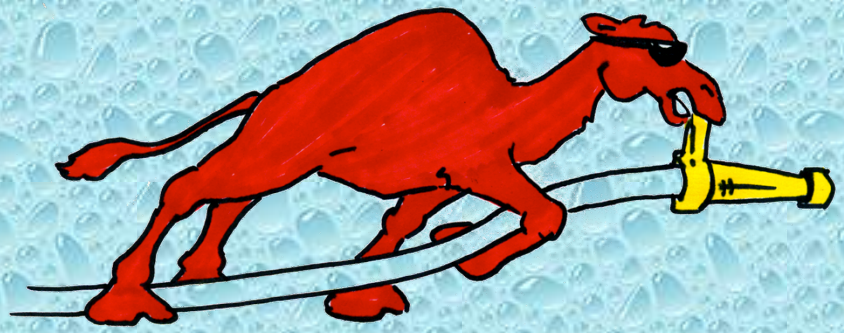
www.GotBigWater.com



Turtle Fire Department
Turtle, Wisconsin

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
June 9, 2013
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

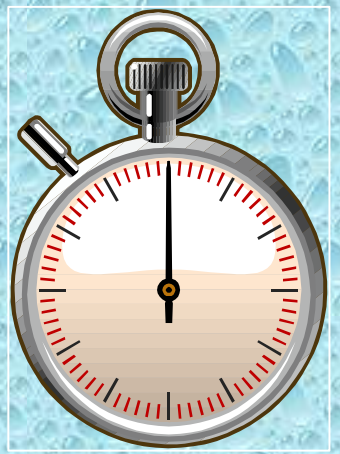
- The 2-day seminar started on Saturday with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Turtle Fire Department.
- Once the classroom part was done, the seminar continued with several hours of practical work on fill-site and dump site operations.
- The program concluded on Sunday with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from the Turtle, Wisconsin area. There were also three students from Bastrop, Texas!

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on June 9th at the Turtle Town Hall and Community Center.
- 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 *5:01 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 eleven 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 Turtle area.*

Drill Participants

- Turtle Engine 50
  - 1,500 gpm pump w/1,000 gal tank
- Turtle Engine 51
  - 2,000 gpm pump w/1,000 gal tank

Drill Participants

- Turtle Tender 52
  - 400 gpm pump w/2,000 gal tank
- Turtle Tender 53
  - 400 gpm pump w/2,000 gal tank

Drill Participants

- Whitewater Tanker 1230
  - 650 gpm pump w/4,100 gal tank
- Janesville Tender 87
  - 750 gpm pump w/3,500 gal tank

Drill Participants

- Clinton Engine 42
  - 1,250 gpm pump w/1,000 gal tank
- Clinton Tender 47
  - 3,400 gal tank

Drill Participants

- Lodi Tender 15
  - 2,000 gal tank

- Beloit Engine 22
  - 1,250 gpm pump w/1,000 gal tank

Drill Participants

- Evansville Tanker 67
  - 300 gpm pump w/3,000 gal tank
- Sharon Tender 43
  - 4,000 gal tank

Preparation

Units staged at the Turtle FD where crews were briefed on the operation and units were prepared for dispatch.

The Drill Begins

Turtle Engine 51 was the first engine to arrive at the dump site (Turtle Community Center) and the crew went to work stretching a TFT Blitzfire as the initial attack line.

Dump Site Operations

Turtle Tender 52 was second unit to arrive on the scene and the crews now went to work on setting up a dump tank in lieu of using a nurse-tanker operation.

Dump Site Operations

Obviously, time was of essence, but the crew was able to have the first dump tank set-up and in operation within three minutes of arrival – which was excellent!

Dump Site Operations

Tender 52 offloaded its 2,000 gallons of water and dump tank operations were underway!

Dump Site Operations

Turtle Tender 53 was the next unit to arrive and its crew went to work setting up a second dump tank. Notice that both of the dump tanks are rectangular in shape. They hold 3,000 gallons each.

Dump Site Operations

Water transfer operations were critical and crews went right to work setting up jet siphon operations.

Water Flow is Started at 250 gpm

At the 5:00-minute mark, water flow was started at 250 gpm using a dump tank operation.

Dump Site Operations

As additional units arrived, the dump site operation grew. The plan was to aim for a flow of 1000 gpm while drafting from both side suction inlets on Engine 51.

Dump Site Operations

At around the 8-minute mark, water transfer operations were under way for the two dump tanks placed to the rear of Engine 51. Meanwhile, the crew worked to set up one of Fol-Da-Tank's 2,000-gallon, Single-Lane Tanks in front of Engine 51.

Dump Site Operations

At the 10-minute mark, a Water Supply Task Force was dispatched which included 3 tankers. Meanwhile, supplies were getting low at the dump site.

Dump Site Operations

Units from the first Water Supply Task Force arrived just in time and flow was never interrupted.

