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# Special Crash Investigations: Remote Vehicle Fire/Child Restraint System Investigation; Vehicle: 2001 Ford Windstar; Location: Kansas; Crash Date: June 2016

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**15. Supplementary Notes**

Each crash represents a unique sequence of events, and generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicles or their safety systems. This report and associated case data are based on information available to the Special Crash Investigation team on the date this report was published.

**16. Abstract**

This report documents the remote vehicle fire/child restraint system (CRS) investigation of a 2001 Ford Windstar with three CRS-restrained occupants involved in a crash with another vehicle, a subsequent rollover, and post-crash fire in daytime in June 2016 in a rural area of Kansas. The Ford Windstar was driven eastbound by a belted 35-year-old male. The other occupants included an unbelted 27-year-old female seated in the front passenger seat, a 6-month-old female seated in a rear-facing CRS in the second-row left position, a 3-year-old female seated in a forward-facing CRS in the second-row right position, and a 5-year-old female seated in a forward-facing CRS in the third-row left seat position. The other vehicle was a 1995 Ford Ranger driven westbound by an unbelted 56-year-old male. The Ranger departed the roadway on the right (north) edge, the driver overcorrected to the left, and the vehicle initiated a counterclockwise yaw. The Ranger crossed over the centerline and entered the eastbound lane, where the front of the Windstar struck the right side of the Ranger. The Windstar departed the roadway, overturned on a descending embankment, and came to rest on its right side. Then a fire began in the engine compartment and spread to the occupant compartment. The driver and second-row left occupant were trapped. The front-row right occupant was fully ejected. They were declared deceased on-scene. The 3-year-old and 5-year-old female occupants were assisted from the vehicle by passersby and transported to a local hospital, where they were admitted for two days while being treated for minor injuries. The driver of the Ranger was fully ejected and declared deceased on-scene.

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## Background

This report documents the remote vehicle fire/child restraint system (CRS) investigation of a 2001 Ford Windstar with three CRS-restrained children involved in a crash with another vehicle, a subsequent rollover, and a post-crash fire (Figure 1). The investigation examines CRS usage, details relating to the fire event, emergency medical services (EMS) response, occupant restraint usage, demographics, and injury data. The crash was identified during a review of Fatality Analysis Reporting System (FARS) crash reports. The criteria for the crash type included an impact not involving the back plane, a fire that spreads to the occupant compartment, and at least one child seated in a CRS. The Special Crash Investigations (SCI) group of the National Highway Traffic Safety Administration assigned the case in August 2019.

*Figure 1. The 2001 Ford Windstar, final rest position (police photo)*

This crash occurred in June 2016 on an undivided, two-lane, east/west, U.S. highway in a rural area of Kansas. The Ford Windstar was driven eastbound at an unknown speed by a belted 35-year-old male. Other occupants included an unbelted 27-year-old female in the front passenger seat, a 6-month-old female seated in a rear-facing CRS in the second-row left position, a 3-year-old female seated in a forward-facing CRS in the second-row right position, and a 5-year-old female seated in a forward-facing CRS in the third-row left seat position. Conditions were daylight, clear, and dry. The other vehicle was a 1995 Ford Ranger driven westbound at an unknown speed by an unbelted 56-year-old male. For unknown reasons, the Ranger departed the roadway on the right (north) edge, the driver overcorrected to the left, and the vehicle initiated a counterclockwise yaw. The Ranger crossed over the centerline and entered the eastbound lane where the front plane of the Windstar struck the right plane of the Ranger in an angled configuration. The Windstar departed the roadway, overturned on a descending embankment,

and came to rest on its right plane. The Windstar then caught fire that spread to the occupant compartment. The driver and second-row left occupant of the Windstar were trapped. The unbelted front-row passenger was fully ejected. All three were declared deceased on-scene. The 3-year-old and 5-year-old females were assisted from the vehicle by passersby and transported to a local hospital, where they were admitted for two days while being treated for minor injuries. The cab of the Ranger separated from the chassis and cargo bed, overturned, and came to rest on the roadway. The unbelted Ranger driver was fully ejected and declared deceased on-scene.

