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Skaneateles Volunteer Fire Department
Skaneateles, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 26, 2014
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

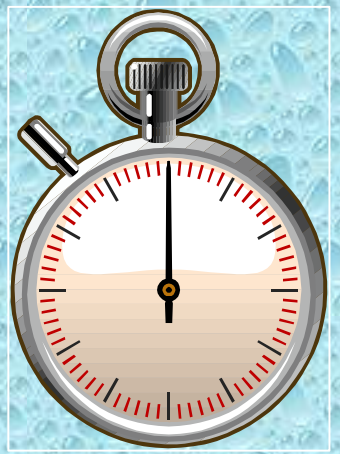
- The 2-day seminar started on Saturday with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at Skaneateles FD Station 1.
- Once the classroom part was done, the seminar continued with several hours of practical work on fill-site and dump site operations.
- The program concluded on Sunday with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from the Onondaga and Cayuga County areas.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 26th at Lakeview Auto & Marine on West Lake Road near Skaneateles FD Station 3.
- 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 10 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 the Skaneateles area.*

Drill Participants

- Skaneateles Engine 12
  - 1,500 gpm pump w/1,000 gal tank

- Amber Engine 2
  - 1,000 gpm pump w/300 gal tank

Drill Participants

- Amber Tanker 3
  - 1,500 gpm pump w/2,500 gal tank

- Tully Tanker 21
  - 250 gpm pump w/1,800 gal tank

Drill Participants

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

- Otisco Tanker Pumper 1
  - 1,500 gpm pump w/1,500 gal tank

Drill Participants

- Marcellus Engine 1
  - 1,500 gpm pump w/1,000 gal tank
- Moravia Tanker 1
  - 3,500 gal tank

Drill Participants

- Sennett Tanker Pumper 1
  - 1,500 gpm pump w/1,500 gal tank

- Sennett Tanker Pumper 3
  - 1,500 gpm pump w/1,500 gal tank

No Photo Available

Drill Participants

- Plainville Tanker 1
  - 1,000 gpm pump w/2,450 gal tank
- Mottville Engine 2
  - 1,500 gpm pump w/1,500 gal tank

Drill Participants

- Mottville Rescue Pumper 1
  - 1,500 gpm pump w/1,000 gal tank

- Spafford Tanker Pumper 1
  - 1,000 gpm pump w/1,500 gal tank

Drill Participants

- West Niles Tanker 1
  - 500 gpm pump w/2,000 gal tank

No Photo Available

The Drill Begins

Skaneateles Engine 12 arrives on the scene as the attack engine and the timer starts once the pumper stops to lay out the supply line.

Dump Site Operations

The crew quickly went to work deploying a 2-1/2-inch attack line so they could be ready to flow water at the 5-minute mark. In the mean time – the driver was preparing to receive water via the 5-inch supply line that had been laid.

Dump Site Operations

Mottville Engine 2 was the next unit to arrive on the scene and they positioned to serve as the dump site engine and supply Skaneateles Engine 12. The key was to get all of this done without the use of a nurse tanker operation.

Dump Site Operations

At around the 4:31-minute mark, the first dump tank was down and in position to receive water. The tank came from Mottville Engine 2 which carries a 1,000 gallon dump tank. Amber Tanker 1 (2,500 gal) is also seen in the photo – it was the first tanker to arrive.

Water Flow is Started

At the 5-minute mark, water flow was started at 250 gpm using a 2-1/2-inch attack line supplied by Skaneateles Engine 12's tank water.

Dump Site Operations

Not long after the water flow was started through the attack line, the 5-inch supply line was charged from Mottville Engine 2 to Skaneateles Engine 12 – and from then on – water flow was never once interrupted.

Dump Site Operations

The dump site crew deployed the 2,500-gallon dump tank from the Amber tanker and began to set up for a multiple dump tank operation.

Dump Site Operations

At the 9:40-minute mark, three dump tanks had been deployed and two were in operation.

