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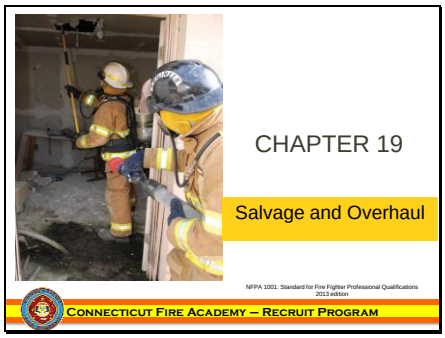

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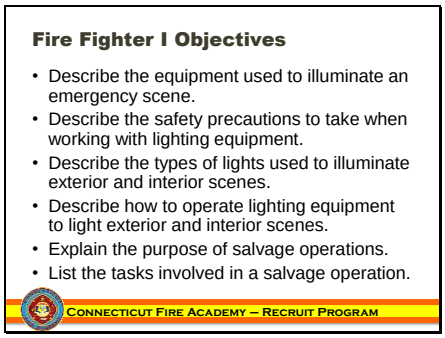

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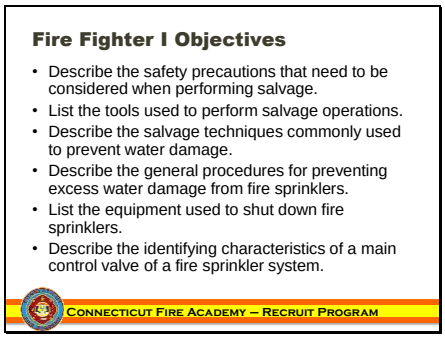

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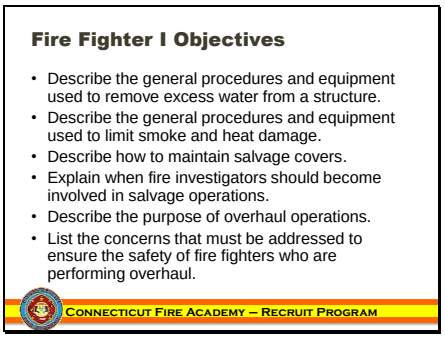

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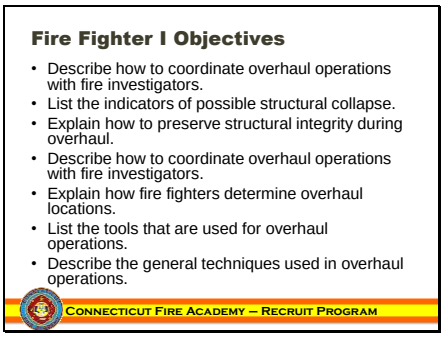

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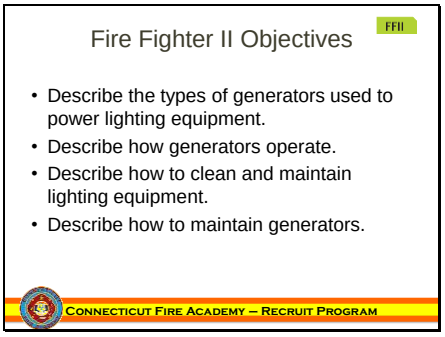

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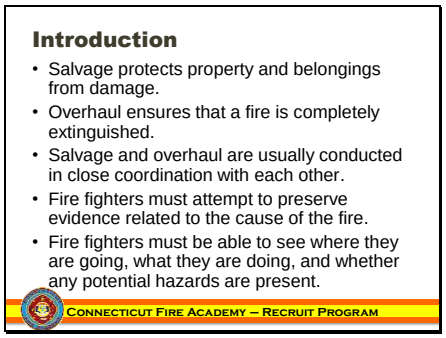

After saving lives and controlling the fire, protecting property is the next highest priority of the fire fighter.
Salvage efforts protect property and belongings from damage, particularly from the effects of smoke and water.
Overhaul ensures that a fire is completely extinguished by finding and exposing any smoldering or hidden pockets of fire in an area that has been burned.
Salvage and overhaul are usually conducted in close coordination with each other and have a lower priority than conducting search and rescue operations or controlling the fire.
Throughout salvage and overhaul, fire fighters must attempt to preserve evidence related to the cause of the fire.
Fire fighters performing salvage and overhaul must be able to see where they are going, what they are doing, and whether any potential hazards are present.

