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Stockport Volunteer Fire Co. 1
Stockport, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill – 1,000 GPM Club
October 10, 2021
Summary Report

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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.

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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 Stockport fire station.
- Once the classroom part was over, 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 Hudson County and the surrounding area.

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The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 10th at the Stockport Playground.
- 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.*

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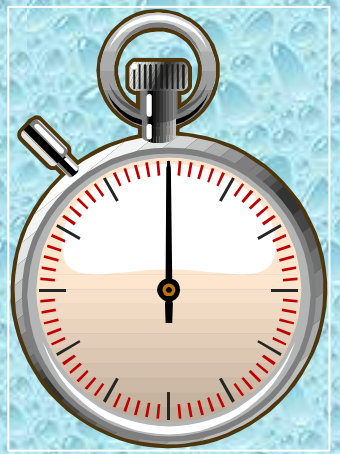
The ISO Test

- 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



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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.

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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.

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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!

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Water Supply Drill Participants

Participants				
Department	**Unit**	**Pump Size**	**Tank Size**	**Assignment**
Stockport	Engine 49-20	1500 gpm	1000 gal	Attack Engine
Stockport	Tanker 49-32	750 gpm	2000 gal	Haul Water
Stottville	Engine 50-22	2000 gpm	750 gal	DumpSite
Stuyvesant	Engine 52-13	1250 gpm	1000 gal	Day Pond Fill Site
Stuyvesant	Tanker 52-32	500 gpm	1800 gal	Haul Water
Stuyvesant Falls	Tanker 65-32	1250 gpm	2000 gal	Haul Water
West Ghent	Engine 57-20	1500 gpm	750 gal	Hudson Fill Site
West Ghent	Engine 57-31	2000 gpm	1250 gal	Hudson Fill Site
West Ghent	Tanker 57-35	300 gpm	3500 gal	Haul Water
Ghent	Tanker 22-35	1500 gpm	3000 gal	Haul Water
Taghkanic	Tanker 56-30	2000 gpm	1500 gal	Haul Water
Valatie	Tanker 55-30	Unk	2000 gal	Haul Water
Claverack	Tanker 12-32	500 gpm	2000 gal	Haul Water
Niverville	Tanker 45-35	500 gpm	5000 gal	Haul Water
Livingston	Tanker 83-35	500 gpm	3550 gal	Haul Water
Kinderhook	Engine 35-13	1250 gpm	1000 gal	Day Pond Fill Site
South Schodack	Tanker 34-9	1500 gpm	3750 gal	Haul Water

- *The participants for the drill were from several different fire departments in the Hudson County region and the water hauling apparatus were representative of the type of water supply support that would respond to a structure fire in the Stockport area.*

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The Drill Begins

The drill began with Stockport's engine and tanker arriving on scene and going to work setting up an attack pumper/nurse tanker water supply operation. Hudson's aerial tower was pre-staged before the drill; it eventually was used once larger flows were needed.

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Dump Site Operations

Stottville Engine 50-22 (2000 gpm) arrived a few minutes later and folks worked to build out a dump tank operation. The Stottville engine eventually took over water supply operations; it drafted from dump tanks and supplied the Hudson aerial tower.

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Dump Site Operations

While nurse tanker operations were underway the dump site crews began deploying dump tanks. A “through-the-drain” sleeve set-up was used for the first suction line to the Stottville pumper.

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Dump Site Operations

Water flow was started at 250 gpm at the 5-minute mark using a TFT Blitzfire.

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Dump Site Operations

As nurse tanker operations were winding down, the crews were ready to transition to a dump tank operation.

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Dump Site Operations

Flow was moved to 500 gpm at the 15-minute mark using Hudson's aerial tower. Stottville's pumper used 5-inch LDH to supply the aerial tower.

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Dump Site Operations

Around the 18-minute mark water levels were critically low in the dump tanks, but units on the 1st Tanker Task Force began to arrive and off-load water.

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Dump Site Operations

By the 20-minute mark, three dump tanks were down and in use and a 2nd Tanker Task Force was alerted.

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Dump Site Operations

The three dump tanks were spaced apart to allow two tankers to simultaneously dump water using their side dumps.

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Dump Site Operations

With the dump tanks placed in front of the Stottville pumper, space was efficiently used and the set-up simulated operating in a single-lane of traffic on a State road.

