

**Rural Feature — March 2005**

## **Water-on-Wheels**

***How to get the wet stuff on the  
red stuff***



*Training America's Rural Fire & Emergency Responders*

## **A Message the Author, Larry Davis**

In October 2002, I started writing the monthly "Rural Fire Command" column for *FireRescue Magazine*. Since that time, the RFC column has been carried in just about every subsequent issue of the magazine.

As time has passed, several readers have contacted me about obtaining back issues of the column. Some expressed an interest in acquiring the articles in Powerpoint format for use in training programs.

This led to, my adaptation of the RFC columns to the PowerPoint format. These PowerPoint programs are being made available through the combined efforts of *FireRescue Magazine* and the Rural Firefighting Institute.



# How to get the wet stuff on the red stuff

Each fire department has unique needs for apparatus, equipment, and people. However, the one thing they share is that they all need apparatus to get the water to where they need it. While firefighting techniques may vary little between departments, how they get agent from the source to the fire is a function of the department's ingenuity and likes and dislikes.

The photos that follow show a number of ideas that departments have used to accomplish the task of getting the wet stuff to the red stuff.



**The ultimate objective of a fire department with regard to a fire emergency is to deliver enough agent to safely perform those operations required and to ultimately control and extinguish the fire.**





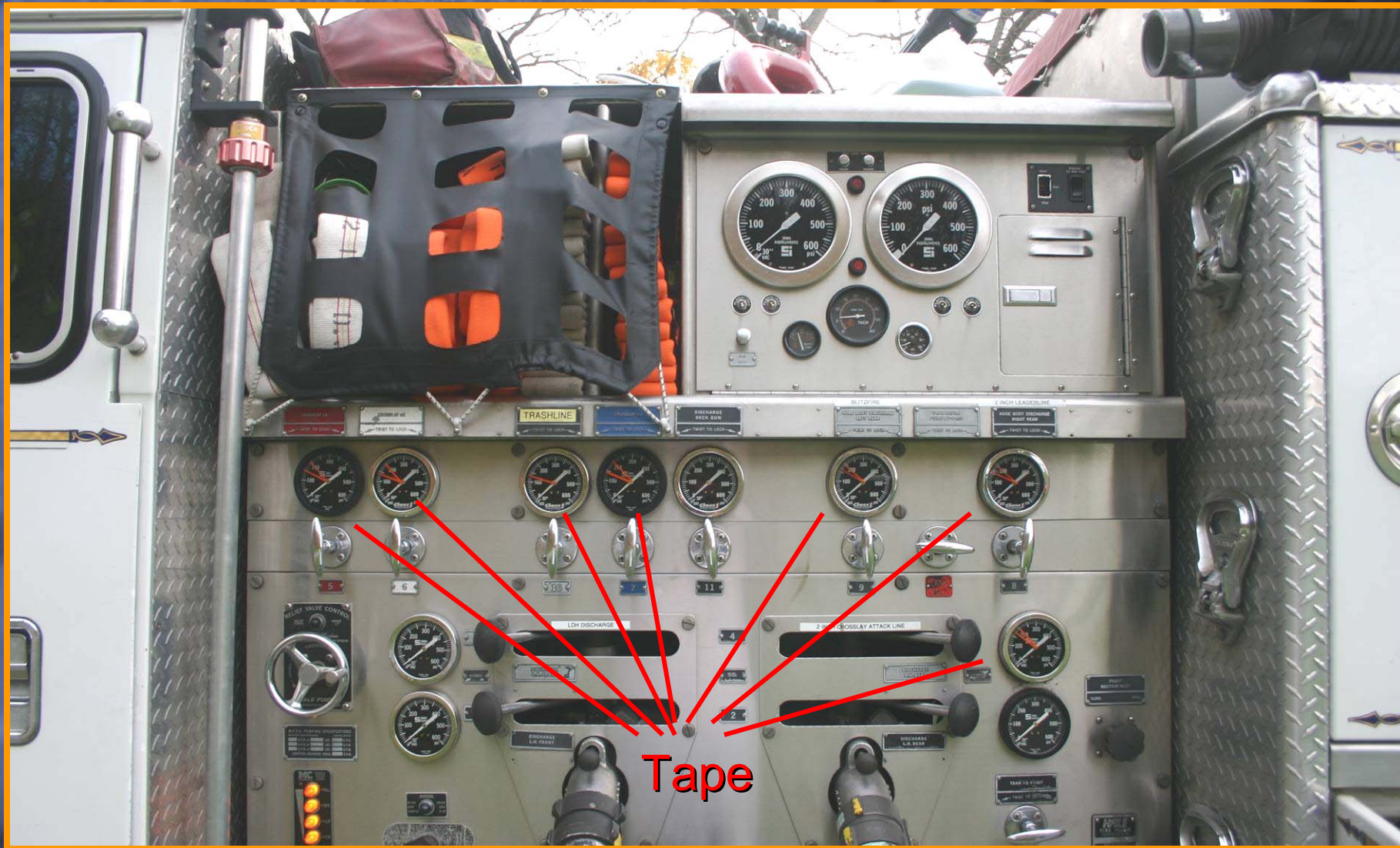
# Attack Engine — Winfield Community (MD) VFD

