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Northeast Dutchess Training Association
Amenia, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill – August 19, 2012
Summary Report

The Purpose

- The purpose of the seminar and drill was to review the basics of rural water supply operations and to practice water supply operations in a non-hydranted setting.
- The drill also allowed mutual aid companies to work together in a real-life training situation.

The Seminar

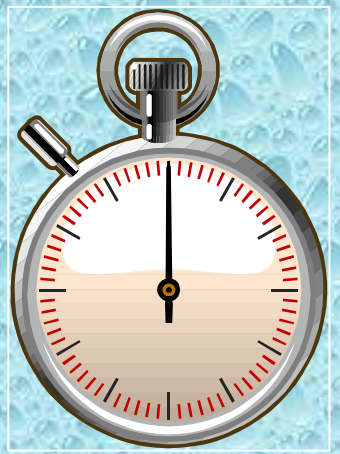
- The seminar started with a 4-hour session to review the basics of rural water supply operations.
- The review session was held at the Amenia Fire Company located in Amenia, New York and was sponsored by the Northeast Dutchess County Training Association.
- Seminar topics included fire flow demand, types of water hauling vehicles, dump site operations, fill-site operations, tanker shuttle operations, and drafting.
- Seminar participants were from the northeast Dutchess County area.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held in Amenia at the fire station..
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While everyone in the fire service may not agree on ISO's evaluation of fire department capabilities, the ISO 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.

The ISO Test

- The ISO 2-hour Water Supply Delivery Test has three critical time segments:
  - 0:00 to 5:00 minutes
  - 5:01 to 15:00 minutes
  - 15:01 to 120:00 minutes



ISO Test *0:00 to 5:00 Minutes*

- A drill location is selected and the units due to respond on the first-alarm assignment are dispatched.
- Time starts when the first engine arrives on the scene and comes to a complete stop.
- There is no requirement to flow water during the first 5 minutes, but the crew must be prepared to flow water once the 5-minute mark is reached.

ISO Test *5:01 to 15:00 minutes*

- At the 5-minute mark, a flow of at least 250 gpm must be started - and it must be sustained.
- During the next 10-minutes, crews can work to further develop their water supply and increase their flow, however…
- At the 15-minute mark (5+10), whatever amount of water is flowing at that time must be maintained for the remainder of the 2-hour test.

ISO Test *15:01 to 120:00 minutes*

- Once the 15-minute mark has been reached, the remainder of the 2-hour test is really just about ***sustaining*** the flow.
- The ISO test includes the simulation of automatic mutual aid response and allows additional water supply units to arrive and assist in the delivery process as would happen on a real incident.
- The real advantage of the ISO test is that it gives a fire department the chance to see where improvements can be made in their water supply delivery process.

It is one thing to say that your fire department can deliver 500 gpm for two hours – it is another thing to prove it in a real-life drill scenario!

Water Supply Drill Participants

- *The participants for the drill were from twelve different fire departments in the Amenia area. The water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in northeast Dutchess County.*

Drill Participants

- Unionville Tanker 67-31
  - 5000 gpm pump w/3,000 gal tank
- Millbrook Tanker 49-31
  - 2,000 gpm pump w/2,500 gal tank

Drill Participants

- Millerton Tanker 51-31
  - 1,250 gpm pump w/2,000 gal tank
- Stanford Tanker 65-31
  - 1,000 gpm pump w/3,200 gal tank

Drill Participants

- Wassaic Tanker 69-31
  - 1,250 gpm pump w/3,000 gal tank

- Amenia Engine 31-16
  - 1,250 gpm pump w/1,500 gal tank

Drill Participants

- Pine Plains Engine 55-13
  - 1,250 gpm pump w/1,000 gal tank

- Amenia Engine 31-17
  - 1,750 gpm pump w/500 gal tank

The Drill Begins

Dover FD's Engine 36-13 (1,500 gpm) served as the attack engine for the drill. The pumper also set up to draft from portable dump tanks and thus served as the dump site engine as well. The timer was started when the pumper came to a stop and hose was stretched.

Dump Site Set-Up

Amenia Engine 31-16 arrived on the scene next along with Wassaic Tanker 69-31. With the timer now running, folks were “under the gun” to get a dump site set-up and operational in time to start flowing water at the 5:00 minute mark.

