*** * * A T T E N T I O N * * ***

Individual Vehicle dimensions were obtained through the use of the Expert AutoStats(R) program.

The Expert AutoStats(R) program contains a multitude of vehicle dimensions and specifications on over 42,000 different vehicles and 203 different manufacturers spanning more than 50 years.

While every attempt has been made to ensure accurate data, these dimensions are meant to be used as first approximations. Some measurements are dependant on such factors as tire and rim sizes, tire inflation pressure and wear, suspension system condition, bumper type and style, and other manufacturing variations from vehicle to vehicle.

Whenever feasible, the vehicle in question or an exemplar vehicle should be measured to verify data important to your case.

Individual Vehicle Data Search Service (R)

Provided by:
4N6XPRT SYSTEMS (R)
Forensic Expert Software
La Mesa, CA 91942-9342

(619) 464-3478 / (800) 266-9778 / FAX: (619) 464-2206

Through the use of

E X P E R T A U T O S T A T S (R)

DEVELOPED BY:
Daniel W. Vomhof III & Daniel W. Vomhof, Ph.D.

VEHICLE DATA RESEARCH BY:
Sheryl Cozby, Marion Vomhof, Muriel Vomhof, & Cindy Christensen

Expert VIN DeCoder®

Version Number 3.1.0.3

DeCoded VIN: **2G4WS52J111165340**

Model:	**2001 Buick Century Custom 4 Door Sedan**
Engine Size:	**3.1L/ 191 cu.in.**
Engine Description:	**V6 cylinder with Overhead Valves (OHV)**
Horse Power:	**170 @ 5200 rpm**
Torque:	**190 lb-ft at 4000 rpm**
Injection System:	**Sequential Fuel Injection (SFI)**
PSI:	**41-47 psi**
Ignition:	**Electronic**
Manufacturer:	**Buick, Olsmobile, Cadillac**
Assembly Plant:	**Oshawa (T&B), ON**
Drive Wheels:	**This is a Front Wheel Drive vehicle w/Manual Seatbelts + Driver & Passenger Air Bags**

The First through Third characters (2G4) indicate a Buick Car made in Canada

The Fourth and Fifth characters (WS) indicate a Century Custom

The Sixth character (5) indicates a 4 Door Sedan

The Seventh character (2) indicates Manual Seatbelts + Driver & Passenger Air Bags

The Eighth character (J) indicates the OEM engine: 3.1L/ 191 cu.in., V6 OHV

The Ninth character (the check digit) is entered as 1.
The VIN appears Valid, the calculated value is 1.

The Tenth character (1) indicates the model year 2001

The Eleventh character (1) indicates the vehicle was made in the assembly plant in Oshawa (T&B), ON

The Twelfth through Seventeenth characters (165340) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.2.0

JEREMY S DAILY PHD PE
TUCRRC
800 TUCKER DRIVE
TULSA OK 74104-9700

9/20/2012

2001 BUICK CENTURY CUSTOM 4 DOOR SEDAN

Curb Weight:	3353 lbs.		1521	kg.
Curb Weight Distribution - Front:	64 %	Rear:	36	%
Gross Vehicle Weight Rating:	4470 lbs.		2028	kg.
Number of Tires on Vehicle:	4			
Drive Wheels:	FRONT			

Horizontal Dimensions	Inches	Feet	Meters
Total Length	195	16.25	4.95
Wheelbase:	109	9.08	2.77
Front Bumper to Front Axle:	44	3.67	1.12
Front Bumper to Front of Front Well:	28	2.33	0.71
Front Bumper to Front of Hood:	6	0.50	0.15
Front Bumper to Base of Windshield:	50	4.17	1.27
Front Bumper to Top of Windshield:	85	7.08	2.16
Rear Bumper to Rear Axle:	42	3.50	1.07
Rear Bumper to Rear of Rear Well:	28	2.33	0.71
Rear Bumper to Rear of Trunk:	5	0.42	0.13
Rear Bumper to Base of Rear Window:	29	2.42	0.74
Width Dimensions			
Maximum Width:	73	6.08	1.85
Front Track:	62	5.17	1.57
Rear Track:	61	5.08	1.55
Vertical Dimensions			
Height:	57	4.75	1.45
Ground to -			
Front Bumper (Top)	22	1.83	0.56
Headlight - center	26	2.17	0.66
Hood - top front:	28	2.33	0.71
Base of Windshield	38	3.17	0.97
Rear Bumper - top:	26	2.17	0.66
Trunk - top rear:	40	3.33	1.02
Base of Rear Window:	43	3.58	1.09

2001 BUICK CENTURY CUSTOM 4 DOOR SEDAN

Interior Dimensions

	Inches	Feet	Meters
Front Seat Shoulder Width	58	4.83	1.47
Front Seat to Headliner	39	3.25	0.99
Front Leg Room - seatback to floor (max)	44	3.67	1.12
Rear Seat Shoulder Width	57	4.75	1.45
Rear Seat to Headliner	37	3.08	0.94
Front Leg Room - seatback to floor (min)	30	2.50	0.76

Seatbelts: 3pt - front and rear

Airbags: FRONT SEAT AIRBAGS

Steering Data

Turning Circle (Diameter)	480	40.00	12.19
Steering Ratio:	:1		
Wheel Radius:	12	1.00	0.30
Tire Size (OEM):	P205/70R15		

Acceleration & Braking Information

Brake Type: FRONT DISC - REAR DRUM

ABS System: ALL WHEEL ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

d = 137.0 ft t = 3.1 sec a = -28.2 ft/sec² G-force = -0.88

Acceleration:

0 to 30mph	t =		sec	a =		ft/sec²	G-force =	
0 to 60mph	t =	10.5	sec	a =	8.4	ft/sec²	G-force =	0.26
45 to 65mph	t =		sec	a =		ft/sec²	G-force =	

Transmission Type: 4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements: 2.5 mph

This vehicles Rated Bumper Strength: 2.5 mph

N.S.D.C = 1999 - 2005

2001 BUICK CENTURY CUSTOM 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.38	Stable
NHTSA Star Rating (calculated)		****

Center of Gravity (No Load):

Inches behind front axle	=	39.24
Inches in front of rear axle	=	69.76
Inches from side of vehicle	=	36.50
Inches from ground	=	22.37
Inches from front corner	=	90.89
Inches from rear corner	=	117.57
Inches from front bumper	=	83.24
Inches from rear bumper	=	111.76

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2247.59	lb*ft*sec²
Pitch Moment of Inertia	=	2170.47	lb*ft*sec²
Roll Moment of Inertia	=	453.54	lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	45.0	deg
Angle Front of Hood to Windshield Base	=	12.8	deg
Angle Front of Hood to Windshield Top	=	18.9	deg
Angle of Windshield	=	25.9	deg
Angle of Steering Tires at Max Turn	=	26.0	deg

First Approximation Crush Factors:

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$

KE Equivalent Speed (Front/Rear/Side)	=	21	CF
Bullet vehicle IMPACT SPEED estimation based on TARGET VEHICLE damage ONLY (Tested for Rear/Side Impact only)	=	27	CF

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test

#4775

2004 PONTIAC GRAND PRIX

Provided By

4N6XPRT StifCalcs®

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TUCRRC
800 TUCKER DRIVE
TULSA OK 74104-9700
12R-110829SC03101

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(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Similar Vehicle database reader

You entered: **2001 BUICK CENTURY**

The Sister/Clone Vehicle Year/Model Interchange list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2000 - 2005	CHEVROLET	IMPALA	2D, 4D, SW	110.5, 125
Remarks:				
1997 - 2004	BUICK	REGAL	2D, 4D, SW	107.5
Remarks: Regal now same as Century				
1997 - 2003	PONTIAC	GRAND PRIX	2D, 4D	110.5
Remarks:				
1998 - 2002	OLDSMOBILE	INTRIGUE	4D	109
Remarks:				
1997 - 2005	BUICK	CENTURY	2D, 4D, SW	109, 116
Remarks:				
2000 - 2005	CHEVROLET	MONTE CARLO	2D	108
Remarks:				
2004 - 2005	PONTIAC	GRAND PRIX	2D, 4D	110.5
Remarks:				

If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering,
521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.

Test Information

Test #	4775	NHTSA Test Reference Guide Version #	V5			
Test Date	2003-10-07	Contract #	DTNH22-01-D-02005			
Contract/Study Title	35 MPH NCAP FRONTAL - 2004 PONTIAC GRAND PRIX GT 4 DOOR SEDAN					
Test Objective(s)	OBTAIN ATD AND VEHICLE DATA					
Test Type	NEW CAR ASSESSMENT TEST	Configuration	VEHICLE INTO BARRIER			
Impact Angle	0	Side Impact Point	0	mm	0.0	inches
		Offset Distance	0	mm	0.0	inches
		Closing Speed	55.9	Km/Hr	34.73	MPH
Test Performer	KARCO ENGINEERING					
Test Reference #	M40100					
Test Track Surface	CONCRETE	Condition	DRY			
Ambient Temperature	29 C	84.2 F	Total Number of Curves	185		
Data Recorder Type	DIGITAL DATA ACQUISITION	Data Link	OTHER			
Test Commentary	DATALINK IS NONE, ON-BOARD DAS					

Fixed Barrier Information

Barrier Type	RIGID	Pole Barrier Diameter	0	mm	0 inches
Barrier Shape	LOAD CELL BARRIER				
Barrier Commentary	NO COMMENTS				

2004 PONTIAC GRAND PRIX LEFT FRONT SEAT OCCUPANT

Test #	4775		
Vehicle #	1	Sex	MALE
Location	LEFT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	HYBRID III		
Occupant Manufacturer	VECTOR, S/N:035		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	NO COMMENTS		

Head

Head to -

Windshielder Header	300	mm	11.8	inches	Head Injury Criteria (HIC)	596	
WindShield	590	mm	23.2	inches	HIC Lower Time Interval (ms)	61.8	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	96.1	
Side Header	235	mm	9.3	inches			
Side Window	335	mm	13.2	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	530	mm	20.9	inches	Arm to Door	30	mm	1.2	inches
Steering Wheel	285	mm	11.2	inches	Hip to Door	185	mm	7.3	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	0	Pelvic Peak Lateral Acceleration (g's)	0
Thoracic Trauma Index	0	Thorax Peak Acceleration (g's)	58.5

Lap Belt Peak Load	3935	Newtons	884.6	pound Force
Shoulder Belt Peak Load	3763	Newtons	846.0	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	175	mm	6.9	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-6795	Newtons	-1527.6	pounds Force
Right Femur Peak Load	-6024	Newtons	-1354.3	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

2004 PONTIAC GRAND PRIX LEFT FRONT SEAT OCCUPANT

Test #	4775					
Vehicle #	1	Sex	MALE			
Location	LEFT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	HYBRID III
Occupant Manufacturer	VECTOR, S/N:035
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	NO COMMENTS

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	FRONTAL AIRBAG
Mounted	STEERING WHEEL
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS

2004 PONTIAC GRAND PRIX RIGHT FRONT SEAT OCCUPANT

Test #	4775		
Vehicle #	1	Sex	MALE
Location	RIGHT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	HYBRID III		
Occupant Manufacturer	VECTOR, S/N:034		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	NO COMMENTS		

Head

Head to -

Windshielder Header	465	mm	18.3	inches	Head Injury Criteria (HIC)	509	
WindShield	785	mm	30.9	inches	HIC Lower Time Interval (ms)	61.9	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	97.8	
Side Header	290	mm	11.4	inches			
Side Window	355	mm	14.0	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	595	mm	23.4	inches	Arm to Door	50	mm	2.0	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	165	mm	6.5	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	0	Pelvic Peak Lateral Acceleration (g's)	0
Thoracic Trauma Index	0	Thorax Peak Acceleration (g's)	43.7

Lap Belt Peak Load	3955	Newtons	889.1	pound Force
Shoulder Belt Peak Load	4090	Newtons	919.5	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	155	mm	6.1	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-5512	Newtons	-1239.2	pounds Force
Right Femur Peak Load	-3737	Newtons	-840.1	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

2004 PONTIAC GRAND PRIX RIGHT FRONT SEAT OCCUPANT

Test #	4775					
Vehicle #	1	Sex	MALE			
Location	RIGHT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	HYBRID III
Occupant Manufacturer	VECTOR, S/N:034
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	NO COMMENTS

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	FRONTAL AIRBAG
Mounted	DASH PANEL - TOP
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS

2004 PONTIAC GRAND PRIX RIGHT REAR SEAT OCCUPANT

Test #	4775		
Vehicle #	1	Sex	NOT APPLICABLE
Location	RIGHT REAR SEAT	Age	0
Position	NOT APPLICABLE	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	3 YEAR OLD CHILD		
Calibration Method	HYBRID III		
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:139		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	CNTRH1:CHIN CONTACTED RETAINING CLIP		

Head

Head to -

Windshielder Header	0	mm	0.0	inches	Head Injury Criteria (HIC)	533	
WindShield	0	mm	0.0	inches	HIC Lower Time Interval (ms)	76.9	
Seatback	550	mm	21.7	inches	HIC Upper Time Interval (ms)	112.9	
Side Header	0	mm	0.0	inches			
Side Window	406	mm	16.0	inches			
Neck to Seatback	0	mm	0.0	inches			
First Contact Region (Head)	OTHER						
Second Contact Region (Head)							

Chest

Chest to -

Dash	0	mm	0.0	inches	Arm to Door	275	mm	10.8	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	330	mm	13.0	inches
Seatback	525	mm	20.7	inches					
Chest Severity Index	0				Pelvic Peak Lateral Acceleration (g's)	0			
Thoracic Trauma Index	0				Thorax Peak Acceleration (g's)	37.1			
Lap Belt Peak Load	0	Newtons	0.0	pound Force					
Shoulder Belt Peak Load	0	Newtons	0.0	pound Force					
First Contact Region (Chest/Abdomen)	NONE								
Second Contact Region (Chest/Abdomen)	NONE								

Legs

Knees to Dash	0	mm	0.0	inches	Knees to Seatback	374	mm	14.7	inches
Left Femur Peak Load	0	Newtons	0.0	pounds Force					
Right Femur Peak Load	0	Newtons	0.0	pounds Force					
First Contact Region (Legs)	NONE								
Second Contact Region (Legs)									

2004 PONTIAC GRAND PRIX RIGHT REAR SEAT OCCUPANT

Test #	4775					
Vehicle #	1		Sex	NOT APPLICABLE		
Location	RIGHT REAR SEAT		Age	0		
Position	NOT APPLICABLE		Height	0 mm	0.0	inches
Type	HYBRID III DUMMY		Weight	0.0 kg	0	pounds
Size	3 YEAR OLD CHILD					

Calibration Method	HYBRID III
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:139
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	CNTRH1:CHIN CONTACTED RETAINING CLIP

Restraints

Restraint # 1	CONVERTIBLE CHILD SAFETY SEAT, FRONT FACING
Mounted	LATCH - LOWER ANCHORAGES AND TOP TETHER
Deployment	NOT APPLICABLE
Restraint Commentary	MANUFACTURER:EVENFLO, MODEL:VANGUARD 5, MODEL#
Restraint # 2	5 POINT BELT
Mounted	CHILD SEAT
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

2004 PONTIAC GRAND PRIX LEFT REAR SEAT OCCUPANT

Test #	4775		
Vehicle #	1	Sex	NOT APPLICABLE
Location	LEFT REAR SEAT	Age	0
Position	NOT APPLICABLE	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	3 YEAR OLD CHILD		
Calibration Method	HYBRID III		
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:082		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	CNTRH1, CHIN CONTACTED RETAINING CLIP		

Head

Head to -

Windshielder Header	0	mm	0.0	inches	Head Injury Criteria (HIC)	583	
WindShield	0	mm	0.0	inches	HIC Lower Time Interval (ms)	76.4	
Seatback	555	mm	21.9	inches	HIC Upper Time Interval (ms)	112.4	
Side Header	0	mm	0.0	inches			
Side Window	385	mm	15.2	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): OTHER

Second Contact Region (Head):

Chest

Chest to -

Dash	0	mm	0.0	inches	Arm to Door	250	mm	9.8	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	275	mm	10.8	inches
Seatback	500	mm	19.7	inches					

Chest Severity Index	0	Pelvic Peak Lateral Acceleration (g's)	0
Thoracic Trauma Index	0	Thorax Peak Acceleration (g's)	40.6

Lap Belt Peak Load 0 Newtons 0.0 pound Force

Shoulder Belt Peak Load 0 Newtons 0.0 pound Force

First Contact Region (Chest/Abdomen): NONE

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash 0 mm 0.0 inches Knees to Seatback 315 mm 12.4 inches

Left Femur Peak Load 0 Newtons 0.0 pounds Force

Right Femur Peak Load 0 Newtons 0.0 pounds Force

First Contact Region (Legs): NONE

Second Contact Region (Legs):

2004 PONTIAC GRAND PRIX LEFT REAR SEAT OCCUPANT

Test #	4775					
Vehicle #	1	Sex	NOT APPLICABLE			
Location	LEFT REAR SEAT	Age	0			
Position	NOT APPLICABLE	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	3 YEAR OLD CHILD					

Calibration Method	HYBRID III
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:082
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	CNTRH1, CHIN CONTACTED RETAINING CLIP

Restraints

Restraint # 1	CONVERTIBLE CHILD SAFETY SEAT, FRONT FACING
Mounted	LATCH - LOWER ANCHORAGES AND TOP TETHER
Deployment	NOT APPLICABLE
Restraint Commentary	MANUFACTURER:CENTURY, MODEL:STE, MODEL#
Restraint # 2	5 POINT BELT
Mounted	CHILD SEAT
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

Vehicle 1 2004 PONTIAC GRAND PRIX

Test #	4775		
VIN	2G2WP522941121660	NHTSA Test Vehicle Number	1
Year	2004	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	PONTIAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	GRAND PRIX	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V6 TRANSVERSE FRONT		
Displacement	3.8 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	UNMODIFIED		
Vehicle Commentary	NO COMMENTS		

Vehicle Length	5034	mm	198.2	inches	CG behind Front Axle	1131	mm	44.5	inches
Vehicle Width	1800	mm	70.9	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2815	mm	110.8	inches	Total Length of Indentation	1383	mm	54.4	inches
Vehicle Test Weight	1789	KG	3943	pounds	Maximum Static Crush Depth	587	mm	23.1	inches
					Pre-Impact Speed	56	kph	34.7	mph

Vehicle Damage Index: 12FDEW6

Principal Direction of Force: 0

Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

DPD 1	-472	mm	-18.6	inches
DPD 2	-582	mm	-22.9	inches
DPD 3	-584	mm	-23.0	inches
DPD 4	-569	mm	-22.4	inches
DPD 5	-539	mm	-21.2	inches
DPD 6	-423	mm	-16.7	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	190.3	inches	171.7	inches	18.6	inches
	4834	mm	4362	mm	472	mm
Centerline	198.2	inches	175.2	inches	23.0	inches
	5034	mm	4450	mm	584	mm
Right Bumper Corner	190.2	inches	173.6	inches	16.7	inches
	4832	mm	4409	mm	423	mm

Bumper Engagement (Inline Impact Only)	Sill Engagement (Side Impact Only)	A-pillar Engagement (Side Impact Only)
0.0	NOT APPLICABLE	0.0

Moving Test Cart Angle	Moving Test Cart/Vehicle Crabbed Angle	Vehicle Orientation on Cart Moving Test Cart
DIRECT ENGAGEMENT	0.0	NOT APPLICABLE
Magnitude of the Tilt Angle Measured between surface of a Rollover Test Cart and the Ground	*Magniture of the Crabbed Angle Measure Clockwise from Longitudinal Vector to Velocity Vector of Vehicle*	*Magnitude of the Angle Measured between the Vehicle Orientation and Direction of Test Cart Motion*

Vehicle 1 2004 PONTIAC GRAND PRIX

Test #	4775		
VIN	2G2WP522941121660	NHTSA Test Vehicle Number	1
Year	2004	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	PONTIAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	GRAND PRIX	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V6 TRANSVERSE FRONT		
Displacement	3.8 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	UNMODIFIED		
Vehicle Commentary	NO COMMENTS		

Vehicle Length	5034	mm	198.2	inches	CG behind Front Axle	1131	mm	44.5	inches
Vehicle Width	1800	mm	70.9	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2815	mm	110.8	inches	Total Length of Indentation	1383	mm	54.4	inches
Vehicle Test Weight	1789	KG	3943	pounds	Maximum Static Crush Depth	587	mm	23.1	inches
					Pre-Impact Speed	56	kph	34.7	mph

Vehicle Damage Index	12FDEW6	Principal Direction of Force	0

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinaldirection. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

