

NON-CRASH CHILD DEATH AND INJURY DATA FORUM

U.S. DOT Headquarters
Washington, DC
November 14, 2011



T.R.U.N.C.

KidsAndCars.org



Where was our baby boy?

October 17, 2000

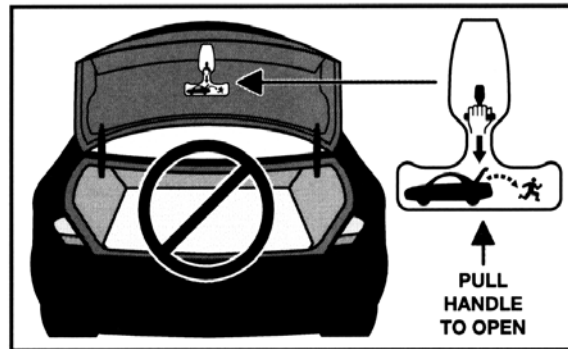
**U.S. Transportation Secretary
Slater announces standard that
requires all cars with trunks to
have an internal trunk release.**

**Requirement effective
September 1, 2001**

Present

Currently there are many ways to get into a car trunk:

- *trunk key
- *lever inside passenger compartment
- *fold down back seats
- *remote key FOBS



Teach children not to play in vehicles. Keep keys out of a child's reach and keep doors and trunks locked – they could lock themselves in. Interior and trunk temperatures rise very quickly on hot days – even a short exposure to high temperatures can cause heat-related injuries, including brain damage and death. Familiarize yourself with the interior trunk release.*

SUCCESS

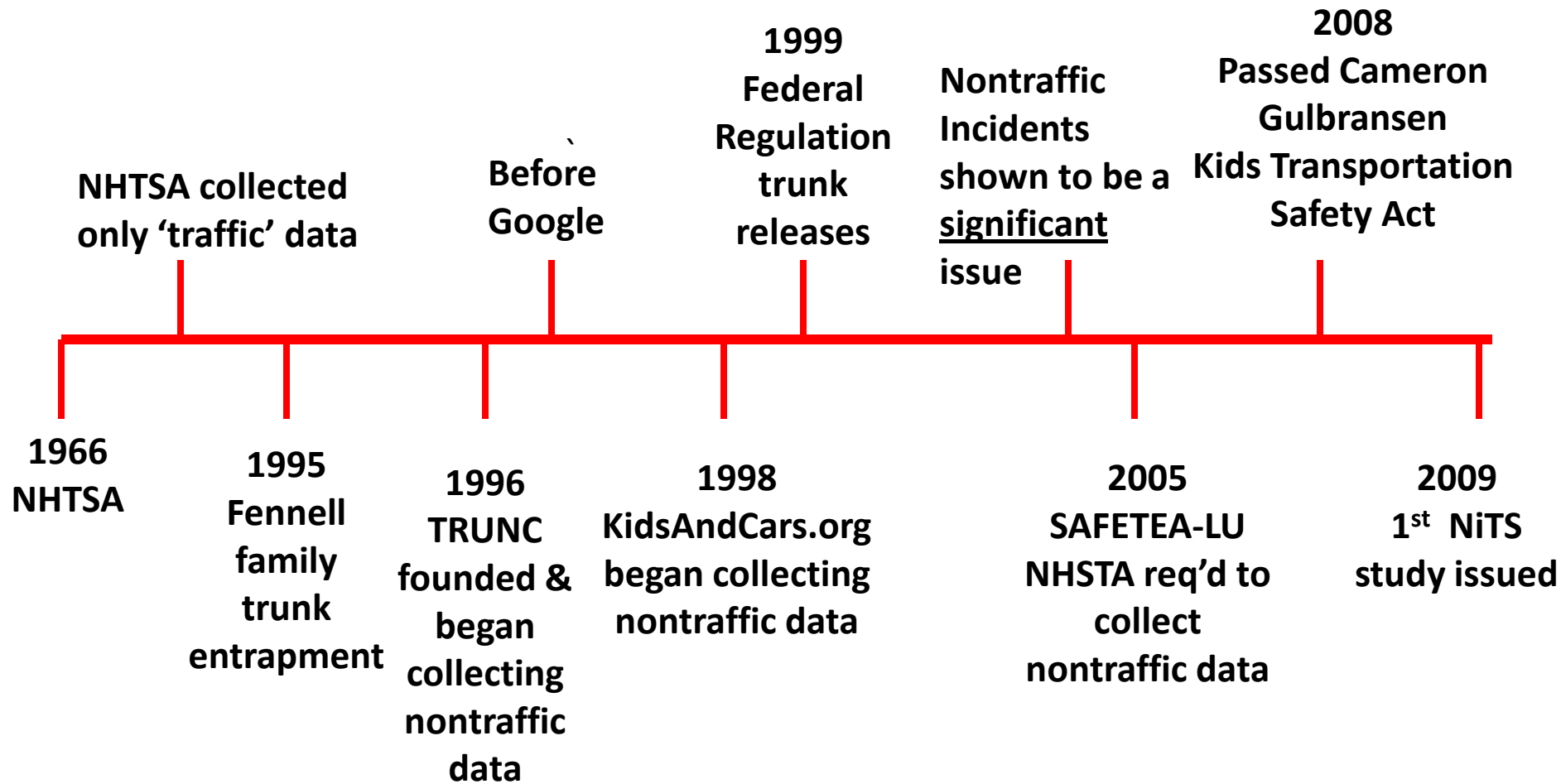
We do not know of ONE fatality in a vehicle that has a trunk release installed inside the trunk compartment

Past

You could only enter a car trunk with a key

TIME

LINE



KidsAndCars.org is a national nonprofit child safety organization dedicated to preventing injuries and death to children in or around motor vehicles.

