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**Town of Webb Fire District
Old Forge, New York**

**Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 18, 2020
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 Old Forge FD.
- 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 the Old Forge/Otter Lake region.

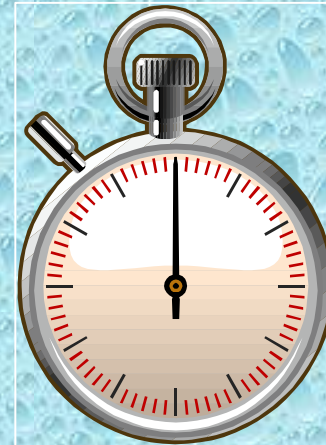
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 18th in downtown Old Forge near Old Forge Pond.
- 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

Participants				
Department	Unit	Pump Size	Tank Size	
Old Forge	Engine 2	1250 gpm	1250 gal	
Old Forge	Engine 5	1000 gpm	500 gal	
Otter Lake	Engine 1	1250 gpm	1000 gal	
Otter Lake	Tanker 1	NA	2000 gal	
Woodgate	Tanker 1	NA	3000 gal	
Big Moose	Engine 133	1000 gpm	300 gal	
Big Moose	Tanker 324	500 gpm	2000 gal	
Oriskany	Tanker 3	1250 gpm	2500 gal	
Forestport	Engine 1	1500 gpm	1000 gal	
Forestport	Tanker 1	NA	2000 gal	
Forestport	Tanker 2	NA	2000 gal	
Eagle Bay	Engine 132	1250 gpm	300 gal	
Boonville	Tanker 6	500 gpm	1800 gal	
Barneveld	Tanker 7	NA	2000 gal	

- The participants for the drill were from several different fire departments in the Old Forge/Otter Lake region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Old Forge area.*

The Drill Begins



Units were divided up into first alarm and tanker task forces and staged at the Old Forge fire station.

Dump Site Operations



The drill started with Old Forge Engine 2 (right) arriving on scene and going to work building out a dump tank operation. Old Forge Engine 5 (left) laid a supply line and assumed the role of the attack engine being fed by Engine 2.

Dump Site Operations



Crews worked to get the dump site up and running as fast as possible. Two dump tanks were deployed rather quickly; although not brought on line right away. The original supply to Engine 5 was tank water from Engine 2.

Dump Site Operations



Water flow started at 250 gpm at the 5-minute mark and moved to 500 gpm at the 14-minute mark using Engine 5's deck gun.

Dump Site Operations



With the first dump tank in use, the second dump tank was brought on line to support the increased flow.

Dump Site Operations



Tankers on the 1st Tanker Task Force began to arrive around the 15-minute mark and two dump tanks were now in use.

Dump Site Operations



Flow was moved to 750 gpm at around the 31-minute mark and more tankers from the next tanker force started to arrive as well.

Dump Site Operations



With plans to move to higher flows, the crews worked to deploy a third dump tank.

Dump Site Operations



Additional jet siphons were placed in service to transfer water to the primary dump tank.

Dump Site Operations



In order to improve flow ability, the suction strainers being used by Engine 2 were changed out to better performing strainers.

Dump Site Operations



By the 100-minute mark flow was pushed to 1300 gpm using four dump tanks and four suction intakes on Engine 2. Forestport Engine 1 was brought in to run two of the jet siphons which allowed Engine 2 to focus on drafting and supplying Engine 5.

