

**Skyline Road Vehicle Accident
Accident Investigation Report
Bureau of Indian Affairs, Warm Springs Agency**

July 18, 2014



Skyline Road Vehicle Accident

Accident Investigation Report

Location:

Bureau of Indian Affairs: Warm Springs Agency

Confederate Tribes of Warm Springs

Warm Springs, Oregon

Investigative Team:



Team Leader

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Deputy Superintendent

BIA, Fort Apache Agency

Team Lead

9/19/2014
Date

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Executive Summary:

On July 13, 2014 the Confederate Tribes of Warm Springs (CTWS)¹ experienced a severe lightning storm that generated between 450-500 lightning strikes. A majority of this storm was along the eastern side of the Cascade Mountain range. This system generated very little moisture, which resulted in multiple fire starts within the jurisdiction of CTWS and surrounding areas. As fires were being detected, CTWS assigned engines and support personnel to each fire. By 0000 hrs (all times PDT) nine known fires burned actively throughout the night.

On July 14, 2014, several more fires were detected and two Type 2IA crews and a strike team of engines were ordered. At the end of the first operational period the larger fires were Dry Hollow and Shaniko Butt Fires (total of three fires in the same general area).

July 15, 2014, seven more fires were added with the primary focus for suppression being Camas Prairie, Logging Unit and the Shaniko Butte Fires. During the late evening all of these fires exhibited extreme fire behavior and made significant runs.

From the period of July 15, 2014 through July 17, 2014, the CTWS actively suppressed over 10 lightning fires and 12 human caused fires. On July 17, 2014 the CTWS and the Warm Springs Agency ordered a Type 2 Incident Management Team to manage the Shaniko Butt fire. The expected date for transition was set for July, 18, 2014 at 1800 hours. During the interim period the CTWS continued with suppression activities and was responsible for initial attack of new fires starts. Several days later a Type 1 Incident Management team was ordered for the Logging Unit fires.

On July 18, 2014 during the morning briefing several engine bosses were reassigned to other support functions within fire operations. This resulted in Fire Fighter 1 (FF1) and Fire Fighter 2 (FF2) being without an engine boss. They were reassigned to Engine 38, to carry out local assignments around the ICP and serve as an initial attack resource.

At approximately 1250 hours, CWTS dispatch received a call from Colombia Dispatch (Forest Service) regarding a smoke report (fire #73) along the Skyline (42) road. Engine 38 is assigned to fire # 73, which is located in the northwest part of the reservation. FF1 is driving the engine and FF2 is the passenger.

As Engine 38 approaches fire # 73, FF1 observes smoke several hundred feet off the right side of the road, as the engine passes a dirt road that leads towards the fire. A split second later FF1 turns to FF2 and asks, "was that our road". At that time FF2 is looking at the map and responds back and says "I think so". Engine 38 drifts off the road, and FF1 tries to steer the engine back on to the road, however the weight of the vehicle and the extremely poor condition of the road prevent a recovery. The engine travels about 100 feet then jumps back on to the road. As soon as the vehicle gets back on the road FF1 over-corrects the steering which causes Engine 38 to roll once and land upright on the Westside of the Skyline 42 road. The crash resulted in injuries to FF1 (broken collar bone) and injuries to FF2 (neck and spinal injuries). FF2 is transported by Life Flight medical personnel to Oregon Health Science University, in Portland, Oregon for medical treatment. FF1 is treated on site and released.

¹ The Confederate Tribes of Warm Springs under the PL 93-638 and the Wildland Fire and Aviation Program Management Operations Guide , Bluebook compacted the Fire Program from the Warm Springs Agency.

