CRASH DATA RESEARCH CENTER

Calspan Corporation Buffalo, NY 14225

NOT-IN-TRAFFIC SURVEILLANCE CALSPAN REMOTE HYPERTHERMIA INVESTIGATION

SCI CASE NO.: CA07-017

VEHICLE: 2005 HONDA PILOT

LOCATION: VIRGINIA

DATE: MARCH 2007

Contract No. DTNH22-07-C-00043

Prepared for:

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

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This remote investigation was assigned to research the facts associated with a hyperthermia death that involved a 9-month old male who was left unattended in a vehicle in a commercial parking lot.

16. Abstract

This remote investigation was assigned to research the facts associated with a hyperthermia death that involved a 9-month old male (case occupant) who was left unattended in a vehicle in a commercial parking lot. The 35-year old driver/mother of the child was distracted by a cellular telephone call and failed to drop her child off at her daycare provider prior to reporting to work. She parked the Honda Pilot EX sport utility vehicle in an open area of a paved parking lot and returned to the vehicle approximately 7.5 hours later. She removed the child from a child safety seat, performed CPR and called for assistance. Attempts to resuscitate the child were unsuccessful. The Medical Examiner reported the cause of death as hyperthermia.

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NOT-IN-TRAFFIC SURVEILLANCE CALSPAN REMOTE HYPERTHERMIA INVESTIGATION

SCI CASE NO.: CA07-017 **VEHICLE: 2005 HONDA PILOT** LOCATION: VIRGINIA DATE: MARCH 2007

Background

This remote investigation was assigned to the facts associated hyperthermia death that involved a 9-month old male (case occupant) who was left unattended in a vehicle in a commercial parking lot. The 35-year old driver/mother of the child was distracted by a cellular telephone call and failed to drop her child off at her daycare provider prior to reporting to work. She parked the Honda Pilot EX sport utility vehicle in an open area of a paved parking lot and returned to the



Figure 1. Exemplar Honda Pilot.

vehicle approximately 7.5 hours later. She removed the child from a child safety seat, performed CPR and called for assistance. Attempts to resuscitate the child were unsuccessful. The Medical Examiner reported the cause of death as hyperthermia.

This incident was identified by NHTSA through an Internet news article. The article was subsequently forwarded to the Calspan Special Crash Investigations (SCI) team for remote follow-up on April 11, 2007. The SCI team initiated telephone contact with the Police Chief and the Prosecutor's Office. Details pertaining to this incident were secured by the legal system until the completion of the jury trial in January 2008. Following the acquittal of the mother, the investigating police detective provided the details of this incident to the SCI team. This hyperthermia death was reported as an Incident to the State Incident Based Reporting System.

Summary

Incident Site

This incident occurred in a parking lot of a commercial building during clear and dry conditions. The lot was surfaced with asphalt and delineated with painted parking spaces. The sky was clear and the pavement was dry. In the area where the Honda was parked, the lot was open to full sun with several trees offering partial early morning shade. The investigating officer noted that the driver pulled forward into the parking space and parked the Pilot in an area of sparse pedestrian traffic.

Vehicle Data

The involved vehicle in this case was a 2005 Honda Pilot EX, four door sport utility vehicle. The Honda was equipped with eight-passenger seating with three rows of seats in a 2-3-3 configuration. Figure 2 is an interior view of the driver's position in of exemplar Honda Pilot. The Honda Pilot EX was black in color with a beige leather interior. The Pilot was identified by Vehicle Identification Number (VIN) 5FNYF18695B (production number deleted). The Pilot was equipped with deep tinted privacy glass at the rear doors, quarter windows, and backlight glazing. The police stated that the vehicle was not equipped with a sunroof. The door windows were power activated and all windows were reported as closed by the investigating officer for the duration of this incident.



Figure 2. View of the driver's position and interior configuration in an exemplar vehicle.

Driver Data

The driver of the Honda and mother of the 9-month-old male was 35-years of age. She was employed full-time and used the Honda Pilot as her means of transportation to work. The mother held the responsibility of transporting her son to day care on her morning drive to work.

Case Occupant

The case occupant was a 9-month old male with a medical examiner reported height of 74.5 cm (29") and a weight of 11 kg (25 lb). The infant was dressed in a diaper, a one-zee style T-shirt that snapped in the front, bib overalls, white socks, and a hooded sweatshirt. It is unknown if the hood was up over his head or if the sweatshirt was zipped while he was in the vehicle. The infant was presumably restrained in a rear-facing infant seat in the rear left position of the vehicle.