Dump Site Operations

Around the 10-minute mark, the “first wave” of additional tankers began to arrive. Moravia’s Tanker 1 was one of tankers on the first “Tanker Box” and is seen here off-loading. One of the problems that arose was electing to dump off of the rear – the road got blocked at times. Fortunately – that eventually was changed to a side dumping operation later in the drill.

Dump Site Operations

As additional tankers began to arrive, the dump site crew worked to gather additional dump tanks and equipment. The plan was to eventually move to a 4-dump tank operation.

Water Flow Increased

At the 15:00-minute mark, water flow was increased to 750 gpm. A Hose Monster flow diffuser with a fixed-pitot was used to accurately measure flow.

Dump Site Operations

This photo taken at the 19:05-minute mark shows four tanks down and three in operation. Amber Tanker 1 has also returned from the fill site (boat launch) with a load of water – making it the first tanker back.

Dump Site Operations

This photo taken around the 23:00-minute mark shows the arrival of the next wave of tankers. Soon, the operation will move to a 4-dump tank operation.

Dump Site Operations

Mottville's rescue/pumper was an "extra" engine on the assignment and took a position at the dump site to support the Skaneateles attack pumper. The Mottville rig ended up serving as a "back-up" water supply (1,000-gallons) if needed.

Dump Site Operations

Four dump tanks are now in operation and Mottville Engine is now drafting from both side suction inlet ports. The officer side suction inlet is taking water from the red 3,500-gallon dump tank shown in the foreground.

Dump Site Operations

The dump site crew switched out the 1,000-gallon tank with a 2,500-gallon dump tank that arrived on one of the tankers. This allowed for greater storage capacity on the ground.

Dump Site Operations

By drafting from both side suction inlets, this 1,500 gpm pumper was able to support the entire dump site operation without the need for another unit to run jet siphons. The additional suction hose had to come from other pumpers and tankers.

