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DeKalb County Association of FDs DeKalb County, Alabama

4th Annual Rural Water Supply Seminar
2-hr Water Supply Drill – September 25, 2011
Summary Report

The Purpose

- The purpose of the 4th annual seminar and drill was to continue to practice rural water supply operations on a county-wide basis by involving mutual aid companies in a real-life practical scenario.
- The 2-day seminar was well attended once again with over 60 participants both days.



The Seminar



- The 2-day seminar was hosted this year by the Crossville FD located in the southern end of DeKalb County.
- The seminar started on Saturday with two, ½-day workshops: one on dump site operations and one on fill site operations.
- Both workshops were held in the Town of Crossville – one at the fire station and the other at the local high school.
- The workshops reviewed the basics of dump site and fill site operations.

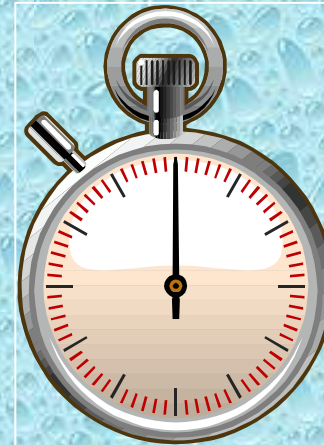
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on September 25, 2011, at a community park in Crossville.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.



The ISO Test

- There are three critical time segments of the ISO 2-hour Water Supply Delivery Test:
 - 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



- The participants for the drill were from fourteen different fire departments and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in DeKalb County.

Drill Participants

- Sylvania Engine 2
 - 1,250 gpm pump
w/1000 gal tank
- Crossville Engine 2
 - 1,250 gpm pump,
w/1,000 gal tank



Drill Participants

- Mt Vera Engine 8
 - 1,250 gpm pump
w/1,000 gal tank

- Hammondville Tanker 1
 - 250 gpm pump,
w/1,500 gal tank



Drill Participants

- Black Creek Engine 150
 - 1,250 gpm pump
w/1,000 gal tank
- Fyffe Engine 4
 - 1,250 gpm pump,
w/1,800 gal tank



Drill Participants

- Aroney Engine 3
 - 1,250 gpm pump
w/3,000 gal tank



- Collinsville Engine 1
 - 1,250 gpm pump,
w/1,000 gal tank



Drill Participants

- Geraldine Engine 3
 - 1,500 gpm pump
w/3,000 gal tank
- Hammondville Engine 1
 - 1,250 gpm pump
w/1,000 gal tank



Drill Participants

- Adamsburg Tanker 1
 - 1,250 gpm pump
w/2,500 gal tank
- Dogtown Tanker 1
 - 500 gpm pump,
w/2,000 gal tank



Drill Participants

- Dogtown Engine 1
 - 1,250 gpm pump
w/1,000 gal tank
- Crossville Engine 6
 - 1,250 gpm,
w/3,000 gal tank



Preparation



Units staged at the Crossville VFD where an operational briefing was conducted outlining the objectives for the drill. Safety issues were also reviewed.

The Drill Starts



Crossville Engine 2 arrives on the scene and times starts. The crew laid out 300-ft of 5-inch supply line in preparation for being supplied by the next arriving unit.

The Drill Starts



Crossville Engine 6 (tanker) arrives next and sets up to begin nurse tanker operations. Between the two units, there are 4,000 gallons of water available to begin fire attack operations – very impressive.

Nurse Tanker Operations



Engine 6 is connected for nurse tanker operations while additional crews begin to build a dump site.

Dump Site Set-up



Positioning the first dump is critical in the overall success of the operation. Here, crews take a moment to think out the best arrangement before other units arrive on the scene.

Water Flow Starts



At the 5:00-minute mark, flow is started at 282 gpm using water from Engine 2. The flow is being measured using a Hose Monster flow diffuser equipped with a fixed pitot tube.

Dump Site Operations



Around the 12:00-minute mark, the first dump tank is down and being filled in preparation for transitioning from a nurse tanker operation to a dump site operation.

Dump Site Operations



Collinsville Engine 1 (1,250 gpm) prepares to take over the dump site. Without a high flow discharge, Engine 1 must use multiple, smaller lines to feed the 5-inch hose supplying the attack engine – Crossville Engine 2.

Dump Site Operations



An LDH manifold is set up to combine the smaller lines into a single, 5-inch supply line. But...the 5-inch line has to be disconnected from the nurse tanker first.

Tankers Arrive



Units on the first Tanker Task Force (3 tankers) arrive and get ready to support the operation.

Dump Site Operations



Around the 14:00-minute mark, dump site crews begin setting up a second, 3,000-gallon dump tank.

A Visitor



Not sure what his name was but he stopped by to say "Hi" and play in the water.

Switching Over



At the 18:09-minute mark, the crews begin to switch out the nurse tanker and transition to the dump site operation. The issue was no control valve on the line feeding the attack pumper. Had there been a manifold or siamese in the line, then this type of changeover would not have been necessary.

Switching Over



The change-over was completed in 1:31 minutes with no interruption of water flow at the nozzle – excellent work!

