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Ashville Fire Department
Ashville, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 20, 2013
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

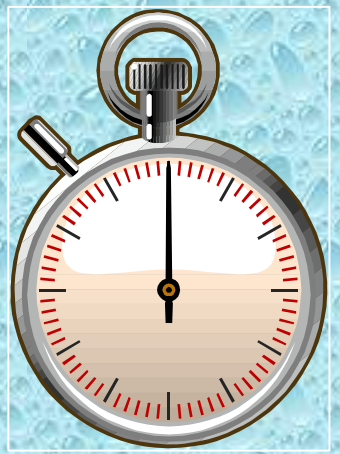
- The 2-day seminar started on Saturday with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Ashville Fire Department.
- Once the classroom part was done, the seminar continued with several hours of practical work on fill-site and dump site operations.
- The program concluded on Sunday with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from the Chautauqua County area.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 20th at the Ashville fire station.
- 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 everyone in the fire service may not agree on ISO's evaluation of fire department capabilities, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.

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 seven different fire departments and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Ashville area.*

Drill Participants

- Ashville Engine 301
  - 1,500 gpm pump w/1,000 gal tank
- Ashville Engine 302
  - 1,500 gpm pump w/1,000 gal tank

Drill Participants

- Ashville Tanker 301
  - 4,200 gal vacuum tanker
- Bear Lake Tanker 674
  - 750 gpm pump w/3,000 gal tank

Drill Participants

- Chautauqua Engine 212
  - 1,500 gpm pump w/1,000 gal tank
- Chautauqua Tanker 211
  - 4,200 gal tank

Drill Participants

- Panama Engine 384
  - 1,250 gpm pump w/1,000 gal tank

- Panama Pumper/Tanker 383
  - 1,500 gpm pump w/3,000 gal tank

Drill Participants

- Kiantone Tanker 361
  - 2,600 gal vacuum tanker
- Ellery Center Tanker 421
  - 500 gpm pump w/2,500 gal tank

Drill Participants

- Stanley Hose Tanker 281
  - 500 gpm pump w/3,000 gal tank
- Busti Engine 311
  - 1,500 gpm pump w/1,000 gal tank

Drill Participants

- Sugar Grove Tanker 634
  - 500 gpm pump w/3,000 gal tank

Preparation

Units staged in the parking lot at the Ashville fire station and crews were briefed and prepared for dispatch

The Drill Begins

Chautauqua Engine 212 was the first-arriving engine and stopped to lay out a 4-inch supply from the front of the station. Ashville Engine 301 arrived next, "picked up" the line and began getting ready for a dump tank operation.

The Drill Begins

Ashville's fire station was used as the dump site location. The attack pumper operated in the rear of the station and the dump site was set up in front of the station.

Attack Pumper Operations

As soon as Engine 212 came to a stop, the timer was started and crews hustled to get operations set up in order to begin water flow at the 5-minute mark.

Dump Site Operations

Ashville Tanker 301 arrived with its 4,200 gallons of water and a 4,000 gallon dump tank.

Dump Site Operations

The dump site crew worked very hard to get the first dump tank set-up and ready for operation in under 5:00 minutes.

Water Flow is Started

At the 5-minute mark, water flow was started at 250 gpm. A HoseMonster flow diffuser with fixed pitot was used to measure water flow during the drill.

Dump Site Operations

Meanwhile, back at the dump site, Engine 301 was already drafting from the first dump tank! Panama's tanker (yellow) was positioned to serve as a nurse tanker if needed.

Two Dump Tanks in Operation

At around the 9:00 minute mark, a second dump tank was placed into service. Chautauqua Tanker 211 is shown here dumping its 4,200 gallons of water.

Dump Site Operations

With two dump tanks already in operation, crews work to build another jet siphon in order to move to a three-dump tank operation.

Dump Site Staging

Tankers were staged across the road from the fire station and were then “called in” as needed. This worked really well and kept the dump site very organized.

Water Supply Officer

Ashville Assistant Chief John Grover assumed the role of Water Supply Officer and his job was to oversee the operation of the dump site and to coordinate the three fill sites. This position is very important in the command structure for it allows the Incident Commander to focus on the emergency.

Nurse Tanker Operations

Panama's 3,000-gallon tanker (1,500 gpm pump) was set-up to support the operation as a nurse tanker – however, it was never needed because crews did a really great job of getting the dump site up and running in under 5:00 minutes.

Three Dump Tanks

Three dump tanks in operation. The flow was moved to 500 gpm at the 15:00 minute mark.

Dump Site Operations

Stanley Hose Tanker 281 arrived as part of the first, tanker task force and is shown here off-loading its 3,000 gallons of water.

