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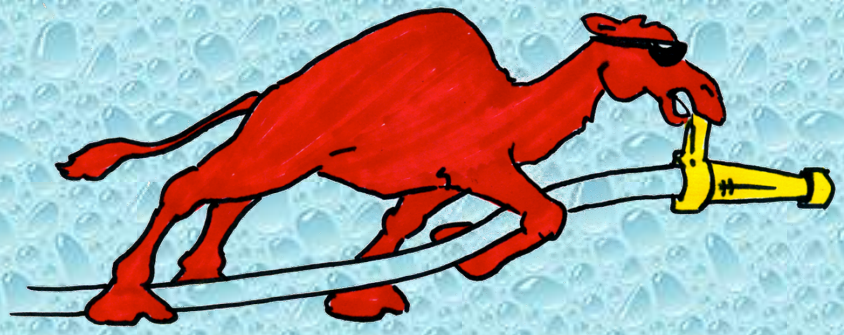


Shelby County EMA
Calera, Alabama

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 23, 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

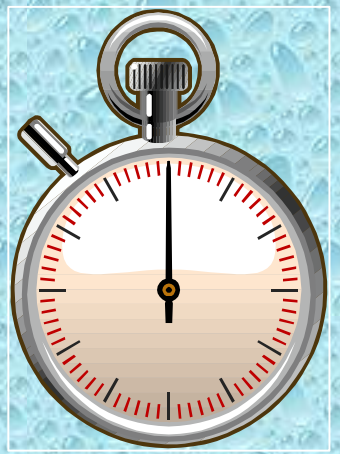
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Rolling Hills Conference Center.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from Shelby County and the surrounding area.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 23rd at a nearby commercial development area.
- 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**	**Dump Tank**
Brierfield	Engine 202	1500 gpm	750 gal	NA
Brierfield	Engine 203	1000 gpm	1500 gal	NA
Brierfield	Tanker 206	1250 gpm	2500 gal	(2) 2100 gal
Pea Ridge	Tanker 101	250 gpm	1800 gal	2500 gal
Four Mile	Tanker 263	750 gpm	2000 gal	2000 gal
Summer Hill	Tanker 280	1000 gpm	2500 gal	3000 gal
Shelby	Tanker 110	1000 gpm	2000 gal	2100 gal
County 17	Tanker 213	1500 gpm	2000 gal	2100 gal

- *The participants for the drill were from the Shelby 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 Calera area.*

The Drill Begins

Brierfield Engine 202 (1500 gpm) arrives at the dump site where a 5” double-clappered siamese has been laid out simulating an attack engine laying hose down a lane. The crews go to work setting up to supply the siamese, while also getting ready to build out a dump tank operation.

Dump Site Operations

Water flow was started at 250 gpm at the 5-minute mark using Engine 202's tank water….which was only 750 gallons. The first-arriving tanker (Pea Ridge) had a small pump and was unable to support the siamese, thus getting a dump tank set up fast was pretty critical.

Dump Site Operations

Fortunately, additional arriving tankers all had larger pumps and were able to pump to the siamese while the crews worked to get Engine 202 set-up for dump tank operations.

Dump Site Operations

The first load of water was dumped around the 10-minute mark into Pea Ridge Tanker 101's 2500-gallon dump tank. Unfortunately, Engine 202 was unable to obtain a draft and this water became unusable.

Dump Site Operations

The crews worked to locate the air leak at Engine 202. They even swapped out the Storz suction hose for threaded suction; this proved unsuccessful as well. Meanwhile, tankers had to pump the siamese in order to support the attack engine.

Dump Site Operations

Shelby Tanker 110 (2000 gal) pumps off its water to the siamese while crews worked trying to resolve the drafting issue at Engine 202.

Dump Site Operations

After spending about 20-minutes trying to resolve the air leak issues without success, Engine 202 was swapped out with Brierfield Engine 203 (1,000 gpm) and a 3-dump tank operation was eventually built out.

