

Portable Pumps and Water Use, S-211

Unit 2 – Delivery of Water

Lesson D – Hose Lays

OBJECTIVE:

Upon completion of this lesson, students will be able to:

- Describe and identify the various types of hose lays used in initial attack and mopup of fires.

I. HOSE DEPLOYMENT

The efficient deployment of hose is important to the wildland firefighter. Hose is generally laid in two manners, using rolled hose or pre-packed hose packs. There are numerous styles of hose packs and different methods to construct them.

Rolled hose is the most common method of deploying hose. When deploying hose ensure personnel are aware of potential impact hazards. Fire caches normally store and ship rolled hose, so there is no handling necessary prior to deployment. It is easier to store and ship, and it can be easily inspected and tested.

Hose packs take time to construct. Hose packs should be dismantled during the off-season to reduce damage to the hose. They are heavy, cumbersome, and make travel in rough terrain difficult.

II. HOSE LAYS

Once the firefighter is familiar with how to set up, operate, and maintain a portable pump, they then must get the water to the incident in an efficient and safe manner. This is accomplished by flowing water through the hose, fittings, and nozzles you have previously learned about.

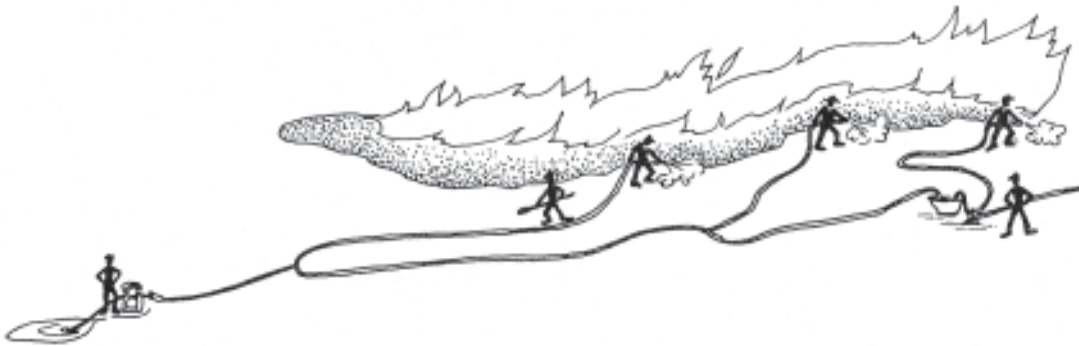
There are numerous ingenious methods for dispensing hose and fittings to accomplish this. Here we will discuss the types of hose lays, not the methods used to lay the hose out.

The two types of hose lays are:

- Simple - one that comes straight off the pump and goes directly to the nozzle with no junctions in between.



- Progressive - is a hose lay that comes from a pump source to the fire with a series of lateral junctions put in place as the hose lay is extended.



Both types of hose lay may use either 1" or 1½" hose of whatever type construction that is preferred.

- A. A simple hose lay is one that runs directly from the pump to the nozzle.

This hose lay is easily installed and can vary in length as needed. This type of hose lay does not have a lot of friction loss due to additional fittings, which is an advantage.

The key disadvantage of the simple hose lay is that the water flow must be stopped before it can be extended by adding a length of hose. **There also are no provisions for safety should the fire flare up behind the nozzle operator.**