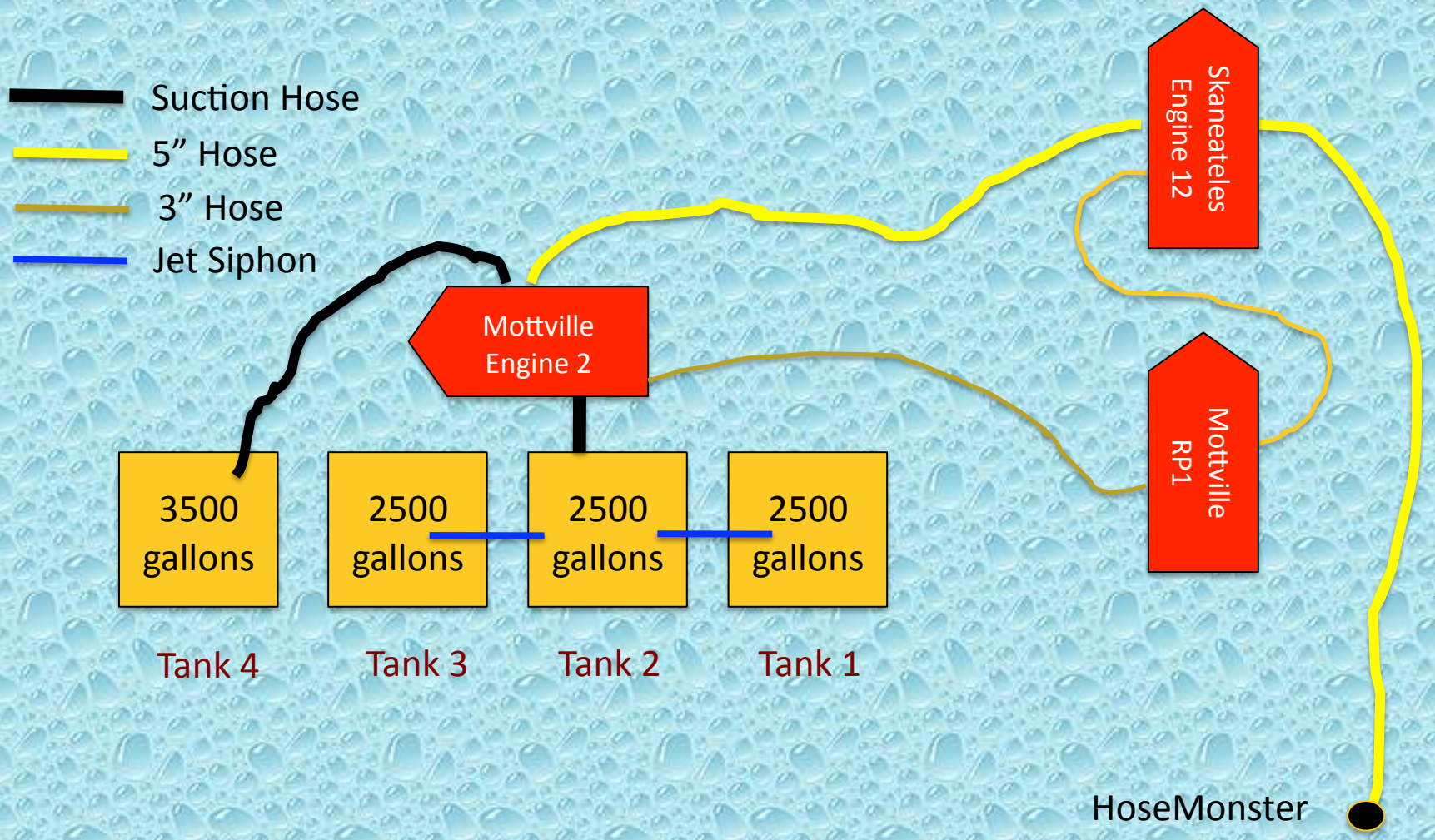
Dump Site Operations

At the 84:00-minute mark, the drafting operation switched to three dump tanks with the fourth held in reserve and the flow was moved to 1,000 gpm where it stayed for the remainder of the drill.

Dump Site Operations

The final arrangement of dump tanks. Once the operation focused on keeping three tanks full, the 1,000 gpm flow rate was achievable.

Final Dump Site Layout



The Fill Sites

- For this drill – two fill sites were used.
- The first fill site was located at a boat launch area near the intersection of Lacy Road and W. Lake Road and took water directly out of Skaneateles Lake.
- This location provided a 3.8-mile round trip for the units hauling water.
- The boat launch area provided sufficient water supply for the shuttle and reasonable access for the tankers.
- A single, 1,500 gpm pumper was used at the boat launch to support tanker loading.

