*** * * 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 70 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
http://www.4n6xprt.com

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: 1G6KD52B3RU231203

Model:	1994 Cadillac Sedan DeVille 4 Door Sedan
Engine Size:	3.8L / 231 cu.in.
Engine Description:	V8 Cylinder
Horse Power:	200 @ 4100 rpm
Torque:	275 lb-ft at 3000 rpm
Injection System:	Multi-Port Fuel Injection (MFI)
PSI:	40 - 50
Ignition:	Electronic
Manufacturer:	Chevrolet
Assembly Plant:	Hamtramck, MI
Drive Wheels:	This is a Front Wheel Drive vehicle w/Active (Manual) Seatbelts + Driver & Passenger 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 Sedan DeVille

The Sixth character (5) indicates a 4 Door Sedan

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

The Eighth character (B) indicates the OEM engine: 3.8L / 231 cu.in., V8

The Ninth character (the check digit) is entered as 3.
The VIN appears Valid, the calculated value is 3.

The Tenth character (R) indicates the model year 1994

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

The Twelfth through Seventeenth characters (231203) 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

3/7/2012

1994 CADILLAC DEVILLE 4 DOOR SEDAN

Curb Weight:	3780	lbs.	1715	kg.
Curb Weight Distribution - Front:	61	% Rear:	39	%
Gross Vehicle Weight Rating:		lbs.		kg.
Number of Tires on Vehicle:	4			
Drive Wheels:	FRONT			

Horizontal Dimensions	Inches	Feet	Meters
Total Length	210	17.50	5.33
Wheelbase:	114	9.50	2.90
Front Bumper to Front Axle:	45	3.75	1.14
Front Bumper to Front of Front Well:	30	2.50	0.76
Front Bumper to Front of Hood:	4	0.33	0.10
Front Bumper to Base of Windshield:	61	5.08	1.55
Front Bumper to Top of Windshield:	83	6.92	2.11
Rear Bumper to Rear Axle:	51	4.25	1.30
Rear Bumper to Rear of Rear Well:	32	2.67	0.81
Rear Bumper to Rear of Trunk:	34	2.83	0.86
Rear Bumper to Base of Rear Window:	48	4.00	1.22
Width Dimensions			
Maximum Width:	77	6.42	1.96
Front Track:	61	5.08	1.55
Rear Track:	61	5.08	1.55
Vertical Dimensions			
Height:	56	4.67	1.42
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	39	3.25	0.99
Rear Bumper - top:	23	1.92	0.58
Trunk - top rear:	39	3.25	0.99
Base of Rear Window:	43	3.58	1.09

1994 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

Steering Data

Turning Circle (Diameter)	492	41.00	12.50
Steering Ratio: 15.60:1			
Wheel Radius:	13	1.08	0.33
Tire Size (OEM): P215/70R15			

Acceleration & Braking Information

Brake Type: ALL DISC

ABS System: ABS

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

d = 148.0 ft t = 3.4 sec a = -26.1 ft/sec² G-force = -0.81

Acceleration:

0 to 30mph	t =	2.7	sec	a =	16.3	ft/sec²	G-force = 0.51
0 to 60mph	t =	8.3	sec	a =	10.6	ft/sec²	G-force = 0.33
45 to 65mph	t =	4.7	sec	a =	6.2	ft/sec²	G-force = 0.20

Transmission Type: AUTOMATIC

Notes:

Federal Bumper Standard Requirements: 2.5 mph

This vehicles Rated Bumper Strength: 5 mph

N.S.D.C = 1994 - 1994

1994 CADILLAC DEVILLE 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.39	Stable
NHTSA Star Rating (calculated)		****

Center of Gravity (No Load):

Inches behind front axle	=	44.46
Inches in front of rear axle	=	69.54
Inches from side of vehicle	=	38.50
Inches from ground	=	21.98
Inches from front corner	=	97.39
Inches from rear corner	=	126.54
Inches from front bumper	=	89.46
Inches from rear bumper	=	120.54

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2687.40	lb*ft*sec²
Pitch Moment of Inertia	=	2593.20	lb*ft*sec²
Roll Moment of Inertia	=	530.40	lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	68.2	deg
Angle Front of Hood to Windshield Base	=	9.0	deg
Angle Front of Hood to Windshield Top	=	16.9	deg
Angle of Windshield	=	34.3	deg
Angle of Steering Tires at Max Turn	=	26.6	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

#2024

1994 CADILLAC DE VILLE

Provided By

4N6XPRT StifCalcs®

Registered to:

TUCRRC
800 TUCKER DRIVE
TULSA OK 74104-9700
11R-110829SC03101

4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA
(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Sister/Clone database reader

You entered: **1996 CADILLAC DEVILLE**

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

Year Range	Make	Model	Body Styles	Wheelbase
1992 - 1997	CADILLAC	SEVILLE	4D	112.2
Remarks:				
1992 - 2002	CADILLAC	ELDORADO	2D	108
Remarks: SAME OLD CAR				
1994 - 1999	CADILLAC	DEVILLE	2D, 4D	115.3
Remarks: (STRETCHED WB)				

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 #	2024	NHTSA Test Reference Guide Version #	2			
Test Date	1994-01-19	Contract #	DTNH22-90-D-22121			
Contract/Study Title	1994 CADILLAC DEVILLE INTO FRONTAL LOAD CELL BARRIER					
Test Objective(s)	OBTAIN 35 MPH NEW CAR ASSESSMENT AND RESEARCH DATA					
Test Type	NEW CAR ASSESSMENT TEST	Configuration	VEHICLE INTO BARRIER			
Impact Angle	0	Side Impact Point	0	mm	0.0	inches
			0	mm	0.0	inches
		Closing Speed	56.2	Km/Hr	34.92	MPH
Test Performer	TRC OF OHIO					
Test Reference #	940119					
Test Track Surface	CONCRETE	Condition	DRY			
Ambient Temperature	19 C	66.2 F	Total Number of Curves	83		
Data Recorder Type	FM MULTIPLEXOR TAPE RECORDER	Data Link	UMBILICAL CABLE			
Test Commentary	NO COMMENTS					

Fixed Barrier Information

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

1994 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	2024						
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	HUMANOID SYSTEMS S/N 142
Occupant Modification	UNMODIFIED
Occupant Description	NO COMMENTS
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG

Head

Head to -

Windshielder Header	346	mm	13.6	inches	Head Injury Criteria (HIC)	753		
WindShield	595	mm	23.4	inches	HIC Lower Time Interval (ms)	70.72		
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	106.72		
Side Header	284	mm	11.2	inches				
Side Window	427	mm	16.8	inches				

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head)	AIR BAG
Second Contact Region (Head)	

Chest

Chest to -

Dash	514	mm	20.2	inches	Arm to Door	160	mm	6.3 inches
Steering Wheel	278	mm	10.9	inches	Hip to Door	186	mm	7.3 inches
Seatback	0	mm	0.0	inches				

Chest Severity Index	446	Pelvic Peak Lateral Acceleration (g's)	
Thoracic Trauma Index		Thorax Peak Acceleration (g's)	46.6

Lap Belt Peak Load	4576	Newtons	1028.7	pound Force
Shoulder Belt Peak Load	3147	Newtons	707.5	pound Force

First Contact Region (Chest/Abdomen)	AIR BAG
Second Contact Region (Chest/Abdomen)	NONE

Legs

Knees to Dash	182	mm	7.2	inches	Knees to Seatback	0	mm	0.0 inches

Left Femur Peak Load	-4824	Newtons	-1084.5	pounds Force
Right Femur Peak Load	-3147	Newtons	-707.5	pounds Force

First Contact Region (Legs)	DASHPANEL
Second Contact Region (Legs)	

1994 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	2024					
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	HUMANOID SYSTEMS S/N 142
Occupant Modification	UNMODIFIED
Occupant Description	NO COMMENTS
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	
Deployment	DEPLOYED PROPERLY
Restraint Commentary	THE ADJUSTABLE D-RING ANCHORAGE WAS PLACED IN THE MID POSITION
Restraint # 2	3 POINT BELT
Mounted	
Deployment	NOT APPLICABLE
Restraint Commentary	THE ADJUSTABLE D-RING ANCHORAGE WAS PLACED IN THE MID POSITION

1994 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	2024		
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	ALDERSON RESEARCH LABS S/N 192		
Occupant Modification	UNMODIFIED		
Occupant Description	NO COMMENTS		
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG		

Head

Head to -

Windshielder Header	316	mm	12.4	inches	Head Injury Criteria (HIC)	663	
WindShield	578	mm	22.8	inches	HIC Lower Time Interval (ms)	71.68	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	107.04	
Side Header	268	mm	10.6	inches			
Side Window	411	mm	16.2	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	551	mm	21.7	inches	Arm to Door	157	mm	6.2	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	167	mm	6.6	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index: 495 — Pelvic Peak Lateral Acceleration (g's):

Thoracic Trauma Index: — Thorax Peak Acceleration (g's): 50.9

Lap Belt Peak Load: 3516 Newtons 790.4 pound Force

Shoulder Belt Peak Load: 8167 Newtons 1836.0 pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash: 173 mm 6.8 inches — Knees to Seatback: 0 mm 0.0 inches

Left Femur Peak Load: -4906 Newtons -1102.9 pounds Force

Right Femur Peak Load: -3774 Newtons -848.4 pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

1994 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	2024					
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	ALDERSON RESEARCH LABS S/N 192
Occupant Modification	UNMODIFIED
Occupant Description	NO COMMENTS
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	
Deployment	DEPLOYED PROPERLY
Restraint Commentary	THE ADJUSTABLE D-RING ANCHORAGE WAS PLACED IN THE MID POSITION
Restraint # 2	3 POINT BELT
Mounted	
Deployment	NOT APPLICABLE
Restraint Commentary	THE ADJUSTABLE D-RING ANCHORAGE WAS PLACED IN THE MID POSITION

Vehicle 1 1994 CADILLAC DE VILLE

Test #	2024		
VIN	1G6KD52B1RU215789	NHTSA Test Vehicle Number	1
Year	1994	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	CADILLAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	DE VILLE	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	FOUR DOOR SEDAN		
Engine	OTHER		
Displacement	4.9 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	8 CYLINDER, TRANSVERSE, FRONT ENGINE		
Vehicle Commentary	STEERING COLUMN COVER COVERED COLLAPSE MECHANISM & SHEAR CAPSULE		

Vehicle Length	5330	mm	209.8	inches	CG behind Front Axle	1255	mm	49.4	inches
Vehicle Width	1965	mm	77.4	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2890	mm	113.8	inches	Total Length of Indentation	1525	mm	60.0	inches
Vehicle Test Weight	1937	KG	4269	pounds	Maximum Static Crush Depth	698	mm	27.5	inches
					Pre-Impact Speed	56	kph	34.9	mph

Vehicle Damage Index: 12FDEW3

Principal Direction of Force: 0

Damage Profile Distance Measurements

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

DPD 1	499	mm	19.6	inches
DPD 2	594	mm	23.4	inches
DPD 3	692	mm	27.2	inches
DPD 4	698	mm	27.5	inches
DPD 5	570	mm	22.4	inches
DPD 6	528	mm	20.8	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	202.1	inches	182.4	inches	19.6	inches
	5133	mm	4634	mm	499	mm
Centerline	209.8	inches	183.0	inches	26.9	inches
	5330	mm	4648	mm	682	mm
Right Bumper Corner	203.0	inches	182.2	inches	20.8	inches
	5155	mm	4627	mm	528	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
NOT APPLICABLE	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 1994 CADILLAC DE VILLE

Test #	2024		
VIN	1G6KD52B1RU215789	NHTSA Test Vehicle Number	1
Year	1994	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	CADILLAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	DE VILLE	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	FOUR DOOR SEDAN		
Engine	OTHER		
Displacement	4.9 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	8 CYLINDER, TRANSVERSE, FRONT ENGINE		
Vehicle Commentary	STEERING COLUMN COVER COVERED COLLAPSE MECHANISM & SHEAR CAPSULE		

Vehicle Length	5330	mm	209.8	inches	CG behind Front Axle	1255	mm	49.4	inches
Vehicle Width	1965	mm	77.4	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2890	mm	113.8	inches	Total Length of Indentation	1525	mm	60.0	inches
Vehicle Test Weight	1937	KG	4269	pounds	Maximum Static Crush Depth	698	mm	27.5	inches
					Pre-Impact Speed	56	kph	34.9	mph

Vehicle Damage Index: 12FDEW3 — 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							
				5330	209.8	4648	183.0				
				Engine Block							
				440	17.3	450	17.7				
5133	202.1	4634	182.4	Front Bumper Corner				5155	203.0	4627	182.2
				Front of Engine							
				4695	184.8	4433	174.5				
3845	151.4	3879	152.7	Firewall				3894	153.3	3923	154.4
				3964	156.1	3965	156.1				
3646	143.5	3674	144.6	Upper Leading Edge of Door				3652	143.8	3669	144.4
3631	143.0	3656	143.9	Lower Leading Edge of Door				3638	143.2	3648	143.6
3592	141.4	3613	142.2	Bottom of 'A' Post				3596	141.6	3613	142.2
2512	98.9	2540	100.0	Upper Trailing Edge of Door				2517	99.1	2543	100.1
2502	98.5	2526	99.4	Lower Trailing Edge of Door				2502	98.5	2501	98.5
				Steering Column							
				3162	124.5	3175	125.0				
				Center of Seering Column to 'A' Post (Horizontal)							
				345	13.6	312	12.3				
				Center of Steering Column to Headliner (Vertical)							
				438	17.2	421	16.6				

1994 CADILLAC DE VILLE

NHTSA Crash Test - #2024 - Front Impact

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

Test Vehicle Weight = 4269 pounds
Vehicle Closing Speed = 34.9 mph
Test Crush Length = 77.4 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	19.6	26.9	20.8	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.6 inches					140.4
Using a Rated No Damage Speed of	2.5 mph	183.0	121.1	138.3	
Using a Rated No Damage Speed of	5.0 mph	337.7	103.1	553.0	
Using a Rated No Damage Speed of	7.5 mph	464.2	86.6	1244.3	
Using a Rated No Damage Speed of	10.0 mph	562.5	71.5	2212.1	
Average Crush = 23.5 inches					97.7
Using a Rated No Damage Speed of	2.5 mph	152.6	84.2	138.3	
Using a Rated No Damage Speed of	5.0 mph	281.7	71.7	553.0	
Using a Rated No Damage Speed of	7.5 mph	387.2	60.2	1244.3	
Using a Rated No Damage Speed of	10.0 mph	469.2	49.8	2212.1	
Maximum Crush = 26.9 inches					74.6
Using a Rated No Damage Speed of	2.5 mph	133.3	64.3	138.3	
Using a Rated No Damage Speed of	5.0 mph	246.1	54.7	553.0	
Using a Rated No Damage Speed of	7.5 mph	338.2	46.0	1244.3	
Using a Rated No Damage Speed of	10.0 mph	409.9	38.0	2212.1	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	26.9	37.6	2.7	7.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.1

