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Shortsville Fire Company
Shortsville, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 8, 2017
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

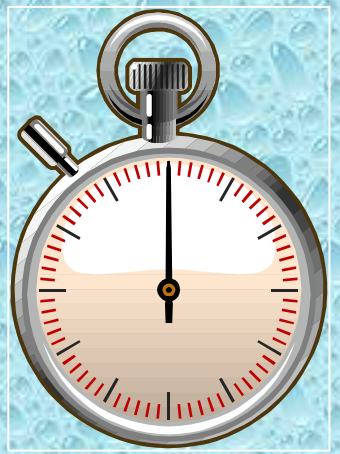
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Shortsville fire station.
- Once the classroom part was done, the seminar continued with 8 hours of practical work on fill-site and dump site operations.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

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 8th in Shortsville at a local 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

- *The participants for the drill were from several different fire departments in the Shortsville region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the area.*

Drill Participants

- Shortsville Engine 2511
  - 1250 gpm pump w/1150 gal tank

- Shortsville Engine 2512
  - 1250 gpm pump w/1000 gal tank

Drill Participants

- Shortsville Tanker 2541
  - 500 gpm pump w/2000 gal tank
- Seneca Castle Tanker 2441
  - 1000 gpm pump w/2000 gal tank

Drill Participants

- Farmington Engine 832
  - 1500 gpm pump w/1200 gal tank
- Manchester Pumper/Tanker 1731
  - 1,500 gpm pump w/2500 gal tank

The Drill Begins

Shortsville Engine 2512 and Tanker 2541 arrive at the dump site and set up for nurse tanker operations to support the initial attack.

Dump Site Operations

Tanker 2541 supplied the engine using a short length of 5-inch hose. The goal was to support a 250 gpm attack until a dump tank operation could be established.

Dump Site Operations

The dump site crew works to set up the first dump tank using the single-lane concept. The 2,500-gallon dump tank was placed in front of Engine 2512.

Dump Site Operations

A 250 gpm water flow was started at the 5:00-minute mark using a Hose Monster flow diffuser with fixed pitot.

Dump Site Operations

The first tanker on the Tanker Task Force arrives on scene and prepares to support the dump site operation.

Dump Site Operations

Using the side suction inlet is important when trying to achieve maximum flow. Thirty feet of suction hose was needed to reach the dump tank placed in front of the pumper.

Dump Site Operations

The original, low level suction strainer was changed out to a Firovac low level strainer in order to improve flow capability.

Dump Site Operations

Once the first dump tank was in operation, flow was moved to 500 gpm and plans moved forward to get a second tank set up.

Dump Site Operations

With the arrival of units on the Tanker Task Force, a second dump tank (2100-gallons) was located and deployed.

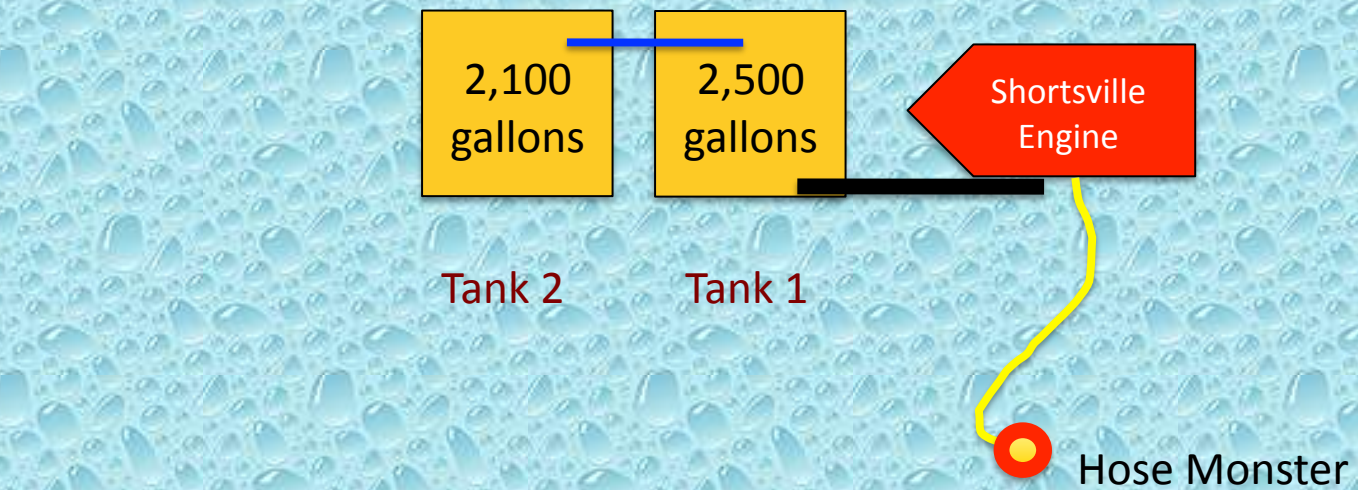
Dump Site Operations

The single-lane tank arrangement worked out well for the drill and the two-dump tank operation was able to support the 500 gpm flow.

Water Transfer Operations

Water transfer operations are always critical to the success of a multiple dump tank operation. The crew at the dump site did a nice job of getting this jet siphon in operation.

Dump Site Layout



Suction Hose

2-1/2” Hose

Jet Siphon

The Fill Site

- For this drill – one fill site was used. It was located along Flint Creek in the downtown area of Shortsville.
- The fill site provided about a 1.0-mile round trip for the units hauling water.
- The creek provided ample water volume to support the drill and access was not a problem.
- A single, 1,250 gpm pumper was used at the pond to support the tanker fill station.

Fill Site Operations

Shortsville Engine 2511 arrives at the fill site and lays a 5-inch supply line from the main parking lot down to the drafting location along the stream.

Fill Site Operations

Engine 2511's crew works to set up the pumper for drafting. Extra suction hose is needed to reach the creek.

Fill Site Operations

The challenge at the fill site was to get set up before the arrival of the first tanker.

Fill Site Operations

The fast-moving creek provided plenty of clean water. A low level suction strainer was the only strainer available for use during the set up of the site.

Fill Site Operations

With the site all set up and ready to go, tanker loading operations are begun.

Fill Site Operations

Tankers were loaded in a small parking lot just off Main Street. A crew of three persons made and broke connections and operated the control valves.

The Results

- The drill was stopped at 65-minute mark due a problem with one of the units hauling water.
- Water flow was interrupted a couple of times during the entire drill.
- An estimated 21,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 432 gpm.
- A peak flow of 570 gpm was sustained for the last 20 minutes of the drill.

The Lessons Learned

- At this drill, a nurse tanker operation was used to support the attack pumper during the early moments of the drill. The use of the nurse tanker allowed the crew to build out the dump site without having to worry about running out of water in 4 minutes.
- The use of the single lane tank arrangement worked out well once the additional suction hose was located. A good example of the need to carry extra suction hose on rural pumpers.

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.
- Having a standardized fill connection for all tankers increases fill efficiency and decreases fill time.
- LDH appliances are important when loading tankers using LDH – thus, there is value to carrying extra appliances on all tankers.

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 Shortsville Fire Department for sponsoring and hosting this seminar.

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This program was developed by
GBW Associates, LLC

For more information contact us at
thebigcamel@gotbigwater.com