Narrative

July 18, 2014 (All Times PDT)

- 0700hrs Fire personnel attending the brief and daily assignments are handed out. FF1 and FF2 are assigned to Engine 38.
- 0730hrs Engine 38 in service; to wet down Heli base and selected roads to reduce dust. Engine 38 refills tank and re-fuels.
- 0815 hrs: Engine 38 out of service – back in yard
- 1250 hrs Dispatch receives a call from Colombia Dispatch reporting smoke. Dispatch assigned it Fire #73. At that time Engine 38 is assigned to fire #73. FF1 and FF2 conduct a map study and gathers intelligence of first smoke report.
- 1309hrs Engine 38 in service to investigate smoke report along the Skyline 42 road.
- 1316hrs Dispatch # 1 provides update to engine 38 about a second smoke report 1 mile south of fire # 73.
- 1355hrs Engine 38 turns onto # 507 road.
- 1400hrs Engine 33 in service to investigate second smoke report.
- 1400hrs As Engine 38 approaches the fire # 73, FF1 observes smoke several hundred feet off the right side of the road, as the engine passes a dirt road that leads towards the fire. A split second later FF1 turns to FF2 and asks, “was that our road”. At that time FF2 is looking at the map and responds back and says “I think so”. Engine 38 drifts off the road, and FF1 tries to steer the engine back on to the road, however the weight of the vehicle and the poor condition of the road prevent a recovery and the engine travels about 100 feet then jumps back on to the road. As the vehicle gets back on the road FF1 over- corrects the steering which causes Engine 38 to roll once and land upright on the Westside of the Skyline 42 road. FF1 asks FF2 if she is ok. FF2 responds yes.
- 1405hrs FF1 contacts passerby and ask for a cell phone but individual does not have phone. FF1 makes contact with campground host who drives her out to cell coverage. FF1 contacts Dispatch#1 and informs them that she has rolled her engine. Dispatch#1 contacts Warm Springs Fire and Safety and notifies them of the motor vehicle accident. At this time FF 7, 8, 9 and 10 are informed of the engine roll over and all respond to the incident from various locations. Warm Springs Fire and Safety deployed EMTs and ambulance and puts life light on alert standby. LE1 arrives on scene.
- 1409hrs LE1 at scene assist FF2 out of engine and place on steps of the engine. FF1 and campground host return to scene. LE1 calls Hoodland Fire/EMS department
- 1420hrs Engine 33 arrives on scene with FF3 and FF4. Engine 33 crew observes FF1 on road and FF2 sitting on ground. FF4 goes directly to FF2 and provides support.

FF3 starts assessing fire situation. FF3 notices that fire is now sending up a large column of black smoke.

- 1430hrs FF5 and FF6 arrive in government vehicle. They were originally en-route to investigate a suspicious fire start located to the southwest of the # 73 fire. FF5 and FF6 begin assisting with constructing fire line around roll over scene.
- 1435hrs Warm Springs Fire and Safety personnel arrive on scene and EMT 1 and 2 begin patient treatment on FF2. FF7 arrives on scene notices FF2 in Ambulance and provides moral support. LE fish and wildlife trooper arrives on scene. FF8 arrives on scene and goes to FF2. FF9 and FF10 arrive on scene. FF9 communicates with FF2 then turns attention to fire
- 1457hrs Life Flight ordered
- 1516hrs Warm Springs Fire and Safety EMT 1 & 2 load FF 2 and transports to intercept life flight at the junction of Highway 26 and Highway 216. LE fish and wildlife trooper lead ambulance to land zone (LZ). FF4 drives EMT 1 unit to the landing zone-traffic control. FF10 drives out to LZ for traffic control. FF7 and FF8 drive out to LZ to assist with traffic control
- 1530hrs Personnel stopped traffic southbound/ one personnel stopped traffic northbound. Life flight personnel prepare FF2 in ambulance for flight to the hospital. Warm Springs Fire and Safety personnel and life flight personnel load FF2 into life flight helicopter which departs to hospital. FF1 transported to incident base and released to family
- 1645hrs FF5 begins conducting an accident investigation – photos

Crew Composition

Driver – FF1

FF1 is a seasonal employee in her second year as a fire fighter type 2 with CTWS. According to her IQCS records she is qualified as a fire fighter type 2, she is also listed as a trainee for Fire Fighter Type 1 and trainee as an Incident Commander Type 5. She has no experience encoded in IQCS at the time of the incident. She first attained arduous status as a fire fighter on June 7, 2013 and again on May 9, 2014. She has a current valid Oregon State driver's license. She has completed all training necessary for a fire fighter type 2. In her interview she did state that since last year she has been driver the engine on and off.