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

1994 CADILLAC DE VILLE

NHTSA Crash Test - #2024 - Front Impact

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

Test Vehicle Weight = 4269 pounds
Vehicle Closing Speed = 34.9 mph
Test Crush Length = 60.0 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	19.6	26.9	20.8	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.6 inches					181.0
Using a Rated No Damage Speed of	2.5 mph	235.7	156.0	178.1	
Using a Rated No Damage Speed of	5.0 mph	435.1	132.9	712.6	
Using a Rated No Damage Speed of	7.5 mph	598.2	111.6	1603.3	
Using a Rated No Damage Speed of	10.0 mph	724.8	92.2	2850.3	
Average Crush = 23.5 inches					125.9
Using a Rated No Damage Speed of	2.5 mph	196.6	108.5	178.1	
Using a Rated No Damage Speed of	5.0 mph	362.9	92.4	712.6	
Using a Rated No Damage Speed of	7.5 mph	498.9	77.6	1603.3	
Using a Rated No Damage Speed of	10.0 mph	604.5	64.1	2850.3	
Maximum Crush = 26.9 inches					96.1
Using a Rated No Damage Speed of	2.5 mph	171.8	82.8	178.1	
Using a Rated No Damage Speed of	5.0 mph	317.0	70.5	712.6	
Using a Rated No Damage Speed of	7.5 mph	435.8	59.2	1603.3	
Using a Rated No Damage Speed of	10.0 mph	528.1	48.9	2850.3	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	26.9	37.6	2.7	7.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.1

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

1994 CADILLAC DE VILLE

NHTSA Crash Test - #2024 - Front Impact

Damage Profile Distances - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4269 pounds
Vehicle Closing Speed = 34.9 MPH
Test Crush Length = 77.4 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Driver Side)	19.6	23.4	27.2	27.5	22.4	20.8	(Pass Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.6 inches					140.4
Using a Rated No Damage Speed of	2.5mph	183.0	121.1	138.3	
Using a Rated No Damage Speed of	5.0mph	337.7	103.1	553.0	
Using a Rated No Damage Speed of	7.5mph	464.2	86.6	1244.3	
Using a Rated No Damage Speed of	10.0mph	562.5	71.5	2212.1	
Average Crush = 24.2 inches					92.1
Using a Rated No Damage Speed of	2.5mph	148.2	79.4	138.3	
Using a Rated No Damage Speed of	5.0mph	273.5	67.6	553.0	
Using a Rated No Damage Speed of	7.5mph	376.0	56.8	1244.3	
Using a Rated No Damage Speed of	10.0mph	455.6	46.9	1534.6	
Maximum Crush = 27.5 inches					71.3
Using a Rated No Damage Speed of	2.5mph	130.4	61.5	138.3	
Using a Rated No Damage Speed of	5.0mph	240.7	52.4	553.0	
Using a Rated No Damage Speed of	7.5mph	330.9	44.0	1244.3	
Using a Rated No Damage Speed of	10.0mph	400.9	36.3	2212.1	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	27.5	38.0	3.1	8.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 17.7

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

1994 CADILLAC DE VILLE

NHTSA Crash Test - #2024 - Front Impact

Damage Profile Distances - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4269 pounds
Vehicle Closing Speed = 34.9 MPH
Test Crush Length = 60.0 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Driver Side)	19.6	23.4	27.2	27.5	22.4	20.8	(Pass Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.6 inches					181.0
Using a Rated No Damage Speed of	2.5mph	235.7	156.0	178.1	
Using a Rated No Damage Speed of	5.0mph	435.1	132.9	712.6	
Using a Rated No Damage Speed of	7.5mph	598.2	111.6	1603.3	
Using a Rated No Damage Speed of	10.0mph	724.8	92.2	2850.3	
Average Crush = 24.2 inches					118.7
Using a Rated No Damage Speed of	2.5mph	190.9	102.3	178.1	
Using a Rated No Damage Speed of	5.0mph	352.4	87.1	712.6	
Using a Rated No Damage Speed of	7.5mph	484.5	73.2	1603.3	
Using a Rated No Damage Speed of	10.0mph	587.1	60.5	1977.3	
Maximum Crush = 27.5 inches					91.9
Using a Rated No Damage Speed of	2.5mph	168.0	79.2	178.1	
Using a Rated No Damage Speed of	5.0mph	310.1	67.5	712.6	
Using a Rated No Damage Speed of	7.5mph	426.3	56.7	1603.3	
Using a Rated No Damage Speed of	10.0mph	516.6	46.8	2850.3	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	27.5	38.0	3.1	8.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 17.7

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: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	5.0	28.7	35.2	234.0	49.4	554.5	67.0	17.3
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.2	34.9	274.0	67.9	553.0	92.5	20.2
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	22.8	35.1	309.0	81.7	584.7	111.0	21.6
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	19.0	35.0	379.9	119.7	603.0	162.9	25.7
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	5.0	14.9	29.5	380.1	125.0	578.1	181.1	23.4
	Average (AVG)				**315.4**	**88.7**	**574.7**	**122.9**	**21.6**
	Minimum (MIN)				**234.0**	**49.4**	**553.0**	**67.0**	**17.3**
	Maximum (MAX)				**380.1**	**125.0**	**603.0**	**181.1**	**25.7**
	Standard Deviation (STDev-sample)				**64.7**	**32.8**	**21.2**	**47.9**	**3.2**
	Number of Tests (n)			**5**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	2.0	28.7	35.2	102.9	59.7	88.7	67.0	17.3
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	24.2	34.9	120.6	82.2	88.5	92.5	20.2
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	22.8	35.1	135.9	98.7	93.6	111.0	21.6
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	19.0	35.0	167.2	144.8	96.5	162.9	25.7
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	2.0	14.9	29.5	170.6	157.4	92.5	181.1	23.4
	Average (AVG)				**139.4**	**108.6**	**92.0**	**122.9**	**21.6**
	Minimum (MIN)				**102.9**	**59.7**	**88.5**	**67.0**	**17.3**
	Maximum (MAX)				**170.6**	**157.4**	**96.5**	**181.1**	**25.7**
	Standard Deviation (STDev-sample)				**29.3**	**41.5**	**3.4**	**47.9**	**3.2**
	Number of Tests (n)			**5**					

Available Test Results

Front Impact Test Summary

Report Filter Settings

Year Range: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	5.0	32.2	35.2	208.2	39.1	554.5	53.1	15.4
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	27.5	34.9	240.9	52.4	553.0	71.4	17.8
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	26.7	35.1	263.8	59.5	584.7	80.9	18.5
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	5.0	18.9	29.5	300.0	77.8	578.1	112.8	18.4
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	20.2	35.0	358.1	106.3	603.0	144.7	24.2
	Average (AVG)				**274.2**	**67.0**	**574.7**	**92.6**	**18.9**
	Minimum (MIN)				**208.2**	**39.1**	**553.0**	**53.1**	**15.4**
	Maximum (MAX)				**358.1**	**106.3**	**603.0**	**144.7**	**24.2**
	Standard Deviation (STDev-sample)				**57.6**	**26.0**	**21.2**	**36.3**	**3.2**
	Number of Tests (n)			**5**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	2.0	32.2	35.2	91.5	47.2	88.7	53.1	15.4
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	27.5	34.9	106.0	63.5	88.5	71.4	17.8
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	26.7	35.1	116.0	72.0	93.6	80.9	18.5
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	2.0	18.9	29.5	134.7	98.0	92.5	112.8	18.4
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	20.2	35.0	157.6	128.6	96.5	144.7	24.2
	Average (AVG)				**121.2**	**81.9**	**92.0**	**92.6**	**18.9**
	Minimum (MIN)				**91.5**	**47.2**	**88.5**	**53.1**	**15.4**
	Maximum (MAX)				**157.6**	**128.6**	**96.5**	**144.7**	**24.2**
	Standard Deviation (STDev-sample)				**25.7**	**31.9**	**3.4**	**36.3**	**3.2**
	Number of Tests (n)			**5**					

Expert VIN DeCoder®

Version Number 3.1.0.3

DeCoded VIN: 1G6KD52YXTU255428

Model:	1996 Cadillac Sedan 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 + Driver & Passenger 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 Sedan DeVille

The Sixth character (5) indicates a 4 Door Sedan

The Seventh character (2) indicates Active (Manual) Seatbelts + Driver & Passenger 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 X.
The VIN appears Valid, the calculated value is 10. (The display Character should be X)

The Tenth character (T) indicates the model year 1996

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

The Twelfth through Seventeenth characters (255428) 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

3/7/2012

1996 CADILLAC DEVILLE 4 DOOR SEDAN

Curb Weight:	3758	lbs.	1705	kg.
Curb Weight Distribution - Front:	64	% Rear:	36	%
Gross Vehicle Weight Rating:	4898	lbs.	2222	kg.
Number of Tires on Vehicle:	4			
Drive Wheels:	FRONT			

Horizontal Dimensions	Inches	Feet	Meters
Total Length	210	17.50	5.33
Wheelbase:	114	9.50	2.90
Front Bumper to Front Axle:	45	3.75	1.14
Front Bumper to Front of Front Well:	30	2.50	0.76
Front Bumper to Front of Hood:	4	0.33	0.10
Front Bumper to Base of Windshield:	61	5.08	1.55
Front Bumper to Top of Windshield:	83	6.92	2.11
Rear Bumper to Rear Axle:	51	4.25	1.30
Rear Bumper to Rear of Rear Well:	32	2.67	0.81
Rear Bumper to Rear of Trunk:	34	2.83	0.86
Rear Bumper to Base of Rear Window:	48	4.00	1.22
Width Dimensions			
Maximum Width:	77	6.42	1.96
Front Track:	61	5.08	1.55
Rear Track:	61	5.08	1.55
Vertical Dimensions			
Height:	56	4.67	1.42
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	39	3.25	0.99
Rear Bumper - top:	23	1.92	0.58
Trunk - top rear:	39	3.25	0.99
Base of Rear Window:	43	3.58	1.09

1996 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

Steering Data

Turning Circle (Diameter)	516	43.00	13.11
Steering Ratio: 15.60:1			
Wheel Radius:	13	1.08	0.33
Tire Size (OEM): P215/70R15			

Acceleration & Braking Information

Brake Type: ALL DISC

ABS System: ABS

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

d = 148.0 ft t = 3.4 sec a = -26.1 ft/sec² G-force = -0.81

Acceleration:

	t		a		G-force
0 to 30mph		sec		ft/sec²	
0 to 60mph	6.7	sec	13.1	ft/sec²	0.41
45 to 65mph		sec		ft/sec²	

Transmission Type: AUTOMATIC

Notes:

Federal Bumper Standard Requirements: 2.5 mph

This vehicles Rated Bumper Strength: 5 mph

N.S.D.C = 1995 - 1996

1996 CADILLAC DEVILLE 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.39	Stable
NHTSA Star Rating (calculated)		****

Center of Gravity (No Load):

Inches behind front axle	=	41.04
Inches in front of rear axle	=	72.96
Inches from side of vehicle	=	38.50
Inches from ground	=	21.98
Inches from front corner	=	94.26
Inches from rear corner	=	129.80
Inches from front bumper	=	86.04
Inches from rear bumper	=	123.96

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2664.74	lb*ft*sec²
Pitch Moment of Inertia	=	2571.42	lb*ft*sec²
Roll Moment of Inertia	=	526.44	lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	68.2	deg
Angle Front of Hood to Windshield Base	=	9.0	deg
Angle Front of Hood to Windshield Top	=	16.9	deg
Angle of Windshield	=	34.3	deg
Angle of Steering Tires at Max Turn	=	25.3	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

#2359

1996 CADILLAC DE VILLE

Provided By

4N6XPRT StifCalcs®

Registered to:

TUCRRC
800 TUCKER DRIVE
TULSA OK 74104-9700
11R-110829SC03101

4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA
(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Sister/Clone database reader

You entered: **1996 CADILLAC DEVILLE**

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

Year Range	Make	Model	Body Styles	Wheelbase
1992 - 1997	CADILLAC	SEVILLE	4D	112.2
Remarks:				
1992 - 2002	CADILLAC	ELDORADO	2D	108
Remarks: SAME OLD CAR				
1994 - 1999	CADILLAC	DEVILLE	2D, 4D	115.3
Remarks: (STRETCHED WB)				

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 #	2359	NHTSA Test Reference Guide Version #	3				
Test Date	1996-01-05	Contract #	DTNH22-90-D-22121				
Contract/Study Title	1996 CADILLAC DEVILLE INTO FRONTAL LOAD CELL BARRIER						
Test Objective(s)	OBTAIN 35 MPH NEW CAR ASSESSMENT AND RESEARCH DATA						
Test Type	NEW CAR ASSESSMENT TEST	Configuration	VEHICLE INTO BARRIER				
Impact Angle	0	Side Impact Point	0	mm	0.0	inches	
			0	mm	0.0	inches	
		Closing Speed	56.5	Km/Hr	35.11	MPH	
Test Performer	TRC OF OHIO						
Test Reference #	960105						
Test Track Surface	CONCRETE	Condition	DRY				
Ambient Temperature	19 C	66.2 F	Total Number of Curves	123			
Data Recorder Type	OTHER	Data Link	UMBILICAL CABLE				
Test Commentary	ELECTRONIC DIGITAL DATA STORAGE						

Fixed Barrier Information

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

1996 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	2359		
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	MFG: ALDERSON RESEARCH LABS S/N: 192		
Occupant Modification	REDUNDANT HEAD AND CHEST ACCELEROMETERS		
Occupant Description	NO COMMENTS		
Occupant Commentary	CNTRH2 IS HEAD RESTRAINT		