What we do.....

- **Data Collection**
- **Education**
- **Policy (laws & regulation)**
- **Product redesign
(engineering)**
- **Survivor Advocacy**

DATA COLLECTION

No data.....no problem

Methodology for gathering data

- 1. Registration of key word preferences on Google and News Media sites**
- 2. Online searches of newspapers, broadcast news, legal documents, the Internet, etc.**
- 3. *Media contacts us with information about an incident***
- 4. Informal nationwide network of professional & personal contacts who look for incident information for us**
- 5. Parents and relatives of victims contact us**
- 6. Child Death Review Teams (CDRTs)**
- 7. Public Information Officers (PIO's)**
- 8. Clipping Service (Burrell's, etc.) (previously)**
- 9. Lexis-Nexis™**

Collaboration



- US Postal Service
- Consumer Reports-articles and testing
- Suffolk and Nassau counties ordinances
- Safeway milk cartons and grocery bags
- State Farm
- Liberty Mutual
- Farmers Insurance
- Centers for Disease Control and Prevention (CDC)
- California Pediatric Trauma Centers backover study
- Safe Ride News
- Pop A Lock
- Britax-poster based on new CA law
- Child Death Review Teams
- American Academy of Pediatrics
- Emergency Nurses Association
- Advocates for Highway and Auto Safety
- Public Citizen
- Center for Auto Safety
- Safely on the Move-CA Child Care curriculum
- Media-many times calls me first



ADVOCATES
FOR HIGHWAY
AND AUTO SAFETY



FARMERS



UNITRIN®

Data collection for the past 4 decades

According to the Fatal Analysis Reporting System (FARS) ~30-40,000 people die every year on our roads and highways

- 1. Involves a crash**
- 2. Takes place on a public road or highway**
- 3. Die within 30-days of the incident**

Pushing to Close Gaps in Compiling Vehicular Deaths

DATA COLLECTION



**Centers for Disease
Control and Prevention**

**Injuries and Deaths Among
Children Left Unattended In or
Around Motor Vehicles**

United States, July 2000 – June 2001
MMWR July 5, 2002

9162 every year.....176 children every week

Just for kids.....

262 fatalities

115,000 injuries

Data continues to be under reported

e.g., NiTS reports an average of 27 heat-stroke deaths per year; KidsAndCars.org data confirms an average of 40 heat-stroke deaths per year during the same time period

Traffic Safety Facts

Crash • Stats



DOT HS 811 116

A Brief Statistical Summary

June 2009

Not-in-Traffic Surveillance 2007 - Children

This issue of Crash*Stats focuses on information in NHTSA's Not-in-Traffic Surveillance (NITS) system regarding children 14 and younger. The NITS 2007 produced an overall estimate of 262 fatalities and 115,000 injuries to children 14 and younger in nontraffic crashes and noncrash incidents. Overall, an estimated 106 child fatalities occurred each year when pedestrians or other nonoccupants were struck by forward-moving vehicles, and 99 child fatalities occurred each year in backovers. The third most common not-in-traffic fatality scenario for children was hyperthermia or excessive heat while in the vehicle, which resulted in an average of 27 fatalities per year. The three most common not-in-traffic injuries involving children in declining order were extremities such as hands or feet caught in closing vehicle doors, falls while exiting or entering vehicles, and being cut by vehicle parts such as bumpers and license plates.

Background

The Not-in-Traffic Surveillance system is a virtual data collection system designed to provide counts and details regarding fatalities and injuries that occur in nontraffic crashes and in noncrash incidents. Information about these incidents has not routinely been collected by NHTSA, and the NITS 2007 system provides its most comprehensive report yet. These fatalities and injuries include an estimated 218 fatalities and 10,000 injuries to children that occurred in nontraffic crashes such as single-vehicle crashes on private roads, collisions with pedestrians on driveways, and two-vehicle crashes in parking facilities. The remaining 44 fatalities and 105,000 injuries to children occurred in noncrash incidents that involve passenger vehicle occupants or otherwise involve passenger vehicles such as injuries from closing doors or falls from stationary vehicles.

Fatalities and Injuries in Nontraffic Crashes

The nontraffic crash fatality and injury component was based predominantly upon police reports received by NHTSA during 2007 through its existing crash data collection

infrastructure. However, NHTSA is aware that NITS does not have a complete count of all nontraffic crash fatalities from all States or of all nontraffic crash injuries from its statistical sample of police jurisdictions. Because of these limitations, NHTSA derived adjustment factors to account for the incompleteness of the NITS system. The adjustment factor for nontraffic crash fatalities accounts for the difference between the expected number of fatalities, based upon death certificates, and the number of fatalities received in NITS. For nontraffic injuries, NHTSA turned to its State Data System and used information from three States that collect information on both nontraffic and traffic injury crashes. The information from these States was then used to adjust for the difference between the expected number of nontraffic crash injuries and the number received.

