



NATIONAL TRANSPORTATION SAFETY BOARD  
**Investigative Hearing**

Norfolk Southern Railway general merchandise freight train 32N  
derailment with subsequent hazardous material release and fires,  
in East Palestine, Ohio, on February 3, 2023

<b>GROUP</b>	<b>C</b>
<b>EXHIBIT</b>	
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Agency / Organization

**Ohio Department of Public Safety**  
**Division of Emergency Medical Services**

Title

**Volunteer Firefighter Course Packet**  
**Course Admission Requirements,**  
**Qualifications for Certification, Course**  
**Objectives, and Recommend Hours Guide**  
**Effective April 1, 2019**



OHIO DEPARTMENT OF PUBLIC SAFETY  
DIVISION OF EMERGENCY MEDICAL SERVICES

**VOLUNTEER FIREFIGHTER COURSE PACKET**  
**Course Admission Requirements, Qualifications for Certification, Course Objectives, and Recommended Hours Guide**  
**EFFECTIVE APRIL 1, 2019**

**Course Overview**

The State of Ohio Certified Volunteer Firefighter Course is an **introductory, awareness-level course** designed to introduce the student to the basic elements of fire ground safety and support operations and to provide them with the knowledge, skills, and abilities (KSAs), to assist in firefighting support operations with their fire departments. The Ohio Volunteer Firefighter certification is a stand-alone certificate specific to the State of Ohio which **does not meet the minimum "Standard for Firefighter Professional Qualifications"** established by the National Fire Protection Association (NFPA) 1001 as a qualifying level of public safety responder for trained firefighters.

As an awareness-level course, the Ohio Volunteer Firefighter Course is intended to be a foundation upon which firefighters can begin to build their training portfolio. Due to the 36-hour time constraint as set forth in section 4765.55 of the Ohio Revised Code, the Ohio Volunteer Firefighter course limits exposures to hazardous environments as described in the Ohio Administrative Code. The course **does not permit** student participation in any instruction involving the type of hazardous environments in which their fire department may operate. Prohibited activities include environments which are considered to be "Immediately Dangerous to Life or Health" (IDLH), including but not limited to, hot zone operations at uncontrolled fires or hazardous materials releases involving fixed structures, mobile equipment, or outdoor areas as well as operation of emergency vehicle apparatus.

Due to the limitations of the Ohio Volunteer Firefighter Course, firefighters certified to the Volunteer Firefighter level shall be provided the additional training necessary to participate in fire department activities that exceed the training provided in the Volunteer Firefighter Course. **The fire chief or the authority having jurisdiction (AHJ) is responsible to provide additional proper training in these expanded areas if the firefighter is expected to function safely within an IDLH environment or operate emergency vehicle apparatus. The fire chief acknowledges that he or she shall assume all the risk and liability for deviating from any of the state and/or nationally recognized standards for firefighting.**

**Course Objectives**

The Volunteer Firefighter Course Objectives are designed to provide the basic elements of fire ground safety and support operations and are not intended to meet the minimum industry standard for firefighter training as determined by the National Fire Protection Association (NFPA) 1001 Standard (2019 edition). The hours assigned to each course objective are recommendations based on the needs of Ohio's fire service, within the constraints of the 36-hour maximum course length. Chartered fire training programs may reallocate topic hours to meet student needs so long as all course objectives are met. **However, deviation of more than 25% of the recommended hours must be justified on the course request form.**

Proper documentation of students meeting course objectives is required.

**Course Requirements**

The Volunteer Firefighter Course, required to obtain a volunteer firefighter certificate, shall consist of a maximum of thirty-six hours\*:

1. The course shall meet the "Volunteer Firefighter Course Objectives" approved by the executive director, with advice and counsel of the Firefighter and Fire Safety Inspector Training Subcommittee; and
2. The Volunteer Firefighter Course shall be approved by the executive director prior to delivery.