Head

Head to -

Windshielder Header	341	mm	13.4	inches	Head Injury Criteria (HIC)	1004	
WindShield	636	mm	25.0	inches	HIC Lower Time Interval (ms)	67.6	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	97.44	
Side Header	259	mm	10.2	inches			
Side Window	371	mm	14.6	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	511	mm	20.1	inches	Arm to Door	157	mm	6.2	inches
Steering Wheel	273	mm	10.7	inches	Hip to Door	185	mm	7.3	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	655	Pelvic Peak Lateral Acceleration (g's)	
Thoracic Trauma Index		Thorax Peak Acceleration (g's)	55.6

Lap Belt Peak Load	7788	Newtons	1750.8	pound Force
Shoulder Belt Peak Load	6679	Newtons	1501.5	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	169	mm	6.7	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-6280	Newtons	-1411.8	pounds Force
Right Femur Peak Load	-4923	Newtons	-1106.7	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

1996 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

Test #	2359					
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	MFG: ALDERSON RESEARCH LABS S/N: 192
Occupant Modification	REDUNDANT HEAD AND CHEST ACCELEROMETERS
Occupant Description	NO COMMENTS
Occupant Commentary	CNTRH2 IS HEAD RESTRAINT

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	3 POINT BELT
Mounted	
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

1996 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	2359		
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	MFG: HUMANETICS ,SIN 142		
Occupant Modification	REDUNDANT HEAD AND CHEST ACCELEROMETERS		
Occupant Description	NO COMMENTS		
Occupant Commentary	CNTRH2 IS HEAD RESTRAINT		

Head

Head to -

Windshielder Header	321	mm	12.6	inches	Head Injury Criteria (HIC)	1236	
WindShield	573	mm	22.6	inches	HIC Lower Time Interval (ms)	71.92	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	102	
Side Header	250	mm	9.8	inches			
Side Window	381	mm	15.0	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	522	mm	20.6	inches	Arm to Door	166	mm	6.5	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	167	mm	6.6	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	672	Pelvic Peak Lateral Acceleration (g's)	
Thoracic Trauma Index		Thorax Peak Acceleration (g's)	59.5

Lap Belt Peak Load	7936	Newtons	1784.1	pound Force
Shoulder Belt Peak Load	6169	Newtons	1386.9	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	149	mm	5.9	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-3730	Newtons	-838.5	pounds Force
Right Femur Peak Load	-3844	Newtons	-864.2	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

1996 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

Test #	2359					
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	MFG: HUMANETICS ,SIN 142
Occupant Modification	REDUNDANT HEAD AND CHEST ACCELEROMETERS
Occupant Description	NO COMMENTS
Occupant Commentary	CNTRH2 IS HEAD RESTRAINT

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	3 POINT BELT
Mounted	
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

Vehicle 1 1996 CADILLAC DE VILLE

Test #	2359		
VIN	1G6KD52Y5TU215502	NHTSA Test Vehicle Number	1
Year	1996	Vehicle Modification Indicator	UNKNOWN
Make	CADILLAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	DE VILLE	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	OTHER		
Displacement	4.6 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	ENGINE IS V8TF		

Vehicle Length	5353	mm	210.7	inches	CG behind Front Axle	1202 mm	47.3 inches
Vehicle Width	1942	mm	76.5	inches	Center of Damage to CG Axis	0 mm	0.0 inches
Vehicle Wheelbase	2894	mm	113.9	inches	Total Length of Indentation	1524 mm	60.0 inches
Vehicle Test Weight	2024	KG	4461	pounds	Maximum Static Crush Depth	678 mm	26.7 inches
					Pre-Impact Speed	57 kph	35.1 mph

Vehicle Damage Index: 12FDEW3

Principal Direction of Force: 0

Damage Profile Distance Measurements

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

DPD 1	483	mm	19.0	inches
DPD 2	555	mm	21.9	inches
DPD 3	619	mm	24.4	inches
DPD 4	636	mm	25.0	inches
DPD 5	573	mm	22.6	inches
DPD 6	539	mm	21.2	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	202.7	inches	183.7	inches	19.0	inches
	5148	mm	4665	mm	483	mm
Centerline	210.7	inches	184.1	inches	26.7	inches
	5353	mm	4675	mm	678	mm
Right Bumper Corner	202.7	inches	181.5	inches	21.2	inches
	5148	mm	4609	mm	539	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
NOT APPLICABLE	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 1996 CADILLAC DE VILLE

Test #	2359		
VIN	1G6KD52Y5TU215502	NHTSA Test Vehicle Number	1
Year	1996	Vehicle Modification Indicator	UNKNOWN
Make	CADILLAC	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	DE VILLE	Steering Column Collapse Mechanism	UNKNOWN
Body	FOUR DOOR SEDAN		
Engine	OTHER		
Displacement	4.6 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	ENGINE IS V8TF		

Vehicle Length	5353	mm	210.7	inches	CG behind Front Axle	1202	mm	47.3	inches
Vehicle Width	1942	mm	76.5	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2894	mm	113.9	inches	Total Length of Indentation	1524	mm	60.0	inches
Vehicle Test Weight	2024	KG	4461	pounds	Maximum Static Crush Depth	678	mm	26.7	inches
					Pre-Impact Speed	57	kph	35.1	mph

Vehicle Damage Index	12FDEW3	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 Pre-Test mm	Left Side Pre-Test inches	Left Side Post-Test mm	Left Side Post-Test inches	Centerline	Centerline Pre-Test mm	Centerline Pre-Test inches	Centerline Post-Test mm	Centerline Post-Test inches	Right Side Pre-Test mm	Right Side Pre-Test inches	Right Side Post-Test mm	Right Side Post-Test inches
				Length of Vehicle at Centerline	5353	210.7	4675	184.1				
				Engine Block	475	18.7	475	18.7				
5148	202.7	4665	183.7	Front Bumper Corner					5148	202.7	4609	181.5
				Front of Engine	4689	184.6	4366	171.9				
3887	153.0	3865	152.2	Firewall					3906	153.8	3897	153.4
					3999	157.4	3922	154.4				
3665	144.3	3673	144.6	Upper Leading Edge of Door					3661	144.1	3660	144.1
3641	143.3	3650	143.7	Lower Leading Edge of Door					3637	143.2	3633	143.0
3564	140.3	3585	141.1	Bottom of 'A' Post					3559	140.1	3576	140.8
2524	99.4	2542	100.1	Upper Trailing Edge of Door					2525	99.4	2540	100.0
2501	98.5	2515	99.0	Lower Trailing Edge of Door					2504	98.6	2505	98.6
				Steering Column	3152	124.1	3203	126.1				
				Center of Seering Column to 'A' Post (Horizontal)	297	11.7	290	11.4				
				Center of Steering Column to Headliner (Vertical)	424	16.7	398	15.7				

1996 CADILLAC DE VILLE

NHTSA Crash Test - #2359 - Front Impact

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

Test Vehicle Weight = 4461 pounds
Vehicle Closing Speed = 35.1 mph
Test Crush Length = 76.5 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	19.0	26.7	21.2	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.0 inches					159.7
Using a Rated No Damage Speed of	2.5 mph	200.7	137.8	146.2	
Using a Rated No Damage Speed of	5.0 mph	370.6	117.5	584.7	
Using a Rated No Damage Speed of	7.5 mph	509.8	98.8	1315.6	
Using a Rated No Damage Speed of	10.0 mph	618.1	81.7	2338.8	
Average Crush = 23.4 inches					105.3
Using a Rated No Damage Speed of	2.5 mph	163.0	90.8	146.2	
Using a Rated No Damage Speed of	5.0 mph	300.9	77.4	584.7	
Using a Rated No Damage Speed of	7.5 mph	413.9	65.1	1315.6	
Using a Rated No Damage Speed of	10.0 mph	501.9	53.9	2338.8	
Maximum Crush = 26.7 inches					80.9
Using a Rated No Damage Speed of	2.5 mph	142.8	69.8	146.2	
Using a Rated No Damage Speed of	5.0 mph	263.7	59.5	584.7	
Using a Rated No Damage Speed of	7.5 mph	362.7	50.0	1315.6	
Using a Rated No Damage Speed of	10.0 mph	439.9	41.4	2338.8	

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

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

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	26.7	37.4	2.3	6.2

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.5

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

1996 CADILLAC DE VILLE

NHTSA Crash Test - #2359 - Front Impact

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

Test Vehicle Weight = 4461 pounds
Vehicle Closing Speed = 35.1 mph
Test Crush Length = 60.0 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	19.0	26.7	21.2	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.0 inches					203.5
Using a Rated No Damage Speed of	2.5 mph	255.7	175.6	186.3	
Using a Rated No Damage Speed of	5.0 mph	472.3	149.7	745.1	
Using a Rated No Damage Speed of	7.5 mph	649.6	125.8	1676.4	
Using a Rated No Damage Speed of	10.0 mph	787.7	104.1	2980.3	
Average Crush = 23.4 inches					134.2
Using a Rated No Damage Speed of	2.5 mph	207.7	115.7	186.3	
Using a Rated No Damage Speed of	5.0 mph	383.5	98.7	745.1	
Using a Rated No Damage Speed of	7.5 mph	527.4	83.0	1676.4	
Using a Rated No Damage Speed of	10.0 mph	639.6	68.6	2980.3	
Maximum Crush = 26.7 inches					103.1
Using a Rated No Damage Speed of	2.5 mph	182.0	88.9	186.3	
Using a Rated No Damage Speed of	5.0 mph	336.1	75.8	745.1	
Using a Rated No Damage Speed of	7.5 mph	462.2	63.7	1676.4	
Using a Rated No Damage Speed of	10.0 mph	560.5	52.7	2980.3	

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

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

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	26.7	37.4	2.3	6.2

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 18.5

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

1996 CADILLAC DE VILLE

NHTSA Crash Test - #2359 - Front Impact

Damage Profile Distances - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4461 pounds
Vehicle Closing Speed = 35.1 MPH
Test Crush Length = 76.5 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Driver Side)	19.0	21.9	24.4	25.0	22.6	21.2	(Pass Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.0 inches					159.7
Using a Rated No Damage Speed of	2.5mph	200.7	137.8	146.2	
Using a Rated No Damage Speed of	5.0mph	370.6	117.5	584.7	
Using a Rated No Damage Speed of	7.5mph	509.8	98.8	1315.6	
Using a Rated No Damage Speed of	10.0mph	618.1	81.7	2338.8	
Average Crush = 22.8 inches					110.9
Using a Rated No Damage Speed of	2.5mph	167.2	95.7	146.2	
Using a Rated No Damage Speed of	5.0mph	308.8	81.6	584.7	
Using a Rated No Damage Speed of	7.5mph	424.8	68.6	1315.6	
Using a Rated No Damage Speed of	10.0mph	515.1	56.7	1626.5	
Maximum Crush = 25.0 inches					92.2
Using a Rated No Damage Speed of	2.5mph	152.5	79.6	146.2	
Using a Rated No Damage Speed of	5.0mph	281.7	67.8	584.7	
Using a Rated No Damage Speed of	7.5mph	387.4	57.0	1315.6	
Using a Rated No Damage Speed of	10.0mph	469.8	47.2	2338.8	

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

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

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	25.0	36.2	1.1	3.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 19.7

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

1996 CADILLAC DE VILLE

NHTSA Crash Test - #2359 - Front Impact

Damage Profile Distances - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 4461 pounds
Vehicle Closing Speed = 35.1 MPH
Test Crush Length = 60.0 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Driver Side)	19.0	21.9	24.4	25.0	22.6	21.2	(Pass Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 19.0 inches					203.5
Using a Rated No Damage Speed of	2.5mph	255.7	175.6	186.3	
Using a Rated No Damage Speed of	5.0mph	472.3	149.7	745.1	
Using a Rated No Damage Speed of	7.5mph	649.6	125.8	1676.4	
Using a Rated No Damage Speed of	10.0mph	787.7	104.1	2980.3	
Average Crush = 22.8 inches					141.3
Using a Rated No Damage Speed of	2.5mph	213.1	121.9	186.3	
Using a Rated No Damage Speed of	5.0mph	393.6	103.9	745.1	
Using a Rated No Damage Speed of	7.5mph	541.3	87.4	1676.4	
Using a Rated No Damage Speed of	10.0mph	656.4	72.3	2072.6	
Maximum Crush = 25.0 inches					117.5
Using a Rated No Damage Speed of	2.5mph	194.4	101.4	186.3	
Using a Rated No Damage Speed of	5.0mph	358.9	86.4	745.1	
Using a Rated No Damage Speed of	7.5mph	493.7	72.7	1676.4	
Using a Rated No Damage Speed of	10.0mph	598.6	60.1	2980.3	

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

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

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	25.0	36.2	1.1	3.1

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 19.7

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: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	5.0	28.7	35.2	234.0	49.4	554.5	67.0	17.3
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	24.2	34.9	274.0	67.9	553.0	92.5	20.2
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	22.8	35.1	309.0	81.7	584.7	111.0	21.6
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	19.0	35.0	379.9	119.7	603.0	162.9	25.7
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	5.0	14.9	29.5	380.1	125.0	578.1	181.1	23.4
	Average (AVG)				**315.4**	**88.7**	**574.7**	**122.9**	**21.6**
	Minimum (MIN)				**234.0**	**49.4**	**553.0**	**67.0**	**17.3**
	Maximum (MAX)				**380.1**	**125.0**	**603.0**	**181.1**	**25.7**
	Standard Deviation (STDev-sample)				**64.7**	**32.8**	**21.2**	**47.9**	**3.2**
	Number of Tests (n)			**5**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	2.0	28.7	35.2	102.9	59.7	88.7	67.0	17.3
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	24.2	34.9	120.6	82.2	88.5	92.5	20.2
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	22.8	35.1	135.9	98.7	93.6	111.0	21.6
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	19.0	35.0	167.2	144.8	96.5	162.9	25.7
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	2.0	14.9	29.5	170.6	157.4	92.5	181.1	23.4
	Average (AVG)				**139.4**	**108.6**	**92.0**	**122.9**	**21.6**
	Minimum (MIN)				**102.9**	**59.7**	**88.5**	**67.0**	**17.3**
	Maximum (MAX)				**170.6**	**157.4**	**96.5**	**181.1**	**25.7**
	Standard Deviation (STDev-sample)				**29.3**	**41.5**	**3.4**	**47.9**	**3.2**
	Number of Tests (n)			**5**					