Left Side				Centerline				Right Side			
Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Length of Vehicle at Centerline							
				5034	198.2	4450	175.2				
				Engine Block							
				420	16.5	420	16.5				
4834	190.3	4362	171.7	Front Bumper Corner				4832	190.2	4409	173.6
				Front of Engine							
				4400	173.2	4088	160.9				
3764	148.2	3699	145.6	Firewall				3759	148.0	3714	146.2
				3816	150.2	3763	148.1				
3414	134.4	3401	133.9	Upper Leading Edge of Door				3414	134.4	3405	134.1
3372	132.8	3360	132.3	Lower Leading Edge of Door				3371	132.7	3356	132.1
3371	132.7	3355	132.1	Bottom of 'A' Post				3359	132.2	3346	131.7
2315	91.1	2301	90.6	Upper Trailing Edge of Door				2314	91.1	2304	90.7
2329	91.7	2317	91.2	Lower Trailing Edge of Door				2322	91.4	2310	90.9
				Steering Column							
				2932	115.4	2940	115.7				
				Center of Seering Column to 'A' Post (Horizontal)							
				405	15.9	415	16.3				
				Center of Steering Column to Headliner (Vertical)							
				415	16.3	373	14.7				

2004 PONTIAC GRAND PRIX

NHTSA Crash Test - #4775 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 3943 pounds
Vehicle Closing Speed = 34.7 mph
Test Crush Length = 70.9 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	18.6	23.0	16.7	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 16.7 inches					192.9
Using a Rated No Damage Speed of	2.5mph	215.2	166.1	139.4	
Using a Rated No Damage Speed of	5.0mph	397.0	141.4	557.6	
Using a Rated No Damage Speed of	7.5mph	545.5	118.6	1254.6	
Using a Rated No Damage Speed of	10.0mph	660.5	97.8	2230.4	
Average Crush = 20.3 inches					130.6
Using a Rated No Damage Speed of	2.5mph	177.0	112.4	139.4	
Using a Rated No Damage Speed of	5.0mph	326.6	95.7	557.6	
Using a Rated No Damage Speed of	7.5mph	448.7	80.3	1254.6	
Using a Rated No Damage Speed of	10.0mph	543.4	66.2	2230.4	
Maximum Crush = 23.0 inches					101.7
Using a Rated No Damage Speed of	2.5mph	156.3	87.6	139.4	
Using a Rated No Damage Speed of	5.0mph	288.3	74.5	557.6	
Using a Rated No Damage Speed of	7.5mph	396.1	62.5	1254.6	
Using a Rated No Damage Speed of	10.0mph	479.6	51.6	2230.4	

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation
Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in
B = Crush resistance per inch of damage width (Crash), lb/in^2
G = Energy dissipated without permanent damage, lb
Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

****

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush Factor	Maximum Crush (inches)	Calculated KE Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	23.0	34.7	0.0	0.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 21.0

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

2004 PONTIAC GRAND PRIX

NHTSA Crash Test - #4775 - Front Impact

Pre/Post Depths - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 3943 pounds
Vehicle Closing Speed = 34.7 mph
Test Crush Length = 54.4 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	18.6	23.0	16.7	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 16.7 inches					251.1
Using a Rated No Damage Speed of	2.5mph	280.1	216.2	181.4	
Using a Rated No Damage Speed of	5.0mph	516.7	184.0	725.7	
Using a Rated No Damage Speed of	7.5mph	709.9	154.3	1632.9	
Using a Rated No Damage Speed of	10.0mph	859.7	127.3	2902.8	
Average Crush = 20.3 inches					169.9
Using a Rated No Damage Speed of	2.5mph	230.4	146.3	181.4	
Using a Rated No Damage Speed of	5.0mph	425.1	124.5	725.7	
Using a Rated No Damage Speed of	7.5mph	584.0	104.4	1632.9	
Using a Rated No Damage Speed of	10.0mph	707.2	86.2	2902.8	
Maximum Crush = 23.0 inches					132.4
Using a Rated No Damage Speed of	2.5mph	203.4	114.0	181.4	
Using a Rated No Damage Speed of	5.0mph	375.2	97.0	725.7	
Using a Rated No Damage Speed of	7.5mph	515.5	81.4	1632.9	
Using a Rated No Damage Speed of	10.0mph	624.2	67.1	2902.8	

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation
Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in
B = Crush resistance per inch of damage width (Crash), lb/in^2
G = Energy dissipated without permanent damage, lb
Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

****

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush Factor	Maximum Crush (inches)	Calculated KE Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	23.0	34.7	0.0	0.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 21.0

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005
Make: BUICK
Model: CENTURY

Test Number	Vehicle Info	No Damage Speed (mph)	Average Crush (inch)	Closing Speed (mph)	Vehicle Stiffness A	Vehicle Stiffness B	Vehicle Width Values G	Vehicle Width Values Kv	Crush Factor
4141	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	20.8	29.6	256.8	60.8	542.3	88.0	16.9
2831	1998 BUICK CENTURY FOUR DOOR SEDAN	5.0	19.7	29.9	268.6	67.9	531.3	97.9	18.1
3524	2001 CHEVROLET MONTE CARLO TWO DOOR C...	5.0	23.2	35.5	277.3	73.0	526.8	98.9	21.7
3471	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	23.2	34.9	279.0	71.9	541.0	98.0	21.0
3053	1999 BUICK CENTURY FOUR DOOR SEDAN	5.0	22.4	34.9	283.7	75.7	531.5	103.1	21.8
2821	1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	5.0	21.0	34.9	302.3	86.0	531.5	117.2	23.1
5204	2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	18.1	29.6	307.7	83.3	567.9	120.7	19.3
3843	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	16.9	29.8	321.5	94.3	548.3	136.2	21.0
4775	2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	20.4	34.7	325.6	95.1	557.6	129.7	23.7
4317	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	12.1	24.9	351.3	115.8	532.7	181.2	20.6
3637	2001 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	16.9	34.7	373.4	131.4	530.8	179.4	28.5
2855	1997 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	17.7	29.6	386.6	107.3	696.2	155.3	19.8
3786	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	12.9	30.0	413.5	160.1	534.0	230.8	27.8
2877	1997 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	9.2	25.2	465.2	205.0	527.9	318.8	27.7
3798	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	11.3	24.8	465.8	162.6	667.3	255.1	21.7
	Average (AVG)				**338.6**	**106.0**	**557.8**	**154.0**	**22.2**
	Minimum (MIN)				**256.8**	**60.8**	**526.8**	**88.0**	**16.9**
	Maximum (MAX)				**465.8**	**205.0**	**696.2**	**318.8**	**28.5**
	Standard Deviation (STDev-sample)				**68.7**	**41.8**	**51.9**	**67.8**	**3.5**
	Number of Tests (n)			**15**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005
Make: BUICK
Model: CENTURY

Test Number	Vehicle Info	No Damage Speed (mph)	Max Crush (inch)	Closing Speed (mph)	Vehicle Stiffness A	Vehicle Stiffness B	Vehicle Width Values G	Vehicle Width Values Kv	Crush Factor
2877	1997 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	19.9	25.2	214.4	43.5	527.9	67.7	12.8
4141	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	24.7	29.6	216.5	43.2	542.3	62.5	14.2
3524	2001 CHEVROLET MONTE CARLO TWO DOOR C...	5.0	28.5	35.5	225.8	48.4	526.8	65.6	17.7
2831	1998 BUICK CENTURY FOUR DOOR SEDAN	5.0	23.2	29.9	227.7	48.8	531.3	70.4	15.4
3053	1999 BUICK CENTURY FOUR DOOR SEDAN	5.0	27.4	34.9	232.5	50.8	531.5	69.3	17.8
3471	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	27.1	34.9	238.5	52.6	541.0	71.6	18.0
2821	1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	5.0	24.1	34.9	263.4	65.3	531.5	89.0	20.2
3843	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	20.6	29.8	264.3	63.7	548.3	92.0	17.2
5204	2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	20.7	29.6	269.6	64.0	567.9	92.7	16.9
2888	1998 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	15.2	24.7	272.9	70.8	525.7	111.4	16.1
4775	2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	23.1	34.7	286.9	73.8	557.6	100.7	20.9
4317	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	13.5	24.9	313.4	92.2	532.7	144.3	18.3
3798	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	16.7	24.8	317.3	75.4	667.3	118.3	14.8
3637	2001 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	19.1	34.7	330.0	102.6	530.8	140.0	25.2
2855	1997 PONTIAC GRAND PRIX FOUR DOOR SEDAN	5.0	19.5	29.6	351.4	88.7	696.2	128.3	18.0
3786	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	14.2	30.0	374.9	131.6	534.0	189.7	25.2
3648	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	5.0	17.6	35.0	452.2	154.1	663.6	209.8	27.8
	Average (AVG)				**285.4**	**74.7**	**562.1**	**107.3**	**18.6**
	Minimum (MIN)				**214.4**	**43.2**	**525.7**	**62.5**	**12.8**
	Maximum (MAX)				**452.2**	**154.1**	**696.2**	**209.8**	**27.8**
	Standard Deviation (STDev-sample)				**64.7**	**31.2**	**55.7**	**43.7**	**4.1**
	Number of Tests (n)			**17**					

Stiffness Values and Test Data

Derived from

NHTSA Crash Test

#4551

2002 CHEVROLET IMPALA

Provided By

4N6XPRT StifCalcs®

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Similar Vehicle database reader

You entered: **2001 BUICK CENTURY**

The Sister/Clone Vehicle Year/Model Interchange list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
2000 - 2005	CHEVROLET	IMPALA	2D, 4D, SW	110.5, 125
Remarks:				
1997 - 2004	BUICK	REGAL	2D, 4D, SW	107.5
Remarks: Regal now same as Century				
1997 - 2003	PONTIAC	GRAND PRIX	2D, 4D	110.5
Remarks:				
1998 - 2002	OLDSMOBILE	INTRIGUE	4D	109
Remarks:				
1997 - 2005	BUICK	CENTURY	2D, 4D, SW	109, 116
Remarks:				
2000 - 2005	CHEVROLET	MONTE CARLO	2D	108
Remarks:				
2004 - 2005	PONTIAC	GRAND PRIX	2D, 4D	110.5
Remarks:				

If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering,
521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.

Test Information

Test #	**4551**	NHTSA Test Reference Guide Version #	**V5**			
Test Date	**2003-03-13**	Contract #	**DTRS57-98-D-00041**			
Contract/Study Title	**FMVSS 214 SIDE IMPACT TEST - 2002 CHEVROLET IMPALA 4 DOOR**					
Test Objective(s)	**ES2 ATD EVALUATION FMVSS 214 SIDE IMPACT TEST**					
Test Type	**RESEARCH SAFETY VEHICLE TEST**	Configuration	**IMPACTOR INTO VEHICLE**			
Impact Angle	**270**	Side Impact Point	**N/A**	mm	**N/A**	inches
		Offset Distance	**0**	mm	**0.0**	inches
		Closing Speed	**53.1**	Km/Hr	**32.99**	MPH
Test Performer	**MGA RESEARCH**					
Test Reference #	**BT03031301**					
Test Track Surface	**CONCRETE**	Condition	**DRY**			
Ambient Temperature	**20** C **68.0** F	Total Number of Curves	**176**			
Data Recorder Type	**OTHER**	Data Link	**OTHER**			
Test Commentary	**EME ON BOARD DAS 3200**					

Fixed Barrier Information

Barrier Type		Pole Barrier Diameter		mm		inches
Barrier Shape						
Barrier Commentary						

2002 CHEVROLET IMPALA LEFT FRONT SEAT OCCUPANT

Test #	4551		
Vehicle #	2	Sex	MALE
Location	LEFT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	EUROSID 2 (ES-2) SIDE IMPACT DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	OTHER		
Occupant Manufacturer	TNO ES2 S/N 009		
Occupant Modification			
Occupant Description	ES2 WITH RIB EXTENSIONS		
Occupant Commentary	LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG		

Head

Head to -

Windshielder Header	352	mm	13.9	inches	Head Injury Criteria (HIC)	69	
WindShield	595	mm	23.4	inches	HIC Lower Time Interval (ms)	45.6	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	81.6	
Side Header	228	mm	9.0	inches			
Side Window	335	mm	13.2	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	535	mm	21.1	inches	Arm to Door	101	mm	4.0	inches
Steering Wheel	324	mm	12.8	inches	Hip to Door	195	mm	7.7	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	0	Pelvic Peak Lateral Acceleration (g's)	64.7
Thoracic Trauma Index	74.7	Thorax Peak Acceleration (g's)	0

Lap Belt Peak Load 0 Newtons 0.0 pound Force

Shoulder Belt Peak Load 0 Newtons 0.0 pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	215	mm	8.5	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	0	Newtons	0.0	pounds Force
Right Femur Peak Load	0	Newtons	0.0	pounds Force

First Contact Region (Legs): OTHER

Second Contact Region (Legs):

2002 CHEVROLET IMPALA LEFT FRONT SEAT OCCUPANT

Test #	4551					
Vehicle #	2	Sex	MALE			
Location	LEFT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	EUROSID 2 (ES-2) SIDE IMPACT DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	OTHER
Occupant Manufacturer	TNO ES2 S/N 009
Occupant Modification	
Occupant Description	ES2 WITH RIB EXTENSIONS
Occupant Commentary	LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	SEAT BACK
Deployment	DEPLOYED PROPERLY
Restraint Commentary	PRIMARY - SEAT MOUNTED SIDE AIRBAG
Restraint # 2	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	NOT APPLICABLE
Restraint Commentary	SECONDARY

2002 CHEVROLET IMPALA LEFT REAR SEAT OCCUPANT

Test #	4551		
Vehicle #	2	Sex	MALE
Location	LEFT REAR SEAT	Age	0
Position	NON-ADJUSTABLE SEAT	Height	0 mm 0.0 inches
Type	EUROSID 2 (ES-2) SIDE IMPACT DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	OTHER		
Occupant Manufacturer	TNO ES2 S/N 010		
Occupant Modification			
Occupant Description	ES2 WITH RIB EXTENSIONS		
Occupant Commentary	CHEST TO DOOR PANEL; LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG		

Head

Head to -

Windshielder Header	0	mm	0.0	inches	Head Injury Criteria (HIC)	187	
WindShield	0	mm	0.0	inches	HIC Lower Time Interval (ms)	49.3	
Seatback	638	mm	25.1	inches	HIC Upper Time Interval (ms)	62.4	
Side Header	191	mm	7.5	inches			
Side Window	328	mm	12.9	inches			
Neck to Seatback	0	mm	0.0	inches			
First Contact Region (Head)	C PILLAR						
Second Contact Region (Head)							

Chest

Chest to -

Dash	0	mm	0.0	inches	Arm to Door	95	mm	3.7	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	156	mm	6.1	inches
Seatback	550	mm	21.7	inches					
Chest Severity Index	0				Pelvic Peak Lateral Acceleration (g's)	82.3			
Thoracic Trauma Index	68.9				Thorax Peak Acceleration (g's)	0			
Lap Belt Peak Load	0	Newtons	0.0	pound Force					
Shoulder Belt Peak Load	0	Newtons	0.0	pound Force					
First Contact Region (Chest/Abdomen)	OTHER								
Second Contact Region (Chest/Abdomen)	NONE								

Legs

Knees to Dash	0	mm	0.0	inches	Knees to Seatback	230	mm	9.1	inches
Left Femur Peak Load	0	Newtons	0.0	pounds Force					
Right Femur Peak Load	0	Newtons	0.0	pounds Force					
First Contact Region (Legs)	OTHER								
Second Contact Region (Legs)									

2002 CHEVROLET IMPALA LEFT REAR SEAT OCCUPANT

Test #	4551					
Vehicle #	2	Sex	MALE			
Location	LEFT REAR SEAT	Age	0			
Position	NON-ADJUSTABLE SEAT	Height	0	mm	0.0	inches
Type	EUROSID 2 (ES-2) SIDE IMPACT DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	OTHER
Occupant Manufacturer	TNO ES2 S/N 010
Occupant Modification	
Occupant Description	ES2 WITH RIB EXTENSIONS
Occupant Commentary	CHEST TO DOOR PANEL; LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	NOT APPLICABLE
Restraint Commentary	PRIMARY
Restraint # 2	NONE
Mounted	NOT APPLICABLE
Deployment	NOT APPLICABLE
Restraint Commentary	SECONDARY

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	4551		
VIN		NHTSA Test Vehicle Number	1
Year	0	Vehicle Modification Indicator	RESEARCH VEHICLE
Make	NHTSA	Post-test Steering Column Shear Capsule Seperation	NOT APPLICABLE
Model	DEFORMABLE IMPACTOR	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	NOT APPLICABLE		
Engine	NOT APPLICABLE		
Displacement	0 Liter	Transmission	NOT APPLICABLE
Vehicle Modification(s) Description			
Vehicle Commentary	FMVSS 214 DEFORMABLE BARRIER AND IMPACTOR		

Vehicle Length	4115	mm	162.0	inches	CG behind Front Axle	1106	mm	43.5	inches
Vehicle Width	1252	mm	49.3	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2591	mm	102.0	inches	Total Length of Indentation	0	mm	0.0	inches
Vehicle Test Weight	1361	KG	3000	pounds	Maximum Static Crush Depth	0	mm	0.0	inches
					Pre-Impact Speed	53	kph	33.0	mph

Vehicle Damage Index: | Principal Direction of Force: 0

Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

DPD 1	0	mm	0.0	inches
DPD 2	0	mm	0.0	inches
DPD 3	0	mm	0.0	inches
DPD 4	0	mm	0.0	inches
DPD 5	0	mm	0.0	inches
DPD 6	0	mm	0.0	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm
Centerline	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm
Right Bumper Corner	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm

Bumper Engagement (Inline Impact Only)	Sill Engagement (Side Impact Only)	A-pillar Engagement (Side Impact Only)
27.0	NOT APPLICABLE	0.0

Moving Test Cart Angle	Moving Test Cart/Vehicle Crabbed Angle	Vehicle Orientation on Cart Moving Test Cart
NOT APPLICABLE	27.0	NOT APPLICABLE
Magnitude of the Tilt Angle Measured between surface of a Rollover Test Cart and the Ground	*Magniture of the Crabbed Angle Measure Clockwise from Longitudinal Vector to Velocity Vector of Vehicle*	*Magnitude of the Angle Measured between the Vehicle Orientation and Direction of Test Cart Motion*

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	4551		
VIN		NHTSA Test Vehicle Number	1
Year	0	Vehicle Modification Indicator	RESEARCH VEHICLE
Make	NHTSA	Post-test Steering Column Shear Capsule Seperation	NOT APPLICABLE
Model	DEFORMABLE IMPACTOR	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	NOT APPLICABLE		
Engine	NOT APPLICABLE		
Displacement	0 Liter	Transmission	NOT APPLICABLE
Vehicle Modification(s) Description			
Vehicle Commentary	FMVSS 214 DEFORMABLE BARRIER AND IMPACTOR		

Vehicle Length	4115	mm	162.0	inches	CG behind Front Axle	1106	mm	43.5	inches
Vehicle Width	1252	mm	49.3	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2591	mm	102.0	inches	Total Length of Indentation	0	mm	0.0	inches
Vehicle Test Weight	1361	KG	3000	pounds	Maximum Static Crush Depth	0	mm	0.0	inches
					Pre-Impact Speed	53	kph	33.0	mph
Vehicle Damage Index					Principal Direction of Force	0			

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinaldirection. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

Left Side				Centerline				Right Side			
Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Length of Vehicle at Centerline							
				0	0.0	0	0.0				
				Engine Block							
				0	0.0	0	0.0				
0	0.0	0	0.0	Front Bumper Corner				0	0.0	0	0.0
				Front of Engine							
				0	0.0	0	0.0				
0	0.0	0	0.0	Firewall				0	0.0	0	0.0
				0	0.0	0	0.0				
0	0.0	0	0.0	Upper Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Bottom of 'A' Post				0	0.0	0	0.0
0	0.0	0	0.0	Upper Trailing Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Trailing Edge of Door				0	0.0	0	0.0
				Steering Column							
				0	0.0	0	0.0				
				Center of Seering Column to 'A' Post (Horizontal)							
				0	0.0	0	0.0				
				Center of Steering Column to Headliner (Vertical)							
				0	0.0	0	0.0				

Vehicle 2 2002 CHEVROLET IMPALA

Test #	4551		
VIN	2G1WH55E429210905	NHTSA Test Vehicle Number	2
Year	2002	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	CHEVROLET	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	IMPALA	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V6 TRANSVERSE FRONT		
Displacement	3.4 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description			
Vehicle Commentary			

Vehicle Length	5063	mm	199.3	inches	CG behind Front Axle	1202	mm	47.3	inches
Vehicle Width	1830	mm	72.0	inches	Center of Damage to CG Axis	-313	mm	-12.3	inches
Vehicle Wheelbase	2810	mm	110.6	inches	Total Length of Indentation	4200	mm	165.4	inches
Vehicle Test Weight	1833	KG	4040	pounds	Maximum Static Crush Depth	332	mm	13.1	inches
					Pre-Impact Speed	0	kph	0.0	mph

