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Frederick County, MD Battalion 2  
Middletown, Maryland

Rural Water Supply Operations Seminar  
2-hr Water Supply Drill  
October 4, 2014  
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 on Saturday with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Middletown VFC's Activity Center.
- Once the classroom part was done, the seminar continued with several hours of practical work on fill-site and dump site operations. Participants also got to see a vacuum tanker and an air primer demonstrated.
- The program concluded on Sunday with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from four counties in Maryland and from Jefferson County, WV.
- Seminar Instructors were Chiefs Butsch & Coe from GBW, LLC



# The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 5, 2014 in Middletown.
- The activities center was chosen as the “target hazard”.
- 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 everyone in the fire service may not agree on ISO’s evaluation of fire department capabilities, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.



# 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 to 15 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 10 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 Frederick County.*

# Drill Apparatus

- Dump Site: Middletown E72
- Fill Site 1: Myersville E82
- Fill Site 2: Pleasant Valley SU6
- Tankers:
  - Frederick County Tankers 1, 5, 7, 17; Engine Tanker 212
  - Carroll County Tanker 6
  - Washington County Tanker 7
  - Montgomery County Tanker 714
  - Jefferson County (WV) Tanker 502
- Command: Chief 7 (Harne)

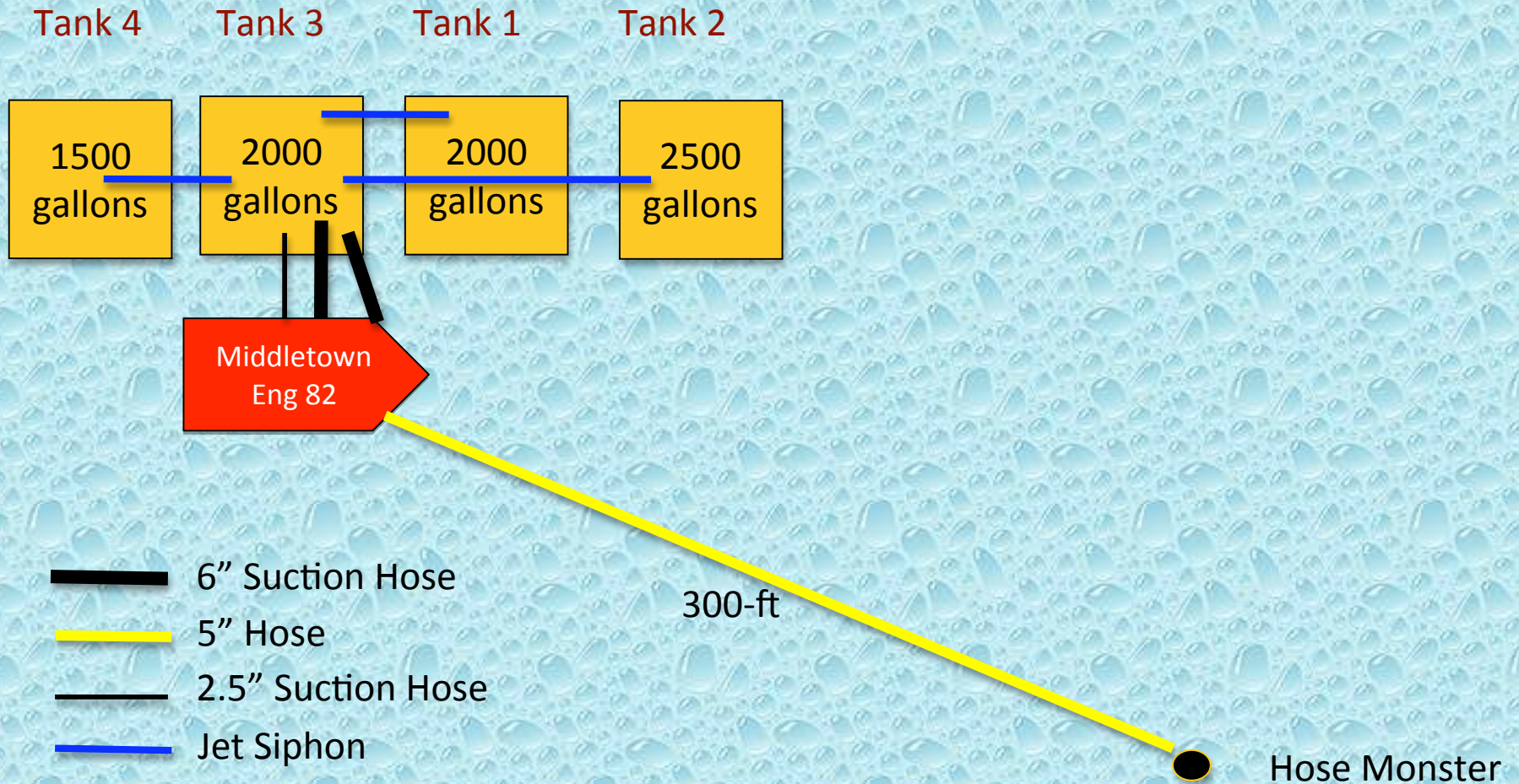


# Dump Site



- E72 set up the dump site. They used a four tank set up due to the relatively small size of the tanks. Tanks were set up far enough apart so that two tankers could dump at once. The crew did a good job of having one guy designating tanks for dumping.

# Dump Site Layout





# Dump Site early on



- The crew of E72 set up 100' of 5" to a jumbo clappered siamese. 200' of 5" was laid from siamese to a Hosemonster which simulated an attack pumper. Washington County Tanker 7 pumped the siamese during the first few minutes of the drill while E72 set up for drafting. Tanker 7 also contributed a tank.



# Dump Site - Adding Capacity



- E72 was able to support up to 1100 gpm flows, three jet siphons and a circulating line. How did they do this with a 1250 gpm pumper? Three sets of suction tubes - one each from the side and front intakes with a “pony” 2.5” suction borrowed from a brush truck. This set up also nicely eliminated the flow restriction posed by the initial choice of a traditional red Kocheck low head strainer.



