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Plainville Fire Department
Plainville, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
September 22, 2013
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

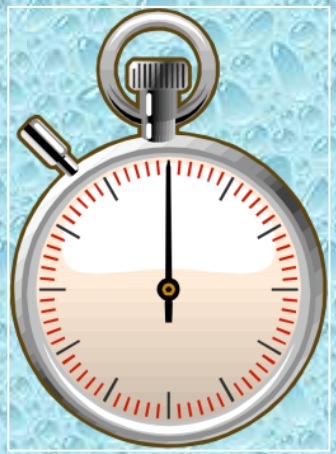
- The 2-day seminar started on Saturday with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Plainville VFD, Station 2.
- Once the classroom part was done, the seminar continued with several hours of practical work on fill-site and dump site operations.
- The program concluded on Sunday with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from Plainville and surrounding communities in Onondaga, Oswego and Cayuga Counties, New York.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on September 22 in Plainville.
- The large church across from the firehouse was chosen as the “target hazard”.
- 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 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 18 different fire departments and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in Onondaga County.*

Drill Participants

- Plainville Tanker 1
  - 1,000 gpm pump with 2,350 gal tank
- Plainville Engine 4
  - 1,750 gpm pump with 1,500 gal tank

Drill Participants

- Plainville Engine 2
  - 1,250 gpm pump w/ 1,000 gal tank

- Conquest T-P 29-2
  - 1,000 gpm pump w/2,200 gal tank

Drill Participants

- Weedsport Tanker 1
  - 1,000 gpm pump w/2,100 gal tank
- Jordan TP 2
  - 2,000 gpm pump w/1,000 gal tank

Drill Participants

- Elbridge Tanker 2
  - No pump w/ 2,000 gal tank
- Granby Center Tanker
  - 500 pump w/ 2,000 gal tank

- No photo available

Drill Participants

- Baldwinsville Tanker 1
  - 500 gpm pump w/ 2,000 gal tank
- Memphis Tanker 3
  - 300 gpm pump w/ 2,000 gal tank

Drill Participants

- Baldwinsville Engine 4
  - 1,500 gpm pump w/ 1,000 gal tank
- Cato Engine 1
  - 1,500 gpm pump w/ 1,500 gal tank

Drill Participants

- Cato Tanker 1
  - No pump w/ 2,000 gal tank
- Ira Tanker 1
  - No pump w/ 2,000 gal tank

Drill Participants

- Phoenix Engine 12
  - 1,500 gpm pump w/ 1,500 gal tank

- Belgium Cold Springs Engine 21
  - 1,500 gpm pump w/ 1,000 gal tank

Drill Participants

- Caughdenay Tanker 651
  - No pump w/ 2,000 gal tank

- Sennett TP 3
  - 1,000 gpm pump w/ 1,500 gal tank

- No photo available

Drill Participants

- Otisco Tanker 1
  - 500 pump w/ 2,500 gal tank
- Victory Tanker 1
  - 1,000 gpm pump w/ 1,500 gal tank

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Drill Participants

- Hanibal Tanker 1251
  - 500 gpm pump w/ 2,000 gal tank
- 4 Guys Factory Demo Tanker
  - 1,000 gpm pump w/ 2,000 gal tank

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Preparation

Units staged in the parking lot at Plainville's firehouse or at the parking lot near W. Gennessee Road and White Road. Crews were briefed and units were prepared for dispatch

The Drill Begins

Plainville Engine 2 was the first-arriving unit at the church and assumed the role of the attack pumper. The stopwatch was started when the engine driver applied the air brakes. This unit was followed by Cato Engine 1 which laid out 600 feet of 5 inch hose from the dump site. Engine 1 used 100 feet of 5 inch hose to supply Engine 2.

Attack Engine Set-up

The crew stretched 25-feet of 4-inch hose to a Hose Monster flow diffuser equipped with a built-in pitot tube for measuring flow. The diffuser simulated the use of a portable master stream device.