Dump Site Operations

With the flow at 500 gpm and four dump tanks fully in operation at the 25:00 minute mark, things were a "little sparse," in that only one tanker was present at the dump site.

Dump Site Operations

At the 30:00 minute mark with all four dump tanks full, the flow was increased to 750 gpm.

Dump Site Operations

With flow now at 750 gpm, suddenly – there were no tankers dumping and no tankers in staging! (The rig above is an engine). So…the pressure was on!

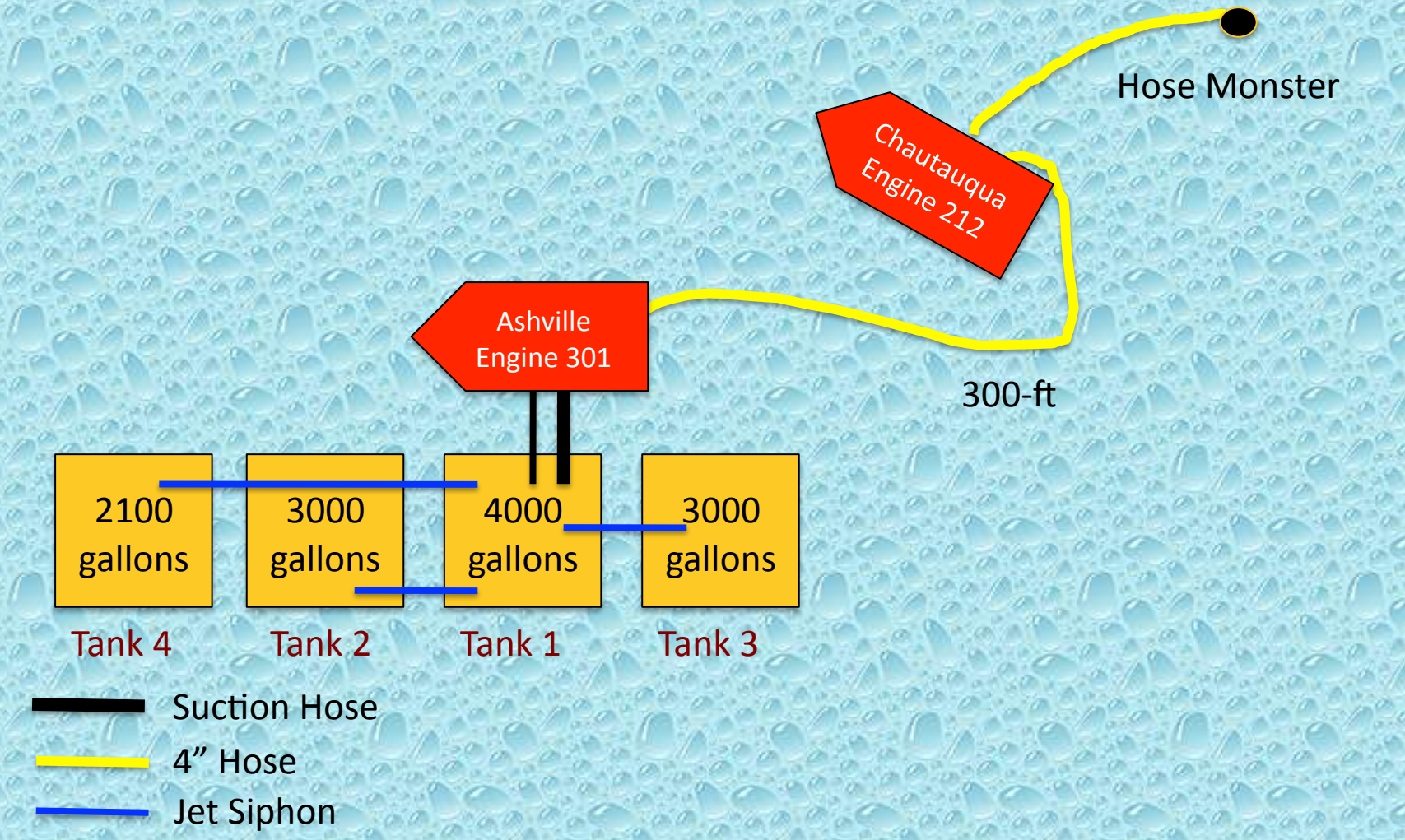
Dump Site Operations

The Water Supply Officer directed Panama's tanker to break from the nurse tanker set-up and move into the shuttle. This move occurred just at the right time and water flow was never interrupted.

Dump Site Operations

Flow was moved to 1,000 gpm at the 81:00 minute mark, to 1,250 gpm at the 108:00 minute mark, and once again to 1,450 gpm at the 113:00 minute mark – all without interruption!