Table 1 summarizes the fatalities and injuries in nontraffic crashes using the adjustment factors to produce national estimates. Table 1 indicates that almost all (210 of 218) of the nontraffic crash fatalities and about half (5,000 of 10,000) of the nontraffic crash injuries were child nonoccupants such as pedestrians or bicyclists. Backovers, where drivers reverse into and injure or kill nonoccupants, accounted for 45 percent of the nontraffic crash fatalities and 20 percent of the injuries to children.

Fatalities in Noncrash Incidents

The noncrash fatality component was based upon mortality data from death certificates contained in special mortality data files obtained from the Centers for Disease Control and Prevention's National Vital Statistics System (NVSS) for 2003 and 2004. The narrative sections of the accidental deaths that did not involve a transport accident were searched for indication of the involvement of passenger vehicles. Fatalities that occurred inside vehicles, while exiting or falling from vehicles or where the vehicles were otherwise a factor in the deaths were assigned incident types. Table 2 summarizes the noncrash deaths by incident type. Incidents of hyperthermia, involving excessive heat inside the vehicle, accounted for an annual average of 27 child fatalities and

Table 1: Estimate of Child (14 and younger) Nontraffic Crash Fatalities and Injuries (2007)

	Fatalities	Injuries
Nonoccupant in Nontraffic Crash: Backing Vehicle	99	2,000
Nonoccupant Struck by Driverless Vehicle	5	<500
Nonoccupant in Nontraffic Crash: Forward-Moving Vehicle	106	3,000
Vehicle Occupant in Nontraffic Crash	9	5,000
Total	218	10,000

Source: NITS 2007

*The estimate of 99 backover fatalities is smaller than the estimate in NHTSA's 2009 Advance Notice of Proposed Rulemaking on Rear Visibility because Table 1 does not contain adults or backover fatalities that occur in traffic crashes.

NHTSA's National Center for Statistics and Analysis

1200 New Jersey Avenue SE., Washington, DC 20590

10 Leading Causes of Injury Death by Age Group Highlighting Unintentional Injury Deaths, United States – 2006

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Unintentional Suffocation 843	Unintentional MV Traffic 471	Unintentional MV Traffic 515	Unintentional MV Traffic 703	Unintentional MV Traffic 10,739	Unintentional MV Traffic 7,162	Unintentional Poisoning 7,542	Unintentional Poisoning 8,234	Unintentional MV Traffic 4,317	Unintentional Fall 16,850	Unintentional MV Traffic 43,664
2	Homicide Unspecified 179	Unintentional Drowning 458	Unintentional Drowning 142	Homicide Firearm 175	Homicide Firearm 4,827	Unintentional Poisoning 5,267	Unintentional MV Traffic 6,470	Unintentional MV Traffic 6,306	Suicide Firearm 2,552	Unintentional MV Traffic 6,738	Unintentional Poisoning 27,531
3	Unintentional MV Traffic 139	Unintentional Fire/burn 202	Unintentional Fire/burn 118	Suicide Suffocation 137	Unintentional Poisoning 2,936	Homicide Firearm 3,767	Suicide Firearm 2,821	Suicide Firearm 3,481	Unintentional Poisoning 2,415	Unintentional Unspecified 4,989	Unintentional Fall 20,823
4	Homicide Other Spec., Classifiable 75	Homicide Unspecified 166	Homicide Firearm 62	Unintentional Fire/burn 14	Suicide Firearm 1,978	Nontraffic fatalities - 2006 163 (ages 1-4)				Suicide Firearm 3,828	Suicide Firearm 16,883
5	Unintentional Drowning 51	Unintentional Suffocation 137	Unintentional Other Land Transport 50	Unintentional Other Land Transport 66	Suicide Suffocation 1,509	Suicide Suffocation 1,597	Suicide Suffocation 1,694	Suicide Suffocation 1,399	Suicide Poisoning 1,028	Unintentional Suffocation 3,211	Homicide Firearm 12,791
6	Undetermined Suffocation 42	Unintentional Pedestrian, Other 113	Unintentional Suffocation 50	Unintentional Fire/burn 64	Unintentional Drowning 616	Suicide Poisoning 800	Suicide Poisoning 1,517	Unintentional Fall 1,290	Suicide Suffocation 598	Adverse Effects 1,605	Suicide Suffocation 7,491
7	Homicide Suffocation 34	Homicide Other Spec., Classifiable 51	Homicide Unspecified 24	Suicide Firearm 62	Homicide Cut/pierce 473	Undetermined Poisoning 625	Undetermined Poisoning 991	Homicide Firearm 1,185	Homicide Firearm 468	Unintentional Fire/burn 1,130	Unintentional Unspecified 6,345
8	Unintentional Fire/burn 13	Homicide	Unintentional Other	Unintentional Fire/burn 13	Undetermined Suffocation	Homicide	Unintentional Fire/burn 13	Undetermined Suffocation	Unintentional Fire/burn 13	Unintentional Fire/burn 13	Suicide Poisoning
9	Tied 23	Fall 38	Pedestrian, Other 22	Poisoning 40	Poisoning 342	Drowning 436	Drowning 466	Drowning 491	Suffocation 463	Poisoning 570	Suffocation 5,912
10	Three* Tied 23	Unintentional Natural/Environment 37	Two** Tied 18	Unintentional Other Transport 30	Unintentional Other Land Transport 280	Unintentional Fall 318	Homicide Cut/pierce 424	Unintentional Fire/burn 491	Unintentional Unspecified 393	Unintentional Natural/Environment 555	Unintentional Drowning 3,579

