

CRASH DATA RESEARCH CENTER

Calspan Corporation
Buffalo, NY 14225

NOT-IN-TRAFFIC SURVEILLANCE

CALSPAN REMOTE HYPERTHERMIA INVESTIGATION

SCI CASE NO.: CA07-027

VEHICLE: 2005 BUICK RENDEZVOUS

LOCATION: NEW YORK

DATE: AUGUST 2007

Contract No. DTNH22-07-C-00043

Prepared for:

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Washington, D.C. 20590

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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.

TECHNICAL REPORT STANDARD TITLE PAGE

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|---|---|---|-------------------------|
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**NOT-IN-TRAFFIC SURVEILLANCE
CALSPAN REMOTE HYPERTHERMIA INVESTIGATION
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LOCATION: NEW YORK
DATE: AUGUST 2007**

BACKGROUND

This remote investigation focused on the events surrounding the hyperthermia death of a 5-month old male who was left in a closed vehicle for a nine-hour period during daytime summer hours. The child's mother forgot to drop the child off at a daycare facility while en route to her place of employment. She returned to the vehicle at the end of her work-shift and found the infant still restrained in the Child Safety Seat (CSS). A co-worker certified as an Emergency Medical Technician (EMT) responded to the mother's screams and found the child without vital signs. He was pronounced deceased at the scene.

The Calspan Special Crash Investigations (SCI) team identified this incident through the local media. The notification was forwarded to NHTSA's Crash Investigation Division on Friday, August 3, 2007 and the case was assigned for remote follow-up. Limited cooperation was obtained from the local police department who investigated this hyperthermia fatality as a crime. The County District Attorney evaluated the case and decided not to file criminal charges against the mother. The crime report was retained at the police headquarters and was not reported to the state crash database. The Not-In-Traffic Surveillance data forms are attached to this Final Report.

SUMMARY

Location

This hyperthermia death occurred in a large open asphalt-surfaced parking lot that was delineated with painted parking spaces that emptied into parking isles. The lot was exposed to full sun throughout the day. The temperature reached a daytime high of 32 degrees C (90 degrees F). The driver parked the vehicle in the lot in an unknown orientation relative to north. The vehicle remained in its parked position for a nine-hour period throughout the driver's work day.

Vehicle Data

The involved vehicle was a 2005 Buick Rendezvous, four-door sport utility vehicle (**Figure 1**). The Buick's exterior color was two-tone beige. The vehicle was equipped with an AS1 windshield, AS2 front door glazing, and deep tint AS3 glazing for the rear doors, quarter windows, and backlight. The vehicle was not equipped with a sunroof. The interior color and configuration was not reported. The police reported that the front and rear door windows were fully closed throughout the duration of this event. There were no aftermarket window shades installed in the vehicle.

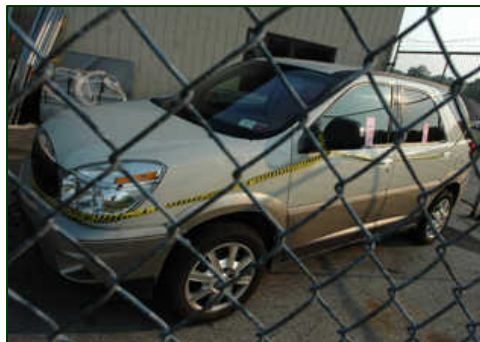


Figure 1. Involved Buick Rendezvous.

Non-Motorist

The non-motorist in this case was the driver's 5-month old son. He was dressed in shorts and a T-shirt of unknown color and fabric. He was restrained in a rear-facing child safety seat in the rear left position of the vehicle and was left in this position for the nine-hour period. The child was discovered by the driver as she returned to the vehicle at the conclusion of her work shift. He was unresponsive and was pronounced deceased at the scene.

Summary of Events

This incident occurred during the daytime hours in August 2007. The child's 32-year old mother was en route to her place of employment to start her assigned work shift at 0800 hours. Her daily commute to work involved an approximate 24 km (15 mile) drive on rural non-congested roads. She was driving the family's 2005 Buick Rendezvous with her 5-month old son restrained in a child safety seat in the second row left position.

While en route to work, the mother forgot to drop the child off at a daycare facility and continued to her place of employment. She parked the vehicle in the center area of a large asphalt surfaced parking lot and exited the vehicle. All windows were closed and the doors were locked. The mother walked to the building where she remained for the duration of her work shift, a period of nine hours. The ambient temperatures reached the 32 degree C range (90 degree F) as the vehicle was parked in full-sun.

A spokesperson for the daycare facility stated to the media that the facility planned on calling the mother later in the morning to verify the child's absent status for the day. However, the employee became distracted by another task and never made the call.

As the mother exited her place of employment and proceeded to her vehicle, she opened the driver's door and observed her child restrained in the CSS. She immediately screamed and yelled for assistance. A fellow employee with EMT certification responded to the mother's cries for help and evaluated the child. He was unable to detect any vital signs. Police and emergency personnel were called to the scene. The child was evaluated at the scene and he was determined to be deceased.

