www.GotBigWater.com

Stratham Volunteer Fire Department
Stratham, New Hampshire

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
June 3, 2018
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

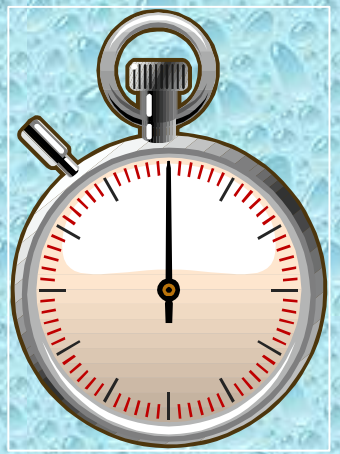
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Stratham VFD station.
- Once the classroom part was done, the seminar continued with 8 hours of practical work on fill-site and dump site operations.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

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on June 3rd in Stratham at a local school.
- 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 Stratham area and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in Stratham.*

Drill Participants

- Stratham 44 Engine 1
  - 1500 gpm pump w/1000 gal tank

- Stratham 44 Engine 3
  - 1500 gpm pump w/1000 gal tank

Drill Participants

- Dover Engine 7
  - 1500 gpm pump w/1000 gal tank
- Stratham 44 Tanker 8
  - 2000 gpm pump w/3000 gal tank

Drill Participants

- Hampton Falls 23 Tanker 4
  - 1000 gpm pump w/2500 gal tank

The Drill Begins

Stratham Tanker 8 arrives on the scene and prepares to pump the clappered siamese laid out by the attack pumper. The “rural hitch” was set up to simulate an attack engine/supply engine operation. There was no ”actual” attack engine, the siamese and 4-inch supply line fed a Hose Monster flow diffuser in an effort to simulate pumping to an attack engine.

Dump Site Operations

Dover Engine 7 (only the crew is shown in photo) arrived and began setting up a dump site operation which would supply the other side of the siamese.

Dump Site Operations

A 250 gpm water flow was started at the 5:00 minute mark using the nurse tanker operation. Meanwhile, the folks worked to get the first dump tank set up and in operation.

Dump Site Operations

At around the 11-minute mark, the operation switched to a dump tank operation as the second arriving tanker, Hampton Falls Tanker 4 was able to dump its water.

Dump Site Operations

When Tanker 8 made its first return trip to the dump site, the crews worked to bring a second dump tank on-line in order to increase flow. Dover Engine 7 used a Fol-Da-Tank suction elbow to assist with drafting operations.

Dump Site Operations

With two dump tanks now in operation, flow was increased to 400 gpm. The difficulty was that there were only two tankers and one engine hauling water in the shuttle – therefore, flow was limited by the number of water hauling rigs.

