Green Monster Fire
Engine 1932
668 Super-heavy Tactical Engine (Tatra)
BLM Elko, NV
Non-Serious Accident Review
September 2008

September 19, 2008

Executive Summary

At approximately 2000 hrs on September 16, 2008, an accident occurred on the Green Monster Fire, BLM Elko District, Nevada. While driving from the fire enroute to Midas station, Engine 1932 (Elko District engine) attempted to drive a narrow portion of a two-track road adjacent to a ditch, slid into the ditch and tipped-over onto its side. The four person crew, engine captain, engine operator, engine operator (T) and crewmember, were not injured during the accident and did not require first aid treatment. All personnel were picked up by vehicle at the scene and transported to Midas Station.

Narrative

9/16/08 2000 hrs- Engine 1932 tips over into a ditch adjacent to two-track heading south to Scraper Springs road.

9/16/08 2010- Engine 1932 contacts Engine 1946 and reports an engine accident, no injuries. Contact made on tactical channel due to inability to hit a repeater from that location.

9/16/08 2017- 1946 contacts Elko Dispatch, states Engine 1932 has rolled over, no injuries, need Helitack chase vehicle to provide crew ground transport. Elko Helitack informed.

9/16/08 2107- Helitack has the crew from Engine 1932, enroute Midas station.

9/16/08 2129- Helitack and crew from Engine 1932 back at Midas station.

Investigative Process

A four person BLM Review Team conducted the review. The investigation included an analysis of human, material and environmental factors. The process included interviews, verification of documentation, visit to the accident scene, site photography, tire track analysis, examination of Engine 1932 and timeline review. The investigation team consisted of the following individuals:

Dennis Terry (Team Lead), Western Great Basin Coordination Center, Asst. Center Manager.

Dave Griggs (Safety SME), Nevada State Office, Nevada BLM State Safety Manager.
Scott Johnson (Operations SME), BLM Carson City Field Office, Fire Operation Supervisor
John Fitchner (Equipment SME), BLM NIFC, Equipment Development Unit, Fire Equipment Specialist – Special Projects Manager.

- Dennis Terry (Team Lead) received Delegation of Authority by Acting State Fire Management Officer on 9/17/08 at 0800 hrs.
- The team received an inbriefing at the Winnemucca Field Office by Elko District Manager and Elko Zone FMO on 9/17/08 at 1300 hrs.
- The team arrived at the accident scene at 1530 hrs the same day.

Findings

Finding #1: All Engine crewmembers were in compliance with BLM work/rest and incident operations driving duty day policies.
Discussion: At the time of the accident, the crew had worked a 13 hour shift with a ½ hour break for lunch. Three crewmembers had taken 2 days off 5 days prior to the accident and one crewmember had a sick leave day on 9/13. They had been working an average of 9 hour days since their days off. An 8 hour day was very common during this time frame. When questioned, none of the crewmembers believed that fatigue played a role in the accident. These hours are within policy limitations.

Finding #2: The crew was driving at night on an unfamiliar road.
Discussion: Engine 1932 left the heel of the fire at approx. 1900 hrs to flag an alternative route into the fire for the Law Enforcement Officer and to return to Midas station for fuel and water. Enroute they encountered a spot fire which they flagged and reported to the Task Force Leader. They also had to leave the road to avoid a spring, navigating off-road which further delayed them. By the time they found a route back to the road, it was completely dark. None of the crewmembers noticed the close proximity of the ditch on the right side of the road until it was too late. The edge of the ditch was obscured by grass, sage and willows.
Recommendation: If necessity dictates driving on a questionable two-tract road at night, continue to utilize spotters or scouts until the risk is mitigated. Consider the option of using the familiar route that you came in on. If reasonable, wait until daylight Consider adding short "night hazard" component to State and National engine driving/refresher training classes. This would include the responsibility of all crew members to be especially alert to hazards on dark and/or unfamiliar roads.

Finding #3: All of the crewmembers on Engine 1932 were wearing seatbelts at the time of the accident.
Discussion: Three crewmembers remained seat belted throughout the accident. One crewmember in the left rear seat, removed his seat belt, and exited the engine through the window. He jumped from the engine at the time it began to tip-over, landing on the two track road on his feet.

Recommendation: Without exception, seat belts must be worn at all times by motor vehicle operators and passengers, regardless of the distance to be traveled or the time involved per the *Interagency Standards for Fire and Fire Aviation Operations* page 07-6 and the *Safety and Health for Field Operations Manual Handbook 1112-2* page 31. State and Field Office FMO's and Field Office Managers should ensure that all employees are educated regarding BLM/Government policy on mandatory seatbelt use.

Finding #4: The passenger in the right front seat (Engine Captain) indicated that he felt insecure due to the arrangement of the passenger side belt.
Discussion: The Engine Captain said that as the vehicle was tipping to the passenger side, he felt as though he was not adequately held in place and fell toward the open passenger side window. Currently, the 668 Chassis comes from the factory with the front seatbelts for both the driver and front passenger configured exactly the same, both belts come from the left side over the left shoulder and waist and latch on the right side. .
Recommendation: At the time of this report, the Equipment Development Unit has contacted Tatra Americas (the current chassis manufacture) to inquire about this item. Tatra America indicated that the current seat/seatbelt meets US Department of Transportation safety requirements. Tatra Americas is currently researching the availability / possibility of changing to different configuration. If a satisfactory substitute is found, the Equipment Development Unit will inform users of the 668 about retrofitting the current 668 seatbelts and standardizing new versions of the 668 with a corrected configuration.

Finding #5: The driver had not attended the required training for the position that he was filling on the engine.
Discussion: Although the Driver possesses a Commercial Driver's License (CDL) permit and can legally operate the vehicle in the State of Nevada, BLM Driver training and qualification requirements were not met. The review team was able to locate training records that indicate that the driver attended required Defensive Driving in 2005. His currency for this training has expired. He has not attended WCF class 668 driver and maintenance training.
Recommendation: At the earliest opportunity, the FMO should assure that all employees have attended required training per the 2008 *Interagency Standards for Fire and Fire Aviation Operations*, Chapter 2 page 2-29.

Finding #6: Initial indication is that damage to the engine is minimal.
Discussion: The engine has been lying on its side for an extended period of time. It has potentially sustained significant damage to the engine, drive train, or pump components not visible in its current state.
Recommendation: Do not start the vehicle or place it back into service until it has been thoroughly inspected by a competent mechanic.

Conclusions and Observations
The crew of Engine 1932 was conducting routine operations on an Initial Attack fire and was within policy requirements for work/rest and driving duty day limitations. They unexpectedly encountered a narrow portion of road at night and slipped into a ditch,

tipping over onto the right side of the engine. All passengers were wearing their seatbelts at the time of the accident. One passenger undid his seatbelt and exited vehicle during the tip-over. While the outcome was positive, potential serious injury could have occurred. This passenger should have remained in his seat with the seatbelt fastened. The review team believes that the training offered by the BLM is more than sufficient for Bureau employees and this type of vehicle. Driving, and especially night driving, remains one of the highest risk activities firefighters undertake in the accomplishment of their jobs. This incident should serve as an important lesson learned to all personnel engaged in driving activities.

Photos:


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