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Lakes Region Mutual Fire Aid
Meredith, New Hampshire

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
May 6, 2018
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 the Meredith FD headquarters station.
- Once the classroom part was done, 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 the Lakes Region and the surrounding area.

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The 2-hour Water Supply Drill

- The tanker shuttle drill was held on May 6th in Meredith at a vacant commercial property.
- 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.*

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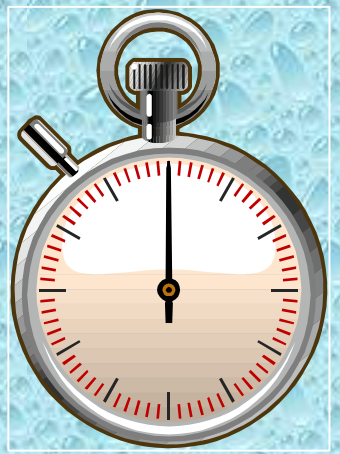
The ISO Test

- 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

- *The participants for the drill were from several different fire departments in the Lakes Region Mutual Fire Aid system and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Meredith area.*

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Drill Participants

- Meredith 14 Engine 2
  - 1250 gpm pump w/750 gal tank
- Meredith 14 Engine 4
  - 2000 gpm pump w/2500 gal tank

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Drill Participants

- Alton 1 Engine 2
  - 2000 gpm pump w/2500 gal tank
- Ashland 2 Engine 2
  - 1500 gpm pump w/1000 gal tank

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Drill Participants

- Holderness 12 Engine 5
  - 1500 gpm pump w/2500 gal tank
- New Hampton 17 Engine 2
  - 1500 gpm pump w/2500 gal tank

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Drill Participants

- Moultonborough 15 Tanker 1
  - 2000 gpm pump w/3000 gal tank
- Gilford 8 Tanker 1
  - 1250 gpm pump w/2500 gal tank

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Drill Participants

- Bristol 4 Engine 4
  - 1500 gpm pump w/2500 gal tank

- Sanborton 19 Engine 1
  - 1500 gpm pump w/2000 gal tank

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Drill Participants

- Sandwich 20 Engine 3
  - 1500 gpm pump w/2500 gal tank
- Barnstead 6 Tanker 1
  - 1500 gpm pump w/3000 gal tank

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Drill Participants

- Hebron 37 Engine 2
  - 1500 gpm pump w/2500 gal tank
- Warren 40 Tanker 1
  - 400 gpm pump w/1800 gal tank

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The Drill Begins

Alton 1 Engine 2 was the first-arriving engine followed shortly thereafter by Meredith 14 Engine 4 which set up for nurse tanker operation using 4-inch LDH and a double-clappered siamese (“the rural hitch.”)

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Dump Site Operations

Within a couple of minutes, Meredith 14 Engine 2 arrived on the scene and began setting up to transition to a dump tank operation because flow was expected to exceed 1,000 gpm. Water flow was started at 250 gpm at the 5-mimute mark.

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Dump Site Operations

Crews work to set up the dump site while nurse tanker operations are under way.

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Dump Site Operations

The rural hitch in operation …but now changed over to dump site operations with flow at 750 gpm at the 15-minute mark. The charged 4-inch LDH on the left side of the photo is being supplied by Meredith 14 Engine 2 at the dump site.

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Dump Site Operations

A Hose Monster flow diffuser with fixed-pitot was used to control and measure the discharge flow during the drill.

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Dump Site Operations

At the 19-minute mark, three dump tanks were down and in operation and flow was being sustained at 750 gpm. Preparations were underway to bring a fourth dump tank on line.

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Dump Site Operations

Barnstead 6 Tanker 1 arrives on scene as part of a Tanker Task Force bringing with it 3,000 gallons of water.

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Dump Site Operations

With four dump tanks in operation, water transfer operations became very important. A Kochek Holley Tube and a traditional jet siphon are seen in use in this photo.

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Dump Site Operations

Knowing the importance of when to “cut and run” for another load of water…a piece of white medical tape on this 10-inch dump chute lets the folks know when to close the valve and head for another load of water.

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Dump Site Operations

Triple suctions were used on the Meredith dump site pumper so that the rig could support a 1,400 gpm flow and run three jet siphons at the same. The triple suctions allowed this 1,250 gpm pumper to exceed its rated capacity.

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Dump Site Operations

The final set-up of the dump site. The four-dump tank arrangement produced a peak flow of 1,400 gpm.

