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

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

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

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

Individual Vehicle Data Search Service (R)

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

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

Through the use of

EXPERT AUTOSTATS(R)

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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®

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Version Number 3.1.0.3

DeCoded VIN: 2G4wS52J111165340

Model: 2001 Buick Century Custom 4 Door Sedan

Engine Size: 3.1L/ 191 cu.in.

Engine Description: V6 cylinder with Overhead Valves (OHV)

Horse Power: **170 @ 5200 rpm**

Torque: 190 lb-ft at 4000 rpm

Injection System: | Sequential Fuel Injection (SFI)

PSI: 41-47 psi Ignition: Electronic

Manufacturer: Buick, Olsmobile, Cadillac

Assembly Plant: Oshawa (T&B), ON

Drive Wheels: This is a Front Wheel Drive vehicle w/Manual Seatbelts + Driver & Passenger Air Bags

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

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

The Sixth character (5) indicates a 4 Door Sedan

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

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

The Ninth character (the check digit) is entered as 1.

The VIN appears Valid, the calculated value is 1.

The Tenth character (1) indicates the model year 2001

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

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

Expert AutoStats®

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

9/20/2012

2001 BUICK CENTURY CUSTOM 4 DOOR SEDAN

| Curb Weight: Curb Weight Distribution - Front: | 3353 lbs. 64 % | 152 Rear: 36 | |
|--|--|--|--|
| Gross Vehicle Weight Rating: | 4470 1bs. | 202 | 8 kg. |
| Number of Tires on Vehicle: Drive Wheels: | FRONT | | |
| Horizontal Dimensions Total Length Wheelbase: | Inches 195 109 | Feet 16.25 9.08 | Meters 4.95 2.77 |
| Front Bumper to Front Axle: 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: | 44 28 6 50 85 | 3.67 2.33 0.50 4.17 7.08 | 1.12 0.71 0.15 1.27 2.16 |
| Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window: | 42 28 5 29 | 3.50 2.33 0.42 2.42 | 1.07 0.71 0.13 0.74 |
| Width Dimensions Maximum Width: Front Track: Rear Track: | 73 62 61 | 6.08 5.17 5.08 | 1.85 1.57 1.55 |
| Vertical Dimensions Height: Ground to - | 57 | 4.75 | 1.45 |
| Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window: | 22 26 28 38 26 40 43 | 1.83 2.17 2.33 3.17 2.17 3.33 3.58 | 0.56 0.66 0.71 0.97 0.66 1.02 1.09 |

Expert AutoStats®

2001 BUICK CENTURY CUSTOM 4 DOOR SEDAN

| Interior Dimensions Front Seat Shoulder Width Front Seat to Headliner | Inches 58 39 | Feet 4.83 3.25 | Meters 1.47 0.99 |
|--|--|----------------------|-------------------------|
| Front Leg Room - seatback to floor (max) | 44 | 3.67 | 1.12 |
| Rear Seat Shoulder Width Rear Seat to Headliner Front Leg Room - seatback to floor (min) | 57 37 30 | 4.75 3.08 2.50 | 1.45 0.94 0.76 |
| Seatbelts: 3pt - front and rear Airbags: FRONT SEAT AIRBAGS | | | |
| Steering Data Turning Circle (Diameter) Steering Ratio: :1 Wheel Radius: Tire Size (OEM): P205/70R15 | 480 12 | 1.00 | 0.30 |
| Acceleration & Braking Information Brake Type: FRONT DISC - REAR DRUM ABS System: ALL WHEEL ABS | | | |
| Braking, 60 mph to 0 (Hard pedal, no skid, d = $\boxed{137.0}$ ft t = $\boxed{3.1}$ sec | dry pavement): $a = \boxed{-28.2} \text{ ft/}$ | sec² G-fo | rce = -0.88 |
| 0 to 60mph | $a = \boxed{8.4} ft/$ | sec² G-fo | rce = rce = rce = |
| Notes: Federal Bumper Standard Requirements: This vehicles Rated Bumper Strength: | 2.5 mg 2.5 mg | | |

N.S.D.C = 1999 - 2005

2001 BUICK CENTURY CUSTOM 4 DOOR SEDAN

Other Information

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

Center of Gravity (No Load):

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

Moments of Inertia Approximations (No Load):

| Yaw Moment of Inertia | = | 2247.59 lb*ft*se | C ² |
|-------------------------|---|-------------------------|----------------|
| Pitch Moment of Inertia | = | 2170.47 lb*ft*se | C ² |
| Roll Moment of Inertia | = | 453.54 lb*ft*se | C ² |

Front Profile Information

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

First Approximation Crush Factors:

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

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

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

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #4775

2004 PONTIAC GRAND PRIX

Provided By

4N6XPRT StifCalcs®

Registered to:

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

Copyright 2012 - All Rights Reserved 4N6XPRT Systems | 8387 University Avenue | La Mesa, CA 91942 | USA (800) 266-9778 | (619) 464-3478 | FAX: (619) 464-2206 | Email: 4n6@4n6xprt.com

Similar Vehicle database reader

You entered: 2001 BUICK CENTURY

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|----------------------------------|-----------------------------|-------------|--------------------|------------|
| 2000 - 2005 Remarks: | CHEVROLET | IMPALA | 2D, 4D, SW | 110.5, 125 |
| 1997 - 2004 Remarks: Regal no | BUICK ow same as Century | REGAL | 2D, 4D, SW | 107.5 |
| 1997 - 2003 Remarks: | PONTIAC | GRAND PRIX | 2D, 4D | 110.5 |
| 1998 - 2002 Remarks: | OLDSMOBILE | INTRIGUE | 4D | 109 |
| 1997 - 2005 Remarks: | BUICK | CENTURY | 2D, 4D, SW | 109, 116 |
| 2000 - 2005 Remarks: | CHEVROLET | MONTE CARLO | 2D | 108 |
| 2004 - 2005 Remarks: | PONTIAC | GRAND PRIX | 2D, 4D | 110.5 |

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

Test Information

| Test # 4775 | 7 | NHTS | A Test R | eference | Guide Versi | on # | V5 | | | |
|-----------------------------|------------------|-----------|----------|----------|-------------|--------|---------------|---------|------------|--------|
| Test Date 2003-10-07 | 7 | | | | Contr | act# | DTNH22-01- | D-02005 | | |
| Contract/Study Title | 35 MPH NC | AP FRONT | AL - 20 | 04 PON | TIAC GRAN | ID PR | IX GT 4 DOOR | SEDAN | | |
| Test Objective(s) | OBTAIN AT | D AND VE | HICLE D | ATA | | | | | | |
| Test Type | NEW CAR A | SSESSMEN | IT TEST | • | | | Configuration | VEHICLE | INTO BARRI | ER |
| Impact Angle | 0 | | | 5 | Side Impact | Point | 0 | mm | 0.0 | inches |
| | | | | | Offset Dis | stance | 0 | mm | 0.0 | inches |
| | | | | | Closing | Speed | 55.9 | Km/Hr | 34.73 | MPH |
| Test Performer | KARCO ENG | INEERING | | | | | | | | |
| Test Reference # | M40100 | | | | | | | | | |
| Test Track Surface | CONCRETE | | | | Cond | dition | DRY | | | |
| Ambient Temperature | 29 C | 84.2 | F | Total N | umber of C | urves | 185 | | | |
| Data Recorder Type | DIGITAL DA | TA ACQUI | SITION | | | | Data Link | OTHER | | |
| Test Commentary | DATALINK | S NONE, C | N-BO | ARD DAS | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | Fix | ed Barri | er Informa | tion | | | | |
| | | | | | | | | | | _ |
| Barrier Type | | | | Pole | Barrier Dia | meter | 0 | mm | 0 | inches |
| Barrier Shape | LOAD CELL | BARRIER | | | | | | | | |
| Barrier Commentary | NO COMM | NTS | | | | | | _ | - | |

2004 PONTIAC GRAND PRIX LEFT FRONT SEAT OCCUPANT

| Test # | 4775 | |
|-------------|----------------------|--|
| Vehicle # | 1 | Sex MALE |
| Location | LEFT FRONT SE | AT Age 0 |
| Position | CENTER POSITI | ON Height 0 mm 0.0 inches |
| Type | HYBRID III DUM | Weight 0.0 kg 0 pounds |
| Size | 50 PERCENTILE | |
| Cali | ibration Method | HYBRID III |
| Occupai | nt Manufacturer | VECTOR, S/N:035 |
| Occupa | ant Modification | UNMODIFIED |
| Occu | pant Description | NO COMMENTS |
| Occupa | ant Commentary | NO COMMENTS |
| Head to - | | <u>Head</u> |
| Windshie | elder Header 300 | mm 11.8 inches Head Injury Criteria (HIC) 596 |
| | WindShield 590 | mm 23.2 inches HIC Lower Time Interval (ms) 61.8 |
| | Seatback 0 | mm 0.0 inches HIC Upper Time Interval (ms) 96.1 |
| | Side Header 235 | mm 9.3 inches |
| 5 | Side Window 335 | mm 13.2 inches |
| Neck to Se | atback 0 r | mm 0.0 inches |
| | First Contact Re | egion (Head) AIR BAG |
| S | Second Contact Re | egion (Head) |
| | | |
| | | <u>Chest</u> |
| Chest to - | | |
| | Dash 530 n | nm 20.9 inches Arm to Door 30 mm 1.2 inches |
| Steering \ | Wheel 285 n | nm 11.2 inches Hip to Door 185 mm 7.3 inches |
| Sea | tback 0 n | nm 0.0 inches |
| Chest S | Severity Index 0 | Pelvic Peak Lateral Acceleration (g's) |
| Thoracic Tr | auma Index 0 | Thorax Peak Acceleration (g's) 58.5 |
| | Lap E | Belt Peak Load 3935 Newtons 884.6 pound Force |
| | Shoulder E | Belt Peak Load 3763 Newtons 846.0 pound Force |
| First Co | ontact Region (Che | est/Abdomen) AIR BAG |
| Second Co | ontact Region (Che | est/Abdomen) NONE |
| | | <u>Legs</u> |
| Knees to | Dash 175 m | nm 6.9 inches Knees to Seatback 0 mm 0.0 inches |
| | | 795 Newtons -1527.6 pounds Force |
| | | 024 Newtons -1354.3 pounds Force |
| J | | Region (Legs) DASHPANEL |
| | Second Contact P | |

2004 PONTIAC GRAND PRIX LEFT FRONT SEAT OCCUPANT

| Test # | 4775 | | | | | | |
|-----------|---------------------------------|-----------------------|-------------------|----------|---------------|-----|--------|
| Vehicle # | 1 | | | Sex | MALE | | |
| Location | LEFT F | RONT SE | AT | Age | 0 | | |
| Position | CENTE | R POSITION | ON | Height | 0 mm | 0.0 | inches |
| Type | HYBRII | O III DUMN | ΛY | Weight | 0.0 kg | 0 | pounds |
| Size | 50 PER | CENTILE | | | | | |
| Cali | ibration N | Method | HYBRID III | | | | |
| Occupai | nt Manuf | acturer | VECTOR, S/N:035 | | | | |
| Occupa | ant Modi | fication | UNMODIFIED | | | | |
| Occu | pant Des | scription | NO COMMENTS | | | | |
| Occupa | Occupant Commentary NO COMMENTS | | | | | | |
| | | | | | | | |
| | | | Restraints | S | | | |
| Restrai | int # 1 [| 3 POINT E | | _ | | | |
| Mounte | ed [| BELT - CO | ONVENTIONAL MOUNT | | | | |
| Deploy | ment [| DEPLOYE | D PROPERLY | | | | |
| Restrai | nt Comn | nentary | NO COMMENTS | | | | |
| Restrai | int # 2 [| FRONTAL | AIRBAG | | | | |
| Mounte | - | STEERING | | | | | |
| Deploy | 7 | | D PROPERLY | | | | |
| | int Comm | | NO COMMENTS | | | | |
| LESUAL | | i c illaly | INO COMINIENTS | | | | |

2004 PONTIAC GRAND PRIX RIGHT FRONT SEAT OCCUPANT

| Test # | 4775 | | | | | | | |
|-------------|----------------------|----------------|------------------|---------------------------------|-------------|--------------|------------------|----------|
| Vehicle # | 1 | | | Sex | MALE | | | |
| Location | RIGHT FRONT S | EAT | | Age | 0 |] | | |
| Position | CENTER POSITI | ON | |] Height | 0 | mm 0 | .0 inche | es |
| Type | HYBRID III DUMI | MY | | Weight | 0.0 | kg 0 | pour | nds |
| Size | 50 PERCENTILE | | |] | | | | |
| Cal | ibration Method | HYBRID III | | | | | | |
| Occupa | nt Manufacturer | VECTOR, S/ | N:034 | | | | | |
| Occup | ant Modification | UNMODIFIE | D | | | | | |
| Occu | pant Description | NO COMME | NTS | | | | | |
| Occupa | ant Commentary | NO COMME | NTS | | | | | |
| Head to - | | | <u>Head</u> | | | | | |
| Windshie | elder Header 465 | 5 mm 18 | 3.3 inche | es Head Injury | Criteria (H | IC) 5 | 09 | |
| | WindShield 785 | mm 30 | 0.9 inche | es HIC Lo | wer Time | Interval | (ms) 61.9 | |
| | Seatback 0 | mm 0 . | | es HIC Up | per Time | Interval | | |
| | Side Header 290 | mm 1 | 1.4 inche | es | | | | |
| 9 | Side Window 355 | mm 14 | 4.0 inche | es | | | | |
| Neck to Se | atback 0 | mm 0.0 | inches | | | | | |
| | First Contact R | egion (Head) | AIR BAG | | | | |] |
| 5 | Second Contact Re | egion (Head) | | | | | |] |
| | | | | | | | | |
| | | | <u>Chest</u> | | | | | |
| Chest to - | | | | | | | | |
| | Dash 595 r | nm 23.4 | inches | Arm to Door 5 | 0 m | m 2.0 | inches | |
| Steering \ | Wheel 0 r | nm 0.0 | inches | Hip to Door 1 | 65 m | m 6.5 | inches | |
| Sea | tback 0 r | nm 0.0 | inches | | | | | _ |
| | Severity Index 0 | | J P | elvic Peak Lateral / | | ι Ο , | 0 | _ |
| Thoracic Ti | rauma Index 0 | | <u> </u> | Thorax Peak | Accelerati | on (g's) | 43.7 | |
| | • | Belt Peak Loa | | Newtons 889.1 | pound Fo | | | |
| | | Belt Peak Load | | Newtons 919.5 | pound Fo | orce | | - |
| | ontact Region (Ch | | | | | | | _ |
| Second Co | ontact Region (Ch | est/Abdomen) | NONE | | | | |] |
| | | | <u>Legs</u> | | | | | |
| Knees to | Dash 155 r | nm 6.1 | inches K | nees to Seatback <mark>0</mark> | m | m 0.0 | inches | |
| Left Fem | ur Peak Load -5 | 512 N | Newtons [| -1239.2 pound | ds Force | | | |
| Right Femi | ur Peak Load 3 | 737 N | Newtons [| -840.1 pound | ds Force | | | _ |
| | First Contact F | Region (Legs) | DASHPAN | <u>EL</u> | | | | |
| | Second Contact F | Region (Legs) | | | | | | |

2004 PONTIAC GRAND PRIX RIGHT FRONT SEAT OCCUPANT

| Test # | 4775 | | | | | | | |
|-----------|---------------------------------|------------|-------------------|----------|------------|---------------|--------|--|
| Vehicle # | 1 | | | Sex | MALE | | | |
| Location | RIGHT | FRONT SI | EAT | Age | 0 | | | |
| Position | CENTE | R POSITION | ON | Height | 0 r | mm 0.0 | inches | |
| Type | HYBRIC | O III DUMN | ΛY | Weight | 0.0 | kg 0 | pounds | |
| Size | 50 PER | CENTILE | |] | | | | |
| Cali | ibration N | Method | HYBRID III | | | | | |
| Occupai | nt Manuf | acturer | VECTOR, S/N:034 | | | | | |
| Occupa | ant Modi | fication | UNMODIFIED | | | | | |
| Occu | pant Des | scription | NO COMMENTS | | | | | |
| Occupa | Occupant Commentary NO COMMENTS | | | | | | | |
| | | | | | | | | |
| | | | Restraint | <u>s</u> | | | | |
| Restrai | nt # 1 [| 3 POINT E | BELT | | | | | |
| Mounte | ed [| BELT - CO | ONVENTIONAL MOUNT | | | | | |
| Deploy | ment [| DEPLOYE | D PROPERLY | | | | | |
| Restrai | nt Comm | nentary | NO COMMENTS | | | | | |
| Restrai | nt # 2 [| FRONTAL | AIRBAG | | | | | |
| Mounte | 7 | | NEL - TOP | | | | | |
| Deploy | = | | D PROPERLY | | | | | |
| | nt Comm | | NO COMMENTS | | | | | |

2004 PONTIAC GRAND PRIX RIGHT REAR SEAT OCCUPANT

| Test # 4775 | |
|--|--|
| Vehicle # 1 | Sex NOT APPLICABLE |
| Location RIGHT REAR SEAT | Age 0 |
| Position NOT APPLICABLE | Height 0 mm 0.0 inches |
| Type HYBRID III DUMMY | Weight 0.0 kg 0 pounds |
| Size 3 YEAR OLD CHILD | |
| Calibration Method HYBRID III | |
| Occupant Manufacturer FIRST TECHNOLOGY SA | AFETY SYSTEMS, S/N:139 |
| Occupant Modification UNMODIFIED | |
| Occupant Description No COMMENTS | |
| Occupant Commentary CNTRH1:CHIN CONTACT | ED RETAINING CLIP |
| | |
| <u>Head</u> | |
| Head to - | |
| Windshielder Header 0 mm 0.0 inche | es Head Injury Criteria (HIC) 533 |
| WindShield 0 mm 0.0 inche | es HIC Lower Time Interval (ms) 76.9 |
| Seatback 550 mm 21.7 inche | es HIC Upper Time Interval (ms) 112.9 |
| Side Header 0 mm 0.0 inche | es |
| Side Window 406 mm 16.0 inche | es |
| Neck to Seatback 0 mm 0.0 inches | |
| First Contact Region (Head) OTHER | |
| Second Contact Region (Head) | |
| | |
| Chest | |
| Chest to - | |
| Dash 0 mm 0.0 inches | Arm to Door 275 mm 10.8 inches |
| Steering Wheel 0 mm 0.0 inches | Hip to Door 330 mm 13.0 inches |
| Seatback 525 mm 20.7 inches | |
| Chest Severity Index 0 Pe | elvic Peak Lateral Acceleration (g's) 0 |
| Thoracic Trauma Index 0 | Thorax Peak Acceleration (g's) 37.1 |
| Lap Belt Peak Load 0 I | Newtons 0.0 pound Force |
| Shoulder Belt Peak Load 0 I | Newtons 0.0 pound Force |
| First Contact Region (Chest/Abdomen) NONE | |
| Second Contact Region (Chest/Abdomen) NONE | |
| <u>Legs</u> | |
| | nees to Seatback 374 mm 14.7 inches |
| | 0.0 pounds Force |
| | 0.0 pounds Force |
| First Contact Region (Legs) NONE | , r = 5.000 |
| Second Contact Region (Legs) | |
| -9 - \ -9-/ | |

2004 PONTIAC GRAND PRIX RIGHT REAR SEAT OCCUPANT

| Test # | 4775 | | |
|-----------|----------------------|---|-------------------------------|
| Vehicle # | 1 | Sex [| NOT APPLICABLE |
| Location | RIGHT REAR | SEAT Age | 0 |
| Position | NOT APPLICA | ABLE Height | 0 mm 0.0 inches |
| Type | HYBRID III DU | JMMY Weight | 0.0 kg 0 pounds |
| Size | 3 YEAR OLD | CHILD | |
| Cali | bration Method | HYBRID III | |
| Occupar | nt Manufacturer | FIRST TECHNOLOGY SAFETY SYSTEMS, S | /N:139 |
| Occupa | ant Modification | UNMODIFIED | |
| Occu | pant Descriptior | n NO COMMENTS | |
| Occupa | ant Commentar | y CNTRH1:CHIN CONTACTED RETAINING CLI | P |
| | | | |
| | | <u>Restraints</u> | |
| Restrai | nt # 1 CONVE | ERTIBLE CHILD SAFETY SEAT, FRONT FACING | |
| Mounte | ed LATCH | I - LOWER ANCHORAGES AND TOP TETHER | |
| Deploy | ment NOT A l | PPLICABLE | |
| Restrai | nt Commentary | MANUFACTURER:EVENFLO, MODEL:VANG | UARD 5, MODEL# |
| Restrai | nt # 2 5 POIN | NT BELT | |
| Mounte | ed CHILD | SEAT | - |
| Deploy | ment NOT AI | PPLICABLE | - |

Restraint Commentary

NO COMMENTS

2004 PONTIAC GRAND PRIX LEFT REAR SEAT OCCUPANT

| Test # 4775 | |
|--|--|
| Vehicle # 1 | Sex NOT APPLICABLE |
| Location LEFT REAR SEAT | Age 0 |
| Position NOT APPLICABLE | Height 0 mm 0.0 inches |
| Type HYBRID III DUMMY | Weight 0.0 kg 0 pounds |
| Size 3 YEAR OLD CHILD | |
| Calibration Method HYBRID III | |
| Occupant Manufacturer FIRST TECHNOLOGY S | AFETY SYSTEMS, S/N:082 |
| Occupant Modification UNMODIFIED | |
| Occupant Description NO COMMENTS | |
| Occupant Commentary CNTRH1, CHIN CONTAC | CTED RETAINING CLIP |
| Head Head to - | |
| Windshielder Header 0 mm 0.0 inche | es Head Injury Criteria (HIC) 583 |
| WindShield 0 mm 0.0 inche | |
| Seatback 555 mm 21.9 inche | ` ' |
| Side Header 0 mm 0.0 inche | · · · · · · · · · · · · · · · · · · · |
| Side Window 385 mm 15.2 inche | es |
| Neck to Seatback 0 mm 0.0 inches | |
| First Contact Region (Head) OTHER | |
| Second Contact Region (Head) | |
| ÿ (, , , <u></u> | |
| <u>Chest</u> | |
| Chest to - | |
| Dash 0 mm 0.0 inches | Arm to Door 250 mm 9.8 inches |
| Steering Wheel 0 mm 0.0 inches | Hip to Door 275 mm 10.8 inches |
| Seatback 500 mm 19.7 inches | |
| Chest Severity Index 0 P | elvic Peak Lateral Acceleration (g's) |
| Thoracic Trauma Index 0 | Thorax Peak Acceleration (g's) 40.6 |
| Lap Belt Peak Load 0 | Newtons 0.0 pound Force |
| Shoulder Belt Peak Load 0 | Newtons 0.0 pound Force |
| First Contact Region (Chest/Abdomen) NONE | |
| Second Contact Region (Chest/Abdomen) NONE | |
| Legs | |
| | nees to Seatback 315 mm 12.4 inches |
| | 0.0 pounds Force |
| | 0.0 pounds Force |
| First Contact Region (Legs) NONE | |
| Second Contact Region (Legs) | |
| 5 \ 5 / <u></u> | |