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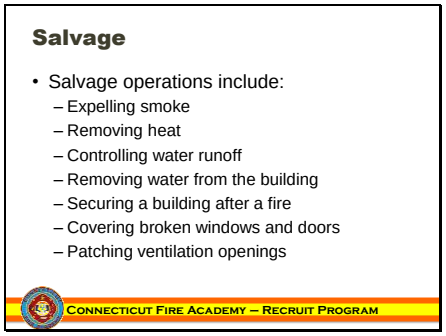

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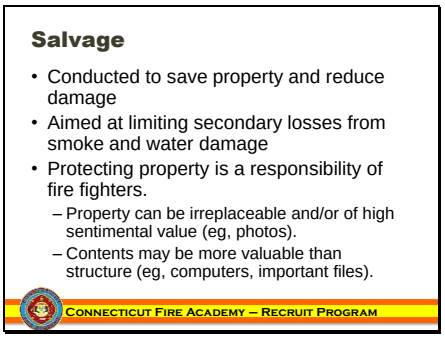

Salvage
Conducted to save property from a fire and reduce damage
Aimed at limiting secondary losses from smoke and water damage
Salvage operations include:
Expelling smoke
Removing heat
Controlling water runoff
Removing water from the building
Securing a building after a fire
Covering broken doors and windows
Patching ventilation openings
Protecting property is a responsibility of fire fighters.
Often property is irreplaceable and of high sentimental value.
Protecting property may be different for a commercial or industrial occupancy.
Occupants value items differently (eg, business records, computers).
Machinery may be more valuable than the finished products.

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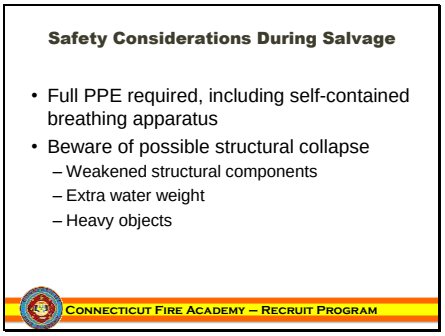

Safety considerations during salvage operations
Safety is a primary concern.
During firefighting and immediately afterward, all personnel should be in full PPE, including self-contained breathing apparatus (SCBA).
Determination of when SCBA can be removed is made by the safety officer after atmospheric testing.
Beware of structural collapse due to:
Weakened structural components
Excess weight of water and building contents
Gas and electrical services should always be shut off to eliminate risk of electrocution or explosion.

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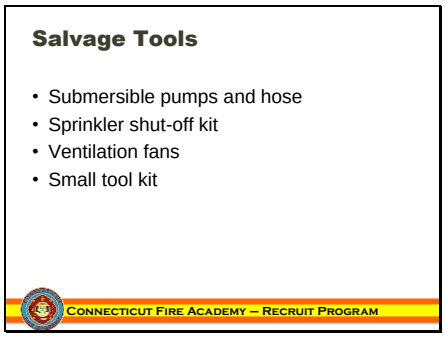
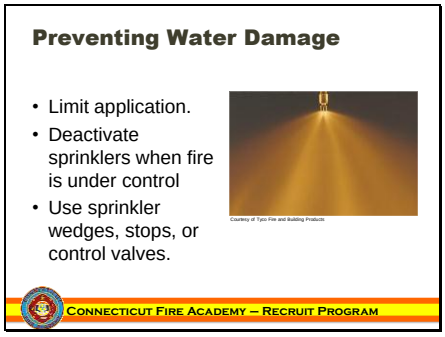
Salvage Tools
Used to shield and cover building contents and remove smoke, water, and other damaging products
Salvage tools include:
Salvage covers: treated canvas or plastic
Box cutters
Floor runners
Wet/dry vacuums
Squeegees

Slide 13



Salvage Tools
Submersible pumps and hose
Sprinkler shut-off kit
Ventilation fans, power blowers
Small tool kit
Pike poles to construct water chutes

Slide 14



Best way to prevent water damage is to limit water application.
Deactivating Sprinklers
Shut down sprinklers as soon as incident commander (IC) declares fire under control.
Insert a sprinkler wedge or sprinkler stop to stop flow from sprinkler heads.
Some sprinkler stops are manufactured with a fusible link so they can shut off a sprinkler head and return that sprinkler head to temporary service
Using sprinkler stops and wedges will be practiced in Skill Drills 19-3 and 19-4.
Situations that will necessitate closure of sprinkler control valve:
Recessed sprinkler heads
Too many heads activated for number of wedges or stops
The main control valve for a sprinkler system is usually an outside stem and yoke (OS&Y) valve or a post indicator valve (PIV).
An OS&Y is usually found in a building's

mechanical room.
A PIV is located outside the building or on the exterior wall.
Some sprinkler systems also have zone valves controlling flow of water to different areas.
Closing a zone valve stops flow to the sprinklers in that zone only.
Sprinkler control valves should always be locked in the open position.
The steps to close and reopen a main control valve will be practiced in Skill Drills 19-5 and 19-6.