Passenger – FF2

FF2 is a seasonal employee in her second year as a fire fighter type 2 with CTWS. According to her IQCS records she was qualified as a fire fighter type 2, and is a trainee for a fire fighter type 1 and incident commander type 5. Both trainee positions are listed on her red card. She had no experience encoded for last year and this year. She first attained arduous status as a fire fighter on July 16, 2013 and again on May 9, 2014.

Investigation Process:

On July 18, 2014 an Accident Investigation Team (AIT) was mobilized by the Northwest Regional Office to investigate a Model 52, Type 4 engine roll over occurring in Warm Springs, Oregon. The team consisted of the following:

- Team Leader
- Chief Investigator
- Technical Specialist

On July 20, 2014, the team received an in-briefing at the Confederate Tribes of Warm Springs, Fire Management Office by the Superintendent, and CTWS Forest Manager and CTWS FMO at 0700 hrs. The AIT received a Delegation of Authority from John Halliday, Superintendent, Warm Springs Agency on July 20, 2014 around 0800 hrs. After the in-briefing the team began the process of collecting evidence and conducting interviews regarding the engine roll over.

The AIT followed the following guidelines investigating the engine roll over.

- The investigation included an analysis of human, material, and environmental factors that may have caused the motor vehicle crash.
- Established a chronology of events that took place prior, during and after the engine roll.
- Reviewed established policy and operational guidelines
- Reviewed law enforcement investigative reports.
- Reviewed dispatching logs
- Conducted interviews
- Conducting a site visit to the location where the engine roll over occurred for site photography, tire track analysis.
- Examination of Engine 38

Work/Rest Compliance

Based on crew time reports FF1 last day off was on July 7 and 8, 2014. The days prior to the lightning storm, on July 15, 2014, FF2 was averaging about 12 hours daily. From July 15 -17, 2014, FF1 averaged about 15.5 hours of arduous work on fires, with July 14, 2014 posting a total of 16.5 hours. The following day time was mitigated by posting only 14 hours.

In crew time report reviewed, FF2 last day off was on the July 8-10, 2014, two days administrative leave and one day normal RDO. July 11, 12, 2014, FF2 post 10 hours of work. From July 13-17, 2014, FF2 average about 14.5 hours per day with only July 15, 2014 posting 16 hours.

Both FF1 and FF2 were within established guidelines for work rest found under the Bureau of Indian Affairs, Wildlife Fire and Aviation Program Management and Operation Guide, the Bluebook 2013. The 2:1 work rest ratio was maintained for both fire fighters prior to the accident.

Road Condition/Accident Scene

The Skyline Road is located in the Northwestern part of the CTWS reservation. The road originates from Highway 26 on U.S. Forest Service Lands then enters into Tribal Land. The accident took place within the reservation approximately 4.5 mile from Highway 26. The engine rollover occurred at GPS coordinates 45° N7'15.56" W121°42'20.53". Several hundred meters before the accident scene there was a sharp curve turning to the right. Then as the road straightened out there was a slight rise in the road before leveling out to a low deep in the road. There were no visual impacts to the road. The road width ranged from 21'6" to 23'. At the place where engine left the road, the fog line to fog line measurement was 21'6". The north bound lane measured 10'6" and the south bound lane measure 10'. The shoulder of the road was constructed of broken asphalt chipping past the fog line. There were no posted speed limit signs. The time of the accident was approximately 1400 hrs. From interview reports smoke was not a factor in the accident.

Findings/Discussion & Recommendation

Finding 1

Per the Blue Book FF1 and FF2 were qualified to operate a type 4 engine. Both had less than 2 years of experience in operating a type 4 engine

Discussion: In reviewing the IQCS master record there is no experience encoded into IQCS for FF1 and FF2.