Pre-Incident

The case occupant's parents had recently purchased a convertible child safety seat and installed the seat in a rear-facing position in the rear right seat of the Honda Pilot. The parents were not comfortable with the fit and installation of this CSS and elected to reinstall the rear-facing infant seat in the rear left position of the vehicle. The convertible seat remained in the rear right position the day of the incident.

On the morning of this incident, the case occupant's father reinstalled the rear-facing infant seat in the rear left position of the Pilot. The case occupant was placed in the CSS in the rear left position and presumably secured in the seat with the integral harness system. **Figure 3** is a view of the second row seat in an exemplar Honda Pilot. The parents entered the Honda Pilot with the mother driving. On this morning, the father required a ride to work, as he had loaned his vehicle to a family member following a traffic



Figure 3. Second row seat configuration of an exemplar Honda Pilot.

crash. This task added approximately five minutes to the driver's normal commute to work that involved a stop at the babysitter's residence.

They departed their residence at approximately 0747 hours. During the commute, the driver became engaged in an emotional cellular telephone conversation with a family member that was 29 minutes in length. She dropped her husband off at work and continued her commute. She drove past the subdivision where her daycare provider lived and continued to her office location, arriving at approximately 0823 hours. She arrived past her normal start time and was one of the last employees to arrive at work that morning.

Incident

The driver parked the Honda Pilot in the parking lot with the front of the vehicle facing in a westerly direction. All the windows were closed as she exited the Honda and proceeded to her office. The vehicle was parked in an area of minimal pedestrian traffic. Traffic noise from an adjacent roadway was present within the area of the parked Honda.

The investigating officer noted that the parking lot was surfaced with asphalt and that the Honda Pilot was positioned in an area of full sun. He further noted that several trees could have shaded the vehicle during the early minutes of its parked position.

The National Weather Service reported a temperature of approximately 5 degrees C (41 degrees F) approximately 30 minutes following her arrival at work. The temperature rose steadily during the day to 13 degrees C (55 degrees F) at the noon hour to a high of 19 degrees C (66 degrees F) at 1643 hours.

While at work, the mother of the case occupant became heavily involved in several tasks that required her full attention. The babysitter called the mother at 0942 hours and left a message on her personnel cell phone inquiring about the status of the non-motorist. The mother did not retrieve the message until 1500 hours. The mother returned the call and left a message for the sitter. They did not directly speak to one another until 1558 hours. At that point, the mother ran to the car and found her 9-month old son unresponsive in the rear facing child safety seat. The total time the child was left unattended in the closed vehicle was approximately 7 hours and 37 minutes. It should be noted that the National Weather Service reported temperature at 1553 hours was 18 degrees C (64.9 degrees F)

The mother removed the child from the CSS and initiated CPR activities as she screamed for assistance. Police and emergency medical personnel responded to the scene. The investigating officer observed the child with the sweat shirt open and the hood down behind his neck. He could not conclude if the child was secured in the CSS for the duration of the day. The child was pronounced deceased at the scene. His body was transported to a local hospital where his core temperature was recorded at 43 degrees C (110 degrees F).

An autopsy was performed. The Medical Examiner concluded that the body suffered from marked dehydration and the cause of death was hyperthermia.

Post-Incident

During the course of the police investigation, the interior temperature of the Honda Pilot was measured at two different intervals. At 1711 hours, approximately 1 hour and 10 minutes after the child was removed from the vehicle, the interior temperature measured 28 degrees C (82.5 degrees F). With the vehicle closed, the temperature was again measured at 1741 hours at 37 degrees C (98.1 degrees F). The ambient outside temperature at this time was reported at 19 degrees C (66 degrees F).

