Explain the uses for higbee cuts and lugs.
 - b) Demonstrate the Foot-tilt method.
 - c) Demonstrate the Two-firefighter method.
 - d) Demonstrate the Knee press method.
 - e) Demonstrate the Stiff-arm method.
 - f) Demonstrate the use of spanner wrenches.
 - g) Demonstrate the over the hip or thigh method.

3. Explain and demonstrate the proper procedure for extending a hose line.
 - a) Use a hose line of equal size.
 - b) Use a hose line of larger or smaller size.
 - c) Extend the line from a wye or siamese.
4. Describe various fire ground situations when it would be necessary to replace a burst section of hose line.
5. Explain and demonstrate methods for retrieving a burst hose line and for replacing a burst section of hose.

Reference:

Delmar Handbook 3rd edition, pages 262-264, 273, 275, 277, 281, 305-310

J&B Fundamentals 2nd edition, pages 467-473, 499-504

IFSTA Essentials 5th edition, pages 641, 651, 654-655, 677-678

APPLICATION

Divide the class into groups. Using a fire department pumper, have one group perform hose line extensions with a single firefighter. Have group two perform supply line hose extensions with multiple firefighters. Using an old section of hose, under close supervision, have group three practice retrieving and replacing a burst section of hose. If the need warrants, form additional groups for extending hose lines and coupling and uncoupling fire hose.

SUMMARY

Restate the types of hose loads for supply hose and briefly point out their purpose, advantages and disadvantages.

Reexamine each type of hose load used for attack lines, its purpose, advantages and disadvantages.

Review the methods for extending, carrying, replacing a burst section, and coupling and uncoupling a section of fire hose.

LESSON FOUR

FIREFIGHTER I

Fire Hose, Appliances and Streams

DOMAIN: PSYCHOMOTOR

LEVEL OF LEARNING: APPLICATION

MATERIALS

IFSTA Essentials 5th edition or Jones and Bartlett Fundamentals of Fire Fighter Skills 2nd Edition or Delmar Firefighter's Handbook 3rd Edition; overhead projector or laptop computer and multimedia projector; projection screen.

NFPA 1001 JPR, 2008 edition

5.3.10 Attack an interior structure fire

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Firefighter I candidate shall correctly define direct, indirect, and combination methods of attack and shall describe the results when each method is correctly applied.

ENABLING OBJECTIVES

1. The Firefighter I candidate shall correctly define in writing the direct method of water application and its results.
2. The Firefighter I candidate shall correctly define in writing the indirect method of water application and its results.
3. The Firefighter I candidate shall correctly define in writing the combination method of water application and its results.

LESSON FOUR

FIREFIGHTER I

Fire Hose, Appliances and Streams

MOTIVATION

A successful fire attack is dependent upon many factors, but probably none more important than the proper application of water to the fire. The success of the fire fighting team depends upon the skill and knowledge of the personnel involved in the initial attack. Understanding the intended purpose of fire streams and their effect on suppression will enable the firefighter to make the correct choice. Properly trained firefighters with an attack plan, using proper fire streams will safely extinguish or contain most fires in their early stages.

PRESENTATION

ENABLING OBJECTIVE #1

The Firefighter I candidate shall correctly define in writing the direct method of water application and its results.

1. Provide a definition of direct attack.
2. Give various examples of fires on which a direct attack may be used and discuss these with the class.
3. Lead the candidates in a discussion on interior and exterior applications using the direct attack method.
4. Discuss the advantages and disadvantage of narrow pattern streams.
 - a) Combination nozzles.
 - b) Solid bore nozzles.
5. Describe what takes place when direct attack streams reach the seat of the fire.

6. Lead the candidates in a discussion on how direct attack affects steam production.

Reference:

Delmar Handbook 3rd edition, pages 325-329, 332-333
J&B Fundamentals 2nd edition, pages 516-518, 618-620
IFSTA Essentials 5th edition, pages 767-768

PRESENTATION

ENABLING OBJECTIVE #2

The Firefighter I candidate shall correctly define in writing the indirect method of water application and its results.

1. Provide a definition of the indirect attack.
2. Provide examples of fires on where an indirect attack would be used.
3. Discuss the differences and effects between moderate angle and wide-angle fog streams when applied to a superheated atmosphere.
4. Lead the candidates in a discussion on interior and exterior positions using the indirect attack method.
5. Discuss what takes place when indirect attack streams reach the seat of the fire in relationship to the thermal balance.
6. Lead the candidates in a discussion on how indirect attacks affect stream production.

Reference:

Delmar Handbook 3rd edition, pages 333
J&B Fundamentals 2nd edition, pages 620-621
IFSTA Essentials 5th edition, page 768

PRESENTATION

ENABLING OBJECTIVE #3

The Firefighter I candidate shall correctly define in writing the combination method of water application and its results.

