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Jolly Farmer Products, Inc – Fire Brigade
Northampton, NB

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 18, 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 with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held in the Jolly Farmer office building.
- 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 Northampton and Central Valley areas.

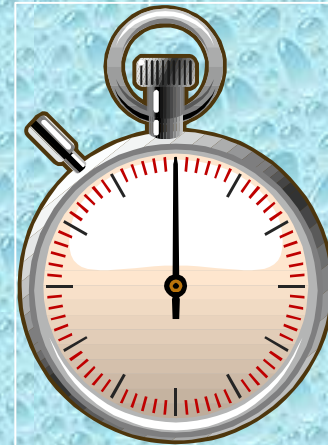
The 2-hour Water Supply Drill

- The tanker shuttle drill was held at the Jolly Farmer facility in one of the large parking lots where the fire brigade would position should a large fire occur in the warehouse or production area.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by FUS in their evaluation of fire department water supply capabilities.
- While everyone in the fire service may not agree on FUS 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 FUS Test

- The FUS 2-hour Water Supply Delivery Test for a Superior Tanker Shuttle Accreditation has two critical time segments:
 - 0:00 to 5:00 minutes
 - 5:01 to 120:00 minutes



FUS 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.



FUS Test *5:01 to 120:00 minutes*



- For dwelling target hazards, at the 5-minute mark, a flow of at least 1,000 lpm must be started - and it must be sustained for the remainder of the drill – which is 120 minutes.
- For commercial property target hazards, a flow of at least 2,000 lpm must be started and sustained for a total of 60 minutes.

Water Supply Drill Participants



- The participants for the drill were from twelve different fire departments in the Northampton region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire at the Jolly Farmer facility.*

Drill Participants

- Jolly Farmer Pumper 1
 - 1,250 gpm pump
w/1,000 gal tank
- Jolly Farmer Tanker 1
 - 2,000 gal tank



Drill Participants

- Oromocto Tanker 429
 - 1,000 gpm pump
w/1,000 gal tank
- Hartland Tanker 3
 - 300 gpm pump
w/2,800 gal tank



Drill Participants

- Debec Tanker 1
 - 1,000 gpm pump w/1,500 gal tank
- Lakeville Tanker 5
 - 1,250 gpm pump w/2,800 gal tank



Drill Participants

- Centerville Tanker
 - 1,250 gpm pump
w/2,800 gal tank
- Harvey Tanker 794
 - 1,500 gpm pump
w/3,000 gal tank



Drill Participants

- Keswick Ridge Tanker 782
 - 1,250 gpm pump
w/2,300 gal tank
- Nackawic Tanker 3
 - 1,000 gpm pump
w/2,000 gal tank



Drill Participants

- Millville Tanker 5
 - 500 gpm pump
w/1,250 gal tank
- Keswick Valley Tanker 2
 - 1,000 gpm pump
w/1,250 gal tank



Preparation



Units staged in the parking lot at the Jolly Farmer facility and received a briefing on the drill. Assignments were made and crews mounted their rigs and were ready for dispatch. They positioned off site before being dispatched.

The Drill Begins



Jolly Farmer Pumper 1 (1,250 gpm) arrived on the scene and began setting up for attack pumper operations. The stop watch was started when the driver engaged the parking brake.

Dump Site Operations



More fire brigade members arrived on the scene and immediately went to work setting up the first dump tank (2,500 gal). The tank was ready in about 4 minutes, just in time for the arrival of the first tanker.

Dump Site Operations



Jolly Farmer Tanker 1 (2,000 gal) arrived on the scene around the 4-minute mark just as crews were getting ready to initiate water flow.

Dump Site Operations



Water flow was started at 250 gpm at the 5-minute mark using the pumper's pre-piped deck gun. The plan was to expand operations to a 1,000 gpm flow so crews members developed a plan to acquire additional resources.

Dump Site Operations



Within a few minutes, the first of several mutual aid tankers arrived on the scene. In order to sustain the flow, it was critical that tankers dumped into the first dump tank until more tanks could be set up.

Dump Site Operations



The dump site crew grabbed the next arriving dump tank and sat it up only to realize that it was a bit small (1,500 gal). The crew knew that they had larger dump tanks on the way so they opted to wait on the arrival of one of those tanks.

Dump Site Operations



Meanwhile, another large dump tank arrived (2,500 gal) and the dump site crew deployed it. The plan was to eventually use at least three dump tanks to achieve the 1,000 gpm flow rate. Therefore, planning was very important as resources arrived. Flow was moved to 500 gpm at the 15-minute mark.

Dump Site Operations



With three dump tanks in operation, the flow was moved to 700 gpm at the 30-minute mark and then to 1,000 gpm at the 45-minute mark. The three large dump tanks provided adequate “on-site” storage to support this size flow.

Dump Site Operations



The dump tanks were positioned to best support the numerous tankers that could only dump off of the rear.

Dump Site Operations



As the flow moved to 1,000 gpm, the dump site pumper began to struggle to run two jet siphons and flow 1,000 gpm. Adding the 2-1/2" suction line helped some, but the greater plan was to transfer the jet siphon operations to another unit.

Dump Site Operations



At the 50-minute mark, the three dump tank operation was supplying the 1,000 gpm flow without much difficulty other than waiting on tankers. The crew decided to place a fourth dump tank into operation.

Water Transfer Operations



Water transfer operations were critical to the success of this drill. The 1,250 gpm was unable to flow 1,000 gpm and run three jet siphons (four dump tanks), so the decision was made to use portable fire pumps to run the jet siphons.

