



**NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF HIGHWAY SAFETY
WASHINGTON, D.C.**

**SURVIVAL FACTORS GROUP CHAIRMAN'S
FACTUAL REPORT**

NORTH LAS VEGAS, NEVADA – HWY22FH004

A. CRASH INFORMATION

Refer to the *Crash Information and Crash Summary Report* in the docket for this investigation.

B. SURVIVAL FACTORS GROUP

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C. DETAILS OF THE SURVIVAL FACTORS INVESTIGATION

The survival factors investigation collected evidence from the involved vehicles and occupants, as well as documented the emergency response to the crash.

1. Vehicles

There were six vehicles involved in the crash sequence established for the NTSB investigation. Further information about the vehicles can be found in the Vehicle Group Chairman's Factual Report, located in the docket for this investigation. Five of the vehicles were impounded and inspected at Ewing Brothers Towing Inc. (Ewing's), 2201 N. Commerce St., North Las Vegas, NV, 89030. The vehicles were inspected from February 1-4, 2022 at Ewing's.

1.1. 2018 Dodge Challenger

The 2018 Dodge Challenger had Vehicle Identification Number (VIN): 2C3CDZAG6JHXXXXXX.¹ The Dodge Challenger sustained severe impact to the front of the vehicle, with additional impact damage present on the left side and rear. Both left and right front doors were removed (by responders). The left window glass was shattered, while the right window glass was intact.

Interior – Driver Area

The steering wheel, side curtain, and side torso airbags deployed in the crash. No blood was found on the airbags. The steering column was displaced left and forward, with the steering rim also deformed inwards towards the hub. The bottom of the steering rim was fractured. The seatbelt was cut (by responders) and the connector was in the buckle at the time of inspection. The floor and footwell were deformed upward and were in contact with the bottom of the seat pan. The seat pan was deformed by the rocker panel and the seat back was twisted slightly inboard. There was blood present on the front upper quadrant of the driver's door. The center console was displaced leftward due to removal of the vehicle's Event Data Recorder (EDR).



Figure 1. Driver's side of Dodge Challenger

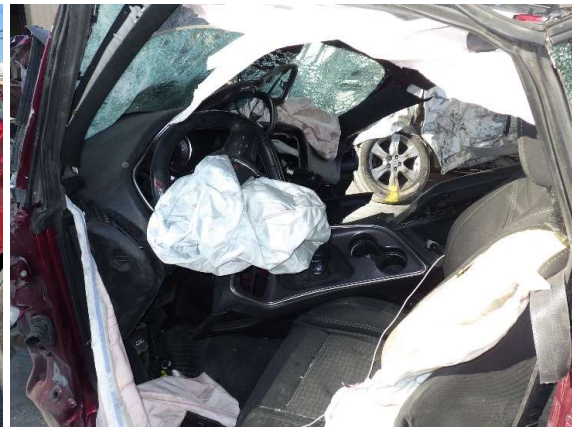


Figure 2. Driver's side occupant compartment

Interior – Front Passenger Area

The frontal, side curtain and side torso airbags deployed in the crash. No blood was found on the airbags. The seatbelt was unbuckled and found in the stowed position. The belt was locked. There were no significant intrusions in the passenger occupant space and the seat appeared undamaged.

¹ The last digits of Vehicle Identification numbers have been replaced with X.



Figure 3. Passenger's side of Dodge Challenger



Figure 4. Passenger's side occupant compartment

1.2. 2013 Toyota Sienna

The 2013 Toyota Sienna had VIN: 5TDXK3DC4DSXXXXX. The Sienna sustained a severe right side impact resulting in complete loss of occupant survival space for the right front passenger. There was also significant vertical crush, in the area of the third row, from the rollover.

Interior – Driver Area

The steering wheel, knee bolster and side curtain airbags deployed in the crash. The driver's seat was removed from the vehicle at time of inspection. The belt was cut (by responders) and the plastic push button on the buckle was broken.

