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Tompkins County Fire and EMS Chiefs Assn.
Tompkins County, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 7, 2018
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 with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Brooktondale VFD.
- Once the classroom part was done, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from Tompkins County and the surrounding area.

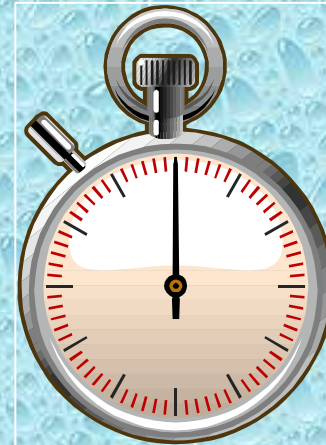
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 7th at a NYSEG facility in nearby Varna, NY.
- 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 ISO no longer uses the physical demonstration of water supply delivery*, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.
- *ISO now uses computer modeling to predict tanker shuttle flow capabilities.*



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 several different fire departments in the Tompkins County region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Brooktondale area.*

Drill Participants

- Brooktondale Engine 101
 - 1250 gpm pump
w/1,000 gal tank
- Brooktondale
Pumper/Tanker 121
 - 1250 gpm pump
w/1500 gal tank



Drill Participants

- Slaterville Engine 1501
 - 1250 gpm pump
w/1750 gal tank

- Slaterville Tanker 1521
 - 1,000 gpm pump
w/1800 gal tank



Drill Participants

- Varna
Pumper Tanker 1921
 - 1250 gpm pump
w/1500 gal tank
- Groton Engine 802
 - 1,500 gpm pump
w/1000 gal tank



Drill Participants

- Etna Pumper Tanker 321
 - 1,500 gpm pump
w/3000 gal tank
- McLean Pumper Tanker 1221
 - 1250 gpm pump
w/2,000 gal tank



Drill Participants

- Speedsville Pumper 1701
 - 1,250 gpm pump
w/1000 gal tank
- Speedsville Tanker 1721
 - 400 gpm pump
w/2100 gal tank



The Drill Begins



Crews staged at a nearby parking lot in the NYSEG complex. They reviewed drill assignments and received a safety briefing.

Dump Site Operations



Brooktondale Engine 101 arrived on the scene first along with Etna Pumper Tanker 321. Nurse tanker operations got under way and a 250 gpm flow was started at the 5-minute mark.

Dump Site Operations



Nurse tanker operations were used until the first dump tank was brought on line. Etna's 3,000 gallons of water provided a sufficient buffer of time to allow the dump tank to be set up without the pressure of losing initial water flow.

Dump Site Operations



Around the 23-minute mark, two dump tanks were up and running. Water flow had moved to 500 gpm at the 15-minute mark.