SCENE FORM

Special Crash Investigations Not In Traffic Surveillance

Unknown = 999 Reference Items 11,12, 13, 14, 15

1 Casa Number	SCENE INFORMATION
Case Number	7. Type of area in which crash occurred
	(Select all that apply) O Single family residential
IDENTIFICATION	O Row houses/townhouses
	O Multi family housing O Commercial
2. Date of Crash //	O Industrial O Rural
	O Unknown
3. Time of Crash	Driver exterior sightline obstructions
Code reported military time of crash.	(Select all that apply)
NOTE: Midnight = 2400	O None O Utility poles
Unknown = 9999	O Other vehicles O Signs O Building O Glare
AMBIENT CONDITIONS	O Trees O Unknown O Shrubbery O No driver present
	O Other (specify)
4. Light Conditions	9. Crash location
O Daylight O Dark	O Driveway O Road / street
O Dark but lighted O Dawn	O Parking Lot O Roadside / shoulder
O Dusk	O Alley O Unknown
O Unknown	O Intersection of driveway and sidewalk
Atmospheric Conditions (Select all that apply)	10. Non motorist sightline obstructions (Select all that apply)
O Clear-No adverse conditions	O None
O Cloudy O Rain	O Other vehicles O Building
O Snow	O Trees
O Fog, Smog, SmokeO Sleet, Hail (freezing rain or drizzle)	O Shrubbery O Utility poles
O Blowing Snow O Severe Crosswinds	O Signs O Glare
O Blowing Sand, Soil, Dirt O Other (specify):	O Other (specify)
O Unknown	+/-
6. Temperature	11. Grade at parked position %
O Below 0 degrees Celsius (Below 32 F)	12. Estimated distance from parked position to impact
O 1-10 degrees Celsius (33-50 F) O >10-24 degrees Celsius (51-75 F)	m
O Over 24 degrees Celsius (Over 75 F) O Unknown	13. Estimated speed at impact kmph
Olimiowii	+/ - 14. Grade at impact %
	Estimated distance from impact to vehicle final rest
	m
	1

VEHICLE FORM

Special Crash Investigations Not In Traffic Surveillance

1. Case Number					
		VEHICLE IDEN	ITIFICATION		
2. VIN					
3. Model Ye	ear				
4. Vehicle N	Make (specify	y):			_
5. Vehicle N	Model (specif	fy):		· · · · · · · · · · · · · · · · · · ·	_
		GLAZ	ING		
Location	Presence (check)	Status (select)	Clarity (select)	Tint (check)	Glazing Obstructions (specify if present)
Windshield		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
LF		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
RF		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
2 nd Left		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
2 nd Right		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
3 rd Left		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
3 rd Right		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Backlight		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Left Backlight		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Right Backlight		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Roof		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Other (specify)		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
		TIRE D	АТА		
6. Vehicle	Manufactu	urer Recommended Tire Size _			
7. LF Tire	Size	9.	RF Tire Size		
8. LR Tire Size 10. RR Tire Size					

		Seats /		
Seat Position	Seat Type (Select from below)	Head Restraint (Check if available)	Head Restraint Adjustment (select)	NOTES:
Front Left			Full Down / Mid / Full Up	
Front Middle			Full Down / Mid / Full Up	
Front Right			Full Down / Mid / Full Up	
2 nd Left			Full Down / Mid / Full Up	
2 nd Middle			Full Down / Mid / Full Up	
2 nd Right			Full Down / Mid / Full Up	
3 rd Left			Full Down / Mid / Full Up	
3 rd Middle			Full Down / Mid / Full Up	
3 rd Right			Full Down / Mid / Full Up	

Seat Type codes:

0 = No seat or seat folded down

1 = Bucket

2 = Bucket w/ folding back

3 = Bench

4 = Bench with folding back cushions

5 = Bench w/ folding back

6 = Split bench w/ separate back cushions

7 = Split bench w/ separate folding back

8 = Pedestal (i.e. column supported)

9 = Box mounted (i.e. van type)

10= Other seat type (specify)

99= Unknown seat type

VEHICLE MEASUREMENTS				
Clearance Heights	Measurements (all from ground, and in centimeters	NOTES		
Beltline				
Top of trunk/tailgate				
Bottom of bumper				
Trailer hitch (if applicable)				
Undercarriage				
Sway bar				
Axle				
Differential				
Other (specify):				
Sensor Height (if equipped)				
Camera Height (if equipped)				