Vehicle Damage Index: 09LWMW8

Principal Direction of Force: 270

Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

DPD 1	-4	mm	-0.2	inches
DPD 2	26	mm	1.0	inches
DPD 3	332	mm	13.1	inches
DPD 4	321	mm	12.6	inches
DPD 5	35	mm	1.4	inches
DPD 6	5	mm	0.2	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	169.3	inches	166.7	inches	2.6	inches
	4301	mm	4235	mm	66	mm
Centerline	199.3	inches	194.0	inches	5.4	inches
	5063	mm	4927	mm	136	mm
Right Bumper Corner	169.2	inches	169.7	inches	-0.5	inches
	4298	mm	4310	mm	-12	mm

Bumper Engagement (Inline Impact Only): 0.0

Sill Engagement (Side Impact Only): DIRECT ENGAGEMENT

A-pillar Engagement (Side Impact Only): 0.0

Moving Test Cart Angle: NOT APPLICABLE

Magnitude of the Tilt Angle Measured between surface of a Rollover Test Cart and the Ground

Moving Test Cart/Vehicle Crabbed Angle: 0.0

Magniture of the Crabbed Angle Measure Clockwise from Longitudinal Vector to Velocity Vector of Vehicle

Vehicle Orientation on Cart Moving Test Cart: NO DIRECT ENGAGEMENT

Magnitude of the Angle Measured between the Vehicle Orientation and Direction of Test Cart Motion

Vehicle 2 2002 CHEVROLET IMPALA

Test #	4551		
VIN	2G1WH55E429210905	NHTSA Test Vehicle Number	2
Year	2002	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	CHEVROLET	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	IMPALA	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V6 TRANSVERSE FRONT		
Displacement	3.4 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description			
Vehicle Commentary			

Vehicle Length	5063	mm	199.3	inches	CG behind Front Axle	1202	mm	47.3	inches
Vehicle Width	1830	mm	72.0	inches	Center of Damage to CG Axis	-313	mm	-12.3	inches
Vehicle Wheelbase	2810	mm	110.6	inches	Total Length of Indentation	4200	mm	165.4	inches
Vehicle Test Weight	1833	KG	4040	pounds	Maximum Static Crush Depth	332	mm	13.1	inches
					Pre-Impact Speed	0	kph	0.0	mph

Vehicle Damage Index 09LWMW8 Principal Direction of Force 270

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinaldirection. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

Left Side				Centerline				Right Side			
Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Length of Vehicle at Centerline							
				5063	199.3	4927	194.0				
				Engine Block							
				0	0.0	0	0.0				
4301	169.3	4235	166.7	Front Bumper Corner				4298	169.2	4310	169.7
				Front of Engine							
				0	0.0	0	0.0				
0	0.0	0	0.0	Firewall				0	0.0	0	0.0
				0	0.0	0	0.0				
0	0.0	0	0.0	Upper Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Bottom of 'A' Post				0	0.0	0	0.0
0	0.0	0	0.0	Upper Trailing Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Trailing Edge of Door				0	0.0	0	0.0
				Steering Column							
				0	0.0	0	0.0				
				Center of Seering Column to 'A' Post (Horizontal)							
				0	0.0	0	0.0				
				Center of Steering Column to Headliner (Vertical)							
				0	0.0	0	0.0				

2002 CHEVROLET IMPALA

NHTSA Crash Test - #4551 - Side Impact

Damage Profile Distances - Indention Length - KE Equivalent Speed - Trapezoidal Average

Test Vehicle Weight = 4040 pounds
KE Equivalent Speed = 21.5 MPH
Test Crush Length = 165.4 inches

Impactor Weight = 3000
Impactor Test Speed = 33.0

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Rear)	-0.2	1.0	13.1	12.6	1.4	0.2	(Front)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 0.2 inches					227160.1
Using a Rated No Damage Speed of	1.0mph	2011.4	206555.9	9.8	
Using a Rated No Damage Speed of	2.0mph	3827.0	186931.2	39.2	
Using a Rated No Damage Speed of	3.0mph	5446.7	168285.8	88.1	
Using a Rated No Damage Speed of	5.0mph	8098.5	133933.1	244.8	
Average Crush = 5.6 inches					289.7
Using a Rated No Damage Speed of	1.0mph	71.8	263.5	9.8	
Using a Rated No Damage Speed of	2.0mph	136.7	238.4	39.2	
Using a Rated No Damage Speed of	3.0mph	194.5	214.7	88.1	
Using a Rated No Damage Speed of	5.0mph	289.2	170.8	175.4	
Maximum Crush = 13.1 inches					52.9
Using a Rated No Damage Speed of	1.0mph	30.7	48.1	9.8	
Using a Rated No Damage Speed of	2.0mph	58.4	43.6	39.2	
Using a Rated No Damage Speed of	3.0mph	83.2	39.2	88.1	
Using a Rated No Damage Speed of	5.0mph	123.6	31.2	244.8	

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation
Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in
B = Crush resistance per inch of damage width (Crash), lb/in^2
G = Energy dissipated without permanent damage, lb
Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

****

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush Factor	Maximum Crush (inches)	Calculated KE Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	13.1	26.2	4.7	17.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 14.2

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Available Test Results
Side Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005
Make: BUICK
Model: CENTURY

Test Number	Vehicle Info	No Damage Speed (mph)	Average Crush (inch)	KEES (mph)	Indention Stiffness A	Indention Stiffness B	Length Values G	Length Values Kv	Crush Factor
2680	1998 BUICK CENTURY FOUR DOOR SEDAN	2.0	9.5	25.1	88.9	108.4	36.4	128.0	26.6
4607	2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN	2.0	13.7	25.3	91.9	78.2	53.9	92.2	18.7
3519	2001 PONTIAC GRAND PRIX FOUR DOOR SEDAN	2.0	10.6	25.4	104.2	114.6	47.4	135.0	24.3
3469	2001 CHEVROLET MONTE CARLO TWO DOOR C...	2.0	9.0	25.5	105.8	139.0	40.3	163.6	29.1
4610	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	7.3	25.1	119.0	187.3	37.8	221.1	34.4
2753	1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	2.0	7.2	24.9	119.1	190.8	37.2	225.5	34.7
3803	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	7.2	25.0	125.4	201.1	39.1	237.6	34.9
3575	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	8.2	25.2	129.4	182.6	45.9	215.5	30.9
4642	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	5.6	21.7	131.8	229.6	37.8	278.6	33.3
4380	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	6.8	25.2	133.7	228.1	39.2	269.1	37.3
4551	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	5.6	21.5	135.7	234.9	39.2	285.5	32.9
3210	2000 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	11.7	25.1	135.7	134.1	68.7	158.2	21.6
2694	1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	2.0	5.1	21.5	137.0	260.6	36.0	316.7	36.1
3475	2001 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	2.0	9.3	36.1	172.3	317.2	46.8	355.5	56.3
	Average (AVG)				**123.6**	**186.2**	**43.3**	**220.2**	**32.2**
	Minimum (MIN)				**88.9**	**78.2**	**36.0**	**92.2**	**18.7**
	Maximum (MAX)				**172.3**	**317.2**	**68.7**	**355.5**	**56.3**
	Standard Deviation (STDev-sample)				**21.5**	**66.1**	**9.0**	**77.1**	**8.9**
	Number of Tests (n)			**14**					

Available Test Results
Side Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005
Make: BUICK
Model: CENTURY

Test Number	Vehicle Info	No Damage Speed (mph)	Max Crush (inch)	KEES (mph)	Indention Stiffness A	Indention Stiffness B	Length Values G	Length Values Kv	Crush Factor
2680	1998 BUICK CENTURY FOUR DOOR SEDAN	2.0	19.8	25.1	42.5	24.8	36.4	29.3	12.7
2694	1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	2.0	14.9	21.5	47.3	31.0	36.0	37.7	12.5
2753	1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	2.0	17.3	24.9	49.3	32.7	37.2	38.7	14.4
4610	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	17.3	25.1	50.4	33.7	37.8	39.7	14.6
4380	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	17.0	25.2	53.5	36.6	39.2	43.2	15.0
3803	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	16.3	25.0	55.2	38.9	39.1	46.0	15.3
4642	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	13.4	21.7	55.4	40.6	37.8	49.3	14.0
3469	2001 CHEVROLET MONTE CARLO TWO DOOR C...	2.0	16.6	25.5	57.0	40.4	40.3	47.6	15.7
4551	2002 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	13.1	21.5	58.6	43.8	39.2	53.2	14.2
3519	2001 PONTIAC GRAND PRIX FOUR DOOR SEDAN	2.0	18.1	25.4	61.3	39.7	47.4	46.8	14.3
3575	2001 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	16.2	25.2	65.8	47.1	45.9	55.6	15.7
4607	2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN	2.0	16.5	25.3	76.5	54.3	53.9	64.0	15.6
3475	2001 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN	2.0	17.6	36.1	90.9	88.2	46.8	98.9	29.7
3210	2000 CHEVROLET IMPALA FOUR DOOR SEDAN	2.0	17.1	25.1	92.8	62.7	68.7	74.0	14.8
	Average (AVG)				**61.2**	**43.9**	**43.3**	**51.7**	**15.6**
	Minimum (MIN)				**42.5**	**24.8**	**36.0**	**29.3**	**12.5**
	Maximum (MAX)				**92.8**	**88.2**	**68.7**	**98.9**	**29.7**
	Standard Deviation (STDev-sample)				**15.4**	**16.0**	**9.0**	**17.7**	**4.2**
	Number of Tests (n)			**14**					

4N6XPRT Systems
Expert System Software for Litigation

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La Mesa, CA 91941-3842

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Web Site: http://www.4n6xprt.com

E-Mail: 4n6@4n6xprt.com

The NHTSA Crash Test database contains two rear impact tests for the Buick Century, but neither of them have any recorded crush depths.

To create a SIMILAR class of vehicle, we first looked at the test weight of the two tests for the Buick Century, which were reported as 3921 and 3958 pounds.

We then looked at the NHTSA database for CARS that have REAR IMPACT TESTS, and a test weight range of 3821-4060 pounds (+/- ~100 pounds of the two test vehicles in the database.).

The Test Summary Reports based on the Average and Maximum crush depths follow.

Available Test Results
Rear Impact Test Summary

Report Filter Settings

Year Range: 1965 - 2013

Vehicle Weight Range: 3821-4060

Test Number	Vehicle Info	No Damage Speed (mph)	Average Crush (inch)	KEES (mph)	Vehicle Width Stiffness Values A	B	G	Kv	Crush Factor
1408	1989 BUICK RIVIERA TWO DOOR SEDAN	5.0	20.1	21.2	177.4	28.7	548.1	49.1	9.0
154	1980 OLDSMOBILE CUTLASS FOUR DOOR SEDAN	5.0	19.5	24.8	226.5	45.9	558.2	72.1	12.6
139	1980 DODGE MIRADA TWO DOOR COUPE	5.0	19.0	25.0	226.9	47.6	540.4	74.5	13.1
1279	1988 CHEVROLET CAVALIER FOUR DOOR SEDAN	5.0	14.0	20.8	275.6	62.3	609.9	107.9	12.4
1269	1988 CHEVROLET CAPRICE FOUR DOOR SEDAN	5.0	12.3	21.7	289.2	78.2	534.7	132.1	15.2
38	1979 CHEVROLET CAMARO TWO DOOR COUPE	5.0	12.4	24.8	340.5	108.3	535.2	170.1	19.7
117	1978 PONTIAC LEMANS TWO DOOR SEDAN	5.0	9.8	20.9	349.0	112.9	539.4	195.0	17.8
166	1978 FORD GRANADA FOUR DOOR SEDAN	5.0	9.1	20.5	369.0	125.3	543.4	219.2	18.4
	Average (AVG)				**281.7**	**76.1**	**551.2**	**127.5**	**14.8**
	Minimum (MIN)				**177.4**	**28.7**	**534.7**	**49.1**	**9.0**
	Maximum (MAX)				**369.0**	**125.3**	**609.9**	**219.2**	**19.7**
	Standard Deviation (STDev-sample)				**68.3**	**35.8**	**24.9**	**62.3**	**3.7**
	Number of Tests (n)			**8**					

Available Test Results
Rear Impact Test Summary

Report Filter Settings

Year Range: 1965 - 2013

Vehicle Weight Range: 3821-4060

Test Number	Vehicle Info	No Damage Speed (mph)	Max Crush (inch)	KEES (mph)	Vehicle Stiffness A	Vehicle Stiffness B	Vehicle Width Values G	Vehicle Width Values Kv	Crush Factor
1408	1989 BUICK RIVIERA TWO DOOR SEDAN	5.0	21.4	21.2	166.2	25.2	548.1	43.1	8.4
75	1979 DODGE ASPEN TWO DOOR COUPE	5.0	21.5	24.8	198.3	36.5	538.3	57.3	11.4
68	1979 PONTIAC GRAND PRIX TWO DOOR COUPE	5.0	21.2	24.9	203.1	38.2	540.1	59.8	11.7
117	1978 PONTIAC LEMANS TWO DOOR SEDAN	5.0	16.7	20.9	205.6	39.2	539.4	67.7	10.5
154	1980 OLDSMOBILE CUTLASS FOUR DOOR SEDAN	5.0	20.5	24.8	215.7	41.7	558.2	65.4	12.0
139	1980 DODGE MIRADA TWO DOOR COUPE	5.0	20.0	25.0	215.9	43.1	540.4	67.4	12.5
1269	1988 CHEVROLET CAPRICE FOUR DOOR SEDAN	5.0	15.2	21.7	234.9	51.6	534.7	87.1	12.4
1279	1988 CHEVROLET CAVALIER FOUR DOOR SEDAN	5.0	15.5	20.8	248.4	50.6	609.9	87.7	11.2
166	1978 FORD GRANADA FOUR DOOR SEDAN	5.0	13.2	20.5	255.3	60.0	543.4	104.9	12.7
38	1979 CHEVROLET CAMARO TWO DOOR COUPE	5.0	13.9	24.8	304.3	86.5	535.2	135.8	17.6
	Average (AVG)				**224.8**	**47.3**	**548.8**	**77.6**	**12.0**
	Minimum (MIN)				**166.2**	**25.2**	**534.7**	**43.1**	**8.4**
	Maximum (MAX)				**304.3**	**86.5**	**609.9**	**135.8**	**17.6**
	Standard Deviation (STDev-sample)				**38.1**	**16.8**	**22.6**	**27.1**	**2.3**
	Number of Tests (n)			**10**					

Expert VIN DeCoder®

Version Number 3.1.0.3

DeCoded VIN: 1G6KD54Y81U248813

Model:	2001 Cadillac Deville 4 Door Sedan
Engine Size:	4.6L/ 279cu.in.
Engine Description:	V8 cylinder with Dual Overhead Cam (DOHC)
Horse Power:	275 @ 5600 rpm
Torque:	300 lb-ft at 4000 rpm
Injection System:	Multiport Fuel Injection(MFI)
PSI:	40-50 psi
Ignition:	Electronic
Manufacturer:	Buick, Oldsmobile, Cadillac
Assembly Plant:	Hamtramck, MI
Drive Wheels:	This is a Front Wheel Drive vehicle w/Active (Manual) Seatbelts + Front and Side Air Bags

The First through Third characters (1G6) indicate a Cadillac Car made in the U.S.A.

The Fourth and Fifth characters (KD) indicate a Deville

The Sixth character (5) indicates a 4 Door Sedan

The Seventh character (4) indicates Active (Manual) Seatbelts + Front and Side Air Bags

The Eighth character (Y) indicates the OEM engine: 4.6L/ 279cu.in., V8, DOHC

The Ninth character (the check digit) is entered as 8.
The VIN appears Valid, the calculated value is 8.

The Tenth character (1) indicates the model year 2001

The Eleventh character (U) indicates the vehicle was made in the assembly plant in Hamtramck, MI

The Twelfth through Seventeenth characters (248813) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.2.0

JEREMY S DAILY PHD PE
TUCRRC
800 TUCKER DRIVE
TULSA OK 74104-9700

9/20/2012

2001 CADILLAC DEVILLE 4 DOOR SEDAN

Curb Weight:	4049 lbs.		1837 kg.	
Curb Weight Distribution -	Front:	61 %	Rear:	39 %
Gross Vehicle Weight Rating:	5133 lbs.		2328 kg.	
Number of Tires on Vehicle:	4			
Drive Wheels:	FRONT			

Horizontal Dimensions	Inches	Feet	Meters
Total Length	207	17.25	5.26
Wheelbase:	115	9.58	2.92
Front Bumper to Front Axle:	43	3.58	1.09
Front Bumper to Front of Front Well:	27	2.25	0.69
Front Bumper to Front of Hood:	6	0.50	0.15
Front Bumper to Base of Windshield:	54	4.50	1.37
Front Bumper to Top of Windshield:	85	7.08	2.16
Rear Bumper to Rear Axle:	49	4.08	1.24
Rear Bumper to Rear of Rear Well:	32	2.67	0.81
Rear Bumper to Rear of Trunk:	7	0.58	0.18
Rear Bumper to Base of Rear Window:	32	2.67	0.81
Width Dimensions			
Maximum Width:	75	6.25	1.91
Front Track:	63	5.25	1.60
Rear Track:	62	5.17	1.57
Vertical Dimensions			
Height:	57	4.75	1.45
Ground to -			
Front Bumper (Top)	20	1.67	0.51
Headlight - center	26	2.17	0.66
Hood - top front:	30	2.50	0.76
Base of Windshield	38	3.17	0.97
Rear Bumper - top:	24	2.00	0.61
Trunk - top rear:	41	3.42	1.04
Base of Rear Window:	43	3.58	1.09

2001 CADILLAC DEVILLE 4 DOOR SEDAN

Interior Dimensions	Inches	Feet	Meters
Front Seat Shoulder Width	61	5.08	1.55
Front Seat to Headliner	39	3.25	0.99
Front Leg Room - seatback to floor (max)	43	3.58	1.09
Rear Seat Shoulder Width	61	5.08	1.55
Rear Seat to Headliner	38	3.17	0.97
Front Leg Room - seatback to floor (min)	43	3.58	1.09

Seatbelts: 3pt - front and rear

Airbags: FRONT SEAT AIRBAGS + SIDE AIRBAGS

Steering Data

Turning Circle (Diameter)	492	41.00	12.50
Steering Ratio:	:1		
Wheel Radius:	13	1.08	0.33
Tire Size (OEM):	P225/60R16		

Acceleration & Braking Information

Brake Type: ALL DISC

ABS System: ABS

Braking, 60 mph to 0 (Hard pedal, no skid, dry pavement):

d = 138.0 ft t = 3.1 sec a = -28.0 ft/sec² G-force = -0.87

Acceleration:

	t		a		G-force
0 to 30mph		sec		ft/sec²	
0 to 60mph	8.0	sec	11.0	ft/sec²	0.34
45 to 65mph		sec		ft/sec²	

Transmission Type: 4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements: 2.5 mph

This vehicles Rated Bumper Strength: 2.5 mph

N.S.D.C = 2000 - 2005

2001 CADILLAC DEVILLE 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.40	Stable
NHTSA Star Rating (calculated)		****

Center of Gravity (No Load):

Inches behind front axle	=	44.85
Inches in front of rear axle	=	70.15
Inches from side of vehicle	=	37.50
Inches from ground	=	22.37
Inches from front corner	=	95.52
Inches from rear corner	=	124.91
Inches from front bumper	=	87.85
Inches from rear bumper	=	119.15

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2964.47	lb*ft*sec²
Pitch Moment of Inertia	=	2859.51	lb*ft*sec²
Roll Moment of Inertia	=	578.82	lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	59.0	deg
Angle Front of Hood to Windshield Base	=	9.5	deg
Angle Front of Hood to Windshield Top	=	17.6	deg
Angle of Windshield	=	28.7	deg
Angle of Steering Tires at Max Turn	=	26.8	deg

First Approximation Crush Factors:

Speed Equivalent (mph) of Kinetic Energy (KE) used in causing crush of indentation may be evaluated using the following formula, the appropriated Crush Factor (CF), and Maximum Indentation Depth (MID), in feet:

$$V(mph) = \sqrt{(30 * CF * MID)}$$

KE Equivalent Speed (Front/Rear/Side)	=	21	CF
Bullet vehicle IMPACT SPEED estimation based on TARGET VEHICLE damage ONLY (Tested for Rear/Side Impact only)	=	27	CF

These CF values are based upon analysis of NHTSA Barrier Crash data, and from over 1000 vehicle accidents where independant evaluation of speed was possible. (These are NOT 'A', 'B', 'C', or 'G' values)

The rear Impact data with more then 2-3 inches of crush damage should be looked at carefully, since some vehicles have very weak trunk & fender strength. Therefore, on some cars, especially GM, you estimate from the rear crush data may be high by as much as 4-5 mph (on a crush of 18 inches).