The Buick was towed from the scene and was impounded by the District Attorney (DA) as he evaluated the case to determine if criminal charges should be filed against the mother. During this evaluation period, the police would not provide specific information regarding this case and the official investigation. The DA subsequently ruled that no charges would be filed against the mother. The vehicle was returned to the family following the DA's announcement.



1. Case Number

IDENTIFICATION

2. Date of Crash ____ / ____ / ____

3. Time of Crash _____

Code reported military time of crash.

NOTE: Midnight = 2400
Unknown = 9999

AMBIENT CONDITIONS

4. Light Conditions

- Daylight
- Dark
- Dark but lighted
- Dawn
- Dusk
- Unknown

5. Atmospheric Conditions
(Select all that apply)

- Clear-No adverse conditions
- Cloudy
- Rain
- Snow
- Fog, Smog, Smoke
- Sleet, Hail (freezing rain or drizzle)
- Blowing Snow
- Severe Crosswinds
- Blowing Sand, Soil, Dirt
- Other (specify):
- Unknown

6. Temperature

- Below 0 degrees Celsius (Below 32 F)
- 1-10 degrees Celsius (33-50 F)
- >10-24 degrees Celsius (51-75 F)
- Over 24 degrees Celsius (Over 75 F)
- Unknown

SCENE INFORMATION

7. Type of area in which crash occurred
(Select all that apply)

- Single family residential
- Row houses/townhouses
- Multi family housing
- Commercial
- Industrial
- Rural
- Unknown

8. Driver exterior sightline obstructions
(Select all that apply)

- None
- Other vehicles
- Building
- Trees
- Shrubby
- Other (specify) _____
- Utility poles
- Signs
- Glare
- Unknown
- No driver present

9. Crash location

- Driveway
- Parking Lot
- Sidewalk
- Alley
- Intersection of driveway and sidewalk
- Road / street
- Roadside / shoulder
- Other (specify) _____
- Unknown

10. Non motorist sightline obstructions
(Select all that apply)

- None
- Other vehicles
- Building
- Trees
- Shrubby
- Utility poles
- Signs
- Glare
- Other (specify) _____
- Unknown

11. Grade at parked position _____ +/- %

12. Estimated distance from parked position to impact

_____ m

13. Estimated speed at impact _____ +/- kmph

14. Grade at impact _____ +/- %

15. Estimated distance from impact to vehicle final rest

_____ m

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



1. Case Number _____

VEHICLE IDENTIFICATION

2. VIN _____

3. Model Year _____

4. Vehicle Make (specify): _____

5. Vehicle Model (specify): _____

GLAZING

| 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 DATA

6. Vehicle Manufacturer Recommended Tire Size _____

7. LF Tire Size _____

9. RF Tire Size _____

8. LR Tire Size _____

10. RR Tire Size _____

Seats / Head Restraint Data

| 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 | 8 = Pedestal (i.e. column supported) |
| 1 = Bucket | 9 = Box mounted (i.e. van type) |
| 2 = Bucket w/ folding back | 10= Other seat type (specify) |
| 3 = Bench | 99= Unknown seat type |
| 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 | |

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) | | |



1. Case Number

PARKING AID PRESENCE

2. Type of backing/parking aid present

- OEM camera
- OEM ultrasonic/radar sensor
- OEM combination camera-ultrasonic/radar sensor
- OEM Fresnel lens
- OEM interior mirrors
- Aftermarket camera
- Aftermarket ultrasonic/radar sensor
- Aftermarket combination camera-ultrasonic radar sensor
- Aftermarket Fresnel lens
- Aftermarket interior mirrors
- Other (specify): _____

CAMERA INFORMATION

Specify field of view measurements on diagram

3. System make/model

4. Video monitor type

- None present
- LCD (color)
- CRT (black & white)
- Unknown

5. Video display size _____ cm
(Diagonal)

6. Camera location

- None present
- Bumper
- License plate
- Tailgate/Hatch/Trunk
- Other (specify): _____

7. Video image quality under scene lighting conditions

- None present
- Good
- Average
- Poor (specify): _____
- Unknown

8. Was the camera functioning properly

- None present
- Yes
- No, poor image quality due to glare
- No, poor image quality due to atmospheric conditions
- No, camera turned off
- No, camera inoperable
- Unknown

ULTRASONIC/RADAR SENSOR

Specify object detection range on diagram

9. System make/model

10. Auditory warning illumination

- No sensor present
- Yes
- No
- Unknown

11. Number of sensors _____

12. Sensor locations
(Select all that apply)

- No sensor present
- Left bumper
- Center bumper
- Right bumper
- License plate area
- Tailgate/Hatch/Trunk

13. Was warning system functioning properly

- No sensor present
- Yes, system alerted driver
- No, system did not alert driver
- No, system turned off
- No, system inoperable
- Unknown