Rev September/2007

Back Up / Parking Aid Form

Special Crash Investigations Not In Traffic Surveillance

Case Number	Video image quality under scene lighting conditions
PARKING AID PRESENCE 2. Type of backing/parking aid present O OEM camera O OEM ultrasonic/radar sensor O OEM combination camera-ultrasonic/radar sensor O OEM Fresnel lens O OEM interior mirrors O Aftermarket camera O Aftermarket ultrasonic/radar sensor O Aftermarket combination camera-ultrasonic radar sensor O Aftermarket Fresnel lens O Aftermarket interior mirrors	O None present O Good O Average O Poor (specify): O Unknown 8. Was the camera functioning properly O None present O Yes O No, poor image quality due to glare O No, poor image quality due to atmospheric conditions O No, camera turned off O No, camera inoperable O Unknown
O Other (specify):	ULTRASONIC/RADAR SENSOR Specify object detection range on diagram
CAMERA INFORMATION	System make/model
Specify field of view measurements on diagram	
3. System make/model 4. Video monitor type O None present O LCD (color) O CRT (black & white) O Unknown 5. Video display size cm (Diagonal) 6. Camera location O None present O Bumper O License plate O Tailnate/Hatch/Trunk	10. Auditory warning illumination O No sensor present O Yes O No O Unknown 11. Number of sensors 12. Sensor locations (Select all that apply) O No sensor present O Left bumper O Center bumper O Right bumper O License plate area O Tailgate/Hatch/Trunk
O Tailgate/Hatch/Trunk O Other (specify):	13. Was warning system functioning properly O No sensor present O Yes, system alerted driver O No, system did not alert driver O No, system turned off O No, system inoperable O Unknown

Spe	ecial Crash Investigations – Not In Traffic Surveill	ance:	Ва	ck Up	/ Park	ing Ai	d For	m	Pa	ige 2
14.	Did driver react to warning									
	O No sensor present O Yes O No O Unknown									
15.	Did driver report common false warnings									
	O No sensor present O Yes O No O Unknown									

Rev September/2007

DRIVER FORM

1. Case Number	10. Driver entry interruption (Select all that apply)
<u> </u>	O Direct trip from building to vehicle
DRIVER PROFILE	O Loaded items into vehicle O Spoke with family
2. Driver's Age 99 = Unknown	O Spoke with neighbors O Spoke with contacted nonmotorist
3. Driver's Sex O Male O Female O Unknown	O Return trip (backing into driveway/lot) O Other (specify): O N/A Unknown
4. Driver's Height cm 999 = Unknown	Purpose of backing Leaving parking space in parking lot
5. Driver's Weight kg 999 = Unknown	O Backing onto roadway from driveway O Entering parking space in parking lot O Backing into driveway from roadway
6. Driver eyewear worn (Select all that apply) O None O Eyeglasses O Sunglasses O Contacts	O Other (specify): O N/A Unknown 12. Where was driver going Description:
O Unknown 7. Driver vision deficiency condition	
(Select all that apply) O None O Near sighted	13. Driver in a hurry
O Far sighted O Astigmatism O Other (specify) O Unknown	O Yes N/A O No Unknown O Unknown
Non motorist's relationship to driver O No relationship O Child	14. How did driver check behind (rear area of vehicle) after vehicle entry (Select all that apply)
O Grandchild O Sibling	O Did not look O Checked mirrors
O Neighbor O Friend O Other (specify):	O Turned right and looked back O Turned left and looked back Viewed Camera
O Unknown DRIVER ACTIONS	Listened for auditory/visual warning from system
Driver approach to vehicle for entry From left front	O Other (specify): N/A Unknown
O From left O From left rear O From right rear O From right front O Circled vehicle	Estimated time between vehicle entry and start of backing
O Return trip (backing into driveway/lot) O Other (specify): O N/A O Unknown	O 0-10 Seconds O 11-30 Seconds O 31-60 Seconds Unknown