Recommendation: Although this finding has no bearing on the engine roll over, more information regarding experience of the driver would have helped clarify level of training and experience of FF1 with engine. The CTWS Fire Management Program needs to take a more active role in encoding individual fire fighter's work experience and training into the IQCS.

Finding 2

FF1 was distracted by looking for smoke and the road that led to the fire.

Discussion: In interviewing FF1 it was reported that while she was driving she was looking for fire 73. This slight distraction caused her to lose sight of the road and as a result the engine veered off the road's shoulder.

Recommendation: Situational awareness needs to be the primary focus of all fire-fighting activities. CTWS must continue to educate drivers that their primary responsibility is getting all personnel to and from the fire safely.

Finding 3

It was stated in the police report, written by the National Forest Service Law Enforcement Officer, that when asked of the driver if she was wearing her seat belt, her response was, "no". It was mentioned in the police report that the driver didn't think FF2 was wearing her seatbelt.

Discussion: In accordance to Vehicle Policy of the CTWS, FF1 did not carry-out the driver's responsibility of wearing her seat belts at all times. When ask of the FF2 if she was wearing her seatbelt she stated she was wearing her seat belt.

Recommendation: A "Just Click It" type program should be everyone's priority. More signs for awareness would inform drivers of their responsibility.

Finding 4

CTWS did not follow established Tribal vehicle policy for completing a check ride for either firefighter; employees did not complete the required S-216 (Driving for the Fire Service).

Discussion: FF1 did not complete S-216 as mandated by the Fleet Management Plan. In accordance to the Agency Fleet Management Plan, Chapter II Fleet Operations, Section I. License Procedure and Policies, C1,2 no records were found showing proof that FF1 successfully completed S-216 and no certification of a check ride for FF1 for a type 4 engine.

Recommendation: CTWS needs to make sure that all policies are adhered. This should be the responsibility of all of our supervisory to step forward if they see policy not being carried out. The region needs to determine if the Tribe's vehicle policy is in compliance with BIA Motor Vehicle policy requirements 5 CFR 930, and 485 DM 16, and the January 12, 2010 memo from the Assistant Secretary, Motor Vehicle Operation Policy Responsibilities, Implementation, and Procedures.

Finding 5

The Blue Book has minimal direction to ensure that employees are qualified to operate type 4 engines.

Discussion: The AI Team could not locate any requirements within the Blue Book that relates to how employees are to be qualified to drive any type of engine.

Recommendation: NIFC needs to develop language and/or guidance within the blue book that clearly outlines the requirements for operating engines used in wildland fire.

Finding 6

The Skyline road (42) is very narrow and in most cases the road is deteriorating passed the Fog Line.

Discussion: When conducting a site visit to the accident scene it was observed that the asphalt along the roads edge was breaking up passed the fog line.

Finding 7

The Skyline road lacks proper posted speeds.

Discussion: During the site visit the AI Team did not observe a posted speed limit sign. While conducted the site investigation numerous vehicles were traveling at a high rate of speed.

Recommendation: CTWS needs to investigate if this road meets minimum standards. In most situations posted speed limits are not the most reasonable and prudent speed. Drivers need to exercise caution when driving our back roads.

Finding 8

No Police report documenting the accident was conducted by the Warm Spring Police Department.

Discussion: CTWS Vehicle Policy and the Agency Fleet Management Plan were not followed. No Tribal Police Department report was written that documented the events that took place. The AI Team had a difficult time getting a police report from any responding LEO.

Recommendation: CTWS needs to follow through with why a police report was not generated by the Tribal Police Department per Agency Fleet Management Plan.

Finding 9

The wooden flatbed be failed to keep the tank, mini-deck and compartments attached to engine during the rollover.

Discussion: When conducting a site visit to the engine rollover, the tank, mini-deck and the compartments separated from the flatbed upon impact. Since 2010, the Model 52 has made the metal flatbeds as part of the standard package.