Dump Site Operations



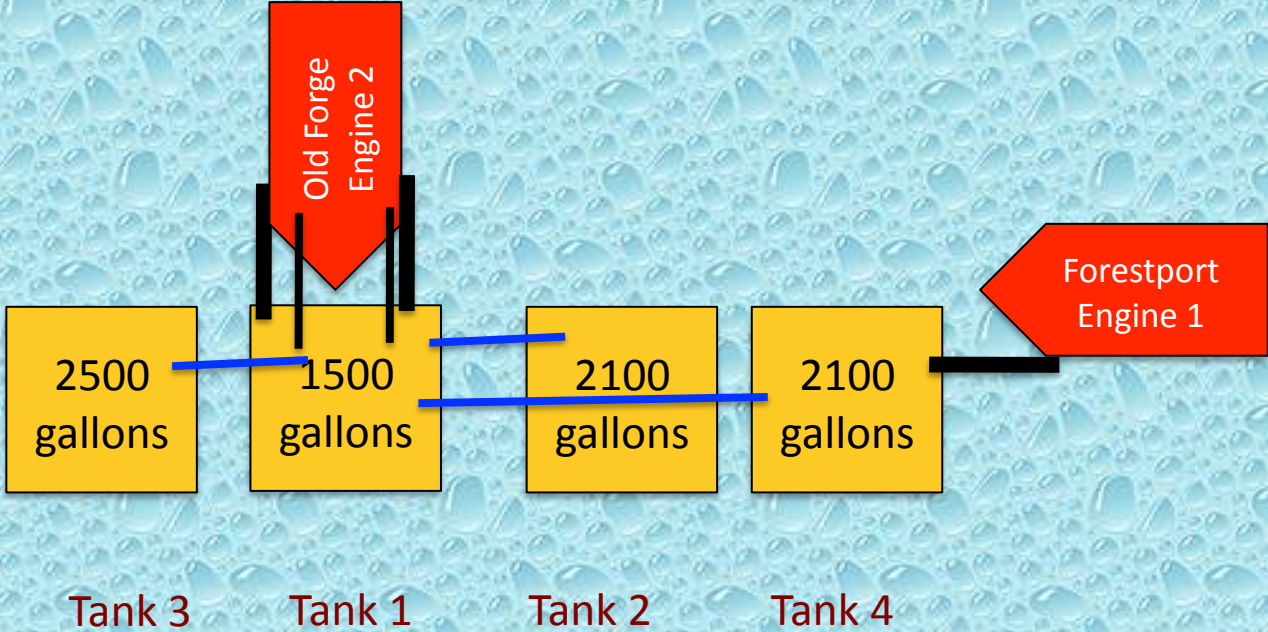
One of the challenges of the drill was handling tanker movement at the dump site because of the number of tankers that could only dump from the rear.

Dump Site Operations



Near the end of the drill, a small portable pump was used to supply water from Old Forge Pond to one of the dump tanks.

Dump Site Layout



— Suction Hose
— Jet Siphon

The Fill Sites

- For this drill – two fill sites were used – both were located at bridges over a large stream.
- The fill sites each provided about a 4-mile round trip for the units hauling water.
- Both fill sites had ample water volume to support the drill and access required the use of several lengths of suction hose.
- A 1,250 gpm pumper was used at each site to support the tanker fill station.

Fill Site Operations



Several lengths of suction hose were needed in order for this 1250 gpm mini-pumper to reach the stream...thus the importance of carrying extra suction hose on rural apparatus.

Fill Site Operations



Tankers were loaded at this fill site using an LDH appliance to control flow to two, smaller fill hoses. The fill rate averaged around the 1000 gpm target rate.

Fill Site Operations



Otter Lake's engine needed additional suction hose to reach its water source.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was interrupted a couple of times during the entire drill; once at the 9-minute mark when drafting operations were not quite ready.
- An estimated 90,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 799 gpm.
- A peak flow of 1300 gpm was achieved during the last 20 minutes of the drill.

The Lessons Learned

- At this drill a dump site engine was used to supply water to an attack engine.
- The dump site engine eventually used four suction intakes to maximize pump capability.
- A four-dump tank operation supported the 1300 gpm flow sustained near the end of the drill.
- A separate engine was brought in to help run jet siphons which resulted in better pump output for the dump site engine.

The Lessons Learned

- Low level suction strainer performance varies quite a bit among manufacturers.
- At this drill, shutting down the operation for a couple of minutes while a better strainer was put in service meant that the higher flow could be achieved.

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, not all tankers had the same fill connection so folks worked to try and fill as efficiently as possible.

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 Old Forge Fire Department for hosting this seminar.



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