Dump Site Operations



At the 22:31-minute mark, the flow is moved to 500 gpm as Dogtown Engine 1 is positioned to run jet siphons.

Water Transfer Operations



With flow expected to hit the 1,000 gpm mark, the use of another engine makes sense since the the dump site pumper has a 1,250 gpm pump. While jet siphons are much needed – they also consume pump capacity – so planning ahead is important.

Water Transfer Operations



More tankers arrive and support the operation. Around the 32:00-minute mark, Adamsburg's tanker is back from the fill site and a third dump tank is being set up.

Dump Site Operations



To help improve the flow from the dump site engine, one of the 2-1/2-inch lines is replaced with a 4-inch line – this helps reduce the friction loss and increase the flow.

Dump Site Operations



Water transfer operations are well underway and the second Tanker Task Force is dispatched.

More Tankers Arrive



Units from the second Tanker Task Force arrive on the scene and crews get ready to increase the flow again.

Being Creative



One issue that sometimes arises is low level strainers flipping over and causing the pump to lose its prime. The folks from Crossville use some traffic cone weights to keep the strainer in place – it works quite well.

5-Tank Operation



At the 48:00-minute mark the flow is moved to 750 gpm and around the 55:00-minute mark, the dump site operates five tanks.

Flow is Increased



At the 90-minute mark, with all dump tanks full and tankers waiting to dump, the flow is increased once again – this time to 1,100 gpm.

Dump Site Operations



The 1,100 gpm flow was maintained through the remainder of the drill without any interruption – a HUGE success!

Dump Site Operations



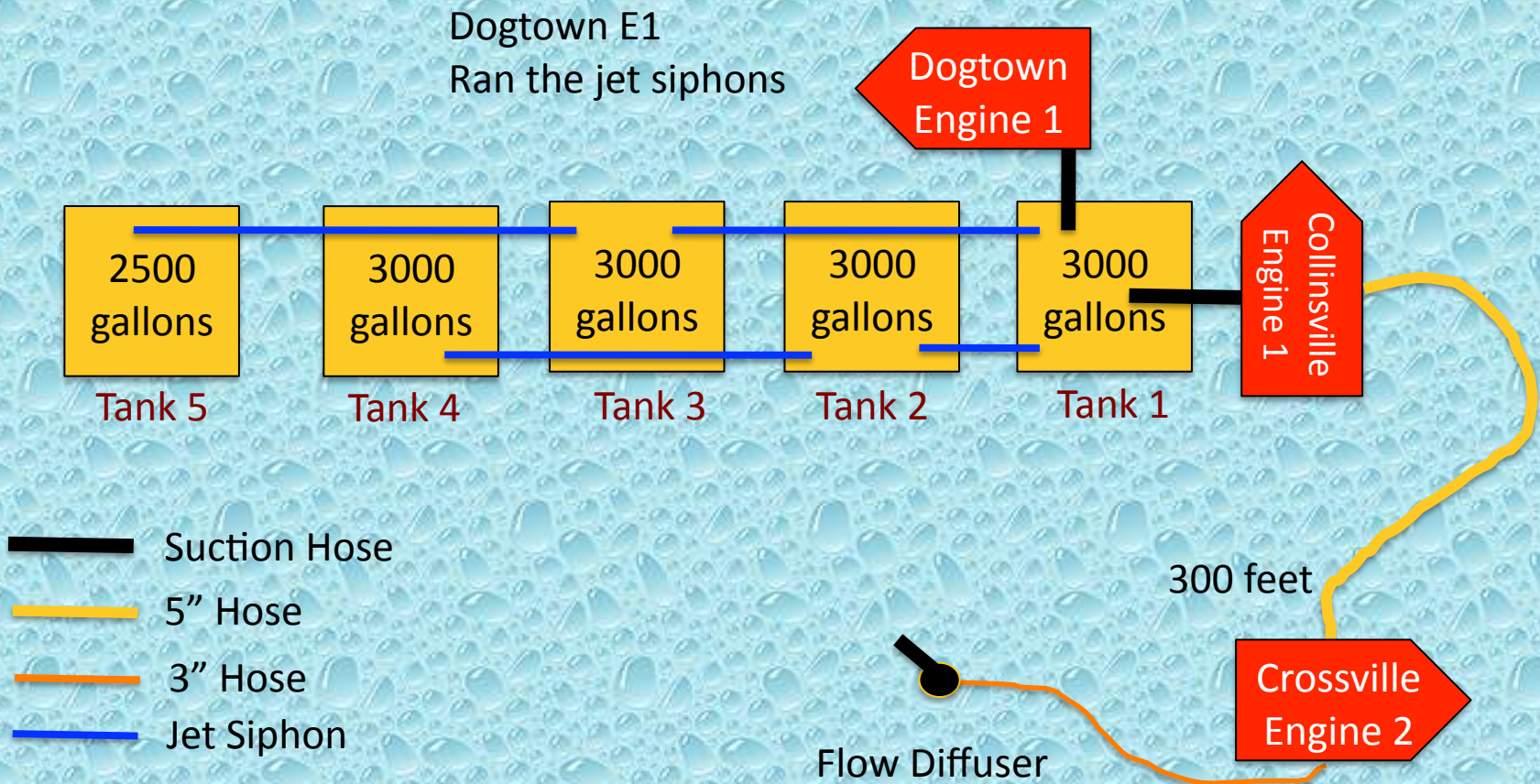
The success of the drill can be attributed to a number of factors – one of which was the use of another pumper early on in the drill to run the jet siphon devices.