Registered Owner: TUCRRC

2004 PONTIAC GRAND PRIX LEFT REAR SEAT OCCUPANT

| Test # | 4775 | | |
|-----------|-----------------|----------|--|
| Vehicle # | 1 | | Sex NOT APPLICABLE |
| Location | LEFT RE | AR SEA | T Age 0 |
| Position | NOT API | PLICABL | E Height 0 mm 0.0 inches |
| Type | HYBRID | III DUMN | MY Weight 0.0 kg 0 pounds |
| Size | 3 YEAR | OLD CH | LD |
| Cali | ibration Me | ethod | HYBRID III |
| Occupar | nt Manufa | cturer | FIRST TECHNOLOGY SAFETY SYSTEMS, S/N:082 |
| Occupa | ant Modific | cation | UNMODIFIED |
| Occu | pant Desc | ription | NO COMMENTS |
| Occupa | ant Comm | entary | CNTRH1, CHIN CONTACTED RETAINING CLIP |
| | | | |
| | | | Restraints |
| Restrai | nt # 1 C | ONVER | TIBLE CHILD SAFETY SEAT, FRONT FACING |
| Mounte | ed L | ATCH - L | OWER ANCHORAGES AND TOP TETHER |
| Deploy | ment N | OT APP | LICABLE |
| Restrai | nt Comme | entary | MANUFACTURER:CENTURY, MODEL:STE, MODEL# |
| Restrai | nt # 2 5 | POINT E | BELT |
| Mounte | ed C | HILD SE | AT |
| Deploy | ment N | OT APP | LICABLE |

Restraint Commentary

NO COMMENTS

Vehicle 1 2004 PONTIAC GRAND PRIX

| Test # | 4775 | | | | | | | | | | |
|---|-----------------|----------------|-----------|------------------|-----------------------|-----------------|------------|---------------|-------------|-----------------|--------------|
| VIN | 2G2WP5 | 2294112166 | 60 | | NHTSA T | est Vehic | le Numbe | r 1 | | | |
| Year | 2004 | | | | Vehicle Mo | dification | Indicator | PROD | UCTION | VEHICL | .E |
| Make | PONTIAC | ; | Post-test | Steering (| Column Shear | Capsule | Seperation | n UNKN | OWN | | |
| Model | GRAND F | PRIX | | Stee | ring Column C | ollapse M | lechanism | UNKN | OWN | | |
| Body | FOUR DO | OR SEDAN | | | | | | | | | |
| Engine | V6 TRAN | SVERSE FR | ONT | | | | | | | | |
| Displacement 3.8 Liter Transmission AUTOMATIC - FRONT WHEEL DRIVE | | | | | | | | | | | |
| Vehicle Modific | cation(s) De | escription [| UNMODI | FIED | | | | | | | |
| Vehicle Comm | entary N | COMMEN | TS | | | | | | | | |
| Vehicle Ler | ngth 50 | 34 mm | 198.2 | inches | CG | behind | Front Axle | 1131 | mm | 44.5 | inches |
| Vehicle \ | Width 18 | 800 mm | 70.9 | inches | Center of D | Damage t | o CG Axis | 0 | mm | 0.0 | inches |
| Vehicle Whee | elbase 28 | 15 mm | 110.8 | inches | Total Len | gth of Inc | dentation | 1383 | mm | 54.4 | inches |
| Vehicle Test W | /eight 17 | '89 KG | 3943 | pounds | Maximum : | Static Cru | ish Depth | 587 | mm | 23.1 | inches |
| | | | | | | Pre-Impa | act Speed | 56 | kph | 34.7 | mph |
| Ve | hicle Dama | age Index 1 | 2FDEW6 | | Princ | ipal Direc | tion of Fo | rce 0 | | | |
| | | | | | | | | | | | |
| Damaga Dr | ofilo Diet | onoo Moo | | - 4- | Crush from | D#a 0 | Doot To | at Dama | . a a 1 / a | | |
| Damage Pro | | | | | Crush fror | | | | _ | | _ |
| _ | | o-Right, Rea | _ | | _ | Pre-Tes | 1 | Post-Te | | Crush E | |
| DPD 1 - | | | 」inches | | Bumper Corner | | inches | 171.7 | inches | | inches |
| DPD 2 - | | | 」inches | | | 4834 | mm | 4362 | mm | 472 |] mm |
| DPD 3 [- | | | 」inches | | Centerline | 198.2 | inches | 175.2 | inches | 23.0 |] inches |
| DPD 4 - | | | 」inches | | | 5034 | mm | 4450 | mm | 584 |] mm |
| DPD 5 [- | | | inches | Diaht B | umper Corner | 190.2 | inches | 173.6 | inches | 16.7 | inches |
| DPD 6 L | • 423 m | m <u>-16.7</u> | inches | rtigitt D | ampor comor | 4832 | mm | 4409 | mm | 423 |] mm |
| | | | | | | 1032 | | 1400 | , | 1 23 | , |
| Bumper F | ngageme | nt | | Sill F | ingagement | | | А | -nillar F | ngageme | ent |
| | pact Only | | | | e Impact Only) | ١ | | | • | npact Onl | |
| · | 0.0 | • | | | APPLICABLE | | | ſ | ` | 0.0 | ٠ <i>٫</i> ٫ |
| | 5.0 | | _ | 1101 | AI I LIOABLE | | | L | | 0.0 | _ |
| Moving | Test Cart | | | Moving | Test Cart/Veh | icle | | Veh | icle Orie | entation o | on Cart |
| Α | ngle | | | Cra | abbed Angle | | | | Moving | Test Car | t |
| DIRECT | ENGAGEN | MENT | | | 0.0 | | | N | IOT API | PLICABL | E |
| Magnitude | of the Tilt Ang | le | | Magniture | of the Crabbed Ang | le | | | Magnitude | e of the Angle | ; |
| Measured be | etween surface | e of a | | Meas | ure Clockwise from | | | Measured | between ti | he Vehicle O | rientation |
| Rollover Test | Cart and the G | Ground | Lor | naitudinal Vecto | or to Velocity Vector | of Vehicle | | and [| Direction o | f Test Cart M | Antion . |

Vehicle 1 2004 PONTIAC GRAND PRIX

| Test # | 4775 | | | | | | | | | | |
|-----------------|-----------|-----------|--------|-----------------|----------|--------------|---------------------|--------------------|-------|----------|--------|
| VIN | 2G2W | P522941 | 12166 | 60 | | NHTS/ | Test Vehicle Nui | mber 1 | | | |
| Year | 2004 | | | | | Vehicle | Modification Indic | ator PROD | OITOU | N VEHICL | .E |
| Make | PONTI | AC | | Post-test S | Steering | Column She | ar Capsule Sepe | ration UNKN | IOWN | | |
| Model | GRAN | D PRIX | | |] Stee | ering Columr | Collapse Mecha | nism UNKN | IOWN | | |
| Body | FOUR | DOOR S | EDAN | | | | | | | | |
| Engine | V6 TR | ANSVER | SE FR | RONT | | | | | | | |
| Displacement | 3.8 | Liter | Tra | ansmission | AUTO | MATIC - FR | ONT WHEEL DRI | VE | | | |
| Vehicle Modific | cation(s) |) Descrip | tion [| UNMODIF | IED | | | | | | |
| Vehicle Comm | entary | NO CO | MMEN | TS | | | | | | | |
| Vehicle Len | igth | 5034 | mm | 198.2 ii | nches | | CG behind Front | Axle 1131 | mm | 44.5 | inches |
| Vehicle V | Width | 1800 | mm | 70.9 ii | nches | Center | of Damage to CG | Axis 0 | mm | 0.0 | inches |
| Vehicle Whee | lbase | 2815 | mm | 110.8 ii | nches | Total L | ength of Indentat | tion 1383 | mm | 54.4 | inches |
| Vehicle Test W | /eight | 1789 | KG | 3943 | ounds | Maximu | m Static Crush De | epth 587 | mm | 23.1 | inches |
| | | | | | | | Pre-Impact Sp | eed 56 | kph | 34.7 | mph |
| Vel | hicle Da | mage Ir | idex 1 | 2FDEW6 | | Pr | incipal Direction o | f Force 0 | | | |

Pre & Post Test Damage Measurements

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

| Left Side Centerlin | | | | Cente | rline | ine Right Side | | | | | |
|---------------------|--------|------|---------|---------------|--------------|----------------|-------------|---------|----------|------|--------|
| Pro | e-Test | Pos | st-Test | Pre | -Test | Post | -Test | Pre | Pre-Test | | -Test |
| mm | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm | inches |
| | | | | Len | gth of Veh | icle at Ce | nterline | | | | |
| | | | | 5034 | 198.2 | 4450 | 175.2 | | | | |
| | | | | | Engin | e Block | | | | | |
| | | | | 420 | 16.5 | 420 | 16.5 | | | | |
| 4834 | 190.3 | 4362 | 171.7 | | Front Bur | mper Cori | ner | 4832 | 190.2 | 4409 | 173.6 |
| | | | | | Front c | of Engine | | | | | |
| | | | | 4400 | 173.2 | 4088 | 160.9 | | | | |
| 3764 | 148.2 | 3699 | 145.6 | | Fire | ewall | | 3759 | 148.0 | 3714 | 146.2 |
| | | | | 3816 | 150.2 | 3763 | 148.1 | | | | |
| 3414 | 134.4 | 3401 | 133.9 | Upp | oer Leadin | g Edge o | f Door | 3414 | 134.4 | 3405 | 134.1 |
| 3372 | 132.8 | 3360 | 132.3 | Lov | ver Leadin | g Edge o | f Door | 3371 | 132.7 | 3356 | 132.1 |
| 3371 | 132.7 | 3355 | 132.1 | | Bottom of | f 'A' Post | | 3359 | 132.2 | 3346 | 131.7 |
| 2315 | 91.1 | 2301 | 90.6 | Up | per Trailing | g Edge o | f Door | 2314 | 91.1 | 2304 | 90.7 |
| 2329 | 91.7 | 2317 | 91.2 | Lo | wer Trailing | g Edge o | f Door | 2322 | 91.4 | 2310 | 90.9 |
| | | | | | Steering | g Columr | 1 | | | | |
| | | | | 2932 | 115.4 | 2940 | 115.7 | | | | |
| | | | | Center of Se | ering Colu | mn to 'A' | Post (Horiz | ontal) | | | |
| | | | | 405 | 15.9 | 415 | 16.3 | | | | |
| | | | | Center of Ste | ering Colu | mn to He | adliner (Ve | rtical) | | | |
| | | | | 415 | 16.3 | 373 | 14.7 | | | | |

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2004 PONTIAC GRAND PRIX

NHTSA Crash Test - #4775 - Front Impact

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

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

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 18.6 23.0 16.7

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

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

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

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

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

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

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

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

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

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

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, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

2004 PONTIAC GRAND PRIX

NHTSA Crash Test - #4775 - Front Impact

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

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

Pre/Post Collision Crush Depths (inches)

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

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

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

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

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

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

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

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

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

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

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

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, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005

Make: BUICK Model: CENTURY

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

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005

Make: BUICK Model: CENTURY

| Test Numbe | Vehicle r Info | No Damage Speed (mph) | Max Crush (inch) | • | • | ehicle ffness B | | • | Crush Factor |
|---------------|--|--------------------------------|------------------------|------|-------|-----------------------|-------|-------|-----------------|
| 2877 | 1997 PONTIAC GRAND PRIX FOUR DOOR SEDAN | 5.0 | 19.9 | 25.2 | 214.4 | 43.5 | 527.9 | 67.7 | 12.8 |
| 4141 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 24.7 | 29.6 | 216.5 | 43.2 | 542.3 | 62.5 | 14.2 |
| 3524 | 2001 CHEVROLET MONTE CARLO TWO DOOR C | 5.0 | 28.5 | 35.5 | 225.8 | 48.4 | 526.8 | 65.6 | 17.7 |
| 2831 | 1998 BUICK CENTURY FOUR DOOR SEDAN | 5.0 | 23.2 | 29.9 | 227.7 | 48.8 | 531.3 | 70.4 | 15.4 |
| 3053 | 1999 BUICK CENTURY FOUR DOOR SEDAN | 5.0 | 27.4 | 34.9 | 232.5 | 50.8 | 531.5 | 69.3 | 17.8 |
| 3471 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 27.1 | 34.9 | 238.5 | 52.6 | 541.0 | 71.6 | 18.0 |
| 2821 | 1998 OLDSMOBILE INTRIGUE FOUR DOOR SEDAN | 5.0 | 24.1 | 34.9 | 263.4 | 65.3 | 531.5 | 89.0 | 20.2 |
| 3843 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 20.6 | 29.8 | 264.3 | 63.7 | 548.3 | 92.0 | 17.2 |
| 5204 | 2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN | 5.0 | 20.7 | 29.6 | 269.6 | 64.0 | 567.9 | 92.7 | 16.9 |
| 2888 | 1998 PONTIAC GRAND PRIX FOUR DOOR SEDAN | 5.0 | 15.2 | 24.7 | 272.9 | 70.8 | 525.7 | 111.4 | 16.1 |
| 4775 | 2004 PONTIAC GRAND PRIX FOUR DOOR SEDAN | 5.0 | 23.1 | 34.7 | 286.9 | 73.8 | 557.6 | 100.7 | 20.9 |
| 4317 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 13.5 | 24.9 | 313.4 | 92.2 | 532.7 | 144.3 | 18.3 |
| 3798 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 16.7 | 24.8 | 317.3 | 75.4 | 667.3 | 118.3 | 14.8 |
| 3637 | 2001 PONTIAC GRAND PRIX FOUR DOOR SEDAN | 5.0 | 19.1 | 34.7 | 330.0 | 102.6 | 530.8 | 140.0 | 25.2 |
| 2855 | 1997 PONTIAC GRAND PRIX FOUR DOOR SEDAN | 5.0 | 19.5 | 29.6 | 351.4 | 88.7 | 696.2 | 128.3 | 18.0 |
| 3786 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 14.2 | 30.0 | 374.9 | 131.6 | 534.0 | 189.7 | 25.2 |
| 3648 | 2001 CHEVROLET IMPALA FOUR DOOR SEDAN | 5.0 | 17.6 | 35.0 | 452.2 | 154.1 | 663.6 | 209.8 | 27.8 |
| | | Average (| AVG) | | 285.4 | 74.7 | 562.1 | 107.3 | 18.6 |
| | 1 | Minimum | (MIN) | | 214.4 | 43.2 | 525.7 | 62.5 | 12.8 |
| | | aximum (| . , | | 452.2 | 154.1 | 696.2 | 209.8 | 27.8 |
| | Standard Deviation (| (STDev-sa | mple) | | 64.7 | 31.2 | 55.7 | 43.7 | 4.1 |
| | Number of Tests (n) | | | | | | | | |

Registrered Owner: TUCRRC

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #4551

2002 CHEVROLET IMPALA

Provided By

4N6XPRT StifCalcs®

Registered to:

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

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Similar Vehicle database reader

You entered: 2001 BUICK CENTURY

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

| Year Range | Make | Model | Body Styles | Wheelbase |
|----------------------------------|-----------------------------|-------------|--------------------|------------|
| 2000 - 2005 Remarks: | CHEVROLET | IMPALA | 2D, 4D, SW | 110.5, 125 |
| 1997 - 2004 Remarks: Regal no | BUICK ow same as Century | REGAL | 2D, 4D, SW | 107.5 |
| 1997 - 2003 Remarks: | PONTIAC | GRAND PRIX | 2D, 4D | 110.5 |
| 1998 - 2002 Remarks: | OLDSMOBILE | INTRIGUE | 4D | 109 |
| 1997 - 2005 Remarks: | BUICK | CENTURY | 2D, 4D, SW | 109, 116 |
| 2000 - 2005 Remarks: | CHEVROLET | MONTE CARLO | 2D | 108 |
| 2004 - 2005 Remarks: | PONTIAC | GRAND PRIX | 2D, 4D | 110.5 |

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

Test Information

| Test # 4551 | NHTSA Test Reference Guide Version # | V5 | | | |
|----------------------|--|---------------|--------|-------------|--------|
| Test Date 2003-03-13 | Contract # | DTRS57-98-D | -00041 | | |
| Contract/Study Title | FMVSS 214 SIDE IMPACT TEST - 2002 CHEVROLET IN | IPALA 4 DOOR | 1 | | |
| Test Objective(s) | ES2 ATD EVALUATION FMVSS 214 SIDE IMPACT TEST | Γ | | | |
| Test Type | RESEARCH SAFETY VEHICLE TEST | Configuration | IMPACT | OR INTO VEH | ICLE |
| Impact Angle | 270 Side Impact Point | N/A | mm | N/A | inches |
| | Offset Distance | 0 | mm | 0.0 | inches |
| | Closing Speed | 53.1 | Km/Hr | 32.99 | MPH |
| Test Performer | MGA RESEARCH | | | | |
| Test Reference # | BT03031301 | | | | |
| Test Track Surface | CONCRETE Condition | DRY | | | |
| Ambient Temperature | 20 C 68.0 F Total Number of Curves | 176 | | | |
| Data Recorder Type | OTHER | Data Link | OTHER | | |
| Test Commentary | EME ON BOARD DAS 3200 | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | Fixed Barrier Information | | | | |
| | | | | | |
| Barrier Type | Pole Barrier Diameter | | mm | | inches |
| Barrier Shape | | | | | |
| Barrier Commentary | | | | | |

2002 CHEVROLET IMPALA LEFT FRONT SEAT OCCUPANT

| Test # 4551 | |
|---|--|
| Vehicle # 2 Sex MALE | |
| Location LEFT FRONT SEAT Age 0 | |
| Position CENTER POSITION Height 0 mm 0.0 inches | |
| Type EUROSID 2 (ES-2) SIDE IMPACT DUMMY Weight 0.0 kg 0 pounds | |
| Size 50 PERCENTILE | |
| Calibration Method OTHER | |
| Occupant Manufacturer TNO ES2 S/N 009 | |
| Occupant Modification | |
| Occupant Description ES2 WITH RIB EXTENSIONS | |
| Occupant Commentary LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG | |
| | |
| <u>Head</u> | |
| Head to | |
| Windshielder Header 352 mm 13.9 inches Head Injury Criteria (HIC) 69 | |
| WindShield 595 mm 23.4 inches HIC Lower Time Interval (ms) 45.6 | |
| Seatback 0 mm 0.0 inches HIC Upper Time Interval (ms) 81.6 | |
| Side Header 228 mm 9.0 inches | |
| Side Window 335 mm 13.2 inches | |
| Neck to Seatback 0 mm 0.0 inches | |
| First Contact Region (Head) | |
| Second Contact Region (Head) | |
| | |
| <u>Chest</u> | |
| Chest to | |
| Dash 535 mm 21.1 inches Arm to Door 101 mm 4.0 inches | |
| Steering Wheel 324 mm 12.8 inches Hip to Door 195 mm 7.7 inches | |
| Seatback 0 mm 0.0 inches | |
| Chest Severity Index Pelvic Peak Lateral Acceleration (g's) 64.7 | |
| Thoracic Trauma Index 74.7 Thorax Peak Acceleration (g's) 0 | |
| Lap Belt Peak Load 0 Newtons 0.0 pound Force | |
| Shoulder Belt Peak Load 0 Newtons 0.0 pound Force | |
| First Contact Region (Chest/Abdomen) AIR BAG | |
| Second Contact Region (Chest/Abdomen) NONE | |
| <u>Legs</u> | |
| Knees to Dash 215 mm 8.5 inches Knees to Seatback mm 0.0 inches | |
| Left Femur Peak Load 0 Newtons 0.0 pounds Force | |
| Right Femur Peak Load 0 Newtons 0.0 pounds Force | |
| First Contact Region (Legs) OTHER | |
| Second Contact Region (Legs) | |

2002 CHEVROLET IMPALA LEFT FRONT SEAT OCCUPANT

| Test # | 4551 | | | | | | |
|---|-----------------|-----------|------------------------------|----------------|---------------|------------|--|
| Vehicle # | 2 | | | Sex | MALE | | |
| Location | LEFT FF | RONT SE | AT | Age | 0 | | |
| Position | CENTER | POSITION | ON | Height | 0 mm | 0.0 inches | |
| Type | EUROSI | D 2 (ES-2 | 2) SIDE IMPACT DUMMY | Weight | 0.0 kg | 0 pounds | |
| Size | 50 PER | CENTILE | | | | | |
| Cali | ibration M | lethod | OTHER | | | | |
| Occupai | nt Manufa | acturer | TNO ES2 S/N 009 | | | | |
| Occupa | ant Modifi | ication | | | | | |
| Occu | pant Desc | cription | ES2 WITH RIB EXTENSIO | NS | | | |
| Occupant Commentary LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG | | | | | | | |
| | | | | | | | |
| | | | Restraints | | | | |
| Restrai | nt # 1 F | RONTAL | AIRBAG | | | | |
| Mounte | ed S | SEAT BA | CK | | | | |
| Deploy | ment 🖸 | DEPLOYE | D PROPERLY | | | | |
| Restrai | nt Comm | entary | PRIMARY - SEAT MOUNT | ED SIDE AIRBAC | 3 | | |
| Restrai | nt # 2 3 | POINT E | BELT | | | | |
| Mounte | ed E | BELT - CO | NVENTIONAL MOUNT | | | | |
| Deploy | ment N | NOT APP | LICABLE | | | | |

