



National Transportation Safety Board

Washington, D.C. 20594

Highway Accident Brief

Accident Number: HWY15FH008
Accident Type: 15-passenger van roadway departure
Location: North of the intersection of State Road 78 West with US Highway 27, near Moore Haven, Florida
Date and Time: Monday, March 30, 2015; 12:30 a.m.
Vehicle: 2000 Dodge B3500 Ram 15-passenger van
Owner/Operator: Independent Haitian Assembly of God Church
Fatalities: 8
Injuries: 10 (8 serious, 2 minor)

Crash Description

About 12:30 a.m. eastern daylight time on March 30, 2015, a 2000 Dodge B3500 Ram 15-passenger van was traveling eastbound on State Road 78 (SR-78) West approaching the T-intersection with US Highway 27 (US-27) near Moore Haven, in Glades County, Florida.¹ The 15-passenger van, which was operated by the Independent Haitian Assembly of God Church in Fort Pierce, Florida, and driven by a 58-year-old male, was transporting 16 adults and a 4-year-old child back to Fort Pierce following a revival celebration at the Eglise De Dieu La Jerusalem Celeste Church in Fort Myers, Florida.

The van failed to stop at the stop sign at the T-intersection with US-27. The van traveled through the intersection, went off the roadway onto the grass shoulder on the north side of US-27, vaulted across a canal, and struck the far side bank, coming to rest 46 feet north of the intersection in the shallow canal, facing northeast. One of the survivors crawled out of the van, walked to the edge of the highway, and waved down help. The collision resulted in eight deaths; the remaining van occupants received injuries ranging from minor to serious and were transported to area hospitals for treatment. Figure 1 shows an overhead satellite view of the intersection of SR-78 West and US-27 with sign locations marked.²

¹ SR-78 runs primarily east–west and US-27 runs primarily north–south; however, at the crash location, SR-78 is oriented north–south and US-27 is oriented east–west with respect to the compass. Therefore, although the Dodge van was traveling eastbound with respect to the roadway, it was traveling northbound with respect to the compass.

² The source for this figure comes from the report of an analysis of the intersection performed postcrash; however, it reflects the state of the intersection at the time of the crash.