Water Transfer Operations



Three portable pumps were used to supply the jet siphons. The pumps varied in capacities and pressures but they all were able to support some level of water transfer. The ultra-high pressure pump worked well on the short transfer run while the higher volume pump worked better on the 30-ft run.

Water Transfer Operations



This “home-made” jet siphon (Jolly Farmer) actually worked the best of all the jet siphons.

Water Transfer Operations



The jet siphon used in the fourth dump tank was rigged to “jump” the third dump tank so that all three jet siphons dumped their water into the primary dump tank (orange tank).

Water Transfer Operations



The three jet siphons easily supported the 1,000 gpm flow and the primary dump tank was kept full.

Dump Site Operations



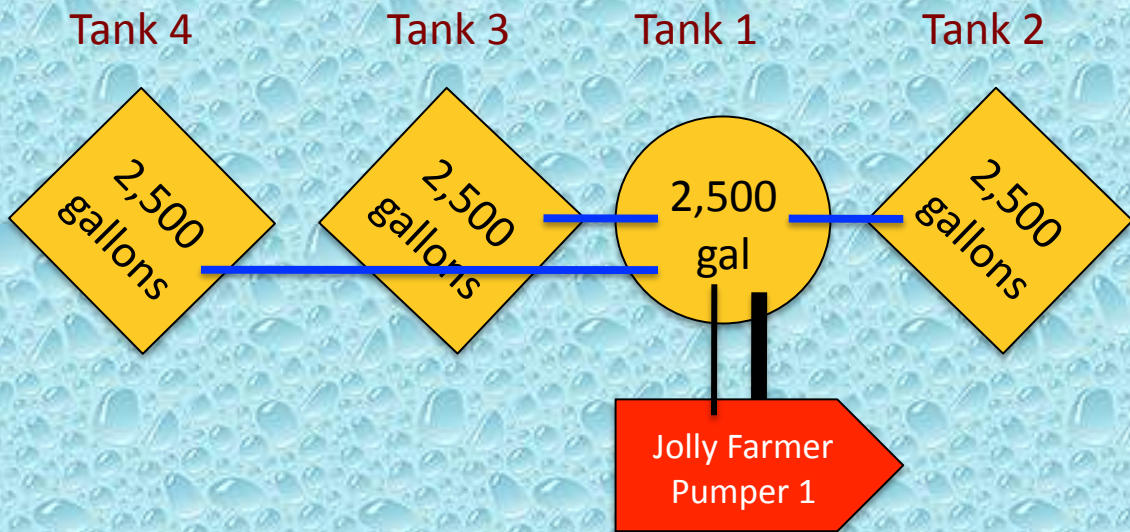
The dump tank arrangement allowed multiple tankers to dump simultaneously – which is what would be needed for a large fire at this facility.

Dump Site Operations



The tankers for the drill came in all different sizes and most of them could only dump off the rear of the vehicle. Fortunately, by using the parking lot for dump site ops, there was adequate space for maneuverability.

Dump Site Layout



The Fill Sites

- For this drill – two fill sites were used.
- The first fill site was located at Kirk Cove along the Saint John River and provided about a 3.4 km round trip for the units hauling water.
- The cove provided ample water volume to support the drill. Access was a bit “tricky” but tankers were loaded on the “main” road, thus reducing the access issues for the tankers.
- A single, 1,000 gpm tanker/pumper was used at the cove to support the tanker fill station.

The Fill Sites

- The second fill site was located at a pond north of the Jolly Farmer facility. The fill site provided about a 4 km round trip for the units hauling water.
- The site used a medium-sized pond at a fish farm. The pond provided ample water volume to support the drill and access was not a problem.
- A single, 1,000 gpm tanker/pumper was used at the pond to support the tanker fill station.

Pond Fill Site



Oromocto Tanker 429 (1,000 gpm) operated as the fill site pumper at the pond. The pumper drafted from the pond and loaded tankers as quickly as possible.

Pond Fill Site



Note the use of a butterfly valve on the officer's side suction inlet. Best practice has all suction inlets equipped with some type of control valve so that operations can be easily switched between on-board tank water and drafting.

Pond Fill Site



Jolly Farmer Tanker 1 arrives at the fill site for its first load of water. One of the issues that arose at both fill sites was the number of different direct fill fittings resulting in the need for quite a few adaptors.

Cove Fill Site



Nackawic Tanker 3 (1,000 gpm) drafted from the cove and supplied water several hundred feet up to Route 105 via 5-inch LDH (high-volume). This reduced the need for tankers to travel down the narrow road to the cove.

Cove Fill Site



An LDH appliance was used as the control valve for loading the tankers. All the pump operator had to do was supply the appliance. Traffic control was important at this location and one person was dedicated to traffic control ops.

Fill Site Operations



Some of the tankers had to fill back through their pumps, others through rear direct fills, and some used both.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was only interrupted once (for about 1-minute) during the drill.
- An estimated 89,500 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 782 gpm.

The Lessons Learned

- At this drill, the dump site crew worked very hard to establish the initial dump site operation and then to expand the operation to a four-tank set-up supporting a 1,000 gpm flow.
- The main issues at the dump site were the limited flow of the low level strainer (<1,000 gpm) and the limited number of water transfer devices available for use early in the drill.

The Lessons Learned

- Adding the 2-1/2" suction line allowed the dump site pumper to improve its pumping capability.
- Jet siphons, suction hose, and dump tanks are needed at most every dump site operation – therefore, it is wise to carry those items on every tanker.

The Lessons Learned

- Portable pumps proved quite useful at this drill in terms of supporting jet siphon operations.
- 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

- 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 were too many different types of tanker fill arrangements which increased the need for adaptors and slowed down the loading operations.

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 Jolly Farmer Fire Brigade for sponsoring and hosting this seminar.



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