Figures 1,2, and 3 show how Winfield set up an attack engine to deal with rural fires.



**Figure 1.** Winfield's 1500-gpm E-143 has been set up for rural firefighting and to simplify operation and getting big lines into service quick.





**Figure 2.** E-143 is loaded with preconnects that require various pump pressures. To make things simple, discharge gauges are marked with tape to indicate the discharge pressures for each line — greatly simplifying the operator's job.



Preconnected  
Blitzfire

5" Hose

Clappered  
Siamese

2-1/2"  
Preconnect



**Figure 3.** A busy back end! On the left is the 5" clappered siamese for the "rural hitch" for laying up long driveways, a bed of 5" hose, a preconnected 2-1/2" line, and a preconnected Blitzfire.



# Water Supply Engine — Kidron (OH) VFD

The Kidron Fire Department built this 1250-gpm water source pumper themselves in a local manufacturing plant. Since Kidron has no hydrants, the unit was designed and set up primarily to fill tankers.



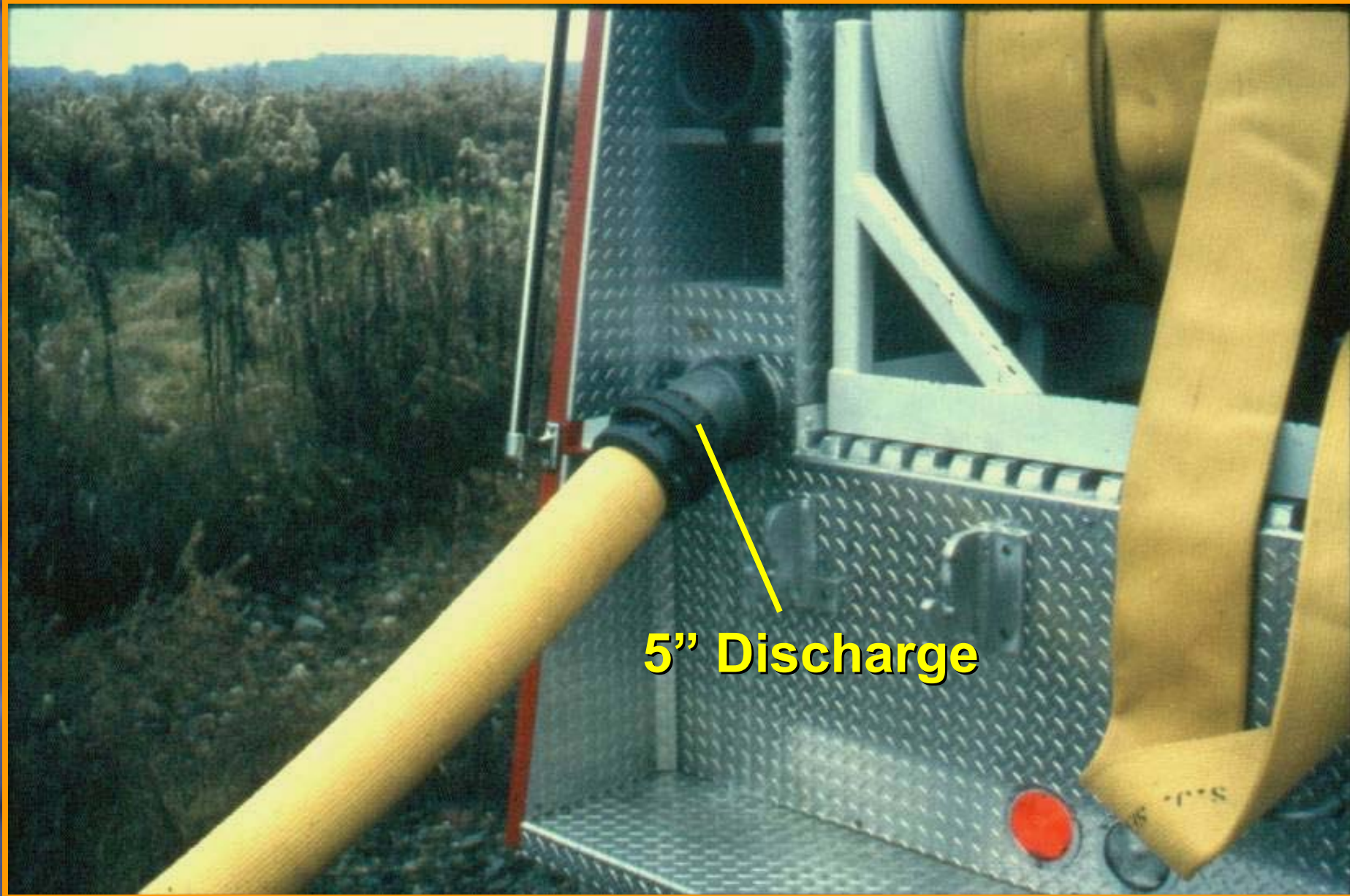
**Figure 4.** Other than having the front-mount pump mounted to the chassis, the volunteers completely built this unit.