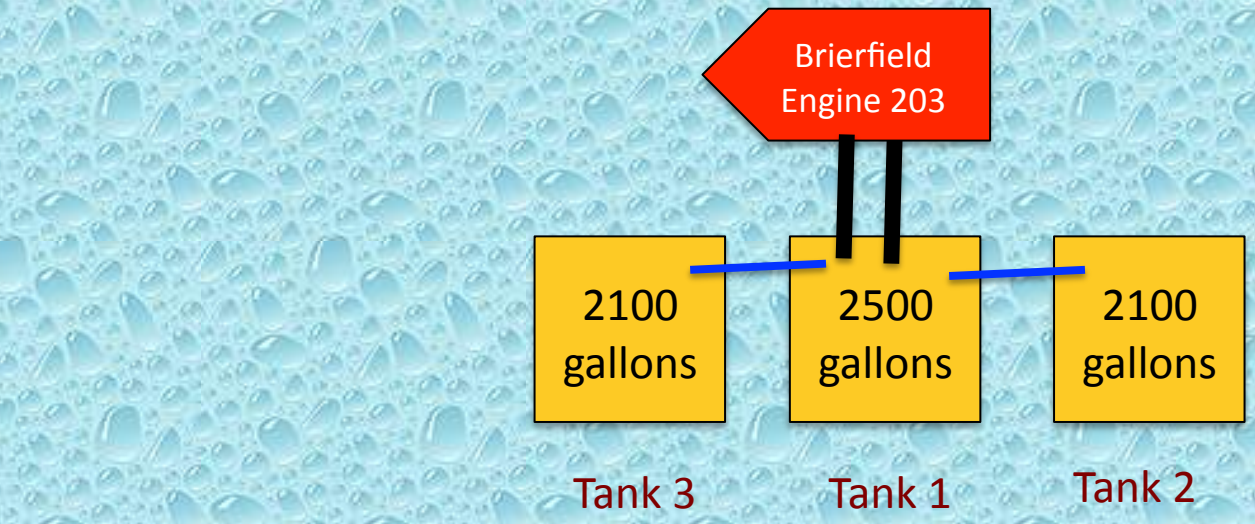
Dump Site Operations

Engine 203 eventually got dual suction lines into the dump tank and a flow of about 600 gpm was sustained for the remainder of the drill.

Dump Site Operations

Three dump tanks and two jet siphons were used to support the 600 gpm flow to fireground.

Final Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – two fill sites were used; each used a pressurized municipal fire hydrant.
- The fill sites both provided about a 2.0-mile round trip for the units hauling water.
- The fire hydrants had ample water volume to support the drill and access was not a problem.
- A 1,500 gpm pumper was used at one fire hydrant; no pumper was available at the other fire hydrant.

Hydrant Fill Sites

Four Mile Tanker 263 (2,000 gal) loads itself from this fire hydrant. The municipal water system had plenty of volume and pressure to load tankers at the 1000 gpm target rate.

Hydrant Fill Sites

Brierfield Engine 202 (1500 gpm) was used at the second fire hydrant to help load tankers. County 17 Tanker 213 (2000 gal) is seen here getting loaded using 5-inch LDH.

Hydrant Fill Sites

Pea Ridge Tanker 101 (1800 gal) self-loading at the first fire hydrant. The hydrants were chosen as fill sites this year since it is realistic in many cases for a tanker to "run back to town" for that first load of water or two.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was interrupted a number of times due to the drafting issues at the dump site.
- Once the dump site pumper was swapped, the folks were able to develop and sustain a 600 gpm flow for the remainder of the drill.
- While perhaps not as successful in terms of flow as previous years, this year's drill showed the value of the double-clappered siamese in keeping flow sustained.
- Tankers pumped off water into the siamese until the dump site could be established.

The Lessons Learned

- The nurse tanker operation 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 use of the double-clappered siamese made the transition to dump tank operations very easy.
- The value of having every tanker being able to pump off water at 500 gpm or greater was seen at this drill.

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 fire hydrants proved to be a realistic challenge in terms of fill 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 Shelby County EMA and the Calera Fire Department for sponsoring and hosting the seminar.

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This program was developed by
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