

Chapter 7

Salvage

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SALVAGE OPERATIONS

Overview

Salvage is the protection of buildings and their contents from unnecessary damage due to water, smoke, and other elements, both during and after a fire.

Efficiently performed salvage work can allow families to continue living in their homes within a few hours after a fire has occurred, with irreplaceable personal effects and property intact. It can ensure continued operations in an affected business, preserving jobs. This in turn promotes community good will toward the fire department, and fosters civic appreciation for a job done well under adverse conditions.

Good common sense, in combination with a thorough working knowledge of the available tools, will dictate your actions. Ask yourself, "If this were my home or business, what could I do to protect it from unnecessary damage?"

Don't allow a limited amount of fire damage to disintegrate into a large amount of water damage and peripheral destruction. Salvage considerations should be present during every stage of fire fighting operations.

PERFORMANCE GOALS

Firefighters shall be able to:

- Identify the purpose of salvage, and its value to the public and the Department.
- Demonstrate proper tarp folding, rolling, throwing, and deployment.
- Demonstrate inspecting, cleaning and maintenance of salvage equipment.
- Construct and use water chutes and catchalls.
- Demonstrate covering windows, doors, and ventilation openings.

TARPS

Sizes and Dimensions

Seattle Fire Department tarps are treated to be water and mildew resistant and extremely pliable. There are 3 tarp sizes in use.

- **Standard tarp : 12' x 18'**
- **Hall runner : 3' x 18'**
- **Visqueen (Plastic) section : 14' x 20'** (Must be cut to size)

Each tarp has canvas loops that are fastened to two corners and are referred to as "**ears**." Metal grommet holes are spaced at 16" intervals along the reinforced outside edges. The "SFD" stenciled logo is located in the center of the tarp, on one side only, and generally indicates the side of the tarp that is kept clean, for use on upholstered furniture. The side of the tarp with the logo is referred to as the "clean" side.

Canvas tarp inventories are maintained in the stations by the Ladder Company Captains. Some older tarps may have a lot and section number stenciled on them. However, tarp inventory is no longer tracked by the Services Division, rendering the lot and section numbers useless.

Tarps are carried on all ladder trucks and engines, on some aid cars, and on various other special purpose apparatus. Standard tarps are accordion folded and held ready with two rubber bands per tarp. The folded dimensions are three feet long by (8-12) inches wide. Hall runners are carried on all ladder trucks, and are stored accordion folded. Hall runners, when folded, have the same dimensions as a standard tarp.

Two tarps and a hall runner lashed together are called a "**bed fire bundle**." It is common practice for ladder companies to store a bed fire bundle ready for immediate deployment.

Tarps are most often utilized as covers, for the protection of furniture, business equipment, warehouse stock, carpeting, or anything else which needs shielding from water or debris. They are also necessary for the construction of water chutes, dikes, and diverters. Occasionally, tarps are useful in first aid applications as blankets, padding, or ground covers.

Soiled tarps can be easily cleaned with water and a scrub brush. Use mild detergent if necessary. Hang tarps completely dry before folding or storing them.

If it is necessary to nail canvas tarps, nail through the grommet holes and bend the nails over. Avoid dragging them over sharp or jagged objects. Small holes or tears in canvas tarps are generally repaired by the Fire Fighters on duty in the stations.

Plastic tarps are purchased in large, pleated rolls which layout to 14 feet by 100 feet. They are cut into 14 X 20 foot sections, **rolled**, taped and stored on the ladder truck in a duffel bag near other salvage and overhaul equipment.

Plastic tarps are exceptionally water tight and are relatively inexpensive. Because they can be left at an incident site, they are especially practical for long term uses. Plastic tarps tear easily and are prone to slip off of the objects they are meant to protect.

Plastic tarps are carried on ladder trucks, in individually rolled 14 feet by 20 ft sizes, bound with a single wrap of tape. Large quantities of them are usually contained together in a duffel bag.