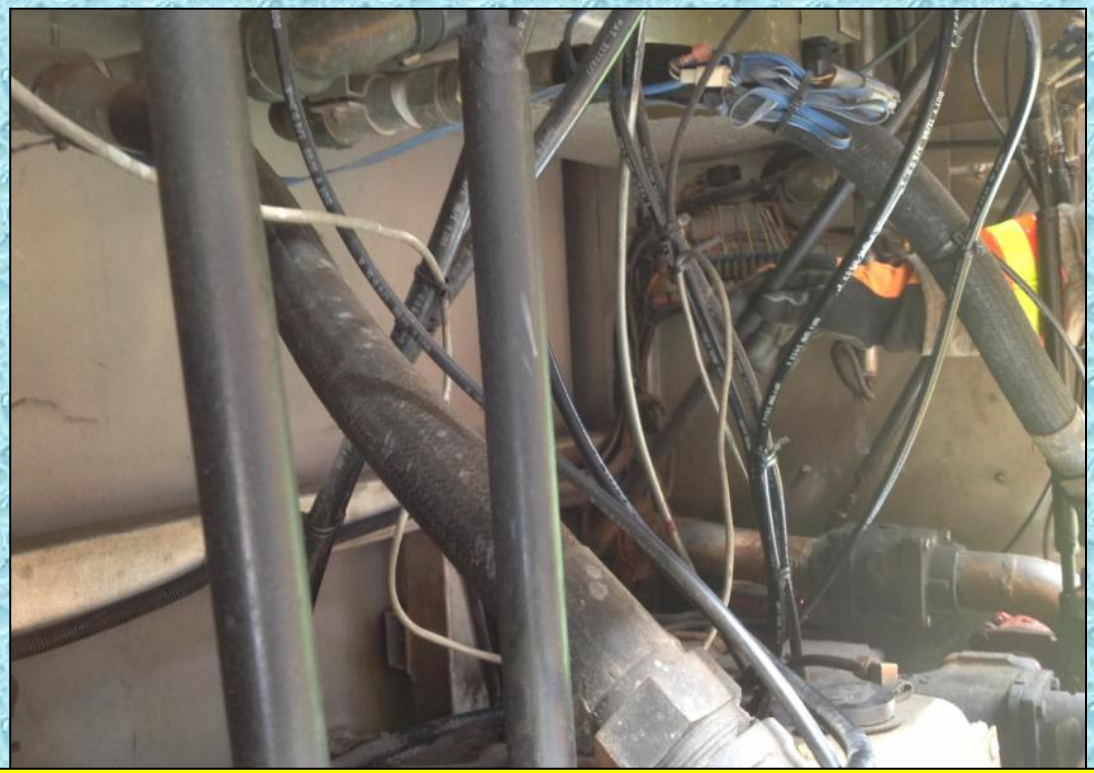
Dump Site Set-up

Plainville Engine 4 was the next unit to arrive on the scene and immediately went to work setting up the dump site.

Dump Site Set-up

The dump site crew decided to set up the tanks fore and aft of the pumper to allow room for tankers to pass by on the street.

Water Flow Begins?



At the 4:55 -minute mark – (one minute early) – water flow was attempted at the attack pumper at a rate of 250 gpm. Unfortunately, the linkage for the tank to pump valve was broken and this unit was not hooked up to a supply yet. Water flow was not started until the ten minute mark.

Dump Site Set-up

Because there was already so much water between the three engines on the scene and the tankers which had already dumped, the IC elected not to use a nurse tanker.

Dump Site Set-up

At the 15-minute mark, three dump tanks were down and the dump site was fully operational. The dump site engine switched from tank water to drafting – and dump site operations were underway.

