

REPORT NUMBER TR-P25001-06-NC

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**GENERAL MOTORS CORPORATION
2005 CHEVROLET UPLANDER
5-DOOR MPV**

NHTSA NUMBER: M50112

**PREPARED BY:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



DECEMBER 1, 2004

FINAL REPORT

**PREPARED FOR:
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Date of Acceptance

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2005 Chevrolet Uplander 5-Door MPV at Karco Engineering, LLC on December 1, 2004. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.16 km/h. The ambient temperature at the barrier face at the time of impact was 8.3 degrees Celcius. The vehicle's maximum post-test static crush was 647 mm to the left of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Measurement Description</th> <th style="text-align: center;">Units</th> <th style="text-align: center;">Threshold</th> <th style="text-align: center;">Driver ATD</th> <th style="text-align: center;">Passenger ATD</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">474.9</td> <td style="text-align: center;">509.0</td> </tr> <tr> <td>Max. Chest Accel. (3 msec Clip)</td> <td style="text-align: center;">G's</td> <td style="text-align: center;">60</td> <td style="text-align: center;">45.8</td> <td style="text-align: center;">42.0</td> </tr> <tr> <td>Left Femur Force</td> <td style="text-align: center;">Newtons</td> <td style="text-align: center;">10008</td> <td style="text-align: center;">-5168.3</td> <td style="text-align: center;">-5400.9</td> </tr> <tr> <td>Right Femur Force</td> <td style="text-align: center;">Newtons</td> <td style="text-align: center;">10008</td> <td style="text-align: center;">-5241.3</td> <td style="text-align: center;">-4949.2</td> </tr> </tbody> </table>				Measurement Description	Units	Threshold	Driver ATD	Passenger ATD	Head Injury Criteria (HIC ₃₆)	N/A	1000	474.9	509.0	Max. Chest Accel. (3 msec Clip)	G's	60	45.8	42.0	Left Femur Force	Newtons	10008	-5168.3	-5400.9	Right Femur Force	Newtons	10008	-5241.3	-4949.2
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SECTION 1

PURPOSE AND SUMMARY OF TEST M50112

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the New Car Assessment Program (NCAP) sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-02005. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph (48.3 km/h) requirements.

This 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated December 1999. Data was obtained indicant of FMVSS 208 "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2005 Chevrolet Uplander 5-Door MPV at a velocity of 56.16 km/h (34.90 mph). The test was performed at Karco Engineering, LLC on December 1, 2004.

Three (3) real-time video cameras and fifteen (15) high-speed film cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in data sheet number 15 (page number: 27) of this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head (primary and redundant), chest (primary and redundant) and pelvic triaxial accelerometers, chest displacement potentiometers, six-axis upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also placed on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. Also, shoulder belt spool-off was measured for the driver and passenger dummies. The driver (position 1) ATD (Serial No. 034) and the right-front passenger (position 2) ATD (Serial No. 035) were calibrated two tests prior to this test.

One hundred and nine (109) channels of data were recorded using an on-board data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the vehicle and dummy response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the Instrumentation Data Channel assignments. Appendix E contains the Dummy Calibration data. Appendix F contains the Child Restraint data and Appendix G contains NAAH data.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the impact event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The vehicle impacted 18 mm to left and 5 mm above to the pre-impact point mark on the barrier. The maximum static crush of the vehicle was 647 mm and both the driver and the passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver ATD head, chest and abdomen contacted the airbag and on rebound the head contacted the headrest, both knees contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD head, chest and abdomen contacted the airbag and on rebound the head contacted the headrest, both knees contacted the glove box.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC ₃₆	Clip (g)	Chest Def. (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)
Driver	474.9	45.8	-24.9	-5168.3	-5241.3	172.5
Passenger	509.0	42.0	-12.8	-5400.9	-4949.2	316.4

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.16
Test Weight	kg	2243
Impact Angle	degrees	0
Average Rebound	mm	363
Maximum Static Crush	mm	647

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door opening	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Rear Door Opening	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Seat Track Shift (mm)	0	0
Seat Back Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 034	50% Male Hybrid III No. 035
Head Contact	Airbag, Headrest	Airbag, Headrest
Chest Contact	Airbag	Airbag
Abdomen Contact	Airbag	Airbag
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

16mm MOVIE COVERAGE

Description	Standard	Additional
High Speed	14	1
Real Time	1	2
Total	15	3

DATA CHANNELS

Driver ATD Sensors	46
Passenger ATD Sensors	46
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	36
Total	145

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M50112	Anti-Lock Brakes	Yes
Make	Chevrolet	All Wheel Drive	No
Model	Uplander	Power Steering	Yes
Body Style	5-Door MPV	Driver Front Airbag	Yes
Vin No.	1GNDV33L35D157488	Driver Side Airbag	Yes
Color	Silver	Driver Head Airbag	No
Delivery Date	11/22/04	Driver Curtain Airbag	No
Odometer (mi)	73	Pass. Airbag	Yes
Dealer	Richard Hilboard Chevrolet	Pass. Side Airbag	Yes
Transmission	5-Speed Automatic	Pass. Head Airbag	No
Final Drive	Front	Pass. Curtain Airbag	No
Type/No. Cyl.	V6	Pre-Tensioners	Yes
Engine Disp. (L)	3.5	Load Limiters	Yes
Engine Placement	Transverse	Bucket Seats	Yes
Roof Rack	No	Air Cond.	Yes
Sunroof/T-Top	Yes	AM/FM Cassette	Yes
Tinted Glass	Yes	Tilt Steering	Yes
Traction Control	No	Automatic Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	Yes
Rear Disc	Yes	Other	Onstar

Does Owners Manual provide instructions to turn off automatic door locks.

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors Corporation	GVWR (kg)	2550
Date of Manufacture	Oct-04	GAWR Front (kg)	1300
		GAWR Rear (kg)	1250

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	Bench	
Number of Occupants	2	2	3	7
Capacity Weight (VCW) (kg)				584
Cargo Weight (RCLW) (kg)				108

DATA SHEET NO. 2...(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

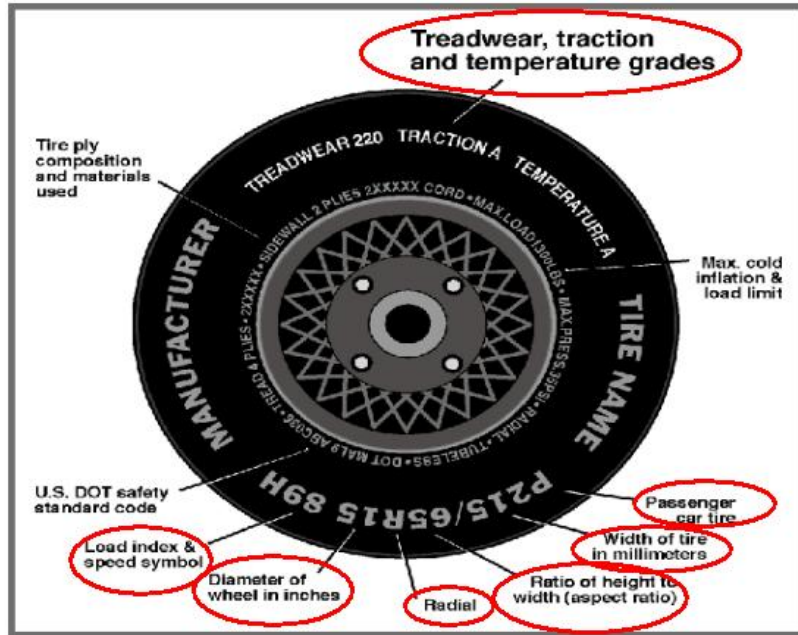
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

Collect year, make, model, VIN, items circled in red, and tire manufacturer and tire name.



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	308	308
Cold Pressure (kpa)	240	240
Recommended Tire Size	P225/60R17	P225/60R17
Tire Size on Vehicle	P225/60R17	P225/60R17
Tire Manufacturer	Goodyear	Goodyear
Treadwear	460	460
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	1 Ply Polyester	1 Ply Polyester
Tire Plies Body	1 Polyester + 1 Steel	1 Polyester + 1 Steel
Load Index/Speed Symbol	98S	98S
Tire Material	Rubber	Rubber
DOT Safety Code Right	DOT M679 B5DR 3904	DOT M679 B5DR 3904
DOT Safety Code Left	DOT M679 B5DR 4004	DOT M679 B5DR 4004

DATA SHEET NO. 2...(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	549	446	995	613	524	1137
Right	kg	562	435	997	605	501	1106
Ratio	%	55.8	44.2	100%	54.3	45.7	100%
Totals	kg	1111	881	1992	1218	1025	2243

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1992
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	108
Calculated Vehicle Target Wt. (TVTW)	kg	2252

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	779	779	774	785	1372
As Tested	mm	755	760	750	758	1419

Vehicle Wheel Base (mm) 3105

Weight of Ballast Secured in cargo area (kg) 9

Vehicle Components Removed Carpet, Jack, Rear Window (2nd Row Seats), Storage Bins

* Ballast weight does not include cameras, instrumentation and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 95.00

Usable Capacity Furnished by COTR (L) N/A

Actual Test Volume with entire fuel System Filled (L) 88.34

1/3 of Usable Capacity (L) N/A

Test Fluid Type: Stoddard Solvent

Kinematic Viscosity: as per ASTM Standard D484-71 Purple

Is Vehicle Fuel Pump Electric or Mechanical? Electric

If electric, does pump operate with ignition switch "On" & engine "OFF" Yes

Fuel System Particulars: None

DATA SHEET NO. 3
POST-TEST IMPACT DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	56.16
Trap No. 1 Entry Distance	mm	<1524	1524
Trap No.1 Exit Distance	mm	<1524	305
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	56.02
Trap No.2 Entry Distance	mm	<1524	1524
Trap No.2 Exit Distance	mm	<1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	5011	4521	-490
Center	mm	5191	4546	-645
Right Side	mm	5013	4566	-447

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	420
Center	mm	310
Right Side	mm	360
Average	mm	363

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

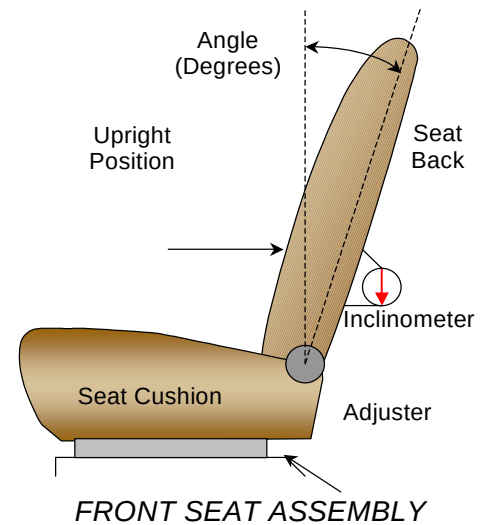
NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: A special application tool with pointed probes is inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly, approximately 13 inches above the pivot point of the seat back. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.



SEAT BACK ANGLES

	Angle (Deg.)
Driver w/seated Dummy	23.0
Passenger w/seated Dummy	23.0

SEAT FORE/AFT POSITIONS

The first or forward most position is counted as number one (1). The fore/aft position is set aft of the middle position for both the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver	196 mm	98 mm
Passenger	196 mm	98 mm

SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver	3	2
Passenger	3	2

DATA SHEET NO. 4...(CONTINUED)

TEST VEHICLE INFORMATION

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

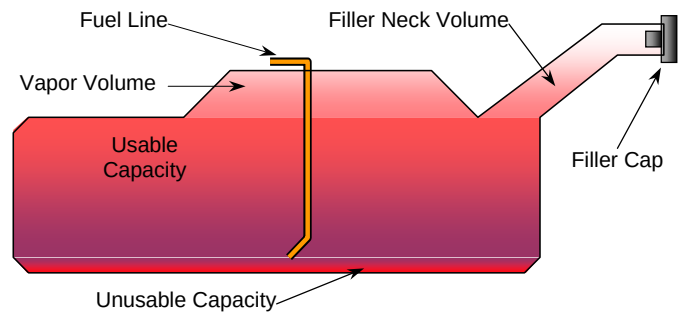
Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	95.00
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	87.40 to 89.29
Actual Amount of Solvent used	88.34
1/3 of Usable Capacity	

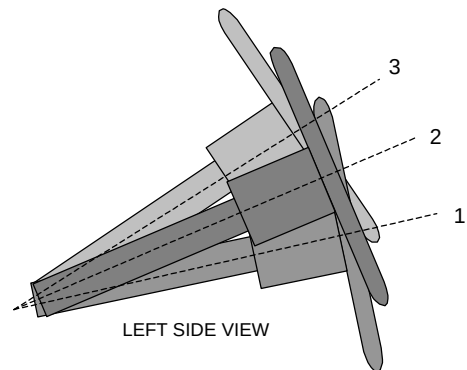
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under the rear seat.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Fore/Aft Positon (mm)	Degrees
Lowermost positon No. 1		14.8
Geometric center position No. 2		25.2
Uppermost position No. 3		35.7

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		59.2		
SWA	Steering Wheel Angle		64.8		
SCA	Steering Column Angle		25.2		
SA	Seat Back Angle		23.0		23.0
HZ	Head to Roof (Z)	190	90.0	185	90.0
HH	Head to Header	440		435	
HW	Head to Windshield	705		705	
HR	Head to Side Header (Y)	285		270	
NR	Nose to Rim	380	11.5		
CD	Chest to Dash	530		550	
CS	Chest to Steering Hub	290			
RA	Rim to Abdomen	160			
KDL	Left Knee to Dash	150	9.1	140	
KDR	Right Knee to Dash	155		145	5.2
PA	Pelvic Angle		20.0		21.4
TA	Tibia Angle		60.0		55.9
KK	Knee to Knee (Y)	290		310	
SK	Striker to Knee	650	3.5	648	3.0
ST	Striker to Head	560	82.0	575	70.0
SH	Striker to H-Point	275	28.0	278	20.0
SHY	Striker to H-Point (Y)	280		270	
HS	Head to Side Window	380		380	
HD	H-Point to Door (Y)	170		160	
AD	Arm to Door (Y)	135		60	

DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

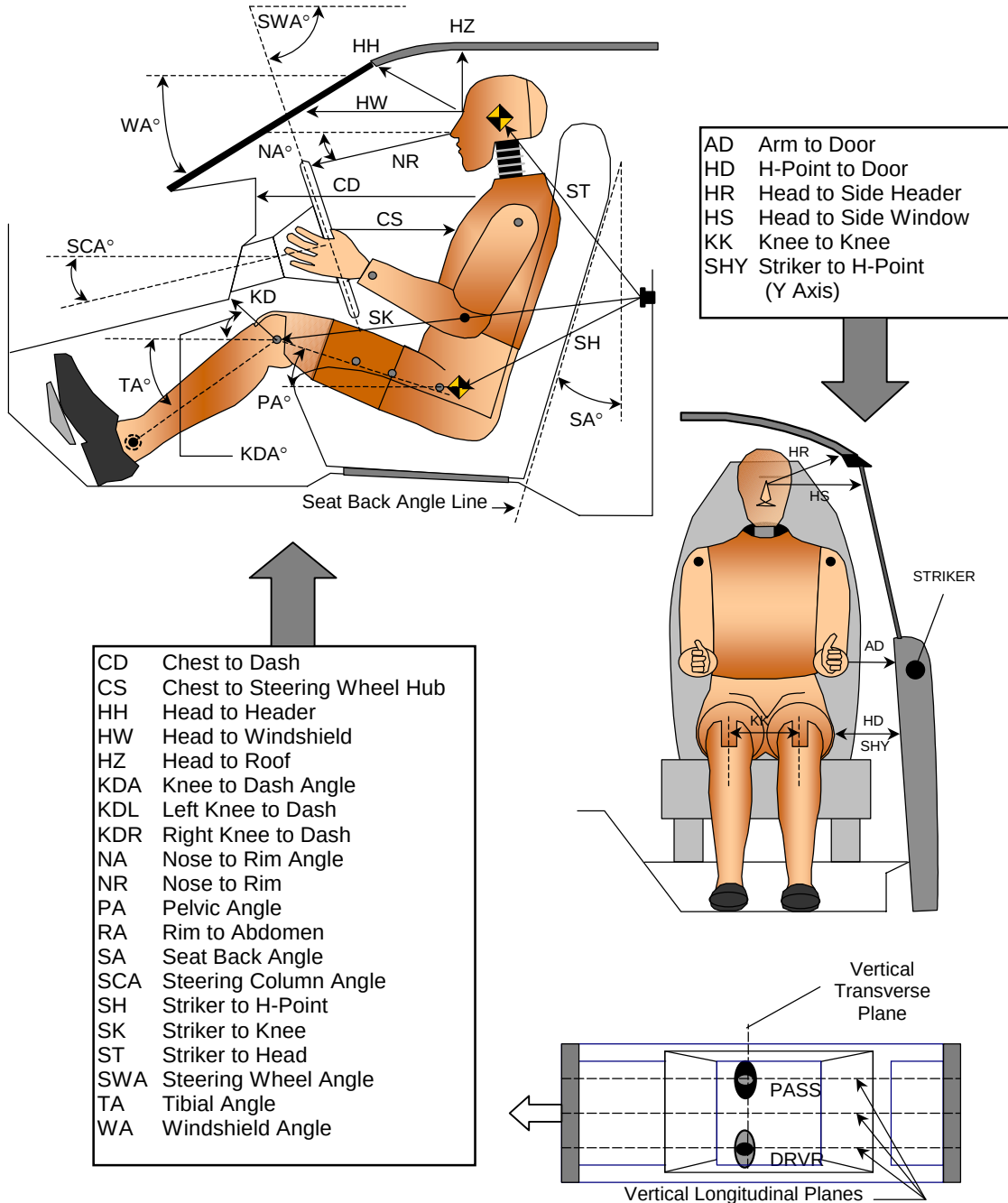
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DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS



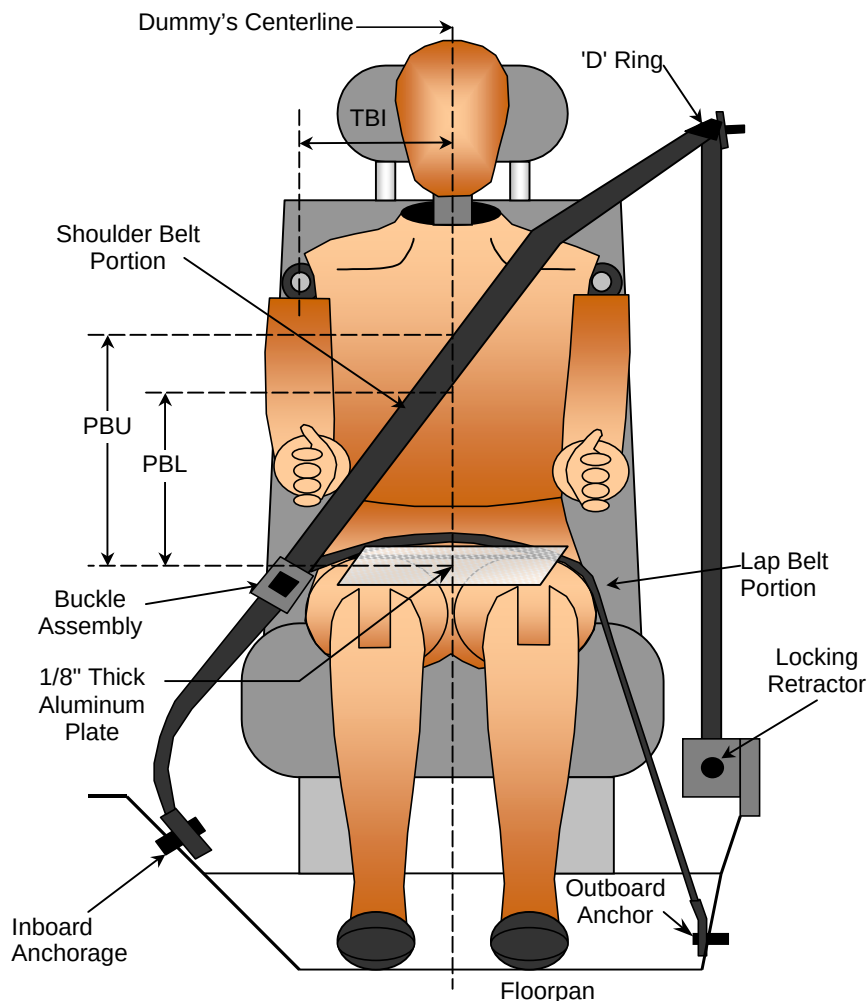
DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	220	220
PBU - Top Surface of reference to belt upper edge	mm	310	300
PBL - Top Surface of reference to belt lower edge	mm	235	225
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7 - VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

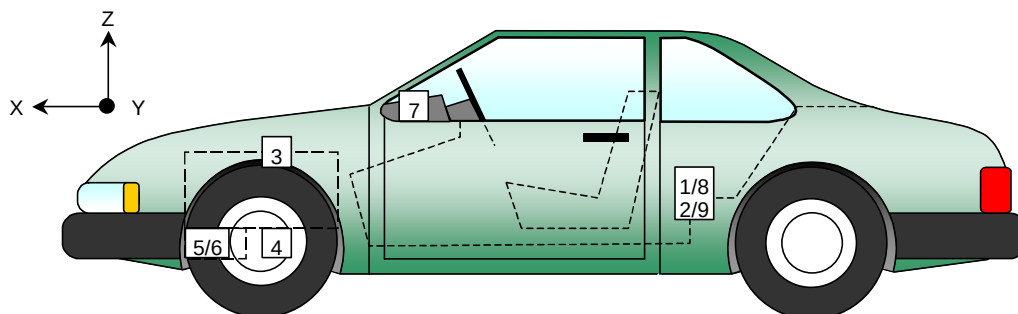
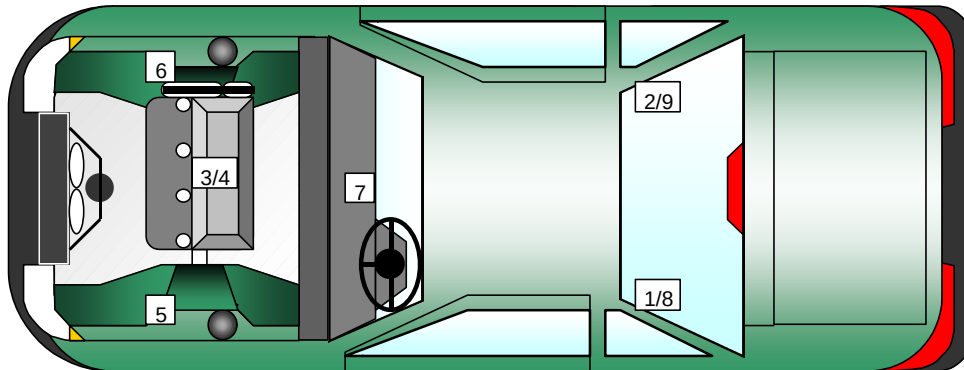
No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member	1900	-300	525	G's	1.9	124.0	-33.8	51.6
2	Right Rear X-Member	1900	300	525	G's	2.0	116.6	-35.0	52.7
3	Engine Top	4500	0	900	G's	51.0	47.8	-111.4	33.7
4	Engine Bottom	4550	50	205	G's	41.0	43.9	-123.0	32.1
5	Left Brake Caliper	4320	-600	290	G's	0.0	0.0	0.0	0.0
6	Right Brake Caliper	4320	600	290	G's	2.9	23.2	-153.8	45.9
7	Instrument Panel	3535	0	1175	G's	3.9	130.0	-42.3	75.1
8	Left Rear X-Member (Z-Axis)	1840	-300	525	G's	6.3	12.8	-10.4	21.9
9	Right Rear X-Member (Z-Axis)	1840	300	525	G's	5.2	124.4	-8.7	21.7

Reference Planes: X=From Rear Surface of Vehicle, Y=Vehicle Centerline, Z=Ground Plane

1.) Channel failed, no data

2.) Channel failed at 55.4 msec.

3.) Channel failed at 52.3 msec.



DATA SHEET NO. 8 - HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	10.5	109.9	-56.1	78.9	0.5	199.3	-58.5	100.4
Head CG	Y	G's	5.7	177.5	-6.2	116.0	6.0	87.2	-11.1	114.6
Head CG	Z	G's	13.8	80.4	-28.3	94.5	30.9	86.7	-1.3	132.0
Head CG Resultant	N/A	G's	57.5	78.9			60.5	100.3		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	9.5	175.3	-50.8	94.6	2.2	154.9	-41.9	85.7
Chest CG	Y	G's	6.8	97.9	-3.5	57.1	2.5	54.1	-15.3	91.9
Chest CG	Z	G's	4.3	36.6	-6.4	111.6	12.2	90.0	-3.5	128.1
Chest CG Resultant	N/A	G's	51.0	94.6			44.0	86.0		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	221.0	42.6	-5168.3	56.2	320.1	34.5	-5400.9	54.8
Right Femur	Z	Newtons	485.0	36.7	-5241.3	56.4	175.3	34.0	-4949.2	74.9

SEATBELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Shoulder Belt Pullout	N/A	MM	172.5	143.8	-25.7	58.8	316.4	117.1	-24.5	55.7
Shoulder Belt Stretch	N/A	MM/CM	0.0	0.0	0.0	0.0	0.00	0.0	0.00	0.0 ¹
Lap Belt Force	N/A	Newtons	2533.1	71.6	-0.1	3.1	4189.1	69.1	-0.8	171.2
Shoulder Belt Force	N/A	Newtons	4436.2	93.4	-33.0	12.3	4839.6	101.5	-17.8	151.1

1.) Not used with pre-tensioners

PRIMARY HEAD INJURY CRITERIA (HIC36)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Primary	474.9	60.9	96.9	44.4	509.0	79.0	114.7	45.8

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	45.8	93.3	96.3	42.0	85.0	88.0

DATA SHEET NO. 8...(CONTINUED)

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	2.6	138.7	-58.3	55.8	1.7	145.0	-47.8	54.9
Pelvis	Y	G's	9.9	92.9	-5.9	57.9	3.4	23.9	-8.9	95.1
Pelvis	Z	G's	3.5	180.1	-21.6	83.8	1.6	159.1	-19.5	85.3
Pelvis Resultant	N/A	G's	59.1	55.8			49.9	54.9		

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	670.4	105.2	-375.2	51.2	221.7	106.5	-340.2	90.2
Neck Force	Y	Newtons	153.2	184.2	-191.5	114.8	28.4	199.4	-208.2	140.2
Neck Force	Z	Newtons	1879.1	85.8	-554.9	108.7	1595.1	86.7	-46.3	148.7
Neck Force Resultant	N/A	Newtons	1961.8	85.8			1622.8	86.7		
Neck Moment	X	N•m	14.8	190.8	-14.6	120.0	13.7	114.4	-15.7	146.8
Neck Moment	Y	N•m	43.9	68.2	-41.6	97.1	19.5	110.7	-29.2	90.6
Neck Moment	Z	N•m	7.6	183.9	-8.1	119.6	8.6	128.4	-14.6	89.0
Neck Moment Resultant	N/A	N•m	44.0	68.3			34.5	90.3		

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	8.6	167.4	-42.8	59.7	26.5	66.4	-82.9	53.8
Left Foot Aft	Z	G's	9.0	49.7	-56.3	32.2	2.7	164.7	-55.7	55.4
Left Foot Fore	Z	G's	20.3	50.7	-79.8	34.8	17.9	72.4	-119.7	55.5
Right Foot Aft	X	G's	32.0	60.5	-111.4	53.3	2.3	127.1	-45.6	46.2
Right Foot Aft	Z	G's	5.2	94.2	-84.2	54.9	3.5	178.7	-20.9	69.5
Right Foot Fore	Z	G's	52.6	47.9	-121.6	54.9	7.5	178.1	-40.0	58.5

1.) Pass. Channel failed at 73.7 msec.

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Upper Moment	X	N•m	28.8	101.9	-2.5	29.8	17.8	59.2	-19.5	100.2
Left Upper Moment	Y	N•m	33.6	90.1	-88.0	60.8	39.9	63.8	-119.4	58.5
Right Upper Moment	X	N•m	66.5	54.0	-13.0	64.7	37.8	56.1	-45.0	100.6
Right Upper Moment	Y	N•m	21.7	97.1	-105.4	60.3	16.3	148.1	-68.2	57.7
Left Lower Moment	X	N•m	16.7	64.5	-3.1	85.7	8.7	72.7	-5.4	102.8
Left Lower Moment	Y	N•m	25.2	182.5	-56.4	58.9	18.2	64.7	-64.0	58.9
Left Lower Force	Z	Newtons	314.5	71.4	-2135.1	34.3	139.7	189.8	-1961.3	48.6
Right Lower Moment	X	N•m	21.6	52.7	-106.6	63.9	74.2	53.7	-11.7	37.5
Right Lower Moment	Y	N•m	197.0	65.7	-49.3	52.5	34.2	93.4	-17.1	40.9
Right Lower Force	Z	Newtons	105.2	144.5	-2250.3	65.2	31.4	148.0	-1809.2	55.1

DATA SHEET NO. 8...(CONTINUED)

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CHEST PEAK DEFLECTION

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest	X	MM	0.0	1.6	-24.9	61.2	0.0	5.8	-12.8	106.2

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	10.7	110.0	-56.3	78.9	0.6	199.3	-58.5	100.3
Head CG	Y	G's	5.6	177.6	-6.3	116.1	6.1	87.2	-11.5	114.3
Head CG	Z	G's	13.7	80.8	-27.7	94.6	31.2	86.6	-1.3	131.0
Head CG Resultant	N/A	G's	57.6	78.9			60.6	100.3		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	9.5	175.5	-50.7	94.7	2.1	154.9	-42.4	85.6
Chest CG	Y	G's	6.8	98.1	-3.4	57.2	2.5	54.3	-15.1	91.8
Chest CG	Z	G's	4.3	36.8	-6.6	55.5	11.7	90.0	-3.4	127.9
Chest CG Resultant	N/A	G's	51.0	94.7			44.4	86.0		

REDUNDANT HEAD INJURY CRITERIA (HIC36)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Redundant	473.8	61.1	97.1	44.4	508.0	79.2	114.7	45.9

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	45.8	93.4	96.4	42.4	85.0	88.0

DATA SHEET NO. 9
SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	220	220
PBU - Top Surface of reference to belt upper edge	mm	310	300
PBL - Top Surface of reference to belt lower edge	mm	235	225
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	800	800
Shoulder Belt length as measured on ATD	mm	870	930
Lap Belt length as measured on ATD	mm	750	710
Remainder of belt on reel	mm	850	845
Total belt length for continuous webbing systems	mm	3270	3285

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	80.0	210.0
As determined electronically	mm	172.5	316.4

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm		

* Not used with shoulder belt pre-tensioner systems.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

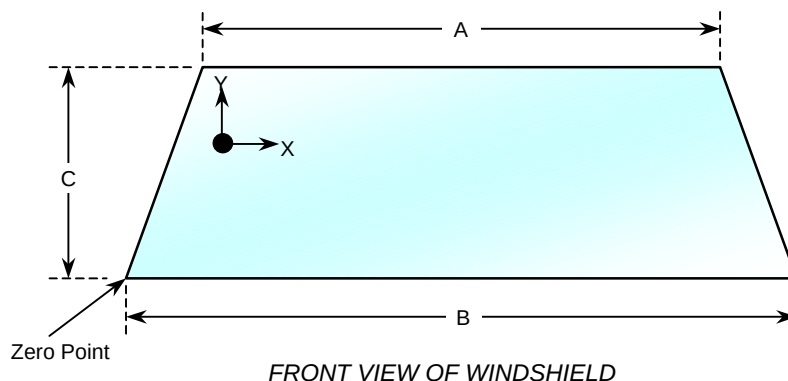
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

The standard requires that the post-test retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles that are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2405	2405	100
Right Side	2405	2405	100
Total	4810	4810	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1310	30
B	mm	1590	35
C-Left	mm	955	30
C-Right	mm	955	30

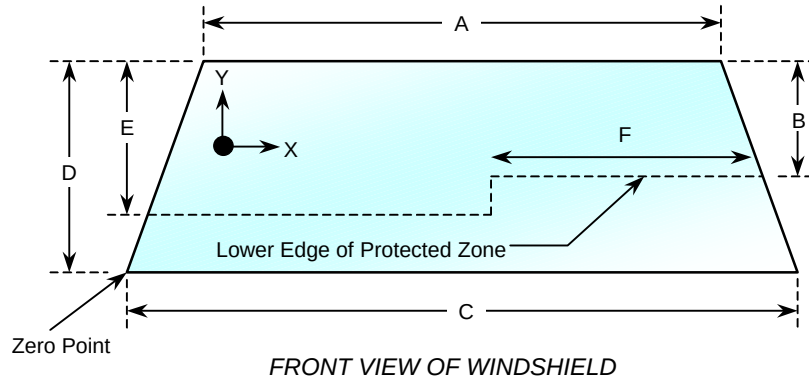
DATA SHEET NO. 11
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1310
B	mm	580
C	mm	1590
D	mm	955
E	mm	537
F	mm	433

AREA OF PROTECTED ZONE FAILURES

- A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 in. by a vehicle component other than one that is normally in contact with the windshield.

X	Y

- B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y

DATA SHEET NO. 12
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV NHTSA No.: M50112
Test Program: 2005 NHTSA 35mph NCAP Test Date: 12/1/04

Test Time: 12:59 PM Temperature: 8.3 Deg. C.

STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5-minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Location Details: No leakage occurred

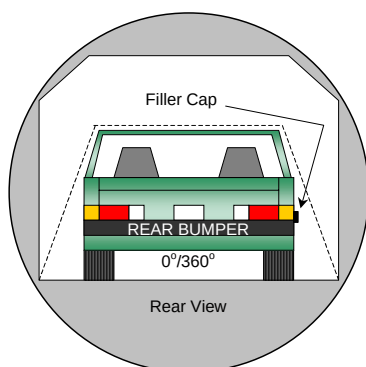
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

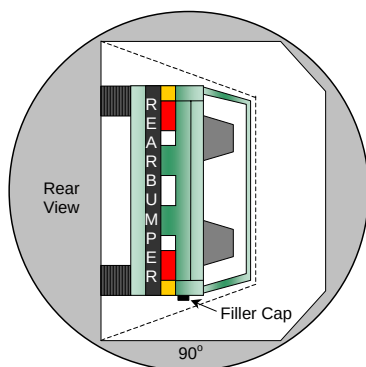
NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

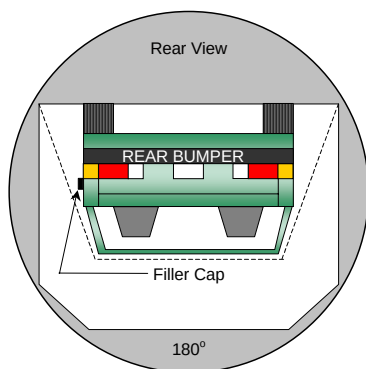
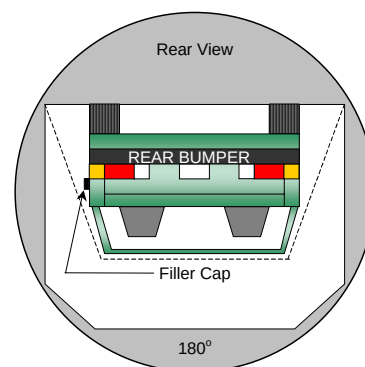
Test Date: 12/1/04



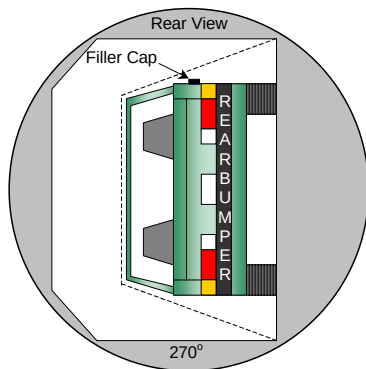
0° to 90°



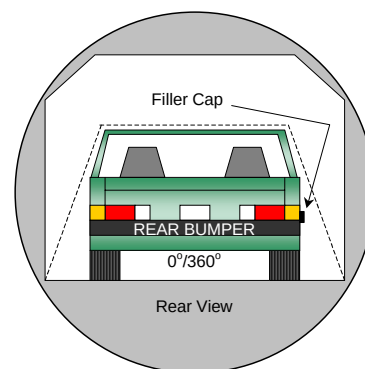
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. No solvent leakage occurred during rollover.

DATA SHEET NO. 13...(CONTINUED)
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	83	300	383
90° to 180°	87	300	387
180° to 270°	80	300	380
270° to 360°	87	300	387

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5
Sixth Minute	1
Seventh Minute	1
Eighth Minute	1

ACTUAL TEST VEHICLE SOLVENT SPILLAGE TABLE (oz.)

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	5191	4546	-645
2	RSOV to front of engine	mm	4627	4341	-286
3	RSOV to firewall centerline	mm	4361	4336	-25
4	RSOV to leading edge of right door	mm	3805	3795	-10
5	RSOV to leading edge of left door	mm	3790	3795	5
6	RSOV to lower leading edge of right door	mm	3697	3700	3
7	RSOV to lower leading edge of left door	mm	3692	3690	-2
8	RSOV to upper trailing edge of right door	mm	2667	2660	-7
9	RSOV to upper trailing edge of left door	mm	2651	2659	8
10	RSOV to lower trailing edge of right door	mm	2684	2675	-9
11	RSOV to lower trailing edge of left door	mm	2679	2680	1
12	RSOV to bottom of right 'A' pillar	mm	3716	3709	-7
13	RSOV to bottom of left 'A' pillar	mm	3706	3704	-2
14	RSOV to firewall on right side	mm	4335	4296	-39
15	RSOV to firewall on left side	mm	4336	4331	-5
16	RSOV to steering column	mm	3215	3275	60
17	Center of steering column to left 'A' pillar	mm	390	400	10
18	Center of steering column to headlining	mm	527	440	-87
19	RSOV to right side of front bumper	mm	5013	4566	-447
20	RSOV to left side of front bumper	mm	5011	4521	-490
21	Length of engine block	mm	600	600	0
RD	RSOV to right side of dash panel	mm	3481	3454	-27
CD	RSOV to center of dash panel	mm	3400	3400	0
LD	RSOV to left side of dash panel	mm	3481	3469	-12

DATA SHEET NO. 14...(CONTINUED)
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	5191	4546	-645
2	Total width	mm	1840	1820	-20
3	Bumper top height	mm	770	780	10
4	Bumper bottom height	mm	260	380	120
5	Longitudinal member top height	mm	555	585	30
6	Longitudinal member bottom height	mm	450	480	30
7	Distance between longitudinal members	mm	910	906	-4
8	Longitudinal member width	mm	70	70	0
9	Engine top height	mm	873	870	-3
10	Engine bottom height	mm	213	246	33
11	Engine and gear box width	mm	780	780	0
12	Front bumper to engine distance	mm	555	355	-200
13	Front shock absorber fixing width	mm	930	970	40
14	Bonnet leading edge height	mm	965	1000	35
15	Front shock absorber fixing width	mm	1200	1213	13
16	Front bumper to front axle distance	mm	980	600	-380
17	Front axle to 'A' pillar distance	mm	515	380	-135
18	'A' pillar to 'B' pillar distance	mm	1145	1140	-5
19	'B' pillar to rear axle distance	mm	1537	1540	3
20	'B' pillar to 'C' pillar distance	mm	1210	1210	0
21	Roof sill bottom height	mm	1580	1590	10
22	Roof sill top height	mm	1670	1680	10
23	Floor sill bottom height	mm	250	280	30
24	Floor sill top height	mm	435	470	35

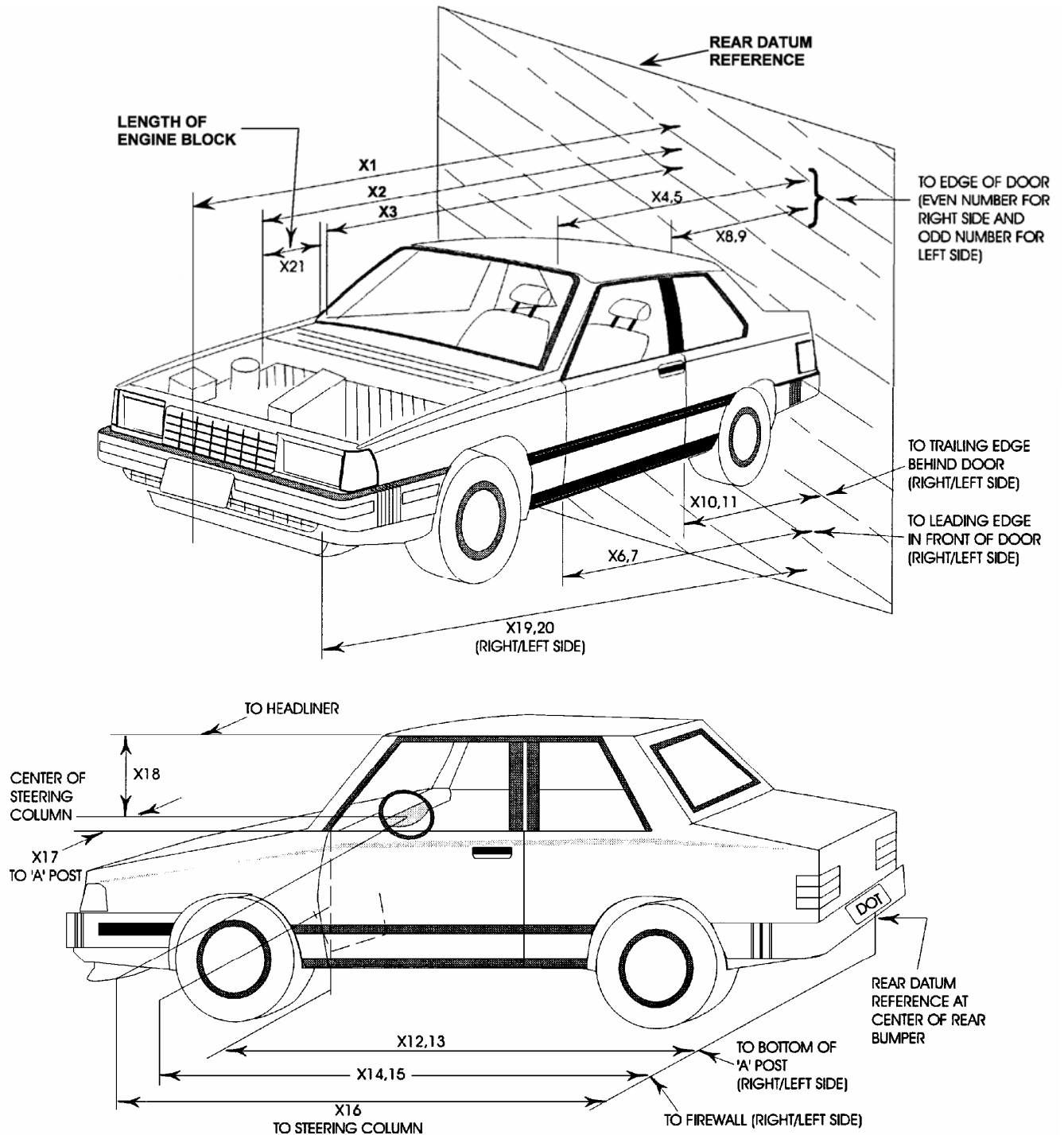
DATA SHEET NO. 14...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04



**DATA SHEET NO. 15
CAMERA LOCATIONS**

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location (mm)			Angle (deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-12192	-6096	-1651	-10	N/A	Zoom	
2	Overall Left Side	-2489	-8280	-1143	-4	8818.9	13	
3	Left Side View	-2134	-8230	-1449	-4	8764.4	35	
4	Driver and Interior View	-5257	-10897	-4648	-13	12249.1	75	
5	Steering Column (Bottom)	-2134	-8230	-2997	-16	8909.1	19	
6	Steering Column (Top)	-2134	-8230	-3404	-20	8991.1	19	
7	Overall Right Side	-2083	8230	-1270	-6	8766.2	13	
8	Right Side View	-1677	10871	-1575	-4	11421.6	80	
9	Passenger and Interior View	-6781	9144	-2997	-9	10789.3	50	
10	Right Side View	-2083	8230	-1575	-4	8767.1	28	
11	Windshield View	-610	0	-5944	-90	N/A	13	
12	Driver Front View	610	-432	-2667	-40	N/A	13	
13	Passenger Front View	610	432	-2667	-40	N/A	13	
14	Pit View of Engine	-914	0	1499	90	N/A	9	DNR
15	Pit View of Fuel Tank	-2438	0	1499	90	N/A	6	DNR

ADDITIONAL CAMERAS

1	Real Time Camera (Still)	-1219	-8585	-1372	0	9180.2	Zoom	30
2	Real Time Camera (Still)	-1067	7976	-991	0	8605.4	Zoom	30
3	Overall Left Side	-1883	-7671	-1143	-2	8217.8	10mm	1000

X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run NTM = No Timing Marks

DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

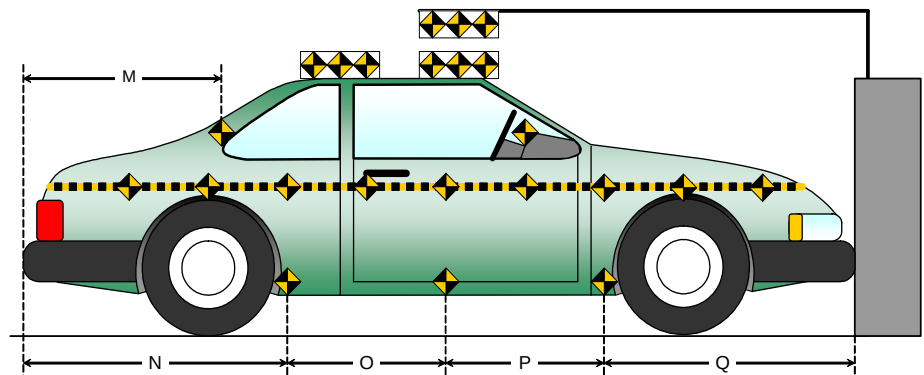
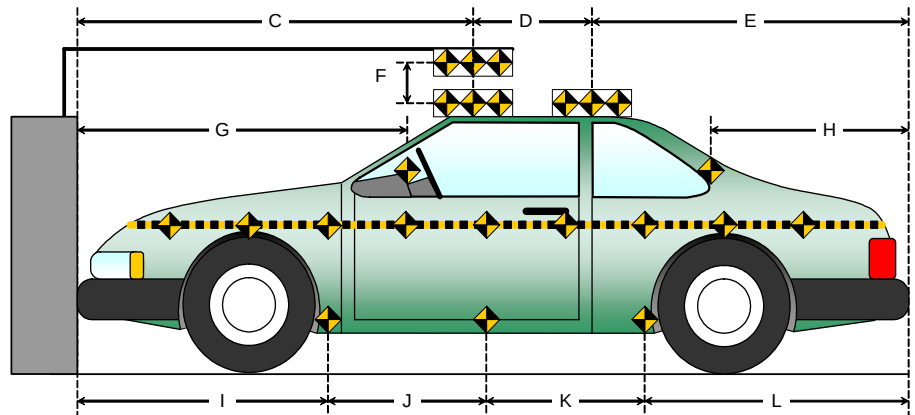
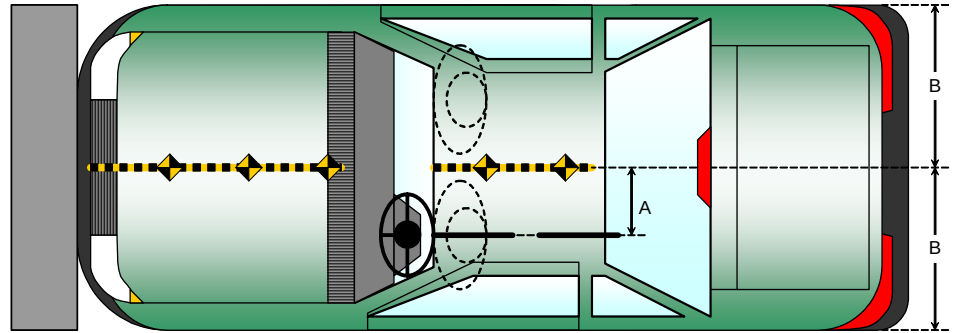
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

All Dimensions in (mm)	
Item	Value
A	330
B	1840
C	2105
D	605
E	2490
F	150
G	1770
H	1354
I	1450
J	1080
K	1080
L	1590
M	1350
N	1590
O	1080
P	1080
Q	1450



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

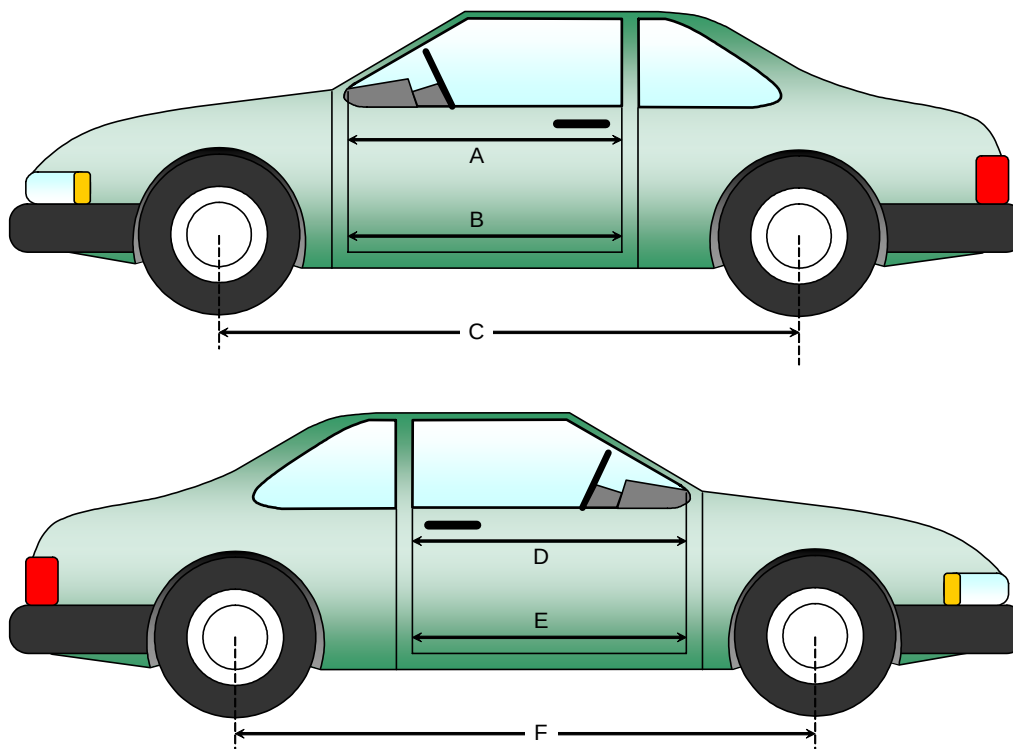
Test Date: 12/1/04

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	1074	1076	2
B	Left Side Lower	mm	943	945	2
D	Right Side Upper	mm	1074	1076	2
E	Right Side Lower	mm	943	945	2

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	3105	2980	-125
F	Right Side Wheel Base	mm	3105	2970	-135



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

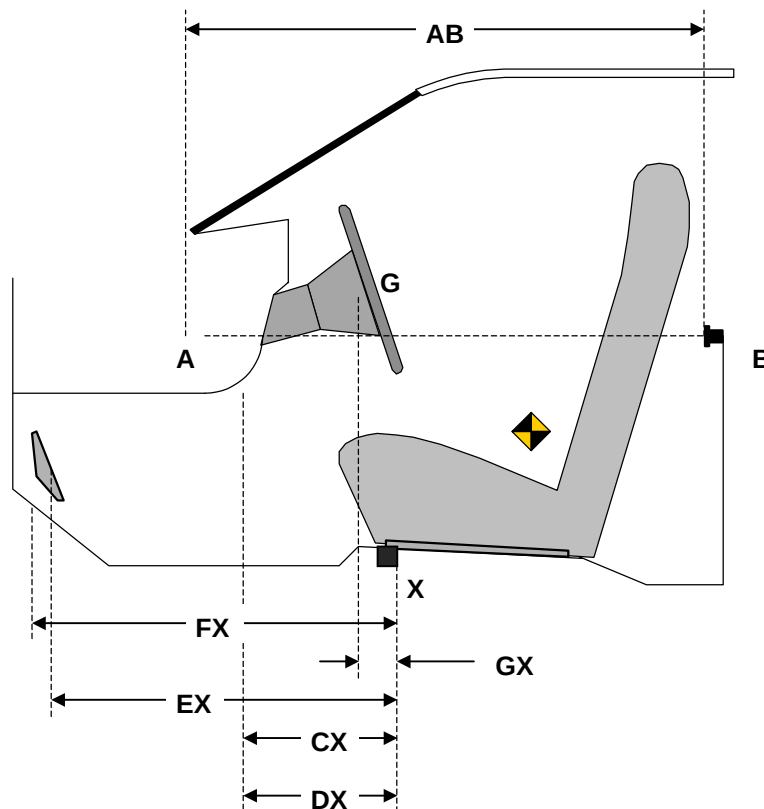
Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	1074	1076	2
CX	Left Knee Bolster to X	mm	281	400	119
DX	Right Knee Bolster to X	mm	331	410	79
EX	Brake Pedal to X	mm	554	455	-99
FX	Foot Rest to X	mm	599	550	-49
GX	Center of Steering Wheel Hub to X	mm	30	150	120

X = Left Front Seat Outboard Anchor Bolt Head



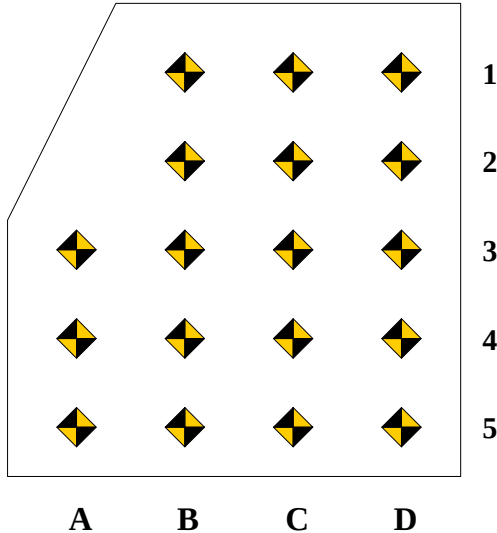
DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04



Measurement reference point for X and Z-axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		770	796	788		719	734	704		-51	-62	-85
2		707	725	724		666	685	659		-41	-40	-65
3	630	631	631	631	608	605	597	590	-21	-26	-34	-41
4	531	528	528	530	511	504	499	495	-20	-24	-29	-35
5	423	423	425	426	403	399	395	392	-20	-24	-30	-34

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		-26	-6	-3		-39	-23	-23		-13	-17	-20
2		30	57	59		105	56	56		75	-1	-3
3	96	102	103	103	102	105	119	128	6	3	16	25
4	100	100	103	104	102	102	105	111	2	1	2	7
5	89	89	90	94	89	90	91	93	0	1	1	-1

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

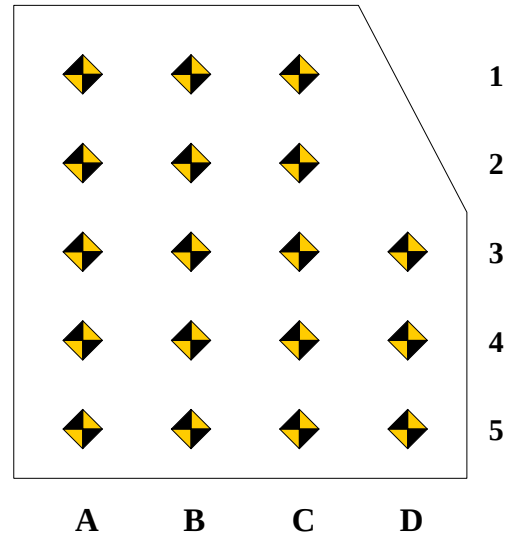
Test Date: 12/1/04

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	732	736	742		661	666	682		-71	-69	-60	
2	659	662	667		610	614	619		-49	-48	-48	
3	566	573	582	590	525	537	548	552	-41	-36	-34	-38
4	464	474	482	494	427	438	446	456	-37	-36	-36	-38
5	369	377	388	398	334	343	352	362	-35	-34	-36	-35

PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-9	-9	-4		-38	-37	-32		-29	-28	-29	
2	54	59	61		46	46	45		-7	-12	-16	
3	108	105	108	108	113	103	96	92	5	-2	-12	-16
4	106	104	104	106	92	89	87	85	-14	-14	-17	-21
5	103	103	104	105	93	88	86	84	-10	-15	-18	-22

DATA SHEET NO. 18
FIXED BARRIER LOAD CELL LOCATIONS

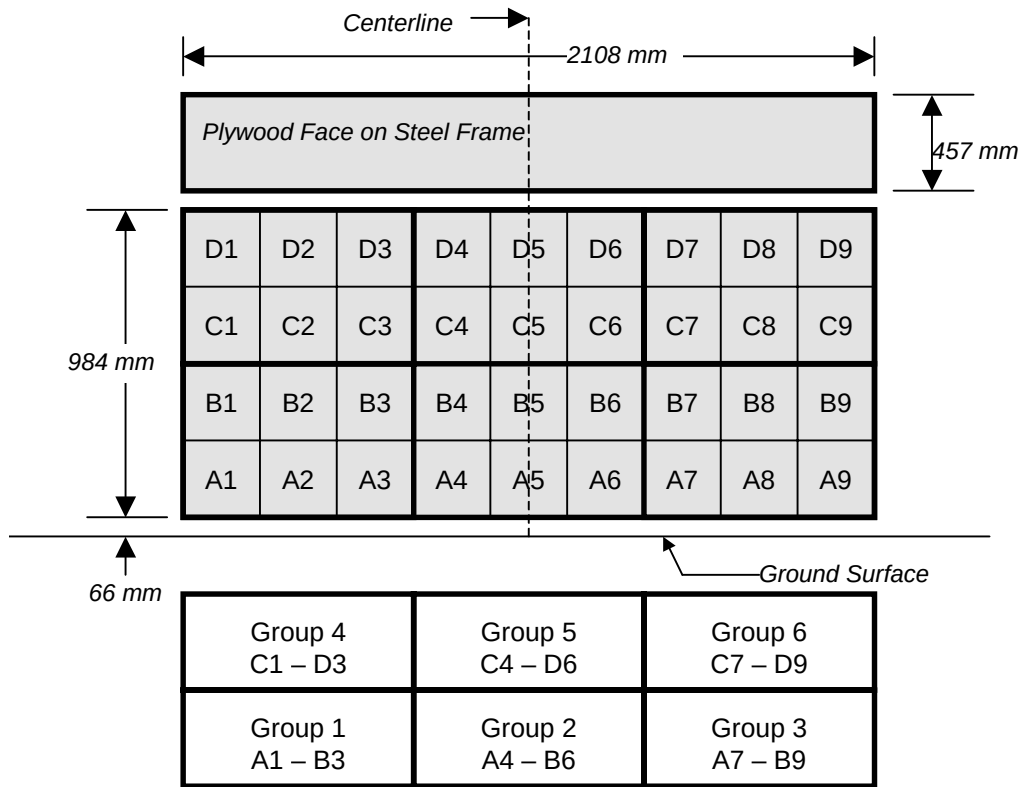
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier



6 Groups of 6 Load Cells Each

The Data is presented in Appendix C with the following requirements:

- 1.) Data from 36 individual load cells
- 2.) Sum data from 6 groupings shown above (6 cells/group)
- 3.) Total or sum of all 36 individual load cells
- 4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

DATA SHEET NO. 19
POST-TEST AIRBAG DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

POST-TEST AIRBAG DATA

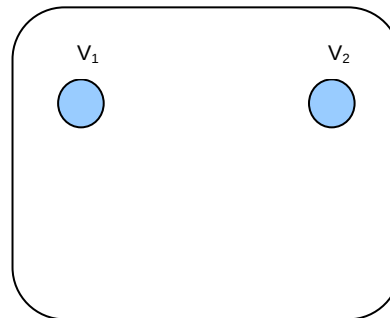
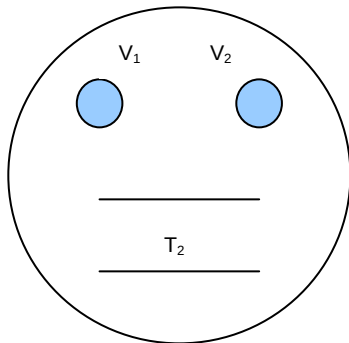
	DRIVER	PASSENGER
No. of vent holes	2	2
Size of vent (mm ²)	317	1268
Total vent area (mm ²)	634	2536

Deflated Airbag Length and Width Dimensions or, If Round, Diameter (mm)		
Length	N/A	580
Width	N/A	720
Depth or Diameter	600	620

Tethering Information		
Is the airbag tethered?	Yes	Yes
Record length of tether (mm)	230	430

Airbag Manufacturing Information		
Manufacturer	Delphi	Delphi
Part No.	GMT 201 DAB	GM04106410
Gas Generator	A22E2550065	PSAB P15221930

Sketch the airbag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel:



DATA SHEET NO. 20
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

VEHICLE INFORMATION

VIN: 1GNDV33L35D157488

Wheel base (mm): 3105

Vehicle Size Category: 5-Door MPV

Test Weight (kg): 2243

ACCELEROMETER DATA

Accelerometer Location: Left Rear Sill

Cal. Procedure/Interval: 6 months / drop test

Integration Algorithm: NHTSA Standard

Linearity: Good

Impact Velocity (km/h): 56.16

Velocity Change (km/h): 60.87

Time of Separation (msec): 80.6

CRUSH PROFILE

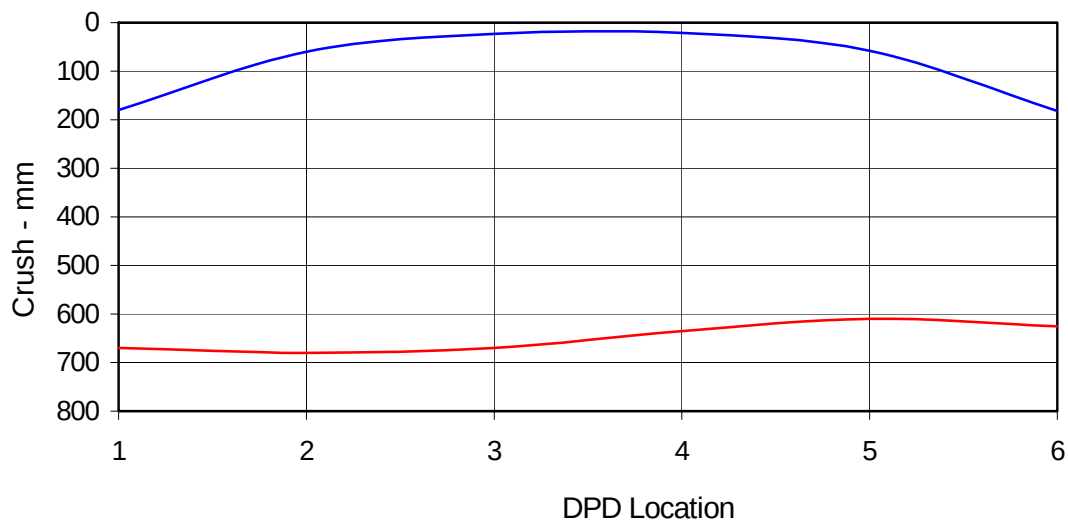
Collision Deformation Classification: 12FDEW6

Maximum Damage: Left Side of Vehicle Centerline

Damage Region Length (mm): 1445

Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	180	670	-490
C2	Crush zone 2 on left side	mm	60	680	-620
C3	Crush zone 3 on left side	mm	23	670	-647
C4	Crush zone 4 on right side	mm	21	635	-614
C5	Crush zone 5 on right side	mm	58	610	-552
C6	Crush zone 6 at right side	mm	182	625	-443