Recommendation: The Model 52 program needs to take a closer look at the wooden design of the flatbed. The region needs to look at retro fitting all wooden flatbeds with metal prior to the 2015 field season.

Commendations

The CTWS showed ability to manage an incident with an incident.

The CTWS took the appropriate action to get the necessary resources to the scene.

Communication was appropriate to maintain control of all incidents and maximize use of limited resources.

Notification and ordering an accident investigation team was done in a timely manner.

Engine 38 Vehicle Specifications

Engine 38 Type 4 Engine under a GSA lease that has a wooden flatbed. Engine 38 is equipped with a pumping package (mini-deck) that was constructed by Missoula, Montana's Model 52 program. All specifics found on the engine unit were evaluated to determine if any parts, equipment or mechanical components caused the engine unit to go off the road and subsequently cause the roll over. A technical expert with Missoula, Montana evaluated all items, specifications of vehicle, pumping package and tank components. A review of the most recent maintenance schedule was reviewed to determine if any problems existed with the Engine Unit.

Engine 38 Specifications:

- 2004 Ford F750, 25,999 GVWR, Standard Cab, diesel power motor, 4x2 automatic transmission.
- The BIA Model 52 Pumping unit was constructed and installed by BIA, Northwest Model 52 program out of Missoula, Montana.
- Date of delivery to CTWS was 5/11/2009.

Tires

- All tires were in fair to good condition.
- Left front tire exhibited wear on outside of tire consistent with the vehicle skidding sideways just prior to leaving the road surface. And wear marks on the right front tire - passenger's inside tire showed indication of tire scrapping pavement edge just prior to get back on the road.
- All tires were fully inflated

Chassis and

- The attachment brackets connecting chassis to the flatbed showed signs of bending, which is most likely due to impact when vehicle rolled over.
- No bolts were broken under the chassis.

Flatbed and attachment points

- The Flatbed is constructed wooden planks measuring 2"x 6" x 12"
- Upon impact the 750 gallon tank, mini-deck, and compartments on the passenger side separated from the wood flatbed. Mounting bolts were pulled through the wood planks.
- The wooden flatbed did fail to support tank, min-deck and compartments,

750 gallon water tank

- Manufacturer – Levan MGF Inc. Gator Tank
- Dimension L 104"x W 46"x H 37"
- Specification- Anti splash and Baffels support
- Design meet and/or exceeds NFPA standards
- Tank was mounted to flatbed with ½ inch bolts.

Pumping Unit

- Mini-deck consists of a Vanguard 23 pump, 2 hose rill, metal over board and associated plumbing
- Wooden planks failed to keep mini-deck attached to the vehicle.