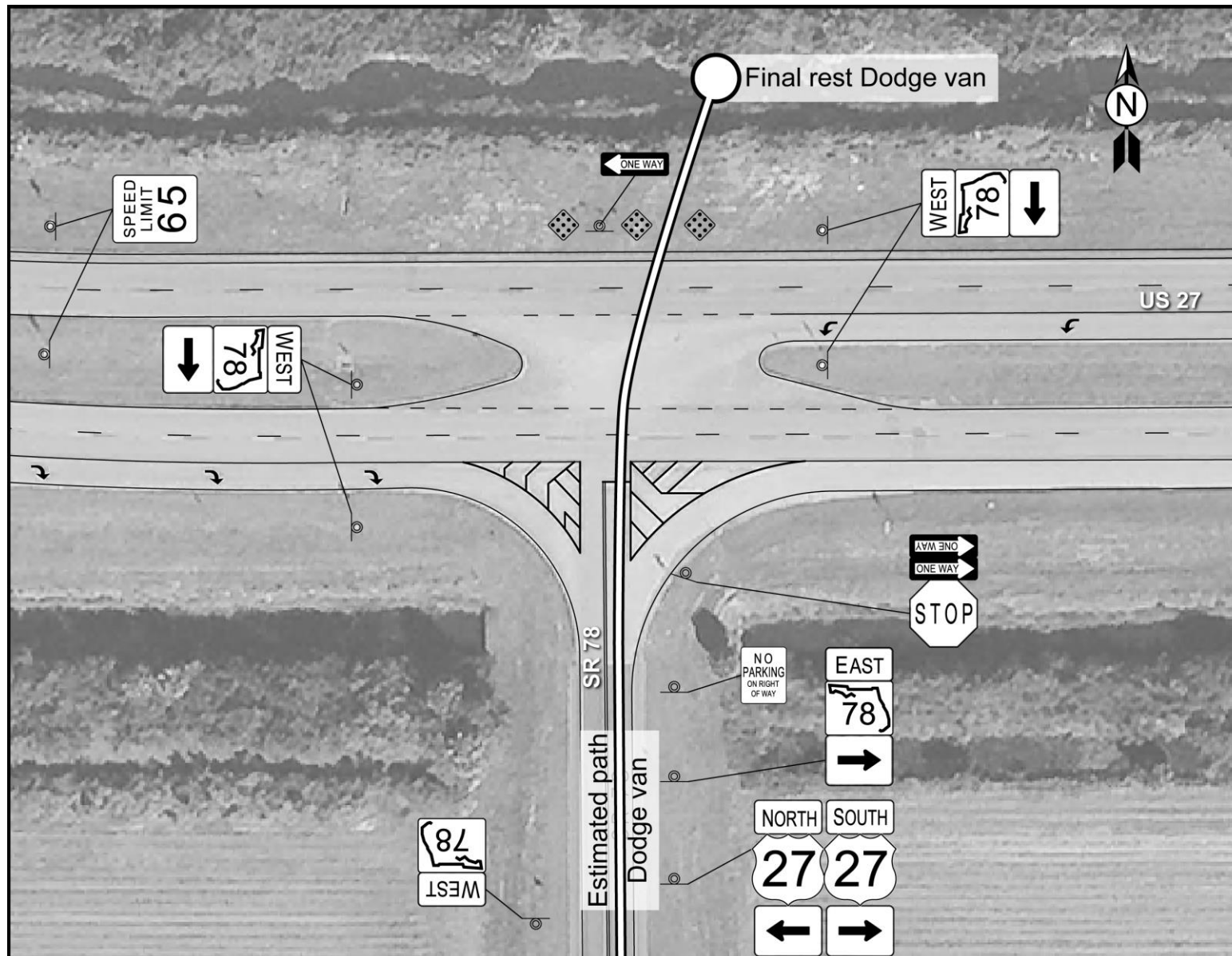


Figure 1. Diagram of the intersection where the crash occurred. (Note: The original image came from the FDOT-funded Intersection Safety Analysis, May 2015; the NTSB has modified that image to accommodate the needs of this report.)

Roadway Information

At the crash location, US-27 is an asphalt-paved, four-lane, divided roadway that generally runs north and south but at this point has an east–west orientation. To the right of US-27 westbound are a grass shoulder and a water-filled canal. The roadway grade and super-elevation are both zero percent. The through lanes are separated by a broken white-painted line.

At the crash location, SR-78 West is an asphalt-paved, two-lane, undivided roadway that generally runs east and west but at this point has a north–south orientation. This directional change begins 900 feet south of the intersection with US-27. The speed limit for eastbound traffic is 60 mph; a speed limit sign is posted 4.4 miles prior to the intersection with US-27. The van’s lane of travel measures 12 feet in width; the opposing lane measures 10 feet 11 inches in width. The lanes are separated by a double yellow-painted line on the approach to the intersection with US-27. The lane edges are defined by a solid white-painted line. There are 10-foot-wide paved shoulders on each side of the roadway.

At the time of the crash, a stop sign was posted at the intersection of SR-78 West with US-27. The stop sign measured 36 inches high and 36 inches wide. The bottom of the sign was 8 feet 6 inches above the ground. The sign was located about 64 feet from the edge of the southernmost travel lane on US-27 and about 20 feet from the edge of the easternmost travel lane on SR-78. The 2009 edition of the *Manual on Uniform Traffic Control Devices* (MUTCD) specifies that this size of stop sign is the minimum for conventional road, multi-lane, or expressway applications.³ An advance warning sign, indicating a stop sign ahead, was posted approximately 930 feet prior to the stop sign’s location at the intersection, and four sets of transverse rumble strips were milled into the roadway beginning about 120 feet prior to the advance warning sign. The warning sign and stop sign are shown in figures 2 and 3.