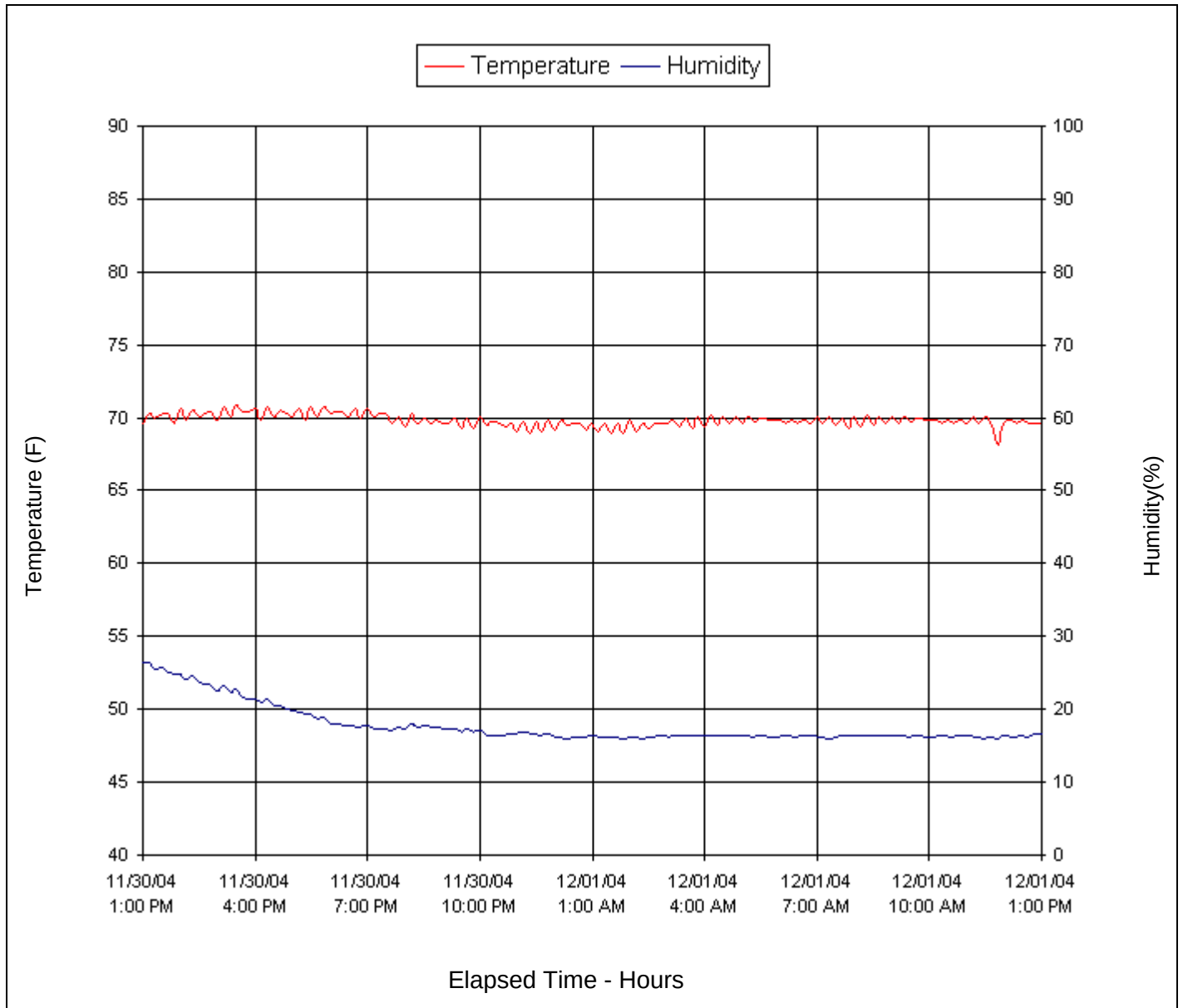
DATA SHEET NO. 21
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04



APPENDIX A
PHOTOGRAPHS

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50	Post-Test Passenger Dummy (Door Open)	A-50
51	Pre-Test Passenger Dummy Feet	A-51
52	Post-Test Passenger Dummy Feet	A-52
53	Pre-Test Passenger Side Glove Box	A-53
54	Post-Test Passenger Side Glove Box	A-54
55	Pre-Test Passenger Side Floor Pan	A-55
56	Post-Test Passenger Side Floor Pan	A-56
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58	Post-Test Passenger Dummy Airbag Contact	A-58
59	Vehicle on Rollover Device at 0°	A-59
60	Vehicle on Rollover Device 90°	A-60
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62	Vehicle on Rollover Device 270°	A-62
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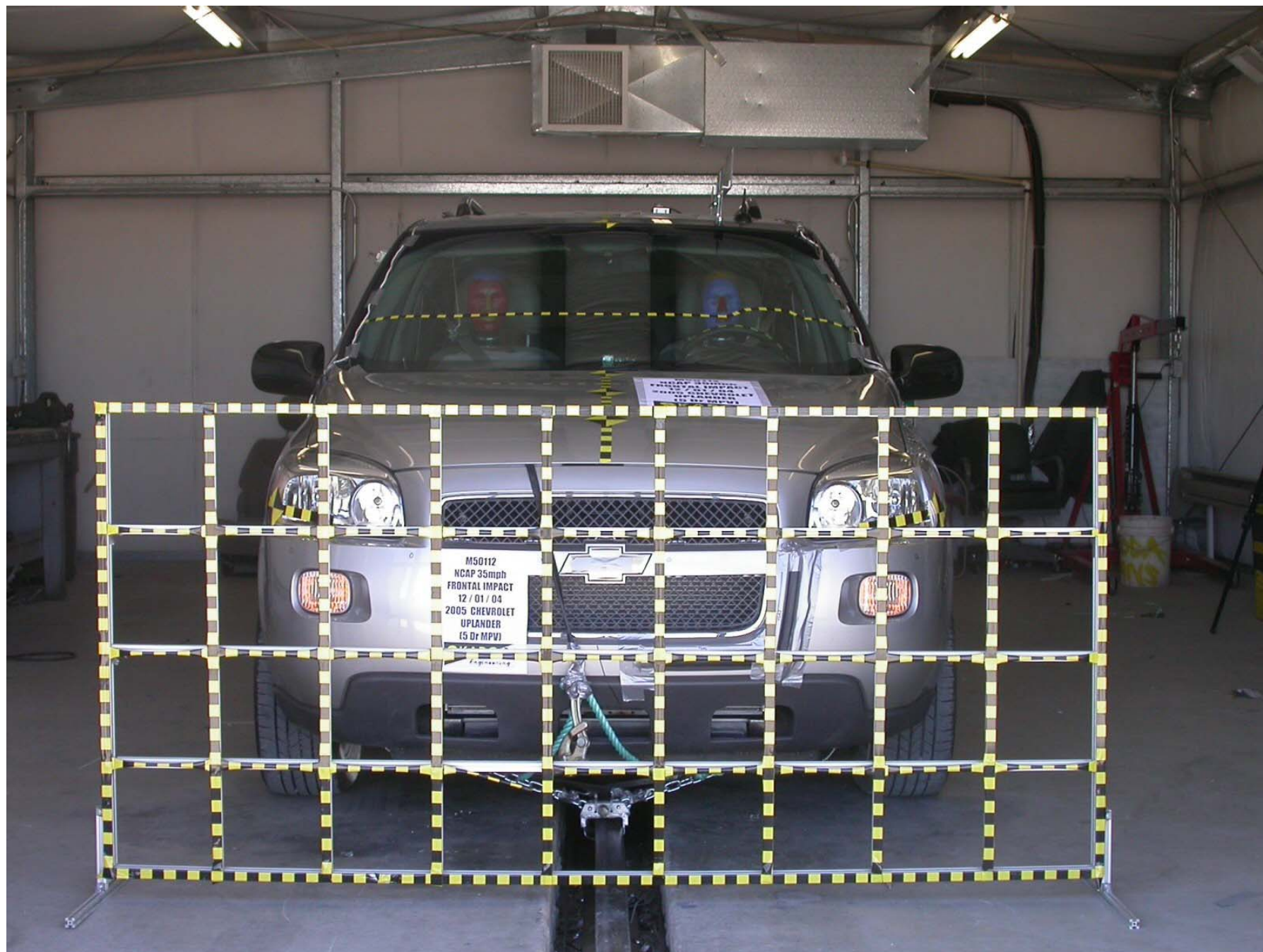


Figure A-1: Load Cell Location

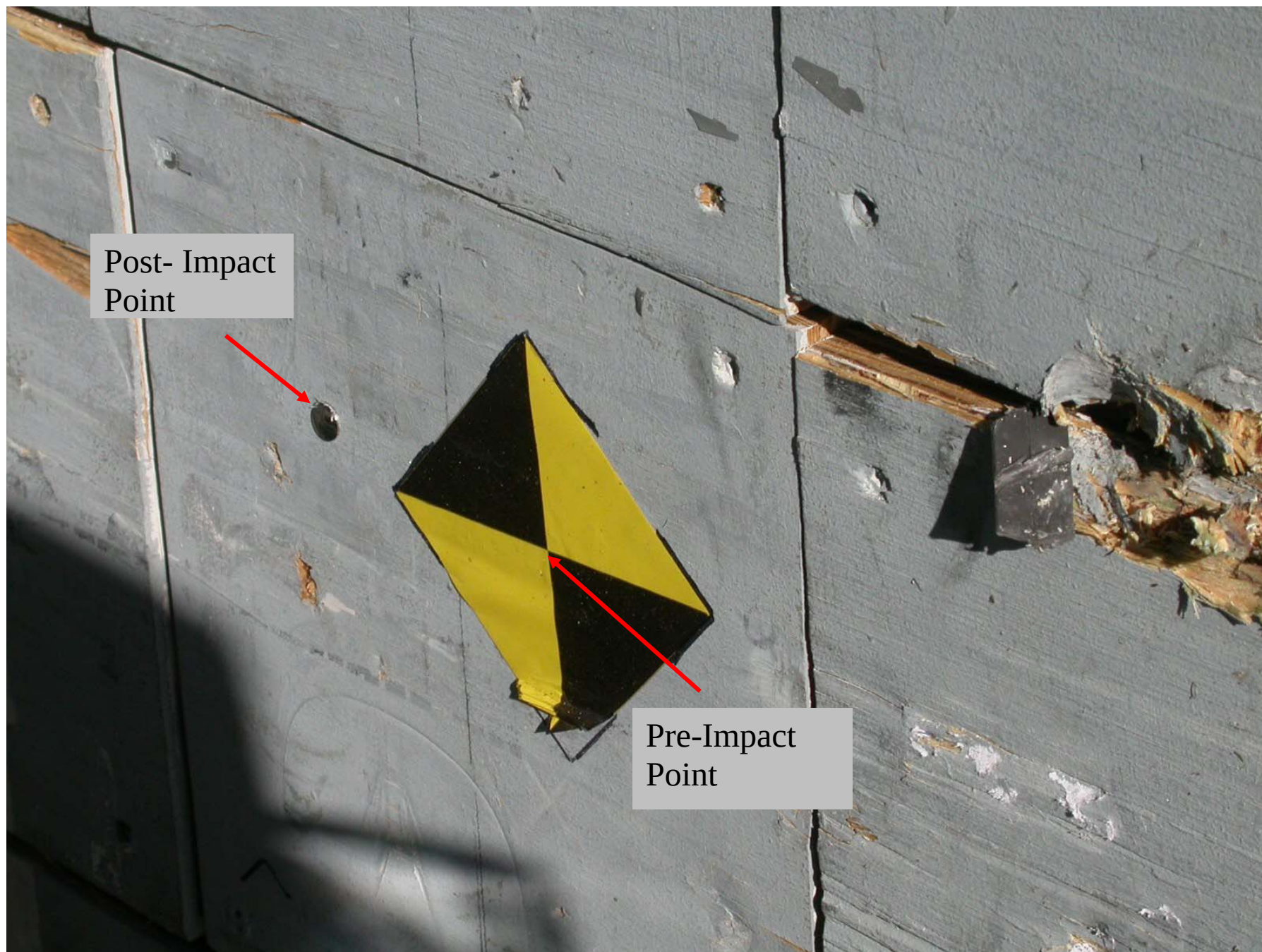


Figure A-2: Test Vehicle Barrier Contact Location



MFD BY GENERAL MOTORS CORP.

10/04

GVWR

GAWR FRT

GAWR RR

2550KG(5622LB)

1300KG(2866LB)

1250KG(2756LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

1GNDV33L35D157488

TYPE: M.P.V.

MODEL: U12216

UPBG TIRE SIZE SPEED RTG

RIM

COLD TIRE PRESSURE

FRT P225/60R17

S

17X6.5J

240KPA(35PSI)

RR P225/60R17

S

17X6.5J

240KPA(35PSI)

SPA T135/70R16

M

16X4T

420KPA(60PSI)

SEE OWNER'S MANUAL  FOR MORE INFORMATION.

Figure A-3: Manufacturer's Label

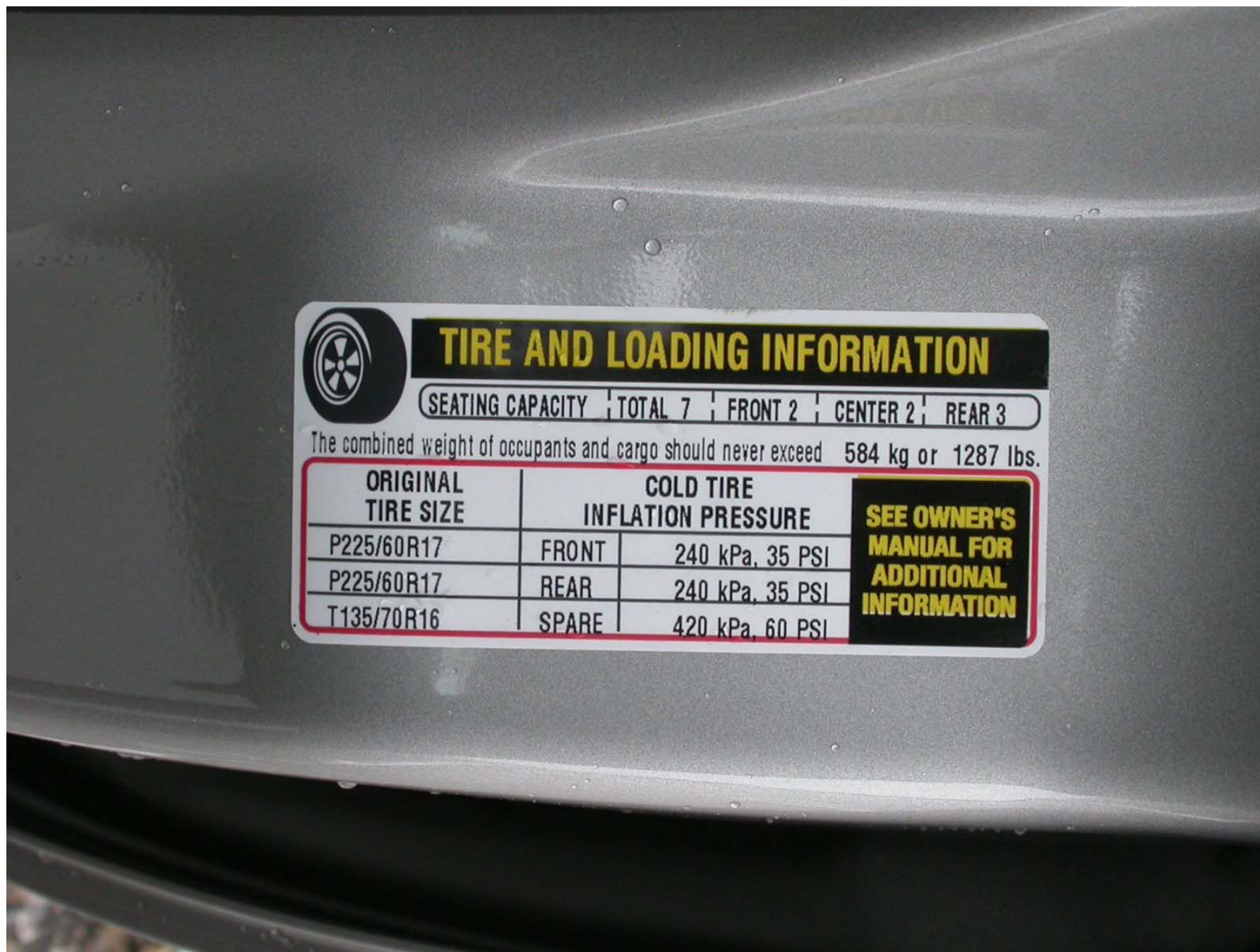


Figure A-4: Tire Placard



Figure A-5: Right Front $\frac{3}{4}$ View, As Received



Figure A-6: Left Rear $\frac{3}{4}$ View, as Received



Figure A-7: Pre-Test Front View (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)

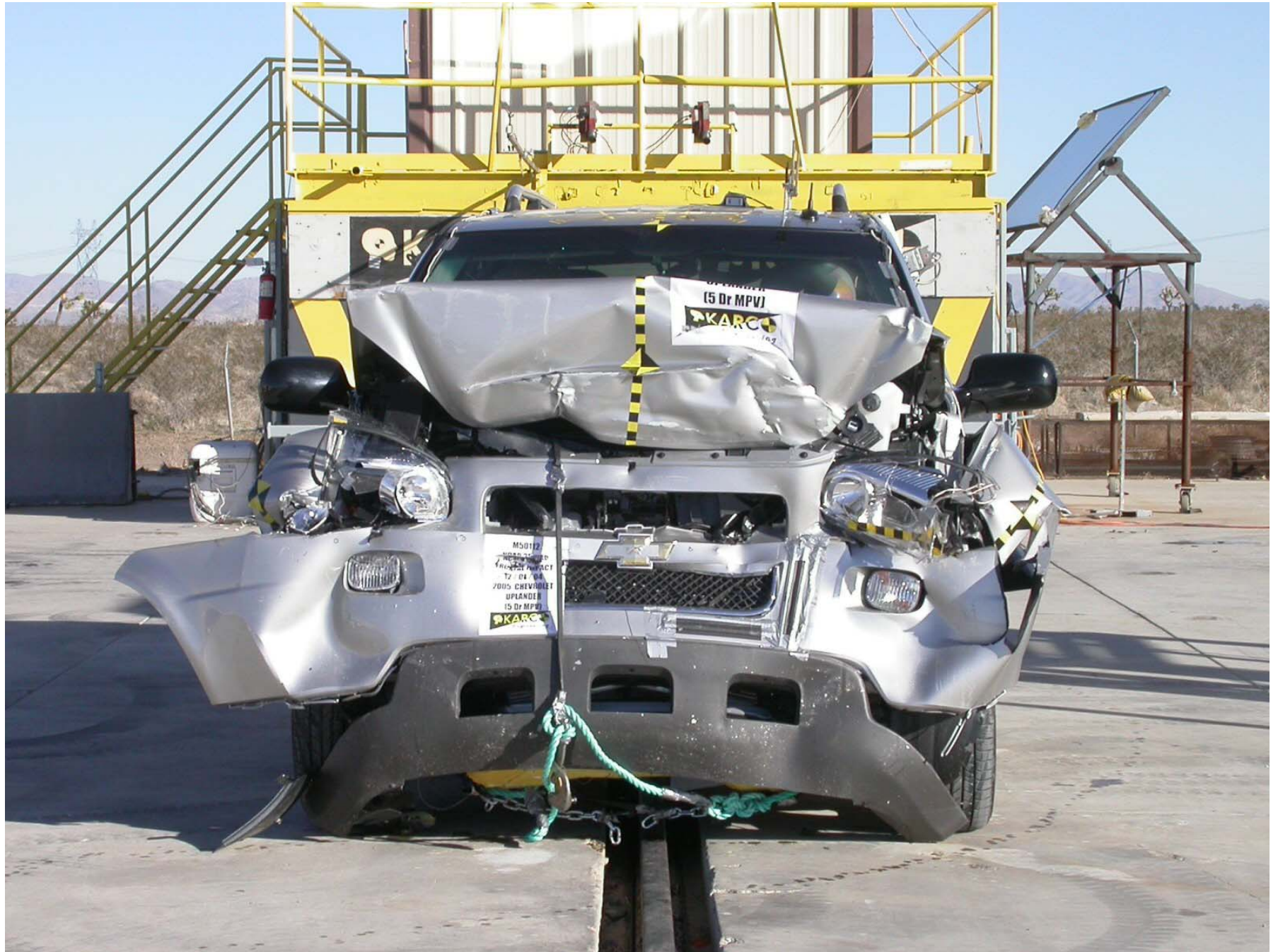


Figure A-8: Post-Test Front View (Vehicle Moved)



Figure A-9: Pre-Test Left Side View (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)



Figure A-10: Post-Test Left Side View



Figure A-11: Pre-Test Right Side View (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)



Figure A-12: Post-Test Right Side View



Figure A-13: Pre-Test Right Front $\frac{3}{4}$ View (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)



Figure A-14: Post-Test Right Front ¾ View (Vehicle Moved)



Figure A-15: Pre-Test Left Rear $\frac{3}{4}$ View (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)



Figure A-16: Post-Test Left Rear $\frac{3}{4}$ View



Figure A-17: Post-Test Left Side $\frac{3}{4}$ View of Doors After Impact (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)



Figure A-18: Post-Test Right Side $\frac{3}{4}$ View of Doors After Impact (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)

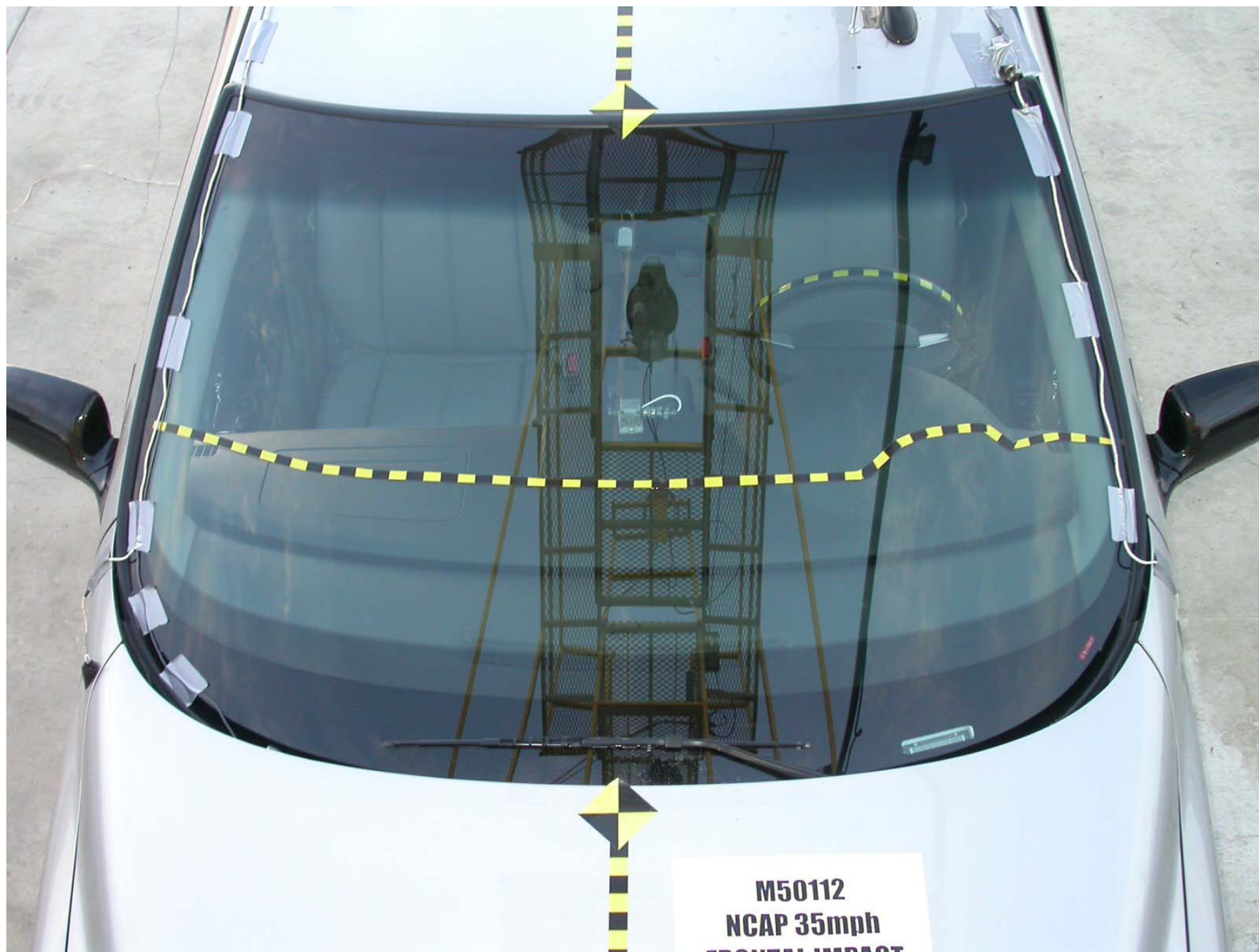


Figure A-19: Pre-Test Windshield



Figure A-20: Post-Test Windshield



Figure A-21: Pre-Test Engine Compartment



Figure A-22: Post-Test Engine Compartment (Vehicle Moved)



Figure A-23: Pre-Test Fuel Cap



Figure A-24: Post-Test Fuel Cap

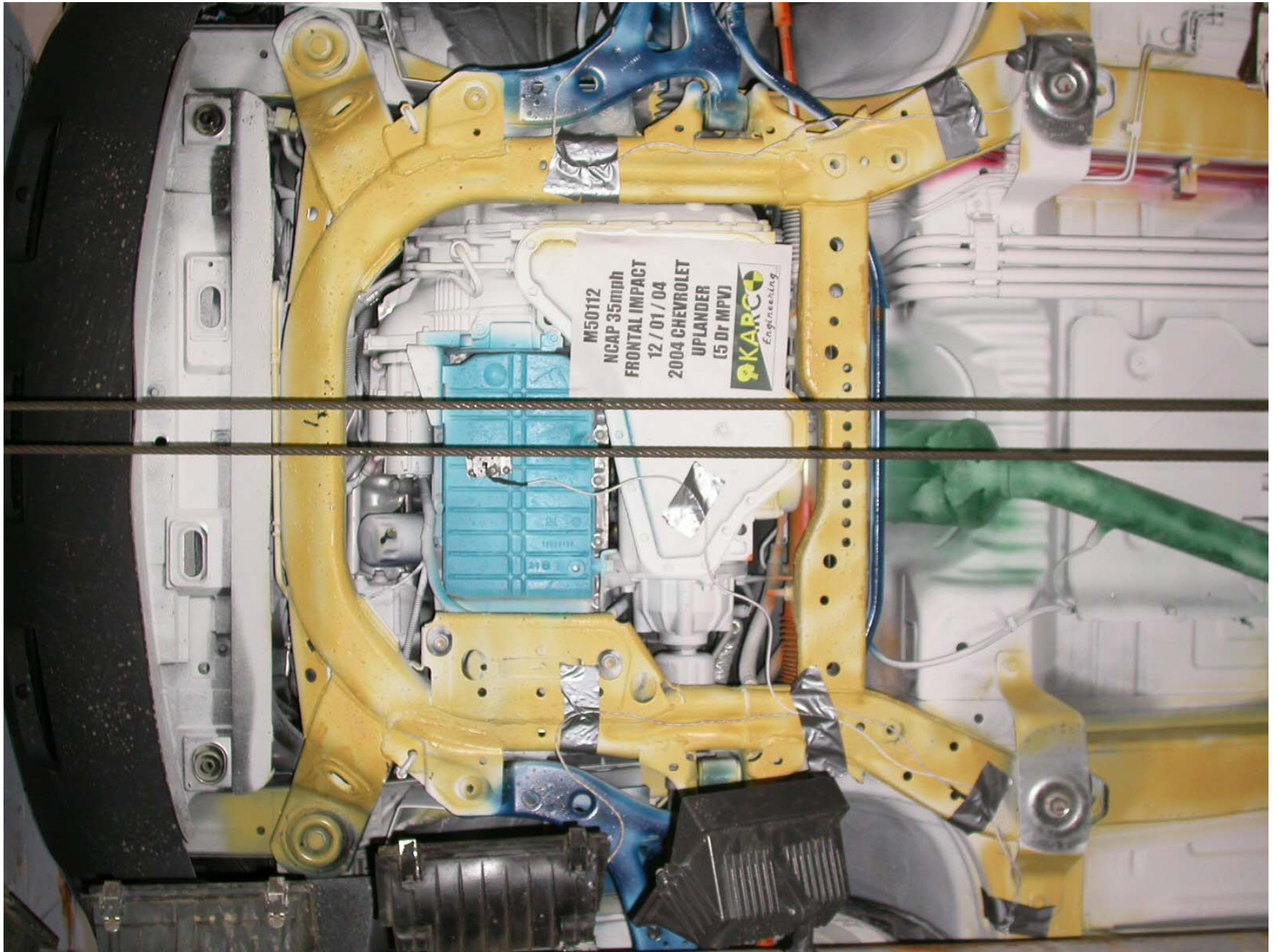


Figure A-25: Pre-Test Front Underbody (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)

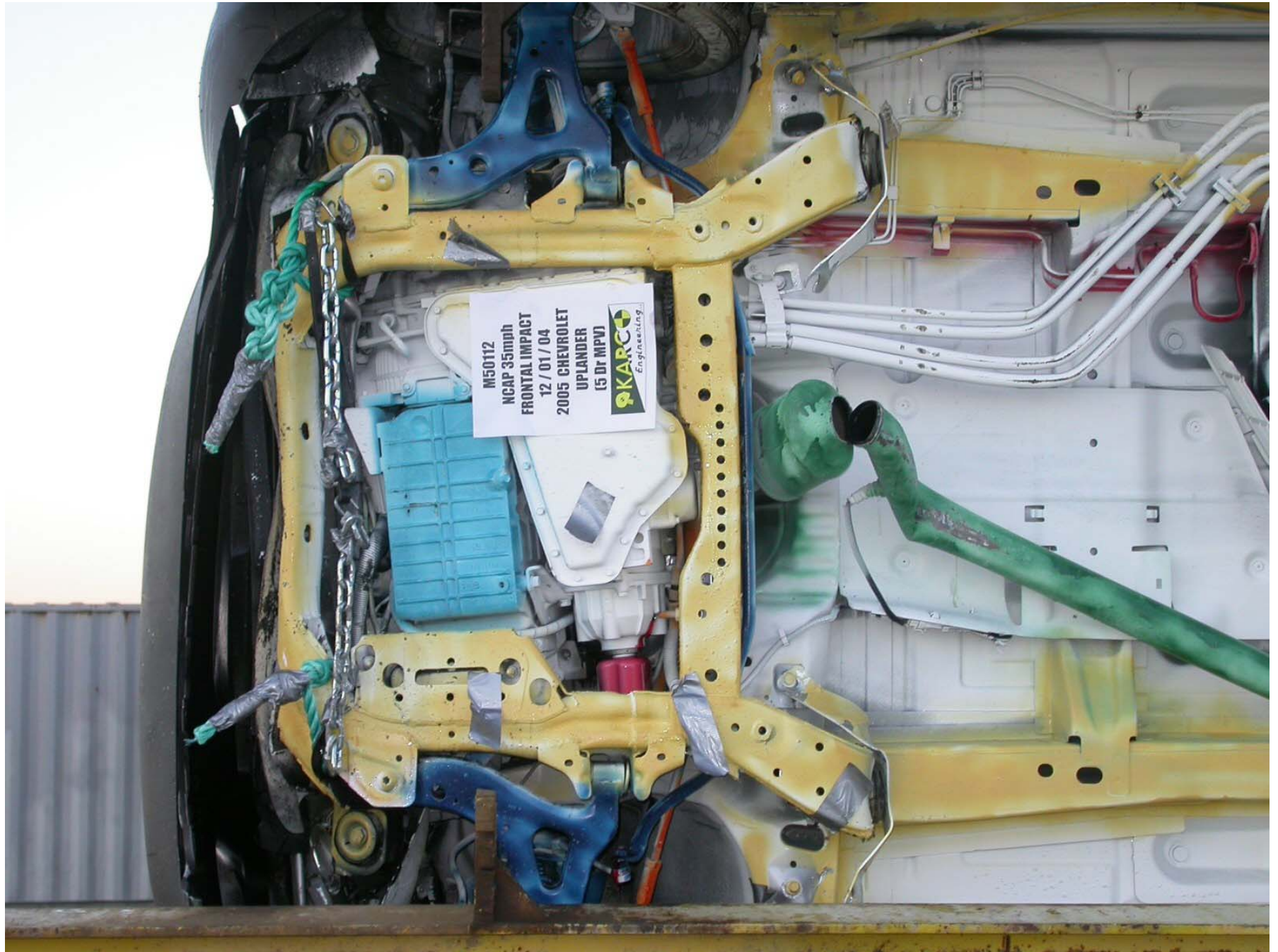


Figure A-26: Post-Test Front Underbody (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)

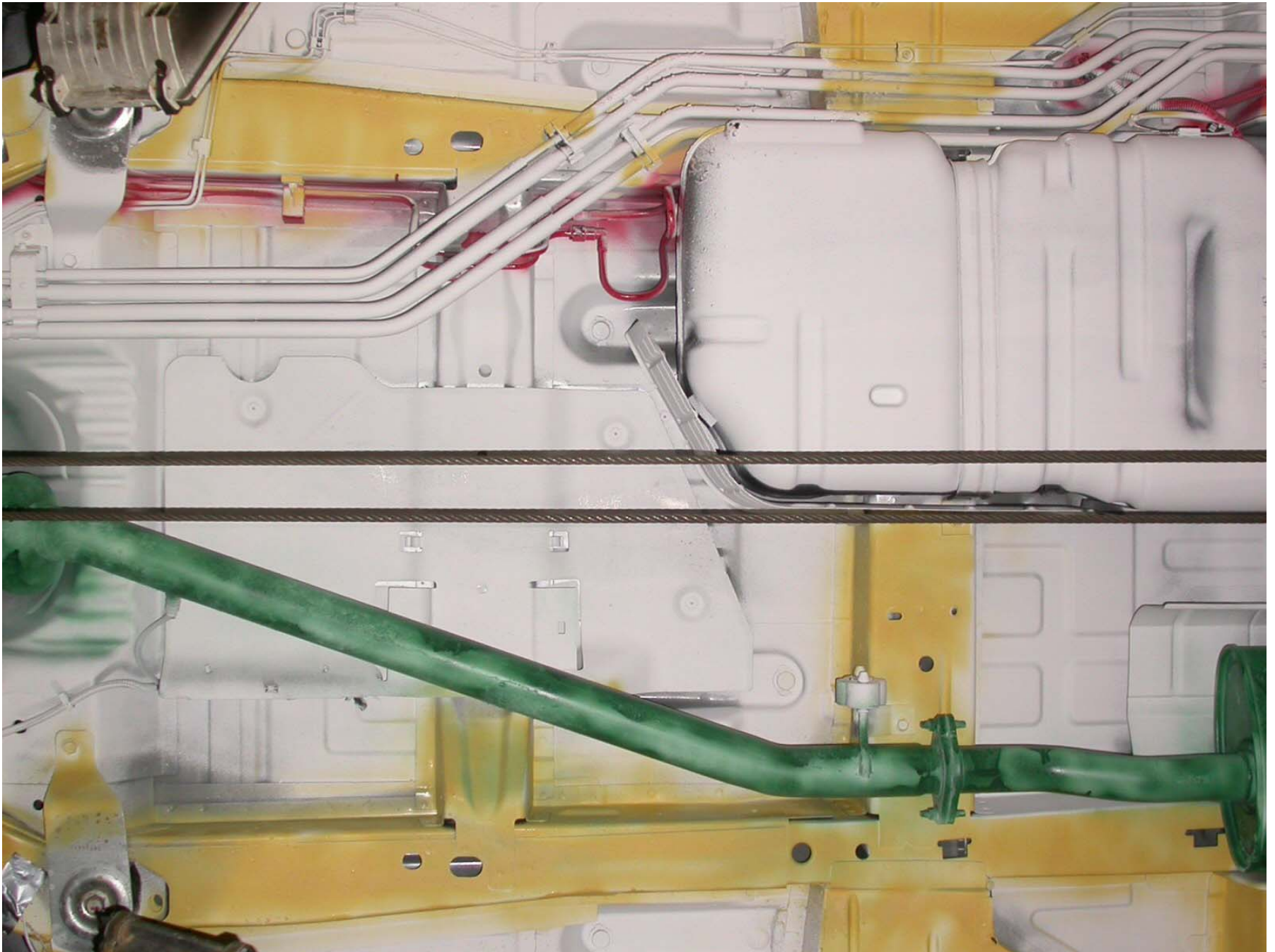


Figure A-27: Pre-Test Mid Underbody

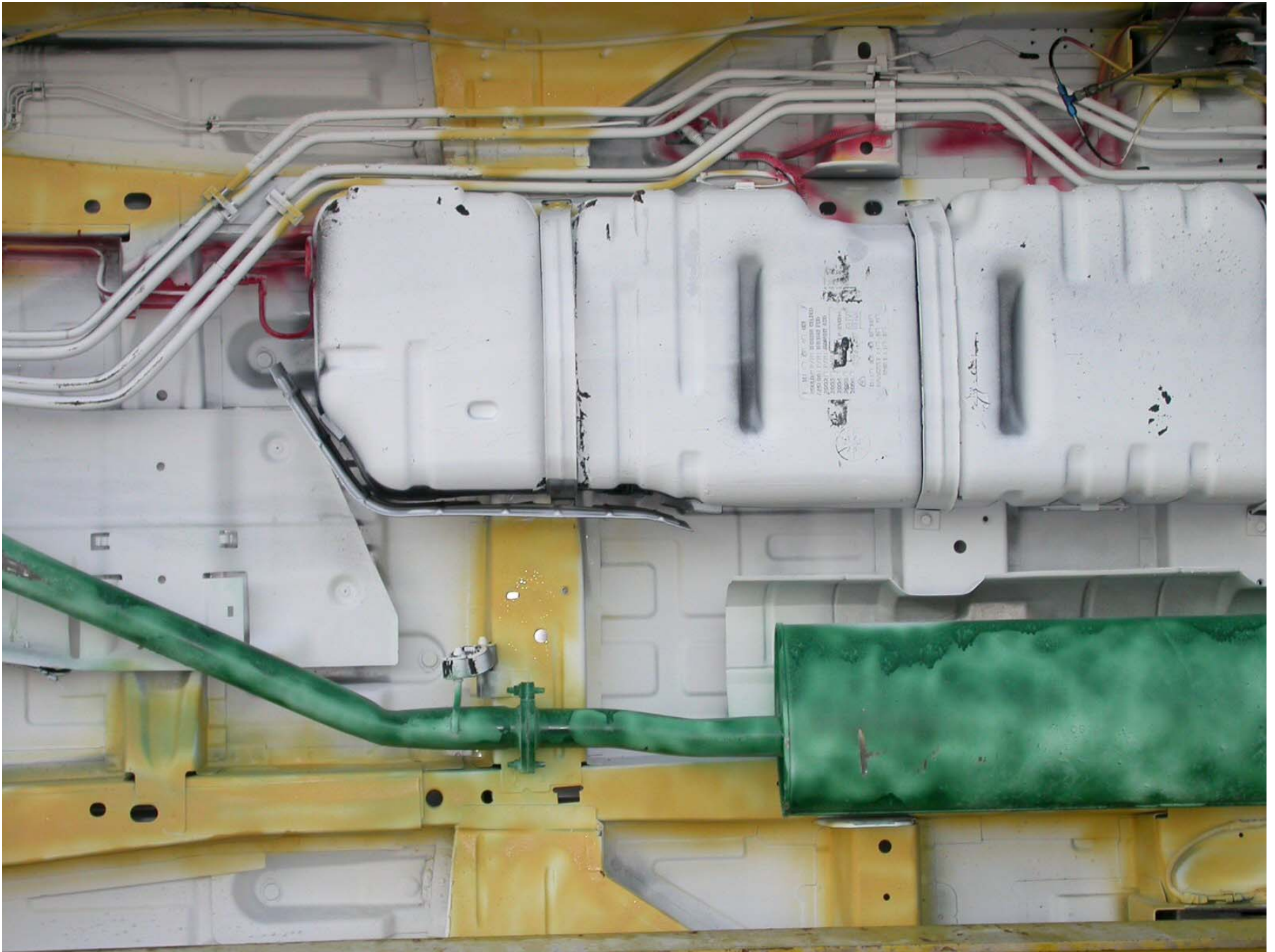


Figure A-28: Post-Test Mid Underbody

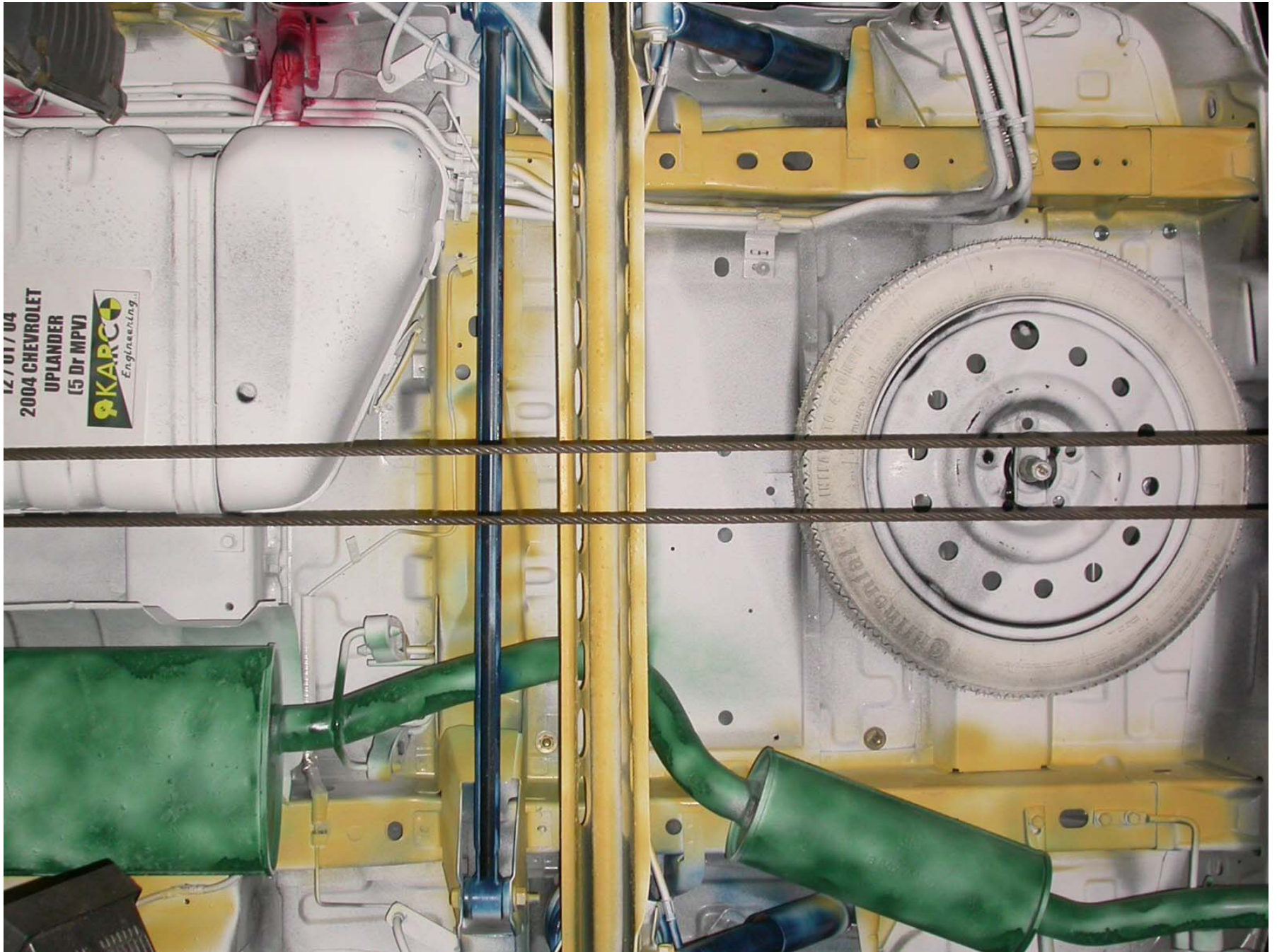


Figure A-29: Pre-Test Rear Underbody (Incorrect Placard: Placard Should Read 2005 Chevrolet Uplander)

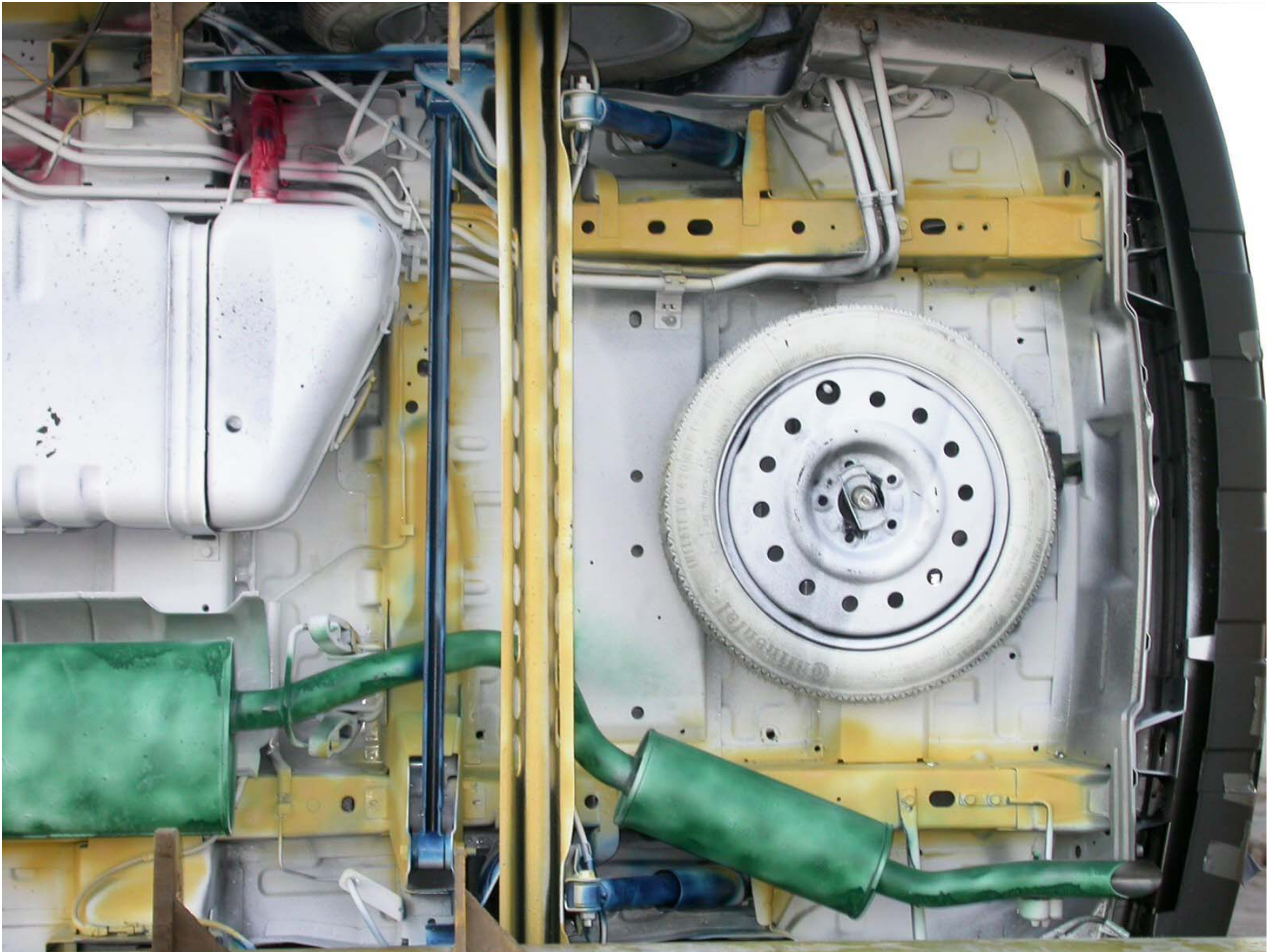


Figure A-30: Post-Test Rear Underbody



Figure A-31: Pre-Test Driver Dummy Front View (Head Position)



Figure A-32: Post-Test Driver Dummy Front View (Head Position)



Figure A-33: Pre-Test Driver Dummy (Through Window)



Figure A-34: Post-Test Driver Dummy (Through Window)



Figure A-35: Pre-Test Driver Dummy (Door Open)



Figure A-36: Post-Test Driver Dummy (Door Open)



Figure A-37: Pre-Test Driver Dummy Feet



Figure A-38: Post-Test Driver Dummy Feet



Figure A-39: Pre-Test Driver Side Knee Bolster



Figure A-40: Post-Test Driver Side Knee Bolster



Figure A-41: Pre-Test Driver Side Floor Pan

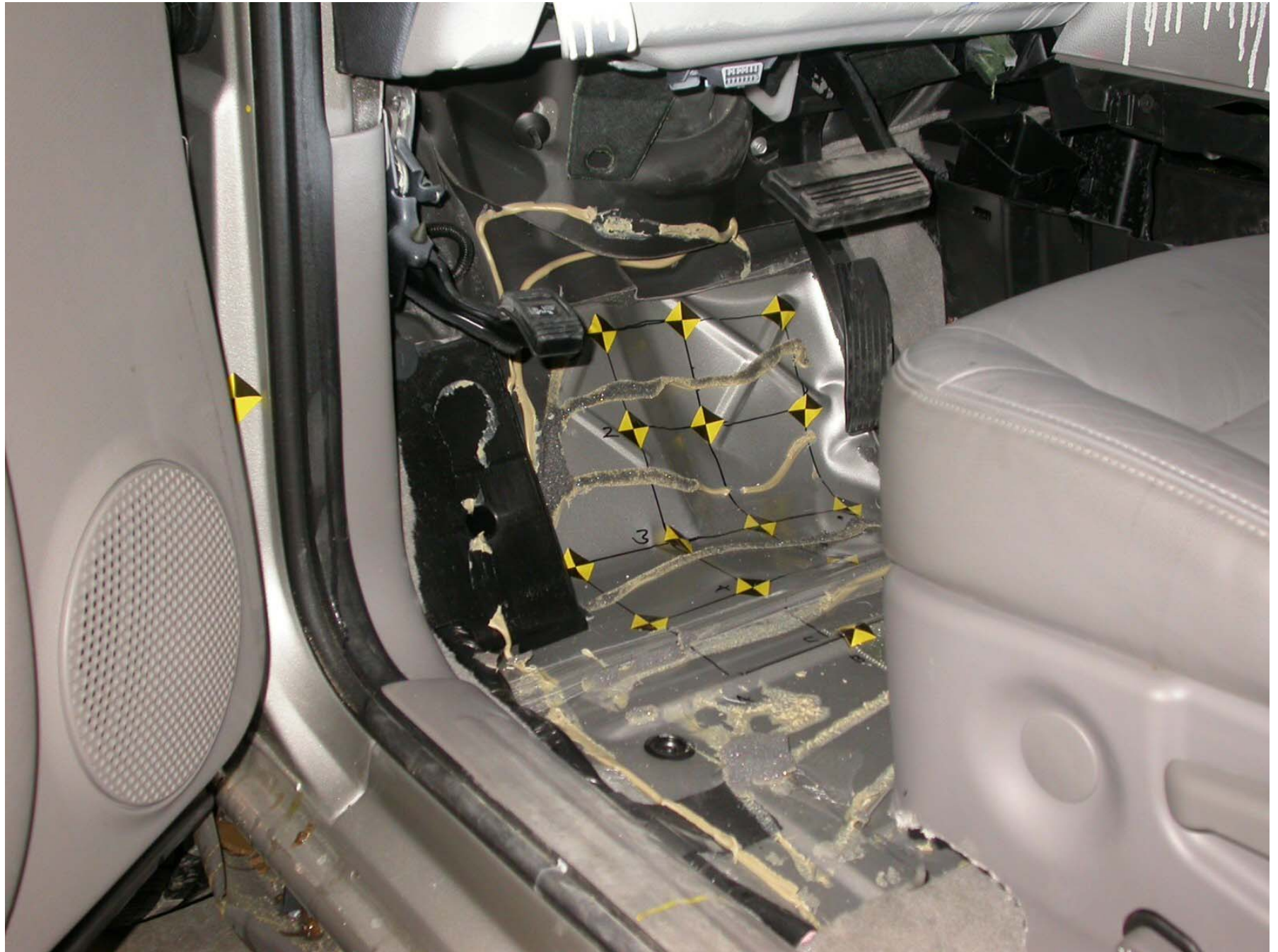


Figure A-42: Post-Test Driver Side Floor Pan



Figure A-43: Post-Test Driver Dummy Head



Figure A-44: Post-Test Driver Dummy Airbag Contact



Figure A-45: Pre-Test Passenger Dummy Front View (Head Position)



Figure A-46: Post-Test Passenger Dummy Front View (Head Position)



Figure A-47: Pre-Test Passenger Dummy (Through Window)



Figure A-48: Post-Test Passenger Dummy (Through Window)



Figure A-49: Pre-Test Passenger Dummy (Door Open)



Figure A-50: Post-Test Passenger Dummy (Door Open)



Figure A-51: Pre-Test Passenger Dummy Feet



Figure A-52: Post-Test Passenger Dummy Feet



Figure A-53: Pre-Test Passenger Side Glove Box



Figure A-54: Post-Test Passenger Side Glove Box



Figure A-55: Pre-Test Passenger Side Floor Pan



Figure A-56: Post-Test Passenger Side Floor Pan



Figure A-57: Post-Test Passenger Dummy Head



Figure A-58: Post-Test Passenger Dummy Airbag Contact

**Photograph Not
Available**

Figure A-59: Vehicle on Rollover Device (0°)



Figure A-60: Vehicle on Rollover Device (90°)



Figure A-61: Vehicle on Rollover Device (180°)

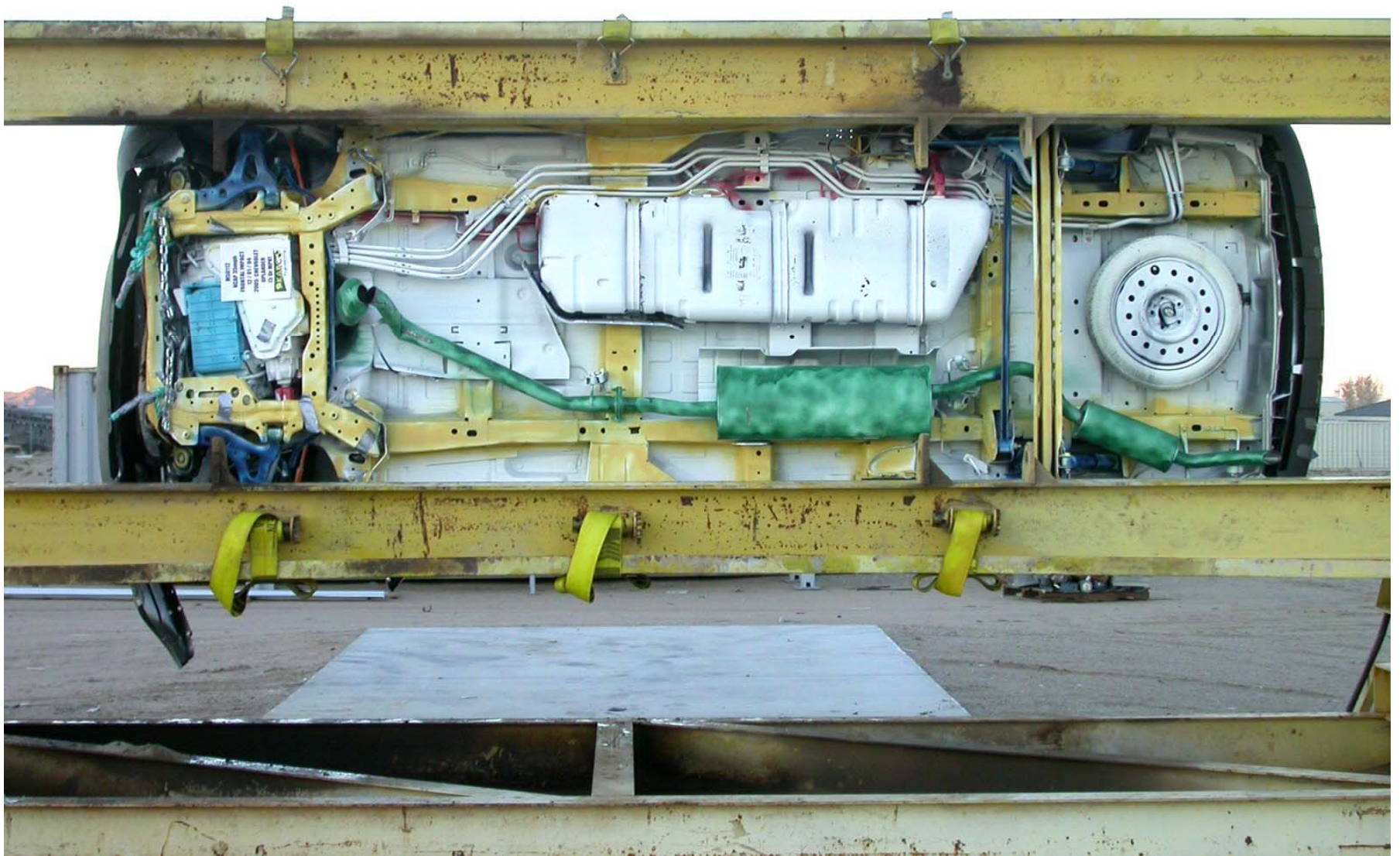


Figure A-62: Vehicle on Rollover Device (270°)



Figure A-63: Vehicle Impact

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

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	Driver Head Primary Y
	Driver Head Primary Z
	Driver Head Resultant Primary
B-2	Driver Head Primary X Velocity
	Driver Head Primary X Displacement
B-3	Driver Head Redundant X
	Driver Head Redundant Y
	Driver Head Redundant Z
	Driver Head Resultant Redundant
B-4	Driver Head Redundant X Velocity
	Driver Head Redundant X Displacement
B-5	Driver Upper Neck Force X
	Driver Upper Neck Force Y
	Driver Upper Neck Force Z
	Driver Upper Neck Force Resultant
B-6	Driver Upper Neck Moment X
	Driver Upper Neck Moment Y
	Driver Upper Neck Moment Z
	Driver Upper Neck Moment Resultant
B-7	Driver Chest Primary X
	Driver Chest Primary Y
	Driver Chest Primary Z
	Driver Chest Resultant Primary
B-8	Driver Chest Primary X Velocity
	Driver Chest Primary X Displacement
B-9	Driver Chest Redundant X
	Driver Chest Redundant Y
	Driver Chest Redundant Z
	Driver Chest Resultant Redundant
B-10	Driver Chest Redundant X Velocity
	Driver Chest Redundant X Displacement
B-11	Driver Chest Deflection

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Driver Pelvis Resultant	B-12
B-13 Driver Pelvis X Velocity	B-13
Driver Pelvis X Displacement	B-13
B-14 Driver Left Femur Force	B-14
Driver Right Femur Force	B-14
B-15 Driver Left Upper Tibia Moment X	B-15
Driver Left Upper Tibia Moment Y	B-15
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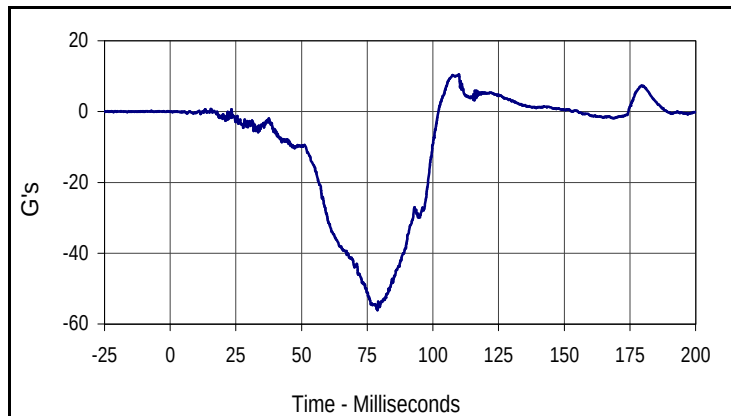
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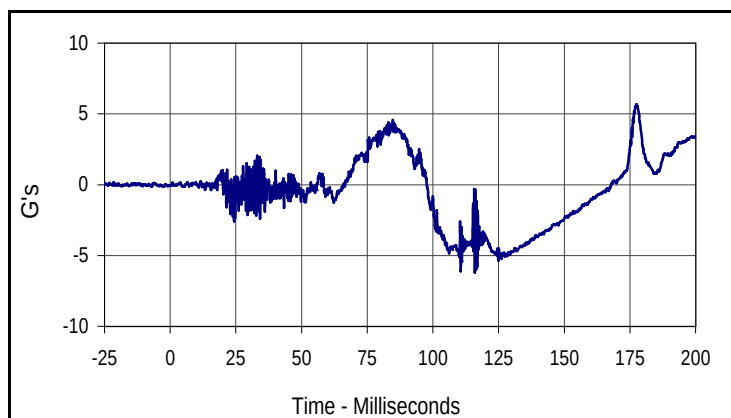
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	Vehicle Right Rear Z Velocity
	Vehicle Right Rear Z Displacement

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

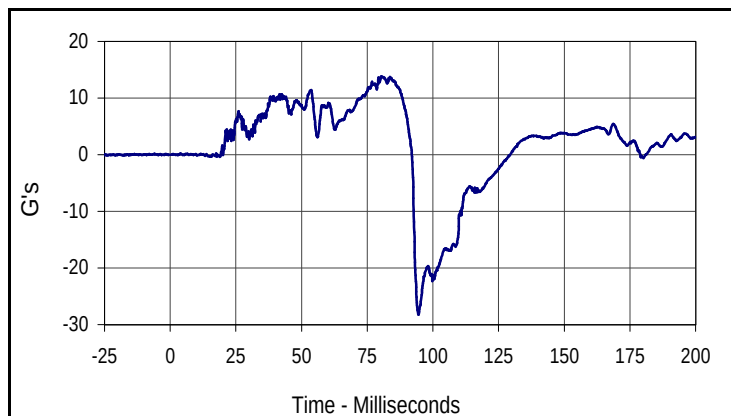
Test Date: 12/1/04
 NHTSA No.: M50112



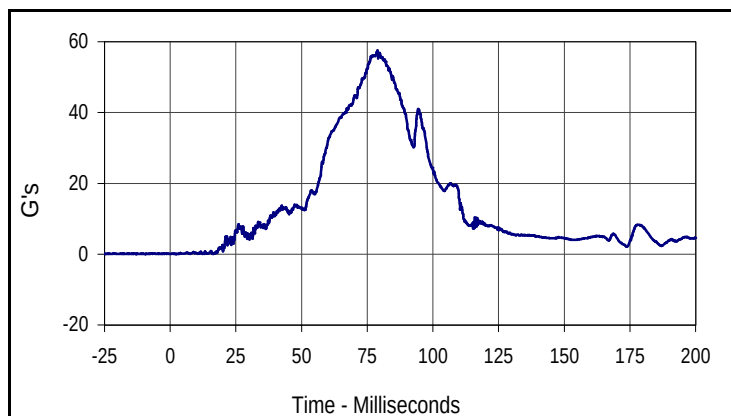
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Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
10.5	109.9	-56.1	78.9



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.7	177.5	-6.2	116.0



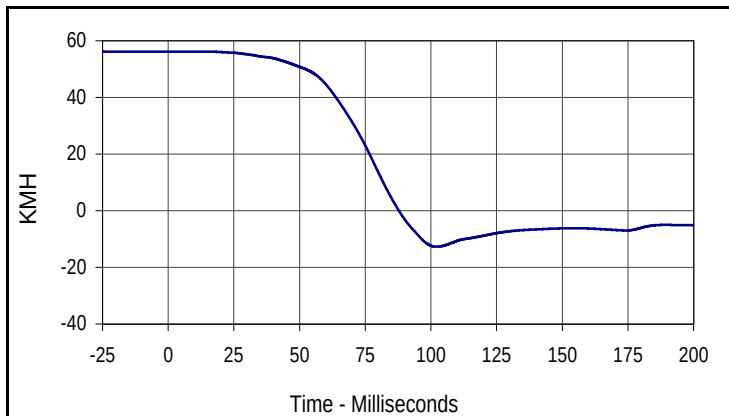
Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.8	80.4	-28.3	94.5