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Multiple Suctions

The dump site pumper eventually used two, 6-inch suction intakes and one, 2-1/2-inch suction intake to supply all of the water to the aerial tower and run multiple jet siphon water transfer devices.

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Dump Site Operations

At the 42-minute mark water flow was moved to 800 gpm and then to 1000 gpm at the 60-minute mark.

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Dump Site Operations

As the water flow increased so did the demand for water transfer. A total of three jet siphons were used to move water between the dump tanks.

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Dump Site Operations

At the 83-minute mark water flow was moved to 1200 gpm where it was sustained for the remainder of the drill.

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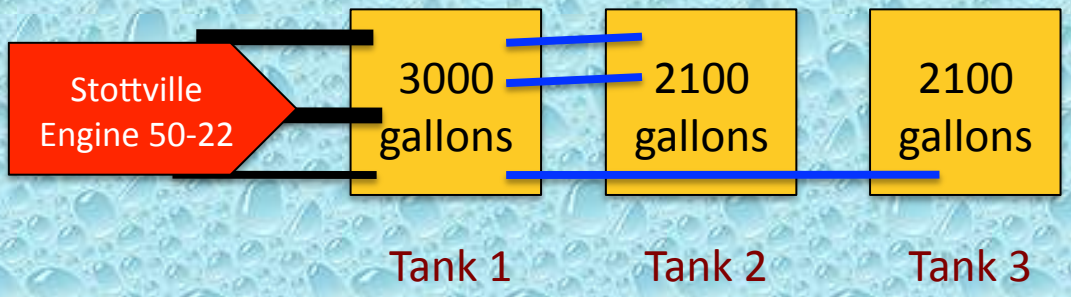
Dump Site Layout



Suction Hose

Jet Siphon

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The Fill Sites

- For this drill – two fill sites were used; one a pond and one a large creek.
- The fill sites both provided 3.0 and a 4.2-mile round trips for the units hauling water.
- Both sites had ample water volume to support the drill and access was not a problem.
- Two pumpers were used at each fill site.

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Day Road Fill Site

Stuyvesant Engine 52-13 (1250 gpm) was the first pumper to arrive at the pond fill site and chose to go directly to the water with a large-capacity floating strainer in lieu of using the dry fire hydrant.

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Day Road Fill Site

Kinderhook Engine 35-13 (1250 gpm) was the second pumper to arrive at the fill site and they used the dry fire hydrant to set up a second loading station.

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Day Road Fill Site

With two pumpers operating independent loading stations at the pond they were able to keep tankers moving. One challenge early on was getting the tankers to arrive from the same direction. That issue was corrected after a few trips.

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Stockport Creek Fill Site

West Ghent Engines 57-31 (1500 gpm) and 57-35 (2000 gpm) were used at Stockport Creek (confluence with Hudson River) to supply water for two, independent loading stations.

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Stockport Creek Fill Site

Tankers were loaded in a parking lot/boat launch area; plenty of space was available for the rigs to maneuver.

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The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was never interrupted!
- An estimated 98,000 gallons of water were flowed through during the drill producing an average flow rate of 843 gpm.
- A peak flow of 1,200 gpm was achieved during the last 37-minutes of the drill.
- For the last 60-minutes of the drill a flow of 1,000 gpm or greater was supplied to the Hudson aerial tower.
- The performance resulted in the participants being awarded membership in the Got Big Water 1,000 GPM Club!

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The Lessons Learned

- At this drill, crews chose to use a nurse tanker operation from the very beginning.
- The nurse tanker operation provided time to get the first dump tank set up without having to worry about running out of water in a minute or two.
- Rear-dumping only tankers were assigned a designate dumping area in an effort to not block out side dumping tankers.

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The Lessons Learned

- As the flow increased, additional suction lines were used to improve intake so that the flow could increase without impacting jet siphon operations.
- The use of a large-capacity pumper (2000 gpm) as the dump site pumper allowed one rig to supply the entire operation.
- The use of the “through-the-drain” set-up allowed the dump tanks to be arranged in a single-lane configuration.

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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, most all of the tankers had the same fill connection which allowed the rigs to get filled and be back on the road in little time.

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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.

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Drill Videos

Be sure to watch videos from the drill on the GotBigWater YouTube Channel.

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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 Robert Plass Memorial Fund for sponsoring the seminar and to the Stockport Volunteer Fire Co. 1 for hosting the seminar.

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