Water Flow Begins

Water flow (280 gpm) was started a bit early at the 3:00-minute mark – however, flow was never interrupted.

Command

An Incident Command Post was set-up near the dump site and a Water Supply Group was built out using a command structure.

Dump Site Operations

Wassaic's dump tank was the first tank set-up. Tanker 69-31 is shown offloading its 3,000 gallons of water.

Dump Site Operations

Millerton Tanker 51-31 was next to arrive and its dump tank was set-up as the second dump tank around the 7:50 minute mark.

Dump Site Operations

Tanker 51-31 offloads its 2,000 gallons of water and additional tankers begin to arrive.

Dump Site Operations

Amenia Engine 31-16 dumps its 1,500 gallons of water into the second tank as crews get ready to increase the flow.

Dump Site Operations

Millbrook Tanker 49-31 arrives around the 13:00 minute mark and drops a third dump tank as well as its 2,500 gallons of water.

Water Transfer Operations

With water transfer operations underway, the flow was increased to 500 gpm at the 15:00-minute mark.

Dump Site Operations

Three dump tanks were now in operation and dump site crews developed plans to increase the flow again once sufficient resources were on scene.

Dump Site Operations

Around the 20-minute mark, all tankers had dumped their first load and dump site crews were awaiting the return of the first tanker. This was a critical moment in the drill. Fortunately, Wassaic Tanker 69-31 returned at the 22:00 minute mark and flow was sustained.

Dump Site Operations

With hopes of moving to a 1,000 gpm flow, preparations for deploying a fourth dump tank were made. Flow was moved to 760 gpm at the 46:00 minute mark.

Oops!

When using dump tanks that have drains that are tied up with rope, it is best to tie up those drains on the INSIDE of the tank.

Water Transfer Operations

Four dump tanks were placed into operation and at the 61:00-minute mark, the flow was pushed to 1,000 gpm where it was sustained for 25 minutes.

Dump Site Operations

Dump site crews had to manage a mixture of tanker types such as this rear off-loading engine/tanker.

Water Transfer Operations

Water transfer operations are critical to the success of increased flow rates. This single transfer device worked fine for the 500 gpm flow rate. However, an additional transfer device was needed once flow was increased.

