



International  
Association  
of Fire Chiefs



National  
Fire Protection  
Association

# Fundamentals of Fire Fighter Skills

## Chapter 18

Salvage and  
Overhaul  
Skill Drills

## Objectives (1 of 4)

- Perform the one fire fighter salvage cover fold.
- Perform the two fire fighter salvage cover fold.
- Fold and roll a salvage cover.
- Perform a one-person salvage cover roll.

### Objectives (2 of 4)

- Perform a shoulder toss.
- Perform a balloon toss.
- Stop water from a sprinkler head using a sprinkler stop.
- Stop water from a sprinkler head using sprinkler wedges.

### Objectives (3 of 4)

- Close and open main control valve (outside screw-and-yoke).
- Close and open main control valve (post-indicator).
- Construct a water chute.
- Construct a water catch-all.

### Objectives (4 of 4)

- Open a ceiling to check for fire with a pike pole.
- Open an interior wall.
- Inspect and run a generator.

### Skill Drill 18-1 One-Fire Fighter Salvage Cover Fold



Step 1: Spread the salvage cover flat on the ground. Stand at one end, facing your partner standing at the other end.



Step 2: You and your partner each place one hand on the outer edge of the cover and the other hand one quarter of the way in from the edge.

## Skill Drill 18-1

### One-Fire Fighter Salvage Cover Fold

Step 3: Together, flip the outside edge in 3" from the middle of the cover, creating a fold at the quarter point.



# Skill Drill 18-1

## One-Fire Fighter Salvage Cover Fold

Step 4: Flip the outside fold in to the same point of the cover, creating a second fold. Repeat steps 2, 3, and 4, from the opposite side of the cover. The folded edges should meet at the middle of the cover, with the folds 6" apart.





### Skill Drill 18-1 One-Fire Fighter Salvage Cover Fold



Step 5: Fold the two halves of the salvage cover together.



Step 6: Starting from the middle of the cover, use a broom to brush the air out of the covers.

### Skill Drill 18-1

### One-Fire Fighter Salvage Cover Fold

Step 7: Move to the newly created narrow edge of the salvage cover.



### Skill Drill 18-1

### One-Fire Fighter Salvage Cover Fold

Step 8: Fold the narrow edge of the salvage cover to 3" from the middle of the cover, creating a fold at the quarter point. Flip the outside fold of the narrow edge in to the same point of the cover, creating a second fold. The folded edges should meet at the middle of the cover, with the folds 6" apart.



# Skill Drill 18-1

## One-Fire Fighter Salvage Cover Fold

Step 9: Fold the two halves of the salvage cover together.



### Skill Drill 18-2

### Two-Fire Fighter Salvage Cover Fold

Step 1: Spread the salvage cover flat on the ground. Stand at one end, facing your partner standing at the other end. You and your partner each place one hand on the outer edge of the cover and the other hand one quarter of the way in from the edge.



### Skill Drill 18-2

#### Two-Fire Fighter Salvage Cover Fold



Step 2: Together, fold the cover in half.



Step 3: Together, grasp the unfolded edge and fold the cover in half again.

### Skill Drill 18-2

#### Two-Fire Fighter Salvage Cover Fold



Step 4: Starting from the middle of the cover, use a broom to brush the air out of the cover.



Step 5: Move to the newly created narrow edge of the salvage cover. Fold the narrow edge of the salvage cover in half length-wise.

### Skill Drill 18-2

#### Two-Fire Fighter Salvage Cover Fold

Step 6: Fold the cover in half length-wise again. Make certain that the open end is on top. Fold the cover in half a third and final time.





### Skill Drill 18-3 Fold and Roll a Salvage Cover



Step 1: Spread the salvage cover flat on the ground. Stand at one end, facing your partner standing at the other end.



Step 2: You and your partner each place one hand on the outer edge of the cover and the other hand one quarter of the way in from the edge.

### Skill Drill 18-3 Fold and Roll a Salvage Cover



Step 3: Together, flip the outside edge in to the middle of the cover, creating a fold at the quarter point.



Step 4: Flip the outside fold in to the middle of the cover, creating a second fold. Repeat steps 2, 3, and 4, from the opposite side of the cover.

### Skill Drill 18-3 Fold and Roll a Salvage Cover



Step 5: The folded edges should meet at the middle of the cover, with the folds touching, but not overlapping.



Step 6: Tightly roll up the folded salvage cover from the end.

### Skill Drill 18-4 One-Person Salvage Cover Roll



Step 1: Stand in front of the end of the object that you are going to cover.



