

www.GotBigWater.com



**Chichester Firefighter's Association
Chichester, New Hampshire**

**Rural Water Supply Operations Seminar
2-hr Water Supply Drill
May 3, 2015
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 Chichester 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 Capital Area Mutual Aid Pact.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on May 3rd at the Chichester public works supply yard on Bear Hill Road.
- 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 nine 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 Capital Area.*

Drill Participants

- Chichester 54-Engine-1
 - 1,500 gpm pump
w/2,000 gal tank
- Chichester 54-Engine-3
 - 1,250 gpm pump
w/1,000 gal tank



Drill Participants

- Canterbury 53-Tanker-1
 - 1,000 gpm pump
w/1,850 gal tank
- Wilmot 87-Tanker-2
 - 500 gpm pump
w/1,750 gal tank



Drill Participants

- Hopkinton 60-Tanker-3
 - 1,000 gpm pump
w/2,000 gal tank
- Pembroke 62-Engine-3
 - 1,250 gpm pump
w/1,500 gal tank



Drill Participants

- Barnstead 6-Engine-2
 - 1,750 gpm pump
w/1,000 gal tank

- Barnstead 6-Tanker-1
 - 1,500 gpm pump
w/3,000 gal tank



Drill Participants

- Loudon 61-Tanker-1
 - 500 gpm pump
w/3,000 gal tank
- Northwood 71-Engine-2
 - 1,750 gpm pump
w/1,000 gal tank



The Drill Begins



Chichester 54-Engine-3 was the first unit to arrive. The crew laid a 4-inch LDH supply line and prepared for a “rural hitch” operation. The timer was started when the crew began laying the supply line.

Dump Site Operations



Barnstead 6-Engine-2 arrived next and took a position to build out a multiple-dump tank dump site operation using the rural hitch during the initial phase of operation.

Dump Site Operations



The attack engine worked to stretch a 4-inch line to a HoseMonster flow diffuser for accurate flow monitoring.

Copyright 2015 - GBW Associates, LLC - Chichester, New Hampshire - May 2015

Dump Site Operations



At the 5-minute mark, flow was started at 250 gpm using the attack engine's deck gun.

Dump Site Operations



At the 15-minute mark, flow was moved to 523 gpm and operations were moved over to a dump tank operation. Barnstead's 3,000-gallon served as a nurse tanker during the early moments of the operation.

Copyright 2015 - GBW Associates, LLC - Chichester, New Hampshire - May 2015

Dump Site Operations



Barnstead 6-Engine-2 (1,750 gpm) had plenty of pumping capacity to support the operation and the crew did a great job of running the dump site.

Dump Site Operations



Loudon 61-Tanker-1 offloads its 3,000-gallons during its first trip to the dump site. One of the problems that occurred was a delay in building out the first fill site. This resulted in a loss of water for about seven minutes.

Dump Site Operations



Two dump tanks are now in operation as the Hopkinton tanker dumps its 2,000 gallons of water.

Copyright 2015 - GBW Associates, LLC - Chichester, New Hampshire - May 2015

Dump Site Operations



The operation moved to a 3-dump tank operation. The red tank is just 1,500 gallons in size and ended up being replaced with a larger tank in order to have greater storage capacity.

Dump Site Operations



At the 46-minute mark, the dump site is operating – but not efficiently. The small red tank was creating a storage issue and the second fill site had just come on line.