Available Test Results

Front Impact Test Summary

Report Filter Settings

Year Range: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	5.0	32.2	35.2	208.2	39.1	554.5	53.1	15.4
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	27.5	34.9	240.9	52.4	553.0	71.4	17.8
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	26.7	35.1	263.8	59.5	584.7	80.9	18.5
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	5.0	18.9	29.5	300.0	77.8	578.1	112.8	18.4
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	5.0	20.2	35.0	358.1	106.3	603.0	144.7	24.2
	Average (AVG)				**274.2**	**67.0**	**574.7**	**92.6**	**18.9**
	Minimum (MIN)				**208.2**	**39.1**	**553.0**	**53.1**	**15.4**
	Maximum (MAX)				**358.1**	**106.3**	**603.0**	**144.7**	**24.2**
	Standard Deviation (STDev-sample)				**57.6**	**26.0**	**21.2**	**36.3**	**3.2**
	Number of Tests (n)			**5**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1994 - 1999
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
1705	1992 CADILLAC SEVILLE FOUR DOOR SEDAN	2.0	32.2	35.2	91.5	47.2	88.7	53.1	15.4
2024	1994 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	27.5	34.9	106.0	63.5	88.5	71.4	17.8
2359	1996 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	26.7	35.1	116.0	72.0	93.6	80.9	18.5
2497	1997 CADILLAC ELDORADO TWO DOOR COUPE	2.0	18.9	29.5	134.7	98.0	92.5	112.8	18.4
2465	1997 CADILLAC DE VILLE FOUR DOOR SEDAN	2.0	20.2	35.0	157.6	128.6	96.5	144.7	24.2
	Average (AVG)				**121.2**	**81.9**	**92.0**	**92.6**	**18.9**
	Minimum (MIN)				**91.5**	**47.2**	**88.5**	**53.1**	**15.4**
	Maximum (MAX)				**157.6**	**128.6**	**96.5**	**144.7**	**24.2**
	Standard Deviation (STDev-sample)				**25.7**	**31.9**	**3.4**	**36.3**	**3.2**
	Number of Tests (n)			**5**					

Expert VIN DeCoder®

Version Number 3.1.0

DeCoded VIN: 1MECM5045NA657507

Model:	1992 Mercury Sable 4 door Sedan
Engine Size:	3.8 L/ 232 cu.in.
Engine Description:	V-6 cylinder with Overhead Valve
Horse Power:	140 @ 3800 rpm
Torque:	215 lb-ft at 2400 rpm
Injection System:	Electronic Fuel Injection (EFI)
PSI:	35-42 psi
Ignition:	electronic
Manufacturer:	Ford
Assembly Plant:	Atlanta, GA
Drive Wheels:	This is a Front Wheel Drive vehicle w/ Manual belts + Driver Air Bag

The First through Third characters (1ME) indicate a Mercury Passenger car made in the U.S.A.

The Fourth character (C) indicates Manual belts + Driver Air Bag

The Fifth through Seventh characters (M5O) indicate a Sable

The Eighth character (4) indicates the OEM engine: 3.8 L/ 232 cu.in., V6, OHV

The Ninth character (the check digit) is entered as 5.
The VIN appears Valid, the calculated value is 5.

The Tenth character (N) indicates the model year 1992

The Eleventh character (A) indicates the vehicle was made in the assembly plant in Atlanta, GA

The Twelfth through Seventeenth characters (657507) indicate the Serial Number and are unique to this vehicle.

Expert AutoStats®

Version 5.2.0

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TULSA OK 74104-9700

5/3/2012

1992 MERCURY SABLE GS 4 DOOR SEDAN

Curb Weight:	3126	lbs.	1418	kg.
Curb Weight Distribution - Front:	63	% Rear:	37	%
Gross Vehicle Weight Rating:		lbs.		kg.
Number of Tires on Vehicle:	4			
Drive Wheels:	FRONT			

Horizontal Dimensions	Inches	Feet	Meters
Total Length	192	16.00	4.88
Wheelbase:	106	8.83	2.69
Front Bumper to Front Axle:	43	3.58	1.09
Front Bumper to Front of Front Well:	22	1.83	0.56
Front Bumper to Front of Hood:	4	0.33	0.10
Front Bumper to Base of Windshield:	52	4.33	1.32
Front Bumper to Top of Windshield:	81	6.75	2.06
Rear Bumper to Rear Axle:	43	3.58	1.09
Rear Bumper to Rear of Rear Well:	29	2.42	0.74
Rear Bumper to Rear of Trunk:			
Rear Bumper to Base of Rear Window:			
Width Dimensions			
Maximum Width:	71	5.92	1.80
Front Track:	62	5.17	1.57
Rear Track:	60	5.00	1.52
Vertical Dimensions			
Height:	55	4.58	1.40
Ground to -			
Front Bumper (Top)	23	1.92	0.58
Headlight - center	28	2.33	0.71
Hood - top front:	31	2.58	0.79
Base of Windshield	38	3.17	0.97
Rear Bumper - top:	23	1.92	0.58
Trunk - top rear:			
Base of Rear Window:			

1992 MERCURY SABLE GS 4 DOOR SEDAN

Interior Dimensions

	Inches	Feet	Meters
Front Seat Shoulder Width	58	4.83	1.47
Front Seat to Headliner	38	3.17	0.97
Front Leg Room - seatback to floor (max)	42	3.50	1.07
Rear Seat Shoulder Width	58	4.83	1.47
Rear Seat to Headliner	38	3.17	0.97
Front Leg Room - seatback to floor (min)	37	3.08	0.94

Seatbelts: 3pt LAP & SHOULDER - front, None or Unknown - rear

Airbags: DRIVER SIDE AIRBAGS

Steering Data

Turning Circle (Diameter)	468	39.00	11.89
Steering Ratio:	15.20:1		
Wheel Radius:	12	1.00	0.30
Tire Size (OEM):	205-65R15		

Acceleration & Braking Information

Brake Type: FRONT DISC - REAR DRUM

ABS System: ABS UNKNOWN

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

d = 152.0 ft t = 3.5 sec a = -25.4 ft/sec² G-force = -0.79

Acceleration:

0 to 30mph	t =	3.1	sec	a =	14.2	ft/sec²	G-force = 0.44
0 to 60mph	t =	9.6	sec	a =	9.2	ft/sec²	G-force = 0.28
45 to 65mph	t =	6.4	sec	a =	4.6	ft/sec²	G-force = 0.14

Transmission Type: AUTOMATIC

Notes:

Federal Bumper Standard Requirements: 2.5 mph

This vehicles Rated Bumper Strength: 5 mph

N.S.D.C = 1992 - 1994

1992 MERCURY SABLE GS 4 DOOR SEDAN

Other Information

Tip-Over Stability Ratio =	1.42	Stable
NHTSA Star Rating (calculated)		****

Center of Gravity (No Load):

Inches behind front axle	=	39.22
Inches in front of rear axle	=	66.78
Inches from side of vehicle	=	35.50
Inches from ground	=	21.59
Inches from front corner	=	89.56
Inches from rear corner	=	115.38
Inches from front bumper	=	82.22
Inches from rear bumper	=	109.78

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2013.78	lb*ft*sec²
Pitch Moment of Inertia	=	1945.74	lb*ft*sec²
Roll Moment of Inertia	=	412.68	lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	63.4	deg
Angle Front of Hood to Windshield Base	=	8.3	deg
Angle Front of Hood to Windshield Top	=	15.9	deg
Angle of Windshield	=	27.3	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

#1890

1993 FORD TAURUS

Provided By

4N6XPRT StifCalcs®

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800 TUCKER DRIVE
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11R-110829SC03101

4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA
(800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Sister/Clone database reader

You entered: **1992 MERCURY SABLE**

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

Year Range	Make	Model	Body Styles	Wheelbase
1992 - 1995	FORD	TAURUS	4D, SW	112.9
Remarks:				
1992 - 1995	MERCURY	SABLE	4D, SW	112.9
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 #	1890	NHTSA Test Reference Guide Version #	2			
Test Date	1993-03-17	Contract #	DTNH22-90-D-22121			
Contract/Study Title	1993 FORD TAURUS INTO FRONTAL LOAD CELL BARRIER					
Test Objective(s)	OBTAIN 35 MPH NEW CAR ASSESSMENT AND RESEARCH DATA					
Test Type	NEW CAR ASSESSMENT TEST	Configuration	VEHICLE INTO BARRIER			
Impact Angle	0	Side Impact Point	0	mm	0.0	inches
			0	mm	0.0	inches
		Closing Speed	56.3	Km/Hr	34.98	MPH
Test Performer	TRC OF OHIO					
Test Reference #	930317					
Test Track Surface	CONCRETE	Condition	DRY			
Ambient Temperature	22 C	71.6 F	Total Number of Curves	69		
Data Recorder Type	FM MULTIPLEXOR TAPE RECORDER	Data Link	UMBILICAL CABLE			
Test Commentary	NO COMMENTS					

Fixed Barrier Information

Barrier Type		Pole Barrier Diameter	0	mm	0	inches
Barrier Shape						
Barrier Commentary	FRONTAL FLAT BARRIER WITH 36 LOADCELLS					

1993 FORD TAURUS LEFT FRONT SEAT OCCUPANT

Test #	1890		
Vehicle #	1	Sex	MALE
Location	LEFT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	PART 572 DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	PART 572		
Occupant Manufacturer	ALDERSON RESEARCH LABS S/N 713		
Occupant Modification	UNMODIFIED		
Occupant Description	NO COMMENTS		
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG		

Head

Head to -

Windshielder Header	355	mm	14.0	inches	Head Injury Criteria (HIC)	647	
WindShield	546	mm	21.5	inches	HIC Lower Time Interval (ms)	54	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	90	
Side Header	185	mm	7.3	inches			
Side Window	280	mm	11.0	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	564	mm	22.2	inches	Arm to Door	95	mm	3.7	inches
Steering Wheel	337	mm	13.3	inches	Hip to Door	173	mm	6.8	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	512	Pelvic Peak Lateral Acceleration (g's)	
Thoracic Trauma Index		Thorax Peak Acceleration (g's)	54.4

Lap Belt Peak Load		Newtons	0.0	pound Force
Shoulder Belt Peak Load	6249	Newtons	1404.8	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	195	mm	7.7	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-7122	Newtons	-1601.1	pounds Force
Right Femur Peak Load	-4260	Newtons	-957.7	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

1993 FORD TAURUS LEFT FRONT SEAT OCCUPANT

Test #	1890					
Vehicle #	1	Sex	MALE			
Location	LEFT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	PART 572 DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	PART 572
Occupant Manufacturer	ALDERSON RESEARCH LABS S/N 713
Occupant Modification	UNMODIFIED
Occupant Description	NO COMMENTS
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	3 POINT BELT
Mounted	
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

1993 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

Test #	1890		
Vehicle #	1	Sex	MALE
Location	RIGHT FRONT SEAT	Age	0
Position	CENTER POSITION	Height	0 mm 0.0 inches
Type	PART 572 DUMMY	Weight	0.0 kg 0 pounds
Size	50 PERCENTILE		
Calibration Method	PART 572		
Occupant Manufacturer	ALDERSON RESEARCH LABS S/N 826		
Occupant Modification	UNMODIFIED		
Occupant Description	NO COMMENTS		
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG		

Head

Head to -

Windshielder Header	378	mm	14.9	inches	Head Injury Criteria (HIC)	431	
WindShield	552	mm	21.7	inches	HIC Lower Time Interval (ms)	57.38	
Seatback	0	mm	0.0	inches	HIC Upper Time Interval (ms)	87.63	
Side Header	177	mm	7.0	inches			
Side Window	265	mm	10.4	inches			

Neck to Seatback 0 mm 0.0 inches

First Contact Region (Head): AIR BAG

Second Contact Region (Head):

Chest

Chest to -

Dash	543	mm	21.4	inches	Arm to Door	123	mm	4.8	inches
Steering Wheel	0	mm	0.0	inches	Hip to Door	159	mm	6.3	inches
Seatback	0	mm	0.0	inches					

Chest Severity Index	405	Pelvic Peak Lateral Acceleration (g's)	
Thoracic Trauma Index		Thorax Peak Acceleration (g's)	43.9

Lap Belt Peak Load	4274	Newtons	960.8	pound Force
Shoulder Belt Peak Load	7178	Newtons	1613.7	pound Force

First Contact Region (Chest/Abdomen): AIR BAG

Second Contact Region (Chest/Abdomen): NONE

Legs

Knees to Dash	168	mm	6.6	inches	Knees to Seatback	0	mm	0.0	inches

Left Femur Peak Load	-6097	Newtons	-1370.7	pounds Force
Right Femur Peak Load	-4047	Newtons	-909.8	pounds Force

First Contact Region (Legs): DASHPANEL

Second Contact Region (Legs):

1993 FORD TAURUS RIGHT FRONT SEAT OCCUPANT

Test #	1890					
Vehicle #	1	Sex	MALE			
Location	RIGHT FRONT SEAT	Age	0			
Position	CENTER POSITION	Height	0	mm	0.0	inches
Type	PART 572 DUMMY	Weight	0.0	kg	0	pounds
Size	50 PERCENTILE					

Calibration Method	PART 572
Occupant Manufacturer	ALDERSON RESEARCH LABS S/N 826
Occupant Modification	UNMODIFIED
Occupant Description	NO COMMENTS
Occupant Commentary	HEAD AND CHEST CONTACTED AIRBAG

Restraints

Restraint # 1	FRONTAL AIRBAG
Mounted	
Deployment	DEPLOYED PROPERLY
Restraint Commentary	NO COMMENTS
Restraint # 2	3 POINT BELT
Mounted	
Deployment	NOT APPLICABLE
Restraint Commentary	NO COMMENTS

Vehicle 1 1993 FORD TAURUS

Test #	1890		
VIN	1FALP5246PA198518	NHTSA Test Vehicle Number	1
Year	1993	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	FORD	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	TAURUS	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	FOUR DOOR SEDAN		
Engine	STRAIGHT 6 TRANSVERSE FRONT		
Displacement	3.8 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	STEERING COLUMN COVER COVERED COLLAPSE MECHANISM & SHEAR CAPSULE		

