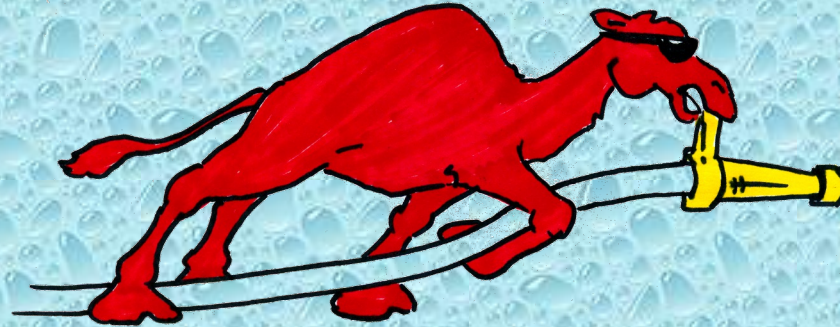


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**Gladys Volunteer Fire Department
Gladys, Virginia**

**Rural Water Supply Operations Seminar
2-hr Water Supply Drill
April 23, 2023
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 Gladys fire station.
- Once the classroom part was over, 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 Campbell County, VA and the surrounding area.

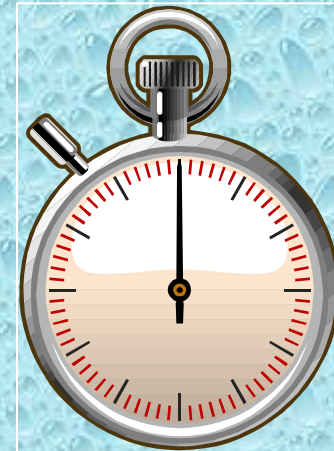
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on April 23 at the Long Island Lumber Yard in Gladys.
- 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

Department	Number	Pump Size	Tank Size	Dump	Assignment
Alta Vista	Tanker 10	1250	2800	3000	Water shuttle
Brookneal	E/T 1-06	1000	1200	2500	Dump site
Concord	Tanker 13-4	500	1200	3000	Water shuttle
Gladys	Engine 14-1	1250	1000		reserve
Gladys	Engine 14-3	1250	1000	2100	Franks Fillsite
Gladys	Tanker 14	750	2500	2500	Water shuttle
Red House	Tanker 9	750	3000	3000	Water shuttle
Renan	Engine 261	1250	1000		River Fillsite
Renan	Tanker 267	500	2000	2100	Water shuttle
Rustburg	Engine 2	2000	750		Attack
Rustburg	Tanker 16	350	3000	3000	Water shuttle

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

The Drill Begins



Rustburg 2 (2000 gpm) arrived on the scene and laid out a couple hundred feet of LDH supply line. The unit will serve as the attack pumper at this drill. Brookneal 1-06 (1000 gpm) arrives second and “picks up” the supply line and prepares for water supply operations. Water flow was started through a HoseMonster (diffuser/pitot device) at 250gpm.

Dump Site Ops



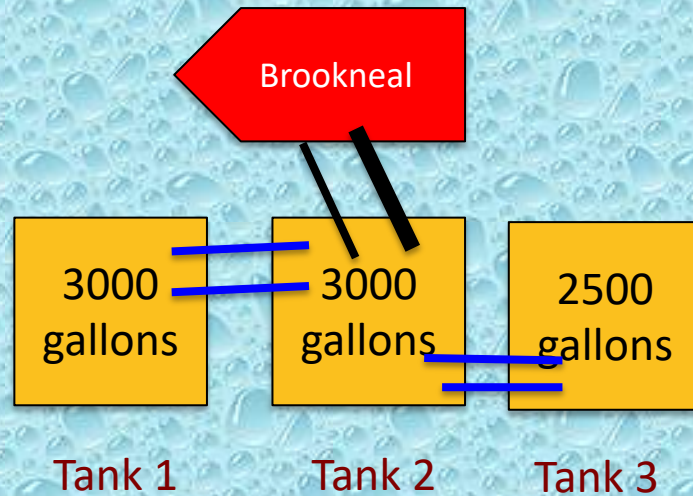
The dump site was quickly built out to use three tanks. Flow was increased to 500 gpm and at times more. Jet siphons were placed in the tanks. Two each were used per tank due to the use of smaller suction hose (5").

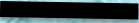

Dump Site Ops

Capacity of the dump site pumper became an issue due to supplying the attack pumper and running 4 jet siphons. Pump capacity was augmented by use of a pony suction. The dump site folks also got smart about managing jet siphons such that only two were running at a time. This was coordinated with which tank the tankers were dumping in.



Dump Site Layout



-  Suction Hose
-  Jet Siphon

The Fill Sites

- For this drill – two fill sites were used; one at the Roanoke River and the other at a pond at Frank's Junkyard.
- The river fill site created about a 4-mile loop, the junkyard about a 5-mile loop.
- Both sites had ample water volume to support the drill and access was not a problem.
- Each site had a pumper assigned.

River Fill Site



Renan Engine 261 was assigned to the river fill site.

Junkyard Fill Site



Gladys Engine 14-1 was assigned to the pond fill site.

Vacuum Tanker Fill Site



Gladys operates a vacuum tanker (seen on the right “blowing off” the water at the dump site)...the easiest way to fill these is let them do their own thing. The crew has left a set of hard sleeves run to the river for the vacuum tanker to use.

The Results

- The drill was stopped at the 2:00-hour mark.
- Except for a few minutes, a 500gpm flow was successfully maintained. Sometimes this flow was closer to 750gpm.
- This flow was sustained by 6 tankers operating over an average 4.5-mile loop.

The Lessons Learned

- At this drill, crews chose to use a supply pumper/attack pumper arrangement from the very beginning.
- The two-pumper arrangement provided time to get the first dump tank set up without having to worry about running out of water in a minute or two. However the first dump tank was down very quickly and drafting operations commenced almost immediately.

The Lessons Learned

- As the flow increased, additional suction lines were used to improve intake so that the flow could increase without impacting jet siphon operations.
- Generally a large pump is better for use as the dump site supply pumper...but sometimes you have what you have. In this case, the crews were smart about using multiple sets of suction hose AND closely coordinating which tanks were being filled and which jet siphons were being used.

The Lessons Learned

- Anything that slows down the loading and dumping of tankers is going to reduce the efficiency of the tanker shuttle. Crews did a good job of stowing dump elbows, fill port caps, etc.
- At this drill, most all of the tankers had the same fill connection which allowed the rigs to get filled and be back on the road in little time.

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 Gladys Volunteer Fire Department for sponsoring and hosting the seminar.



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