

Rapid Lesson Sharing

Event Type: Non-Fire, Engine Rollover

Date: February 26, 2023

Location: Tuba City, Arizona

Narrative

On February 26, 2023, two Administratively Determined (AD) firefighters departed their home unit enroute to Engine Operator (ENOP) training in Phoenix, AZ. After approximately three and one-half hours of travel two firefighters, traveling in a Type 6 wildland fire engine, encountered high winds and a bumpy highway. At approximately 1450 hrs, high winds impacted the engine and the engine veered into the oncoming lane of traffic. The driver was able to quickly return the engine to the correct lane of the highway, though the momentum of the engine caused the vehicle to “fish tail” and again entered the oncoming lane. The engine struck the guard rail on the opposite side of travel, spun counterclockwise and exited the highway, landing in a sandy area adjacent to a cement culvert. Civilians stopped at the site and assisted the two firefighters in exiting the vehicle. Emergency responders quickly arrived at the scene. The passenger of the vehicle reported being uninjured. The driver of the vehicle was assessed at the scene and the determination was made to transport him to a local medical center for further evaluation. The passenger accompanied the driver, in the ambulance, during transport. The driver was evaluated and released within a couple hours. No injuries were reported. The engine sustained substantial damage.

Summary of Events

On the morning of February 26, 2023, two wildland firefighters arrived at their home unit and prepared to depart for Engine Operator (ENOP) training, scheduled to begin the following day. Home unit personnel completed a daily preventive maintenance (PM) check on a Type 6 wildland fire engine. The two firefighters completed required AD paperwork, received the engine, loaded their gear, and prepared to depart for training. During the PM check of the engine, two items were identified as missing from engine (a jack and triangle reflectors). The two firefighters, traveling in the engine, followed home unit personnel to the local Harbor Freight Tools store and the two items were purchased and placed on the engine. At approximately 1100 hrs, the two firefighters departed for training. During the next three to three and a half hours, the firefighters traveled south, toward Phoenix, stopping only occasionally for breaks, fuel, and snacks. Near Tuba



City, AZ, while driving down a bumpy section of the two-lane highway, the vehicle encountered strong cross winds from the west (passenger side of vehicle). The driver reported that on multiple occasions the vehicle was pushed, by the wind, into the oncoming lane of traffic. At approximately 1450 hrs, while traveling at speeds between 60-65 mph, strong cross winds from the west, again pushed the vehicle into the oncoming lane of traffic. At this moment, an oncoming vehicle swerved to its right to miss the engine, while at the same time the driver of the engine quickly returned his vehicle to the correct lane of travel. However, the engine began to “fish tail,” and came close to impacting the southbound side guard rail. Again, the driver attempted to correct the engine, however the engine continued to “fish tail” causing it to again enter the oncoming lane of traffic. The engine crossed the oncoming lane of traffic and impacted the northbound side guard rail. The impact caused the engine to spin



1. Culvert, in background, where vehicle exited the roadway.

counterclockwise, resulting in further damage along the passenger side of the vehicle and extensive damage to that section of the guard rail. The engine crossed over the guard rail and came to rest approximately five feet below and sixty feet from the edge of the roadway, facing the opposite direction of travel. Photos, vehicle damage, and other evidence at the scene, indicated that the engine impacted multiple wooden guard rail posts and crush blocks, exited the roadway at a cement culvert, and rolled a minimum of one full revolution before coming to rest on the passenger side. Both the driver and passenger remained in their seat belts throughout the incident. Both side curtain air bags and the passenger side seat air bag deployed. Upon coming to rest, the passenger was able to release his seat belt. He checked on the driver, who seemed a bit disoriented. Assessing no immediate injuries to either himself or the driver, the passenger gathered cell phones and made emergency notifications to the home unit. The driver was unable to free himself as his seat belt was locked in place. Civilians arrived on scene and announced that they called emergency services and attempted to break the windshield, freeing the occupants inside. Eventually someone climbed on to the driver's side of the vehicle and opened the driver's door. The driver's seat belt remained locked, and a civilian used a knife to cut the driver free. Both personnel were able to exit the vehicle through the driver's door. Emergency responders were in the area and quickly arrived on scene. Emergency Medical personnel arrived and assessed the individuals. The passenger reported he was uninjured and did not need medical care. During medical assessment of the driver, the passenger secured the scene and gathered items as best as possible. The driver was assessed and though no injuries were initially found, the determination was made to transport the driver to the local medical center for further evaluation and the passenger rode with the driver. Home unit personnel arrived at the hospital within a couple hours and the driver was released from care. Personnel remained overnight and the next day they returned to the medical facility in an attempt to gather copies of all medical documentation. The following day personnel traveled to the tow yard and took additional photos of the vehicle. All personnel traveled back to the home unit and were released.



