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**Riverton Volunteer Fire Department  
Riverton, Connecticut**

**Rural Water Supply Operations Seminar  
2-hr Water Supply Drill – 1,000 GPM Club  
June 2, 2024  
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 Riverton 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 Litchfield County and the surrounding area.

# The 2-hour Water Supply Drill

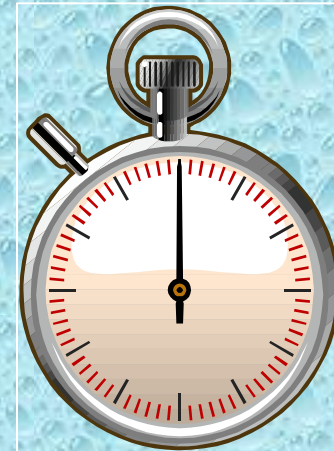
- The tanker shuttle drill was held on June 2<sup>nd</sup> at the Riverton Fair Grounds.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water 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

<b>Participants</b>				
<b>Department</b>	<b>Unit</b>	<b>Pump Size</b>	<b>Tank Size</b>	<b>Dump Tank</b>
Riverton	Engine 4	2000 gpm	1000 gal	NA
Riverton	Tanker 34	500 gpm	3000 gal	3000 gal
Winsted	Engine 14	1500 gpm	1000 gal	NA
Pleasant Valley	Engine 6	2000 gpm	1000 gal	NA
Norfolk	Tanker 100	500 gpm	3000 gal	(2) 3000 gal
Barkhamsted East	Tanker 2	1250 gpm	3000 gal	3000 gal
West Hartland	Tanker 33	500 gpm	3000 gal	3000 gal
Colebrook	Tanker 31	NA	4000 gal	3000 gal
East Hartland	Tanker 3	500 gpm	3000 gal	3000 gal
New Hartland	Tanker 100	500 gpm	1900 gal	3000 gal
Winchester Center	Tanker 1	1500 gpm	3000 gal	3000 gal
Tolland	Tanker 1	750 gpm	3000 gal	3000 gal

- The participants for the drill were from several different fire departments in the Litchfield 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 Riverton area.*

# The Drill Begins



Riverton Tanker 34 (500 gpm/3500 gal) arrives on the scene first and begins supplying a rural hitch with 250 gpm at the 5-minute mark. Riverton Engine 4 arrives shortly thereafter and begins to set-up for dump tank operations.



# Dump Site Operations



While Tanker 34 pumps the rural hitch (clappered Siamese) the crew of Engine 4 sets up Tanker 34's dump tank and gets ready to draft.



# Dump Site Operations



At the 8:35 minute mark Barkhamsted East Tanker 2 (3000 gal) dumps the first load of water into the dump tank and at the 13:30 minute mark the operation transitions from a rural hitch operation to a dump tank operation.



# Dump Site Operations



Knowing the desire to expand the flow, crews worked quickly to locate and set up a second dump tank. This one came from Tanker 2.



# Dump Site Operations



By the 14:30 minute mark, three dump tanks were down and two were in operation. Thirty seconds later flow was moved to 500 gpm using a HoseMonster flow diffuser.



# Dump Site Operations



Additional tankers begin to arrive and dump their water and plans are underway to continue increasing the flow.



# Dump Site Operations



To help improve pumping ability, Engine 4's (2000 gpm) operator deployed a 3-inch suction line using an auxiliary intake.



# Dump Site Operations



By the 42:00 minute mark four dump tanks were in operation and at the 45-minute mark flow was moved to 800 gpm using Engine 4's pre-piped deck gun.



# Dump Site Operations



By the 60-minute mark, Engine 4 had two, 6-inch suction lines and one, 3-inch suction line in operation and was maintaining a 1000 gpm flow. Engine 4 supplied all of the water to the simulated attack engine and supplied all of the water to the three water transfer (jet siphons) devices.