Restraint Commentary

SECONDARY

2002 CHEVROLET IMPALA LEFT REAR SEAT OCCUPANT

| Test # 4551 |
|--|
| Vehicle # 2 Sex MALE |
| Location LEFT REAR SEAT Age 0 |
| Position NON-ADJUSTABLE SEAT Height 0 mm 0.0 inches |
| Type EUROSID 2 (ES-2) SIDE IMPACT DUMMY Weight 0.0 kg 0 pounds |
| Size 50 PERCENTILE |
| Calibration Method OTHER |
| Occupant Manufacturer TNO ES2 S/N 010 |
| Occupant Modification |
| Occupant Description ES2 WITH RIB EXTENSIONS |
| Occupant Commentary CHEST TO DOOR PANEL; LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG |
| |
| <u>Head</u> |
| Head to |
| Windshielder Header 0 mm 0.0 inches Head Injury Criteria (HIC) 187 |
| WindShield 0 mm 0.0 inches HIC Lower Time Interval (ms) 49.3 |
| Seatback 638 mm 25.1 inches HIC Upper Time Interval (ms) 62.4 |
| Side Header 191 mm 7.5 inches |
| Side Window 328 mm 12.9 inches |
| Neck to Seatback 0 mm 0.0 inches |
| First Contact Region (Head) |
| Second Contact Region (Head) |
| |
| <u>Chest</u> |
| Chest to - |
| Dash 0 mm 0.0 inches Arm to Door 95 mm 3.7 inches |
| Steering Wheel 0 mm 0.0 inches Hip to Door 156 mm 6.1 inches |
| Seatback 550 mm 21.7 inches |
| Chest Severity Index Pelvic Peak Lateral Acceleration (g's) 82.3 |
| Thoracic Trauma Index 68.9 Thorax Peak Acceleration (g's) 0 |
| Lap Belt Peak Load 0 Newtons 0.0 pound Force |
| Shoulder Belt Peak Load 0 Newtons 0.0 pound Force |
| First Contact Region (Chest/Abdomen) OTHER |
| Second Contact Region (Chest/Abdomen) NONE |
| <u>Legs</u> |
| Knees to Dash 0 mm 0.0 inches Knees to Seatback 230 mm 9.1 inches |
| Left Femur Peak Load 0 Newtons 0.0 pounds Force |
| Right Femur Peak Load 0 Newtons 0.0 pounds Force |
| First Contact Region (Legs) OTHER |
| Second Contact Pagion (Lags) |

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2002 CHEVROLET IMPALA LEFT REAR SEAT OCCUPANT

| Test # | 4551 | | |
|-----------|----------------------|-------------------------------|--|
| Vehicle # | 2 | | Sex MALE |
| Location | LEFT REAR SE | AT | Age 0 |
| Position | NON-ADJUSTA | BLE SEAT | Height 0 mm 0.0 inches |
| Type | EUROSID 2 (ES | S-2) SIDE IMPACT DUMMY | Weight 0.0 kg 0 pounds |
| Size | 50 PERCENTIL | E | |
| Cal | libration Method | OTHER | |
| Occupa | nt Manufacturer | TNO ES2 S/N 010 | |
| Occup | ant Modification | | |
| Occu | pant Description | ES2 WITH RIB EXTENSION | ONS |
| Occup | ant Commentary | CHEST TO DOOR PANEL | L; LEFT LEG TO DOOR PANEL; RIGHT LEG TO LEFT LEG |
| | | | |
| | | Restraints | |
| Restra | int # 1 3 POINT | BELT | |
| Mounte | ed BELT - 0 | CONVENTIONAL MOUNT | |
| Deploy | ment NOT AP | PLICABLE | |
| Restra | int Commentary | PRIMARY | |
| Restra | int # 2 NONE | | |
| Mounte | ed NOT AP | PLICABLE | |
| Deploy | ment NOT AP | PLICABLE | |

Restraint Commentary

SECONDARY

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

| Toot # | AEE4 | | | | | | | | | | | | |
|-----------------|---------------|-----------|---------------|--------------|---------------|------------------|----------------|-------------------|------------|------------|---------------|----------------|-----------------|
| | 4551 | | | 1 | | A 11 17 | TO 4 T | 4 . 1 . 1 . 1 . 1 | la Nit | 4 | | | |
| VIN | | 7 | | | | | | | le Numbe | | | | |
| | 0 | | | | | | | | Indicator | | | /EHICLE | |
| | NHTSA | | | | | g Column | | • | • | | | | |
| Model | DEFOR | MABL | <u>E IMPA</u> | <u>CTOR</u> | St | eering Colu | umn Co | ollapse M | 1echanism | NOT A | APPLIC | ABLE | |
| Body | NOT AF | PPLICA | BLE | | | | | | | | | | |
| Engine | NOT AF | PLICA | BLE | | | | | | | | | | |
| Displacement | 0 | Liter | Tra | ansmiss | ion NO | T APPLICA | ABLE | | | | | | |
| Vehicle Modific | cation(s) | Descrip | otion [| | | | | | | | | | |
| Vehicle Comm | entary [| FMVS | S 214 D | EFORM | ABLE B | ARRIER AI | ND IMF | PACTOR | | | | | |
| Vehicle Len | ngth [| 4115 |] mm | 162.0 | inches | | CG | behind | Front Axle | 1106 | mm | 43.5 | inches |
| Vehicle V | Nidth [| 1252 | mm | 49.3 | inches | Cent | ter of D | Damage t | o CG Axis | s 0 | mm | 0.0 | inches |
| Vehicle Whee | elbase | 2591 | mm | 102.0 | inches | Tot | al Lenç | gth of Inc | dentation | 0 | mm | 0.0 | inches |
| Vehicle Test W | /eight [| 1361 | Īκg | 3000 | pound | s Maxi | imum S | Static Cru | sh Depth | 0 | mm | 0.0 | inches |
| | _ | | _ | | _ : | | | Pre-Impa | act Speed | 53 | kph | 33.0 | mph |
| Vel | hicle Dar | mage li | ndex [| | | | | | tion of Fo | | | | • |
| | | 3.3 | | | | | - 1 | | | | | | |
| | | | | | | | | | | | | | |
| Damage Pro | ofile Di | stance | <u>Meas</u> | ureme | <u>ents</u> | <u>Crus</u> | <u>sh fron</u> | n Pre & | Post Tes | st Dam | <u>age Me</u> | <u>asuren</u> | <u>nents</u> |
| (Measu | ured Left | t-to-Rigl | ht, Rea | r-to-Fror | nt) | | | Pre-Tes | <u>it</u> | Post-Te | <u>est</u> | Crush I | <u>Depth</u> |
| DPD 1 |) | mm | 0.0 | inche | s Le | ft Bumper | Corner | 0.0 | inches | 0.0 | inches | 0.0 | inches |
| DPD 2 |) | mm | 0.0 | inche | es. | | | 0 | mm | 0 | mm | 0 | mm |
| DPD 3 |) | mm | 0.0 | inche | s | Con | terline | 0.0 | inches | 0.0 | -] inches | 0.0 | - ∏inches |
| DPD 4 |) | mm | 0.0 | inche | S | Cen | teriffe | | | | ₹ | | ₹ |
| DPD 5 | | | 0.0 | inche | :S | | | 0 | mm | 0 |] mm - | 0 | _ mm _ |
| DPD 6 | | | 0.0 | inche | Diah | t Bumper (| Corner | 0.0 | inches | 0.0 | inches | 0.0 | inches |
| 2. 2 3 2 | | | 0.0 | | | | | 0 | mm | 0 |] mm | 0 | mm |
| | | | | | | | | | | | | | |
| Bumper E | ngagem | nent | | | S | ill Engagen | nent | | | , | A-pillar E | ngagem | ent |
| (Inline Im | pact On | ly) | | | (5 | Side Impac | t Only) | | | | (Side In | npact On | ıly) |
| | 7.0 | Ť | | Γ | N | OT APPLIC | ABLE | | | | Ì | 0.0 | Ť |
| | | _ | | - | | | | | | | | | _ |
| Moving | Test Ca | art | | | Movi | ng Test Ca | art/Vehi | icle | | Vel | hicle Ori | entation (| on Cart |
| Α | ngle | | | | | Crabbed A | ngle | | | | Moving | Test Ca | rt |
| NOT A | PPLICA | BLE | | | | 27.0 | | | | | NOT AP | PLICABL | .E |
| Magnitude | of the Tilt A | ngle | | | Magni | ture of the Cral | bbed Angl | le | | | Magnitud | e of the Angle | — —— |
| Measured be | etween surf | ace of a | | | М | easure Clockw | vise from | | | Measure | d between t | the Vehicle C |)rientation |
| Pollovor Tost | Cart and th | o Cround | | 1. | ongitudinal \ | lactor to Valori | ity Voctor | of Vahiolo | | and | Direction | of Tost Cart N | Motion |

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

| To at # | 4554 | | | | | / 13 | | | | | |
|---|--|----------------------|-------------------|-----------------|-----------------|---------------------|---------------|---------------|------------|--------|--|
| | 4551 | | \neg | | NII ITO A T | aat Vahiala Ni | | | | | |
| VIN | | 7 | | | | est Vehicle N | = | | \/E11101.F | | |
| | Year 0 Vehicle Modification Indicator RESEARCH VEHICLE Make NHTSA Post-test Steering Column Shear Capsule Seperation NOT APPLICABLE | | | | | | | | | | |
| Model DEFORMABLE IMPACTOR Steering Column Collapse Mechanism NOT APPLICABLE | | | | | | | | | | | |
| | | | ACTOR | Steering | Column C | oliapse iviech | anism [NC | JI APPLIC | ABLE | | |
| Body NOT APPLICABLE Engine NOT APPLICABLE | | | | | | | | | | | |
| Displacement | | _ | ransmission | NOT APP | LICARI F | | | | 1 | | |
| Vehicle Modific | | _ | | INOT AFF | LICABLE | | | | <u> </u> | | |
| Vehicle Commo | ` ′• | | DEFORM ARI | I E BARRIE | P AND IM | PACTOR | | | | | |
| Vehicle Len | | 4115 mm | | ches | | behind Fron | t Ayle 110 | 6 mm | 43.5 | inches | |
| Vehicle V | Ĭ | 1252 mm | | | | Damage to C | | mm | 0.0 | inches | |
| Vehicle Whee | | 2591 mm | | ches | | gth of Indent | | mm | 0.0 | inches | |
| Vehicle Test W | | 1361 KG | === | ounds | | Static Crush I | | mm | 0.0 | inches | |
| vernole rest w | oigint [| <u>1301</u> | 5000 pc | , arias | Maximum | Pre-Impact S | | kph | 33.0 | mph | |
| Veh | nicle Da | mage Index | | \neg | Princ | ipal Direction | · — | | 33.0 |]p.i. | |
| VCI | noic bai | mage mack L | | | 1 11110 | ipai Direction | 0110100 | U | | | |
| | | P | ra & Post | Tost Da | Ansma | /leasurem | ante | | | | |
| | | | | | - | | | | | | |
| (Measureme | ents are tak | en in a longitudinal | direction. Except | for Engine Bloc | k, all measurer | ments are take from | m the Rear Ve | hicle Surface | forward.) | | |
| Le | eft Side | | | С | enterline | | | Righ | t Side | | |
| Pre-Test | | Post-Test | | Pre-Test | Р | ost-Test | Pre | -Test | Pos | t-Test | |
| mm inche | s m | nm inches | I | mm inch | nes mr | n inches | mm | inches | mm | inches | |
| | | | | Length of | Vehicle at | Centerline | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |
| | | | | | ngine Bloc | <u>k</u> | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |
| 0.0 | 0 | 0.0 | | Fron | t Bumper C | Corner | 0 | 0.0 | 0 | 0.0 | |
| | | | | Fr | ont of Engi | ne | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |
| 0.0 | 0 | 0.0 | | | Firewall | | 0 | 0.0 | 0 | 0.0 | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |
| 0.0 | 0 | 0.0 | | Upper Le | ading Edge | e of Door | 0 | 0.0 | 0 | 0.0 | |
| 0.0 | 0 | 0.0 | | Lower Le | ading Edge | of Door | 0 | 0.0 | 0 | 0.0 | |
| 0.0 | 0 | 0.0 | | Botto | om of 'A' Po | ost | 0 | 0.0 | 0 | 0.0 | |
| 0.0 | 0 | 0.0 | | Upper T | railing Edge | of Door | 0 | 0.0 | 0 | 0.0 | |
| 0.0 | 0 | 0.0 | | Lower T | railing Edge | e of Door | 0 | 0.0 | 0 | 0.0 | |
| | | | | Ste | eering Colu | mn | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |
| | | | Center | of Seering | Column to | 'A' Post (Hori | zontal) | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |
| | | | Center | of Steering | Column to | Headliner (Ve | ertical) | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | | |

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Vehicle 2 2002 CHEVROLET IMPALA

| Test # | 4551 | | | | | | | | | |
|-----------------|---------------------|---------------------------------------|---------|------------------|------------------------|--------------|------------|-------------------------|-------------------|----------------|
| VIN | 2G1WH55E4 | 2921090 |)5 | | NHTSA T | est Vehic | le Numbe | r 2 | | |
| Year | 2002 | | | | Vehicle Mo | odification | Indicator | PRODUCTION | ON VEHIC | LE |
| Make | CHEVROLE | Γ | Post-te | st Steering | Column Shear | Capsule | Seperatio | n UNKNOWN | | |
| Model | IMPALA | · · · · · · · · · · · · · · · · · · · | | Stee | ring Column C | Collapse M | /lechanism | UNKNOWN | | - |
| Body | FOUR DOOR | SEDAN | | | | | | | | |
| Engine | V6 TRANSV | ERSE FR | ONT | | | | | | | |
| Displacement | 3.4 Lite | er Tra | ansmiss | sion AUTC | MATIC - FROI | NT WHEE | L DRIVE | | | |
| Vehicle Modific | cation(s) Desc | ription [| | | | | | | | |
| Vehicle Comm | entary | | | | | | | | | |
| Vehicle Len | igth 5063 | mm | 199.3 | inches | CC | 3 behind | Front Axle | 1202 mm | 47.3 | inches |
| Vehicle V | Width 1830 | mm | 72.0 | inches | Center of I | Damage 1 | to CG Axis | -313 mm | -12.3 | inches |
| Vehicle Whee | lbase 2810 | mm | 110.6 | inches | Total Len | igth of Ind | dentation | 4200 mm | 165.4 | inches |
| Vehicle Test W | /eight 1833 | KG | 4040 | pounds | Maximum | Static Cru | ısh Depth | 332 mm | 13.1 | inches |
| | | | | | | Pre-Impa | act Speed | 0 kph | 0.0 | mph |
| Vel | hicle Damage | Index 0 | 9LWMV | N8 | Princ | cipal Direc | tion of Fo | rce 270 | | |
| Damage Pro | | | | | Crush from | | | st Damage N | | |
| DPD 1 | ured Left-to-R | -0.2 | inche | • | Pumpar Carna | Pre-Tes | - | Post-Test 166.7 inch | Crush les 2.6 | |
| DPD 1 2 2 | | 1.0 | inche | | Bumper Corne | 4301 | i | | 66 | 」inches ファァ |
| DPD 2 [2 | | 13.1 | inche | | | |] mm | | | _ mm |
| DPD 4 3 | | 12.6 | inche | | Centerline | | inches | 194.0 inch | | inches |
| DPD 5 3 | | 1.4 | inche | | | 5063 |] mm | 4927 mm | 136 | _ mm |
| DPD 6 5 | | 0.2 | inche | Diaht E | Bumper Corner | 169.2 | inches | 169.7 inch | es -0.5 | inches |
| 2. 2 0 2 | | 0.2 | | .0 | | 4298 |] mm | 4310 mm | -12 | mm |
| | | | | | | | | | | |
| • | ingagement | | | | Engagement | | | - | r Engagem | |
| ` | pact Only) | | | • | e Impact Only | | | (Side | Impact On | ıly) |
| | 0.0 | | | DIREC | T ENGAGEME | NT | | | 0.0 | |
| Moving | Test Cart | | | Moving | Test Cart/Veh | nicle | | Vehicle C | Orientation (| on Cart |
| А | ngle | | | Cr | abbed Angle | | | Movi | ng Test Ca | rt |
| NOT A | PPLICABLE | | | | 0.0 | | | NO DIREC | T ENGAGE | MENT |
| Magnitude | of the Tilt Angle | | | Magniture | e of the Crabbed And | gle | | Magnit | tude of the Angle | е |
| Measured be | etween surface of a | 1 | | Meas | sure Clockwise from | 1 | | Measured betwee | n the Vehicle C |)rientation |
| Pollovor Tost | Cart and the Groun | nd | , | anaitudinal Vact | for to Valocity Vactor | r of Vahiala | | and Directio | n of Toot Cart I | Motion |

Vehicle 2 2002 CHEVROLET IMPALA

| Test # 45 | 551 | | | | | | |
|--------------------|-----------------------------|---|------------------|-------------------------|----------------------|-----------|--------|
| _ | G1WH55E4292109 | 05 | NHTSA Tes | t Vehicle Numb | er 2 | | |
| | 002 | | | fication Indicato | | ON VEHIC | LE |
| = | HEVROLET | Post-test Steering Colu | ımn Shear C | apsule Seperati | | | |
| = | IPALA | Steering | Column Coll | apse Mechanisr | m UNKNOWN | | |
| Body F (| OUR DOOR SEDAN | | | • | | | |
| Engine V | 6 TRANSVERSE F | | | | | | |
| Displacement 3. | 4 Liter Tr | ansmission AUTOMA | TIC - FRONT | WHEEL DRIVE | |] | |
| Vehicle Modificati | on(s) Description | _ | | | | | |
| Vehicle Commen | tary | | | | | | |
| Vehicle Length | 5063 mm | 199.3 inches | CG b | ehind Front Axl | e 1202 mm | 47.3 | inches |
| Vehicle Wic | Ith 1830 mm | 72.0 inches | Center of Da | mage to CG Ax | is -313 mm | -12.3 | inches |
| Vehicle Wheelba | ase 2810 mm | 110.6 inches | Total Lengtl | h of Indentation | 4200 mm | 165.4 | inches |
| Vehicle Test Weig | ght 1833 KG | 4040 pounds | Maximum Sta | atic Crush Depth | m 332 mm | 13.1 | inches |
| | | | P | re-Impact Spee | d 0 kph | 0.0 |] mph |
| Vehic | le Damage Index 🛭 | 9LWMW8 | Principa | al Direction of Fo | orce 270 | | |
| | | | | | | | |
| | <u>P</u> | re & Post Test Da | <u>image Me</u> | <u>easurement</u> | <u>s</u> | | |
| (Measurements | are taken in a longitudinal | direction. Except for Engine Bloc | k, all measureme | nts are take from the F | Rear Vehicle Surface | forward.) | |
| Left | Side | С | enterline | | Righ | nt Side | |
| Pre-Test | Post-Test | Pre-Test | Pos | t-Test | Pre-Test | Pos | t-Test |
| mm inches | mm inches | mm inch | es mm | inches | mm inches | mm | inches |
| | | Length of | Vehicle at Ce | enterline | | | |
| | | 5063 199. | 3 4927 | 194.0 | | | |
| | | Е | ngine Block | | | | |
| | | 0.0 | 0 | 0.0 | | | |
| 4301 169.3 | 4235 166.7 | Fron | Bumper Cor | mer 4 | 298 169.2 | 4310 | 169.7 |
| | | Fr | ont of Engine |) | | | |
| | | 0.0 | 0 | 0.0 | | | |
| 0.0 | 0.0 | | Firewall | | 0.0 | 0 | 0.0 |
| | | 0.0 | 0 | 0.0 | | | |
| 0.0 | 0.0 | • | ading Edge o | | 0.0 | 0 | 0.0 |
| 0.0 | 0.0 | | ading Edge o | _ | | 0 | 0.0 |
| 0.0 | 0.0 | | m of 'A' Post | = | | 0 | 0.0 |
| 0.0 | 0.0 | • • • | ailing Edge c | | | 0 | 0.0 |
| 0.0 | 0.0 | | ailing Edge o | | 0.0 | 0 | 0.0 |
| | | | ering Colum | | | | |
| | | 0.0 | 0 | 0.0 | | | |
| | | Center of Seering | | | al) | | |
| | | 0 0.0 | 0 | 0.0 | | | |
| | | Center of Steering | | | I) | | |
| | | 0.0 | 0 | 0.0 | | | |

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2002 CHEVROLET IMPALA

NHTSA Crash Test - #4551 - Side Impact

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

Test Vehicle Weight = 4040 pounds

Impactor Weight = 3000

SMAC Stiffness

Κv

227160.1

KE Equivalent Speed = 21.5 MPH Impactor Test Speed = 33.0

CRASH 3 Stiffness Coefficents

Test Crush Length = 165.4 inches

Damage Profile Distance Collision Crush Depths (inches)