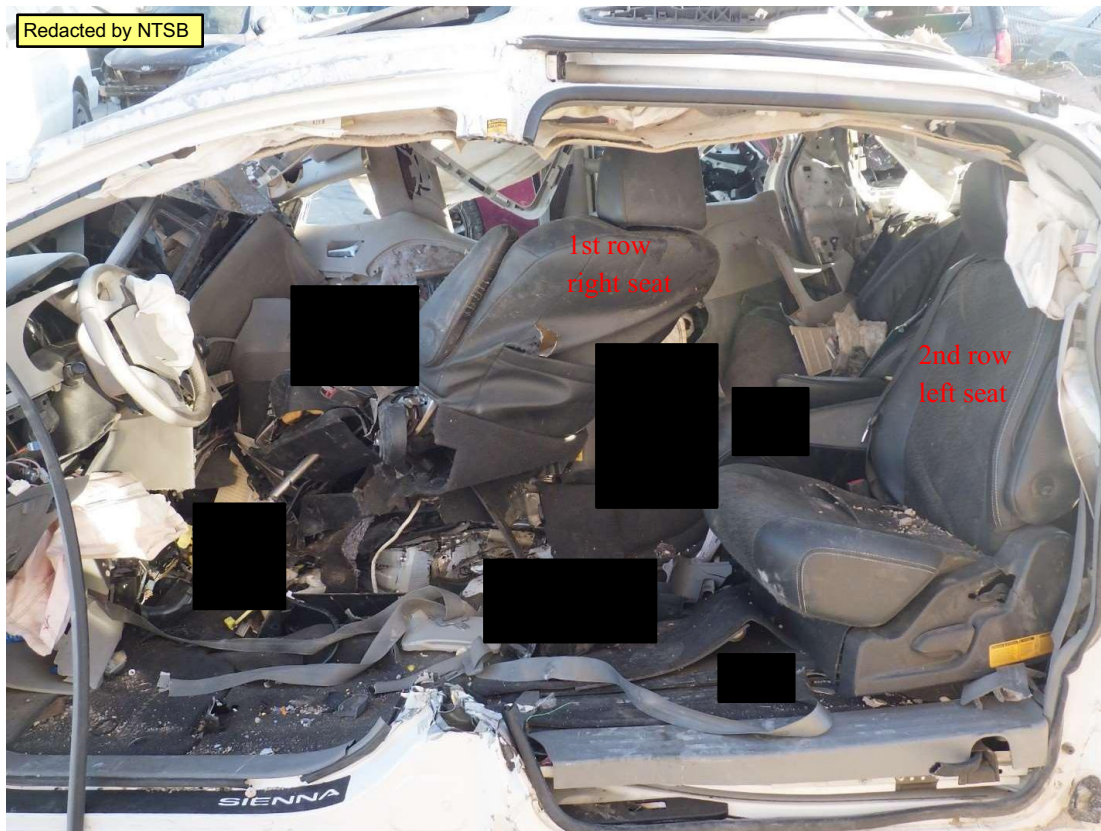


Figure 5. Occupant compartment for first and second row of Sienna.

Interior – Front Passenger Area

The front, knee bolster, side curtain and side torso airbags deployed in the crash. Blood was present on the side airbag. The seatbelt was cut (by responders) and the connector was still engaged in the buckle. The plastic push button on the buckle was broken and the buckle was not functional. The right front seat was significantly displaced to the left and twisted clockwise. The passenger occupant space was completely lost due to severe intrusion.

Interior – 2nd Row Seat Area

For the 2nd row right seat, the belt was cut and the connector was engaged in the buckle. The seat pan was deformed upwards and to the left, by intrusion of the right sliding door.

For the 2nd row left seat, the belt was cut and unbuckled at the time of the inspection. Blood was found on the front upper surface of the seat pan.

Blood was found on the upper right rear of the front right passenger seat back, just below the head rest. Blood was also present on the right sliding door trim panel, C-pillar, and window frame. Blood was also found on the roof.

Interior – 3rd Row Seat Area

Inspection of the third-row seating area was initially obscured due to severe vertical roof deformation. It was observed that all three seatbelts were unbuckled at the time of inspection. The left seatbelt was entrapped in the wreckage.