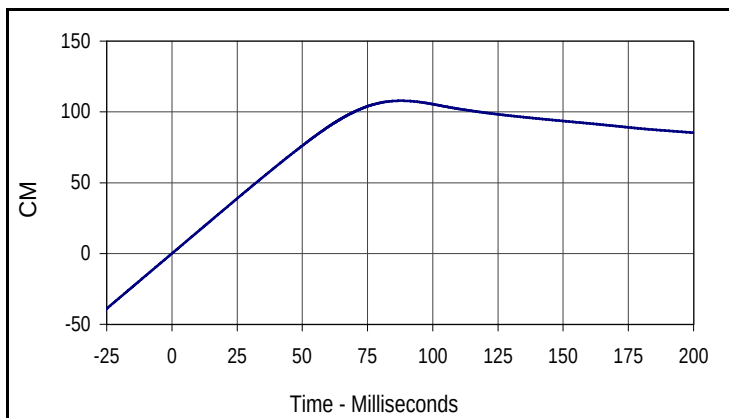
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
57.5	78.9	0.0	2.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



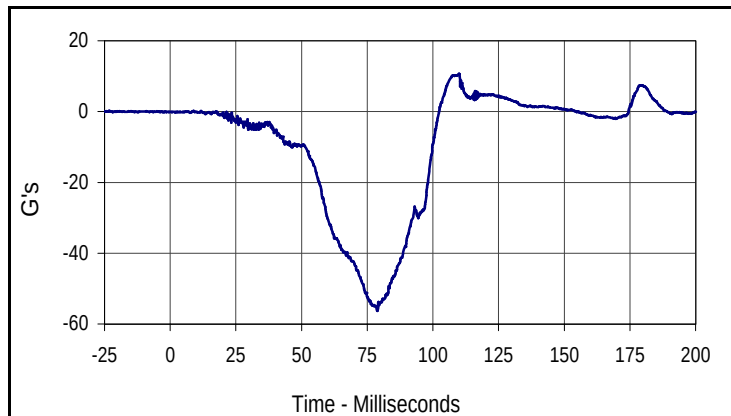
Curve Description			
Driver Head Primary X Velocity			
CURNO	Type	SAE Class	Units
001	IN1	180	KMH
Max	Time	Min	Time
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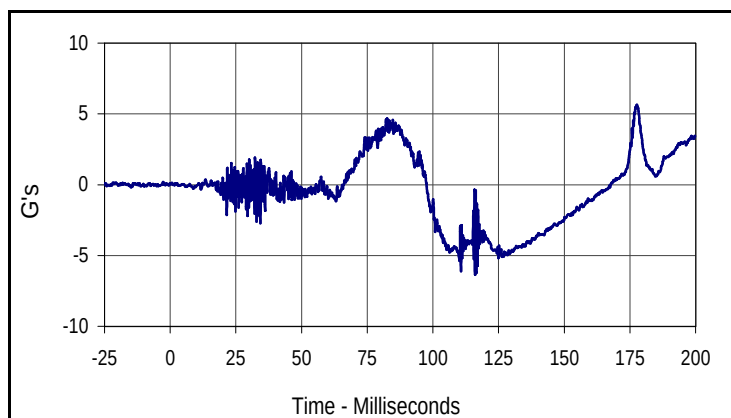
Curve Description			
Driver Head Primary X Displacement			
CURNO	Type	SAE Class	Units
001	IN2	180	CM
Max	Time	Min	Time
107.9	87.8	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

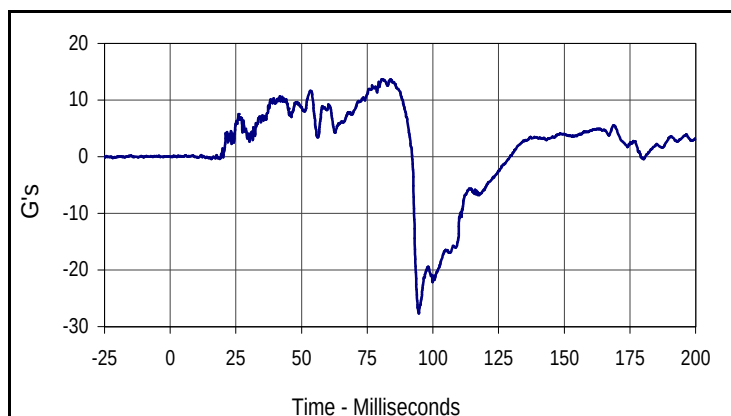
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 NHTSA No.: M50112



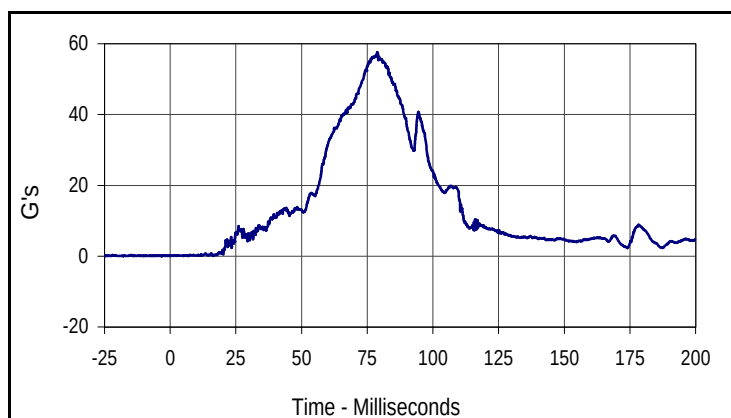
Curve Description			
Driver Head Redundant X			
CURNO	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
10.7	110.0	-56.3	78.9



Curve Description			
Driver Head Redundant Y			
CURNO	Type	SAE Class	Units
005	FIL	1000	G's
Max	Time	Min	Time
5.6	177.6	-6.3	116.1



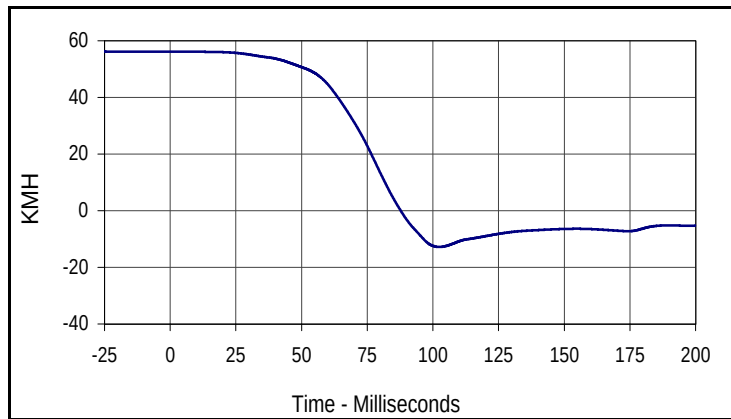
Curve Description			
Driver Head Redundant Z			
CURNO	Type	SAE Class	Units
006	FIL	1000	G's
Max	Time	Min	Time
13.7	80.8	-27.7	94.6



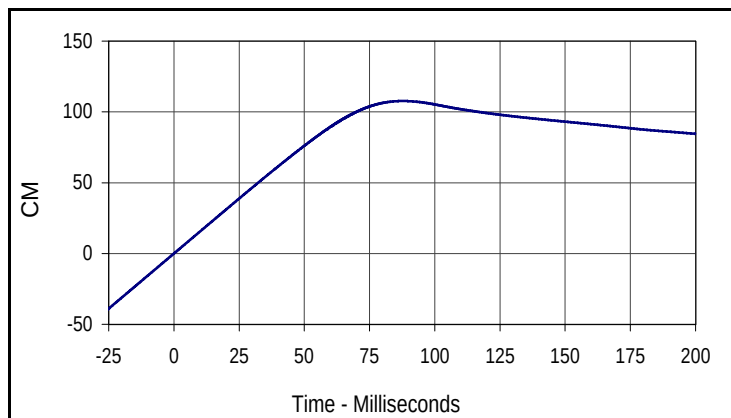
Curve Description			
Driver Head Resultant Redundant			
CURNO	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
57.6	78.9	0.1	16.3

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 Test Program: 2005 NHTSA 35mph NCAP

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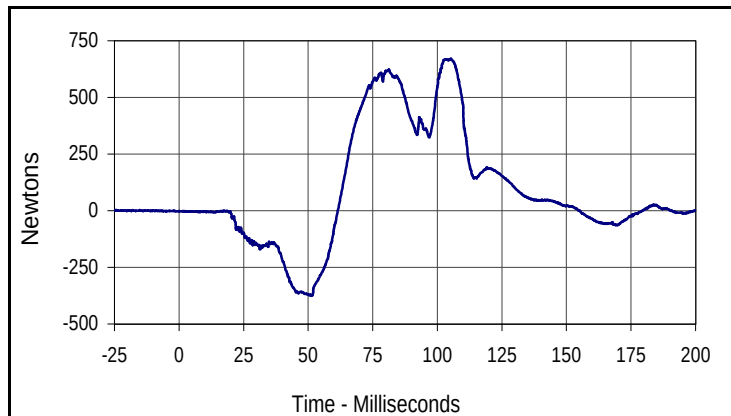
Curve Description			
Driver Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
004	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-12.8	102.3



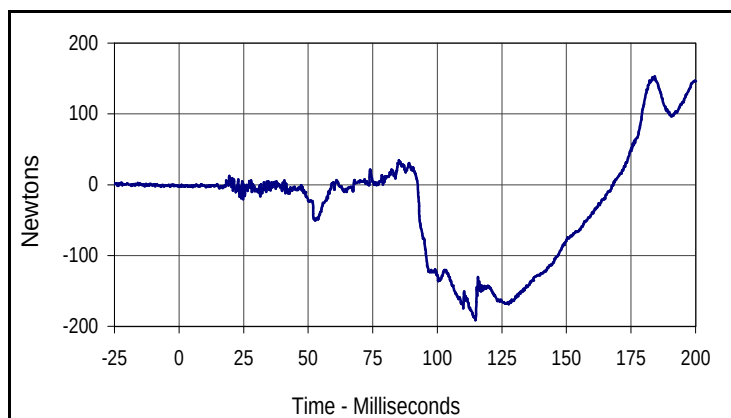
Curve Description			
Driver Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
004	IN2	180	CM
Max	Time	Min	Time
107.7	87.7	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

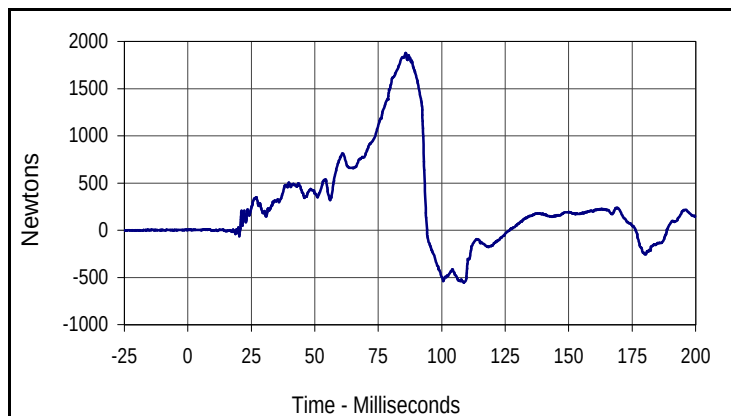
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 NHTSA No.: M50112



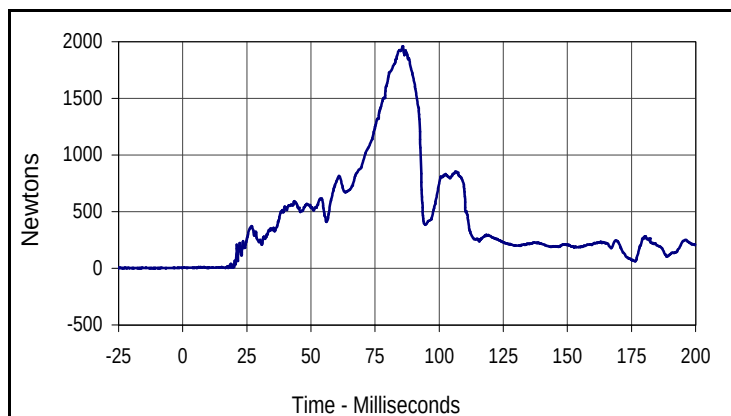
Curve Description			
Driver Upper Neck Force X			
CURNO	Type	SAE Class	Units
007	FIL	1000	Newtons
Max	Time	Min	Time
670.4	105.2	-375.2	51.2



Curve Description			
Driver Upper Neck Force Y			
CURNO	Type	SAE Class	Units
008	FIL	1000	Newtons
Max	Time	Min	Time
153.2	184.2	-191.5	114.8



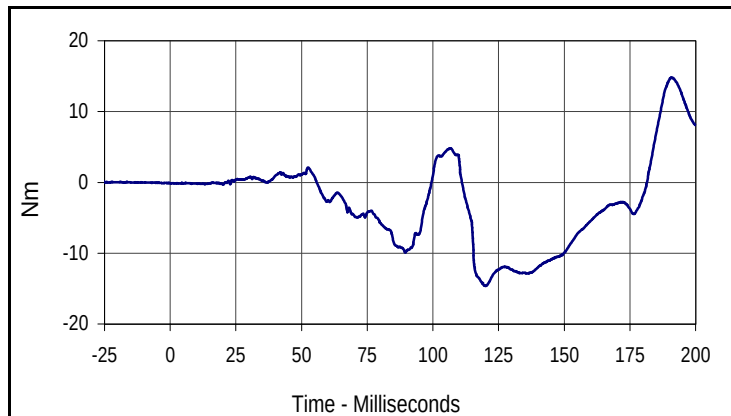
Curve Description			
Driver Upper Neck Force Z			
CURNO	Type	SAE Class	Units
009	FIL	1000	Newtons
Max	Time	Min	Time
1879.1	85.8	-554.9	108.7



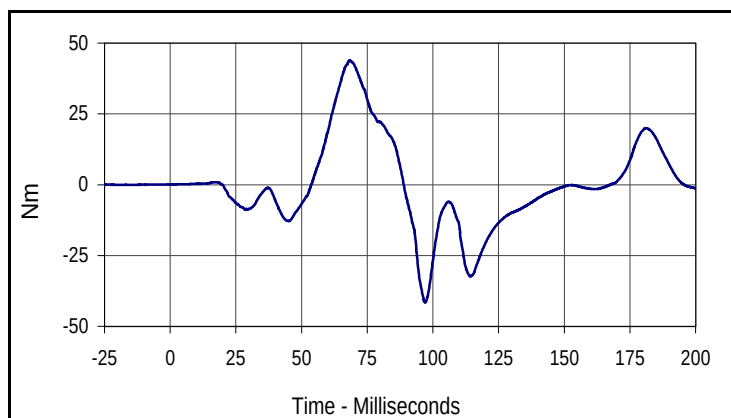
Curve Description			
Driver Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
007	RES	1000	Newtons
Max	Time	Min	Time
1961.8	85.8	2.2	17.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

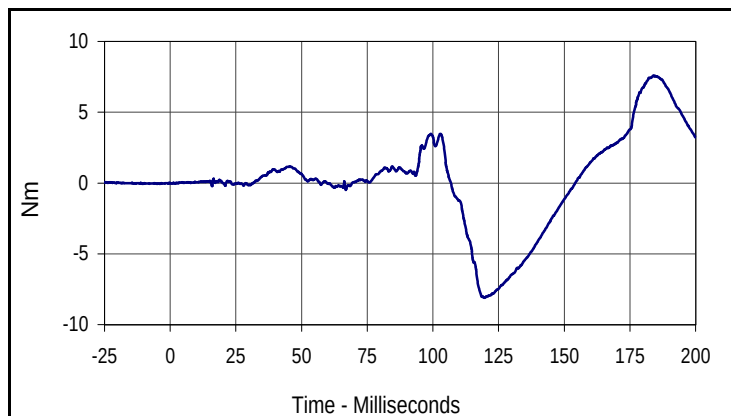
Test Date: 12/1/04
 NHTSA No.: M50112



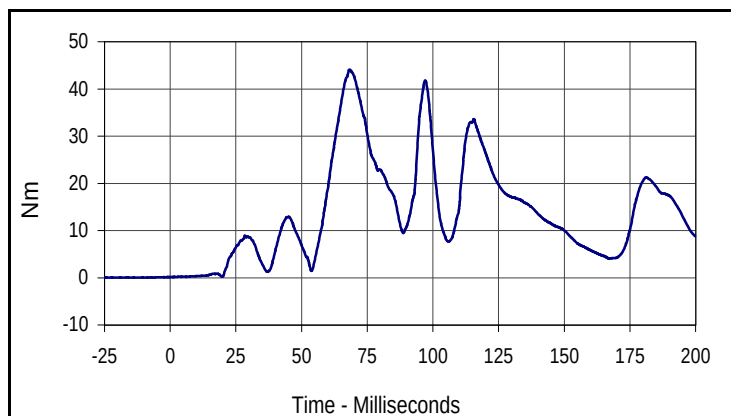
Curve Description			
Driver Upper Neck Moment X			
CURNO	Type	SAE Class	Units
010	FIL	600	Nm
Max	Time	Min	Time
14.8	190.8	-14.6	120.0



Curve Description			
Driver Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
011	FIL	600	Nm
Max	Time	Min	Time
43.9	68.2	-41.6	97.1



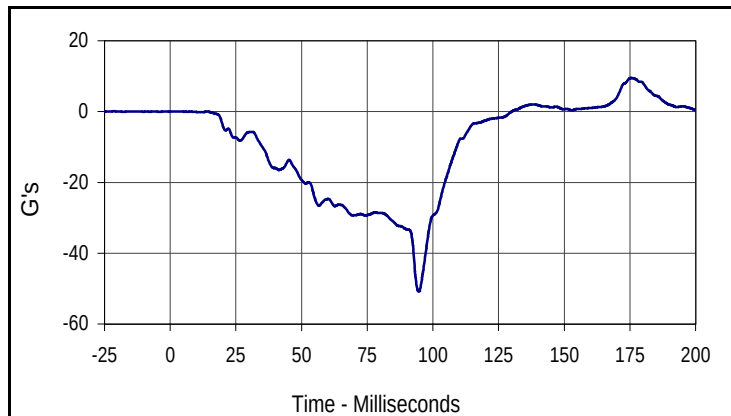
Curve Description			
Driver Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
7.6	183.9	-8.1	119.6



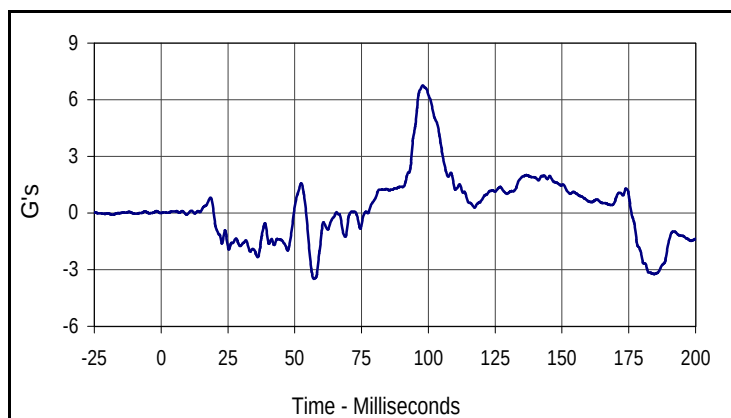
Curve Description			
Driver Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
010	RES	600	Nm
Max	Time	Min	Time
44.0	68.3	0.1	1.1

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

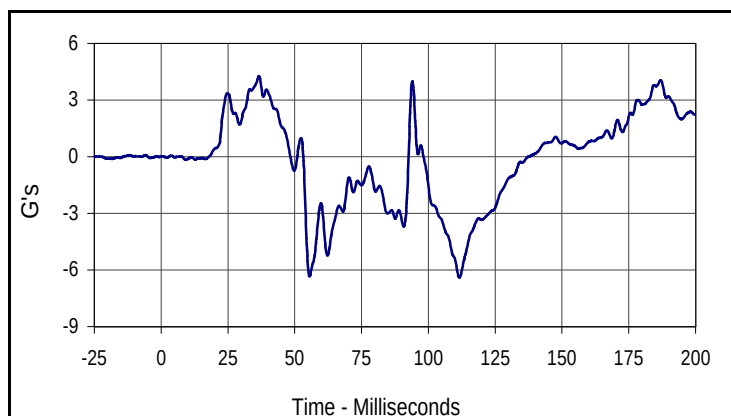
Test Date: 12/1/04
 NHTSA No.: M50112



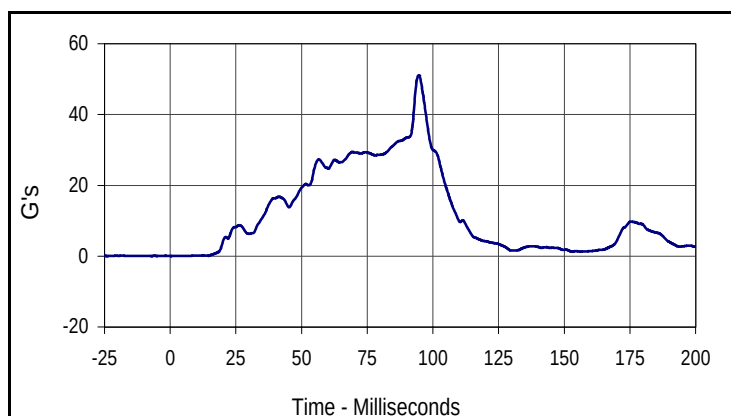
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
9.5	175.3	-50.8	94.6



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
6.8	97.9	-3.5	57.1



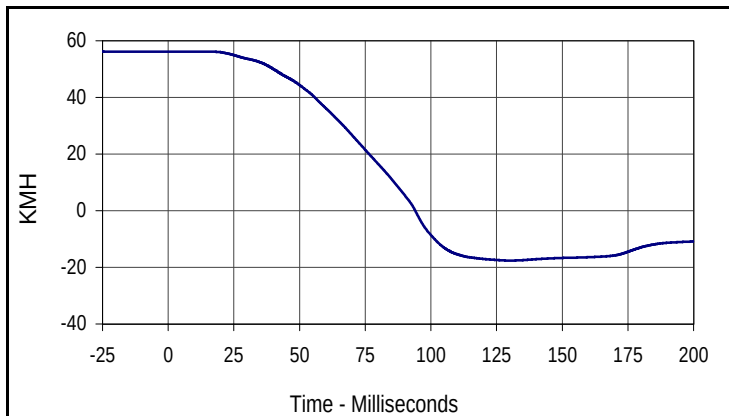
Curve Description			
Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
015	FIL	180	G's
Max	Time	Min	Time
4.3	36.6	-6.4	111.6



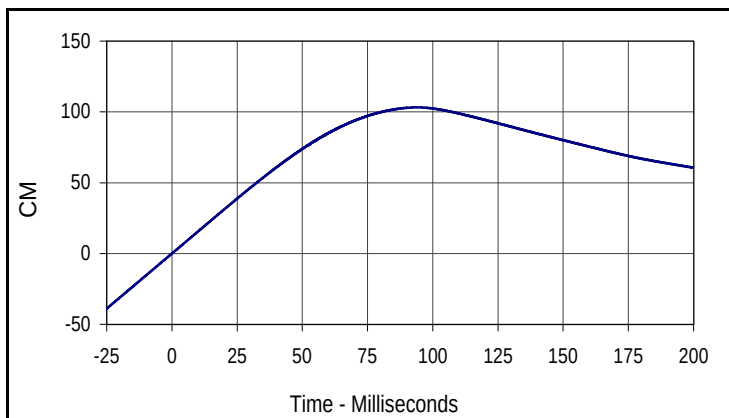
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
013	RES	180	G's
Max	Time	Min	Time
51.0	94.6	0.0	0.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



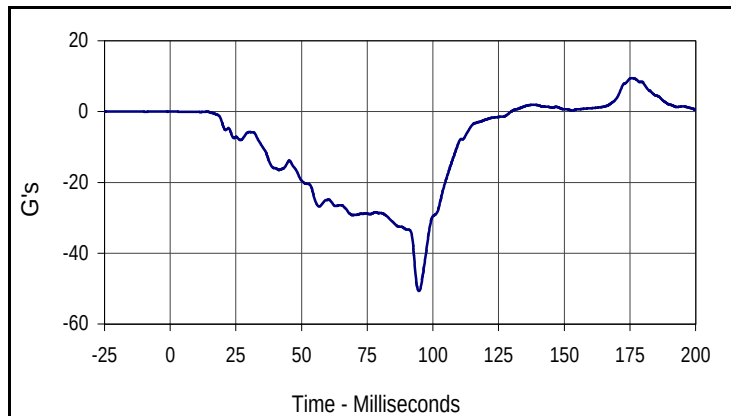
Curve Description			
Driver Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
013	IN1	180	KMH
Max	Time	Min	Time
56.2	4.6	-17.6	130.0



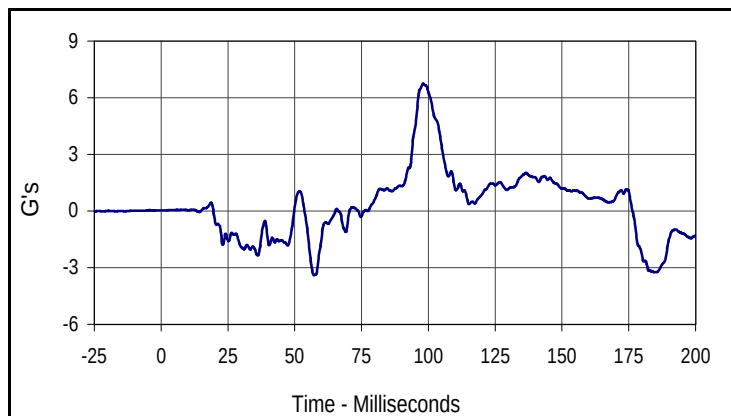
Curve Description			
Driver Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
013	IN2	180	CM
Max	Time	Min	Time
103.2	94.0	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

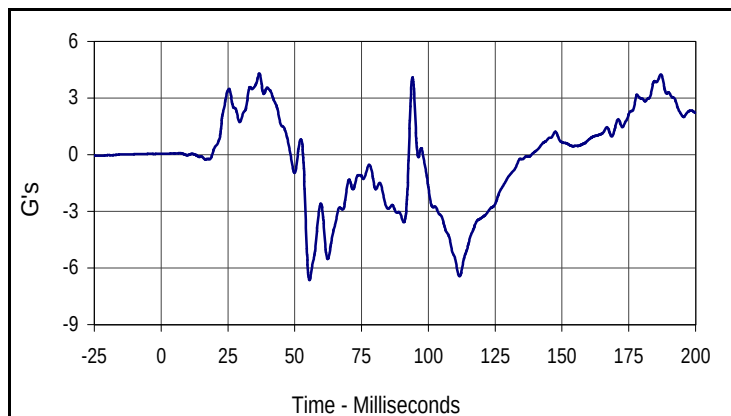
Test Date: 12/1/04
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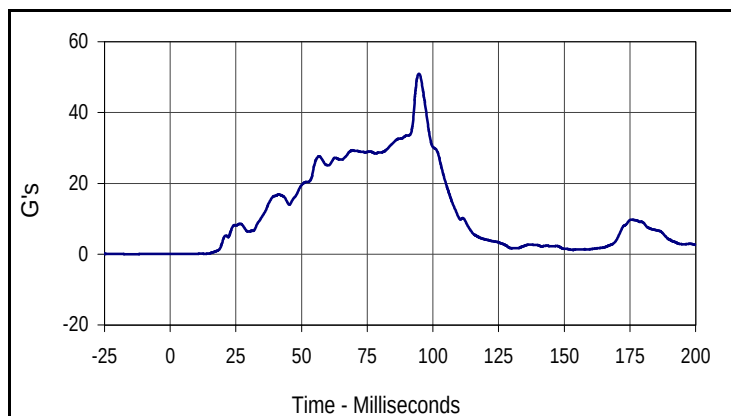
Curve Description			
Driver Chest Redundant X			
CURNO	Type	SAE Class	Units
016	FIL	180	G's
Max	Time	Min	Time
9.5	175.5	-50.7	94.7



Curve Description			
Driver Chest Redundant Y			
CURNO	Type	SAE Class	Units
017	FIL	180	G's
Max	Time	Min	Time
6.8	98.1	-3.4	57.2



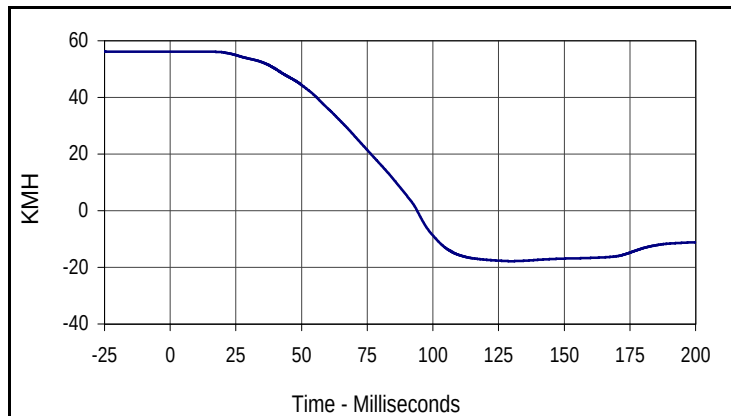
Curve Description			
Driver Chest Redundant Z			
CURNO	Type	SAE Class	Units
018	FIL	180	G's
Max	Time	Min	Time
4.3	36.8	-6.6	55.5



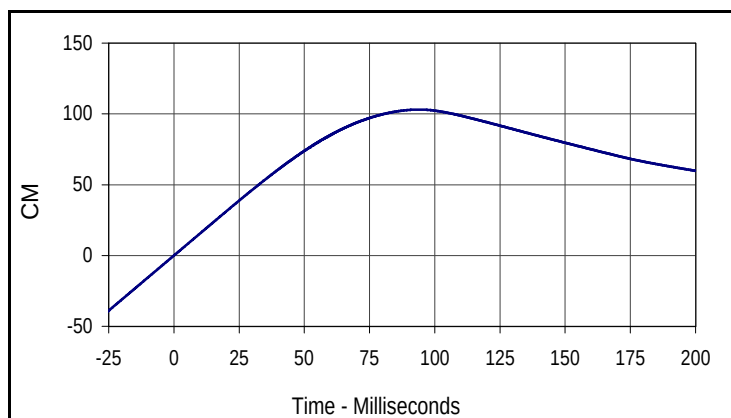
Curve Description			
Driver Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
016	RES	180	G's
Max	Time	Min	Time
51.0	94.7	0.1	2.1

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

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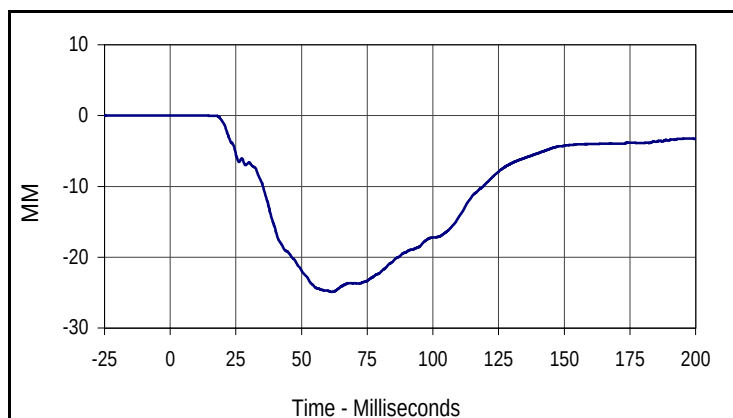
Curve Description			
Driver Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
016	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-17.8	129.8



Curve Description			
Driver Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
016	IN2	180	CM
Max	Time	Min	Time
103.1	94.0	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

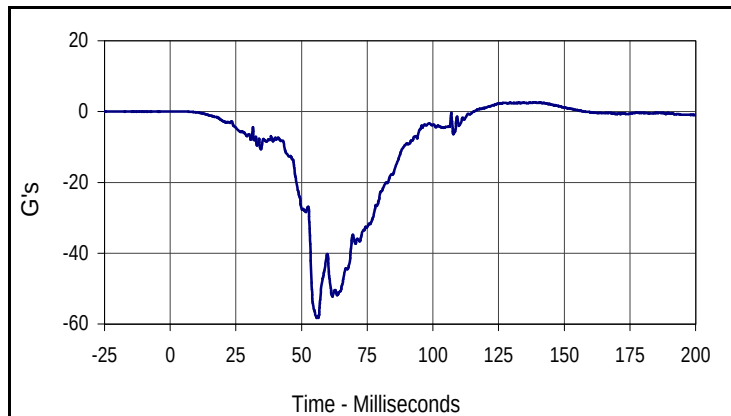
Test Date: 12/1/04
 NHTSA No.: M50112



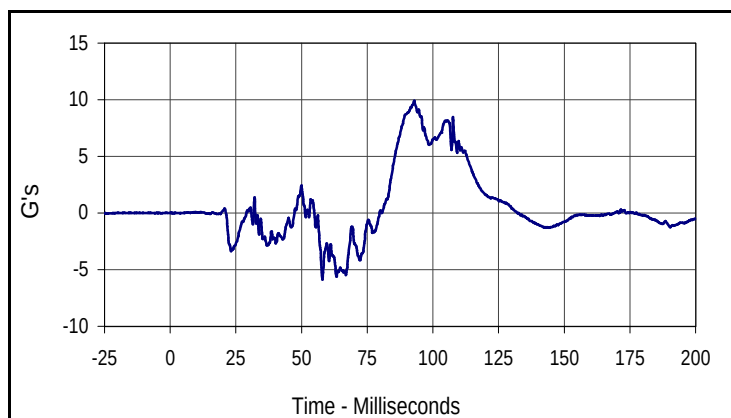
Curve Description			
Driver Chest Deflection			
CURNO	Type	SAE Class	Units
019	FIL	600	MM
Max	Time	Min	Time
0.0	1.6	-24.9	61.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

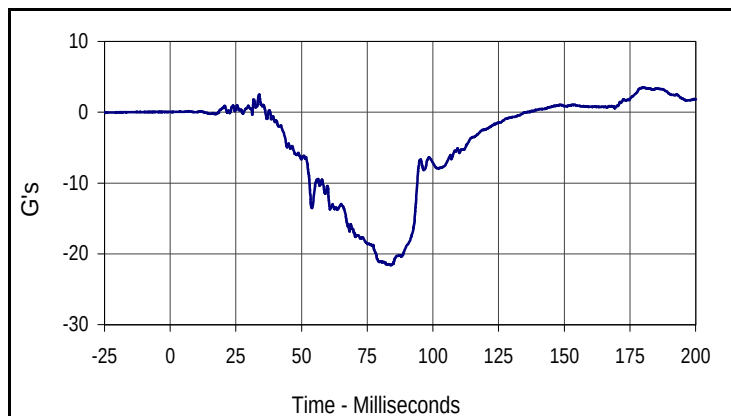
Test Date: 12/1/04
 NHTSA No.: M50112



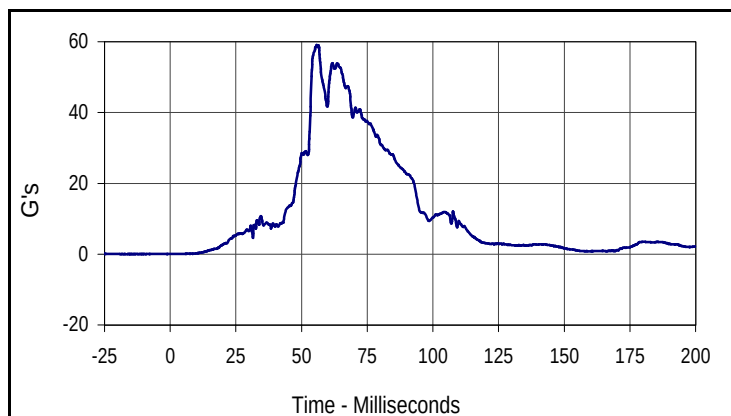
Curve Description			
Driver Pelvis X			
CURNO	Type	SAE Class	Units
020	FIL	1000	G's
Max	Time	Min	Time
2.6	138.7	-58.3	55.8



Curve Description			
Driver Pelvis Y			
CURNO	Type	SAE Class	Units
021	FIL	1000	G's
Max	Time	Min	Time
9.9	92.9	-5.9	57.9



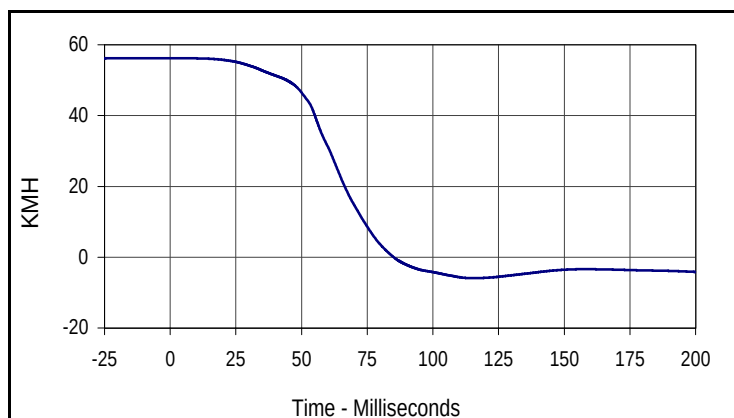
Curve Description			
Driver Pelvis Z			
CURNO	Type	SAE Class	Units
022	FIL	1000	G's
Max	Time	Min	Time
3.5	180.1	-21.6	83.8



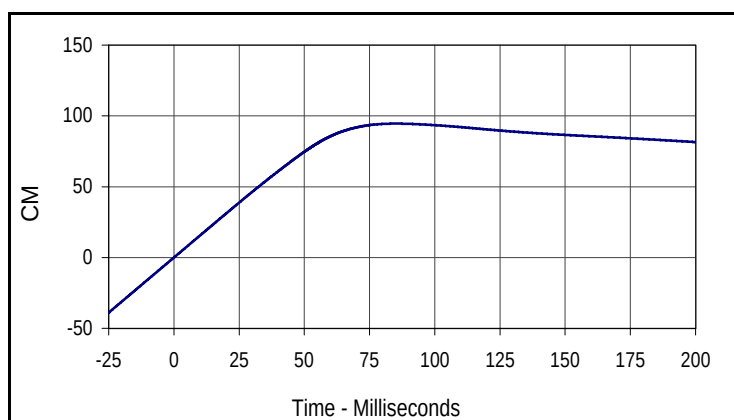
Curve Description			
Driver Pelvis Resultant			
CURNO	Type	SAE Class	Units
020	RES	1000	G's
Max	Time	Min	Time
59.1	55.8	0.0	0.6

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



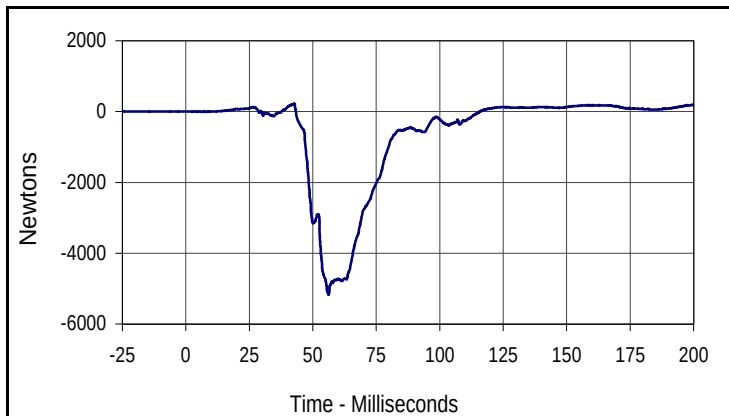
Curve Description			
Driver Pelvis X Velocity			
CURNO	Type	SAE Class	Units
020	IN1	180	KMH
Max	Time	Min	Time
56.2	6.6	-5.9	115.5



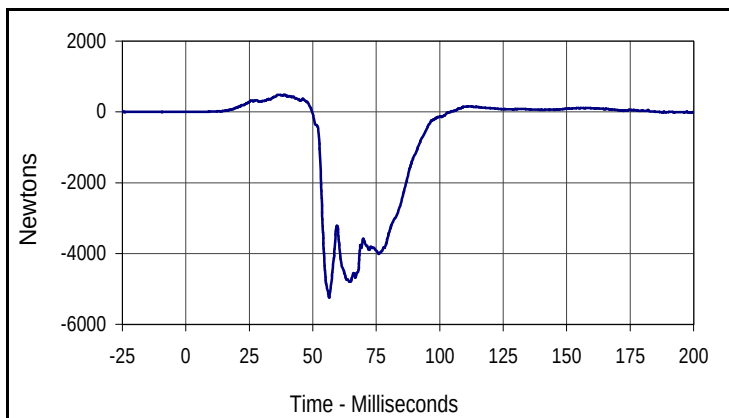
Curve Description			
Driver Pelvis X Displacement			
CURNO	Type	SAE Class	Units
020	IN2	180	CM
Max	Time	Min	Time
94.6	85.1	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
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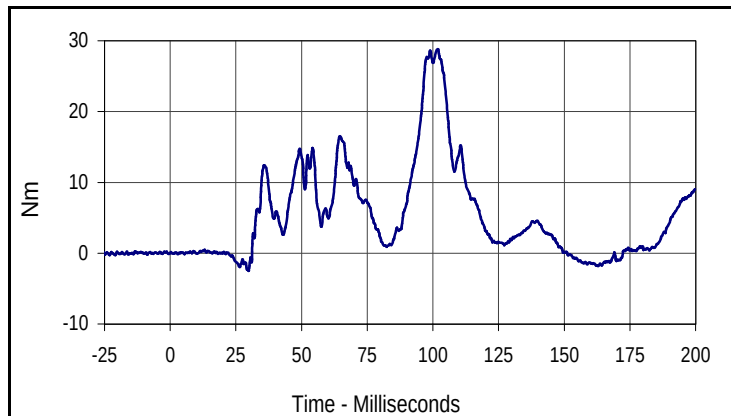
Curve Description			
Driver Left Femur Force			
CURNO	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
221.0	42.6	-5168.3	56.2



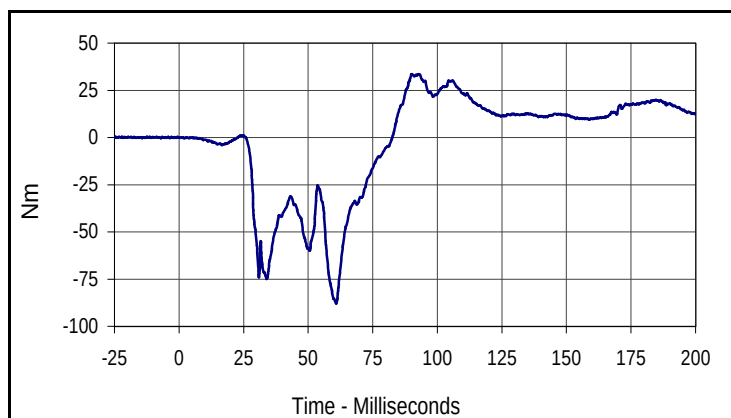
Curve Description			
Driver Right Femur Force			
CURNO	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
485.0	36.7	-5241.3	56.4

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

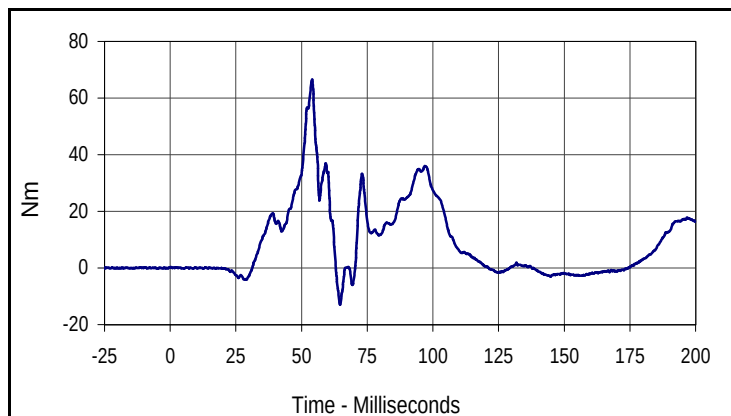
Test Date: 12/1/04
 NHTSA No.: M50112



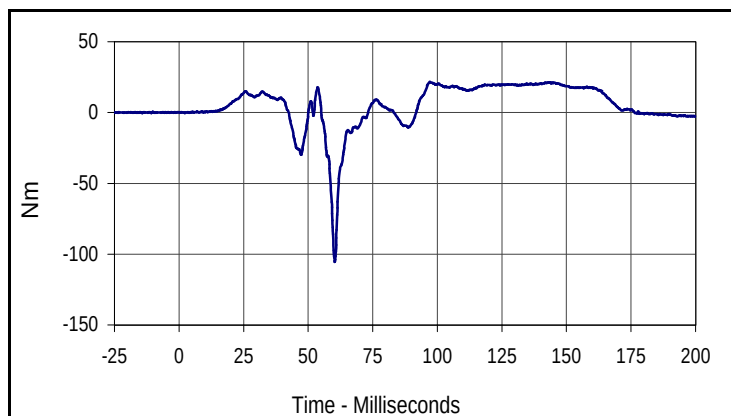
Curve Description			
Driver Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
025	FIL	600	Nm
Max	Time	Min	Time
28.8	101.9	-2.5	29.8



Curve Description			
Driver Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
33.6	90.1	-88.0	60.8



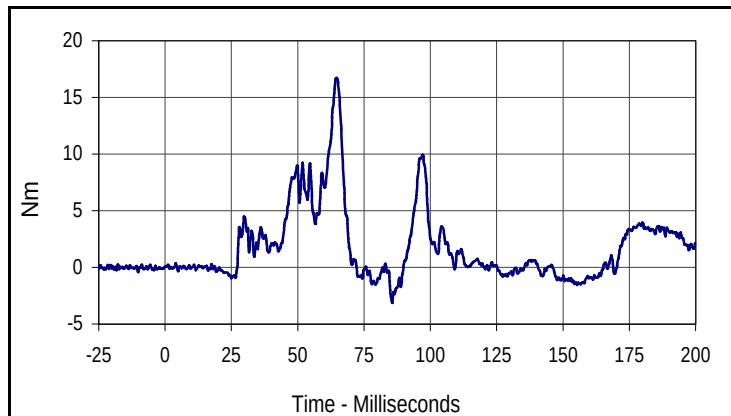
Curve Description			
Driver Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
027	FIL	600	Nm
Max	Time	Min	Time
66.5	54.0	-13.0	64.7



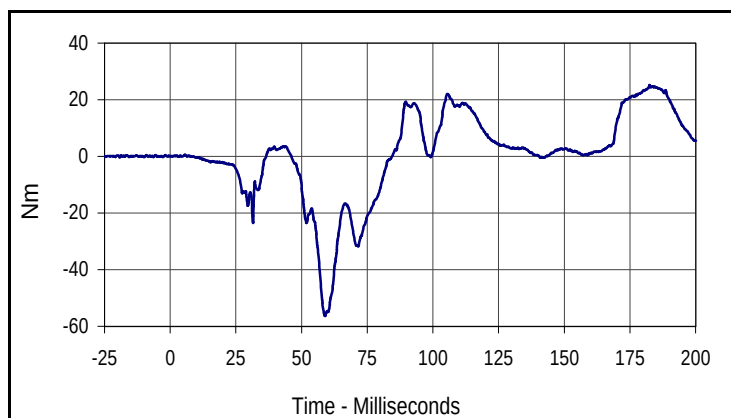
Curve Description			
Driver Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
028	FIL	600	Nm
Max	Time	Min	Time
21.7	97.1	-105.4	60.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

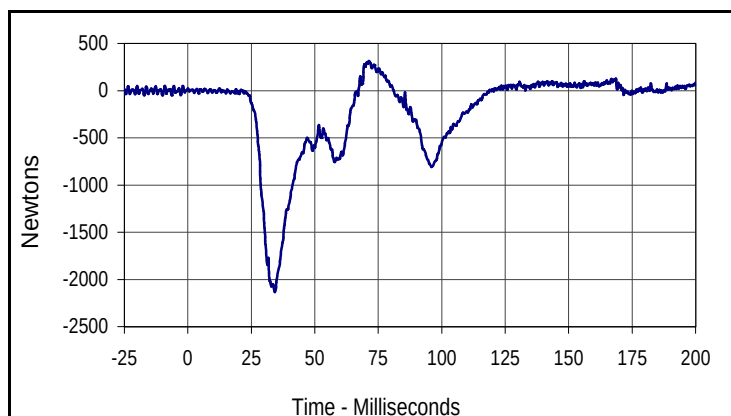
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
029	FIL	600	Nm
Max	Time	Min	Time
16.7	64.5	-3.1	85.7



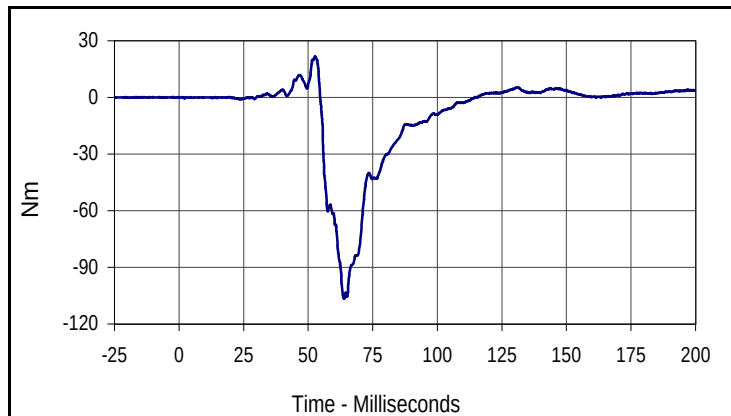
Curve Description			
Driver Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
030	FIL	600	Nm
Max	Time	Min	Time
25.2	182.5	-56.4	58.9



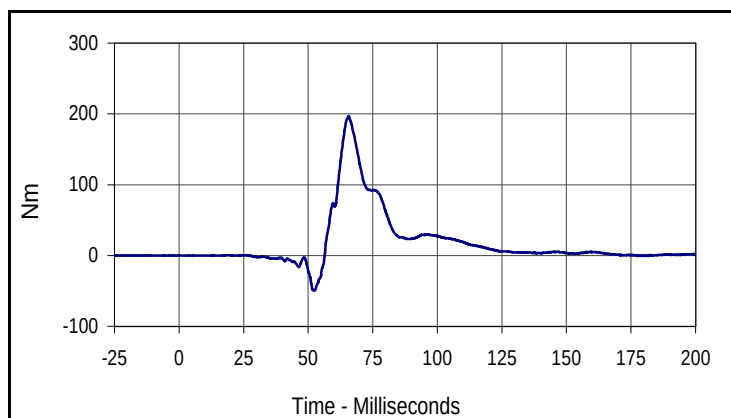
Curve Description			
Driver Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
031	FIL	600	Newtons
Max	Time	Min	Time
314.5	71.4	-2135.1	34.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

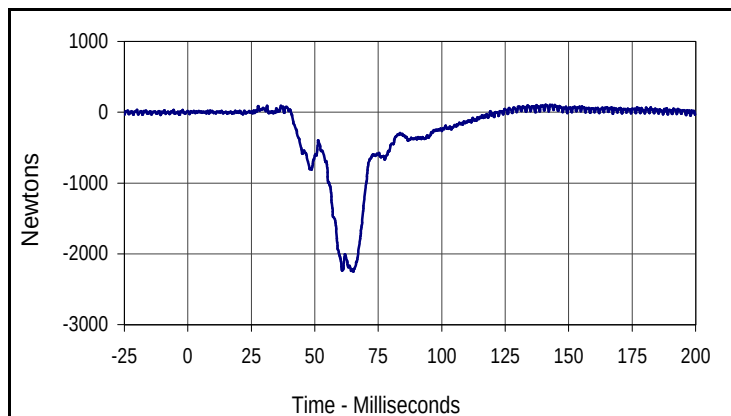
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
032	FIL	600	Nm
Max	Time	Min	Time
21.6	52.7	-106.6	63.9



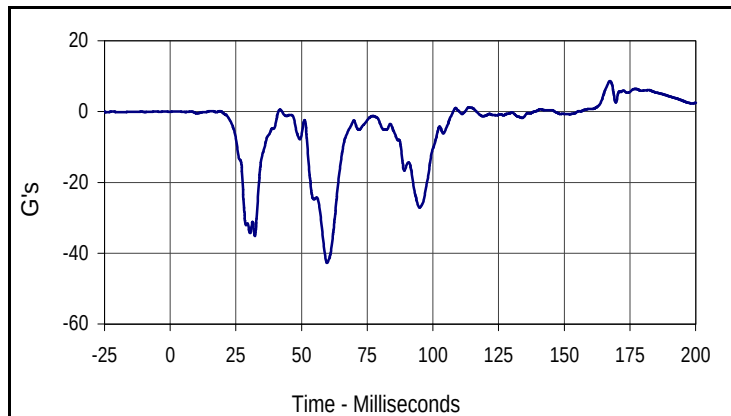
Curve Description			
Driver Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
033	FIL	600	Nm
Max	Time	Min	Time
197.0	65.7	-49.3	52.5



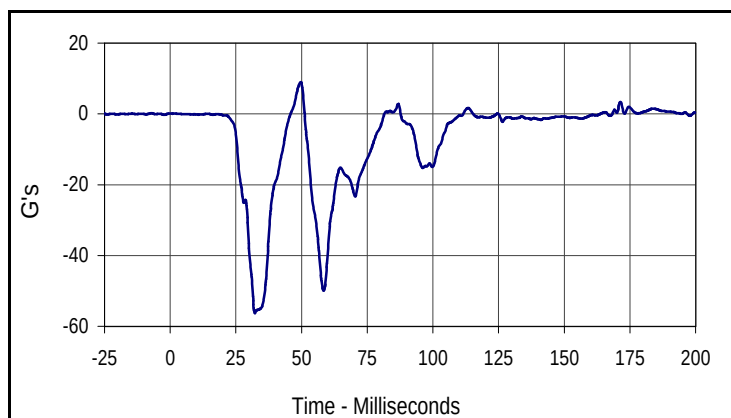
Curve Description			
Driver Right Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
034	FIL	600	Newtons
Max	Time	Min	Time
105.2	144.5	-2250.3	65.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

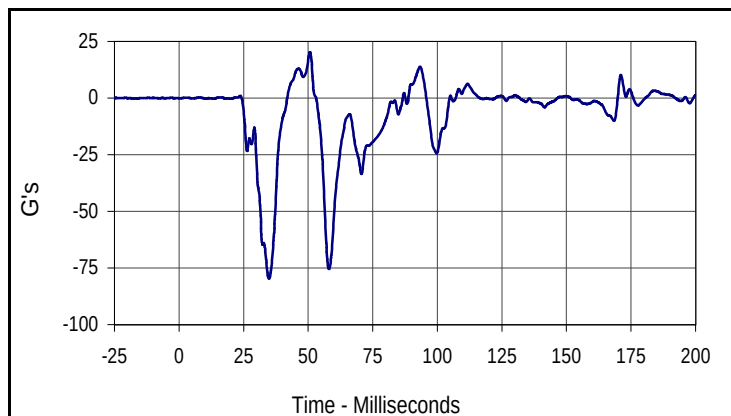
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Left Foot Aft X			
CURNO	Type	SAE Class	Units
035	FIL	180	G's
Max	Time	Min	Time
8.6	167.4	-42.8	59.7



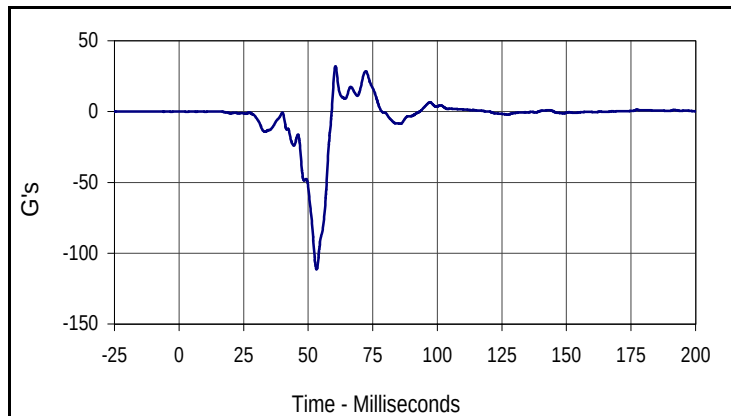
Curve Description			
Driver Left Foot Aft Z			
CURNO	Type	SAE Class	Units
036	FIL	180	G's
Max	Time	Min	Time
9.0	49.7	-56.3	32.2



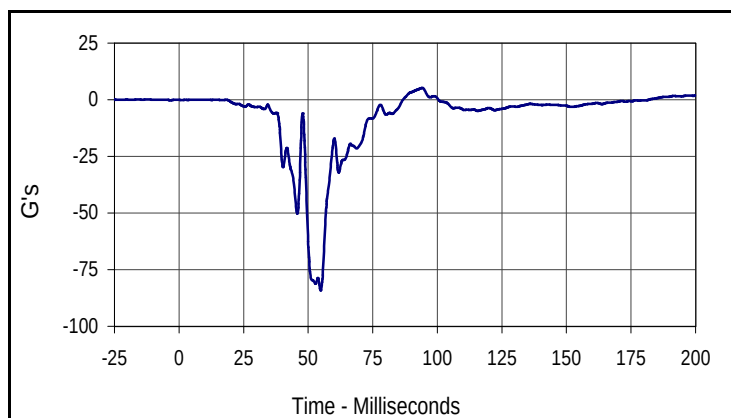
Curve Description			
Driver Left Foot Fore Z			
CURNO	Type	SAE Class	Units
037	FIL	180	G's
Max	Time	Min	Time
20.3	50.7	-79.8	34.8

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

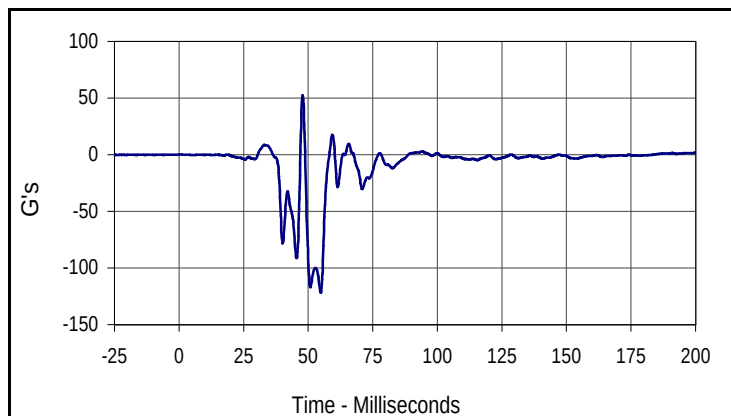
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Right Foot Aft X			
CURNO	Type	SAE Class	Units
038	FIL	180	G's
Max	Time	Min	Time
32.0	60.5	-111.4	53.3



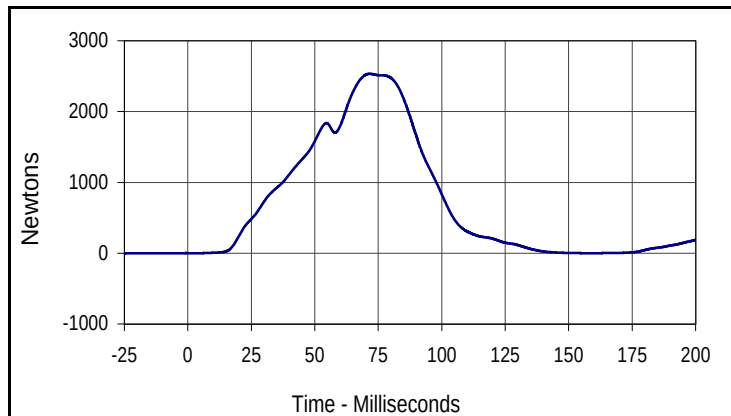
Curve Description			
Driver Right Foot Aft Z			
CURNO	Type	SAE Class	Units
039	FIL	180	G's
Max	Time	Min	Time
5.2	94.2	-84.2	54.9



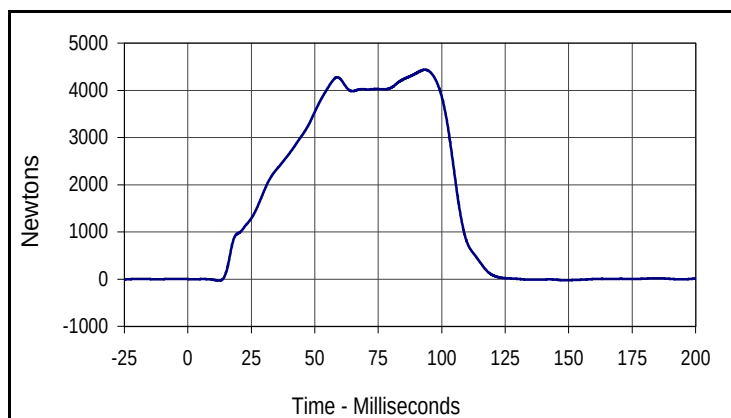
Curve Description			
Driver Right Foot Fore Z			
CURNO	Type	SAE Class	Units
040	FIL	180	G's
Max	Time	Min	Time
52.6	47.9	-121.6	54.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

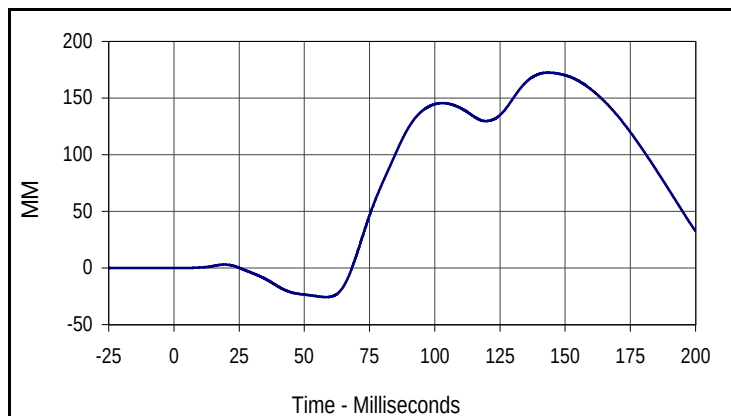
Test Date: 12/1/04
 NHTSA No.: M50112



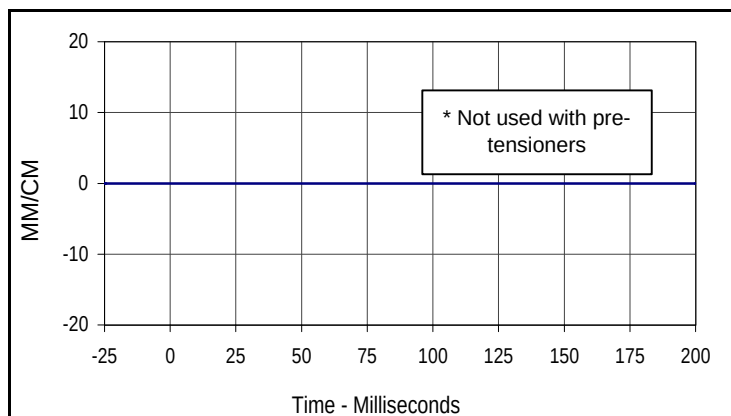
Curve Description			
Driver Lap Belt Force			
CURNO	Type	SAE Class	Units
041	FIL	60	Newtons
Max	Time	Min	Time
2533.1	71.6	-0.1	3.1



Curve Description			
Driver Shoulder Belt Force			
CURNO	Type	SAE Class	Units
042	FIL	60	Newtons
Max	Time	Min	Time
4436.2	93.4	-33.0	12.3



Curve Description			
Driver Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
043	FIL	60	MM
Max	Time	Min	Time
172.5	143.8	-25.7	58.8

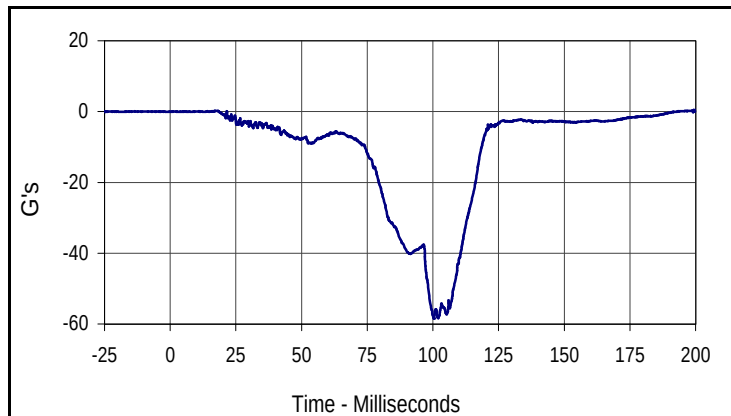


Curve Description			
Driver Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
044	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