Slide 15

Before a sprinkler system can be restored to normal operation, the sprinkler heads that have been activated must be replaced.
An activated sprinkler head must be replaced with another head of the same design, size, and temperature rating.
The valve must be closed and the system drained.

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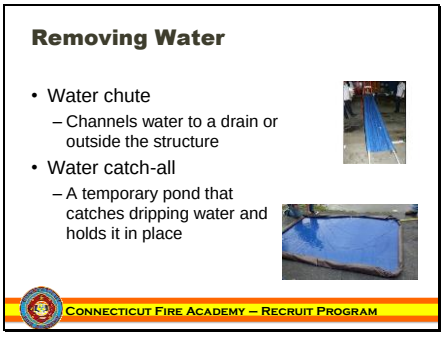
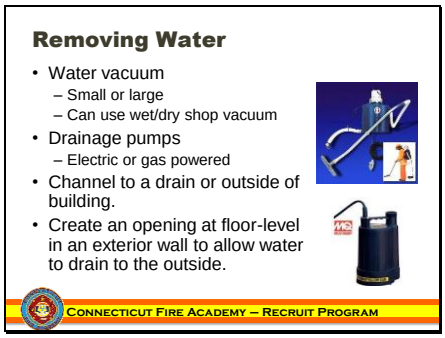


Removing Water
Channel water to a drain or outside building.
Create an opening at floor level in an exterior wall from which water can drain.
Water chute: A chute constructed using a ladder and a salvage cover that channels water to a drain or the outside the structure
Constructing a water chute will be practiced in Skill Drill 19-7.
Water catch-all: A temporary pond constructed using a salvage cover to hold dripping water in one location
Constructing a water catch-all will be practiced in Skill Drill 19-8.

Slide 17

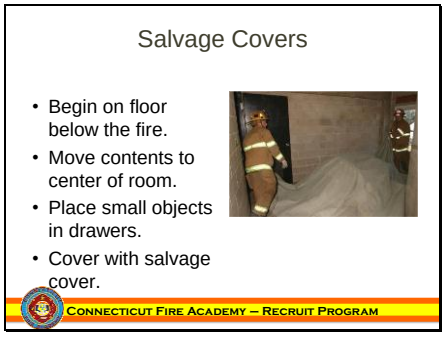


Removing Water
Water vacuum
Available as small-capacity backpack and as larger, wheeled unit
Wet/dry shop vacuums can be used as alternative.
Drainage pumps
Remove water that has accumulated in basements or below ground level
Electric submersible pumps can be lowered into the water.
Gas-powered pumps must remain outside because they emit carbon monoxide

Slide 18

Limiting smoke and heat damage
Keep heat and smoke out of areas that are not involved in the fire.
Close doors after a room is searched.
Rapid ventilation will often reduce smoke damage.
Salvage Covers
Large square or rectangular sheets of heavy canvas or plastic material
Use salvage covers to protect building contents.

Slide 19



Salvage Covers
Begin on the floor immediately below the fire.
Move contents to center of room.
Place pictures and small objects in drawers.
Cover with salvage cover.
Can be left behind to protect contents from drainage or the elements (remember to retrieve them when no longer needed)
Special folding and rolling techniques permit rapid deployment.
Folding and rolling salvage covers will be practiced during practical skill training.
Spreading a salvage cover will be practiced during practical skill training.