The Windstar was configured with an air bag control module (ACM) having an Event Data Recorder (EDR) capability supported by the Bosch Crash Data Retrieval (CDR) system. The CDR data summary stated that the ACM was incapable of capturing pre-crash data and that it appeared the police did not image the ACM. The Ranger was not a CDR-supported vehicle.

## Summary

### Crash Site

The crash site was an undivided, two-lane, east/west, U.S. highway in a rural area of Kansas (Figure 2). The surface was paved with asphalt in traveled condition. The roadway was configured with lanes measuring 2.7 m (12.0 ft) wide from the centerline to the fog line with additional pavement measuring 0.8 m (2.7 ft) wide from the fog line to the edge of the pavement. The roadway was bordered by unpaved shoulders measuring 2.6 m (8.5 ft) wide, and the roadside consisted of sloping ground leading to drainage ditches. The centerline was a dashed yellow painted stripe configured with a continuous rumble strip. The fog lines were solid white painted stripes. In the eastbound direction, the roadway curved right in a radius measuring 1,160 m (3.805 ft) from the right fog line. The speed limit was 104 km/h (65 mph). Conditions at the time of the crash were daylight, clear, and dry. Temperature was 35.5 °C (96 °F), relative humidity was 41 percent, and winds were southerly at 13 km/h (8 mph). A crash diagram is included at the end of this report.

*Figure 2. Crash site looking east (police photo)*

### Pre-Crash

The Windstar was traveling east at an unknown speed, and the Ranger was traveling west at an unknown speed. For unknown reasons, the Ranger departed the roadway on the right (north) edge, then returned to the roadway while the driver overcorrected, causing a counterclockwise yaw. According to the police report, the Ranger crossed the centerline into the eastbound lane, where it rotated to an orientation where its right plane was perpendicular to the roadway. The report stated that there was no indication of braking for the Ranger. It was unknown if the driver of the Windstar took evasive action.

### Crash

The front of the Windstar struck the right side of the Ranger in the area of the front-right tire and fender in an angle (Event 1) in the eastbound lane. The Ranger's cab separated from the chassis and cargo bed, overturned one quarter-turn (Event 2), and came to rest on its right side in the eastbound lane near the point of impact. The chassis and cargo bed departed the roadway on the south edge and came to rest on the roadside. The unbelted driver of the Ranger was fully ejected.

The Windstar rotated clockwise and departed the roadway on the south edge. The left side tires tripped on the roadside, initiating a left-side leading rollover of two quarter-turns (Event 3), coming to rest on its roof on the roadside. The unbelted front right passenger was fully ejected. The vehicle caught fire in the engine compartment, which spread to the entire occupant compartment (Event 4).

## Post-Crash

Passersby and witnesses to the crash stopped to assist the occupants. One witness told police that he saw that the driver inside the Windstar was apparently deceased. The ejected front-right passenger was lying on the roadside and also appeared deceased. Passersby broke window glazing to get the second- and third-row occupants from the vehicle. The second-row left child was trapped and deceased. The second-row right occupant and third-row left occupant were transported by ambulance to a local hospital and treated for minor injuries. Both drivers, the front-right passenger, and the second-row left child in the Windstar were declared deceased on-scene. It was not determined how soon after the crash the Windstar caught fire. Both vehicles were towed due to damage.

## 2001 Ford Windstar

### Description

The 2001 Ford Windstar was a 4-door minivan identified by the Vehicle Identification Number (VIN) 2FMZA57491Bxxxxxx. The electronic odometer reading was unknown. The vehicle had three rows to seat seven in a 2-2-3 seat configuration. It had a 6-cylinder, 3.8- liter, gasoline engine; a front-wheel drive; and hydraulic brakes. The front row had bucket seats and adjustable head restraints. The front-row seat track positions were unknown. The second row had two bucket seats and adjustable head restraints, and the third row had a bench seat and folding back. The Windstar had Lower Anchors and Tethers for Children (LATCH) in the second and third rows.