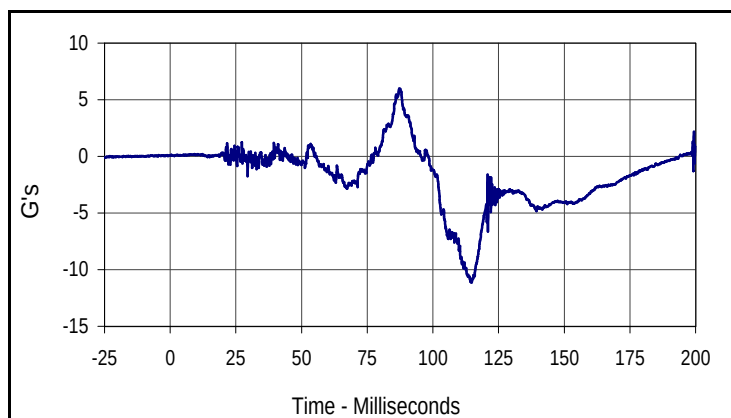
* Not used with pre-tensioners

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

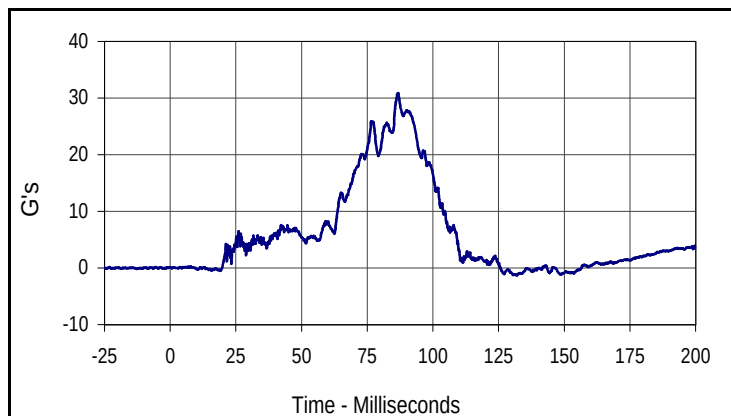
Test Date: 12/1/04
 NHTSA No.: M50112



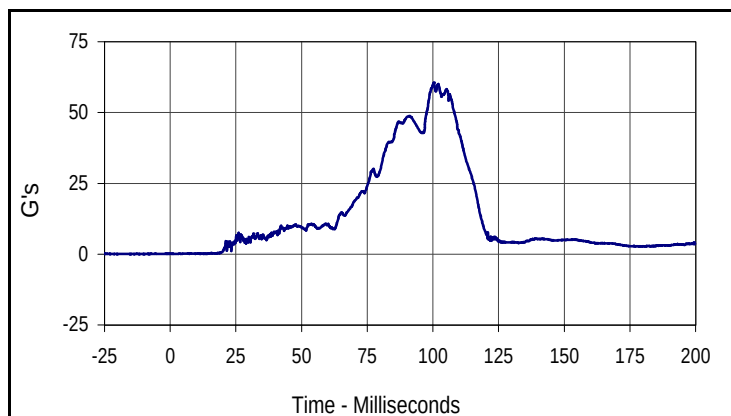
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
0.5	199.3	-58.5	100.4



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
6.0	87.2	-11.1	114.6



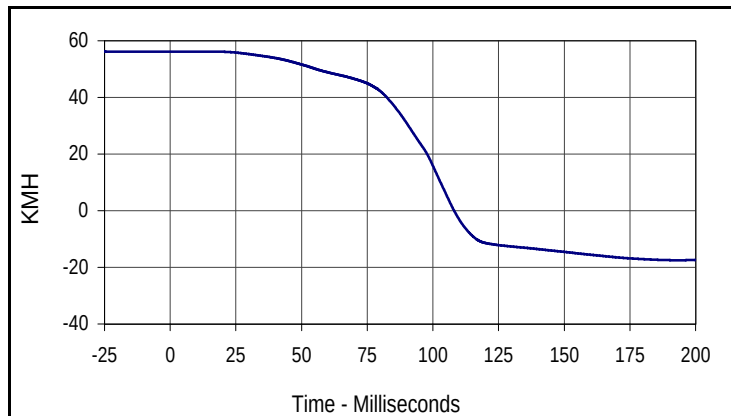
Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
30.9	86.7	-1.3	132.0



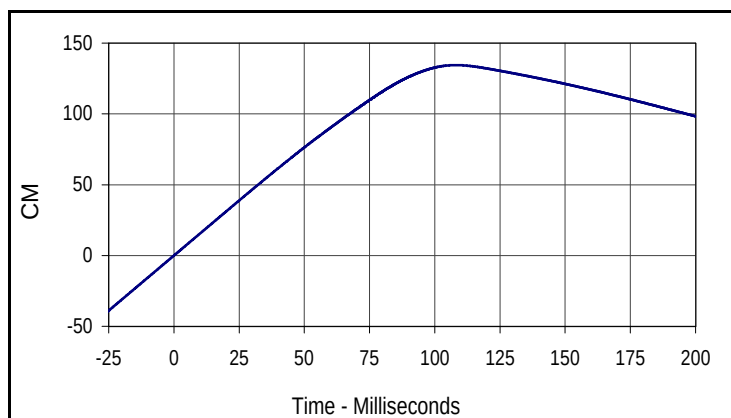
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
045	RES	1000	G's
Max	Time	Min	Time
60.5	100.3	0.1	13.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
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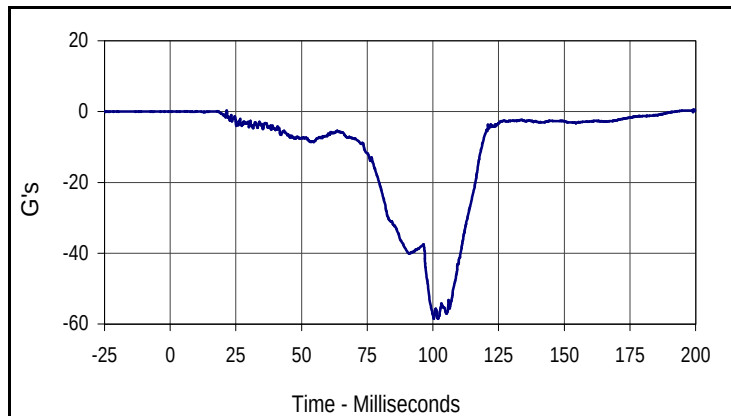
Curve Description			
Passenger Head Primary X Velocity			
CURNO	Type	SAE Class	Units
045	IN1	180	KMH
Max	Time	Min	Time
56.1	18.5	-17.5	192.9



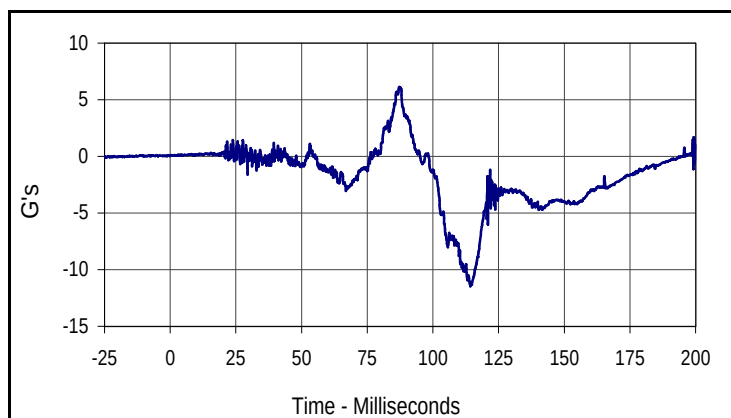
Curve Description			
Passenger Head Primary X Displacement			
CURNO	Type	SAE Class	Units
045	IN2	180	CM
Max	Time	Min	Time
134.5	108.1	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

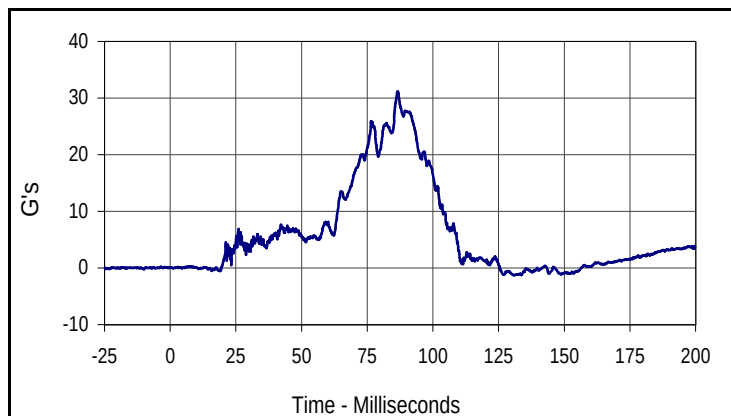
Test Date: 12/1/04
 NHTSA No.: M50112



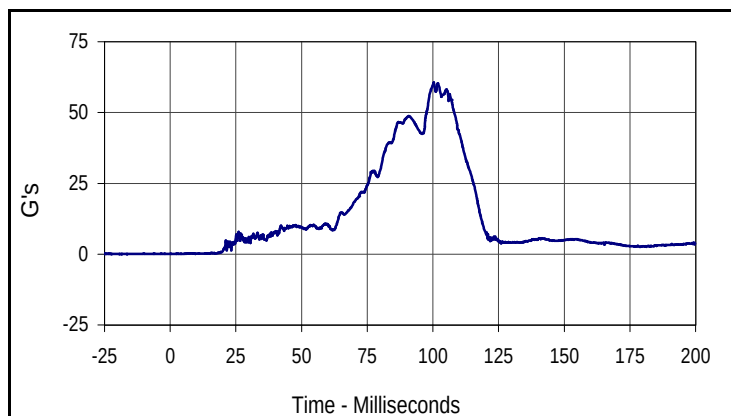
Curve Description			
Passenger Head Redundant X			
CURNO	Type	SAE Class	Units
048	FIL	1000	G's
Max	Time	Min	Time
0.6	199.3	-58.5	100.3



Curve Description			
Passenger Head Redundant Y			
CURNO	Type	SAE Class	Units
049	FIL	1000	G's
Max	Time	Min	Time
6.1	87.2	-11.5	114.3



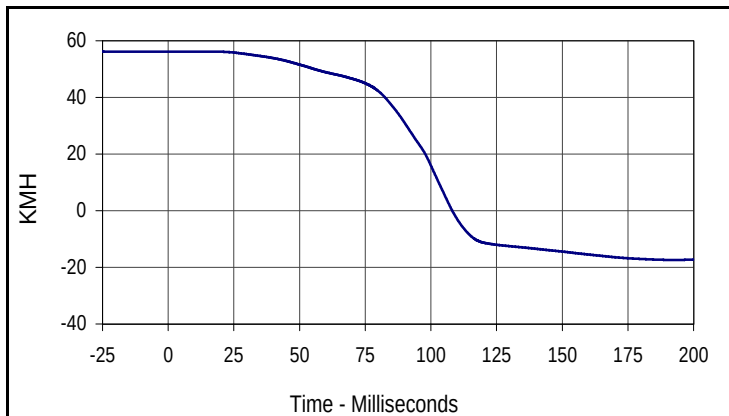
Curve Description			
Passenger Head Redundant Z			
CURNO	Type	SAE Class	Units
050	FIL	1000	G's
Max	Time	Min	Time
31.2	86.6	-1.3	131.0



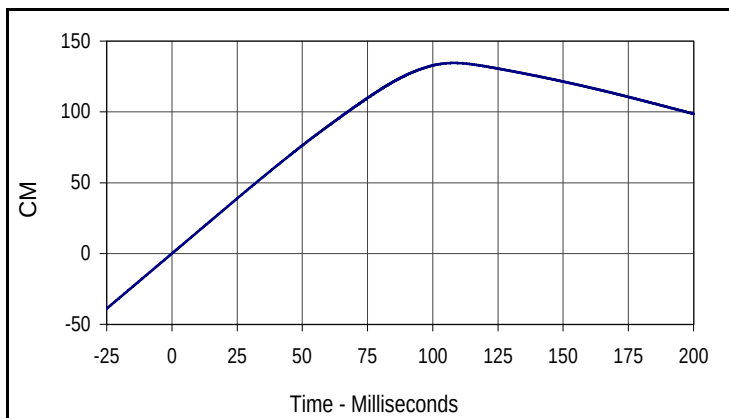
Curve Description			
Passenger Head Resultant Redundant			
CURNO	Type	SAE Class	Units
048	RES	1000	G's
Max	Time	Min	Time
60.6	100.3	0.1	4.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



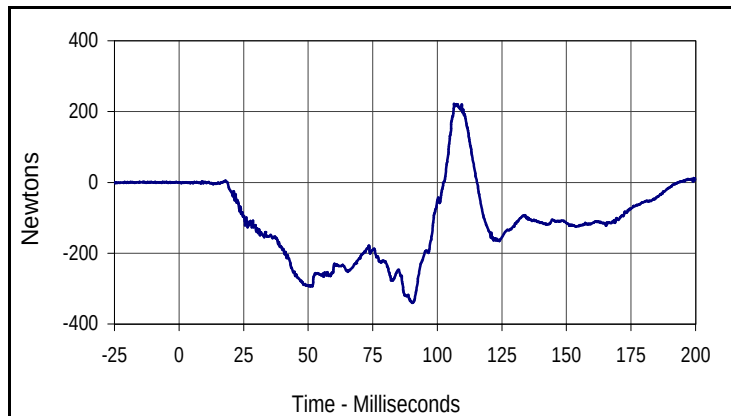
Curve Description			
Passenger Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
048	IN1	180	KMH
Max	Time	Min	Time
56.2	7.3	-17.4	192.3



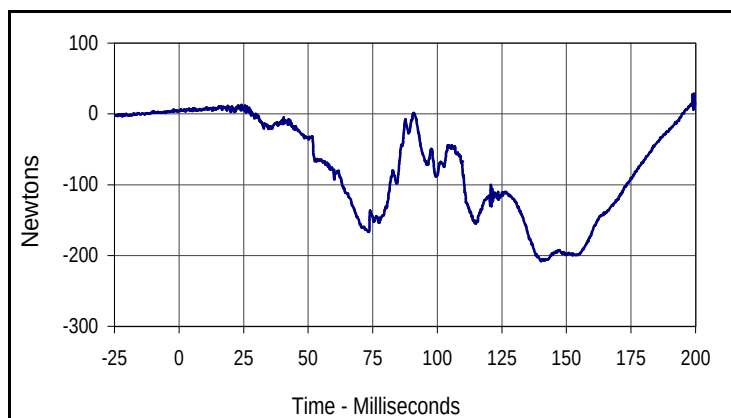
Curve Description			
Passenger Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
048	IN2	180	CM
Max	Time	Min	Time
134.6	108.1	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

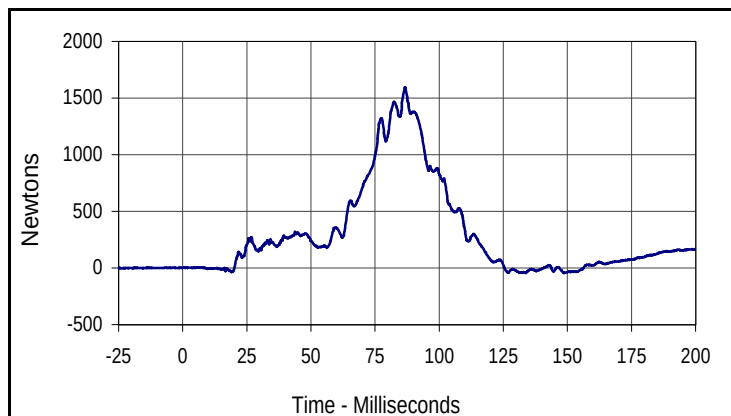
Test Date: 12/1/04
 NHTSA No.: M50112



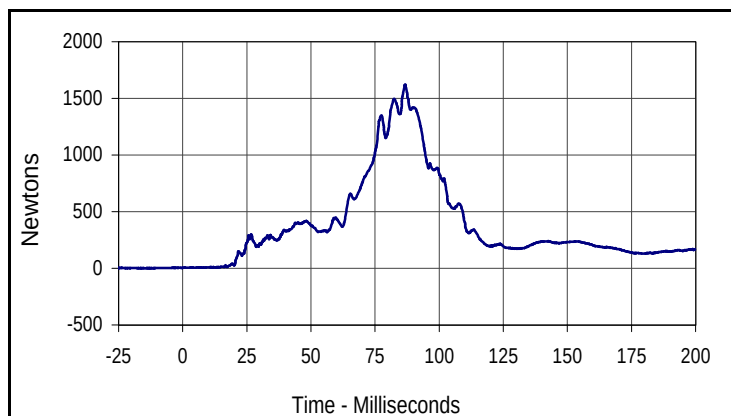
Curve Description			
Passenger Upper Neck Force X			
CURNO	Type	SAE Class	Units
051	FIL	1000	Newtons
Max	Time	Min	Time
221.7	106.5	-340.2	90.2



Curve Description			
Passenger Upper Neck Force Y			
CURNO	Type	SAE Class	Units
052	FIL	1000	Newtons
Max	Time	Min	Time
28.4	199.4	-208.2	140.2



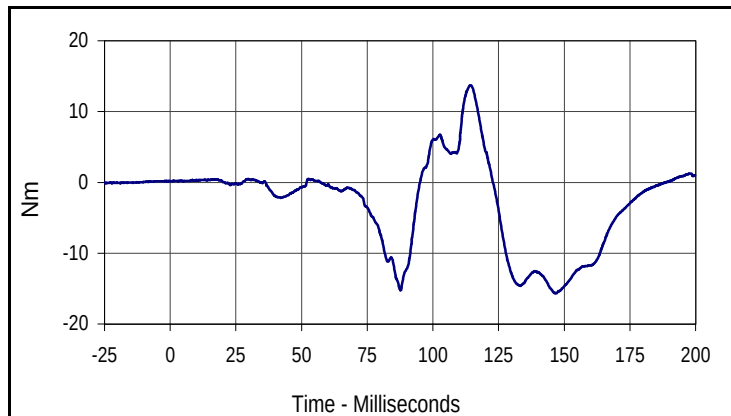
Curve Description			
Passenger Upper Neck Force Z			
CURNO	Type	SAE Class	Units
053	FIL	1000	Newtons
Max	Time	Min	Time
1595.1	86.7	-46.3	148.7



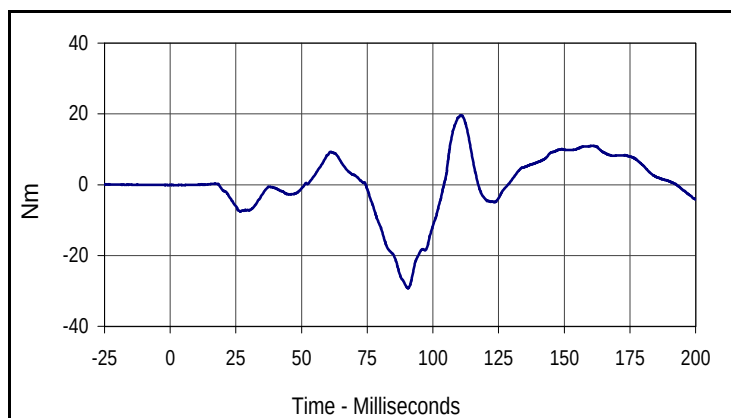
Curve Description			
Passenger Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
051	RES	1000	Newtons
Max	Time	Min	Time
1622.8	86.7	4.1	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

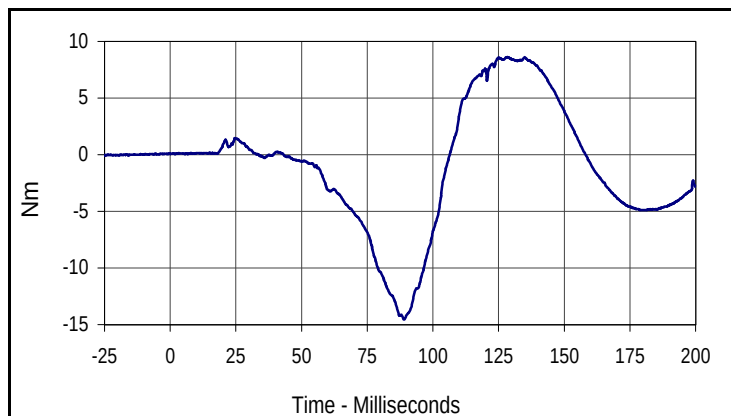
Test Date: 12/1/04
 NHTSA No.: M50112



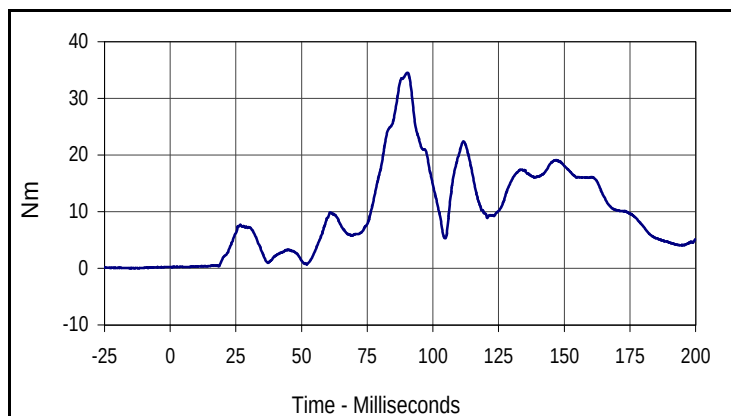
Curve Description			
Passenger Upper Neck Moment X			
CURNO	Type	SAE Class	Units
054	FIL	600	Nm
Max	Time	Min	Time
13.7	114.4	-15.7	146.8



Curve Description			
Passenger Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
055	FIL	600	Nm
Max	Time	Min	Time
19.5	110.7	-29.2	90.6



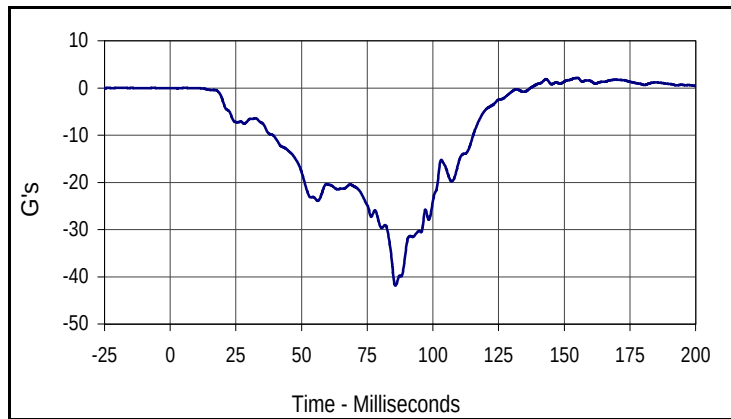
Curve Description			
Passenger Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
056	FIL	600	Nm
Max	Time	Min	Time
8.6	128.4	-14.6	89.0



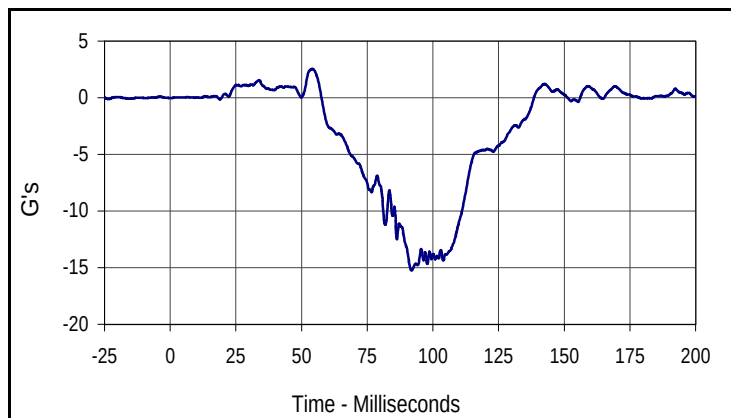
Curve Description			
Passenger Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
054	RES	600	Nm
Max	Time	Min	Time
34.5	90.3	0.2	0.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

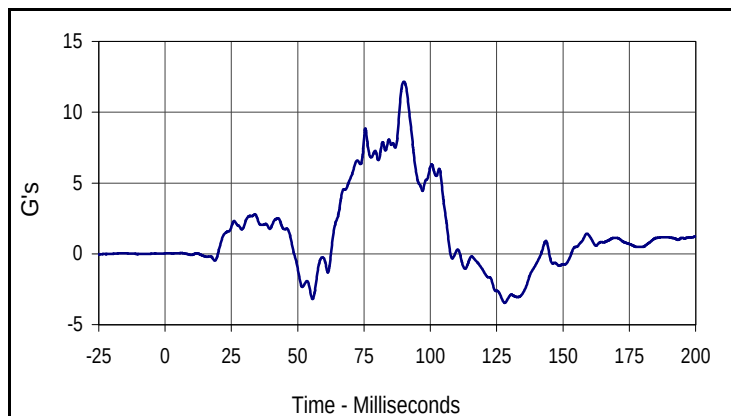
Test Date: 12/1/04
 NHTSA No.: M50112



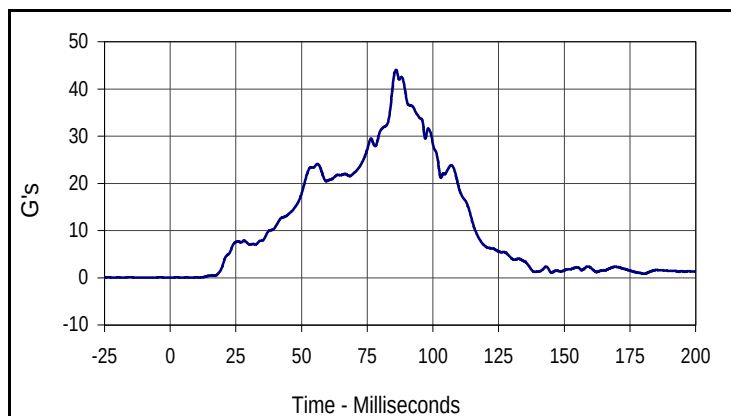
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
057	FIL	180	G's
Max	Time	Min	Time
2.2	154.9	-41.9	85.7



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
058	FIL	180	G's
Max	Time	Min	Time
2.5	54.1	-15.3	91.9



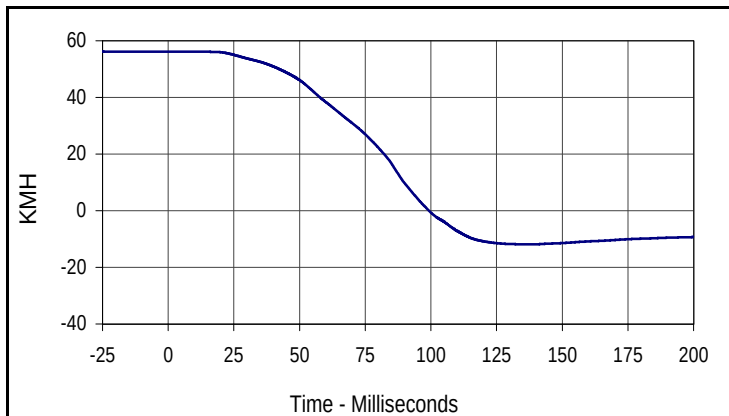
Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
059	FIL	180	G's
Max	Time	Min	Time
12.2	90.0	-3.5	128.1



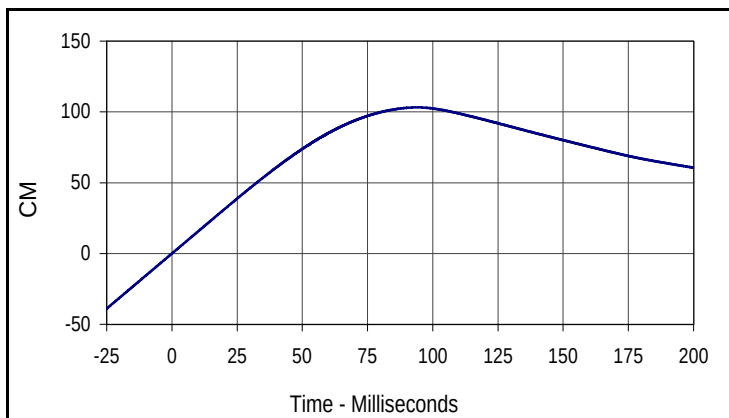
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
057	RES	180	G's
Max	Time	Min	Time
44.0	86.0	0.0	8.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
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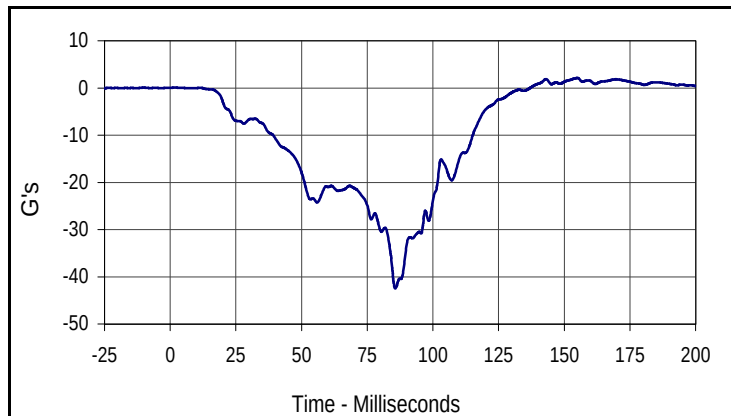
Curve Description			
Passenger Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
057	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-11.9	137.2



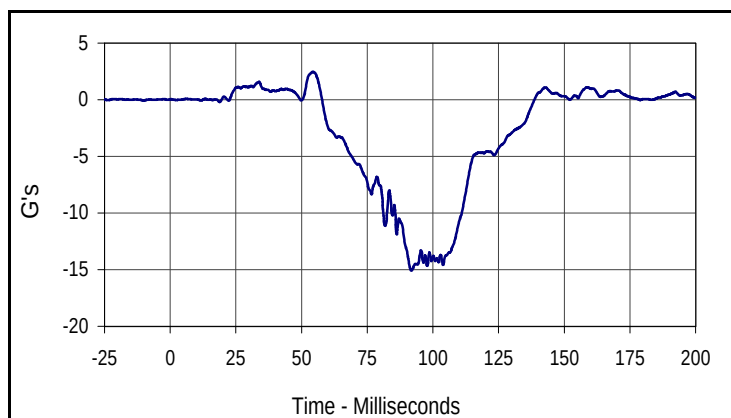
Curve Description			
Passenger Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
057	IN2	180	CM
Max	Time	Min	Time
103.2	94.0	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

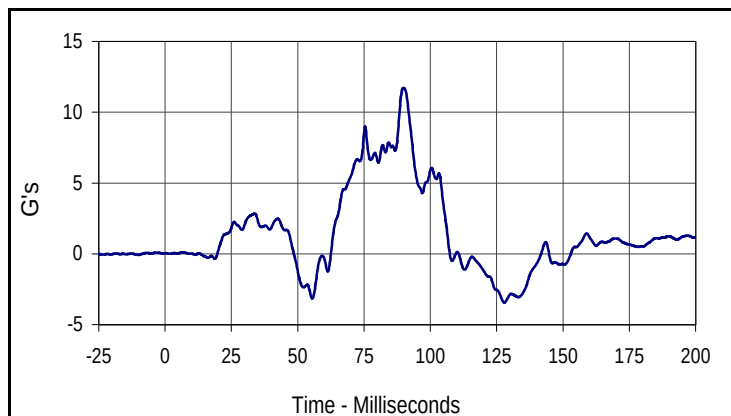
Test Date: 12/1/04
 NHTSA No.: M50112



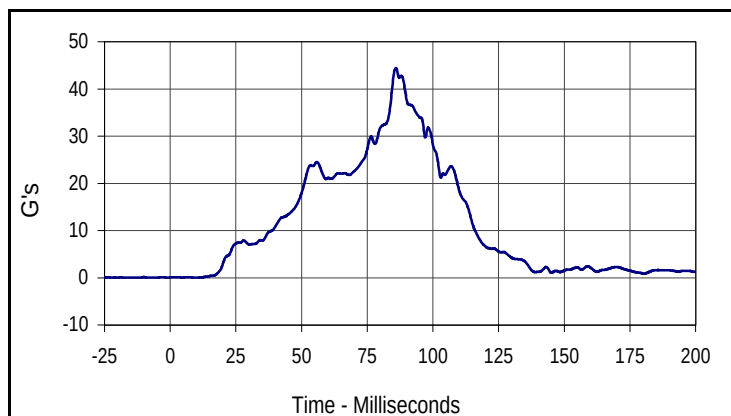
Curve Description			
Passenger Chest Redundant X			
CURNO	Type	SAE Class	Units
060	FIL	180	G's
Max	Time	Min	Time
2.1	154.9	-42.4	85.6



Curve Description			
Passenger Chest Redundant Y			
CURNO	Type	SAE Class	Units
061	FIL	180	G's
Max	Time	Min	Time
2.5	54.3	-15.1	91.8



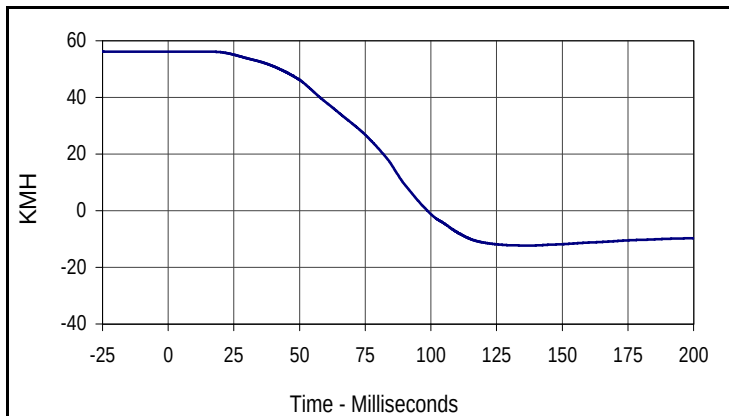
Curve Description			
Passenger Chest Redundant Z			
CURNO	Type	SAE Class	Units
062	FIL	180	G's
Max	Time	Min	Time
11.7	90.0	-3.4	127.9



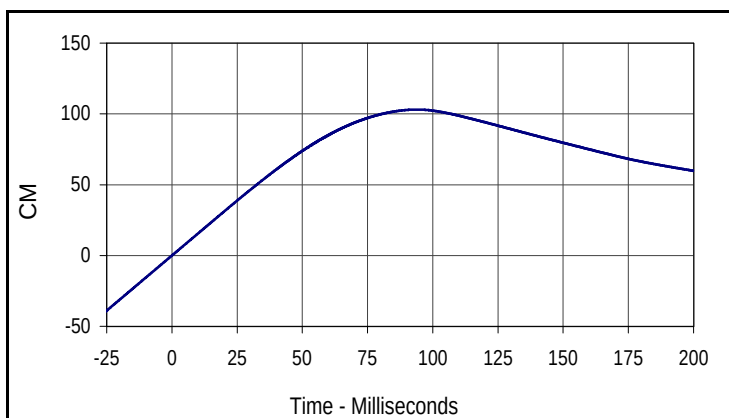
Curve Description			
Passenger Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
060	RES	180	G's
Max	Time	Min	Time
44.4	86.0	0.0	10.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



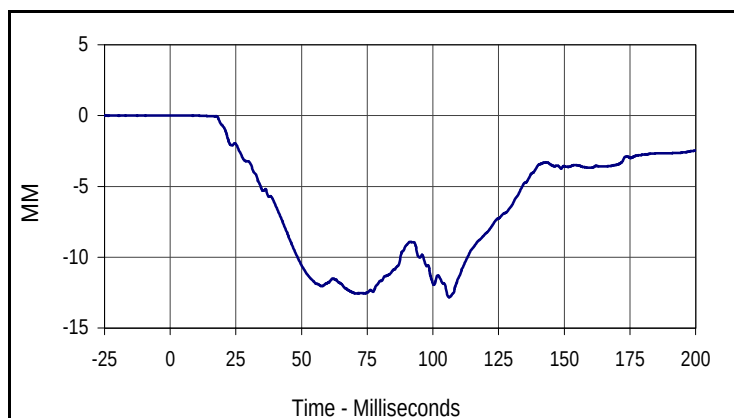
Curve Description			
Passenger Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
060	IN1	180	KMH
Max	Time	Min	Time
56.2	5.4	-12.3	136.9



Curve Description			
Passenger Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
060	IN2	180	CM
Max	Time	Min	Time
103.1	94.0	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

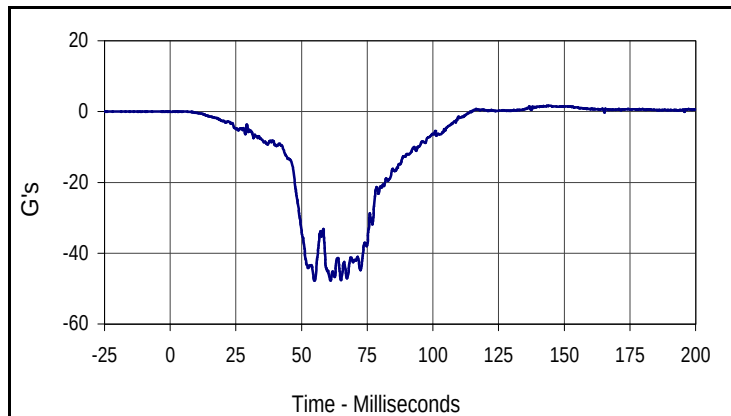
Test Date: 12/1/04
 NHTSA No.: M50112



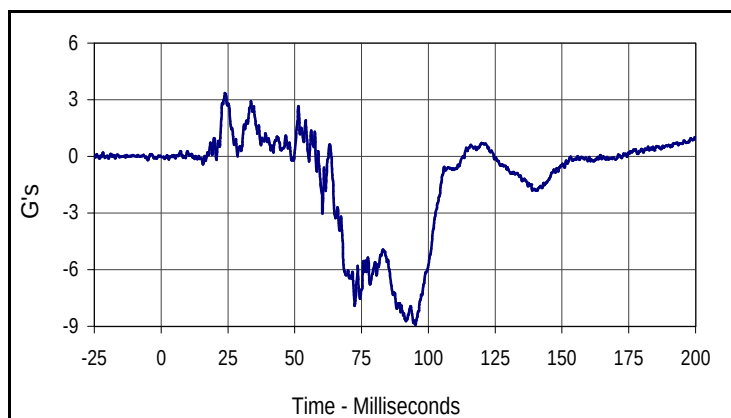
Curve Description			
Passenger Chest Deflection			
CURNO	Type	SAE Class	Units
063	FIL	600	MM
Max	Time	Min	Time
0.0	5.8	-12.8	106.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

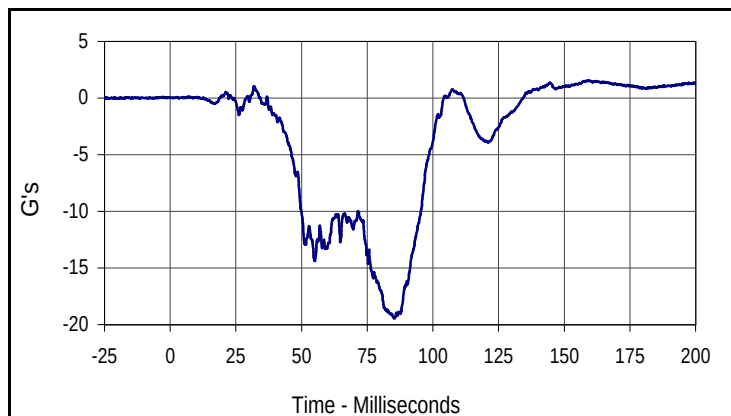
Test Date: 12/1/04
 NHTSA No.: M50112



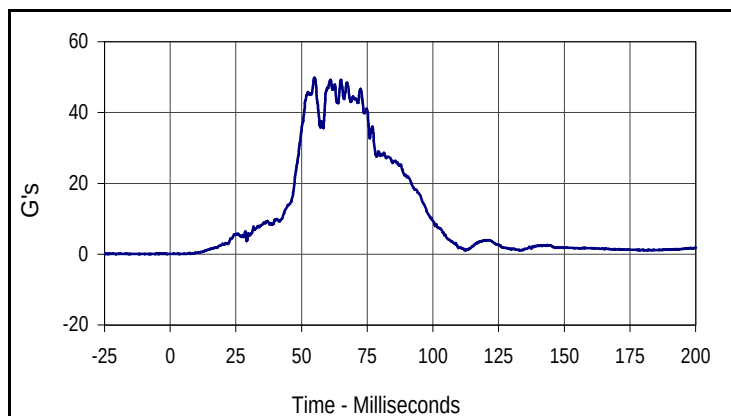
Curve Description			
Passenger Pelvis X			
CURNO	Type	SAE Class	Units
064	FIL	1000	G's
Max	Time	Min	Time
1.7	145.0	-47.8	54.9



Curve Description			
Passenger Pelvis Y			
CURNO	Type	SAE Class	Units
065	FIL	1000	G's
Max	Time	Min	Time
3.4	23.9	-8.9	95.1



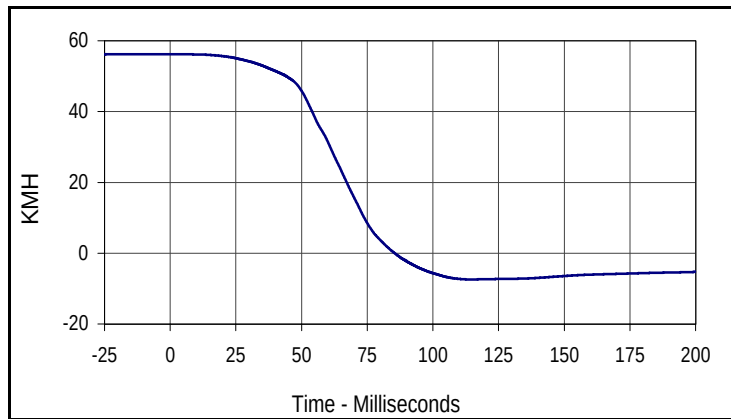
Curve Description			
Passenger Pelvis Z			
CURNO	Type	SAE Class	Units
066	FIL	1000	G's
Max	Time	Min	Time
1.6	159.1	-19.5	85.3



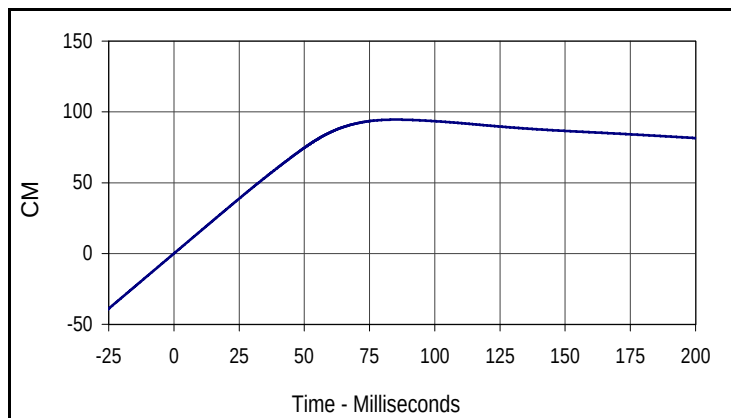
Curve Description			
Passenger Pelvis Resultant			
CURNO	Type	SAE Class	Units
064	RES	1000	G's
Max	Time	Min	Time
49.9	54.9	0.0	3.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



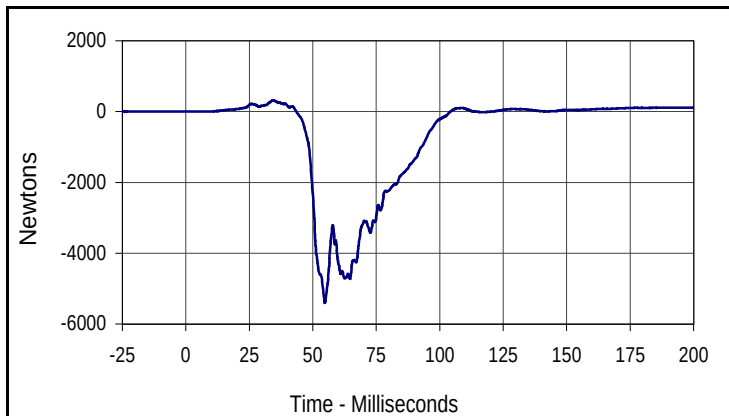
Curve Description			
Passenger Pelvis X Velocity			
CURNO	Type	SAE Class	Units
064	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-7.4	114.6



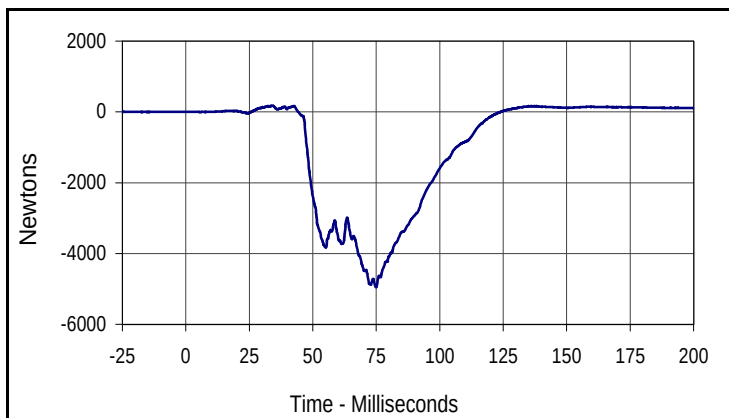
Curve Description			
Passenger Pelvis X Displacement			
CURNO	Type	SAE Class	Units
064	IN2	180	CM
Max	Time	Min	Time
94.6	85.1	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



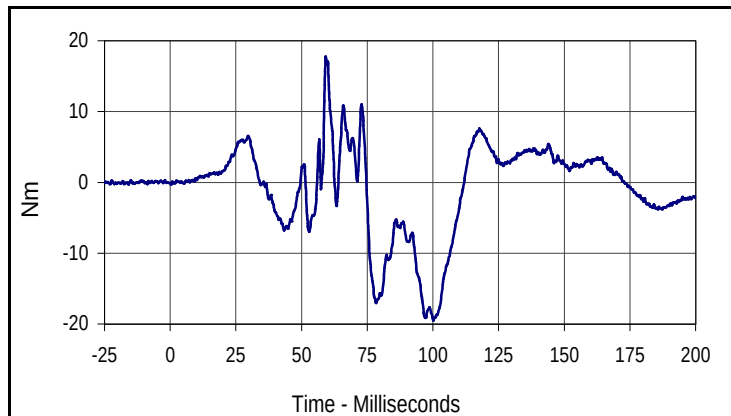
Curve Description			
Passenger Left Femur Force			
CURNO	Type	SAE Class	Units
067	FIL	600	Newtons
Max	Time	Min	Time
320.1	34.5	-5400.9	54.8



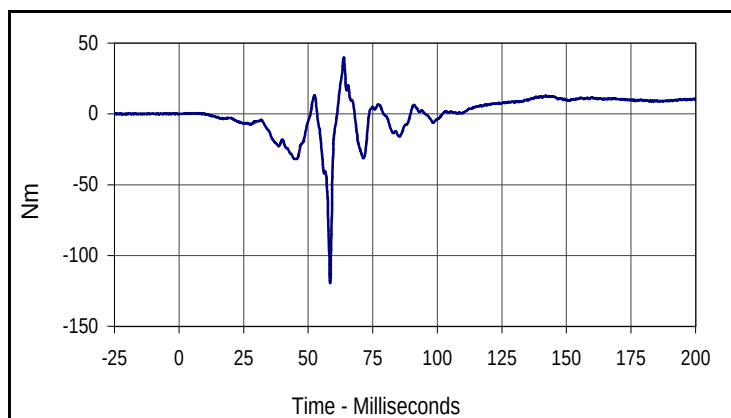
Curve Description			
Passenger Right Femur Force			
CURNO	Type	SAE Class	Units
068	FIL	600	Newtons
Max	Time	Min	Time
175.3	34.0	-4949.2	74.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

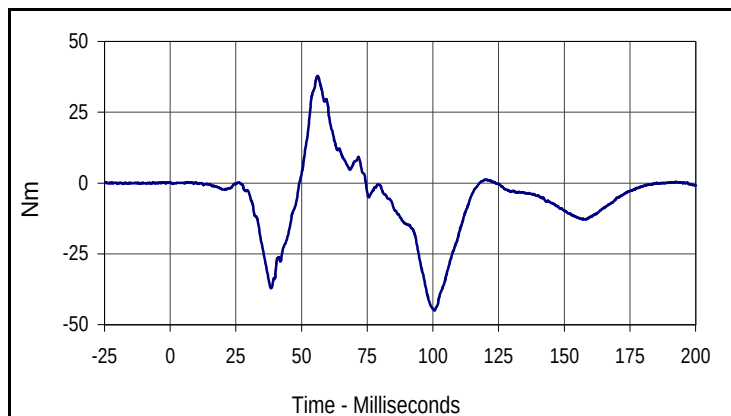
Test Date: 12/1/04
 NHTSA No.: M50112



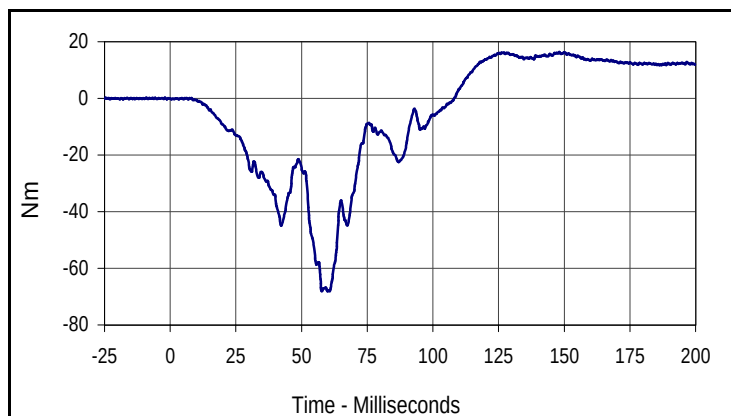
Curve Description			
Passenger Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
069	FIL	600	Nm
Max	Time	Min	Time
17.8	59.2	-19.5	100.2



Curve Description			
Passenger Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
070	FIL	600	Nm
Max	Time	Min	Time
39.9	63.8	-119.4	58.5



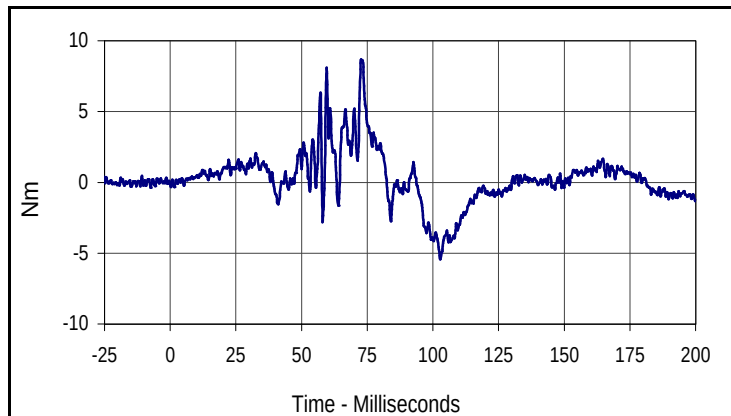
Curve Description			
Passenger Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
071	FIL	600	Nm
Max	Time	Min	Time
37.8	56.1	-45.0	100.6



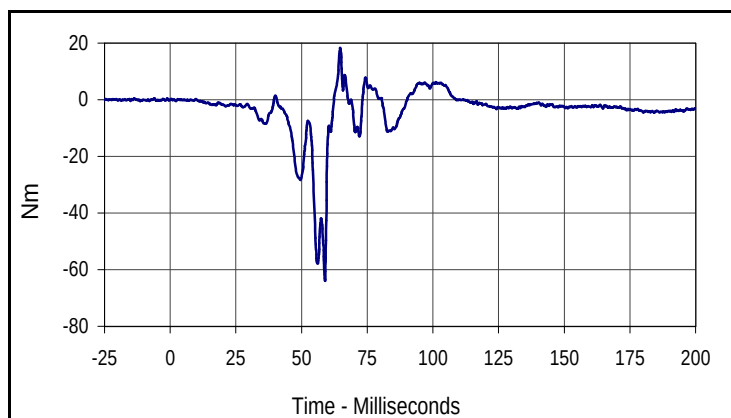
Curve Description			
Passenger Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
072	FIL	600	Nm
Max	Time	Min	Time
16.3	148.1	-68.2	57.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

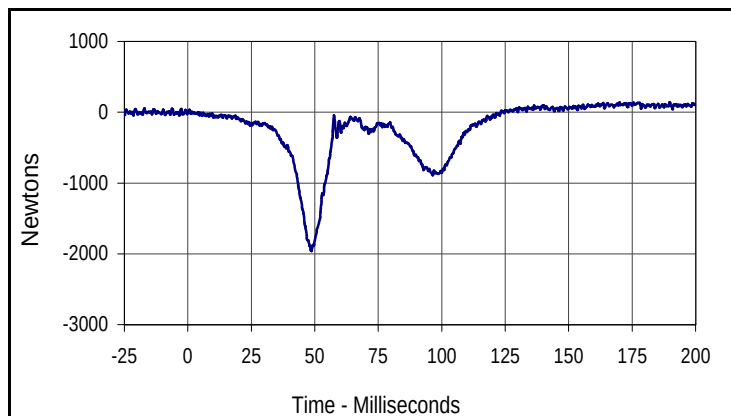
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
073	FIL	600	Nm
Max	Time	Min	Time
8.7	72.7	-5.4	102.8



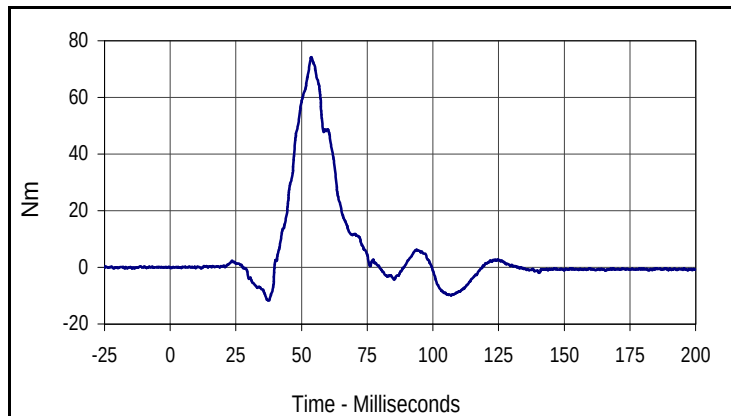
Curve Description			
Passenger Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
074	FIL	600	Nm
Max	Time	Min	Time
18.2	64.7	-64.0	58.9



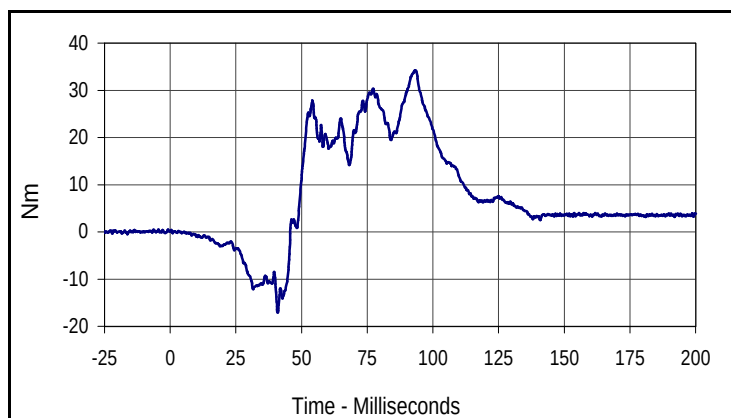
Curve Description			
Passenger Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
075	FIL	600	Newtons
Max	Time	Min	Time
139.7	189.8	-1961.3	48.6

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

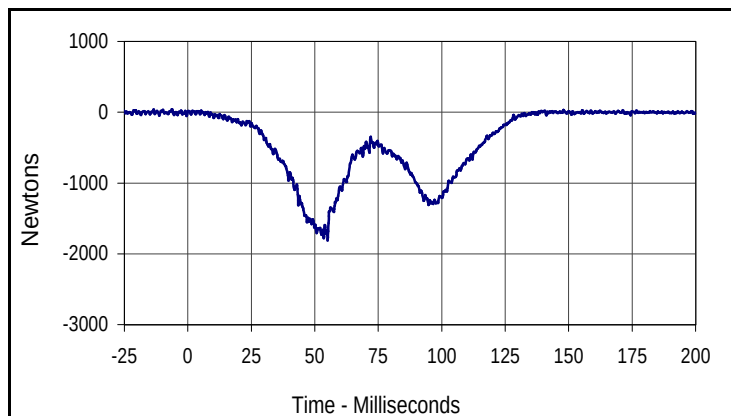
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
076	FIL	600	Nm
Max	Time	Min	Time
74.2	53.7	-11.7	37.5



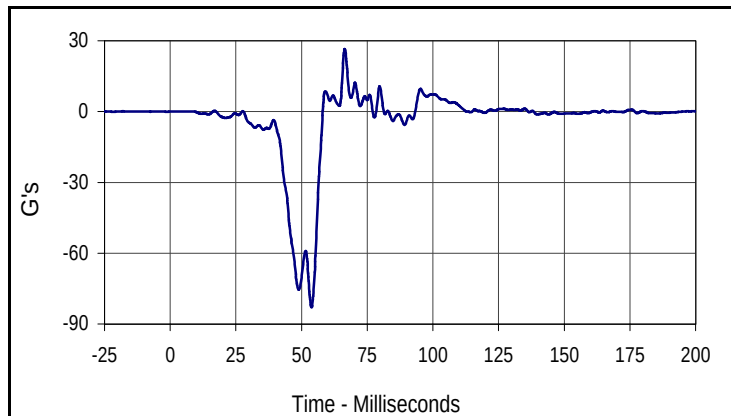
Curve Description			
Passenger Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
077	FIL	600	Nm
Max	Time	Min	Time
34.2	93.4	-17.1	40.9



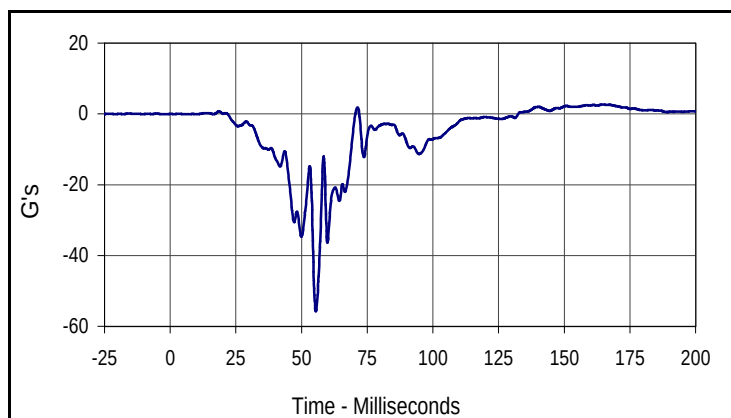
Curve Description			
Passenger Right lower Tibia Force Z			
CURNO	Type	SAE Class	Units
078	FIL	600	Newtons
Max	Time	Min	Time
31.4	148.0	-1809.2	55.1

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

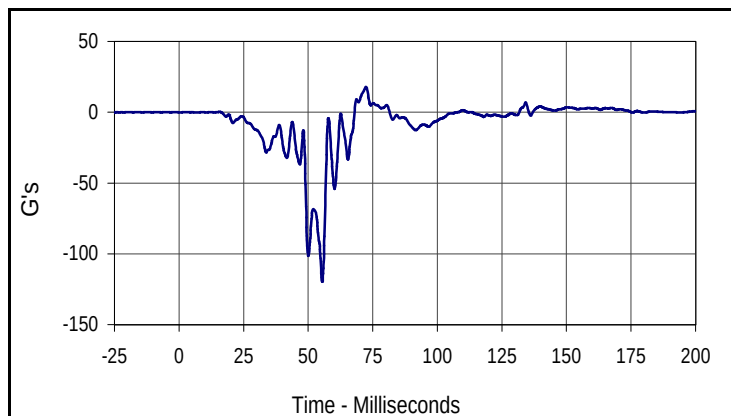
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Left Foot Aft X			
CURNO	Type	SAE Class	Units
079	FIL	180	G's
Max	Time	Min	Time
26.5	66.4	-82.9	53.8



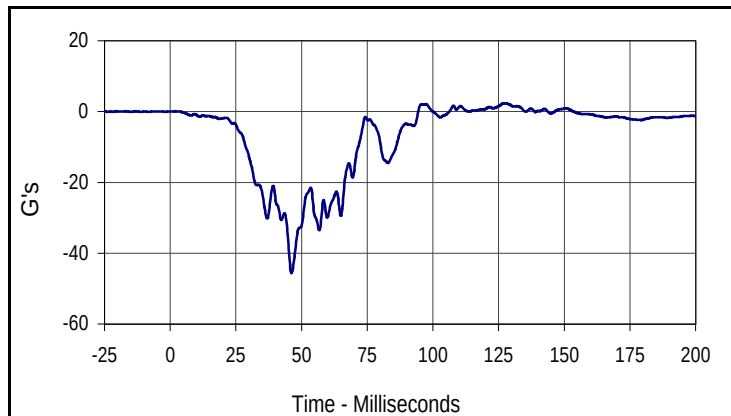
Curve Description			
Passenger Left Foot Aft Z			
CURNO	Type	SAE Class	Units
080	FIL	180	G's
Max	Time	Min	Time
2.7	164.7	-55.7	55.4



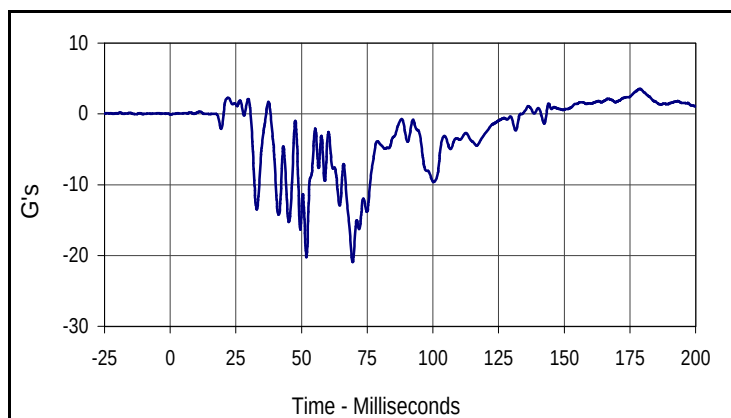
Curve Description			
Passenger Left Foot Fore Z			
CURNO	Type	SAE Class	Units
081	FIL	180	G's
Max	Time	Min	Time
17.9	72.4	-119.7	55.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

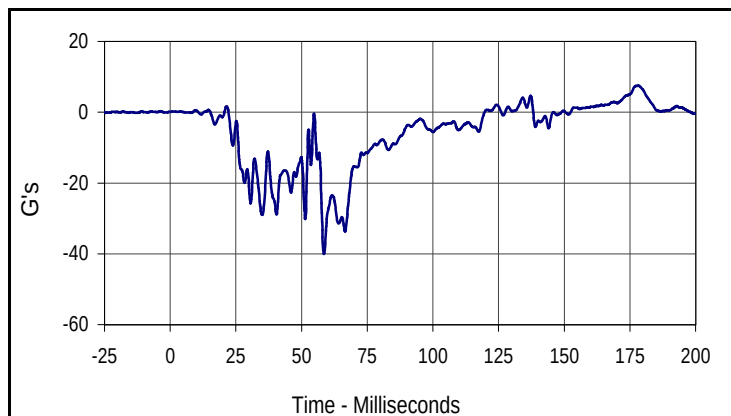
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Right Foot Aft X			
CURNO	Type	SAE Class	Units
082	FIL	180	G's
Max	Time	Min	Time
2.3	127.1	-45.6	46.2