Stiffness Values and Test Data

Derived from

NHTSA Crash Test

#4837

2004 CADILLAC DE VILLE

Provided By

4N6XPRT StifCalcs®

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Similar Vehicle database reader

You entered: **2001 CADILLAC DEVILLE**

The Sister/Clone Vehicle Year/Model Interchange list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
1998 - 2004	CADILLAC	SEVILLE	4D	112.2
Remarks:				
2000 - 2005	BUICK	LESABRE	2D, 4D, SW	112.2, 127
Remarks: MOVES TO PARK AVENUE CHASSIS				
1997 - 2005	BUICK	PARK AVENUE	2D, 4D	113.8
Remarks:				
2000 - 2005	CADILLAC	DEVILLE	2D, 4D	115.3
Remarks: MOVES TO NEW SEVILLE CHAS				
1995 - 1999	BUICK	RIVIERA	2D	113.8
Remarks: BASED ON AURORA CHASSIS				
1995 - 1999	OLDSMOBILE	AURORA	4D	113.8
Remarks:				
2000 - 2005	PONTIAC	BONNEVILLE	2D, 4D, SW	112.2, 127
Remarks:				

If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering,
521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.

Test Information

Test #	4837	NHTSA Test Reference Guide Version #	V5			
Test Date	2003-11-17	Contract #	DTNH22-01-D-02005			
Contract/Study Title	35 MPH NCAP FRONTAL - 2004 CADILLAC DEVILLE DHS 4 DOOR SEDAN					
Test Objective(s)	OBTAIN ATD AND VEHICLE DATA					
Test Type	OPTIONAL NEW CAR ASSESSMENT TEST	Configuration	VEHICLE INTO BARRIER			
Impact Angle	0	Side Impact Point	0	mm	0.0	inches
		Offset Distance	0	mm	0.0	inches
		Closing Speed	56.0	Km/Hr	34.80	MPH
Test Performer	KARCO ENGINEERING					
Test Reference #	G40100					
Test Track Surface	CONCRETE	Condition	DRY			
Ambient Temperature	14 C	57.2 F	Total Number of Curves	185		
Data Recorder Type	DIGITAL DATA ACQUISITION	Data Link	OTHER			
Test Commentary	DATALINK IS NONE, ON-BOARD DAS					

Fixed Barrier Information

Barrier Type	RIGID	Pole Barrier Diameter	0	mm	0 inches
Barrier Shape	LOAD CELL BARRIER				
Barrier Commentary	NO COMMENTS				

2004 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	4837		
Vehicle #	1	Sex	MALE
Location	LEFT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	HYBRID III		
Occupant Manufacturer	VECTOR, S/N:035		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	NO COMMENTS		

Head

Head to -

Windshielder Header	350	mm	13.8	inches	Head Injury Criteria (HIC)	414	
WindShield	625	mm	24.6	inches	HIC Lower Time Interval (ms)	56.1	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	92	
Side Header	285	mm	11.2	inches			
Side Window	360	mm	14.2	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	542	mm	21.3	inches	Arm to Door	155	mm	6.1	inches
Steering Wheel	300	mm	11.8	inches	Hip to Door	170	mm	6.7	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	0	Pelvic Peak Lateral Acceleration (g's)	0
Thoracic Trauma Index	0	Thorax Peak Acceleration (g's)	49.2

Lap Belt Peak Load	5194	Newtons	1167.7	pound Force
Shoulder Belt Peak Load	4574	Newtons	1028.3	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	170	mm	6.7	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-4246	Newtons	-954.5	pounds Force
Right Femur Peak Load	-5294	Newtons	-1190.1	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

2004 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	4837					
Vehicle #	1	Sex	MALE			
Location	LEFT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	HYBRID III
Occupant Manufacturer	VECTOR, S/N:035
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	NO COMMENTS

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	FRONTAL AIRBAG
Mounted	STEERING WHEEL
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS

2004 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	4837		
Vehicle #	1	Sex	MALE
Location	RIGHT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	HYBRID III		
Occupant Manufacturer	VECTOR, S/N:034		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	NO COMMENTS		

Head

Head to -

Windshielder Header	360	mm	14.2	inches	Head Injury Criteria (HIC)	438	
WindShield	645	mm	25.4	inches	HIC Lower Time Interval (ms)	62.8	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	98.7	
Side Header	270	mm	10.6	inches			
Side Window	340	mm	13.4	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	568	mm	22.4	inches	Arm to Door	48	mm	1.9	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	160	mm	6.3	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	0	Pelvic Peak Lateral Acceleration (g's)	0
Thoracic Trauma Index	0	Thorax Peak Acceleration (g's)	46.9

Lap Belt Peak Load	4454	Newtons	1001.3	pound Force
Shoulder Belt Peak Load	5254	Newtons	1181.2	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	155	mm	6.1	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-3706	Newtons	-833.1	pounds Force
Right Femur Peak Load	-4735	Newtons	-1064.5	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

2004 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	4837					
Vehicle #	1	Sex	MALE			
Location	RIGHT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	HYBRID III
Occupant Manufacturer	VECTOR, S/N:034
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	NO COMMENTS

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	FRONTAL AIRBAG
Mounted	DASH PANEL - TOP
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS

2004 CADILLAC DE VILLE RIGHT REAR SEAT OCCUPANT

Test #	4837		
Vehicle #	1	Sex	NOT APPLICABLE
Location	RIGHT REAR SEAT	Age	0
Position	NOT APPLICABLE	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	3 YEAR OLD CHILD		
Calibration Method	HYBRID III		
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:139		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	NO COMMENTS		

Head

Head to -

Windshielder Header	0	mm	0.0	inches	Head Injury Criteria (HIC)	571	
WindShield	0	mm	0.0	inches	HIC Lower Time Interval (ms)	74.5	
Seatback	618	mm	24.3	inches	HIC Upper Time Interval (ms)	110.5	
Side Header	0	mm	0.0	inches			
Side Window	400	mm	15.7	inches			
Neck to Seatback	0	mm	0.0	inches			
First Contact Region (Head)	NONE						
Second Contact Region (Head)							

Chest

Chest to -

Dash	0	mm	0.0	inches	Arm to Door	305	mm	12.0	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	350	mm	13.8	inches
Seatback	590	mm	23.2	inches					
Chest Severity Index	0				Pelvic Peak Lateral Acceleration (g's)	0			
Thoracic Trauma Index	0				Thorax Peak Acceleration (g's)	40.1			
Lap Belt Peak Load	0	Newtons	0.0	pound Force					
Shoulder Belt Peak Load	0	Newtons	0.0	pound Force					
First Contact Region (Chest/Abdomen)	NONE								
Second Contact Region (Chest/Abdomen)	NONE								

Legs

Knees to Dash	0	mm	0.0	inches	Knees to Seatback	402	mm	15.8	inches
Left Femur Peak Load	0	Newtons	0.0	pounds Force					
Right Femur Peak Load	0	Newtons	0.0	pounds Force					
First Contact Region (Legs)	NONE								
Second Contact Region (Legs)									

2004 CADILLAC DE VILLE RIGHT REAR SEAT OCCUPANT

Test #	4837					
Vehicle #	1	Sex	NOT APPLICABLE			
Location	RIGHT REAR SEAT	Age	0			
Position	NOT APPLICABLE	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	3 YEAR OLD CHILD					

Calibration Method	HYBRID III
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:139
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	NO COMMENTS

Restraints

Restraint # 1	CONVERTIBLE CHILD SAFETY SEAT, FRONT FACING
Mounted	LATCH - LOWER ANCHORAGES AND TOP TETHER
Deployment	NOT APPLICABLE
Restraint Commentary	MANUFACTURER:EVENFLO, MODEL:VANGUARD 5, MODEL#3691261 P1
Restraint # 2	5 POINT BELT
Mounted	CHILD SEAT
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

2004 CADILLAC DE VILLE LEFT REAR SEAT OCCUPANT

Test #	4837		
Vehicle #	1	Sex	NOT APPLICABLE
Location	LEFT REAR SEAT	Age	0
Position	NOT APPLICABLE	Height	0 mm 0.0 inches
Type	HYBRID III DUMMY	Weight	0.0 kg 0 pounds
Size	3 YEAR OLD CHILD		
Calibration Method	HYBRID III		
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:082		
Occupant Modification	UNMODIFIED		
Occupant Description	N0 COMMENTS		
Occupant Commentary	CNTRH1, HEAD CONTACTED THE SEAT BAR		

Head

Head to -

Windshielder Header	0	mm	0.0	inches	Head Injury Criteria (HIC)	766	
WindShield	0	mm	0.0	inches	HIC Lower Time Interval (ms)	68	
Seatback	622	mm	24.5	inches	HIC Upper Time Interval (ms)	104	
Side Header	0	mm	0.0	inches			
Side Window	400	mm	15.7	inches			
Neck to Seatback	0	mm	0.0	inches			
First Contact Region (Head)	OTHER						
Second Contact Region (Head)							

Chest

Chest to -

Dash	0	mm	0.0	inches	Arm to Door	280	mm	11.0	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	348	mm	13.7	inches
Seatback	620	mm	24.4	inches					
Chest Severity Index	0				Pelvic Peak Lateral Acceleration (g's)	0			
Thoracic Trauma Index	0				Thorax Peak Acceleration (g's)	41.3			
Lap Belt Peak Load	0	Newtons	0.0	pound Force					
Shoulder Belt Peak Load	0	Newtons	0.0	pound Force					
First Contact Region (Chest/Abdomen)	NONE								
Second Contact Region (Chest/Abdomen)	NONE								

Legs

Knees to Dash	0	mm	0.0	inches	Knees to Seatback	415	mm	16.3	inches
Left Femur Peak Load	0	Newtons	0.0	pounds Force					
Right Femur Peak Load	0	Newtons	0.0	pounds Force					
First Contact Region (Legs)	NONE								
Second Contact Region (Legs)									

2004 CADILLAC DE VILLE LEFT REAR SEAT OCCUPANT

Test #	4837					
Vehicle #	1	Sex	NOT APPLICABLE			
Location	LEFT REAR SEAT	Age	0			
Position	NOT APPLICABLE	Height	0	mm	0.0	inches
Type	HYBRID III DUMMY	Weight	0.0	kg	0	pounds
Size	3 YEAR OLD CHILD					

Calibration Method	HYBRID III
Occupant Manufacturer	FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:082
Occupant Modification	UNMODIFIED
Occupant Description	N0 COMMENTS
Occupant Commentary	CNTRH1, HEAD CONTACTED THE SEAT BAR

Restraints

Restraint # 1	CONVERTIBLE CHILD SAFETY SEAT, FRONT FACING
Mounted	LATCH - LOWER ANCHORAGES AND TOP TETHER
Deployment	NOT APPLICABLE
Restraint Commentary	MANUFACTURER:COSCO, MODEL:REGAL RIDE, MODEL#22-139-MON
Restraint # 2	5 POINT BELT
Mounted	CHILD SEAT
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

Vehicle 1 2004 CADILLAC DE VILLE

Test #	4837		
VIN	1G6KE54Y64U152437	NHTSA Test Vehicle Number	1
Year	2004	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	CADILLAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	DE VILLE	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V8 TRANSVERSE FRONT		
Displacement	4.6 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	UNMODIFIED		
Vehicle Commentary	DHS MODEL		

Vehicle Length	5258	mm	207.0	inches	CG behind Front Axle	1238	mm	48.7	inches
Vehicle Width	1891	mm	74.4	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2934	mm	115.5	inches	Total Length of Indentation	1291	mm	50.8	inches
Vehicle Test Weight	2054	KG	4527	pounds	Maximum Static Crush Depth	615	mm	24.2	inches
					Pre-Impact Speed	56	kph	34.8	mph

Vehicle Damage Index: 12FDEW6

Principal Direction of Force: 0

Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

DPD 1	-480	mm	-18.9	inches
DPD 2	-553	mm	-21.8	inches
DPD 3	-605	mm	-23.8	inches
DPD 4	-608	mm	-23.9	inches
DPD 5	-559	mm	-22.0	inches
DPD 6	-485	mm	-19.1	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	201.1	inches	182.2	inches	18.9	inches
	5108	mm	4628	mm	480	mm
Centerline	207.0	inches	182.8	inches	24.2	inches
	5258	mm	4643	mm	615	mm
Right Bumper Corner	201.1	inches	182.0	inches	19.1	inches
	5108	mm	4623	mm	485	mm

Bumper Engagement (Inline Impact Only)	Sill Engagement (Side Impact Only)	A-pillar Engagement (Side Impact Only)
0.0	NOT APPLICABLE	0.0

Moving Test Cart Angle	Moving Test Cart/Vehicle Crabbed Angle	Vehicle Orientation on Cart Moving Test Cart
DIRECT ENGAGEMENT	0.0	NOT APPLICABLE
Magnitude of the Tilt Angle Measured between surface of a Rollover Test Cart and the Ground	*Magniture of the Crabbed Angle Measure Clockwise from Longitudinal Vector to Velocity Vector of Vehicle*	*Magnitude of the Angle Measured between the Vehicle Orientation and Direction of Test Cart Motion*

Vehicle 1 2004 CADILLAC DE VILLE

Test #	4837		
VIN	1G6KE54Y64U152437	NHTSA Test Vehicle Number	1
Year	2004	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	CADILLAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	DE VILLE	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V8 TRANSVERSE FRONT		
Displacement	4.6 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	UNMODIFIED		
Vehicle Commentary	DHS MODEL		

Vehicle Length	5258	mm	207.0	inches	CG behind Front Axle	1238	mm	48.7	inches
Vehicle Width	1891	mm	74.4	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2934	mm	115.5	inches	Total Length of Indentation	1291	mm	50.8	inches
Vehicle Test Weight	2054	KG	4527	pounds	Maximum Static Crush Depth	615	mm	24.2	inches
					Pre-Impact Speed	56	kph	34.8	mph

Vehicle Damage Index 12FDEW6 Principal Direction of Force 0

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinaldirection. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

Left Side				Centerline				Right Side			
Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Length of Vehicle at Centerline							
				5258	207.0	4643	182.8				
				Engine Block							
				646	25.4	646	25.4				
5108	201.1	4628	182.2	Front Bumper Corner				5108	201.1	4623	182.0
				Front of Engine							
				4725	186.0	4512	177.6				
4219	166.1	4187	164.8	Firewall				4234	166.7	4133	162.7
				4107	161.7	4010	157.9				
3651	143.7	3650	143.7	Upper Leading Edge of Door				3656	143.9	3656	143.9
3633	143.0	3620	142.5	Lower Leading Edge of Door				3636	143.1	3631	143.0
3586	141.2	3572	140.6	Bottom of 'A' Post				3601	141.8	3590	141.3
2529	99.6	2528	99.5	Upper Trailing Edge of Door				2537	99.9	2537	99.9
2500	98.4	2483	97.8	Lower Trailing Edge of Door				2497	98.3	2495	98.2
				Steering Column							
				3146	123.9	3200	126.0				
				Center of Seering Column to 'A' Post (Horizontal)							
				410	16.1	410	16.1				
				Center of Steering Column to Headliner (Vertical)							
				425	16.7	333	13.1				

2004 CADILLAC DE VILLE

NHTSA Crash Test - #4837 - Front Impact

Pre/Post Depths - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4527 pounds
Vehicle Closing Speed = 34.8 mph
Test Crush Length = 74.4 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	18.9	24.2	19.1	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 18.9 inches					165.3
Using a Rated No Damage Speed of	2.5mph	208.3	142.4	152.3	
Using a Rated No Damage Speed of	5.0mph	384.4	121.2	609.4	
Using a Rated No Damage Speed of	7.5mph	528.2	101.7	1371.1	
Using a Rated No Damage Speed of	10.0mph	639.8	84.0	2437.5	
Average Crush = 21.6 inches					126.6
Using a Rated No Damage Speed of	2.5mph	182.3	109.0	152.3	
Using a Rated No Damage Speed of	5.0mph	336.3	92.8	609.4	
Using a Rated No Damage Speed of	7.5mph	462.2	77.9	1371.1	
Using a Rated No Damage Speed of	10.0mph	559.8	64.3	2437.5	
Maximum Crush = 24.2 inches					100.8
Using a Rated No Damage Speed of	2.5mph	162.7	86.9	152.3	
Using a Rated No Damage Speed of	5.0mph	300.2	73.9	609.4	
Using a Rated No Damage Speed of	7.5mph	412.5	62.1	1371.1	
Using a Rated No Damage Speed of	10.0mph	499.6	51.2	2437.5	

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation
Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in
B = Crush resistance per inch of damage width (Crash), lb/in^2
G = Energy dissipated without permanent damage, lb
Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

****

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush Factor	Maximum Crush (inches)	Calculated KE Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	24.2	35.6	0.8	2.4

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 20.0

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

2004 CADILLAC DE VILLE

NHTSA Crash Test - #4837 - Front Impact

Pre/Post Depths - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4527 pounds
Vehicle Closing Speed = 34.8 mph
Test Crush Length = 50.8 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	18.9	24.2	19.1	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 18.9 inches					242.1
Using a Rated No Damage Speed of	2.5mph	305.1	208.6	223.1	
Using a Rated No Damage Speed of	5.0mph	563.0	177.6	892.6	
Using a Rated No Damage Speed of	7.5mph	773.7	149.0	2008.3	
Using a Rated No Damage Speed of	10.0mph	937.1	123.0	3570.3	
Average Crush = 21.6 inches					185.4
Using a Rated No Damage Speed of	2.5mph	267.0	159.7	223.1	
Using a Rated No Damage Speed of	5.0mph	492.6	135.9	892.6	
Using a Rated No Damage Speed of	7.5mph	677.0	114.1	2008.3	
Using a Rated No Damage Speed of	10.0mph	820.0	94.2	3570.3	
Maximum Crush = 24.2 inches					147.7
Using a Rated No Damage Speed of	2.5mph	238.3	127.2	223.1	
Using a Rated No Damage Speed of	5.0mph	439.7	108.3	892.6	
Using a Rated No Damage Speed of	7.5mph	604.2	90.9	2008.3	
Using a Rated No Damage Speed of	10.0mph	731.9	75.0	3570.3	

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation
Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in
B = Crush resistance per inch of damage width (Crash), lb/in^2
G = Energy dissipated without permanent damage, lb
Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

****

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush Factor	Maximum Crush (inches)	Calculated KE Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	24.2	35.6	0.8	2.4

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 20.0

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005
Make: CADILLAC
Model: DEVILLE

Test Number	Vehicle Info	No Damage Speed (mph)	Average Crush (inch)	Closing Speed (mph)	Vehicle Stiffness A	Vehicle Stiffness B	Vehicle Width Values G	Vehicle Width Values Kv	Crush Factor
4691	2003 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	21.2	29.8	272.9	63.6	585.6	91.9	16.7
3534	2001 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	23.7	35.1	292.0	74.2	574.9	100.8	20.8
3520	2001 BUICK LESABRE FOUR DOOR SEDAN	5.0	20.7	35.1	325.1	94.5	559.2	128.5	23.8
4238	2002 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	21.1	35.3	348.3	100.1	606.4	135.8	23.6
4837	2004 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	20.8	34.8	349.3	100.1	609.4	136.5	23.3
3282	2000 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	20.6	35.4	350.2	103.6	591.9	140.5	24.4
3274	2000 BUICK LESABRE FOUR DOOR SEDAN	5.0	18.7	35.1	360.9	116.4	559.5	158.3	26.4
4490	2003 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	15.6	29.3	382.5	119.2	613.8	173.2	22.0
2193	1995 OLDSMOBILE AURORA FOUR DOOR SEDAN	5.0	18.4	34.7	398.8	128.6	618.6	175.5	26.1
	Average (AVG)				**342.2**	**100.0**	**591.0**	**137.9**	**23.0**
	Minimum (MIN)				**272.9**	**63.6**	**559.2**	**91.9**	**16.7**
	Maximum (MAX)				**398.8**	**128.6**	**618.6**	**175.5**	**26.4**
	Standard Deviation (STDev-sample)				**40.2**	**20.9**	**22.8**	**28.9**	**3.0**
	Number of Tests (n)			**9**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005
Make: CADILLAC
Model: DEVILLE

Test Number	Vehicle Info	No Damage Speed (mph)	Max Crush (inch)	Closing Speed (mph)	Vehicle Stiffness A	Vehicle Stiffness B	Vehicle Width Values G	Vehicle Width Values Kv	Crush Factor
4691	2003 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	22.3	29.8	260.2	57.8	585.6	83.5	15.9
3534	2001 BUICK PARK AVENUE FOUR DOOR SEDAN	5.0	25.5	35.1	271.8	64.2	574.9	87.3	19.3
3520	2001 BUICK LESABRE FOUR DOOR SEDAN	5.0	24.1	35.1	279.9	70.1	559.2	95.3	20.5
3282	2000 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.9	35.4	289.4	70.8	591.9	95.9	20.2
4238	2002 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.6	35.3	298.7	73.6	606.4	99.8	20.3
4837	2004 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.2	34.8	300.0	73.9	609.4	100.7	20.0
4490	2003 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	18.3	29.3	326.3	86.7	613.8	126.0	18.8
2193	1995 OLDSMOBILE AURORA FOUR DOOR SEDAN	5.0	22.0	34.7	334.2	90.3	618.6	123.3	21.9
3274	2000 BUICK LESABRE FOUR DOOR SEDAN	5.0	19.8	35.1	339.6	103.1	559.5	140.1	24.8
4874	2003 CADILLAC SEVILLE FOUR DOOR SEDAN	5.0	20.9	35.1	343.6	98.8	597.8	134.3	23.5
	Average (AVG)				**304.4**	**78.9**	**591.7**	**108.6**	**20.5**
	Minimum (MIN)				**260.2**	**57.8**	**559.2**	**83.5**	**15.9**
	Maximum (MAX)				**343.6**	**103.1**	**618.6**	**140.1**	**24.8**
	Standard Deviation (STDev-sample)				**29.9**	**15.0**	**21.6**	**20.4**	**2.5**
	Number of Tests (n)			**10**					

Stiffness Values and Test Data

Derived from

NHTSA Crash Test

#3620

2001 BUICK PARK AVENUE

Provided By

4N6XPRT StifCalcs®

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(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Similar Vehicle database reader

You entered: **2001 CADILLAC DEVILLE**

The Sister/Clone Vehicle Year/Model Interchange list indicates the following are Similar Models

Year Range	Make	Model	Body Styles	Wheelbase
1998 - 2004	CADILLAC	SEVILLE	4D	112.2
Remarks:				
2000 - 2005	BUICK	LESABRE	2D, 4D, SW	112.2, 127
Remarks: MOVES TO PARK AVENUE CHASSIS				
1997 - 2005	BUICK	PARK AVENUE	2D, 4D	113.8
Remarks:				
2000 - 2005	CADILLAC	DEVILLE	2D, 4D	115.3
Remarks: MOVES TO NEW SEVILLE CHAS				
1995 - 1999	BUICK	RIVIERA	2D	113.8
Remarks: BASED ON AURORA CHASSIS				
1995 - 1999	OLDSMOBILE	AURORA	4D	113.8
Remarks:				
2000 - 2005	PONTIAC	BONNEVILLE	2D, 4D, SW	112.2, 127
Remarks:				

If you have suggestions, corrections, etc., you should contact Greg Anderson at Scalia Safety Engineering,
521 East Washington Avenue, Suite 200, Madison, WI 53703-2914, (608) 256-0820, FAX (608) 256-0212, E-mail: greganderson@cs.com.