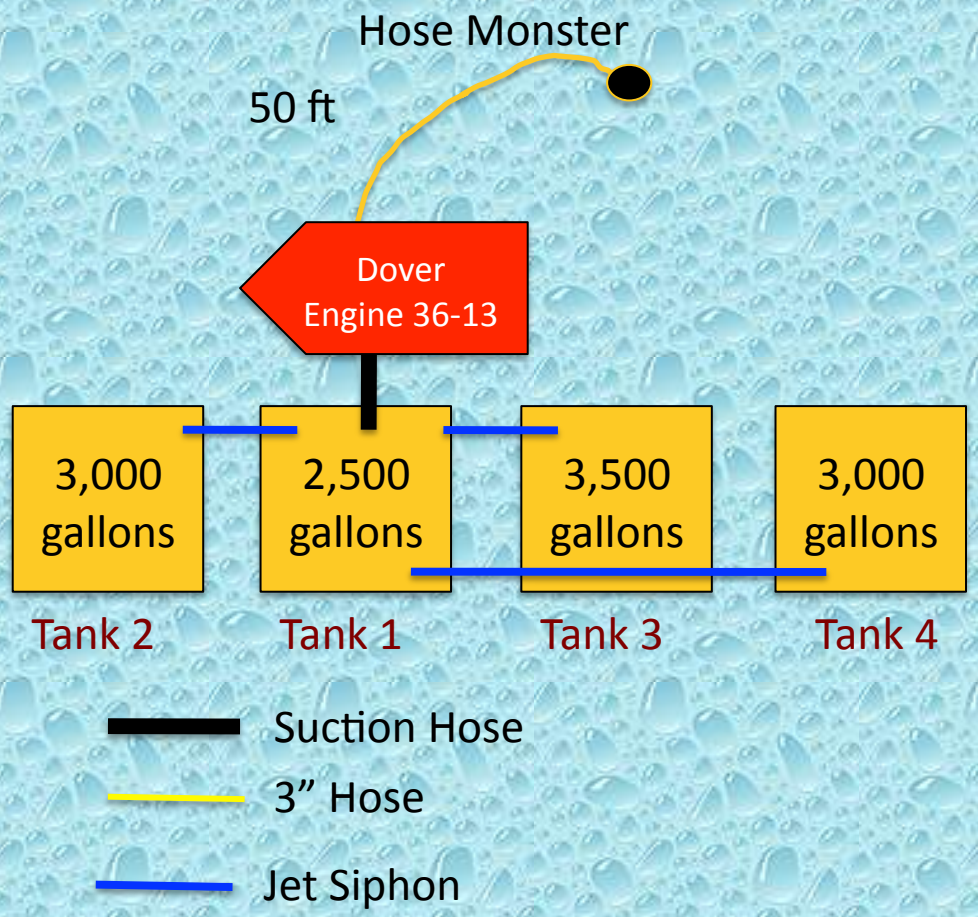
Water Transfer Operations

Water was transferred from the fourth tank to the primary drafting tank by "jumping" the third tank.

Dump Site Operations

With four tanks up and running, the crews worked hard to keep the 1,000 gpm flow sustained.

Dump Site Layout



The Fill Sites

- For this drill – two fill sites were used.
- One site was a pond on Cascade Mountain Road that provided a 3.3-mile round trip for the units hauling water.
- The pond provided adequate water volume to support the drill and access was not a problem.
- A single, 1,750 gpm pumper was used at the pond to support the tanker fill station.

The Fill Sites

- The other fill site was a pond located on Mygatt Road.
- The pond provided ample water and a 2.8-mile round trip for the units hauling water.
- A 1,250 gpm pumper was used at the pond.

Cascade Fill Site

Amenia's Engine 31-17 (1,750 gpm) water supply pumper was used as the supply pumper at this water source.

Cascade Fill Site

The fill site crew used 5-inch LDH to supply the loading station which was located about 300-feet away out on the hard road.

Cascade Fill Site

A LDH manifold was used as the loading valve for tanker fill operations at this fill site.

Cascade Fill Site

Wassaic Tanker 69-31 was the first tanker filled at the site and 3-inch hose was used as the fill line.

Cascade Fill Site

The Cascade fill site was able to fill tankers at the recommended 1,000 gpm rate without any problems.

Mygatt Fill Site

Pine Plains Engine 55-13 (1,250 gpm) was used at this fill site. The pumper can be seen in this picture flowing its deck gun.

Mygatt Fill Site

The water supply site for the Mygatt Road fill site required the pumper to draft.

Mygatt Fill Site

The fill site crew is shown here loading Tanker 51-31 so that it can get back on the road hauling water.

The Results

- The drill was stopped at the 1:26-hour mark because of time constraints.
- Water flow was never interrupted.
- 54,480 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 656 gpm during the 83-minutes that water was flowing.

The Lessons Learned

- If the nurse tanker mode of operation is not going to be used, then crews need to be very proficient at setting up the first dump tank. At this drill, the first arriving crew was very good at getting a dump tank deployed because there was a mechanical issue with the engine/tanker that was going to nurse.
- By getting that first dump tank into position quickly, the crews were able to avoid running out of water.

The Lessons Learned

- Interoperability is important at a large, water hauling event. It is critical that tankers and fill site pumpers have the correct fittings to minimize fill connection times.
- A tanker fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tankers is going to reduce the efficiency of the tanker shuttle. At this drill, tanker fill connections varied and fill times were slowed some while crews worked to make the right connection.

The Lessons Learned

- Jet siphons, suction hose, and dump tanks are needed at most every dump tank operation – therefore, it is wise to carry those items on every tanker.
- The "bundling" of water hauling mutual aid resources has proven successful in many drills. The tanker task force concept is an effective process for requesting and using additional rural water supply resources.

The Lessons Learned

- Tankers should be marked on all four sides with their unit numbers. When operating at large, mutual aid incidents, group supervisors and command staff may not recognize a tanker – so identification markings are important.
- When operating a dump site in a large area, it is important to determine the approach and departure routes of tankers. There was confusion at times at this drill and tankers were not always used as efficiently as possible.

Summary

- The drill was a success. For the new folks, they got to see how dump tank operations work.
- For the older, experienced folks, it was a chance to practice their "craft."
- The success of the drill showed the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Many thanks to the Northeast Dutchess Training Association and the Amenia Fire Company for sponsoring and hosting this seminar.

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This program was developed by
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