

WHITEHALL VOLUNTEER FIRE COMPANY



FIRE TRAINING MANUAL

Volume 1

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LESSON PLAN

Annual Bloodborne Pathogen Refresher

Estimated Time: 45 Minutes

NYS Requirements: (a) Protective Clothing: 15 minutes
(b) Scene Safety: 15 minutes
(c) General Hazard Recognition: 15 minutes

MFD Category: OSHA

Designed For: Entire Department

Objective: Participants shall be able to:

- (a) recognize hazards, including diseases and illnesses, associated with exposure to blood and other pathogens;
- (b) understand common terminology;
- (c) understand and apply precautions to avoid exposures;
- (d) take actions to report exposures; and
- (e) identify available testing and treatment options in the event of a possible exposure.

Instructions:

- (1) Utilize the CD or on-line content to provide course content (approximately 30 minutes);
- (2) Present lecture on site specific information, including but not limited to (approximately 15 minutes):
 - a. Location of PPE
 - b. Location of Exposure Control Plan and associated forms
 - c. Identification of Ryan White Officer and officer to receive exposures.
- (3) Answer questions from participants.

LESSON PLAN

Lock out/Tag out

Estimated Time: 15 Minutes

NYS Requirements: (a) Scene Safety: 15 minutes

MFD Category: OSHA

Designed For: Entire Department

Objective: Participants shall be able to:

- (a) Identify the procedures to be taken in the event of an incident involving powered tool/machinery;
- (b) Identify the location of the lock out/tag out kits;
- (c) Recognize hazards generally associated with powered machineries.

Instructions:

- (1) Present PowerPoint based lecture;
- (2) Answer questions from participants.

LESSON PLAN

Workplace Violence Lecture

Estimated Time: 30 Minutes

NYS Requirements: (a) Fire Station Safety 15 minutes

(b) Scene Safety 15 minutes

MFD Category: OSHA

Designed For: Entire Department

Objective: Participants shall be able to:

- (1) Identify the “workplace” of the fire / EMS service;
- (2) Identify types of workplace violence facing fire/EMS service members;
- (3) Identify practices taken by the Department to make the workplace safer;
- (4) Know how to report issues of workplace violence and document instances of workplace violence;
- (5) Identify practices that can be taken by members on scenes to heighten safety at a scene.

Instructions:

- (1) Review PowerPoint lecture
- (2) Answer questions

LESSON PLAN

Hazardous Materials Refresher

Estimated Time: 30 Minutes

NYS Requirements: (a) Fire Scene Safety 30 minutes

MFD Category: Hazardous Materials & Radiation

Designed For: Entire Department

Objective: Participants shall be able to:

- (a) Recognize special hazards to which they may be exposed during fire and other emergencies, such as;;
- (b) Identify the actions to be taken in situations involving the above special hazards if they are encountered;
- (c) Utilize the Hazardous Materials Response Guide to identify hazardous materials and identify the actions to be taken in situations involving the above special hazards.

LESSON PLAN

Sexual Harassment Lecture

Estimated Time: 15 Minutes

NYS Requirements: (a) Fire Station Safety 15 minutes

MFD Category: Annual OSHA

Designed For: Entire Department

Objective: Participants shall be able to:

- (d) Define and recognize sexual harassment;
- (e) Identify the procedures and actions to be taken in the event of being a witness to sexual harassment;
- (f) List the punishments to be taken for engaging in or failing to report sexual harassment.

Instructions:

- (1) Present PowerPoint based lecture;
- (2) Answer questions from participants.

LESSON PLAN

Respiratory Protection: SCBA

Estimated Time: 45 Minutes

NYS Requirements: Self Contained Breathing Apparatus 45 minutes

MFD Category: Personal Safety & PPE

MFD Policy/Best Practice to be reviewed: "SCBA Cylinder Changes"

Designed For: Entire Department

Objective: Participants shall be able to:

- (1) Identify the components of the SCBA;
- (2) Identify the proper techniques for Donning and Doffing the SCBA;
- (3) Identify the proper techniques for inspecting the SCBA and actually perform a quick inspection of the SCBA;
- (4) Identify the proper techniques for applying buddy breather and RIC connection and actually make such connections;
- (5) Identify the procedures to be taken in case of a malfunction.

Instructions:

- (1) Present PowerPoint based lecture;
- (2) Perform actual donning and doffing of SCBA;
- (3) Perform change out SCBA cylinder;
- (4) Perform actual inspection of SCBA;
- (5) Perform actual procedures in case of failure to lower pressure hose, and for a crack in mask;
- (6) Review: SCBA Best Practice on Cylinder Changes
- (7) Answer questions from participants.

LESSON PLAN

Mayday procedures

Estimated Time: 60 Minutes

NYS Requirements: Fire Scene Safety 60 Minutes

MFD category: Communications

Designed For: Entire Department

MFD Policy/Best Practice to be reviewed: "Mayday Procedures"

Objective: Participants shall be able to:

- (1) Identify on-scene hazards that could lead to a Mayday situation;
- (2) Identify situations in which a Mayday transmission is appropriate;
- (3) Identify the actions of all participants to be taken in the event a Mayday is transmitted;
- (4) Identify actions to be avoided in a Mayday event;
- (5) Transmit a Mayday in accordance with the "LUNAR" method.

Instructions:

- (1) Review Mayday PowerPoint presentation;
- (2) Practice Mayday transmissions;
- (3) Review Best Practice: Mayday Procedures.

LESSON PLAN

SCBA Skills Testing

Estimated Time: 160 Minutes

NYS Requirements: Self Contained Breathing Apparatus 180 Minutes
Protective Clothing 20 minutes

MFD category: Personal Safety & PPE

MFD Policy/Best Practice to be reviewed: None

Designed For: Interior FF's

Objective: Participants shall be able to:

- (1) Don and Doff PPE;
- (2) Don an SCBA;
- (3) Transmit a MAYDAY utilizing the LUNAR method;
- (4) Inspect an SCBA;
- (5) Demonstrate actions to be taken to SCBA emergencies, including:
 - a. Leak in Low Pressure Hose Line
 - b. Crack in SCBA Mask
 - c. Air obstruction preventing demand inhalation
- (6) While in full PPE and SCBA donned, and with no visibility:
 - a. Perform a low profile and full escape of the SCBA in a confined space
 - b. Follow a jumbled hose-line to safety
 - c. Maneuver through a maze or obstacle course to safety
- (7) Breath Down SCBA to no air, and demonstrate "chinning"

Instructions:

- (1) For objectives 1 & 2: Student will demonstrate proper donning and doffing of PPE and SCBA in accordance with the FF1 skill sheets;
- (2) For objective 3: Student will demonstrate transmitting a MAYDAY in accordance with the MFD skill sheet;

- (3) For objective 4: Student will perform an inspection of the SCBA, voicing each point of inspection and completing an SCBA inspection form;
- (4) For objective 5: Student will demonstrate the procedures to be taken when instructor advises student of the emergency, being:
 - a. Air obstruction preventing on-demand inhalations (utilize purge valve, transmits MAYDAY)
 - b. Crack in facemask (covers mask, transmits MAYDAY)
 - c. Leak in low pressure air line (grabs and covers air line, transmits MAYDAY)

NOTE: This may be performed as part of obstacle course.

- (5) For Objective 6: Instructor shall create an obstacle course containing a jumbled hose line, confined space requiring low profile escape, and a through the wall escape (interior wall breach).
- (6) For objective 7: Student will breathe down remaining air in front of instructor.
 - a. Student will breath air to point of mask being “sucked in”;
 - b. Instructor will identify approximate time from the operation of the vibra-alert;
 - c. Student will identify to instructor how many breaths student was able to take past the point of the vibra-alert no longer operating;
 - d. Student will obtain one more breath by utilizing purge valve, is possible.
 - e. Student will demonstrate chinning upon no air remaining in SCBA or mask.
- (7) Student will demonstrate method of refilling SCBA utilizing compressor station.
(Utilize skill sheet form FF1)

LESSON PLAN

SCBA Fill Station

Estimated Time: 15 minutes

NYS Requirements: Tool & Equipment Safety 15 minutes

MFD category: Tools & Equipment

MFD Policy/Best Practice to be reviewed:

Designed For: Interiors, Scene Support, Operators

Objective: Given the MFD SCBA fill station and a depleted SCBA cylinder, students will be able to fill the cylinder in accordance with the manufacturer's instructions.

Steps:

1. FF ensures no cylinders are in container
2. FF opens explosion safe compartment
3. FF places SCBA in compartment
4. FF attaches SCBA to fill line
5. FF closes bleed valve and opens SCBA to allow air to enter
6. FF closes explosion proof compartment
7. FF opens cascade system, making sure to utilize only one fill tank, and uses lowest tank which is still above "fill pressure".
8. FF sets fill pressure / sets regulator to appropriate end pressure
9. FF slowly fills SCBA, avoiding overheating
10. FF opens container, closes SCBA fill, and bleeds off of air
11. Instructor/FF feels SCBA cylinder to ensure it is not hot

LESSON PLAN

RIT Policy Lecture

Estimated Time: 30 minutes

NYS Requirements: Fire Scene Safety 30 Minutes

MFD category: Rescue

MFD Policy/Best Practice to be reviewed: "Rapid Intervention"

Designed For: RIT members

Objective: Utilizing a written exam, participants shall demonstrate knowledge of the following:

- (1) MFD method of establishing a RIT Team;
- (2) The roles of Teams A & B of the RIT Team;
- (3) The role of the RIT Liaison;
- (4) The on-scene procedures to be followed by the RIT Team;
- (5) Equipment to be utilized by RIT Team members

Instructions:

- (1) Present the RIT lecture;
- (2) Provide written exam.

NOTE: In lieu of attending the lecture, students may take the written exam. Successful completion is a score of at least 90.

LESSON PLAN

Managing Your Air

Estimated Time: 60 Minutes

NYS Requirements: Fire Scene Safety 30 Minutes

Self Contained Breathing Apparatus 30 Minutes

MFD category: Personal Safety & PPE

MFD Policy/Best Practice to be reviewed: “Managing Your Air”

Designed For: Interior FF’s

Objective: Participants shall be able to:

(1) Identify the methods of

Instructions:

(1) Review the Managing Your Air presentation;

(2) Provide students with the Managing Your Air Written Exam.