Test Information

Test #	3620	NHTSA Test Reference Guide Version #	V5			
Test Date	2001-01-05	Contract #	DTNH22-99-D-02041			
Contract/Study Title	NCAP SIDE IMPACT - 2001 BUICK PARK AVENUE 4 DOOR SEDAN - M10118					
Test Objective(s)	TO GENERATE COMPARATIVE SIDE IMPACT PERFORMANCE INFORMATION					
Test Type	NEW CAR ASSESSMENT TEST	Configuration	IMPACTOR INTO VEHICLE			
Impact Angle	270	Side Impact Point	N/A	mm	N/A	inches
		Offset Distance	0	mm	0.0	inches
		Closing Speed	61.3	Km/Hr	38.09	MPH
Test Performer	KARCO ENGINEERING					
Test Reference #	M10118`					
Test Track Surface	CONCRETE	Condition	DRY			
Ambient Temperature	14 C	57.2 F	Total Number of Curves	58		
Data Recorder Type	DIGITAL DATA ACQUISITION	Data Link	OTHER			
Test Commentary	NO COMMENTS					

Fixed Barrier Information

Barrier Type		Pole Barrier Diameter		mm	inches
Barrier Shape					
Barrier Commentary					

2001 BUICK PARK AVENUE LEFT FRONT SEAT OCCUPANT

Test #	3620		
Vehicle #	2	Sex	MALE
Location	LEFT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	NHTSA SIDE IMPACT DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	SIDE IMPACT DUMMY		
Occupant Manufacturer	MFG: FTSS, MODEL: SA-SID-M001, S/N: 274		
Occupant Modification	NO COMMENTS		
Occupant Description	PART 572F SIDE IMPACT DUMMY (SID)		
Occupant Commentary	CNTRC1: DOOR PANEL, CNTRL1: DOOR PANEL		

Head

Head to -

Windshielder Header	405	mm	15.9	inches	Head Injury Criteria (HIC)	154	
WindShield	617	mm	24.3	inches	HIC Lower Time Interval (ms)	45	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	80.9	
Side Header	225	mm	8.9	inches			
Side Window	365	mm	14.4	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): SIDE WINDOW

Second Contact Region (Head):

Chest

Chest to -

Dash	510	mm	20.1	inches	Arm to Door	136	mm	5.4	inches
Steering Wheel	325	mm	12.8	inches	Hip to Door	193	mm	7.6	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index: 0 — Pelvic Peak Lateral Acceleration (g's): 43

Thoracic Trauma Index: 60 — Thorax Peak Acceleration (g's): 0

Lap Belt Peak Load: 0 Newtons 0.0 pound Force

Shoulder Belt Peak Load: 0 Newtons 0.0 pound Force

First Contact Region (Chest/Abdomen): OTHER

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash: 170 mm 6.7 inches — Knees to Seatback: 0 mm 0.0 inches

Left Femur Peak Load: 0 Newtons 0.0 pounds Force

Right Femur Peak Load: 0 Newtons 0.0 pounds Force

First Contact Region (Legs): OTHER

Second Contact Region (Legs):

2001 BUICK PARK AVENUE LEFT FRONT SEAT OCCUPANT

Test #	3620					
Vehicle #	2	Sex	MALE			
Location	LEFT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	NHTSA SIDE IMPACT DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	SIDE IMPACT DUMMY
Occupant Manufacturer	MFG: FTSS, MODEL: SA-SID-M001, S/N: 274
Occupant Modification	NO COMMENTS
Occupant Description	PART 572F SIDE IMPACT DUMMY (SID)
Occupant Commentary	CNTRC1: DOOR PANEL, CNTRL1: DOOR PANEL

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - INTEGRATED SEAT MOUNT
Deployment	NOT APPLICABLE
Restraint Commentary	
Restraint # 2	FRONTAL AIRBAG
Mounted	SEAT BACK
Deployment	DEPLOYED PROPERLY
Restraint Commentary	FRONTAL PROTECTION AIRBAG

2001 BUICK PARK AVENUE LEFT REAR SEAT OCCUPANT

Test #	3620		
Vehicle #	2	Sex	MALE
Location	LEFT REAR SEAT	Age	0
Position	NON-ADJUSTABLE SEAT	Height	0 mm 0.0 inches
Type	NHTSA SIDE IMPACT DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	SIDE IMPACT DUMMY		
Occupant Manufacturer	MFG: FTSS, MODEL: SA-SID-M001, S/N: 057		
Occupant Modification	NO COMMENTS		
Occupant Description	PART 572F SIDE IMPACT DUMMY (SID)		
Occupant Commentary	CNTRC1: DOOR PANEL, CNTRL1: DOOR PANEL		

Head

Head to -

Windshielder Header	0	mm	0.0	inches	Head Injury Criteria (HIC)	790	
WindShield	0	mm	0.0	inches	HIC Lower Time Interval (ms)	55.7	
Seatback	692	mm	27.2	inches	HIC Upper Time Interval (ms)	60.1	
Side Header	215	mm	8.5	inches			
Side Window	340	mm	13.4	inches			
Neck to Seatback	0	mm	0.0	inches			
First Contact Region (Head)	C PILLAR						
Second Contact Region (Head)							

Chest

Chest to -

Dash	0	mm	0.0	inches	Arm to Door	107	mm	4.2	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	110	mm	4.3	inches
Seatback	610	mm	24.0	inches					
Chest Severity Index	0				Pelvic Peak Lateral Acceleration (g's)	61			
Thoracic Trauma Index	72				Thorax Peak Acceleration (g's)	0			
Lap Belt Peak Load	0	Newtons	0.0	pound Force					
Shoulder Belt Peak Load	0	Newtons	0.0	pound Force					
First Contact Region (Chest/Abdomen)	OTHER								
Second Contact Region (Chest/Abdomen)	NONE								

Legs

Knees to Dash	0	mm	0.0	inches	Knees to Seatback	131	mm	5.2	inches
Left Femur Peak Load	0	Newtons	0.0	pounds Force					
Right Femur Peak Load	0	Newtons	0.0	pounds Force					
First Contact Region (Legs)	OTHER								
Second Contact Region (Legs)									

2001 BUICK PARK AVENUE LEFT REAR SEAT OCCUPANT

Test #	3620					
Vehicle #	2	Sex	MALE			
Location	LEFT REAR SEAT	Age	0			
Position	NON-ADJUSTABLE SEAT	Height	0	mm	0.0	inches
Type	NHTSA SIDE IMPACT DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	SIDE IMPACT DUMMY
Occupant Manufacturer	MFG: FTSS, MODEL: SA-SID-M001, S/N: 057
Occupant Modification	NO COMMENTS
Occupant Description	PART 572F SIDE IMPACT DUMMY (SID)
Occupant Commentary	CNTRC1: DOOR PANEL, CNTRL1: DOOR PANEL

Restraints

Restraint # 1	3 POINT BELT
Mounted	BELT - CONVENTIONAL MOUNT
Deployment	NOT APPLICABLE
Restraint Commentary	LEFT REAR PASSENGER, BELT ONLY

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	3620		
VIN		NHTSA Test Vehicle Number	1
Year	0	Vehicle Modification Indicator	RESEARCH VEHICLE
Make	NHTSA	Post-test Steering Column Shear Capsule Seperation	NOT APPLICABLE
Model	DEFORMABLE IMPACTOR	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	NOT APPLICABLE		
Engine	NOT APPLICABLE		
Displacement	0 Liter	Transmission	NOT APPLICABLE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	NHTSA SIDE IMPACT MOVING DEFORMABLE BARRIER (MDB) 27 DEG. CRAB ANGLE		

Vehicle Length	4120	mm	162.2	inches	CG behind Front Axle	1104	mm	43.5	inches
Vehicle Width	1676	mm	66.0	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2590	mm	102.0	inches	Total Length of Indentation	0	mm	0.0	inches
Vehicle Test Weight	1361	KG	3000	pounds	Maximum Static Crush Depth	0	mm	0.0	inches
					Pre-Impact Speed	61	kph	38.1	mph

Vehicle Damage Index: | Principal Direction of Force: 0

Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

DPD 1	0	mm	0.0	inches
DPD 2	0	mm	0.0	inches
DPD 3	0	mm	0.0	inches
DPD 4	0	mm	0.0	inches
DPD 5	0	mm	0.0	inches
DPD 6	0	mm	0.0	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm
Centerline	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm
Right Bumper Corner	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm

Bumper Engagement (Inline Impact Only)	Sill Engagement (Side Impact Only)	A-pillar Engagement (Side Impact Only)
0.0	NOT APPLICABLE	0.0

Moving Test Cart Angle	Moving Test Cart/Vehicle Crabbed Angle	Vehicle Orientation on Cart Moving Test Cart
DIRECT ENGAGEMENT	27.0	NOT APPLICABLE
Magnitude of the Tilt Angle Measured between surface of a Rollover Test Cart and the Ground	*Magniture of the Crabbed Angle Measure Clockwise from Longitudinal Vector to Velocity Vector of Vehicle*	*Magnitude of the Angle Measured between the Vehicle Orientation and Direction of Test Cart Motion*

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

Test #	3620		
VIN		NHTSA Test Vehicle Number	1
Year	0	Vehicle Modification Indicator	RESEARCH VEHICLE
Make	NHTSA	Post-test Steering Column Shear Capsule Seperation	NOT APPLICABLE
Model	DEFORMABLE IMPACTOR	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	NOT APPLICABLE		
Engine	NOT APPLICABLE		
Displacement	0 Liter	Transmission	NOT APPLICABLE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	NHTSA SIDE IMPACT MOVING DEFORMABLE BARRIER (MDB) 27 DEG. CRAB ANGLE		

Vehicle Length	4120	mm	162.2	inches	CG behind Front Axle	1104	mm	43.5	inches
Vehicle Width	1676	mm	66.0	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2590	mm	102.0	inches	Total Length of Indentation	0	mm	0.0	inches
Vehicle Test Weight	1361	KG	3000	pounds	Maximum Static Crush Depth	0	mm	0.0	inches
					Pre-Impact Speed	61	kph	38.1	mph
Vehicle Damage Index					Principal Direction of Force	0			

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinaldirection. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

Left Side				Centerline				Right Side			
Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Length of Vehicle at Centerline							
				0	0.0	0	0.0				
				Engine Block							
				0	0.0	0	0.0				
0	0.0	0	0.0	Front Bumper Corner				0	0.0	0	0.0
				Front of Engine							
				0	0.0	0	0.0				
0	0.0	0	0.0	Firewall				0	0.0	0	0.0
				0	0.0	0	0.0				
0	0.0	0	0.0	Upper Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Bottom of 'A' Post				0	0.0	0	0.0
0	0.0	0	0.0	Upper Trailing Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Trailing Edge of Door				0	0.0	0	0.0
				Steering Column							
				0	0.0	0	0.0				
				Center of Seering Column to 'A' Post (Horizontal)							
				0	0.0	0	0.0				
				Center of Steering Column to Headliner (Vertical)							
				0	0.0	0	0.0				

Vehicle 2 2001 BUICK PARK AVENUE

Test #	3620		
VIN	1G4CW54K014136364	NHTSA Test Vehicle Number	2
Year	2001	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	BUICK	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	PARK AVENUE	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V6 TRANSVERSE FRONT		
Displacement	3.8 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	NO COMMENTS		

Vehicle Length	5257	mm	207.0	inches	CG behind Front Axle	1255	mm	49.4	inches
Vehicle Width	1931	mm	76.0	inches	Center of Damage to CG Axis	-527	mm	-20.7	inches
Vehicle Wheelbase	2893	mm	113.9	inches	Total Length of Indentation	3450	mm	135.8	inches
Vehicle Test Weight	1968	KG	4338	pounds	Maximum Static Crush Depth	356	mm	14.0	inches
					Pre-Impact Speed	0	kph	0.0	mph

Vehicle Damage Index: 10LPAW3

Principal Direction of Force: 297

Damage Profile Distance Measurements

(Measured Left-to-Right, Rear-to-Front)

DPD 1	28	mm	1.1	inches
DPD 2	276	mm	10.9	inches
DPD 3	347	mm	13.7	inches
DPD 4	288	mm	11.3	inches
DPD 5	50	mm	2.0	inches
DPD 6	56	mm	2.2	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm
Centerline	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm
Right Bumper Corner	0.0	inches	0.0	inches	0.0	inches
	0	mm	0	mm	0	mm

Bumper Engagement (Inline Impact Only): 27.0

Sill Engagement (Side Impact Only): DIRECT ENGAGEMENT

A-pillar Engagement (Side Impact Only): 90.0

Moving Test Cart Angle: NOT APPLICABLE

Magnitude of the Tilt Angle Measured between surface of a Rollover Test Cart and the Ground

Moving Test Cart/Vehicle Crabbed Angle: 0.0

Magniture of the Crabbed Angle Measure Clockwise from Longitudinal Vector to Velocity Vector of Vehicle

Vehicle Orientation on Cart Moving Test Cart: DIRECT ENGAGEMENT

Magnitude of the Angle Measured between the Vehicle Orientation and Direction of Test Cart Motion

Vehicle 2 2001 BUICK PARK AVENUE

Test #	3620		
VIN	1G4CW54K014136364	NHTSA Test Vehicle Number	2
Year	2001	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	BUICK	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	PARK AVENUE	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	V6 TRANSVERSE FRONT		
Displacement	3.8 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	NO COMMENTS		

Vehicle Length	5257	mm	207.0	inches	CG behind Front Axle	1255	mm	49.4	inches
Vehicle Width	1931	mm	76.0	inches	Center of Damage to CG Axis	-527	mm	-20.7	inches
Vehicle Wheelbase	2893	mm	113.9	inches	Total Length of Indentation	3450	mm	135.8	inches
Vehicle Test Weight	1968	KG	4338	pounds	Maximum Static Crush Depth	356	mm	14.0	inches
					Pre-Impact Speed	0	kph	0.0	mph

Vehicle Damage Index	10LPAW3	Principal Direction of Force	297

Pre & Post Test Damage Measurements

(Measurements are taken in a longitudinaldirection. Except for Engine Block, all measurements are take from the Rear Vehicle Surface forward.)

Left Side				Centerline				Right Side			
Pre-Test		Post-Test		Pre-Test		Post-Test		Pre-Test		Post-Test	
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
				Length of Vehicle at Centerline							
				0	0.0	0	0.0				
				Engine Block							
				0	0.0	0	0.0				
0	0.0	0	0.0	Front Bumper Corner				0	0.0	0	0.0
				Front of Engine							
				0	0.0	0	0.0				
0	0.0	0	0.0	Firewall				0	0.0	0	0.0
				0	0.0	0	0.0				
0	0.0	0	0.0	Upper Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Leading Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Bottom of 'A' Post				0	0.0	0	0.0
0	0.0	0	0.0	Upper Trailing Edge of Door				0	0.0	0	0.0
0	0.0	0	0.0	Lower Trailing Edge of Door				0	0.0	0	0.0
				Steering Column							
				0	0.0	0	0.0				
				Center of Seering Column to 'A' Post (Horizontal)							
				0	0.0	0	0.0				
				Center of Steering Column to Headliner (Vertical)							
				0	0.0	0	0.0				

2001 BUICK PARK AVENUE

NHTSA Crash Test - #3620 - Side Impact

Damage Profile Distances - Indention Length - KE Equivalent Speed - Trapezoidal Average

Test Vehicle Weight = 4338 pounds
KE Equivalent Speed = 24.4 MPH
Test Crush Length = 135.8 inches

Impactor Weight = 3000
Impactor Test Speed = 38.1

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Rear)	1.1	10.9	13.7	11.3	2.0	2.2	(Front)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 1.1 inches					12550.3
Using a Rated No Damage Speed of	1.0mph	543.6	11540.8	12.8	
Using a Rated No Damage Speed of	2.0mph	1040.6	10573.6	51.2	
Using a Rated No Damage Speed of	3.0mph	1491.1	9648.8	115.2	
Using a Rated No Damage Speed of	5.0mph	2252.4	7926.1	320.0	
Average Crush = 7.9 inches					243.3
Using a Rated No Damage Speed of	1.0mph	75.7	223.8	12.8	
Using a Rated No Damage Speed of	2.0mph	144.9	205.0	51.2	
Using a Rated No Damage Speed of	3.0mph	207.6	187.1	115.2	
Using a Rated No Damage Speed of	5.0mph	313.6	153.7	239.9	
Maximum Crush = 13.7 inches					80.9
Using a Rated No Damage Speed of	1.0mph	43.6	74.4	12.8	
Using a Rated No Damage Speed of	2.0mph	83.6	68.2	51.2	
Using a Rated No Damage Speed of	3.0mph	119.7	62.2	115.2	
Using a Rated No Damage Speed of	5.0mph	180.8	51.1	320.0	

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation
Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in
B = Crush resistance per inch of damage width (Crash), lb/in^2
G = Energy dissipated without permanent damage, lb
Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

****

4N6XPRT System's First Approximation Crush Factor (CF)

Speed from Crush calculation using a generic CF of 21 as suggested in Expert AutoStats

KE Speed (mph) = SQRT(30 * CF * max crush in feet)

Crush Factor	Maximum Crush (inches)	Calculated KE Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	13.7	26.8	2.5	9.2

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 17.3

CF = (mph * mph) / (30 * max crush in feet), dimensionless

4N6XPRT Systems CF is calculated based upon the data reported and is specific to this vehicle and this test

Available Test Results
Side Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005
Make: CADILLAC
Model: DEVILLE