Vehicle Length	4875	mm	191.9	inches	CG behind Front Axle	1095 mm	43.1 inches
Vehicle Width	1790	mm	70.5	inches	Center of Damage to CG Axis	0 mm	0.0 inches
Vehicle Wheelbase	2666	mm	105.0	inches	Total Length of Indentation	1525 mm	60.0 inches
Vehicle Test Weight	1711	KG	3771	pounds	Maximum Static Crush Depth	490 mm	19.3 inches
					Pre-Impact Speed	56 kph	35.0 mph

Vehicle Damage Index: 12FDEW2

Principal Direction of Force: 0

Damage Profile Distance Measurements

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

DPD 1	410	mm	16.1	inches
DPD 2	460	mm	18.1	inches
DPD 3	474	mm	18.7	inches
DPD 4	490	mm	19.3	inches
DPD 5	468	mm	18.4	inches
DPD 6	443	mm	17.4	inches

Crush from Pre & Post Test Damage Measurements

	Pre-Test		Post-Test		Crush Depth	
Left Bumper Corner	185.4	inches	169.3	inches	16.1	inches
	4710	mm	4300	mm	410	mm
Centerline	191.9	inches	172.9	inches	19.1	inches
	4875	mm	4391	mm	484	mm
Right Bumper Corner	185.8	inches	168.4	inches	17.4	inches
	4720	mm	4277	mm	443	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
NOT APPLICABLE	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 1993 FORD TAURUS

Test #	1890		
VIN	1FALP5246PA198518	NHTSA Test Vehicle Number	1
Year	1993	Vehicle Modification Indicator	PRODUCTION VEHICLE
Make	FORD	Post-test Steering Column Shear Capsule Seperation	UNKNOWN
Model	TAURUS	Steering Column Collapse Mechanism	NOT APPLICABLE
Body	FOUR DOOR SEDAN		
Engine	STRAIGHT 6 TRANSVERSE FRONT		
Displacement	3.8 Liter	Transmission	AUTOMATIC - FRONT WHEEL DRIVE
Vehicle Modification(s) Description	NO COMMENTS		
Vehicle Commentary	STEERING COLUMN COVER COVERED COLLAPSE MECHANISM & SHEAR CAPSULE		

Vehicle Length	4875	mm	191.9	inches	CG behind Front Axle	1095	mm	43.1	inches
Vehicle Width	1790	mm	70.5	inches	Center of Damage to CG Axis	0	mm	0.0	inches
Vehicle Wheelbase	2666	mm	105.0	inches	Total Length of Indentation	1525	mm	60.0	inches
Vehicle Test Weight	1711	KG	3771	pounds	Maximum Static Crush Depth	490	mm	19.3	inches
					Pre-Impact Speed	56	kph	35.0	mph

Vehicle Damage Index 12FDEW2 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							
				4875	191.9	4391	172.9				
				Engine Block							
				381	15.0	381	15.0				
4710	185.4	4300	169.3	Front Bumper Corner				4720	185.8	4277	168.4
				Front of Engine							
				4305	169.5	4058	159.8				
3610	142.1	3490	137.4	Firewall				3610	142.1	3585	141.1
				3645	143.5	3552	139.8				
3359	132.2	3375	132.9	Upper Leading Edge of Door				3355	132.1	3382	133.1
3325	130.9	3315	130.5	Lower Leading Edge of Door				3320	130.7	3313	130.4
3290	129.5	3277	129.0	Bottom of 'A' Post				3280	129.1	3284	129.3
2270	89.4	2291	90.2	Upper Trailing Edge of Door				2270	89.4	2298	90.5
2280	89.8	2265	89.2	Lower Trailing Edge of Door				2265	89.2	2263	89.1
				Steering Column							
				2872	113.1	2821	111.1				
				Center of Seering Column to 'A' Post (Horizontal)							
				285	11.2	205	8.1				
				Center of Steering Column to Headliner (Vertical)							
				451	17.8	402	15.8				

1993 FORD TAURUS

NHTSA Crash Test - #1890 - Front Impact

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

Test Vehicle Weight = 3771 pounds
Vehicle Closing Speed = 35.0 mph
Test Crush Length = 70.5 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	16.1	19.1	17.4	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 16.1 inches					202.5
Using a Rated No Damage Speed of	2.5 mph	216.4	174.6	134.1	
Using a Rated No Damage Speed of	5.0 mph	399.5	148.8	536.3	
Using a Rated No Damage Speed of	7.5 mph	549.2	125.0	1206.6	
Using a Rated No Damage Speed of	10.0 mph	665.7	103.3	2145.0	
Average Crush = 17.9 inches					163.9
Using a Rated No Damage Speed of	2.5 mph	194.6	141.3	134.1	
Using a Rated No Damage Speed of	5.0 mph	359.3	120.4	536.3	
Using a Rated No Damage Speed of	7.5 mph	494.0	101.1	1206.6	
Using a Rated No Damage Speed of	10.0 mph	598.8	83.6	2145.0	
Maximum Crush = 19.1 inches					143.9
Using a Rated No Damage Speed of	2.5 mph	182.4	124.1	134.1	
Using a Rated No Damage Speed of	5.0 mph	336.7	105.7	536.3	
Using a Rated No Damage Speed of	7.5 mph	463.0	88.8	1206.6	
Using a Rated No Damage Speed of	10.0 mph	561.1	73.4	2145.0	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	19.1	31.7	-3.3	-10.5

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 25.6

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

1993 FORD TAURUS

NHTSA Crash Test - #1890 - Front Impact

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

Test Vehicle Weight = 3771 pounds
Vehicle Closing Speed = 35.0 mph
Test Crush Length = 60.0 inches

Pre/Post Collision Crush Depths (inches)

	Left Side Crush	Centerline Crush	Right Side Crush	
(Driver Side)	16.1	19.1	17.4	(Pass. Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 16.1 inches					237.7
Using a Rated No Damage Speed of	2.5 mph	254.0	205.0	157.4	
Using a Rated No Damage Speed of	5.0 mph	468.9	174.6	629.4	
Using a Rated No Damage Speed of	7.5 mph	644.7	146.7	1416.2	
Using a Rated No Damage Speed of	10.0 mph	781.4	121.3	2517.8	
Average Crush = 17.9 inches					192.3
Using a Rated No Damage Speed of	2.5 mph	228.5	165.8	157.4	
Using a Rated No Damage Speed of	5.0 mph	421.7	141.3	629.4	
Using a Rated No Damage Speed of	7.5 mph	579.9	118.7	1416.2	
Using a Rated No Damage Speed of	10.0 mph	702.8	98.1	2517.8	
Maximum Crush = 19.1 inches					168.9
Using a Rated No Damage Speed of	2.5 mph	214.1	145.6	157.4	
Using a Rated No Damage Speed of	5.0 mph	395.2	124.1	629.4	
Using a Rated No Damage Speed of	7.5 mph	543.4	104.3	1416.2	
Using a Rated No Damage Speed of	10.0 mph	658.7	86.2	2517.8	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	19.1	31.7	-3.3	-10.5

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 25.6

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

1993 FORD TAURUS

NHTSA Crash Test - #1890 - Front Impact

Damage Profile Distances - Vehicle Width - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 3771 pounds
Vehicle Closing Speed = 35.0 MPH
Test Crush Length = 70.5 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Driver Side)	16.1	18.1	18.7	19.3	18.4	17.4	(Pass Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 16.1 inches					202.5
Using a Rated No Damage Speed of	2.5mph	216.4	174.6	134.1	
Using a Rated No Damage Speed of	5.0mph	399.5	148.8	536.3	
Using a Rated No Damage Speed of	7.5mph	549.2	125.0	1206.6	
Using a Rated No Damage Speed of	10.0mph	665.7	103.3	2145.0	
Average Crush = 18.3 inches					156.8
Using a Rated No Damage Speed of	2.5mph	190.4	135.2	134.1	
Using a Rated No Damage Speed of	5.0mph	351.4	115.2	536.3	
Using a Rated No Damage Speed of	7.5mph	483.2	96.8	1206.6	
Using a Rated No Damage Speed of	10.0mph	585.7	80.0	1489.3	
Maximum Crush = 19.3 inches					141.0
Using a Rated No Damage Speed of	2.5mph	180.5	121.5	134.1	
Using a Rated No Damage Speed of	5.0mph	333.2	103.5	536.3	
Using a Rated No Damage Speed of	7.5mph	458.2	87.0	1206.6	
Using a Rated No Damage Speed of	10.0mph	555.3	71.9	2145.0	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	19.3	31.8	-3.2	-9.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 25.4

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

1993 FORD TAURUS

NHTSA Crash Test - #1890 - Front Impact

Damage Profile Distances - Indention Length - Closing Speed - Trapezoidal Average

Test Vehicle Weight = 3771 pounds
Vehicle Closing Speed = 35.0 MPH
Test Crush Length = 60.0 inches

Damage Profile Distance Collision Crush Depths (inches)

	DPD1	DPD2	DPD3	DPD4	DPD5	DPD6	
(Driver Side)	16.1	18.1	18.7	19.3	18.4	17.4	(Pass Side)

		CRASH 3 Stiffness Coefficents			SMAC Stiffness
		A	B	G	Kv
Minimum Crush = 16.1 inches					237.7
Using a Rated No Damage Speed of	2.5mph	254.0	205.0	157.4	
Using a Rated No Damage Speed of	5.0mph	468.9	174.6	629.4	
Using a Rated No Damage Speed of	7.5mph	644.7	146.7	1416.2	
Using a Rated No Damage Speed of	10.0mph	781.4	121.3	2517.8	
Average Crush = 18.3 inches					184.0
Using a Rated No Damage Speed of	2.5mph	223.5	158.7	157.4	
Using a Rated No Damage Speed of	5.0mph	412.5	135.2	629.4	
Using a Rated No Damage Speed of	7.5mph	567.2	113.6	1416.2	
Using a Rated No Damage Speed of	10.0mph	687.5	93.9	1748.1	
Maximum Crush = 19.3 inches					165.4
Using a Rated No Damage Speed of	2.5mph	211.9	142.6	157.4	
Using a Rated No Damage Speed of	5.0mph	391.1	121.5	629.4	
Using a Rated No Damage Speed of	7.5mph	537.8	102.1	1416.2	
Using a Rated No Damage Speed of	10.0mph	651.8	84.4	2517.8	

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

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

Crush Factor	Maximum Crush (inches)	Calculated Impact Speed (mph)	Calculated Error (mph)	Calculated Error (%)
21	19.3	31.8	-3.2	-9.9

4N6XPRT Systems Specific Crush Factor (CF Specific to this test) = 25.4

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: 1992 - 1995
Make: MERCURY
Model: SABLE

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
2143	1994 FORD TAURUS FOUR DOOR SEDAN	2.5	28.9	40.2	126.8	66.1	121.6	75.2	22.4
1976	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	20.2	35.0	165.8	106.8	128.8	123.9	24.3
1974	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	18.2	35.1	178.3	128.0	124.2	148.4	27.1
1973	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	15.0	30.1	182.5	133.9	124.4	159.3	24.1
1890	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	18.3	35.0	190.8	135.8	134.1	157.5	26.8
1899	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	12.0	29.4	222.9	200.6	123.8	239.6	28.9
1777	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	12.0	29.3	246.6	220.6	137.9	263.7	28.7
	Average (AVG)				**187.7**	**141.7**	**127.8**	**166.8**	**26.0**
	Minimum (MIN)				**126.8**	**66.1**	**121.6**	**75.2**	**22.4**
	Maximum (MAX)				**246.6**	**220.6**	**137.9**	**263.7**	**28.9**
	Standard Deviation (STDev-sample)				**38.8**	**53.1**	**6.1**	**65.1**	**2.5**
	Number of Tests (n)			**7**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1992 - 1995
Make: MERCURY
Model: SABLE

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
2143	1994 FORD TAURUS FOUR DOOR SEDAN	5.0	28.9	40.2	236.8	57.6	486.2	75.2	22.4
1976	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	20.2	35.0	306.2	91.0	515.1	123.9	24.3
1974	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	18.2	35.1	329.3	109.1	496.8	148.4	27.1
1973	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	15.0	30.1	331.9	110.8	497.4	159.3	24.1
1890	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	18.3	35.0	352.3	115.7	536.3	157.5	26.8
1899	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	12.0	29.4	404.3	165.0	495.4	239.6	28.9
1777	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	12.0	29.3	447.3	181.4	551.4	263.7	28.7
	Average (AVG)				**344.0**	**118.7**	**511.2**	**166.8**	**26.0**
	Minimum (MIN)				**236.8**	**57.6**	**486.2**	**75.2**	**22.4**
	Maximum (MAX)				**447.3**	**181.4**	**551.4**	**263.7**	**28.9**
	Standard Deviation (STDev-sample)				**67.9**	**42.3**	**24.3**	**65.1**	**2.5**
	Number of Tests (n)			**7**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1992 - 1995
Make: MERCURY
Model: SABLE

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
1976	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	21.5	35.0	155.7	94.1	128.8	109.1	22.8
1974	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	19.7	35.1	164.6	109.0	124.2	126.4	25.0
1973	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	16.5	30.1	166.3	111.2	124.4	132.3	21.9
2143	1994 FORD TAURUS FOUR DOOR SEDAN	2.5	21.9	40.2	167.8	115.8	121.6	131.7	29.6
1890	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	19.3	35.0	180.6	121.6	134.1	141.1	25.4
1899	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	13.4	29.4	199.0	159.9	123.8	191.1	25.8
1777	1993 FORD TAURUS FOUR DOOR SEDAN	2.5	12.6	29.3	234.9	200.0	137.9	239.1	27.3
	Average (AVG)				**181.3**	**130.2**	**127.8**	**153.0**	**25.4**
	Minimum (MIN)				**155.7**	**94.1**	**121.6**	**109.1**	**21.9**
	Maximum (MAX)				**234.9**	**200.0**	**137.9**	**239.1**	**29.6**
	Standard Deviation (STDev-sample)				**27.5**	**36.9**	**6.1**	**45.7**	**2.6**
	Number of Tests (n)			**7**					

Available Test Results
Front Impact Test Summary

Report Filter Settings

Year Range: 1992 - 1995
Make: MERCURY
Model: SABLE

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
1976	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	21.5	35.0	287.4	80.2	515.1	109.1	22.8
1973	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	16.5	30.1	302.4	91.9	497.4	132.3	21.9
1974	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	19.7	35.1	303.9	93.0	496.8	126.4	25.0
2143	1994 FORD TAURUS FOUR DOOR SEDAN	5.0	21.9	40.2	313.3	101.0	486.2	131.7	29.6
1890	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	19.3	35.0	333.4	103.6	536.3	141.1	25.4
1899	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	13.4	29.4	361.0	131.6	495.4	191.1	25.8
1777	1993 FORD TAURUS FOUR DOOR SEDAN	5.0	12.6	29.3	425.9	164.5	551.4	239.1	27.3
	Average (AVG)				**332.5**	**109.4**	**511.2**	**153.0**	**25.4**
	Minimum (MIN)				**287.4**	**80.2**	**486.2**	**109.1**	**21.9**
	Maximum (MAX)				**425.9**	**164.5**	**551.4**	**239.1**	**29.6**
	Standard Deviation (STDev-sample)				**47.7**	**29.0**	**24.3**	**45.7**	**2.6**
	Number of Tests (n)			**7**					

EXPERT VIN DeCoder

The VIN Number is 1FU JGEDU 3 CS BD6318

The vehicle should be a 2012 Freightliner
The model: Cascadia CA125 Day Cab 6x4 Truck-Tractor
The assembly plant: Saltillo, Hoahuila, Mexico

The OEM engine was: Inline 6 cylinder Cummins ISB6.7 Diesel
Engine Displacement/Type = 6.7 L/ 408 cu.in., L6 Diesel
Engine manufacturer = Cummins

The fuel distribution system: Diesel

fuel pump/line pressure = N/A
The ignition system = N/A

This is a Rear Wheel Drive Vehicle

The first three characters { 1, F, U } indicates that the vehicle was a Freightliner Truck made in the U.S.A.

