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Big Water Test Data

Liquid Trans Hydro Mini
Closed Relay Test From Bridge
Darnestown, Maryland
May 2004

Facts & Figures...

- During May 2004, Larry Davis, VP of GBW Associates, LLC led a series of performance tests and operational demonstrations on the Liquid Trans Hydro Mini. This presentation is a brief summary of a test involving the use of the Mini off of a bridge.
- The test was conducted in Darnestown, Maryland where the Mini was deployed over a bridge and used to supply a 1,500 gpm pumper.
- The impressive fact was that the lift was 33-ft lift.

Test Site



Site was a bridge over a large creek. The lift was measured at 33 feet.

Test Site

The Mini was positioned on the bridge to be deployed over the guard rail.



Deployment Set-up



Hoist is attached to the truck hitch.

Deployment Set-up



Deployment ramp is obtained and is prepared for attachment to the guard rail.

Deployment Set-up



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Liquid Trans Hydro Mini Tests

Deployment Set-up



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Deployment Set-up



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Mini Deployment



Pressure measurement fitting attached.



Mini Deployment



A problem that arose early on into the test was the winch cable, hydraulic hoses, and 4-inch supply hose getting tangled.

Mini Deployment



The lines were untangled and the Mini was lowered without issue.

Mini Deployment



Once deployed into the water, the pump was powered up and the 4-inch hose charged. The hose had to be tied off to prevent additional hose from being pulled over the bridge railing.