### Exterior Damage

The Windstar sustained major damage to the front in the impact with the other vehicle (Event 1) and unknown severity damage to the right side in the rollover event (Event 2). The front plane appeared to have sustained direct damage distributed from bumper corner to bumper corner. The left and right wheelbases appeared to have been shortened. The estimated Collision Deformation Classification (CDC) for the Windstar in Event 1 was 11FDEW4. The estimated CDC for Event 2 was 00R99O9. Fire damage was present in the engine compartment (Event 4).

### Vehicle Fire Discussion

The Windstar sustained a major post-impact fire involving the engine and all three rows of the occupant compartment. According to the police report, the fire started in the Windstar's engine compartment and spread rearward, damaging the front half of the occupant compartment. On-scene police photos reveal involvement of all three rows including burn damage to two CRSs.

Three volunteer fire departments responded to the fire. The fire incident report generated by the lead station was obtained. The report indicated that they were notified of an injury vehicle accident five minutes after the crash and arrived on-scene 17 minutes after the crash. Actions taken included fire suppression, basic life support, and traffic control. Their response resources included one suppression apparatus with one personnel, one EMS unit with two personnel, and one unspecified unit with three personnel that was likely a private vehicle, given the volunteer nature of the department. They arrived to find a fire in the engine compartment of the Windstar. They suppressed the fire using unspecified methods, observed two fatal ejected occupants, and searched the scene for additional occupants. They set up road blocks and prepared the child occupants of the Windstar for EMS transport. The last fire unit was cleared from the scene one hour, 37 minutes after the crash.

### Child Restraint Systems

#### *Baby Trend EZ Flex-Loc Infant Safety Seat*

The 6-month-old female in the second-row left position occupant was seated in a Baby Trend EZ Flex-Loc infant safety seat (ISS) (Figure 3), part of a Baby Trend Easy5 Travel System. The Baby Trend was a rear-facing model with a LATCH-equipped, height-adjustable base; a 5-point harness system; EPS foam side impact head protection; and a carry handle and removable

canopy. The lower LATCH straps on this CRS were flexible as opposed to rigid. It was unknown if LATCH was used to install the seat. The parameters for using this CRS are as follows:

Weight: 4-30 lbs (1.82-13.6 kg)
Height: 30 inches (76.2 cm) or less

The child using this seat met the weight and height parameters. The CRS sustained burn damage and was likely damaged due to being compressed between the front and second-row seat backs. According to the police report, this child was trapped in the vehicle and required extrication. In addition to severe head injuries, she sustained injuries to the upper and lower extremities consistent with the loading of the harness straps.

*Figure 3. Baby Trend EZ Flex-Loc infant safety seat, second-row left seat position, the 2001 Ford Windstar (police photo)*

*Figure 4. Unknown make/model CRS, second-row right seat position, the 2001 Ford Windstar (police photo)*

### *Unknown Make/Model CRS*

The 3-year-old female in the second-row right position was seated in a forward-facing CRS of an unknown make/model. Police images indicate that the CRS was installed using LATCH lower anchors (Figure 4). It was unknown if the tether was used. This CRS remained inside the vehicle and sustained fire damage after the occupant was removed. The occupant's medical records indicate she sustained abrasions to both shoulders caused by loading of the harness straps, suggesting the harness was used. The parameters for using this CRS installed with LATCH in a forward-facing orientation are unknown, and no further data were available.

