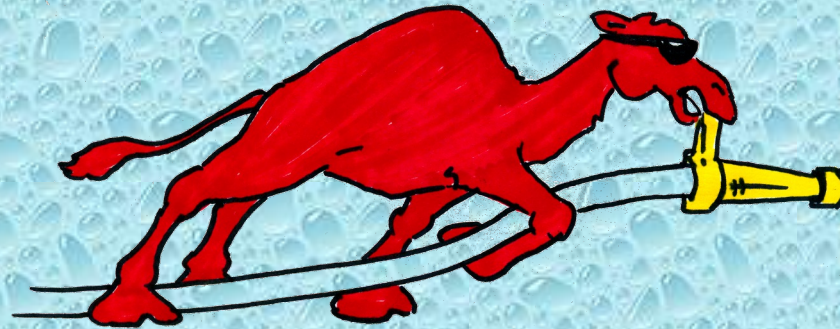


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Atkinson Fire Department
Atkinson, New Hampshire

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
September 24, 2023
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 Atkinson 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 Atkinson FD and the surrounding area.

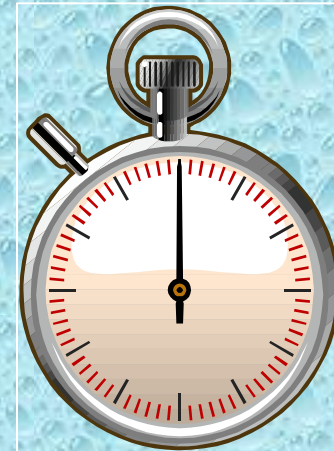
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on September 25th at the Atkinson Academy.
- 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

Participants				
Department	Unit	Pump Size	Tank Size	Drill Assign
Atkinson	Engine 1	1500 gpm	1000 gal	Dump Site
Atkinson	Engine 3	1500 gpm	1750 gal	Fill Site
Atkinson	Tanker 1	1000 gpm	3000 gal	1st Alarm
Windham	Tanker 1	1500 gpm	3000 gal	2nd Alarm
Derry	Tanker 1	1500 gpm	2500 gal	3rd Alarm
Hampstead	Tanker 1	1250 gpm	3000 gal	1st Alarm
Auburn	Tanker 1	1250 gpm	2500 gal	3rd Alarm
Chester	Tanker 1	1500 gpm	3000 gal	3rd Alarm
Danville	Tanker 3	1250 gpm	2500 gal	1st Alarm
Newton	Tanker 5	1250 gpm	2500 gal	2nd Alarm
Plaistow	Tanker 6	1500 gpm	3000 gal	Fill Site

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

The Drill Begins



The goal of the drill was to support a rural hitch operation and transition to a dump tank operation at some point. A TFT 5"x5" double-clappered Siamese was pre-deployed to simulate a pumper having laid out a supply line. A HoseMonster flow diffuser was used to simulate the attack pumper. Atkinson Tanker 1 arrived first and pumped the siamese.

Dump Site Operations



Hampstead Tanker 1 was next to arrive to support the rural hitch operation. Meanwhile, the crew from Atkinson Engine 1 (not shown) begin gathering equipment to build out a dump site.

Dump Site Operations



The first arriving tankers were able to start a 500 gpm flow using the rural hitch. Around the 19-minute mark, the first dump tank was operation with a second one deployed and ready.

Dump Site Operations



Around the 21-minute mark a 2nd Alarm of tankers was dispatched and at the 24-minute mark, two dump tanks were now in operation.

Dump Site Operations



Additional tankers begin to arrive on the scene and preparation is underway to eventually move to a 3-dump tank operation and a 1,000 gpm flow.

Dump Site Operations



A couple of the tankers could only rear dump so they were directed to pull past the row of dump tanks and then back up and dump into the last dump tank.

Dump Site Operations



Around the 47-minute mark, 3 dump tanks were now in operation and crews worked to improve the water transfer process.

Dump Site Operations



At the 68-minute mark, flow was moved to 750 gpm and then again to 1000 gpm at the 105-minute mark.

Dump Site Operations



Engine 1 used a Fol Da Tank suction elbow on the officer to add a second, 6-inch suction intake line which allowed the 1500 gpm pumper to flow 1000 gpm to the fire scene and supply four jet siphon devices at the same time.

