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Big Water Flow

1500 gpm Foam Pumper
Flow Test

Corpus Christi, Texas

Summer 2006

Facts & Figures...

- On a recent trip to Texas we had the opportunity to flow test an industrial foam pumper to see how much water could be pushed through the rig while working off of a fixed-fire water system (industrial fire hydrant).
- The rig was a 1991 GMC/White National Foam pumper with a Hale 1500 gpm single-stage pump and a 1000-gallon foam concentrate tank.
- The pumper was equipped with a Servo Command balanced pressure foam system and a pre-piped monitor outfitted with a TFT 300 gpm-2000 gpm automatic nozzle. The rig also had a high-flow, 5-inch discharge and six, 2-1/2-inch discharges.

Facts & Figures

- The pumper was one of a fleet of three foam pumpers that protect a chemical plant where big fire flows might be needed when plant emergencies occur.
- The chemical plant in question has a fire water system that has a normal operating pressure of 150 psi and can supply 10,000 gpm through a series of diesel powered fire pumps (this is not uncommon in the oil refining and chemical manufacturing fields).
- To simulate the plant's fire water system, we used RTFC's Training Academy as the test site because the fire water system on their training ground can produce the high pressures and flows commonly found in industrial facilities.

Facts & Figures

- We had hoped to put a smooth bore nozzle on the pumper's pre-piped monitor but the monitor's threads were 4-inch and our smooth bore had 3.5-inch thread. Therefore, we had to resort to the use of portable monitors, but we still achieved some excellent flows.
- **The results of the flow test showed that we moved 2,350 gpm through two (2) TFT Crossfire monitors and one (1) TFT Blitzfire monitor.**
- The pumper was supplied by two (2), 5-inch supply lines from independent hydrants and we had 100 psi residual pressure at the pump panel when we were flowing the 2350 gpm. We had no more throttle available and the motor was running around 1600 rpms.

Facts & Figures

- Realizing that we could possibly get rid of more water, we decided to open the pre-piped monitor even though we had no way of measuring its flow. When opened, we still flowed 2,064 gpm through the three portable monitors and we managed to have a decent stream on the big monitor as well.
- Once again, this flow test – like others we have done in the past – reinforces the fact that a pumper's rated capacity is measured at DRAFT.
- When we can get a pumper hooked up to a good water system, we can move much more water through its pump.
- Congratulations to the owner of this Texas foam pumper – they now know the capability of their rig – it really can move some big water!

Foam Pumper Flow Test



This 1,500 gpm foam pumper built by National Foam was able to flow over 2,300 gpm when supplied by two, 5-inch supply lines fed by an industrial fire water system capable of flowing 6,000 gpm @ 150 psi operating pressure.

Foam Pumper Flow Test



The master gauges tell the story at this test. With 2,300 gpm flowing, the pumper had no more throttle left and still had a 100 psi residual pressure showing on its master intake gauge.

Foam Pumper Flow Test

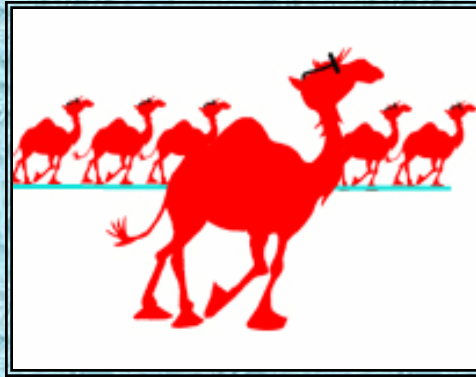


A crew member is verifying the flow from this 2-inch smooth bore tip by using a hand held pitot tube. Such devices are needed when conducting flow tests so that accurate data can be collected.

Foam Pumper Flow Test



2,350 gpm are shown flowing here through portable master stream devices. By using the smooth bore nozzles, we were able to accurately measure the flow from each device.



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