### *Graco TurboBooster Highback CRS*

The 5-year-old female in the third-row left position was seated in a forward-facing Graco TurboBooster Highback CRS (Figure 5), in combination with the vehicle's lap and shoulder seat belt. It had an optional high-back support, adjustable headrest and armrests, a removable seat cushion, a cup holder, shoulder belt guides, and a belt-positioning clip. The parameters for using this CRS with the back support are as follows:

Weight: 30-100 lbs (14-45 kg)
Height: 38-57 inches (97-145 cm)
At least 4 years old

The occupant using this CRS met the weight and age parameters, and it is unknown whether she met the height parameter.

*Figure 5. Graco TurboBooster Highback CRS, third-row left seat position, the 2001 Ford Windstar (police photo)*

## NHTSA Recalls and Investigations

A VIN search last queried in May 2021 revealed no unrepaired recalls.

## Interior Damage

The Windstar's interior sustained impact damage and fire damage. Burn damage was present in all three rows of the compartment including the CRSs in the second row. The police report indicated that intrusion was present. Intrusion components and magnitude were not determined. Post-crash activities caused glazing damage and integrity loss.

## Manual Restraint Systems

The Windstar had three-point continuous lap and shoulder seat belts for all seat positions. The driver was reportedly belted at the time of the crash. The front passenger was unbelted and fully ejected through an unknown area during the crash. The second-row left child was in a rear-facing ISS installed using an unknown method. The second-row right child was in a CRS that appeared in police photos to be installed using LATCH. The third-row left occupant was in a forward-facing high-back belt-positioning booster in combination with the vehicle's lap and shoulder belt.

## Supplemental Restraint Systems

The Windstar was equipped with advanced frontal air bags and seat-mounted side impact air bags for the driver and the front passenger. The frontal impact in Event 1 was presumably a deployment-level event, but air bag deployment status is unknown. The police report did not include air bag data, and on-scene photos did not include images of air bag locations.

## Rollover Discussion

At impact with the Ranger, the Windstar rotated clockwise and departed the roadway on the south edge. It went down a descending embankment until its left side tires engaged the ground with sufficient opposing lateral force to cause a left-side-leading trip rollover of three quarter-turns. The vehicle came to rest on its right side near a ditch. The estimated rollover distance was 12 m (40 ft).

## 2001 Ford Windstar Occupants

### Driver Demographics

| | |
|---|---|
| Age/sex: | 35 years/male |
| Height: | 183 cm (72 in) |
| Weight: | 113 kg (250 lb) |
| Eyewear: | Unknown |
| Seat type: | Bucket with adjustable head restraint |
| Seat track position: | Unknown |
| Manual restraint usage: | Lap and shoulder belt used |
| Usage source: | Police report |
| Air bags: | Frontal and seat-mounted side impact air bags, unknown if deployed |
| Alcohol/drug data: | None |
| Egress from vehicle: | Entrapped, declared deceased before being removed |
| Transport from scene: | None |
| Type of medical treatment: | None |

### Driver Injuries

| Injury No. | Injury | Injury Severity AIS 2015 | Involved Physical Component (IPC) | IPC Confidence Level |
|---|---|---|---|---|
| 1 | Laceration, pons | 140212.6 | Left IP | Probable |
| 2 | Transection, aorta | 420210.5 | Steering wheel rim | Probable |
| 3 | Tear, mesentery, avulsion of small bowel and colon | 542026.4 | Steering wheel rim | Probable |
| 4 | Fracture, comminuted, vault skull | 150404.3 | Left IP | Probable |
| 5 | Laceration, cerebrum | 140688.3 | Left IP | Probable |
| 6 | Laceration, cerebellum | 140474.3 | Left IP | Probable |
| 7<br>8 | Fractures, bilateral femur shafts | 853221.3<br>853221.3 | Lower left IP | Probable |
| 9 | Hemothorax (400-500 ml) | 442200.3 | Steering wheel rim | Probable |
| 10 | Fractures, ribs, left L5-L10, anterio-lateral, L7-L12, posterior (unilateral flail) | 450212.3 | Steering wheel | Probable |
| 11 | Fracture, open, left humerus | 751101.3 | Left IP | Probable |
| 12 | Fracture, closed, right humerus | 751100.2 | Left IP | Probable |
| 13<br>14 | Fracture, thoracic spine T7/T8 with separation | 650416.2<br>650416.2 | Steering wheel rim | Probable |
| 15 | Laceration, scalp | 110602.1 | Left IP | Probable |

| Injury No. | Injury | Injury Severity AIS 2015 | Involved Physical Component (IPC) | IPC Confidence Level |
|---|---|---|---|---|
| 16 | Burns, face, chest, abdomen, left arm, both legs | 912000.1 | Fire | Certain |

