

Rural Travel Emergency Case Study: Mexican Hat Bus Accident



Executive Summary

In January 2008 a bus filled with vacationing skiers rolled on a rural Utah highway. A passing motorist immediately attempted to alert emergency responders by calling 911 from his cell phone. But a weak cellular signal at the accident scene caused the call to drop before the motorist could report the accident. Because of the weak cell signal, the tragedy was not reported for another 36 minutes. The first emergency vehicles arrived at the remote accident scene after an hour had passed. Nine people died and 35 were seriously injured.

The National Transportation Safety Board concluded the delayed reporting of the accident and emergency response were a direct result of "a lack of wireless telephone coverage at the accident scene." In its accident report the NTSB recommended large busses carry cellular signal boosters on board to report emergencies occurring in areas of weak cell signal. The report further identified Wilson Electronics as a preferred provider of cell signal boosters.

Shortly after the accident local emergency responders installed Wilson cellular signal boosters in response vehicles, and report the devices significantly enhance cellular connectivity in the weak signal areas of their jurisdiction.

A Tragic Accident

On Jan. 6, 2008, a nearly new 55-passenger bus with a driver and 52 charter passengers departed Telluride, Colo., for Phoenix, Ariz. The passengers were returning home from a three day ski trip. The normal route from Telluride to Phoenix along Colorado State Route 145 was closed due to heavy snow. The planned alternate route included U.S. Route 163 through rural southeast Utah.

That evening about 8 p.m. as the bus traveled south

on two-lane U.S. 163 between Bluff, Utah, and Mexican Hat, Utah, it began to round a long curve that went down a gradual decline. As it traveled through the curve, the vehicle began to drift and then ran off the highway.

As the bus did a 360-degree rollover down an embankment, the roof was torn from the entire length of the vehicle. Fifty of the 53 occupants were ejected from the coach. Seven passengers died at the scene. Two more died within hours at hospitals.

The driver and 34 passengers suffered serious injuries, including head trauma, fractures of the spine and limbs, and internal injuries. Nine passengers escaped with minor injuries.

Reporting & Response

A motorist came upon the scene within two minutes of the rollover. The motorist immediately dialed 911 on a cellular phone to report the accident. But when San Juan County (Utah) 911 dispatch received the incoming call at 8:04 p.m., the cellular signal faded and the call dropped before the motorist could relay any information. With no reliable cell signal at or near the accident scene, the accident was not reported to 911 dispatch until 8:38, some 34 minutes later. The first emergency response vehicles arrived at 9 p.m., nearly one full hour after the bus rolled.

Ambulances from five agencies responded to the isolated site, some dispatched from nearly 120 miles away. They transported the injured to 13 hospitals and medical facilities. The final ambulance carrying injured passengers left the scene at 12:20 a.m.

Conclusions


Following a lengthy investigation, the National Transportation Safety Board issued its report on the accident in May 2009. Quoting directly:

"Effective management of traumatic injury is critically dependent on the time in which definitive care can be delivered. It took 36 minutes to report the Mexican Hat accident, a delay that was directly attributable to a lack of wireless telephone coverage at the accident scene."

NTSB Highway Accident Report HAR-09/01PB2009-916201, pg. 45

"It took 36 minutes to report the Mexican Hat accident, a delay that was directly attributable to a lack of wireless telephone coverage at the accident scene."

NTSB accident report
"Provide information about the risks of operating in rural areas without wireless telephone coverage and advise members to carry mobile cellular amplifiers."



The report went on to state the National Emergency Number Association reported that 40 percent of all 911 emergency calls made in the U.S. were dialed on wireless phones. In some jurisdictions the percentage was much higher.

According to NENA, more than 250 million Americans subscribed to cell phone service and a growing percentage lived in households with no landline telephone service. However, in areas with spotty wireless phone coverage like rural San Juan County, 911 emergencies could not always be reported via cell phone. The report was based on figures available in 2009. The reported numbers and percentages are likely higher now.

The NTSB report concluded driver fatigue and excessive speed were the main contributing factors to the accident. Weather, road conditions, and mechanical condition of the bus were determined to be non-factors.

Recommendations

The NTSB report recommends that federal and state highway transportation officials develop criteria to assess the risks of rural travel by large buses. It also recommends that federal and state emergency medical service planners develop plans for reporting and responding to large scale transportation emergencies along rural roads traveled by buses.

The report also includes this recommendation to the industry groups American Bus Association and United Motorcoach Association:

“Inform your members through Web sites, newsletters, and conferences of the circumstances of the Mexican Hat, Utah, accident. The prepared information should . . . provide information about the risks of operating in rural areas without wireless telephone coverage and advise members to carry mobile cellular amplifiers or satellite-based devices to communicate emergency events.”

NTSB Highway Accident Report HAR-09/01PB2009-916201, pg. 70

The report’s footnote 132 further clarifies, “Electronics designed specifically for mobile applications can be used to amplify weak cellular signals in rural areas. For example, Wilson Electronics in St. George, Utah, sells a mini-mobile amplifier kit that is comparable in cost to a GPS unit.”

Results

Although it was not specifically directed at emergency responders, the San Juan County sheriff’s office and local search and rescue teams adopted the NTSB’s recommendation.

“We installed cellular amplifiers in our vehicles (shortly after the accident),” said San Juan County, Utah, sheriff Mike Lacy. “I’m a retired highway patrolman and only once, 25 years ago, have I seen a bus accident with as much carnage as that one,” he said in an interview.

The sheriff’s department installed cell signal boosters made by Wilson Electronics, and Lacy said that the devices have made a significant difference in their cellular connectivity range on roadways.

Source: Wireless Dealer magazine, “NTSB Recommends Cell Phone Amplifiers for Passenger Vehicles in Rural Areas,” Oct. 7, 2009.

Related Benefit

This case study highlights the benefit of boosting cellular signals to enhance, or in some cases to make possible, voice communication for travelers on remote roadways. The same benefit applies to data transferred via cellular network to and from remote locations. For example, consider fleet operators that have need to download vehicle telemetry as trucks traverse their nationwide routes, or that require drivers to promptly upload cargo data updates to central networks. As long as a cellular signal is detectable, booster technology makes the above described and similar remote data transfers practical.

NTSB recommendation to motorcoach industry associations

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Sheriff Mike Lacy,
San Juan County, Utah

Resources

NTSB Report HAR-09/01PB2009-916201, “Motorcoach Run-Off-the-Road and Rollover, U.S. Route 163, Mexican Hat, Utah, January 6, 2008”

<http://www.nts.gov/publicctn/2009/HAR0901.pdf>

Sondra Sneed, Wireless Dealer magazine, “NTSB Recommends Cell Phone Amplifiers for Passenger Vehicles in Rural Areas,” Oct. 7, 2009

http://www.wirelessdealermagazine.info/index.php/home/featured-topics/ntsb_recommends_cell_phone_amplifiers_for_passenger_vehicles_in_rural_areas/



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