*Three causes are: Adverse effects, undetermined unspecified and unintentional falls

**Two causes are: Unintentional firearm and unintentional poisoning

Source: National Vital Statistics System, National Center for Health Statistics, CDC.

Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.

Heat Related Incidents (1995-2010)

WHO

Heat-related incidents most frequently occur with children less than three years old and in a parent's vehicle.

	Fatal	Non-Fatal
Victim Age	Less than 1 Year old: 169 victims 1-2 Years old: 124 victims 2-3 Years old: 119 victims	Less than 1 Year old: 430 victims 1-2 Years old: 245 victims 2-3 Years old: 175 victims
Owner of vehicle	Mother of victim: 181 Father of victim: 103 Both parents of victim: 76	Mother of victim: 602 Father of victim: 186 Both parents of victim: 85

Between 1995 and 2010, KidsAndCars.org recorded over 1700 heat related incidents involving vehicles and children of ages 15 or under. Information includes both fatal and non-fatal.

Heat Related Incidents (1995-2010)

WHAT

The majority of hot weather incidents occur when outside temperatures are between 85 and 105°.

	Fatal	Non-Fatal
Outside temperature the day of the incident:	90-99°: ~186 incidents	80-89°: ~132 incidents
	80-89°: ~115 incidents	90-99°: ~111 incidents
	100-116°: ~49 incidents	100-116°: ~53 incidents

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Heat Related Incidents (1995-2010)

WHERE

Most incidents occur in a regular car in a parking lot (such as a workplace).

	Fatal	Non-Fatal
Type of vehicle	2 or 4 door Car: 260 incidents Minivan: 79 incidents Sport Utility Vehicle: 72 incidents	2 or 4 door Car: 703 incidents Minivan: 156 incidents Sport Utility Vehicle: 99 incidents
Where the vehicle typically is parked	Parking Lot (including apartment or business): 219 incidents Driveway of home: 210 incidents Other driveway: 40 incidents	Parking Lot (including apartment or business): 993 incidents Driveway of home: 53 incidents Street: 52 incidents

Between 1995 and 2010, KidsAndCars.org recorded over 1700 heat related incidents involving vehicles and children of ages 15 or under. Information includes both fatal and non-fatal.

Heat Related Incidents (1995-2010)

WHY/HOW

The majority of children are left in the vehicle by an adult, and suffer injury or death in minutes to hours.