**Contact Hours**

Student contact hours: 50 – 60 minutes = 1 hour; 25 – 30 minutes = ½ hour; full days (0800 – 1600) = 7 hours (assuming 1 hour for lunch unless otherwise documented). Instructional hours may include topic instruction, material review, and testing for knowledge, e.g., quizzes. Instructional hours shall not include practical skill testing, written testing for certification, or instruction on any topic(s) not listed on this guide.

**OHIO VOLUNTEER FIREFIGHTER CERTIFICATION REQUIREMENTS**

<b>STANDARD/ DIRECTIVE</b>	<b>O.A.C. REFERENCE</b>	<b>VOLUNTEER FIREFIGHTER COURSE ADMISSION REQUIREMENTS</b>
N/A	4765-20-02 4765-24-09	Individuals shall be at least eighteen (18) years of age, except that a chartered fire training program may admit a student who is seventeen (17) years old provided that the student has graduated or is enrolled in the twelfth (12th) or final grade in a secondary school program.
N/A	4765-20-02 4765-24-09	Individuals shall meet all admission requirements established by the chartered fire training program.
<b>STANDARD/ DIRECTIVE</b>	<b>O.A.C. REFERENCE</b>	<b>QUALIFICATIONS FOR VOLUNTEER FIREFIGHTER CERTIFICATION</b>
N/A	4765-20-02	An applicant for a firefighter certificate shall be at least eighteen (18) years of age.
HSPD-5,8	4765-20-02	National Incident Management System ICS 100, or online equivalent.
HSPD-5,8	4765-20-02	National Incident Management System IS 700.
NFPA 1001	4765-20-02	Successful completion of a volunteer firefighter training course (36 hours) through an Ohio chartered fire training program.
N/A	4765-20-02	Shall pass the knowledge and practical skills examinations within one hundred eighty (180) days of volunteer firefighter training course completion.
N/A	4765-20-02	Shall submit a completed application within ninety (90) days of passing the knowledge examination.
N/A	4765-20-02	Applicants shall have not been convicted of any of the following: (a) Any felony; (b) A misdemeanor committed in the course of practice; (c) A misdemeanor involving moral turpitude.
N/A	4765-20-02	Applicants shall have not committed fraud, misrepresentation, or material deception in applying for or obtaining a certificate issued under section 4765.55 of the Ohio Revised Code and Chapter 4765-20 of the Ohio Administrative Code.

**PRACTICAL SKILLS FOR OHIO VOLUNTEER FIREFIGHTER COURSE**

**Skills to be tested for state certification examination: 5 Mandatory Skills and 2 Random Skills**

**NOTE: In order to support efficiency of course logistics and planning all skills may be completed as flip-the-switch. However, time allocated for practical skills testing shall not be included in the 36 hours of instruction time.**