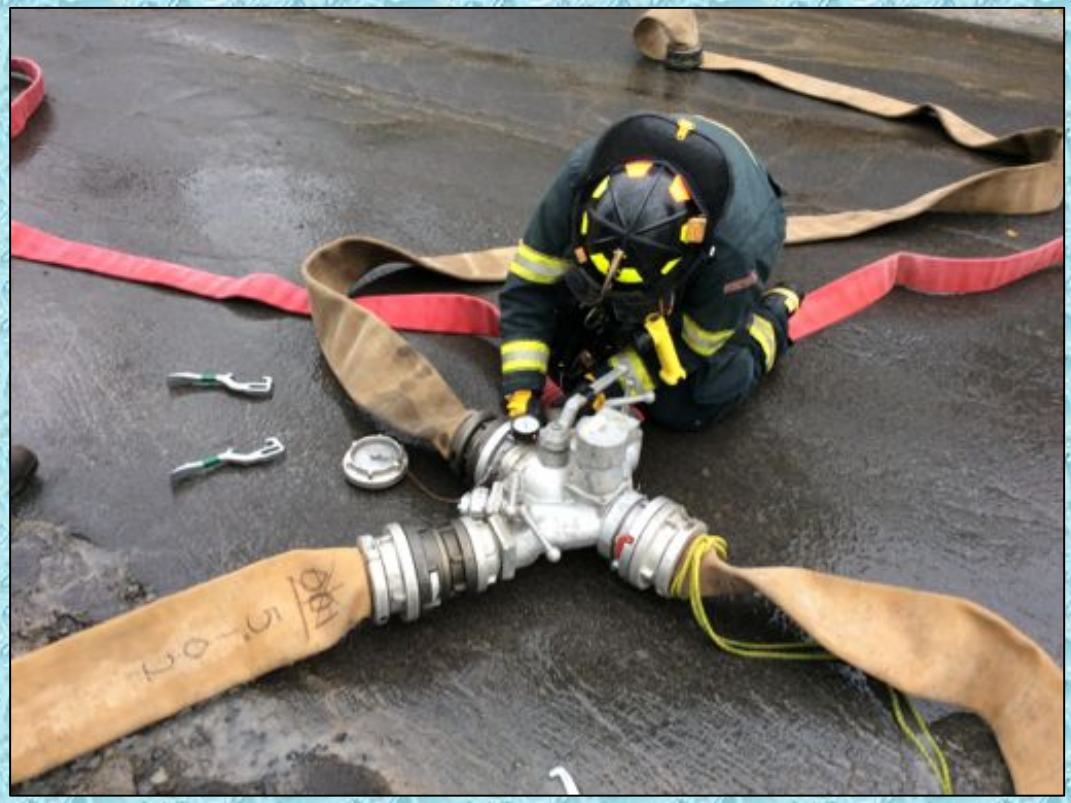
The Fill Sites

- The second fill site was located at a creek crossing on Benson Road. The pumper had to draft off of a bridge.
- This location provided a 6.5-mile round trip for the units hauling water.
- The creek area provided sufficient water supply for the shuttle – although the shallowness of the creek required a person to maintain the suction strainer the entire time.
- A single, 1,000 gpm pumper was used at the boat launch to support tanker loading.

Boat Launch Fill Site

Marcellus Engine 1's (1,500 gpm) initial set-up at the boat launch area. The crew had the site up and running in very short order and was ready to fill when the first tanker arrived.

Boat Launch Fill Site



The crew used LDH to load the tankers at rates over 1,000 gpm – once again emphasizing the value of LDH in tanker loading operations.

Boat Launch Fill Site

Eventually – the Marcellus crew located more suction hose and was able to increase pump capacity by drafting from both the front and officer side suction inlets. The pumper is outfitted with an MIV on the front intake which allowed for the easy addition of the second suction line.

Benson Road Fill Site

Amber Engine 2 (1,000 gpm) drafted from the creek and loaded tankers using LDH as well.

Benson Road Fill Site

One of the issues that arose at this fill site was the shallowness of the creek. A crew member had to “babysit” the floating strainer in order to prevent a loss of prime.

Benson Road Fill Site

The fill site crew did a very nice job of cycling tankers through this fill site. While one tanker was being loaded, the next one was connected and ready to go once the first one was filled – thus, very little lost time.

The Results

- The drill was stopped at the 2-hour mark and water flow was ever interrupted throughout the entire drill!
- An estimated 86,590 gallons of water were flowed during the drill producing an average flow rate of 753 gpm.

The Lessons Learned

- At this drill, the dump site was set-up very quickly and crews were able to initiate flow without the use of a nurse tanker operation – partially because the dump site pumper carried a dump tank and partially because the crew was very good at setting up a dump site.
- The parking lot layout provided ample space for this shuttle operation and traffic flow was not a problem once the tankers moved to side dumping operation.

The Lessons Learned

- The use of dual suctions by the dump site pumper allowed for sufficient intake to support the initial and intermediate flows as well as supplying the jet siphons.
- 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.

The Lessons Learned

- At this drill, the fill site crews did a great job of keeping up with the pace. The boat launch fill site was filling tankers well in excess of 1,000 gpm which allowed the tankers to get back on the road to the dump site much sooner.
- The creek fill site crew was very good about having the next tanker connected and ready to fill – thus also reducing the time spent at the fill site.

The Lessons Learned

- Once again, this drill illustrated the value of using LDH to load tankers. The two fill sites had no problem filling tankers at, or over 1,000 gpm – all because of the use of LDH and standardized fittings.
- 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.
- Be sure to check out video clips from the drill at the GotBigWater YouTube Channel.

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 Skaneateles, Marcellus, and Mottville FDs for sponsoring and hosting this seminar.

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This program was developed by
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