NOTE: Students may complete the Managing Your Air Written Exam in lieu of sitting through the lecture. Successful completion is a minimum of 90.

LESSON PLAN

Building Search and Victim Rescue

Civilian Rescue & Firefighter (RIT) Rescue)

Estimated Time: 180 Minutes

NYS Requirements: Fire Scene Safety 15 Minutes

Self Contained Breathing Apparatus 60 Minutes

Tool & Equipment Safety 60 Minutes

General Hazard Recognition 15 Minutes

MFD category: Rescue 3 hours

MFD Policy/Best Practice to be reviewed: “Building Search”

Designed For: Interior FF’s and RIT Members

Objective: Given a smoke filled, multi-room residential like building, participants shall be able to:

- (1) Perform a two person search;
- (2) Perform a three person search;
- (3) Perform a four person search;

Each in accordance with the MFD Best Practice on Building Search.

Instructions: Students must complete each scenario, providing the students with the following instructions. All stations should be conducted simultaneously, rotating students:

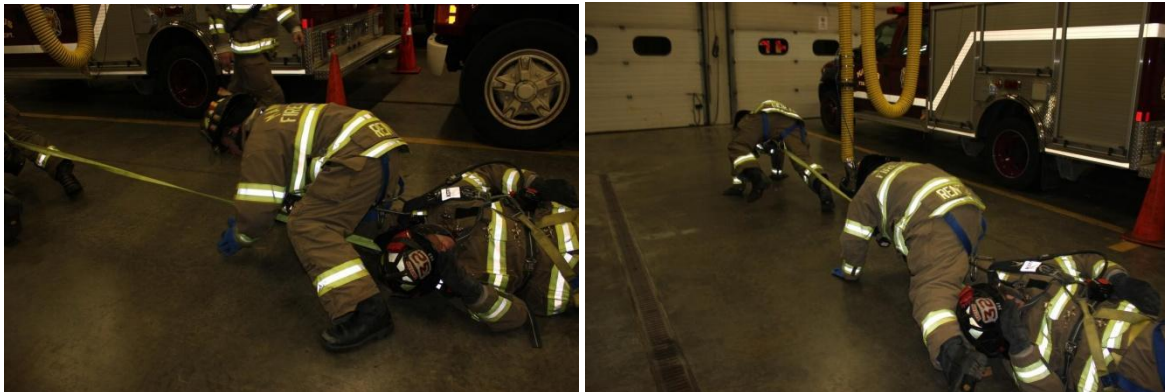
SCENARIO 1: CIVILIAN SEARCH & RESCUE

- (1) Review the Building Search Best Practice;
- (2) Fill at least one room with “smoke”. Place one live victim (civilian, not firefighter)
- (3) Divide students into teams of 2. Students may begin as 4 person teams and then operate in accordance with MFD Best Practice.

- (4) Team 1 will perform primary search maneuvers in accordance with the MFD Building Search Best Practice.
 - a. Team 1 will be told to rescue victim utilizing webbing method of securing victim, and a drag method of moving victim (see pictures).
- (5) Team 2 will then perform secondary search maneuvers in accordance with the MFD Building Search Best Practice.
 - a. Team 2 will rescue victim utilizing incline drag of rescuing victim, and tying a rescue knot.
- (6) Complete skill sheets on search from the FF1 series for each student.

Rescue Drag

- (1) Secure victim with webbing or sling link;
- (2) First rescuer utilizes carabineer from his/her harness to attach close to victim's to rescue straps;
- (3) Second rescuer loops 10' (or more) webbing to victim's rescue straps;
- (4) Rescuer's carabineer is attached to end of webbing;
- (5) Firefighters straddle webbing and harness to crawl, pulling victim.



SCENARIO 2: RIT SEARCH & RESCUE

- (1) Review the Building Search Best Practice;
- (2) Fill at least one room with "smoke". Place one live victim (Firefighter, with SCBA)
- (3) Divide students into 2 teams of 2 (Team A & B). Students may begin as 4 person teams and then operate in accordance with MFD RIT Best Practice.
- (4) Team A will perform primary search maneuvers in accordance with the MFD RIT Best Practice.

- (5) Team A is to locate victim and provide air to victim. Team A then calls to Team B, to extract victim.
- (6) Teams A & B then remove firefighter from location.
 - a. Instructor advises Team that they must first use webbing or sling link, and then drag victim 10 feet with harnesses to safety.

Using webbing to secure firefighter:

- (1) Utilizing 20' (or longer) webbing in a loop, place loop over waste of victim
- (2) Bring bottom of loop under legs of firefighter and over top loop
 - a. This now creates waste strap
- (3) Bring webbing over each arm, to secure arms
- (4) Either:
 - a. Bring webbing over head of firefighter; or
 - b. Grab loops which are on the shoulders from behind the head



Sling link:

- o Firefighter takes sling link from bag
- o Firefighter determines which loops are for legs (out loops), arms (inner loops) and head (middle loop)
- o Firefighter attaches sling link in correct order (feet, arms, head)

- Firefighter performs task with eyes open. Firefighter performs task with closed eyes.

SENARIO THREE (modified “Denver Drill):

Objective: Given a live victim in a tight space, acting unconscious, two firefighters with SCBA (and on air) will stand victim up and move victim through window prop.

- Firefighter A kneels in front of victim
- Firefighter B squats behind victim
- Firefighter A grabs SCBA straps, pulls victim up
- Firefighter B pushes victim up
- Firefighter A places knees against knees/legs of victim, keeps feet on outside of victims feet, rolls back, pulling victim forward. Firefighter A ends leaning back onto SCBA
- Firefighter B is in a squat. Firefighter B rolls victim back onto knees of firefighter A. Firefighter B makes sure to keep foot planted flat with knee bent to hold victim.
- Firefighter A stands, holding straps of SCBA. Firefighter A lifts victim from SCBA front straps as firefighter B stands with victim.
- Victim is placed on shoulders of firefighter A.



SCENARIO 4: (Large Area Search)

OBJECTIVE: Given a large area, and no visibility (blacked out masks), firefighters in two teams of four firefighters (the second team can have as few as 2) will demonstrate large area search, and specifically will:

1. properly assemble large area search and rescue teams;
2. identify and apply the principles of “anchor, point and shoot” in large area searches;
3. properly search a large area utilizing large area rope bags;
4. locate the victim;
5. remove a victim after a large area search.

SCENARIO 5: (Move firefighter up stairs)

OBJECTIVE: Given a staircase, two rescue firefighters donned in SCBA, and a downed firefighter in SCBA, students will demonstrate moving the firefighter up a flight of stairs.

LESSON PLAN

RIT Skills: Securing Victim, Drags, Lifts, Rescues

Estimated Time: 180 Minutes

NYS Requirements: Self Contained Breathing Apparatus 45 minutes

MFD Category: Personal Safety & PPE

MFD Policy/Best Practice to be reviewed:

Designed For: Interior FF's and RIT Members

TERMINAL OBJECTIVE:

Given a low visibility environment, RIT team members will be able to harness and relocate a downed firefighter to a safe environment in accordance with the fire department's best practices or accepted industry techniques.

ENABLING OBJECTIVES:

Given a low visibility environment, RIT team members will be able to:

- Utilize webbing and/or other equipment such as a sling-link to permit a firefighter to be moved within a building;
- Having secured a firefighter or victim, 2 firefighters drag firefighters utilizing waste straps;
- Raise a downed firefighter from a lying position to a standing position, placing the victim on the shoulder of a rescuer;
- Utilize webbing and/or other equipment such as a sling-link to permit a firefighter to be lowered from an elevated position to a lower level utilizing a ladder and pulley system;
- Utilize the SCBA straps and the hip-harness to permit a firefighter to be lowered from an elevated position to a lower level, utilizing a ladder and pulley system, and to be moved within a building;

- Utilize a “sked” and pulley system to move a downed firefighter up stairs utilizing two or three persons.
- EMS personnel should be ready with equipment and skills to rehabilitate victim.

EQUIPMENT NEEDED

- Manican Dummy with SCBA
- Pulley and Rope
- 24’ Ladder
- Sked
- Staircase
- Window to lower outside area
- Personal webbing (20’)

APPLICATION

- SECURING FIREFIGHTER (variations):
 - o Firefighters will place 20’ webbing over dummy’s extremities permitting harnessing of firefighter; or
 - o Firefighter will place sling link over dummy’s extremities permitting harnessing of firefighter; or
 - o Firefighter will utilize waste harness and SCBA straps to secure harnessing of firefighter (dummy)
- TASK 1. Rescue Firefighters will each secure their waste harnesses to downed firefighter’s shoulder straps/harnessing and crawl, dragging firefighter (utilizing various methods of securing firefighter).

METHOD 1 (Using harness to secure firefighter) o Take Caribeenner from harness, secure to SCBA shoulder harness o Tighten shoulder harnesses

o Tie overhand knot on strap to prevent slippage



METHOD 2 (Using webbing to secure firefighter) o Utilizing 20' (or longer) webbing in a loop, place loop over waste of victim o Bring bottom of loop under legs of firefighter and over top loop

- This now creates waste strap o Bring webbing over each arm, to secure arms o Either:
 - Bring webbing over head of firefighter; or
 - Grab loops which are on the shoulders from behind the head
 - Firefighter performs process first with eyes open, then eyes closed.



METHOD 3: Sling link:

- Firefighter takes sling link from bag
 - Firefighter determines which loops are for legs (out loops), arms (inner loops) and head (middle loop)
 - Firefighter attaches sling link in correct order (feet, arms, head)
 - Firefighter performs task with eyes open. Firefighter performs task with closed eyes.
- **TASK 2 Drag**
 - (1) Legs are strongest part of body. Hands are needed to trace rope, hose or find way out of structure. Thus, utilizing waste harness is best method to move victim.
 - (2) First secure victim or firefighter above.
 - (3) First rescuer utilizes caribeener from harness to attach close to victim to rescue straps.
 - (4) Second rescuer loops 10' (or more) webbing to victim's rescue straps. Caribeener utilizes is attached to end of webbing. o Firefighters straddle webbing and harness to crawl.





