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Peru Fire Department
Peru, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 3, 2021
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 Peru Fire Department.
- 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 Clinton County and the surrounding area.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 3rd at Peru High School.
- 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

Department	Unit	Pump Size	Tank Size	Dump Tank
Peru	Engine 273	1500 gpm	1600 gal	NA
Peru	Tanker 274	1500 gpm	3000 gal	NA
Keeseville	Tanker 233	1000 gpm	3000 gal	NA
Keeseville	Tanker 234	1000 gpm	2000 gal	2100 gal
Ausable Forks	Tanker 114	750 gpm	2200 gal	2100 gal
South Plattsburgh	Tanker 324	1000 gpm	3000 gal	3500 gal
South Plattsburgh	Engine 323	1500 gpm	1000 gal	NA
Morrisonville	Engine 262	1250 gpm	1250 gal	NA
Chazy	Tanker 153	1000 gpm	3000 gal	3000 gal
West Chazy	Tanker 336	1500 gpm	3000 gal	3000 gal
Saranac	Tanker 313	NA	4000 gal	(2) 2100 gal

- *The participants for the drill were from several different fire departments in the Clinton 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 Peru/Keeseville area.*

The Drill Begins



The drill began with South Plattsburgh Engine 323 being staged in a parking lot as if they were waiting to supply a pumper or aerial device at a large fire. As the Tanker Task Forces were dispatched, units began to arrive on the scene and water supply operations commenced.

Dump Site Operations



At the 3:50-minute mark water flow was underway at 250 gpm and Peru Tanker 274 initiated a nurse tanker operation supplying the South Plattsburgh engine.

Dump Site Operations



When the second due tanker (Keeseville Tanker 234) arrived crews deployed the first dump tank (2100 gal) and prepared for the transition to a dump tank operation.

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Dump Site Operations



Crews worked to transition to a dump tank operation in preparation for an increase in fire flow.

Dump Site Operations



The dump site engine crew worked to get two suction lines in operation. The front suction ended up having an air leak problem that could not easily be resolved so it was eventually taken out of service.

Dump Site Operations



By the 15-minute mark flow was moved to 750 gpm and nurse tanker operations were stopped.

Dump Site Operations



A couple of tankers could only dump off of the rear and they were positioned at the end of the dump tank line where they would not block out the side dumping tankers.

Dump Site Operations



Three dump tanks were eventually placed into operation and South Plattsburgh Engine 323 was able to get twin, 6-inch suction lines in operation which allowed the flow to peak at just over 1000 gpm.

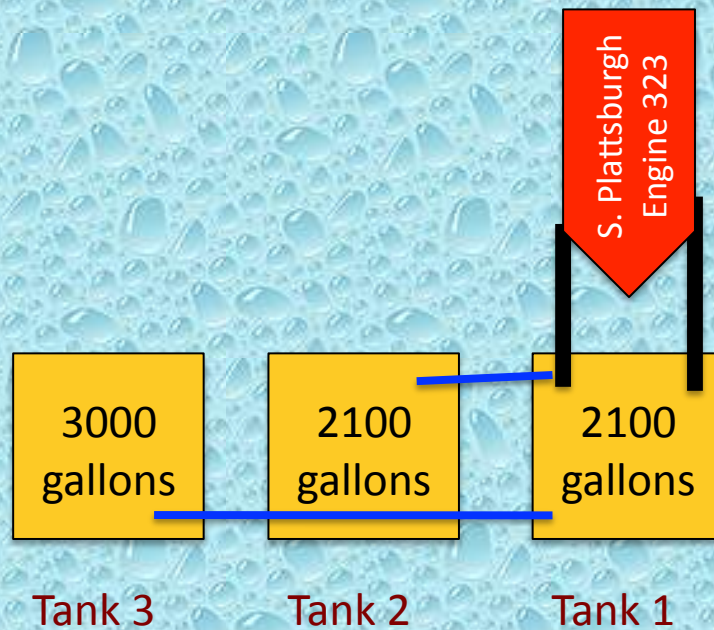
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Dump Site Operations



A good looking output from one of two jet siphon, water transfer devices used at the drill.

Dump Site Layout



— Suction Hose
— Jet Siphon

The Fill Sites

- For this drill – two fill sites were used; they were two different streams.
- The fill sites both provided about a 5.7-mile round trip for the units hauling water.
- Both sites had ample water volume to support the drill and access was not a problem.
- A 1500 gpm and a 1250 gpm pumper were used at the fill sites.

Fill Site Operations



Both fill sites required the fill site pumper to draft off of a bridge and load tankers using LDH.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was interrupted a couple of times; neither time was for very long.
- The three dump tank setup easily supported a 750 gpm flow.
- A peak flow of 1,000 gpm was achieved a few times during the last hour of the drill but could not be sustained. A flow of 750 gpm was the practical limit for the available resources.

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 designated dumping area in an effort to not block out side dumping tankers.

The Lessons Learned

- As the flow increased, a second suction line was used to improve intake so that the flow could increase without impacting jet siphon operations.
- The use of a suction elbow aided in getting the second suction line in operation.
- The dump tanks were in a single-lane configuration which aided tanker off-loading.

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.

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 Peru and Keeseville Fire Departments for sponsoring the seminar to the Peru Fire Department for hosting the seminar.



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