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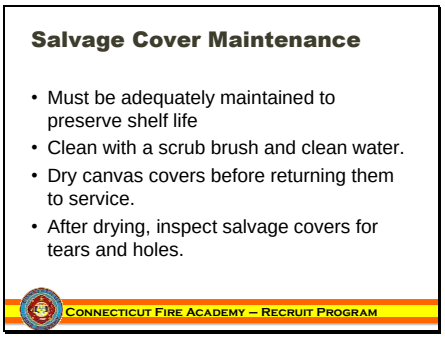
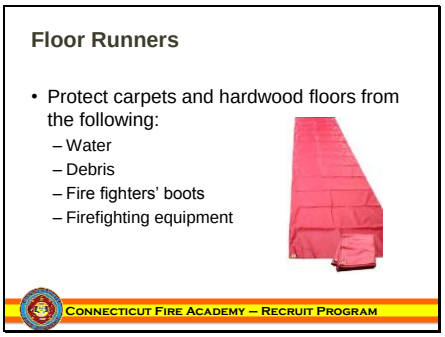


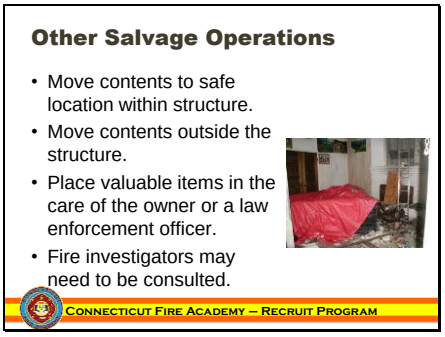
Salvage Cover Maintenance
Must be adequately maintained to preserve shelf life
Easily maintained by cleaning with a scrub brush and clean water
Canvas covers must be properly dried before returning to service.
After drying, salvage covers should be inspected for tears and holes.

Slide 21



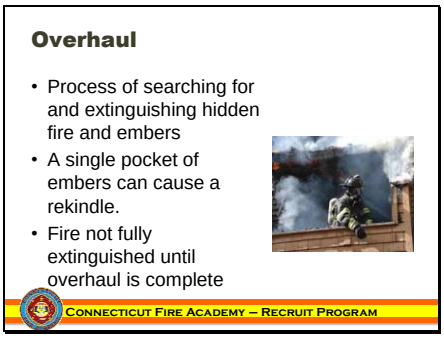
Floor Runners
Protect carpets and hardwood floors from water, debris, fire fighters' boots, and firefighting equipment.

Slide 22



Other Salvage Operations
Move contents to a safe location within the structure.
Move contents outside the structure.
Protect contents from damage caused by firefighting operations or weather.
Place valuable items in the care of a law enforcement officer if property owner is not present.
Fire investigators may need to be consulted.

Slide 23



Overhaul
Overhaul is the process of searching for and extinguishing pockets of fire that remain after a fire has been brought under control.
A single pocket of embers can cause a rekindle.
Fire is not considered fully extinguished until overhaul is complete.
Process
Identify and open any void spaces where fire might be burning undetected.
Open the walls and ceiling to expose any burned areas.
Materials that are still burning must be soaked with water or removed from the building.
Overhaul is also required for nonstructure fires, including those in automobiles, bulk piles, vegetation, and garbage.

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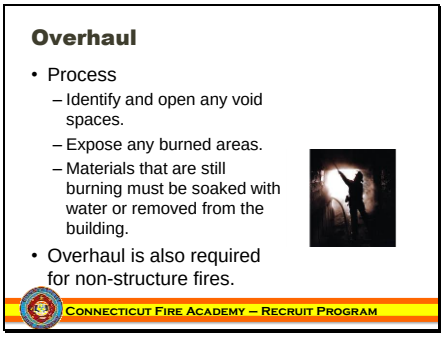

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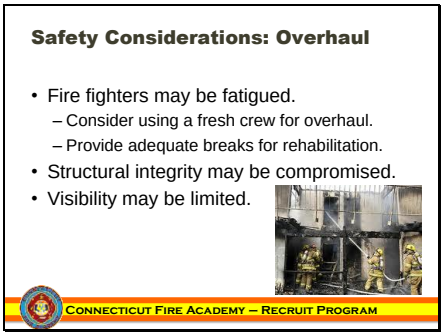
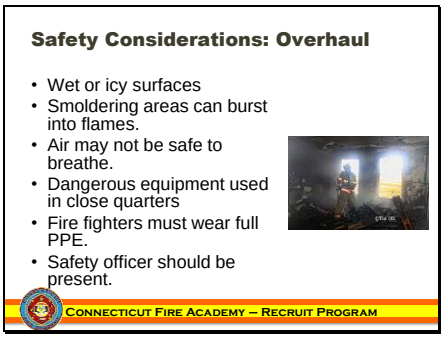