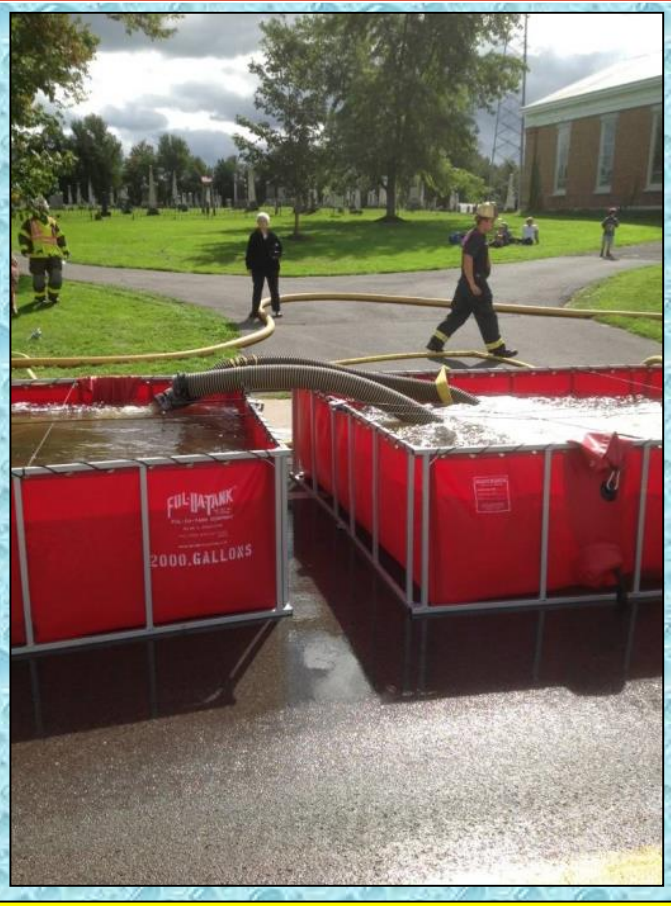
Dump Site Set-up

A forth dump tank was obtained and crews quickly put it in service. Unfortunately a leaking hard sleeve coupling had the dump site engine desperate to achieve a prime. This was alleviated by taking suction off the front intake and rechecking the coupling – it was missing a gasket.

Command

Command was established and a system of organization began to develop.

Five Dump Tanks in Use



Around the 30:00 -minute mark, fire flow was moved to 1000 gpm. A fifth dump tank was put down.

Dump Site Set-up

Water transfer operations were now underway. Jordan Engine 2 was brought in to run the multiple jet siphons. They took suction from a sixth tank and used a manifold to run the jet siphons.

Dump Site Set-up

At the 49:00-minute mark, flow was moved to 1500 gpm and the dump site continued to be a very busy place.

7-Tank Dump Site

A seventh dump tank was deployed to supply Jordan Engine 2 (to run jet siphons) and the original sixth dump tank was repurposed to support the main water supply. Jet siphons were supplied and controlled using an LDH manifold.

Dump Site Operations

Crews did a nice job of spacing the tanks so that two tankers could dump at once - which is critical when trying to achieve flows in excess of 1,000 gpm.

Lots of Tankers

Lots of tankers need lots of direction. A coordinator was appointed to control where (which dump tank) tankers off-loaded their water.