DEMS SKILL SHEET	NFPA JPR	TOPIC	PSYCHOMOTOR OBJECTIVE	SKILLS TESTING R / M	JUSTIFICATION
1-2	4.1.2	PPE	Properly don personal protective clothing.	M	Life Safety/Mission Critical JPR
1-3	4.3.1	PPE	Properly don SCBA.	M	Life Safety/Mission Critical JPR
1-4	4.3.1	SCBA	Demonstrate emergency procedures taken in the event of SCBA failure or air cylinder depletion.	M	Life Safety/Mission Critical JPR
7-3	4.3.6	Ground Ladders	Demonstrate one firefighter extension ladder carry and raise.	M	Mission Critical JPR
12-1	4.3.19	Hose Evolutions	Advance a charged hoseline of 1½" or 1¾" on level ground using a one firefighter method.	M	Exterior Hose Evolutions only No IDLH training.
2-1	4.3.20	Ropes	Demonstrate proper method to tie the following knots: bowline, clove hitch.	R	Mission Critical JPR
3-1	4.2.3	Communications	Communications – Radio Transmission.	R	Mission Critical JPR
4-1	4.3.2	Incident Response	Responding on apparatus.	R	Mission Critical JPR
6-1	4.3.4	Forcible Entry	Select, carry, and utilize forcible entry tools, identify correct procedure for forcibly gaining access into one or a combination of doors, windows or through walls. Start a chainsaw and rotary saw if available.	R	Mission Critical JPR
7-1	4.3.6	Ground Ladders	Demonstrate two firefighter carry and raise for extension ladders; extending the fly section(s) assuring the fly section is locked.	R	Mission Critical JPR
7-7	4.3.10	Attack Lines	Demonstrate proper method of operating a hoseline from a ladder utilizing a leg lock.	R	Mission Critical JPR
10-7	4.2.4	Communications	Declaring a Mayday.	R	Mission Critical JPR
14-1	4.3.11	Horizontal Ventilation	Perform horizontal ventilation for a simulated fire (may use a smoke machine or paper streamers).	R	Mission Critical JPR
16-1	4.3.14	Salvage	Two Firefighter Salvage Cover Fold.	R	Mission Critical JPR
16-2	4.3.14	Salvage	One Firefighter Salvage Cover Roll and Spread.	R	Mission Critical JPR
17-1	4.3.15	Water Supply	Perform hydrant-to-pumper hose connections with forward lay.	R	Mission Critical JPR
17-2	4.3.15	Water Supply	Perform pumper-to-hydrant hose connections with reverse lay.	R	Mission Critical JPR
18-1	4.3.16	Fire Extinguishers	Demonstrate how to safely operate a portable extinguisher to extinguish an incipient fire.	R	Mission Critical JPR
19-1	4.3.18	Scene Safety	Turn off building utilities at the emergency scene, securing building utilities.	R	Mission Critical JPR

## OHIO VOLUNTEER FIREFIGHTER COURSE OBJECTIVES & RECOMMENDED HOURS GUIDE

\*Objectives extracted from NFPA 1001 "Standard for Firefighter Professional Qualifications"

GENERAL KNOWLEDGE		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>THE FIRE SERVICE (ORGANIZATION, HISTORY, MISSION, &amp; SAFETY)</b>	The organization of the fire department; the mission of fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the Fire Fighter; the role of other agencies as they relate to the fire department; the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.					
<b>Cognitive:</b>						
1. Describe the culture and mission of the fire service.			5-6	70		
2. Describe the roles and responsibilities of a firefighter.			8-10			
3. Describe the roles within the fire department.						
4. Outline the organization of the fire department.						
5. Discuss the roles of other agencies as they relate to the fire department.						
6. Explain a fire department's standard operating procedures, rules, and regulations as they apply to firefighters.		11-37	15-29			
7. Describe the organization of the fire service.						
8. Describe the history of the fire service.						
9. List the main types of job-related firefighter fatalities, injuries, and illnesses.						
10. Discuss the fire service safety standards, regulations and initiatives developed to improve firefighter safety and health.			38-48			
11. Describe the safety practices to observe on the training ground.						
12. Outline the safety considerations for working in and around the fire station.			62-63			
13. Describe the characteristics of the incident command system.		899-905 1385-1393	819-831 837-840			
14. Describe how to function within an assigned role in the incident command system.						
<b>Section Total</b>				<b>70</b>		<b>70</b>