At the request of the NTSB investigators, the North Las Vegas Fire Department removed the roof of the vehicle. The third-row seats had significant loss of occupant space due to severe intrusion from the rear, pushing the left and middle third-row seats forward and to the right. The row 3 seat pan was also displaced upwards.



Figure 6. Third-row occupant compartment in Sienna, viewed after removal of the vehicle roof.

1.3. 2016 Ford Fusion

The 2016 Ford Fusion had VIN: 3FA6P0PU2GRXXXXX. The Ford sustained damage to the front, with additional minor impact damage to the right front door and the rear bumper. The steering wheel and knee bolster airbags deployed in the crash. The left curtain airbag deployed, while the right curtain airbag did not. No blood was found on the airbags or elsewhere in the interior. There were shoe prints on the knee airbag. The driver belt inertia reel was locked. The belt was unbuckled at the time of inspection and was functional. The belt had scuffing marks at 27" and 33 ½" from the lower anchor that were perpendicular to the belt and did not appear to be crash-related. The total webbing length from the lower anchor to the upper anchor was 75". The center console was displaced due to removal of the EDR module. The occupant compartment was intact with no intrusions noted.

1.4. 2005 Chevrolet Malibu

The 2005 Chevrolet Malibu had a VIN of 1G1ZT54845FXXXXXX. The Chevrolet sustained damage to the front left corner. Both frontal airbags deployed. Some minor scuffing was present on the driver's airbag. No blood was found on either airbag. The driver belt was found with the inertia reel locked. The total webbing length from the lower anchor to the upper anchor was 43" and the seat belt connector was barely able to reach the buckle (with the inertia reel locked). The right front passenger belt was found unbuckled and not locked. The occupant compartment was intact with no intrusions noted.

1.5. 2016 Hyundai Tucson

The 2016 Hyundai Tucson had VIN: KM8J33A44GUXXXXXX. The Hyundai sustained damage on the left side, spanning the front and rear doors. The driver's side torso and curtain airbags deployed in the crash. The front steering wheel airbag did not deploy. There was no sign of blood in the interior of the vehicle. Blood was present on the outside surface of the deployed curtain airbag. There was no interior crush or deformation. Glass was noted throughout the front seats and front of vehicle. The front door did not open due to damage. The driver belt was extended with the inertia reel locked. The belt was unbuckled at the time of inspection and was functional.

1.6. 2021 Mercedes GLE 350

The 2021 Mercedes GLE had VIN 4JGFB4KB1MAXXXXXX. The Mercedes sustained only minor damage and was released from the scene. It was not available for inspection.

2. Occupants

The crash involved a total of 15 people, as shown in Table 1.

Table 1. Crash Victims

6 Vehicles and 15 total Occupants	Injury Information*			
	Not Injured	Minor	Serious	Fatal
2018 Dodge Challenger				
Driver (1)				1
Passenger (1)				1
2013 Toyota Sienna				
Driver (1)				1
Passengers (6)				6
2016 Ford Fusion				
Driver (1)			1	
2005 Chevrolet Malibu				
Driver (1)	1			
Passenger (1)	1			
2016 Hyundai Tucson				
Driver (1)		1		
2021 Mercedes GLE 350				
Driver (1)	1			

<i>Passengers (1)</i>	1			
Totals	4	1	1	9

*NOTE: Title 49 CFR 830.2 defines fatal injury as any injury that results in death within 30 days of the accident, and serious injury as any injury that: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date of injury; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burn affecting more than 5 percent of the body surface.

The occupants of each vehicle and their seating location, gender, age, and injury description are provided in the sections that follow. Toxicological testing was performed on the Dodge driver; refer to the Medical Factual Report, available in the docket. Note that the passenger seating locations in the vehicles and seatbelt use are provided based on evidence from statements to law enforcement, first responder reports, or interviews with investigators. Interviews were conducted with the driver of the Ford Fusion and emergency personnel from agencies that responded. These were recorded and transcribed.^{2,3} The other surviving vehicle drivers and passengers were contacted but did not respond to requests for interviews.