³ See http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm, accessed December 29, 2015.



Figure 2. Advance warning sign on the approach to the intersection of SR-78 West and US-27.



Figure 3. Stop sign at the intersection of SR-78 West and US-27.

The crash occurred at night. There were no street lights, and the roadway was clear and dry. Investigators recorded video imagery of the approach to the intersection under nighttime and daylight conditions.⁴

The Florida Department of Transportation (FDOT) searched its records for 2009–2013 and reported a total of 10 crashes in the 0.10-mile segment containing this intersection. The records showed one fatal crash (resulting in two fatalities and two injuries), three injury crashes (resulting in four injuries), and six property-damage-only crashes.

Following this crash, the FDOT had a contractor conduct an Intersection Safety Analysis for the subject intersection.⁵ The purpose of this analysis was to determine if any enhancements could be made to the intersection to improve safety.⁶ The analysis report recommended that the FDOT consider the following:

- Installing a new “Stop Ahead” sign assembly with a flashing beacon, “Stop Ahead” pavement messages, and rumble strips on the northbound approach;
- Removing the yield sign for the channelized northbound right turn lane and adding merge pavement messages and a sign for the long acceleration lane;
- Removing the stop sign on the northbound approach and installing an oversized stop sign with a reflective post strip and a raised concrete island within the gore area of the northbound right turn lane; and
- Adding lighting at the intersection.

In response to these recommendations, the FDOT installed a new “Stop Ahead” sign with a flashing beacon, provided additional rumble strips, replaced the stop sign with an oversized version, and replaced the retro-reflective materials bordering the canal.

Operational Information

The pastor of the Independent Haitian Assembly of God Church was the registered owner of the 15-passenger Dodge van. According to a church spokesperson, the church used the van to transport parishioners to and from church services and special events.

Trip Information

The pastor and 17 other congregants left their church in Fort Pierce in the Dodge 15-passenger van about 4:30 p.m. on Sunday, March 29, to travel to the Eglise De Dieu La Jerusalem Celeste Church in Fort Myers, Florida, to participate in a revival event there. The crash occurred during the 127-mile return trip to Fort Pierce, following this event.⁷ Passenger

⁴ Recorded video is available in the docket for this investigation.

⁵ The analysis report is available in the docket for this investigation; it provided the initial source for figure 1.

⁶ At the time of the crash, the signage at the intersection was in accordance with the MUTCD.

⁷ The trip back to Fort Pierce was estimated to take about 2 hours 30 minutes to complete.

interviews indicated that, after the revival in Fort Myers, the church group started the return trip to Fort Pierce about 10:00 p.m. At the time of the crash, the van had traveled about 50 miles.⁸ Interviews revealed that the van driver was familiar with driving this route between Fort Pierce and Fort Myers.

Driver Information

The 58-year-old male driver held a Florida class B commercial driver's license (CDL) with no restrictions and passenger and school bus endorsements.⁹ The CDL was issued in February 2011 and was valid through March 2019. The van driver's driving record showed citations for speeding in October 1994, July 1999, and March 2010, as well as a citation for careless driving in October 2004.

Although a medical exam was not required to drive the van, the driver had been employed as a school bus driver since July 2003 and had undergone annual medical examinations as required of a Florida school bus operator since that time. The driver's most recent examination occurred in July 2014. In the 2014 exam, the driver marked "NO" for all the medical conditions/issues listed in the health history section and did not indicate he was taking any medication. The physical examination was unremarkable, and the physician certified the driver for the maximum period.¹⁰

It is unknown whether the Independent Haitian Assembly of God Church had a formal training program or written directives governing the operation of its vehicles. According to the church spokesperson, the driver's experience with school buses was considered when the church granted him approval to operate the 15-passenger van.

The driver died in the crash; as a result, no information on his sleep, either in general or specifically in the days prior to the crash, could be gathered.