Although plastic tarps have some uses in common with canvas tarps, they are used almost exclusively as protection from environmental elements for roof or window covers. They are also left in place over debris piles to protect neighbors or passers-by from hazardous dust in a post fire situation.



FOLDING & ROLLING TARPS

The Accordion Fold

Figure 7.2 - Begin with two members facing each other at opposite ends of the tarp. The tarp should be held lengthwise between the members, with the clean side up. The Firefighters pull against each other slightly

Figure 7.3 - Both members grasp the tarp with their left hand one quarter distance in from the left edge and their right hand one quarter distance in from the right edge.

While pulling against each other, the members flip the outside folds up and into the center.

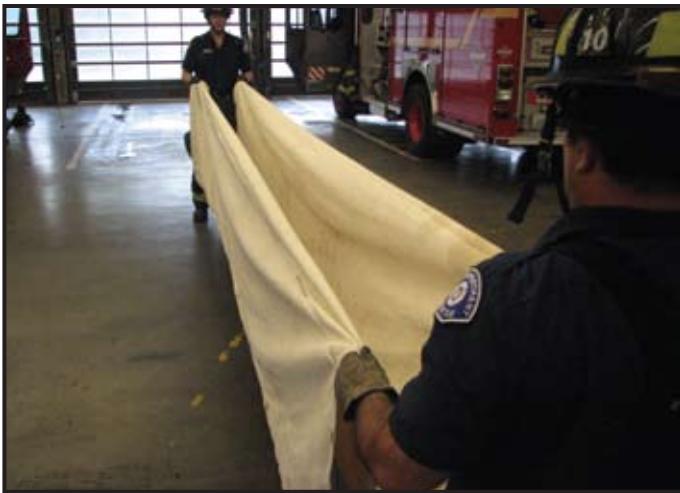


Figure 7.4 -The person with the tarp's "ears" to their right, kneels at the end of the tarp, facing the long way, and grasps the tarp about 8" to 12" from their knee, pulling it toward them to make an 8" to 12" fold. (Fig 7.4 & 7.5)



Forming pleats

Figure 7.5 to 7.5.3 Continue grasping and pulling the tarp, stacking and creasing the pleats until the end of the tarp is reached. The pop flake should be facing the same direction as the bottom flake.

When made up properly, the ears will always be contained in the top and bottom flakes, and will both be pointing in the same direction. The location of the ears will indicate the center of the tarp.





Rubber bands (inner tube cross sections) are then placed over the ends of the folded tarp to hold it ready on the apparatus. Always remember, when holding the accordion folded tarp for use, "Ears towards you, and towards your work."

THE DOUGHNUT ROLL

Figure 7.6 - Two members begin by un-pleating a tarp and laying it, still folded, on the floor. Next, they unfold one half of the tarp.

Figure 7.7 - The members each grasp a corner on the long side of the unfolded half of the tarp and, while pulling tension against each other, roll the tarp to the center. Both members then move around to the opposite side, unfold the other half of the tarp, and then roll again so that both sides are rolled to the center.



Figure 7.8 - The two members kneel at the ends of the tarp and pull against each other to straighten the rolls.

Figure 7.9 - The tarp is then rolled lengthwise, much the same as single rolling a length of hose.



LAYING TARPS

Figure 7.10 - One member holds the tarp across both arms with the ears towards his/her body and toward the object to be covered. The bottom flake is gripped with both hands. The forearms are elevated to hold tension on the tarp. A second member then grasps the top fold with both hands and walks backward until the tarp is stretched taut.

Place the center of the tarp (marked by the ears) alongside the centerline of the object to be covered. The tarp is then opened and the excess on the floor, if any, is tucked under.

A piece of lath or scrap wood laid parallel over the tarp indicates glass or fragile objects have been covered.

If more than one tarp is required to cover an object, overlap the edges of the tarps by one foot and roll them together in the same direction as the water will flow.