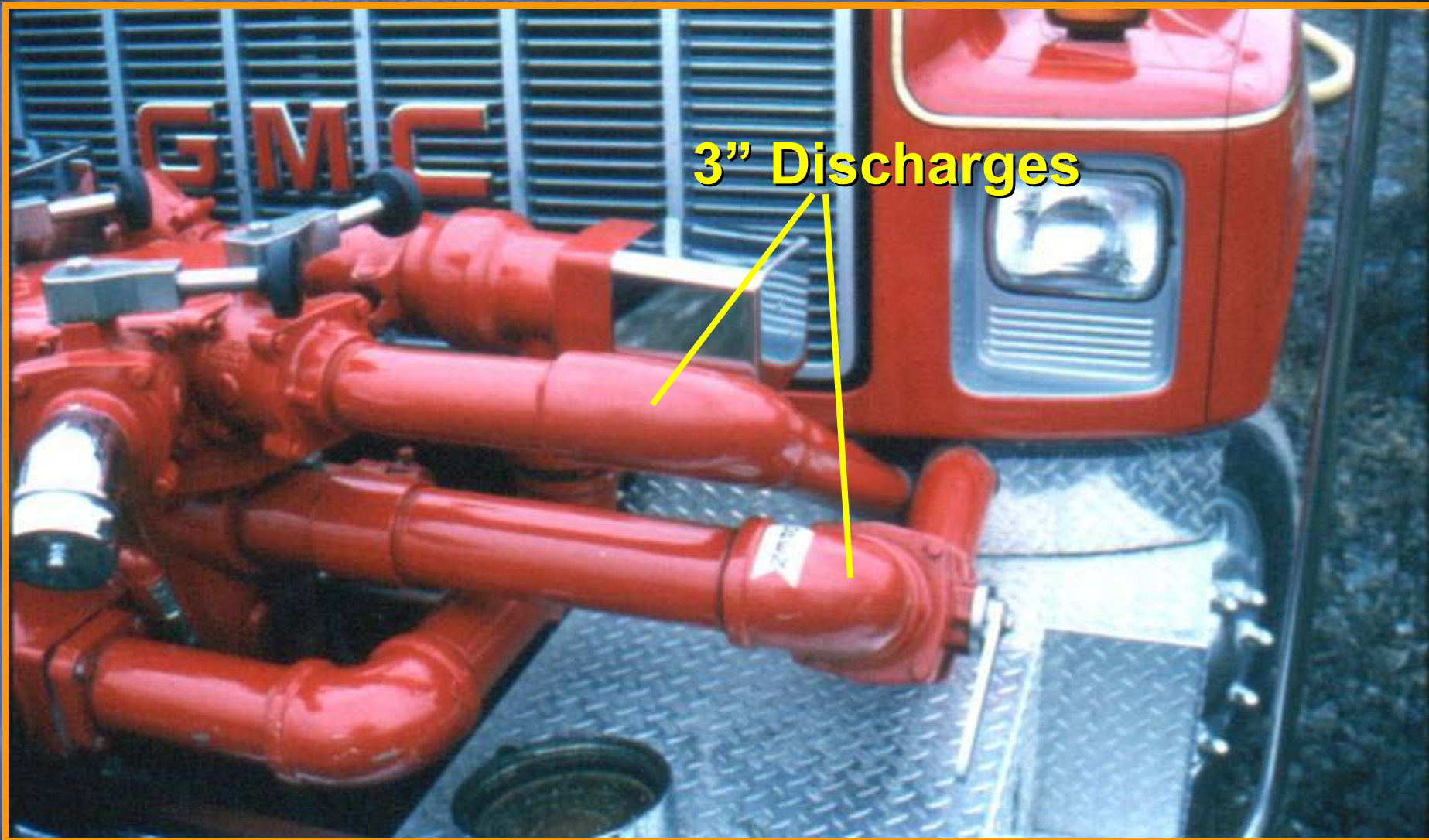
**Figure 5.** The fill manifold at the rear is preconnected to 600 feet of 5" hose carried on the reel. Suction hose is carried in the left compartment.





**Figure 6.** The major discharge on this apparatus is a the 5" rear discharge.





**Figure 7.** To ensure maximum flow, two 3" discharges supply the 5" discharge. These two pipes connect to 3" hydraulic hose to go over the front axle and under the cab to a 5" pipe that runs through the body to the rear.



# Hose Reel Pumper — Rindge (NH) FD

The Rindge (NH) Fire Department designed its hose reel pumper to be small so as to be able to get into streams and other water sources both in good weather and during typical New England winters.



**Figure 8.** The unit is equipped with a 750-gpm front-mount pump to simplify drafting operations.





**Figure 9.** The hose reel pumper carries 4" hose on the reel. The unit's short overall length allows it to be easily maneuvered into tight spots.





**Figure 10.** Six short lengths of suction hose are utilized so they can be carried in a compartment (accessible from both sides) that keeps the hose low for easy accessibility.



# Water Source Pump — Lawrence Twp. (MI) VFD

The Lawrence Township(MI) Fire Department designed this water source pumper to be able to access rural water supplies. It is equipped with a 1000-gpm engine-driven Class A fire pump and the equipment needed to set up a draft site.