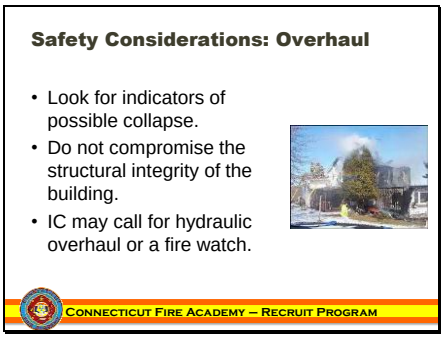
Safety Considerations During Overhaul
Overhaul is strenuous work.
Fire fighters involved in suppression may be fatigued and may overlook hazards.
ICs should consider using fresh crews for overhaul.
Provide adequate breaks for rehabilitation

Slide 26



Safety Considerations During Overhaul
Surfaces can be wet or icy.
Smoldering areas can burst into flames.
Air may not be safe to breathe.
Dangerous equipment is used in close quarters.
A charged hose line must always be ready in case of flare-ups or explosions.
Fire fighters must wear full PPE.
Safety officer should be present to note hazards and ensure safe operations.

Slide 27



Safety Considerations During Overhaul
Structural integrity could be compromised by fire.
Evaluate structural integrity before beginning overhaul.
Visibility is limited.
Company officers should supervise operations, look for hazards, and make sure crew members work carefully.
Look for indicators of possible structural collapse:
Lightweight and/or truss construction
Cracked walls, out-of-alignment walls, sagging floors
Heavy mechanical equipment on the roof
Overhanging cornices or heavy signs
Accumulations of water
Do not compromise the structural integrity of the building.
IC may call for a “hydraulic overhaul” in which large-caliber hose streams are used to completely extinguish a fire from the exterior.
Condemned or abandoned buildings that will be torn down are not places to risk the health of a fire fighter
If a complete overhaul cannot be conducted, IC may establish a fire watch.

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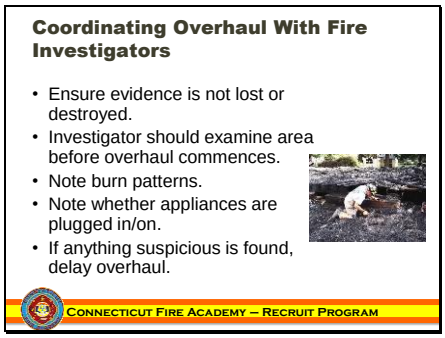
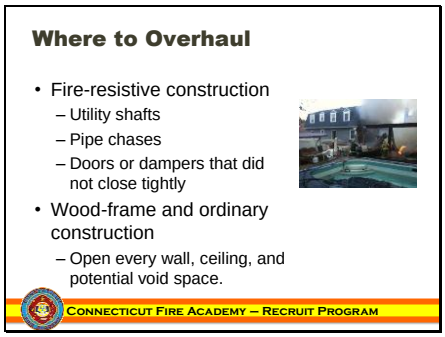


Coordinating overhaul with fire investigators
Ensure important evidence is not lost or destroyed.
Ideally, the fire investigator should examine the area before overhaul begins.
Note burn patterns on walls and ceilings.
Note whether appliances were plugged in or turned on before moving them.
If anything suspicious is noted, delay overhaul until an investigator examines the scene.

Slide 29



Where to Overhaul
Overhaul must be thorough and extensive.
Make sure the fire is definitely out.
Overhaul depends on the building's construction, its contents, and the size of the fire.
Fire-resistive construction
Can help contain a fire
Look for openings that would allow the fire to spread
Utility shafts
Pipe chases
Doors and dampers that did not close tightly
Wood-frame and ordinary construction
Many void spaces exist.

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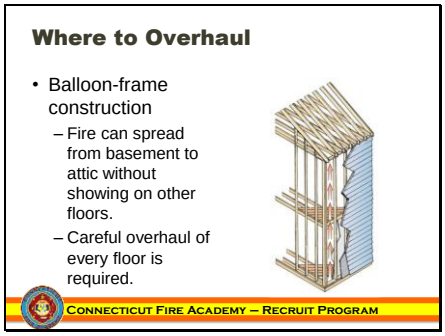

Balloon-frame construction
Fire can spread from basement to attic without showing on other floors.
These structures require careful, floor-by-floor overhaul.
Look for voids created by remodeling.
False ceilings
False roofs
Every wall, ceiling, and potential void space needs to be opened and checked.
Consider the cause and original location of the fire in determining where to overhaul.
Check areas around ventilation ducts and chimneys.
Check areas around wiring and piping in electrical fires.