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

В G Minimum Crush = 0.2 inches

5.0mph

| Willing Ordon = 0.2 inches | | | | | 227100.1 |
|----------------------------------|--------|--------|----------|-------|----------|
| Using a Rated No Damage Speed of | 1.0mph | 2011.4 | 206555.9 | 9.8 | |
| Using a Rated No Damage Speed of | 2.0mph | 3827.0 | 186931.2 | 39.2 | |
| Using a Rated No Damage Speed of | 3.0mph | 5446.7 | 168285.8 | 88.1 | |
| Using a Rated No Damage Speed of | 5.0mph | 8098.5 | 133933.1 | 244.8 | |
| Average Crush = 5.6 inches | | | | | 289.7 |
| Using a Rated No Damage Speed of | 1.0mph | 71.8 | 263.5 | 9.8 | |
| Using a Rated No Damage Speed of | 2.0mph | 136.7 | 238.4 | 39.2 | |
| Using a Rated No Damage Speed of | 3.0mph | 194.5 | 214.7 | 88.1 | |
| Using a Rated No Damage Speed of | 5.0mph | 289.2 | 170.8 | 175.4 | |
| Maximum Crush = 13.1 inches | | | | | 52.9 |
| Using a Rated No Damage Speed of | 1.0mph | 30.7 | 48.1 | 9.8 | |
| Using a Rated No Damage Speed of | 2.0mph | 58.4 | 43.6 | 39.2 | |
| Using a Rated No Damage Speed of | 3.0mph | 83.2 | 39.2 | 88.1 | |
| | | | | | |

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Using a Rated No Damage Speed of

244.8

31.2

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

123.6

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

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

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

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

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

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

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

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005

Make: BUICK Model: CENTURY

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

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 1997 - 2005

Make: BUICK Model: CENTURY

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

4N6XPRT Systems

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91941-3842

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

Phone: (619) 464-3478

E-Mail: 4n6@4n6xprt.com

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

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

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

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

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

Available Test Results Rear Impact Test Summary

Report Filter Settings

Year Range: 1965 - 2013

Vehicle Weight Range: 3821-4060

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

Available Test Results Rear Impact Test Summary

Report Filter Settings

Year Range: 1965 - 2013

Vehicle Weight Range: 3821-4060

| Test | Vehicle | No | Max | | | | ١٨/ : ما 4 ا | | |
|---------------------|---|-----------------|--------------|-------|-------|------|--------------|-------|--------|
| Numbei | r Info | Damage Speed | Max Crush | KEES | | | | | Crush |
| | | (mph) | (inch) | (mph) | A | В | G | Kv | Factor |
| 1408 | 1989 BUICK RIVIERA TWO DOOR SEDAN | 5.0 | 21.4 | 21.2 | 166.2 | 25.2 | 548.1 | 43.1 | 8.4 |
| 75 | 1979 DODGE ASPEN TWO DOOR COUPE | 5.0 | 21.5 | 24.8 | 198.3 | 36.5 | 538.3 | 57.3 | 11.4 |
| 68 | 1979 PONTIAC GRAND PRIX TWO DOOR COUPE | 5.0 | 21.2 | 24.9 | 203.1 | 38.2 | 540.1 | 59.8 | 11.7 |
| 117 | 1978 PONTIAC LEMANS TWO DOOR SEDAN | 5.0 | 16.7 | 20.9 | 205.6 | 39.2 | 539.4 | 67.7 | 10.5 |
| 154 | 1980 OLDSMOBILE CUTLASS FOUR DOOR SEDAN | 5.0 | 20.5 | 24.8 | 215.7 | 41.7 | 558.2 | 65.4 | 12.0 |
| 139 | 1980 DODGE MIRADA TWO DOOR COUPE | 5.0 | 20.0 | 25.0 | 215.9 | 43.1 | 540.4 | 67.4 | 12.5 |
| 1269 | 1988 CHEVROLET CAPRICE FOUR DOOR SEDAN | 5.0 | 15.2 | 21.7 | 234.9 | 51.6 | 534.7 | 87.1 | 12.4 |
| 1279 | 1988 CHEVROLET CAVALIER FOUR DOOR SEDAN | 5.0 | 15.5 | 20.8 | 248.4 | 50.6 | 609.9 | 87.7 | 11.2 |
| 166 | 1978 FORD GRANADA FOUR DOOR SEDAN | 5.0 | 13.2 | 20.5 | 255.3 | 60.0 | 543.4 | 104.9 | 12.7 |
| 38 | 1979 CHEVROLET CAMARO TWO DOOR COUPE | 5.0 | 13.9 | 24.8 | 304.3 | 86.5 | 535.2 | 135.8 | 17.6 |
| Average (AVG) | | | | | 224.8 | 47.3 | 548.8 | 77.6 | 12.0 |
| Minimum (MIN) | | | | | 166.2 | 25.2 | 534.7 | 43.1 | 8.4 |
| | M | laximum (| (MAX) | | 304.3 | 86.5 | 609.9 | 135.8 | 17.6 |
| | Standard Deviation | (STDev-sa | mple) | | 38.1 | 16.8 | 22.6 | 27.1 | 2.3 |
| Number of Tests (n) | | | | | | | | | |

Expert VIN DeCoder®

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Version Number 3.1.0.3

DeCoded VIN: 1G6KD54Y81U248813

Model: 2001 Cadillac Deville 4 Door Sedan

Engine Size: 4.6L/ 279cu.in.

Engine Description: V8 cylinder with Dual Overhead Cam (DOHC)

Horse Power: 275 @ 5600 rpm

Torque: 300 lb-ft at 4000 rpm

Injection System: |Multiport Fuel Injection(MFI)

PSI: 40-50 psi Ignition: Electronic

Manufacturer: Buick, Oldsmobile, Cadillac

Assembly Plant: Hamtramck, MI

Drive Wheels: This is a Front Wheel Drive vehicle w/Active (Manual) Seatbelts + Front and Side Air Bags

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

The Fourth and Fifth characters (KD) indicate a Deville

The Sixth character (5) indicates a 4 Door Sedan

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

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

The Ninth character (the check digit) is entered as 8.

The VIN appears Valid, the calculated value is 8.

The Tenth character (1) indicates the model year 2001

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

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

Expert AutoStats®

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

9/20/2012

2001 CADILLAC DEVILLE 4 DOOR SEDAN

| 2001 CADILLAC DEVILLE 4 DOOK SEDAN | | | |
|--|--|--|--|
| Curb Weight: Curb Weight Distribution - Front: | 4049 lbs. | 1837 Rear: 39 | kg. |
| Gross Vehicle Weight Rating: | 5133 lbs. | 2328 | kg. |
| Number of Tires on Vehicle: Drive Wheels: | FRONT | | |
| Horizontal Dimensions Total Length Wheelbase: | Inches 207 115 | Feet 17.25 9.58 | Meters 5.26 2.92 |
| Front Bumper to Front Axle: 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: | 43 27 6 54 85 | 3.58 2.25 0.50 4.50 7.08 | 1.09 0.69 0.15 1.37 2.16 |
| Rear Bumper to Rear Axle: Rear Bumper to Rear of Rear Well: Rear Bumper to Rear of Trunk: Rear Bumper to Base of Rear Window: | 49 32 7 32 | 4.08 2.67 0.58 2.67 | 1.24 0.81 0.18 0.81 |
| Width Dimensions Maximum Width: Front Track: Rear Track: | 75 63 62 | 6.25 5.25 5.17 | 1.91 1.60 1.57 |
| Vertical Dimensions Height: Ground to - | 57 | 4.75 | 1.45 |
| Front Bumper (Top) Headlight - center Hood - top front: Base of Windshield Rear Bumper - top: Trunk - top rear: Base of Rear Window: | 20 26 30 38 24 41 43 | 1.67 2.17 2.50 3.17 2.00 3.42 3.58 | 0.51 0.66 0.76 0.97 0.61 1.04 1.09 |

Expert AutoStats®

2001 CADILLAC DEVILLE 4 DOOR SEDAN

| Interior Dimensions | Inches | Feet | Meters |
|---|--|--------------------------|--|
| Front Seat Shoulder Width | 61 | 5.08 | 1.55 |
| Front Seat to Headliner | 39 | 3.25 | 0.99 |
| Front Leg Room - seatback to floor (max) | 43 | 3.58 | 1.09 |
| Rear Seat Shoulder Width | 61 | 5.08 | 1.55 |
| Rear Seat to Headliner | 38 | 3.17 | 0.97 |
| Front Leg Room - seatback to floor (min) | 43 | 3.58 | 1.09 |
| Seatbelts: 3pt - front and rear | | | |
| Airbags: FRONT SEAT AIRBAGS + SIDE AI | RBAGS | | |
| Steering Data | | | |
| Turning Circle (Diameter) | 492 | 41.00 | 12.50 |
| Steering Ratio: :1 | · | | |
| Wheel Radius: | 13 | 1.08 | 0.33 |
| Tire Size (OEM): P225/60R16 | | | |
| | | | |
|] | | | |
| Acceleration & Braking Information | | ı | |
| Brake Type: ALL DISC | | | |
| <u></u> | | | |
| Brake Type: ALL DISC | dry pavement): | | |
| Brake Type: ALL DISC ABS System: ABS | dry pavement): a = -28.0 ft/ | sec² G-fo | rce = -0.87 |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, | · <u>· </u> | sec² G-fo | rce = -0.87 |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, d = 138.0 ft t = 3.1 sec | $a = \boxed{-28.0} \text{ ft/}$ | | rce = -0.87 rce = -0.87 |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, d = 138.0 ft t = 3.1 sec Acceleration: | $a = \boxed{-28.0} \text{ ft/}$ | ′sec² G-fo | |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, d = 138.0 ft t = 3.1 sec Acceleration: 0 to 30mph t = sec | $a = \boxed{-28.0} \text{ ft/}$ $a = \boxed{\qquad} \text{ ft/}$ $a = \boxed{\qquad} \text{ 11.0} \text{ ft/}$ | ′sec² G-fo ′sec² G-fo | rce = |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, d = 138.0 ft t = 3.1 sec Acceleration: 0 to 30mph t = sec 0 to 60mph t = 8.0 sec | $a = \boxed{-28.0} \text{ ft/}$ $a = \boxed{\qquad} \text{ ft/}$ $a = \boxed{\qquad} \text{ 11.0} \text{ ft/}$ | ′sec² G-fo ′sec² G-fo | rce = rce = |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, d = 138.0 ft t = 3.1 sec Acceleration: 0 to 30mph t = sec 0 to 60mph t = 8.0 sec 45 to 65mph t = sec | $a = \boxed{-28.0} \text{ ft/}$ $a = \boxed{\qquad} \text{ ft/}$ $a = \boxed{\qquad} \text{ 11.0} \text{ ft/}$ | ′sec² G-fo ′sec² G-fo | rce = rce = |
| Brake Type: ALL DISC ABS System: ABS Braking, 60 mph to 0 (Hard pedal, no skid, d = 138.0 ft t = 3.1 sec Acceleration: 0 to 30mph t = sec 0 to 60mph t = 8.0 sec 45 to 65mph t = sec Transmission Type: 4spd AUTOMATIC | a = -28.0 ft/ a = 11.0 ft/ a = 11.0 ft/ | ′sec² G-fo ′sec² G-fo | rce = rce = |

N.S.D.C = 2000 - 2005

2001 CADILLAC DEVILLE 4 DOOR SEDAN

Other Information

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

Center of Gravity (No Load):

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

Moments of Inertia Approximations (No Load):

| Yaw Moment of Inertia | = | 2964.47 lb | *ft*sec² |
|-------------------------|---|-------------------|----------|
| Pitch Moment of Inertia | = | 2859.51 lb | *ft*sec² |
| Roll Moment of Inertia | = | 578.82 1b | *ft*sec² |

Front Profile Information

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

First Approximation Crush Factors:

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

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

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

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #4837

2004 CADILLAC DE VILLE

Provided By

4N6XPRT StifCalcs®

Registered to:

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

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Similar Vehicle database reader

You entered: 2001 CADILLAC DEVILLE

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

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

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

Test Information

| Test # 4837 | 1 | NHTSA Test Refe | erence Guide Vers | ion# | V5 | | | |
|------------------------------|---|-----------------|-------------------|---------|---------------|---------|-------------|--------|
| Test Date 2003-11-1 7 | 7 | | Cont | ract# | DTNH22-01- | D-02005 | | |
| Contract/Study Title | itle 35 MPH NCAP FRONTAL - 2004 CADILLAC DEVILLE DHS 4 DOOR SEDAN | | | | | | | |
| Test Objective(s) | OBTAIN ATD AN | D VEHICLE DA | TA | | | | | |
| Test Type | OPTIONAL NEW | CAR ASSESSM | ENT TEST | | Configuration | VEHICLE | INTO BARRIE | R |
| Impact Angle | 0 | | Side Impac | t Point | 0 | mm | 0.0 | inches |
| | | | Offset D | istance | 0 | mm | 0.0 | inches |
| | | | Closing | Speed | 56.0 | Km/Hr | 34.80 | MPH |
| Test Performer | KARCO ENGINEER | RING | | | | | | |
| Test Reference # | G40100 | | | | | | | |
| Test Track Surface | CONCRETE | | Con | dition | DRY | | | |
| Ambient Temperature | 14 C 57 . | 2 F | Total Number of 0 | Curves | 185 | | | |
| Data Recorder Type | DIGITAL DATA A | QUISITION | | | Data Link | OTHER | | |
| Test Commentary | DATALINK IS NO | NE, ON-BOAR | D DAS | | | | | |
| • | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | Fixed | d Barrier Informa | tion | | | | |
| | | | | | | | | |
| Barrier Type | RIGID | | Pole Barrier Dia | meter | 0 | mm | 0 | inches |
| Barrier Shape | LOAD CELL BARR | IER | | | | | | |
| Barrier Commentary | | | | | | | | |

2004 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

| Test # 4837 | |
|--|---|
| Vehicle # 1 Sex MALE | |
| Location LEFT FRONT SEAT Age 0 | |
| Position CENTER POSITION Height 0 mm 0.0 inches | |
| Type HYBRID III DUMMY Weight 0.0 kg 0 pounds | |
| Size 50 PERCENTILE | |
| Calibration Method HYBRID III | |
| Occupant Manufacturer VECTOR, S/N:035 | |
| Occupant Modification UNMODIFIED | |
| Occupant Description NO COMMENTS | |
| Occupant Commentary NO COMMENTS | |
| <u>Head</u> | |
| Head to - | _ |
| Windshielder Header 350 mm 13.8 inches Head Injury Criteria (HIC) 414 | ╡ |
| WindShield 625 mm 24.6 inches HIC Lower Time Interval (ms) 56.1 | ╡ |
| Seatback 0 mm 0.0 inches HIC Upper Time Interval (ms) 92 | _ |
| Side Header 285 mm 11.2 inches | |
| Side Window 360 mm 14.2 inches | |
| Neck to Seatback 0 mm 0.0 inches | |
| First Contact Region (Head) | |
| Second Contact Region (Head) | |
| | |
| <u>Chest</u> | |
| Chest to - | |
| Dash 542 mm 21.3 inches Arm to Door 155 mm 6.1 inches | |
| Steering Wheel 300 mm 11.8 inches Hip to Door 170 mm 6.7 inches | |
| Seatback 0 mm 0.0 inches | |
| Chest Severity Index Pelvic Peak Lateral Acceleration (g's) The second of the secon | |
| Thoracic Trauma Index 0 Thorax Peak Acceleration (g's) 49.2 | |
| Lap Belt Peak Load 5194 Newtons 1167.7 pound Force | |
| Shoulder Belt Peak Load 4574 Newtons 1028.3 pound Force | |
| First Contact Region (Chest/Abdomen) AIR BAG | |
| Second Contact Region (Chest/Abdomen) NONE | |
| <u>Legs</u> | |
| Knees to Dash 170 mm 6.7 inches Knees to Seatback mm 0.0 inches | |
| Left Femur Peak Load -4246 Newtons -954.5 pounds Force | |
| Right Femur Peak Load -5294 Newtons -1190.1 pounds Force | |
| First Contact Region (Legs) DASHPANEL | |
| Second Contact Region (Legs) | |

2004 CADILLAC DE VILLE LEFT FRONT SEAT OCCUPANT

| Test # | 4837 | | | | | | | |
|-----------|------------|------------|-------------------|----------|------------|---|--------|--|
| Vehicle # | 1 | | | Sex | MALE | | | |
| Location | LEFT F | RONT SE | AT | Age | 0 | | | |
| Position | CENTE | R POSITION | ON | Height | 0 r | nm 0.0 | inches | |
| Type | HYBRIC | O III DUMN | ΛY | Weight | 0.0 | <g 0<="" td=""><td>pounds</td><td></td></g> | pounds | |
| Size | 50 PER | CENTILE | | | | | | |
| Cali | ibration N | Method | HYBRID III | | | | | |
| Occupar | nt Manuf | acturer | VECTOR, S/N:035 | | | | | |
| Occupa | ant Modi | fication | UNMODIFIED | | | | | |
| Occu | pant Des | scription | NO COMMENTS | | | | | |
| Occupa | ant Comi | mentary | NO COMMENTS | | | | | |
| | | | | | | | | |
| | | | Restraints | <u>s</u> | | | | |
| Restrai | nt # 1 [| 3 POINT E | BELT | | | | | |
| Mounte | ed [| BELT - CO | ONVENTIONAL MOUNT | | | | | |
| Deploy | ment [| DEPLOYE | D PROPERLY | | | | | |
| Restrai | nt Comm | nentary | NO COMMENTS | | | | | |
| Restrai | nt # 2 [| FRONTAL | AIRBAG | | | | | |
| Mounte | 7 | STEERING | | | | | | |
| Deploy | = | | D PROPERLY | | | | | |
| | nt Comm | | NO COMMENTS | | | | | |

2004 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

| Test # 4837 | | | | | | | |
|------------------------|----------------|----------------|-------------|---------------------|-------------------------|----------------------|----|
| Vehicle # 1 | _ | | | Sex | MALE | | ٦ |
| Location RIGHT F | RONT S | EAT | | Age | 0 | | _ |
| Position CENTER | POSITI | ON | | Height | 0 mm | 0.0 inche | S |
| Type HYBRID | III DUMI | ИΥ | | Weight | 0.0 kg | 0 poun | ds |
| Size 50 PERC | ENTILE | | |] | | | |
| Calibration Me | ethod | HYBRID III | | | | | |
| Occupant Manufa | cturer | VECTOR, S/ | N:034 | | | | |
| Occupant Modific | cation | UNMODIFIE | | | | | |
| Occupant Desc | cription | NO COMMEN | | | | | |
| Occupant Comm | entary | NO COMME | NTS | | | | |
| Head to - | | | <u>Head</u> | | | | |
| Windshielder Head | der 360 | mm 1 4 | I.2 inch | oc Hood Injury | Criteria (HIC) | 438 | |
| WindShielder Head | | = = | | • • | wer Time Interva | | |
| Seatba | | mm 0 . | | | per Time Interva | ` ' === | |
| Side Head | | | | | per rime interve | (1113) [<u>30.7</u> | |
| Side Wind | | | 3.4 inch | | | | |
| Neck to Seatback 0 | | nm 0.0 | inches | | | | |
| | | egion (Head) | AIR BAG | | | | |
| | | egion (Head) | | | | | |
| | | J (, | | | | | |
| | | | Chest | | | | |
| Chest to - | | | | | | | |
| Dash 5 6 | 68 n | nm 22.4 | inches | Arm to Door | 18 mm 1. | 9 inches | |
| Steering Wheel 0 | n | nm 0.0 | inches | Hip to Door | 60 mm 6 . | 3 inches | |
| Seatback 0 | n | nm 0.0 | inches | | | | |
| Chest Severity Ind | dex 0 | |] P | Pelvic Peak Lateral | Acceleration (g's) | 0 | |
| Thoracic Trauma Ind | ex 0 | |] | Thorax Peak | Acceleration (g's | s) 46.9 | |
| | Lap E | Belt Peak Load | 4454 | Newtons 1001.3 | pound Force | | |
| | | Belt Peak Load | | Newtons 1181.2 | pound Force | | |
| First Contact Reg | • ' | • | | | | | I |
| Second Contact Reg | gion (Che | est/Abdomen) | NONE | | | | |
| | | | <u>Legs</u> | | | | |
| Knees to Dash 1 | 55 n | nm 6.1 | <u></u> | nees to Seatback | mm 0 . | 0 inches | |
| Left Femur Peak L | oad -3 | 706 N | lewtons [| -833.1 poun | ds Force | | |
| Right Femur Peak Lo | oad -4 | 735 N | lewtons [| -1064.5 poun | ds Force | | |
| First C | Contact F | Region (Legs) | DASHPAN | EL | | | |
| Second C | ontact R | tegion (Legs) | | | | | |

2004 CADILLAC DE VILLE RIGHT FRONT SEAT OCCUPANT

| | Sex MALE |
|------------------------|--|
| ONT SEAT | Age 0 |
| OSITION | Height 0 mm 0.0 inches |
| DUMMY | Weight 0.0 kg 0 pounds |
| NTILE | |
| od HYBRID III | |
| rer VECTOR, S/N:034 | |
| ion UNMODIFIED | |
| tion NO COMMENTS | |
| tary NO COMMENTS | |
| | |
| Restraints | <u>s</u> |
| DINT BELT | |
| T - CONVENTIONAL MOUNT | |
| PLOYED PROPERLY | |
| ary NO COMMENTS | |
| NTAL AIRBAG | |
| | |
| PLOYED PROPERLY | |
| | |
| | Irer VECTOR, S/N:034 ion UNMODIFIED tion NO COMMENTS NO COMMENTS Restraint: T - CONVENTIONAL MOUNT PLOYED PROPERLY ary NO COMMENTS ONTAL AIRBAG SH PANEL - TOP PLOYED PROPERLY |