Test Number	Vehicle Info	No Damage Speed (mph)	Average Crush (inch)	KEES (mph)	Indention Stiffness A	Indention Stiffness B	Length Values G	Length Values Kv	Crush Factor
3202	2000 BUICK LESABRE FOUR DOOR SEDAN	2.0	6.8	21.3	104.1	146.6	37.0	178.6	26.5
3291	2000 BUICK LESABRE FOUR DOOR SEDAN	2.0	9.2	25.2	140.5	176.7	55.8	208.6	27.5
2387	1996 BUICK RIVIERA TWO DOOR COUPE	2.0	8.1	21.3	143.7	170.0	60.8	207.1	22.2
3819	2001 BUICK LESABRE FOUR DOOR SEDAN	2.0	6.6	25.0	144.4	252.8	41.3	298.6	38.1
3620	2001 BUICK PARK AVENUE FOUR DOOR SEDAN	2.0	7.9	24.4	144.9	205.1	51.2	243.5	30.0
3300	2000 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	9.6	24.5	145.8	170.9	62.2	202.6	25.0
4777	2001 BUICK LESABRE FOUR DOOR SEDAN	2.0	9.9	21.4	154.8	151.4	79.2	184.2	18.5
	Average (AVG)				**139.8**	**181.9**	**55.3**	**217.6**	**26.8**
	Minimum (MIN)				**104.1**	**146.6**	**37.0**	**178.6**	**18.5**
	Maximum (MAX)				**154.8**	**252.8**	**79.2**	**298.6**	**38.1**
	Standard Deviation (STDev-sample)				**16.3**	**36.6**	**14.1**	**41.4**	**6.2**
	Number of Tests (n)			**7**					

Available Test Results
Side Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005
Make: CADILLAC
Model: DEVILLE

Test Number	Vehicle Info	No Damage Speed (mph)	Max Crush (inch)	KEES (mph)	Indention Stiffness A	Indention Stiffness B	Length Values G	Length Values Kv	Crush Factor
3202	2000 BUICK LESABRE FOUR DOOR SEDAN	2.0	13.5	21.3	52.9	37.9	37.0	46.2	13.5
3819	2001 BUICK LESABRE FOUR DOOR SEDAN	2.0	15.0	25.0	63.4	48.7	41.3	57.5	16.7
3620	2001 BUICK PARK AVENUE FOUR DOOR SEDAN	2.0	14.0	24.4	81.7	65.1	51.2	77.3	16.9
3291	2000 BUICK LESABRE FOUR DOOR SEDAN	2.0	15.5	25.2	83.4	62.3	55.8	73.6	16.4
2387	1996 BUICK RIVIERA TWO DOOR COUPE	2.0	13.4	21.3	87.5	63.0	60.8	76.8	13.5
3300	2000 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	14.8	24.5	94.4	71.7	62.2	85.0	16.2
4777	2001 BUICK LESABRE FOUR DOOR SEDAN	2.0	14.4	21.4	106.6	71.8	79.2	87.3	12.7
	Average (AVG)				**81.4**	**60.1**	**55.3**	**71.9**	**15.1**
	Minimum (MIN)				**52.9**	**37.9**	**37.0**	**46.2**	**12.7**
	Maximum (MAX)				**106.6**	**71.8**	**79.2**	**87.3**	**16.9**
	Standard Deviation (STDev-sample)				**18.2**	**12.5**	**14.1**	**14.9**	**1.8**
	Number of Tests (n)			**7**					

4N6XPRT Systems
Expert System Software for Litigation

8387 University Avenue
La Mesa, CA 91942

Phone: (619) 464-3478
Fax: (619) 464-2206
Toll Free: 1- 800-266-9778

Web Site: http://www.4n6xprt.com

E-Mail: 4n6@4n6xprt.com

Dear Conference Attendee,

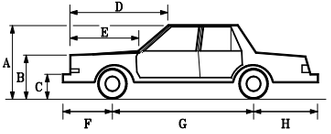
We at 4N6XPRT Systems in conjunction with the Tulsa University Crash Reconstruction Research Consortium (TUCRRC) were pleased to be able to provide you with the preceding data for the crash test vehicles.

Information regarding the Services available to you through 4N6XPRT Systems, as well as the Programs used to create the data report follows this page.

We look forward to providing you similar information in the near future.

Sincerely,

Daniel W. Vomhof III
Daniel W. Vomhof, Ph.D.



Expert AutoStats®

Expert AutoStats® is a program that has over 42,000 cars, pick-ups, vans, and utility vehicles that range in years from the 1940's to the present. Expert AutoStats® has specifications that can assist in reconstructing accidents when the data for the vehicle is unavailable or the vehicle is too severely damaged to get correct measurements.

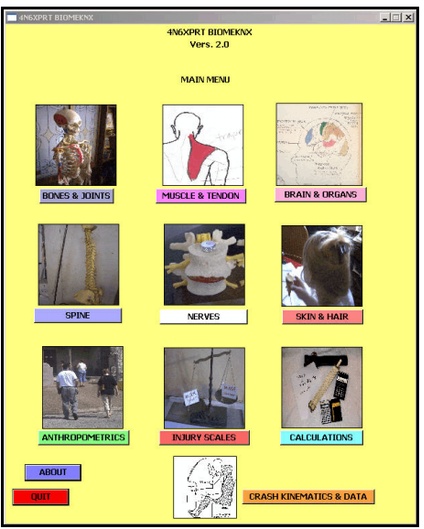
For many vehicles mid-1960's to present, data such as bumper height, front and rear overhang, hood height, etc., are also included.

Model | Data Page 1 | Data Page 2 | Data Page 3 | Printer | File Output | DXF Output

2011 FORD POLICE INTERCEPTOR (3.27) MSP POLICE PKG 4 DOOR SEDAN

Horizontal Dimensions			Vertical Dimensions		
Length	212	in.	Height	58	in.
Wheelbase	115	in.	Ground to:		
Front Bumper to Front Axle	43	in.	Front Bumper (Top)	23	in.
Front Bumper to Front of Hood	8	in.	Headlight - Center	27	in.
Front Bumper to Base of Windshield	65	in.	Hood - Top Front	31	in.
Front Bumper to Top of Windshield	91	in.	Base of Windshield	39	in.
Front Bumper to Front Wheel Well	26	in.	Rear Bumper (Top)	25	in.
Rear Bumper to Rear of Trunk	8	in.	Trunk - Top Rear	39	in.
Rear Bumper to Base of Rear Window	38	in.	Base of Rear Window	40	in.
Rear Bumper to Rear Well	38	in.	**Weight Dimensions**		
Rear Bumper to Rear Axle	54	in.	Curb Weight	4184	lbs.
Depth Dimensions			Curb Weight Distribution:		
Width	78	in.	Front =	56	%
Front Track	63	in.	Rear =	44	%
Rear Track	66	in.	Gross Vehicle Weight Rating	5500	lbs.

4N6XPRT BioMeknx®



Collecting the Biomechanical data of importance to the Accident Investigator into one easily accessible reference location

Biomechanics is the application of physics to describe, evaluate, or model living tissue and biological materials. Originally it was the application of the part of physics known as Mechanics to living systems. This is the same portion of physics which is used as the basis for much of accident reconstruction.

Biomechanics is important in many aspects of forensic work from vehicle accident reconstruction to slip-trip-stumble-fall cases. This particular program contains modules containing information on a variety of biomechanics and injury modalities, physical data found in the literature for failure of bone and tissue, calculation modules to evaluate individual specific parameters, and definitions and terminology used in the literature and found in medical reports.

4N6XPRT BioMeknx® is a program designed for the accident investigator. The BioMeknx program incorporates information from a number of different sources, as well as over 30 years of reconstruction experience. 4N6XPRT BioMeknx™ compiles into one source a number of items of information to assist in reconstructing accidents by tying in the human component more tightly without the need to be a BioMechanics expert. Identification of body location, body part illustrations, failure threshold limits, definitions of terms, calculation modules for body link lengths, weights, stride lengths, and formulas for other types of calculations are only some of the material included in the program.

To gather into your library the material included in the 4N6XPRT BioMeknx™, you would need a minimum of 10-15 Anatomy and Physiology, Human Factors, and Biomechanics books, as well as conduct over 50 hours of internet research.

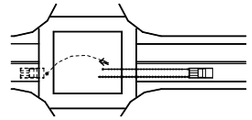
3FAPP1280MR117253

Expert VIN DeCoder®

Expert VIN DeCoder® is a program that "DeCodes" the 17 character VIN number for Cars, Vans, Pickups, and Utility vehicles manufactured from 1981 to the present.

Cars/Vans/Utility/Lt. Trucks Modules: 1981 to Present

Ford	Chevrolet/Geo
Mercury/Lincoln	Pontiac / Buick / Oldsmobile
Chrysler/AMC/Jeep	Cadillac/Saturn
European Import	Asian Import



4N6XPRT Ped & Bike Calcs®

The **4N6XPRT Ped & Bike Calcs®)** program is a program that provides FIRST ESTIMATE calculations to evaluate the speed of a vehicle involved in striking a pedestrian or bicyclist, IF Vehicle, scene, and pedestrian {or pedestrian and bicycle in a vehicle-bike accident} measurements are available. This program may also be used when skateboards or roller skates are involved.

>>>Calculate Time given D & V<<<
Enter Distance (in feet) : 45
Enter Velocity (in mph) : 6

Expert Qwic Calcs®

Expert Qwic Calcs® quickly provides answers to questions important in vehicle collision litigation. The user inputs data in response to relevant questions, Expert Qwic Clacs® performs the mathematical calculations required. Both the input data and the calculated result are then displayed, and may be "dumped" to a printer.

When the law enforcement accident report gives insufficient information to do a full - blown accident reconstruction, Expert Qwic Calcs® may be used to "scope out"the parameters of speeds, times, and distances to determine these relationships in a vehicle accident.

Expert TireStuf®

The Expert TireStuf® program is a Menu Driven program which has 19 modules explaining the various tire size designation systems, the information which MAY be in the DOT tire number, the DOT mandated Tire Grading system, Lug Nut Tightening and Tire Rotation schemes, Mix and Match precautions, a glossary of Tire Terms, and Addresses of a few of the sources of additional information on tires and rims.

Also included is a calculation of the number of revolutions in one mile given the tire dimensions.

4N6XPRT StifCalcs®

4N6XPRT StifCalcs®. Is a program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

In addition to the NHTSA Crash Test data, the program includes a "Similar Vehicle List Reader" which allows quick retrieval of the data for the desired and "similar" vehicle(s). This will drive the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module which allows the creation of "Class" vehicles.

WITHOUT THE INTERNET the user can:

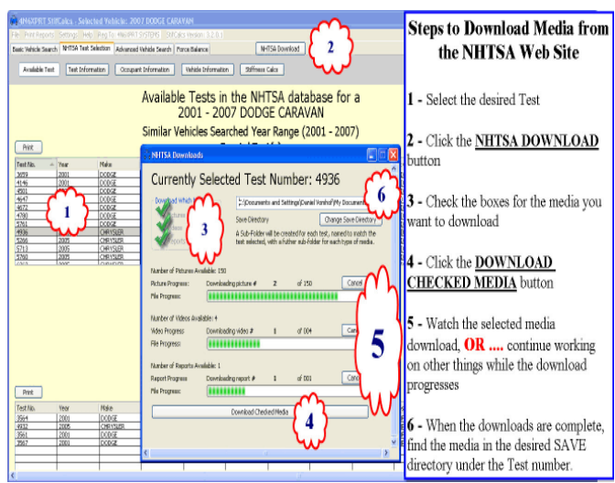
★ Lookup individual tests and get basic front, side, and rear **STIFFNESS VALUES** from these tests. The values are based on the reported crush depths and lengths within each test.
★ Obtain Similar Vehicle group summary STIFFNESS data with Statistical measures.
★ Create "CLASS" vehicles and get summary STIFFNESS data with Statistical measures.

FRONTAL STATISTICAL MEASURES EXAMPLE:

		Vehicle Width			
		Stiffness Values			
		A	B	G	Kv
Average (AVG)		305.7	93.5	523.6	143.1
Minimum (MIN)		115.0	13.2	465.2	23.5
Maximum (MAX)		461.6	200.0	614.1	387.3
Standard Deviation (STDev-sample)		73.4	38.4	36.2	72.8
Number of Tests (n)	53				

WITH THE INTERNET the user can:

★ **RESEARCH** and **easily download** the **PICTURES**, **VIDEOS**, and **REPORTS** available for individual tests



Steps to Download Media from the NHTSA Web Site

1 - Select the desired Test

2 - Click the NHTSA DOWNLOAD button

3 - Check the boxes for the media you want to download

4 - Click the DOWNLOAD CHECKED MEDIA button

5 - Watch the selected media download, **OR ....** continue working on other things while the download progresses

6 - When the downloads are complete, find the media in the desired SAVE directory under the Test number.

Please use this order form when ordering. Due to conditions and rising costs beyond our control, Shipping & Handling for program orders must be paid per the included schedule.

Contact Name:_____

Title:_____

Company/Organization:_____

Street:_____

City: _____ State: _____ Zip: _____

Phone: (_____)_____ FAX: (_____)_____

E-Mail: _____

PAYMENT BY: Check____ Money Order____ Govt. Purchase Order____

for Credit Card Orders, **please circle Credit Card type: Am. Express / Visa / MasterCard**, then complete the following:

Card Number: _____Expiration Date (MM/YY):____/____

Security code (card ID) on **back of** Visa/MasterCard card or **front of** American Express Card:

←Visa/MasterCard | Security | American Express →

Address for where the **credit card bill is sent**: _____

(This is the address that the credit card bill would go to, not where we would send the data or product to)

Zip for where the **credit card bill is sent**:_____

(This is the zip code that the credit card bill would go to, not where we would send the data or product to)

PROGRAM ORDER FORM:

(Pricing effective as of 8/30/12 - prices subject to change without notice)

Expert AutoStats®:	$ 625.00 *	$_____
4N6XPRT BioMeknx®:	$ 495.00 *	$_____
4N6XPRT Ped & Bike Calcs®:	$ 375.00 *	$_____
Expert Qwic Calcs®:	$ 275.00 *	$_____
Expert TireStuf®:	$ 85.00 *	$_____
4N6XPRT StifCalcs®:	$ 650.00 *	$_____
Expert VIN DeCoder®:	$ 550.00 *	$_____
		======
	SUB-TOTAL	$_____
Handling **:		$_____

(Cash or Check with order = $5.00, Credit Card = $10.00 , Govt. Purchase Order = $15.00)

Notarized Affidavit Filing Requirement $_____

($25.00 per required Notarized Signature)

Normal delivery is via electronic download

☐ - Deliver via electronic download link (e-mail address required) $ 0.00

☐ - Deliver on USB - **additional cost of $35.00 / disk / program** $_____

======

SUB-TOTAL $_____

California shipping addresses add **8.50%** sales tax $_____

(*California orders delivered electronically **DO NOT** owe sales tax*)

TOTAL $_____

Individual Vehicle Data FAX/Order Form

☐ **Expert VIN Decoder & Expert AutoStats**
☐ **NHTSA Crash Test Results**
☐ **BOTH**
Please circle ALL OPTIONS that apply

YEAR & MAKE:_____

MODEL:_____

If you are requesting **VIN DeCoder & AutoStats** please also provide:

Vehicle Type:Car - Pickup - Utility - Van
No. of Doors:2/3/4/5
Car Body Style:Coupe/Conv./Sedan/Wagon
DRIVE WHEELS: 4x2 / 4x4
PICKUPS:Dual Rear Wheel - Std. / Extra / Super / Crew Cab - Short Bed / Long Bed
VANS:Cargo / Passenger - Short / Long Wheelbase

VIN Information

___ ___ ___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7 8 9

___ ___ ___ ___ ___ ___ ___ ___
10 11 12 13 14 15 16 17

NHTSA Crash Test Information
Impact location - Front / Side / Rear
Impact Speed - Lower / Higher

Case Reference/Number:_____

Authorized signature: _____

Individual Vehicle Data Search Service®

Charges & Services

Individual Vehicle Specifications
$40.00-First vehicle*, $35.00/Additional Vehicles*,
$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications
$40.00-First vehicle*, $35.00/Additional Vehicles*,
$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)
$40.00-First cycle*, $35.00/Additional cycles*,
$20.00/Additional Similar Model*

NHTSA Crash Test Results
$40.00 per test - Includes A, B, & G values
Calculations are based on the test results

Individual Vehicle Specifications

Now you can get the Expert AutoStats® data for the vehicles in your case ***QUICKLY, EASILY***, and ***ECONOMICALLY***, instead of guessing, or begging a printout from a friend.

Our vehicle database includes dimensions on over 42,000 Cars, Vans, Lt. Pickups, and Utility Vehicles covering 1945 to the present.

Minimum Vehicle specifications include:

Overall Length	Curb Weight
Overall Width	Weight Distribution
Overall Height	Front/Rear Track
Wheelbase	CG Location

Model years with **N**o **S**ignificant **D**imensional **C**hanges VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (*when available*)

Front/Rear Overhang	Bumper Heights
Hood height	Turning Circle
Bumper-to-hood	Ground-to-hood

Dimensions are given in both Imperial and metric (SI) units. Motorcycle specifications will be similar to the Vehicle specifications with appropriate changes where applicable.

NHTSA Crash Test Results

Test results include: General Test information, Barrier Data when provided, Vehicle Data as reported by the testing organization, Occupant (Dummy) data when provided, and A-B-G Stiffness calculations based on the test results.

4N6XPRT Systems®

Providing Vehicle dimensional data, VIN DeCoding, and NHTSA Crash Test Results as a service to the Litigation community, in the form of:

Expert Systems Software Programs for Litigation

Expert AutoStats®
4N6XPRT StifCalcs®
4N6XPRT BioMeknx®
4N6XPRT Ped & Bike Calcs®
Expert Qwic Calcs®
Expert TireStuf®
Expert VIN DeCoder®

Vehicle Data Service

Individual Vehicle Data Search Service®

8387 University Avenue, Suite P
La Mesa, CA 91942-9342

Phone: 1-800-266-9778
Fax: **(619) 464-2206**
E-Mail: **4n6@4n6xprt.com**

Web: **http://www.4n6xprt.com**

Expert VIN DeCoder®

Expert VIN DeCoder® is a program that "DeCodes" the 17 character VIN number for vehicles manufactured from 1981 to the present.

Modules: 1981 to Present
Control Module - One Required per Set

Ford Cars (includes Festiva & Merkur)
Mercury/Lincoln Cars
Ford vans/Utility/Lt. Trucks

Chevrolet/Geo Cars
Pontiac/GM of Canada Cars
Oldsmobile Cars
Buick Cars
Cadillac/Saturn Cars
General Motors Vans/Utility/Lt. Trucks

Chrysler/AMC/Jeep Cars
Chrysler/Jeep Vans/Utility/Lt. Trucks

European Import Cars/Vans/Utility/Lt. Trucks
Asian Import Cars/Vans/Utility/Lt. Trucks

SYSTEM REQUIREMENTS

Expert VIN DeCoder® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math co-processor chip is NOT required. Expert VIN DeCoder® has also been tested under the various versions of MS-DOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as a DOS program under Windows 3.x, Windows, 95, Windows 98, Windows NT, OS/2 2.x, OS/2 Warp, and various versions of LINUX.

A variety of dot matrix printers emulating the EPSON series have been used with no difficulty. The output is also compatible with the Hewlett-Packard II, IIP, III and IIIP Laser printers. Expert VIN DeCoder® works with monochrome and color monitors.

As of April 1995 the 4N6XPRT Systems® programs Expert AutoStats®, Expert Qwic Calcs®, Expert TireStuf®, 4N6XPRT Ped & Bike Calcs®, and Expert VIN DeCoder® are accessible from within RECTEC.

PLEASE PRINT

Contact Name:_____
Company/Dept:_____
Mailing Address:_____
City:_____State:____Zip:_____
Phone:_____
Fax:_____
E-Mail:_____

Expert VIN DeCoder®
_____ (copies) x $525.00 . . . . . = $_____
Handling **: $_____
(Check with order = $5.00, Credit Card = $10.00 , Govt. P.O.r = $15.00)
Notarized Affidavit Filing Requirement $_____
($25.00 per required Notarized Signature)

Normal delivery is via electronic download
☐ - Deliver via electronic download link (e-mail address required) $ 0.00
☐ Please deliver on USB at an
additional cost of $35.00 per disk $_____
SUB-TOTAL = $_____
CA Addresses add 9.50% sales tax . . . . = $_____
*(California orders delivered by e-mail attachment **DO NOT** owe sales tax)*
TOTAL = $_____

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4N6XPRT Systems®
Credit Card Orders:
MasterCard:___ Visa:___ Am.Ex.:___
Card #:_____
Expires:_____
Name on Card: _____
Signature: _____
Billing Add. #: _____
Billing Zip: _____

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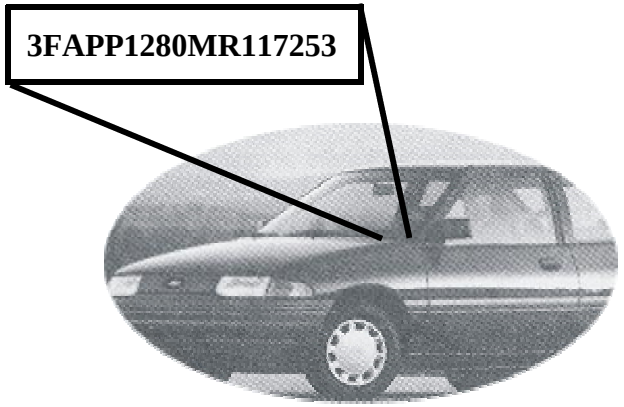
Expert VIN DeCoder®



User Friendly Software to provide interpretation of the 17 character VIN Number on Cars, Lt. Pickups, Utility Vehicles, and Vans.