Dump Site Operations



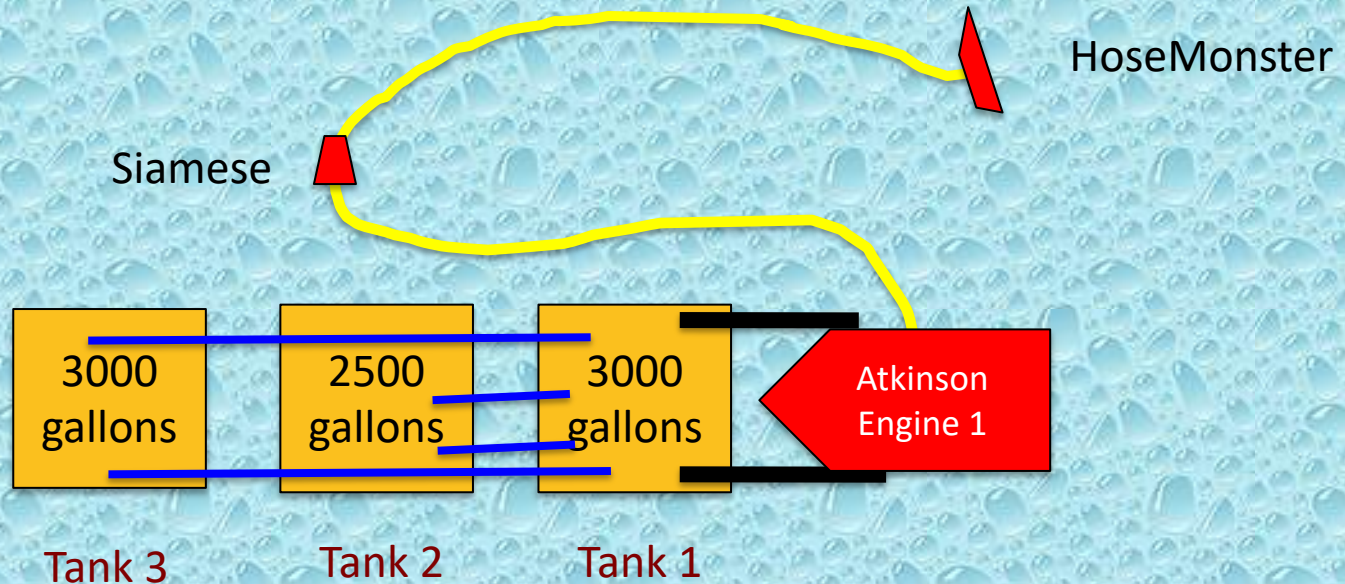
Water transfer operations became really important as the dump site expanded and flow increased. Four jet siphon devices were eventually needed to support the operation.

Dump Site Operations



In the end, 8 tankers and 2 fill sites were needed to support this 1000 gpm operation.