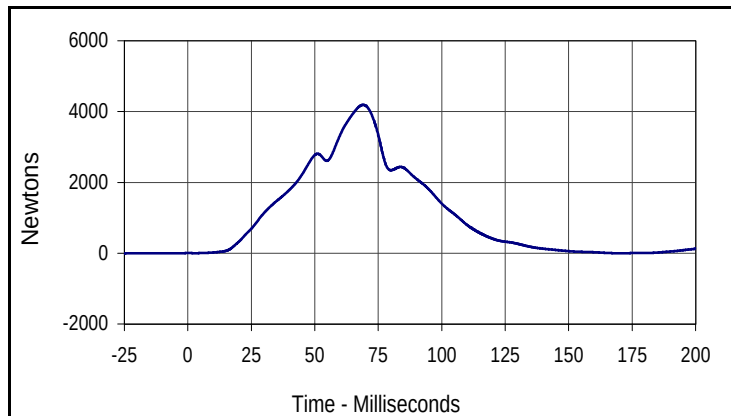
Curve Description			
Passenger Right Foot Aft Z			
CURNO	Type	SAE Class	Units
083	FIL	180	G's
Max	Time	Min	Time
3.5	178.7	-20.9	69.5



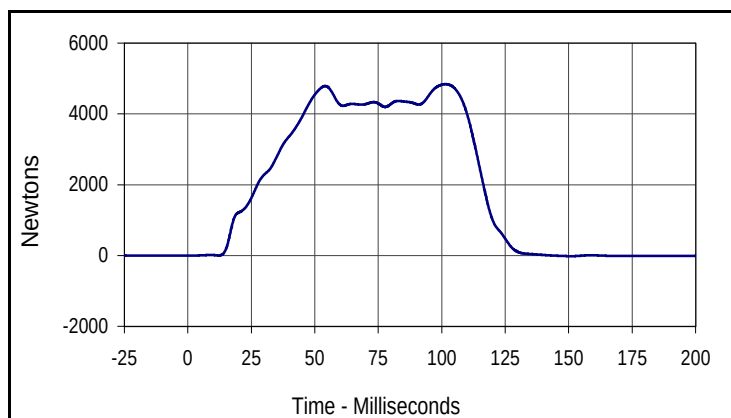
Curve Description			
Passenger Right Foot Fore Z			
CURNO	Type	SAE Class	Units
084	FIL	180	G's
Max	Time	Min	Time
7.5	178.1	-40.0	58.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

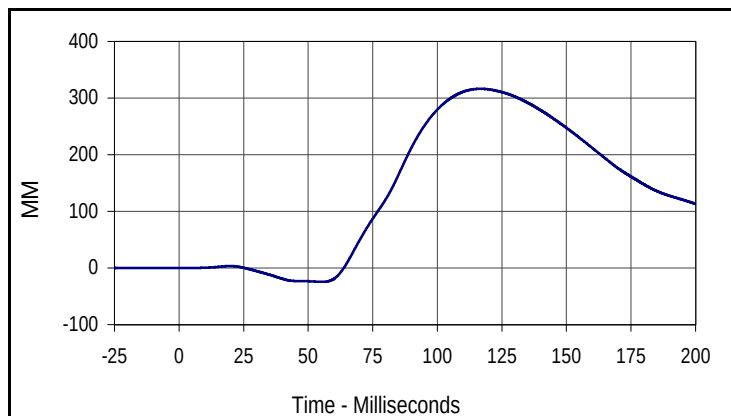
Test Date: 12/1/04
 NHTSA No.: M50112



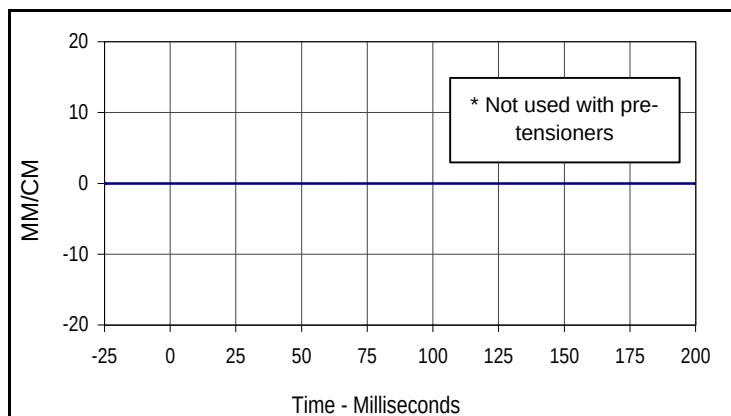
Curve Description			
Passenger Lap Belt Force			
CURNO	Type	SAE Class	Units
085	FIL	60	Newtons
Max	Time	Min	Time
4189.1	69.1	-0.8	171.2



Curve Description			
Passenger Shoulder Belt Force			
CURNO	Type	SAE Class	Units
086	FIL	60	Newtons
Max	Time	Min	Time
4839.6	101.5	-17.8	151.1



Curve Description			
Passenger Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
087	FIL	60	MM
Max	Time	Min	Time
316.4	117.1	-24.5	55.7

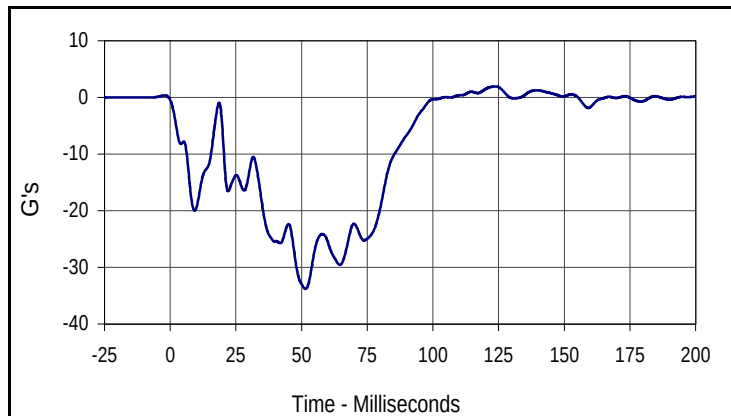


Curve Description			
Passenger Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
088	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

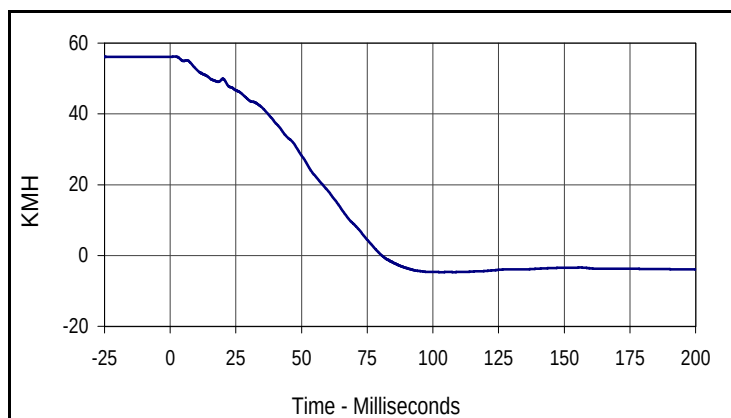
* Not used with pre-tensioners

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

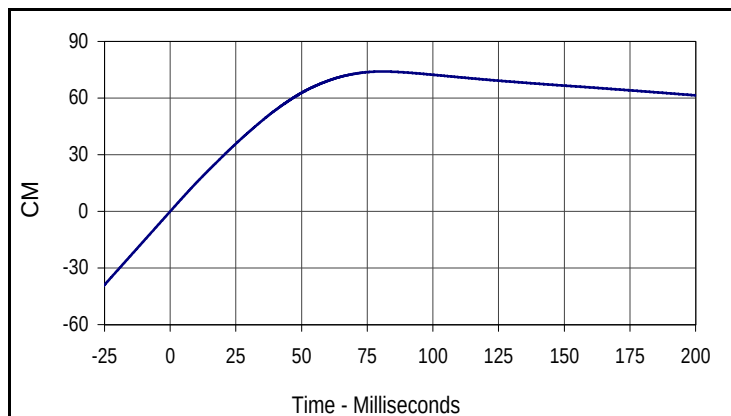
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Vehicle Left Rear X			
CURNO	Type	SAE Class	Units
089	FIL	60	G's
Max	Time	Min	Time
1.9	124.0	-33.8	51.6



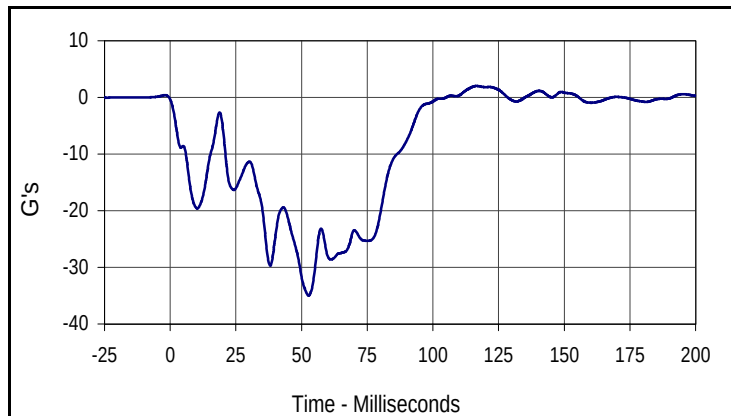
Curve Description			
Vehicle Left Rear X Velocity			
CURNO	Type	SAE Class	Units
089	IN1	180	KMH
Max	Time	Min	Time
56.2	1.9	-4.7	108.0



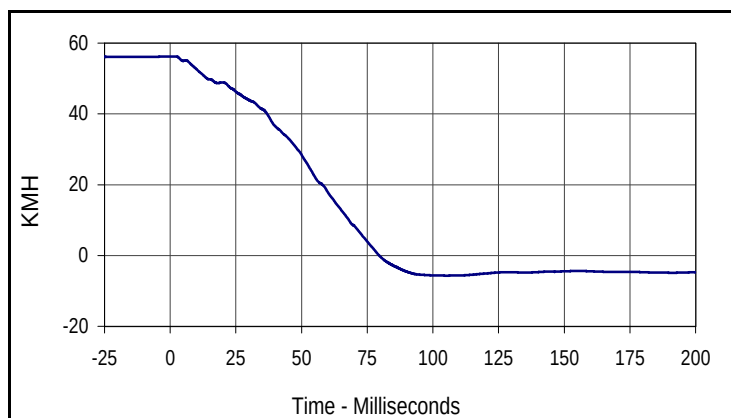
Curve Description			
Vehicle Left Rear X Displacement			
CURNO	Type	SAE Class	Units
089	IN2	180	CM
Max	Time	Min	Time
74.1	80.6	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

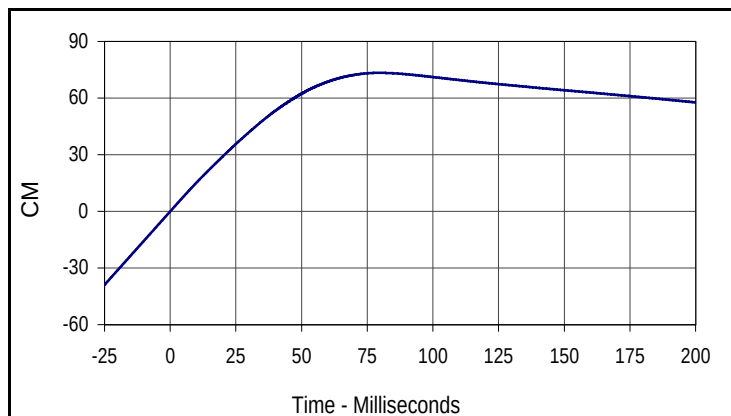
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Vehicle Right Rear X			
CURNO	Type	SAE Class	Units
090	FIL	60	G's
Max	Time	Min	Time
2.0	116.6	-35.0	52.7



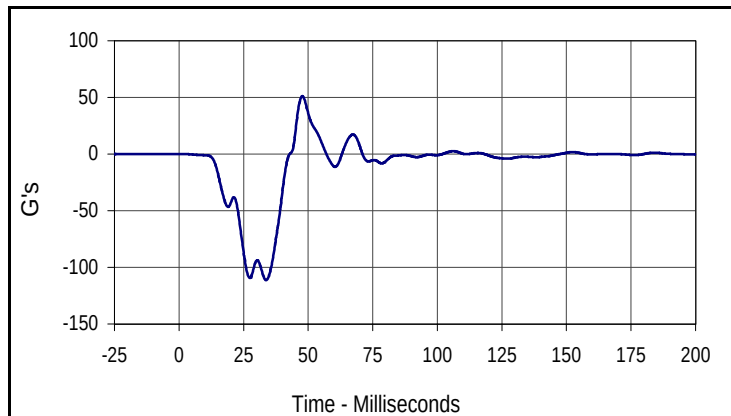
Curve Description			
Vehicle Right Rear X Velocity			
CURNO	Type	SAE Class	Units
090	IN1	180	KMH
Max	Time	Min	Time
56.2	2.1	-5.7	105.5



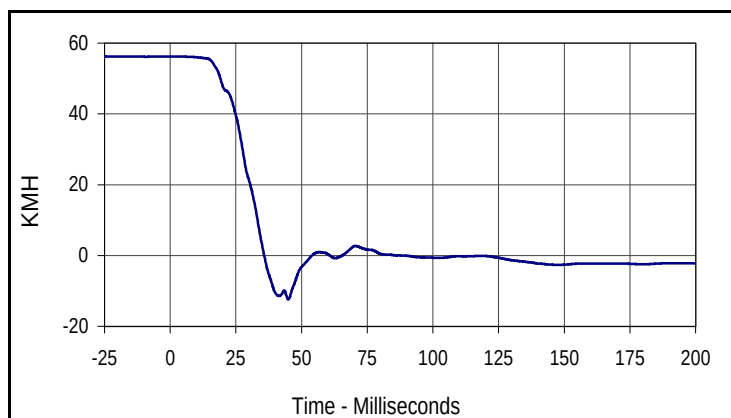
Curve Description			
Vehicle Right Rear X Displacement			
CURNO	Type	SAE Class	Units
090	IN2	180	CM
Max	Time	Min	Time
73.4	79.5	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

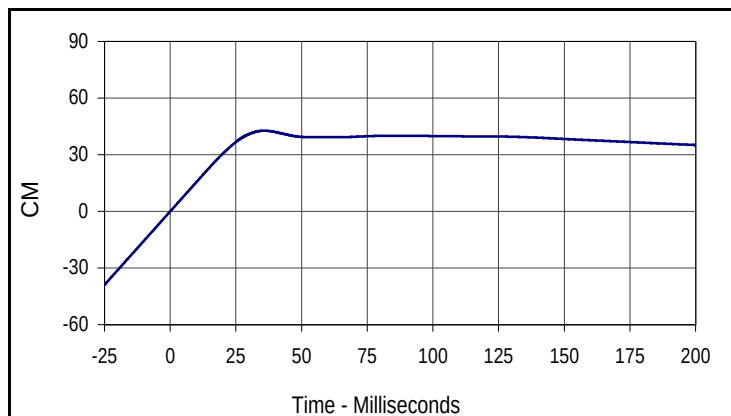
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Vehicle Engine Top X			
CURNO	Type	SAE Class	Units
091	FIL	60	G's
Max	Time	Min	Time
51.0	47.8	-111.4	33.7



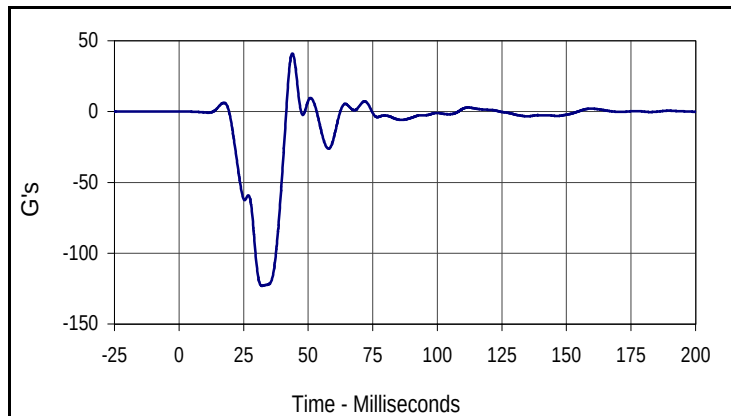
Curve Description			
Vehicle Engine Top X Velocity			
CURNO	Type	SAE Class	Units
091	IN1	180	KMH
Max	Time	Min	Time
56.2	4.2	-12.4	44.9



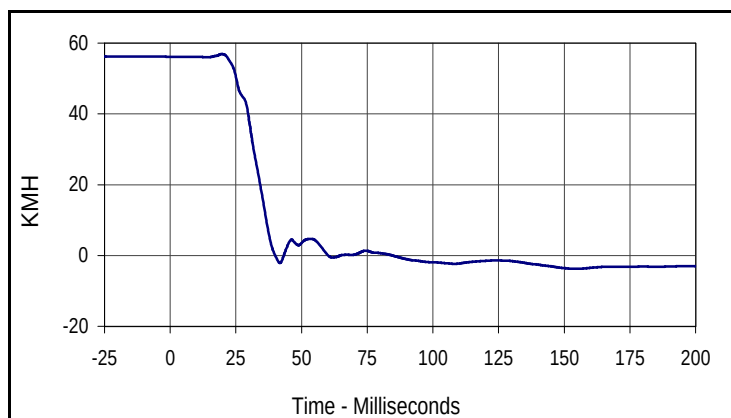
Curve Description			
Vehicle Engine Top X Displacement			
CURNO	Type	SAE Class	Units
091	IN2	180	CM
Max	Time	Min	Time
42.7	35.8	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

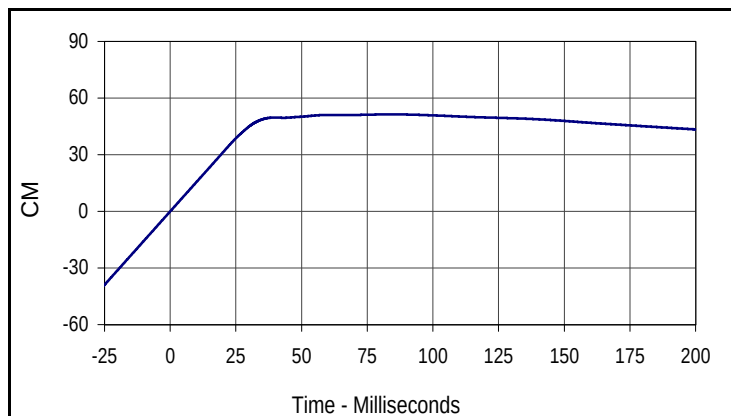
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Vehicle Engine Bottom X			
CURNO	Type	SAE Class	Units
092	FIL	60	G's
Max	Time	Min	Time
41.0	43.9	-123.0	32.1



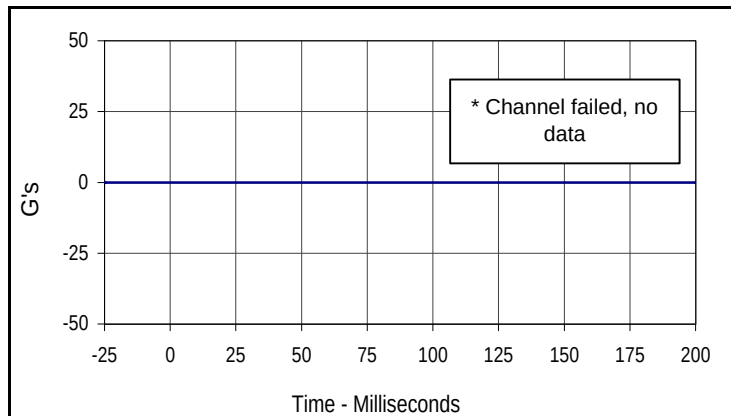
Curve Description			
Vehicle Engine Bottom X Velocity			
CURNO	Type	SAE Class	Units
092	IN1	180	KMH
Max	Time	Min	Time
56.9	19.6	-3.8	155.2



Curve Description			
Vehicle Engine Bottom X Displacement			
CURNO	Type	SAE Class	Units
092	IN2	180	CM
Max	Time	Min	Time
51.4	84.6	0.0	0.0

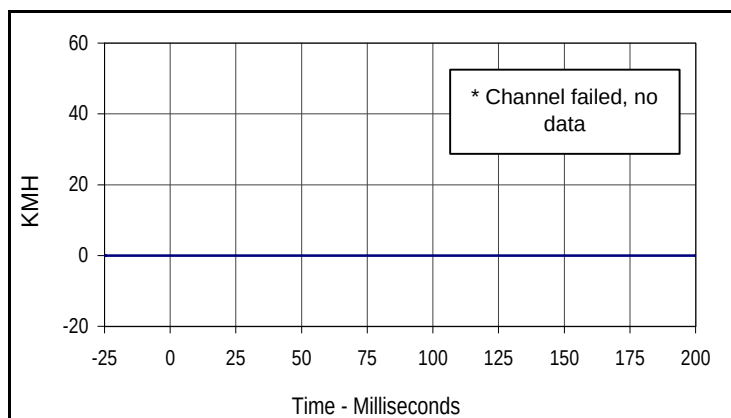
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



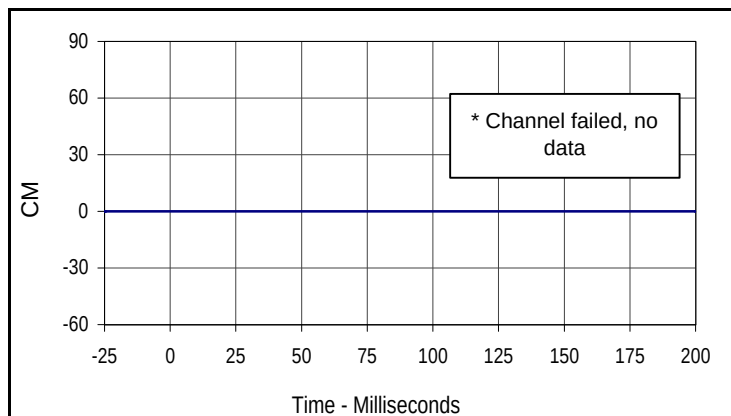
Curve Description			
Vehicle Left Brake Caliper X			
CURNO	Type	SAE Class	Units
093	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



Curve Description			
Vehicle Left Brake Caliper X Velocity			
CURNO	Type	SAE Class	Units
093	IN1	180	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

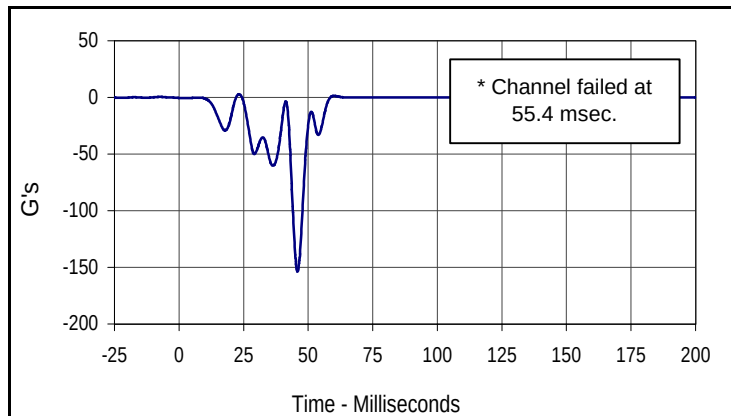


Curve Description			
Vehicle Left Brake Caliper X Displacement			
CURNO	Type	SAE Class	Units
093	IN2	180	CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

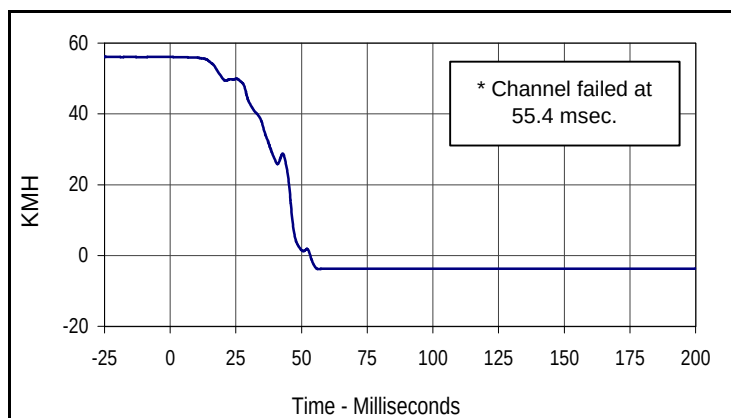
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



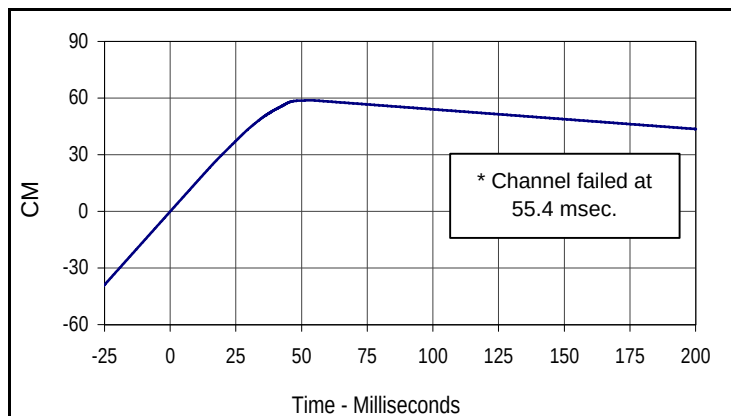
Curve Description			
Vehicle Right Brake Caliper X			
CURNO	Type	SAE Class	Units
094	FIL	60	G's
Max	Time	Min	Time
2.9	23.2	-153.8	45.9

* Channel failed at 55.4 msec.



Curve Description			
Vehicle Right Brake Caliper X Velocity			
CURNO	Type	SAE Class	Units
094	IN1	180	KMH
Max	Time	Min	Time
56.1	0.0	-3.8	56.4

* Channel failed at 55.4 msec.

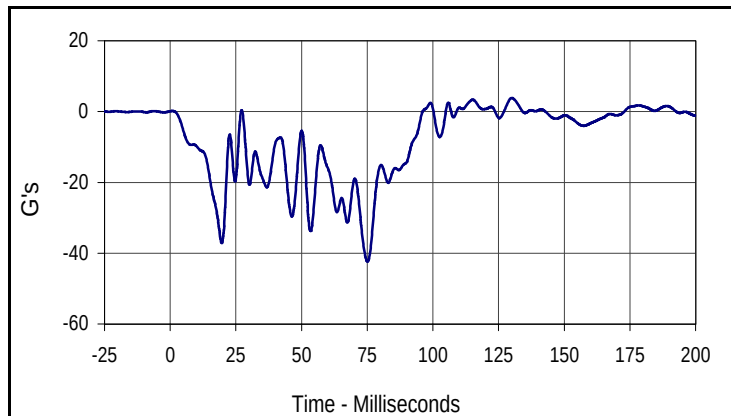


Curve Description			
Vehicle Right Brake Caliper X Displacement			
CURNO	Type	SAE Class	Units
094	IN2	180	CM
Max	Time	Min	Time
58.8	53.3	-0.1	0.0

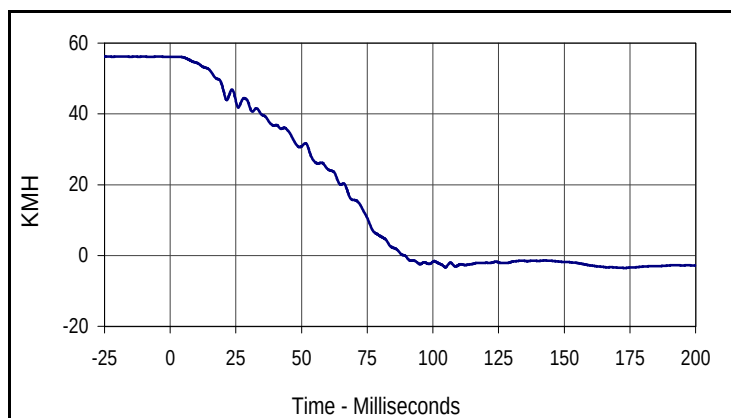
* Channel failed at 55.4 msec.

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

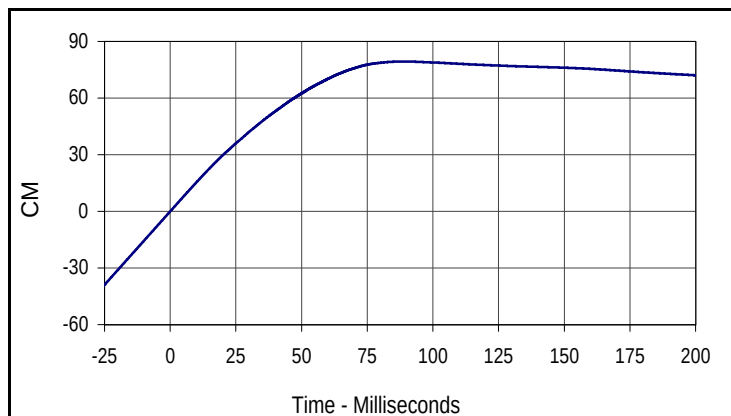
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Vehicle Instrument Panel X			
CURNO	Type	SAE Class	Units
095	FIL	60	G's
Max	Time	Min	Time
3.9	130.0	-42.3	75.1



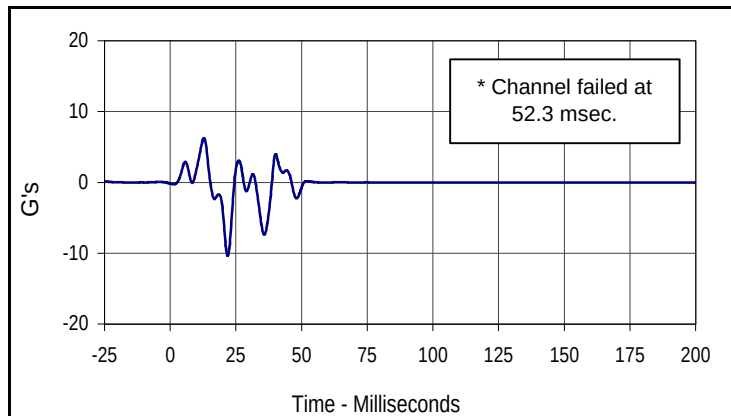
Curve Description			
Vehicle Instrument Panel X Velocity			
CURNO	Type	SAE Class	Units
095	IN1	180	KMH
Max	Time	Min	Time
56.1	3.3	-3.5	173.1



Curve Description			
Vehicle Instrument Panel X Displacement			
CURNO	Type	SAE Class	Units
095	IN2	180	CM
Max	Time	Min	Time
79.4	89.3	0.0	0.0

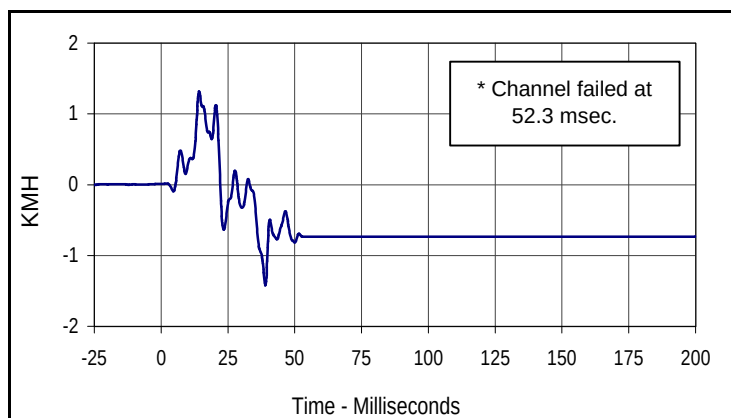
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



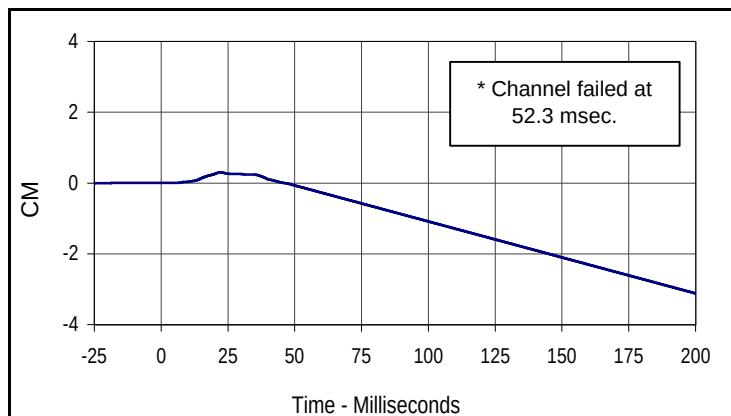
Curve Description			
Vehicle Left Rear Z			
CURNO	Type	SAE Class	Units
096	FIL	60	G's
Max	Time	Min	Time
6.3	12.8	-10.4	21.9

* Channel failed at 52.3 msec.



Curve Description			
Vehicle Left Rear Z Velocity			
CURNO	Type	SAE Class	Units
096	IN1	180	KMH
Max	Time	Min	Time
1.3	14.2	-1.4	39.0

* Channel failed at 52.3 msec.

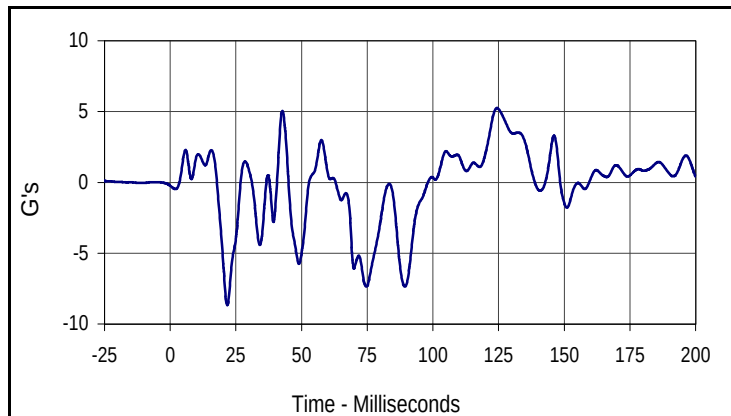


Curve Description			
Vehicle Left Rear Z Displacement			
CURNO	Type	SAE Class	Units
096	IN2	180	CM
Max	Time	Min	Time
0.3	22.1	-3.1	200.0

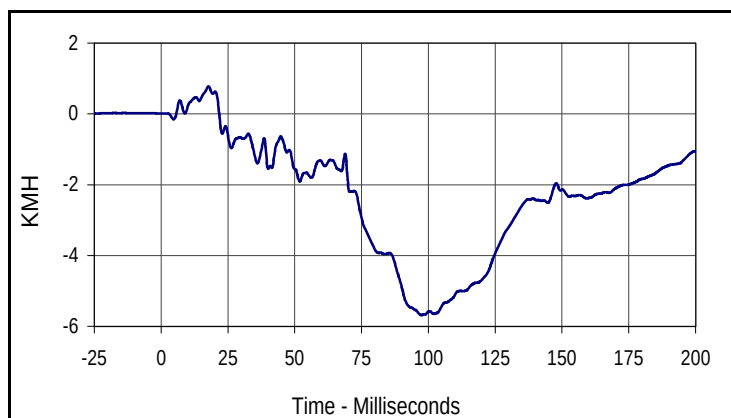
* Channel failed at 52.3 msec.

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

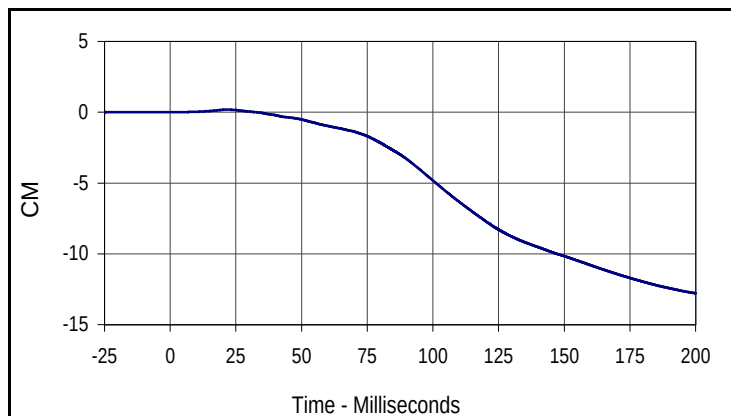
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Vehicle Right Rear Z			
CURNO	Type	SAE Class	Units
097	FIL	60	G's
Max	Time	Min	Time
5.2	124.4	-8.7	21.7



Curve Description			
Vehicle Right Rear Z Velocity			
CURNO	Type	SAE Class	Units
097	IN1	180	KMH
Max	Time	Min	Time
0.8	17.7	-5.7	97.5



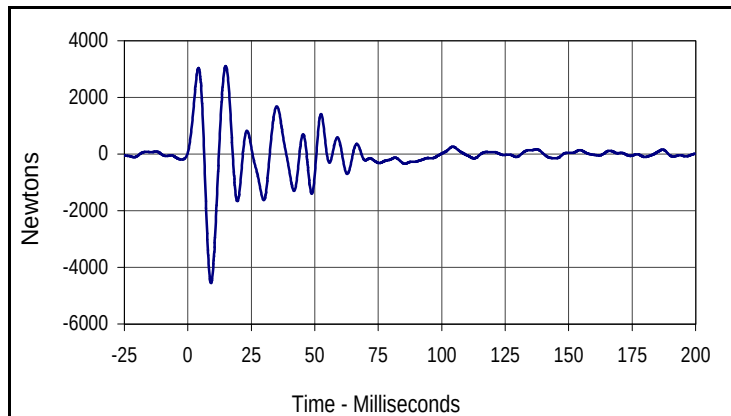
Curve Description			
Vehicle Right Rear Z Displacement			
CURNO	Type	SAE Class	Units
097	IN2	180	CM
Max	Time	Min	Time
0.2	21.7	-12.8	200.0

APPENDIX C

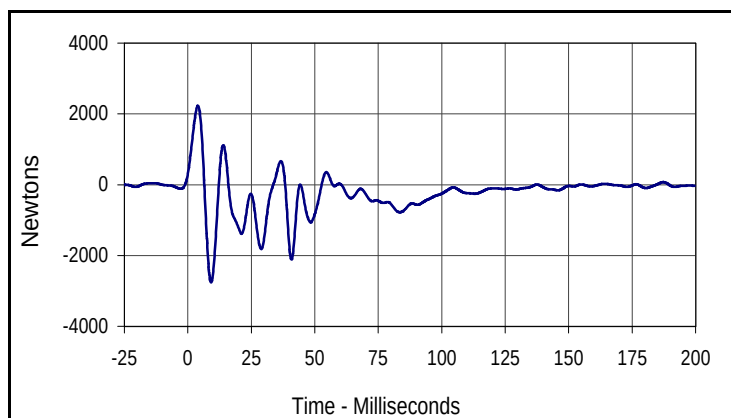
LOAD CELL BARRIER DATA PLOTS

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

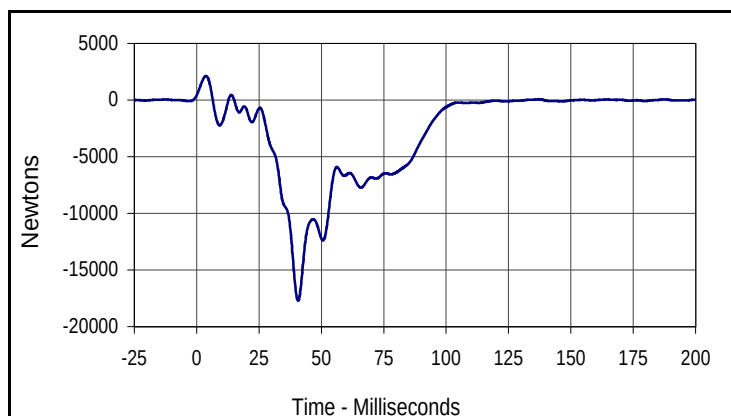
Test Date: 12/1/04
 NHTSA No.: M50112



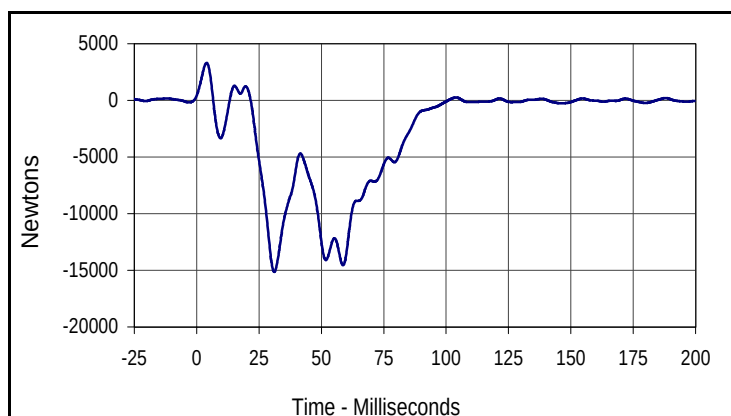
Curve Description			
Barrier Force A1			
CURNO	Type	SAE Class	Units
098	FIL	60	Newtons
Max	Time	Min	Time
3104.4	14.9	-4553.5	9.1



Curve Description			
Barrier Force B1			
CURNO	Type	SAE Class	Units
107	FIL	60	Newtons
Max	Time	Min	Time
2230.2	3.9	-2764.3	9.2



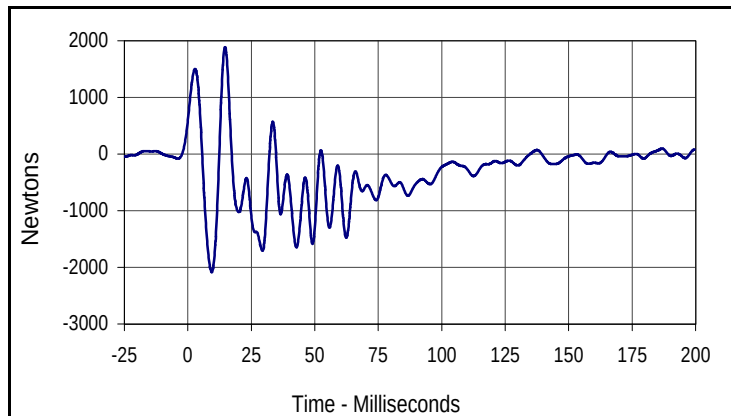
Curve Description			
Barrier Force C1			
CURNO	Type	SAE Class	Units
116	FIL	60	Newtons
Max	Time	Min	Time
2129.1	3.7	-17716.9	40.6



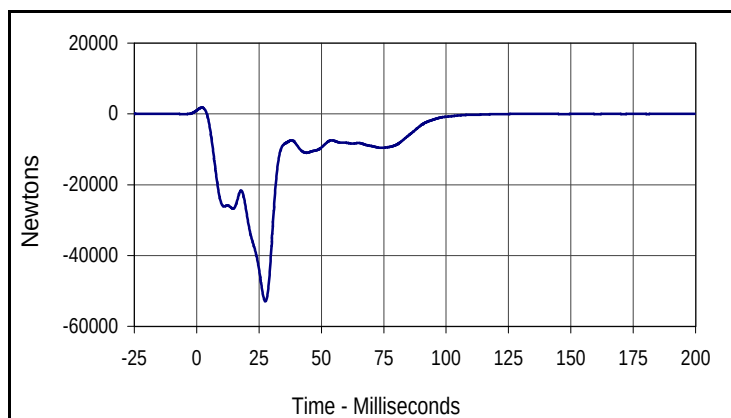
Curve Description			
Barrier Force D1			
CURNO	Type	SAE Class	Units
125	FIL	60	Newtons
Max	Time	Min	Time
3317.3	4.0	-15128.5	31.1

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

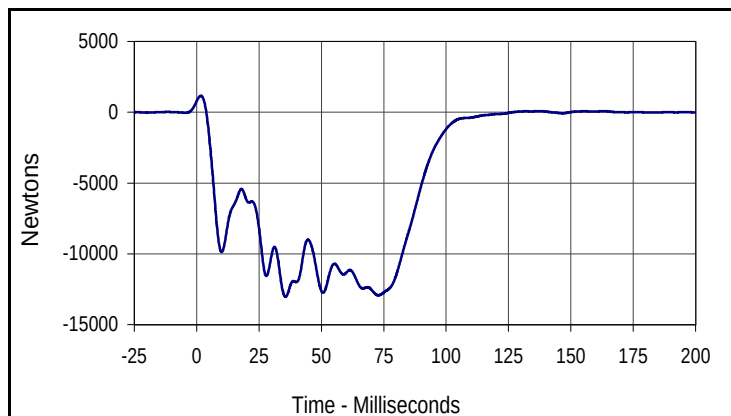
Test Date: 12/1/04
 NHTSA No.: M50112



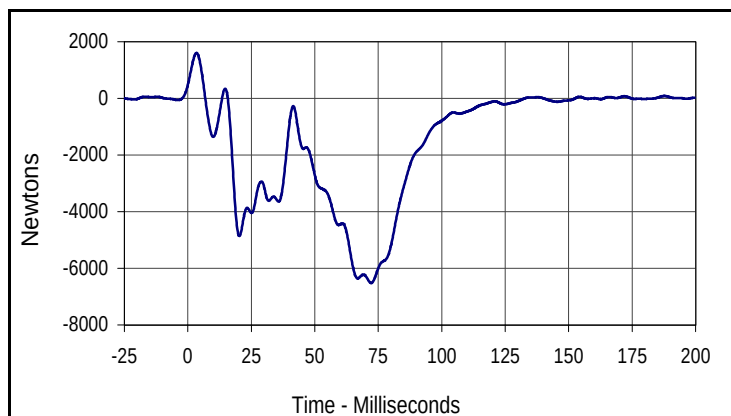
Curve Description			
Barrier Force A2			
CURNO	Type	SAE Class	Units
099	FIL	60	Newtons
Max	Time	Min	Time
1886.7	14.6	-2082.2	9.4



Curve Description			
Barrier Force B2			
CURNO	Type	SAE Class	Units
108	FIL	60	Newtons
Max	Time	Min	Time
1796.2	2.1	-52947.0	27.5



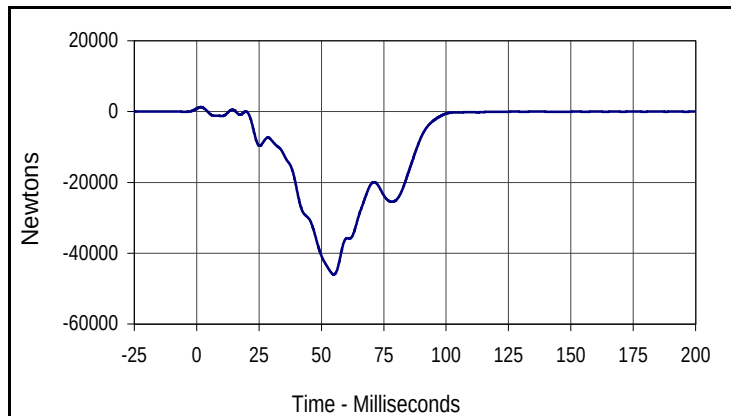
Curve Description			
Barrier Force C2			
CURNO	Type	SAE Class	Units
117	FIL	60	Newtons
Max	Time	Min	Time
1163.4	1.7	-13031.9	35.6



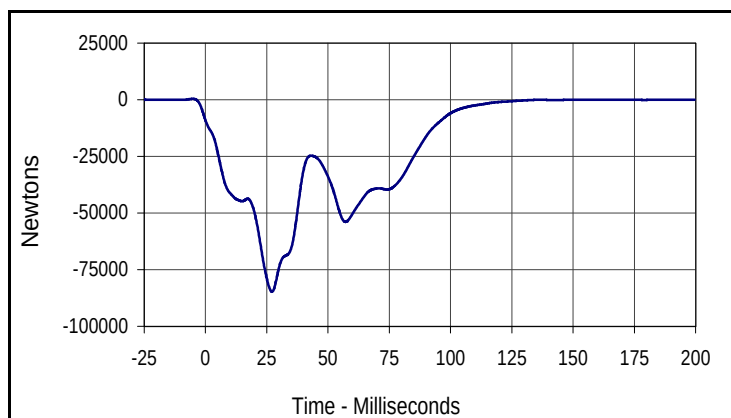
Curve Description			
Barrier Force D2			
CURNO	Type	SAE Class	Units
126	FIL	60	Newtons
Max	Time	Min	Time
1606.7	3.4	-6520.6	72.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

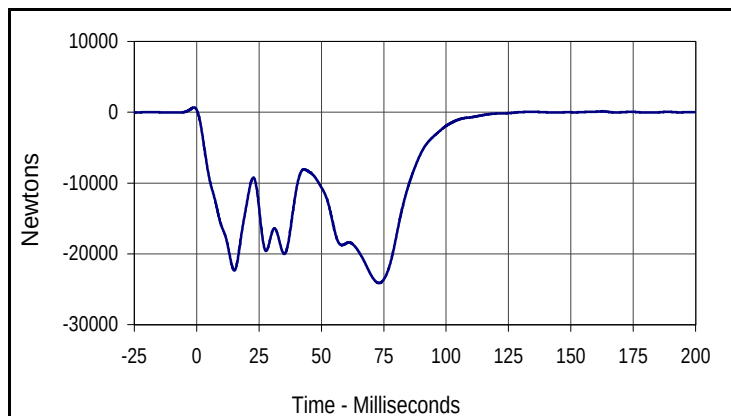
Test Date: 12/1/04
 NHTSA No.: M50112



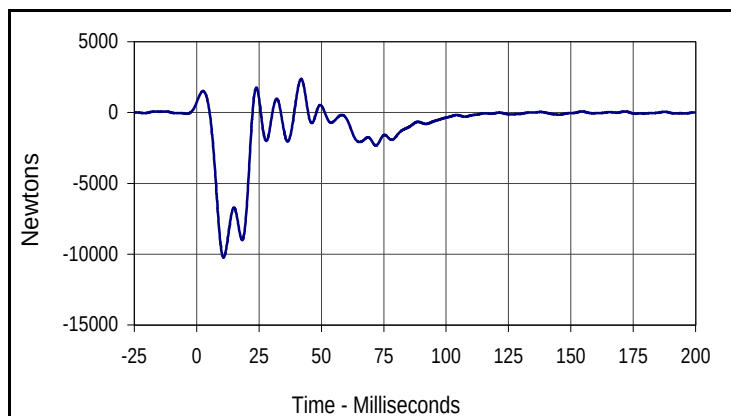
Curve Description			
Barrier Force A3			
CURNO	Type	SAE Class	Units
100	FIL	60	Newtons
Max	Time	Min	Time
1260.6	1.7	-46048.3	55.0



Curve Description			
Barrier Force B3			
CURNO	Type	SAE Class	Units
109	FIL	60	Newtons
Max	Time	Min	Time
62.5	170.9	-84684.1	27.1



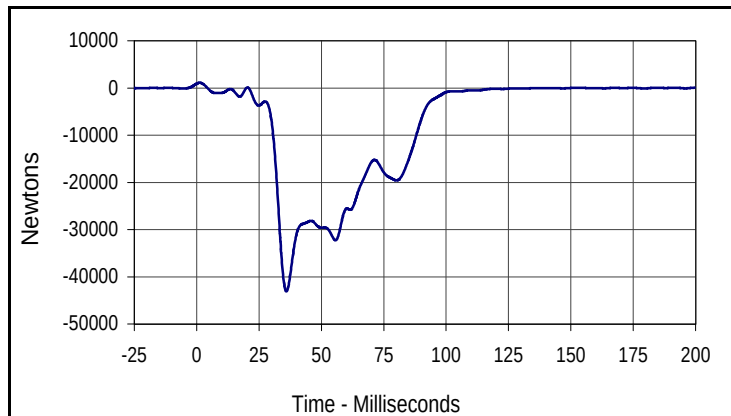
Curve Description			
Barrier Force C3			
CURNO	Type	SAE Class	Units
118	FIL	60	Newtons
Max	Time	Min	Time
334.4	0.0	-24126.7	73.1



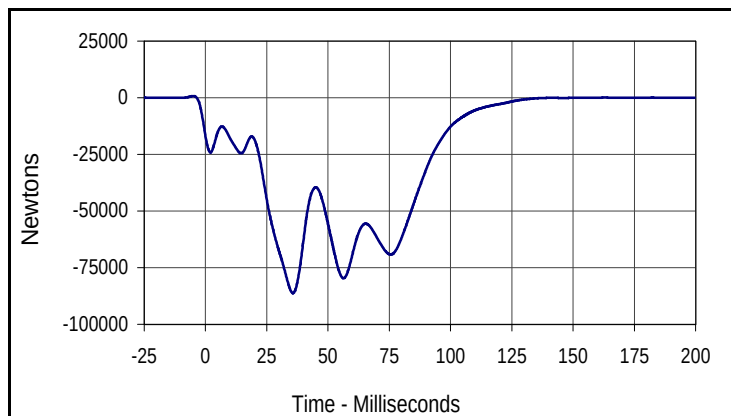
Curve Description			
Barrier Force D3			
CURNO	Type	SAE Class	Units
127	FIL	60	Newtons
Max	Time	Min	Time
2371.1	41.9	-10247.2	10.8

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

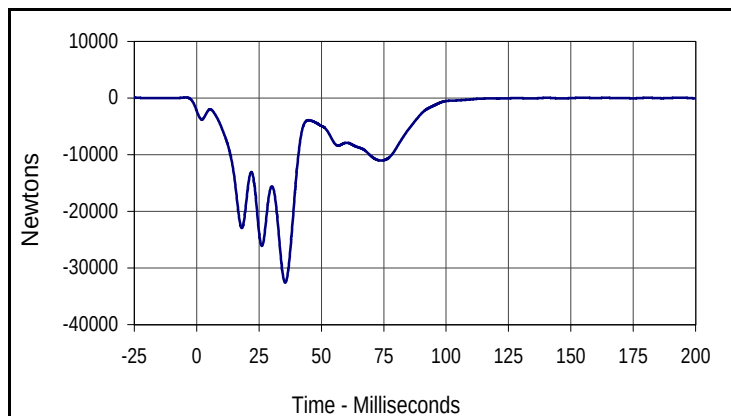
Test Date: 12/1/04
 NHTSA No.: M50112



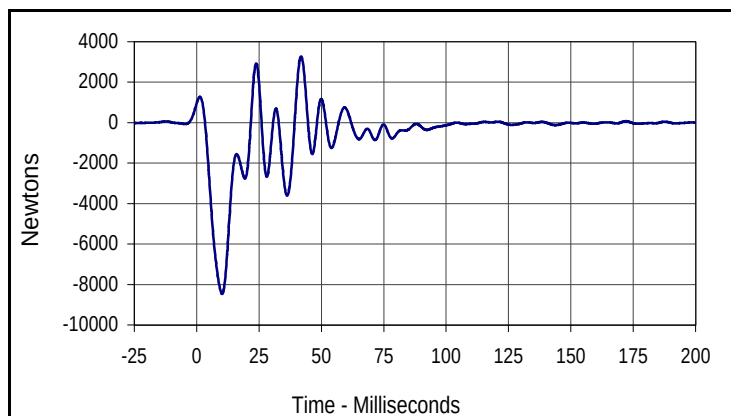
Curve Description			
Barrier Force A4			
CURNO	Type	SAE Class	Units
101	FIL	60	Newtons
Max	Time	Min	Time
1111.5	1.3	-43099.1	35.9



Curve Description			
Barrier Force B4			
CURNO	Type	SAE Class	Units
110	FIL	60	Newtons
Max	Time	Min	Time
86.4	162.9	-86249.8	35.7



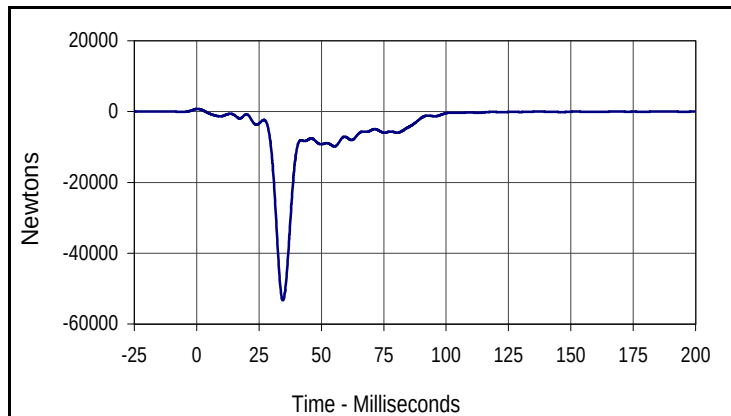
Curve Description			
Barrier Force C4			
CURNO	Type	SAE Class	Units
119	FIL	60	Newtons
Max	Time	Min	Time
46.7	155.3	-32582.5	35.5



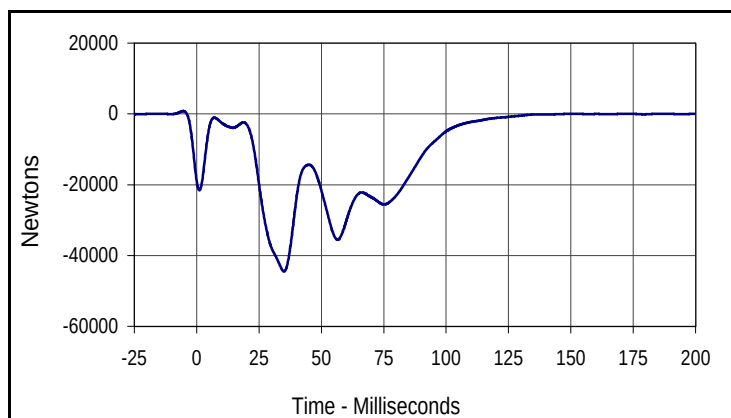
Curve Description			
Barrier Force D4			
CURNO	Type	SAE Class	Units
128	FIL	60	Newtons
Max	Time	Min	Time
3275.9	41.8	-8462.4	10.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

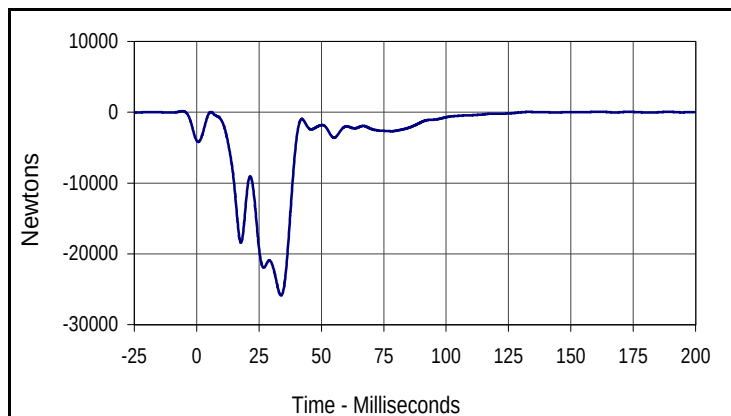
Test Date: 12/1/04
 NHTSA No.: M50112



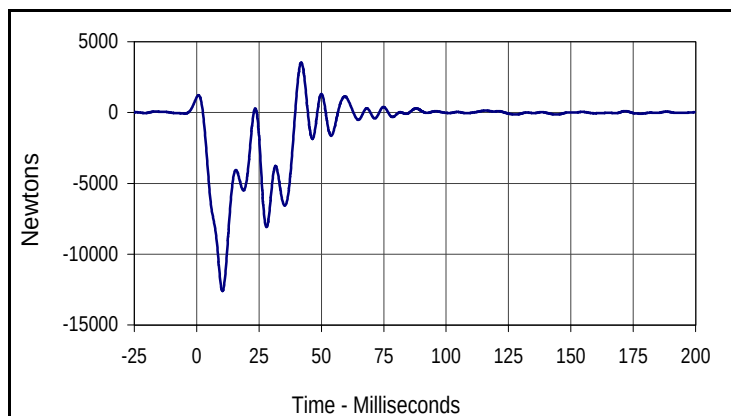
Curve Description			
Barrier Force A5			
CURNO	Type	SAE Class	Units
102	FIL	60	Newtons
Max	Time	Min	Time
773.9	0.3	-53312.0	34.6



Curve Description			
Barrier Force B5			
CURNO	Type	SAE Class	Units
111	FIL	60	Newtons
Max	Time	Min	Time
66.5	200.0	-44484.8	35.0



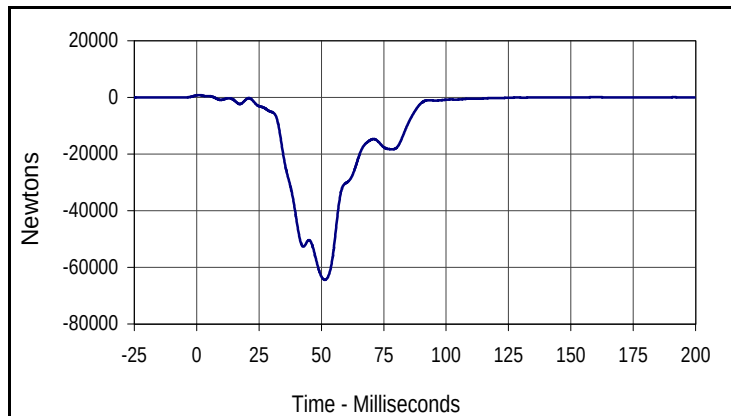
Curve Description			
Barrier Force C5			
CURNO	Type	SAE Class	Units
120	FIL	60	Newtons
Max	Time	Min	Time
70.2	162.3	-25885.6	33.8



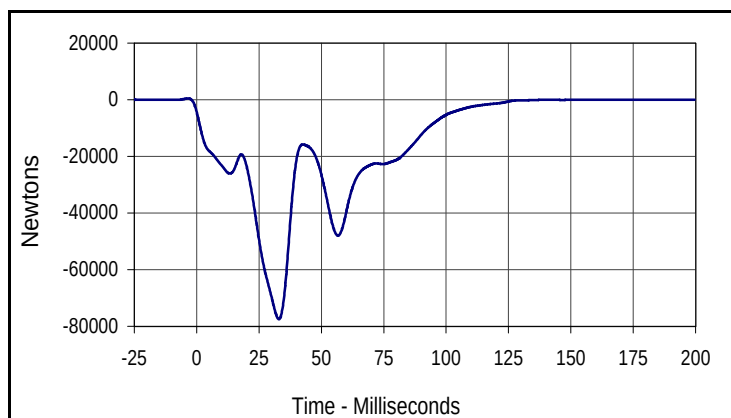
Curve Description			
Barrier Force D5			
CURNO	Type	SAE Class	Units
129	FIL	60	Newtons
Max	Time	Min	Time
3521.1	41.9	-12602.9	10.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

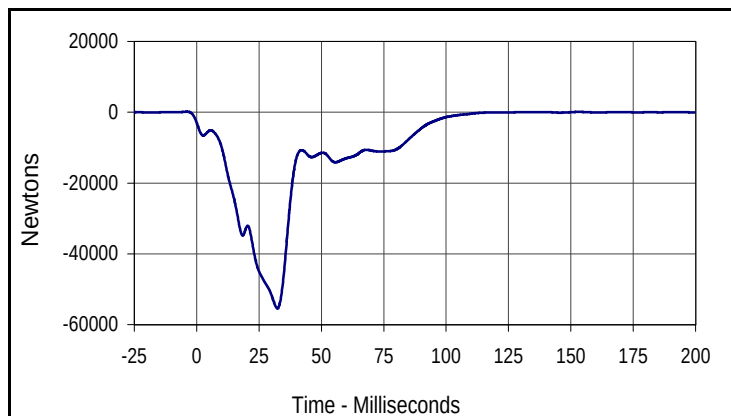
Test Date: 12/1/04
 NHTSA No.: M50112



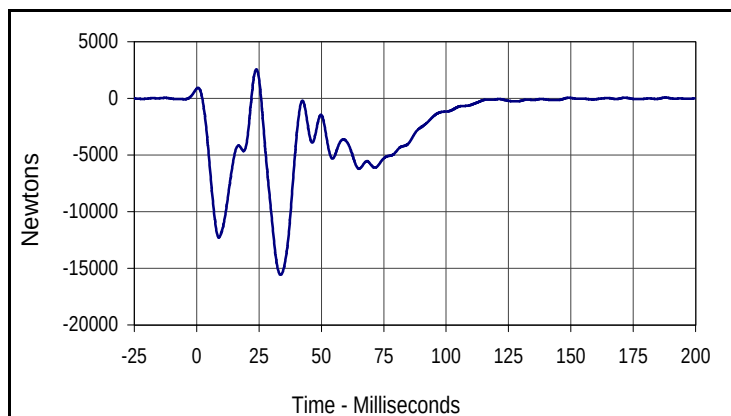
Curve Description			
Barrier Force A6			
CURNO	Type	SAE Class	Units
103	FIL	60	Newtons
Max	Time	Min	Time
814.2	0.9	-64401.9	51.4