The fourth character { J } indicates a 6x4 Truck-Tractor

The fifth with the sixth character { GE } indicates a Cascadia CA125 Day Cab
GVWR: Class 7

The seventh with the eighth character { DU } indicates the OEM engine: L6, 6.7 L/ 408 cu.in., Cummins ISB6.7 Diesel

The ninth character { the Check Digit } is 3
The calculated Check Digit is 3

The tenth character { C } indicates the model year was 2012

The eleventh character { S } indicates it was made at the assembly plant at Saltillo, Hoahuila, Mexico

The twelfth through seventeenth characters { BD6318 } is the serial number unique to this vehicle.

EXPERT AUTOSTATS
Ver. 3.9

PROVIDED BY:
4N6XPRT Systems
8387 University Avenue
La Mesa CA 91941

03-30-2012

2012 FREIGHTLINER CASCADIA CA125 DAY CAB 180WB 2DR TRACTOR

CURB WEIGHT:	15220 lbs.	6904 kg.
Curb Weight Distribution -	Front: 56 %	Rear: 44 %
Gross Vehicle Weight Rating:	60000 lbs.	27216 kg.
Number of Tires on Vehicle:	10	
Drive Wheels:	REAR	

HORIZONTAL DIMENSIONS

	Inches	Feet	Meters
Total Length	286	23.83	7.26
Wheelbase:	180	15.00	4.57
Front Bumper to Front Axle	49	4.08	1.24
Front Bumper to Front of Front Well	___	__.__	_.__
Front Bumper to Front of Hood	___	__.__	_.__
Front Bumper to Base of Windshield	___	__.__	_.__
Front Bumper to Top of Windshield	___	__.__	_.__
Rear Bumper to Rear Axle	57	4.75	1.45
Rear Bumper to Rear of Rear Well	___	__.__	_.__
Rear Bumper to Rear of Trunk	___	__.__	_.__
Rear Bumper to Base of Rear Window	___	__.__	_.__

WIDTH DIMENSIONS

Maximum Width	96	8.00	2.44
Front Track	80	6.67	2.03
Rear Track	72	6.00	1.83

VERTICAL DIMENSIONS

	Inches	Feet	Meters
Height	117	9.75	2.97
Ground to:			
Front Bumper (Top)	___	__.__	_.__
Headlight - center	___	__.__	_.__
Hood - top front	___	__.__	_.__
Base of windshield	___	__.__	_.__
Rear Bumper - top	___	__.__	_.__
Trunk - top rear	___	__.__	_.__
Base of rear window	___	__.__	_.__

Reg. To: 4N6XPRT Systems S/N:99R-930512AQ03201

2012 FREIGHTLINER CASCADIA CA125 DAY CAB 180WB 2DR TRACTOR

INTERIOR DIMENSIONS

	Inches	Feet	Meters
Front Seat Shoulder Width	___	__.__	_.__
Front Seat to Headliner	___	__.__	_.__
Front Leg - seatback to floor (max)	___	__.__	_.__
Rear Seat Shoulder Width	___	__.__	_.__
Rear Seat to Headliner	___	__.__	_.__
Rear Leg - seatback to floor (min)	___	__.__	_.__

Seatbelts: SEATBELTS UNKNOWN
Airbags: AIRBAGS UNKNOWN

STEERING DATA

Turning Circle (Diameter)	___	__.__	__.__
Steering Ratio:	__.__:1		
Wheel Radius:	___	__.__	_.__
Tire Size (OEM):	295/75R22.5 14P		

ACCELERATION & BRAKING INFORMATION

Brake Type: AIRBRAKES
ABS System: ABS UNKNOWN

Braking, 60 mph -> 0 (Hard pedal, no skid, dry pavement):
d = ___ ft t = __._ sec. a =-__._ ft/sec/sec G-force = -_.__

ACCELERATION:

0->30 mph	t = __._ sec.	a = __._ ft/sec/sec	G-force = _.__
0->60 mph	t = __._ sec.	a = __._ ft/sec/sec	G-force = _.__
45->65 mph	t = __._ sec.	a = __._ ft/sec/sec	G-force = _.__

Transmission Type: 10spd MANUAL

NOTES:

Federal Bumper Standard Requirements = NO REQUIREMENT

N.S.D.C. = 2008 - 2012

Reg. To: 4N6XPRT Systems S/N:99R-930512AQ03201

2012 FREIGHTLINER CASCADIA CA125 DAY CAB 180WB 2DR TRACTOR

OTHER INFORMATION

TIP-OVER STABILITY RATIO = 0.81 UNSTABLE

CENTER OF GRAVITY (No Load):

Inches behind front axle	= 79.20
Inches in front of rear axle	= 100.80
Inches from side of vehicle	= 48.00
Inches from ground	= 46.80
Inches from front corner	= 136.89
Inches from rear corner	= 164.94
Inches from front bumper	= 128.20
Inches from rear bumper	= 157.80

MOMENTS OF INERTIA APPROXIMATIONS (No Load):

YAW MOMENT OF INERTIA	= 14470.60	lb-ft-sec^2
PITCH MOMENT OF INERTIA	= 13918.80	lb-ft-sec^2
ROLL MOMENT OF INERTIA	= 2589.60	lb-ft-sec^2

FRONT PROFILE INFORMATION

ANGLE FRONT BUMPER TO HOOD FRONT	= ___	deg
ANGLE FRONT OF HOOD TO WINDSHIELD BASE	= ___	deg
ANGLE FRONT OF HOOD TO WINDSHIELD TOP	= ___	deg
ANGLE OF WINDSHIELD	= ___	deg
ANGLE OF STEERING TIRES AT MAX TURN	= ___	deg

FIRST APPROXIMATION CRUSH FACTORS:

Speed Equivalent (mph) of energy used in causing crush or indentation may be evaluated using the following formula and the appropriate Crush Factor (CF) and Maximum indentation depth, or MID, (in feet):

V(mph) = Sqr root of (30 * CF * MID)

Front Impact for a front engine vehicle	= 21
Front Impact for a Rear engine vehicle	= 27
Side Impact	= 27
Rear Impact for a front engine vehicle	= 27
Rear Impact for a rear engine vehicle	= 21

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

EXPERT VIN DeCoder

The VIN Number is 1JJ V482P 1 KL 126830

The vehicle should be a Wabash Trailer made in the U.S.A.
The model: VAN Trailer
The assembly plant: Lafayette, IN

This is a 48 foot, 2 axle, FRP CAN 102" wide VAN Trailer

The first three characters { 1, J, J } indicates that the vehicle was a Wabash National Corp Trailer made in the U.S.A.

The fourth character { V } indicates a VAN trailer

The fifth with the sixth character { 48 } indicates the nominal length: 48 feet

The seventh character { 2 } indicates the number of axles: 2

The eighth character { P } indicates:
FRP CAN 102" wide

The ninth character { the Check Digit } is 1
The calculated Check Digit is 1

The tenth character { K } indicates the model year was 1989

The eleventh character { L } indicates it was made at the assembly plant at Lafayette, IN

The twelfth through seventeenth characters { 125830 } is the serial number unique to this vehicle.

EXPERT TrukStuf

4N6XPRT SYSTEMS
La Mesa, CA. 91941

This program contains information and computational programs pertaining to Semi-Tractors and Trailers. The dimensional data is generic and approximate. It is intended that these dimensions be used for preliminary case evaluation. There is no substitute for the acutual information for a specific Tractor or Trailer.

The data used in this program was derived from several sources which included original manufacturer's information when available. The information was crossed checked against secondary publications such as shop manuals, resale books, other vehicle references, and finally, against many vehicles found in dealers' lots, parking lots, and elsewhere.

Because many, if not most, Semi-Tractors are essentially custom made to a buyer's specifications, only ranges of curb and gross weights, and wheelbase values can be provided. The same is true for the King Pin to rear wheels of Semi-Trailers, in most cases. You should, therefore, verify all dimensional and weight values with an exemplar tractor/trailer, scale receipts, shipping manifests, etc., whenever possible.

***** For these reasons, we DO NOT GUARANTEE the Absolute Accuracy of this program's interpretation of any specific Vehicle or computation. NO other Warranties are either expressed or implied!! *****

EXPERT TRUKSTUF Ver. 2.94
Serial #: 930114TS01201
Registered to:4N6XPRT SYSTEMS

EXPERT TRUKSTUF INFORMATION
Ver. 2.94

Prepared for: 4N6XPRT SYSTEMS
on 03-30-2012

---TRAILER TYPE---	------ INCH ------	FEET ------	METERS ------
DRY or BOX VAN			
Length			
(Typical)		48	14.6
(Range)		40-53	12.19-16.12
Height		13.5	4.11
(Range)		12-1	3.66-4.12
Width			
(Standard)	96	8	2.44
(Freeway Maximum)	102	8	2.59
Wheelbase (From King Pin)			
Typical	438	36.5	11.33
(Sliding Tandem Unit has 12 Ft. of Travel - Min/Max W.B.)			
Swing Radius - King Pin to Corner of Bed			
Sq. Corner Bed (96/102)	60/62.5	5-5.21	1.525-1.59
Rnd. Crnr Bed (96/102)	56/58.5	4.7-4.9	1.43-1.49
Rear Overhang	40	3.3	1.001
Clearance (*)			
Loaded Floor Ht.	54	4.5	1.37
Frame - Ground	35-43	2.9-3.6	0.88-1.10
Minimum to Ground	11	0.9	0.275
Tandem Axle Separation	48	4.0	1.22
Tires: # = 8 and Size (Type) = 10x22(Tube) = 11x24.5(Tubeless)			
Diam. O.D.	46	3.8	1.16

Empty Weight	---- Lbs ----	---- Kg ----
(Typical)	11,500	5221
(Range)	10-12,000	4540 - 5448

(*) Clearances based upon the tire size stated. Changing tires will change these values. All of these values are +/- 2 inches.

Fifth Wheel (King) Pin is about 3 ft. (1 m) behind the front of trailer.

Under-ride frame Ground Clearance at rear of trailer is 19-30 In. (7.6-12 Cm)

Expert VIN DeCoder®

Version Number 3.1.0

DeCoded VIN: 1C4GT54L0VB206101

Model:	1997 Chrysler Town & Country SX Wagon Extended Wagon
Engine Size:	3.8L / 231cu.in.
Engine Description:	V6 Cylinder with Overhead Valves
Horse Power:	180 @ 4400 rpm
Torque:	240 lb-ft at 3300 rpm
Injection System:	Sequential Multipolt Fuel Injection (SMFI)
PSI:	49 psi
Ignition:	Electronic
Manufacturer:	Chrysler
Assembly Plant:	St. Louis, MO
Drive Wheels:	This is an All Wheel Drive vehicle

The First through Third characters (1C4) indicate a Chrysler MPV made in the U.S.A.

The Fourth character (G) indicates a GVWR of 5001-6000 lbs.

The Fifth through Seventh characters (T54) indicate a Town & Country SX Wagon

The Eighth character (L) indicates the OEM engine: 3.8L / 231cu.in., V6, OHV

The Ninth character (the check digit) is entered as 0.
The VIN appears Valid, the calculated value is 0.

