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Winfield Community VFD
Winfield, Maryland

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
April 6, 2025
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

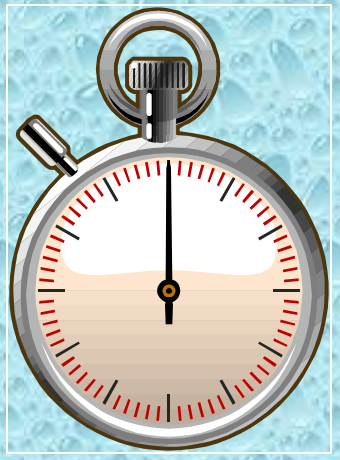
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Winfield fire station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.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

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on April 6th at a nearby Colonial Pipeline facility.
- 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**
Winfield	Engine 141	1500 gpm	1000 gal	NA
Winfield	Engine 142	1500 gpm	1000 gal	NA
Winfield	Tanker 14	1500 gpm	3500 gal	(2) 2500 gal
Pleasant Valley	Tanker 6	1500 gpm	3200 gal	3500 gal
Pleasant Valley	Special Unit 6	1500 gpm	500 gal	NA
Mt Airy	Tanker 14	1500 gpm	3500 gal	3500 gal
Libertytown	Tanker 17	1500 gpm	3500 gal	3500 gal
Howard County	Engine 131	1500 gpm	1000 gal	NA
West Friendship	Tanker 34	1250 gpm	3400 gal	3500/3000
West Friendship	Water Supply 3	1250 gpm	750 gal	NA
Guardian Hose	Tanker 10	1500 gpm	3000 gal	3000 gal
West Friendship	Engine 31	1500 gpm	1000 gal	
New Midway	Tanker 9	1500 gpm	3500 gal	(2) 3000 gal
Lineboro	Tanker 7	1500 gpm	3000 gal	(2) 2100 gal
Urbana	Tanker 23	1500 gpm	3000 gal	3000 gal
Gamber	Eng/Tanker 133	1250 gpm	2500 gal	2500 gal
New Windsor	Brush 105	1000 gpm	250 gal	NA
Harney	Eng/Tanker 112	1500 gpm	2500 gal	NA
Lisbon	Tanker 4	1500 gpm	3500 gal	3000 gal
Lisbon	Water Supply 42	1250 gpm	750 gal	NA

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

The Drill Begins

The drill started with crews executing a rural hitch operation using a 5” double-clappered siamese. Winfield Engine 141 arrived on the scene and laid out several hundred feet of of 5-inch supply line before going to work as the attack pumper.

Rural Hitch Operations

Tanker 14 (left) arrived next and proceeded back the lane to co-locate with Engine 141 and go to work as the “attack tanker.” Tanker 1 (right) arrived next and went to work supplying the rural hitch.

Rural Hitch Operations

Around the 8-1/2-minute mark, the rural hitch was operational at 500 gpm. Crews then worked to expand the ability to have multiple tankers support the operation.

Rural Hitch Operations

Additional arriving tankers supported the rural hitch and crews set up additional clappered Siamese devices.

Attack Tanker Operations

When Tanker 14 arrived on the scene the rig positioned near Engine 141 and supplied tank water using the “attack tanker” concept. The tanker driver then took the supply line from the rural hitch into Tanker 14’s pump to complete the evolution.

Dump Site Operations

Meanwhile, back out at the rural hitch, tankers continued to pump off their water while crews worked to get a dump tank operation up and running. Around the 45-minute mark flow was moved to 1000 gpm using the rural hitch.

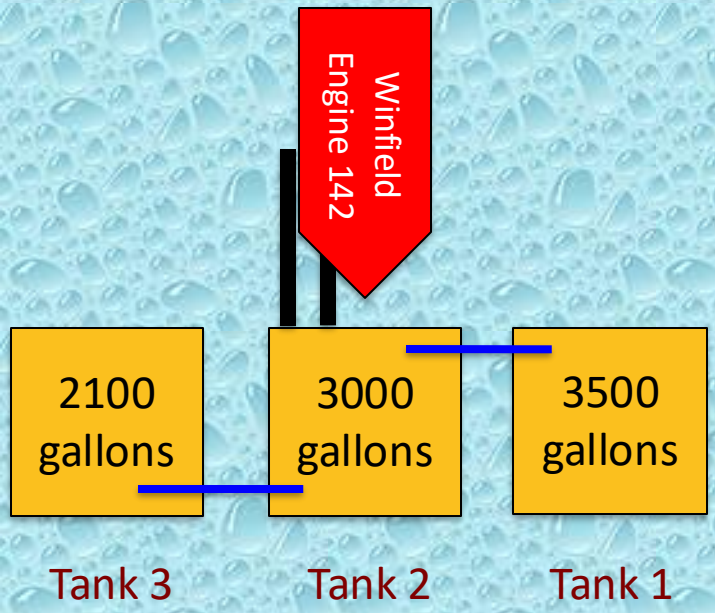
Dump Site Operations

At the 51-minute mark, the operation transitioned to a dump tank operation.

Dump Site Operations

At the 90-minute mark flow was moved to 1500 gpm, where it remained for the remainder of the drill. Engine 142 used multiple suction lines to support the 3-dump tank operation.

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – three fill sites were used – two on the South Branch Patapsco River and one on Tuckers Branch.
- The fill sites both provided about a 3-mile or 4-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 mixture of 1250 gpm and 1500 gpm pumpers were used at the fill sites to load tankers.

River Fill Site

The river fill site provided plenty of water and access for two pumpers to set up and load tankers.

River Fill Site

Lisbon Water Supply 42 (1250 gpm) [left] and Pleasant Valley Special Unit 6 (1500 gpm) [right] drafted from the river and operated independent tanker loading stations.

Creek Fill Site

West Friendship Water Supply 3 (1250 gpm) took position at a bridge over the creek and deployed their hydraulic pump to support their pumping operation.

Creek Fill Site

The pumper also drafted from the bridge-mount dry fire hydrant and was able to load tankers at the 1000 gpm target rate.

The Results

- The drill was stopped 10-minutes shy of the 2-hour mark.
- Water flow was never interrupted!
- An estimated 94,500 gallons of water were flowed through the attack pumper during the drill producing an average flow rate of 909 gpm.
- For the last 20-minutes of the drill a flow of 1,500 gpm or greater was supplied.

The Lessons Learned

- At this drill, crews simulated use of the Carroll County SOP on rural water supply operations; this included the use of an attack tanker and the double-clappered Siamese.
- The rural hitch was able to support a 1000 gpm flow because all of the tankers could pump off, at or above the 1000 gpm rate..
- The transition to dump tank operations occurred without water flow interruption.

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 142 was able to supply a peak flow of 1500 gpm to the simulated fire ground and feed water to two 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 – but that did not hinder operations as units were familiar with each other due to mutual aid operations.

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 Winfield Community VFD for sponsoring and hosting the seminar.

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For more information contact us at
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