LESSON PLAN

Large Area Search Drill

Estimated Time: 90 minutes

NYS Requirements: Tool & Equipment Safety 15 minutes

General Hazard Recognition 15 minutes

Protective Clothing 15 minutes

Self Contained Breathing Apparatus 45 minutes

MFD category: Rescue

MFD Policy/Best Practice to be reviewed:

Designed For: RIT Members

Objective: Given a large area, a downed and lost firefighter in SCBA, a RIT Team will:

1. Properly assemble large area search and rescue teams;
2. Identify and apply the principles of “anchor, point and shoot” in large area searches;
3. Properly search a large area utilizing proper tools;
4. Remove a victim after a large area search.

Safety Review

Large area search is dangerous. When learning to search, we must:

1. Keep search procedures simple
2. Realize dangers of conditions requiring large area search
3. Ensure accountability
4. Utilize air management
5. Maintain proper staffing and backup
6. Ensure utilizing the large area rope search is actually necessary
7. Have an exit strategy

A. Tools required

1. Large area search rope bag
2. Thermal Imaging Camera
3. Forcible Entry Tools
4. RIT Bag
5. Portable Radios
6. Personal webbing
7. Handlights
8. SCBA

B. Teams

1. Primary search team
 - a. Teams should not exceed four (4) members
 - i. Teams can be 3 or 2 members
 - ii. 1 firefighter should never conduct large area search
 - b. This team is in charge of locating the victim, not removing the victim
2. Back up team
 - a. There should be one back up team member for each primary search team
 - b. This team is in charge of removing the victim located by the Primary team
3. Accountability officer
 - a. There should be an A.O. at the entry point (which is also the exit point)

C. Search Bag

1. Our bags are 150 feet in length. Located on T-2 and E-1
2. Bag has knots every 10 feet, with multiple knots indicating length
3. Carabineers are utilized for rescuers to search off of the main line

D. Process (“Anchor, Point and Shoot”)

1. Establish the anchor
 - a. Immediately outside the IDLH (Immediately Dangerous Life Hazard) area
2. Establish “Point”
 - a. Establish the direction of travel.

3. Shoot
 - a. The process of moving forward
4. Every time the team changes direction, the team repeats “anchor, point and shoot”.
 - a. Re-establish the anchor so that the anchor is stable and does not move
 - b. No one enters building unless they are connected to the rope

E. Anchors

1. Initial anchor
 - a. The first anchor is immovable regardless of how many persons are on the line
 - b. This is set to a stationary object
2. Subsequent anchors
 - a. *Interior wall anchors*: Breach a wall and tie around a stud. Not efficient and difficult to establish
 - b. *Fixed object anchor*: wrap or fix rope around an anchor of significant size, such as a column
 - c. *Human anchor*: Team member holds the search rope. Very quick to set up. Very reliable. Human anchor is an audible anchor. Wrap rope around back of firefighter, around SCBA.

F. Positions

1. First Position: Team leader with rope bag and T.I.C.
 - a. Rope bag is on caribeenner secured to First Position
2. Second Position: Search member on rope line, with tool
3. Third Position: Search member on rope line, with tool (specialty tool, like Rabbit tool)
4. Fourth Position: Search member, RIT bag

G. Process

1. Ensure there is a back up team and control/accountability man ready
2. Ensure everyone has a radio
3. Everyone begins on the same side of the rope
 - a. Positions may change during tether searches
 - b. Positions may change when team locates victim
4. First position scans room to confirm direction, provides T.I.C. to second person to provide orientation for second person
 - a. When moving, hold rope above floor

- b. Keep rope taught!
 - c. Control rope. Do not let too much rope out of bag
 - d. Establishes anchors at turning points
5. Move in pairs, leaving space between groups of two people
 6. When searching, individual never crosses rope, as crossing over main rope line could create entanglement
 - a. Search only 180 degrees
 7. If a member needs to leave due to low air, either leave in pairs or have a backup member follow in line and escort member out
 8. When setting anchors, move around the anchor on the rope.
 9. Teather onto search line. One method is to use a 20' loop of webbing, utilizing a water knot and caribeer. Another method is the search ropes in our search bags. Try to avoid moving more than 15-20' to avoid entanglement. We carry 50' rope bags
 10. Teathering off of line:
 - a. Lead member has rope bag. Rope bag has a caribeener. Second and Third positions connect their caribeeners to lead member's caribeener, and search off of caribeener.
 - b. Another method if needed is to tie an overhand knot into search line, and caribeener into line.

H. Locating victim

1. Once victim is located, team leader secures rope to a fixed object or becomes fixed object.
 - a. Rope must be taught. Team leader calls to back up team.
 - b. Team leader scans room with T.I.C.
2. Back up team follows rope quickly.
 - a. Back up team assists with removal when arriving. Back up team can be from 2 – 4 members.
3. RIT bag position applies air to victim

I. Victim not located.

1. Team only has about 12-14 minutes to search before having to exit.
2. Leave search bag behind, secured if possible.
 - a. Consider tying off to Halligan if nothing else, or to RIT bag.
3. Exit quickly, to permit second team to enter and retrace rope.

J. Exit

1. Rope bag is left behind. Ideally, secure rope bag to an object if possible and keep line taught. Otherwise, first position secures line upon exit.
 - a. First position stays about 10-20' behind rescue team members, to avoid bumping into them.
 - b. Keep rope taught!
2. Backup team arrives: Team leader of backup team communicates with First Position member.
3. Backup team takes victim. Search team takes lead position on exit, due to low air supply.
4. One search team member ensures that he is on line at all times in case other members lose contact. Rescue team can communicate with search team members who are on line.
5. Big issue is Air Supply. Air supply is low! Search team needs to extricate themselves, while ensuring that back up team is moving out.
6. NOTE: If victim is found and no air is left for rescuers, consider:
 - a. Leave one member behind on RIT pack for air
 - b. Rest of team exits, while backup team arrives

LESSON PLAN
Primary And Secondary Search

Estimated Time: 120 Minutes

NYS Requirements: Self Contained Breathing Apparatus 45 minutes

Scene Safety 20 minutes

MFD Category: Rescue

MFD Policy/Best Practice to be reviewed: "Search"

Designed For: Interior FFs and RIT members

Objective: Participants shall be able to:

This lesson has a classroom and a tactical method. First provide classroom portion (45 minutes) then perform search drills.

Classroom

Search Operations

Search is considered a fundamental operation in the fire service. Searching for potential occupants of a structure requires coordination and a lot of practice in order to make sure it is safe and effective. Many search methods exist for various fire conditions and situations. The officer must decide which method is appropriate for each operation and coordinate the search often while completing other fire ground tasks such as suppression. A search operational plan must be agreed upon prior to entry and must include a primary and secondary search.

I. Review: Purposes of search:

(a) Locate victims

(b) Locate the fire

II. Two types of search:

Primary Search: Quick attempt to locate and remove those who are in danger.

- Time is critical.
- Check all areas where victims might be.
- Rely on sight, sound, and touch.
- Use hand tools to extend your reach.
- Check probable areas that are tenable and safe for you to search quickly

Secondary Search: Thorough search conducted after the situation is under control.

- Locates victims not discovered in primary search
- Completed when conditions improve but may still present hazards; IDLH?
- Slow and methodical covering all areas
- Use several teams of firefighters
- Include all areas of the building

III. Who conducts the search and when?

- (a) Search is a truck company function. This does not mean that the crew on our aerial performs the search. Search can be performed by any crew: engine, truck, squad.

IV. Other issues:

- (a) What are the factors to be considered when determining the location of a primary search?
For example:

1. Location of viable life. How can you determine which areas are survivable?
 - i. Heavy fire in a room? Do you search in or next to it?
 - ii. Heavy black smoke in a room? Do you search in or next to it?
 - iii. Light white smoke from a room? Do you search in or next to it?
 - iv. Search on fire floor? Search above fire floor?
2. Availability of other resources (2nd and 3rd vehicles)
3. Size, spread of Fire
4. Construction of house
 - i. Balloon frame
 - ii. Trust constructed
 - iii. True dimensional wood

- (b) What areas of a building are searched first?

1. Do you search where there can be no life?
 - i. Is life sustainable in fire area?

2. Ability to search near the fire as the fire grows will diminish.
 - i. So do you search near the fire first?
- (c) What incident factors may help you determine a direction or location to begin your search?
1. Towels thrown out windows? We teach this in fire prevention.
 2. Near exit doors?
 3. Near the fire?
 4. Where did fire start?
 5. Farthest away from exit doors?
 6. Location of caller?
- (d) What methods does the department use when conducting a primary search in order to keep your crews oriented and together?
1. 1 person search in each room, officer as anchor to hallway?
 - i. This can be safe in small areas, but more dangerous in large areas. Officer may use T.I.C. to guide search and monitor location of searching firefighter. Officer stays in hallway to ensure exit of firefighters.
 2. 2 person search with no anchor person?
 - i. This works well when no team has a thermal imaging camera.
 3. 3 person search with anchor person?
 - i. 2 people search and third team member utilizes T.I.C. to monitor searching firefighters and look for victim.
 4. 4 person (split into 2 groups)
- (e) What are the engine company considerations for supporting a search with suspected or known life safety issues?
1. If Engine Company extinguishes fire, the volume of smoke will double, potentially killing victims.
 - i. Can ventilation be accomplished prior to extinguishing fire so as to limit smoke spread?
 2. Should Engine Company protect staircases to ensure entry and exit of building of search team and victim?
 3. Is there ample water supply to suppress the fire or only contain the fire to support search efforts?
- (f) Safety and other considerations:

1. Search teams operating above the fire are at great risk.
2. Ladders should be raised to the second floor windows as soon as personnel are available, and personnel must be advised immediately of fire extension or if the engine company is unable to control the fire.
3. Engine crews must protect the stairs, exits and searching firefighters. Engine company follows search crews, so that search crews can locate fire and are protected by hand line.
4. Fire blocking stairway access must be controlled.

Search techniques

- Person stays on wall, but uses tool to search
 - Always hold sharp end of a tool, search with handle.
 - If using a halligan, keep the point end towards floor. Otherwise, you may fall on point!
- Yell out finding windows and doors.
- Always search above and below furniture. Always open closet and room doors.
 - Eg: On and under a bed
- Search quickly, but thoroughly.
- Make sure that the center of the room is always searched.
- Avoid searching the same part of a room twice during a primary search. Go up one side, back down another.
- T.I.C.'s cannot see behind furniture or inside closets or other rooms.