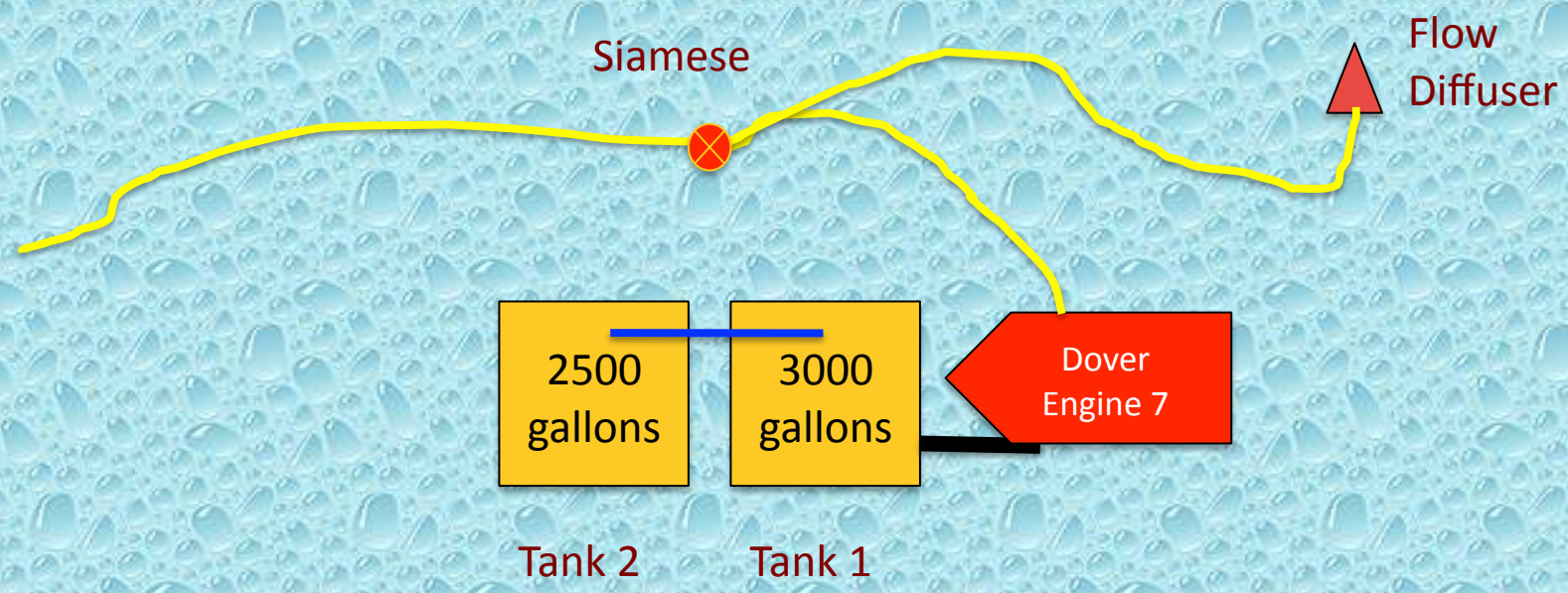
Dump Site Operations

Tanker 4 dumps another load of water. Since the tanker only had a rear dump, the driver would pull past the last dump tank and then back up so as not to block out the other tanker that had side dumps.

Dump Site Operations

The single-lane tank arrangement was used during the drill in an effort to simulate operations along a narrow roadway. Stratham Engine 1 is seen on the far left pumping off its water back via 4-inch hose to the yellow dump tank.

Dump Site Layout



Suction Hose

4” Hose

Jet Siphon

The Fill Site

- For this drill – one fill site was used, a nearby pond located in a residential area.
- The pond was outfitted with a dry fire hydrant and provided about a 2.0-mile round trip for the units hauling water.
- The pond provided ample water volume to support the drill and access was not much of a problem.
- Crews could not attain an air tight connection on the dry fire hydrant connection so they ended up using a traditional drafting arrangement.
- A 1500 gpm pumper was used at the fill site to support the tanker loading operation.

Pond Fill Site

Stratham Engine 3 (1500 gpm) positioned to draft from the dry fire hydrant. They could not overcome an air leak at the suction connection so they quickly switched to a traditional drafting arrangement using suction hose.

Pond Fill Site

The air leak that occurred happened at the suction hose connection and could not easily be remedied by the crews. Thus, they wasted no time in going directly to the pond in order to be ready for the first tanker.

Pond Fill Site

Crews used 4-inch LDH to load Tanker 8 at a target fill rate of 1,000 gpm. An LDH manifold was used to control the loading operation.

Pond Fill Site

Tanker 4 was loaded using dual lines outfitted with 3-inch camlock fittings and the same 1000 gpm target loading rate.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was interrupted a couple of times during the drill due to the fill site crews working to remedy the air leak problem.
- A peak flow of 500 gpm was sustained for most of the drill…which was pretty good considering the limited number of vehicles hauling water.

The Lessons Learned

- At this drill, a nurse tanker operation (aka “rural hitch”) was used during the early moments of the drill which allowed the crews to set-up the dump site without the pressure of running out of water in a couple of minutes.
- Water flow was never interrupted during the first 15-minutes of the drill…including the transition from rural hitch to dump tank operations. The crews did an excellent job making the seamless transition!

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, the rigs hauling water all loaded a bit differently and thus the loading speed was effected at the fill site.

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 Stratham VFD for sponsoring and hosting the seminar.

www.GotBigWater.com

This program was developed by
GBW Associates, LLC

For more information contact us at
thebigcamel@gotbigwater.com