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Franklin County Firefighters Association
Franklin County, Kansas

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 5, 2025
Summary Report

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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.

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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 L.O.H. Fire District's Station 2.
- 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 tender shuttle exercise and program review.
- Seminar participants were from Franklin County and the surrounding area.

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The 2-hour Water Supply Drill

- The tender shuttle drill was held October 5th on Kingman Road at the southern edge of Ottawa.
- 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 tender shuttle flow capabilities.*

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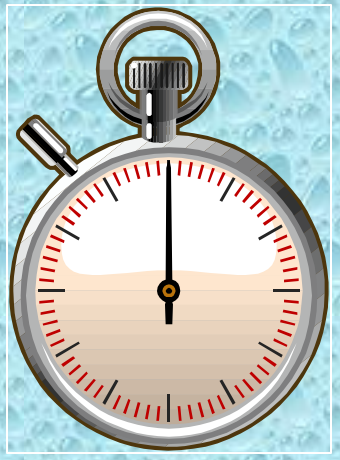
The ISO Test

- 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



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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.

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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.

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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!

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Water Supply Drill Participants

Participants				
Department	**Unit**	**Pump Size**	**Tank Size**	**Dump Tank**
LOH	Tender 3653	1250 gpm	3000 gal	2000 gal
LOH	Engine 3652	1500 gpm	1000 gal	NA
LOH	Tender 3662	250 gpm	2500 gal	NA
LOH	Tender 3661	750 gpm	4000 gal	3500 gal
Ohio Twp	Tender 3463	300 gpm	2500 gal	NA
Ohio Twp	Tender 3452	1500 gpm	2000 gal	2100 gal
Ohio Twp	Engine 3451	1250 gpm	750 gal	NA
Northwest	Tender 3867	500 gpm	2000 gal	2000 gal
Northwest	Tender 3862	250 gpm	2500 gal	2000 gal
Wellsville	Tender 3763	NA	1800 gal	2000 gal
Cutler	Tender 3561	500 gpm	2000 gal	3000gal
Richmond	Engine 3451	1500 gpm	1000 gal	NA
Pottawatomie	Tender 3361	500 gpm	3000 gal	3000/2000

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

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The Drill Begins

The drill started with crews executing a rural hitch operation using a 5”x 2-1/2”x 2-1/2” gated wye appliance. The hitch fed Ohio Twp Engine 3451 who had laid out several hundred of 4-inch LDH. Engine 3451 operated as the attack pumper during the drill. LOH Tender 3661 is pumping of its 4000 gallons in this photo.

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Dump Site Operations

Ohio Twp Engine 3452 arrives and goes to work supplying the rural hitch while crews begin to gather equipment to build out a dump site. Water flow is at 250 gpm.

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Dump Site Operations

More work being done to gather equipment for dump tank operations. The key point was building out the site far enough away from the rural hitch appliance so that tenders could still pump off while tanks were being set up.

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Dump Site Operations

Cutler Tender 3561 pulls into position to support the rural hitch while work continues on the dump tank setup.

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Dump Site Operations

LOH Tender 3653 (far right) takes position as the dump site pumper and connects to the rural hitch appliance to make the transition to dump tanks.

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Dump Site Operations

Engine 3452 offloads its water and the dump site becomes operational. Flow was moved to 500 gpm and the rural hitch was left in place.

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Dump Site Operations

Two dumps were operational around the 55-minute mark. There was no longer a need for tenders to pump off their water if they had dump capability.

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Dump Site Operations

The final set-up. Crews worked hard to keep the 500 gpm flow running without interruption using the 2-dump tank arrangement.

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Dump Site Operations

One of the key items in the operation was changing out the suction strainer on the dump site pumper to a TFT low level strainer; this allowed the pumper better intake which translated to more efficient pumping to the attack pumper and the jet siphons.