2004 CADILLAC DE VILLE RIGHT REAR SEAT OCCUPANT

| Test # 4837 | |
|--|---------------------------------------|
| Vehicle # 1 | Sex NOT APPLICABLE |
| Location RIGHT REAR SEAT | Age 0 |
| Position NOT APPLICABLE | Height 0 mm 0.0 inches |
| Type HYBRID III DUMMY | Weight 0.0 kg 0 pounds |
| Size 3 YEAR OLD CHILD | |
| Calibration Method HYBRID III | |
| Occupant Manufacturer FIRST TECHNOLOGY S | AFETY SYSTEMS, S/N:139 |
| Occupant Modification UNMODIFIED | |
| Occupant Description No COMMENTS | |
| Occupant Commentary NO COMMENTS | |
| Head Head to - | |
| Windshielder Header 0 mm 0.0 inche | es Head Injury Criteria (HIC) 571 |
| WindShield 0 mm 0.0 inche | |
| Seatback 618 mm 24.3 inche | ` ' |
| Side Header 0 mm 0.0 inche | · · · · · · · · · · · · · · · · · · · |
| Side Window 400 mm 15.7 inche | |
| Neck to Seatback 0 mm 0.0 inches | |
| First Contact Region (Head) NONE | |
| Second Contact Region (Head) | |
| ÿ (, <u> </u> | |
| <u>Chest</u> | |
| Chest to - | |
| Dash 0 mm 0.0 inches | Arm to Door 305 mm 12.0 inches |
| Steering Wheel 0 mm 0.0 inches | Hip to Door 350 mm 13.8 inches |
| Seatback 590 mm 23.2 inches | |
| Chest Severity Index 0 P | elvic Peak Lateral Acceleration (g's) |
| Thoracic Trauma Index 0 | Thorax Peak Acceleration (g's) 40.1 |
| Lap Belt Peak Load 0 | Newtons 0.0 pound Force |
| Shoulder Belt Peak Load 0 | Newtons 0.0 pound Force |
| First Contact Region (Chest/Abdomen) NONE | |
| Second Contact Region (Chest/Abdomen) NONE | |
| <u>Legs</u> | |
| | nees to Seatback 402 mm 15.8 inches |
| | 0.0 pounds Force |
| | 0.0 pounds Force |
| First Contact Region (Legs) NONE | |
| Second Contact Region (Legs) | |
| 5 \ 5 / <u></u> | |

2004 CADILLAC DE VILLE RIGHT REAR SEAT OCCUPANT

| Test # | 4837 | | | | | | |
|---------------------------------|-------------|-----------|---|-----------------|---------------|---------------|----------|
| Vehicle # | 1 | | | Sex | NOT APPLIC | ABLE | |
| Location | RIGHT F | REAR SEA | AT | Age | 0 | | |
| Position | NOT AP | PLICABL | E | Height | 0 mm | 0.0 inches | |
| Туре | HYBRID | III DUMN | IY | Weight | 0.0 kg | 0 pounds | ; |
| Size | 3 YEAR | OLD CHI | LD | | | | |
| Cali | libration M | 1ethod | HYBRID III | | | | |
| Occupai | nt Manufa | acturer | FIRST TECHNOLOGY S | AFETY SYSTEMS, | S/N:139 | | |
| Occupa | ant Modif | ication | UNMODIFIED | | | | |
| Occu | ıpant Des | cription | NO COMMENTS | | | | |
| Occupant Commentary NO COMMENTS | | | | | | | |
| | | | | | | | |
| | | | Restraints | 5 | | | |
| Restrai | int # 1 | CONVERT | IBLE CHILD SAFETY SE | _ | 3 | | |
| Mounte | = | | OWER ANCHORAGES A | | | | |
| Deploy | ment [| NOT APPI | _ICABLE | | | | |
| Restrai | int Comm | entary | MANUFACTURER:EVEN | IFLO, MODEL:VAN | GUARD 5, MO | DEL#3691261 P | 1 |
| Dootroi | :n+# 2 [| - DOINT F | | | | | |
| | = | POINT E | | | | | |
| Mounte | ed [| CHILD SE | <u>AT </u> | | | | |
| Deploy | ment 📭 | NOT APPI | ICABLE | | | | |
| Restrai | int Comm | entary | NO COMMENTS | | | | |

2004 CADILLAC DE VILLE LEFT REAR SEAT OCCUPANT

| Test # 4837 | |
|--|-------------------------------|
| Vehicle # 1 Sex [| NOT APPLICABLE |
| Location LEFT REAR SEAT Age | 0 |
| Position NOT APPLICABLE Height | 0 mm 0.0 inches |
| Type HYBRID III DUMMY Weight | 0.0 kg 0 pounds |
| Size 3 YEAR OLD CHILD | |
| Calibration Method HYBRID III | |
| Occupant Manufacturer FIRST TECHNOLOGY SAFETY SYSTEMS, S | 5/N:082 |
| Occupant Modification UNMODIFIED | |
| Occupant Description NO COMMENTS | |
| Occupant Commentary CNTRH1, HEAD CONTACTED THE SEAT BAI | R |
| | |
| <u>Head</u> | |
| Head to - | |
| Windshielder Header 0 mm 0.0 inches Head Injury Cr | riteria (HIC) 766 |
| WindShield 0 mm 0.0 inches HIC Lowe | er Time Interval (ms) 68 |
| Seatback 622 mm 24.5 inches HIC Uppe | er Time Interval (ms) 104 |
| Side Header 0 mm 0.0 inches | |
| Side Window 400 mm 15.7 inches | |
| Neck to Seatback 0 mm 0.0 inches | |
| First Contact Region (Head) OTHER | |
| Second Contact Region (Head) | |
| | |
| <u>Chest</u> | |
| Chest to - | |
| Dash 0 mm 0.0 inches Arm to Door 280 | |
| Steering Wheel 0 mm 0.0 inches Hip to Door 348 | 8 mm [13.7] inches |
| Seatback 620 mm 24.4 inches | |
| Chest Severity Index Delvic Peak Lateral Ac | , |
| | cceleration (g's) 41.3 |
| · | ound Force |
| | oound Force |
| First Contact Region (Chest/Abdomen) NONE | |
| Second Contact Region (Chest/Abdomen) NONE | |
| <u>Legs</u> | |
| Knees to Dash 0 mm 0.0 inches Knees to Seatback 415 | mm 16.3 inches |
| Left Femur Peak Load 0 Newtons 0.0 pounds | |
| Right Femur Peak Load 0 Newtons 0.0 pounds | Force |
| First Contact Region (Legs) | |
| Second Contact Region (Legs) | |

2004 CADILLAC DE VILLE LEFT REAR SEAT OCCUPANT

| Test # | 4837 | | | | | | |
|----------------------------------|---|------------|----------------------|------------------|---------------|-----------------|--|
| Vehicle # | 1 | | | Sex | NOT APPLIC | ABLE | |
| Location | LEFT R | EAR SEA | Т | Age | 0 | | |
| Position | NOT A | PPLICABL | E | Height | 0 mm | 0.0 inches | |
| Type | HYBRII | O III DUMN | 1Y | Weight | 0.0 kg | 0 pounds | |
| Size | 3 YEAF | R OLD CHI | LD | | | | |
| Cali | ibration I | Method | HYBRID III | | | | |
| Occupar | nt Manuf | acturer | FIRST TECHNOLOGY SA | AFETY SYSTEMS, | S/N:082 | | |
| Occupa | ant Modi | fication | UNMODIFIED | | | | |
| Occupant Description NO COMMENTS | | | | | | | |
| Occupa | Occupant Commentary CNTRH1, HEAD CONTAG | | | | AR | | |
| | | | | | | | |
| | | | Restraints | 3 | | | |
| Restrai | nt # 1 [| CONVERT | TBLE CHILD SAFETY SE | AT, FRONT FACING | 3 | | |
| Mounte | ed [| LATCH - L | OWER ANCHORAGES AI | ND TOP TETHER | | | |
| Deployi | ment [| NOT APPI | LICABLE | | | | |
| Restrai | nt Comn | nentary | MANUFACTURER:COSC | O, MODEL:REGAL | RIDE, MODEI | L#22-139-MON | |
| Restrai | nt# 2 [| 5 POINT E | RFI T | | | | |
| Mounte | 7 | CHILD SE | | | | | |
| Deploy | 7 | NOT APPI | | | | | |
| | nt Comn | | NO COMMENTS | | | | |

Vehicle 1 2004 CADILLAC DE VILLE

| Test # | 4837 | | | | | | | | | | |
|-----------------|-------------------|-------------|----------|-----------------|-------------------------|--------------|------------|-----------------|--------------|----------------|---------------|
| VIN | 1G6KE54Y | 64U15243 | 37 | | NHTSA T | est Vehic | le Numbe | r 1 | | | |
| Year | 2004 | | | | Vehicle Mo | dification | Indicator | PROD | UCTION | VEHICL | .E |
| Make | CADILLAC | | Post-tes | st Steering | Column Shear | Capsule | Seperation | n UNKN | OWN | | |
| Model | DE VILLE | | | Ste | ering Column C | ollapse M | 1echanism | UNKN | OWN | | |
| Body | FOUR DOO | R SEDAN | | | | | | | | | |
| Engine | V8 TRANS | ERSE FR | RONT | | | | | | | | |
| Displacement | 4.6 Li | ter Tra | ansmiss | ion AUT | OMATIC - FROM | NT WHEE | L DRIVE | | | | |
| Vehicle Modific | cation(s) Des | cription [| UNMOE | IFIED | | | | | | | |
| Vehicle Comm | entary DHS | MODEL | | | | | | | | | |
| Vehicle Ler | ngth 525 | 8 mm | 207.0 | inches | CC | 3 behind | Front Axle | 1238 | mm | 48.7 | inches |
| Vehicle \ | Width 189 | 1 mm | 74.4 | inches | Center of I | Damage t | to CG Axis | 0 | mm | 0.0 | inches |
| Vehicle Whee | elbase 293 | 4 mm | 115.5 | inches | Total Len | gth of Ind | dentation | 1291 | mm | 50.8 | inches |
| Vehicle Test W | /eight 205 | 4 KG | 4527 | pounds | Maximum | Static Cru | ish Depth | 615 | mm | 24.2 | inches |
| | | | | | | Pre-Impa | act Speed | 56 | kph | 34.8 | mph |
| Ve | hicle Damag | e Index 1 | 2FDEW | 6 | Princ | ipal Direc | tion of Fo | rce 0 | | | |
| | | | | | | | | | | | |
| Damaga Dr | ofilo Diotor | | | . n. 1 n | Cruah fra | D# 0 | Doot To | at Dame | M. | | |
| Damage Pro | | | | | Crush froi | | | | | | |
| _ | ured Left-to-F | | _ | | _ | Pre-Tes | i | Post-Te | _ | Crush E | |
| DPD 1 - | | | inche | | Bumper Corne | | inches | 182.2 | inches | | inches |
| DPD 2 - | | | inche | | | 5108 | mm | 4628 | mm | 480 |] mm |
| DPD 3 - | | | inche | | Centerline | 207.0 | inches | 182.8 | inches | 24.2 | inches |
| = | 608 mm | | inche | | | 5258 | mm | 4643 | mm | 615 |] mm |
| DPD 5 [- | | | inche | Diaht | Bumper Corner | 201.1 | inches | 182.0 | inches | 19.1 | inches |
| DPD 6 L | 485 mm | -19.1 | inche | s '''g''' | Bampor Comor | 5108 | mm | 4623 | mm | 485 |] mm |
| | | | | | | 3100 | | 4023 | , | 1400 |] |
| Bumper F | ngagement | | | Sill | Engagement | | | Δ | -nillar F | ngageme | ent |
| | npact Only) | | | | de Impact Only |) | | | • | npact Onl | |
| · | 0.0 | | Г | | T APPLICABLE | | | ı | <u> </u> | 0.0 | ٠ <i>٫٫</i> , |
| | 7.0 | | L | 110 | TALLEGABLE | | | ı | | <u> </u> | _ |
| Moving | Test Cart | | | Movin | g Test Cart/Veh | ricle | | Veh | icle Orie | entation o | on Cart |
| А | ngle | | | С | rabbed Angle | | | | Moving | Test Car | t |
| DIRECT | ENGAGEME | NT | | | 0.0 | | | N | IOT API | PLICABL | E |
| Magnitude | of the Tilt Angle | | | Magnitu | re of the Crabbed Ang | gle | | | Magnitude | e of the Angle | ÷ |
| Measured be | etween surface of | fa | | Mea | asure Clockwise from | 1 | | Measured | between th | he Vehicle O | rientation |
| Rollover Test | Cart and the Gro | und | 1. | onaitudinal Ved | ctor to Velocity Vector | r of Vehicle | | and [| Direction of | f Test Cart M | 10tion |

Vehicle 1 2004 CADILLAC DE VILLE

| Test # | 4837 | | | | | | | | | | |
|-----------------|-----------|-----------------------------|---------|-----------|--------------|--------------|--|---------------------|------|------|--------|
| VIN | 1G6KE | 54Y64 | U15243 | 37 | | NHTSA | A Test Vehicle N | umber 1 | | | |
| Year | 2004 | | | | | Vehicle | Vehicle Modification Indicator PRODUCTIO | | | | |
| Make | CADIL | CADILLAC Post-test Steering | | | | | ear Capsule Sep | eration UNKI | 10MN | | |
| Model | DE VIL | LE | | | Ste | ering Columr | n Collapse Mech | anism UNKI | 10MN | | |
| Body | FOUR | OUR DOOR SEDAN | | | | | | | | | |
| Engine | V8 TR | ANSVE | RSE FR | RONT | | | | | | | |
| Displacement | 4.6 | Liter | Tra | ansmissio | n AUT | OMATIC - FR | ONT WHEEL DE | RIVE | | ı | |
| Vehicle Modific | cation(s) |) Descrip | otion [| UNMODI | FIED | | | | | | |
| Vehicle Comm | entary | DHS M | ODEL | | | | | | | | |
| Vehicle Len | ngth | 5258 | mm | 207.0 | inches | | CG behind Fron | t Axle 1238 | mm | 48.7 | inches |
| Vehicle V | Nidth | 1891 |] mm | 74.4 | inches | Center | of Damage to Co | G Axis 0 | mm | 0.0 | inches |
| Vehicle Whee | elbase | 2934 | mm | 115.5 | inches | Total L | ength of Indenta | ation 1291 | mm | 50.8 | inches |
| Vehicle Test W | /eight | 2054 | KG | 4527 | pounds | Maximu | m Static Crush [| Depth 615 | mm | 24.2 | inches |
| | | | | | | | Pre-Impact S | Speed 56 | kph | 34.8 | mph |
| Vel | hicle Da | ımage lı | ndex 1 | 2FDEW6 | | Pr | incipal Direction | of Force 0 | | | |
| | | | | | | | | | | | |

Pre & Post Test Damage Measurements

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

| | Left | Side | | | Cente | rline | | Right Side | | | | | |
|------|--------|------|---------|---------------|--------------|------------|-------------|------------|--------|------|--------|--|--|
| Pr | e-Test | Pos | st-Test | Pre | -Test | Post | -Test | Pre | -Test | Post | -Test | | |
| mm | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm | inches | | |
| | | | | Len | gth of Veh | icle at Ce | nterline | | | | | | |
| | | | | 5258 | 207.0 | 4643 | 182.8 | | | | | | |
| | | | | | Engin | e Block | | | | | | | |
| | | | | 646 | 25.4 | 646 | 25.4 | | | | | | |
| 5108 | 201.1 | 4628 | 182.2 | | Front Bur | mper Corr | ner | 5108 | 201.1 | 4623 | 182.0 | | |
| | | | | | Front c | of Engine | | | | | | | |
| | | | | 4725 | 186.0 | 4512 | 177.6 | | | | | | |
| 4219 | 166.1 | 4187 | 164.8 | | Fire | ewall | | 4234 | 166.7 | 4133 | 162.7 | | |
| | | | | 4107 | 161.7 | 4010 | 157.9 | | | | | | |
| 3651 | 143.7 | 3650 | 143.7 | Upp | oer Leadin | g Edge o | f Door | 3656 | 143.9 | 3656 | 143.9 | | |
| 3633 | 143.0 | 3620 | 142.5 | Low | ver Leadin | g Edge of | f Door | 3636 | 143.1 | 3631 | 143.0 | | |
| 3586 | 141.2 | 3572 | 140.6 | | Bottom of | f 'A' Post | | 3601 | 141.8 | 3590 | 141.3 | | |
| 2529 | 99.6 | 2528 | 99.5 | Up | per Trailing | g Edge of | f Door | 2537 | 99.9 | 2537 | 99.9 | | |
| 2500 | 98.4 | 2483 | 97.8 | Lo | wer Trailing | g Edge of | f Door | 2497 | 98.3 | 2495 | 98.2 | | |
| | | | | | Steerin | g Column | 1 | | | | | | |
| | | | | 3146 | 123.9 | 3200 | 126.0 | | | | | | |
| | | | | Center of Se | ering Colu | mn to 'A' | Post (Horiz | ontal) | | | | | |
| | | | | 410 | 16.1 | 410 | 16.1 | | | | | | |
| | | | | Center of Ste | ering Colu | mn to He | adliner (Ve | rtical) | | | | | |
| | | | | 425 | 16.7 | 333 | 13.1 | | | | | | |

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

2004 CADILLAC DE VILLE

NHTSA Crash Test - #4837 - Front Impact

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

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

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 18.9 24.2 19.1

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

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

A = Maximum force per inch of damage without permanent damage, lb/in

B = Crush resistance per inch of damage width (Crash), lb/in^2

G = Energy dissipated without permanent damage, lb

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

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

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

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

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

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

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

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

2004 CADILLAC DE VILLE

NHTSA Crash Test - #4837 - Front Impact

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

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

Pre/Post Collision Crush Depths (inches)

Left Side Crush Centerline Crush Right Side Crush (Pass. Side)

(Driver Side) 18.9 24.2 19.1

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

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

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

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

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

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

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

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

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

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

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, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005

Make: CADILLAC Model: DEVILLE

| Test | Vehicle | No | | | | | | | |
|-----------------------------------|--|---------|---------|--------------------|-------|---------|--------------|-------|--------|
| Number | r Info | Damage | Average | e Closing Vehicle | | | Widtl | | |
| | | Speed | Crush | Speed | S t | iffness | | ı e s | Crush |
| | | (mph) | (inch) | (mph) | Α | В | G | Κv | Factor |
| 4691 | 2003 BUICK PARK AVENUE FOUR DOOR SEDAN | 5.0 | 21.2 | 29.8 | 272.9 | 63.6 | 585.6 | 91.9 | 16.7 |
| 3534 | 2001 BUICK PARK AVENUE FOUR DOOR SEDAN | 5.0 | 23.7 | 35.1 | 292.0 | 74.2 | 574.9 | 100.8 | 20.8 |
| 3520 | 2001 BUICK LESABRE FOUR DOOR SEDAN | 5.0 | 20.7 | 35.1 | 325.1 | 94.5 | 559.2 | 128.5 | 23.8 |
| 4238 | 2002 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 21.1 | 35.3 | 348.3 | 100.1 | 606.4 | 135.8 | 23.6 |
| 4837 | 2004 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 20.8 | 34.8 | 349.3 | 100.1 | 609.4 | 136.5 | 23.3 |
| 3282 | 2000 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 20.6 | 35.4 | 350.2 | 103.6 | 591.9 | 140.5 | 24.4 |
| 3274 | 2000 BUICK LESABRE FOUR DOOR SEDAN | 5.0 | 18.7 | 35.1 | 360.9 | 116.4 | 559.5 | 158.3 | 26.4 |
| 4490 | 2003 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 15.6 | 29.3 | 382.5 | 119.2 | 613.8 | 173.2 | 22.0 |
| 2193 | 1995 OLDSMOBILE AURORA FOUR DOOR SEDAN | 5.0 | 18.4 | 34.7 | 398.8 | 128.6 | 618.6 | 175.5 | 26.1 |
| | | Avanana | (A)(C) | | 242.0 | 100.0 | 504.0 | 427.0 | 22.0 |
| | | Average | (AVG) | | 342.2 | 100.0 | 591.0 | 137.9 | 23.0 |
| | | | 272.9 | 63.6 | 559.2 | 91.9 | 16.7 | | |
| | N | | 398.8 | 128.6 | 618.6 | 175.5 | 26.4 | | |
| Standard Deviation (STDev-sample) | | | | | 40.2 | 20.9 | 22.8 | 28.9 | 3.0 |
| | Num | 9 | | | | | | | |

Available Test Results Front Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005

Make: CADILLAC Model: DEVILLE

| Test Numbe | Vehicle r Info | No Damage | Max | • | • | e h i c l e | | • | 0 1 |
|---------------|--|----------------|-----------------|-------------|----------|--------------|-------------|--------------|-----------------|
| | | Speed (mph) | Crush (inch) | Speed (mph) | S t A | iffness B | S Valu G | ı e s∣ Kv | Crush Factor |
| 4691 | 2003 BUICK PARK AVENUE FOUR DOOR SEDAN | 5.0 | 22.3 | 29.8 | 260.2 | 57.8 | 585.6 | 83.5 | 15.9 |
| 3534 | 2001 BUICK PARK AVENUE FOUR DOOR SEDAN | 5.0 | 25.5 | 35.1 | 271.8 | 64.2 | 574.9 | 87.3 | 19.3 |
| 3520 | 2001 BUICK LESABRE FOUR DOOR SEDAN | 5.0 | 24.1 | 35.1 | 279.9 | 70.1 | 559.2 | 95.3 | 20.5 |
| 3282 | 2000 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 24.9 | 35.4 | 289.4 | 70.8 | 591.9 | 95.9 | 20.2 |
| 4238 | 2002 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 24.6 | 35.3 | 298.7 | 73.6 | 606.4 | 99.8 | 20.3 |
| 4837 | 2004 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 24.2 | 34.8 | 300.0 | 73.9 | 609.4 | 100.7 | 20.0 |
| 4490 | 2003 CADILLAC DE VILLE FOUR DOOR SEDAN | 5.0 | 18.3 | 29.3 | 326.3 | 86.7 | 613.8 | 126.0 | 18.8 |
| 2193 | 1995 OLDSMOBILE AURORA FOUR DOOR SEDAN | 5.0 | 22.0 | 34.7 | 334.2 | 90.3 | 618.6 | 123.3 | 21.9 |
| 3274 | 2000 BUICK LESABRE FOUR DOOR SEDAN | 5.0 | 19.8 | 35.1 | 339.6 | 103.1 | 559.5 | 140.1 | 24.8 |
| 4874 | 2003 CADILLAC SEVILLE FOUR DOOR SEDAN | 5.0 | 20.9 | 35.1 | 343.6 | 98.8 | 597.8 | 134.3 | 23.5 |
| | | Average (| (AVG) | | 304.4 | 78.9 | 591.7 | 108.6 | 20.5 |
| | | Minimum | (MIN) | | 260.2 | 57.8 | 559.2 | 83.5 | 15.9 |
| | N | /laximum | (MAX) | | 343.6 | 103.1 | 618.6 | 140.1 | 24.8 |
| | Standard Deviation | (STDev-sa | ample) | | 29.9 | 15.0 | 21.6 | 20.4 | 2.5 |
| | Num | ber of Tes | sts (n) | 10 | | | | | |