**Figure 11.** Once in position, the operator starts the engine and operates the pump from the rear.





**Figure 12.** In this situation, the pump is supplying a 5" line to a manifold for tanker filling.



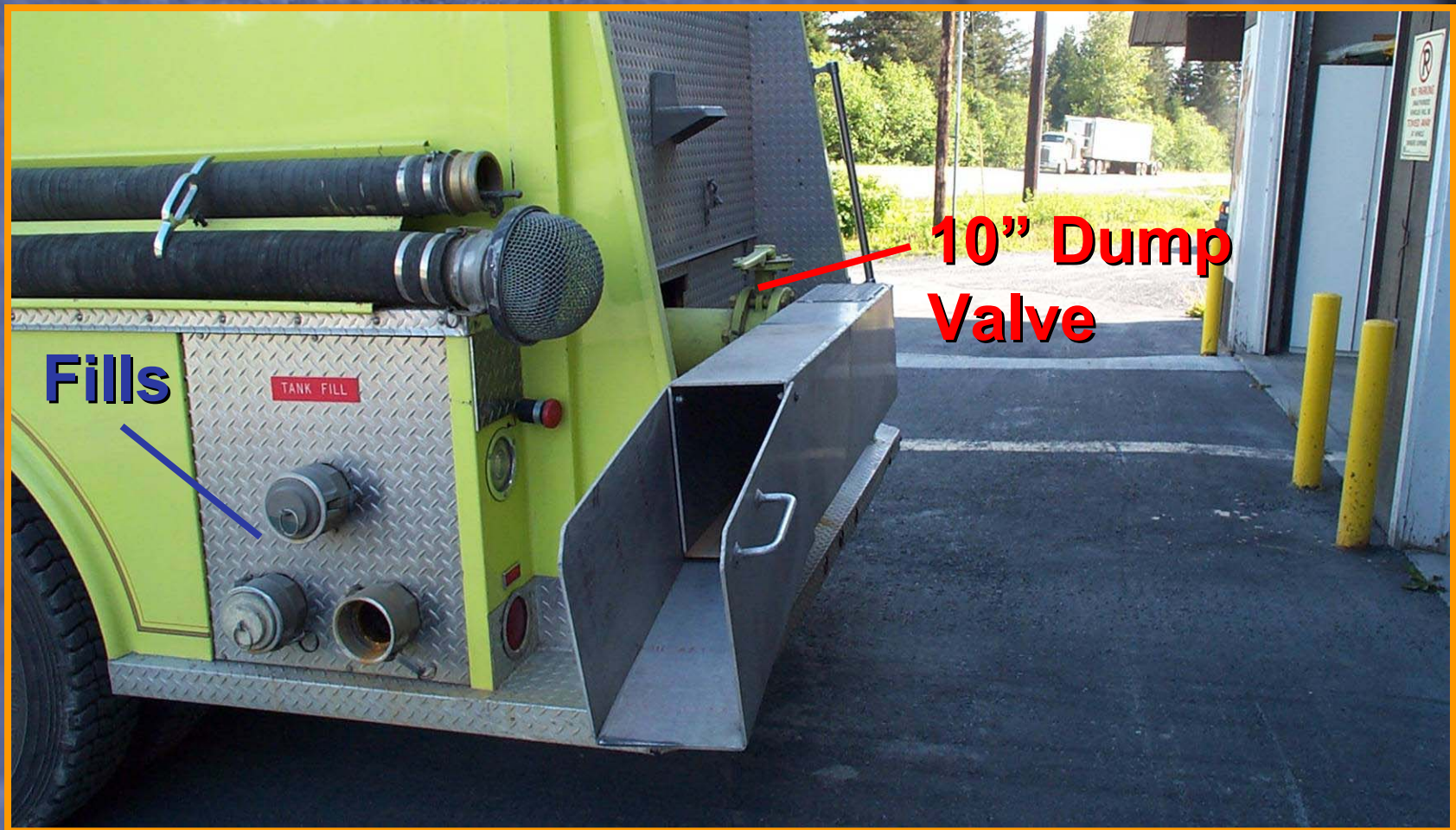
# Tanker/Pumper — Bear Creek (AK) VFD

The Bear Creek (AK) VFD modified their existing tanker/pumper to make it more efficient. This was done without spending a lot of money.



**Figure 13.** The tanker is primarily intended to transport water but can be used in initial fire attack operations if required.





**Figure 14.** The major changes made by the department were to improve the filling and off-loading of the tanker. The large diameter dump valve was installed and connected to a custom made chute to allow water to be off-loaded to the left side — eliminating the need to back up to a dump site. Large fills equipped with Cam-lok fittings were also installed to reduce fill time.



