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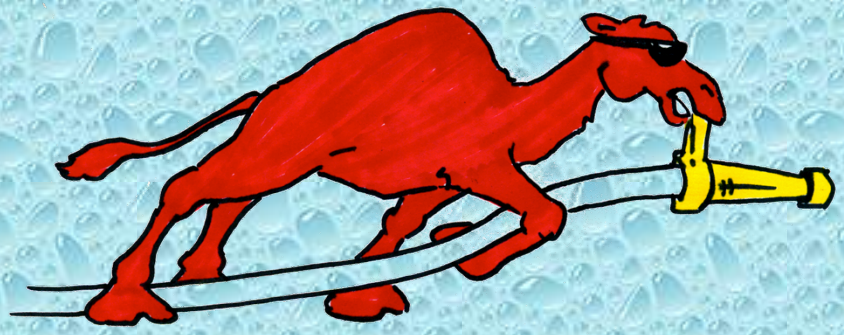


York County Fire and EMS
York County, Maine

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
May 1, 2022
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

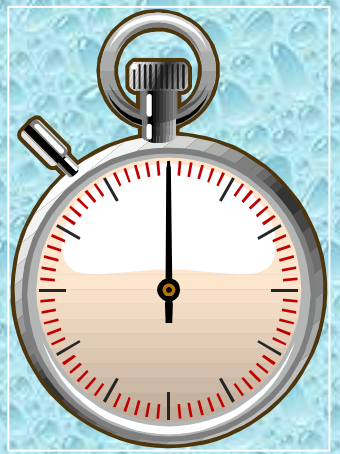
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at Goodwin Mills Fire Rescue.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from York County and the surrounding area.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on May 1st at a local event venue site.
- 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**	**Dump Tank**
Goodwin Mills	Tanker 84	1500 gpm	2500 gal	2100 gal
Windham	Tank 5	1500 gpm	2800 gal	3000 gal
Kennebunk	Tank 22	750 gpm	1800 gal	2100 gal
Kennebunkport	Tank 1	500 gpm	3500 gal	3500 gal
Waterboro	Engine 1	1250 gpm	1000 gal	NA
Alfred	Tank 95	1250 gpm	2500 gal	2100 gal
Buxton	Tank 433	1250 gpm	2750 gal	3000 gal

- *The participants for the drill were from several different fire departments in the York 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 Goodwin Mills area.*

Drill Participants

- Goodwin Mills Tanker 84
  - 1500 gpm pump w/2500 gal tank

- Waterboro Engine 1
  - 1250 gpm pump w/1000 gal tank

Drill Participants

- Kennebunk Tank 22
  - 750 gpm pump w/1800 gal tank

- Kennebunkport Tank 1
  - 500 gpm pump w/3500 gal tank

Drill Participants

- Buxton Tank 433
  - 1250 gpm pump w/2750 gal tank
- Windham Tank 5
  - 1500 gpm pump w/2800 gal tank

Drill Participants

- Alfred Tank 95
  - 1250 gpm pump w/2500 gal tank

The Drill Begins

Goodwin Mills Tanker 84 arrives on scene and goes to work setting up as the dump site pumper. They are simulating supplying water to a first-arriving pumper – there just was not one available at drill time. The rig is equipped with a rear intake, so it was the first suction connection made.

Dump Site Operations

The first dump tank down was a 2500 gallon one and it was in operation by the 9-minute mark.

Dump Site Operations

As additional units arrived on the scene, a second dump tank (2100 gal) was deployed. Water flow was started at 250 gpm at the 5-minute mark and then moved to 500 gpm at the 15-minute mark using a TFT Blitzfire device.

Dump Site Operations

The plan to expand operations included the addition of a third dump tank (2500 gal). Folks took time to add some "space" when deploying the third tank so that two tankers could dump water at the same time. This was important since four of the five tankers hauling water were tandem-axle large capacity tankers.

