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**Special Crash Investigations:
Remote Hyperthermia Fatality
Investigation;
Vehicle: 2016 Toyota Highlander;
Location: Virginia;
Date: June 2020**

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16. Abstract This remote investigation documents the circumstances surrounding the hyperthermia death of an 11-month-old female who was left in a 2016 Toyota Highlander by her father for approximately 4.5 hours. In the early afternoon the father placed the child in a rear-facing child restraint system (CRS) in the second-row left position of the Toyota parked at the family residence. His intent was to drive his mother (the child's grandmother) to an appointment, then drop the child off at a neighboring private daycare facility where her sibling had been dropped off earlier that day. He drove the grandmother to her appointment in the Toyota and forgot to drop the child off at daycare. The father returned to the residence and parked the Toyota. Later in the afternoon he left the residence to run some errands and pick the grandmother up from her appointment. He decided to take a different vehicle, an Acura. He picked up the grandmother and returned to his residence. Approximately 4.5 hours after placing the child in the Toyota, the father drove the Toyota to the daycare to pick up his two children. The father was under the presumption that both children were at daycare. As he entered the residential daycare, he was told by the provider that only the 5-year-old was there. He immediately returned to the Toyota to find the child unresponsive, still secured in the CRS. EMS was notified and police, fire, and emergency medical personnel were dispatched. The child was transported by ambulance to a local level 1 trauma center. Her body temperature was recorded at 42.6 °C (108.6 °F). After extensive attempts to revive her, the child was pronounced deceased. The cause of death was hyperthermia.			
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Special Crash Investigations
Remote Hyperthermia Fatality Investigation
SCI Case No. CR20021
Vehicle: 2016 Toyota Highlander
Location: Virginia
Incident Date: June 2020

Background

This remote investigation documents the circumstances surrounding the hyperthermia death of an 11-month-old female who was left in a 2016 Toyota Highlander (Figure 1) by her father for approximately 4.5 hours. In the early afternoon the father placed the child in a rear-facing child restraint system (CRS) in the second-row left position of the Toyota parked at the family residence. His intent was to drive his mother (the child's grandmother) to an appointment, then drop the child off at a neighboring private daycare facility where her 5-year-old sibling had been dropped off earlier that day. He drove the grandmother to her appointment in the Toyota and forgot to drop the child off at daycare. The father returned to the residence and parked the Toyota in his reserved parking space. Later in the afternoon he left the residence to run some errands and pick the grandmother up from her appointment. He decided to take a different vehicle (an Acura) to keep its battery charged. He picked up the grandmother and returned to his residence. Approximately 4.5 hours after placing the child in the Toyota, the father drove the Toyota to the daycare to pick up his two children. The father was under the presumption that both children were at daycare. He entered the residential daycare and was told by the provider that only the 5-year-old was there. He immediately returned to the Toyota to find the child unresponsive, still secured in the CRS. EMS was notified with police, fire, and emergency medical personnel dispatched to the daycare. The child was transported by ambulance to a local level 1 trauma center. Her body temperature was recorded at 42.6 °C (108.6 °F). After extensive attempts to revive her, the child was pronounced deceased. The cause of death was hyperthermia.



*Figure 1. Involved 2016 Toyota Highlander
(Image provided by the investigating police department.)*

This incident was identified by the National Highway Traffic Safety Administration through media coverage and assigned the Special Crash Investigations (SCI) group for additional research in June 2020. The police incident report was forwarded to the SCI team. The SCI investigator interviewed the investigating police detective regarding the circumstances of this incident and obtained the police images of the Toyota, the incident site, and the CRS.

Incident Site

The police report indicated the “incident site” was the single-family residence/daycare facility where the child was found. The hyperthermia event occurred in the parking lot of the family residence; therefore for this report, the incident site was considered to be the location of that family residence due to the length of the elapsed time the child was left unattended in the Toyota.

The hyperthermia incident took place in the parking lot of a townhouse community (Figure 2) where the child resided with her father, her 5-year-old sister, and her paternal grandmother. The grandmother was living at the residence to assist with caregiving for the children due to the recent death of their mother.