THROWING TARPS

Figure 7.11 - Two members take positions on opposite sides of the object to be covered. The member throwing the tarp holds it in the left hand with the ears towards him/her and at the center of the target object. The member then grips the bottom quarter of the flaps with the left hand and picks up the top half of the flaps with the right hand.

Figure 7.12 - Spread the tarp and cock the right arm.



Figure 7.13 - With a shot put motion, heave the flaps in the right hand up and over the object to be covered. The tarp is then spread open. If more than one tarp is required to cover an object, a second tarp is thrown alongside the edge of the first tarp and five feet away from it, leaving one foot of overlap when opened.

If more than one tarp is used, make a water tight roll in the same direction the water will flow. Excess tarp, if any, is tucked under. Use pieces of wood to indicate glass where required.



THE STAIRWELL WATER CHUTE

Begin by constructing enough doughnut rolls to accomplish the necessary distance of water at approximately **seventeen feet per roll**. This will allow for one foot overlap at the roll ends. **Beginning at the point where the water will be released**, and working back up the stairwell toward the water source, position the doughnut rolls at the seventeen foot intervals.

Figure 7.14 - Unroll the bottom tarp first, spreading the doughnut roll out on the stairs. Leave at least a one-foot aisle way on the inside of the stairwell.

Figure 7.15 - Unroll the next highest tarp, overlapping it one foot past the top of the lower chute. Spread it out across the stairs and roll the outside edges together, keeping the upper chute within the lower chute. Maintain the inner aisle way.



Continue up the stairwell in the same manner until the source of the water is reached and water flow is established. Additional tarps, still folded, should be used to bank the chutes around the turns to prevent overflow.

THE CATCHALL

Figure 7.16 - Two members begin by unpleating a tarp, laying it on the floor, and unfolding one half.

The members then grasp the corners on the long side of the unfolded half of the tarp and, while pulling against each other, roll the tarp into a point one foot short of the first crease (two feet in.)

Cross over to the opposite long side, unfold it, and repeat the operation.



Figure 7.17 - The members then move clockwise to the short edge and roll that side in three feet.



Figure 7.18 – Both members lock the corners by lifting the top roll with one hand, then raising the bottom roll with the other hand to form a pocket for the top roll.

Figure 7.19 - Tuck the top roll into the pocket and square the corner.



Repeat the operation on the opposite short side. The resulting catchall measures 8' x 12'. Similar catchalls can be constructed and placed with their edges overlapping so that one large floor is formed. Every 8' x 12' foot catchall will hold approximately 60 gallons of water for each inch of depth.

NOTE: Consider requesting the Marine Unit for larger water jobs. They carry specialized de-watering equipment, capable of removing large quantities of water quickly.

THE BABY LADDER CATCHALL

Figure 7.20 -To construct a baby ladder catchall, the following equipment is required: one canvas tarp, a pike pole (12 ft or longer), a baby ladder, and utility rope or several utility straps.

Figure 7.21 - Begin by setting the baby ladder on the edge and removing the top of the fly section from the guides. Dog the fly on the bottom rung again and spread the top ends to make a triangle of the ladder. Using either the utility rope or a utility strap, tie the rungs together with a clove hitch to form a closed end.



Figure 7.22 - Place a 12 feet (or longer) pike pole along the edge of the tarp at the base of the ladder triangle. Roll the pike pole into the tarp, keeping the pike end outside of the roll to prevent tearing. Roll it into the bottom of the base of the triangle.

Figure 7.23 - Lift the rolled pike pole and tie it in place across the top of the spread end of the ladder. Use a clove hitch around the pole and the beams of the ladder at the point above the top rung, to secure the tarp and pole to the ladder. The loops of the clove hitch should straddle the rungs. Tie the tarp to the ladder at the apex of the triangle. Lift the catchall and tuck the tarp edges under the ladder.