Dump Site Layout

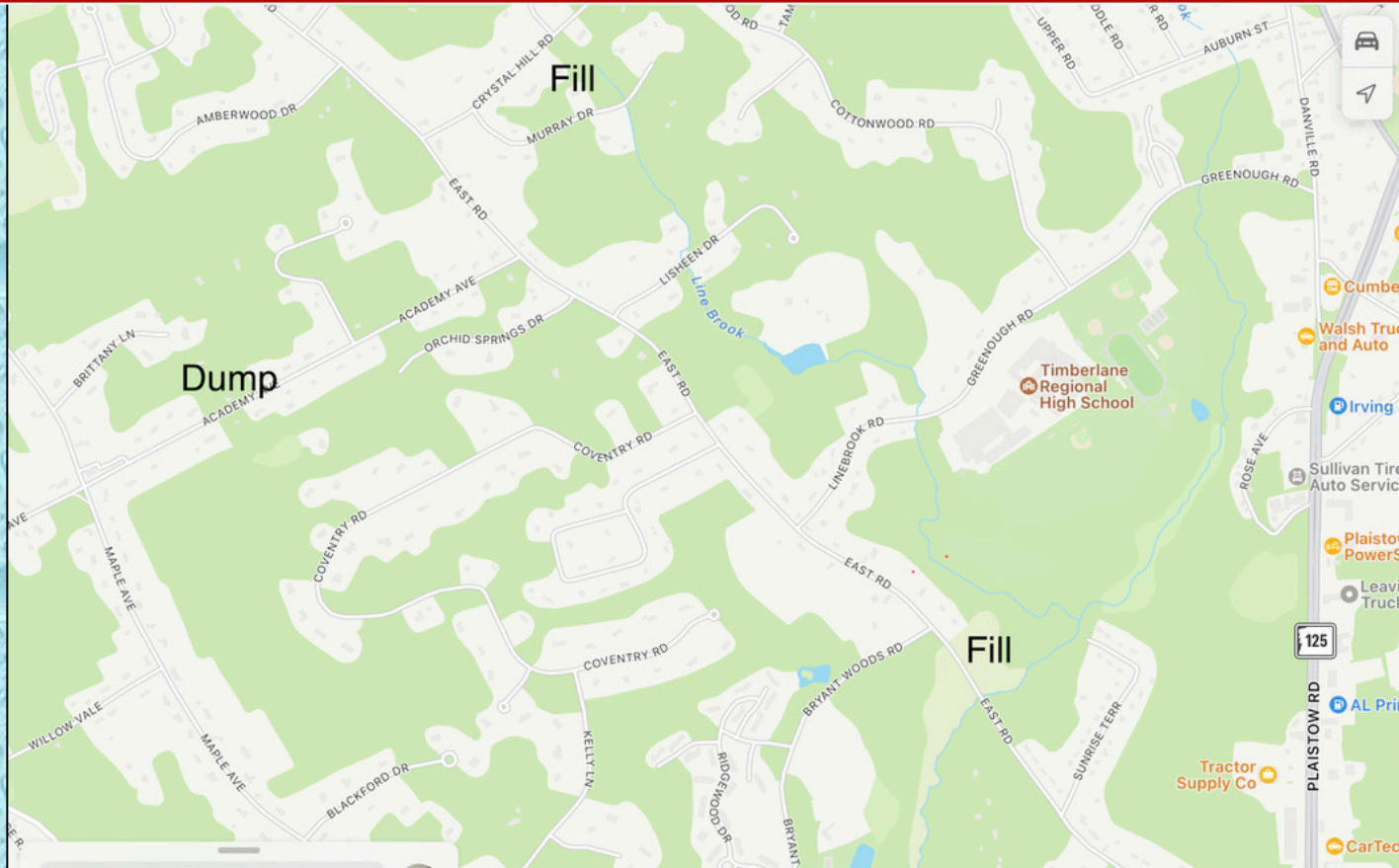


- Suction Hose
- Jet Siphon

The Fill Sites

- For this drill – two fill sites were used; a pond on Murray Drive and a pond on East Road.
- The fill sites both provided about a 3.0-mile and 3.6-mile round trip respectively for the units hauling water.
- Both ponds had ample water volume to support the drill and access was not a problem.
- Each fill site had a 1,500 gpm pumper at it to support the tanker loading station.

Fill Sites



The map provides a general overview of the dump site and fill site locations. Both sites were supplied by a pond and both sites had dry fire hydrants available for use.

East Road Fill Site



Atkinson Engine 3 (1500 gpm) drafted from the dry fire hydrant at this pond and loaded tankers using 4-inch LDH.

East Road Fill Site



The pond was located near the Plaistow/Atkinson town line and the was a small turnout area where crews set up the loading station.

Murray Drive Fill Site



Plaistow Tanker 6 (1500 gpm) was used at this fill site where the crew drafted from the dry fire hydrant and ran an LDH fill line to the front and rear of the rig so that no tanker had to wait in line to be connected for loading.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was interrupted once during the transition to dump tank operations.
- An estimated 71,250 gallons of water were flowed through during the drill producing an average flow rate of 625 gpm.
- For the last 15-minutes of the drill a flow of 1,000 gpm or greater was supplied to the simulated attack pumper.

The Lessons Learned

- At this drill, the rural hitch was used as is normal practice in the region.
- Incoming tankers supplied the double-clappered rural hitch operation until the dump site was ready.
- The transition to the dump tank operation was smooth.

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 body pump powered by sufficient motor horsepower at the dump site allowed one rig to supply the entire 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.
- 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. That 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 Atkinson Fire Department for sponsoring and hosting the seminar.



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