Dump Site Operations

Kennebunkport Tank 1 (3500 gal) was the only vacuum tanker hauling water in the drill and did a good job of self-loading at the fill site. The tanker was also the largest tanker hauling water.

Dump Site Operations

Alfred Tank 95 (2500 gal) carried plenty of 6-inch suction hose which was eventually used to get a second intake line up and running on Tanker 84, the dump site pumper.

Dump Site Operations

What is missing? Tankers! At the 21-minute mark no tankers could be found at the dump site and things looked dismal for water flow….but Tanker 84's operator did a good job using the 2500 gallons of on-board water to hold over operations until a tanker arrived. Thus, no loss in water flow.

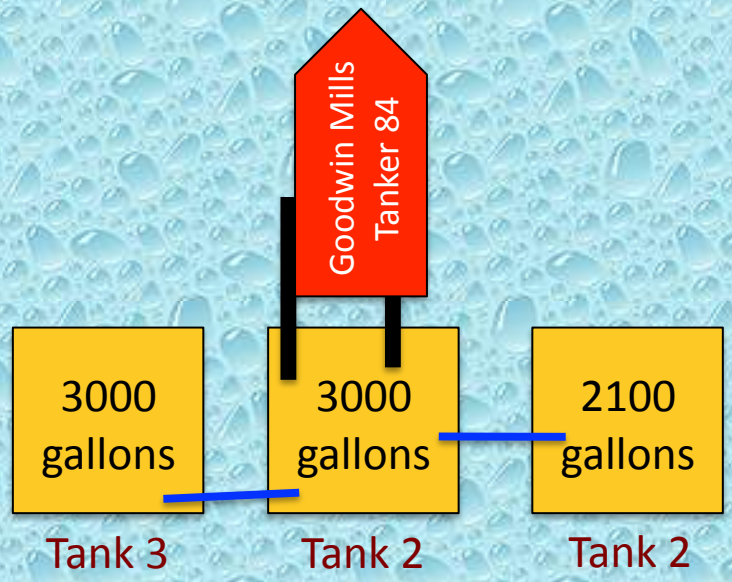
Dump Site Operations

At the 37-minute mark Tanker 84 had twin suction lines in operation. No interruption in flow occurred because the suction intake had a control valve and the pump had an automatic air primer.

Dump Site Operations

At the 45-minute mark, flow was moved to 800 gpm. The tanker approach route was changed so that the rigs could dump on their driver's side…which made it easier and faster for the drivers.

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Site

- For this drill – one fill site was used; a nearby causeway on the Saco River.
- The fill site both provided about a 0.6-mile round trip for the units hauling water.
- The river had ample water volume to support the drill and water access was not a problem.
- A 1250 gpm pumper was used to draft and load tankers at the fill site.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was only interrupted once for about 2 minutes around the 53-minute mark in the drill.
- An estimated 63,900 gallons of water were flowed through the supply pumper during the drill producing an average flow rate of 613 gpm.
- A peak flow of 800 gpm was achieved during the last 43-minutes of the drill.

The Lessons Learned

- At this drill, a large engine/tanker was used as the dump site pumper.
- The engine/tanker provided much needed initial attack water and set-up time to get the first dump tank set up without having to worry about running out of water in a minute or two.
- The use of the engine/tanker's rear intake (valved) made for quick transition to dump tank operations.

The Lessons Learned

- As the flow increased, an additional 6-inch suction line was used to improve intake so that the flow could increase without impacting jet siphon operations.
- The use of a large body pump powered by a big motor at the dump site allowed one rig to supply the entire operation.
- The dump tank configuration simulated the supply pumper being located in a driveway…a very realistic scenario.

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, 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.
- Access to the single fill site slowed down the loading operation. In a real event, a second fill site would have been needed.

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.

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 Forest Stewards Guild and York County Fire & EMS for sponsoring the seminar and to Goodwin Mills Fire Rescue for hosting it.

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This program was developed by
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