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Shortsville Fire Department
Shortsville, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
May 5, 2019
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

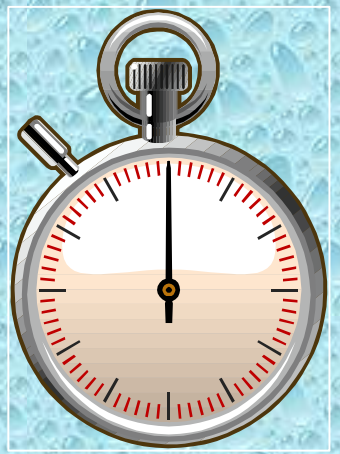
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Shortsville fire station.
- Once the classroom part was done, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- 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 May 5th 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!

Drill Participants

- Shortsville Engine 2511
  - 1250 gpm pump w/1000 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

- Phelps Tanker 2141
  - 250 gpm pump w/1900 gal tank

- Manchester Pumper/Tanker 1731
  - 1,500 gpm pump w/2500 gal tank

Drill Participants

- Middlesex 62-PT-46
  - 1000 gpm pump w/1500 gal tank
- East Bloomfield Tanker 741
  - 1000 gpm pump w/2000 gal tank

Drill Participants

- Ionia
  Pumper/Tanker 1632
  - 1250 gpm pump w/1250 gal tank

- Port Gibson
  Pumper/Tanker 2231
  - 1,500 gpm pump w/1600 gal tank

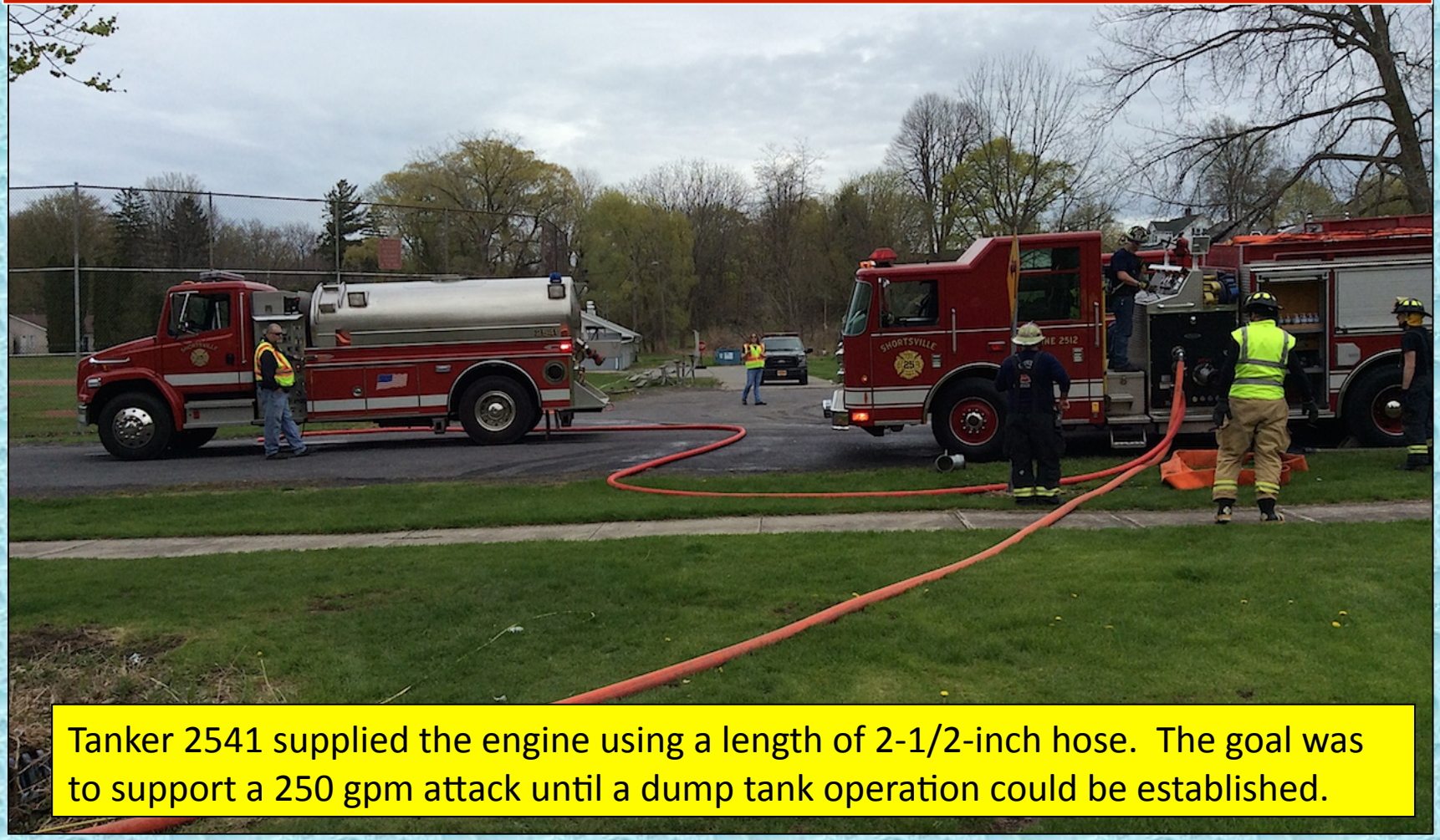
Drill Participants

- Honeoye-Richmond Tanker 1441
  - 250 gpm pump w/2000 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 length of 2-1/2-inch hose. The goal was to support a 250 gpm attack until a dump tank operation could be established.