Stiffness Values and Test Data

Derived from

NHTSA Crash Test #3620

2001 BUICK PARK AVENUE

Provided By

4N6XPRT StifCalcs®

Registered to:

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

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Similar Vehicle database reader

You entered: 2001 CADILLAC DEVILLE

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

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

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

Test Information

| Test # 3620 | NHTSA Test Reference Guide Version # | V5 | | | | | | | | |
|-----------------------------|--|--------------------------------------|--|--|--|--|--|--|--|--|
| Test Date 2001-01-05 | Contract # | DTNH22-99-D-02041 | | | | | | | | |
| Contract/Study Title | NCAP SIDE IMPACT - 2001 BUICK PARK AVENUE 4 DO | OOR SEDAN - M10118 | | | | | | | | |
| Test Objective(s) | TO GENERATE COMPARATIVE SIDE IMPACT PERFORM | MANCE INFORMATION | | | | | | | | |
| Test Type | NEW CAR ASSESSMENT TEST | Configuration IMPACTOR INTO VEHICLE | | | | | | | | |
| Impact Angle | 270 Side Impact Poin | t N/A mm N/A inches | | | | | | | | |
| | Offset Distance | e 0 mm 0.0 inches | | | | | | | | |
| | Closing Speed | d 61.3 Km/Hr 38.09 MPH | | | | | | | | |
| Test Performer | KARCO ENGINEERING | | | | | | | | | |
| Test Reference # | M10118` | | | | | | | | | |
| Test Track Surface | CONCRETE Condition | DRY | | | | | | | | |
| Ambient Temperature | 14 C 57.2 F Total Number of Curves | 5 58 | | | | | | | | |
| Data Recorder Type | DIGITAL DATA ACQUISITION | Data Link OTHER | | | | | | | | |
| Test Commentary | NO COMMENTS | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | Fixed Barrier Information | | | | | | | | | |
| | | | | | | | | | | |
| Barrier Type | Pole Barrier Diameter | r mm inches | | | | | | | | |
| Barrier Shape | | | | | | | | | | |
| Barrier Commentary | | | | | | | | | | |

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2001 BUICK PARK AVENUE LEFT FRONT SEAT OCCUPANT

2001 BUICK PARK AVENUE LEFT FRONT SEAT OCCUPANT

| Test # | 3620 | | | | | |
|-----------|---------------------|----------------------|--------------------|---------------|----------------|------|
| Vehicle # | 2 | | Sex | MALE | | |
| Location | LEFT FRONT SE | AT | Age | 0 | | |
| Position | CENTER POSIT | ION | Height | 0 mm | 0.0 inc | hes |
| Type | NHTSA SIDE IM | PACT DUMMY | Weight | 0.0 kg | 0 por | unds |
| Size | 50 PERCENTILE | | | | | |
| Calil | bration Method | SIDE IMPACT DUMMY | | | | |
| Occupar | nt Manufacturer | MFG: FTSS, MODEL: SA | A-SID-M001, S/N: 2 | 74 | | |
| Occupa | ant Modification | NO COMMENTS | | | | |
| Occup | pant Description | PART 572F SIDE IMPAC | CT DUMMY (SID) | | | |
| Occupa | ant Commentary | CNTRC1: DOOR PANEL, | , CNTRL1: DOOR P | ANEL | | |
| | | | | | | |
| | | Restraints | S | | | |
| Restrair | nt # 1 3 POINT | | = | | | |
| Mounte | ed BELT - IN | NTEGRATED SEAT MOUN | Τ | | | |
| Deployr | ment NOT APF | PLICABLE | | | | |
| Restrair | nt Commentary | | | | | |
| Restrair | ot # 2 EDONTA | L AIRBAG | | | | |
| | | | | | | |
| Mounte | | | | | | |
| Deployr | ment DEPLOY | ED PROPERLY | | | | |
| Restrair | nt Commentary | FRONTAL PROTECTION | I AIRBAG | | | |

2001 BUICK PARK AVENUE LEFT REAR SEAT OCCUPANT

| _ | | | | | | | | | |
|--------------------|-----------------------|------------------|-------------|---------------------|--------------|---------------|---------------|--------|----|
| Test # 36 | 20 | | | | | | | | _ |
| Vehicle # 2 | | | | Sex | MALE | | | |] |
| Location LE | FT REAR SEA | Т | | Ago | 0 | | | | |
| Position NC | ON-ADJUSTAB | LE SEAT | | Heigh | 0 |] mm [| 0.0 | inches | ; |
| Type NF | HTSA SIDE IMF | PACT DUMMY | , | Weigh | t 0.0 | kg [| 0 | pound | ls |
| Size 50 | PERCENTILE | | |] | | | | | |
| Calibra | tion Method | SIDE IMPAC | T DUMMY | | | | | | |
| Occupant M | <i>l</i> lanufacturer | MFG: FTSS, | MODEL: S | A-SID-M001, S/N: | 057 | | | | |
| Occupant | Modification | NO COMME | NTS | | | | | | |
| Occupan | nt Description | PART 572F | SIDE IMPA | CT DUMMY (SID) | | | | | |
| Occupant | Commentary | CNTRC1: DC | OR PANEL | ., CNTRL1: DOOR | PANEL | | | | |
| Head to - | | | <u>Head</u> | | | | | | |
| Windshielde | r Header 0 | mm 0 . | 0 inch | es Head Injury | Criteria (H | HIC) | 790 | | |
| | indShield 0 | mm 0 . | | , , | ower Time | · - | | 55.7 | |
| ; | Seatback 692 | _ = | 7.2 inch | | oper Time | | ` ' | 60.1 | |
| | e Header 215 | _ = | | | | | ` , | | |
| | Window 340 | | 3.4 inch | es | | | | | |
| Neck to Seatb | ack 0 r | nm 0.0 | inches | | | | | | |
| F | First Contact Re | egion (Head) | C PILLAR | | | | | | |
| Seco | ond Contact Re | egion (Head) | | | | | | | |
| | | | | | | | | | |
| | | | Chest | | | | | | |
| Chest to - | | | | | | | | | |
| Das | sh 0 n | nm 0.0 | inches | Arm to Door | 107 n | nm 4 . | . 2 ir | nches | |
| Steering Whe | eel 0 n | nm 0.0 | inches | Hip to Door | 110 n | nm 4. | . 3 ir | nches | |
| Seatbac | ck 610 n | nm 24.0 | inches | | | | | | |
| Chest Seve | erity Index 0 | |] F | Pelvic Peak Lateral | Accelerati | ion (g's) | 61 | | |
| Thoracic Traun | ma Index 72 | | | Thorax Peal | Accelera | tion (g's | s) 0 | | |
| | Lap F | Belt Peak Load | 0 | Newtons 0.0 | pound F | orce | | | |
| | Shoulder E | Belt Peak Load | 0 | Newtons 0.0 | pound F | orce | | | |
| First Conta | act Region (Che | est/Abdomen) | OTHER | | | | | | |
| Second Conta | act Region (Che | est/Abdomen) | NONE | | | | | | |
| | | | <u>Legs</u> | | | | | | |
| Knees to Da | sh 0 m | nm 0.0 | | nees to Seatback | 131 n | nm 5 . | 2 ir | nches | |
| Left Femur F | | | | | ds Force | <u>U.</u> | <u>-</u> " | .550 | |
| Right Femur P | | | | | ds Force | | | | |
| = | First Contact R | | OTHER | <u></u> , pour | | | | | |
| | cond Contact R | | | | | | | | |
| | | J (J) | | | | | | | |

2001 BUICK PARK AVENUE LEFT REAR SEAT OCCUPANT

| Test # | 3620 | | | |
|-----------|---------------------|----------------------|--------------------|-------------------------------------|
| Vehicle # | 2 | | Sex | MALE |
| Location | LEFT REAR SEA | ΑT | Age | 0 |
| Position | NON-ADJUSTAE | BLE SEAT | Height | $\boxed{0}$ mm $\boxed{0.0}$ inches |
| Type | NHTSA SIDE IM | PACT DUMMY | Weight | 0.0 kg 0 pounds |
| Size | 50 PERCENTILE | | | |
| Cal | ibration Method | SIDE IMPACT DUMMY | | |
| Occupa | nt Manufacturer | MFG: FTSS, MODEL: SA | A-SID-M001, S/N: 0 | 57 |
| Occup | ant Modification | NO COMMENTS | | |
| Occu | pant Description | PART 572F SIDE IMPAC | T DUMMY (SID) | |
| Occupa | ant Commentary | CNTRC1: DOOR PANEL, | CNTRL1: DOOR P | PANEL |
| | | | | |
| | | Restraints | <u>5</u> | |
| Restrai | nt # 1 3 POINT | BELT | | |
| Mounte | ed BELT - C | ONVENTIONAL MOUNT | | |
| Deploy | ment NOT APF | PLICABLE | | |
| Restrai | nt Commentary | LEFT REAR PASSENGE | R, BELT ONLY | |

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

| T4 # | 2000 | | | | | | | | | | | | |
|-----------------|---------------|-------------|---------------|----------|---------------|-------------|------------------|----------------------|--------------|---------|---------------|-----------------|--------------|
| Test # | 3620 | | | _ | | | NII 1770 : 1 | - | | - | | | |
| VIN | | | | | | | | Test Vehic | | | | | |
| | 0 | | | | | | | l odification | | | | | |
| Make | NHTSA | ١ | | Post-te | st Stee | ring Co | lumn Shea | ar Capsule | Seperatio | n NOT | <u>APPLIC</u> | ABLE | |
| Model | DEFOR | RMABL | E IMPA | CTOR | | Steerin | ig Column | Collapse N | /lechanism | NOT | <u>APPLIC</u> | ABLE | |
| Body | NOT A | PPLIC/ | ABLE | | | | | | | | | | |
| Engine | NOT A | PPLIC/ | ABLE | | | | | | | | | | |
| Displacement | 0 | Lite | r Tra | ansmiss | sion N | IOT AP | PLICABLE | | | | | | |
| Vehicle Modific | cation(s) | Descri | ption [| NO CO | MMEN | TS | | | | | | | |
| Vehicle Comm | entary | NHTS | A SIDE | MPAC | ΓΜΟΥ | ING DE | FORMABL | E BARRIE | R (MDB) | 27 DEG | . CRAB | ANGLE | |
| Vehicle Len | | 4120 | mm | 162.2 | inche | | | G behind | | | mm | 43.5 | inches |
| Vehicle V | Width | 1676 | mm | 66.0 | inche | es | Center of | Damage | to CG Axis | 0 | mm | 0.0 | inches |
| Vehicle Whee | elbase | 2590 | mm | 102.0 | inche | es | Total Le | ngth of In | dentation | 0 | mm | 0.0 | inches |
| Vehicle Test W | Veight | 1361 | KG | 3000 | pour | nds | Maximum | Static Cru | ush Depth | 0 | mm | 0.0 | inches |
| | | | _ | | | | | Pre-Imp | act Speed | 61 | kph | 38.1 | mph |
| Vel | hicle Da | mage I | Index [| | | \neg | Prin | icipal Dired | • | | | | • |
| | | J | _ | | | _ | | ' | | | | | |
| | | | | | | | | | | | | | |
| Damage Pro | ofile Di | stance | <u>e Meas</u> | sureme | <u>ents</u> | | Crush fro | om Pre & | Post Tes | st Dam | age Me | <u>easuren</u> | <u>nents</u> |
| (Measu | ured Lef | t-to-Rig | jht, Rea | r-to-Fro | nt) | | | Pre-Tes | <u>st</u> | Post-To | <u>est</u> | Crush I | <u>Depth</u> |
| DPD 1 | 0 | mm | 0.0 | inche | s l | Left Bu | mper Corn | er 0.0 | inches | 0.0 | inches | s 0.0 | inches |
| DPD 2 | 0 | mm | 0.0 | inche | s | | | 0 |] mm | 0 | mm | 0 | mm |
| DPD 3 | 0 | mm | 0.0 | inche | s | | Centerlin | e 0.0 | inches | 0.0 | inches | s 0.0 | inches |
| DPD 4 | 0 | mm | 0.0 | inche | s | | Centenin | 0.0 | - | 0.0 | ₹ | 0.0 | |
| DPD 5 | 0 | mm | 0.0 | inche | | | | |] mm | |] mm | | _ |
| DPD 6 | <u> </u> | mm | 0.0 | inche | s Ri | ght Bur | mper Corne | er <u>0.0</u> | inches | 0.0 | inches | s 0.0 | inches |
| _ | | | | _ | | | | 0 | mm | 0 | mm | 0 | mm |
| | | | | | | | | | | | | | |
| Bumper E | Engagen | nent | | | | Sill En | gagement | | | | A-pillar E | Engagem | ent |
| (Inline Im | npact Or | nly) | | | | (Side I | Impact Onl | y) | | | (Side Ir | mpact On | ıly) |
| | 0.0 | | | [| | NOT A | PPLICABL | E | | | | 0.0 | |
| | | | | _ | | | | | | | | | _ |
| Moving | g Test C | art | | | Mo | oving T | est Cart/Ve | hicle | | Ve | hicle Ori | ientation | on Cart |
| Α | ngle | | | | | Crab | bed Angle | | | | Moving | g Test Ca | rt |
| DIRECT | ENGAG | EMEN. | Т | | | | 27.0 |] | | | NOT AP | PLICABL | .E |
| Magnitude | of the Tilt A | Angle | | | Ма | igniture of | the Crabbed A | ngle | | | Magnitud | le of the Angle | е |
| Measured be | etween sur | face of a | | | | Measure | e Clockwise fro | m | | Measure | d between | the Vehicle C |)rientation |
| Pollovor Tost | Cart and th | o Cround | 4 | , | ongitudin | al Vactor t | to Volocity Voct | or of Vahiala | | and | Direction | of Toot Cart I | Motion |

Vehicle 1 0 NHTSA DEFORMABLE IMPACTOR

| Test # | 3620 | | | | | | | | | |
|-----------------|---------------------------|---------------------|----------------|-----------------|---------------|------------------|---------------|-----------------|-----------|----------|
| VIN | | | | NH | ΓSA Test | Vehicle Nur | mber [1 | | | |
| Year | 0 | | | | | ication Indic | = | | VEHICLE | <u> </u> |
| | NHTSA | Post-te | st Steering | | | psule Sepe | = | | | |
| | DEFORMABLE | | | - | | apse Mechai | = | | | |
| | NOT APPLICAE | | | 3 | | | | | | |
| • | NOT APPLICAE | | | | | | | | | |
| Displacement | 0 Liter | Transmiss | ion NOT | APPLICA | BLE | | | |] | |
| Vehicle Modific | cation(s) Descript | ion NO CO | MMENTS | | | | | | _ | |
| Vehicle Comm | entary NHTSA | SIDE IMPAC | T MOVING | DEFORM | IABLE B | ARRIER (MI | DB) 27 | DEG. CRAB | ANGLE | |
| Vehicle Ler | | mm 162.2 | inches | | | ehind Front | _ | | 43.5 | inches |
| Vehicle \ | Width 1676 | mm 66.0 | inches | Cent | er of Dan | nage to CG | Axis 0 | mm | 0.0 | inches |
| Vehicle Whee | elbase 2590 | mm 102.0 | inches | Tota | al Length | of Indentat | ion 0 | mm | 0.0 | inches |
| Vehicle Test W | /eight 1361 | KG 3000 | pounds | Maxi | mum Sta | itic Crush De | pth 0 | mm | 0.0 | inches |
| | | | | | Pre | e-Impact Sp | eed 61 | kph | 38.1 |] mph |
| Ve | hicle Damage Ind | dex | | | Principa | I Direction o | f Force | 0 | | |
| | | | | | | | | | | |
| | | <u> Pre & F</u> | ost Tes | st Dama | <u>ige Me</u> | asureme | <u>nts</u> | | | |
| (Measureme | ents are taken in a longi | tudinaldirection. E | xcept for Engi | ne Block, all m | neasurement | ts are take from | the Rear \ | Vehicle Surface | forward.) | |
| L | eft Side | | | Cente | rline | | | Righ | t Side | |
| Pre-Test | Post-Te | st | Pre- | Test | Post- | -Test | Р | re-Test | | t-Test |
| mm inche | s mm ind | ches | mm | inches | mm | inches | mm | inches | mm | inches |
| | | | Leng | th of Vehi | icle at Ce | nterline | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | |
| | | | | Engine | e Block | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | |
| 0.0 | 0.0 |) | | Front Bun | nper Corr | ner | 0 | 0.0 | 0 | 0.0 |
| | | | | Front o | f Engine | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | |
| 0.0 | 0.0 |) | | Fire | wall | | 0 | 0.0 | 0 | 0.0 |
| | | | 0 | 0.0 | 0 | 0.0 | | | | |
| 0.0 | 0.0 | | | er Leadino | | | 0 | 0.0 | 0 | 0.0 |
| 0.0 | 0.0 | | Low | er Leading | | f Door | 0 | 0.0 | 0 | 0.0 |
| 0.0 | 0.0 | | | Bottom of | | | 0 | 0.0 | 0 | 0.0 |
| 0.0 | 0.0 | | | per Trailing | | | 0 | 0.0 | 0 | 0.0 |
| 0.0 | 0.0 | | Lov | wer Trailing | | | 0 | 0.0 | 0 | 0.0 |
| | | | | ` | Column | | | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | |
| | | Cei | | | | Post (Horizo | ntal) | | | |
| | | _ | 0 | 0.0 | 0 | 0.0 | | | | |
| | | Cer | | | | adliner (Ver | tical) | | | |
| | | | 0 | 0.0 | 0 | 0.0 | | | | |

4N6XPRT StifCalcs® licensed by 4N6XPRT Systems (www.4N6XPRT.com) to:

Vehicle 2 2001 BUICK PARK AVENUE

| Test # | 3620 | | | | | | | | | | |
|-----------------|---------------------|----------|-------------|-----------------|-------------------|--------------|------------|----------------|--------------|--------------|--------------|
| VIN | 1G4CW54K0 | 141363 | 64 | | NHTSA T | est Vehic | le Numbe | r 2 | | | |
| Year | 2001 | | | | Vehicle Me | odification | Indicator | PROD | UCTION | I VEHICL | .E |
| Make | BUICK | | Post-test | Steering Co | olumn Shear | r Capsule | Seperation | n UNKN | OWN | | |
| Model | PARK AVEN | UE | | Steerir | ng Column C | Collapse M | lechanism | UNKN | OWN | | |
| Body | FOUR DOOR | SEDAN | | | | | | | | | |
| Engine | V6 TRANSVE | ERSE FR | ONT | | | | | | | | |
| Displacement | 3.8 Lite | er Tra | ansmissioi | n AUTOM | ATIC - FRO | NT WHEE | L DRIVE | | | | |
| Vehicle Modific | cation(s) Descr | iption [| NO COM | MENTS | | | | | | | |
| Vehicle Comm | entary NO C | OMMEN | TS | | | | | | | | |
| Vehicle Len | ngth 5257 | mm | 207.0 | inches | C | G behind | Front Axle | 1255 | mm [| 49.4 | inches |
| Vehicle V | Width 1931 | mm | 76.0 | inches | Center of | Damage t | o CG Axis | -527 | mm [| -20.7 | inches |
| Vehicle Whee | elbase 2893 | mm | 113.9 | inches | Total Ler | ngth of Inc | dentation | 3450 | mm [| 135.8 | inches |
| Vehicle Test W | /eight 1968 | KG | 4338 | pounds | Maximum | Static Cru | sh Depth | 356 | mm [| 14.0 | inches |
| | | | | | | Pre-Impa | ct Speed | 0 | kph [| 0.0 | mph |
| Vel | hicle Damage | Index 1 | 0LPAW3 | | Princ | cipal Direc | tion of Fo | rce 297 | , | | |
| Damage Pro | ofile Distanc | e Meas | suremen | <u>ts</u> | Crush fro | m Pre & | Post Tes | st Dama | age Me | asurem | <u>ients</u> |
| (Measu | ured Left-to-Rig | ght, Rea | r-to-Front) | | | Pre-Tes | t | Post-Te | est | Crush [| Depth |
| DPD 1 2 | 28 mm | 1.1 | inches | Left Bu | mper Corne | r 0.0 | inches | 0.0 | inches | 0.0 | inches |
| DPD 2 | 2 76 mm | 10.9 | inches | | · | 0 | mm | 0 | mm | 0 | mm |
| DPD 3 | 347 mm | 13.7 | inches | | Centerline | 0.0 | inches | 0.0 | inches | 0.0 | inches |
| DPD 4 | 288 mm | 11.3 | inches | | Certterinie | 0.0 | mm | 0.0 | mm | 0.0 | mm |
| DPD 5 | 50 mm | 2.0 | inches | | | | | | 1 | | • |
| DPD 6 | 6 mm | 2.2 | inches | Right Bu | mper Corne | | inches | 0.0 | inches | 0.0 | inches |
| | | | | | | 0 | mm | 0 | mm | 0 |] mm |
| 5 - | | | | 0:11 = | | | | | = | | |
| | Ingagement | | | | gagement | ` | | | • | ngagem | |
| | pact Only) | | _ | - | Impact Only | | | 1 | | pact On | \у) П |
| 2 | 7.0 | | | DIRECT | ENGAGEME | ENI | | | 9 | 0.0 | J |
| Moving | Test Cart | | | Moving T | est Cart/Vel | nicle | | Veh | nicle Orie | entation o | on Cart |
| A | ngle | | | Crab | bed Angle | | | | Moving | Test Car | t |
| NOT A | PPLICABLE | _ | | | 0.0 | | | DIR | ECT EN | GAGEM | ENT |
| _ | of the Tilt Angle | | | Magniture of | f the Crabbed An | gle | | | - | of the Angle | |
| | etween surface of a | | | Measure | e Clockwise fron | n | | Measured | between th | ne Vehicle O | rientation |
| Rollover Test | Cart and the Groun | d | Long | itudinal Vector | to Velocity Vecto | r of Vehicle | | and L | Direction of | Test Cart N | 1otion |