GENERAL KNOWLEDGE		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>COMMUNICATIONS</b>	Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment, so that all necessary information is obtained, communications equipment is operated correctly, and the information is relayed promptly and accurately to the dispatch center.					
<b>Cognitive:</b>		57-71	136-144 149-152	20		
1. Explain the steps in processing an emergency incident.						
2. Describe the procedures for handling non-emergency calls.						
3. Describe the procedures for handling emergency calls.						
4. Describe the principles of effective radio communications.						
5. Describe when to use plain language and the use of ten-codes can complicate radio communications.						
6. Discuss the purpose of size-up and progress reports.						
7. Recognize routine radio traffic, emergency traffic, and emergency evacuation signals.						
<b>Psychomotor: (Skill Sheet 3-1)</b>		73	150		10	
1. Send and receive messages over the fire department radio.						
<b>Section Total</b>				<b>20</b>	<b>10</b>	<b>30</b>
<b>FIRE BEHAVIOR</b>	Understand the conditions needed for fire to ignite and grow to operate in a safe and effective manner on the fire ground.					
<b>Cognitive:</b>		117-127 131-134 161-162 165 254-258 135-160	159-178	50		
1. Describe the chemistry of fire, including the elements of fire and the products of combustion.						
2. Explain how fires spread by conduction, convection, and radiation.						
3. Define flow path; describe how it influences the growth of a building fire. <a href="https://www.youtube.com/watch?v=lq_WF_VVK0">https://www.youtube.com/watch?v=lq_WF_VVK0</a> , <a href="https://www.youtube.com/watch?v=X80yseC2fmQ">https://www.youtube.com/watch?v=X80yseC2fmQ</a>						
4. Discuss the methods of extinguishment.						
5. Explain the four classes of fire.						
6. Explain the function of fuel within the combustion process.						
7. Explain the various stages of the burning process.						
8. Explain the signs, causes, effect, and prevention of flashover.						
9. Explain the signs, causes, effect, and prevention of backdrafts.						
<b>Section Total</b>				<b>50</b>		<b>50</b>

GENERAL KNOWLEDGE		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>BUILDING CONSTRUCTION</b>	Understand the basic types of building construction and how each type of building construction reacts when exposed to the effects of heat and fire; to better understand when it is safe to enter a burning building and when to evacuate.					
<b>Cognitive:</b>						
1. Describe the characteristics of materials used in the construction of buildings.		77-111 165-176	193-222 340-356	40		
2. Explain the five classifications of construction types.						
3. Describe the hazards related to building construction.						
4. Discuss the hazards associated with buildings under construction or demolition.						
5. Describe the factors that increase the chance of building collapse.						
6. Describe the construction and operation of different types of doors and windows.						
<b>Section Total</b>				<b>40</b>		<b>40</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>PERSONAL PROTECTIVE EQUIPMENT</b>	The ability to don personal protective clothing, doff personal protective clothing and prepare for reuse.					
<b>Cognitive:</b>						
1. Explain the conditions that require personal protective equipment.		183-201	69-80	50		
2. Identify each component of the personal protective equipment.						
3. Discuss the uses and limitation of personal protective equipment.						
4. Describe the steps for donning of personal protective equipment.						
5. Describe the steps for doffing of personal protective equipment.						
<b>Psychomotor: (Skill Sheet 1-2)</b>						
1. Don a full ensemble of personal protective clothing and prepare for use within one minute.		232	77-78		90	
2. Doff the full ensemble of personal protective clothing and prepare for reuse.		239-240	79-80			
<b>Section Total</b>				<b>50</b>	<b>90</b>	<b>140</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>SELF-CONTAINED BREATHING APPARATUS</b>	Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other personal protective equipment, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.					
<b>Cognitive:</b>		201-228	82-118	60		
1. Describe the steps for donning personal protective equipment, including SCBA.						
2. Describe the steps for doffing personal protective equipment, including SCBA.						
3. Explain the conditions that require respiratory protection.						
4. Explain the relationship between oxygen content and life safety.						
5. Discuss the uses and limitation of SCBA.						
6. Identify each component of the SCBA.						
7. Identify various alarms (i.e., low air, no motion, etc.).						
8. Discuss breathing techniques while wearing the SCBA.						
9. Summarize the indications for and emergency procedures used with SCBA.						
10. Recognize the physical requirements of the SCBA wearer.						
11. Describe the circumstances under which a breathing cylinder must be replaced and the methods used when changing a cylinder.						
12. Describe nonemergency exit indicators and techniques.						
13. Describe SCBA inspection and maintenance procedures.						
<b>Psychomotor: (Skill Sheet 1-3, 1-4)</b>		232-236	95-102 104-106		120	
1. Don a full ensemble of personal protective clothing and SCBA correctly and begin breathing air within two minutes.						
2. Doff a full ensemble of personal protective clothing and SCBA, prepare for reuse.						
3. Demonstrate the ability to control breathing.						
4. Replace a depleted air cylinder with a full air cylinder.		248-249	116-121			
<b>Section Total</b>				<b>60</b>	<b>120</b>	<b>180</b>



FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>RESPONSE SAFETY</b>	Respond on apparatus to an emergency scene, given personal protective clothing and other necessary personal protective equipment, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other personal protective equipment is correctly used.					
<b>Cognitive:</b>		37-39	48-56	30		
1. Discuss the safety considerations for riding fire apparatus.						
2. Explain the importance of remaining seated with seat belts fastened in reducing the possibility of serious injury or death if involved in an accident.						
3. Discuss safe driving practices.						
4. Explain the potential hazards involved in operating on emergency scenes including vehicle traffic, utilities, and environmental conditions.						
5. Describe the proper procedures for dismounting the apparatus in traffic.						
6. Explain the procedures for safe operation at emergency scenes.						
7. Identify protective equipment available for member's safety at designated emergency and work zones.						
8. Discuss the importance of situational awareness on the emergency scene for firefighter safety and survival.						
<b>Psychomotor: (Skill Sheet 4-1)</b>		50	50-51		20	
1. Demonstrate correctly mounting and dismounting an apparatus when simulating response to an incident.						
<b>Section Total</b>				30	20	60
<b>FORCIBLE ENTRY</b>	Force entry into a structure, given personal protective equipment, tools, and an assignment, so that the tools are used as designed, the barrier is removed, and the opening is in a safe condition and ready for entry					
<b>Cognitive:</b>		371-407	282-283 331-370	60		
1. Describe the situations and circumstances that require forcible entry into a structure.						
2. List the general safety considerations when using forcible entry tools.						
3. List the general carrying considerations that apply to all tools.						
4. List the four categories of forcible entry tools; describe the tools in each category.						
5. Describe the basic construction and operation of typical doors and windows.						
6. Describe the techniques necessary to force entry through the various types of doors and windows.						
7. Discuss the dangers associated with forcing entry through doors and windows.						
8. Describe the characteristics, capabilities, and limitations, of the various forcible entry tools.						
9. List the general inspection, cleaning, and maintenance tips for forcible entry tools.						
10. List the considerations to be taken prior to forcing entry into a structure, e.g., check incident address.						
<b>Psychomotor: (Skill Sheet 6-1)</b>		415-426	343-345 351-352		120	
1. Demonstrate how to carry, operate, and use hand and power tools to force entry through doors and windows using assorted methods and tools.						
<b>Section Total</b>				60	120	180