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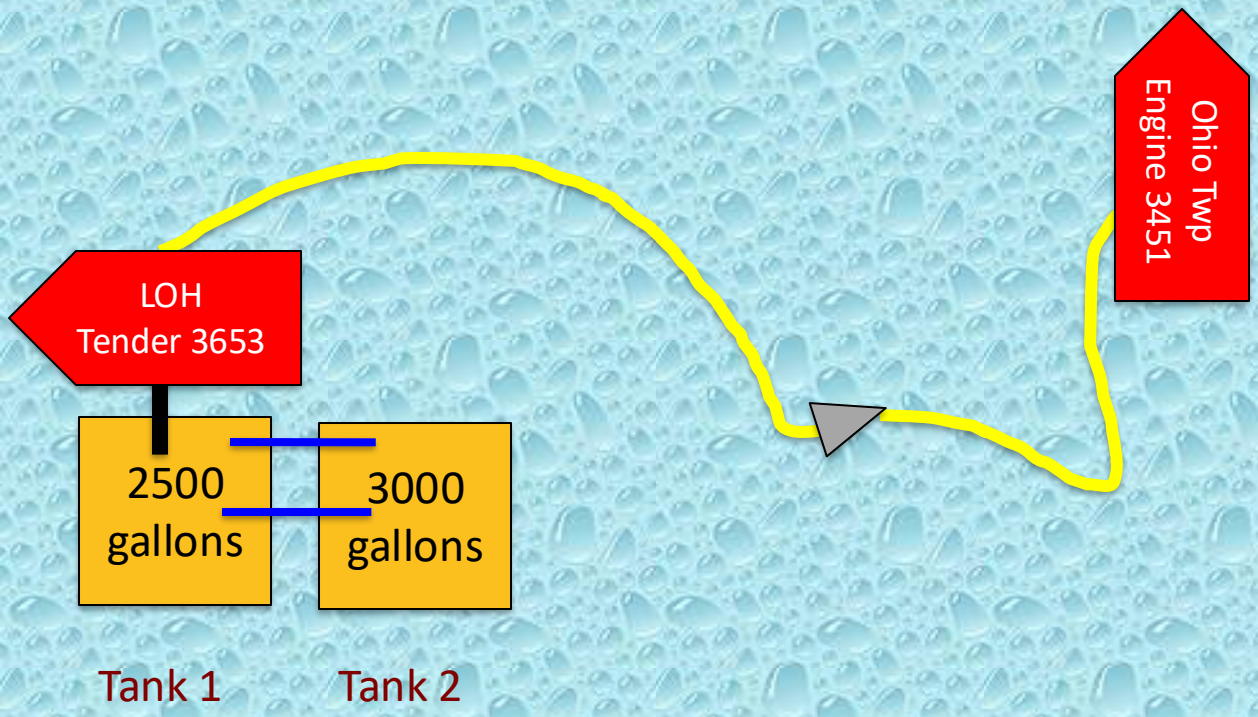
Dump Site Layout



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The Fill Sites

- For this drill – two fill sites were used – one at a nearby quarry and one at a nearby fire hydrant.
- The fill sites provided a 2.2-mile and a 4.0-mile round trip for the units hauling water.
- Both sites had ample water volume to support the drill, and access was not a problem.
- A 1500 gpm pumper was used at each fill site to load tenders.

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Quarry Fill Site

LOH Engine 3652 took position at the quarry, drafted, and supported a tender loading station.

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Quarry Fill Site

An LDH appliance was used to quicken the loading process and help reach the 1000 gpm loading rate.

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The Results

- The drill was stopped at the 90-minute mark.
- Water flow was interrupted once during the early moments of the rural hitch operation due to an adaptor issue.
- An estimated 33,500 gallons of water were flowed through the attack pumper during the drill producing an average flow rate of 376 gpm.
- For the last 45-minutes of the drill a flow of 500 gpm or greater was supplied.

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The Lessons Learned

- At this drill, crews chose to use a rural hitch operation to get things started.
- Using the rural hitch gave the crews time to get a dump tank set-up without the added pressure of having to draft and flow water right away.
- Once the first dump tank was up and running the operation ran flawlessly.

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The Lessons Learned

- It is important to carry a variety of hose adaptors when operating in an area that uses different size supply hose.
- Not all low level suction strainers are created the same. It is important to select a top-performing strainer when running a dump tank operation because jet siphons use additional pump capacity.
- Changing out the suction strainer at this drill made a huge improvement to flow capability at the dump site.

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The Lessons Learned

- A tender fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tenders is going to reduce the efficiency of the tender shuttle.
- At this drill, there was some variance in how the tenders loaded – meaning the fill connection. Had fill connections been the same for every tender, flow most certainly could have been higher at the dump site.

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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 tender – as well as adaptors.
- The hydrant fill site required an engine to assist with the tender loading process as expected. The pressure was insufficient for loading tenders by themselves.

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Drill Videos

Be sure to watch videos from the drill on the GotBigWater YouTube Channel.

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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 Franklin County Firefighters Association for sponsoring and the Lincoln-Ottawa-Harrison Fire District for hosting the seminar.

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