Dump Site Layout



The Fill Sites

- For this drill – three fill sites were used – two ponds and Lake Chautauqua.
- The first fill site was located at pond on Victoria Road and provided a 5.3-mile roundtrip for units hauling water..
- The pond provided sufficient water volume to support the drill and access was gained using a dry fire hydrant.
- A single, 1,000 gpm pumper was used at the dry hydrant to support the tanker fill station.

The Fill Sites

- The second fill site was located at a private pond in a mobile home park on Carpenter-Pringle Road and provided a 2.7-mile roundtrip for units hauling water.
- The site provided ample water volume to support the drill and access was gained using a dry fire hydrant.
- This fill site was used to load the two vacuum tankers, therefore no pumper or loading crew was every assigned to the site.

The Fill Sites

- The third fill site was located along Lake Chautauqua at the ferry launch on Stow Ferry Road and provided a 3.1-mile roundtrip for units hauling water.
- The site provided ample water volume to support the drill and access was not an issue.
- A single, 1,500 gpm pumper was used at this site to draft and load tankers.

Victoria Road Fill Site

First-arriving crews worked had to work very quickly to get this fill site up and running since it was to be the first fill site used by tankers.

Victoria Road Fill Site

The crew used a 6-inch dry fire hydrant to access the pond. The pumper was unable to achieve 1,000 gpm from the dry hydrant – most likely due to sediment build-up around the suction strainer in the pond. A flow of around 850 gpm was the most achieved.

Victoria Road Fill Site

The fill site crew set up to load using a 4-inch LDH line for those tankers equipped to handle such: they also set up to fill using a single, 3-inch line for those tankers that had smaller fill connections.

Victoria Road Fill Site

The Panama pumper was a 1,250 gpm pumper de-rated to 1,000 gpm. However, it was equipped with a 3-inch high-flow discharge and was able to support a good flow (850 gpm) to the 4-inch LDH fill line.

Victoria Road Fill Site

The Victoria Road fill-site was a good example of operating on narrow roads and the need to have a traffic management plan. Once the site was operational, all tankers were directed to travel in the same direction because of the limited space available for passing.

Vacuum Tanker Fill Site

Ashville's 4,200 gallon vacuum tanker (T-301) is shown here self-loading through 30-feet of 6-inch suction hose connected to a 6-inch dry fire hydrant. The vacuum tanker's 500 cfm vacuum pump allows the tanker to load at over 1,000 gpm without the need for an engine crew.

Vacuum Tanker Fill Site

More impressive was the fact that the pond was about 200-feet away from the dry fire hydrant – which meant that the 500 cfm vacuum pump had to pull water through 230 feet of 6-inch conduit.

Vacuum Tanker Fill Site

Kiantone's new Firovac 2,700-gallon vacuum tanker also did a fine job of loading using the same suction set-up.

Stow Ferry Fill Site

Lake Chautauqua provided an endless source of water at this fill site. Busti Engine 311 (1,500 gpm) took a position at the ferry launch and supported tanker loading operations using 4-inch LDH. One problem that occurred was excessive aquatic debris and vegetation blocking strainers. The pumper crew had to work hard to keep the suction lines free.

Stow Ferry Fill Site

Two loading operations were established – one used 4-inch LDH for those tankers so equipped and the other used dual 3-inch lines supplied by an LDH manifold.

The Results

- The drill was stopped at the 1:55-hour mark.
- Water flow was never interrupted!
- An estimated 85,114 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 774 gpm.

The Lessons Learned

- At this drill, dump tanks were set up very quickly. In fact, the first tank was ready before the 5:00-minute mark!
- A 3,000-gallon nurse tanker was put into position but was never needed.
- The nurse tanker was used to provide support should a gap in the shuttle operation occur – this was a good plan.

The Lessons Learned

- Once flow was increased to 750 gpm at about 45 minutes into the drill, the nurse tanker was cut loose and began hauling water – again, another good decision by the Water Supply Officer.
- The tanker staging area worked out well at the dump site and really provided for a smooth offloading operation.

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 a mixture of tankers that had 4-inch Storz loading fittings and that had 2-1/2-inch loading fittings. The smaller fittings slowed down the loading operations by increasing the time needed to make and break connections.

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.
- 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.

The Lessons Learned

- Vacuum tankers clearly make a difference in a water hauling operation. At this drill, two vacuum tankers (6,900-gallon total capacity) never once had to have an engine crew help load the tanker.
- Perhaps the greatest advantage of a vacuum tanker is its ability to self-load – that proved true again at this drill.

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 Ashville Fire Department for sponsoring and hosting this seminar.

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This program was developed by
GBW Associates, LLC

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