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>FIREFIGHTER SURVIVAL</b>	Employ emergency incident scene safe operating procedures to protect firefighter's health and safety.					
<b>Cognitive:</b>						
1. Define personnel accountability system.						
2. Describe how to apply a risk/benefit analysis to an emergency incident.						
3. List the common hazards to firefighters; explain safe practices to ensure firefighter survival.		39-43 433-440 467-473	696-715	40		
4. Explain how to maintain team integrity during emergency operations.						
5. Describe how to initiate emergency communication procedures (MAYDAY).						
6. Explain firefighter survival procedures.						
7. Describe air management procedures.						
8. Explain the importance of the rehabilitation process.		1329-1332	724			
<b>Psychomotor: (Skill Sheet 10-7)</b>						
1. Demonstrate initiating a MAYDAY call for emergency assistance.		484	703-704		10	
<b>Section Total</b>				<b>40</b>	<b>10</b>	<b>50</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>GROUND LADDERS</b>	Set up ground ladders, given single and extension ladders, an assignment, and team members, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and assignment is accomplished.					
<b>Cognitive:</b>						
1. Identify ladder parts and construction materials.			376-384			
2. List the types of ground ladders.						
3. Describe the hazards and safety considerations for using ground ladders.						
4. Discuss the proper placement of ground ladders.			388-390			
5. Describe the process for lifting and moving ladders.						
6. Discuss the procedures to be followed when working from a ladder.			420-421			
7. Describe the criteria for selecting the appropriate ladder and safe location for placement.				60		
8. Describe how to remove ladders from apparatus.		315-319 324-341				
9. Describe how to lift ladders.						
10. Describe the various ladder carries.			391-418			
11. Determine appropriate ladder placement for common fire-ground tasks.						
12. Describe the various ladder raises.						
13. Describe the approaches to securing a ladder.						
14. Describe ladder climbing considerations.			418-420			
15. Describe considerations when dismantling a ladder.						
16. Describe how to descend a ladder.			423			
<b>Psychomotor: (Skill Sheets 7-1, 7-3, 7-6)</b>						
1. Demonstrate the ability to remove a ladder from fire apparatus, carry a ladder, place a ladder, raise a ladder, extend a ladder, lock the flies, ensure stability, climb and dismount a ladder, descend a ladder, and lower a ladder.		347-366	394-404 406-417 419-421		180	
<b>Section Total</b>				60	180	240
<b>SEARCH &amp; RESCUE</b>	Conduct victim rescue given an assignment utilizing various drags and carries.					
<b>Cognitive:</b>						
1. Discuss essential size-up and situational awareness activities necessary for firefighter safety.			431-438			
2. Describe the search safety guidelines in a structure fire.						
3. Explain the two types of searches.		433-439 450-475		40		
4. Describe the various search methods and marking systems.						
5. Describe various victim removal methods including various drags and carries.			438-469			
6. Explain the methods used to assist a victim down a ladder.						
<b>Section Total</b>				40		40