Fatal

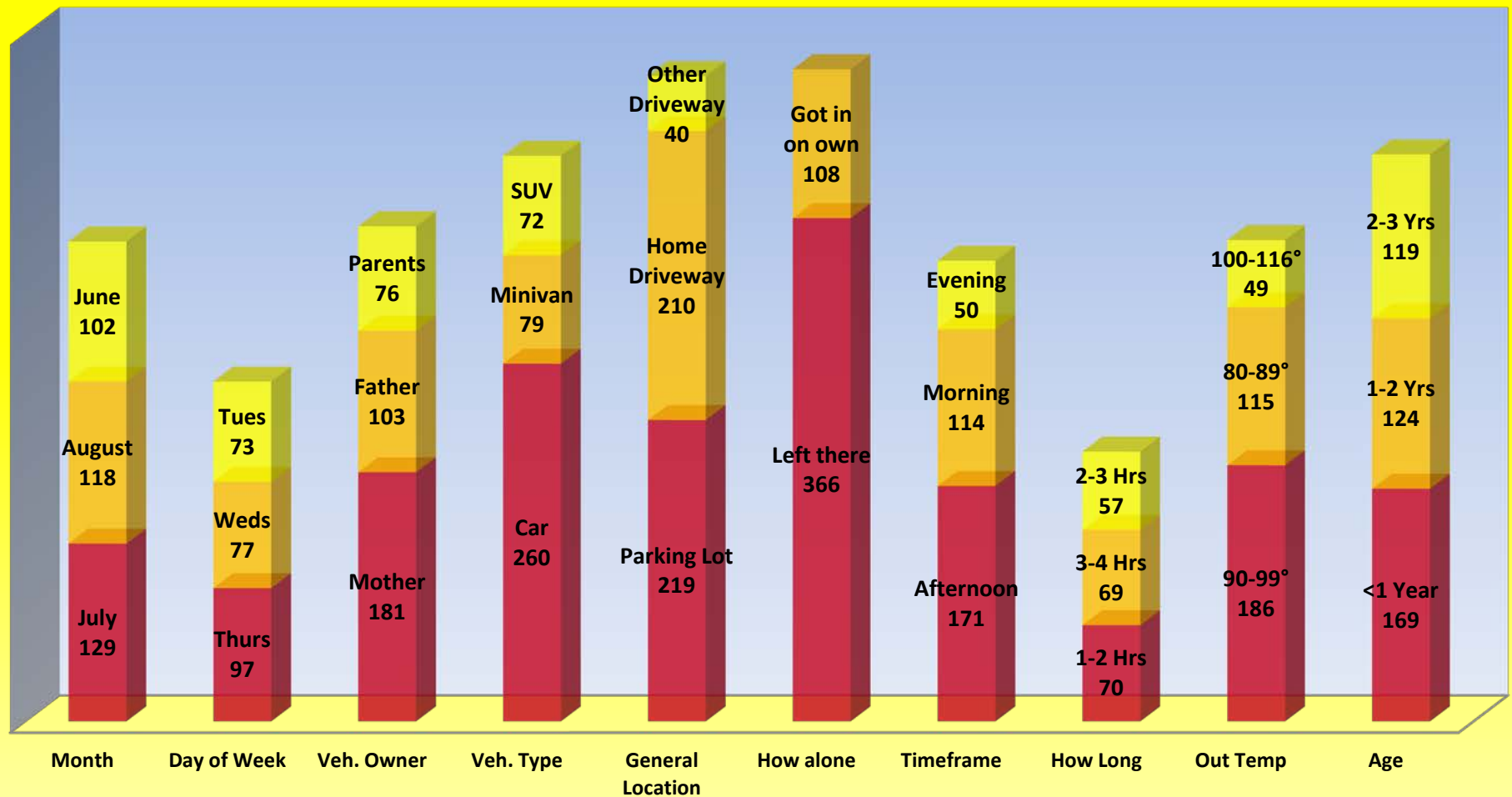
Non-Fatal

How the child got in the vehicle	Left there by responsible party: 366 Got in on their own: 130	Left there by responsible party: 1159 Got in on their own: 13
If child was left by responsible party, was it intentional?	No: 225 incidents Unknown: 90 incidents Yes: 51 incidents	Yes: 824 incidents No: 203 incidents Unknown: 132 incidents
Amount of time before child was found	1-2 Hours: 70 incidents 3-4 Hours: 69 incidents 2-3 Hours: 57 incidents	Less than 1 hour: 578 incidents 1-2 Hours: 131 incidents 2-3 Hours: 48 incidents

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Heat Related Incidents (1995-2010) - Fatal