The Office of the Medical Examiner, District 21, in Fort Myers, Florida, performed the postmortem examination and toxicological testing of the driver. That examination identified no evidence of any significant natural disease or acute medical condition that could have affected his performance. Toxicological tests of the driver's blood were negative for the presence of

⁸ Investigators were unable to determine why it took so long to travel 50 miles; interviewed passengers confirmed the departure time and stated that the van did not make any stops. Investigators note that the reported crash time is the time of the 911 call, and it is unknown how long it took the passenger to escape the vehicle and flag down the passing motorist who called authorities.

⁹ Under Florida law, a class B CDL is required to operate a single vehicle with a gross vehicle weight rating of 26,001 pounds or more. A passenger endorsement is required to operate any vehicle designed to transport 16 or more people. However, because of its lesser weight and 15-passenger status, neither a CDL nor a passenger endorsement was required to operate the Dodge van.

¹⁰ Although the driver would have qualified for a 2-year certificate under federal guidelines, the state of Florida requires school bus drivers to undergo a medical examination each year.

alcohol and illicit drugs.¹¹ The driver's urine was also tested for amphetamines, barbiturates, benzodiazepines, cocaine metabolites, MDMA/MDA, methadone, methaqualone, and opiates. The results were negative.

The driver's blood contained chlorpheniramine (17 ng/ml) and naproxen (2.3 mcg/ml). Chlorpheniramine is a sedating antihistamine available over the counter, often with the name Chlor-Trimeton. Levels of chlorpheniramine in the range 10–40 ng/ml are considered therapeutic. The medication carries the following warning, "May impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery)."¹² The presence of a sedating antihistamine at therapeutic levels in the driver's blood suggests that he may have been impaired at the time of the crash. However, given the lack of information on the driver's sleeping habits in the days preceding the crash and his activity on the day of the crash, the effect of this impairment on the crash is difficult to assess.

Naproxen is a non-steroidal anti-inflammatory medication used to treat pain and fever, available both by prescription (commonly with the name Naprosyn) and over the counter (commonly with the name Aleve). Therapeutic levels of naproxen are considered to be in the range of 26–69 mcg/ml.¹³

Vehicle Damage

The van had significant contact damage to its entire front end from striking the canal bank before landing in the canal. The hood was buckled back and pushed into the windshield. The roof and windshield header were buckled up and back. The engine was moved rearward, so that it intruded into the area occupied by the dashboard, which was displaced into the passenger cabin. The left front axle was broken. The left bumper corner and left front fender were crushed rearward, restricting the left front tire. The driver door was initially jammed closed but later opened by first responders during the extrication of the driver. First responders found the passenger-side sliding door ajar and removed it to gain access to injured passengers and to remove the deceased. The vehicle's wheelbase was reduced from 127.6 inches to 110 inches on the driver side and to 124 inches on the passenger side. Maximum crush was estimated to be 18 inches at the front bumper. Figure 4 shows a view of the van at final rest and the deformation to its front end.

¹¹ The medical examiner's office tested for ethanol, acetone, methanol, isopropanol, amphetamines, barbiturates, benzodiazepines, buprenorphine, cannabinoids, cocaine metabolites, fentanyl, opiates, and salicylates.

¹² See <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=29>, accessed December 29, 2015.

¹³ See <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=182>, accessed December 29, 2015.



Figure 4. (a) Left—postcrash view of Dodge 15-passenger van at final rest in canal. NOTE: Orange paint on ground indicates area of vault. (Source: Florida Highway Patrol) (b) Right—postcrash view of front end deformation to Dodge 15-passenger van. (Source: Florida Highway Patrol)

The Florida Highway Patrol (FHP) conducted a postcrash examination of the vehicle. The van's tires revealed no precrash defects; only crash-related damage was noted. The right front tire and both rear tires could be rotated freely; the left front tire was impinged by crash-related damage and could not be rotated. The FHP depressed the brake pedal as the tires were rotated; the brakes engaged and negated rotation of the tires. The master cylinder and power brake booster were found to be intact. The brake fluid reservoir was found to contain sufficient fluid. Although the left front brake line was compromised during the crash, the FHP inspector was able to pinch the line to stop the leakage. There was evidence of headlight filament deformation, indicating that the headlights had been illuminated (on) during this crash. The FHP found that the rearmost bench seat (fourth row) had been set in place without being secured to the floor. The FHP found no mechanical defects that might have contributed to the cause of this crash.