Accident Investigation

On Monday, February 27, agency, regional and central office management met via conference call to discuss next steps. The decision was made to initiate a Rapid Lessons Sharing (RLS) review to meet accident investigation requirements commensurate with the incident. An RLS team was selected and departed for the engine's home unit the following morning.



LESSONS SHARED

1. As driving conditions change (i.e., weather, road conditions, time of travel, fatigue, etc.), driving practices need to change accordingly. In this case, the driver experienced multiple lane disruptions caused by high cross winds and

a bumpy road. Weather observations, day of the incident, reported wind gusts in the area at the time of the incident were 20 to 35 mph.

- a. Driving conditions may warrant a reduction in speed, until such time as conditions improve.
 - b. Carefully select route of travel based on current and expected weather and road conditions. Pre-select alternate routes of travel. Keep program management staff (and dispatch as required), notified of all route changes as they occur.
 - i. Road and weather conditions at the time of the incident were clear and dry, though gusty winds did exist.
2. Multiple qualified personnel allow for opportunities to switch driver duties more frequently, allowing for additional periods of rest, to reduce driver fatigue to a minimum.
 - a. When two or more qualified drivers are available, rotate driving duties frequently.
3. In this incident, both personnel were wearing seat belts.
 - a. Though one individual was assessed and transported for additional medical evaluation, ultimately no injuries were reported. Seat belts and side passenger air bags were clearly a factor in preventing injuries in this incident.
4. The engine's Fire Equipment Maintenance and Performance Record (FEMPR) is used to organize, track, and record vehicle history and records.
 - a. A home unit qualified engine boss (ENGB) completed and documented the vehicle preventative maintenance (PM) check prior to the engine departing the home unit.
 - b. The engine and personnel were scheduled to attend the following week's ENOP training, where personnel would be extensively trained in PM checks and would then be able to complete PM checks on their own.
 - c. No vehicle deficiencies were noted, that directly impacted the outcome of the incident.
 - d. Home unit staff reported the engine had been used during a previous session of ENOP training. Though a PM check was completed and documented, prior to issue of the vehicle, the FEMPR could be upgraded to include tabbed dividers, highlighting specific elements of the FEMPR, to enable enhanced record keeping and to prompt specific maintenance checks. The use of the BIA FEMPR for Type 6 engines was discussed with a central office Division of Wildland Fire Management senior official and it was relayed to investigators that during BIA ENOP training, personnel are provided a copy of a template BIA Type 6 and/or Type 4 FEMPR (depending on vehicle at training), and it is the responsibility of the home unit to edit the template FEMPR specific to the equipment in use.
5. Personnel were cleared to drive a government vehicle, per Motor Vehicle Operator's License and Driving Record GSA Form 3607 completed in FY 2022. Personnel were scheduled to complete GSA Form 3607, for FY 2023, prior to the start of the unit's fire season.

Commendations

- Personnel involved made immediate notifications to the home unit, within minutes of the incident.
- Support from the home unit and regional office was key to the success of this Rapid Lessons Shared.

RLS Review Team Closing Comments

The personnel involved in the incident were quick to contact and notify the home unit. Home unit staff immediately supported the personnel and were on site within hours. Home unit senior management and regional office staff were quick to respond and provide support. Central office notifications were swift, enabling a review team to be on site within approximately 48 hours of the incident. The Regional Safety Manager supported the review team throughout the investigation and provided photos (scene/vehicle) taken within approximately 24 hours of the incident, was present during interviews, and assisted in drafting the Rapid Lessons Sharing report.



This RLS was submitted by:
Adrian Grayshield - Team Lead
Brent Higbee - BLM SME

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