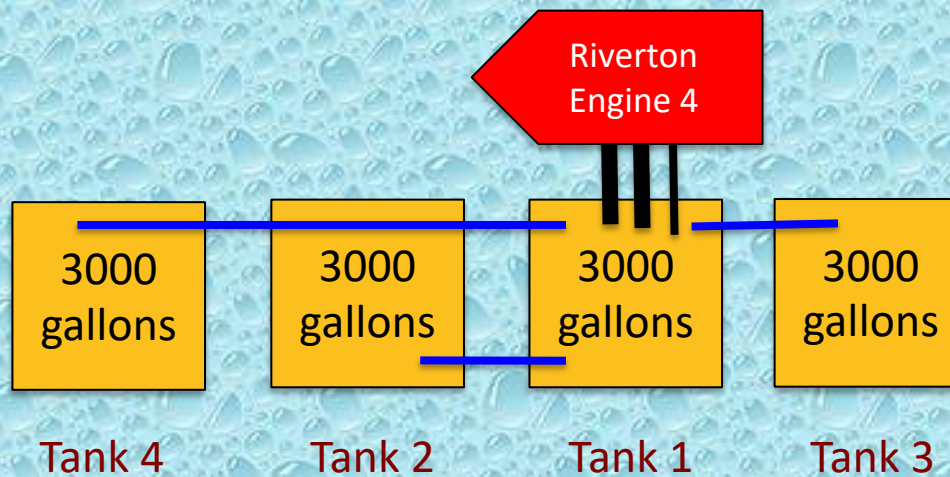


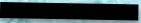

# Dump Site Operations



At the 80-minute mark flow was moved to 1300 gpm and then again to 1600 gpm at the 92-minute mark. Water flow was never once interrupted during the drill.

# Dump Site Layout



-  Suction Hose
-  Jet Siphon



# The Fill Sites

- For this drill, two fill sites were used; both along the Farmington River.
- The fill sites provided around a 1.8-mile and around a 3-mile round trip for the units hauling water.
- The river had ample water to support the operations.
- A 2000 gpm and a 1500 gpm pumper were used to supply the tanker loading sites.

# Hogback Road Fill Site



Winsted Engine 14 (1500 gpm) drafted from the river at this roadside pull-off and supplied water for two loading stations. One for Tolland's vacuum tanker and one for the remaining tankers.



# Hogback Road Fill Site



The fill site crew worked hard to get the tankers loaded as fast as possible and back on the road to the dump site.



# West River Road Fill Site



Pleasant Valley Engine 6 (2000 gpm) drafted from the river and supplied two fill stations.



# West River Road Fill Site



The crew had a bit less room to work at this fill site location but did a nice job of getting tankers loaded and back on the road as fast as possible.

# The Results

- The drill was stopped at the 2-hour mark.
- Water flow was never interrupted!
- An estimated 107,000 gallons of water were flowed through Engine 4 during the drill producing an average flow rate of 934 gpm.
- For the last 60-minutes of the drill a flow of 1,000 gpm or greater was supplied.
- For the last 30-minutes, a flow of 1,500 gpm or greater was supplied!
- The performance resulted in the participants being awarded membership in the Got Big Water 1,000 GPM Club!



# The Lessons Learned

- At this drill, crews chose to use a rural hitch operation to get things started.
- Using the rural hitch gave the crews time to get a dump tank set-up with the added pressure of having to draft and flow water right away.
- Once the first dump tank was up and running the operation ran flawlessly.

# The Lessons Learned

- As the flow increased, additional suction lines were added as were additional dump tanks.
- 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 dump site pumper, Engine 4 was able to supply a peak flow 1600 gpm to the simulated fire ground and feed water to three jet siphons.



# 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, there was some variance in how the tankers loaded – meaning the fill connection. Had fill connections been the same for every tanker, flow most certainly could have been higher at the dump site.

# 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.



# The Lessons Learned

- Vacuum tankers are very efficient water haulers. At this drill, Tolland's 3000-gal vacuum tanker outperformed all others. The reason? They self-loaded.

<u>Tanker</u>	<u>Size</u>	<u>Average GPM Delivered</u>
Tolland (vacuum)	3,000 gals	198
Colebrook	4,000 gals	181
West Hartland	3,000	168
Winchester	3,000	142
Barkhamsted East	3,000	141
Riverton	3,000	125
Norfolk	3,000	122
East Hartland	3,000	112
New Hartford	1,900	<u>105</u>
		1,294

Average per tanker: 144 GPM

Average GPM Delivered

# 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 Winsted Area Chiefs for sponsoring and the Riverton VFD for hosting the seminar.



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