Injuries and Occupant Protection

The driver and 17 passengers were aboard the 15-passenger van when the crash occurred. The driver and seven passengers in the rear seating area sustained fatal injuries. Eight of the ten surviving passengers sustained serious injuries, including four passengers who had multiple rib fractures. The other seriously injured passengers sustained femur fractures and fractures to the cervical and lumbar regions of the spine. The two passengers with minor injuries sustained lacerations, abrasions, and contusions. Due to modifications made to the van, at the time of the crash, only 9 occupant restraints were available for the 18 occupants. No van occupants were ejected.

The van was equipped with bucket seats and lap/shoulder belts for the driver and front seat passenger. Following the crash, both front seatbacks were significantly bent forward due to impacts from unrestrained rear passengers. Behind the front seats were four rows of bench

seats.¹⁴ Interviews revealed that the bench seats were occupied by four passengers in each row. The first three rows consisted of original equipment manufacturer (OEM) three-person removable bench seats that were designed and manufactured for this van. These seats were originally equipped with lap/shoulder belts at the left outboard seating positions and lap belts in the center seating positions. The right outboard seats in the first and second row had lap belts; the right outboard seat position in the third row had a lap/shoulder belt. The roof rail attachments for the lap/shoulder belt at bench row 1 on the left side and row 3 on the right side had been removed/disabled prior to the crash.

The fourth row bench seat was a non-OEM four-person seat designed to be converted to a fold-down bed.¹⁵ This four-person bench seat replaced the original OEM bench seat and was not equipped with any seat belt hardware. For the outer seat positions, the shoulder belt attachments to the vehicle roof rail were used in conjunction with the original seat hardware, which remained in place. The screws used to bolt down the original seat to the vehicle remained in place but exhibited rust and other signs of disuse and exposure. The legs of the replacement seat were solid and smooth, and they lacked connection points for the vehicle's attachment hardware. Linear rust stains, corresponding to the frame/legs of the replacement seat, were observed on the floor of the van and indicated that the non-OEM bench seat comprising the fourth row was not attached to the vehicle prior to the crash.

Following the crash, first responders cut and/or removed one or both of the floor attachment points for the bench seats comprising the first and third rows to reach the passengers. The second row bench seat remained attached to the floor. The seatbacks of all three OEM bench seats were almost completely bent forward and flattened against their seat pans. (See figure 5.) First responders stated that, upon opening the van's rear doors, the fourth row non-OEM bench seat was blocking their access to passengers, and they threw it out (into the canal) in the course of the extrication effort. Additionally, after entering the van from the right-side sliding door, first responders found that most of the passengers were piled between and behind the front bucket seats and against the right-side sliding door. Two deceased passengers were found lying on top of a surviving 4-year-old female passenger, who was on the floor under the first row bench seat on the left side. Adjacent to this young girl was a surviving male passenger, who was found partially under the first row bench seat, facing the right-side sliding door.

¹⁴ The bench seats, which were designed to accommodate three persons, were aligned adjacent to the left side wall to provide for an aisle along the right side wall.

¹⁵ No identifying labels or markings could be located on the seat. The history of this seat and the reason it was placed in the van could not be determined, due to the closing of the church and the unavailability of church representatives.



Figure 5. The bench seats from rows 1 and 2 of the Dodge 15-passenger van.

The front air bags deployed in the crash.