Dump Site Operations

A fourth dump tank (3,000 gallons) was set-up in front of Engine 51 in preparation for moving to a higher flow.

Dump Site Operations

The units from the Water Supply Task Force provided plenty of water and at the 15-minute mark, the flow was moved to 500 gpm.

Dump Site Operations

With the flow at 500 gpm, the dump site operation began to stabilize some.

Dump Site Operations

Beloit Engine 22 was placed into service at the 23-minute mark to help run jet siphons.

Dump Site Operations

Water supplies were stretched thin at this point in the drill. There are no tankers waiting to dump and the rear dump tanks are almost empty.

Dump Site Operations

At 35-minutes, another Water Supply Task Force was dispatched bringing another three tankers.

Dump Site Operations

At the 44-minute mark, all four dump tanks were full of water and the flow was moved to 1,000 gpm.

Dump Site Operations

Engine 51's high-flow discharge was used to supply the portable monitor via 5-inch LDH.

Dump Site Operations

All of a sudden, tankers just started arriving from the fill sites and it became apparent that the cycle was becoming much more efficient.

Dump Site Operations

With the flow now at 1,000 gpm and tankers waiting to offload water, a fifth dump tank (3,000 gallons) was placed in service to the rear of Engine 51. This additional dump tank allowed tankers to offload their water and head for another load.

Dump Site Operations

The five-tank arrangement proved to be a bit of a challenge to operate because of the arrangement of tankers in front of and in the rear of Engine 51. However, the crews worked hard and were able to sustain the flow. Water transfer operations between tanks were critical.

Dump Site Operations

In order to transfer water quicker, crews used a ladder and additional suction hose to “jump” one of the rectangular tanks.