Step 2: Start to unroll the cover over one end of the object.

### Skill Drill 18-4 One-Person Salvage Cover Roll



Step 3: Continue unrolling the cover over the top of the object. Allow the remainder of the cover to unroll and settle at the end of the object.



Step 4: Spread the cover, unfolding each side outward over the object to the first fold.

### Skill Drill 18-4 One-Person Salvage Cover Roll



Step 5: Unfold the second fold on each side to drape the cover completely over the object.



Step 6: Tuck in all loose edges of the cover around the object.

### Skill Drill 18-5 Shoulder Toss



Step 1: Place a folded salvage cover over one arm.



Step 2: Toss the cover over the salvaged object with a straight-arm movement.

### Skill Drill 18-5 Shoulder Toss

Step 3: Unfold the cover until it completely drapes the object.





### Skill Drill 18-6 Balloon Toss



Step 1: Place the cover on the ground beside the object.



Step 2: Unfold the cover so that it runs along the entire base of the object. Each fire fighter grabs one edge of the cover and brings it up to waist height.

### Skill Drill 18-6 Balloon Toss



Step 3: Together, lift the cover quickly so that it fills with air like a balloon.



Step 4: Move quickly to the other side of the item, using the air to help support the cover, and spread the entire cover over the object.

## Skill Drill 18-7 Using a Sprinkler Stop

1. Have a sprinkler stop in hand.
2. Place the flat-coated part of the sprinkler stop over the sprinkler head orifice and between the frame of the sprinkler head.
3. Push the lever to expand the sprinkler stop until it snaps into position.

### Skill Drill 18-8 Using Sprinkler Wedges



Step 1: Hold one wedge in each hand.



Step 2: Insert the two wedges, one from each side, between the discharge orifice and the sprinkler head deflector.

## Skill Drill 18-8 Using Sprinkler Wedges

Step 3: Bump the wedges securely into place to stop the water flow.



### Skill Drill 18-9

## Close and Re-Open Main Control Valve (OS&Y)

Step 1: Locate the OS&Y valve as indicated on the preincident plan. It may be inside the building or close by outside. The stem of an OS&Y valve protrudes from the valve handle in the open position. Identify the valve that controls sprinklers in the fire area. Smaller systems will have only one OS&Y valve.



### Skill Drill 18-9

#### Close and Re-Open Main Control Valve (OS&Y)

Step 1 (continued): Large buildings may have multiple sprinkler systems or one main control valve and additional zone valves controlling the flow to different areas. If the valve is locked in the open position with a chain and padlock, and the key is readily available, unlock and remove the chain. If no key is available, cut the lock or the chain with a pair of bolt cutters. Cut a link close to the padlock so that the chain can be reused.



### Skill Drill 18-9

#### Close and Re-Open Main Control Valve (OS&Y)



Step 2: Turn the valve handle clockwise to close the valve. Keep turning until resistance is strong and little of the stem is visible.



Step 3: To open the OS&Y valve, turn the handle counterclockwise until resistance is strong and the stem is visible again. Lock the valve in the open position.



### Skill Drill 18-10

#### Close and Open Main Control Valve (PIV)

Step 1: Locate the PIV (usually located outside the building). The location of the valve should be indicated on a preincident plan. Most PIVs will be locked open by a padlock. Unlock the padlock if the key is readily available. If no key is available, cut the lock with a pair of bolt cutters.



### Skill Drill 18-10

#### Close and Open Main Control Valve (PIV)

Step 2: Remove the handle from its storage position on the PIV and place it on top of the valve, similar to a hydrant wrench. Turn the valve stem in the direction indicated on top of the valve to close the valve. Keep turning until resistance is strong and the visual indicator changes from “OPEN” to “SHUT.”



### Skill Drill 18-10

#### Close and Open Main Control Valve (PIV)

Step 3: To reopen the PIV, turn in the opposite direction until resistance is strong and the indicator changes back to "OPEN." The valve should then be locked in the open position.



# Skill Drill 18-11

## Construct a Water Chute

Step 1: Fully open a large salvage cover flat on the ground.



# Skill Drill 18-11

## Construct a Water Chute

Step 2: Roll the cover tightly from one edge toward the middle. If using pike poles, lay one pole on the edge and roll the cover around the handle. Stop rolling before reaching the middle. Roll the opposite edge tightly toward the middle in the same manner. Stop when the rolls are 1' to 3' apart.