14. Did driver react to warning

- No sensor present
- Yes
- No
- Unknown

15. Did driver report common false warnings

- No sensor present
- Yes
- No
- Unknown



DRIVER FORM

1. Case Number

DRIVER PROFILE

2. Driver's Age

99 = Unknown

3. Driver's Sex

- Male
- Female
- Unknown

4. Driver's Height

999 = Unknown

_____ cm

5. Driver's Weight

999 = Unknown

_____ kg

6. Driver eyewear worn

(Select all that apply)

- None
- Eyeglasses
- Sunglasses
- Contacts
- Unknown

7. Driver vision deficiency condition

(Select all that apply)

- None
- Near sighted
- Far sighted
- Astigmatism
- Other (specify): _____
- Unknown

8. Non motorist's relationship to driver

- No relationship
- Child
- Grandchild
- Sibling
- Neighbor
- Friend
- Other (specify): _____
- Unknown

DRIVER ACTIONS

9. Driver approach to vehicle for entry

- From left front
- From left
- From left rear
- From right rear
- From right front
- Circled vehicle
- Return trip (backing into driveway/lot)
- Other (specify): _____
- N/A
- Unknown

10. Driver entry interruption
(Select all that apply)

- Direct trip from building to vehicle
- Loaded items into vehicle
- Spoke with family
- Spoke with neighbors
- Spoke with contacted nonmotorist
- Return trip (backing into driveway/lot)
- Other (specify): _____
- N/A
- Unknown

11. Purpose of backing

- Leaving parking space in parking lot
- Backing onto roadway from driveway
- Entering parking space in parking lot
- Backing into driveway from roadway
- Other (specify): _____
- N/A
- Unknown

12. Where was driver going

Description:

13. Driver in a hurry

- Yes N/A
- No Unknown
- Unknown

14. How did driver check behind (rear area of vehicle) after vehicle entry

(Select all that apply)

- Did not look
- Checked mirrors
- Turned right and looked back
- Turned left and looked back
- Viewed Camera
- Listened for auditory/visual warning from system
- Other (specify): _____
- N/A Unknown

15. Estimated time between vehicle entry and start of backing

- 0-10 Seconds Over 60 Seconds
- 11-30 Seconds N/A
- 31-60 Seconds Unknown

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



Non Motorist Form

1. Case Number

NON-MOTORIST PROFILE

2. Non-motorist's Age _____ Months
_____ Years
99 = Unknown

3. Non-motorist's Sex
 Male
 Female
 Unknown

4. Non-motorist's Height _____ cm
999 = Unknown

5. Non-motorist's Weight _____ kg
999 = Unknown

6. Medical outcome
 Not injured
 ER only
 Hospitalized 1-4 days
 Hospitalized 5 days or more
 Treatment later
 Fatal
 Unknown

7. Source of most severe injury
 Bumper
 Tire
 Undercarriage
 Other Specify: _____
 Ground
 N/A
 Unknown

8. Non-motorist impairment
(Select all that apply)
 No drugs or alcohol present
 Positive for alcohol (specify BAC): _____
 Positive for drugs (specify): _____
 Unknown

9. Source of alcohol/drug results
 Police reported
 Medical Report
 Other (specify) _____
 Not Tested
 Unknown if tested

NON-MOTORIST ACTIONS

10. Non-motorist attitude
 Standing
 Bending at waist
 Sitting
 Crouching
 Kneeling
 On skates/skateboard
 On bike/scooter
 Other (specify) _____
 Unknown

11. Non-motorist motion
 Not moving
 Walking slowly
 Walking rapidly
 Running or jogging
 Skipping/Hopping/Jumping
 Falling/Stumbling/Rising
 On skates/skateboard
 On bike/scooter
 Other (specify): _____
 Unknown

12. Non-motorist approach relative to rear of vehicle
 Stationary
 From left
 From right
 From behind
 Other (specify): _____
 Unknown

13. Non-motorist first avoidance action
 No avoidance actions
 Stopped
 Accelerated pace
 Ran away (along vehicle path)
 Jumped
 Turned away from vehicle
 Turned toward vehicle and braced
 Dove or fell away from vehicle
 Other (specify): _____
 Unknown

14. Non-motorist primary focus of attention
 Striking vehicle
 Play object
 Person
 Surrounding traffic
 Animal
 Handheld electronic (phone, MP3 player, etc.)
 Other Object (specify) _____
 Unknown

15. Were any other Non-motorists present?
(Select all that apply)
 Alone
 One adult present
 One other child present
 Multiple adults present
 Multiple children present
 Unknown

NON MOTORIST CLOTHING

NOTES:

- Specify Color, Fabric and Texture/Weight for outermost layer only
- 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 | | | | | | |
| White | Other (specify) | | | | | | |

| | 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 Y | Short Sleeve | | | | |
| | Long Sleeve | | | | |
| | Light Jacket | | | | |
| | Heavy Jacket | | | | |
| | Other (Specify): _____ | | | | |
| | | | | | |
| L O W E R B O D Y | Shorts | | | | |
| | Pants | | | | |
| | Shoes | | | | |
| | Other (specify): _____ | | | | |
| | | | | | |