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Cuba Joint Fire District  
Cuba, New York

Rural Water Supply Operations Seminar  
2-hr Water Supply Drill – 1000 GPM Club  
September 25, 2022  
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 Cuba 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 Allegany County and the surrounding area.

# The 2-hour Water Supply Drill

- The tanker shuttle drill was held on September 25<sup>th</sup> at Cuba-Rushford High 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

<b>Participants</b>				
<b>Department</b>	<b>Unit</b>	<b>Pump Size</b>	<b>Tank Size</b>	<b>Dump Tank</b>
Cuba	Engine 1	1500 gpm	1000 gal	NA
Cuba	Engine 2	1500 gpm	1000 gal	NA
Cuba	Tanker 7	1250 gpm	2000 gal	2100 gal
Clarksville	Engine 3	1250 gpm	750 gal	NA
Clarksville	Tanker 2	1250 gpm	2000 gal	2100 gal
Friendship	Engine 2	1250 gpm	750 gal	NA
Friendship	Tanker 7	NA	1800 gal	2100 gal
Bolivar	Tanker 7	NA	1800 gal	2100 gal
Ischua	Tanker 5	750 gpm	2450 gal	2500 gal
Hinsdale	Tanker 114	1000 gpm	2000 gal	2100 gal
Richburg-Wirt	Tanker 7	1500 gpm	3000 gal	3000 gal
Belfast	Tanker 7	1250 gpm	3200 gal	3500 gal
New Hudson	Tanker 7	NA	3000 gal	3500 gal

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

# The Drill Begins



Cuba 3 (1500 gpm) [left] arrives on the scene and lays out several hundred feet of 5-inch LDH supply line. The unit will serve as the attack pumper at this drill. Cuba 1 (1500 gpm) arrives second and “picks up” the supply line and prepares for water supply operations.

# Dump Site Operations



Water flow is started at 250 gpm at the 5:00-minute mark using a TFT Blitzfire.

# Dump Site Operations



Tankers on the 1<sup>st</sup> Alarm begin to arrive and crews begin to build out at dump tank operation.

# Dump Site Operations



The attack and dump site pumpers both carried 1,000 gallons of water so there was about a 7-minute buffer before tanker water was needed.

# Dump Site Operations



At the 10-minute mark, the first dump tank was deployed and in operation. No interruption in water flow occurred.

# Dump Site Operations



The 1<sup>st</sup> Tanker Task Force was dispatched at the 12-minute mark and flow was moved to 500 gpm at the 15-minute mark.

# Dump Site Operations



Water transfer operations are always important with any dump tank operation and crews worked hard to get a couple of jet siphons built.



# Dump Site Operations



At the 15-minute mark the second dump tank was ready to be brought on-line as tankers from the 1<sup>st</sup> Tanker Task Force began to arrive.

# Dump Site Operations



Water transfer operations got underway using two, 6-inch jet siphon set ups. One person was put in charge of controlling the jet siphons which freed up the pump operator to focus on drafting and supplying the attack pumper.

# Dump Site Operations



As additional tankers arrived on the scene crews worked to get a third dump tank set-up in anticipation of increasing the flow. The 2<sup>nd</sup> Tanker Task Force was dispatched at the 18:00-minute mark.

# Dump Site Operations



Flow was increased to 800 gpm at the 40:00-minute mark using Cuba 3's pre-piped deck gun.

# Dump Site Operations



By the 50:00-minute mark, three dump tanks were in operation and all tankers in the drill were now hauling water.

# Dump Site Operations



Three jet siphons were eventually used to manage the transfer of water between the dump tanks.

# Dump Site Operations



Cuba 1 (1500 gpm) used triple suction lines (two 6" and one 3") to support the water supply operation.

# Dump Site Operations



At the 60-minute mark, water flow was moved to 1,000 gpm where it remained, uninterrupted for remainder of the drill.

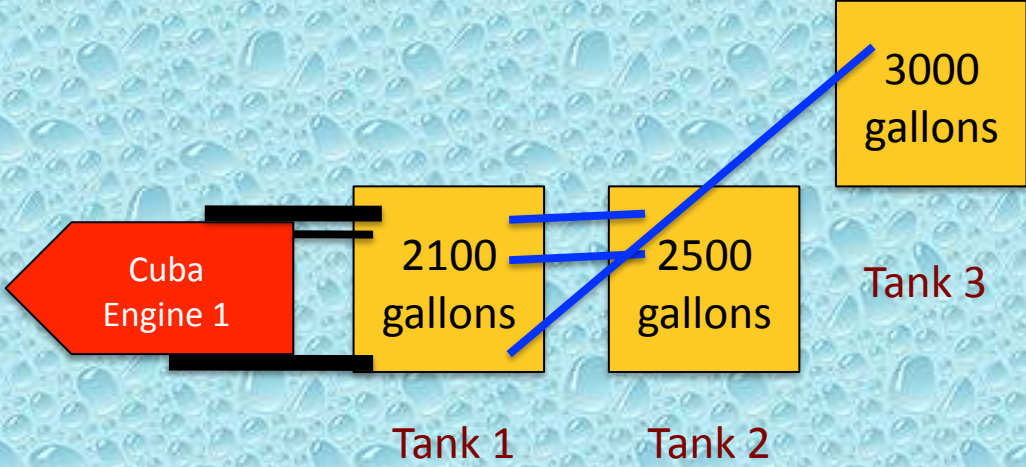


# Dump Site Operations



At one point during the second-half of the drill, Tanker 114 had a dump chute malfunction and had to resort to pumping off its water. That really posed no problem as the tanker had a 1,000 gpm pump and simply pulled out of the way and pumped its water back into the primary dump tank.

# Dump Site Layout



— Suction Hose  
— Jet Siphon

# The Fill Sites

- For this drill – two fill sites were used; both located near a boat launch on Cuba Lake.
- The fill sites both provided about a 6.0-mile round trip for the units hauling water.
- The lake had ample water volume to support the drill and access was not a problem.
- Two, 1250 gpm pumpers were used at the boat launch to support the two tanker loading stations.

# Lake Fill Site



Clarksville Engine 33's crew works to get set up at the fill site. The boat launch area provide good access to the water.

# Lake Fill Site



Friendship Engine 2 operated a second fill site from the same boat launch area. Both fill sites were able to load tankers at rates exceeding 1,000 gpm.

# Lake Fill Site



The boat launch are provided good access to the water for this pumper as well. The crews worked to maximize their suction intakes.

# Lake Fill Site



The real challenge using this fill site was that the round trip mileage was just over 6-miles which meant crews had to really hustle to get these rigs loaded and back on the road to the dump site.

# The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was never interrupted!
- An estimated 91,000 gallons of water were flowed through during the drill producing an average flow rate of 791 gpm.
- For the last 60-minutes of the drill a flow of 1,000 gpm or greater was supplied to the attack pumper.
- The performance resulted in the participants being awarded membership in the Got Big Water 1,000 GPM Club!



# The Lessons Learned

- At this drill, crews chose to use a supply pumper/attack pumper arrangement from the very beginning.
- The two-pumper arrangement (both with 1,000 gallon tanks) provided time to get the first dump tank set up without having to worry about running out of water in a minute or two.

# 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.
- The use of a large body pump powered by sufficient motor horsepower at the dump site allowed one rig to supply the entire operation.

# 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, 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 Cuba Joint Fire District for sponsoring and hosting the seminar.



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