16.	What direction was the driver looking during backing maneuver	19.	Did driver see struck non motorist prior to impact (Select all that apply)
	(Select all that apply) O Straight ahead O Right O Left O Rearward		O No, never saw non motorist O Saw non motorist prior to entering vehicle O Saw non motorist after entering vehicle O Other (specify): Unknown
	O At object inside the car O At mirrors	20.	Est time between start of backing and impact
17.	O Other (specify):O N/A Unknown Was the driver distracted during back up maneuver (Select all that apply)		O <2 or = 1 second O 2-5 seconds O 6-10 seconds O > 10 seconds O N/A Unknown
	O No non-driving activities External	21.	Driver interior sightline obstructions (Select all that apply)
	O Looking at other vehicles O Looking at other non motorist O Looking at intended turn destination O External focus, not specified		O Pillar O Other occupant O Headrest O Other (specify) O Cargo O Unknown None
	O Other external focus (specify): Internal	22.	Recent experience driving this vehicle
	 O Looking at other occupant O Talking to passenger O Dialing phone O Talking on phone O Listening to radio/cd/portable playback device O Adjusting radio/cd player O Adjusting climate controls O Using a device/controls integral to vehicle 	23.	O More than 10 times the last three months O 6-10 times the last three months O 2-5 times the last three months O Less than 2 times the last three months O First time driving this vehicle O N/A Unknown Frequency of driving in this parking lot/driveway
	(specify): O Reading/adjusting navigation system O Eating or drinking O Smoking related O Retrieving fallen object (specify): O Internal focus, not specified O Focused on other internal object		O Daily O Weekly O Several times a month O Monthly O Rarely O First time in lot/driveway O N/A Unknown
	(specify): O N/A Unknown	24.	Driver Impairment (Select all that apply)
18.	Driver avoidance actions prior to impact (Select all that apply) O None O Braking		O No drugs or alcohol present O Alcohol present (specify BAC): O Drugs present (specify): O Unknown
	O Steering left O Steering right	25.	Source of alcohol/drug results
	O Accelerating O Other (specify): O N/A Unknown		O Police reported O Medical record O Other (specify) O Not Tested

Non Motorist Form

Special Crash Investigations Not In Traffic Surveillance

1.	Case Number		11. Non-motorist motion
2		nths	 O Not moving O Walking slowly O Walking rapidly O Running or jogging O Skipping/Hopping/Jumping
	99 = Unknown Non-motorist's Sex O Male	ars	O Falling/Stumbling/Rising O On skates/skateboard O On bike/scooter
	O Female O Unknown		O Other (specify): O Unknown
4.	Non-motorist's Height cm 999 = Unknown		12. Non-motorist approach relative to rear of vehicleO Stationary
5.	Non-motorist's Weight kg 999 = Unknown		O From left O From right
6.	Medical outcome		O From behind O Other (specify): O Unknown
	O Not injured O ER only O Hospitalized 1-4 days		13. Non-motorist first avoidance action
	O Hospitalized 5 days or more O Treatment later O Fatal		O No avoidance actionsO StoppedO Accelerated pace
7.	O Unknown Source of most severe injury		O Ran away (along vehicle path) O Jumped O Turned away from vehicle
	Bumper O Tire O Undercarriage O Other Specify:		O Turned toward vehicle and braced O Dove or fell away from vehicle O Other (specify): O Unknown
	O Ground O N/A Unknown		14. Non-motorist primary focus of attention
8.	Non-motorist impairment (Select all that apply) O No drugs or alcohol present		O Striking vehicle O Play object O Person
	O Positive for alcohol (specify BAC):O Positive for drugs (specify):		O Surrounding traffic O Animal
9.	O Unknown Source of alcohol/drug results		O Handheld electronic (phone, MP3 player, etc.) O Other Object (specify) O Unknown
	Police reported Medical Report O Other (specify)		15. Were any other Non-motorists present? (Select all that apply)
	O Not Tested O Unknown if tested		O Alone
	NON-MOTORIST ACTIONS		O One adult present O One other child present O Multiple adults present
10	Non-motorist attitude		O Multiple addits present O Multiple children present O Unknown
	O Standing O Bending at waist O Sitting O Crouching O Kneeling O On skates/skateboard O On bike/scooter O Other (specify) O Unknown		

NON MOTORIST CLOTHING

NOTES:

White

• Specify Color, Fabric and Texture/Weight for outermost layer only

Other (specify)

- Indicate "NONE" if applicable
- Available codes:

<u>Colors</u>		<u>Fabrics</u>	<u>Textures</u>	<u>Weights</u>
Black	Charcoal gray	Natural	Soft	Heavy
Lt gray/silver	Brown	Synthetic	Slick	Medium
Gold/tan	Purple	Blend	Coarse	Light
Dark blue	Light blue			_
Dark green	Light green			
Maroon	Red			
Orange	Yellow			

	Clothing	Color	Fabric	Texture	Weight
H E A D W E A R	Hat				
	Helmet				
	Hood				
	Other (specify):				
U P P E R B O D	Short Sleeve				
	Long Sleeve				
	Light Jacket				
	Heavy Jacket				
	Other (Specify):				
Y					
L O W E R B	Shorts				
	Pants				
	Shoes				
	Other (specify):				
D Y					