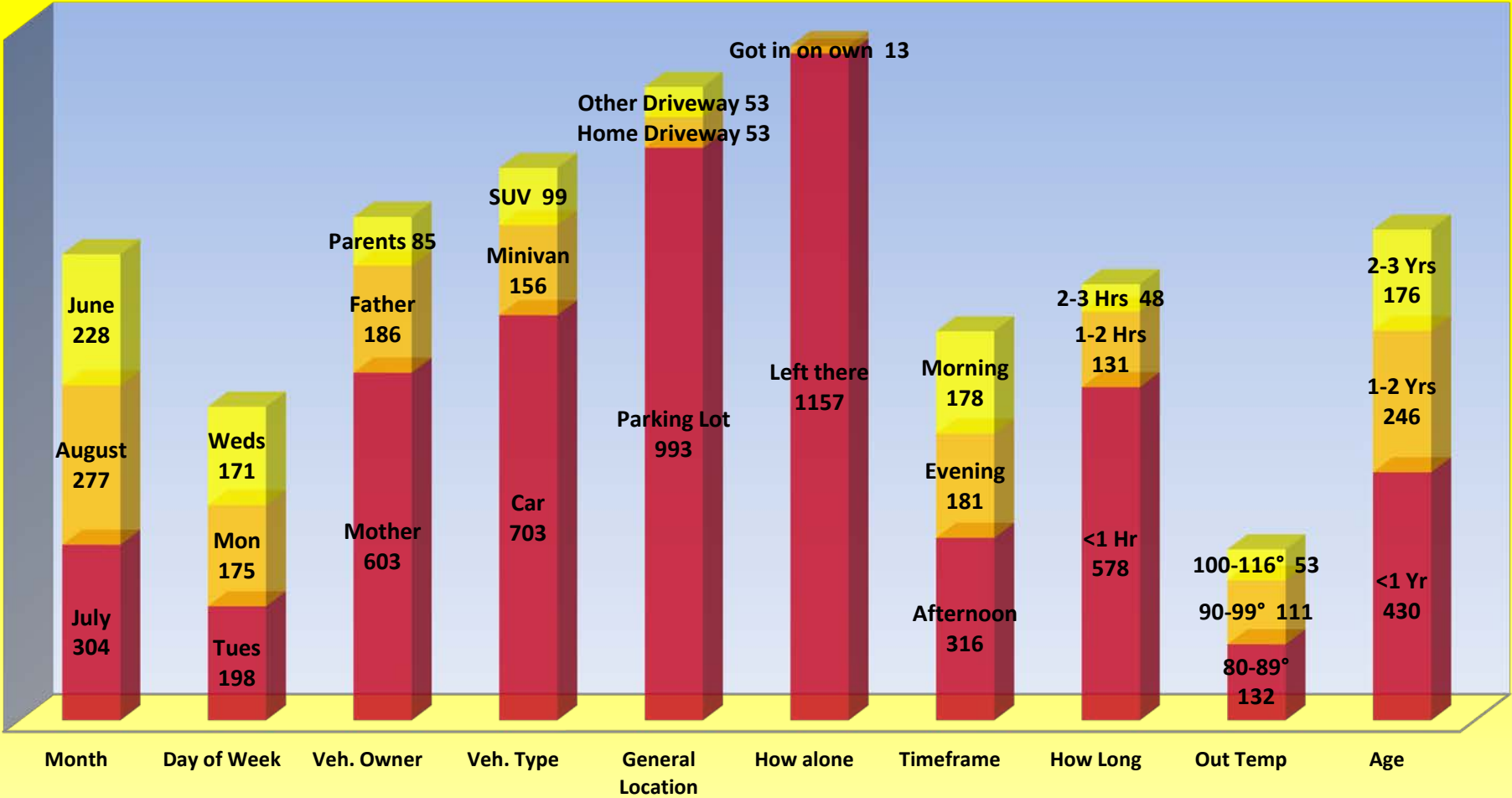
Data Source: KidsAndCars.org



Month		Day of Week		Veh. Owner		Veh Type		General Location		How alone		Timeframe		How Long		Out Temp		Age	
July	129	Thursday	97	Mother	181	Car	260	Parking Lot	219	Left there	366	Afternoon	171	1-2 Hrs	70	90-99	186	<1 Yr	169
August	118	Wednesday	77	Father	103	Van	79	Driveway - Home	210	Got in on own	108	Morning	114	3-4 Hrs	69	80-89	115	1-2 Yrs	124

Heat Related Incidents (1995-2010) - Non-Fatal

Data Source: KidsAndCars.org



Month		Day of Week		Veh. Owner		Veh Type		General Location		How alone		Timeframe		How Long		Out Temp		Age	
July	304	Tuesday	198	Mother	603	Car	703	Parking Lot	993	Left there	1157	Afternoon	316	< 1 Hr	578	80-89	132	<1 Yr	430
August	277	Monday	175	Father	186	Van	156	Driveway - Home	53	Got in on own	13	Evening	181	1-2 Hrs	131	90-99	111	1-2 Yrs	246

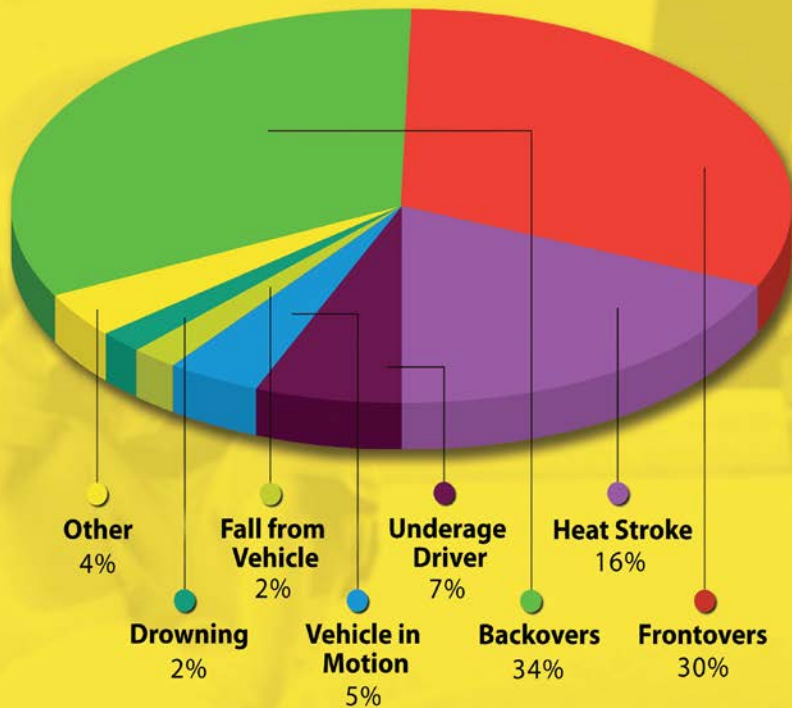
Fatal Distraction

Forgetting a child in the back seat of a hot, parked car is a horrifying, inexcusable mistake. But is it a crime?