Dump Site Operations



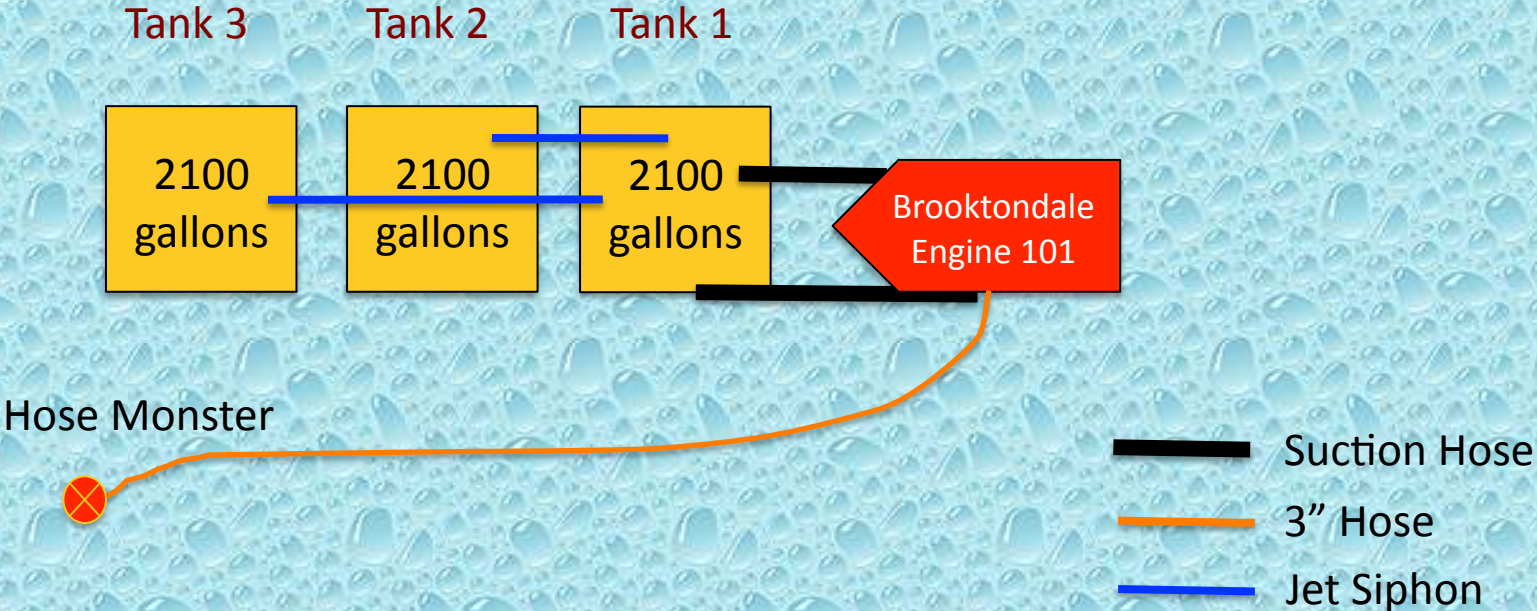
At the 76-minute mark, flow was moved to 800 gpm. Speedsville Engine 1701 (red) was brought in to help run a jet siphon so that the dump site pumper could concentrate on supplying the fire flow.

Dump Site Operations



The crews were able to sustain the 800 gpm flow through the end of the drill. In all, three dump tanks and two jet siphon transfers were used to support the operation. Engine 101 (left) ended up using a second, suction line in order to support the pumping operation.

Dump Site Layout



The Fill Site

- For this drill – two fill sites were used. One was a creek and one a fire hydrant.
- The fill sites provided less than a 4-mile round trip each for rigs hauling water.
- The creek and hydrant provided ample water volume to support the drill and access was not much of a problem.
- A 1500 gpm pumper was used at the creek and a 1250 gpm pumper was used at the fire hydrant to support the tanker fill stations.

Creek Fill Site



Groton Engine 808 (1500 gpm) drafts off a bridge and loads tankers using 5-inch LDH.

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Creek Fill Site



Speedsville Tanker 1721 is shown being loaded at the creek fill site. Although the lift was a bit excessive, tankers were loaded in short order and with little effort.

Hydrant Fill Site



A fire hydrant located at the Varna VFD station was used as a second fill site. The hydrant had sufficient pressure and volume to load tankers without using a pumper on the hydrant. The key to success was that only one tanker was loaded at a time.

Hydrant Fill Site



An engine crew was assigned to this fill site and they helped load tankers; they just did not use their rig to pump water.

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The Results

- The drill was stopped at the 105-minute mark due to time constraints.
- Water flow was interrupted once, early in the event.
- An estimated 60,200 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 573 gpm.
- A peak flow of 800 gpm was sustained for the last 33 minutes of the drill.

The Lessons Learned

- At this drill, a nurse tanker operation was used during the early moments of the drill which allowed the crews to set-up the dump site without the pressure of running out of water in a couple of minutes.
- The single-lane arrangement of dump tanks proved successful. The arrangement allowed for easy travel, side-dumping, and kept a lane of traffic open.

The Lessons Learned

- Use of the front suction inlet on the dump site engine proved problematic since flow was substantially restricted and the engine struggled to support a 500 gpm flow and operate jet transfer siphons.
- A second suction line was added at the dump site engine midway through the drill which allowed the performance to improve significantly. The engine was equipped with a suction inlet control valve which allowed the second suction to be added without interrupting flow.

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.
- At this drill, not all tanker fittings were the same which slowed down the loading process. As the drill progressed, folks worked to use the same fitting to load all of the tankers – which helped with improving efficiency.

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 – as well as adaptors.
- 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.

Drill Videos

**Be sure to watch videos from
the drill on 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 Tompkins County Fire and EMS Chiefs Association for sponsoring and the Brooktondale Volunteer Fire Department for hosting this seminar.



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