Actual Drill: Practice searching for a victim, blacked out. Utilize different numbers of persons. Ensure that every team knows what technique they will use before they go into a room and confirms the roles of each firefighter. Also make sure they exit prior to air down to 25% of any firefighter.

Practice in teams of 2 and then 3.

Practice a primary search, and then a secondary search.

Safety concern: Ensure that halligan is kept face down for search, and only the handles of other tools are used for sweeps.

LESSON PLAN
Head First Ladder Bail

Estimated Time: 120 Minutes

NYS Requirements: Scene Safety

MFD Category: OSHA

MFD Policy/Best Practice to be reviewed: "Search"

Designed For: Interior FFs

Objective: Given a 2nd story window, and ladder (and safety equipment), participants shall be able to descend from the window head first, down the ladder.

Note to students: This maneuver should only be done as a last resort.

1. The ladder needs to be set in the rescue position.
2. The exiting FF approaches the window staying as low as possible.
3. The exiting FF reaches out the window.
4. Put your strong arm on the top rung of the ladder near the riser on the side of your strong arm.
5. Take your weak arm and slide down the riser of the ladder opposite your strong arm until your strong arm straightens out.
6. As your strong arm straightens bend your knees and rotate on the ladder. (Keep your knees bent. If you straighten your legs you will rotate to fast.)
7. Your weak arm moves from the riser on the side opposite your strong arm on a rung toward the riser your strong arm is near.
8. As your legs come around find the rung of the ladder.
9. Descend the ladder rung by rung.

LESSON PLAN

Bailout (2nd Story Window)

Estimated Time: 30 minutes

NYS Requirements: Scene Safety 30 minutes

MFD category: Rescue

MFD Policy/Best Practice to be reviewed:

Designed For: Interiors, Scene Support, Operators

Objective: Given a second story window in a practice environment, a firefighter shall perform two bailouts utilizing their bailout device.

Safety:

- (1) Safety Officer must be appointed;
- (2) Safety Officer checks firefighter's connection to belay system;
- (3) Safety Officer or Instructor must review procedure for bailout, including ensuring that firefighter remembers to extend rope to side to control descent while pulling descender.

Steps:

- (1) Firefighter dons PPE and SCBA (but not blacked out);
- (2) Firefighter is connected to pulley system;
- (3) Firefighter exits window utilizing bailout system and successfully lowers self to ground, in a controlled descent.

LESSON PLAN
Firefighter Through the Floor Rescue

Estimated Time: 120 Minutes

NYS Requirements: Scene Safety 20 minutes

MFD Category: Rescue

MFD Policy/Best Practice to be reviewed:

Designed For: Interior FFs and RIT members

Objective: Given a firefighter below a hole in the floor, participants shall be able to evacuate the firefighter from the ground floor and through the hole, up to the floor upon which the rescuers are standing.

There are variations to each drill.

HOSE METHOD: Conscious uninjured FF

1. Secure the area around the hole in the floor. (Use doors, plywood, or something to dissipate the weight of the rescue FFs)
2. Pass a charged hose line through the hole in the floor until the bend reaches the floor below.
3. The downed FF steps on the bend of the hose and holds onto the hose with both arms.
4. Four FFs man each side of the hose on the top floor.
5. The top FFs work together to pull the downed FF back to the top floor. The FFs would pull about a foot then the last FF would run up and become the 1st FF
6. As the FF reaches the floor he/she steps off the hose.

HOSE METHOD: Conscious injured (lower extremity) FF

1. Secure the area around the hole in the floor. (Use doors, plywood, or something to dissipate the weight of the rescue FFs)
2. Pass a hose line through the hole in the floor until the bend reaches the floor below.

3. A FF might need to go the location of the injured FF. The rescuer could slide down the hose line like a fire pole.
4. The downed FF should position him/herself, or the rescuer should position the downed FF onto the hose line, with the hose line under the downed FF's chest. (The downed FF is lying face down.
5. Four FFs man each side of the hose on the top floor.
6. The top FFs work together to pull the downed FF back to the floor. The FF would pull about a foot then the last FF would run up and become the 1st FF.
7. As the FF reaches the floor two other FF will have to pull him/her up onto the floor.

ROPE HOIST (with ladder): Unconscious FF

1. Secure the area around the hole in the floor. (Use doors, plywood, or something to dissipate the weight of the rescue FFs)
2. Place a ladder into the hole the FF fell.
3. A rescuer will have to go the location of the downed FF.
4. A rescuer should set up the rope. On the second rung from the top place the carabiner end of the rope four times around the rung. Place a bend through the carabiner. Attach a second carabiner to the bend, and pass it to the rescuer that entered the hole. The running end of the rope is past under the lowest visible rung of the ladder.
5. The bottom rescuer converts the air mask of the downed FF to a rescue harness.
6. The bottom rescuer attaches the carabineer to the rack and strap, top center, of the air mask of the downed FF.
7. At least 4 FF should man the rope (The rope may be able to be pulled from the outside).
8. One FF is at the top of the ladder supervising.
9. The bottom rescuer guides the downed FF up the ladder.
10. As the downed FF is pulled up the ladder two rescuers should grab the downed FF and pull him/her through the hole.

ROPE HOIST (without ladder): Conscious or Unconscious FF

1. Secure the area around the hole in the floor. (Use doors, plywood, or something to dissipate the weight of the rescue FFs)
2. A rescuer will have to go the location of the downed FF. Lower the rescuer into the hole using a rope or a hose line.
3. The rescuer should set up the rope. The middle of the rope is handed down from the rescuers that are on the upper floor.

4. The middle of the rope is then passed under the waist strap of the downed FF, and from the floor up on the lower shoulder strap of the downed FF shoulder strap.
5. The middle of the rope is then passed up to the upper floor to the awaiting rescuers.
6. The rope is then split on both ends. There should be four lines going up through the floor. Two lines of the rope are on each end of the hole. (Note, this is one rope creating four lines, two on each side of the hole.)
7. Four rescuers on that floor are needed. One rescue FF on each line coming up through the floor. (If only two FF are present, one needs to be on each end of the hole, each with two lines.)
8. On the cadence "READY GO" the rope is pulled up through the hole in the floor.
9. The bottom rescuer guides the downed FF up through the hole.
10. As the downed FF is pulled up through the hole in the floor, the team of FF pulling on the ropes walk the downed FF toward one side of the hole. The easiest is to walk toward the back of the downed FF so the tank hits the hole in the floor, not the face of the downed FF.

LESSON PLAN

Starting and Maintaining Tools

Estimated Time: 120 minutes

NYS Requirements: Tool & Equipment Safety 120 minutes

MFD category: Tools & Equipment

MFD Policy/Best Practice to be reviewed:

Designed For: Interiors, Scene Support, Operators

Objective: Given various tools, firefighters will demonstrate proper use and maintenance of each tool, in accordance with the manufacturer's instructions

Steps: Firefighters will demonstrate their ability to utilize the following tools, and perform maintenance of such tools where indicated:

Generators: Turn on and operate all generators.

Chain Saws: Start and operate chain saws, including breaks. Show ability to change blade, and clean saw.

Lighting: Start and if needed, connect lighting devices.

Rotary Saws: Start and operate rotary saws. Show ability to change blade and clean saw.

Axes: Show proper method of cleaning and oiling axes.

Portable pumps: Starts and operates portable pumps.

SCBA fill devices: Connects and operates regulators to SCBA fill devices, such as air bags.

LESSON PLAN

Setting Up A Draft

Estimated Time: 60 minutes

NYS Requirements:

MFD category: Fire Pumps

MFD Policy/Best Practice to be reviewed:

Designed For: Interiors, Scene Support, Operators

Objective: Firefighters will be able to set up a draft from a static water source such as a portable pond.

Operators will be able to draft water from a portable pond.

Steps (generally):

- (1) Operator places vehicle in pump gear and chocks vehicle;
- (2) Operator and Firefighters verbally identify location of portable pond based upon street, fire location, traffic and direction of tankers.
- (3) Firefighters collect parts for a draft, including hard suction, proper strainer (barrel or flat), mallet.
- (4) Firefighters work in team of two to connect at least two lengths of hose:
 - a. Firefighters inspect hose for O-ring
 - b. Firefighters ensure tight fit of connections
- (5) Firefighters place hard suction in water, and operator connects hard suction to appropriate suction inlet on vehicle
- (6) Operator puts vehicle in RPM mode and voices that RPM mode is used to avoid the vehicle from shutting off due to cavitation;
- (7) Operator increases engine speed, primes pump, pulls draft;
- (8) Upon request, operator identifies intake gauge on vehicle and identifies proper gauge position (negative);
- (9) Operator pulls and maintains draft:
- (10) Firefighters flow water.

- (11) Instructor causes draft to be lost, usually by taking hose from water;
- (12) Operator regains draft.

LESSON PLAN
Deploying and Assembling a City Lay

Estimated Time: 120 Minutes

NYS Requirements:

MFD Category: Fire Hose Practices

MFD Policy/Best Practice to be reviewed:

Designed For: Scene Support and Interior FFs

OBJECTIVES

At the end of this lecture, the student will be able to:

- A. Identify the advantages of a “city lay”
- B. Properly assemble a 200’ or 250’ city lay and place it into the hose bed
- C. Successfully deploy a city lay 1 ¾” hand line without entanglement

PROCESS

- A. FF grabs top loop (a 50’ bundle) and places it on shoulder;
- B. FF turns and grabs bottom loop, keeping it in hand.
- C. FF walks with 2nd loop until it stretches out fully, while keeping bundle on shoulder
- D. FF walks away from the entrance, stretching the line fully, but not blocking entrance
- E. FF drops the stretched line, and then walks with bundle on shoulder to the entrance
- F. FF places bundle on ground, uncouples strapping.
 - a. If FF intends to enter “dry”, he keeps bundle tight to place back on shoulder.
 - b. If FF intends to enter wet, he places bundle so it does not jam under door or block entrance and flakes out bundle quickly.