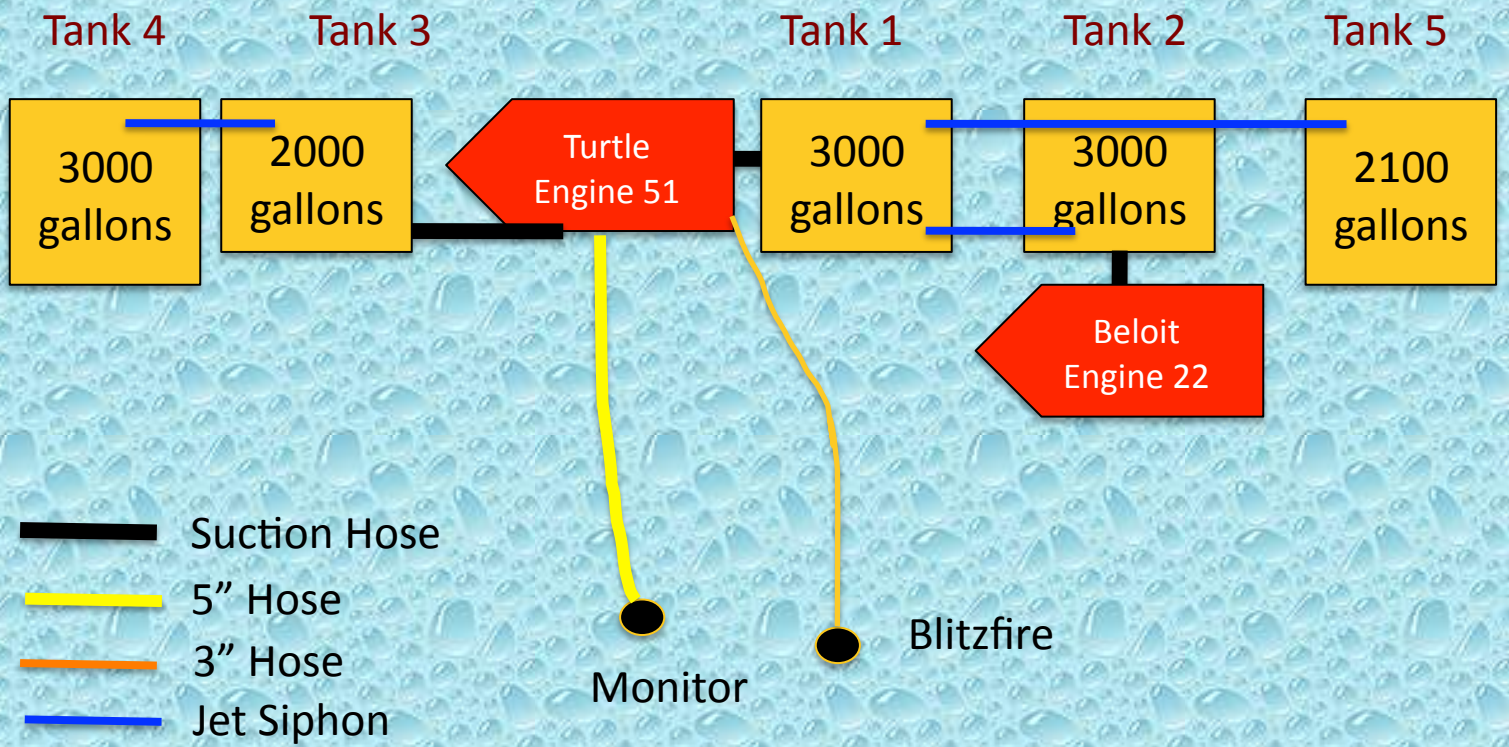
Dump Site Operations

At the 70-minute mark the flow was moved to 1,500 gpm and then again to 1,750 gpm at the 80-minute mark. Unfortunately, one of the fill site pumpers had to respond to a “real” incident at the 85-minute mark and the flow at the dump site had to be reduced to 550 gpm for awhile.

Dump Site Operations

The crews did a nice job of managing a somewhat challenging dump site without ever interrupting the flow of water! Great Work!

Dump Site Layout



The Fill Sites

- For this drill – three fill sites were used.
- The first fill site was located at Sweet Allyn Park along Turtle Creek and provided about a 0.7 mile round trip for units hauling water.
- The creek provided ample water volume to support the drill and access was not a problem.
- A single, 1,500 gpm pumper was used at the creek to support the tanker fill station.

The Fill Sites

- The second fill site was located near the intersection of E. Creek Road and Milton Shopiere Road and also used water from Turtle Creek.
- This site provided a 3.9-mile roundtrip.
- The site provided ample water volume to support the drill and access was not a problem.
- A single, 1,250 gpm pumper was used at the creek to support the tanker fill station.

The Fill Sites

- The third fill site was located on South County Road J and used a 1,200 gpm irrigation well as the water source.
- This site provided a 4.8-mile roundtrip and ample water volume to support the drill; access was not a problem.
- No pumper was needed at this fill site because of the capability of the irrigation pump.

Sweet Allyn Park Fill Site

Turtle Engine 50 arrived at the park and gained entry to the access pathway.

Sweet Allyn Park Fill Site

Engine 50's crew had to hustle in order to be ready to fill the first tanker. The goal was to be set up in less than 5-minutes after arrival.

Sweet Allyn Park Fill Site

Several lengths of suction hose were needed to reach the creek. A floating strainer was the strainer of choice for the crew.

Sweet Allyn Park Fill Site

The crew was ready just in time and is shown here stretching a 5-inch supply line up to the tanker loading area.

Sweet Allyn Park Fill Site

The loading station became a busy place as additional tankers began to arrive.

Sweet Allyn Park Fill Site

The use of the jumbo-wye made it much easier to load the tankers without having to have the pump operator open and close valves.

Sweet Allyn Park Fill Site

Eventually, two portable pumps were used to aid Engine 50 in the water supply process.

East Creek Road Fill Site

Clinton Engine 42 (1,250 gpm) was used to support this tanker fill site. The water supply was adequate – just a little bit tricky to access.

East Creek Road Fill Site

Tankers were filled quickly at this fill site as well and the loading crew did a nice job of reducing the fill times.

East Creek Road Fill Site

This fill site had plenty of space for tankers to maneuver into position for loading.

Irrigation Well Fill Site

Perhaps the most impressive fill site was the one that used the 1,200 gpm irrigation well as the supply source.

Irrigation Well Fill Site

The well produced the 1,200 gpm flow at a constant pressure of 100 psi. By using 4-inch LDH – there was no need for a pumper at this fill site.

Irrigation Well Fill Site

The fill site also provided sufficient space to position multiple tankers for loading.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was never interrupted!
- An estimated 108,000 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 939 gpm.
- A peak performance of 1,750 gpm for 5:00 minutes was achieved at the 80-minute mark.

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.
- This was only the third time in GBW's history of such drills where a nurse tanker operation was not used and water flow was never interrupted! This feat was achieved because of the rapid deployment of the initial dump tank.
- The use of Turtle's Engine 51 at the dump site made a big difference in being able to support the higher flows later in the drill.

The Lessons Learned

- The community center layout provided ample space for this large-scale operation and traffic flow was not a problem.
- 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 fill line had a Storz-style connection which really made a difference in reducing the amount of time needed to connect fill lines.

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

- The use of the rectangular-shaped dump tanks clearly allow for a narrower dump site profile.
- The challenge at this drill was drafting from two sides of the pumper (dump site) and from two different water supplies (front tanks and rear tanks).
- Engine 51's pump operator did a good job of managing that operation and the pumper was designed very well to make that job easy! (MIV's, cameras, large pump, rear suction, etc).

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 Turtle Fire Department for sponsoring and hosting this seminar.

www.GotBigWater.com

This program was developed by
GBW Associates, LLC

For more information contact us at
thebigcamel@gotbigwater.com