# Fill Site 1

- Myersville E82 (1500 gpm pumper) utilized a dry hydrant at the Middletown Park. E82 filled tankers through two 4" fill lines but did not have manifolds. Since E82 only had one high flow discharge, the crew used a purpose built wye / 3" short shot combination from two 2.5" discharges to feed the second line





# Fill Site 2- Poole Construction

- Carroll County SU6 (a 1500 gpm pumper) set up Fill Site 2 at Poole Construction located at Rt. 40A at the Catoctin Creek. This location provided plenty of room for tankers to pull in and get filled.





# Fill Site 2

- The crew of SU6 set up twin 5" fill lines wye'd from a main 5" line with two manifolds. This aided in quick filling and draining. When timed, this fill site was filling in excess of 1000 gpm



# The Results

- The drill was stopped at the 2:00-hour mark.
- | <u>Flows</u> | <u>Times</u>          |
|--------------|-----------------------|
| 250gpm       | 5 to 15 minute mark   |
| 750gpm       | 16 to 60 minute mark  |
| 900-1100 gpm | 61 to 120 minute mark |
- Water flow was not actively monitored by the drill coordinator during the second hour but IC stated flow was lost briefly a couple of times; however the instructors had set a pretty high goal for sustainment.
- An estimated 89,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of around 850 gpm.



# The Lessons Learned

- At this drill, the dump site was set-up very quickly and crews really hustled to sustain the water flow in the early stages.
- The activity center grounds provided ample space for this large operation and traffic flow was not a problem.
- The assistance of Fire Police from Middletown, Myersville, and Wolfsville at key intersections greatly helped with Traffic Safety

# 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, almost every tanker had a Storz connection for filling. This standardization helped with quick filling.



# 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.
- 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.

# The Lessons Learned

- Although most of pumpers and tankers could work with 5-inch LDH, there was a very limited number of LDH valves and appliances available for use.
- The crews learned to work through problems like the use of a flow limiting low level strainer.



# 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.

# Summary

- Many thanks to Frederick County Battalion 2 for sponsoring this seminar.
- Thanks to the following:
  - Middletown VFC for hosting
  - Middletown Ladies Auxillary for preparing Lunches
  - The Fire Store for sponsoring Food costs
  - Foldatank for donating a Single Lane Tank and other Hardware, all of which was raffled off to support the National Fallen Firefighters Foundation.





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