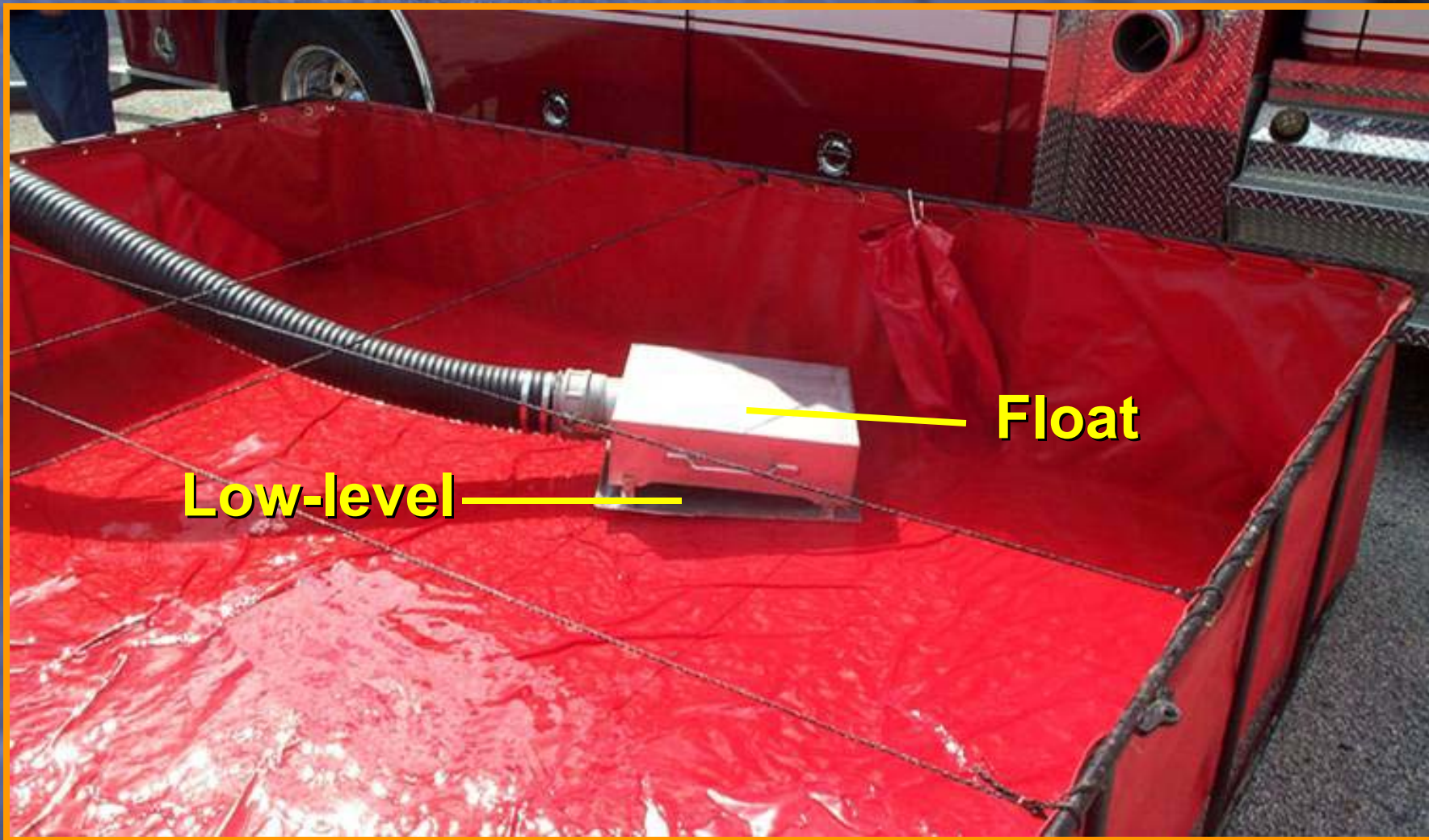
# Vacuum Tanker — Canaan Twp. (OH) VFD

The Canaan Twp (OH) Fire Department had Firovac design and build this 2000-gal vacuum tanker. The vacuum tanker has 2 major advantages. First, ISO credits the tanker with 100% of its capacity (unlike the 90% for conventional tankers) because of the sealed tank. The second is that it does not need a pumper or fill site set up to fill. This is because the unit can load itself using its vacuum pump and 8" suction.