The parking lot was surfaced with asphalt and was located directly in front of a row of townhouses. The lot consisted of assigned parking spaces for the various residents. Each parking space was delineated with painted white lines and labeled “RESERVED” on the bordering concrete curb. The lot was open. At the location of the Toyota, the lot was oriented in a north/south direction with perpendicular parking. Vehicles were parked facing both east and west. The Toyota was parked in the third space from the north edge of the parking lot facing west (marked with a yellow X in Figure 2) toward the townhouses. The family residence was located approximately 15 m (50 ft) to the south of the assigned parking space. Figure 3 is a satellite image of the incident location and the parked position of the Toyota.



Figure 2. Incident site, townhouse parking lot (Image provided by the investigating police department.)



Figure 3. Satellite image of the incident location and the parked position of the Toyota identified by the yellow circle (Image date October 2020.)

Weather Data

The weather data for this incident was provided by the National Weather Service. Sunrise occurred at 0547 hours with sunset reported at 2040 hours. The high temperature for the day was 31 °C (88 °F) at 1652 hours. Weather data for the duration of this incident is provided in the following table.

Time	Temperature Degrees C (F)	Humidity	Calculated Heat Index Degrees C (F)	Wind Direction Speed km/h (mph)	Conditions
1252	29 (84)	38	28 (83)	NW (7)	Partly cloudy
1352	29 (85)	40	29 (84)	NW (14)	Mostly cloudy
1452	29 (84)	43	29 (84)	SW (9)	Mostly cloudy
1552	31 (87)	39	30 (86)	W 16 (10)	Mostly cloudy
1652	31 (88)	37	31 (87)	SW 16 (10)	Mostly cloudy
1752	31 (87)	43	31 (87)	SSW 19 (12)	Mostly cloudy
1853	29 (84)	46	29 (84)	SW 14 (9)	Mostly cloudy

Vehicle Information

The involved vehicle was a 2016 Toyota Highlander SUV (Figure 4) with the XLE trim package and was an all-wheel-drive platform with four doors and a rear lift gate. The Toyota was identified by Vehicle Identification Number: 5TDJKRFH0GSxxxxxx. Glazing consisted of an AS1 laminated windshield, AS2 operable front door windows, AS3 (deep tint) operable second-row door windows, and AS3 fixed side quarter windows and backlight. The Toyota had an operable roof window that was AS3 deep-tinted. During this event, all operable windows were closed and the interior cover for the roof window was closed. The exterior color of the Toyota was silver with a matching silver interior with leather surfaced seats and interior trim.



Figure 4. Right plane of the involved 2016 Toyota

Note: This parked location of the Toyota was at the daycare facility where the child was found.

(Image provided by the investigating police department.)

The interior of the Toyota had front-row bucket seats (Figure 5), second-row captain's chairs (Figure 6), and a three-passenger third-row seat.



*Figure 5. Front row of the Toyota Highlander
(Image provided by the investigating police
department.)*



*Figure 6. Second row of the Toyota
Highlander and the rear-facing CRS (Image
provided by the investigating police
department.)*

At the time of this incident, the third-row seat backs were folded forward to form a larger cargo space behind the second row. All seat positions had adjustable head restraints. The second-row head restraints were removed and placed in the rear cargo area prior to this event.

The Toyota had power windows and a power door-locking system operated by a key fob or with the switch cluster on the driver's door panel. All four door windows, with second-row lockout, were controlled from the driver position. A lock lever was positioned above the door release levers on all four doors. This lever, when manually rotated rearward, would unlock the specific door. These lock levers rotated to the lock and unlock positions by activation of the power lock function.

The interior door release levers were flush-mounted in pockets in the upper forward quadrants of the door panels (Figure 7). The levers were hinged at the aft aspect. In the locked mode, the doors did not open by pulling on the door lever. Additionally, the rear doors had child locks to prevent unwarranted opening of the rear doors by children. The status of this manually operated locking feature was not reported.



Figure 7. Left rear door panel documenting the door release lever, the lock lever, and the sun shade (Image provided by the investigating police department.)

The rear door windows had retractable interior sun shades. Based on the images provided by police, the sun shade for the left rear door was in the up/used position.