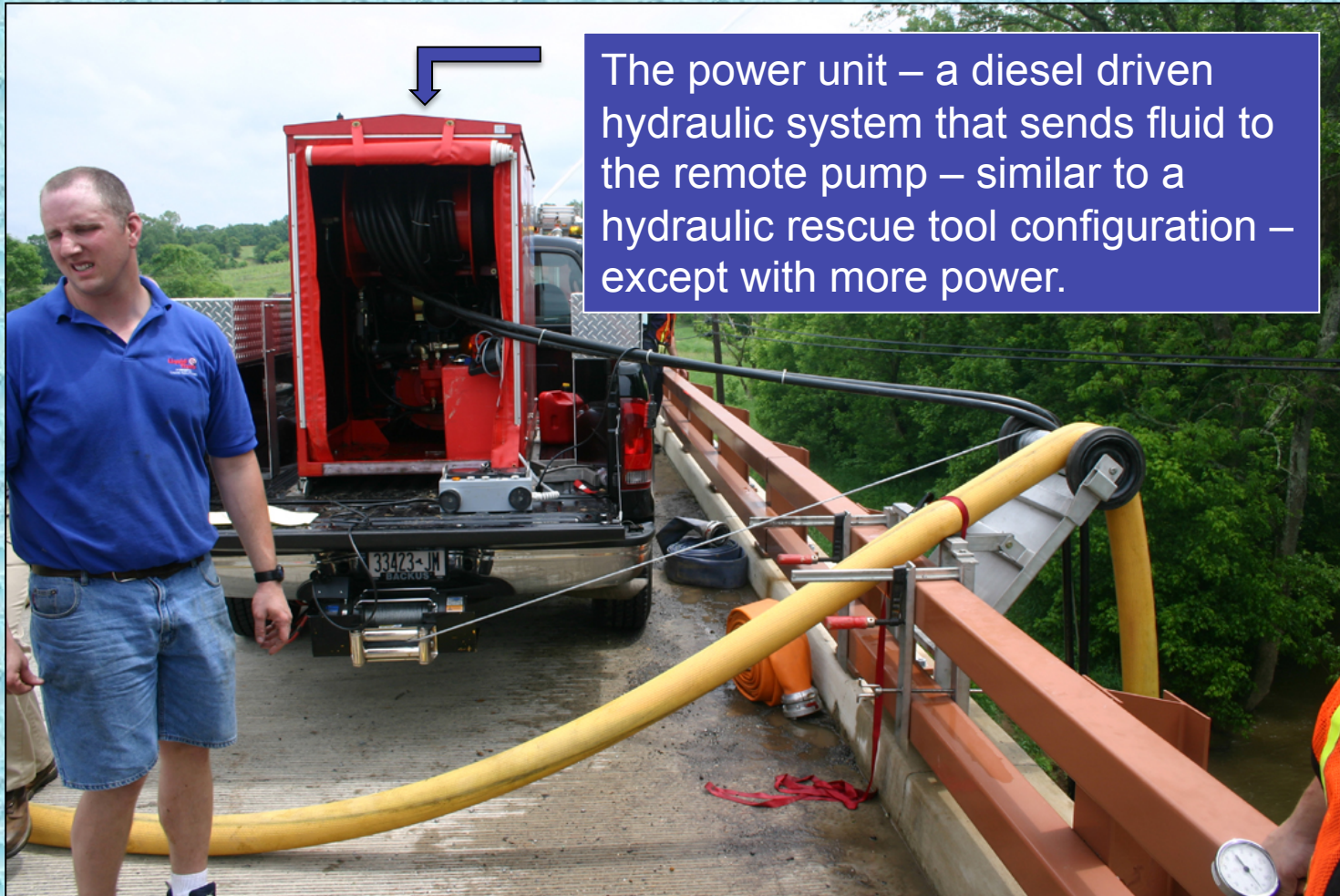
Mini Deployment



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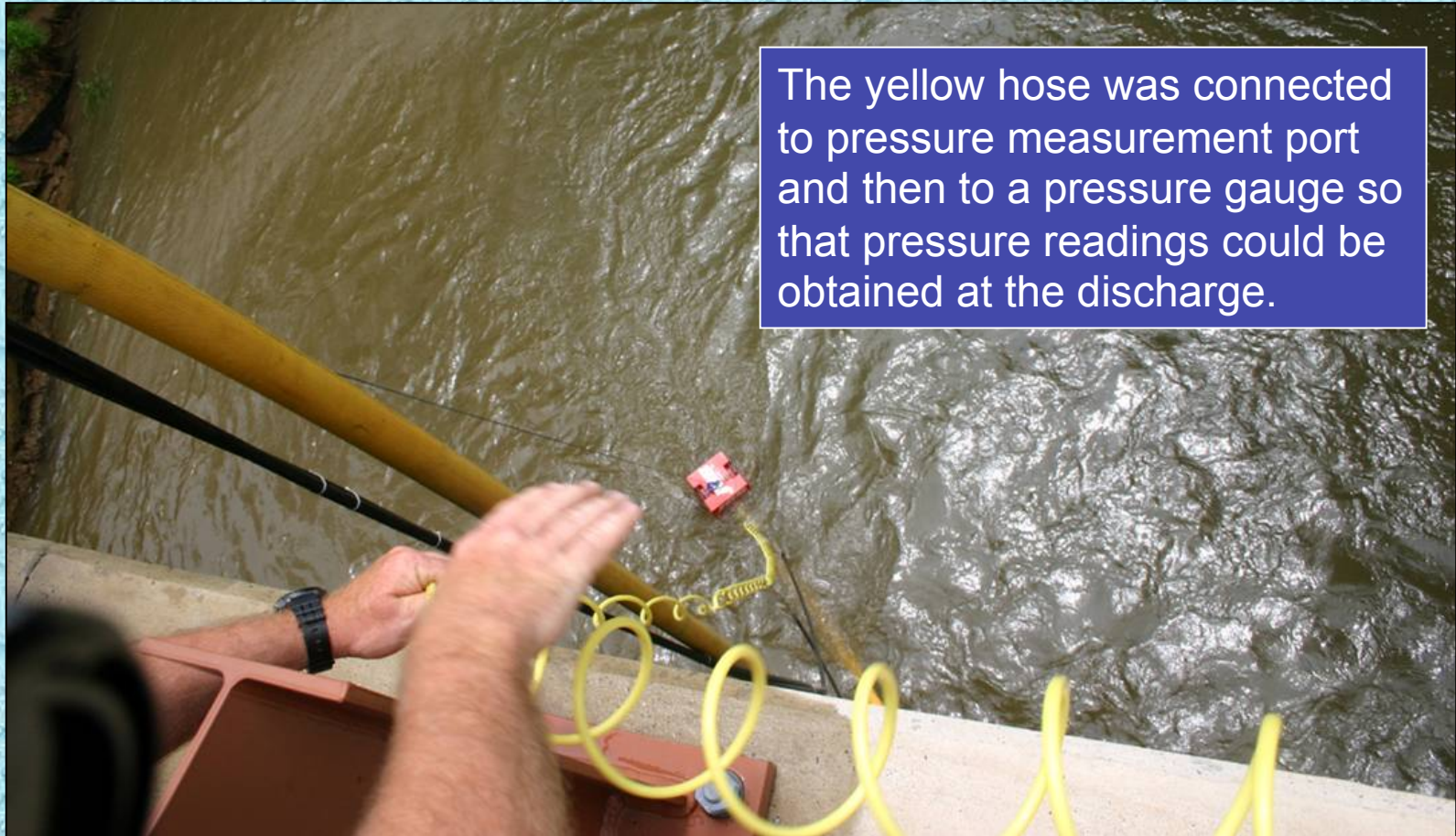
Liquid Trans Hydro Mini Tests

Mini Deployment



The power unit – a diesel driven hydraulic system that sends fluid to the remote pump – similar to a hydraulic rescue tool configuration – except with more power.

33 feet of Lift



The yellow hose was connected to pressure measurement port and then to a pressure gauge so that pressure readings could be obtained at the discharge.

Power Unit at Maximum rpm



Supply Set-up

The Mini supplies the 1,500 gpm pumper through 100-ft of 4-inch hose.



Pitot Measurement



The flow from the pumper's pre-piped deck gun was near 900 gpm. A hand held pitot gauge was used to verify the flow through the 2-inch tip.

Pump Discharge Pressure

The Pump Discharge Pressure at the Mini was 16.5 psi.



Impressive



The Mini clearly demonstrated its ability to pump water and overcome head pressure issues. The use of the 4-inch hose made it easy for the pump to deliver the 900 gpm at 16.5 psi PDP.



Retrieval



Retrieval proved bit more difficult than deployment!



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