Curve Description			
Barrier Force B6			
CURNO	Type	SAE Class	Units
112	FIL	60	Newtons
Max	Time	Min	Time
32.7	152.8	-77512.5	32.9



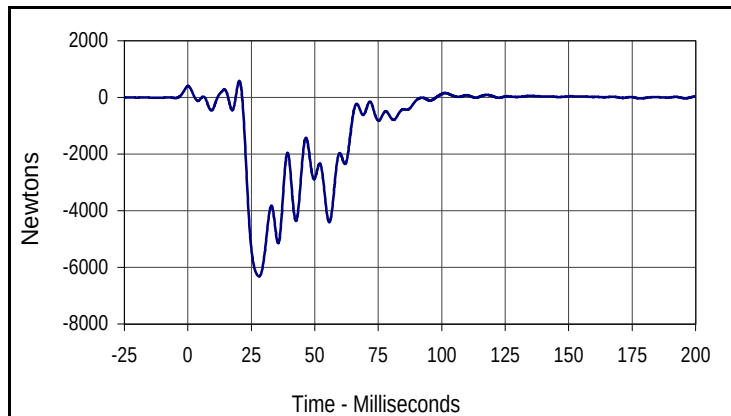
Curve Description			
Barrier Force C6			
CURNO	Type	SAE Class	Units
121	FIL	60	Newtons
Max	Time	Min	Time
88.7	153.2	-55352.2	32.3



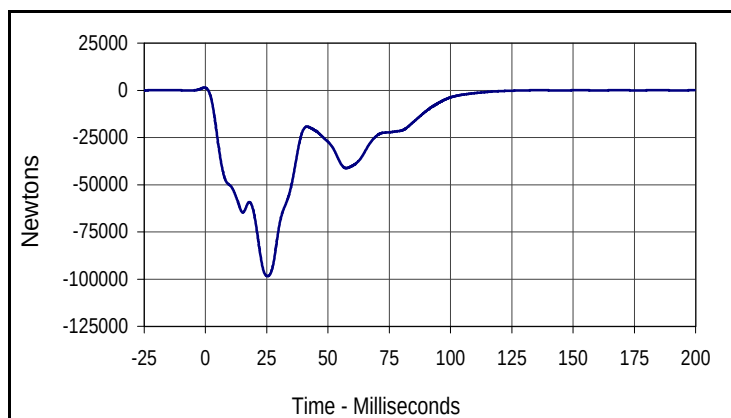
Curve Description			
Barrier Force D6			
CURNO	Type	SAE Class	Units
130	FIL	60	Newtons
Max	Time	Min	Time
2562.9	23.9	-15578.9	33.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

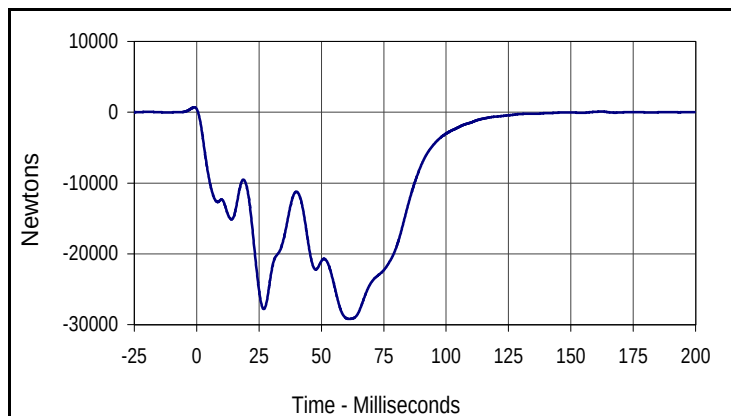
Test Date: 12/1/04
 NHTSA No.: M50112



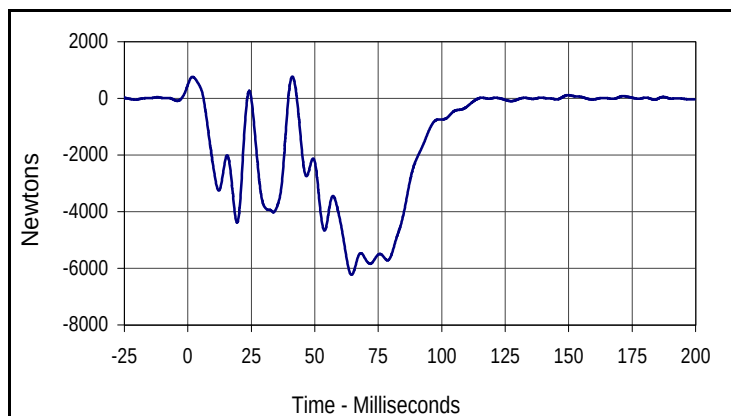
Curve Description			
Barrier Force A7			
CURNO	Type	SAE Class	Units
104	FIL	60	Newtons
Max	Time	Min	Time
585.6	20.3	-6317.8	28.0



Curve Description			
Barrier Force B7			
CURNO	Type	SAE Class	Units
113	FIL	60	Newtons
Max	Time	Min	Time
1343.2	0.0	-98460.2	25.3



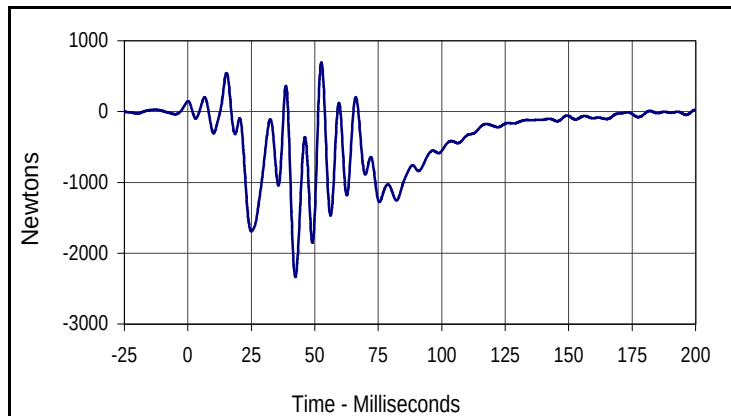
Curve Description			
Barrier Force C7			
CURNO	Type	SAE Class	Units
122	FIL	60	Newtons
Max	Time	Min	Time
452.7	0.0	-29187.2	61.1



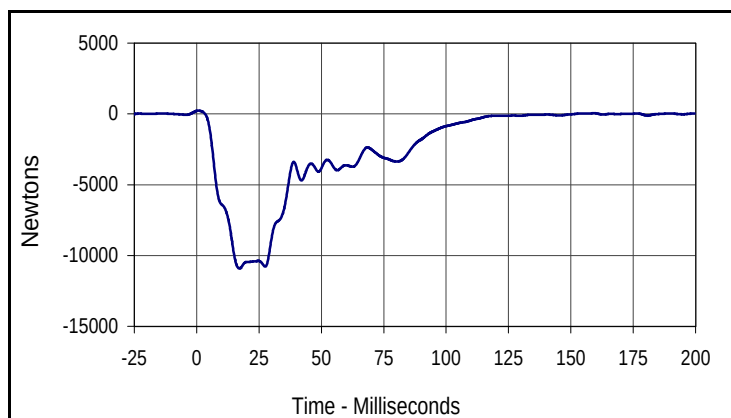
Curve Description			
Barrier Force D7			
CURNO	Type	SAE Class	Units
131	FIL	60	Newtons
Max	Time	Min	Time
772.5	41.1	-6229.9	64.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

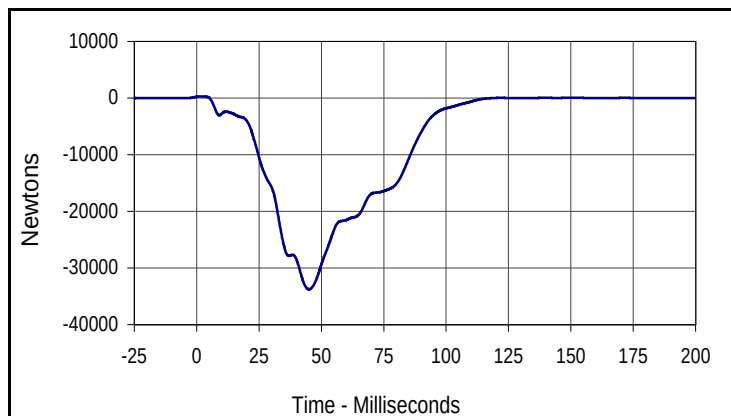
Test Date: 12/1/04
 NHTSA No.: M50112



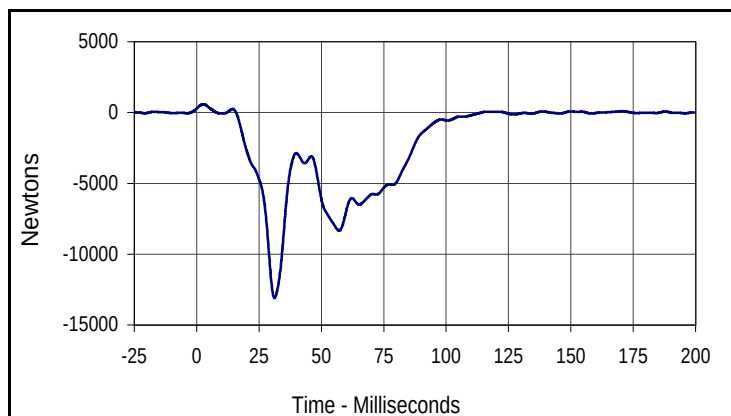
Curve Description			
Barrier Force A8			
CURNO	Type	SAE Class	Units
105	FIL	60	Newtons
Max	Time	Min	Time
691.2	52.6	-2334.0	42.4



Curve Description			
Barrier Force B8			
CURNO	Type	SAE Class	Units
114	FIL	60	Newtons
Max	Time	Min	Time
235.3	0.6	-10913.4	17.1



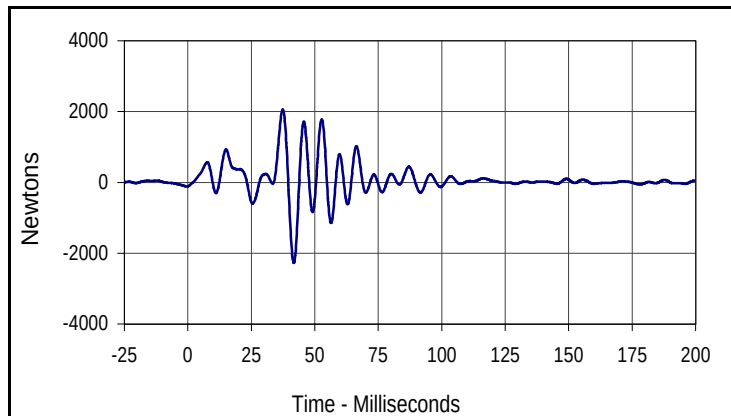
Curve Description			
Barrier Force C8			
CURNO	Type	SAE Class	Units
123	FIL	60	Newtons
Max	Time	Min	Time
276.2	2.6	-33771.0	45.0



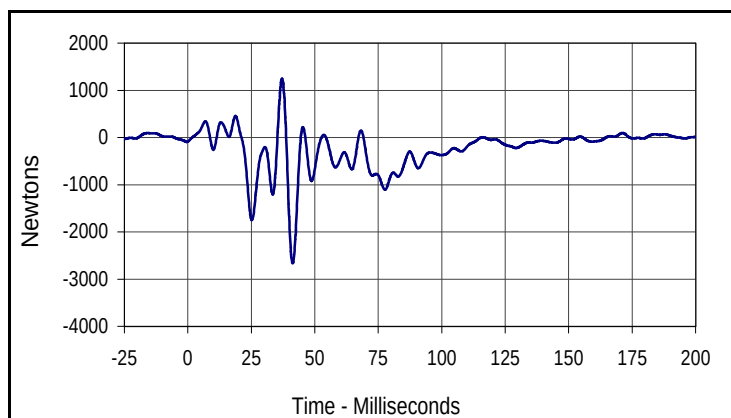
Curve Description			
Barrier Force D8			
CURNO	Type	SAE Class	Units
132	FIL	60	Newtons
Max	Time	Min	Time
586.1	2.7	-13102.8	31.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

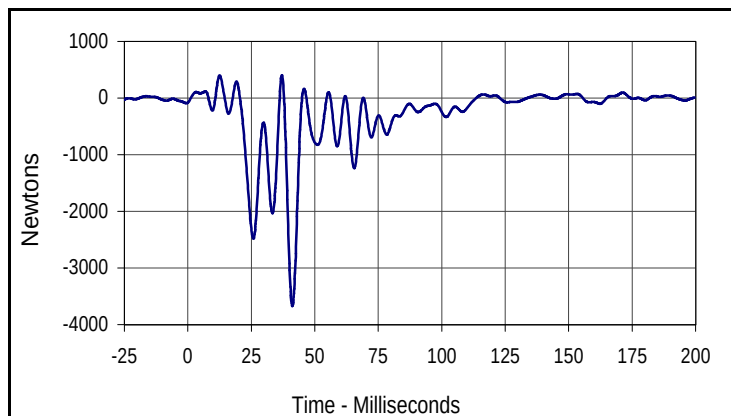
Test Date: 12/1/04
 NHTSA No.: M50112



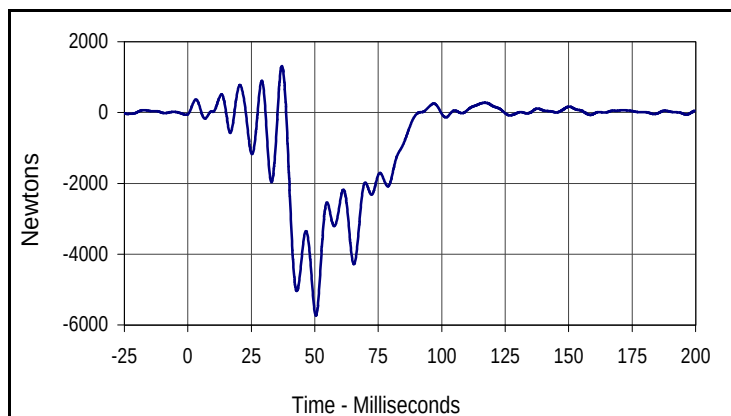
Curve Description			
Barrier Force A9			
CURNO	Type	SAE Class	Units
106	FIL	60	Newtons
Max	Time	Min	Time
2054.1	37.4	-2271.4	41.7



Curve Description			
Barrier Force B9			
CURNO	Type	SAE Class	Units
115	FIL	60	Newtons
Max	Time	Min	Time
1244.3	37.1	-2666.6	41.3



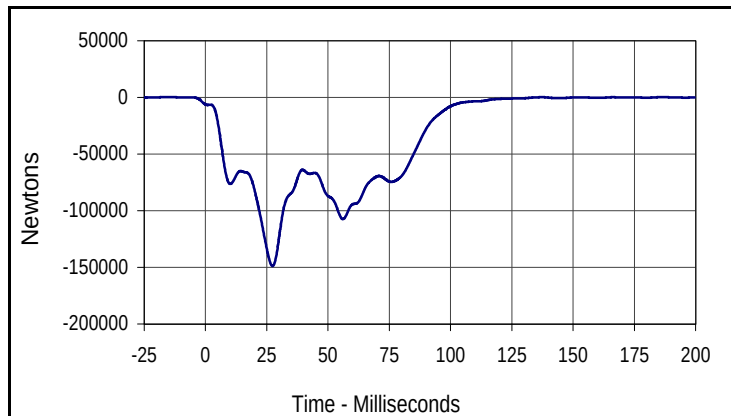
Curve Description			
Barrier Force C9			
CURNO	Type	SAE Class	Units
124	FIL	60	Newtons
Max	Time	Min	Time
402.6	12.5	-3670.3	41.2



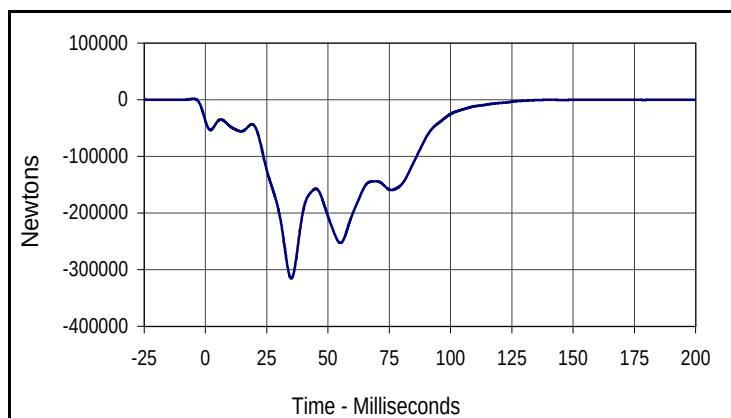
Curve Description			
Barrier Force D9			
CURNO	Type	SAE Class	Units
133	FIL	60	Newtons
Max	Time	Min	Time
1315.7	37.0	-5738.0	50.4

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

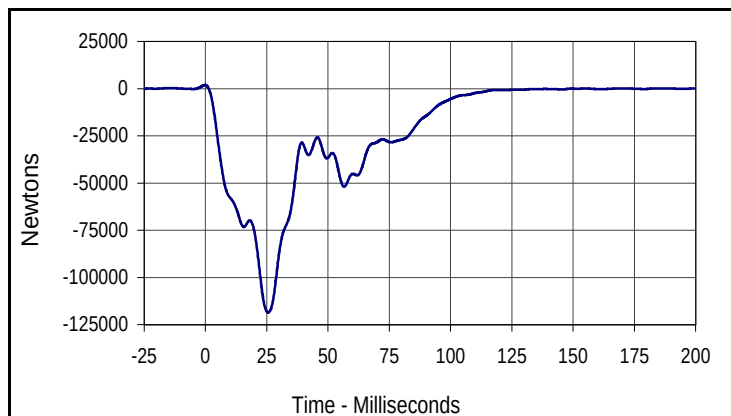
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Barrier Force Sum Group 1			
CURNO	Type	SAE Class	Units
001	SUM	60	Newtons
Max	Time	Min	Time
387.8	187.0	-148854.7	27.4



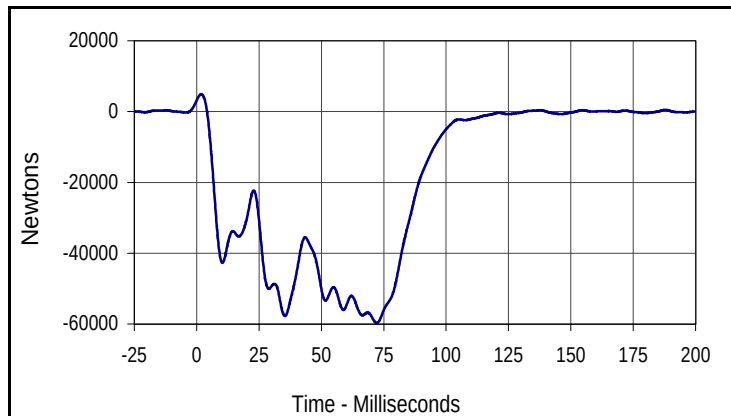
Curve Description			
Barrier Force Sum Group 2			
CURNO	Type	SAE Class	Units
002	SUM	60	Newtons
Max	Time	Min	Time
244.1	199.8	-315663.0	35.0



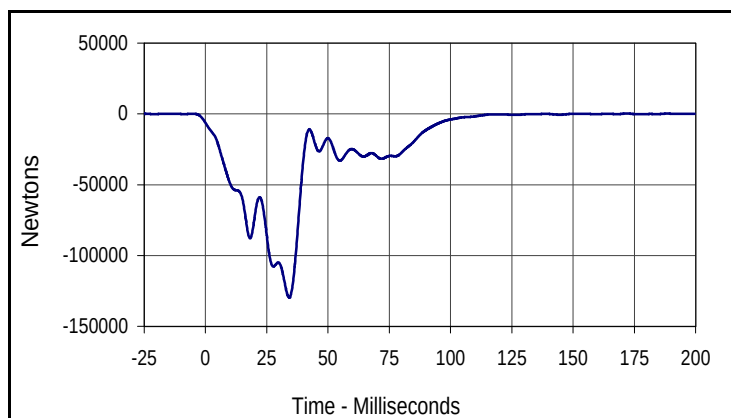
Curve Description			
Barrier Force Sum Group 3			
CURNO	Type	SAE Class	Units
003	SUM	60	Newtons
Max	Time	Min	Time
1915.2	0.0	-118536.4	25.6

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

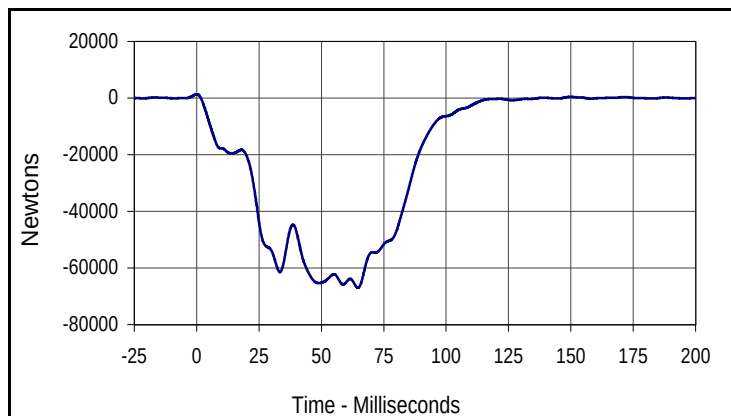
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Barrier Force Sum Group 4			
CURNO	Type	SAE Class	Units
004	SUM	60	Newtons
Max	Time	Min	Time
4901.2	1.9	-59744.9	72.1



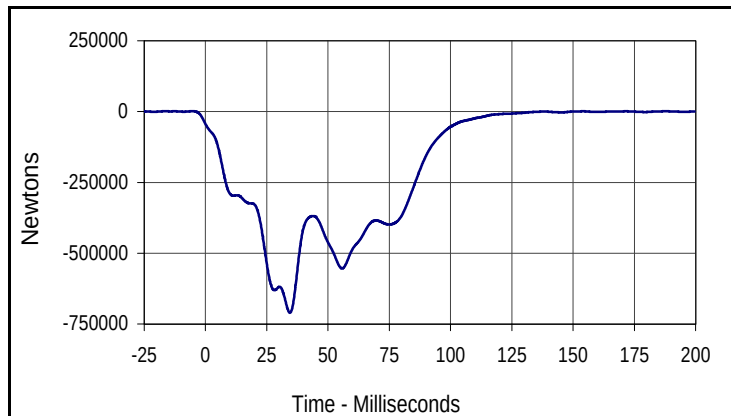
Curve Description			
Barrier Force Sum Group 5			
CURNO	Type	SAE Class	Units
005	SUM	60	Newtons
Max	Time	Min	Time
302.3	171.9	-129587.9	34.2



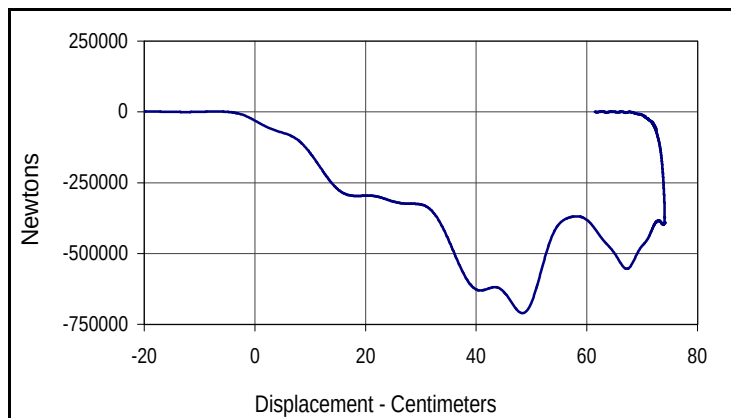
Curve Description			
Barrier Force Sum Group 6			
CURNO	Type	SAE Class	Units
006	SUM	60	Newtons
Max	Time	Min	Time
1324.3	0.0	-66990.9	64.6

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Barrier Force Total Sum			
CURNO	Type	SAE Class	Units
007	SUM	60	Newtons
Max	Time	Min	Time
1341.4	187.8	-710343.7	34.4



Curve Description			
Barrier Force Total Sum vs. Displ.			
CURNO	Type	SAE Class	Units
001	XVY	60	Newtons
Max	CM	Min	CM
1341.4	62.7	-710343.7	47.4

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

Location	Units	Max	Time	Min	Time
Barrier Force A1	Newtons	3104.4	14.9	-4553.5	9.1
Barrier Force A2	Newtons	1886.7	14.6	-2082.2	9.4
Barrier Force A3	Newtons	1260.6	1.7	-46048.3	55.0
Barrier Force A4	Newtons	1111.5	1.3	-43099.1	35.9
Barrier Force A5	Newtons	773.9	0.3	-53312.0	34.6
Barrier Force A6	Newtons	814.2	0.9	-64401.9	51.4
Barrier Force A7	Newtons	585.6	20.3	-6317.8	28.0
Barrier Force A8	Newtons	691.2	52.6	-2334.0	42.4
Barrier Force A9	Newtons	2054.1	37.4	-2271.4	41.7
Barrier Force B1	Newtons	2230.2	3.9	-2764.3	9.2
Barrier Force B2	Newtons	1796.2	2.1	-52947.0	27.5
Barrier Force B3	Newtons	62.5	170.9	-84684.1	27.1
Barrier Force B4	Newtons	86.4	162.9	-86249.8	35.7
Barrier Force B5	Newtons	66.5	200.0	-44484.8	35.0
Barrier Force B6	Newtons	32.7	152.8	-77512.5	32.9
Barrier Force B7	Newtons	1343.2	0.0	-98460.2	25.3
Barrier Force B8	Newtons	235.3	0.6	-10913.4	17.1
Barrier Force B9	Newtons	1244.3	37.1	-2666.6	41.3
Barrier Force C1	Newtons	2129.1	3.7	-17716.9	40.6
Barrier Force C2	Newtons	1163.4	1.7	-13031.9	35.6
Barrier Force C3	Newtons	334.4	0.0	-24126.7	73.1
Barrier Force C4	Newtons	46.7	155.3	-32582.5	35.5
Barrier Force C5	Newtons	70.2	162.3	-25885.6	33.8
Barrier Force C6	Newtons	88.7	153.2	-55352.2	32.3
Barrier Force C7	Newtons	452.7	0.0	-29187.2	61.1
Barrier Force C8	Newtons	276.2	2.6	-33771.0	45.0
Barrier Force C9	Newtons	402.6	12.5	-3670.3	41.2
Barrier Force D1	Newtons	3317.3	4.0	-15128.5	31.1
Barrier Force D2	Newtons	1606.7	3.4	-6520.6	72.2
Barrier Force D3	Newtons	2371.1	41.9	-10247.2	10.8
Barrier Force D4	Newtons	3275.9	41.8	-8462.4	10.2
Barrier Force D5	Newtons	3521.1	41.9	-12602.9	10.3
Barrier Force D6	Newtons	2562.9	23.9	-15578.9	33.7
Barrier Force D7	Newtons	772.5	41.1	-6229.9	64.5
Barrier Force D8	Newtons	586.1	2.7	-13102.8	31.2
Barrier Force D9	Newtons	1315.7	37.0	-5738.0	50.4
Barrier Force Sum Group 1	Newtons	387.8	187.0	-148854.7	27.4
Barrier Force Sum Group 2	Newtons	244.1	199.8	-315663.0	35.0
Barrier Force Sum Group 3	Newtons	1915.2	0.0	-118536.4	25.6
Barrier Force Sum Group 4	Newtons	4901.2	1.9	-59744.9	72.1
Barrier Force Sum Group 5	Newtons	302.3	171.9	-129587.9	34.2
Barrier Force Sum Group 6	Newtons	1324.3	0.0	-66990.9	64.6
Barrier Force Total Sum	Newtons	1341.4	187.8	-710343.7	34.4

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	KEAC027	Accel.,1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	KEAC031	Accel.,1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	KEAC032	Accel.,1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	KEAC026	Accel.,1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST, PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST, PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST, PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST, REDUNDANT	X	KEAC023	Accel.,1/2 bridge	Endevco	7264-200	G
17	CHEST, REDUNDANT	Y	KEAC022	Accel.,1/2 bridge	Endevco	7264-200	G
18	CHEST, REDUNDANT	Z	KEAC024	Accel.,1/2 bridge	Endevco	7264-200	G
19	CHEST DEFLECTION	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	KEAC019	Accel.,1/2 bridge	Endevco	7264-200	G
21	PELVIS, PRIMARY	Y	KEAC020	Accel.,1/2 bridge	Endevco	7264-200	G
22	PELVIS, PRIMARY	Z	KEAC021	Accel.,1/2 bridge	Endevco	7264-200	G
23	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT, AFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT, AFT	Z	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT, FORE	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT, AFT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT, AFT	Z	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT, FORE	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	BL134	Load cell, Seat belt	FGP	FN4060	N
42	SHOULDER BELT FORCE	X	BL135	Load cell, Seat belt	FGP	FN4060	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST, PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST, PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST, PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST, REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST, REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST, REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
63	CHEST DEFLECTION	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT, AFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT, AFT	Z	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT, FORE	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT, AFT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT, AFT	Z	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT, FORE	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	BL168	Load cell, Seat belt	First Tech	IF-964	N
86	SHOULDER BELT FORCE	X	BL169	Load cell, Seat belt	First Tech	IF-964	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
12/1/04
2005 Chevrolet Uplander 5-Door MPV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR	X	KEVA002	Accel., Pre-Amp	I.C.S/Karco	3031-500	G
90	RIGHT REAR	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	ENGINE TOP	X	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	ENGINE BOTTOM	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	LEFT BRAKE CALIPER	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT BRAKE CALIPER	X	KEVA012	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	INSTRUMENT PANEL	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	LEFT REAR	Z	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
97	RIGHT REAR	Z	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/1/04
2005 Chevrolet Uplander 5-Door MPV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
98	BARRIER FORCE A1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
99	BARRIER FORCE A2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
100	BARRIER FORCE A3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
101	BARRIER FORCE A4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
102	BARRIER FORCE A5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
103	BARRIER FORCE A6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
104	BARRIER FORCE A7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
105	BARRIER FORCE A8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
106	BARRIER FORCE A9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
107	BARRIER FORCE B1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
108	BARRIER FORCE B2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
109	BARRIER FORCE B3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
110	BARRIER FORCE B4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
111	BARRIER FORCE B5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
112	BARRIER FORCE B6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
113	BARRIER FORCE B7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
114	BARRIER FORCE B8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
115	BARRIER FORCE B9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/1/04
2005 Chevrolet Uplander 5-Door MPV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
116	BARRIER FORCE C1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
117	BARRIER FORCE C2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
118	BARRIER FORCE C3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
119	BARRIER FORCE C4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
120	BARRIER FORCE C5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
121	BARRIER FORCE C6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
122	BARRIER FORCE C7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
123	BARRIER FORCE C8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
124	BARRIER FORCE C9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
125	BARRIER FORCE D1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
126	BARRIER FORCE D2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
127	BARRIER FORCE D3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
128	BARRIER FORCE D4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
129	BARRIER FORCE D5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
130	BARRIER FORCE D6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
131	BARRIER FORCE D7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
132	BARRIER FORCE D8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
133	BARRIER FORCE D9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Nine Accelerometer Array Head
12/1/04
2005 Chevrolet Uplander 5-Door MPV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
202	DRIVER X-ARM	Y	GPAC016	Accel., 1/2 bridge	Endevco	7264-2000	G
203	DRIVER X-ARM	Z	GPAC015	Accel., 1/2 bridge	Endevco	7264-2000	G
204	DRIVER Y-ARM	X	GPAC004	Accel., 1/2 bridge	Endevco	7264-2000	G
205	DRIVER Y-ARM	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
206	DRIVER Z-ARM	X	GPAC006	Accel., 1/2 bridge	Endevco	7264-2000	G
207	DRIVER Z-ARM	Y	GPAC007	Accel., 1/2 bridge	Endevco	7264-2000	G
208	PASS. X-ARM	Y	GPAC012	Accel., 1/2 bridge	Endevco	7264-2000	G
209	PASS. X-ARM	Z	GPAC001	Accel., 1/2 bridge	Endevco	7264-2000	G
210	PASS. Y-ARM	X	GPAC036	Accel., 1/2 bridge	Endevco	7264-2000	G
211	PASS. Y-ARM	Z	GPAC014	Accel., 1/2 bridge	Endevco	7264-2000	G
212	PASS. Z-ARM	X	GPAC030	Accel., 1/2 bridge	Endevco	7264-2000	G
213	PASS. Z-ARM	Y	GPAC037	Accel., 1/2 bridge	Endevco	7264-2000	G

APPENDIX E

DUMMY CALIBRATION DATA

Test Program: Hybrid III 50th Percentile Male Head Drop Test

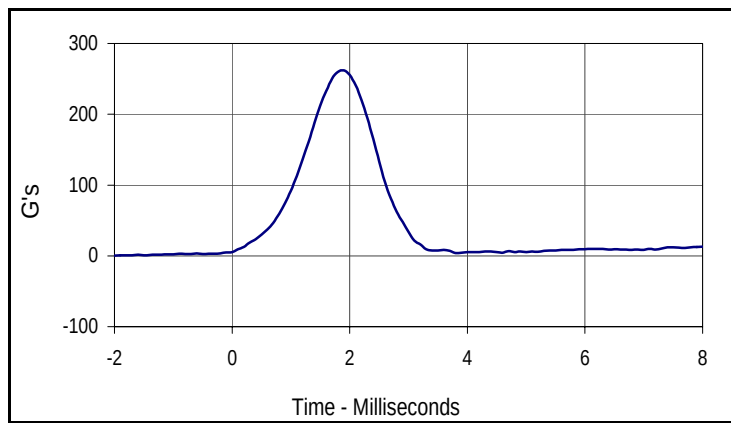
Test Date: 11/15/04

ATD Serial No.: 034

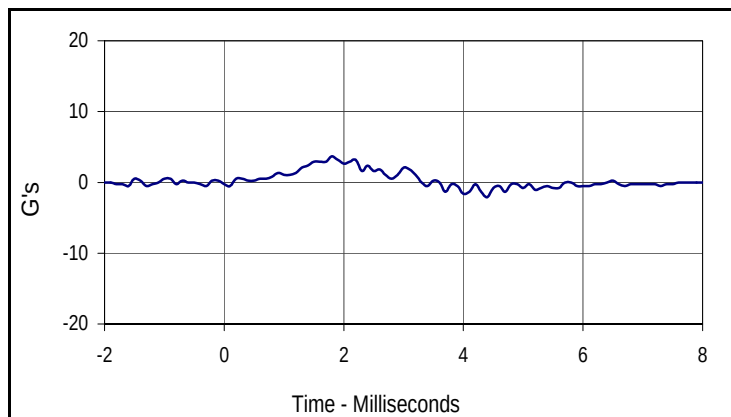
Test I.D.: HD11H



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	261.8	Pass
Peak Lateral Acceleration	G's	≤15.0	3.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
261.8	1.9	0.4	-2.0



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.7	1.8	-2.1	4.4

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

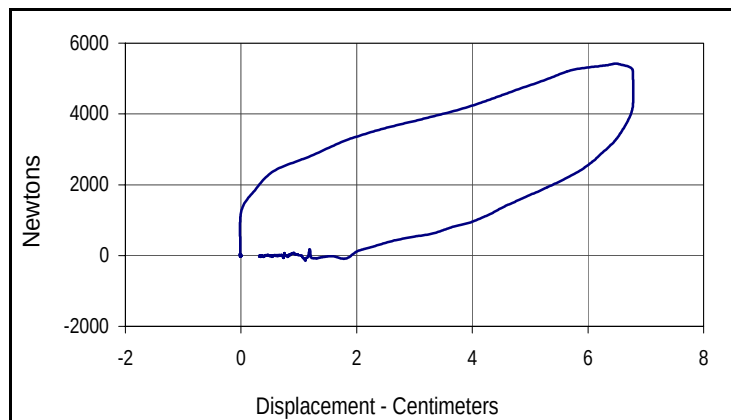
Test Date: 11/16/04

ATD Serial No.: 034

Test I.D.: CH11H



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5422	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.78	Pass
Internal Hysteresis	%	69 to 85	73.7	Pass
Overall Test Results				Pass



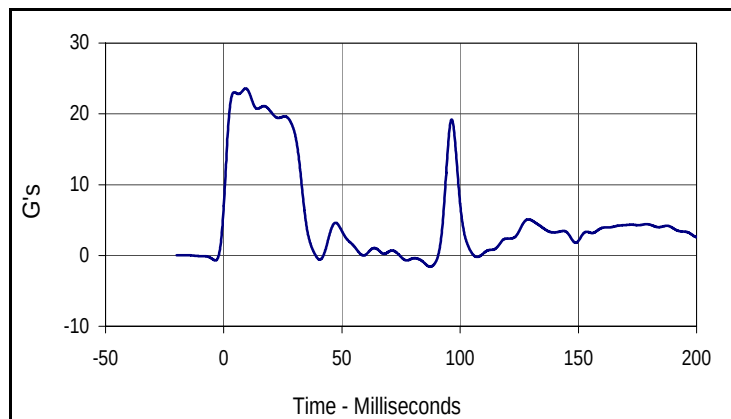
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	73.7
Peak Probe Force		Peak Chest Deflection	
5422		6.78	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 034

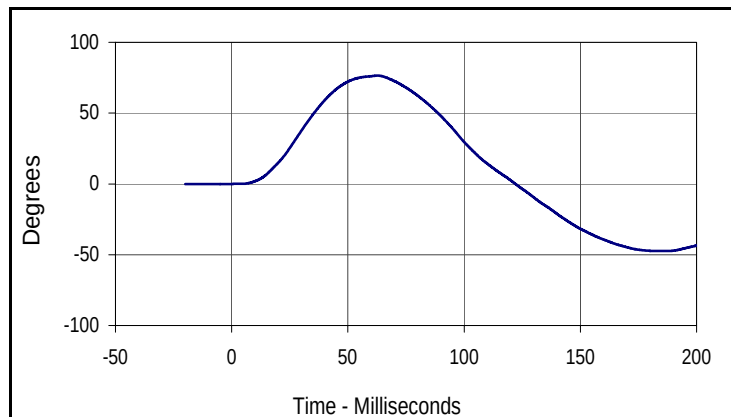
Test Date: 11/15/04
 Test I.D.: NF11G



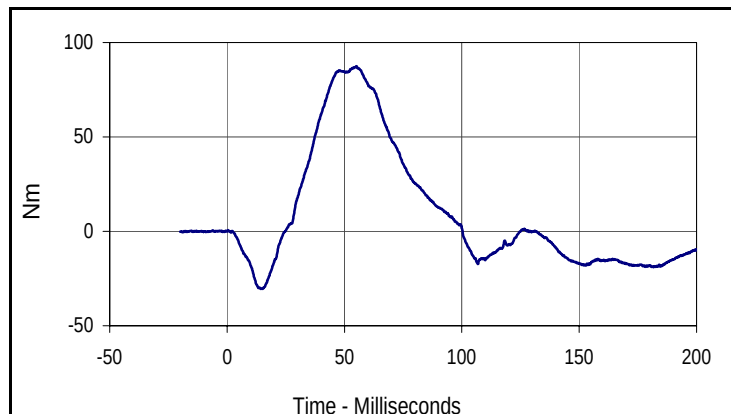
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.05	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.4	Pass
	20 Msec.	G's	17.6 to 22.6	20.3	Pass
	30 Msec.	G's	12.5 to 18.5	17.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	19.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	34.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	76.5	Pass
	Time	Msec.	57.0 to 64.0	62.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	122.1	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	87.4	Pass
	Time	Msec.	47.0 to 58.0	55.1	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	100.3	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.6	9.3	-1.6	87.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
76.5	62.7	-47.4	184.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
87.4	55.1	-30.5	14.4

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

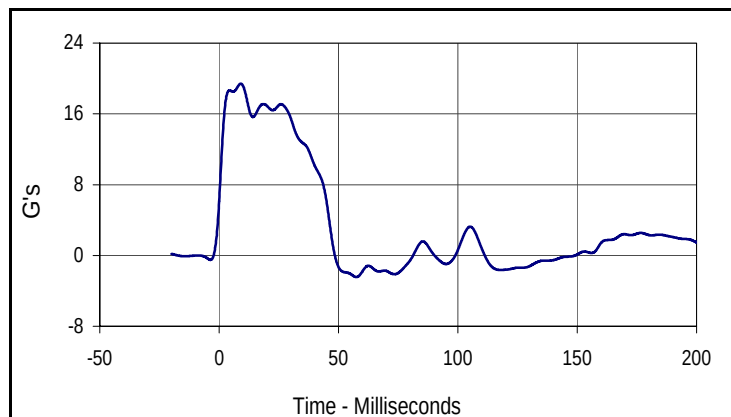
Test Date: 11/15/04

ATD Serial No.: 034

Test I.D.: NE11J



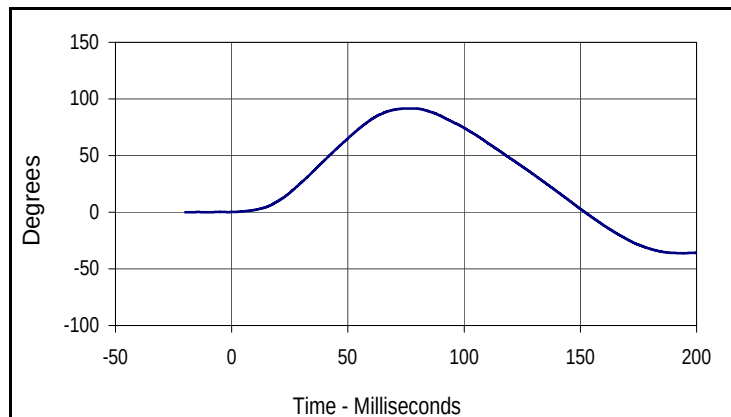
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.08	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.2	Pass
	20 Msec.	G's	14.0 to 19.0	16.9	Pass
	30 Msec.	G's	11.0 to 16.0	15.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	91.6	Pass
	Time	Msec.	72.0 to 82.0	77.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	152	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-75.3	Pass
	Time	Msec.	65.0 to 79.0	66.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	147.6	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

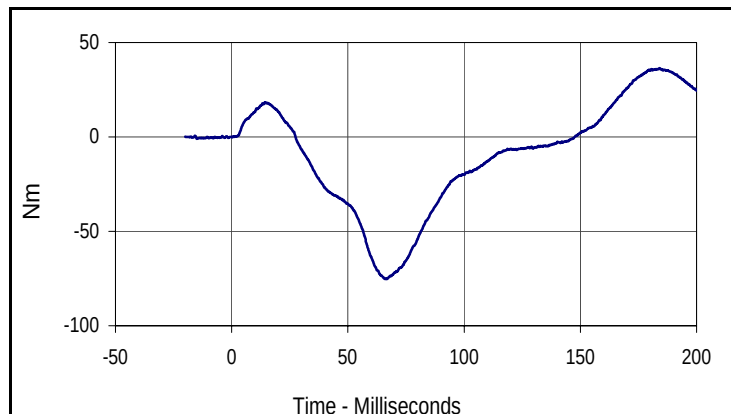
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.4	9.1	-2.4	57.5



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
91.6	77.4	-36.1	193.8



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
36.4	184.1	-75.3	66.0

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 11/15/04

ATD Serial No.: 034

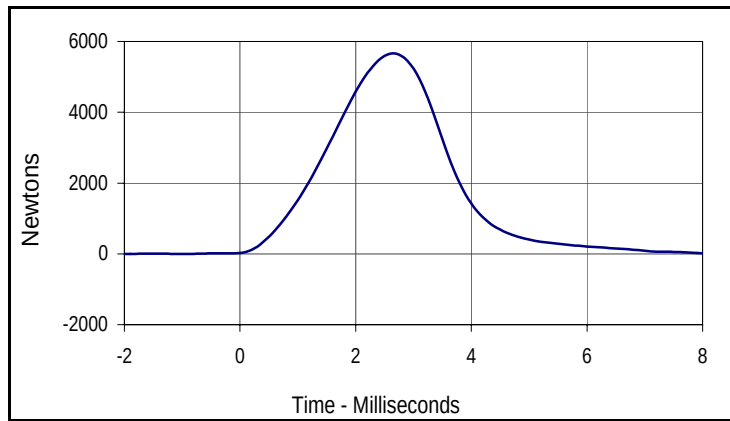
Test I.D.: LK11H , RK11H

**Left Knee**

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5653	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5337	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5652.9	2.6	-20.8	9.3

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5337.0	3.0	-30.7	9.3

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 11/17/04

ATD Serial No.: 034

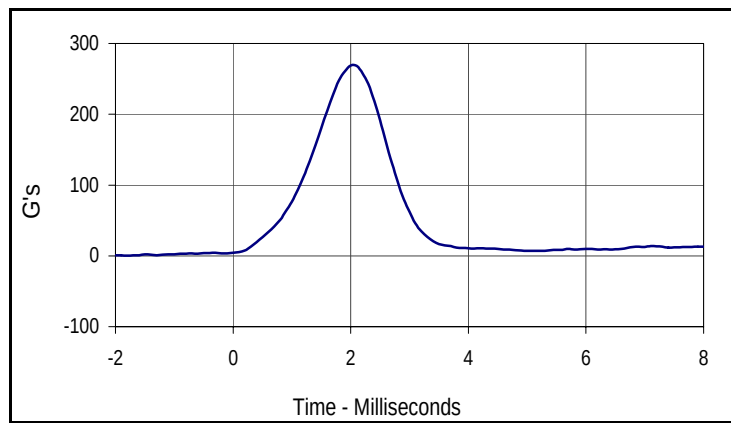
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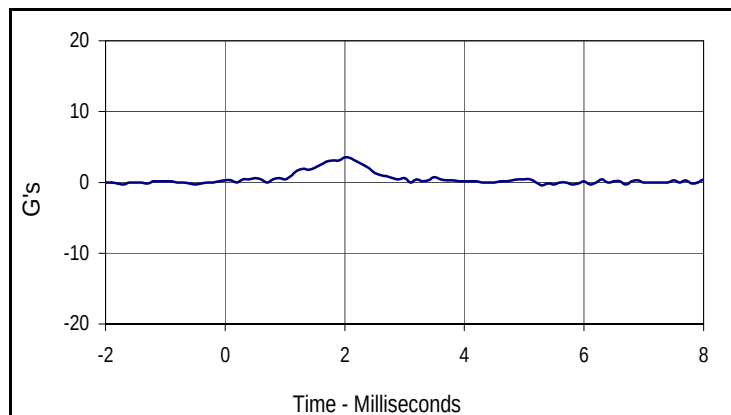
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	880	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	139	Pass
E - Shoulder pivot from back	mm	84 to 94	85	Pass
F - Thigh clearance	mm	140 to 155	151	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	338	Pass
J - Elbow rest height	mm	190 to 211	208	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	497	Pass
N - Buttock popliteal length	mm	452 to 477	461	Pass
O - Chest depth	mm	213 to 229	224	Pass
P - Foot length	mm	251 to 267	263	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	998	Pass
Z - Waist circumference	mm	836 to 866	856	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop TestTest Date: 11/15/04ATD Serial No.: 035Test I.D.: HD11G

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	268.6	Pass
Peak Lateral Acceleration	G's	≤15.0	3.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
268.6	2.0	0.3	-1.8



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.6	2.0	-0.4	5.3

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

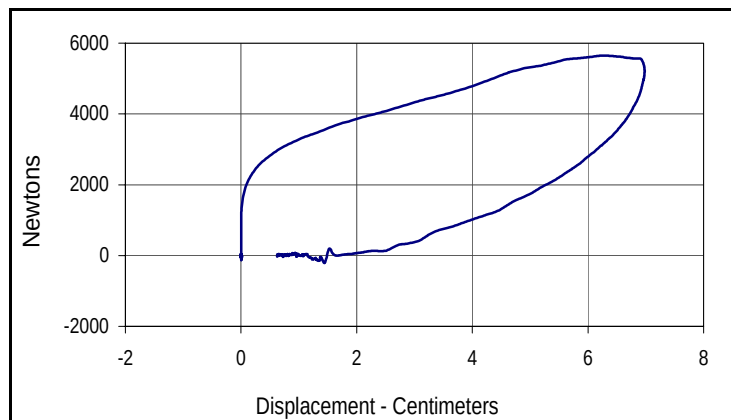
Test Date: 11/16/04

ATD Serial No.: 035

Test I.D.: CH11G



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.70	Pass
Peak Probe Force	Newtons	5159 to 5893	5646	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.98	Pass
Internal Hysteresis	%	69 to 85	73.9	Pass
Overall Test Results				Pass



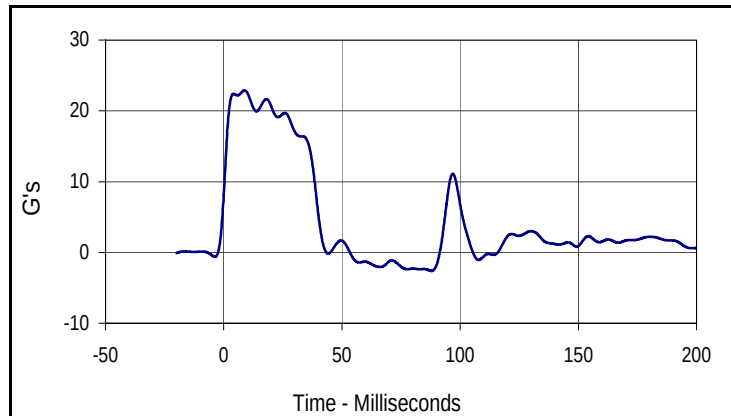
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	73.9
Peak Probe Force		Peak Chest Deflection	
5646		6.98	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 035

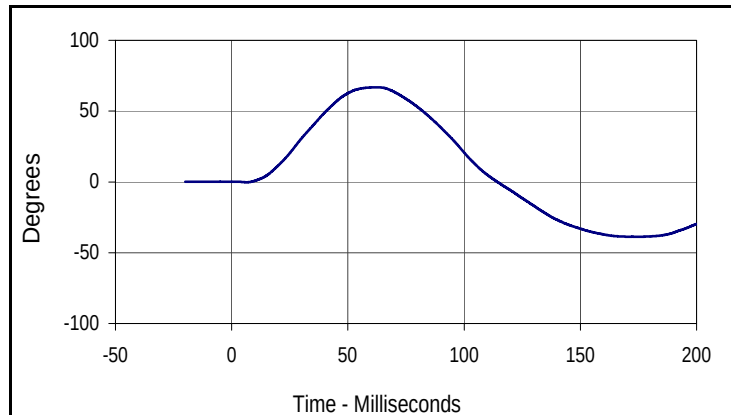
Test Date: 11/15/04
 Test I.D.: NF11J



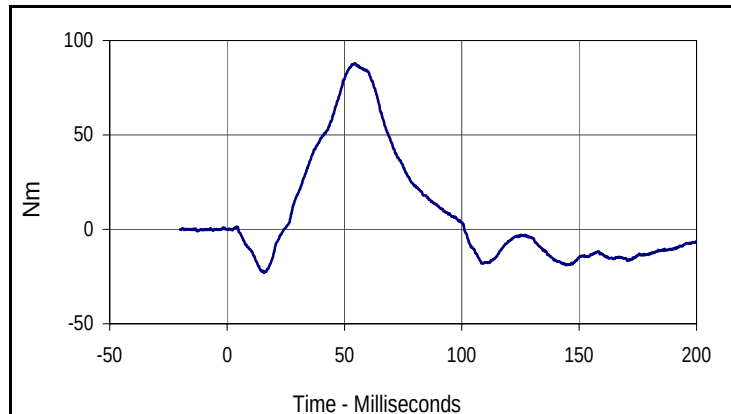
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.92	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.5	Pass
	20 Msec.	G's	17.6 to 22.6	20.7	Pass
	30 Msec.	G's	12.5 to 18.5	17.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	40.2	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	66.8	Pass
	Time	Msec.	57.0 to 64.0	62.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	114.3	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	88.0	Pass
	Time	Msec.	47.0 to 58.0	54.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.1	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
22.9	8.8	-2.6	87.9



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
66.8	62.3	-38.7	175.7



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
88.0	54.4	-23.1	15.8

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

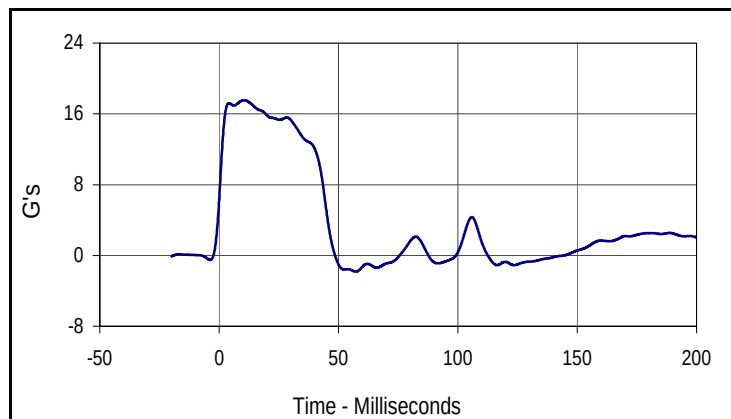
Test Date: 11/15/04

ATD Serial No.: 035

Test I.D.: NE11L



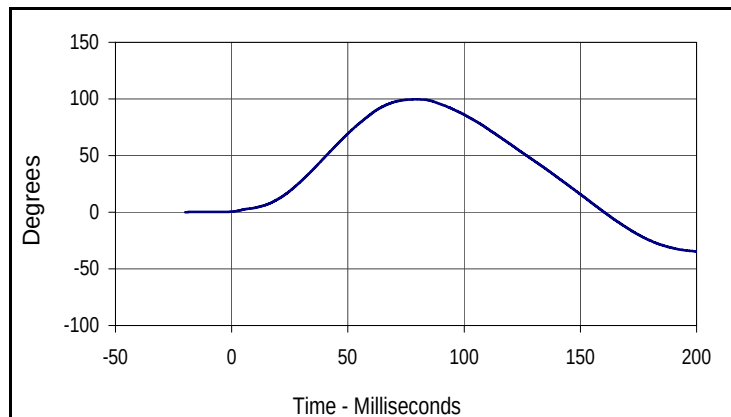
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.13	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.5	Pass
	20 Msec.	G's	14.0 to 19.0	15.8	Pass
	30 Msec.	G's	11.0 to 16.0	15.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.0	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	99.6	Pass
	Time	Msec.	72.0 to 82.0	79.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	160.3	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-70.8	Pass
	Time	Msec.	65.0 to 79.0	72.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	144.5	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

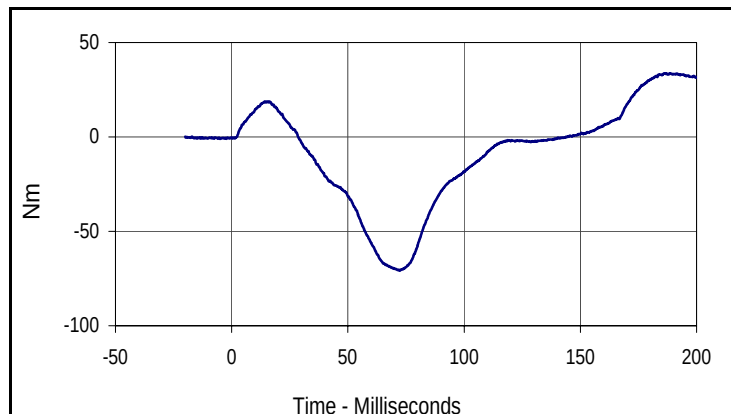
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.5	10.4	-1.8	57.3



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
99.6	79.3	-34.5	200.0



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
33.7	188.9	-70.8	72.4

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 11/15/04

ATD Serial No.: 035

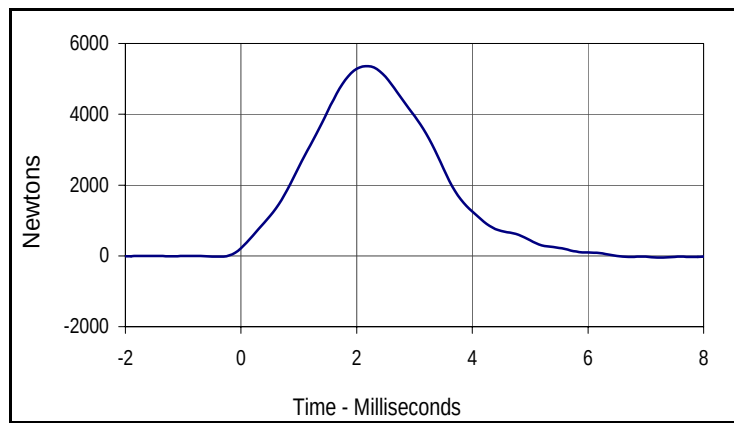
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**Left Knee**

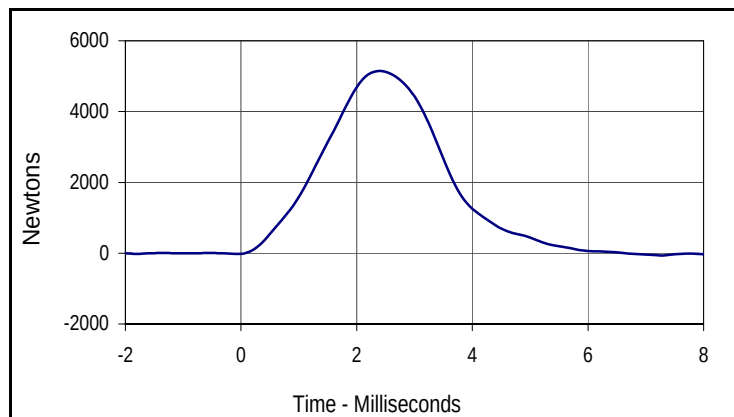
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.13	Pass
Peak Probe Force	Newtons	4715 to 5782	5363	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5147	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5362.6	2.2	-60.5	9.9

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5147.1	2.4	-62.0	7.3

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 11/17/04

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	519	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	137	Pass
E - Shoulder pivot from back	mm	84 to 94	92	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	301	Pass
H - Skull cap to back line	mm	41 to 46	43	Pass
I - Shoulder to elbow length	mm	330 to 345	333	Pass
J - Elbow rest height	mm	190 to 211	209	Pass
K - Buttock to knee length	mm	579 to 604	582	Pass
L - Popliteal length	mm	429 to 455	435	Pass
M - Knee pivot height	mm	485 to 500	498	Pass
N - Buttock popliteal length	mm	452 to 477	457	Pass
O - Chest depth	mm	213 to 229	228	Pass
P - Foot length	mm	251 to 267	262	Pass
V - Shoulder breadth	mm	422 to 437	431	Pass
W - Foot breadth	mm	91 to 107	102	Pass
Y - Chest circumference	mm	970 to 1001	995	Pass
Z - Waist circumference	mm	836 to 866	855	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	227	Pass
Overall Test Results				Pass

APPENDIX F

CHILD RESTRAINT SYSTEM

REPORT NUMBER TR-P25001-06-NC

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**GENERAL MOTORS CORPORATION
2005 CHEVROLET UPLANDER
5-DOOR MPV**

NHTSA NUMBER: M50112

**PREPARED BY:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



DECEMBER 1, 2004

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
400 SEVENTH STREET, SW, ROOM 5311
WASHINGTON, D.C. 20590**

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KARCO Engineering, LLC

Date: 12/15/04

Approved by: _____
Mr. Frank D. Richardson, Program Manager
KARCO Engineering, LLC

Date: 12/15/04

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

1. Report No. TR-P25001-06-NC		2. Government Accession No.		3. Recipients Catalog No.	
4. Title and Subtitle Final Report of a Graco Hi-Back TurboBooster CRS Final Report of a Evenflo Titan 5 Convertible CRS NHTSA NO. M50112				5. Report Date December 1, 2004	
				6. Performing Organization Code KAR	
7. Authors Mr. Biren J. Patel, Project Engineer, Karco Mr. Frank Richardson, Program Manager, Karco				8. Performing Organization Report No. TR-P25001-06-NC	
9. Performing Organization Name and Address Karco Engineering, LLC 9270 Holly Rd. Adelanto, CA, 92301				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-01-D-02005	
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code NPS-111 400 Seventh Street, SW, Room 5311 Washington, D.C 20590				13. Type of Report and Period Covered Final Test Report Option Year 3	
				14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS	
15. Supplementary Notes					
16. Abstract A frontal test was conducted on the subject CRS's Graco Hi-Back Turbo Booster and Graco Titan 5 Convertible in conjunction with frontal NCAP testing on a 2005 Chevrolet Uplander 5-Door MPV and in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the determination of CRS crashworthiness. This test was conducted at Karco Engineering, LLC on December 1, 2004					
Measurement Description		Units		Left Rear	Right Rear
Head Injury Criteria (HIC) 36		N/A		929.2	939.0
Head Injury Criteria (HIC) 15		N/A		589.1	446.3
3 msec. Chest Clip		G's		41.3	45.4
Peak Chest Deflection		mm		-23.7	-20.9
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) Final Report of a Graco Hi-Back Turbo Booster CRS NHTSA NO. M50112				18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
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Form DOT F1700.7 (8-72)

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SECTION F-1

PURPOSE AND SUMMARY OF TEST M50112

The purpose of this test is to obtain CRS performance data during an NCAP (35mph) frontal impact test.

The 56.16 km/h NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

One part 572P, three year old child Hybrid III dummy (Position 3) was instrumented with head, chest, and pelvic tri-axial accelerometers, a chest displacement potentiometer and six axis upper and lower neck cells. In addition a tri-axial accelerometer was installed on the CRS and a seatbelt load cell was placed on the upper tether.

One ten year old child Hybrid III dummy (Position 4) was instrumented with head, chest, and pelvic tri-axial accelerometers, a chest displacement potentiometer, six axis upper neck, lumbar, clavicle, ASIS and femur load cells. In addition a tri-axial accelerometer was installed on the CRS and the CRS seat back. Seat belt load cells were placed on the shoulder and lap belts, also shoulder belt spool-out and elongation was measured.

The right rear child dummy (Serial No. 082) was calibrated two tests prior and left rear child dummy (Serial No. 011) was calibrated one test prior to this test. Child dummy calibration information is found in Section F-5.