Only the driver and front seat passenger were using their available lap/shoulder belts.¹⁶ Inspection of the lap/shoulder belts for the driver and front-right passenger positions showed that the seat belts were still latched in the buckles, and both seat belt webbings had been cut just above the buckles by emergency responders. The lap/shoulder attachments for the first row left outboard seat position and the third row right outboard seat position appeared to have been removed/disabled. For the middle and outboard seat positions of the first and second row OEM bench seats, the available lap-belts-only attached to the seat frames showed no evidence of usage. First responders tore out the lap/shoulder belt for the third row left-side seat position while removing the bench row seat. Both lap/shoulder belt attachments for the outboard seat positions in the fourth row remained attached; however, these restraints did not have buckles. There were no restraints for the two remaining seating positions in the fourth row.

Viewed together, table 1 and figure 6 show the positions, ages, available restraints, restraint use, and injury levels of the van occupants. The table and the seating chart were developed based on information provided in interviews with 3 of the 10 surviving passengers.¹⁷ Interviewees identified and located all but two passengers as to their seating positions. (The unidentified seating positions were the second bench row, seat C, and the third bench row, seat A).¹⁸ (Note that the bench seats in rows 1–3 were designed to hold only three occupants and therefore were equipped with only three restraint systems; however, table 1 and figure 6 show the actual occupancy of the vehicle, which was greater than the vehicle’s design seating capacity.)

¹⁶ Information concerning seat belt usage was obtained from the FHP crash report, first responder interviews, and physical inspection of the van interior.

¹⁷ The remaining surviving passengers either declined to be interviewed or could not be interviewed for medical reasons.

¹⁸ For both the table and figure, investigators placed the final two passengers based on the remaining unoccupied seating positions and presumptions related to the age/fitness of the unassigned passengers.

Table 1. Occupant injury information for Dodge 15-passenger van. (Entries in red indicate a fatality.)

Seat Position	Age	Available Restraint	Restraint Use	Injury
Driver	58	Lap/Shoulder Belt	Lap/Shoulder	Fatal
Front Passenger	57	Lap/Shoulder Belt	Lap/Shoulder	Serious
Row 1—Seat A	65	Lap/Shoulder Belt—Disabled	None	Serious
Row 1—Seat B	53	Lap Belt	None	Fatal
Row 1—Seat C	44	Lap Belt	None	Serious
Row 1—Seat D	66	None	None	Fatal
Row 2—Seat A	53	Lap/Shoulder Belt	None	Serious
Row 2—Seat B	26	Lap Belt	None	Serious
Row 2—Seat C	89	Lap Belt	None	Serious
Row 2—Seat D	79	None	None	Fatal
Row 3—Seat A	68	Lap/Shoulder Belt	None	Serious
Row 3—Seat B	71	Lap Belt	None	Fatal
Row 3—Seat C	4	Lap/Shoulder Belt—Disabled	None	Minor
Row 3—Seat D	58	None	None	Fatal
Row 4—Seat A	57	Lap/Shoulder Belt—No Buckle	None	Serious
Row 4—Seat B	60	None	None	Fatal
Row 4—Seat C	59	None	None	Fatal
Row 4—Seat D	48	Lap/Shoulder Belt—No Buckle	None	Minor

**MOORE HAVEN, FL
HWY 15 FH 008**

INJURY LEGEND	
F = FEMALE	M = MALE # = AGE
N = NONE	M = MINOR
S = SERIOUS	F = FATAL
SAMPLE	
INJURY LEVEL	
AGE	
GENDER	
	F 14 M
Source: NTSB	