Child Restraint System

The 11-month old child was secured in a rear-facing CRS by the integrated 5-point harness system throughout the duration of this incident. The CRS was a Graco Snug CK 40 with a model number of 1914326 and a date of manufacture of April 7, 2014 (Figure 8). The CRS was recommended for rear-facing use only for children 1.8 to 18 kg (4 to 40 lb) and less than 89 cm (35 in) in height. The CRS consisted of a molded plastic shell with a detachable base. Eight recline positions were provided and at the time of this incident the CRS was adjusted to position 1 (Figure 9). The CRS had a 5-point integrated harness system with a chest clip and a center-mounted buckle for securing the individual harness latch plates.

The CRS had LATCH (lower anchors and tethers for children) to secure the base to the LATCH anchors in the vehicle. The shell of the CRS had a designated belt path to use when using the vehicle's 3-point seat belt system for restraint. Based on the on-scene police images, the base of the CRS was secured with the lower anchors and the vehicle's seat belt was routed through the belt path of the shell. Both belt systems appeared to be taut.



Figure 8. Graco CRS (Image provided by the investigating police department.)

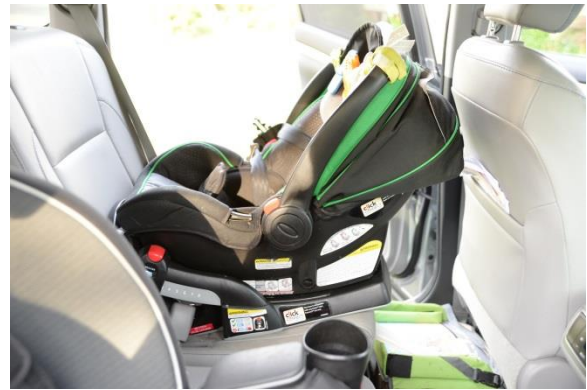


Figure 9. Reclined position of the CRS behind the driver's seat (Image provided by the investigating police department.)

Pre-Incident

On the morning of this incident, the 44-year-old father placed his 5-year-old daughter in a forward-facing CRS in the second-row right position of the Toyota and drove her to a private residence daycare located approximately 5.6 km (3.5 mi) from the residence. The average non-rush hour drive time was listed as 8 minutes. The 11-month-old child remained at the family residence under the watch of her paternal 70-year-old grandmother. Although this child attends the same day care as her older sister, she is typically dropped off in the early afternoon and picked up at the same time as her sister. The father returned to the residence and parked the Toyota in his reserved parking space in front of a row of townhouses. In this parked position, the Toyota was facing east. The parking lot was open. The conditions were reported as mostly cloudy throughout the duration of this incident.

Incident

The father returned to the residence at an unspecified time in the morning. He went downstairs to work and left the child with the grandmother to be fed. In the early afternoon, he placed the child in the rear-facing CRS in the second-row left position of the Toyota. He secured her with the integral 5-point harness system. With the doors and windows of the Toyota closed, he returned to his townhouse approximately 15 m (50ft) from the Toyota, then returned to the Toyota with the grandmother. It was his intent to drop the grandmother off for a scheduled hair appointment then transport the child to the daycare. He drove the grandmother to her appointment and dropped her off. He stated to the investigating officer that the child must have fallen asleep in the Toyota as she didn't make a noise. He returned home, forgetting to drop the child off at daycare, and parked the Toyota in his reserved parking space. He left the child in the Toyota and entered the residence. He then took the family dog for a walk then went downstairs to send some e-mails for work. The father further stated that since it was the end of the week, he decided to run some errands prior to picking the grandmother up from her appointment. He decided to drive a second family vehicle, an Acura parked in the overflow lot of the complex. He told the investigating police officer that he wanted to drive the Acura in order to keep its battery charged.

The father apparently ran several errands prior to picking up the grandmother after the appointment and then returned to the townhouse. He parked the Acura in the overflow parking area and he and the grandmother entered the townhouse. They did not pass the Toyota. The father later told the investigating police officer that in his mind he thought that he had dropped the child off at daycare in the early afternoon, as this was his normal routine.

Approximately 4.5 hours after placing the child in the Toyota, the father departed the townhouse and drove the Toyota to pick his children up from daycare. He was unaware the 11-month-old child was restrained in the CRS in the second row. The father drove to the daycare (a single-family residence) and parked the Toyota in the driveway. He walked to the side door where he asked a daycare worker the whereabouts of the child. This daycare worker told him she was "with you" and was never dropped off. It was apparent that the daycare and the father never communicated regarding the status of the 11-month-old child on this day. He immediately returned to the Toyota and found the child unresponsive in the CRS. EMS was notified and police, fire, and emergency medical personnel were dispatched to the daycare.