CHILD DUMMY VALUES

Location	HIC 36 Values	HIC 15 Values	3 Msec. Chest Clip	Peak Chest Deflection
Right Rear Child (3 Yr.)	939	446.3	45.4	-20.9
Left Rear Child (10 Yr.)	929.2	589.1	41.3	-23.7

DATA SHEET NO.1
CRASH TEST SUMMARY

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CHILD RESTRAINT SYSTEM INFORMATION

Description	Position #3 CRS	Position #4 CRS
Manufacturer	Evenflo	Graco
Model Name	Titan 5	TurboBooster
Serial No.	3671439 P1	JJ 1006042008680
Type	Convertible	Hi-Back Booster
Forward/Rearward	Forward	Forward

VISIBLE DUMMY CONTACT POINTS

Description	Position #3 CRS	Position #4 CRS
Head Contact	Chin to Chest	Vehicle Seat Headrest
Chest Contact	None	None
Abdomen Contact	None	None
Left Knee Contact	None	None
Right Knee Contact	None	None
Left Toe Contact	Right Front Seat Back	Left Front Seat Back
Right Toe Contact	Right Front Seat Back	Left Front Seat Back

POST-TEST DOOR OPENINGS

Description	Position #3 CRS	Position #4 CRS
Front Door	Remained closed/latched, opened w/o tools	Remained closed/latched, opened w/o tools
Rear Door	Remained closed/latched, opened w/o tools	Remained closed/latched, opened w/o tools
Hatch/Other Door	Remained closed/latched, opened w/o tools	Remained closed/latched, opened w/o tools

POST-TEST SEAT DATA

Location	Seat Movement (mm)	Seat Back Failure
Left Rear	None	None
Right Rear	None	None

CAMERA COVERAGE

Description	Standard	Additional
High Speed	2	2
Real Time	0	0
Total	2	2

DATA CHANNELS

Child Sensors	54
Belt Sensors	5
Car Seat Sensors	9
Total	68

DATA SHEET NO.2
CRS PARAMETER DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

RETAINING CLIP INFORMATION

Description	Position #3 CRS	Position #4 CRS
Ret. Clip Movement	75 mm	

CHILD HARNESS STRETCH

Description	Position #3 CRS	Position #4 CRS
Harness Stretch	0 mm	

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	549	446		613	524	
Right	kg	562	435		605	501	
Ratio	%	55.8	44.2		54.3	45.7	
Totals	kg	1111	881	1992	1218	1025	2243

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1992
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	108
Calculated Vehicle Target Wt. (TVTW)	kg	2252

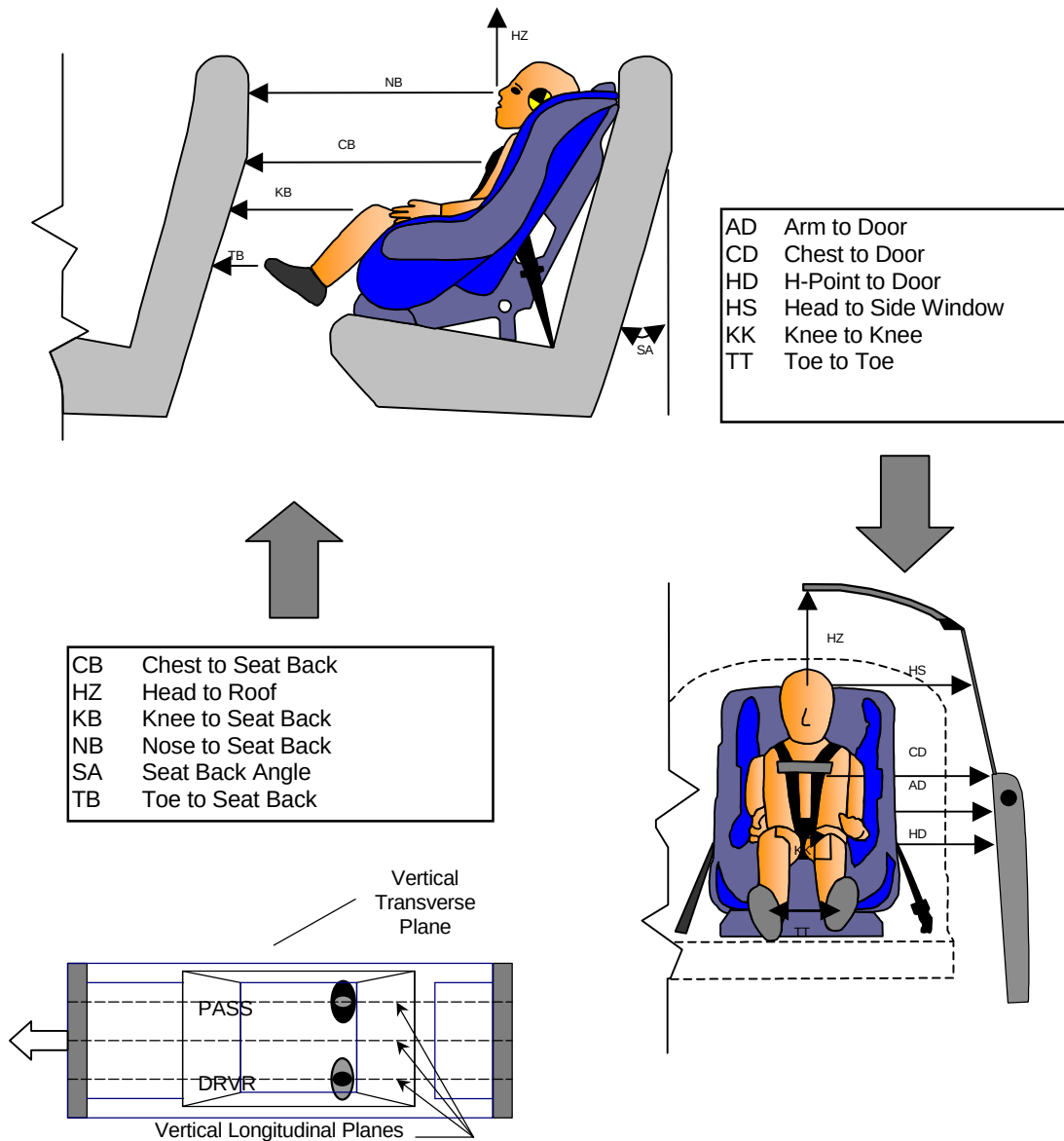
DATA SHEET NO.3 **CHILD DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program 2005 NHTSA 35mph NCAP

Test Date: 12/1/04



DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

DATA SHEET NO.3
CHILD DUMMY POSITIONING IN VEHICLE...(CONTINUED)

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CHILD DUMMY POSITION MEASUREMENTS

Code	Measurement	Units	P3 CRS Serial No. 082			P4 CRS Serial NO. 011		
			Pre-Test	Post-Test	Diff.	Pre-Test	Post-Test	Diff.
SA	Seat Back Angle	deg.	23.0	23.5	0.5	23.0	23.5	0.5
HZ	Head to Roof (Z)	mm	365	360	-5	243	240	-3
CD	Chest to Dash	mm	430	430	0	460	410	-50
KK	Knee to Knee (Y)	mm	150	165	15	210	165	-45
HS	Head to Side Window	mm	410	450	40	425	335	-90
HD	H-Point to Door (Y)	mm	310	315	5	310	230	-80
AD	Arm to Door	mm	245	250	5	270	190	-80
NB	Nose to Seat Back	mm	555	600	45	500	490	-10
CB	Chest to Seat Back	mm	525	595	70	485	530	45
FF	Foot to Foot	mm	110	150	40	260	130	-130
KB-Left	Knee to Seat Back	mm	280	320	40	185	270	85
KB-Right	Knee to Seat Back	mm	280	330	50	175	225	50
TB-Left	Toe to Seat Back	mm	5	35	30	0	80	80
TB-Right	Toe to Seat Back	mm	5	30	25	0	55	55

DATA SHEET NO. 4 - CHILD HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	0.5	24.0	-34.2	114.2	58.2	198.9	-50.3	112.2
Head CG	Y	G's	1.0	31.1	-11.0	103.6	13.7	106.9	-15.5	111.5
Head CG	Z	G's	67.4	89.0	-0.5	14.6	60.3	91.8	-7.0	60.4
Head CG Resultant	N/A	G's	74.8	89.0			69.2	199.3		

PRIMARY HEAD INJURY CRITERIA (HIC)

Location	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG (HIC36)	929.2	75.4	111.4	58.1	939.0	78.4	114.4	58.4
Head CG (HIC15)	589.1	83.7	98.7	68.8	446.3	85.5	100.5	61.5

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.7	200.0	-38.3	63.8	4.3	161.5	-45.6	83.4
Chest CG	Y	G's	2.4	157.5	-20.1	91.5	5.4	112.2	-3.8	80.2
Chest CG	Z	G's	13.6	98.8	-9.7	77.1	19.9	200.0	-19.7	62.8
Chest CG Resultant	N/A	G's	41.6	66.3			46.3	75.7		

PRIMARY CHEST CLIP (3MSEC)

Location	Left Rear (10 Yr.)			Right Rear (3 Yr.)		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG	41.3	63.6	66.6	45.4	74.1	77.1

CHEST PEAK DEFLECTIONS

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest	X	MM	2.6	23.3	-23.7	101.5	0.1	20.3	-20.9	114.9

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	4.3	200.0	-41.8	64.1	15.8	140.1	-66.1	69.0
Pelvis	Y	G's	6.1	103.0	-11.3	55.3	13.1	70.2	-14.5	197.8
Pelvis	Z	G's	2.8	200.0	-35.2	64.8	25.3	199.1	-24.5	63.5
Pelvis Resultant	N/A	G's	54.3	64.9			70.0	69.0		

DATA SHEET NO. 4...(CONTINUED)Test Vehicle: 2005 Chevrolet Uplander 5-Door MPVNHTSA No.: M50112Test Program: 2005 NHTSA 35mph NCAPTest Date: 12/1/04**UPPER NECK PEAK FORCES AND MOMENTS**

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	-1.8	0.4	-1084.9	110.5	20.3	20.4	-1008.1	112.7
Neck Force	Y	Newtons	22.1	149.7	-427.0	104.1	79.9	132.5	-118.6	109.1
Neck Force	Z	Newtons	2446.2	97.7	-15.1	14.3	1760.8	106.2	-164.9	44.1
Neck Force Resultant	N/A	Newtons	2652.0	88.6			1947.2	109.8		
Neck Moment	X	Nm	15.0	129.8	-16.3	95.2	5.1	94.7	-4.0	82.7
Neck Moment	Y	Nm	8.8	128.4	-42.1	86.3	0.9	20.9	-13.7	66.4
Neck Moment	Z	Nm	0.1	3.7	-5.5	67.2	5.0	110.7	-4.4	128.1
Neck Moment Resultant	N/A	Nm	42.4	86.2			13.8	66.4		

LOWER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons					137.8	197.0	-1005.8	109.4
Neck Force	Y	Newtons					156.8	90.7	-20.7	20.6
Neck Force	Z	Newtons					1764.2	85.1	-45.5	14.8
Neck Force Resultant	N/A	Newtons					1807.1	87.2		
Neck Moment	X	Nm					10.6	130.7	-9.6	110.8
Neck Moment	Y	Nm					127.5	112.4	-9.9	196.6
Neck Moment	Z	Nm					6.3	115.2	-3.7	107.9
Neck Moment Resultant	N/A	Nm					127.7	112.4		

FEMUR PEAK FORCES AND MOMENTS

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur Force	Z	Newtons	803.7	64.0	-145.3	156.7				
Right Femur Force	Z	Newtons	834.8	65.5	-160.2	169.1				

DATA SHEET NO. 4...(CONTINUED)Test Vehicle: 2005 Chevrolet Uplander 5-Door MPVNHTSA No.: M50112Test Program: 2005 NHTSA 35mph NCAPTest Date: 12/1/04**LUMBAR PEAK FORCES AND MOMENTS**

Location	Axis	Units	Left Rear (10 Yr.)			
			Max	Time	Min	Time
Lumbar Force	X	Newtons	1245.6	104.8	-390.3	57.3
Lumbar Force	Y	Newtons	73.9	156.5	-1581.4	93.1
Lumbar Force	Z	Newtons	1500.7	108.2	-1332.5	65.9
Lumbar Force Resultant	N/A	Newtons	2172.0	97.4		
Lumbar Moment	X	Nm	11.4	158.2	-165.7	91.1
Lumbar Moment	Y	Nm	42.2	130.2	-21.5	200.0
Lumbar Moment	Z	Nm	34.6	90.5	-11.0	199.2
Lumbar Moment Res.	N/A	Nm	169.3	91.0		

CLAVICLE PEAK FORCES

Location	Axis	Units	Left Rear (10 Yr.)			
			Max	Time	Min	Time
Left Clavicle Force	X	Newtons	23.5	135.8	-2300.7	92.0
Left Clavicle Force	Z	Newtons	576.5	60.0	-148.5	119.9
Right Clavicle Force	X	Newtons	137.1	87.2	-164.2	102.8
Right Clavicle Force	Z	Newtons	560.4	104.1	-53.1	64.4

UPPER AND LOWER ASIS PEAK FORCES

Location	Axis	Units	Left Rear (10 Yr.)			
			Max	Time	Min	Time
Left Upper ASIS Force	X	Newtons	265.4	70.5	-50.9	136.0
Left Lower ASIS Force	Z	Newtons	398.1	66.2	-5.0	199.9
Right Upper ASIS Force	X	Newtons	440.4	57.3	-610.2	105.8
Right Lower ASIS Force	Z	Newtons	1279.1	93.9	-1.2	2.3

DATA SHEET NO. 4...(CONTINUED)

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CHILD SEAT ACCELEROMETER PEAK VALUES

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Child Seat	X	G's	19.2	174.2	-48.5	70.0	10.7	145.0	-51.1	60.3
Child Seat	Y	G's	5.9	123.5	-7.5	52.0	5.8	200.0	-8.5	85.7
Child Seat	Z	G's	24.5	59.7	-7.2	41.8	20.8	200.0	-15.7	186.6
Child Seat Resultant	N/A	G's	48.8	70.1			51.4	60.2		
Child Seat Seatback	X	G's	10.2	182.2	-16.4	74.6				
Child Seat Seatback	Y	G's	3.2	142.2	-4.9	67.8				
Child Seat Seatback	Z	G's	3.7	176.2	-7.1	200.0				
Child Seat Seatback Res.	N/A	G's	17.0	74.6						

CHILD SEATBELT SENSOR PEAK VALUES

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)				
			Max	Time	Min	Time	Max	Time	Min	Time	
Lap Belt Force	N/A	Newtons	2577.2	48.5	-90.4	55.9					1
Shoulder Belt Force	N/A	Newtons	6186.6	78.5	-172.4	48.5					
Shoulder Belt Pullout	N/A	MM	139.3	94.4	0.0	2.2					
Shoulder Belt Elongation	N/A	MM/CM	0.0	0.0	0.0	0.0					2

1.) Channel failed at 51.7 msec.

2.) Not installed

CHILD SEAT TETHER BELT SENSOR PEAK VALUES

Location	Axis	Units	Left Rear (10 Yr.)				Right Rear (3 Yr.)			
			Max	Time	Min	Time	Max	Time	Min	Time
Car Seat Upper Tether Force	N/A	Newtons					260.8	77.0	-15.7	185.6

DATA SHEET NO.5
CRS PERFORMANCE DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CRS PERFORMANCE DATA

Location	P3 CRS Serial No. 082		P4 CRS Serial No. 011	
	Damage	Post-Test	Damage	Post-Test
Upper Tether Strap	No	None		
Upper Tether Buckle	No	None		
Upper Tether Hook	No	None		
Veh. Upper Tether Anchor	No	None		
Lower Anchor Strap	No	None		
Lower Anchor Buckle	No	None		
Lower Anchor Hooks	No	None		
Veh. Lower CRS Anchors	No	None		
5-Point Harness Connections	No	None		
Cracks on CRS	No	None	No	None
Fabric Tears on CRS	No	None	No	None
Vehicle Seat Structure	No	None	No	None
Vehicle Seat Fabric Tears	No	None	No	None

DATA SHEET NO.6
CRS CAMERA DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV

NHTSA No.: M50112

Test Program 2005 NHTSA 35mph NCAP

Test Date: 12/1/04

CAMERA LOCATIONS

No.	Camera View	Location(mm)			Angle (Deg.)	Film Plane to Head (mm)	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Left Rear Dummy Onboard	-2692	-787	-1473	-15	670.5	4mm	1396
2	Right Rear Dummy Onboard	-2693	787	-1473	-15	741.5	4mm	1396

ADDITIONAL CAMERAS

1	Left Rear Dummy Onboard	-3200	-787	-1473	-15	437.6	4mm	1396
2	Right Rear Dummy Onboard	-3200	787	-1473	-15	741.5	4mm	1396

X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run NTM = No Time Marks

SECTION F-2

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USE THIS PRODUCT AFTER DECEMBER 31 2010

Manufactured in 02SEP04

Model # 3671439 P1

EVENFLO COMPANY INC.
PIQUA, OHIO 45356 (USA)

2001 US AND FOREIGN PATENTS PENDING

Figure F2-1: Close-up, Position 3 CRS Label



Figure F2-2: Pre-Test Frontal View of Position 3 CRS



Figure F2-3: Post-Test Frontal View of Position 3 CRS



Figure F2-4: Pre-Test Rear View of Position 3 CRS



Figure F2-5: Post-Test Rear View of Position 3 CRS



Figure F2-6: Pre-Test Left Side View of Position 3 CRS



Figure F2-7: Post-Test Left Side View of Position 3 CRS



Figure F2-8: Pre-Test Right Side View of Position 3 CRS



Figure F2-9: Post-Test Right Side View of Position 3 CRS



Figure F2-10: Pre-Test Position 3 Front View (Head Position)

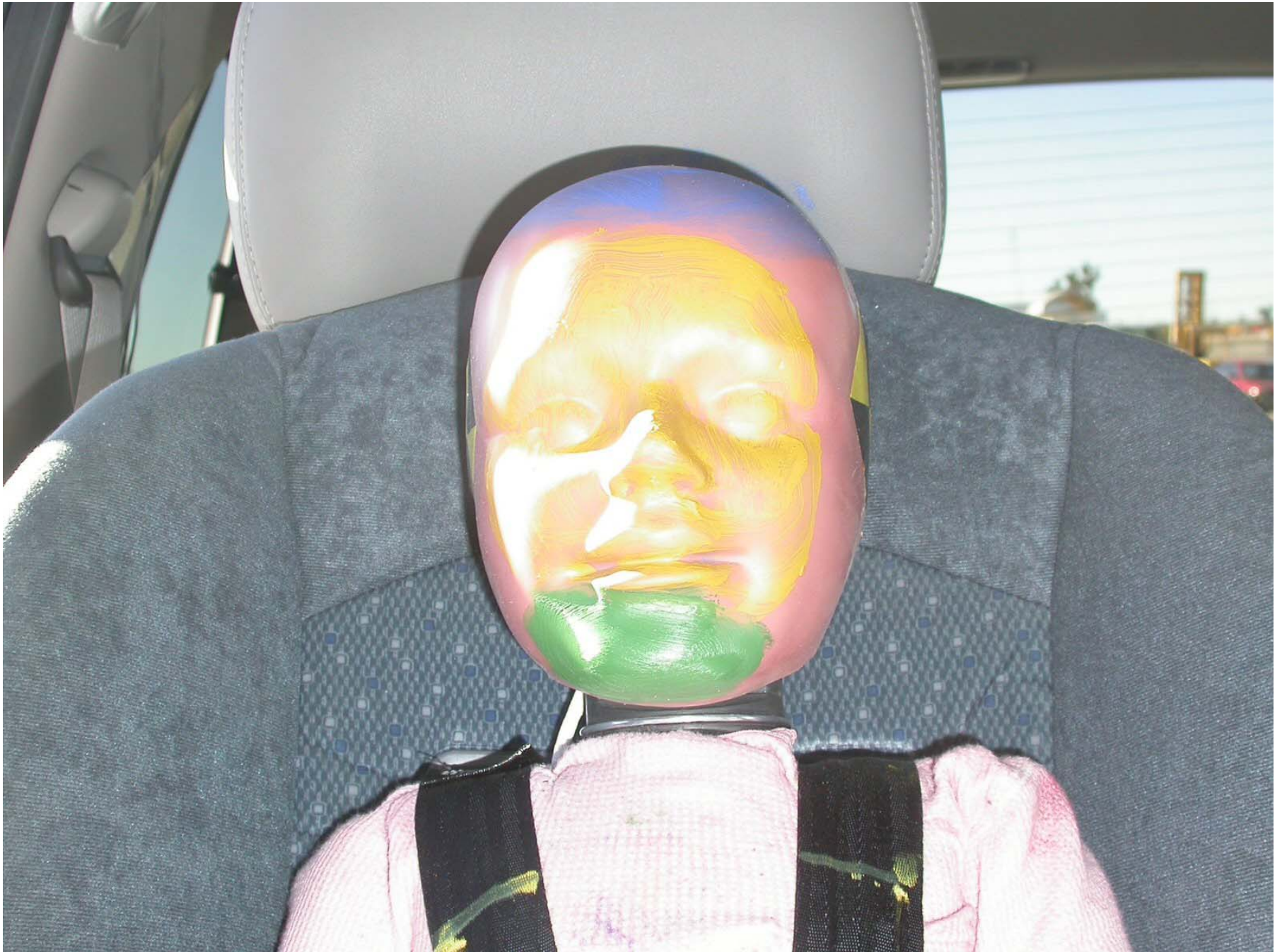


Figure F2-11: Post-Test Position 3 Front View (Head Position)

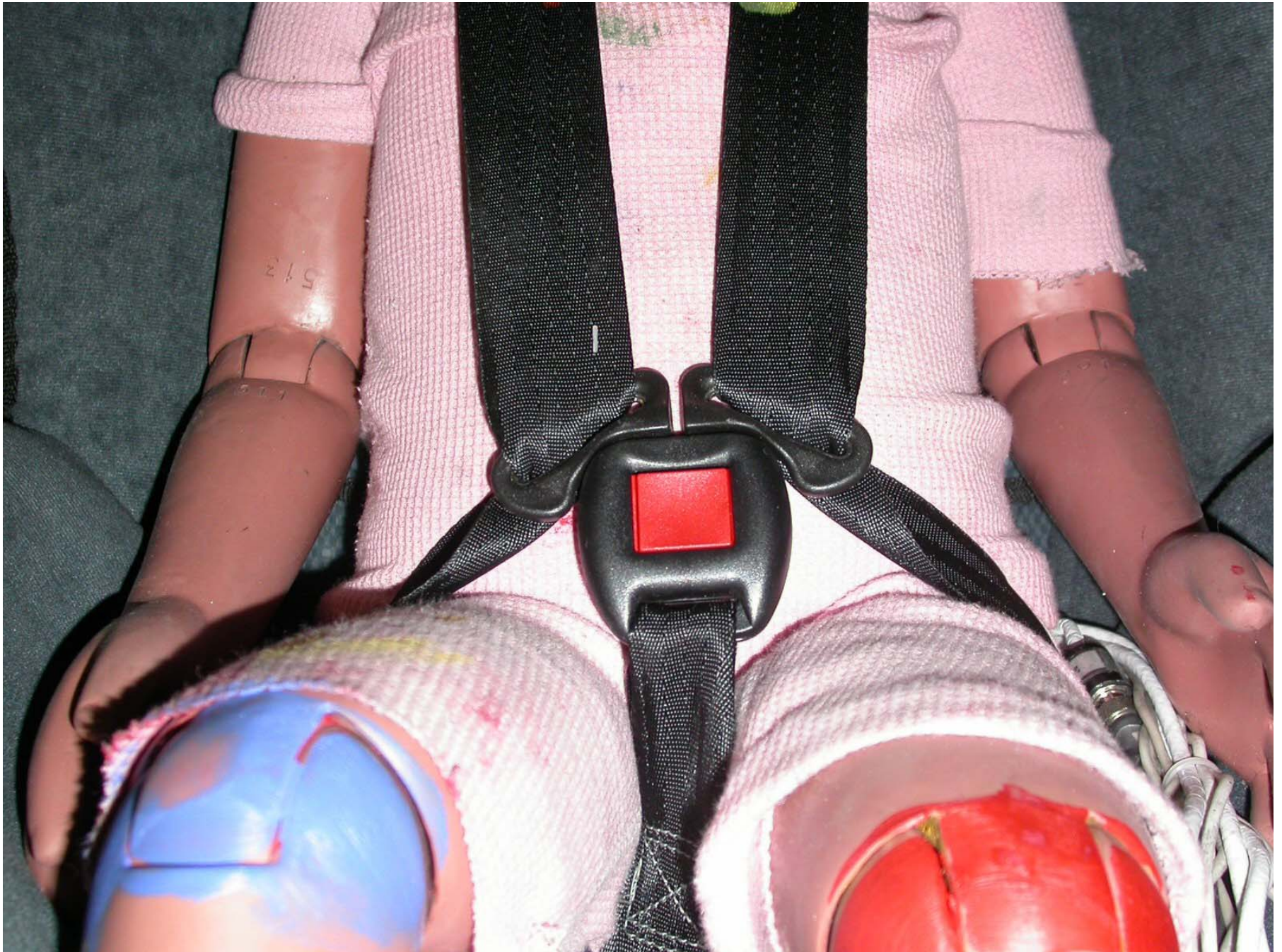


Figure F2-12: Pre-Test Position 3 Front View (Seatbelt Position)



Figure F2-13: Post-Test Position 3 Front View (Seatbelt Position)



Figure F2-14: Pre-Test Position 3 Right Side View (Through Window)



Figure F2-15: Post-Test Position 3 Right Side View (Through Window)



Figure F2-16: Pre-Test Position 3 Left Side View



Figure F2-17: Post-Test Position 3 Left Side View



Figure F2-18: Post-Test Position 3 Dummy Legs



Figure F2-19: Close-up, Position 4 CRS Label



Figure F2-20: Pre-Test Frontal View of Position 4 CRS



Figure F2-21: Post-Test Frontal View of Position 4 CRS



Figure F2-22: Pre-Test Rear View of Position 4 CRS



Figure F2-23: Post-Test Rear View of Position 4 CRS



Figure F2-24: Pre-Test Left Side View of Position 4 CRS



Figure F2-25: Post-Test Left Side View of Position 4 CRS



Figure F2-26: Pre-Test Right Side View of Position 4 CRS



Figure F2-27: Post-Test Right Side View of Position 4 CRS

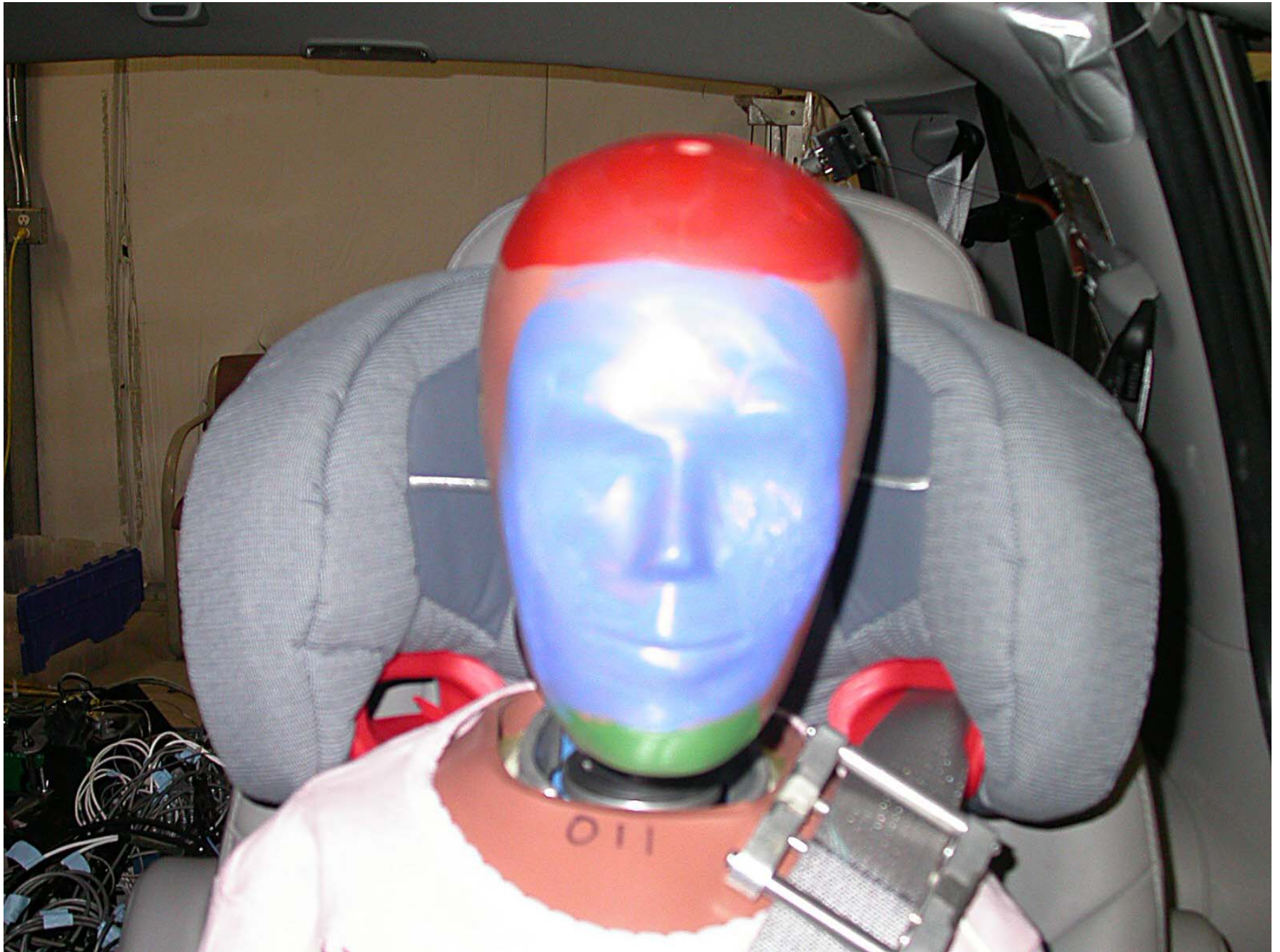


Figure F2-28: Pre-Test Position 4 Front View (Head Position)



Figure F2-29: Post-Test Position 4 Front View (Head Position).



Figure F2-30: Pre-Test Position 4 Front View (Seatbelt Position)



Figure F2-31: Post-Test Position 4 Front View (Seatbelt Position)



Figure F2-32: Pre-Test Position 4 Left Side View (Through Window)



Figure F2-33: Post-Test Position 4 Left Side View (Through Window)



Figure F2-34: Pre-Test Position 4 Right Side View



Figure F2-35: Post-Test Position 4 Right Side View



Figure F2-36: Post-Test Position 4 Dummy Legs



Figure F2-37: Dummy Contact Point

SECTION F-3

CHILD DUMMY RESPONSE AND CRS DATA TRACES

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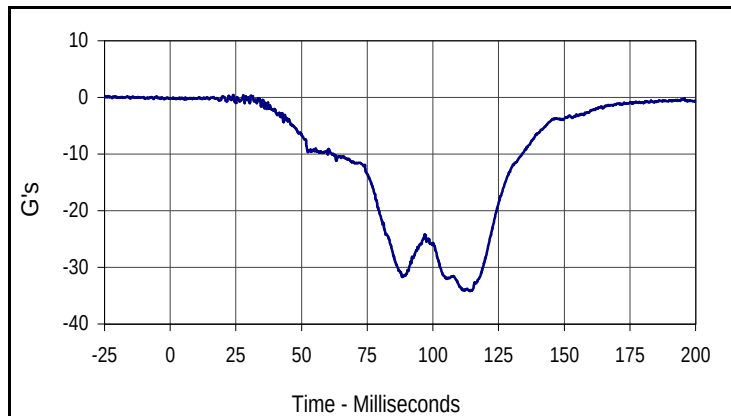
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LIST OF DATA PLOTS...(CONTINUED)

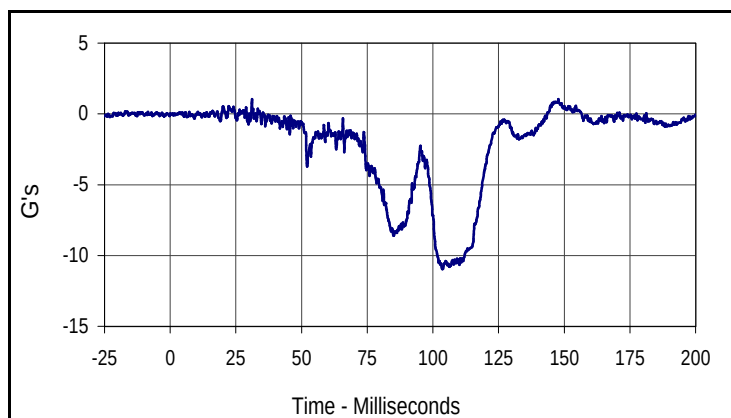
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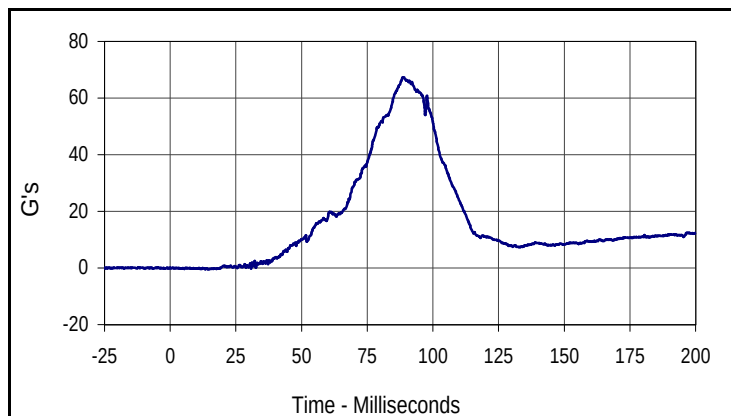
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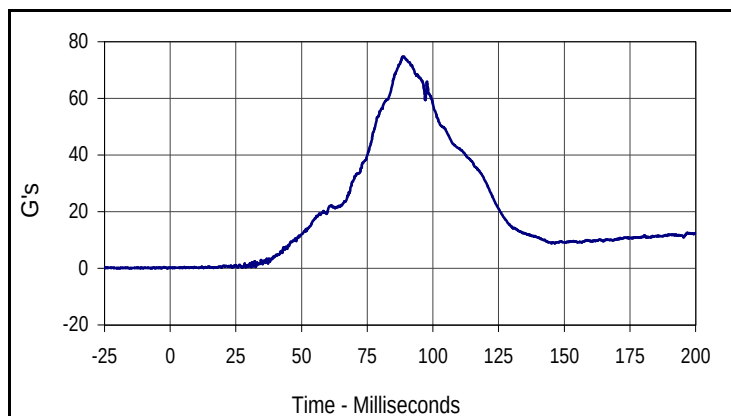
Curve Description			
Left Rear (10 Yr.) Head X			
CURNO	Type	SAE Class	Units
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Max	Time	Min	Time
0.5	24.0	-34.2	114.2



Curve Description			
Left Rear (10 Yr.) Head Y			
CURNO	Type	SAE Class	Units
135	FIL	1000	G's
Max	Time	Min	Time
1.0	31.1	-11.0	103.6



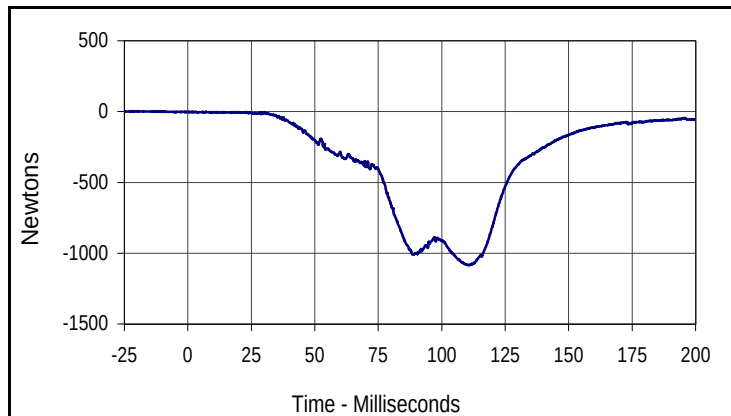
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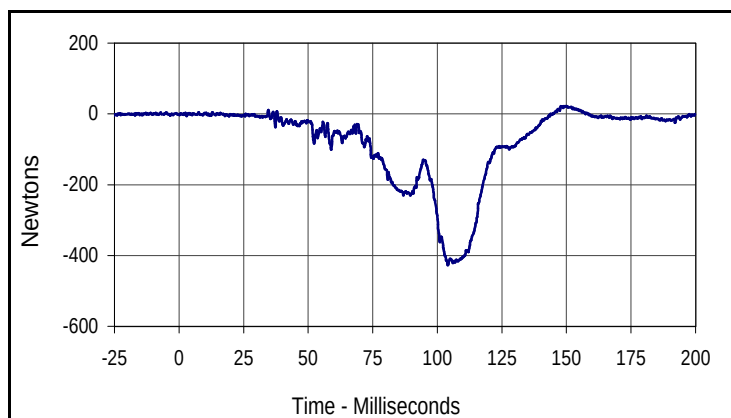
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Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

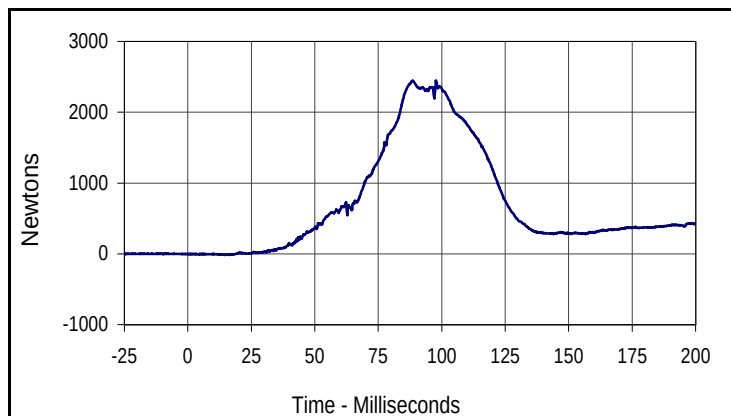
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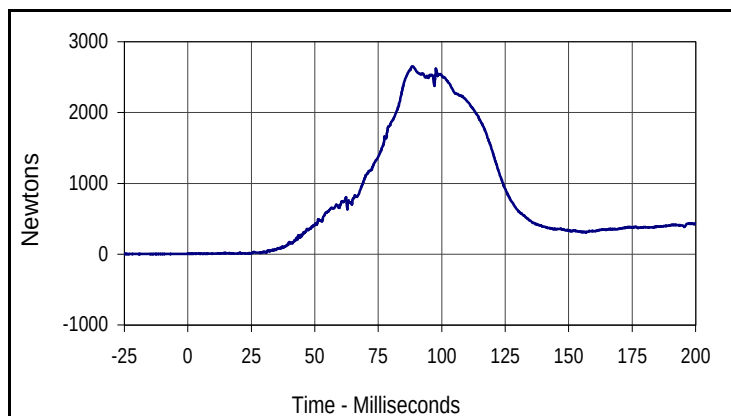
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Left Rear (10 Yr.) Upper Neck Force X			
CURNO	Type	SAE Class	Units
137	FIL	1000	Newtons
Max	Time	Min	Time
-1.8	0.4	-1084.9	110.5



Curve Description			
Left Rear (10 Yr.) Upper Neck Force Y			
CURNO	Type	SAE Class	Units
138	FIL	1000	Newtons
Max	Time	Min	Time
22.1	149.7	-427.0	104.1



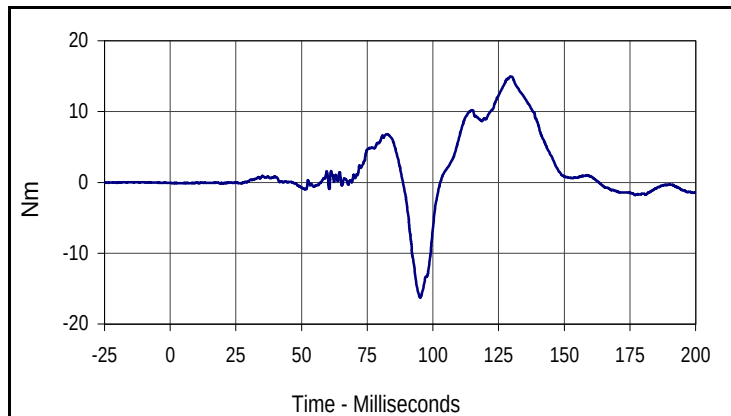
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Left Rear (10 Yr.) Upper Neck Force Z			
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139	FIL	1000	Newtons
Max	Time	Min	Time
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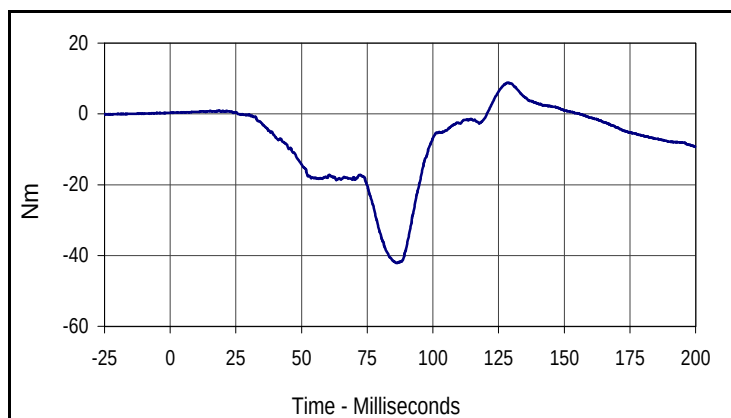
Curve Description			
Left Rear (10 Yr.) Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
137	RES	1000	Newtons
Max	Time	Min	Time
2652.0	88.6	2.9	0.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

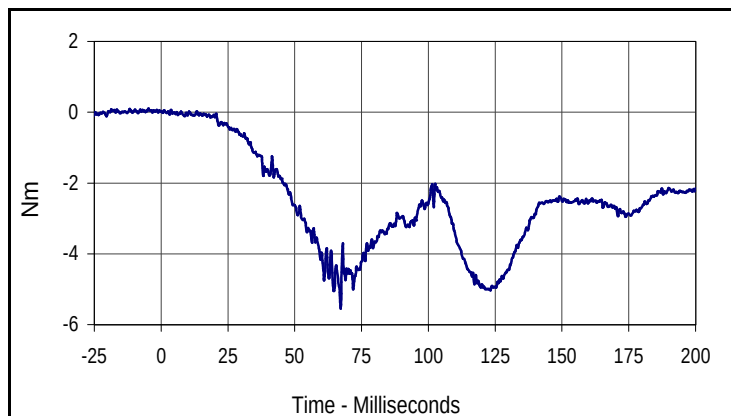
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 NHTSA No.: M50112



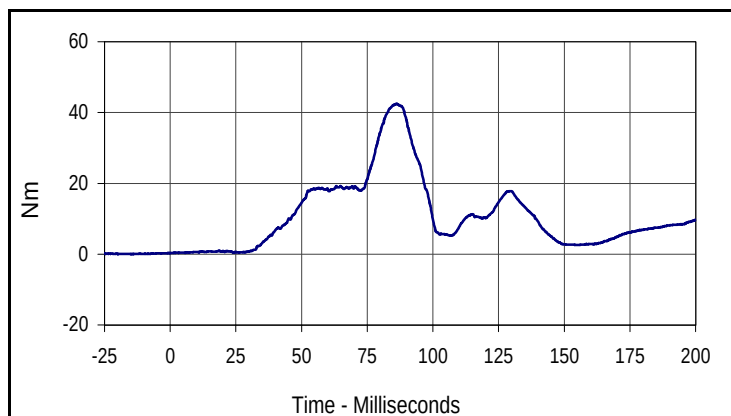
Curve Description			
Left Rear (10 Yr.) Upper Neck Moment X			
CURNO	Type	SAE Class	Units
140	FIL	600	Nm
Max	Time	Min	Time
15.0	129.8	-16.3	95.2



Curve Description			
Left Rear (10 Yr.) Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
141	FIL	600	Nm
Max	Time	Min	Time
8.8	128.4	-42.1	86.3



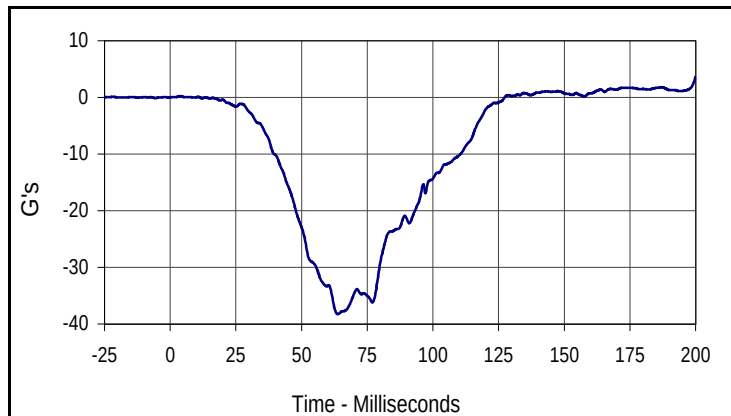
Curve Description			
Left Rear (10 Yr.) Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
142	FIL	600	Nm
Max	Time	Min	Time
0.1	3.7	-5.5	67.2



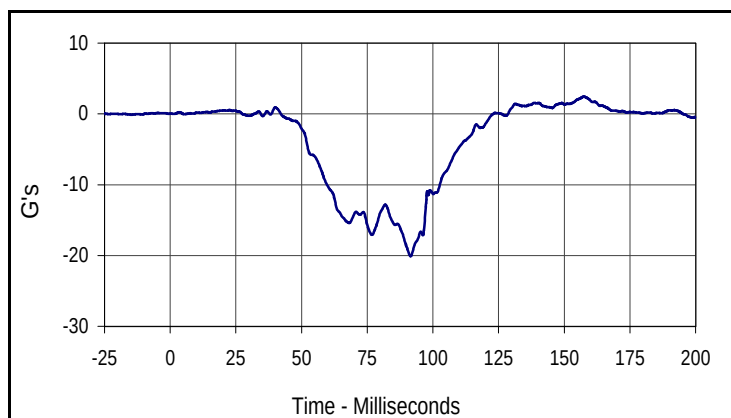
Curve Description			
Left Rear (10 Yr.) Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
140	RES	600	Nm
Max	Time	Min	Time
42.4	86.2	0.3	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

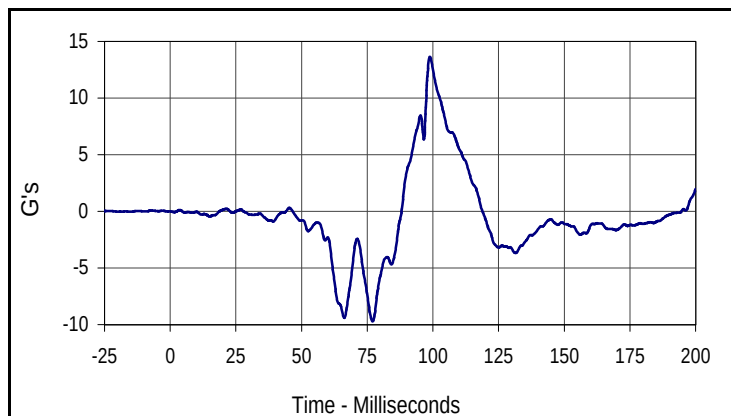
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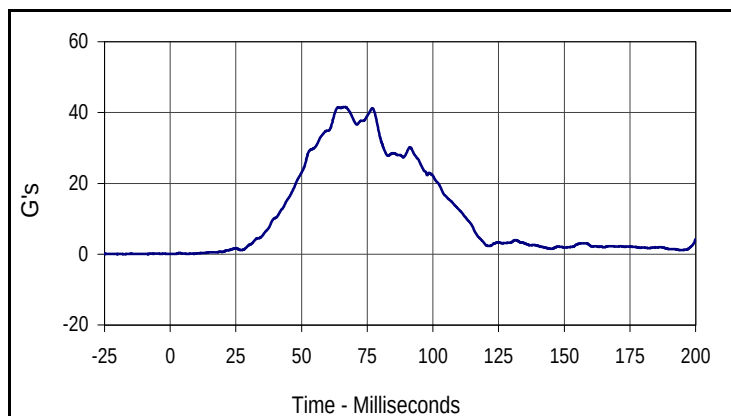
Curve Description			
Left Rear (10 Yr.) Chest X			
CURNO	Type	SAE Class	Units
143	FIL	180	G's
Max	Time	Min	Time
3.7	200.0	-38.3	63.8



Curve Description			
Left Rear (10 Yr.) Chest Y			
CURNO	Type	SAE Class	Units
144	FIL	180	G's
Max	Time	Min	Time
2.4	157.5	-20.1	91.5



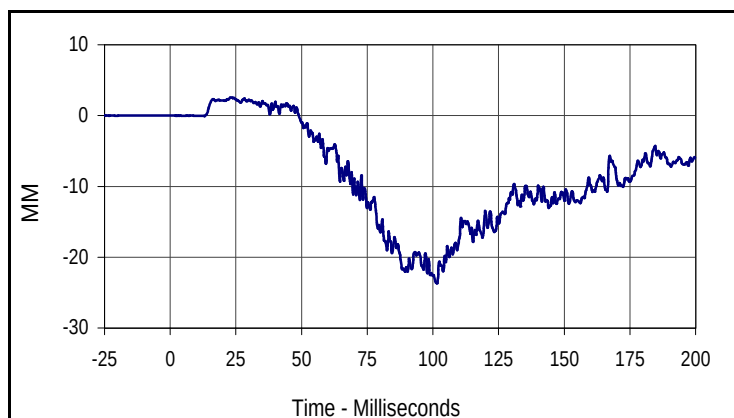
Curve Description			
Left Rear (10 Yr.) Chest Z			
CURNO	Type	SAE Class	Units
145	FIL	180	G's
Max	Time	Min	Time
13.6	98.8	-9.7	77.1



Curve Description			
Left Rear (10 Yr.) Chest Resultant			
CURNO	Type	SAE Class	Units
143	RES	180	G's
Max	Time	Min	Time
41.6	66.3	0.0	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

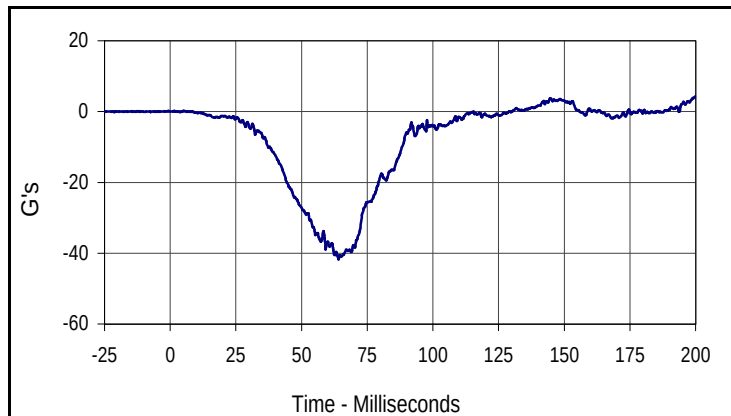
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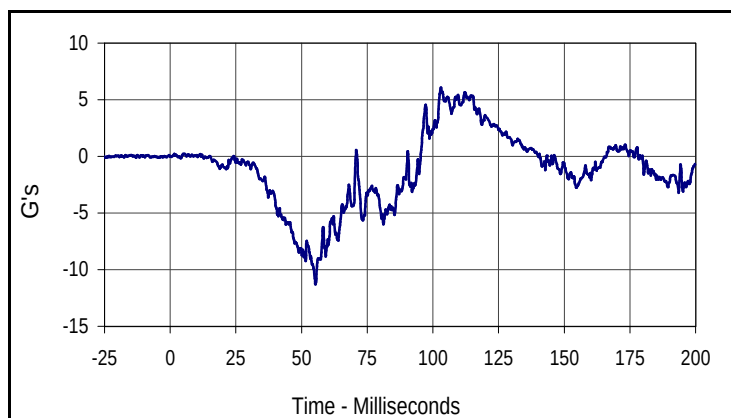
Curve Description			
Left Rear (10 Yr.) Chest Deflection			
CURNO	Type	SAE Class	Units
146	FIL	600	MM
Max	Time	Min	Time
2.6	23.3	-23.7	101.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

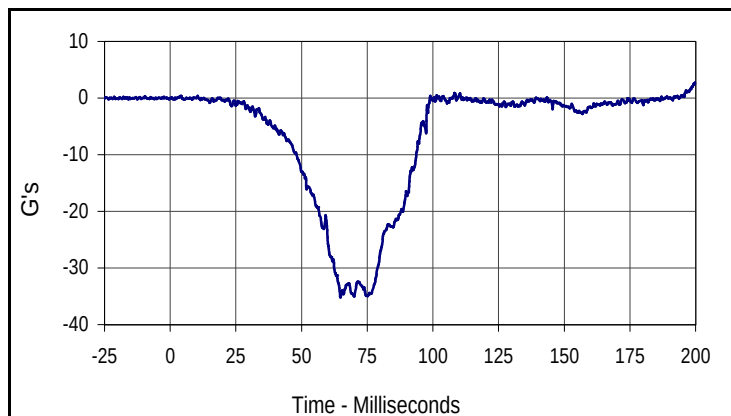
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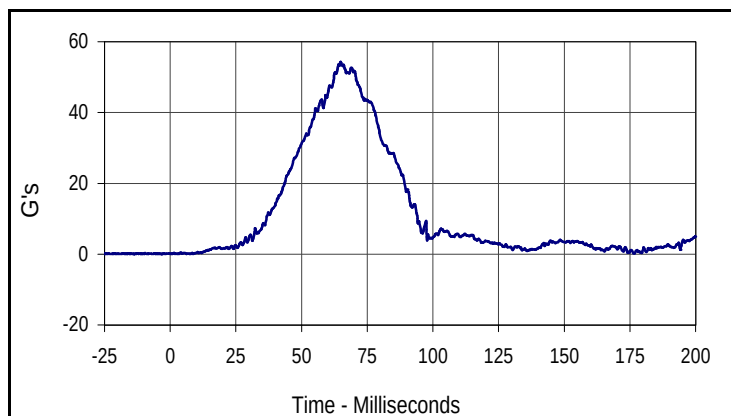
Curve Description			
Left Rear (10 Yr.) Pelvis X			
CURNO	Type	SAE Class	Units
147	FIL	1000	G's
Max	Time	Min	Time
4.3	200.0	-41.8	64.1



Curve Description			
Left Rear (10 Yr.) Pelvis Y			
CURNO	Type	SAE Class	Units
148	FIL	1000	G's
Max	Time	Min	Time
6.1	103.0	-11.3	55.3



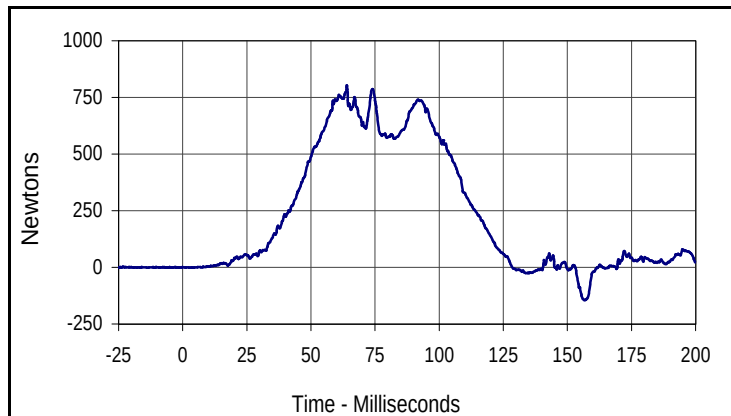
Curve Description			
Left Rear (10 Yr.) Pelvis Z			
CURNO	Type	SAE Class	Units
149	FIL	1000	G's
Max	Time	Min	Time
2.8	200.0	-35.2	64.8



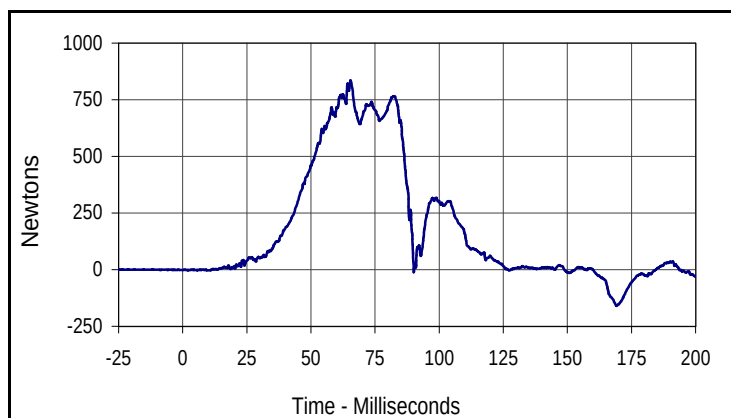
Curve Description			
Left Rear (10 Yr.) Pelvis Resultant			
CURNO	Type	SAE Class	Units
147	RES	1000	G's
Max	Time	Min	Time
54.3	64.9	0.0	7.8

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112



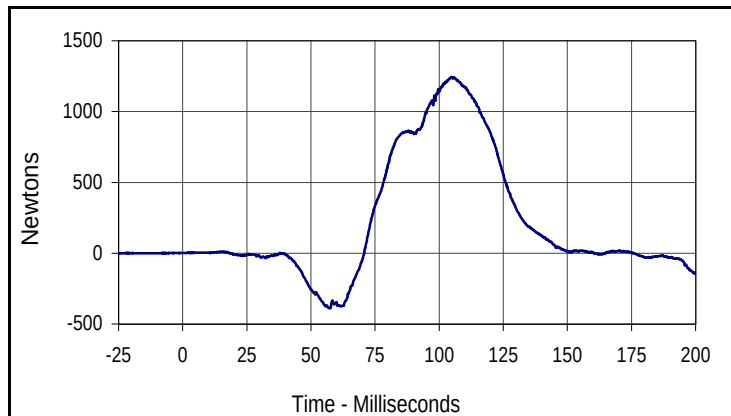
Curve Description			
Left Rear (10 Yr.) Left Femur Force			
CURNO	Type	SAE Class	Units
150	FIL	600	Newtons
Max	Time	Min	Time
803.7	64.0	-145.3	156.7



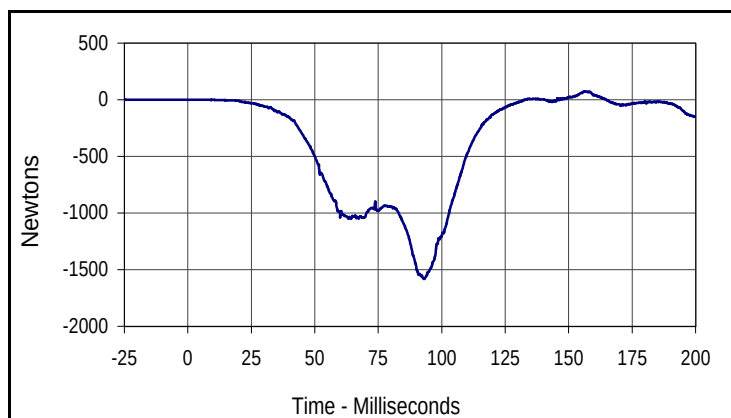
Curve Description			
Left Rear (10 Yr.) Right Femur Force			
CURNO	Type	SAE Class	Units
151	FIL	600	Newtons
Max	Time	Min	Time
834.8	65.5	-160.2	169.1

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

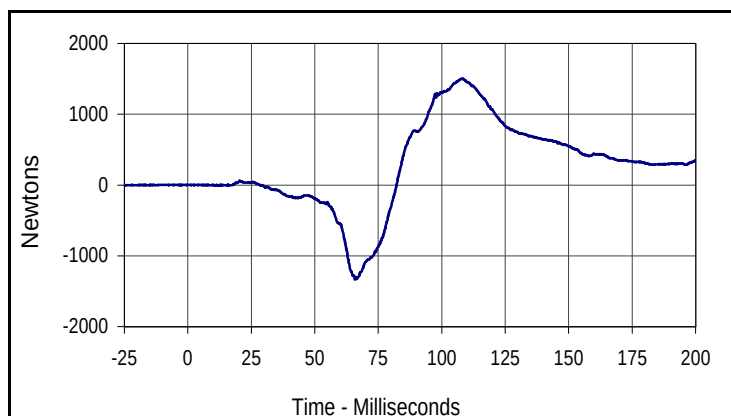
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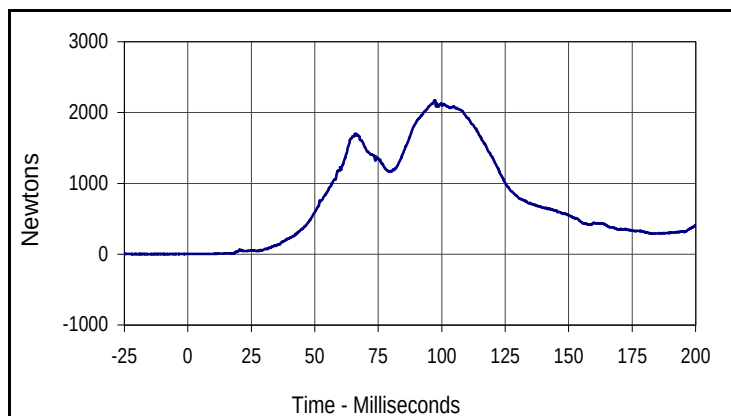
Curve Description			
Left Rear (10 Yr.) Lumbar Force X			
CURNO	Type	SAE Class	Units
152	FIL	1000	Newtons
Max	Time	Min	Time
1245.6	104.8	-390.3	57.3



Curve Description			
Left Rear (10 Yr.) Lumbar Force Y			
CURNO	Type	SAE Class	Units
153	FIL	1000	Newtons
Max	Time	Min	Time
73.9	156.5	-1581.4	93.1



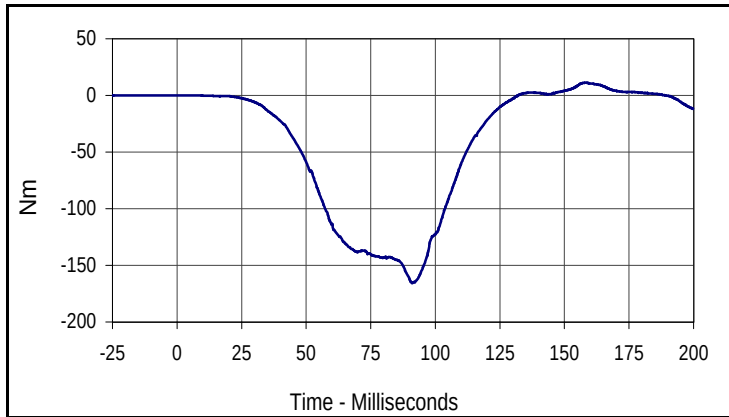
Curve Description			
Left Rear (10 Yr.) Lumbar Force Z			
CURNO	Type	SAE Class	Units
154	FIL	1000	Newtons
Max	Time	Min	Time
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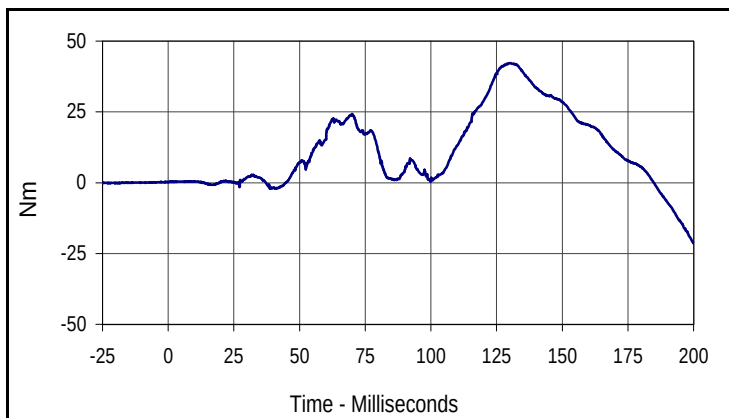
Curve Description			
Left Rear (10 Yr.) Lumbar Force Resultant			
CURNO	Type	SAE Class	Units
152	RES	1000	Newtons
Max	Time	Min	Time
2172.0	97.4	1.9	1.1

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

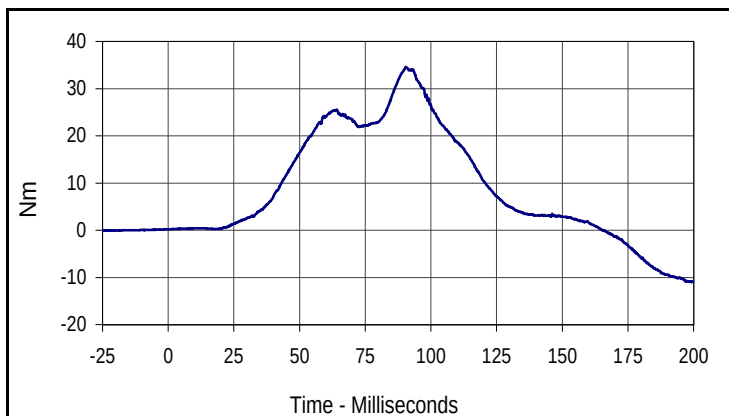
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 NHTSA No.: M50112



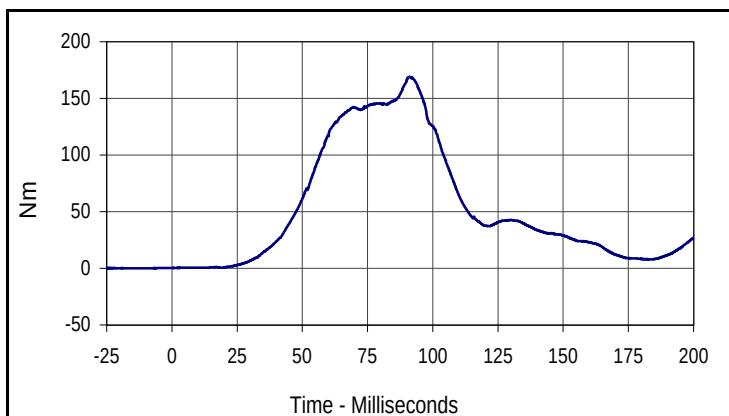
Curve Description			
Left Rear (10 Yr.) Lumbar Moment X			
CURNO	Type	SAE Class	Units
155	FIL	1000	Nm
Max	Time	Min	Time
11.4	158.2	-165.7	91.1