4N6XPRT Systems®
Forensic Expert Software
8387 University Avenue
La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com
E-Mail: VIN@4n6xprt.com

1-800-266-9778

Expert VIN DeCoder® example

INPUT:

1) Enter VIN Numbers to be DeCoded: 3FAPP1280MR117253

3FA PP128 0 MR 117253

2) Is this the VIN Number to be DeCoded (Y/N)? **Y**

OUTPUT:

EXPERT VIN DeCoder

The VIN Number is 3FA PP128 0 MR 117253

The vehicle should be a 1991 Ford
The model: Escort 2/3-door Hatchback GT
The assembly plant: Hermosillo, Mexico
The 4 passenger vehicle had : Passive (Automatic) Front Belts

The OEM engine was: In-line 4 cylinder with Double Overhead Cam
Engine Displacement/Type = 1.8 L/ 112 cu.in. L4, DOHC
Brake Horsepower (SAE) = 127 @ 6500 rpm
Torque (SAE) = 114 lb-ft at 4500 rpm
Engine manufacturer = Mazda

The fuel distribution system: Electronic Fuel Injection (EFI)
Fuel pump/line pressure = 35-45 psi
The ignition system = electronic

This is a Front Wheel Drive vehicle.

The first three characters {3, F, A} indicates that the vehicle was a Ford made in Mexico

The fourth character {P} indicates the vehicle had Passive (Automatic) Front Belts

The fifth character {P} indicates it was a Passenger Car

The sixth with the seventh character {12} indicates a Escort 2/3-door Hatchback GT

The eighth character {8} indicates the OEM engine : 1.8 L/ 112 cu.in. L4, DOHC

The 9th Character { the Check Digit } is 0
The calculated Check Digit value is 0

The tenth character {M} indicates the Model Year was 1991

The eleventh character {R} indicates it was made at the assembly plant in Hermosillo, Mexico

The twelveth through the seventeenth characters { 117253 } is the Serial Number unique to this vehicle.

01-01-2001 S/N:930114VD01201 Reg. User: 4N6XPRT SYSTEMS

Expert AutoStats®

The Expert AutoStats® program contains data on more than 42,000 cars, pick-ups, vans, and utility vehicles that range in years from the 1940's to the present. The Expert AutoStats® base information can assist in reconstructing accidents when the data for the vehicle is unavailable or the vehicle is too severely damaged to get correct measurements. The program is currently relied upon by over 700 private and 300 Government entities within the United States for this very purpose. Additionally, for many vehicles mid-1960's to present, data such as bumper height, front and rear overhang, hood height, etc., are also included.

As of April 1995 the 4N6XPRT Systems® programs Expert AutoStats®, Expert Qwic Calcs®, Expert TireStuf®, and Expert VIN DeCoder® are accessible from within RECTEC.

SYSTEM REQUIREMENTS

Expert AutoStats® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math co-processor chip is NOT required. Expert AutoStats® has also been tested under the various versions of MS-DOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as a DOS program under Windows 3.x, Windows, 95, Windows 98, Windows NT, Windows Me, Windows 2000, Windows XP, Windows Vista, OS/2 2.x, OS/2 Warp, and various versions of LINUX.

A variety of dot matrix printers emulating the EPSON series have been used with no difficulty. The output is also compatible with the Hewlett-Packard II, IIP, III and IIIP Laser printers and Hewlett-Packard Desk Jet inkjet printers. Expert AutoStats® works with monochrome and color monitors.

PLEASE PRINT

Contact Name: _____
Company/Dept: _____
Mailing Address: _____
City:State:Zip: _____
Phone: _____
Fax: _____
E-Mail: _____

AutoStats® _____ (copies) x $625.00 . . = $_____
Handling **: $_____
(Check with order = $5.00, Credit Card = $10.00 , Govt. P.O.r = $15.00)
Notarized Affidavit Filing Requirement $_____
($25.00 per required Notarized Signature)

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☐ - Deliver via electronic download link (e-mail address required) $ 0.00
☐ Please deliver on USB at an
additional cost of $35.00 per disk $_____
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(*California orders delivered by e-mail attachment **DO NOT** owe sales tax*)

TOTAL = $_____

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Expires: _____Sec.Code:_____
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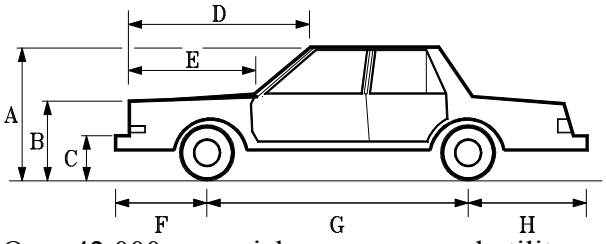
** Checks MUST be drawn from a bank in the U.S.A.*

Expert AutoStats®



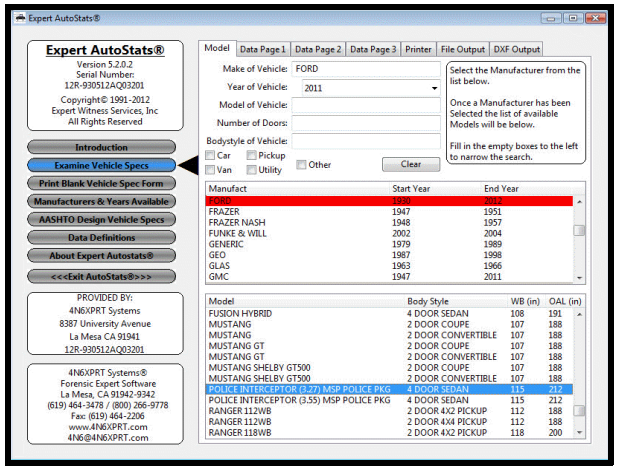
Over 42,000 cars, pick-ups, vans, and utility vehicles 1940's to the present are represented.

4N6XPRT Systems®
Forensic Expert Software
8387 University Avenue
La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com
E-Mail: autostats@4n6xprt.com

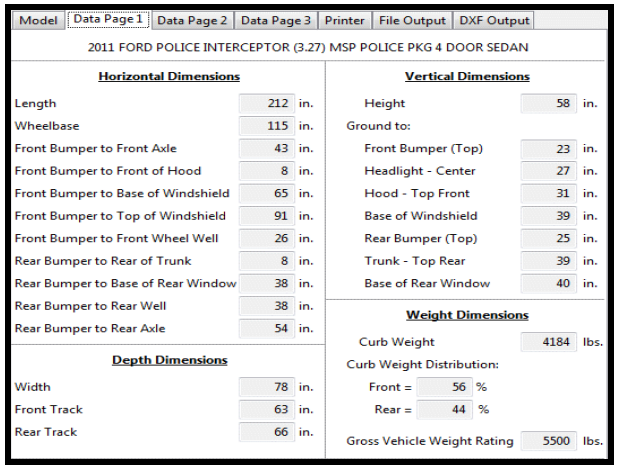
1-800-266-9778

Select Your Vehicle



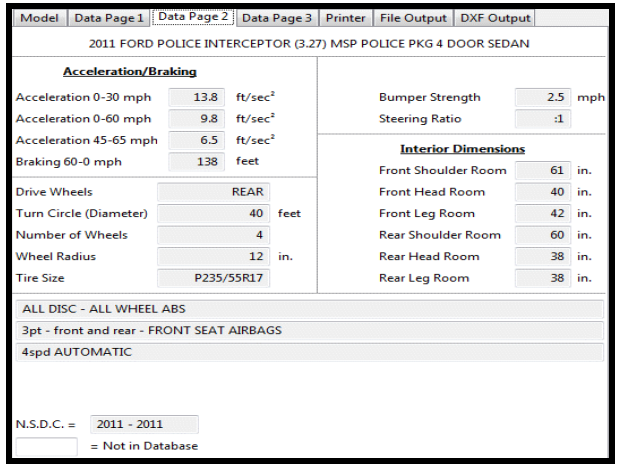
After typing in the Make, Year, and Type of vehicle, you are presented with the vehicles which are available for that year.

Screen 1



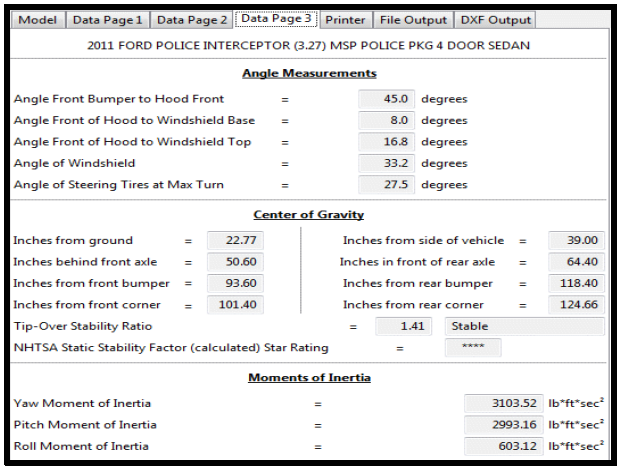
The first screen of data contains exterior dimensions and weight data. Length, Height, Wheelbase, Width, and Weight Distribution are published dimensions. Curb Weight is an average of published curb weights for the given vehicle. Detail dimensions such as the bumper heights and Front Bumper to Front of Hood are measurements obtained by our staff from actual vehicles.

Screen 2



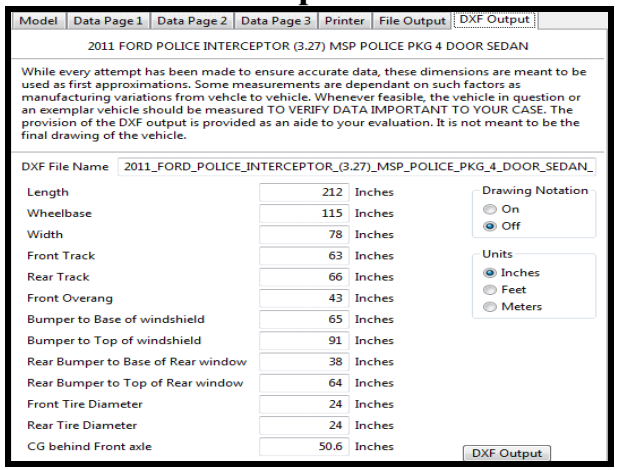
The second screen of data contains interior dimensions and various performance data. The data contained in the second screen comes from various published sources.

Screen 3



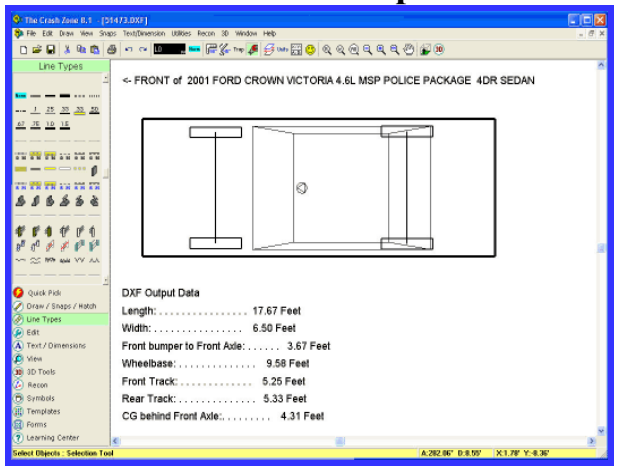
The third and last screen contains a number of calculated items of information which may be of use depending upon the type of case, the other software that you use, and the questions which need to be answered.

DXF Output Screen



From within the Expert AutoStats program you have the ability to output the data to a 2-D DXF file for importation into your CAD Scene Drawings. The screen below shows an import of the DXF file with Text into the CAD Zone program.

CADZONE Import



4N6XPRT StifCalcs®

Introducing ..... 4N6XPRT StifCalcs®. A program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

In addition to the NHTSA Crash Test data, the program includes a "Similar Vehicle Reader". Initially developed in cooperation with Greg Anderson and maintained by 4N6XPRT Systems starting with the 2013 version, the reader allows quick retrieval of vehicles similar to the desired vehicle. The Reader drives the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module which allows the creation of "CLASS" vehicles.

STIFFNESS DATA, based on the selected test or test grouping is automatically calculated based on the reported crush depths and widths for front, side, and rear tests.

The User can - **WITHOUT the need for the internet:**

★ Lookup individual tests and get basic front, side, or rear (as appropriate to the test) **STIFFNESS VALUES** from the selected test. The values are based on the reported crush depths and lengths within each test.

SYSTEM REQUIREMENTS

4N6XPRT StifCalcs® is a MS-Windows program designed to work under a 32 **or** 64-bit (2000/XP/Vista/7) Windows System.

★ Obtain Similar Vehicle group summary **STIFFNESS VALUES** with Statistical measures.

★ Create "CLASS" vehicles and get summary **STIFFNESS VALUES** with Statistical measures.

FRONTAL STATISTICAL MEASURES EXAMPLE:

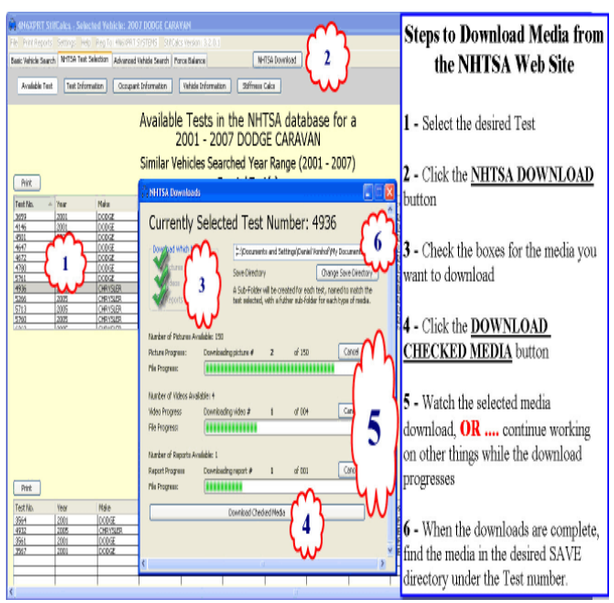
		Vehicle Width	Stiffness Values		
			A	B	G	Kv
Average (AVG)			305.7	93.5	523.6	143.1
Minimum (MIN)			115.0	13.2	465.2	23.5
Maximum (MAX)			461.6	200.0	614.1	387.3
Standard Deviation (STDev-sample)			73.4	38.4	36.2	72.8
Number of Tests (n)	53					

WITH an internet connection the User will also be able to -

★ **RESEARCH** and **easily download** the

PICTURES,
VIDEOS,
and
REPORTS

that are available for the individual tests



PLEASE PRINT

Contact Name: _____
Company/Dept: _____
Mailing Address: _____
City:State:Zip: _____
Phone: _____
Fax: _____
E-Mail: _____
(E-mail address required for electronic delivery)

StifCalcs®_____ (copies) x $650.00 . . = $_____
Handling **: $_____
(Check with order = $5.00, Credit Card = $10.00 , Govt. P.O. = $15.00)
Notarized Affidavit Filing Requirement $_____
($25.00 per required Notarized Signature)

Normal delivery is via electronic download
☐ - Deliver via electronic download link (e-mail address required) $ 0.00
☐ Please deliver on USB at an
additional cost of $35.00 per disk $_____
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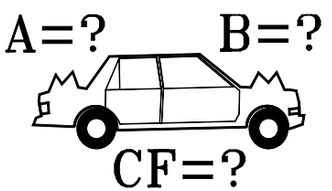
*Orders outside of U.S.A. shipped via E-Mail attachment **ONLY**.*

4N6XPRT StifCalcs®



Quick, Convenient, Easy access to the NHTSA Crash Test data on your own MS-Windows computer without the need for an internet connection.

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Forensic Expert Software
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La Mesa, CA 91942-9342

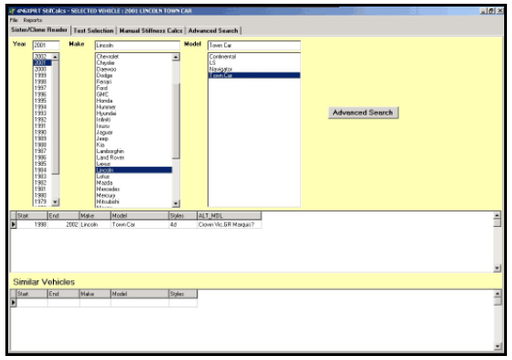
Web: http://www.4n6xprt.com
E-Mail: stifcalcs@4n6xprt.com

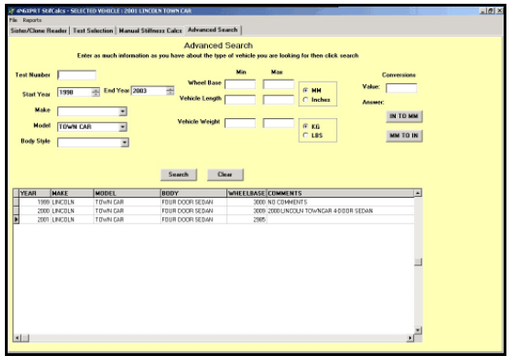
1-800-266-9778

BASIC VEHICLE CRASH TEST SEARCH

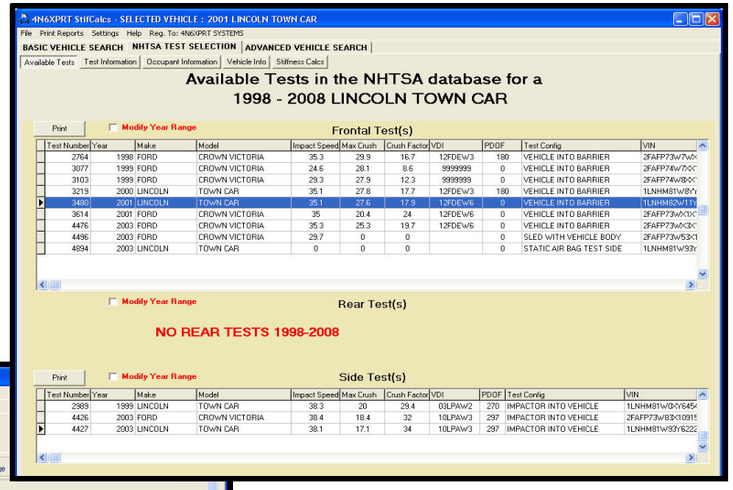
Select the desired vehicle through our **SIMILAR VEHICLE READER**

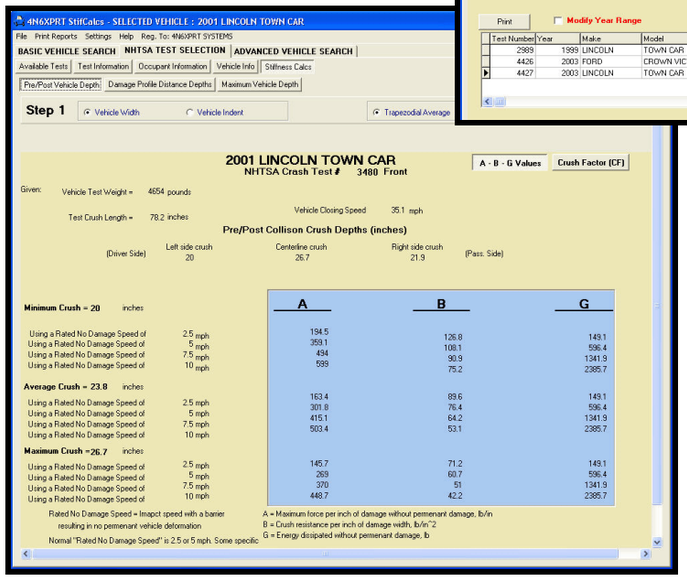
.





