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**Franklin County Firefighters Association  
Strong, Maine**

**Rural Water Supply Operations Seminar  
2-hr Water Supply Drill  
May 19, 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 Forster Building in Strong, ME.
- 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 Franklin County and the surrounding area.

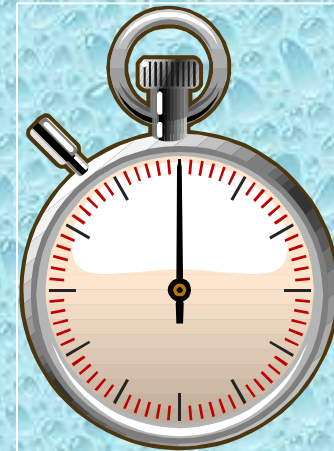
# The 2-hour Water Supply Drill

- The tanker shuttle drill was held on May 19th<sup>th</sup> at Sandy River Riders Park.
- 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>
Kingfield	Tanker 3	500 gpm	2000 gal	2000 gal
New Sharon	Tanker	1250 gpm	2600 gal	3000 gal
Rangely	Engine 4	1250 gpm	750 gal	NA
Strong	Tanker 71	1250 gpm	2500 gal	3000 gal
Strong	Rescue 73	1500 gpm	1000 gal	NA
Wilton	Tanker 1	1250 gpm	2000 gal	2100 gal
Industry	Tanker 1	750 gpm	2500 gal	2500 gal
Temple	Tanker 3	1250 gpm	3000 gal	2000 gal

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

# The Drill Begins



Because the “rural hitch” is a mainstay of the rural water supply operations in this area of Maine the crews wanted to run half of the drill using a rural hitch format. New Sharon’s tanker (1250 gpm/2600 gal) arrived first and began supplying water to the double-clappered Siamese and the simulated attack pumper. A flow of 250 gpm was started at the 3-minute mark.

# Dump Site Operations



Strong Tanker 71 was the second tanker to arrive and took position to supply the other side of the clapped Siamese. The crews operated the rural hitch for about 50 minutes and then moved to a dump tank operation.

# Dump Site Operations



Strong Rescue Engine 73 (1500 gpm) was used as the dump site pumper and once they arrived on the scene the crew began setting up for a transition from the rural hitch to a dump tank operation.

# Dump Site Operations



At around the 50-minute mark the first dump tank was brought on line and flow was moved to 500 gpm using a TFT Blitzfire.

# Dump Site Operations



As additional units arrived the crews worked to build out a second dump tank to improve flow operations. Water transfer operations were critical so crews worked to get jet siphons in place.

# Dump Site Operations



A total of six tankers were used to haul water during the drill. One fill site was used to support the operation.

# Dump Site Operations



Around the 60-minute mark, two dump tanks were now in operation and work was underway to deploy a third tank.



# Dump Site Operations



Three dump tanks were down and two were in operation by the 69-minute mark. Flow remained at 500 gpm.

# Dump Site Operations



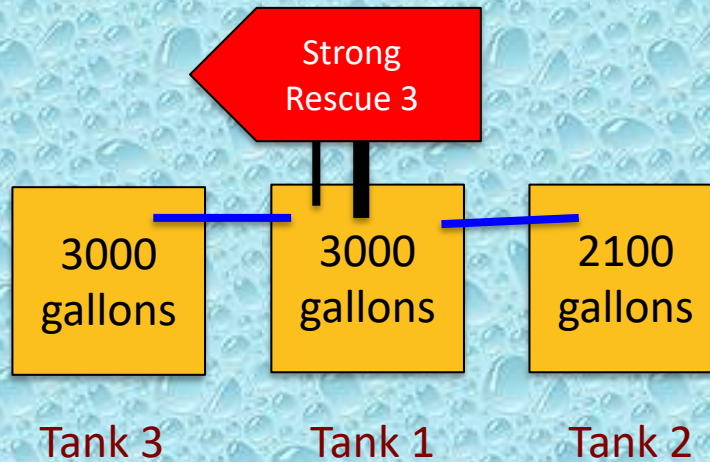
Around the 81:00-minute mark a second Blitzfire was deployed and flow was moved to around 900 gpm where it was sustained for the remainder of the drill.

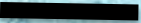

# Dump Site Operations



In order to support the 900 gpm flow and the two jet siphon water transfer device, a 3-inch suction line was added. Also note that a 6-inch barrel strainer was used as no top-performing low-level strainer was available.

# Dump Site Layout



-  Suction Hose
-  Jet Siphon

# The Fill Sites

- For this drill – one fill site was used; an access point along Valley Brook.
- The fill site provided about a 2.2-mile round trip for the units hauling water.
- The brook had ample water volume to support the drill and access was not a problem.
- A single, 1250 gpm pumper was used to supply the tanker loading site.

# Valley Brook Fill Site



Rangely Engine 4 (1250 gpm) took position near a water access point and drafted directly from the brook..

# Valley Brook Fill Site



The brook provided plenty of water, but several lengths of suction hose were needed to access it.

# Valley Brook Fill Site



The fill site crew went to work setting up several fill lines and tried to load as many tankers as possible using 4-inch LDH.



# Valley Brook Fill Site



As operations progressed, the fill site operation was able to have two tankers connected at one time while committing loading operations to just one. This made for a smooth transition between loading tankers.

# The Results

- The drill was stopped at the 94-minute mark due to time constraints.
- Water flow was never interrupted!
- An estimated 51,000 gallons of water were flowed through the simulated attack pumper during the drill producing an average flow rate of 491 gpm.
- For the last 30-minutes of the drill a flow of 900 gpm or greater was supplied to the simulated attack pumper.

# The Lessons Learned

- At this drill, crews chose to use a “rural-hitch” (nurse tanker) operation for the first half of the drill.
- All six tankers were able to deliver at least one load of water to the simulated fire scene by using the rural hitch operation.

# 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.
- An under-performing low-level strainer was replaced with a barrel strainer in order to improve pumper intake flow.
- 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, not all tankers had the same fill connection which slowed the rigs some getting filled and back on the road to 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.

# 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 Franklin County Firefighters Association for sponsoring and to the Strong Fire Department for hosting the seminar.





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