2.1. 2018 Dodge Challenger

The driver was a 59-year-old male who was fatally injured. He was wearing his seatbelt. An autopsy was conducted at the Clark County Office of the Coroner/Medical Examiner. He sustained subdural and subarachnoid hemorrhages, cervical spine fracture, multiple rib fractures, pelvic fracture, and multiple upper and lower extremity fractures. Toxicological analysis of the blood detected cocaine, benzoylcegonine, and phencyclidine (PCP).

Passenger 1 was a 46-year-old male who was fatally injured. He was seated in the right front passenger seat. An external exam was conducted at the Clark County Office of the Coroner/Medical Examiner demonstrating multiple blunt force injuries, including fractures of the extremities and bilateral hemothoraces. He was not wearing his seatbelt.

2.2. 2013 Toyota Sienna

The driver was a 35-year-old male who was fatally injured. He was belted. An external exam was conducted at the Clark County Office of the Coroner/Medical Examiner, demonstrating multiple blunt force injuries, including rib fractures. Toxicological analysis of the blood was negative for tested-for substances.

Passenger 1 was a 13-year-old female who was fatally injured. She was seated in the right front passenger seat and was belted. She sustained cervical spine, rib, pelvis, and extremity fractures.

Passenger 2 was a 23-year-old male who was fatally injured. He was seated in the left 2nd row seat and was wearing his seatbelt. He sustained cervical and facial fractures.

² SF Attachment: Ford Fusion Driver Interview.

³ SF Attachment: NLVFD Responder Interview.

Passenger 3 was a 25-year-old male who was fatally injured. He was seated in the right 2nd row seat and was wearing his seatbelt. He sustained skull, right femur, and left tibia/fibula fractures.

Passenger 4 was a 5-year-old male who was ejected and fatally injured. He was seated in the 3rd row, but unknown which seat. He was not wearing his seatbelt. He sustained multiple traumatic injuries, including clavicle and femur fractures.

Passenger 5 was a 10-year-old male who was ejected and fatally injured. He was seated in the 3rd row, but unknown which seat. He sustained multiple traumatic injuries to the head, torso and extremities.

Passenger 6 was a 15-year-old male who was ejected and fatally injured. He was seated in the 3rd row, but unknown which seat. He was not wearing his seatbelt. He sustained multiple traumatic injuries, including skull, rib, and extremity fractures.

2.3. 2016 Ford Fusion

The driver and sole occupant was a 31-year-old female who was seriously injured. She was transported to University Medical Center. She sustained abdominal wall contusion, cervical spine disc injury at C4/5, and left knee sprain.

2.4. 2005 Chevrolet Malibu

The driver was a 23-year-old male who was assessed by first responders and reported no injuries. He was not transported to a medical facility.

The passenger was a 32-year-old female who was assessed by first responders and reported no injuries. She was not transported to a medical facility.

2.5. 2016 Hyundai Tucson

The driver and sole occupant was a 38-year-old male who was assessed by first responders and reported minor injuries. He declined transportation to a medical facility.

2.6. 2021 Mercedes GLE 350

The driver was a 53-year-old male who was assessed by first responders and reported no injuries. He was not transported to a medical facility.

The passenger was a 59-year-old male who was assessed by first responders and reported no injuries. He was not transported to a medical facility.

3. Emergency Response

The location of the crash was in the city of North Las Vegas, in Clark County. The Clark County Combined Communication Center (CCC) received the 911 calls and coordinated dispatch. Multiple 911 calls were received from witnesses. In addition, the Ford Fusion initiated an automatic crash notification call to 911. A phone connection was opened between the 911 operator and the vehicle, but no one in the vehicle responded.⁴

3.1. Law Enforcement

3.1.1. North Las Vegas Police Department

The North Las Vegas Police Department (NLVPD) conducted the police crash investigation.

- Report NLPD2201290001725⁵

The CCC Incident Detail report (Incident number: NL22012900000455) was obtained.⁶ The following items regarding the crash were included in the report.