Note: FF stretches bottom length beyond doorway to stretch out fully (cone is door/entrance).

Bundle placed at entrance/door. DO NOT BRING bottom length to entrance if stretch requires more length than you have at doorway.



LESSON PLAN

Size Up, Approaching Doorway, and Moving Hose Practices

Estimated Time: 120 Minutes

NYS Requirements:

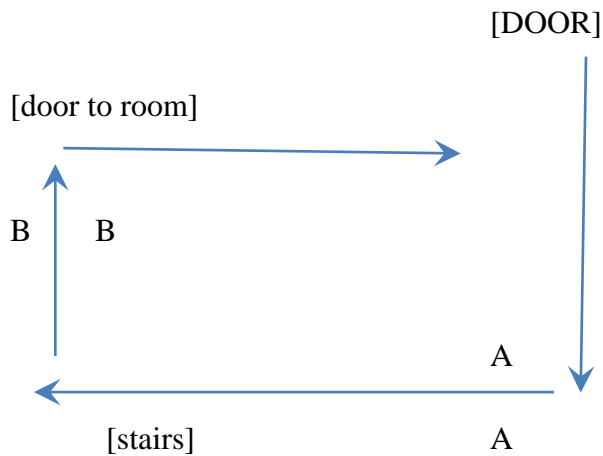
MFD category: Fire Hose Practices (120 Minutes);

MFD Policy/Best Practice to be reviewed: "Size Up"

Designed For: Interior FFs

Objective: Given a simulated room with cones set up at various turns, set up as below, firefighters shall be able to deploy hose, and move the hose around the obstacle course without knocking over any cones and with bringing all hose lengths with them to the "fire room".

SET UP: Using either an actual building with an entry door and stair case, or a simulated room as below:



A & B represent cones or an actual turn of a staircase. The drill shall proceed as possible:

DRILL SKILL SET:

1. Firefighter 1 deploys hose lay properly.
2. Officer performs walk around and size up.
3. Firefighters 2 and 3 go to door, to begin door size up/forcible entry. Firefighters 2 and 3 open door or arrange for door.
4. Team prepares for entry and performs proper size up in accordance with attached lesson plan.
5. Rules for hose deployment:
 - A. Hose is not caught on anything outside door.
 - B. Firefighter on nozzle remains, if possible, with officer, but advances towards staircase, then up staircase, then fire room door.
 - C. “Hoseman” (last man) ensures that all hose is brought inside doorway, then all hose brought to bottom of staircase, then to fire room, then enough is reserved to enter fire room.
 - D. At least officer and Nozzleman positions at doorway, has ample hose to move into room.
 - E. Upon entering room, team moves outside doorway to permit heat and steam to exit room. Before charging line, officer calls to Vent Team to vent room.

Lesson for Students:

- I. Review the following size up issues with the students. Then review the entire process. Walk everyone through it prior to running the drill. The drill should be run numerous times to ensure proper entry techniques:

Size up and viewing the structure.

- A. Officer walks around building if possible.
- B. Officer identifies various factors during the size up, such as:
 - i. Type of building construction
 1. Review:
 - a. Type 1 – fire resistant (protected against heat)
 - b. Type 2 – non-combustible (materials that do not burn but may still fail under fire, such as light weight metal truss)
 - c. Type 3- Ordinary Construction (solid brick usually, spalls under heat, causing collapse)
 - d. Type 4 – Heavy Timber

- e. Type 5 – Stick/wood construction.
- ii. Location of Fire
 - 1. Helps determine where entry is made and type of entry, eg:
 - a. Through the door
 - b. Vent, Enter & Search
 - 2. Where victims can survive
 - 3. Should building be vented prior to entry (prevent flash or backdraft)
- iii. Extent of Fire
- iv. Location of other smoke, eg:
 - 1. Dark smoke may indicate fire or high heat, pre-flash conditions
 - 2. Light smoke may indicate fire at a distant location
 - 3. Smoke at two opposite points in a commercial structure may indicate significant fire in structure
- v. Life safety priorities in structure
- vi. Possible fuel loads and combustion hazards
- vii. Number of floors of building and potential exits
- viii. Escape hazards

- II. Student properly identifies role (seat assignments)
- III. Students correctly complete donning gear and SCBA.
- IV. Students select proper length of hose and correct hose lay.
- V. Students correctly select tools
 - a. Instructor will review tools on vehicle and quickly reviews uses of each.
- VI. Students apply mask, SCBA, PPE, prior to entering structure
- VII. Officer and/or students feel door, check for back draft or explosion hazards caused by entering prior to opening door
- VIII. Officer and/or Student checks door to see if it opens. Student closes door until entry team is ready.

NOTE: Upon opening door, student opening door should get down to floor to see smoke lift and to quickly scan for victims

- IX. Student forces door if necessary (for this drill, place halligan in same manner as to open door, describe how door would open)
- X. Student ensures hose is properly flaked out for entry:
 - a. Note: The hose should be brought on the opening side of the doorway, as opposed to the hinged side of the door, so that the hose does not bind under the door or hinges.
- XI. Officer determines whether hose should be advanced wet or dry upon entry
- XII. Officer advises operations of PAR and destination of crew
- XIII. Student props door open to prevent closure
- XIV. Student sounds floor
- XV. Officer scans building with T.I.C.
- XVI. Student enters structure, moving up a stair case, sounding stair case as moving
- XVII. Student ensures adequate hose to move around stairs and hose does not bind. **THIS IS CRITICAL to evaluate!**
- XVIII. Student arrives at fire room. Student **flakes out hose** to prepare for entry. Student repeats entry steps above at fire room.
- XIX. Officer calls to charge line, if not charged already.
- XX. Backup crew assembles at stair way, calling PAR on entry. Back up crew protects stairs with hose of same size or greater size.
- XXI. Student enters fire room, **stays out of doorway** for extinguishment.

- a. If ventilation is required vertically or horizontally, engine team coordinates with ventilation team.

XXII. Student advises operations of status of fire attack. At end of attack, search is conducted of room.

XXIII. Evacuation of fire team.

- a. Backup crew remains in place until primary attack line is out of building
- b. Primary crew calls PAR upon exit
- c. Back up crew calls PAR upon exit.

LESSON PLAN

Forcible Entry

Estimated Time: 60 Minutes

NYS Requirements:

MFD category: Forcible Entry

MFD Policy/Best Practice to be reviewed:

Designed For: Interior FFs

Objective: Given a door pro and a set of irons, firefighters will be able to work in teams of two and force an inward swinging door, and then an outward swinging door.

- (1) Use the halligan to “shock” (hit) the door at the top middle and bottom on the lock side.



- (2) Drive the adze of a halligan bar between the door and jamb and push down or up on the halligan (in a direction opposite of the direction of the pike) as far as possible in order to “gap” the door.



(3) Use the blade of the axe to hold or “wedge” the gap before removing the adze.



(4) Remove the adze and “set” the fork with the bevel side towards the door and pull back on the bar away from the door until the forks “bight” (resistance is felt) (Photo 4)



(5) If the forks won't bight after a few attempts, flip the forks around so that the bevel is towards the jamb.



(6) The member with the axe takes a position on one knee and, at the direction of the member with the halligan, drives the fork between the door and jamb while the member with the halligan maintains pressure on the halligan in a direction away from the door to keep the forks from driving into the jamb.

- (7) The forks are set to the proper depth at the point where the top of the “V” is even with the inside of the jamb. The member with the halligan can then push in forcefully towards the door to “force” it. KEEP FINGERS OPEN AND NOT WRAPPED AROUND TOOL!



- (8) Use the adze of the halligan to “control” the door.



- (9) If the door does not open when the attempt to force it is made, use the axe to wedge the gap, and then place the adze between the door and the back of the jamb and “crush” up or down to widen the gap.



- (10) If the door still doesn't open, bring the halligan perpendicular to the door and push in on it to “clear” the door, being sure to use the adze to capture and “control” the door



LESSON PLAN

“Through The Lock”

Estimated Time: 30 minutes

NYS Requirements:

MFD category: Forcible Entry

MFD Policy/Best Practice to be reviewed:

Designed For: Interior Firefighters

Objective: Given a locked door, firefighters will be able to perform the “through the lock” technique and gain entry to a locked door.

OVERVIEW:

Instead of using our heavy-duty tools like our irons set with the Halligan and a striking tool like a flathead axe or maul, this technique uses much less force. Normally when we resort to the heavy-duty tools, it’s under emergency conditions, or when we’re faced with a heavily fortified door that requires the big guns to get through. This often causes extensive damage to the door and the doorframe.

Through-the-lock allows us to reduce damage and still accomplish quick, efficient and safe forcible entry.

Through-the-lock is a technique where we use our ability to remove the front of the standard mechanical lock cylinder found on doors by pulling or removing the lock face and cylinder, exposing the internal components. We can then manipulate the internal mechanism to unlock the door.

Removing the Cylinder

Removing the cylinder face from the body of the lock is a critical step in the through-the-lock technique.

There are a number of methods to accomplish this based on the type of lock and the quality of the lock.

Less expensive locks are usually less difficult to force than more expensive, better constructed locks.

Some of the lock cylinders that you find in most aluminum-frame commercial buildings are mortise-style locks that can either be pulled or sometimes simply screwed out of the body of the lock.

A wide variety of tools are effective in pulling the cylinder: a pair of channel lock pliers, and lock-pulling tools like the K-tool or R-tool.

There are also a number of techniques used to drill out the lock front with a cordless drill, providing an opening large enough to manipulate the lock with a screwdriver.

Cylinder Size-Up

If you're faced with a mortise-style lock in the locked position, the spring-loaded pin inside the lock body will be away from the doorframe. After you have removed the cylinder from the lock body, take the time to size up the back of the cylinder by looking at the back of the lock. If the back of the cylinder has a cam, use the key tool end that has a pointed end turned down at a 90-degree angle. This angled tool allows you to reach inside the lock body and move the spring-loaded pin back and forth to open the lock.

Based on how the lock is positioned in the doorframe, the pin will normally be positioned in the 5 o'clock or 7 o'clock position. You may have to push the pin down slightly to move it.

If the back of the cylinder has a piece of metal that looks like the end of a flat blade screwdriver, then select the end of the key tool that looks like a flat blade screw driver and use the flat point of the key tool to turn the lock until it opens.