Staying Dry



Staying dry and preventing sun burn – Alabama style! Enough said!

Dump Site Layout



The Fill Sites

- For this drill – three fill sites were used – two ponds and a fire hydrant.
- The first site was a large pond along Route 68 that provided a 5.8-mile roundtrip.
- The second site was a pond on Tidmore Road providing a 3.0-mile roundtrip.
- The third site was a fire hydrant on Union Grove Road providing a 2.5-mile roundtrip.

Route 68 Fill Site



Black Creek Engine 150 (1,250 gpm) takes position to draft and support a tanker fill station.

Route 68 Fill Site



Engine 150's four-person crew hustled to get the fill site set up because there were no other sites ready yet.

Route 68 Fill Site



One issue with the Black Creek pumper is that it does not carry LDH, so multiple, 2-1/2-inch lines were needed to support the 1,000 gpm filling rate goal.

Route 68 Fill Site



Water access was great and drafting was very easy. Engine 150 was able to fill tankers at an average rate of 1,200 gpm.

Route 68 Fill Site



The pump operator used the pre-piped deck gun as his circulation line. The gun was shutdown while filling tankers and re-opened when done.

Route 68 Fill Site



Engine 150 pumped dual, 150-ft, 2-1/2-inch lines siamesed into a 4-inch line for tanker fill operations.

Tidmore Fill Site



Hammondville Engine 1 (1,250 gpm) drafts and supplies 5-inch LDH for tanker fill operations. Once again, without a high-flow discharge, the pumper pumped two smaller lines into a control valve which fed the 5-inch hose.

Tidmore Fill Site



Engine 1 had good access to water at this site as well and used a low-level strainer for drafting.

Tidmore Fill Site



At the other end of the operation, the 5-inch line was wye'd into two, 4-inch fill lines which were used to fill tankers.

Union Grove Fill Site



This fill site involved the use of a hydrant that could not support a 1,000 gpm flow without some help.

Union Grove Fill Site



To increase the ability of the hydrant, a 5-inch line is used to fill a dump tank from which Sylvania Engine 2 (1,250 gpm) drafts and fills tankers at 1,000 gpm.

Union Grove Fill Site



The hydrant fills the dump tank and the engine then drafts water and fills tankers at a rate faster than what the hydrant could do by itself in a direct hook-up.

Union Grove Fill Site



Again – no high-flow discharge, so dual, 3-inch lies feed a control valve and tankers are filled with a 4-inch line.

The Results

- The drill was stopped after two hours.
- Once water flow started at the 5-minute mark, it was never interrupted.
- A total of 82,794 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 720 gpm.

The Lessons Learned

- There were over 16,000 gallons of “water on wheels” at this drill – so sufficient water was available to sustain the 500 gpm for some time. This shows the importance of “front-loading” assignments so that adequate water is enroute to incident “on the go down.”
- The use of “tanker task forces” at this drill again reinforced the advantage of assembling resources in bundles. Each task force had at least three tankers and their dispatch and arrival provided a huge advantage in increasing flow operations.

The Lessons Learned

- A nurse tanker operation was utilized at this drill and once again it proved successful. Having a large tanker “chase” a pumper allows time for a dump site operation to be set-up while the the fire attack is supported.
- Crossville’s combination of Engine 6 (3,000 gallons) chasing Engine 2 (1,000 gallons) provides an effective cushion for building out a large operation.

The Lessons Learned

- Water transfer operations were planned out as the dump site was developed. The use of the Dogtown engine proved pivotal in sustaining and increasing the flow.
- When a pumper does not have a high-flow discharge, it is often better to siamese several smaller lines into the LDH instead of connecting a 4" or 5" hose directly to a 2-1/2" discharge.

The Lessons Learned

- It was quite clear again this year that standardization has improved the water supply operations in DeKalb County.
- The tankers and pumpers that participated were better equipped to move the big water than previous years and the folks in DeKalb County are commended for their work.
- DeKalb County is clearly the most improved rural water supply operation that we have seen over the least several years. Congratulation!

Summary

- The 4th Annual DeKalb County Rural Water Supply Operations Seminar was another grand success. Folks enjoyed the practical skill work shops and it was clear that improvement was made in water hauling operations.
- The success of the drill continues to show the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Once again, many thanks to the DeKalb County Association of Fire Departments for sponsoring and hosting this seminar and to the membership of the Crossville FD for providing classroom space and dining facilities.
- We also wish to thank the participants for the success of our National Fallen Fire Fighters raffle – a brick was placed in the Walk of Honor in the name of the DeKalb County Association of Fire Departments. Great Job!!!



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