Dump Site Operations

At the 10-minute mark, one dump tank was down and the operation was moved to a dump tank operation.

Dump Site Operations

Flow was moved to 500 gpm at the 15-minute mark using a Hose Monster flow diffuser with fixed-pitot.

Dump Site Operations

At the 23-minute mark, two dump tanks were down and in operation and preparations were underway to increase the flow.

Dump Site Operations

One of the tankers hauling water was a rear-dumping tanker only. The dump site officer did a good job of directing rigs so that the rear-dumping tanker could always get in position at the last dump tank.

Dump Site Operations

At 39-minutes, the flow was moved to 750 gpm and at the 54-minute mark, three dump tanks were down and in operation.

Dump Site Operations

Water transfer operations became critical at the dump site. A short length of 2-1/2-inch hose was used to supply a gated wye which then supplied two jet siphons. One firefighter was assigned to control the jet siphons at the wye.

Dump Site Operations

The dump site crew chose to use a “through the drain sleeve” set-up and place the dump tanks to the rear of the pumper. This arrangement allowed tankers to drive past and side dump their water.

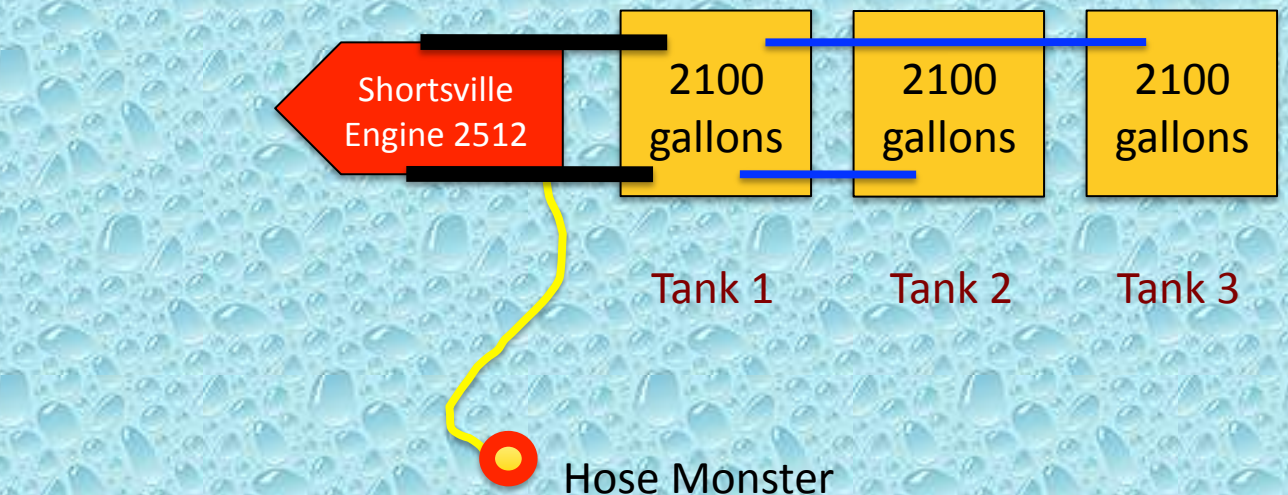
Dump Site Operations

Using the three dump arrangement behind the pumper necessitated the transfer of water from the third tank to the primary tank…thus the need for additional suction hose.

Dump Site Operations

At the 92-minute mark, the dump site pumper deployed a second, 6-inch suction line and one-minute later, flow was moved to 1000 gpm and maintained for the remainder of the drill.

Dump Site Layout



The Fill Site

- For this drill – two fill sites were used. Both located along Flint Creek in the downtown area of Shortsville.
- The fill sites provided about a 1.5-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 1,250 gpm and a 1500 gpm pumper were used to support the tanker fill stations.

Fill Site Operations

Shortsville Engine 2511 drafted out of the creek at this fill site and supplied a 300-ft 5-inch line up to an LDH manifold in a parking lot. Tankers were then loaded in the parking lot. In addition to drafting using a 6-inch suction line, Engine 2511 also located a sufficient quantity of 3-inch suction hose to add in another suction line.

Fill Site Operations

Port Gibson Pumper Tanker 2231 (1500 gpm) drafted from the same creek but used a dry fire hydrant as the supply point. They too loaded tankers using LDH.

The Results

- The drill was stopped at the 2-hour mark.
- Water flow was only interrupted on time for about 1-minute around the 18:30-minute mark.
- An estimated 82,250 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 721 gpm.
- A peak flow of 1000 gpm was sustained for the last 30 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

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