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Kent County Fire Chiefs' Association
Chestertown, Maryland

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
April 27, 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

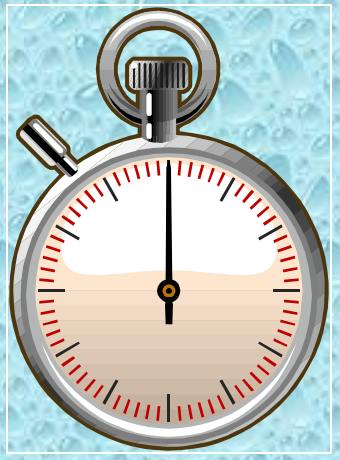
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Chestertown fire station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.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

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on April 27th at a local concrete recycling 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**
Chestertown	Engine 6	1500 gpm	1000 gal	NA
Chestertown	Tanker 6	1500 gpm	4000 gal	4000 gal
Galena	Tanker 3	1250 gpm	4400 gal	NA
Kennedyville	Tanker 4	1500 gpm	4000 gal	4000 gal
Church Hill	Engine/Tanker 5	1500 gpm	2500 gal	NA
Mary Del	Tanker 56	2000 gpm	3500 gal	NA
Magnolia	Tanker 55	1000 gpm	6000 gal	NA
Sudlersville	Engine 63	1500 gpm	1000 gal	NA
Millington	Tanker 2	1500 gpm	4000 gal	4000 gal
Rock Hall	Engine Tanker 7	1500 gpm	3000 gal	3500 gal
Betterton	Engine 5	2000 gpm	1000 gal	NA
Queenstown	Engine Tanker 3	1750 gpm	3000 gal	NA
Kennedyville	Engine 4	1500 gpm	750 gal	NA

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

The Drill Begins

The drill started with crews executing a rural hitch operation using a 5” double-clappered siamese. Chestertown Engine 6 arrived on the scene and laid out 5-inch supply hose and went to work as the attack pumper. A few minutes behind them Tanker 6 (4000 gal) arrived and began supplying the rural hitch.

Dump Site Operations

The use of the double-clappered siamese was important to the operation as it allowed for water to be sent to the attack pumper shortly after the arrival of the tanker.

Dump Site Operations

At the 4:30 minute mark water flow was started at 250 gpm at the attack pumper.

Dump Site Operations

The second-arriving tanker positioned to support the rural hitch and plans were underway to locate a dump site for transition to dump tank operations.

Dump Site Operations

Around the 15-minute mark crews were working to build out a dump operation using equipment arriving on the tankers.

Dump Site Operations

The first load of water is dumped into the dump tanks around the 24-minute mark and about one minute later the water supply transitions to a dump tank operation.

Dump Site Operations

Flow was moved to 750 gpm around the 25-minute mark and 3 dump tanks were operational.

Dump Site Operations

Additional tankers arrived and flow was moved to 1000 gpm around the 30-minute mark.

Dump Site Operations

Water transfer operations became critical as flow continued to increase; this time to 1250 gpm around the 55-minute mark.

Dump Site Operations

Kennedyville Engine 4 (1500 gpm) was able to deploy twin, 6-inch suctions which allowed the rig to support the fireground flow and the jet siphons.

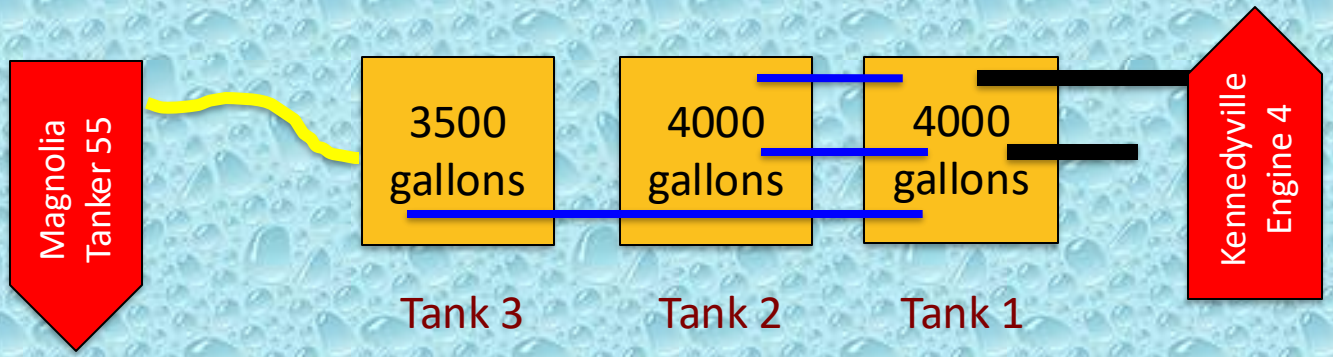
Dump Site Operations

Magnolia Tanker 55 (6000 gal/1000 gpm) arrived at the 72-minute mark and positioned to support dump tank operations.

Dump Site Operations

The tanker was operational by the 80-minute mark. Tankers that could not dump pumped off their water into Tanker 55 who in-turn supplied water to the dump tanks using an open relay (5-inch diffuser). Flow was moved to 1700 gpm and then again to 2000 gpm around the 108-minute mark.

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – two fill sites were used – both along the Chester River.
- The fill sites provided about a 1.2-mile round trip and a 3.0-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 1500 gpm pumper and a 2000 gpm pumper were used to load tankers.

Morgnec Fill Site

Betterton Engine 5 (2000 gpm) drafted from the river at this recreation area and supplied an LDH manifold which in turn supported a loading station.

Morgnec Fill Site

The crews worked hard to load the tankers at the 1000 gpm fill rate goal and get them back on the road to the dump site. Most every rig loaded using twin, 3-inch fill lines.

Buckingham Fill Site

Sudlersville Engine 63 (1500 gpm) drafted from the river at this boat launch and supplied an LDH manifold which in turn supported the loading station.

The Results

- The drill was stopped at the 2-hour mark.
- Water flow was only interrupted once during the first 15-minutes of the operation.
- An estimated 139,425 gallons of water were flowed through the attack pumper during the drill producing an average flow rate of 1,223 gpm.
- For the last 60-minutes of the drill a flow of 1,250 gpm or greater was supplied.
- For the last 12-minutes, a flow of 2,000 gpm or greater was supplied!

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 without 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 was able to supply a peak flow of 2000 gpm to the simulated fire ground and feed water to three jet siphons.
- The tractor trailer tanker played a huge role as it was able to supply 1000 gpm to the dump site.

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, almost all tankers loaded using the same fill hose/fitting arrangement which allowed the crews to get the tankers loaded and back on the road to the fill site in very short order.

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 Kent County Fire Chief’s Association for sponsoring and the Chestertown Volunteer Fire Company for hosting the seminar.

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