Post-Incident

Ambulance personnel were the first to arrive on-scene. They immediately initiated cardiopulmonary resuscitation (CPR) efforts and transported the child a local level 1 trauma center. The child's temperature was recorded at 42.6 °C (108.8 °F). CPR was maintained without response and the child was pronounced deceased less than 40 minutes later. The cause of death was hyperthermia. The body was transferred to the medical examiner's office for autopsy. Following the police investigation, no charges were filed against the father.

Caregiver/Guardian Data

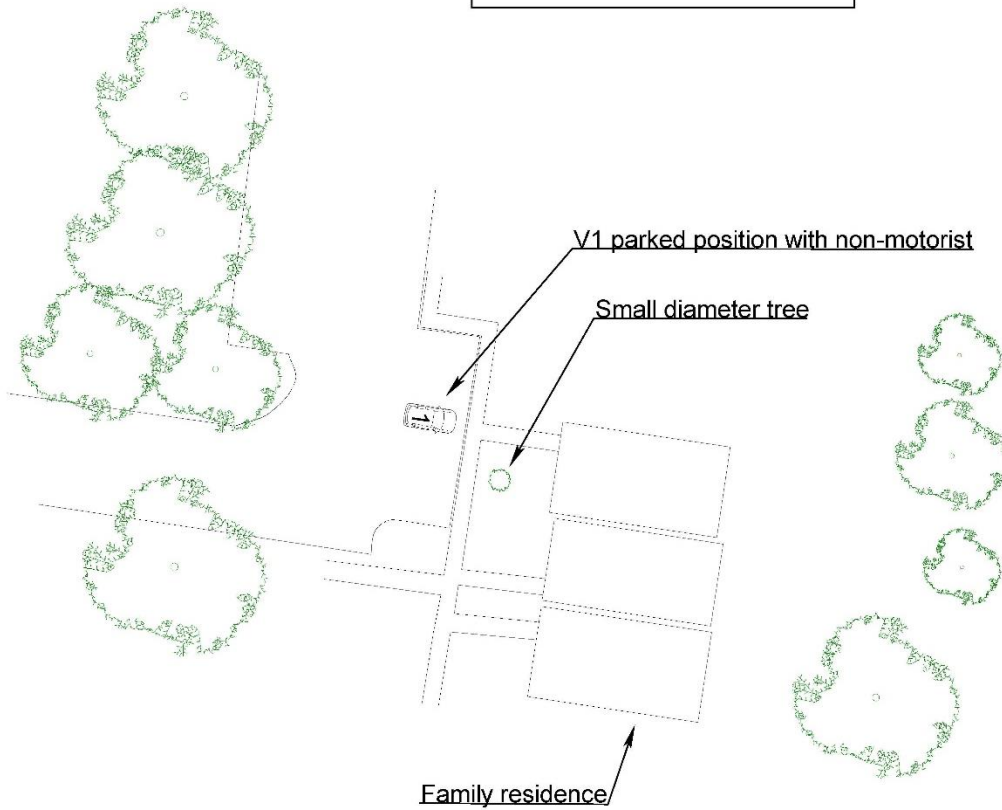
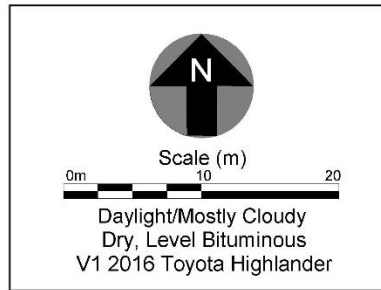
The primary caregiver was the 44-year old father of the 11-month-old child and her 5-year-old sister. His job allowed him to work remotely from his residence.

The father's 70-year-old mother (paternal grandmother to the two sisters) was living there to assist with the child care, and acted as a secondary caregiver.

Non-Motorist

Age/sex:	11-months/female
Height:	Not reported
Weight:	10 kg (22 lb)
Seat Type:	Child restraint system
Restraint Use:	Integrated 5-point harness system
Transport from scene:	Ambulance to a local level 1 trauma center
Type of medical treatment:	CPR/ventilator, pronounced deceased shortly after arrival

Incident Diagram



	
Case Number:	CR20021

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