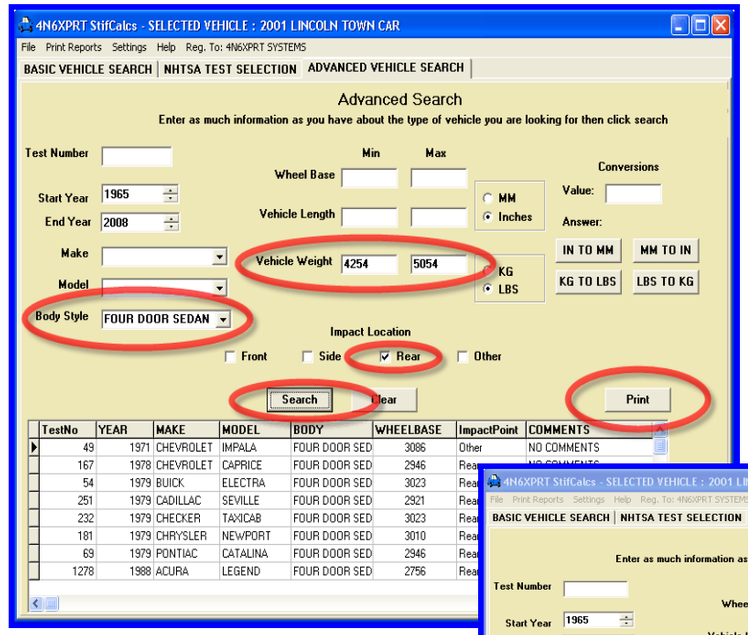
Once the desired vehicle is found/selected, click on the Test Selection tab. From here, select the test to be viewed



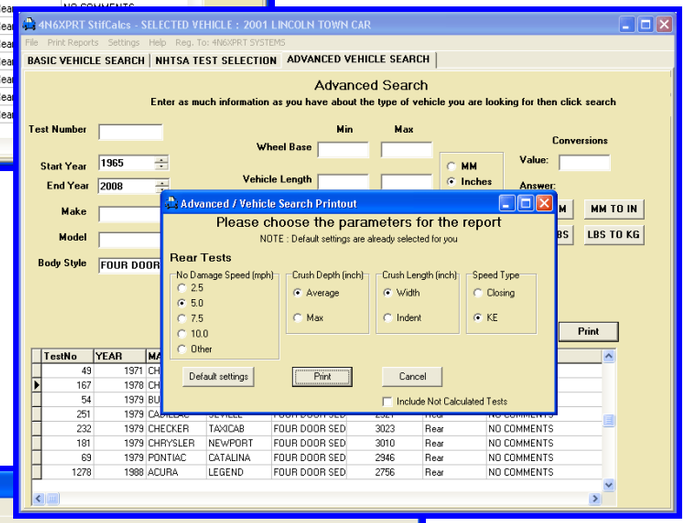


Once a test is selected, the available data for the Test, Occupant(s), Vehicle(s), and Stiffness data can be viewed. The stiffness values are automatically generated from the available test data.

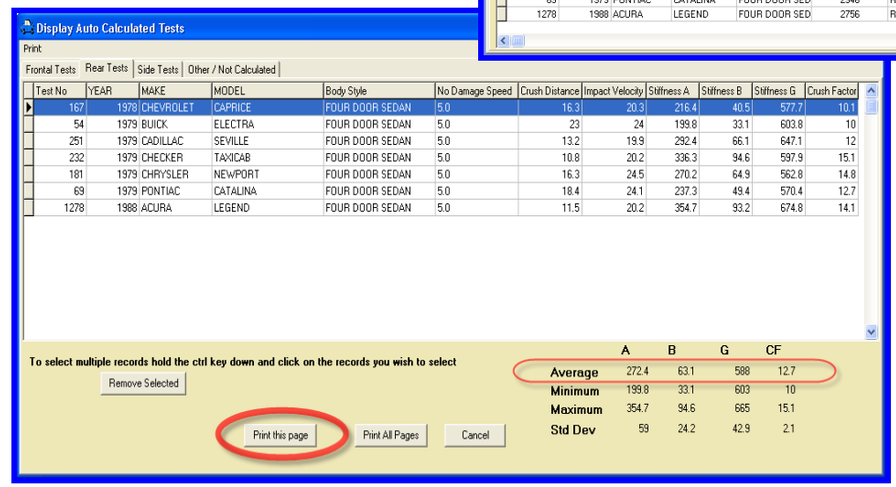
"CLASS" VEHICLE CRASH TEST SEARCH



Using the **ADVANCED SEARCH** tab, you can also create a **CLASS** of vehicle for when there are no tests available for the specific vehicle and test type. To create a class of REAR IMPACT stiffness values for the Lincoln, first set the **weight range**, **body style**, and **test type**, then **search** the database, when you have a sufficient number of tests (that is, more than one or two) that have been found, click the PRINT button:



Now Set your calculation parameters - **No Damage Speed - Crush Depth - Indentation (Crush) Length** - and **Speed**, then view your results, and if desired, print them to hard copy



The program will calculate the **AVERAGE, MINIMUM, MAXIMUM,** and **Standard Deviation** of the Stiffness Values calculated based upon the parameters you set in the preceding step.

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue
La Mesa, CA 91942-9342

FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778
Fax: (619) 464-2206

Web Site: ***http://www.4n6xprt.com***

E-Mail: ***4n6@4n6xprt.com***

2012 ORDER FORM

Expert AutoStats® - Expert VIN DeCoder® - 4N6XPRT StifCalcs® - 4N6XPRT BioMeknx™
Expert Qwic Calcs® - Expert TireStuf® - 4N6XPRT Ped & Bike Calcs®

Please use this order form when ordering your programs. Due to conditions and rising costs beyond our control, Shipping & Handling must be paid per the included schedule.

Contact Name: _____
Title: _____
Company/Organization: _____
Street: _____
City: _____ State: _____ Zip: _____
Phone: (_____)_____ FAX: (_____)_____
E-Mail: _____

Expert AutoStats®:	$ 595.00 *	$_____
4N6XPRT BioMeknx™:	$ 495.00 *	$_____
4N6XPRT Ped & Bike Calcs®:	$ 375.00 *	$_____
Expert Qwic Calcs®:	$ 275.00 *	$_____
Expert TireStuf®:	$ 85.00 *	$_____
4N6XPRT StifCalcs®**:**	$ 600.00 *	$_____
Expert VIN DeCoder®:	$ 525.00 *	$_____
		======
	SUB-TOTAL	$_____

California shipping addresses add **8.50%** sales tax $_____
(*California orders delivered by e-mail attachment **DO NOT** owe sales tax*)

Handling **: *(Cash or Check with order = **$5.00**, Credit Card = **$10.00** , Govt. Purchase Order = **$15.00**)* $_____

Notarized Affidavit filing requirement - **$25.00 per required notarized signature**: $_____

Normal delivery will be via email of a download link to a self extracting zip file

☐ - Deliver via electronic download link (e-mail address required) $ 0.00

☐ - Please deliver on USB at an **additional cost of $35.00 per program** $_____

======

TOTAL $_____

Enclosed is:
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Card #_____ Expires_____ SecCode _____
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-- California orders cannot be shipped without sales tax included.
-- Written Purchase Orders must be received in office before shipping.

* *Prices are subject to change without notice. Call for Multi-program and package purchase discounts.*
** *Orders will be shipped within 10 working days. Other shipping methods may cost extra. The Handling charge listed is for the first program,* ***add $5.00 per additional program*** *ordered at the same time and shipped to the same address.*

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You may call or fax your order to us if paying by credit card.

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Fax: (619) 464-2206

Web Site: http://www.4n6xprt.com

E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

Card type: Am. Express / Visa / MasterCard
Card Number: _____
Expiration Date (MM/YY): ____/____

←Visa/MasterCard American Express →

Security code (card ID) on back of Visa/MasterCard card or front of American Express Card:

Address for where the **credit card bill is sent**:

_____

*(This is the address number - for instance, ours would be **8387 University Avenue** - that the credit card bill would go to, not where we would send the data or product to)*

City/State/Zip for where the **credit card bill is sent**:

_____

*(- for instance, ours would be **La Mesa, CA 91941** - that the credit card bill would go to, not where we would send the data or product to)*

Authorized signature: _____

We appreciate your cooperation in supplying us with this information and understanding that it is being required of us to obtain the information.

Sincerely,

Daniel W. Vomhof III
General Manager/Technical Support

SERVICE

You may make your request by phone or fax. Our fax machine is on 24 hours, 7 days a week, and can be reached at (619) 464-2206. A request may also be made by e-mail, which reaches us when we are "on the road" as well as in the office..

Upon receiving your request, we will research you request and **fax the information to you at NO ADDITIONAL CHARGE!** Normal response time is one working day or less. Your hard copy will follow in the mail.

Please include the vehicle information on the sample order form when requesting your Individual Vehicle Data Search. Please also be sure to provide a Visa, MasterCard, or American Express number, name as it appears on the card, Expiration date, and the billing address # and Zip.

*Pricing is for multiple vehicles on same Order/Request. Similar Vehicles may be required when it is not possible to determine the exact model of vehicle requested, based upon the information provided.

VIN DeCoding Information

FAX/Order Form

☐ **Expert VIN Decoder & Expert AutoStats**
☐ **NHTSA Crash Test Results**
☐ **BOTH**

Please circle ALL OPTIONS that apply

YEAR & MAKE:

_____

MODEL:_____

If you are requesting
VIN DeCoder & AutoStats
please also provide the following information:

No. of Doors:	2/3/4/5
Body Style:	Coupe/Conv./Sedan/Wagon
SUV & P/U:	4x2 / 4x4 / Dual Rear Wheel
PICKUPS:	Std. / Extra / Super / Crew Cab
	Short Bed / Long Bed
VANS:	Cargo / Passenger
	Short / Long Wheelbase

VIN Information

___	___	___		___	___	___	___	___		___						
1	2	3		4	5	6	7	8		9						
											___	___		___	___	___	___	___	___
											10	11		12	13	14	15	16	17

NHTSA Crash Test Information
Impact location - Front / Side / Rear
Impact Speed - Lower / Higher

PAYMENT INFORMATION
Visa/MasterCard / American Express:

_____

Expires: _____ / _____

Name & Address:

_____

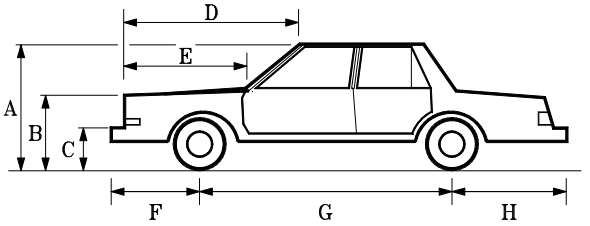
_____

_____

_____

Case Reference Name/Number:_____

Individual Vehicle Data Search Service®



Providing Vehicle dimensional data, VIN DeCoding, and NHTSA Crash Test Results as a service to the Litigation community.

E-Mail: **ivdss@4n6xprt.com**

FAX: (619) 464-2206
Phone: (619) 464-3478 / 1-800-266-9778

4N6XPRT Systems®
Forensic Expert Software
8387 University Avenue, Suite P
La Mesa, CA 91942-9342

Web: http://www.4n6xprt.com

How often have you been confronted with the

following on a Traffic Collision Report - "87 Ford, 4 door, Blue"? We have the answer to the problem of determining WHICH Ford 4 door model this was!

We will DeCode the VIN number and provide you with the information contained within that VIN number

Information generally includes:

Year	OEM Engine
Make	Displacement/Type
Model	Rated Horsepower
Drive Wheels	Rated Torque
Rated Pass. Load	Iginition System
Plant of Manufacture	Fuel Line Pressure

Also (*when provided by VIN*)

Gross Vehicle Weight	Safety Equipment
Transmission	

A DMV search for a vehicle identification from the registration will typically cost less than $10.00 and will give the VIN number, Make, and Year of vehicle. However, to also obtain the vehicle Model requires a "Manual Search" which will typically cost $30.00/vehicle/year searched.

With our service, you will be able to find out the model of vehicle as well as all of the other information mentioned above. This information will be faxed to you, typically in less than one working day, and the hard copy will follow in the mail.

Allow us to help you have all the information you require in your next Accident, Personal Injury, Criminal, Domestic, or Product Liability case.

Individual Vehicle Specifications

Now you can get the Expert AutoStats® data for the vehicles in your case ***QUICKLY, EASILY***, and ***ECONOMICALLY***, instead of guessing, or begging a printout from a friend.

Our vehicle database includes dimensions on over 35,000 Cars, Vans, Lt. Pickups, and Utility Vehicles covering 1945 to the present.

Minimum Vehicle specifications include:

Overall Length	Curb Weight
Overall Width	Weight Distribution
Overall Height	Front/Rear Track
Wheelbase	CG Location

Model yeasr with **N**o **S**ignificant **D**imensional **C**hanges
VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (*when available*)

Fron/Reart Overhang	Bumper Heights
Hood height	Turning Circle
Bumper-to-hood	Ground-to-hood

Dimensions are given in both Imperial and metric (SI) units. Motorcycle specifications will be similar to the Vehicle specifications with appropriate changes where applicable.

While the VIN number contains much information, it does not contain everything needed to identify a particular vehicle in every situation. Therefore, we would appreciate you providing as much of the information on the order form as possible.

If you are not sure of the specific model, we will provide dimensions on the similar model vehicles matching the provided data for a small additional cost per model*.

Individual Vehicle Data Search Service® Charges & Services

Individual Vehicle Specifications

$40.00-First vehicle*, $35.00/Additional Vehicles*,
$20.00/Additional Similar Model*

Medium/Heavy Truck Specifications

$40.00-First vehicle*, $35.00/Additional Vehicles*,
$20.00/Additional Similar Model*

Motorcycle Specifications (1970+)

$40.00-First cycle*, $35.00/Additional cycles*,
$20.00/Additional Similar Model*

NHTSA Crash Test Results

$40.00 per test - Includes A, B, & G values
Calculations are based on the test results

NHTSA Crash Test Results

Test results include: General Test information, Barrier Data when provided, Vehicle Data as reported by the testing organization, Occupant (Dummy) data when provided, and A-B-G Stiffness calculations based on the test results.

You may make your request by phone or fax. Our fax machine is on 24 hours/day and can be reached at:

(619) 464-2206

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Motorcycle Specifications (1970+)

$40.00-First cycle*, $35.00/Additional cycles*, $20.00/Additional Similar Model*

NHTSA Crash Test Results

$40.00 per test - Includes A, B, & G values
Calculations are based on the test results

Contact Name & Address:

_____
_____
_____
_____

Phone: (_____) _____
Fax: (_____) _____

PAYMENT INFORMATION
Visa/MasterCard / American Express:

_____
Expires: _____ / _____
Credit Card billing address and Zip:
Address:_____
Zip: _____
Security Code # _____

FAX/Order Form

☐ **Expert VIN Decoder & Expert AutoStats**
☐ **NHTSA Crash Test Results**
☐ **BOTH**

Please circle <u>ALL OPTIONS</u> that apply

YEAR & MAKE:
_____
MODEL: _____

If you are requesting
VIN DeCoder & AutoStats
please also provide:

No. of Doors:	2/3/4/5
Body Style:	Coupe/Conv./Sedan/Wagon
SUV - P/U:	4x2 / 4x4 / Dual Rear Wheel
PICKUPS:	Std. / Extra / Super / Crew Cab
	Short Bed / Long Bed
VANS:	Cargo / Passenger
	Short / Long Wheelbase

VIN Information

__ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

NHTSA Crash Test Information

YEAR & MAKE:
_____
MODEL: _____

Impact location - Front / Side / Rear
Impact Speed - Lower / Higher

Case Reference/Number:_____

FAX/Order Form

☐ **Expert VIN Decoder & Expert AutoStats**
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Please circle <u>ALL OPTIONS</u> that apply

YEAR & MAKE:
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4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue
La Mesa, CA 91942-9342

FED Tax ID No.: 95-3121248

Phone: 1- 800-266-9778
Fax: (619) 464-2206

Web Site: http://www.4n6xprt.com

E-Mail: 4n6@4n6xprt.com

Dear Customer,

Due to the governments desire (both U.S. & California) to "protect us" we will need the following information from you in order to process your credit card(s). Please complete this form and return it with your order.

Card type: Am. Express / Visa / MasterCard
Card Number: _____
Expiration Date (MM/YY): ____/____

←Visa/MasterCard American Express →

Security code (card ID) on back of Visa/MasterCard card or front of American Express Card:

Address for where the **credit card bill is sent**:

_____

*(This is the address number - for instance, ours would be **8387 University Avenue** - that the credit card bill would go to, not where we would send the data or product to)*

City/State/Zip for where the **credit card bill is sent**:

_____

*(- for instance, ours would be **La Mesa, CA 91941** - that the credit card bill would go to, not where we would send the data or product to)*

Authorized signature: _____

We appreciate your cooperation in supplying us with this information and understanding that it is being required of us to obtain the information.

Sincerely,

Daniel W. Vomhof III
General Manager/Technical Support

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The 2011 version of 4N6XPRT StifCalcs® contains a Force Balance module -

The Force Balance approach to Stiffness values is based on the concept of "Equal and Opposite Forces" in combination with the assumption that one of the vehicles involved has a good set of Stiffness values based on testing.

There are essentially only TWO requirements in order to use a Force Balance approach, and they are:

- ❑ You must have A-B values for one of the vehicles for the surface that was hit
- ❑ Both vehicles must have SOME damage

Beyond these two requirements, the QUALITY of your calculation results will be impacted by :

- ❑ The quality of the information you have on each vehicle (weight, pass/cargo load, etc.)
- ❑ The quality/accuracy of your crush measurements
- ❑ The quality of your A-B stiffness values

while the Force Balance analysis CAN be run with degraded information in the above three areas, the quality of the results will also be degraded, sometimes significantly so.

As an extension of our **I**ndividual **V**ehicle **D**ata **S**earch **S**ervice, we have now added Force Balance Analysis runs to our services. An order form with pricing follows on the next page.

With respect to the Order Form -

A) Please be SPECIFIC on the vehicle make and model, including drive wheels, bed length, etc.
B) The Curb Weight used will come from Expert AutoStats unless you specify some other weight
C) The PDOF Lever Arm default length is 0 inches
D) The Angle of Collision Force to Normal Force default value is 0 degrees
E) If no Crush Spacing is indicated, equal spacing will be used.

If you have any specific questions, please be sure to call.

Sincerely,

Daniel W. Vomhof III
General Manager/Technical Support

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FORCE BALANCE ORDER FORM

$40 for the first "Run" / $20 for each additional crush variation with same vehicles

Vehicle 1 (KNOWN Stiffness) - Year/Make/Model

_____

Curb Weight (pounds) = _____
Occupant + Cargo Weight (pounds) = _____
Total Weight (pounds) = _____

Angle of Collision Force to Force Normal to
Collision Face (degrees) = _____
PDOF Lever Arm Distance (inches) = _____

Damage Length (inches) = _____

If Crush Depth measurements are equally spaced, you do not need to fill in the distance between Crush measurements.

Crush Depth	**Crush Spacing** EQUAL?? Yes / No
C1 (inches) = _____	
	Distance C1 to C2 (inches) = _____
C2 (inches) = _____	
	Distance C2 to C3 (inches) = _____
C3 (inches) = _____	
	Distance C3 to C4 (inches) = _____
C4 (inches) = _____	
	Distance C4 to C5 (inches) = _____
C5 (inches) = _____	
	Distance C5 to C6 (inches) = _____
C6 (inches) = _____	
	Distance C6 to C7 (inches) = _____
C7 (inches) = _____	
	Distance C7 to C8 (inches) = _____
C8 (inches) = _____	
	Distance C8 to C9 (inches) = _____
C9 (inches) = _____	
	Distance C9 to C10 (inches) = _____
C10 (inches) = _____	

Vehicle 2 - Year/Make/Model

_____

Curb Weight (pounds) = _____
Occupant + Cargo Weight (pounds) = _____
Total Weight (pounds) = _____

Angle of Collision Force to Force Normal to
Collision Face (degrees) = _____
PDOF Lever Arm Distance (inches) = _____

Damage Length (inches) = _____

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Crush Depth	**Crush Spacing** EQUAL?? Yes / No
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	Distance C1 to C2 (inches) = _____
C2 (inches) = _____	
	Distance C2 to C3 (inches) = _____
C3 (inches) = _____	
	Distance C3 to C4 (inches) = _____
C4 (inches) = _____	
	Distance C4 to C5 (inches) = _____
C5 (inches) = _____	
	Distance C5 to C6 (inches) = _____
C6 (inches) = _____	
	Distance C6 to C7 (inches) = _____
C7 (inches) = _____	
	Distance C7 to C8 (inches) = _____
C8 (inches) = _____	
	Distance C8 to C9 (inches) = _____
C9 (inches) = _____	
	Distance C9 to C10 (inches) = _____
C10 (inches) = _____	

Name_____
Company_____
Address_____
City/State/Zip_____
Phone_____
Case Reference _____

Visa/MasterCard/American Express
Card Number_____
Expiration _____/_____
Security Code_____
Card Billing Address_____
City/State/Zip_____

E-Mail_____

A Division of Expert Witness Services, Inc.

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