Vehicle 2 2001 BUICK PARK AVENUE

| Test # | 3620 | | | | | | | | | |
|-----------------|--------------|-----------|--------|-----------|--------------|-----------------------------|---------------------|--------|---------|--------|
| VIN | 1G4CV | N54K01 | 41363 | 64 | | NHTSA Test Vehicle Nu | umber 2 | | | |
| Year | 2001 | | | | | Vehicle Modification Indi | icator PROD | OUCTIO | N VEHIC | LE |
| Make | BUICK | | | Post-test | Steerin | Column Shear Capsule Sep | eration UNKN | IOWN | | |
| Model | PARK | AVENU | E | | St | ering Column Collapse Mecha | anism UNKN | IOWN | | |
| Body | FOUR | DOOR S | SEDAN | | | | | | | |
| Engine | V6 TR | ANSVE | RSE FF | RONT | | | | | | |
| Displacement | 3.8 | Liter | Tr | ansmissio | on AU | OMATIC - FRONT WHEEL DR | RIVE | | | |
| Vehicle Modific | cation(s) |) Descrip | tion | NO COM | MENTS | | | | | |
| Vehicle Comm | entary | NO CO | MMEN | ITS | | | | | | |
| Vehicle Len | ngth | 5257 |] mm | 207.0 | inches | CG behind Fron | t Axle 1255 | mm | 49.4 | inches |
| Vehicle V | Vidth | 1931 |] mm | 76.0 | inches | Center of Damage to CO | 3 Axis -527 | mm | -20.7 | inches |
| Vehicle Whee | elbase | 2893 |] mm | 113.9 | inches | Total Length of Indenta | ation 3450 | mm | 135.8 | inches |
| Vehicle Test W | /eight | 1968 | KG | 4338 | pounds | Maximum Static Crush D | Depth 356 | mm | 14.0 | inches |
| | | | | | | Pre-Impact S | peed 0 | kph | 0.0 | mph |
| Vel | hicle Da | ımage Ir | ndex 1 | 0LPAW3 | | Principal Direction | of Force 297 | 7 | | |
| | | | | | | | | | | |

Pre & Post Test Damage Measurements

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

| Le | ft Side | Center | line | 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 Vehic | cle at Centerline | | | | | | |
| | | 0.0 | 0.0 | | | | | | |
| | | Engine | Block | | | | | | |
| | | 0.0 | 0.0 | | | | | | |
| 0.0 | 0.0 | Front Burn | per Corner | 0 | 0.0 | 0 | 0.0 | | |
| | | Front of | f Engine | | | | | | |
| | | 0.0 | 0.0 | | | | | | |
| 0.0 | 0.0 | Fire | wall | 0 | 0.0 | 0 | 0.0 | | |
| | | 0.0 | 0.0 | | | | | | |
| 0.0 | 0.0 | Upper Leading | Edge of Door | 0 | 0.0 | 0 | 0.0 | | |
| 0.0 | 0.0 | Lower Leading | Edge of Door | 0 | 0.0 | 0 | 0.0 | | |
| 0.0 | 0.0 | Bottom of | 'A' Post | 0 | 0.0 | 0 | 0.0 | | |
| 0.0 | 0.0 | Upper Trailing | Edge of Door | 0 | 0.0 | 0 | 0.0 | | |
| 0.0 | 0.0 | Lower Trailing | Edge of Door | 0 | 0.0 | 0 | 0.0 | | |
| | | Steering | Column | | | | | | |
| | | 0.0 | 0.0 | | | | | | |
| | | Center of Seering Colum | nn to 'A' Post (Hori | izontal) | | | | | |
| | | 0.0 | 0.0 | | | | | | |
| | | Center of Steering Colur | nn to Headliner (V | ertical) | | | | | |
| | | 0.0 | 0.0 | | | | | | |

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2001 BUICK PARK AVENUE

NHTSA Crash Test - #3620 - Side Impact

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

Test Vehicle Weight = 4338 pounds

Impactor Weight = 3000

KE Equivalent Speed = 24.4 MPH

Impactor Test Speed = 38.1

Test Crush Length = 135.8 inches

Damage Profile Distance Collision Crush Depths (inches)

| | DPD1 | DPD2 | DPD3 | DPD4 | DPD5 | DPD6 | (C |
|--------|------|------|------|------|------|------|------------|
| (Rear) | 1 1 | 10.9 | 13.7 | 11.3 | 2.0 | 22 | (Front) |

CRASH 3 Stiffness Coefficents SMAC Stiffness Α В G K۷ Minimum Crush = inches 12550.3 1.1 Using a Rated No Damage Speed of 543.6 1.0mph 11540.8 12.8 Using a Rated No Damage Speed of 2.0mph 1040.6 10573.6 51.2 Using a Rated No Damage Speed of 3.0mph 1491.1 115.2 9648.8 Using a Rated No Damage Speed of 2252.4 320.0 5.0mph 7926.1 Average Crush = 7.9 243.3 inches Using a Rated No Damage Speed of 1.0mph 75.7 223.8 12.8 Using a Rated No Damage Speed of 2.0mph 144.9 205.0 51.2 Using a Rated No Damage Speed of 207.6 187.1 115.2 3.0mph Using a Rated No Damage Speed of 5.0mph 313.6 153.7 239.9 Maximum Crush = 13.7 inches 80.9 Using a Rated No Damage Speed of 43.6 74.4 1.0mph 12.8 Using a Rated No Damage Speed of 2.0mph 83.6 68.2 51.2 Using a Rated No Damage Speed of 3.0mph 119.7 62.2 115.2 Using a Rated No Damage Speed of 5.0mph 180.8 51.1 320.0

Normal "Rated No Damage Speed" is 2.5 or 5 mph. Some Specific vehicles may, however, have a higher rating

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

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

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

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

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

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

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

Rated No Damage Speed = Impact speed with a barrier resulting in no permanant vehicle deformation

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, Ib

Kv = Crush resistance per inch of damage width (SMAC), lb/in^2

4N6XPRT StifCalcs®

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005

Make: CADILLAC Model: DEVILLE

| Test | Vehicle | No | | | | | | | |
|--------|--|-------------|---------|-------|-------|---------|------|-------|--------|
| Number | r Info | Damage | Average | | I n | dention | Lenç | g t h | |
| | | Speed | Crush | KEES | S t | iffness | Valu | ı e s | Crush |
| | | (mph) | (inch) | (mph) | Α | В | G | Kv | Factor |
| 3202 | 2000 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 6.8 | 21.3 | 104.1 | 146.6 | 37.0 | 178.6 | 26.5 |
| 3291 | 2000 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 9.2 | 25.2 | 140.5 | 176.7 | 55.8 | 208.6 | 27.5 |
| 2387 | 1996 BUICK RIVIERA TWO DOOR COUPE | 2.0 | 8.1 | 21.3 | 143.7 | 170.0 | 60.8 | 207.1 | 22.2 |
| 3819 | 2001 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 6.6 | 25.0 | 144.4 | 252.8 | 41.3 | 298.6 | 38.1 |
| 3620 | 2001 BUICK PARK AVENUE FOUR DOOR SEDAN | 2.0 | 7.9 | 24.4 | 144.9 | 205.1 | 51.2 | 243.5 | 30.0 |
| 3300 | 2000 CADILLAC DE VILLE FOUR DOOR SEDAN | 2.0 | 9.6 | 24.5 | 145.8 | 170.9 | 62.2 | 202.6 | 25.0 |
| 4777 | 2001 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 9.9 | 21.4 | 154.8 | 151.4 | 79.2 | 184.2 | 18.5 |
| | | Average | (AVG) | | 139.8 | 181.9 | 55.3 | 217.6 | 26.8 |
| | | Minimum | (MIN) | | 104.1 | 146.6 | 37.0 | 178.6 | 18.5 |
| | | Maximum | (MAX) | | 154.8 | 252.8 | 79.2 | 298.6 | 38.1 |
| | Standard Deviation | n (STDev-sa | ample) | | 16.3 | 36.6 | 14.1 | 41.4 | 6.2 |
| | Nu | mber of Te | sts (n) | 7 | | | | | |

Registrered Owner: TUCRRC Serial Number: 12R-110829SC03101

4N6XPRT StifCalcs®

Available Test Results Side Impact Test Summary

Report Filter Settings

Year Range: 2000 - 2005

Make: CADILLAC Model: DEVILLE

| Test | Vehicle | No | | | | | | | |
|-------|--|-------------|---------|-------|-------|---------|------|-------|--------|
| Numbe | r Info | Damage | Max | | I n | dention | Leng | j t h | |
| | | Speed | Crush | KEES | S t | iffness | Valu | e s | Crush |
| | | (mph) | (inch) | (mph) | Α | В | G | Κv | Factor |
| 3202 | 2000 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 13.5 | 21.3 | 52.9 | 37.9 | 37.0 | 46.2 | 13.5 |
| 3819 | 2001 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 15.0 | 25.0 | 63.4 | 48.7 | 41.3 | 57.5 | 16.7 |
| 3620 | 2001 BUICK PARK AVENUE FOUR DOOR SEDAN | 2.0 | 14.0 | 24.4 | 81.7 | 65.1 | 51.2 | 77.3 | 16.9 |
| 3291 | 2000 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 15.5 | 25.2 | 83.4 | 62.3 | 55.8 | 73.6 | 16.4 |
| 2387 | 1996 BUICK RIVIERA TWO DOOR COUPE | 2.0 | 13.4 | 21.3 | 87.5 | 63.0 | 60.8 | 76.8 | 13.5 |
| 3300 | 2000 CADILLAC DE VILLE FOUR DOOR SEDAN | 2.0 | 14.8 | 24.5 | 94.4 | 71.7 | 62.2 | 85.0 | 16.2 |
| 4777 | 2001 BUICK LESABRE FOUR DOOR SEDAN | 2.0 | 14.4 | 21.4 | 106.6 | 71.8 | 79.2 | 87.3 | 12.7 |
| | | Average (| (AVG) | | 81.4 | 60.1 | 55.3 | 71.9 | 15.1 |
| | | Minimum | (MIN) | | 52.9 | 37.9 | 37.0 | 46.2 | 12.7 |
| | | Maximum | (MAX) | | 106.6 | 71.8 | 79.2 | 87.3 | 16.9 |
| | Standard Deviation | n (STDev-sa | ample) | | 18.2 | 12.5 | 14.1 | 14.9 | 1.8 |
| | Nu | mber of Tes | sts (n) | 7 | | | | | |

Registrered Owner: TUCRRC Serial Number: 12R-110829SC03101

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,

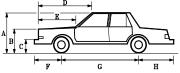
We at 4N6XPRT Systems in conjunction with the Tulsa University Crash Reconstruction Research Consortium (TUCRRC) were pleased to be able to provide you with the preceding data for the crash test vehicles.

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,

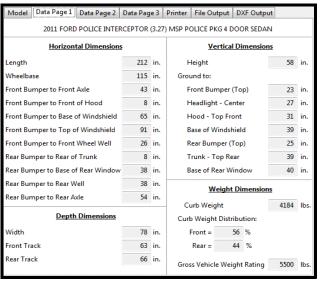
Daniel W. Vomhof III Daniel W. Vomhof, Ph.D.



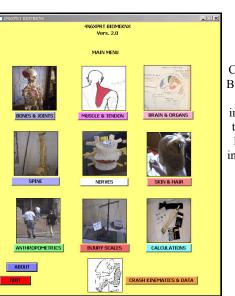
Expert AutoStats[®]

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

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



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 BioMeknxTM, you would need a minimum of 10-15 Anatomy and Physiology, Human Factors, and Biomechanics books, as well as conduct over 50 hours of internet research.

3FAPP1280MR117253

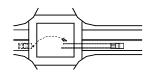
Expert VIN DeCoder®



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

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

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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.

A=? B=? CF=? 4N6XPRT StifCalcs®

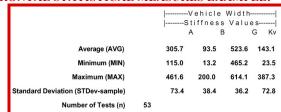
4N6XPRT StifCalcs®. Is a program which puts the NHTSA Crash Test database at your fingertips with no need to access the internet in order to obtain Stiffness Values!

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

WITHOUT THE INTERNET the user can:

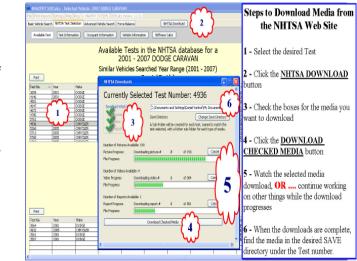
- ★ Lookup individual tests and get basic front, side, and rear STIFFNESS VALUES from these tests. The values are based on the reported crush depths and lengths within each test.
- ★ Obtain Similar Vehicle group summary STIFFNESS data with Statistical measures.
- ★ Create "CLASS" vehicles and get summary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

FRONTAL STATISTICAL MEASURES EXAMPLE:



WITH THE INTERNET the user can:

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



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| | Zip for where the cred | it card bill is s | sent:, not where we would send the data or product to) |
| (This i | s the zip code that the credit co | ırd bill would go to | n, not where we would send the data or product to) |
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| xpert TireStuf®: | \$ 85.00 * | \$ | YEAR & MAKE: |
| N6XPRT StifCalcs®: | \$ 650.00 * | \$ | MODEL: |
| xpert VIN DeCoder®: | \$ 550.00 * | \$ | |
| | CUD TOTAL | ====== | If you are requesting VIN DeCoder & AutoStats please also provide: |
| 41: **. | SUB-TOTAL | \$ | Vehicle Type:Car - Pickup - Utility - Van |
| andling **: (Cash or Check with order | u = \$5.00 Cuadit Cand = \$ | \$ | No. of Doors:2/3/4/5 |
| , | se Order = \$15.00) | 10.00, | Car Body Style:Coupe/Conv./Sedan/Wagon DRIVE WHEELS: 4x2 / 4x4 |
| otarized Affidavit Filing Requir | | \$ | PICKUPS:Dual Rear Wheel - Std. / Extra / Super / Crew Cab - Short Bed / Long Bed |
| | red Notarized Signature) | Ψ | VANS:Cargo / Passenger - Short / Long Wheelbase |
| | | | VIN Information |
| | s via electronic download | ¢ 0.00 | |
| - Deliver via electronic download lir - Deliver on USB - additional cost | | \$ 0.00 \$ | $\frac{1}{2}$ $\frac{2}{3}$ $\frac{4}{5}$ $\frac{6}{6}$ $\frac{7}{8}$ $\frac{9}{9}$ |
| Benver on OBB auditional cost | or \$55.00 / disk / program | ====== | |
| | SUB-TOTAL | \$ | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ |
| alifornia shipping addresses add | 8 50% sales tav | \$ | NHTSA Crash Test Information |
| California orders delivered electronic | | Ψ | Impact location - Front / Side / Rear Impact Speed - Lower / Higher |
| | · —— | \$ | impact speed "Lower," Higher |
| | 101/11 | | Case Reference/Number: |
| | | | |
| | | | |
| | | | |
| Authorized signatur | e: | | |

Individual Vehicle Data Search Service®

Charges & Services

Individual Vehicle Specifications

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

Medium/Heavy Truck Specifications

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

Motorcycle Specifications (1970+)

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

NHTSA Crash Test Results

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

Individual Vehicle Specifications

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

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

Minimum Vehicle specifications include:

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

Model years with No Significant Dimensional Changes VIN DeCoding when VIN is provided Information available

Mid-60's to present **also includes** (when available)
Front/Rear Overhang
Bumper Heights

Hood height Turning Circle
Bumper-to-hood Ground-to-hood

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

NHTSA Crash Test Results

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

4N6XPRT Systems[®]

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

Expert Systems Software Programs for Litigation

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

Vehicle Data Service

Individual Vehicle Data Search Service®

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

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

E-Mail: 4n6@4n6xprt.com

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

Expert VIN DeCoder®

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

Modules: 1981 to Present

Control Module - One Required per Set

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

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

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

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

SYSTEM REQUIREMENTS

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

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

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

PLEASE PRINT

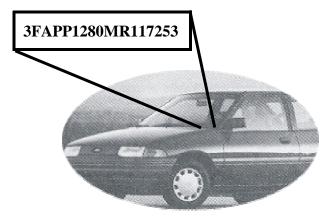
| City: | State: 7in: |
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| SUB-TOTAL = \$ | |
| E-Maii: | |
| Evpert VIN | DeCoder® |
| | |
| | |
| (Check with ord | ler = \$5.00, Credit Card = \$10.00, Govt. P.O.r = \$15.00) |
| Notarized A | Affidavit Filing Requirement \$ |
| | (\$25.00 per required Notarized Signature) |
| ☐ - Deliver via e | lectronic download link (e-mail address required) \$ 0.00 on USB at an additional cost of \$35.00 per disk \$ |
| CA A 11 | SUB-IUIAL = \$ |
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| Mail to: | 4N6XPRT Systems® |
| | |
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| Telephone (| |
| | onday-Friday - 9:30am-5:00pm PST |
| | (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 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:

Enter VIN Numbers to be DeCoded: 3FAPP1280MR117253 1)

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

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.

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

Expert AutoStats®

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

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

SYSTEM REQUIREMENTS

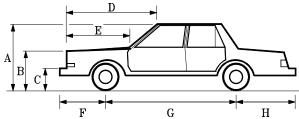
Expert AutoStats® has been tested on a wide variety of IBM laptop and desktop clones ranging from 8088 through Pentium® chips. A math coprocessor chip is NOT required. Expert AutoStats® has also been tested under the various versions of MS-DOS 3.0 thru 7.0, DrDOS 6.0, and PC DOS 7.0. It also works as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

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

PLEASE PRINT

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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: <u>autostats@4n6xprt.com</u>

1-800-266-9778

Orders will be shipped Priority Mail within 10 working days of receipt of order.

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* Checks MUST be drawn from a bank in the U.S.A.

Select Your Vehicle

| Expert AutoStats® | Model Data Page 1 | Data Page 2 | Data Page 3 | Printer | File Output D | (F Output | | |
|--|-------------------------|-----------------|-------------|------------|----------------|-------------|----------|------|
| Version 5.2.0.2 Serial Number: | Make of Vehicle | FORD | | | Select the Ma | nufacture | from | the |
| 12R-930512AQ03201 | Year of Vehicle | 2011 | | | list below. | | | |
| Copyright© 1991-2012 | Model of Vehicle | | | | Once a Manu | facturer h | s heer | |
| Expert Witness Services, Inc | 2000,000,000 A 50,000 A | | | | Selected the I | | | |
| All Rights Reserved | Number of Doors | | | | Models will b | e below. | | |
| Introduction | Bodystyle of Vehicle | | | | Fill in the em | atu bawas t | a tha I | -61 |
| | Car Pickup | | | | to parrow the | | o tile i | CIL |
| Examine Vehicle Specs | Van Utility | Other | | Clear | | | | _ |
| rint Blank Vehicle Spec Form | Manufact | | St | art Year | End | Year | | 9 83 |
| anufacturers & Years Available | FORD | | | 930 | 2012 | | | |
| ASHTO Design Vehicle Specs | FRAZER FRAZER NASH | | | 947 948 | 1951 1957 | | | |
| | FUNKE & WILL | | | 002 | 2004 | | | Ė |
| Data Definitions | GENERIC | | | 979 | 1989 | | | 1 |
| About Expert Autostats® | GEO | | | 987 | 1998 | | | |
| About expert Autostatse | GLAS | | | 963 | 1966 | | | |
| << <exit autostats®="">>></exit> | GMC | | | 947 | 2011 | | | į. |
| PROVIDED BY: | Model | | | Body St | vle | WB (in) | OAL | (in |
| 4N6XPRT Systems | FUSION HYBRID | | | | SEDAN | 108 | 191 | |
| 8387 University Avenue | MUSTANG | | | | COUPE | 107 | 188 | |
| La Mesa CA 91941 | MUSTANG | | | | CONVERTIBLE | 107 | 188 | |
| 12R-930512AO03201 | MUSTANG GT | | | 2 DOOF | COUPE | 107 | 188 | |
| 121(-330312AQ03201) | MUSTANG GT | | | 2 DOOF | CONVERTIBLE | 107 | 188 | |
| 4N6XPRT Systems® | MUSTANG SHELBY | GT500 | | 2 DOOF | COUPE | 107 | 188 | |
| Forensic Expert Software | MUSTANG SHELBY | | | | CONVERTIBLE | 107 | 188 | |
| La Mesa, CA 91942-9342 | POLICE INTERCEPT | | | | SEDAN | 115 | 212 | |
| (619) 464-3478 / (800) 266-9778 | POLICE INTERCEPT | OR (3.55) MSP P | OLICE PKG | | SEDAN | 115 | 212 | |
| Fax: (619) 464-2206 | RANGER 112WB | | | | 4X2 PICKUP | 112 | 188 | -0 |
| www.4N6XPRT.com | RANGER 112WB | | | | 4X4 PICKUP | 112 | 188 | |
| 4N6@4N6XPRT.com | RANGER 118WB | | | 2 DOOF | 4X2 PICKUP | 118 | 200 | |