1. Provide a definition of the combination attack.
2. Give examples of fires where a combination method may be used.
3. Lead the candidates in a discussion on interior and exterior applications using the combination attack method.
4. Describe and discuss water application methods.
 - a) "T" Pattern.
 - b) "Z" Pattern.
 - c) "O" Pattern.
5. Discuss what takes place with the thermal balance when combination attack streams reach the seat of the fire.

Reference:

Delmar Handbook 3rd edition, pages 333

J&B Fundamentals 2nd edition, pages 621

IFSTA Essentials 5th edition, pages 768-769

APPLICATION

Divide the class into small groups. Draw a floor plan of a ranch style house. Give each group a working fire scenario in a different room. Allow time for each group to work, then have a spokesperson from each group to explain which attack they chose and why. After each group has completed their response, involve the class in a discussion of each group's response.

SUMMARY

Review each method of fire attack: direct, indirect, and combination.

Briefly restate the determining factors that dictate the correct attack method.

Reexamine the expected results of each type of attack.

Emphasize the importance of maintaining the thermal balance when fighting fire.

LESSON FIVE

FIREFIGHTER I

Fire Hose, Appliances and Streams

DOMAIN: PSYCHOMOTOR

LEVEL OF LEARNING: APPLICATION

MATERIALS

IFSTA Essentials 5th edition or Jones and Bartlett Fundamentals of Fire Fighter Skills 2nd Edition or Delmar Firefighter's Handbook 3rd Edition; NFPA 1962, Standard for the Care, Use, and Service Testing of Fire Hose, Including Couplings and Nozzles; overhead projector or laptop computer and multimedia projector; projection screen; Class A Pumper.

NFPA 1001 JPR, 2008 edition

5.5.2 Clean, inspect, and return fire hose to service

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Firefighter II candidate when given fire hose and nozzles shall correctly demonstrate the procedures for

cleaning, maintenance and inspection of fire hose and nozzles.

ENABLING OBJECTIVES

1. The Firefighter II candidate when given a section of fire hose shall correctly demonstrate the procedures for cleaning, maintenance, and inspecting fire hose and couplings.
2. The Firefighter II candidate shall correctly demonstrate the procedure for cleaning, maintenance, and inspection of nozzles.

LESSON THREE

FIREFIGHTER II

Fire Hose, Appliances and Streams

MOTIVATION

Fire hose may be the most important component in fire extinguishing efforts outside of the firefighters. Sending water through fire hose, from the supply point to the nozzle, is a process that is often taken for granted. To insure the confidence firefighters must have in fire hose, it must be cleaned after each use, and properly maintained. Fire hose that is properly cleaned, and maintained is not only safer but will have a longer service life. All too often firefighter's lives depend on the integrity of their hose line.

PRESENTATION

ENABLING OBJECTIVE #1

The Firefighter II candidate when given a section of fire hose shall correctly demonstrate the procedures for cleaning, maintenance, and inspection of fire hose and couplings.

1. Discuss "after use" care and maintenance of the various types of fire hose.
 - a) Booster line hose.
 - b) Hard suction hose.
 - c) Rubber jacket collapsible hose.
 - d) Woven jacket fire hose.

2. Discuss after use care and maintenance of fire hose couplings.
 - a) Threaded couplings.
 - b) Sexless couplings.

3. Explain the cause and prevention of various kinds of hose damage.
 - a) Mechanical damage.

- b) Thermal damage.
 - c) Organic damage such as mold and mildew.
 - d) Chemical damage.
4. Explain the recommended methods and procedures for drying fire hose.
 5. Discuss storage procedures for fire hose.

Reference:

Delmar Handbook 3rd edition, pages 257-260

J&B Fundamentals 2nd edition, pages 474-479

IFSTA Essentials 5th edition, pages 634-642

Reference: NFPA 1962, Standard for the Care, Use, and Service Testing of Fire Hose Including Couplings and Nozzles.

PRESENTATION

ENABLING OBJECTIVE #2

The Firefighter II candidate shall correctly demonstrate the procedure for cleaning, maintenance, and inspection of nozzles.

1. Discuss the procedures for cleaning and maintaining nozzles.
 - a) Check for internal / external damage.
 - b) Ease of operation.
 - c) Check gasket.
2. Using different nozzles describe and demonstrate to the class the proper methods for cleaning, maintenance and inspection of nozzles.

Reference:

Delmar Handbook 3rd edition, pages 344-345

J&B Fundamentals 2nd edition, page 520

IFSTA Essentials 5th edition, page 733

APPLICATION

Have the firefighters properly demonstrate cleaning, maintenance and drying procedures for fire hose and cleaning and maintenance procedures for nozzles.

SUMMARY

Review the cleaning and maintenance procedures of fire hose.

Review the cleaning and maintenance of fire hose couplings.

Review the cleaning and maintenance of fire hose nozzles.