



## MARK TWAIN NATIONAL FOREST LESSONS LEARNED

**Incident Type:** Fire; Interagency Assist

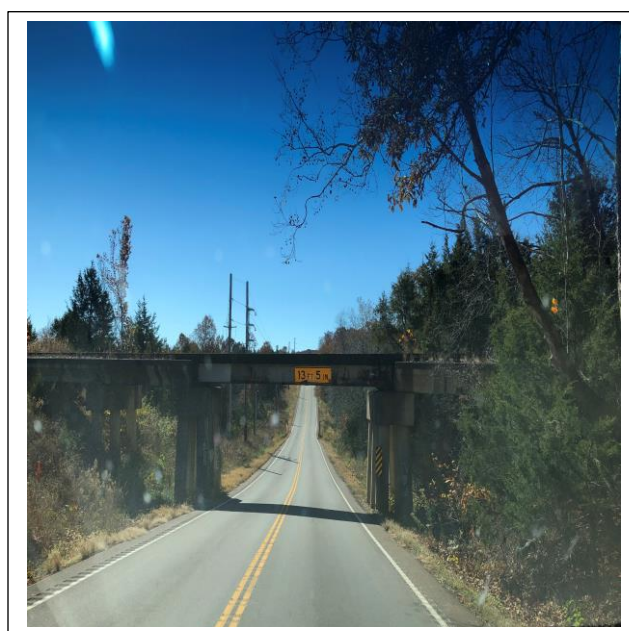
**Topic:** Low Clearance – Transportation Routes

**Location:** Missouri

### **Incident Narrative:**

On October 24 at 1535, a U.S. Forest Service dozer/roll back transport package was responding to a resource order request for fire suppression assistance on private land. While driving on a lettered state highway the operator approached a railroad trestle underpass. The driver slowed the speed of the transport due to concerns that the clearance appeared low. As the driver approached at a low speed to test the clearance height, the Roll Over Protection System (ROPS) of the dozer came into contact with trestle. The driver immediately stopped and began backing away from the underpass. A real-time risk assessment determined the damage to the ROPS was not an immediate threat to the safety of the operator. No other damage was identified. The driver was able to continue to the interagency request for assistance via an alternative route.

### **Pictures:**





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**Damage Sustained:** Three bolts on the ROPS were sheared off. No damage was identified on the transport. Damage to the trestle is undetermined.

### **Contributing Factors:**

1. Height of the transport package was unknown relative to the clearance of the underpass.
2. There is a steep incline as you approach the underpass.
3. Limited operational decision space with no shoulders on the highway.

### **Lessons Learned:**

1. Always be aware of low clearance passage on transportation routes. Objects and infrastructure that could create a low clearance hazard include underpasses and overpasses; bridges; power and phone lines; traffic lights; tree limbs; and signage.
2. Always contact infrastructure authorities when a Forest Service action could have created damage. Infrastructure could include underpasses and overpasses; bridges; power and phone lines; traffic lights; and signage. In this case, the railroad responsible for the trestle should have been contacted as soon as the incident scene was safe.
3. Dispatch should have been contacted as soon as it was safe to do so to assist with appropriate infrastructure authority contacts.
4. Whenever structural damage affecting the safety features of vehicle(s) or equipment is sustained, it should be red tagged and removed from service until a trained industry professional appropriate to the vehicle(s) or equipment can assess and correct the damage.
5. Never attempt a low clearance passage that is not clearly signed.
6. Never attempt a low clearance passage where the height of the transport package is not known relevant to the available clearance.



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### **Recommended Actions:**

1. All drivers of dozer transport packages must review clearance heights at least annually and make sure those clearance heights are prominently displayed in appropriate locations in the transport. This must also be done anytime a new package configuration is employed.
2. Review infrastructure within the jurisdiction that could pose a low clearance hazard. Low clearance “no go” routes must be shared with all transport drivers and documented on operations maps and with Missouri-Iowa Interagency Coordination Center (MOCC) Dispatch. Off-Forest resources must be briefed as appropriate on these potential hazards.
3. Establish “Standard Operating Procedures” for dozer transport packages traveling outside of the jurisdiction that might encounter low clearance hazards.
4. Review equipment or vehicle physical conditions that require red tagging. When the safe operation of a vehicle or equipment is compromised, it must be red tagged until serviced by an appropriate industry professional. Any time the structural integrity of a safety feature is damaged, the equipment/vehicle must be red tagged.
5. Review accident reporting procedures and when to recognize that external agencies or authorities must be contacted.
6. Analyze and discuss height, weight, length, and width factors pertinent to dozer transport operations.
7. Support the continued establishment of a Mark Twain National Forest Heavy Equipment Committee.