Gross Weigh

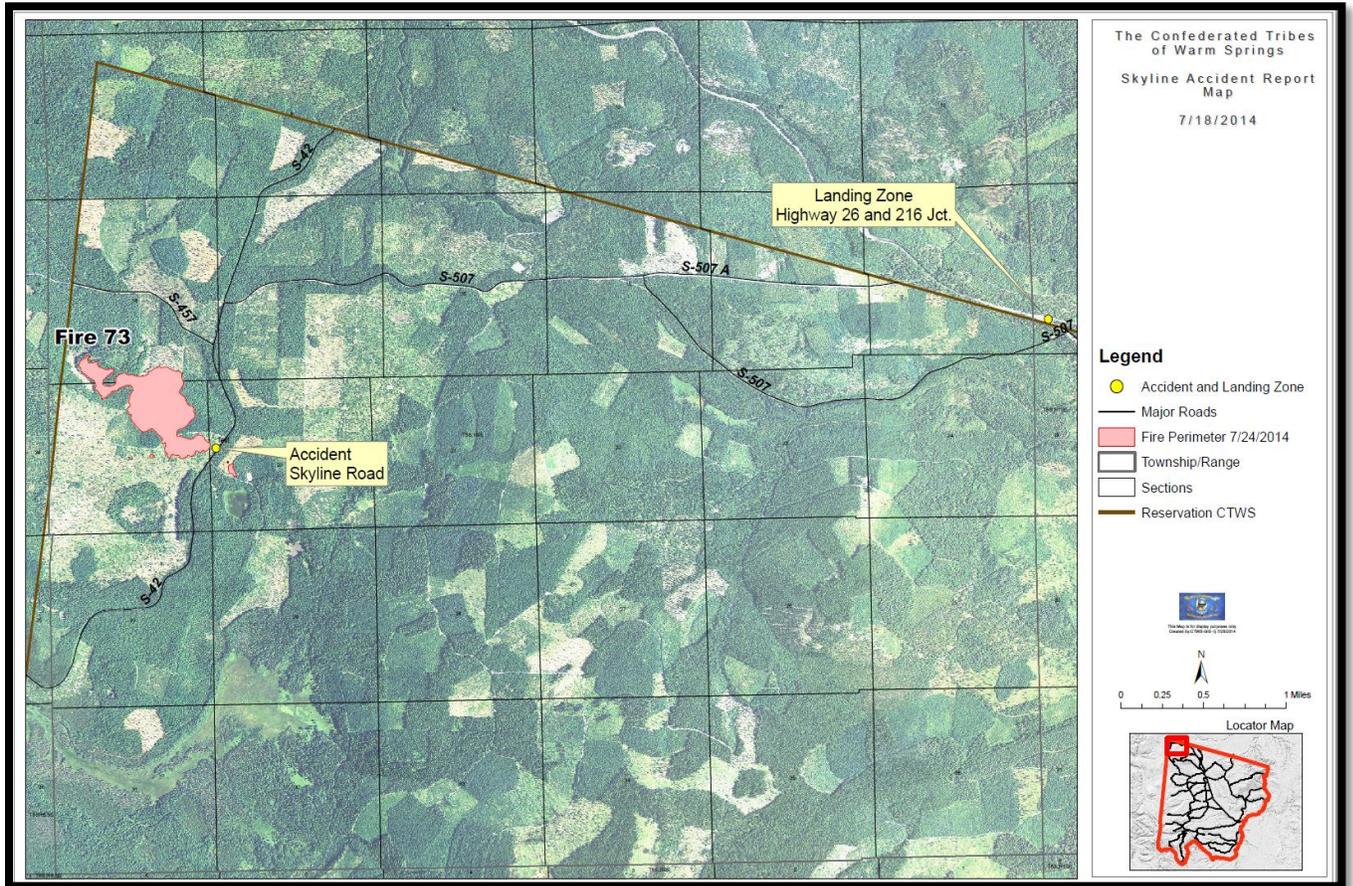
- Weight Ticket conducted on 6/12/2014 by Warm Spring Forest Product Industries
- With Driver and passenger
- Gross Weight at that time was 22,560 lbs. with two individuals and tank fully loaded.
- The weight of the total engine was well within limits for a F750.

Conclusions and Observations:

Engine 38 was responding to a smoke report when the driver lost control of the vehicle, which resulted in an over correction of the vehicle, sending the vehicle into a roll over. The driver sustained a fractured collar bone and the passenger suffered neck and spinal injuries. The driver was not wearing their seatbelt.

This engine roll over involved two engine crew members with little to no time behind the wheel, being placed in a situation which required them to respond to a fire. To minimize exposure, supervisors need to provide training, mentoring, and guidance to decrease employees exposure to hazardous situations. Leaders need to ensure that all employees are following Agency/Tribal policies and procedures.

Map: Fire 73 and Accident Location



Engine 38 Motor Vehicle Crash Photo 029. Passenger Side of engine



Engine 38 Motor Vehicle Crash Photo 031. Front View



Engine 38 Motor Vehicle Crash Photo 036 Tank and Compartment box lying about 30 feet away from Vehicle.



Engine 38 Motor Vehicle Crash Photo 051. Pumping Unit laying upside down about 20 feet away from Vehicle. Note wooden flat bed and locations where bolt pulled through wooden planks.



Engine 38 Motor Vehicle Crash Photo 201. Road showing sign of asphalt breaking apart