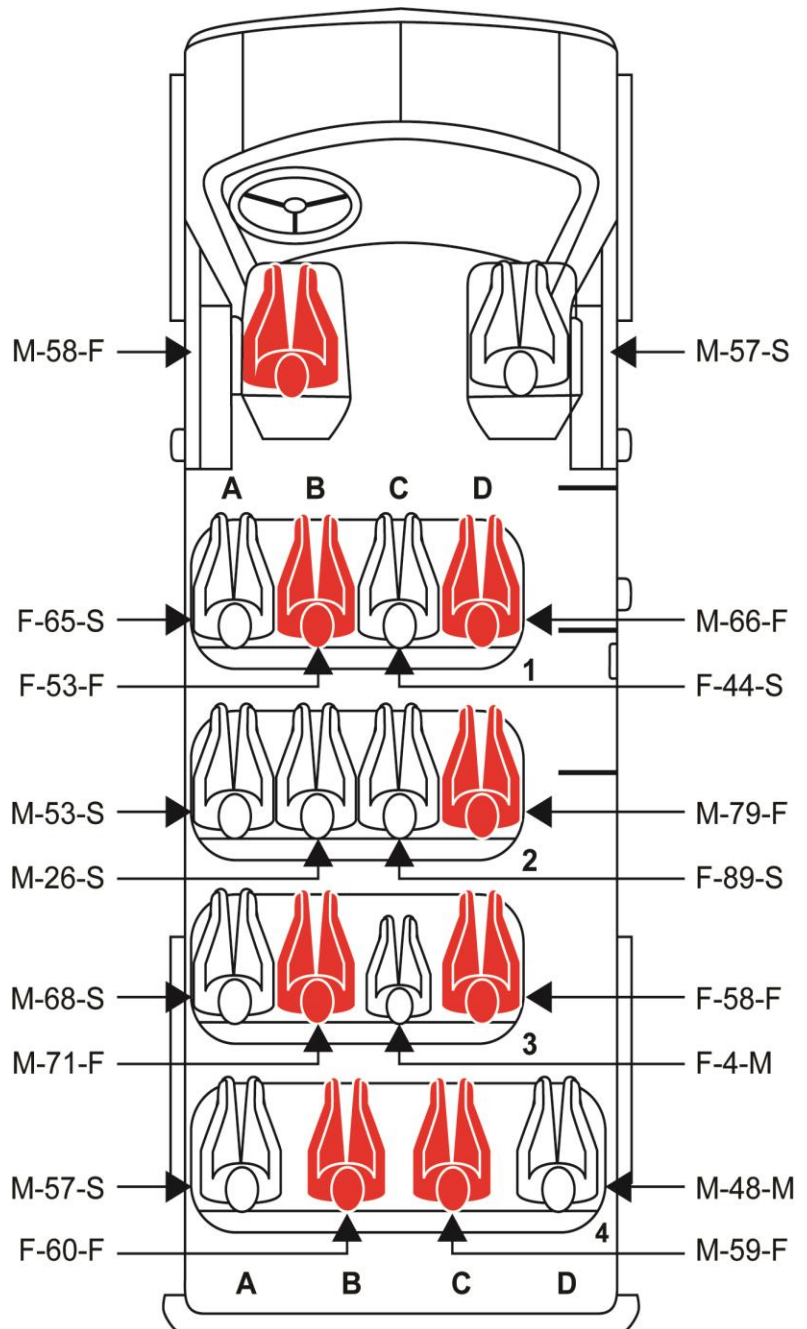


Figure 6. Seating positions and individual and survival information for the occupants of the Dodge 15-passenger van. (Occupant images shaded in red indicate a fatality at that location.)

Florida Seat Belt Laws

Florida law requires the vehicle operator and the front seat passenger to be restrained by a properly adjusted seat belt while the vehicle is in motion. Additionally, all passengers under the age of 18 are required to be restrained by a seat belt or child restraint device while the vehicle is in motion, regardless of their seating position.¹⁹ The 4-year-old female passenger of the accident van was required by Florida law to have been in an age-appropriate child restraint.²⁰

Probable Cause

The National Transportation Safety Board determines that the probable cause of the Moore Haven, Florida, crash was the failure of the 15-passenger van driver to stop at a posted stop sign, possibly as a result of impairment from the use of a sedating antihistamine. Contributing to the severity of the injuries was the loading of more passengers into the van than it had seat belts, the nonuse of available seat belts, and the operation of the van with an unsecured fourth-row seat that had no passenger restraints.

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¹⁹ See [Florida State Statute 316.614](#), accessed December 29, 2015.

²⁰ See [Florida State Statute 316.613.1\(a\)](#), accessed December 29, 2015.