*Source: autopsy report.*

## Driver Kinematics

The belted 35-year-old male driver was seated in an unknown posture. At impact, he was displaced forward and left in response to the direction of force. Air bag deployment data are unknown. The driver loaded the seat belt, and longitudinal intrusion of the left instrument panel and steering column reduced the occupant space. He loaded the steering wheel with his chest and abdomen, causing a transection of the aorta, fracture of the thoracic spine at T7/T8, fractures to multiple ribs on the left aspect, and mesentery tear with avulsion to the colon. The driver's head and neck continued moving forward in a hyper-extension contacting the left instrument panel and causing a comminuted fracture to the vault skull, and lacerations to the cerebrum, cerebellum, pons, and scalp. His arms contacted the left instrument panel, causing fractures to the bilateral humeri, and his legs contacted the lower left instrument panel, causing fractures to the bilateral femur shafts. During the rollover, the driver was pinned in his seated position due to intrusion and likely seat deformation. When the vehicle came to rest due to his entrapment, responders could not remove him before the front row was involved with fire. The driver sustained burns to his face, chest, abdomen, left arm, and lower extremities. His autopsy report indicated that the cause of death was blunt trauma with aortic transection and laceration of the brain, suggesting his death preceded the fire. He was pronounced deceased prior to being removed from the vehicle.

## Front-Row Right Occupant Demographics

| | |
|---|---|
| Age/sex: | 27 years/female |
| Height: | 165 cm (65 in) |
| Weight: | 70 kg (154 lb) |
| Eyewear: | Unknown |
| Seat type: | Bucket |
| Seat track position: | Unknown |
| Manual restraint usage: | Lap and shoulder belt not used |
| Usage source: | Police report |
| Air bags: | Frontal and seat-mounted side impact air bags, unknown if deployed |
| Egress from vehicle: | Fully ejected |
| Transport from scene: | None |
| Type of medical treatment: | None |

## Front-Row Right Occupant Injuries

| Injury No. | Injury | Injury Severity AIS 2015 | Involved Physical Component (IPC) | IPC Confidence Level |
|---|---|---|---|---|
| 1 | Contusions, bilateral lungs, 3-8 cm (1-3 in) diameter | 441412.4 | Right IP | Probable |
| 2 | Hemorrhages, subdural, occipital and parietal lobes, cerebrum | 140650.3 | Windshield | Probable |
| 3 | Atlanto-occipital fracture and dislocation | 650208.3 | Windshield | Probable |
| 4<br>5 | Fractures, bilateral femur shafts | 853221.3<br>853221.3 | Left IP | Probable |
| 6 | Spinal cord injury NFS with fracture C6, cervical spine NFS | 610204.3 | Windshield | Probable |
| 7 | Hemorrhages, subarachnoid, occipital and parietal lobes, cerebrum | 140693.2 | Windshield | Probable |
| 8 | Fracture, left elbow | 751800.2 | Ground | Probable |
| 9 | Fracture, left mandible | 250600.1 | Windshield | Probable |
| 10 | Fracture, left rib L11, posterior | 450201.1 | Right IP | Probable |
| 11 | Lacerations, minor, forehead | 210602.1 | Windshield | Probable |
| 12 | Abrasions, face | 210202.1 | Windshield | Probable |
| 13 | Abrasion, right neck | 310202.1 | Windshield | Probable |
| 14 | Abrasions (dicing type), chest | 410202.1 | Windshield | Probable |
| 15 | Abrasions, mid-back | 410202.1 | Ground | Probable |
| 16 | Laceration, right elbow | 710602.1 | Ground | Probable |
| 17 | Abrasions, bilateral arms | 710202.1 | Ground | Probable |
| 18 | Contusions, right thigh | 810402.1 | Lower right IP | Probable |
| 19 | Abrasions, right knee and lower leg | 810202.1 | Lower right IP | Probable |