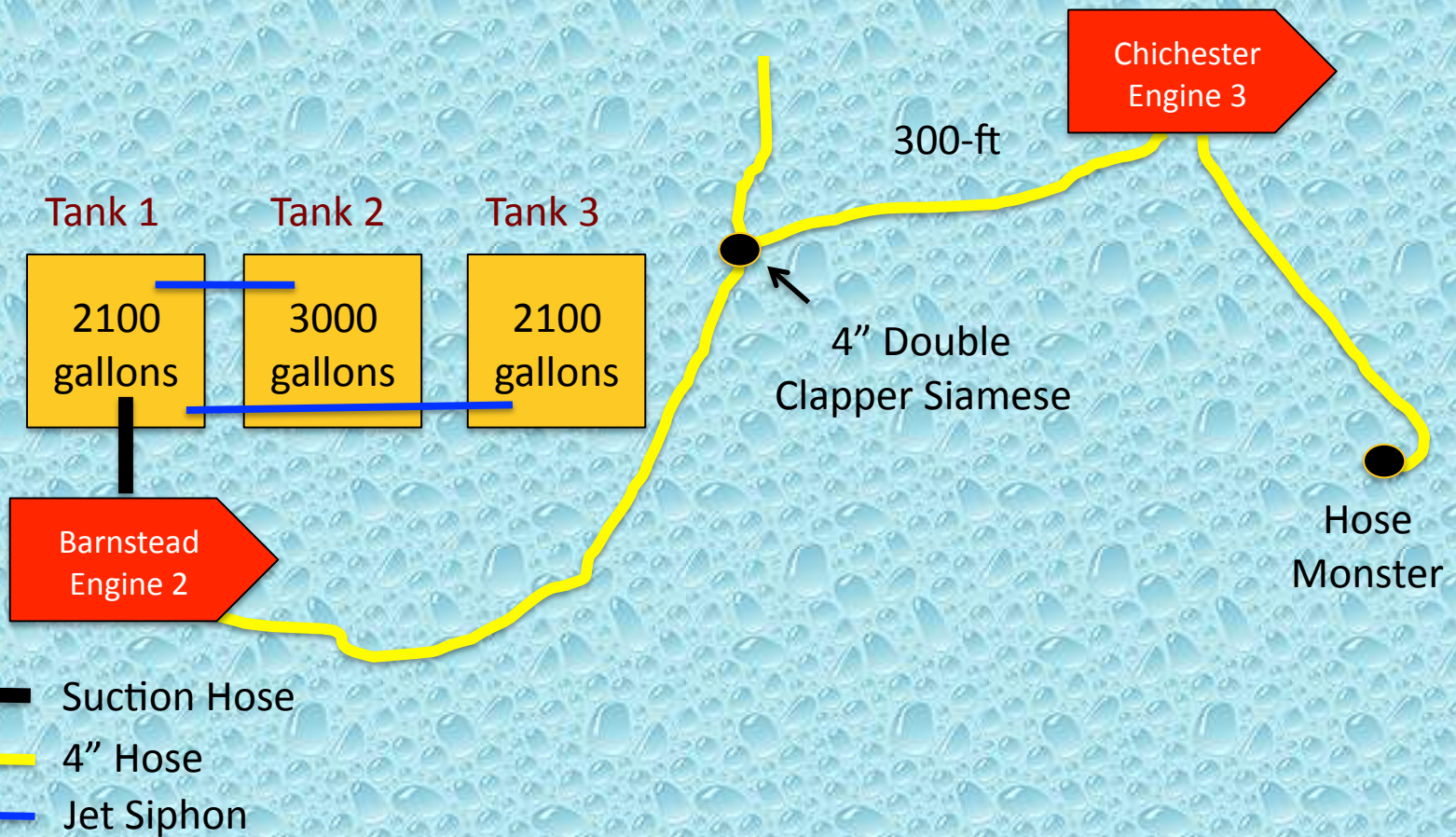
Dump Site Operations



The dump site crew replaced the small red tank with a larger (yellow) tank and that change made a big difference in flow sustainability.

Copyright 2015 - GBW Associates, LLC - Chichester, New Hampshire - May 2015

Dump Site Layout



The Fill Sites

- For this drill, two fill sites were used.
- The first fill site was a pond on Deer Meadow Road.
- A 1,250 gpm pumper was used to load tankers at this fill site.
- The fill site provided a 2-mile round trip for units hauling water.
- The pond provided ample water volume to support the drill and access was not a problem.

The Fill Sites

- The second fill site was located at a bridge over Perry Brook on Swiggey Brook Road.
- A 1,750 gpm pumper was used to load tankers at this fill site.
- The fill site provided a 2.6-mile round trip for units hauling water.
- The brook provided ample water volume to support the drill and access was not a problem.

Deer Meadow Fill Site



Pembroke 62-Engine-3's (1,250 gpm) crew used a 500 gpm portable fire pump to bolster their pumper's output capability at the pond fill site.

Copyright 2015 - GBW Associates, LLC - Chichester, New Hampshire - May 2015

Deer Meadow Fill Site



The Pembroke engine supplied a TFT manifold which was used to load the tankers as they arrived at the fill site. Tankers were loaded using 4-inch LDH.

Deer Meadow Fill Site



The access area to the lake provided ample room for the pumper to set up drafting operations. The addition of the portable pump increased the ability to load tankers by allowing the pumper to take in more volume.

Perry Brook Fill Site



Northwood's pumper (1,750 gpm) took draft from Perry Brook which also provided ample water for the operation.

Perry Brook Fill Site



The large capacity pumper had little trouble obtaining a draft. Tankers were loaded at this fill site using 4-inch LDH.

Perry Brook Fill Site



A floating barrel strainer was used in the drafting operation at the Perry Brook fill site. Water depth was good as was the water quality.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was only interrupted once – for about 7 minutes - at the 29 -minute mark because a delay occurred in getting the first fill site set-up due to a communication issue.
- An estimated 55,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 508 gpm.

The Lessons Learned

- The dump site was built in little time thanks to good hustle by crews on the first-arriving units.
- Once again, this drill showed the value of the “rural hitch” in the early phases of a tanker shuttle operation. Three thousand gallons of water were “pumped off” to the attack engine before dump-and-run operations were ready. This reduced the urgency to get a drafting operation in place and allowed for an uninterrupted supply during the set up.
- The maintenance yard layout provided ample space for this large operation and traffic flow was not a problem.

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 every fill line had a 4-inch Storz connection which really made a difference in reducing the amount of time needed to connect fill lines.
- Standardized fill connections always speed up fill operations.

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

- Portable fire pumps can make a big difference in rural water supply operations – as was the case at this drill where a 500 gpm portable pump allowed a 1,250 gpm pumper to exceed tanker fill rate expectations.

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 Chichester Fire Department and Firefighters Association for sponsoring and hosting this seminar.



www.GotBigWater.com

*This program was developed by
GBW Associates, LLC
Copyright © 2015
No part may be used or copied
without expressed written consent.*

*For more information contact us at
thebigcamel@gotbigwater.com*