LESSON PLAN

Forcible Entry: Outward Swinging Door

Estimated Time: 30 minutes

NYS Requirements:

MFD category: Forcible Entry

MFD Policy/Best Practice to be reviewed:

Designed For: Interior Firefighters

Objective: Given an outward swinging door, firefighters will be able to efficiently force the door utilizing a halligan and flat head axe or maul.

STEPS:

1. Begin by driving the adz between the door and the jamb a few inches above the lock or between locks if there is more than one. Make sure to position the halligan with its fork toward the hinge side of the door. This allows the slight curvature of the adz to help it work its way around the edge of the door.



2. Gaining the initial purchase between the door and the jamb can be time consuming with a strong, tight-fitting steel door. Widen the gap between the door and jamb by driving an ax blade in the space with a sledgehammer. This will allow for easy insertion of the adz. It is important to drive the adz to a depth equal to the full thickness of the door—that is 3/8 to 1. inches. If, in your haste, you drive the adz to an insufficient depth and then attempt to pry the door, you may end up tearing a wood door or “skinning” a metal-covered door, leaving the lock latch and bolt intact.



- a. Conversely, if you drive the adz deeper than the thickness of a door, it will become imbedded in the doorjamb, making the task of prying the door more difficult.
 - b. Judging how far to drive the adz is usually not a concern with a door set in a substantial steel jamb. Experienced firefighters are attuned to the sound of the ax or sledgehammer striking the halligan; the metallic “clang” will change to a solid “thud” when the edge of the adz makes contact with the steel doorjamb.
 - c. To ensure proper depth, fire departments may grind a notch or paint a stripe on the adz 1. to 1. inches from the tip, indicating the average thickness of the door.
3. Once you drive the adz to the full thickness of the door, pull the shaft of the halligan away from the door. Put two firefighters to work on the tool.
 - a. If the door does not pry open, use the weight of two firefighters to push the shaft of the halligan down. This action will rotate the adz, increasing the spread between the door and the jamb and, hopefully, crush the door and jamb sufficiently to allow the slightly curved adz to work its way around the edge of the door. Now drive the adz to its maximum depth, achieving greater leverage.



4. If these techniques fail, you have not wasted your time, because the adz will crush the door and the jamb, allowing for easier insertion of the fork. When driving the fork between an outward-swinging door and its jamb, position it with the bevel against the doorjamb. This will allow the curvature of the fork to work its way around the edge of the door.
5. Leverage exerted by the fork of a halligan can be limited when a door is recessed in a masonry wall, because the shaft of the tool strikes the doorway, restricting its range of motion. This is another reason to always take a sledgehammer along with the irons. A company that encounters an outward-swinging door recessed in a masonry wall may be able to use its sledgehammer to break brick or concrete block out of the doorway, allowing room for the shaft of the halligan.

LESSON PLAN

Policy Review

Estimated Time: 30 minutes

NYS Requirements: Scene Safety 30 minutes

MFD category: Fire Protection Organization

MFD Policy/Best Practice to be reviewed:

Designed For: Entire Department

Objective: Given Department policies and best practices, members will be able to understand and recall the proper practices in accordance with the Department's written policies and best practices.

Lesson: Take the Policy/Best Practice Manual. Review highlights of each manual.

At end of lesson, take written exam questions and review the questions and answers with group.

LESSON PLAN

Thermal Imaging Camera Review & Practice

Estimated Time: 90 Minutes

NYS Requirements:

MFD category: Tools & Equipment

MFD Policy/Best Practice to be reviewed:

Objective: Given a Thermal Imaging Camera, interior firefighters shall be able to:

- (1) Utilize each of the functions of the camera in accordance with manufacturer's recommendations;
- (2) Identify heat signatures and cold signatures;
- (3) Utilize the camera to locate a victim.

Designed for: Interior FFs

LESSON:

- (1) Present CD from Manufacturer on Thermal Imaging Camera
- (2) Practice use of Thermal Imaging Camera, utilizing each of the functions of the camera

LESSON PLAN

Vent, Enter, Isolate, Search

Estimated Time: 120 Minutes

NYS Requirements:

MFD category: Rescue (60 minutes); Ground Ladders (60 Minutes)

MFD Policy/Best Practice to be reviewed:

Objective: Given a simulated emergency scenario at a two story building, firefighters will be able to efficiently perform a vent, enter, isolate and search technique as a team.

Designed for: Interior FFs

Uses:

- V.E.I.S. is utilized to quickly enter an elevated floor from a window, search the room and close the room door, and exit.
- V.E.I.S. permits the room to vent while closing off the room from filling the smoke
- V.E.I.S. is a quick search technique for multiple rooms, by entering from outside
- The concept behind V.E.I.S. is simply meeting the primary objective for venting, which is to vent to rescue victims or make conditions more tenable for victims
- This is generally a truck company function. Engine operations should continue unless a strongly suspected or confirmed life hazard requires the first due engine to perform a rescue

Misc. Issues:

- It is possible to over ventilate if a hose line is not in place.
- VEIS tactics does not mean you break out every window.
- Preservation of life is the main objective on the fire ground. All other operations are designed to enable us to reach this objective.
- VEIS is not necessary at every fire; however it should be standard practice at a majority of fires to which we respond.

- VEIS should be used primarily at residential fires, both single story and multiple story dwellings. It should also be used at high-rise fires when there are multiple locations that need to be quickly searched for victims.

Equipment Needed:

- Ladder (24')
- Search and Entry Tools
- Flashlight
- 6' hook
- Radio

STEPS:

(1) Where to search first?

- a. Sleeping areas, if during night time
- b. Child rooms?
- c. Egress paths
- d. Debate: Search unlivable rooms (heavy black smoke) or survivable rooms?

(2) Roles:

- a. Notify Operations and other companies which side and rooms entering
- b. Firefighter 1 prepares to make entry (Dons SCBA and tools)
- c. Firefighter 2, not on air, obtains roof ladder, creates opening
Note: This may be an exterior firefighter
- d. Firefighter 2 places ladder properly, for rescue (below window), and foots ladder. He does not move from footing ladder.
 - i. Note: review proper positioning of Firefighter 2, being to stand on outside and NOT under ladder. Standing under ladder can permit ladder to slip out and is a danger for falling hazard.

(3) Ladder Placement:

- a. Size up: Ensure back-draft conditions are not present
- b. When placing ladder, **DO NOT** break window with ladder
 - i. **DO NOT** give fire the time to advance towards the window, so break it **ONLY** when you are at the top of the ladder.
 - ii. Note: Danger to this is that victim is below window and is hit with glass
- c. Two options of ladder placement:
 - i. Ladder can be placed next to window for entry (not rescue), permitting rescuer to enter window by stepping inside. This makes it more difficult to sound floor and feel for victim. Ladder tender moves ladder to rescue position, under window, after entry is made.
 - ii. Ladder can be placed under window for rescue.

(4) Entry:

- a. Attempt to pull window sash instead of pushing remainder inside. Clear window as quickly as possible but as much as possible
- b. Use hand to feel ground below and near window to prevent injury to a victim
- c. **THEN** sound ground before making entry with tool
- d. One firefighter enters room, searches around room, closes room door **AS SOON AS POSSIBLE**
 - i. Before closing door, look into hallway and evaluate hallway conditions
 - ii. Do not enter hallway or search other rooms.
 - iii. Use knowledge of hallway conditions to update operations or make future decisions on V.E.S.
- e. Firefighter remains in voice contact with firefighter at window (if there is a third firefighter to hold ladder)
- f. Firefighter at window (if there is a third firefighter footing ladder) utilizes Thermal Imaging Camera to scan room and monitor firefighter
 - i. **NOTE:** If one victim is found, multiple rescuers should be summoned to room, permitting entry of other firefighters to assist with rescue.
 - ii. **NOTE:** Remember to complete search of room for additional victims after first victim is removed.
- g. Firefighter 1 exits building.

(5) Repositioning

- a. Firefighter 2 moves ladder to next window
- b. Firefighter 1 grounds ladder, while Firefighter 2 makes entry, repeating steps

- i. NOTE: A third firefighter (scene support) would foot ladder and move ladder if present.
- c. Notify Operations and other companies where entering, and what is clear.

LESSON PLAN

Mini-Pumper and Wild land Firefighting Practice

Estimated Time: 120 Minutes

NYS Requirements: (a) Protective Clothing: 15 minutes
(b) Scene Safety: 15 minutes
(c) General Hazard Recognition: 15 minutes

MFD Category: Wildland & Ground Fires: 120 minutes (interiors)

Fire Pumps: 120 minutes (operators)

Notes: Split 60/60 for persons who perform both.

Designed For: Entire Department

Objective: At the end of this lesson, participants shall be able to operate the mini-pumper, including but not limited to drafting and flowing water and relaying from a tanker or engine.

Objective: At the end of this lesson, participants shall be able to extend a hose lay at least 300 feet from the mini-pumper, utilizing appliances and wild land hose.

Skills:

Operators: Participants shall be instructed in the use of the mini-pumper, including but not limited to the following functions:

- (4) Starting pump;
- (5) Priming pump;
- (6) Review of all intake and output valves and gates;
- (7) Venturi flows;
- (8) Drafting processes;

Participants shall demonstrate the ability to:

- (1) Draft water;
- (2) Access tank water;
- (3) Flow water;
- (4) Accept water from tanker/engine.

Firefighters (Scene support and interior): Participants shall be instructed in the use of hoses and appliances, and proper nozzles, including but not limited to:

- (1) Attach 2 ½” line to a gated Y, then attach either 1 ¾” double jacket or single jacket, ending with single jacket wild land hose and a combination nozzle.