## Skill Drill 18-11 Construct a Water Chute

Step 3: Turn the cover upside down. Position the chute so it collects the dripping water and channels it toward a drain or outside opening. The chute can be placed on the floor, with one end propped-up by a chair or other object. Use a stepladder or other tall object to support chutes constructed with pike poles.



### Skill Drill 18-12 Construct a Water Catch-All



Step 1: Fully open a large salvage cover flat on the ground.



Step 2: Roll two edges inward from the opposite sides, approximately 3' on each side.

### Skill Drill 18-12 Construct a Water Catch-All



Step 3: Fold each of the four corners over at a 90° angle, starting each fold approximately 3' in from the edge.



Step 4: Roll the remaining two edges inward approximately 2'.



# Skill Drill 18-12

## Construct a Water Catch-All

Step 5: Lift the rolled edge over the corner flaps, and tuck it in under the flaps to lock the corners in place.



### Skill Drill 18-13

#### Pull a Ceiling Using a Pike Pole

Step 1: Select the appropriate length pike pole based on the height of the ceiling. For most residential applications, a 6' pole is sufficient; longer poles are needed for higher ceilings.



### Skill Drill 18-13

### Pull a Ceiling Using a Pike Pole

Step 2: Determine what area of the ceiling will be opened. In most cases, the officer in charge makes this determination. Typically, the most heavily damaged areas will be opened first, followed by the surrounding areas.



# Skill Drill 18-13

## Pull a Ceiling Using a Pike Pole

Step 3: Position yourself to begin work with your back toward a door, so the debris you pull down will not block your access to the exit.



### Skill Drill 18-13

#### Pull a Ceiling Using a Pike Pole

Step 4: Using a strong, upward-thrusting motion, penetrate the ceiling with the tip of the pike pole. Face the hook side of the tip away from you.



### Skill Drill 18-13

#### Pull a Ceiling Using a Pike Pole

Step 5: Pull down and away from your body, so the ceiling material falls away from you.



### Skill Drill 18-13

#### Pull a Ceiling Using a Pike Pole

Step 6: Continue pulling down sections of the ceiling until the desired area is open. Pull down any insulation, such as rolled fiberglass, found in the ceiling.



### Skill Drill 18-13

#### Pull a Ceiling Using a Pike Pole

- **NOTE:** Use the pike pole to break through and pull down large sections of ceilings made with gypsum board. Pulling down laths and breaking through plaster ceilings will require more force. Power saws may be required to cut through ceilings made of plywood or solid boards.



## Skill Drill 18-14 Open an Interior Wall

Step 1: Determine what area of the wall will be opened. The officer in charge will usually make this determination. Typically, the areas most heavily damaged by the fire are opened first, followed by the surrounding areas, working outward.



## Skill Drill 18-14 Open an Interior Wall

Step 2: Use the axe blade to begin cutting near the top of the wall. Cut downward between wall studs. Survey the wall for electrical switches or receptacles as they are evidence of electric wires behind the wall.



### Skill Drill 18-14 Open an Interior Wall

Step 3: After making two vertical cuts, use the pick end of the axe to pull the wall material away from the studs and open the wall. Work from top to bottom.



## Skill Drill 18-14 Open an Interior Wall

Step 4: If necessary, remove items such as baseboards or window and door trim with a Halligan tool or axe.



## Skill Drill 18-14 Open an Interior Wall

Step 5: Continue opening additional sections of the wall until the desired area is open. Pull out any insulation, such as rolled fiberglass, found behind the wall.



## Skill Drill 18-15

### Conduct a Weekly/Monthly Generator Test

1. Remove the generator from the apparatus compartment (if required) or open all doors as needed and install grounding rod (as needed).
2. Check oil and fuel levels and start generator.
3. Connect the power cord or junction box to the generator.

### Skill Drill 18-15

#### Conduct a Weekly/Monthly Generator Test

4. Connect a load (fan or lights) and listen as the engine revs up to proper speed. Check the voltage and amperage gauges to confirm efficient operation.
5. Run the generator under load for 15 to 30 minutes.
6. Turn off the load and listen as the generator slows down to idle speed.

### Skill Drill 18-15

#### Conduct a Weekly/Monthly Generator Test

7. Allow generator to idle for approximately 2 minutes, then turn it off.
8. Disconnect all power cords and junction boxes, and remove grounding rod (as needed).
9. Clean all power cords and tools and replace them in proper storage areas.



## **Skill Drill 18-15**

### **Conduct a Weekly/Monthly Generator Test**

10. Allow the generator to cool for 5 minutes before refueling and checking oil.
11. Refill with fuel and oil as needed.
12. Return the generator to its compartment.