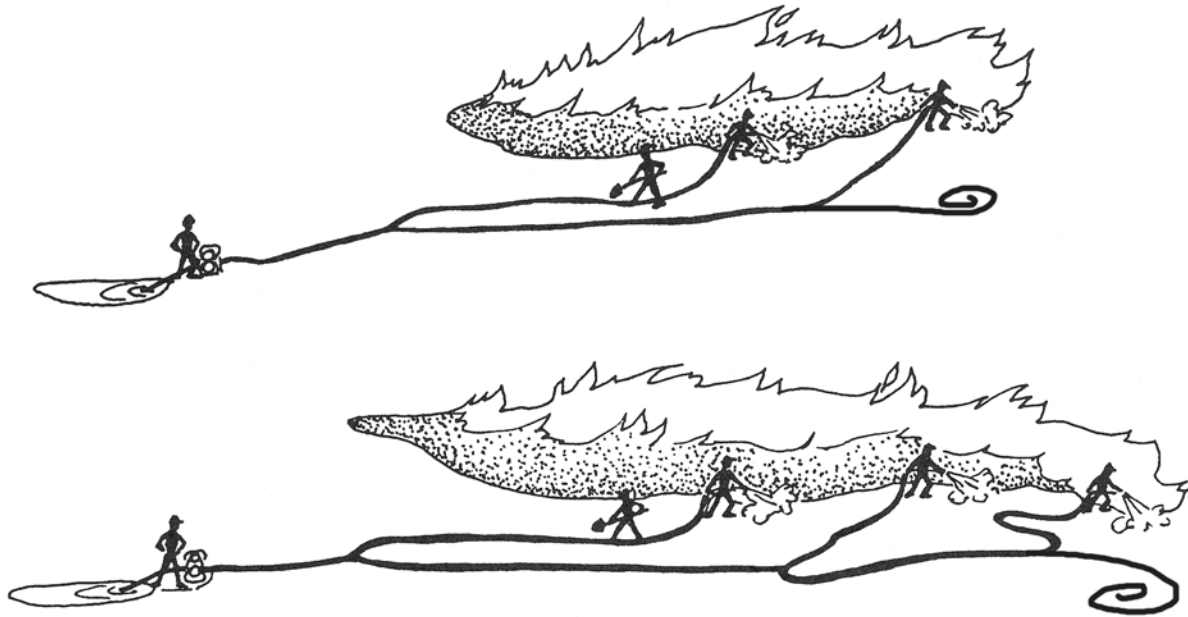
A simple hose lay is more difficult to use in mopup as you must either reverse the installation process or pull large amounts of hose.

- B. A progressive hose lay is one that incorporates a series of lateral lines off of a main trunk line.

The progressive hose lay has several advantages over the simple hose lay in that it provides for a continuous attack on a fire without risking shutting down the hose lay to extend its reach.

The progressive hose lay provides a safety margin for the lead nozzle operator in that there is a charged or easily charged lateral line behind them should there be a flare up. It also can provide for multiple attack lines on spot fires across the control line.

A progressive hose lay does create a higher friction loss in your hose lay due to the increased numbers of fittings (approximately 5 psi each). A progressive hose lay may be slower to install, but is inherently safer for direct attack and much more efficient in mopup.



1. To install a progressive hose lay, a crew first extends a trunk line of 1½" hose from the pump to the fire as a simple hose lay. Once they reach the fire, they install a gated wye and proceed 100 feet with the trunk line to install another gated wye, which has a 1½" to 1" reducer on one side (towards the fire) and attach 100 feet of 1" hose with the preferred nozzle. One person can then operate this nozzle to attack the fire as another person extends the next section of the trunk line, which is attached to the remaining side of the gated wye. Once the trunk line is extended and the second lateral gated wye is in place the first nozzle operator then charges the trunk line and returns for more hose once the second lateral attack line is flowing water. This process is repeated until the fire is contained or the pump has reached capacity.
2. A progressive hose lay is very efficient when mopup time arrives. A progressive hose lay off of a Mark 3 pump can easily supply three to five nozzles depending on friction loss and required head pressure. This can efficiently keep a 20-person crew busy. A progressive hose lay provides numerous opportunities for lateral lines to speed up mopup and prevent having to move 1½" trunk lines.

III. HOSE RETRIEVAL

Once the hose lay operation is finished and it is time to retrieve the hose, it is important to follow the proper method, to avoid damage to the hose.

Drain the water from the hose by opening a valve or disconnecting the hose at the lowest point on the line. Stretch the hose out to drain all the water. Any hose that is damaged should be marked by tying a knot in the ends of the hose.

There are various ways to field roll hose such as the watermelon roll, figure eight, and single or double rolling, etc.

When handling hose, care should be taken not to damage the hose or fittings. Hose can be damaged by dragging it over rough surfaces such as rock or pavement or pulling long lengths of hose by the fitting with vehicles, winches and ATV's. The fitting can be damaged by dragging on a rough surface or by being dropped.

Hose should be cleaned, inspected, and tested after use. These procedures are given in the NFPA standard 1962, Care, Use, and Maintenance of Fire Hose, and the NWCG Water Handling Equipment Guide, NFES 1275.