***“One of the
Saddest
Databases in
America”***

U.S. CHILD FATALITIES BY TYPE (2006 - 2010)

Nontraffic Fatalities Involving Children < 15 Years Old



Backovers	34%
Frontovers	30%
Heat stroke	16%
Vehicle Set In Motion	5%
Underage Driver	7%
Fall from Vehicle	4%
Drowning	2%
Other	4%

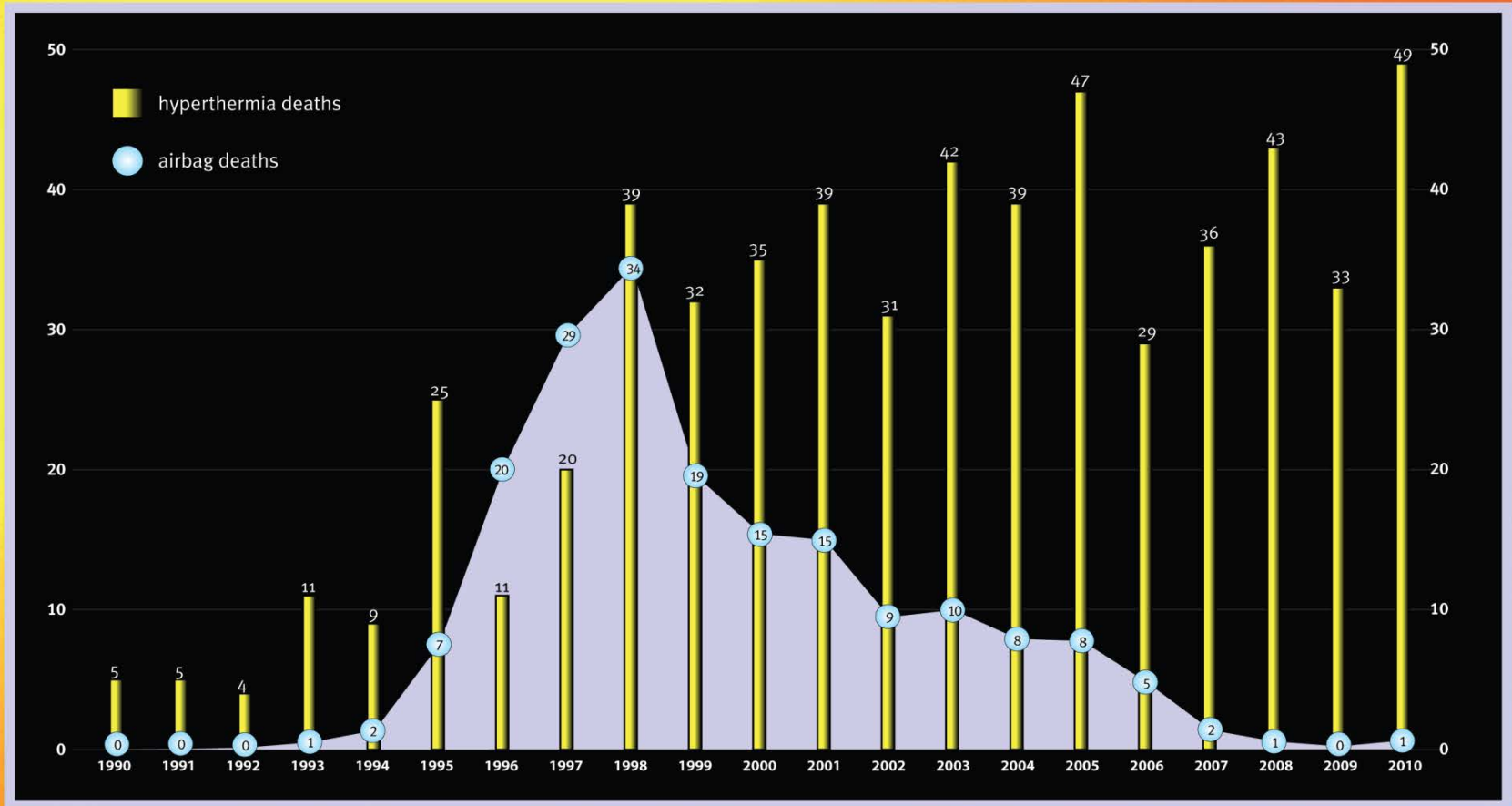
KIDS AND CARS.ORG™

LOVE THEM, PROTECT THEM

www.KidsAndCars.org

Data Source: KidsAndCars.org

CHILD VEHICULAR HEAT STROKE VS. CHILD FRONT SEAT PASSENGER DEATHS



During the 1990's, there were many reports of child deaths caused by the front seat passenger airbag. At least 180 children have been killed by a deploying front seat passenger airbag from 1990-2010; while during those same years at least 584 children died in vehicles due to heat stroke. In the three-year period from 1990-1992, before airbags were required, there were only 14 known child vehicular heat stroke deaths. Now, most young children travel in the back seat because of front seat passenger air bags and because the back seat is much safer. In the past three years, (2008-2010) there have been at least 125 known child vehicular heat stroke fatalities.... a 892% increase from the early 1990's.

KIDS AND CARS.ORG™

LOVE THEM, PROTECT THEM

www.KidsAndCars.org

***To err is human;
but to forgive
is
design***

Is it our society, our government or the auto industry saying...

it's not okay to have a dead car battery; but it is okay to have a dead baby.....

Technology could help to prevent heat-related tragedies

NASA Langley Research Center is actively seeking partnerships and collaborations to commercialize its Child Presence Sensor technology.