LESSON PLAN

Departing Vehicle, Hand Line & Big Water Skills

Estimated Time: 45 Minutes

NYS Requirements: (a) Protective Clothing: 15 minutes
(b) Scene Safety: 15 minutes
(c) Tools & Equipment Safety: 15 minutes

MFD Category: Fire Hose Practices

Designed For: Interior FFs, Scene Support, Operators

Objective: While donning full SCBA at the appropriate time, participants shall demonstrate the following skills, each in accordance with the skills sheets of the Department:

- (11) Deploys from the vehicle for at least three different riding positions, and selects the proper tools for the assignment given by the instructor
- (12) Deploying a pre-connected hose load properly which charges without kinks, to the front door of a structure;
- (13) Operates a 1 ¾" hand line, demonstrating:
 - a. Proper handling
 - b. Ability to move hose line without standing
 - c. Proper spotting techniques (2nd person)
 - d. Advances such hose line into a structure, and while doing so:
 - (i) Ensures that the hand line does not get caught under the door;
 - (ii) Ensures that all of the hose is brought to each "turn point"
 - (iii) Ensures that ample hose is brought to the fire room
 - (iv) Ensures that ample hose is available to move into the fire room
 - (v) Maintains proper nozzle position to body.
- (14) Deploying a master stream device, including but not limited to:
 - a. Selecting the appropriate "big water" device
 - b. Setting up the device
 - c. Charging the device
 - d. Changing the tips of the nozzle for reach

- (15) Deploys a 2 1/2" hand line, including but not limited to:
- a. ensures that the hand line does not get caught under the door;
 - b. Ensures that all of the hose is brought to each "turn point"
 - c. Ensures that ample hose is brought to the fire room
 - d. Ensures that ample hose is available to move into the fire room
 - e. Maintains proper nozzle position to body.

LESSON PLAN

Master Stream and “big water” practices

Estimated Time: 45 Minutes

NYS Requirements: (a) Scene Safety: 15 minutes

(b) Tools & Equipment Safety: 15 minutes

MFD Category: Fire Hose Practices (firefighters)

Apparatus Driving, Operating (operators)

Designed For: Interior FFs, Scene Support, Operators

Objective: Given a master stream device, participants will be able to extend the hose of proper diameter, set up the master stream, and change the flow on the device.

Objective: Given a deck gun, participants will be able to maneuver and flow the deck gun.

Objective: Given a 2 ½” hand line with a 2 ½” nozzle, students can move the line forward as a team, and can “sit” on the hand line.

Objective: Given a 2 ½” hand line, students will be able to identify pressures which are too high, too low and appropriate for hand line.

Lesson:

Instructor reviews the parts of the master stream device, including:

- a. Water input connection, identifying ability to connect 4” and 2 ½” hoses;
- b. Identify to participants that the reach of a master stream is at most 3 stories;
- c. “Legs” with spikes, identifying method of securing spikes to ground with flathead axe;
- d. Gates (on/off), instructing students that gate should be “cracked” open prior to calling for water flow;
- e. Review of water flow chart, as indicated on device;
- f. Safe initiation of water flow, by placing hand on master stream and knee on hose, to avoid device “jumping” upon being charged;
- g. Use and removal of tips, indicating those used for reach vs. gallonage;

- h. “Flexibility” of master stream, demonstrating that the device cannot bend upwards top 90 degrees, noting limitations on positioning;
- i. Avoidance of “water hammer” when shutting down device.

Skills:

- a. Firefighter will deploy master stream, positioning device in safe manner;
- b. Firefighter secures legs of master stream into ground;
- c. Firefighter may utilize any size hose line;
- d. Firefighter connects hose to master stream, and cracks device open;
- e. Firefighter places hand on master stream and knee on hose;
- f. Firefighter calls for water, with hand motion or on radio;
- g. Firefighter observes and practices with reach and flow, varying between different sized tips;
- h. Firefighter does not create “water hammer” by shutting down too quickly.

Skills:

- a. Firefighter and Operator utilize deck gun from Engine.
- b. Firefighter and Operator flow deck gun, avoiding water hammer.
- c. Firefighter identifies reach of deck gun, being about 3 stories at most.
- d. Instructor and operator discuss positioning of Engine to maximize the reach of deck gun.

Skills:

- a. Firefighter will deploy and move a 2 1/2” hand line;
- b. Firefighter will operate hand line at varying pressures:
 - (i) Instructor will have operator flow hand line at a “low” pressure, so student can identify a weak hose line;
 - (ii) Instructor will have operator flow hand line at too “high” of a pressure, so student can identify a pressure which makes hand line difficult to operate.
- c. Firefighter creates a “loop” in hose for stationary firefighting.

LESSON PLAN

Skills Testing: Ground Ladders & Ladder Rescue

Estimated Time: 180 Minutes

NYS Requirements:

MFD category:	Ground Ladder Practices	60 minutes
	Rescue	120 minutes

MFD Policy/Best Practice to be reviewed: None

Designed For: Interior FF's, Scene Support (throwing and supporting ladders)

Objective: Participants shall demonstrate their ability to:

1. Perform a two-firefighter ladder carry
2. Perform a single firefighter ladder raise on a straight and extension ladder
3. Perform a two firefighter ladder raise
4. Foot a ladder
5. Deploy a roof ladder to the roof
6. Perform V.E.I.S
7. Assist a conscious victim down a ladder
8. Remove an unconscious victim down a ladder in teams of four (each firefighter must be the ladder rescuer).

Lesson Plan

Ladder raises, carries and related practices

Estimated Time: 180 Minutes

NYS Requirements: (a) Tool and Equipment Safety: 30 minutes

MFD Category: Ground Ladders

Designed For: Interior Firefighters, Operators, Scene Support

Objective: At the end of this lesson, participants will be able to properly carry a ladder utilizing a “single firefighter carry”

Objective: At the end of the lesson, participants will be able to deploy a ground ladder utilizing a flat raise.

Objective: At the end of the lesson, participants will be able to deploy a ground ladder utilizing a beam raise.

Objective: At the end of the lesson, participants will be able to carry a roof ladder to a roof and deploy the ladder.

Objective: At the end of the lesson, participants will be able to work off of a ground ladder utilizing either a leg lock or after securing to the ladder with a harness.

Safety Note: Footing a ladder

Review with students:

Department policy requires that all ladders are “footed” from the outside and not from underneath the ladder.

Single Firefighter Carry

Locate Center of Ladder.

Place one arm through rungs,
just to one side of the middle rung.

Bring top beam to
rest on shoulder.



Suitcase Carry

The suitcase carry is the preferred method of carry for the Department, per our Best Practices. This method should be deployed unless the firefighters verbally state otherwise.

Both firefighters face the butt
of the ladder at each ends.

Grab the upper beams. Pick up the ladder using good
lifting techniques



Three firefighter suitcase carry employs the same general technique for a 35' ladder.

One firefighter Ladder Raise

Carry ladder to building.
Check for overhead obstructions.



Place butt against structure
and rotate ladder so that both spurs
contact the ground and structure.
Lay ladder on ground.



Grasp a rung near the tip, bring the end of the ladder to chest height.

Step beneath the ladder and push upwards.



Walk toward the structure,
lifting the rungs hand over
hand until the ladder is
vertical against building

Pull the butt away
from the structure.



Two Firefighter Beam Raise

Begin with one firefighter at each end.
Check for overhead hazards.
Firefighters gauge best placement.



From a standing position, the firefighter at the butt end lowers the ladder under the beam is on the ground. Firefighter at butt end then places foot on lower beam and hands on upper beam.



The firefighter at the tip walks the ladder hand over hand, raising the beam until vertical.



Two firefighters stand on opposite sides, rotating the ladder as needed. Fly must facing away from the building.



Each firefighter places one foot against each side of beam. Firefighter with back to building extends fly section.



Outside firefighter “heels” ladder. Both lean ladder into place. Halyard must be secured.



Two Firefighter Flat Raise

Begin with one fire fighter near the butt of the ladder and one at the tip. Check for overhead hazards.

The fire fighter at the butt places the butt of the lower beam on the ground. The fire fighter at the tip rotates the ladder until both beams are in contact with the ground.

The fire fighter at the butt places both feet on the bottom rung, grasps a higher rung, crouches, and leans backward.

The fire fighter at the tip swings under the ladder and walks toward the butt, raising the rungs hand-over-hand until the ladder is vertical. On opposite sides, the fire fighters pivot the ladder into position, if necessary.



Each fire fighter places one foot against the butt of a beam to brace the ladder. The fire fighter with his back to the structure extends and locks the fly section.



The fire fighter on the outside heels the ladder while both lean it into place. Secure the halyard before climbing the ladder.



Roof Ladder to Roof

1. The fire fighter carries the roof ladder to the base of a ladder that is already in place to provide access to the roofline.
2. The fire fighter places the roof ladder on the ground and rotates the hooks of the roof ladder to the open position.
3. The fire fighter uses a one-fire fighter beam or rung raise to lean the roof ladder against one beam of the other ladder with the hooks oriented outward.

4. The fire fighter climbs the lower ladder until reaching the mid point of the roof ladder. The fire fighter then slips one shoulder between two rungs of the roof ladder and shoulders the ladder
5. The fire fighter climbs to the roofline of the structure carrying the roof ladder on one shoulder.
6. The fire fighter then uses a ladder belt to secure to the ladder or applies a ladder leg lock (described in the Working From a Ladder section).
7. The fire fighter places the roof ladder on the roof surface with hooks down. The ladder is pushed up toward the peak of the roof with a hand-over-hand motion.
8. Once the hooks have passed the peak, the fire fighter pulls back on the roof ladder to set the hooks and checks to ensure they are secure.
9. A roof ladder is removed from the roof by reversing the process described above. After releasing the hooks from the peak, it may be necessary to turn the ladder on one of its beams so that it can slide down the roof without catching the hooks on the roofing material.

Leg Lock/ Harness Lock

Firefighter climbs to desired height,
And then one rung higher.



The knee is bent under the rung and the

Firefighter puts the leg which is
“opposite” to working side through ladder.



The foot is secured around the lower rung

Foot is brought back under the rung



or the beam. Other leg is moved down one rung.



Harness Lock

A harness lock is easier and quicker than a leg lock, and may be safer.

1. Climb to the desired height.
2. Take the Caribener from the harness, and lock it as high as possible on the upper rung.
3. Place the left knee on the left beam, and the right knee on the right beam.
4. Push back, and the firefighter is now secured.

Lesson Plan

Conscious Victim Rescue

Estimated Time: 60 Minutes

NYS Requirements:

MFD Category: Rescue

Designed For: Interior Firefighters

Objective: Given an conscious victim, firefighters will be able to assist the conscious victim from a second story to the ground floor utilizing ground ladders, or from an elevated story utilizing an aerial device (bucket).