The Tenth character (V) indicates the model year 1997

The Eleventh character (B) indicates the vehicle was made in the assembly plant in St. Louis, MO

The Twelfth through Seventeenth characters (206101) 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

5/3/2012

1997 CHRYSLER TOWN & COUNTRY 4 DOOR MINI VAN

Curb Weight:	3951	lbs.	1792	kg.
Curb Weight Distribution - Front:	59	% Rear:	41	%
Gross Vehicle Weight Rating:	5400	lbs.	2449	kg.
Number of Tires on Vehicle:	4			
Drive Wheels:	FRONT			

Horizontal Dimensions	Inches	Feet	Meters
Total Length	200	16.67	5.08
Wheelbase:	119	9.92	3.02
Front Bumper to Front Axle:	34	2.83	0.86
Front Bumper to Front of Front Well:	19	1.58	0.48
Front Bumper to Front of Hood:	5	0.42	0.13
Front Bumper to Base of Windshield:	32	2.67	0.81
Front Bumper to Top of Windshield:	72	6.00	1.83
Rear Bumper to Rear Axle:	47	3.92	1.19
Rear Bumper to Rear of Rear Well:	35	2.92	0.89
Rear Bumper to Rear of Trunk:	5	0.42	0.13
Rear Bumper to Base of Rear Window:	5	0.42	0.13
Width Dimensions			
Maximum Width:	76	6.33	1.93
Front Track:	63	5.25	1.60
Rear Track:	64	5.33	1.63
Vertical Dimensions			
Height:	69	5.75	1.75
Ground to -			
Front Bumper (Top)	23	1.92	0.58
Headlight - center	28	2.33	0.71
Hood - top front:	30	2.50	0.76
Base of Windshield	43	3.58	1.09
Rear Bumper - top:	21	1.75	0.53
Trunk - top rear:	39	3.25	0.99
Base of Rear Window:	44	3.67	1.12

1997 CHRYSLER TOWN & COUNTRY 4 DOOR MINI VAN

Interior Dimensions

	Inches	Feet	Meters
Front Seat Shoulder Width	63	5.25	1.60
Front Seat to Headliner	40	3.33	1.02
Front Leg Room - seatback to floor (max)	41	3.42	1.04
Rear Seat Shoulder Width	65	5.42	1.65
Rear Seat to Headliner	40	3.33	1.02
Front Leg Room - seatback to floor (min)	37	3.08	0.94

Seatbelts: 3pt - front and rear

Airbags: FRONT SEAT AIRBAGS

Steering Data

Turning Circle (Diameter)	480	40.00	12.19
Steering Ratio: 17.50:1			
Wheel Radius:	13	1.08	0.33
Tire Size (OEM): 215/65R15			

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 = 142.0 ft t = 3.2 sec a = -27.2 ft/sec² G-force = -0.85

Acceleration:

0 to 30mph	t =	3.1	sec	a =	14.2	ft/sec²	G-force = 0.44
0 to 60mph	t =	10.7	sec	a =	8.2	ft/sec²	G-force = 0.26
45 to 65mph	t =	5.7	sec	a =	5.1	ft/sec²	G-force = 0.16

Transmission Type: 4spd AUTOMATIC

Notes:

Federal Bumper Standard Requirements: No Requirement

This vehicles Rated Bumper Strength: 5 mph

N.S.D.C = 1996 - 1998

1997 CHRYSLER TOWN & COUNTRY 4 DOOR MINI VAN

Other Information

Tip-Over Stability Ratio =	1.17	Reasonably Stable
NHTSA Star Rating (calculated)		***

Center of Gravity (No Load):

Inches behind front axle	=	48.79
Inches in front of rear axle	=	70.21
Inches from side of vehicle	=	38.00
Inches from ground	=	27.01
Inches from front corner	=	91.09
Inches from rear corner	=	123.22
Inches from front bumper	=	82.79
Inches from rear bumper	=	117.21

Moments of Inertia Approximations (No Load):

Yaw Moment of Inertia	=	2726.53	lb*ft*sec²
Pitch Moment of Inertia	=	2768.12	lb*ft*sec²
Roll Moment of Inertia	=	634.22	lb*ft*sec²

Front Profile Information

Angle Front Bumper to Hood Front	=	54.5	deg
Angle Front of Hood to Windshield Base	=	25.7	deg
Angle Front of Hood to Windshield Top	=	28.9	deg
Angle of Windshield	=	31.0	deg
Angle of Steering Tires at Max Turn	=	28.4	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).

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,

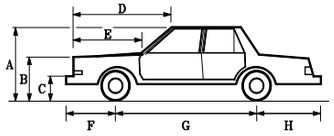
We at 4N6XPRT Systems in conjunction with the Tulsa University Crash Reconstruction Research Consortium (TUCRRC) were pleased to be able to provide you with the preceding data for the crash test vehicles.

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 40,000 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.

********** | PARTIAL OUTPUT | **********

2001 FORD CROWN VICTORIA 4DR SEDAN

[HORIZONTAL DIMENSIONS]

LENGTH	212 in.
WHEELBASE	115 in.
FRONT BUMPER TO FRONT AXLE	44 in.
FRONT BUMPER TO FRONT OF HOOD	8 in.
FRONT BUMPER TO BASE OF WINDSHIELD	66 in.
FRONT BUMPER TO TOP OF WINDSHIELD	91 in.
FRONT BUMPER TO FRONT WELL	27 in.
REAR BUMPER TO REAR OF TRUNK	8 in.
REAR BUMPER TO BASE OF REAR WINDOW	39 in.
REAR BUMPER TO REAR WELL	37 in.
REAR BUMPER TO REAR AXLE	53 in.

[VERTICAL DIMENSIONS]

HEIGHT	57 in.
GROUND TO:	
FRONT BUMPER (Top)	23 in.
HEADLIGHT - Center	27 in.
HOOD - Top Front	26 in.
BASE OF WINDSHIELD	38 in.
REAR BUMPER (Top)	26 in.
TRUNK - Top Rear	40 in.
BASE OF REAR WINDOW	40 in.

[DEPTH DIMENSIONS]

WIDTH	78 in.
FRONT TRACK	63 in.
REAR TRACK	64 in.

[WEIGHT DIMENSIONS]

CURB WEIGHT	3920 lbs.
Curb Weight Distribution: FRONT = 55%	REAR = 45%
GROSS VEHICLE WEIGHT	5170 lbs.

EXPERT AUTOSTATS(c) Reg.To:4N6XPRT Systems S/N:01R-930512AQ03201

2001 FORD CROWN VICTORIA 4DR SEDAN

[ACCELERATION/BRAKING]

ACCELERATION 0-30 mph	16.9 ft/sec/sec
ACCELERATION 0-60 mph	11.1 ft/sec/sec
ACCELERATION 45-65 mph	6.8 ft/sec/sec
BRAKING 60-0 mph	133 ft

DRIVE WHEELS	REAR
TURNING CIRCLE (DIAMETER)	41 ft.
NUMBER OF WHEELS	4
WHEEL RADIUS	13 in.
TIRE SIZE	P225/60SR16

BUMPER STRENGTH:	5 mph
STEERING RATIO	16.40:1

[INTERIOR DIMENSIONS]

FRONT SHOULDER ROOM	61 in.
FRONT HEAD ROOM	39 in.
FRONT LEG ROOM	43 in.
REAR SHOULDER ROOM	60 in.
REAR HEAD ROOM	38 in.
REAR LEG ROOM	40 in.

ALL DISC - REAR ABS - OPTIONAL
3pt - front and rear, FRONT SEAT AIRBAGS
4spd AUTOMATIC

N.S.D.C. = 1998 - 2001
---- = Value not in Database

EXPERT AUTOSTATS(c) Reg.To:4N6XPRT Systems S/N:01R-930512AQ03201

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.

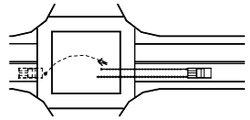
Expert VIN DeCoder®

3FAPP1280MR117253

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.

Expert Qwic Calcs®

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

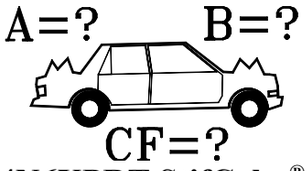
Expert Qwic Calcs® quickly provides answers to questions important in vehicle collision litigation. The user inputs data in response to relevant questions, Expert Qwic Clacs® performs the mathematical calculations required. Both the input data and the calculated result are then displayed, and may be "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 addition to the NHTSA Crash Test data, the program includes a "Sister/Clone List Reader" developed in cooperation with Greg Anderson. This allows quick retrieval of the "Sister/Clone" data for the desired vehicle. This will drive the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module for the initial vehicle selection.

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

To use the program, follow this "Yellow Brick Road":

1) Sister/Clone Reader -

(a) - Select YEAR (b) - Select Manufacturer
(c) - Select Model

▼

2) Click on TEST SELECTION Tab

▼

3) Select a test from the available tests which are displayed

▼

4) View TEST INFORMATION

▼

5) View OCCUPANT DATA

▼

6) View VEHICLE DATA

▼

7) View STIFFNESS CALCS

▼

8) Click on Reports - PRINT REPORT

IT'S THAT SIMPLE .... REALLY!!

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)

Authorized signature: _____

PROGRAM ORDER FORM:

(Pricing effective as of 5/20/11 - prices subject to change without notice)

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	$_____
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 **9.50%** 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:_____

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 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 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®

_____

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Phone: 1-800-266-9778
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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.

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Company/Dept:_____
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Phone:_____
Fax:_____
E-Mail:_____

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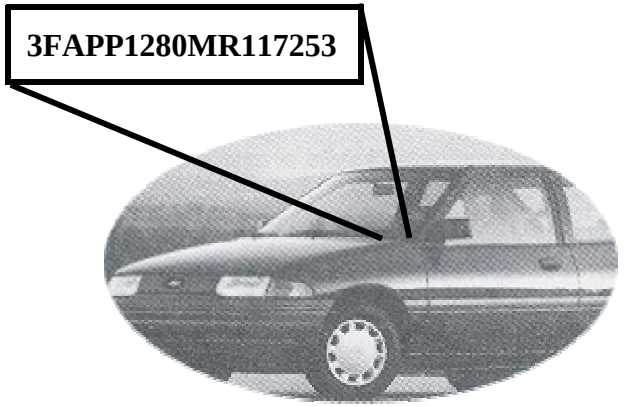
Orders will be shipped Priority Mail within 10 working days of receipt of order.
Prices subject to change WITHOUT NOTICE.
** Checks MUST be drawn from a bank in the U.S.A.*

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.

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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.

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Fax: _____
E-Mail:_____

AutoStats® _____ (copies) x $595.00 . . = $_____
Handling **: $_____
(Check with order = $5.00, Credit Card = $10.00 , Govt. P.O.r = $15.00)
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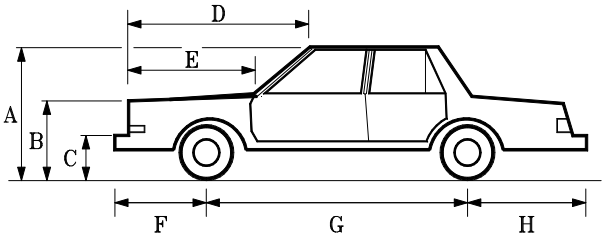
Monday-Friday - 9:30am-5:00pm PST
Phone: (619) 464-3478 Fax: (619) 464-2206

Orders will be shipped Priority Mail within 10 working days of receipt of order.
Prices subject to change WITHOUT NOTICE.
** Checks MUST be drawn from a bank in the U.S.A.*

Expert AutoStats®



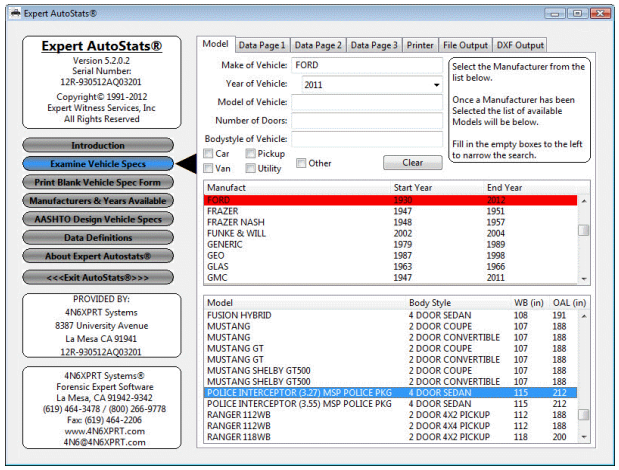
Over 42,000 cars, pick-ups, vans, and utility vehicles 1940's to the present are represented.

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

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

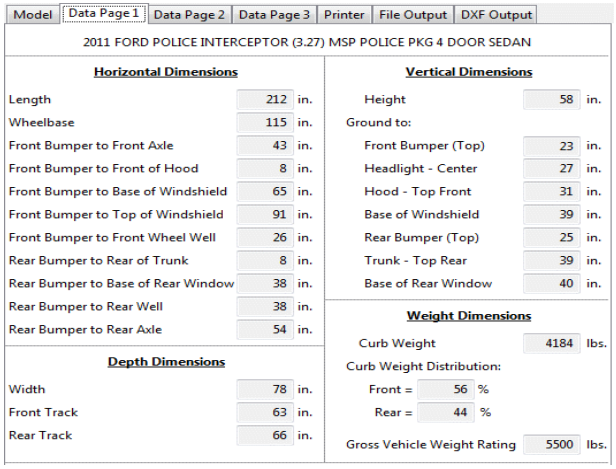
1-800-266-9778

Select Your Vehicle



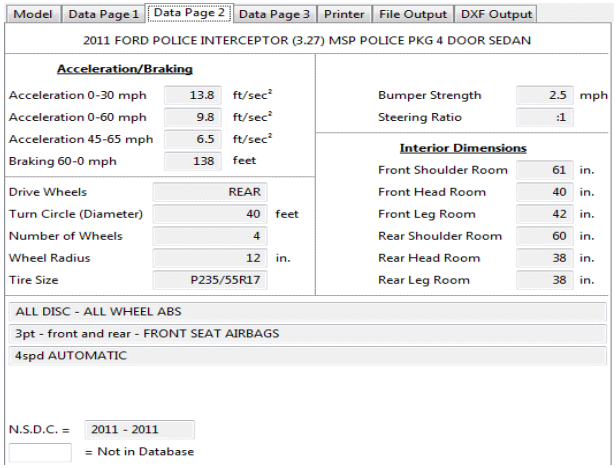
After typing in the Make, Year, and Type of vehicle, you are presented with the vehicles which are available for that year.

Screen 1



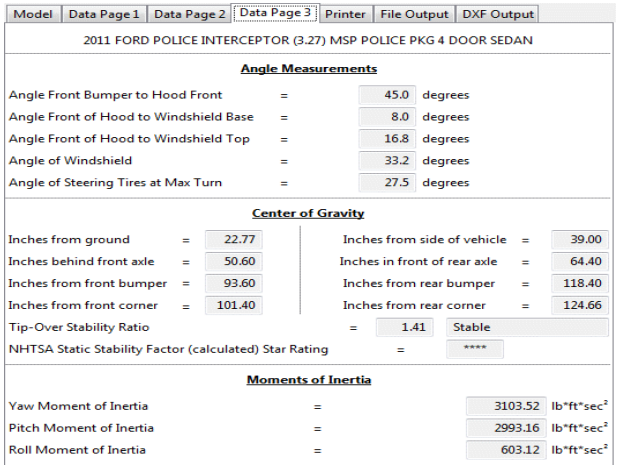
The first screen of data contains exterior dimensions and weight data. Length, Height, Wheelbase, Width, and Weight Distribution are published dimensions. Curb Weight is an average of published curb weights for the given vehicle. Detail dimensions such as the bumper heights and Front Bumper to Front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

Screen 2



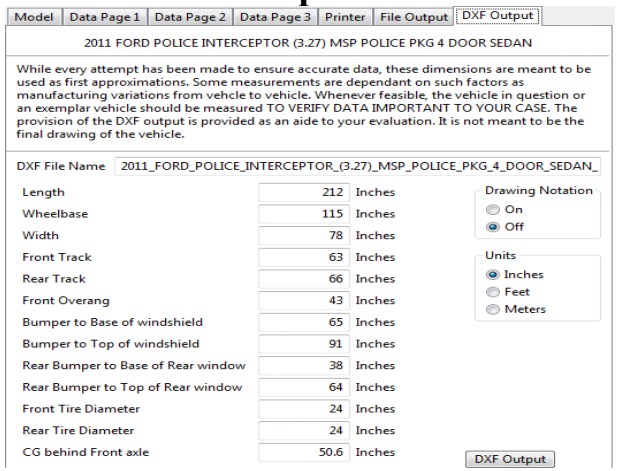
The second screen of data contains interior dimensions and various performance data. The data contained in the second screen comes from various published sources.