*Source: autopsy report.*

## Front-Row Right Occupant Kinematics

The front-row right passenger was unbelted and in an unknown posture. At impact, she was displaced forward and left from her seat with her face and head striking the windshield, her torso striking the right instrument panel, and her lower extremities striking the lower right instrument panel. She sustained fractures to the cervical spine at the altlanto-occipital and C6 aspects, multiple hemorrhages to the cerebrum, fracture to the mandible, and lacerations to the chest,

resulting from the windshield contact. She sustained a fracture to rib R11 and bilateral contusions to the lungs, resulting from instrument panel contact. She sustained fractures to the bilateral femur shafts, and abrasions and contusions to the lower extremities caused by contact with the lower right instrument panel. The Windstar rotated and departed the road way down an embankment before tripping and overturning three quarter-turns, left-side leading. She was fully ejected through an unknown opening, resulting in abrasions and contusions to multiple regions. It was unknown whether she was struck by the overturning vehicle. She did not sustain burn injuries. She was declared deceased on-scene.

## Second-Row Left Occupant Demographics

| | |
|---|---|
| Age/sex: | 6 months/female |
| Height: | 67 cm (26 in) |
| Weight: | 5 kg (11 lb) |
| Eyewear: | None |
| Seat type: | Bucket with folding back |
| Seat track position: | Not adjustable |
| Manual restraint usage: | Rear-facing CRS |
| Usage source: | Police report |
| Air bags: | None available |
| Egress from vehicle: | Entrapped, deceased prior to being removed |
| Transport from scene: | None |
| Type of medical treatment: | None |

## Second-Row Left Occupant Injuries

| Injury No. | Injury | Injury Severity AIS 2015 | Involved Physical Component (IPC) | IPC Confidence Level |
|---|---|---|---|---|
| 1 | Fracture, open, vault skull (frontal, parietal and occipital bones) with significant loss of brain | 113002.6 | CRS shell, front and second-row seat backs | Probable |
| 2 | Abrasions, contusions and minor lacerations, face | 210202.1 | Flying glass | Probable |
| 3<br>4 | Abrasions and contusions, bilateral arms and legs | 710202.1<br>810202.1 | CRS harness | Probable |

*Source: Autopsy report.*

## Second-Row Left Occupant Kinematics

The 6-month-old female in the second-row left position was restrained in a rear-facing CRS with a 5-point harness. At impact, she and the CRS were displaced toward the front of the vehicle, and she loaded the CRS shell and harness straps. The driver and his seat back were displaced rearward reducing the child's space in the second row and compressing the CRS shell and the

occupant's head between the front and second-row seat backs. This dynamic caused open fractures to the frontal, parietal, and occipital regions of the vault skull accompanied with significant exposure and loss of brain tissue. The child's scalp and face were contacted by flying glass causing minor lacerations and abrasions. Her arms and legs revealed abrasions and contusions caused when loading the CRS harness. She was removed from the vehicle by responders and declared deceased on-scene. Her medical records did not document any burn injuries.