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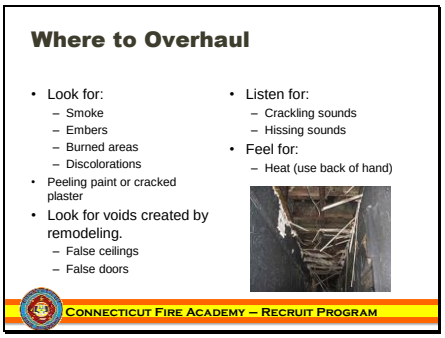
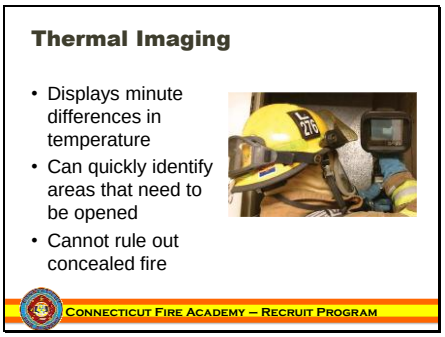


Using your senses
Look for:
Smoke from cracks or around doors and windows
Fresh or new smoke
Red, glowing embers
Burned areas
Discolored material
Peeling paint or cracked plaster
Listen for:
Crackling sounds
Hissing sounds
Feel for:
Heat, using the back of the hand (if safe to remove glove)

Slide 32



Thermal imaging
Produces images of even slight differences in temperature
Can detect hot spots behind walls or ceilings
Interpreting readings takes practice and training
Can assist in location of hidden fires or heat but does not replace thorough investigation by fire fighters
Hot spots behind padding and carpeting may not show up on the thermal imager
Cannot rule out the possibility of a concealed fire

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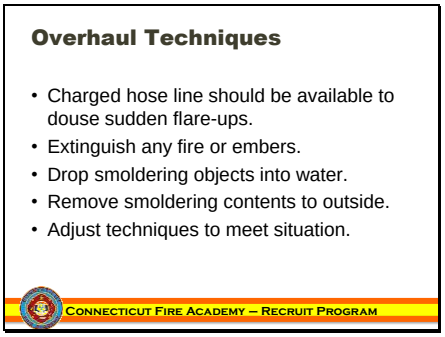
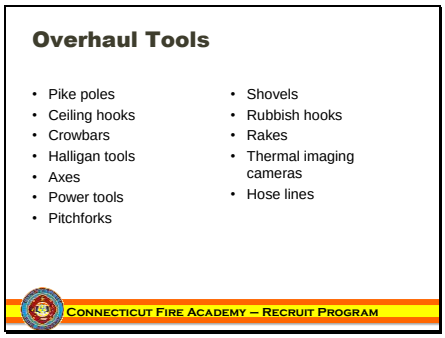


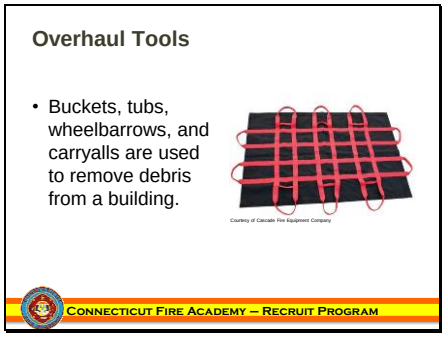
Overhaul Techniques
Charged hose line should be available to douse sudden flare-ups.
Extinguish small pockets of fire or smoldering materials using the least possible amount of water.
Drop smoldering objects into a bathtub or bucket filled with water.
Remove mattresses and other materials prone to smoldering and douse thoroughly outside.
Move far enough from structure to prevent damage if object rekindles.
Do not block entrances or exits.
Adjust techniques as situations dictate.
Enlarge a window opening to facilitate removal of debris.
Use a front-end loader to remove debris from large commercial structures.