A. Establish Contact with Victim/ Victims

1. Effective communication is paramount to keep control of the situation. This is best maintained by assigning someone on the ground during the setup of the ladders.
2. Determine the possible number of victims and report the findings to the IC.
3. Reassure the victim and continue with communications until the victim is safely down to the ground.

B. Ladder Placement

1. All basic ladder practices will be followed (safety, selection, carries, and raises)
2. Place the ladder just below the window sill.

C. Firefighter placement

1. It is recommended that four firefighters be utilized for ladder rescues.
2. The officer in charge can be used for the initial victim contact and communications. The officer in charge oversees safety and maintains situational awareness. In addition, the officer in charge will notify the Incident Commander of the number of victim(s), the location of the victim(s), and request the need for EMS assistance.
3. One firefighter to heel the ladder.
4. One firefighter to climb ladder, make entry into the structure, communicate with the victim and assist victims onto the ladder
5. One firefighter to climb the ladder and wait at the tip for the victim to access the ladder.
6. The firefighter will assist the victim down the ladder.

D. Victim handling

1. Expect the victims to be scared, excitable, and impatient. Be aware that the victims may try to access the ladder prior to the firefighter ascending. This can cause an unstable ladder if the firefighters are not prepared.
2. Communicate all actions you are doing- nothing should be a surprise to the victim
3. It is important to reassure the victim and keep them calm all the way to the ground. Keep in mind that some people may not have used a ladder in their life. Children and the elderly may need reassurance while climbing down the ladder.
4. Descend the ladder slowly and safely when assisting the victim to the ground.
5. If the victim loses control or becomes combative, stop descending, force the victim into the ladder by keeping them between the ladder and the firefighter, and call for assistance
6. If the victim becomes unconscious, attempt to utilize an unconscious victim ladder technique and call for assistance.

E. Victim transfer of care

1. Treat all of the victims who were rescued as patients. The officer in charge will determine if the victims need initial BLS treatment by the rescue company (triage and additional rescues will factor into this decision).
2. Do not let the victim leave until they have been turned over to EMS for evaluation.

F. Aerial Operation Considerations

1. Ladder rescues performed with the use of an aerial device should be performed as above with the following exceptions:
 - a. Consider the climbing angle and trip hazards associated with the aerials in our system when bringing people down.
2. The operator of the aerial should bring the ladder down to the set point and not up to victims. This will help ensure the victims do not try to enter the ladder prior to it being in position.
3. Do not allow the aerial device to be overloaded.

Lesson Plan

Unconscious Victim Rescue

Estimated Time: 60 Minutes

NYS Requirements:

MFD Category: Rescue

Designed For: Interior Firefighters

Objective: Given an unconscious victim, firefighters will be able to extract the victim from a second story utilizing ground ladders, or from an elevated story utilizing an aerial device (bucket).

Safety: This is performed in practice/drill with the victim held with webbing so that the victim's weight can be taken off of the Rescue Firefighter. The Rescue Firefighter is placed on belay.

A. Ladder position

1. Position ladder for rescue, below the sill, and at a greater angle than for a regular climb.

B. Rescuer position

1. Outside firefighter goes to window to accept victim.
2. A second outside firefighter can go up ladder to support firefighter.
3. Firefighter locks knees into rungs and presses them outward as a modified leg lock for support.

C. Victim Lowering

1. Victim is lowered out window, and is held across arms of rescue firefighter.
2. Rescue firefighter keeps two hands on beams AT ALL TIMES.
3. If Rescue firefighter needs to stop or if victim begins to struggle, Rescue firefighter pins body against ladder, pulling arms inward to body.

D. Victim Lowering: ALTERNATE METHOD

1. Victim's legs can be placed on Rescue firefighter's shoulders, so that victim's back is against ladder.

E. Webbing: an assist for heavy victims

1. Webbing may be used to assist as follows:
 - a. For victim lowered out window horizontally, tie granny knot around arms and waste of victim with webbing. This secures victim and permits the window firefighters to support some weight of the victim as the victim is lowered down ladder.
 - b. At some point, however, the window firefighters will have to let go of webbing but it gives the Rescue firefighter a chance to get in position and down a few rungs.

1 Place the ladder in rescue position, with the tip below the windowsill.

2 One fire fighter enters the window to assist the victim. The second fire fighter stands on the ladder to receive the victim, with both arms level and hands on beams.

3 The victim is placed in the fire fighter's arms.

4 The fire fighter descends, keeping arms level and sliding the hands down the beams.

4.

LESSON PLAN

Lowering Victim From Elevated Height

&

Unconscious Victim Rescue

Estimated Time: 60 Minutes

NYS Requirements:

MFD Category: Rescue

Designed For: Interior Firefighters and RIT

TERMINAL OBJECTIVE: Given an unconscious victim on a second story floor, rescuers will efficiently secure a victim and lower the victim from the second story to a crew on the first floor.

OBJECTIVE: Given an order to rescue a victim from a second story floor, firefighters will quickly clear an entry window, make entry through the window, and secure a victim for rescue.

OBJECTIVE: Given a victim in a second story, firefighters will secure the victim to a pulley system and lower the victim to the ground through a second story window.

EQUIPMENT NEEDED:

- 24' Ladder or Aerial Ladder
- Pulley System
- Webbing or sling link

SAFETY:

- Ground ladder must ALWAYS be footed
- Ground ladder must be held from OUTSIDE of ladder, NEVER from UNDER ladder

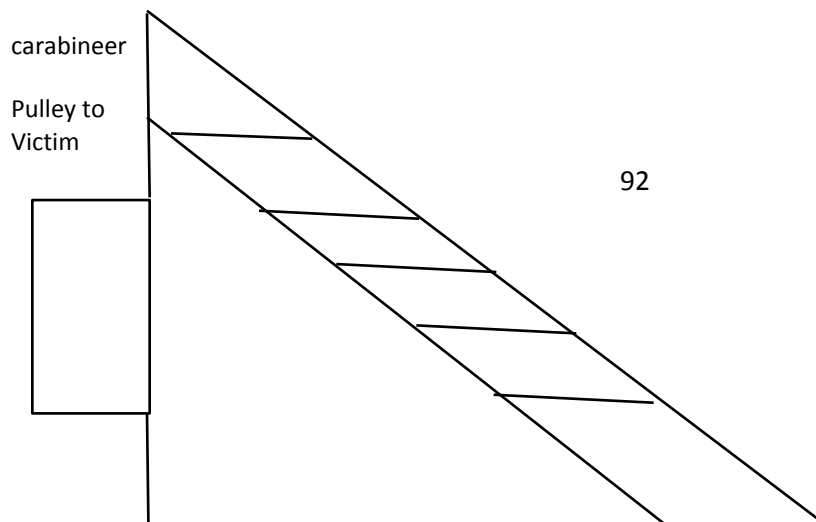
DURING DRILL:

- Place an interior search crew inside 2nd story.
- Place a victim inside, away from the window by at least 15 feet.
- Have interior search crew call for a pulley set up out second floor window.

- Exterior crew should advise interior crew that there is no escape ladder from the rescue window.
- Interior crew then applies webbing or SCBA harness to victim for use in lowering.

STEPS:

- Firefighter 1 (who may be an interior or scene support personnel) will:
 - Grab 24' ladder; or
 - Raises Ladder to entry height below window. Breaks window if possible.
 - Grabs 16' roof ladder if height permits
 - If roof ladder used, FF1 unhooks the hooks, breaks window with ladder, grabs window sash with hooks, removes window sash.
 - Places ladder below window for rescue
- Firefighter 2 (interior firefighter)
 - While ladder is being placed, FF2 is donning mask, SCBA and “goes on air”
 - Grabs tools (pike pole preferred)
 - Climbs ladder with FF1 footing ladder
 - Clears window of glass
 - Enters window to secure victim.
- Firefighter 3 (interior firefighter) if available, follows FF2 into window
- FF1 and Exterior Crew:
 - Raise ladder above window as high as possible
 - Increases slope of ladder 10-20 degrees beyond normal climbing angle
 - Climbs ladder, places rope rescue bag in position for rescue
 - Caribeener is connected to rung nearest to top of ladder
 - Pulley is placed over and then through next highest rung, given to interior crew and connected to victim (“pulley to person” provides greatest mechanical advantage)
 - Pulley is connected to Victim
 - Bag with rope is placed over second rung from caribeener, and dropped to ground.
- Exterior Crew pulls victim to window upon command of interior crew
 - Note: Interior crew can utilize pulley system to pull victim across floor
- Interior Crew lifts patient out of window
 - Ladder is placed correctly if victim is not crammed between building and ladder.
- Exterior Crew lowers victim to ground



Rope between and over rung

Rope Bag for rescuers to hoist

LESSON PLAN

Chain Saw and Rotary Saw Practice

Estimated Time: 120 Minutes

NYS Requirements: Tool & Equipment Safety 120 minutes

MFD category: Ventilation (60)

Tools & Equipment (60)

MFD Policy/Best Practice to be reviewed: Required use of masks (PESH Policies)

Designed For: Interior FF's

Objective: Given 3/4" plywood on a frame, firefighters will utilize a chain saw to make 4x4 practice cuts.

Objective: Given 3/4" plywood on a frame, firefighters will utilize a rotary saw to make 4x4 practice cuts.

The purpose of this drill is to help everyone become comfortable with the use of a chain and rotary saw and to instill safe practices before going "to the roof" for ventilation.

Safety Notes:

1. Chain saws are never carried up ladders while the motor is running;
2. Chain saws are always fully throttled before the plunge cut;
3. Tip the saw into the wood as opposed to plunging the tip.
4. Rotary saws are never carried while running.
5. When moving the saw forward (not cutting), rotary saws are always 'walked' while the motor is running, using wheel barrel push.
6. Spotter should always remain behind cutter.

Instructor notes:

1. Set up 2x4 plywood on a frame of a 2x6. Hollow or solid wood doors are also acceptable.

2. Demonstrate the 7-9-8 cut. The cuts should always overlap each other. Make an inspection hold after the “7” is completed by making a third triangle cut for inspection.
3. Make 4x4 cuts in the wood.
4. Ensure that the saws are always held and moved in a safe manner.