- The crash with unknown injuries was reported at 3:12 p.m.
- Multiple ejections reported at 3:12 p.m.
- First unit dispatched at 3:13 p.m.
- First unit arrived at scene at 3:16 p.m.
- Multiple fatalities reported at 3:17 p.m.
- Transport of occupant initiated 3:19 p.m.
- Coroner arrived on scene at 6:18 p.m.
- Roadway reopened at 1:23 a.m. on 1/30/22

3.1.2. Clark County Coroner

An autopsy of one fatally injured driver was conducted at the at the Clark County Office of the Coroner/Medical Examiner, 1704 Pinto Lane, Las Vegas, NV, 89106. NTSB investigators attended the autopsy on February 2, 2022.

3.2. Fire and EMS

3.2.1. North Las Vegas Fire Department

The North Las Vegas Fire Department (NLVFD) had jurisdiction for the crash. The NLVFD Incident Detail Report (Incident number: 01292022-2043478) was obtained.⁷ In addition, the National Fire Incident Reporting System (NFIRS) report with a narrative description was

⁴ Ford systems connect to a driver's cell phone to initiate the ACN call, so the vehicle would not be affected by the 3G shutdown. No data is transmitted.

⁵ SF Attachment: State of Nevada Traffic Crash Report.

⁶ SF Attachment: North Las Vegas Police Department Incident Detail Report.

⁷ SF Attachment: NLVFD Incident Detail Report.

provided.⁸ According to the NFIRS report, Engine 50 arrived first, established command and began triage. Rescue 55 arrived. Battalion 5 then arrived and assumed command. Triage identified eight fatal victims and 2 in need of transport. Additional units responding included Truck 52 and Engine 53. Battalion 1 was not dispatched but arrived at the scene to provide support.

The scene was initially declared a level 5 multi-casualty incident (MCI), meaning 5-10 patients. Later it was upgraded to level 5 MCI, once additional people involved were identified.

A meeting with the NLVFD responders was held on February 2, 2022. The meeting and interviews with the staff provided a description of the fire response. In addition, the NLVFD advised that they follow Southern Nevada Fire Operations Standard Operating Procedures⁹ for multi-casualty incidents. They also regularly conduct training that includes response to MCIs.

3.2.2. MedicWest Ambulance

MedicWest Ambulance (MWA) responded under a mutual aid agreement. MWA responded with a total of five ambulance units.

MWA unit 576 transported the 10-year-old male. According to the NLVFD Incident Detail Report, MWA unit 576 was dispatched at 3:18 p.m., was enroute at 3:18 p.m., arrived on scene at 3:20 p.m., left the scene at 3:23 p.m., and arrived at the hospital at 3:34 p.m.

MWA unit 750 transported the 31-year-old female. According to the NLVFD Incident Detail Report, MWA unit 750 was dispatched at 3:18 p.m., was enroute at 3:18 p.m., arrived on scene at 3:20 p.m., left the scene at 3:28 p.m., and arrived at the hospital at 3:38 p.m.

3.3. Hospital – University Medical Center

Two victims were transported to University Medical Center by ground ambulance. One patient was admitted. One patient was pronounced dead in the Emergency Room at 4:21 p.m. University Medical Center is located at 800 Hope Place, Las Vegas, NV 89106, and is the only Level 1 Trauma Center in Nevada.

4. Docket Material

The following attachments and photographs are included in the docket for this investigation:

LIST OF ATTACHMENTS

Survival Factors Attachment: Ford Fusion Driver Interview

Survival Factors Attachment: NLVFD Responder Interview

Survival Factors Attachment: State of Nevada Traffic Crash Report

Survival Factors Attachment: North Las Vegas Police Department Incident Detail Report

⁸ SF Attachment: NLVFD National Fire Incident Reporting System report.

⁹ SF Attachment: Southern Nevada Fire Operations Standard Operating Procedures.

Survival Factors Attachment: NLVFD Incident Detail Report
Survival Factors Attachment: NLVFD National Fire Incident Reporting System report
Survival Factors Attachment: Southern Nevada Fire Operations Standard Operating Procedures

END OF REPORT

Ellen Lee PE, Survival Factors Investigator