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Levelland Fire Department
Levelland, Texas

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
April 3, 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

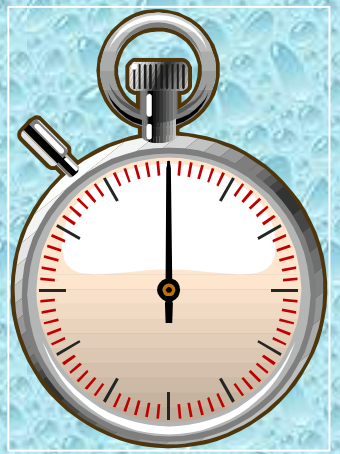
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Levelland Fire Station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.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

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on April 3rd at Levelland City Park.
- 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
Levelland	Engine 8	1250 gpm	1000 gal	NA
Levelland	Tanker 3	750 gpm	3000 gal	NA
Levelland	Tanker 9	(2)400 gpm	4000 gal	4000 gal
Lamesa	Tanker 8	500 gpm	3000 gal	3000 gal
West Carlisle	Tanker 1	200 gpm	1500 gal	1500 gal
Sundown	Engine 1	1250 gpm	1000 gal	NA
Sundown	Tanker 25	(2) 200 gpm	7000 gal	NA
Whiteface	Tanker 30	200 gpm	3000 gal	NA
Whiteface	Brush 33	350 gpm	1250 gal	NA
Ransom Canyon	Tanker 1	500 gpm	1800 gal	2000 gal

- *The participants for the drill were from several different fire departments in the Hockley 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 Levelland area.*

The Drill Begins

Engine 8 and Tanker 3 arrive on the scene and begin to set up for fire attack operations using a nurse tanker operation. A 250 gpm flow was started from Engine 8 at the 3:25-minute mark using an attack line.

Dump Site Operations

As additional units began to arrive crews worked to deploy dump tanks in anticipation of increasing the fire flow.

Dump Site Operations

Levelland Tanker 9 and West Carlisle Tanker 1 arrived and crews were able to deploy a total of three dump tanks while nurse tanker operations were still underway.

Dump Site Operations

The folks chose to use a “through the drain” sleeve maneuver to draft from the 4000-gallon dump tank. Since no top-performing low level strainer was available, they chose to use a barrel strainer.

Dump Site Operations

You can never have too much “stuff” at a large, expanding dump site. Given the various sizes of suction hose and appliances used in the area, it was imperative to gather a variety of items.

Dump Site Operations

Because of the position of the attack engine, Tanker 3 became the dump site engine. Tanker 9 then took position to continue supporting nurse operations until the draft could be attained.

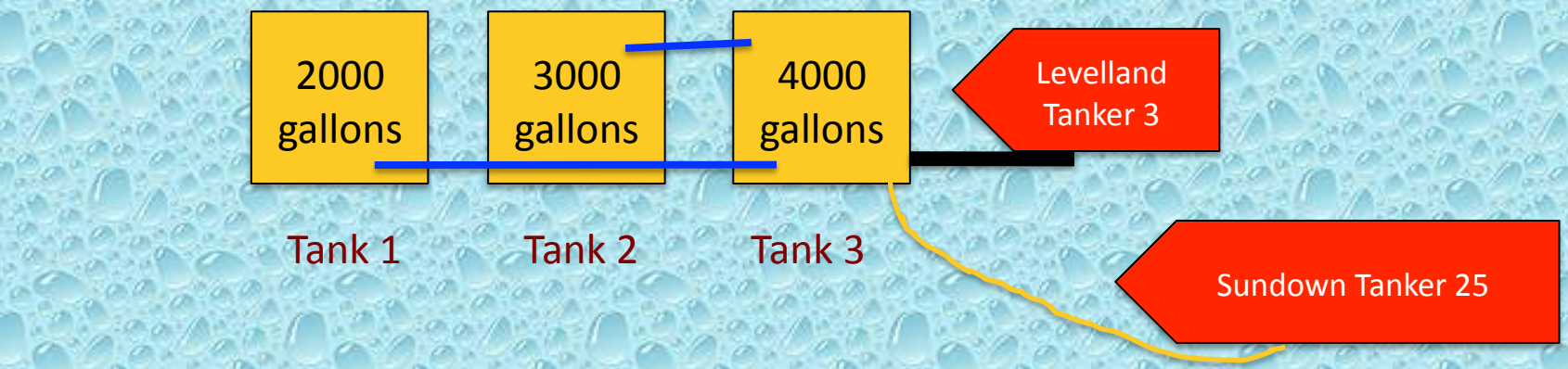
Dump Site Operations

At around the 35-minute mark flow was moved 500 gpm and then to 800 gpm at the 51-minute mark using a 3-dump tank arrangement.

Dump Site Operations

Sundown Tanker 25 positioned to the rear of the dump site operation and supplied its 7000 gallons to the primary dump tank using its twin, 200 gpm off-load pumps. The water was discharged into the dump tank using a section of 2-1/2-inch suction hose.

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill, one fill site was used; a pressurized fire hydrant on the city water system.
- The fill site provided about a 1.5-mile round trip for the units hauling water.
- The hydrant seemed to have ample water volume to support the drill and access was not a problem.
- A 1250 gpm pumper was used at the hydrant to support tanker loading operations.

Hydrant Fill Site

Sundown Engine 1 (1250 gpm) was used to load tankers at the hydrant fill site. The first fire hydrant selected for use was broken so the crew had to locate a working hydrant…thus there was some delay getting the fill site up and running.

The Results

- The drill was stopped at the 77-minute mark when a break in a nearby water main occurred.
- Water flow was never interrupted during the drill.
- An estimated 36,600 gallons of water were flowed through the attack pumper during the drill producing an average flow rate of 499 gpm.
- A peak flow of 800 gpm was achieved during the last 26-minutes of the drill.

The Lessons Learned

- At this drill, crews chose to use a nurse tanker operation from the very beginning.
- 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 tractor-trailer tanker as a nurse tanker helped ensure water supply to the primary dump tank. The tanker was positioned out of the way of the tankers hauling water…this was very important to keep the rigs moving.

The Lessons Learned

- The first arriving tanker was never supposed to be the dump site pumper but that is what happened due to some positioning of other units.
- Fortunately, the tanker had a 750 gpm pump and could supply the operation.
- Had more flow been needed, additional suction lines would have to have been deployed or another pumper would have to have replaced Tanker 3.
- The use of rectangular dump tanks allowed for a single-lane configuration which was one of the primary goals of the 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, few of the tankers had the same fill connection which slowed down the loading process some.

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 Levelland Fire Department for sponsoring and hosting the seminar.

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This program was developed by
GBW Associates, LLC

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