## Second-Row Right Occupant Demographics

| | |
|---|---|
| Age/sex: | 3 years/female |
| Height: | 100 cm (39 in) |
| Weight: | 13 kg (28 lb) |
| Eyewear: | None |
| Seat type: | Bucket with folding back |
| Seat track position: | Not adjustable |
| Manual restraint usage: | CRS |
| Usage source: | Police report |
| Air bags: | None available |
| Egress from vehicle: | Removed due to age through unknown opening |
| Transport from scene: | Helicopter |
| Type of medical treatment: | Admitted two days |

## Second-Row Right Occupant Injuries

| Injury No. | Injury | Injury Severity AIS 2015 | Involved Physical Component (IPC) | IPC Confidence Level |
|---|---|---|---|---|
| 1 | Abrasion, left forehead | 110202.1 | CRS shell | Possible |
| 2 | Abrasions, bilateral shoulders and arms | 710202.1 | CRS harness | Probable |
| 3 | Abrasions, bilateral legs | 810202.1 | CRS harness | Probable |

*Source: medical records.*

## Second-Row Right Occupant Kinematics

The 3-year-old female in the second-row right position was seated in a forward-facing CRS of an unknown make/model configured with a 5-point harness and installed using LATCH. At impact, she was displaced forward, loading the harness straps that caused abrasions to the shoulders, arms, and legs. During the rollover, she was held in the CRS by the harness. Her left forehead possibly contacted the CRS shell during the rollover, causing an abrasion. She did not sustain burn injuries. She was assisted from the vehicle by passersby prior to the arrival of EMS and transported by ambulance to a hospital, where she was admitted for two days.

## Third-Row Left Occupant Demographics

| | |
|---|---|
| Age/sex: | 5 years/female |
| Height: | Unknown |
| Weight: | 17 kg (38 lb) |
| Eyewear: | Unknown |
| Seat type: | Bench |
| Seat track position: | Not adjustable |
| Manual restraint usage: | CRS |
| Usage source: | Police report |
| Air bags: | None available |
| Egress from vehicle: | Exited with assistance through unknown opening |
| Transport from scene: | Ambulance |
| Type of medical treatment: | Admitted two days |

## Third-Row Left Occupant Injuries

| Injury No. | Injury | Injury Severity AIS 2015 | Involved Physical Component (IPC) | IPC Confidence Level |
|---|---|---|---|---|
| 1 | Abrasion, left lower leg (ankle) | 810202.1 | Left side panel | Possible |

*Source: medical records.*

## Third-Row Left Occupant Kinematics

The 5-year-old female in the third-row left position was seated in a forward-facing, high-back booster safety seat and restrained by the vehicle's lap and shoulder seat belt. At impact, she was displaced forward, loading the seat belt that held her in place. During the rollover, she remained in her seated position until the vehicle came to rest. At some point during the crash, her left ankle possibly contacted the vehicle's left side panel, causing an abrasion. She did not sustain burn injuries. She was assisted from the vehicle by passersby prior to the arrival of EMS and transported by ambulance to a hospital, where she was admitted for two days.

## 1995 Ford Ranger

### Vehicle Description

The 1995 Ford Ranger was identified by the VIN 1FTCR15X2SPxxxxxx. It was a 2-door, extended cab light truck configured with a 6-cylinder, 4.0-liter gasoline engine; hydraulic brakes; and a 4-wheel drive.

### Exterior Damage

The Ranger sustained major damage at impact with the other vehicle. The cab separated from the chassis, overturned onto its right plane, and came to rest in the eastbound lane. The chassis and cargo bed departed the roadway and came to rest on the roadside. The estimated CDC for the Ranger in Event 1 was 02RYEW99, and the estimated CDC for Event 3 was 00R99O99.