Screen 3



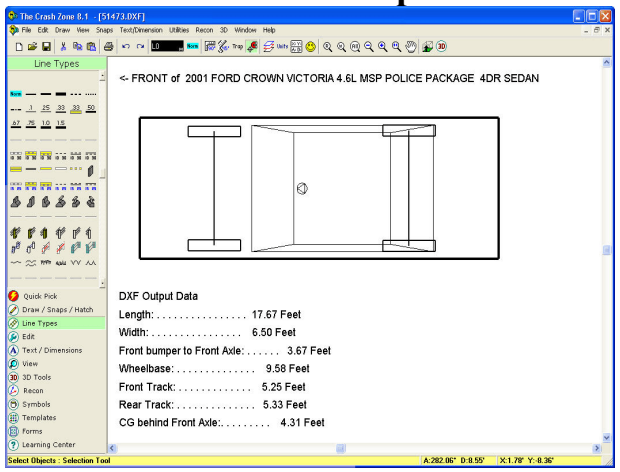
The third and last screen contains a number of calculated items of information which may be of use depending upon the type of case, the other software that you use, and the questions which need to be answered.

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®

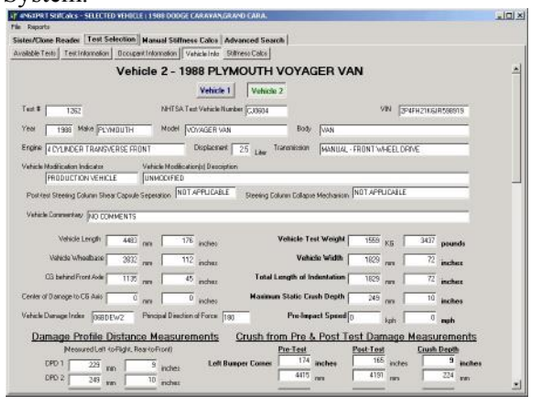
Introducing ..... 4N6XPRT StifCalcs®. A program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet!

In addition to the NHTSA Crash Test data, the program includes a "Sister/Clone List Reader" developed in cooperation with Greg Anderson. This allows quick retrieval of the "Sister/Clone" data for the desired vehicle. This will drive the initial selection of the available tests. Alternatively, we have an ADVANCED SEARCH module for the initial vehicle selection.

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

SYSTEM REQUIREMENTS

4N6XPRT StifCalcs® is a MS-Windows program designed to work under a 32 bit (95/98/Me/NT/ 2000/XP/Vista) Windows System.



To use the program, follow this "Yellow Brick Road":

1) Sister/Clone Reader -
(a) - Select YEAR
(b) - Select Manufacturer
(c) - Select Model

▼

2) Click on TEST SELECTION Tab

▼

3) Select a test from the available tests which are displayed

▼

4) View TEST INFORMATION

▼

5) View OCCUPANT DATA

▼

6) View VEHICLE DATA

▼

7) View STIFFNESS CALCS

▼

8) Click on Reports - PRINT REPORT

IT'S THAT SIMPLE .... REALLY!!

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 $600.00 . . = $_____
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 = $_____

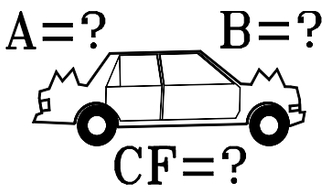
Enclosed is:
Check/M. O. :___ Credit Card:___ P.O.:___

Please make check/M.O./P.O. payable to:
4N6XPRT Systems®
Credit Card Orders:
MasterCard:___ Visa:___ Am.Ex.:___
Card #: _____
Expires: _____
Name on Card: _____
Signature: _____
Billing Add. #: _____
Billing Zip: _____

Mail to: 4N6XPRT Systems®
8387 University Avenue
La Mesa, CA 91942-9342
Telephone Orders:
Monday-Friday - 9:30am-5:00pm PST
Phone: (619) 464-3478 Fax: (619) 464-2206

Orders within the U.S. will be shipped Priority Mail or via E-mail attachment within 10 working days of receipt of order.
*All prices are in U.S. Dollars, and subject to change **WITHOUT NOTICE.***
*Orders outside of U.S.A. shipped via E-Mail attachment **ONLY**.*

4N6XPRT StifCalcs®



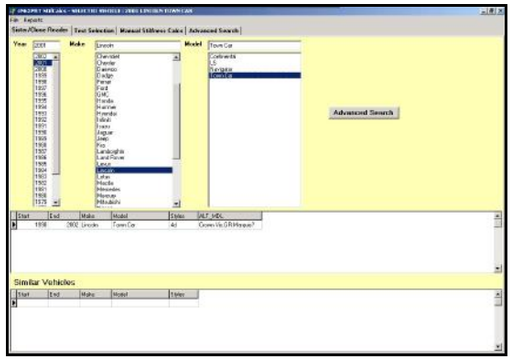
Quick, Convenient, Easy access to the NHTSA Crash Test data on your own MS-Windows computer without the need for an internet connection.

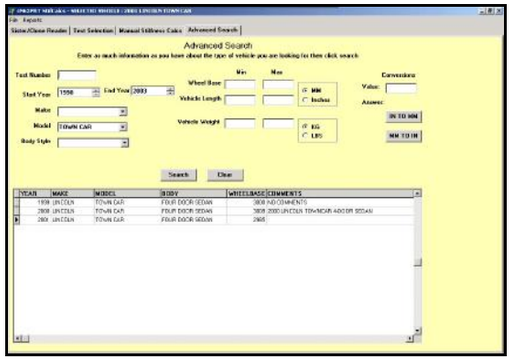
4N6XPRT Systems®
Forensic Expert Software
8387 University Avenue
La Mesa, CA 91942-9342

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

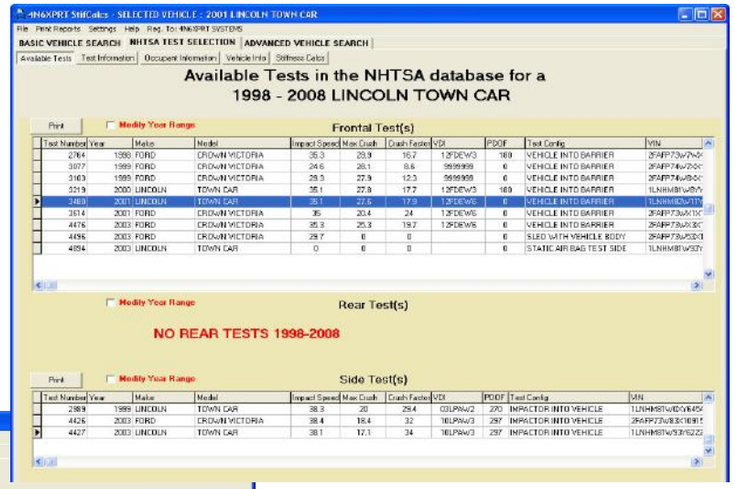
1-800-266-9778

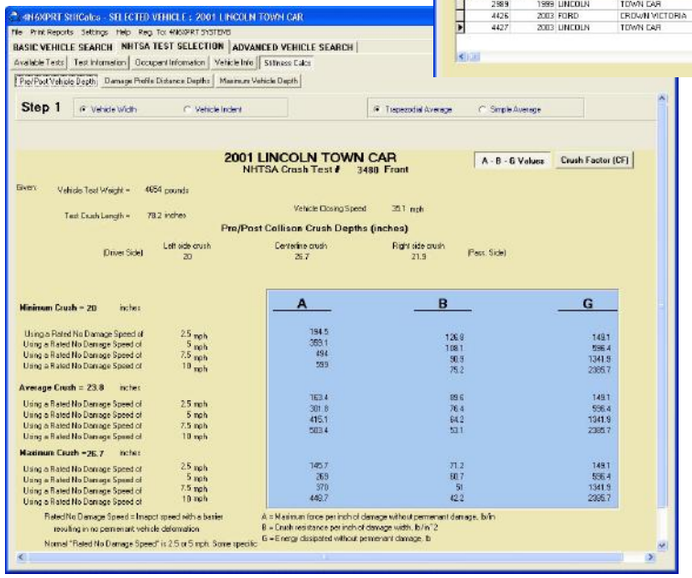
Select the desired vehicle through either our SISTER/CLONE READER or our ADVANCED SEARCH tab.



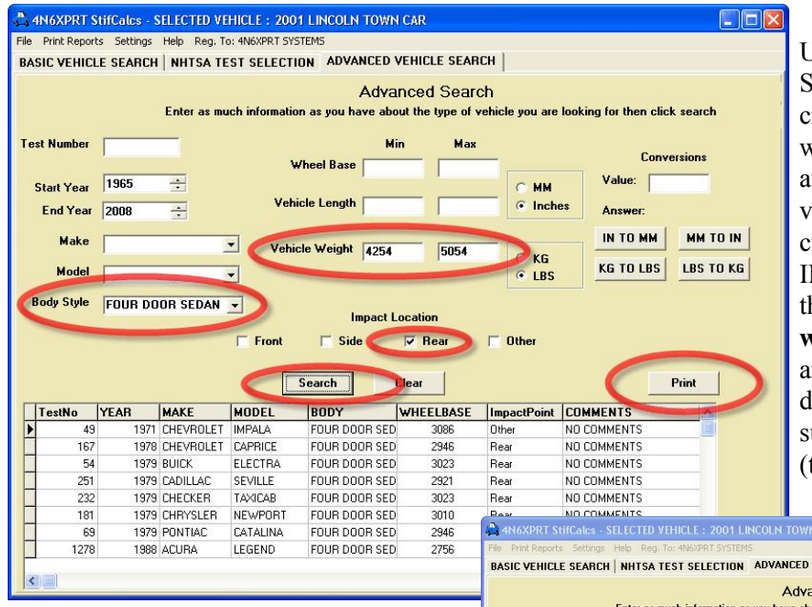


Once the desired vehicle is found/selected, click on the Test Selection tab. From here, select the test to be viewed

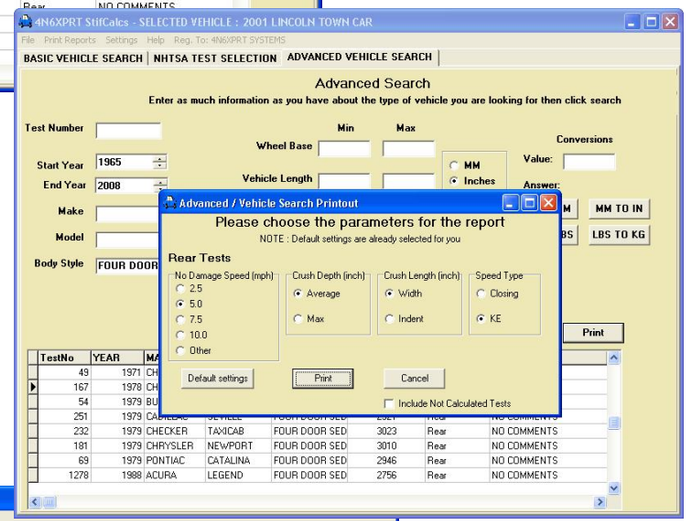




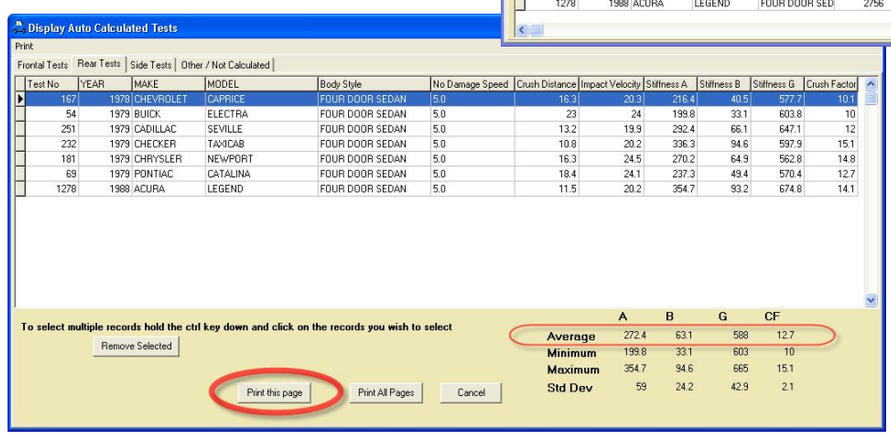
Once a test is selected, the available data for the Test, Occupant(s), Vehicle(s), and Stiffness data can be viewed. The stiffness values are automatically generated from the available test data.



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:
Check____ Money Order____ Purchase Order____ Credit Card: Visa_____ Master Card_____ American Express_____

Card #_____ Expires_____ SecCode _____
Billing Add. :_____ Billing Zip: _____
Name on Card:_____ Signature: _____

PLEASE NOTE

-- Orders cannot be shipped without correct Shipping & Handling included.
-- 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.*

Please make checks, money orders or Purchase Orders Payable to: **4N6XPRT Systems®**

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

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

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:

_____

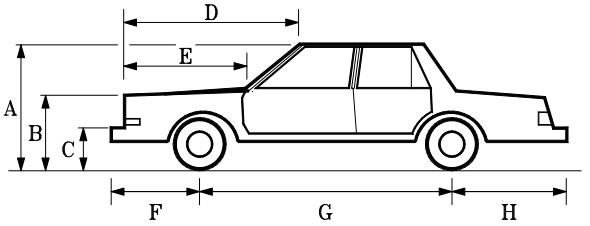
_____

_____

_____

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

Individual Vehicle Data Search Service® Charges & Services

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

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

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**
☐ **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:_____

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

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

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,

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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) = _____

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) = _____	

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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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: _____

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