**Figure 15.** By using the pump's pressure mode to pressurize the tank, the tank can off-load at 1000+ gpm.





**Figure 16.** In this demonstration, using Firovac's specially designed strainer that functions both as a floating and lo-level strainer, the tank drains the porta-tank to fill at over 1000 gpm.



# South Lynches (SC) Rural Water Supply System

The South Lynches Fire Department worked long and hard to develop its water delivery system to improve its ISO rating throughout its protected area. The department operates out of six stations, the two key components are the pumper/tankers and the tanker/pumpers that the department designed for each station.



**Figure 17.** The 1500-gpm is designed primarily for initial attack, but can also serve as a water source pumper, or as a tanker in a water shuttle operation. The units are equipped with both rear jet dumps and 6" suction intakes, and carry 1000 ft of 5" hose.





**Figure 18.** The department is a firm believer in squirrel tail suctions to make drafting set up easy.





**Figure 19.** The tanker/pumpers are primarily designed to haul water to attack apparatus. However, they can also be used for fire attack if needed. Each unit is equipped with long suction hoses for drafting if needed, and a rear jet dump. A discharge in the front bumper can be used to nurse an engine using 3" hose.





**Figure 20.** The South Lynches water shuttle in operation showing an engine using a rear suction to draft from a porta-tank while two tankers use their jet dumps and extensions to off-load into the porta-tank.



# Rural Water System — Meadowood (NH)

The Meadowood Community Area Fire Department designed a unique two-piece response unit to handle both fire attack and water supply. It is comprised of a pumper/tanker and a water-source pumper.



**Figure 21.** The attack unit is equipped with a large water tank and a 750-gpm front-mount pump





**Figure 22.** The attack unit features two reels that hold 2" hose with Storz couplings in the front bumper. These lines are not preconnected, but they are extended, disconnected from the reel, and attached to the pump outlets.





**Figures 23.** The portable monitor with preconnected hoses attached is carried for use in blitz attacks.





**Figure 24.** The rear shows the 4" hose bed, LDH fittings, and tank dump valve and direct tank fill for use when the unit is required to shuttle water.





**Figures 25.** The Meadowood firefighters took a used 1000-gpm pumper and equipped it with two reels of 4" hose, extra suction hose, and all of the equipment used for drafting and relay pumping operations to supply water to attack apparatus.





**Figures 26.** The unit's several thousands of feet of 4" are carried on two reels to keep from overloading a single reel.



# Food for Thought

As these photos show, the limitations fire departments often have with moving water are simply the limits of their imaginations. Hopefully these photos will provide some ideas on how your department can deal with its water supply challenges.

**For Questions or comments on this or any of the Rural Fire Command articles, contact the author at [ldavis@RFI411.org](mailto:ldavis@RFI411.org)**



# About the Author



Larry Davis is a full member of the Society of Fire Protection Engineers, a Certified Fire Protection Specialist, and a Certified Fire Service Instructor II with more than 30 years experience as a fire service instructor. He is Vice President of GBW Associates, and Chairman of the Rural Firefighting Institute.

Davis has conducted more than 400 Rural Firefighting Tactics and Rural Water Supply Operations seminars throughout the United States and Canada. In addition, he has written numerous fire service texts, including *Rural Firefighting Operations*, books I, II, and III. Most recently, Davis co-wrote the *Rural Firefighting Handbook* and *Foam Firefighting Operations*, book I with Dominic Colletti.





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**To obtain any or all of the other PowerPoint versions of the Rural Fire Command column, contact Larry Davis at:**

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