The Market Opportunities

Every year, infants and small children die needlessly because they have been accidentally left in vehicles. Overloaded, exhausted, distracted or confused by a change in routine, working parents can completely forget that they've left their children unattended. Others may leave sleeping children in car seats while they exit their vehicles for what they believe will be a quick errand. Yet, left alone for only a few minutes, a small child can suffer a deadly heatstroke, even on a seemingly mild day.

The Child Presence Sensor technology can serve as a reminder to the caregiver that a child has been left unattended.

The Benefits

- Alerts the driver that a child remains in the car
- Requires no action by the user for proper functioning because of its "Install and Forget" approach
- Minimizes cost by making use of known technology
- Works with any new or existing vehicle or child safety seat
- Activates automatically and beeps when the child is placed in the car seat
- Provides an audible alarm which remains with the driver
- Is small, easy to use, and has a long battery life.

The Technology

A sensor switch triggers immediately when the child is placed in the seat and deactivates when the child is removed. The switch has a large activation area with a sensitivity of approximately eight ounces. The sensor,

Child Presence Sensor

A Safeguard for Children



fastened to the side of the car seat, detects weight once the child is placed in the seat and transmits a unique code to the driver-alarm module via a radio-frequency link. The alarm module, designed to attach to the driver's key ring, arms and disarms automatically. If the driver moves a predetermined distance away from the vehicle, the driver-alarm unit sounds an alarm. If the driver does not return to the vehicle, the alarm will beep continuously and will not turn off until the driver removes the child from the safety seat.

Additional Information

To discuss in detail how this technology can profit you and your business, please contact:

Technology Commercialization Center, Inc.

144 Research Drive
Hampton, VA 23666
Phone: (757) 766-9200
E-mail: info@teccenter.org
Website: www.teccenter.org

TeCC—one of six NASA Regional Technology Transfer Centers—serves Delaware, Maryland, Pennsylvania, Virginia, and West Virginia.



Require automakers to install seat belt sensors for all seating positions

- Driver knows everyone is buckled up
- Alerts driver when someone unbuckles
- 40-50% of children who die in crashes are *not buckled*

Once sensors are required in all seating positions....
driver could possibly be alerted if someone was left
inside the vehicle

Power Window Switches

RISKY DESIGN

Horizontal
rocker switches



Toggle switches



SAFER

Lever



SUCCESS!!!!!!!
2009 Model Year

Other risks to children:

- ✓ **Seat belt entanglement**
- ✓ **Carbon Monoxide poisoning**
- ✓ **Trunk entrapment**
- ✓ **Car theft when child left in vehicle**
- ✓ **Car towed when left in vehicle**
- ✓ **Fires in vehicles**
- ✓ **Abduction/Kidnapped**
- ✓ **Left vehicle**
- ✓ **Fall from vehicle**
- ✓ **Found guns in vehicles**
- ✓ *Set vehicle into motion (?)*

Top numbers per incident type

Type	Incidents	Victims	Fatalities	Top State	Top Month	Top Day	Top Make	Top Loc
WH	1711	2226	552	FL (233)	7 (433)	TU (271)	Ford (95)	PL (1212)
JL	1145	1640	3	CA (101)	3 (125)	MO (176)	Ford (39)	PL (796)
WC	329	432	4	NY (25)	12 (102)	FR (53)	Chevrolet (7)	PL (246)
PA	123	142	50	CA (12)	5 (20)	TH (24)	Ford (34)	PL (24)
OT	88	132	45	FL (14)	11 (5)	TU (17)	Chevrolet, Dodge (4)	PL (33)
FA	79	87	33	TX (9)	10,11 (13)	WE (19)	Ford (7)	ST (27)
FI	63	126	35	CA,MI,UT (5)	11 (9)	WE,TH (10)	Ford (6)	PL (23)
LV	56	68	5	CA (6)	2 (8)	MO (10)	Ford, Chevrolet (4)	PL (31)
CM	27	57	22	MD (4)	2 (8)	MO (9)	Ford, Dodge (2)	GR (9)
KA	17	25	0	CA (4)	8 (4)	TH (4)	Toyota (2)	PL (9)
SB	14	19	11	MI (3)	6,12 (3)	TU (5)	Honda (2)	PL,DWHM(4)
GI	8	10	0	CA (2)	10 (3)	SU,WE (2)	-	DW (4)

A virtual system

- ✓ Uses multiple systems from NHTSA and others
- ✓ Provides different types of data for more complete picture

Four major components

- **Nontraffic crash database**
- Noncrash injury database
- Noncrash fatality database
- Special Crash Investigations (SCI)

**.....”she’s
not your
ordinary
baggage”**

Thank you!

KidsAndCars.org Facebook page:

<http://www.facebook.com/#!/pages/KidsAndCarsorg/128148590541866?ref=ts>

Follow KidsAndCars.org on Twitter: <http://twitter.com/#!/KidsAndCars>

Sign up for KidsAndCars.org's email Newsletter: <http://www.KidsAndCars.org>

Transportation bill contained provisions to:

- Collect non traffic data!
- Test and evaluate backover technologies!
- Regulate that power windows switches will have to be pulled up or out to activate window glass!