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>HOSELINE DEPLOYMENT</b>	Deploy a hoseline as a member of a team, given a fire apparatus, hoseline, personal protective equipment, and an assignment. Clean, inspect, and return fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.					
<b>Cognitive:</b>						
1.	Describe the types of fire hose and hose couplings.					
2.	Describe basic hose rolls used by fire departments.					
3.	Discuss causes and prevention of fire hose damage, and the procedures for noting a defective hose and removing it from service.					
4.	Discuss the inspection, care, and maintenance of fire hose.		557-584			
5.	Discuss causes and prevention of fire hose damage, and the procedures for noting a defective hose and removing it from service.	541-557 563-566 606-631				
6.	Identify the hose appliances and tools used in conjunction with hose and nozzles to complete hose layouts.					
7.	Describe the various hose loads used for attack lines.					
8.	Describe the techniques and precautions to be followed when advancing and operating attack lines.					
9.	Describe the procedures for extending a section of hose, controlling a loose hoseline and replacing a burst section of hose.		621-643	120		
10.	Explain how to drain, pick up and unload hose.					
11.	Classify and discuss each type, design, operation, nozzle pressure effects, and flow capabilities of nozzles.					
12.	Describe the extinguishing properties of water.		585-590			
13.	Discuss the principles of fire streams.					
14.	Explain offensive versus defensive fire attack strategies.					
15.	Describe the criteria for determining hoseline selection, nozzle selection and entry decisions.	669-685	649-662			
16.	Describe the methods for making interior direct, indirect, and combination attacks on a structure fire.					
17.	Explain the principles of exposure protection.		676-677			
<b>Psychomotor: (Exterior only) (Skill Sheets 7-7, 12-1)</b>						
1.	Demonstrate how to couple and uncouple various hand line connections.	568-576	563-567			
2.	Demonstrate the various hose rolls.		574-579			
3.	Operate various nozzles from closed to open positions and adjust stream patterns along with flow rates.		586-589			
4.	Demonstrate how to advance a hose load; operate charged and uncharged lines 1-½ inch (38mm) diameter or larger hose line from apparatus.		618-619 629-630 633-636			
5.	Demonstrate the ability to prevent water hammer when shutting down nozzles.	641-649 658-664			240	
6.	Demonstrate how to operate a charged attack line from a ladder.		638-639			
7.	Demonstrate how to extend hose lines.		638-639			
8.	Demonstrate how to replace burst hose sections.		640-642			
9.	Demonstrate how to drain and pick up hose.		642			
<b>Section Total</b>				<b>120</b>	<b>240</b>	<b>360</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>HORIZONTAL VENTILATION</b>	Perform ventilation on a structure, given an assignment, personal protective equipment, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed all ventilation barriers are removed, structural integrity is not compromised, and products of combustion are removed from the structure					
<b>Cognitive:</b>						
1. Describe the reasons for ventilation, the considerations that affect the decision to ventilate, and the effects on fire behavior.		493-513	475-480	50		
2. Define horizontal ventilation.			486-495			
3. Explain the two types of horizontal ventilation.						
4. Define vertical ventilation.						
5. Discuss safety considerations when ventilating a structure.						
6. Describe the basic indicators of potential roof collapse.		514-521	495-512			
7. Describe vertical ventilation techniques.						
<b>Psychomotor: (Skill Sheet 14-1)</b>						
1. Demonstrate the ability to transport and operate ventilation tools, equipment, and ladders.				90		
2. Demonstrate the procedures for safely breaking window glass, door glass, and removing obstructions.			488-489			
3. Perform negative pressure horizontal ventilation for a simulated fire (use of smoke machine or paper streamers is acceptable).			491			
4. Perform positive pressure horizontal ventilation for a simulated fire (use of smoke machine or paper streamers is acceptable).		529	494			
<b>Section Total</b>				<b>50</b>	<b>90</b>	<b>140</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>OVERHAUL</b>	Overhaul a fire scene, given personal protective equipment, attack line, hand tools, and a flashlight, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.					
<b>Cognitive:</b>						
1. Define overhaul.		740-746	731 753-764	30		
2. Discuss health and safety considerations during overhaul.						
3. Discuss how to determine where overhaul is to be conducted.						
4. List the types of tools and methods used to expose hidden fires.						
5. Discuss the signs of arson and the preservation of evidence; coordination with fire investigations.		756-763	1047 1049-1053			
<b>Section Total</b>				<b>30</b>		<b>30</b>
<b>SALVAGE</b>	Conserve property as a member of a team, given salvage tools and equipment and an assignment, so that the building and its contents are protected from further damage.					
<b>Cognitive:</b>						
1. Discuss the purpose of property conservation and its value to the public.		746-755	734-735  741-753	30		
2. Discuss the safety considerations to be taken during salvage operations.						
3. List the tools necessary to conduct salvage operations.						
4. Describe the use of salvage covers to protect building contents.						
5. Describe the proper folding, rolling, and spreading of salvage covers.						
6. Discuss the option of protecting building contents by moving them to a safe location.						
7. Describe how to stop the flow from a sprinkler to minimize water damage to a structure and its contents.						
<b>Psychomotor: (Skill Sheets 16-1 &amp; 16-2)</b>						
1. Demonstrate the ability to cluster furniture.		766-773	746-752		60	
2. Demonstrate steps to deploy covering materials.						
3. Demonstrate how to roll and fold salvage covers for reuse.						
<b>Section Total</b>				<b>30</b>	<b>60</b>	<b>90</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	JAB 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>WATER SUPPLY</b>	Connect a fire department pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.					
<b>Cognitive:</b>		557-563 587-606 685	526-549	60		
1. Describe municipal water supply systems.						
2. List the types of fire hydrants and the characteristics of each type.						
3. Explain fire hydrant operation, including the shutting down of a hydrant.						
4. Describe water hammer and the effects on the water distribution system, hose, and fire personnel.						
5. Discuss issues adversely affecting fire hydrant water supply or pressure.						
6. Describe rural water supply sources.						
7. Discuss the steps required to attach a soft sleeve hose to a fire hydrant.						
8. Discuss the three types of hose lays used to connect a water supply source and an attack engine.						
9. Describe the three basic hose loads commonly used for loading supply hose.						
10. Describe the different techniques used to carry and advance supply hose.						
11. Explain the steps necessary to connect to a standpipe or sprinkler system fire department connection.						
<b>Psychomotor: (Skill Sheets 17-1, 17-2)</b>		577-578 634-640	533-537 614-615 601-602 606 545-546 608-612 616-617 620		120	
1. Operate a fire hydrant						
2. Make a soft sleeve hydrant connection.						
3. Make a hydrant connection for a forward hose lay.						
4. Make a hydrant connection for a reverse hose lay.						
5. Demonstrate steps to connect and place hard suction hose for drafting operation.						
6. Demonstrate two types of hose loads						
7. Demonstrate a working hose drag and shoulder carry.						
8. Connect a supply fire hose to a fire department connection.						
<b>Section Total</b>				<b>60</b>	<b>120</b>	<b>180</b>

FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>PORTABLE FIRE EXTINGUISHERS</b>	Extinguish incipient Class A, Class B, and Class C fires, given a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, and correct extinguisher-handling techniques are followed.					
<b>Cognitive:</b>						
1. Discuss the methods of fire extinguishment.						
2. List the classifications of fire.			230-239			
3. Explain the classification, rating and labeling of fire extinguishers.						
4. Discuss the variety of extinguishing agents and their properties.						
5. Describe the types of fire extinguishers and the characteristics of each type.		254-268		40		
6. Describe how to select the appropriate portable fire extinguishers.						
7. Discuss safety considerations when using portable fire extinguishers.			239-259			
8. Explain how to transport a portable fire extinguisher.						
9. Describe basic fire extinguisher operation.						
10. Discuss inspection and care of portable fire extinguishers.						
<b>Psychomotor: (Skill Sheet 18-1)</b>						
1. Select an appropriate extinguisher based on the size and type of fire.						
2. Demonstrate how to safely carry a portable extinguisher.			251			
3. Demonstrate how to safely approach a fire with a portable fire extinguisher.		270-273	218-225		90	
4. Using a stored-pressure water extinguisher, extinguish an incipient Class A fire.			252			
5. Using a dry chemical (ABC) fire extinguisher, extinguish a flammable liquid fire.			253-254			
<b>Section Total</b>				<b>40</b>	<b>90</b>	<b>130</b>



FIREGROUND OPERATIONS		IFSTA 7 <sup>th</sup> Edition	J&B 4 <sup>th</sup> Edition	Cognitive (Lecture) Minutes	Practical Skills Minutes	Total Minutes
<b>SCENE SAFETY</b>	Turn off building utilities, given tools and an assignment, so that the assignment is safely completed.					
<b>Cognitive:</b>						
1. Describe general guidelines for operating safely at various types of emergency scenes.		39-46 687-693	56-62 687-690	20		
2. Explain the importance of personnel accountability systems.						
3. List the properties, principles, and safety concerns for electricity, gas, and water systems.						
4. Explain the methods for utility disconnect and associated dangers.						
5. Describe the use of required safety equipment.						
<b>Psychomotor: (Skill Sheet 19-1)</b>		729			20	
1. Demonstrate utility control.						
<b>Section Total</b>				20	20	40
<b>ROPES AND KNOTS</b>	Tie a knot appropriate for hoisting a tool, given personnel protective equipment, tools, ropes, and an assignment, so that the knots used are appropriate for hoisting tools securely and as directed.					
<b>Cognitive:</b>						
1. Describe the types of rope and the distinct functions of each type.		277-296	295-304	30		
2. Describe the materials from which rope is made.						
3. Describe the types of rope construction.						
4. Describe the components of a rope maintenance program.						
5. Explain the reasons for placing rope out of service.			305-324			
6. Identify the parts of a rope and the considerations when tying a knot.						
7. Discuss types and usages of fire service knots, hitches, and bends.						
8. Describe hoisting methods for tools and equipment.						
<b>Psychomotor: (Skill Sheet 2-1)</b>		300-301	308-313 316		90	
1. Demonstrate tying the following knots: safety, clove hitch, bowline.						
2. Demonstrate hoisting tools and equipment using ropes and the correct knot.		306-311	319-324			
<b>Section Total</b>				30	90	120