### Rollover Discussion

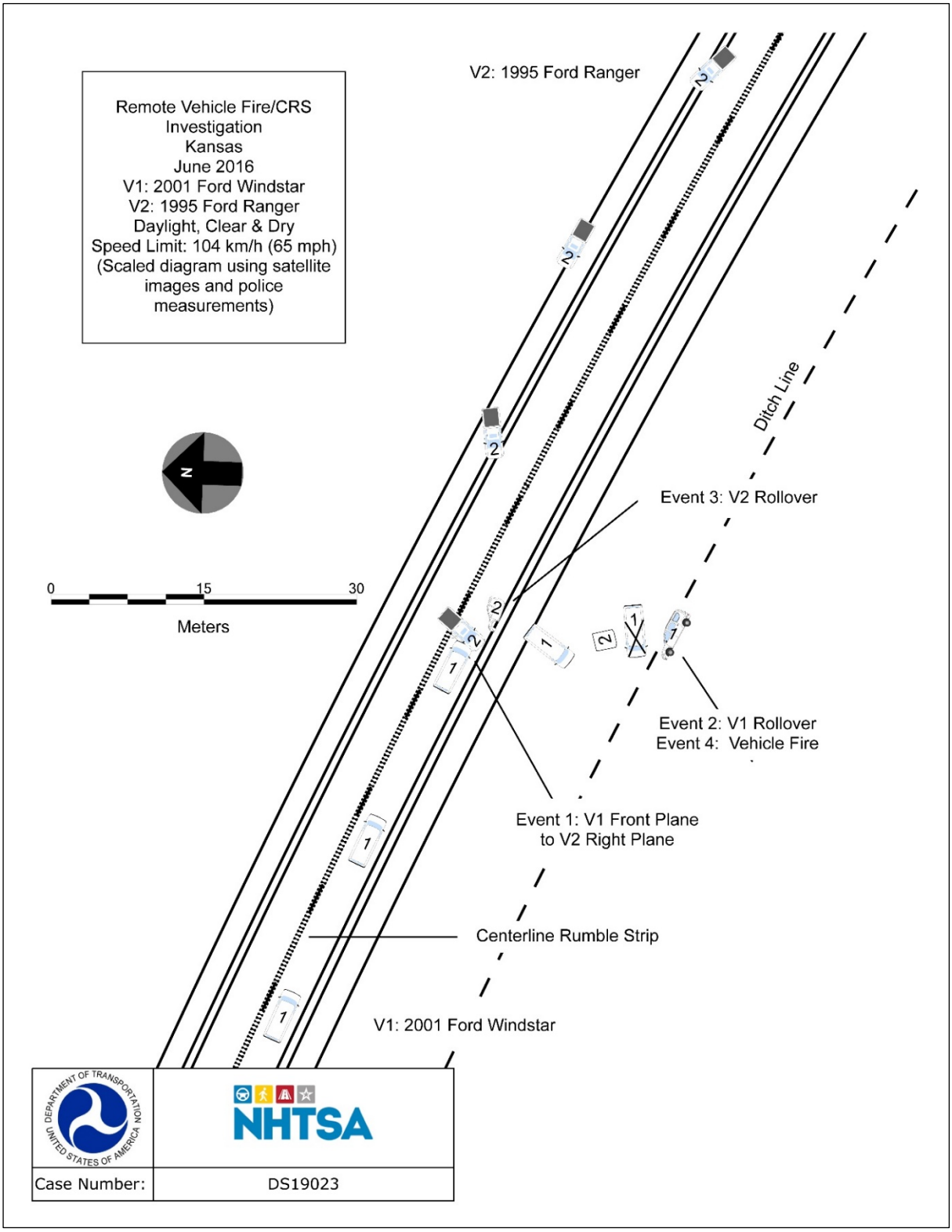
At impact with the Windstar, the Ranger's cab separated from the frame and cargo bed. The cab overturned one quarter-turn and came to rest on its right plane in the eastbound lane and shoulder (Figure 6) while the frame and bed departed the roadway on the south edge and came to rest in an upright orientation on the roadside. It was determined that the rollover was initiated by the vehicle-to-vehicle impact. The estimated rollover distance was 4 m (13 ft).

*Figure 6. The 1995 Ford Ranger cab, final rest position (police photo)*

### Occupant Data

The unbelted 56-year-old male driver was fully ejected through the passenger side window during the crash. He sustained fatal injuries of an unknown nature and was declared deceased on-scene.

# Crash Diagram



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**National Highway
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