BED FIRE BUNDLE

Bed fires are a common occurrence that can generate a lot of smoke. Locating the mattress, extinguishing it, wrapping it and removing from the structure rapidly will produce the best outcome with the respect to life safety and property conservation.

This evolution is included to illustrate the procedure for removing a smoldering or freshly extinguished mattress to the outside of a building for overhaul. It must always be assumed that the mattress is still smoldering, and the introduction of enough oxygen will cause to re-ignite. Related rescue, ventilation, extinguishment, salvage, etc. should be carried out as usual for any fire.

After extinguishment, begin by rolling the mattress up to one end of the bed. Two members, then unpleat a tarp across the open end of the bed, atop the springs and perpendicular to the mattress.

The members unfold the tarp and spread it out, as much as possible, between the rolled up mattress and the end of the bed, then wet the tarp thoroughly with the pump can to protect it from being burned or scorched.

Roll the rolled Pull the mattress onto the center of the wetted tarp, spread the tarp completely, and stretch the long edges of the tarp up over the mattress. The long edges are then rolled together across the full length of the tarp.

Facing each other, the two members on the tarp then twist the loose ends tight to the mattress. Both members twist in clockwise direction so that the tarp will not unwind when the mattress is picked up.

Holding the twisted ends, the two members carry the tarp and mattress from the building, followed by a third member with a pump can. Don't use the elevator. Don't throw it out a window, or off the fire escape. Use the stairs.

Once the mattress had been safely removed from the building, unroll it from the tarp and overhaul it as quickly as possible

COVERING WINDOWS - ROOF OPENINGS

This evolution is included to illustrate the method used for covering unwanted openings in buildings or residences, utilizing plastic tarp and lath. Although this method works extremely well in most circumstances, and has the benefit of being water tight, it is not the only means available to the fire fighter. If security is a primary concern, for instance, an appropriately sized piece of wood nailed over the opening might be more practical. If the surface surrounding the hold will not take a nail, the use of duct tape on one or more sides, or covering the hole from the inside of the building, may be acceptable substitutes.

Common sense and a thorough working knowledge of the available tools and materials will guide you to an approach which fits each unique circumstance.

Begin by assembling plastic tarp, several strips of lath, two hammers, and two nail bags. When the equipment is assembled, cut a piece of plastic to the appropriate size. Cut it two feet wider than the width of the hole and two feet longer than the length of the hole. This will result in a uniform 12 inch overlap on all four sides when the plastic is centered over the hole. These measurements are approximate. When covering windows, it is more effective to roll the edges clear into the window frame. When covering a hole in a roof err on the side of too much overlap rather than too little. Next, secure enough lath to span the width of the hole plus one foot (except when nailing to the window frame.) If more than one piece of lath is used, always overlap the ends of the lath, one on top of the other by 3 or 4 inches.

Center the plastic over the hole. Then center the lath across the top edge of the piece of plastic. The lath should span the width of the hole with six inches of excess on each side.

Move to the bottom of the piece of plastic and roll the lath under the plastic, rolling to a point six inches below the hole. Pull down while rolling, keeping tension on the plastic. This will ensure a tight roll and a taut surface across the face of the hole. Nail the lath into the place while maintaining as much tautness as possible.

Secure enough lath to run the length of the hole plus one foot. Position the lath on the left side of the hole, between the previously nailed sections of lath. This will indicate the exact length needed to span the length of the hole. Then move the lath out to the edge of the plastic on the left side of the hole.

Before rolling the lath into the plastic, fold the top and bottom of the left side plastic in at a slight angle.

Roll the lath into the plastic, keeping tension on the plastic to eliminate wrinkles and to maintain tautness. Roll in to the ends of the previously nailed lath, then nail in place. Move around to the remaining side of the hole and repeat the operation used on the third side. It is especially important to maintain tautness while rolling the final side. Roll to the ends of the top and bottom lath, then nail.