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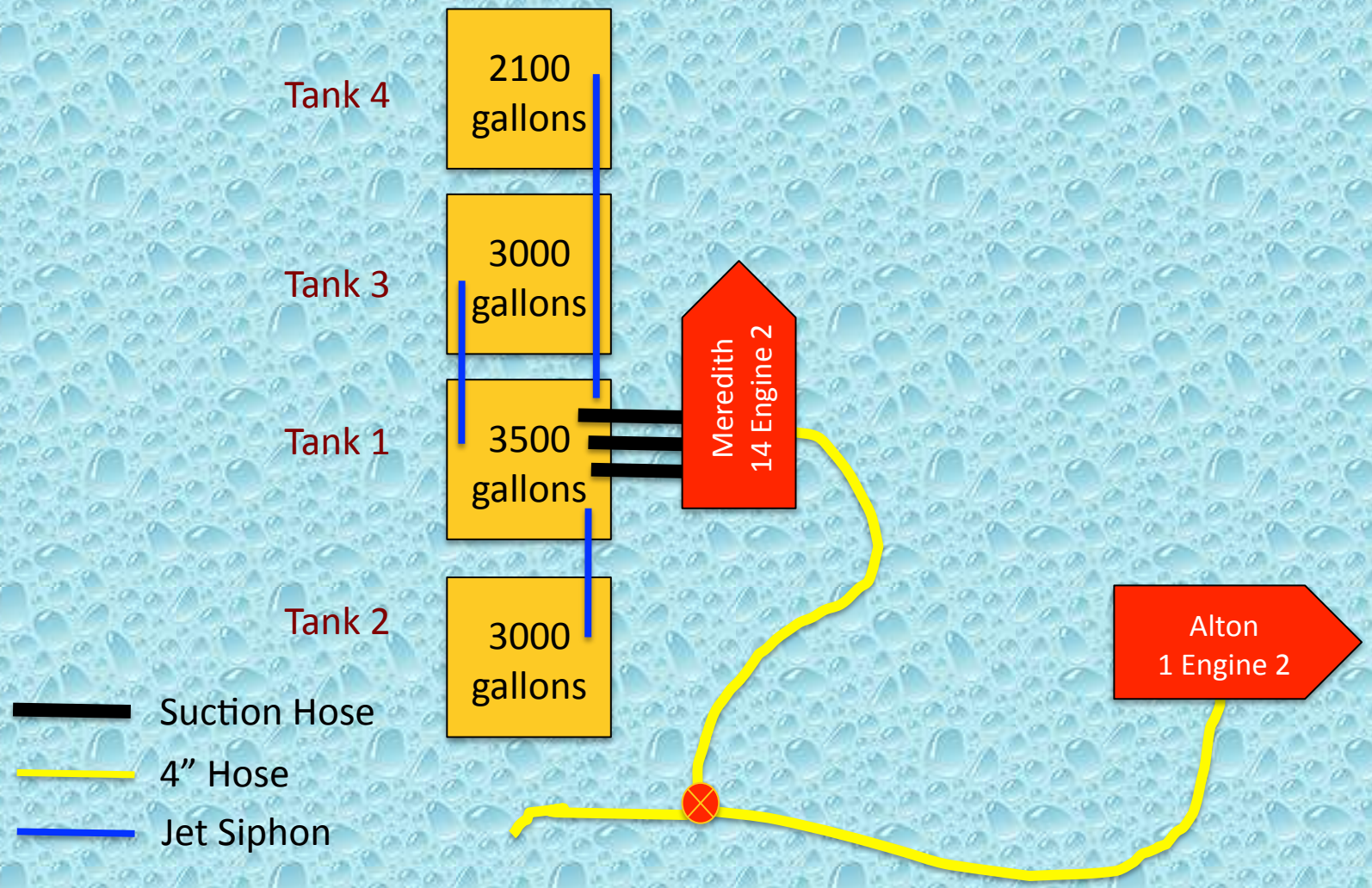
Dump Site Layout



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The Fill Site

- For this drill – two fill sites were used. One was located on Wickwas Lake and the other on Waukesan Lake.
- The fill sites provided a 5.4-mile and a 3.0-mile round trip respectively for the units hauling water.
- Both lakes provided ample water volume to support the drill and access was not much of a problem.
- A 1500 gpm pumper was used at each fill site to support the tanker fill stations.

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Wickwas Lake Fill Site

Ashland 2 Engine 2 (1,500 gpm) drafts directly from Wickwas Lake and loads tankers at a 1,000 gpm rate.

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Waukewan Lake Fill Site

Holderness 12 Engine 5 (1,500 gpm) drafts out of Waukewan Lake and loads tankers at a rate of 1,000 gpm.

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The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was interrupted once during the drill.
- An estimated 108,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 958 gpm.
- A peak flow of 1,400 gpm was sustained for the last 15 minutes of the drill.

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The Lessons Learned

- At this drill, a nurse tanker operation (aka “rural hitch”) was used during the early moments of the drill which allowed the crews to set-up the dump site without the pressure of running out of water in a couple of minutes.
- The rural hitch was again used much later in the drill when the dump site pumper placed a third suction line in service. Tankers pumped the hitch during the 90-second changeover of suction lines.

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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, all tankers loaded using the same fill connection – a 4-inch storz fitting. This "common" fitting made the loading process very efficient.

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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 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.

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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 Lakes Region Mutual Fire Aid for sponsoring the seminar and to the Meredith FD for hosting the weekend.

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