Slide 34



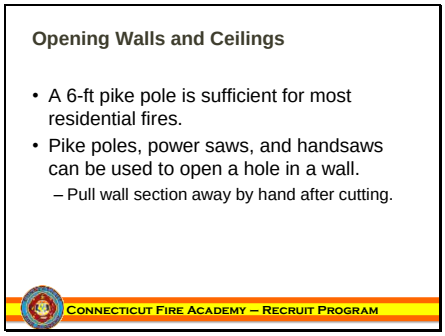
Overhaul Tools
Overhaul tools are designed for cutting, prying, and pulling.
Tools include:
Pike poles and ceiling hooks
Crowbars and Halligan-type tools
Axes
Power tools
Pitchforks and shovels
Rubbish hooks and rakes
Thermal imaging cameras
A 1½" or 1¾" hose line is usually sufficient to extinguish hot spots.
Follow you department's standard operating procedures when choosing a hose line during overhaul.

Slide 35



Overhaul Tools
Buckets, tubs, wheelbarrows, and carryalls are used to remove debris from a building.

Slide 36



Opening walls and ceilings
A 6-ft pike pole is sufficient for most residential fires.
Work from farther away toward the door so the exit is not blocked by debris.
Use pike pole or ceiling hook to penetrate wall or ceiling.
Pike poles, power saws, and handsaws can be used to open a hole in a wall.

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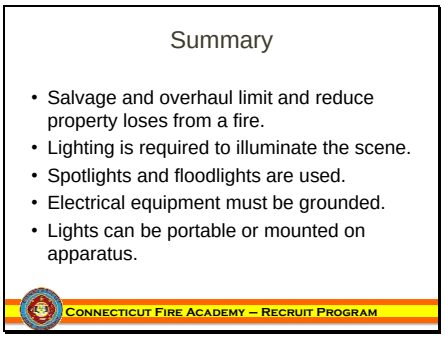

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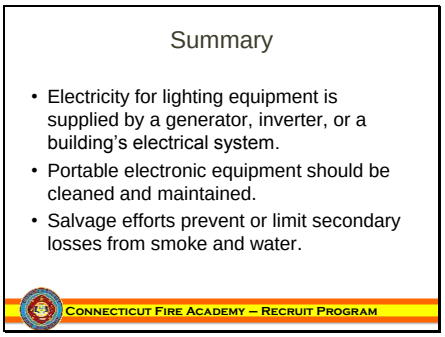

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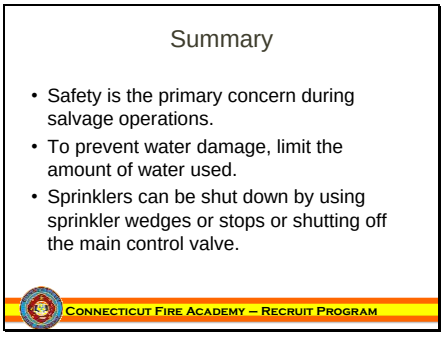

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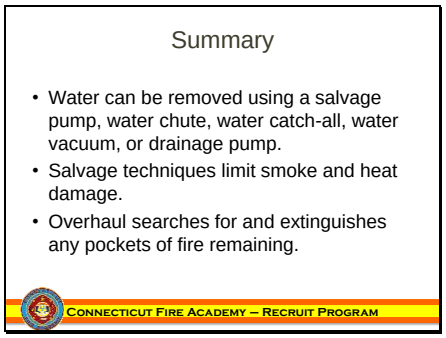

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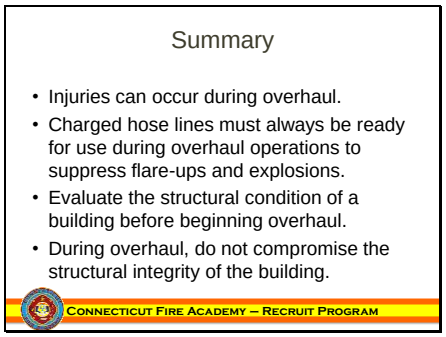

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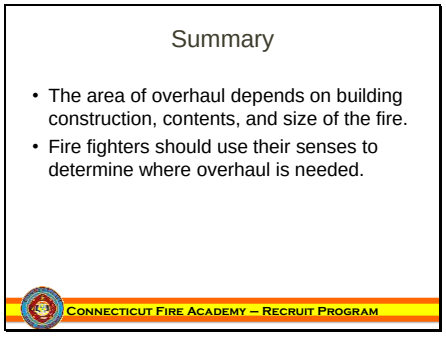

Slide 43


NEVER FORGET
F.D.N.Y.
9-11-01
IN MEMORY OF OUR FALLEN HEROES
PENTAGON ATTACK
SEPTEMBER 11, 2001
9·11·01
REMEMBER
CONNECTICUT FIRE ACADEMY – RECRUIT PROGRAM