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Relay Pumping

In-Service Drill 4-inch Hose Relay Montgomery County Fire and Rescue Service 2007

Background

- The Montgomery County Fire and Rescue Service runs an In-Service Training Program that uses different "real life" scenarios to help keep company level personnel operationally ready to perform.
- The Summer 2007 session of the In-Service program focused on establishing a relay pumping operation from a municipal water supply.
- The incident simulated a propane release where a 500 gpm sustained flow was needed to control the incident.

1st Arriving Engine

The 1st arriving engine deploys a TFT Blitzfire line and has initiated a layout of 4-inch supply line.



The Engine Driver

The engine driver plays a critical role in getting this operation starting. He is responsible for getting everything up and running and water flowing.



The Crew

The crew works to get the attack line in place and ready to accept the water from the engine. Coordination is the key term in this operation.



TFT Blitzfire – 500 gpm

Many MCFRS engines carry a TFT Blitzfire. These devices have been deployed and successfully used on a number of large fires.



Attack Engine

Engine 716 (1250 gpm) operates as the attack engine and is being fed through its 4-inch supply line.



Relay Pumper

Engine 715 (1500 gpm) is the next pumper in the relay operation and is pumping to Engine 716.



Hose Layout

The hose layouts between the pumpers were short (600 ft) in terms of traditional relay operations, but it was concept that was being practiced.



4-inch LDH

The newer, lightweight fabric LDH seems to be much easier to maneuver and work with on the fire scene.



2nd Relay Pumper

Engine 712 (1250 gpm) is the second relay pumper and is shown here feeding E715's supply line.



Elevation

Engine 712 is pumping up a slight grade to E715. Elevation is one of the items that an engine driver must consider when calculating his discharge pressure.



Hose Layout

This photo shows the layout between the 2nd Relay Pumper and the Water Supply Pumper which is connected to a hydrant.



Water Supply Pumper

Engine 724 (1250 gpm) operates as the water supply pumper and uses a "heavy water" hook-up on the hydrant.



Heavy Water Hook-up

The Humat valve on the steamer outlet and a ¹/₄-turn ball valve on the 2-1/2 outlet make up the Heavy Water Hook-up.



Heavy Water Hook-up

This photo shows the typical hose layout for the heavy water hook-up. This hook-up allows the pumper to have access to additional water in the hydrant.



Heavy Water Hook-up

Another shot of the heavy water hook-up.

ALC: A



High Flow Discharge

Many of the MCFRS pumpers have a designated high-flow discharge specifically designed to support LDH operations.



Water Flow Starts

Meanwhile, back at the attack engine once the relay is completed, water flow is started.



Water Flow

The company officer remains in control of the water flow operation having to supervise both his crew while being ready to also support the engine driver if needed.



Flow Increase

With the relay up and running, additional water was determined to be available and the flow is bumped up to 1000 gpm.



Additional Lines

With the relay running, additional crews arrive at the attack engine and man additional attack lines.



Facts & Figures...

- A relay pumping operation is not a common operation for many FDs.
- Pumping relays take time to build and are really dependent upon the arrival times of the pumpers and the size of their pumps.
- The important factor is the capability of the supply hose.
 Fittings and adaptors are critical to the success of the operation.
- The relay pumping operation shown in this presentation took 14minutes to set-up and sustained a flow of 1000 gpm.



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