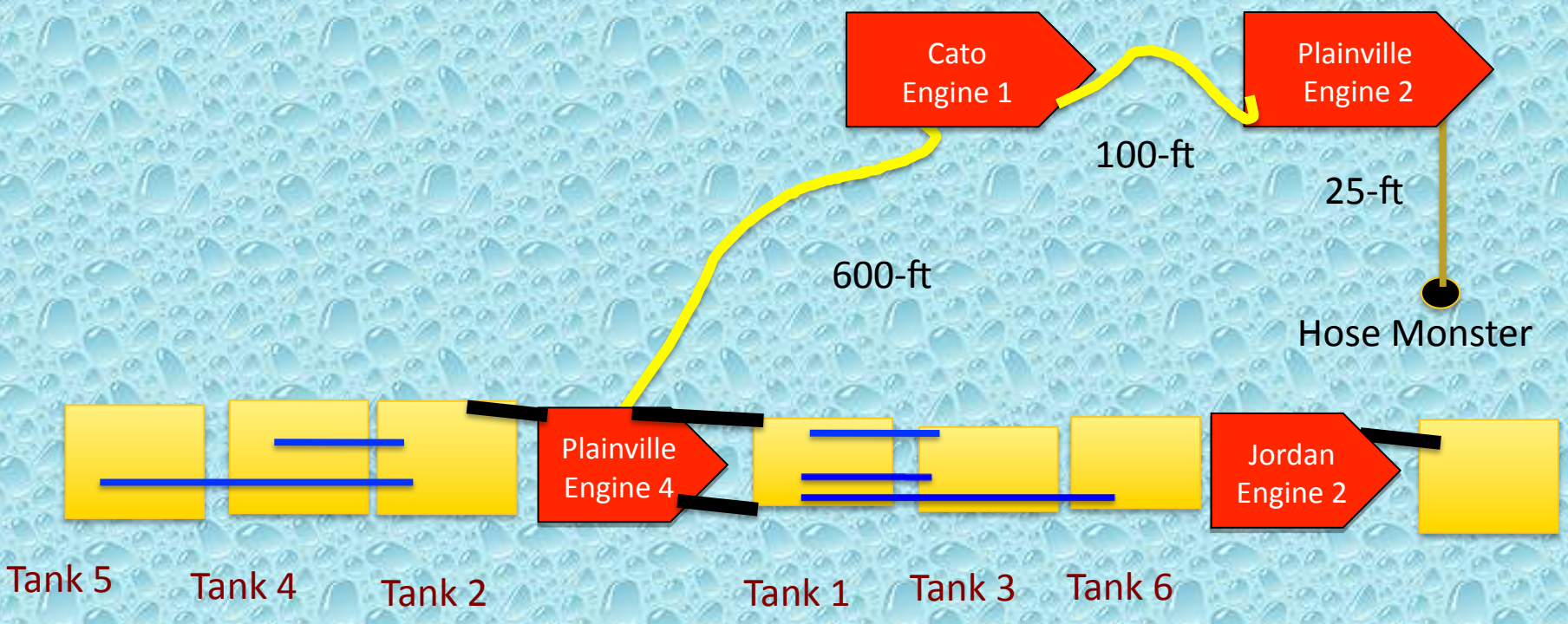
Water Transfer Operations

The flow from this Holley Tube jet siphon is a good, solid stream of water – which is exactly what is needed. Note the 6" hard sleeve on the ladder – moving the water once is the most efficient way to manage multiple tanks.

Dump Site Operations

As the fire flow increased, it was noted that the jet siphon supplying the front primary dump tank could not keep up. A second jet siphon was added and that corrected the problem.

Dump Site Layout



All tanks 2000 or 2100 gal. Tank 1 & 3 Fol-Da-Tank SLTs.

The Fill Sites

- For this drill – three fill sites were used. All were able to fill at or above 1000 gpm.
- The first fill site was located at a creek on West Genesee Road at the old Saw Mill and was staffed by Baldwinsville Engine 4.
- The second fill site was located at the pond at the intersection of Swamp Road and Plainville Road and was staffed by Belgium-Cold Springs Engine 21.
- The third fill site was located at a hydrant on River Bend Drive and staffed by Phoenix Engine 12.

Creek Fill Site

The crew had the site set up quickly with basic fill lines. As tankers arrived, the crew grabbed appliances to make the site run more efficiently. This was the only site running for a while.

Pond Fill Site

The crew arrived to find a very soft shoulder from an overnight rain and had to figure out a more stable position from which to draft. This position required more hard sleeves than the engine carried so additional hard sleeves had to be obtained from tankers coming in to be filled. The crew eventually established an LDH fill line out to the main road and were able to fill successfully.

Hydrant Fill Site

This fill site was established at a fire hydrant. The crew did a good job of trimming out all of the outlets of the hydrant in order to maximize flow. Although the pumper was missing appliances, the crew overcame the problem by controlling flow at the pump panel.

The Results

- The drill was stopped at the 2:00-hour mark.
- Once it started, water flow was never interrupted!
- An estimated 153,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 1,450 gpm.

The Lessons Learned

- At this drill, the dump site was set-up very quickly and crews really hustled to sustain the water flow in the early stages.
- The use of the Jordan pumper at the dump site made a big difference in being able to support the higher flows later in the drill.
- The street dimensions did restrict the space for this large operation but positioning the tanks to the rear and front of the pumper and coordinating traffic flow made this operation go smoothly.

The Lessons Learned

- Air leaks during drafting can really create problems. The missing suction gasket created problems until the crews figured out the issue.
- At higher flows you are really going to notice if jet siphon flow is inadequate. The crew did well by adding additional jet siphons when needed.
- The dump site pumper maximized its capacity. If more flow would have been needed, then an additional pumper would have to have been inserted into the dump site operation.

The Lessons Learned

- 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.
- Crews did a good job of recognizing this and borrowed adapters when necessary. When deciding what to carry on your tanker, you should plan to carrying the adapters necessary to assist surrounding companies in filling your tanker.

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 again proved to be an effective process for requesting and using additional rural water supply resources.

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 Plainville VFD for sponsoring and hosting this seminar – and for all of their pre-planning which made this weekend such a success.

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This program was developed by
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