Rapid Lesson Sharing

Event Type: Engine Bed Mounting Bracket Failure

Date: March 7, 2016

Location: Ozark-St. Francis National Forests, Arkansas

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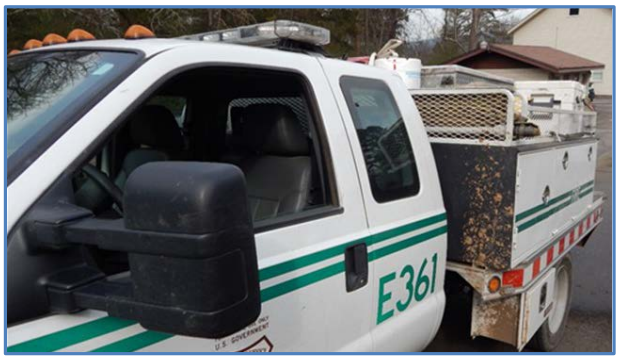
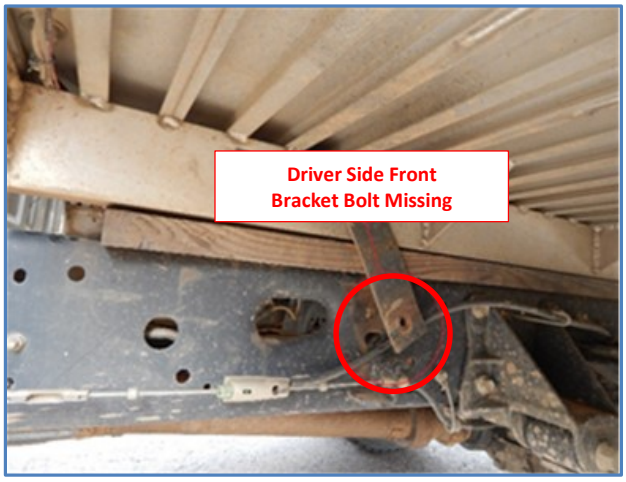


NARRATIVE

On Monday, March 7, it was discovered that the bed mounting brackets had failed on two Type 6 Engines located on the Big Piney Ranger District of the Ozark-St. Francis National Forests.

The issue was first observed by the Supervisory Fire Engine Operator (SFEO) when one of the engines was parked at the District office. He noticed that one of the boxes "looked a little off". Upon further inspection, the SFEO realized that the entire bed and pump package had turned counterclockwise on the frame.

He discovered that the bed had been mounted to the frame with six pieces of steel strap—all of which were compromised. Two of the straps had sheared completely, two had missing bolts, and two were severely bent. (See photos on this page.)



Bed Rotates Off Frame

The entire bed and pump package had moved over six inches on the front.

Furthermore, it became apparent that the bed would have continued to rotate even farther off the frame had it

The steel straps used to mount the bed to the frame on this Type 6 Engine with a Model 52 pump package (pictured at top) were not substantial enough to withstand the load of the pump package. This resulted in hazardous consequences. The 1/4" steel plate used to mount the aluminum bed to the frame does not appear to have the strength to handle the forces involved. It is not believed that one single event caused the failure, but rather the effect of stress over time.

not been stopped by the chock block mounted on the passenger side cab of the truck (see photo on right).

Both of the Unit's engines were red flagged. When the other engine was inspected it also had a sheared mounting bracket.

Once the problem was identified, six separate people were asked to walk around the engine to see if they could identify what was off.

At first, no one was able to pick out that the bed had shifted. It took a few minutes of careful study to identify this hazard.

Therefore, it would have been easy for the truck to have been operated in this condition with the driver being unaware.

Model 52 Style

The two engines are the Model 52 style, with premanufactured pump packages attached to a standard aftermarket aluminum bed.

The aluminum beds were installed prior to the installation of the pump packages.

The entire bed and pump package have rotated off the frame.

LESSONS

On this Unit, walk-arounds, Engine and Preventive Maintenance checks now occur regularly with both vehicles.

It goes without saying that had the bed and pump package fallen off the vehicle while it was moving the results could have been catastrophic.

Initial recommendations to other units include:

- ✓ Inspect similar Type 6 configurations for similar bed mounting systems and replace/upgrade bed mounts whether damage is evident or not.
- ✓ At a minimum, ensure that bed mounts are inspected during monthly PM checks.

This incident demonstrates the need for the utilization of the national standard for Type 6 Engines to avoid potential safety gaps related to pump package installation.

This RLS was submitted by:

Forest Safety Officer

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