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

Screen 1

| Model Data Page 1 Data Page 2 | Data Pag | e 3 | Printer | File Outp | ut D | XF Outp | ut | |
|------------------------------------|----------|-------|---------------------|--------------------------|--------|---------|------|------|
| 2011 FORD POLICE INTER | RCEPTOR | (3.27 |) MSP P | OLICE PKG | 4 DO | OR SEDA | N | |
| Horizontal Dimensions | | | Vertical Dimensions | | | | | |
| Length | 212 | in. | H | leight | | | 58 | in. |
| Wheelbase | 115 | in. | Grou | und to: | | | | |
| Front Bumper to Front Axle | 43 | in. | F | ront Bump | er (To | p) | 23 | in. |
| Front Bumper to Front of Hood | 8 | in. | F | leadlight - | Cente | r | 27 | in. |
| Front Bumper to Base of Windshield | 65 | in. | H | Hood - Top Front | | | | in. |
| Front Bumper to Top of Windshield | 91 | in. | В | Base of Windshield | | | | in. |
| Front Bumper to Front Wheel Well | 26 | in. | R | Rear Bumper (Top) | | | | in. |
| Rear Bumper to Rear of Trunk | 8 | in. | Т | runk - Top | Rear | | 39 | in. |
| Rear Bumper to Base of Rear Window | 38 | in. | В | ase of Rea | r Wind | low | 40 | in. |
| Rear Bumper to Rear Well | 38 | in. | | Wei | aht Di | mensior | ne . | |
| Rear Bumper to Rear Axle | 54 | in. | _ | | | mension | | |
| Depth Dimensions | | | | urb Weight b Weight D | | tion: | 4184 | lbs. |
| Width | 78 | in. | | Front = | 56 | % | | |
| Front Track | 63 | in. | | Rear = | 44 | % | | |
| Rear Track | 66 | in. | Gros | ss Vehicle \ | Veight | Rating | 5500 | lbs. |

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

| Model D | ata Page 1 | Data Page 2 | Data | Page 3 | Printer | File Output | DXF Output | | |
|--|--------------|-------------|---------|----------|--------------------------------------|---------------|------------|-----|-----|
| | 2011 FORE | POLICE INT | ERCEPT | TOR (3.2 | 7) MSP P | OLICE PKG 4 E | OOR SEDAN | | |
| Ace | celeration/ | Braking | | | | | | | |
| Acceleratio | n 0-30 mph | 13.8 | ft/sec | 2 | | Bumper Stre | ngth | 2.5 | mp |
| Acceleratio | n 0-60 mph | 9.8 | ft/sec | 2 | | Steering Rati | io | :1 | |
| Acceleratio | n 45-65 mp | h 6.5 | ft/sec | 2 | | Interior | Dimensions | | |
| Braking 60- | 0 mph | 138 | feet | | | Front Should | | 61 | in. |
| Drive Whee | els | | REAR | | | Front Head I | Room | 40 | in. |
| Turn Circle | (Diameter) | | 40 | feet | | Front Leg Ro | oom | 42 | in. |
| Turn Circle (Diameter) Number of Wheels Wheel Radius | | | 4 12 | | Rear Shoulder Room Rear Head Room | er Room 6 | 60 | in. | |
| | | | | | | oom | 38 | in. | |
| Tire Size | | P235/ | 55R17 | | | Rear Leg Roo | om | 38 | in. |
| ALL DISC | - ALL WHEE | L ABS | | | | | | | |
| 3pt - front | and rear - I | FRONT SEAT | AIRBA | GS | | | | | |
| 4spd AUT | OMATIC | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| N.S.D.C. = | 2011 - 20 | 11 | | | | | | | |
| | = Not in D | atabase | | | | | | | |
| | | | | | | | | | |

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

| Model Data Page 1 Da | ata Pag | je 2 Dat | a Page 3 | Printer | File O | utput | DXF Ou | tput | |
|------------------------------|----------|-----------|------------|------------|----------|---------|-----------|-------|------------|
| 2011 FORD PC | OLICE II | NTERCEP | TOR (3.2 | 7) MSP P | OLICE P | KG 4 E | OOR SEI | DAN | |
| | | Ang | gle Meas | urement | <u>s</u> | | | | |
| Angle Front Bumper to Ho | ood Fro | ont | = | | 45.0 | degre | ees | | |
| Angle Front of Hood to W | indshie | eld Base | = | | 8.0 | degre | ees | | |
| Angle Front of Hood to W | indshie | eld Top | = | | 16.8 | degre | ees | | |
| Angle of Windshield | | | = | | 33.2 | degre | es | | |
| Angle of Steering Tires at I | Max Tu | ırn | = | | 27.5 | degre | ees | | |
| | | C | enter of | Gravity | | | | | |
| Inches from ground | = | 22.77 | | Inch | es from | side o | f vehicle | = | 39.00 |
| Inches behind front axle | = | 50.60 | | Inche | s in fro | nt of n | ear axle | = | 64.40 |
| Inches from front bumper | = [| 93.60 | | Inch | es from | rear b | umper | = | 118.40 |
| Inches from front corner | = | 101.40 | | Inch | es from | rear c | orner | = | 124.66 |
| Tip-Over Stability Ratio | | | | = | 1.4 | 11 | Stable | | |
| NHTSA Static Stability Fac | tor (ca | lculated) | Star Ratir | ng | = | | **** | | |
| | | M | oments o | of Inertia | | | | | |
| Yaw Moment of Inertia | | | | = | | | 31 | 03.52 | lb*ft*sec² |
| Pitch Moment of Inertia | | | | = | | | 29 | 93.16 | lb*ft*sec² |
| Roll Moment of Inertia | | | : | = | | | 6 | 03.12 | lb*ft*sec² |

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

| Model Data Page 1 Data Page 2 Da | ta Page 3 Prin | ter File Outpu | ut DXF Output | | | | | |
|---|------------------|------------------|--------------------------|--|--|--|--|--|
| 2011 FORD POLICE INTERCE | PTOR (3.27) MS | P POLICE PKG | 4 DOOR SEDAN | | | | | |
| 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 manufacturing variations from vehcle to vehicle. Whenever feasible, the vehicle in question or an exemplar vehicle should be measured TO VERIFY DATA IMPORTANT TO YOUR CASE. The provision of the DXF output is provided as an aide to your evaluation. It is not meant to be the final drawing of the vehicle. | | | | | | | | |
| DXF File Name 2011_FORD_POLICE_IN | NTERCEPTOR_(3 | .27)_MSP_POLI | CE_PKG_4_DOOR_SEDAN_ | | | | | |
| Length | 212 | Inches | Drawing Notation | | | | | |
| Wheelbase | 115 I | Inches | ⊚ On | | | | | |
| Width | 78 | 78 Inches | Off | | | | | |
| Front Track | 63 | Inches | Units | | | | | |
| Rear Track | 66 | Inches | Inches | | | | | |
| Front Overang | 43 | Inches | ⊚ Feet | | | | | |
| Bumper to Base of windshield | 65 | Inches | Meters | | | | | |
| Bumper to Top of windshield | 91 | Inches | | | | | | |
| Rear Bumper to Base of Rear window | 38 | Inches | | | | | | |
| Rear Bumper to Top of Rear window 64 Inches | | | | | | | | |
| Front Tire Diameter 24 Inches | | | | | | | | |
| Rear Tire Diameter | 24 | Inches | | | | | | |
| CG behind Front axle | 50.6 | Inches | DXF Output | | | | | |

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

| The Crash Zone 8.1 - (5) | | |
|--|---|-------|
| | ps Text/Dimension Utilities Recon 30 Window Help | . 6 × |
| D 😅 🔛 🙏 🕪 🛝 6 | § ା ଦ ଦ ାଲ୍ଲା ଲ ାଜ୍ୟ ଲୋକ୍କ୍ଲୋକ୍କ୍ୟ କ୍ଷାଣ୍ଡ ହେଉ | |
| Line Types | FRONT of 2001 FORD CROWN VICTORIA 4.6L MSP POLICE PACKAGE 4DR SEDAN | ^ |
| <u> </u> | 0 | |
| | | æ |
| Quick Pidk Draw / Snaps / Hotch Une Types Edit | DXF Output Data Length: 17.67 Feet Width: 6.50 Feet | |
| A Text/Dimensions Street The View Recon | Front bumper to Front Asie: 3.67 Feet Wheelbase: | |
| Symbols (ii) Templates (iii) Forms (iii) Learning Center | Rear Track: 5.33 Feet CG behind Front Axie: 4.31 Feet | ¥ |
| Select Objects : Selection Too | A 282.06" D 8.05" X 1.76" Y - 8.36 | |

4N6XPRT StifCalcs®

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

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

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

The User can - WITHOUT the need for the internet:

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

SYSTEM REQUIREMENTS

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

- ★ Obtain Similar Vehicle group summary STIFFNESS VALUES with Statistical measures.
- ★ Create "CLASS" vehicles and get summary STIFFNESS VALUES with Statistical measures.

FRONTAL STATISTICAL MEASURES **EXAMPLE:**

| | Vehicle Width Stiffness Values | | | | | | |
|----|-------------------------------------|---------------------------------|--|--|--|--|--|
| | A B G K | | | | | | |
| | 305.7 | 93.5 | 523.6 | 143.1 | | | |
| | 115.0 | 13.2 | 465.2 | 23.5 | | | |
| | 461.6 | 200.0 | 614.1 | 387.3 | | | |
| | 73.4 | 38.4 | 36.2 | 72.8 | | | |
| 53 | | | | | | | |
| | 53 | 305.7 115.0 461.6 73.4 | 305.7 93.5 115.0 13.2 461.6 200.0 73.4 38.4 | Stiffness Value A B 305.7 93.5 523.6 115.0 13.2 465.2 461.6 200.0 614.1 73.4 38.4 36.2 | | | |

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

★ RESEARCH and easily download the

PICTURES, VIDEOS. and

REPORTS

that are available for the individual tests

| MODERT STOTE Date: A Solution of Vehicle 2000 Per Propost Serges Rep Prop 10 410 991 15 Basic Vehicle Search MellSA Test Selection Advanced Vehicle Search MellSA Test Selection Advanced Vehicle Search MellSA Test Deformation Occupants | ISTORIS SPECIAS Version (3.2.0.) | Steps to Download Media from the NHTSA Web Site |
|--|---|--|
| · | 2001 - 2007 DODGE CARAVAN | 1 - Select the desired Test |
| Print No. Year Males 3002 2001 DODGE 4146 2001 DODGE | 2 MIREL Brooks & | 2 - Click the <u>NHTSA DOWNLOAD</u> button |
| 201 | | 3 - Check the boxes for the media you want to download |
| 5/00 2005 CREVAR LOVA NOOP TO BRIDGE | Picture Program: Conelisating picture 4 2 of 120 Caroli Plan Program: Conelisating picture 4 2 of 120 Caroli Pla Program: | 4 - Click the <u>DOWNLOAD</u> <u>CHECKED MEDIA</u> button |
| | Water Acquess Developing (46) 2 1 of CO4 Case 5 Fig. Progress 1 | 5 - Watch the selected media download, OR continue working on other things while the download |
| Perk Perk Migle | Connibati Orden(Heds) | progresses 6 - When the downloads are complete, find the media in the desired SAVE directory under the Test number. |

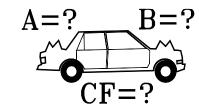
PLEASE PRINT

| Contact Name: |
|--|
| Company/Dept: |
| Mailing Address: |
| City:State:Zip: |
| Phone: |
| Fax: |
| E-Mail: |
| (E-mail address required for electronic delivery) |
| StifCalcs [®] (copies) x \$650.00 = \$ |
| Handling **: \$ |
| (Check with order = \$5.00, Credit Card = \$10.00, Govt. P.O. = \$15.00) Notarized Affidavit Filing Requirement \$ |
| (\$25.00 per required Notarized Signature) |
| Normal delivery is via electronic download □ - Deliver via electronic download link (e-mail address required) \$ 0.00 □ Please deliver on USB at an additional cost of \$35.00 per disk SUB-TOTAL = \$ |
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| 4N6XPRT Systems® |
| Credit Card Orders: |
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| Monday-Friday - 9:30am-5:00pm PST Phone: (619) 464-3478 Fax: (619) 464-2206 |
| 1 Holic. (017) 707-3770 1 ax. (017) 404-2200 |
| Orders within the U.S. will be shipped Priority Mail or via E-mail attachment |

Orders outside of U.S.A. shipped via E-Mail attachment ONLY.

within 10 working days of receipt of order. All prices are in U.S. Dollars, and subject to change WITHOUT NOTICE.

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

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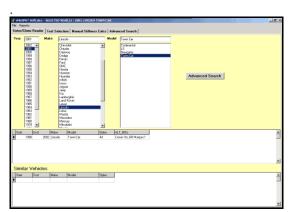
Web: http://www.4n6xprt.com E-Mail: stifcalcs@4n6xprt.com

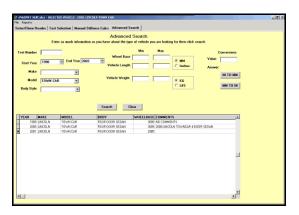
1-800-266-9778

BASIC VEHICLE CRASH TEST SEARCH

SIC VEHICLE SEARCH NHTSA TEST SELECTION ADVANCED VEHICLE SEARCH

Select the desired vehicle through our SIMILAR VEHICLE READER

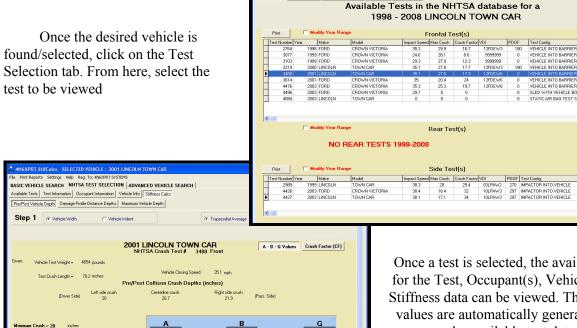




Once the desired vehicle is found/selected, click on the Test test to be viewed

mum Crush =26.7 inches

Normal "Bated No Damage Speed" is 2.5 or 5 mph. Some specific

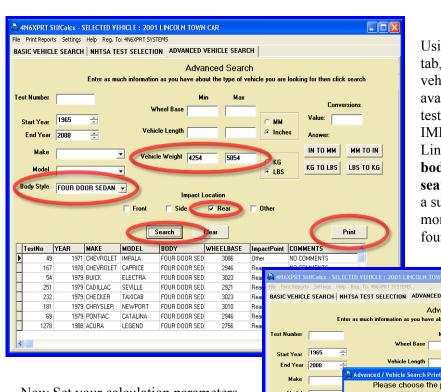


A = Maximum force per inch of damage without permenant damage, lb/in B = Crush resistance per inch of damage width, lb/in^.

G = Energy dissipated without permenant damage, It

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

"CLASS" VEHICLE CRASH TEST SEARCH



1979 BUICK

1979 CADILLAC

1979 CHECKER

1979 CHRYSLEF

1979 PONTIAC

ELECTRA

SEVILLE

TAXICAR

NEWPOR

CATALINA

To select multiple records hold the ctrl key down and click on the records you wish to select

FOUR DOOR SEDAN

FOUR DOOR SEDAN

FOLIR DOOR SEDAN

FOUR DOOR SEDAN

FOUR DOOR SEDAN

Print All Pages

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:

Please choose the parameters for the report Now Set your calculation parameters -LBS TO KG No Damage Speed - Crush Depth -Indentation (Crush) Length - and **Speed**, then view your results, and if Print desired, print them to hard copy TestNo YEAR Default settings 1978 C 1979 B Include Not Calculated Test 1979 CHRYSLER NEWPOR FOUR DOOR SED NO COMMENTS 1979 PONTIAC CATALINA FOUR DOOR SED NO COMMENTS Display Auto Calculated Tests Frontal Tests Rear Tests Side Tests Other / Not Calculated

10.8

18.4

No Damage Speed | Crush Distance | Impact Velocity | Stiffness A | Stiffness B | Stiffness G | Crush Factor

20.2

24.1

20.2

237.3

354.7

33.1

94.6

64.9

49.4

93.2 674.8

597.9

562.8

570.4

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.

Expert System Software for Litigation

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

FED Tax ID No.: 95-3121248

E-Mail: 4n6@4n6xprt.com

Phone: 1-800-266-9778

Fax: (619) 464-2206

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% (California orders del. Handling **: (Cash or Check with order = \$5.00) Notarized Affidavit filing requirement - § | livered by e-mail attachment DO NO 00, Credit Card = \$10.00 , Govt. Purcha | se Order = \$15.00) | \$ \$ \$ |
| Normal delivery will be via □ - Deliver via electronic download link □ - Please deliver on USB at an addition | | | \$ 0.00 \$ |
| | | TOTAL | \$ |
| Enclosed is: | | | • |
| Check Money Order Purchase Order | Credit Card: Visa | Master Card Ame | erican Express |
| Card # | | Expires S | ecCode |
| Billing Add.: | | Billing Zir |): |
| Billing Add. :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.

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.

^{*} 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.

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

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

is being required of us to obtain the information.

FED Tax ID No.: 95-3121248

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

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 Card Number: | / Visa / MasterCard | | |
|--|---|---|----------------------------|
| Expiration Date (MM/YY): | / | | |
| 1234 5678 9012 345 123 Losen grown forent g | ← Visa/MasterCard | American Express → | 3712 3468 95006 6 FROST |
| Security code (card ID) Address for where the credi | | Card card or front of Amer | rican Express Card: |
| (This is the address number - | for instance, ours would be 838 , not where we would send to | 7 University Avenue - that the creath the data or product to) | lit card bill would go to, |
| City/State/Zip for where the | credit card bill is sent: | | |
| (- for instance | e, ours would be La Mesa, CA 9 not where we would send t | 1941 - that the credit card bill wou the data or product to) | ld go to, |
| Authorized signature: | | | |
| We appreciate your o | cooperation in supplying | us with this information a | and understanding that it |

Sincerely,

Daniel W. Vomhof III

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.

FAX/Order Form

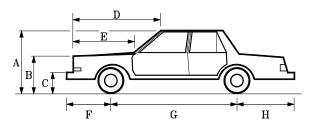
□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

VEAR & MAKE.

| TEM & MINE. |
|---|
| 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 No Significant Dimensional Changes 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

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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: |
|--------------|---|----------|
|--------------|---|----------|

| hone | :() |
|---------|-------------------------------------|
| ax: | |
| | PAYMENT INFORMATION |
| | Visa/MasterCard / American Express: |
| | |
| _ | Expires: / |
| radit (| Card billing address and Zip: |
| | |
| Address | · |
| Zip: | |
| Securi | ty Code # |
| | -, |

FAX/Order Form

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Please circle ALL OPTIONS that apply

YEAR & MAKE:

| MODEL: | |
|------------------|---|
| If you are reque | Č . |
| VIN DeCoder | |
| please also prov | vide: |
| 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 |
| WANG. | Short Bed / Long Bed |
| VANS: | Cargo / Passenger Short / Long Wheelbase |
| | Short / Long wheelbase |
| | VIN Information |
| 1 2 3 | 4 5 6 7 8 9 |
| 10 11 | 12 13 14 15 16 17 |
| | |
| | |
| | A Crash Test Information |
| YEAR & MAK | E: |
| | |
| MODEL: | |
| MODEL | |
| Impact location | - Front / Side / Rear |
| Impact Speed - | |
| impuot speeu | 20,001, 11181101 |
| | |
| | |
| | |
| _ | |
| Case Reference | /Number: |

FAX/Order Form

□ Expert VIN Decoder & Expert AutoStats □ NHTSA Crash Test Results □ BOTH

Please circle ALL OPTIONS that apply

| If you are reque VIN DeCoder of please also prov | & AutoStats |
|--|---|
| 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 |
| <u>NHTS</u> YEAR & MAK | SA Crash Test Information E: |
| MODEL: | |
| Impact location | - Front / Side / Rear Lower / Higher |

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

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 Card Number: | / Visa / MasterCard | | |
|--|---|--|-----------------------------|
| Expiration Date (MM/YY): | / | | |
| 1234 5678 9012 345 123 Lonard graum binard graum binard passes binard passes binard passes binard passes binard passes binard passes Card ID | ← Visa/MasterCard | American Express → | 3712 3 9500b |
| Security code (card ID) Address for where the credi | | Card card or front of Ame | erican Express Card: |
| (This is the address number - | for instance, ours would be 838 not where we would send | 7 University Avenue - that the cre the data or product to) | edit card bill would go to, |
| City/State/Zip for where the | credit card bill is sent: | | |
| (- for instance | e, ours would be La Mesa, CA 9 not where we would send | 1941 - that the credit card bill wo the data or product to) | uld go to, |
| Authorized signature: | | | |
| We appreciate your of is being required of us to obtain | | us with this information | and understanding that |

it

Sincerely,

Daniel W. Vomhof III

Expert System Software for Litigation

8387 University Avenue La Mesa, CA 91942-9342

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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 Individual Vehicle Data Search Service, we have now added Force Balance Analysis runs to our services. An order form with pricing follows on the next page.

With respect to the Order Form -

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

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

Sincerely,

Daniel W. Vomhof III

Expert System Software for Litigation

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FED Tax ID No.: 95-3121248

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

E-Mail: 4n6@4n6xprt.com

FORCE BALANCE ORDER FORM

| Vehicle 1 (KNOWN Stiffness) - Year/Make/Model | | ditional crush variation with same vehicle 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) = | | 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) = | | |
| Dar | mage Length (inches) = | Damage Lengt | th (inches) = | |
| | urements are equally spaced, you do not istance between Crush measurements. | If Crush Depth measurements are need to fill in the distance between | | |
| Crush Dep C1 (inches) = | EQUAL?? Yes / No Distance C1 to C2 (inches) = Distance C2 to C3 (inches) = Distance C3 to C4 (inches) = Distance C4 to C5 (inches) = Distance C5 to C6 (inches) = Distance C6 to C7 (inches) = | C2 (inches) = Distance C C3 (inches) = Distance C C4 (inches) = Distance C C5 (inches) = Distance C C6 (inches) = Distance C C7 (inches) = Distance C C8 (inches) = Distance C | Crush Spacing EQUAL?? Yes / No C1 to C2 (inches) = C2 to C3 (inches) = C3 to C4 (inches) = C4 to C5 (inches) = C5 to C6 (inches) = C6 to C7 (inches) = C7 to C8 (inches) = C8 to C9 (inches) = C9 to C10 (inches) = | |
| Name | | Visa/MasterCard/Americ | an Express | |
| Address | | Expiration/_ | | |
| | | | | |
| | | Card Billing Address | | |
| | | Card Billing AddressCity/State/Zip | | |

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

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 Number: Am. Express / Visa / MasterCard |
|---|
| Card Number: |
| Light and Date (1911). ——————————————————————————————————— |
| 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