Curve Description			
Left Rear (10 Yr.) Lumbar Moment Y			
CURNO	Type	SAE Class	Units
156	FIL	1000	Nm
Max	Time	Min	Time
42.2	130.2	-21.5	200.0



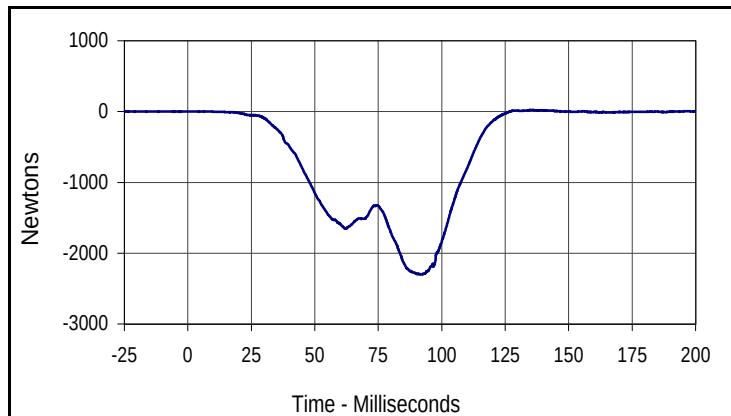
Curve Description			
Left Rear (10 Yr.) Lumbar Moment Z			
CURNO	Type	SAE Class	Units
157	FIL	1000	Nm
Max	Time	Min	Time
34.6	90.5	-11.0	199.2



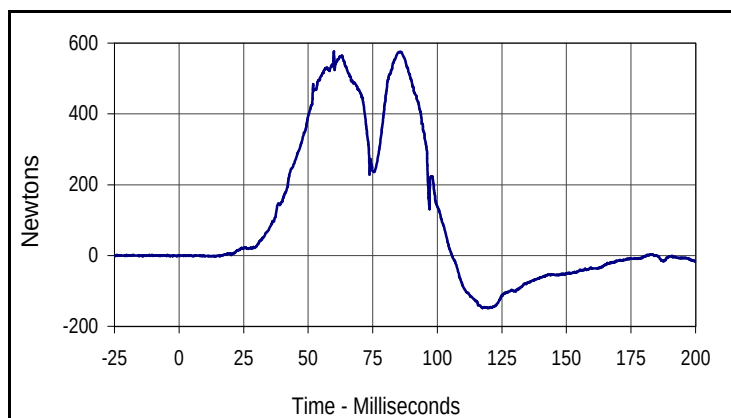
Curve Description			
Left Rear (10 Yr.) Lumbar Moment Resultant			
CURNO	Type	SAE Class	Units
155	RES	1000	Nm
Max	Time	Min	Time
169.3	91.0	0.3	0.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

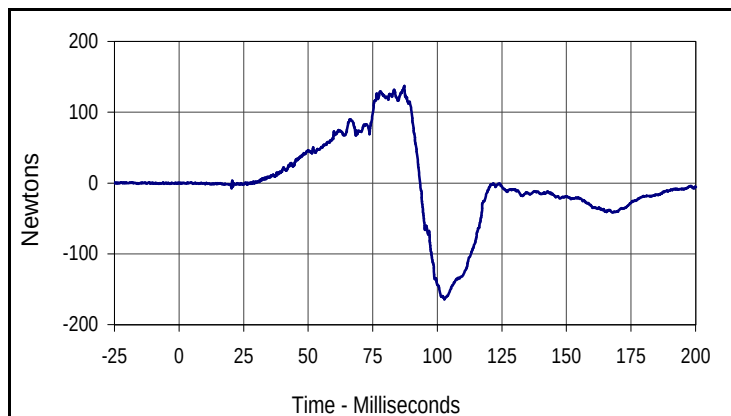
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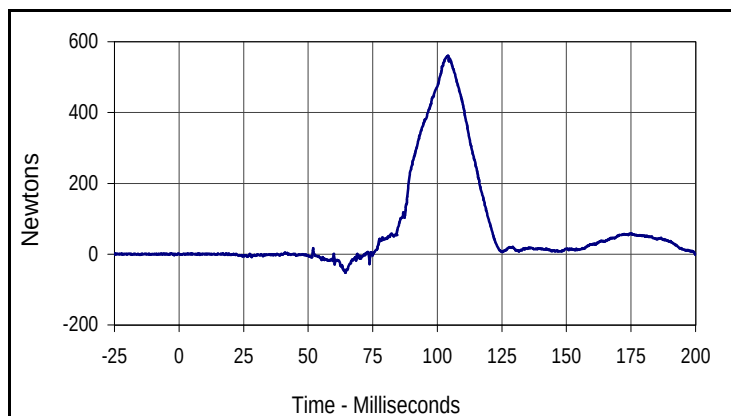
Curve Description			
Left Rear (10 Yr.) Left Clavicle Force X			
CURNO	Type	SAE Class	Units
158	FIL	1000	Newtons
Max	Time	Min	Time
23.5	135.8	-2300.7	92.0



Curve Description			
Left Rear (10 Yr.) Left Clavicle Force Z			
CURNO	Type	SAE Class	Units
159	FIL	1000	Newtons
Max	Time	Min	Time
576.5	60.0	-148.5	119.9



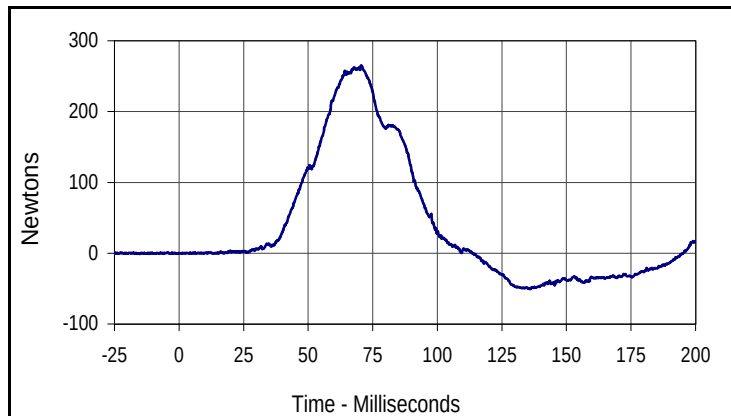
Curve Description			
Left Rear (10 Yr.) Right Clavicle Force X			
CURNO	Type	SAE Class	Units
160	FIL	1000	Newtons
Max	Time	Min	Time
137.1	87.2	-164.2	102.8



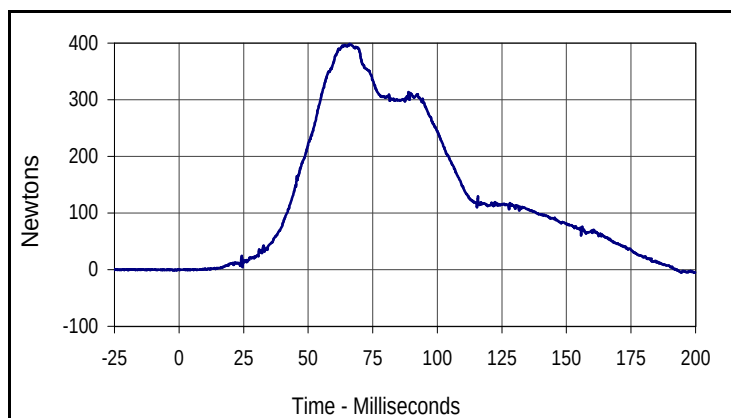
Curve Description			
Left Rear (10 Yr.) Right Clavicle Force Z			
CURNO	Type	SAE Class	Units
161	FIL	1000	Newtons
Max	Time	Min	Time
560.4	104.1	-53.1	64.4

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

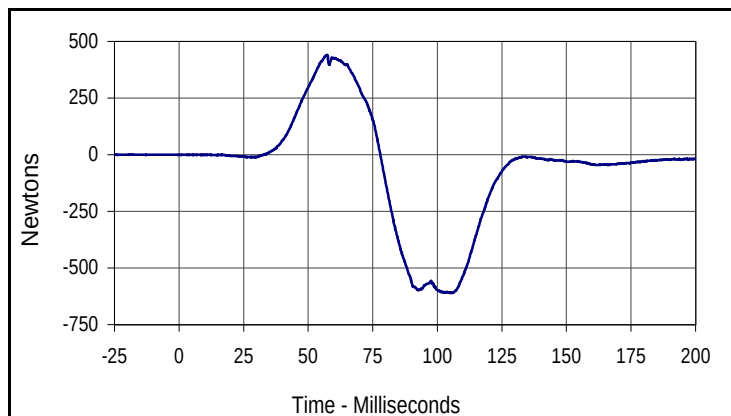
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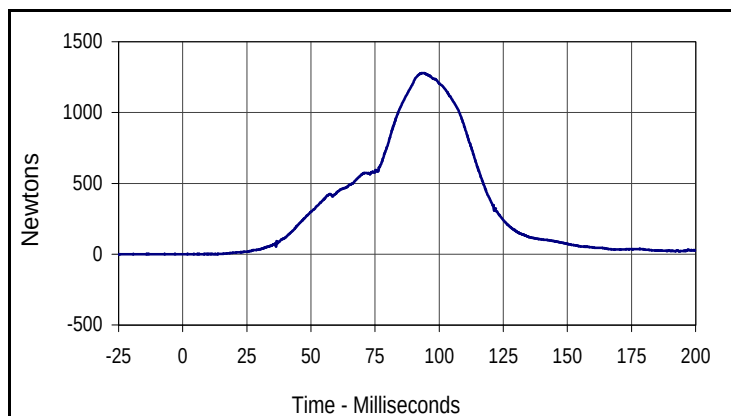
Curve Description			
Left Rear (10 Yr.) Left Upper ASIS Force			
CURNO	Type	SAE Class	Units
162	FIL	1000	Newtons
Max	Time	Min	Time
265.4	70.5	-50.9	136.0



Curve Description			
Left Rear (10 Yr.) Left Lower ASIS Force			
CURNO	Type	SAE Class	Units
163	FIL	1000	Newtons
Max	Time	Min	Time
398.1	66.2	-5.0	199.9



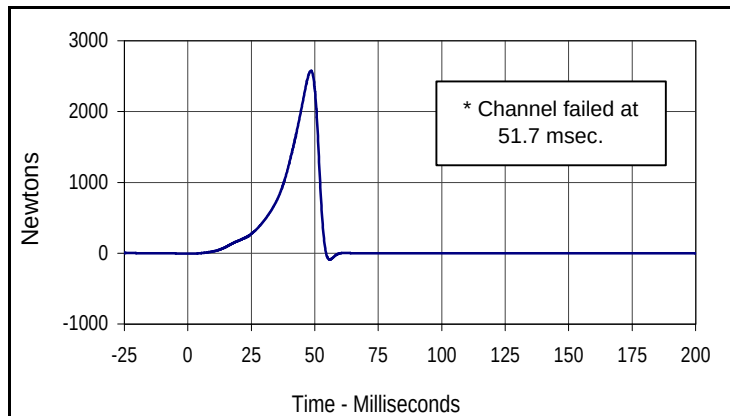
Curve Description			
Left Rear (10 Yr.) Right Upper ASIS Force			
CURNO	Type	SAE Class	Units
164	FIL	1000	Newtons
Max	Time	Min	Time
440.4	57.3	-610.2	105.8



Curve Description			
Left Rear (10 Yr.) Right Lower ASIS Force			
CURNO	Type	SAE Class	Units
165	FIL	1000	Newtons
Max	Time	Min	Time
1279.1	93.9	-1.2	2.3

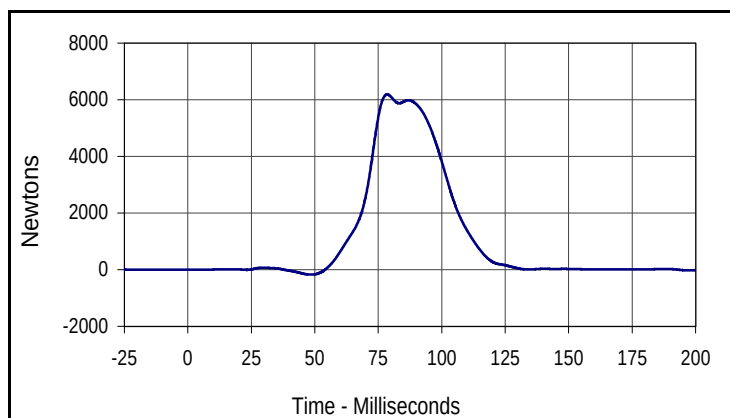
Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 12/1/04
 NHTSA No.: M50112

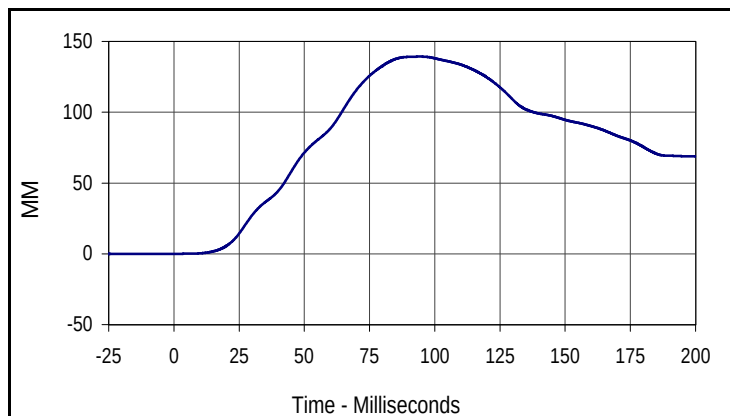


Curve Description			
Left Rear (10 Yr.) Lap Belt Force			
CURNO	Type	SAE Class	Units
166	FIL	60	Newtons
Max	Time	Min	Time
2577.2	48.5	-90.4	55.9

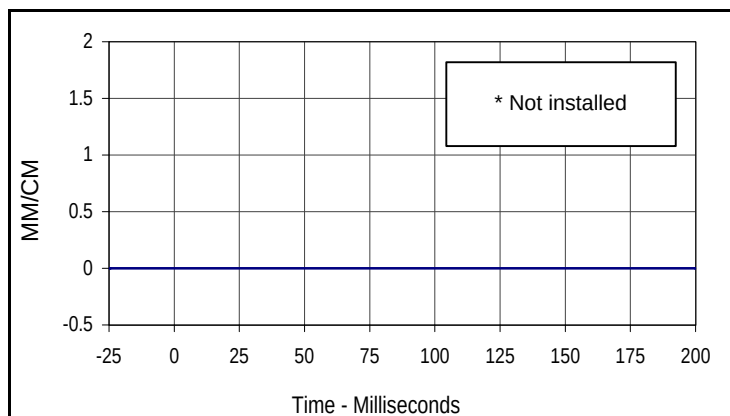
* Channel failed at 51.7 msec.



Curve Description			
Left Rear (10 Yr.) Shoulder Belt Force			
CURNO	Type	SAE Class	Units
167	FIL	60	Newtons
Max	Time	Min	Time
6186.6	78.5	-172.4	48.5



Curve Description			
Left Rear (10 Yr.) Shoulder Belt Pullout (10Yr.)			
CURNO	Type	SAE Class	Units
168	FIL	60	MM
Max	Time	Min	Time
139.3	94.4	0.0	2.2

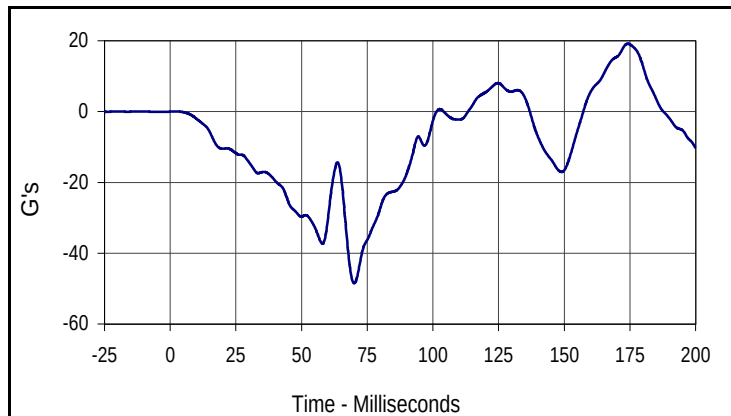


Curve Description			
Left Rear (10 Yr.) Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
169	FIL	60	MM/CM
Max	Time	Min	Time
0.00	0.0	0.00	0.0

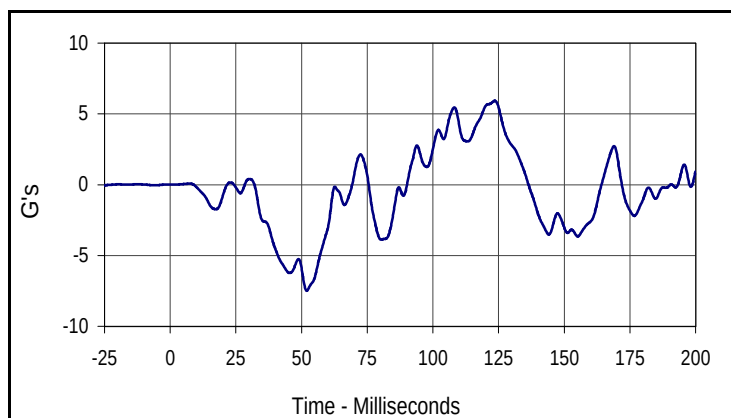
* Not Installed

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

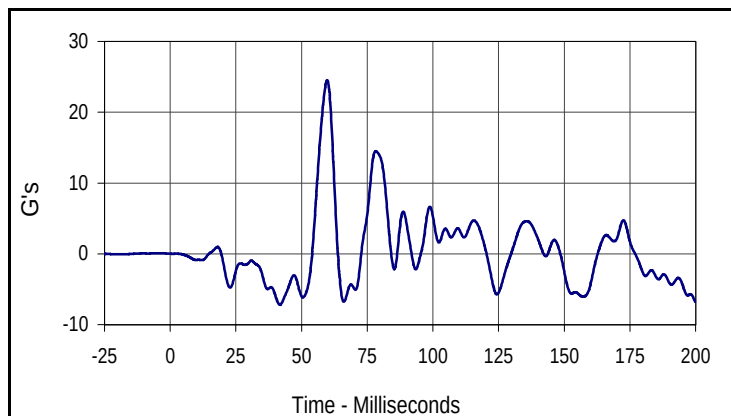
Test Date: 12/1/04
 NHTSA No.: M50112



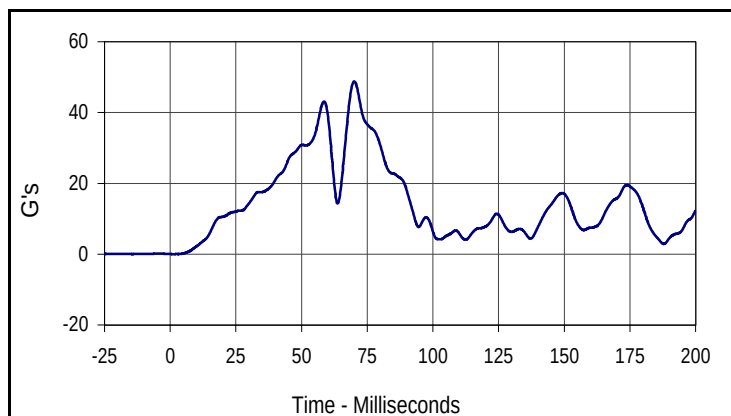
Curve Description			
Left Rear (10 Yr.) Car Seat X			
CURNO	Type	SAE Class	Units
170	FIL	60	G's
Max	Time	Min	Time
19.2	174.2	-48.5	70.0



Curve Description			
Left Rear (10 Yr.) Car Seat Y			
CURNO	Type	SAE Class	Units
171	FIL	60	G's
Max	Time	Min	Time
5.9	123.5	-7.5	52.0



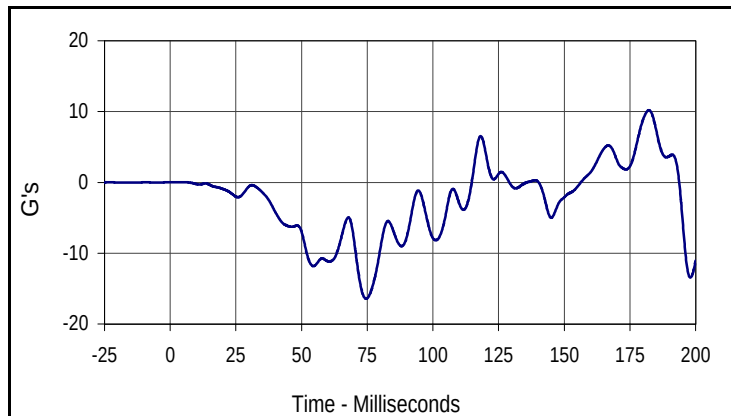
Curve Description			
Left Rear (10 Yr.) Car Seat Z			
CURNO	Type	SAE Class	Units
172	FIL	60	G's
Max	Time	Min	Time
24.5	59.7	-7.2	41.8



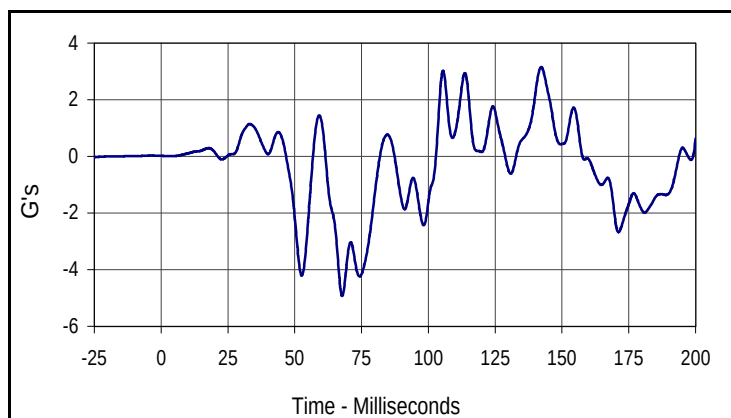
Curve Description			
Left Rear (10 Yr.) Car Seat Resultant			
CURNO	Type	SAE Class	Units
170	RES	60	G's
Max	Time	Min	Time
48.8	70.1	0.0	1.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

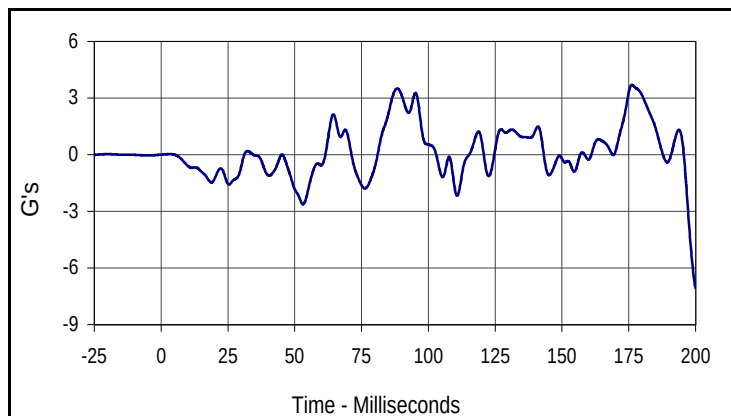
Test Date: 12/1/04
 NHTSA No.: M50112



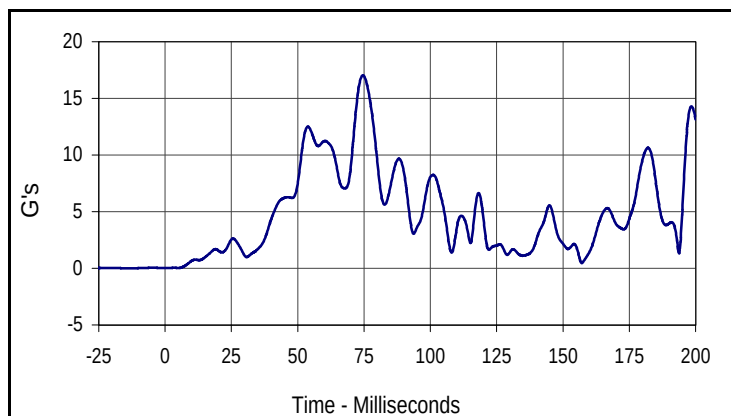
Curve Description			
Left Rear (10 Yr.) Car Seat Seatback X			
CURNO	Type	SAE Class	Units
173	FIL	60	G's
Max	Time	Min	Time
10.2	182.2	-16.4	74.6



Curve Description			
Left Rear (10 Yr.) Car Seat Seatback Y			
CURNO	Type	SAE Class	Units
174	FIL	60	G's
Max	Time	Min	Time
3.2	142.2	-4.9	67.8



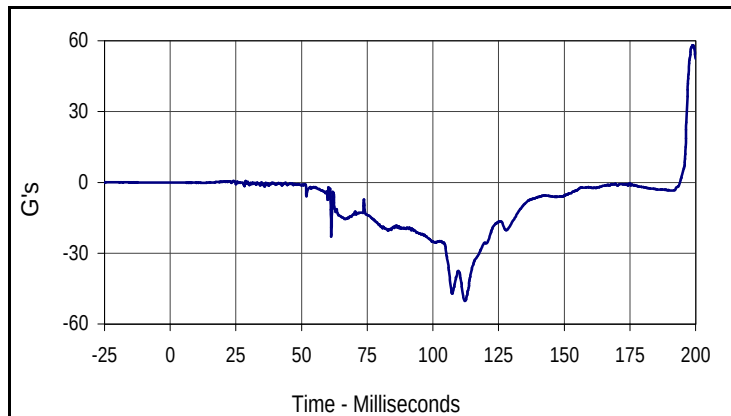
Curve Description			
Left Rear (10 Yr.) Car Seat Seatback Z			
CURNO	Type	SAE Class	Units
175	FIL	60	G's
Max	Time	Min	Time
3.7	176.2	-7.1	200.0



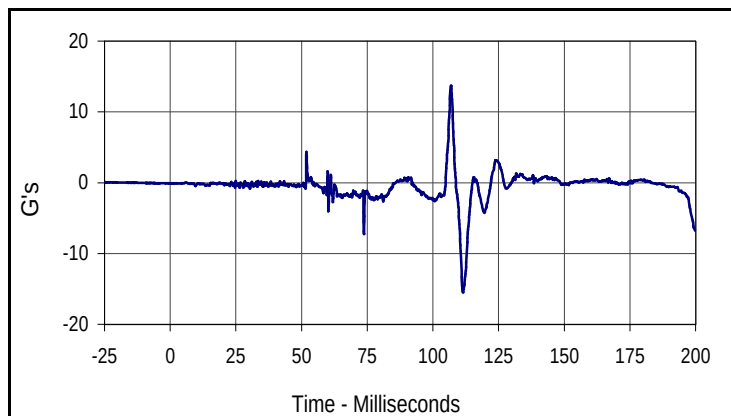
Curve Description			
Left Rear (10 Yr.) Car Seat Seatback Resultant			
CURNO	Type	SAE Class	Units
173	RES	60	G's
Max	Time	Min	Time
17.0	74.6	0.0	0.2

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

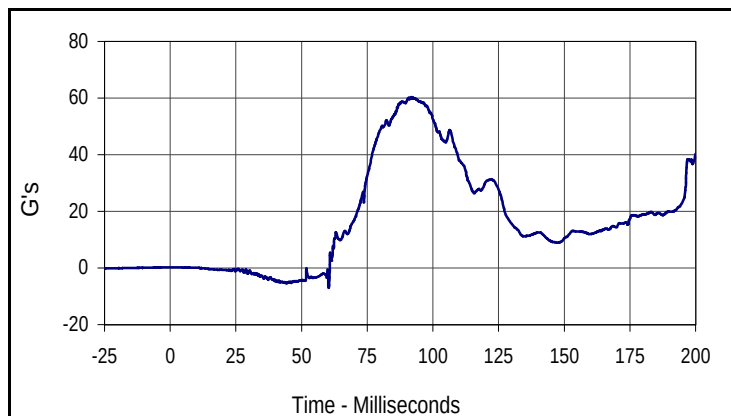
Test Date: 12/1/04
 NHTSA No.: M50112



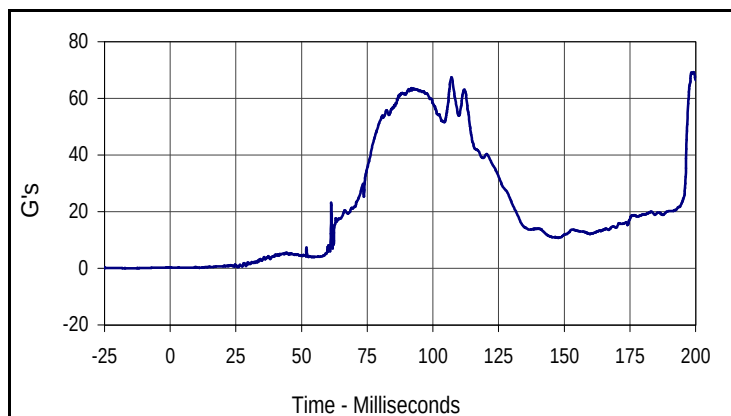
Curve Description			
Right Rear (3 Yr.) Head X			
CURNO	Type	SAE Class	Units
176	FIL	1000	G's
Max	Time	Min	Time
58.2	198.9	-50.3	112.2



Curve Description			
Right Rear (3 Yr.) Head Y			
CURNO	Type	SAE Class	Units
177	FIL	1000	G's
Max	Time	Min	Time
13.7	106.9	-15.5	111.5



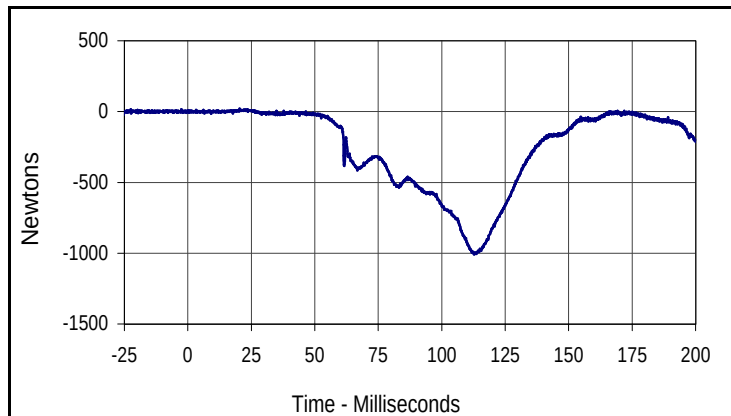
Curve Description			
Right Rear (3 Yr.) Head Z			
CURNO	Type	SAE Class	Units
178	FIL	1000	G's
Max	Time	Min	Time
60.3	91.8	-7.0	60.4



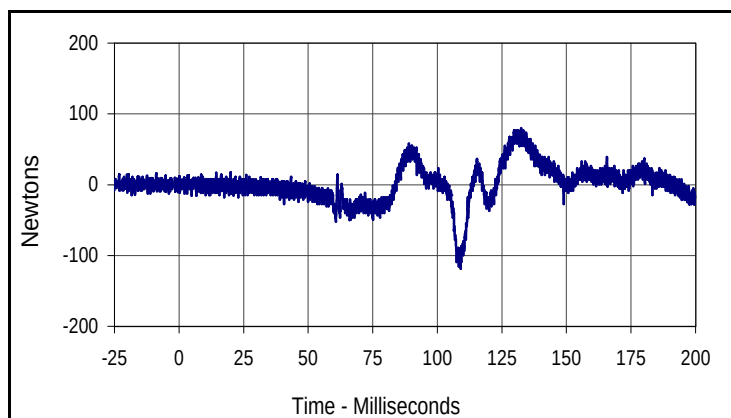
Curve Description			
Right Rear (3 Yr.) Head Resultant			
CURNO	Type	SAE Class	Units
176	RES	1000	G's
Max	Time	Min	Time
69.2	199.3	0.2	11.0

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

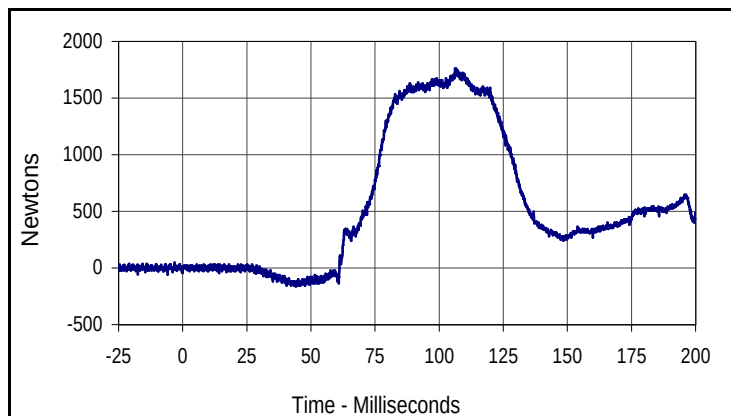
Test Date: 12/1/04
 NHTSA No.: M50112



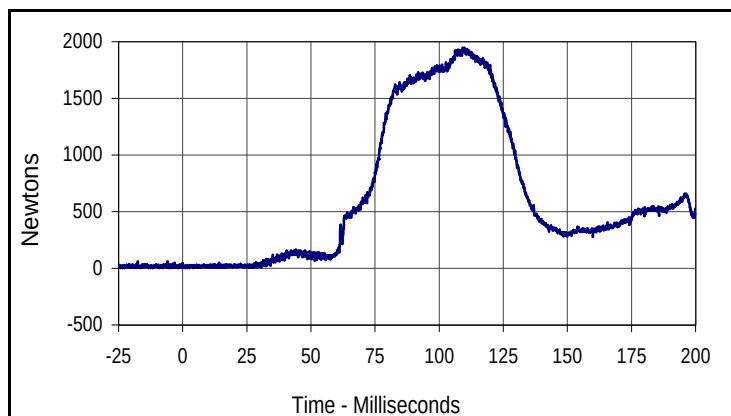
Curve Description			
Right Rear (3 Yr.) Upper Neck Force X			
CURNO	Type	SAE Class	Units
179	FIL	1000	Newtons
Max	Time	Min	Time
20.3	20.4	-1008.1	112.7



Curve Description			
Right Rear (3 Yr.) Upper Neck Force Y			
CURNO	Type	SAE Class	Units
180	FIL	1000	Newtons
Max	Time	Min	Time
79.9	132.5	-118.6	109.1



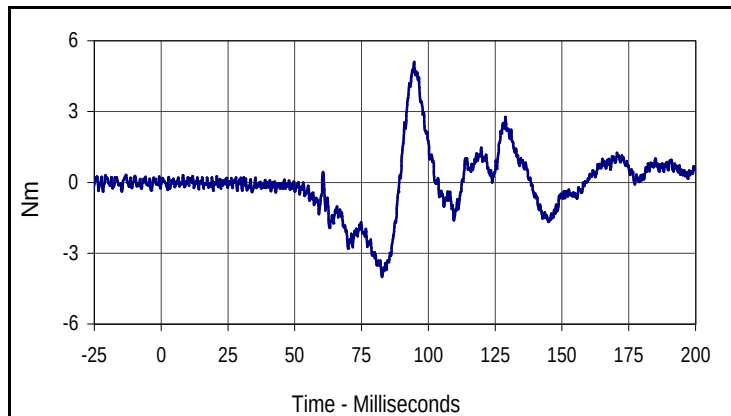
Curve Description			
Right Rear (3 Yr.) Upper Neck Force Z			
CURNO	Type	SAE Class	Units
181	FIL	1000	Newtons
Max	Time	Min	Time
1760.8	106.2	-164.9	44.1



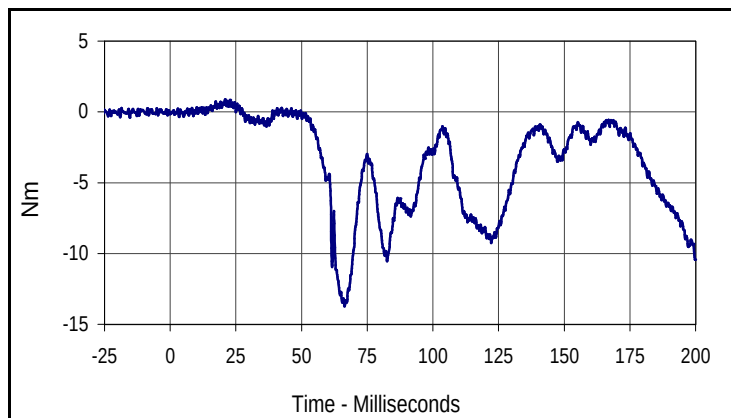
Curve Description			
Right Rear (3 Yr.) Upper Neck Force Resultant			
CURNO	Type	SAE Class	Units
179	RES	1000	Newtons
Max	Time	Min	Time
1947.2	109.8	2.5	1.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

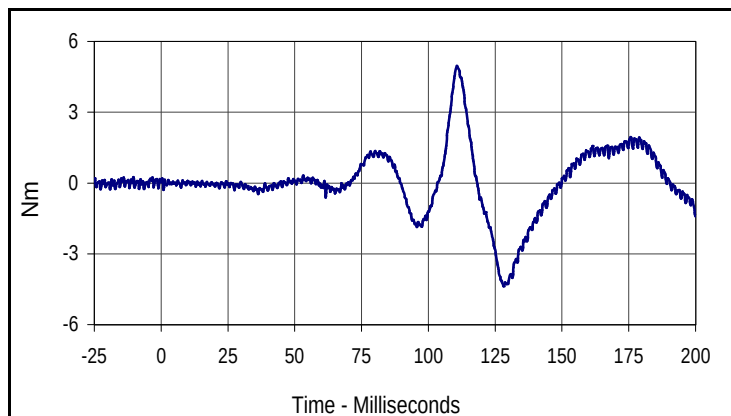
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 NHTSA No.: M50112



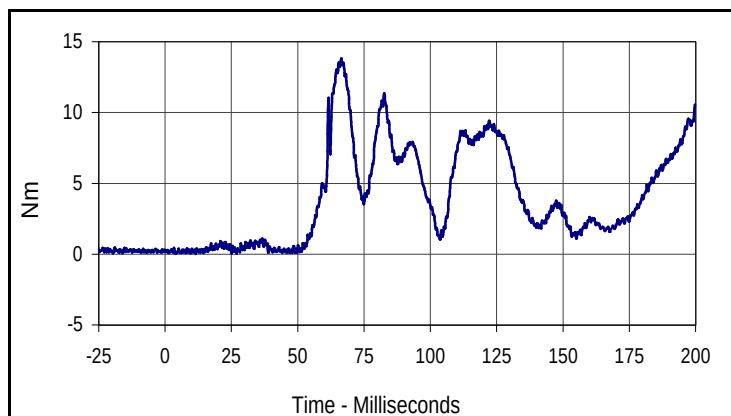
Curve Description			
Right Rear (3 Yr.) Upper Neck Moment X			
CURNO	Type	SAE Class	Units
182	FIL	600	Nm
Max	Time	Min	Time
5.1	94.7	-4.0	82.7



Curve Description			
Right Rear (3 Yr.) Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
183	FIL	600	Nm
Max	Time	Min	Time
0.9	20.9	-13.7	66.4



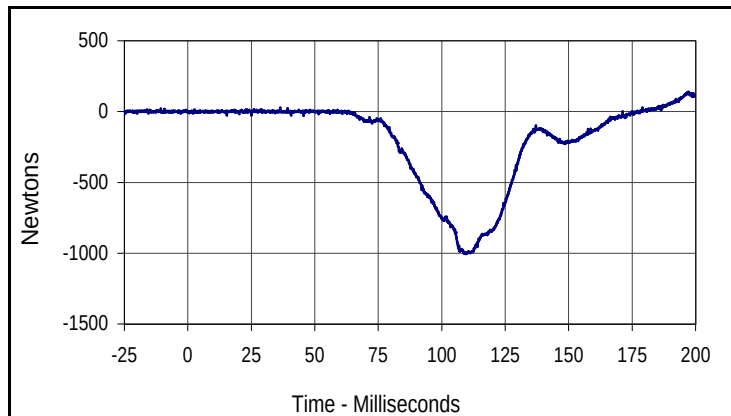
Curve Description			
Right Rear (3 Yr.) Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
184	FIL	600	Nm
Max	Time	Min	Time
5.0	110.7	-4.4	128.1



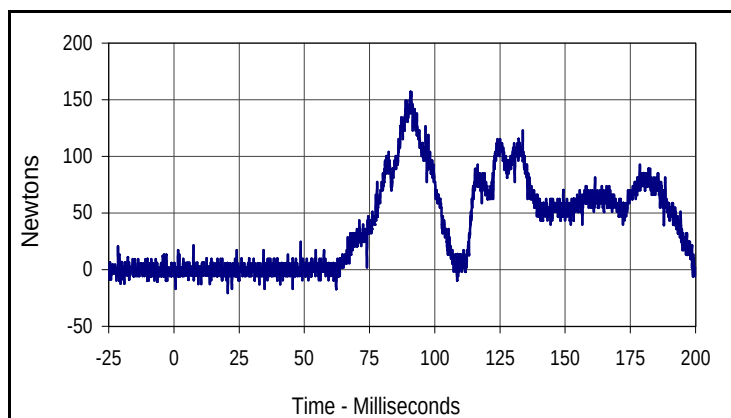
Curve Description			
Right Rear (3 Yr.) Upper Neck Moment Resultant			
CURNO	Type	SAE Class	Units
182	RES	600	Nm
Max	Time	Min	Time
13.8	66.4	0.0	11.5

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

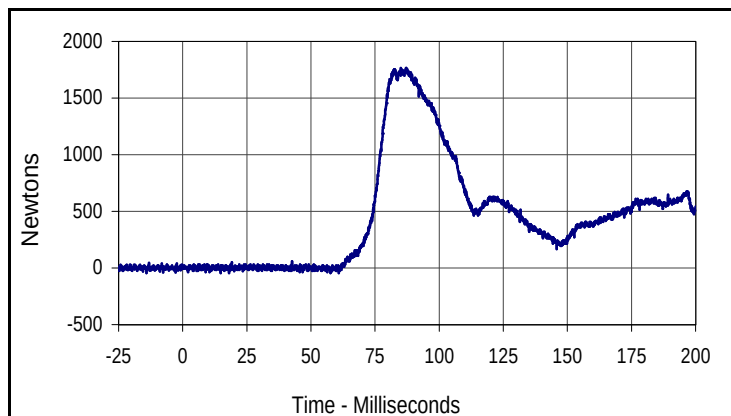
Test Date: 12/1/04
 NHTSA No.: M50112



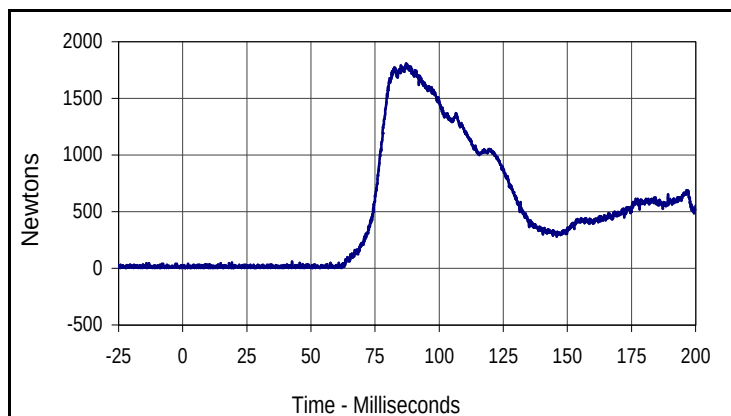
Curve Description			
Right Rear (3 Yr.) Lower Neck Force X			
CURNO	Type	SAE Class	Units
185	FIL	1000	Newtons
Max	Time	Min	Time
137.8	197.0	-1005.8	109.4



Curve Description			
Right Rear (3 Yr.) Lower Neck Force Y			
CURNO	Type	SAE Class	Units
186	FIL	1000	Newtons
Max	Time	Min	Time
156.8	90.7	-20.7	20.6



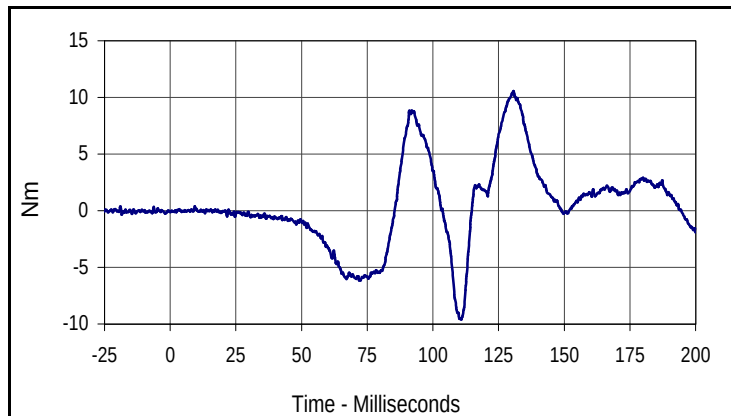
Curve Description			
Right Rear (3 Yr.) Lower Neck Force Z			
CURNO	Type	SAE Class	Units
187	FIL	1000	Newtons
Max	Time	Min	Time
1764.2	85.1	-45.5	14.8



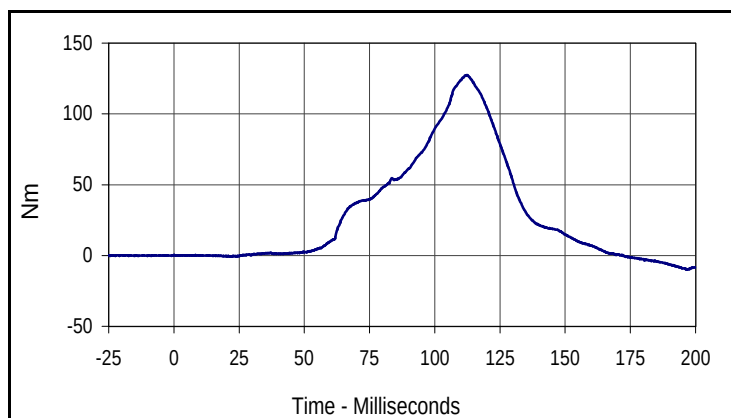
Curve Description			
Right Rear (3 Yr.) Lower Neck Force Resultant			
CURNO	Type	SAE Class	Units
185	RES	1000	Newtons
Max	Time	Min	Time
1807.1	87.2	2.6	19.6

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

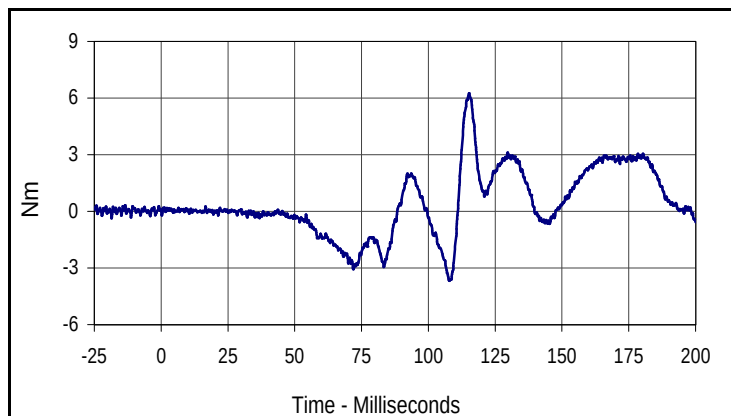
Test Date: 12/1/04
 NHTSA No.: M50112



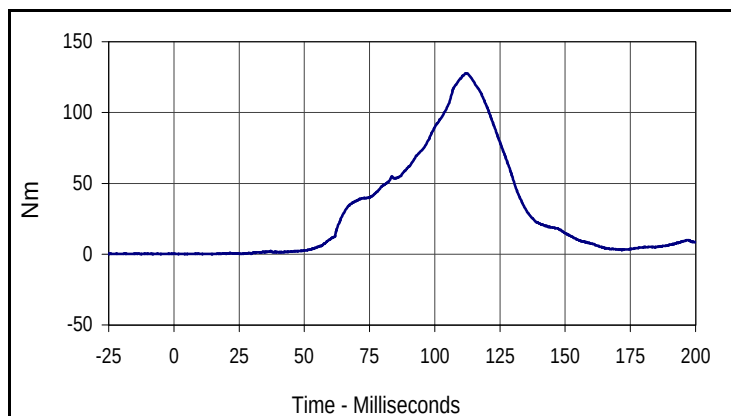
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment X			
CURNO	Type	SAE Class	Units
188	FIL	600	Nm
Max	Time	Min	Time
10.6	130.7	-9.6	110.8



Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Y			
CURNO	Type	SAE Class	Units
189	FIL	600	Nm
Max	Time	Min	Time
127.5	112.4	-9.9	196.6



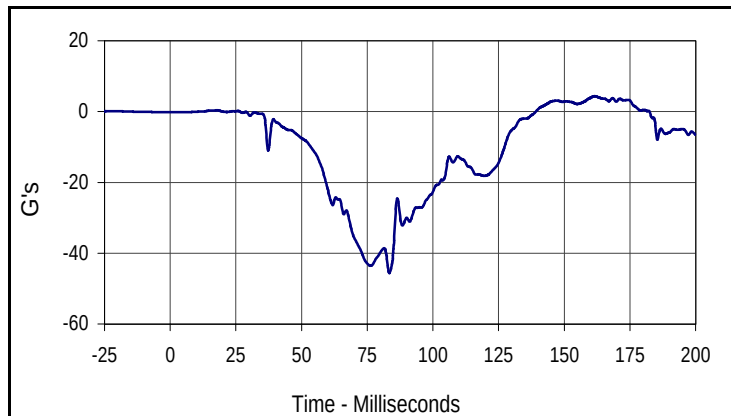
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Z			
CURNO	Type	SAE Class	Units
190	FIL	600	Nm
Max	Time	Min	Time
6.3	115.2	-3.7	107.9



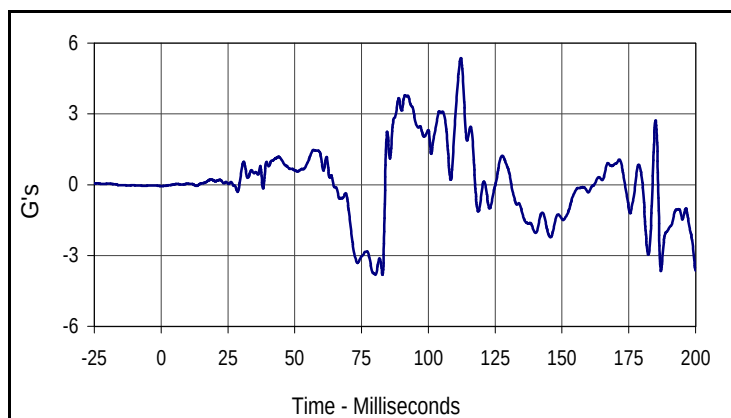
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Resultant			
CURNO	Type	SAE Class	Units
188	RES	600	Nm
Max	Time	Min	Time
127.7	112.4	0.0	14.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

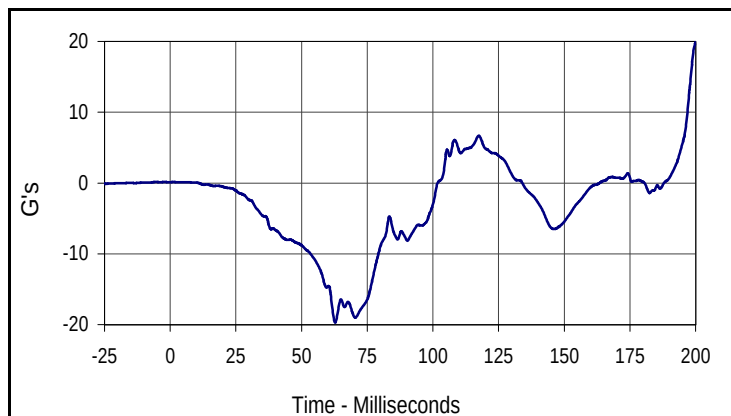
Test Date: 12/1/04
 NHTSA No.: M50112



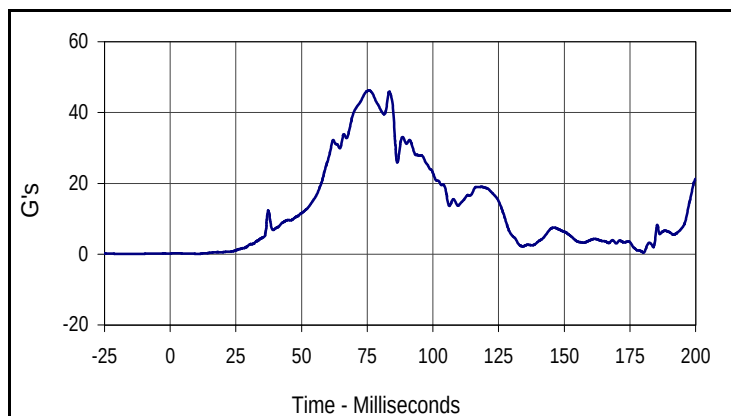
Curve Description			
Right Rear (3 Yr.) Chest X			
CURNO	Type	SAE Class	Units
191	FIL	180	G's
Max	Time	Min	Time
4.3	161.5	-45.6	83.4



Curve Description			
Right Rear (3 Yr.) Chest Y			
CURNO	Type	SAE Class	Units
192	FIL	180	G's
Max	Time	Min	Time
5.4	112.2	-3.8	80.2



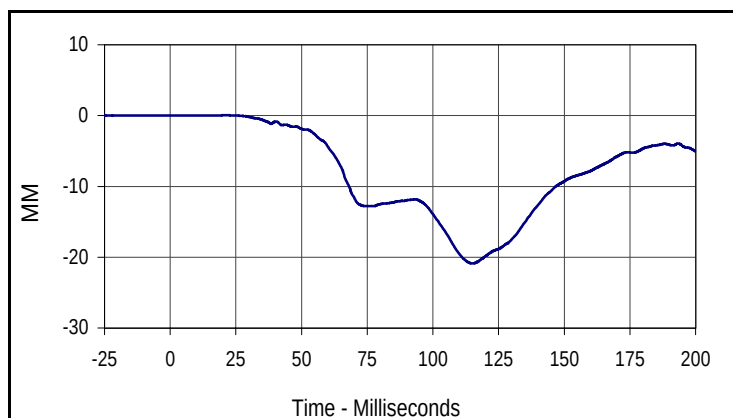
Curve Description			
Right Rear (3 Yr.) Chest Z			
CURNO	Type	SAE Class	Units
193	FIL	180	G's
Max	Time	Min	Time
19.9	200.0	-19.7	62.8



Curve Description			
Right Rear (3 Yr.) Chest Resultant			
CURNO	Type	SAE Class	Units
191	RES	180	G's
Max	Time	Min	Time
46.3	75.7	0.0	10.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

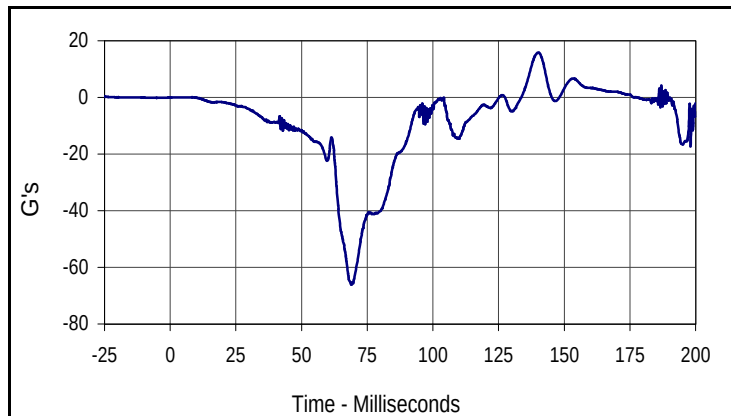
Test Date: 12/1/04
 NHTSA No.: M50112



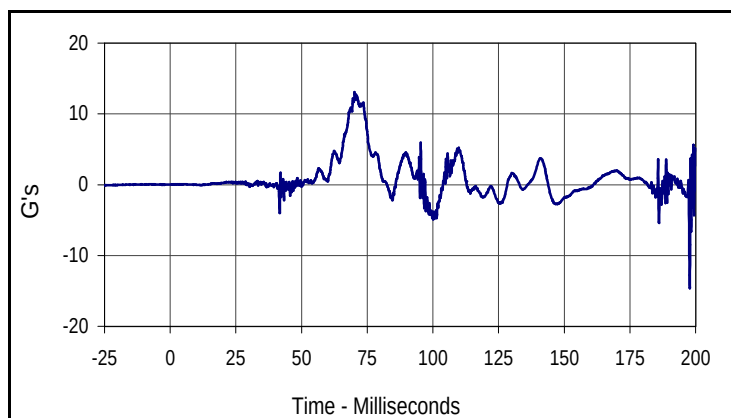
Curve Description			
Right Rear (3 Yr.) Chest Deflection			
CURNO	Type	SAE Class	Units
194	FIL	600	MM
Max	Time	Min	Time
0.1	20.3	-20.9	114.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

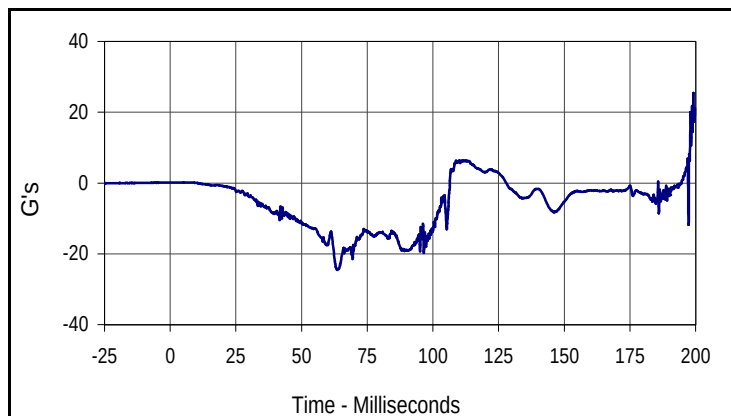
Test Date: 12/1/04
 NHTSA No.: M50112



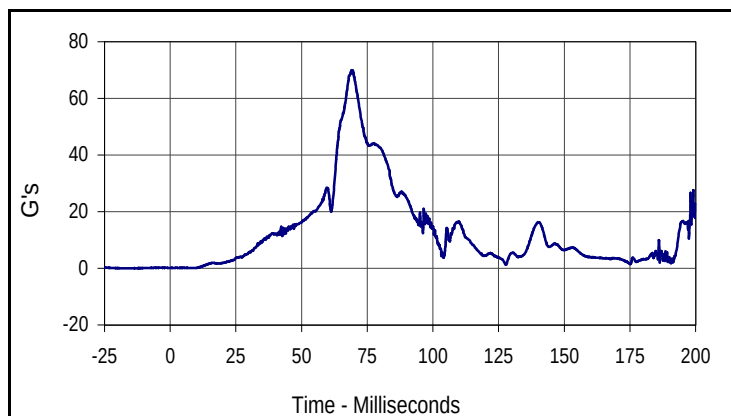
Curve Description			
Right Rear (3 Yr.) Pelvis X			
CURNO	Type	SAE Class	Units
195	FIL	1000	G's
Max	Time	Min	Time
15.8	140.1	-66.1	69.0



Curve Description			
Right Rear (3 Yr.) Pelvis Y			
CURNO	Type	SAE Class	Units
196	FIL	1000	G's
Max	Time	Min	Time
13.1	70.2	-14.5	197.8



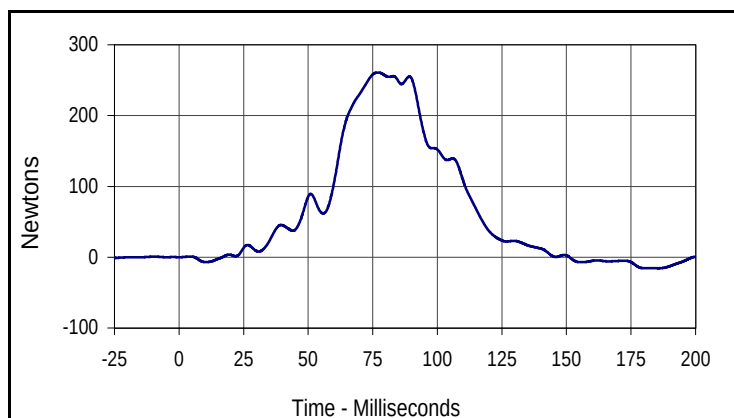
Curve Description			
Right Rear (3 Yr.) Pelvis Z			
CURNO	Type	SAE Class	Units
197	FIL	1000	G's
Max	Time	Min	Time
25.3	199.1	-24.5	63.5



Curve Description			
Right Rear (3 Yr.) Pelvis Resultant			
CURNO	Type	SAE Class	Units
195	RES	1000	G's
Max	Time	Min	Time
70.0	69.0	0.1	9.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

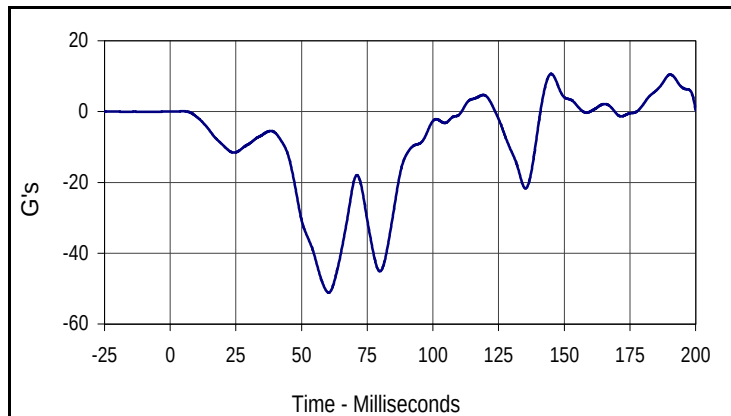
Test Date: 12/1/04
 NHTSA No.: M50112



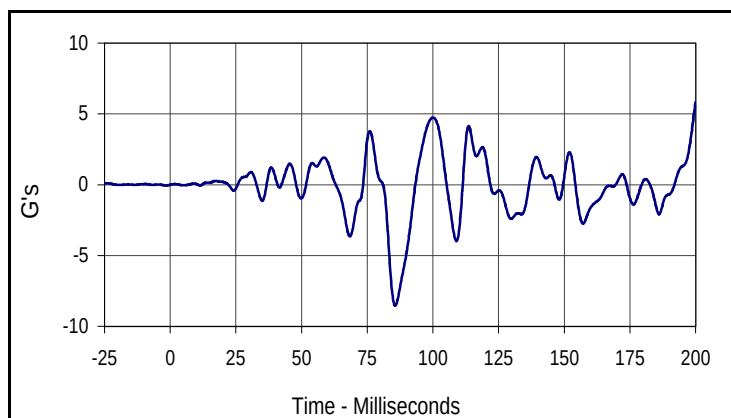
Curve Description			
Right Rear (3 Yr.) Child Seat Tether Force			
CURNO	Type	SAE Class	Units
198	FIL	60	Newtons
Max	Time	Min	Time
260.8	77.0	-15.7	185.6

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

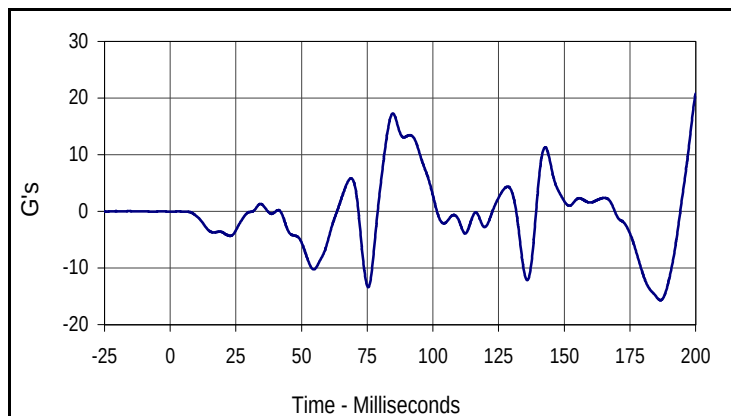
Test Date: 12/1/04
 NHTSA No.: M50112



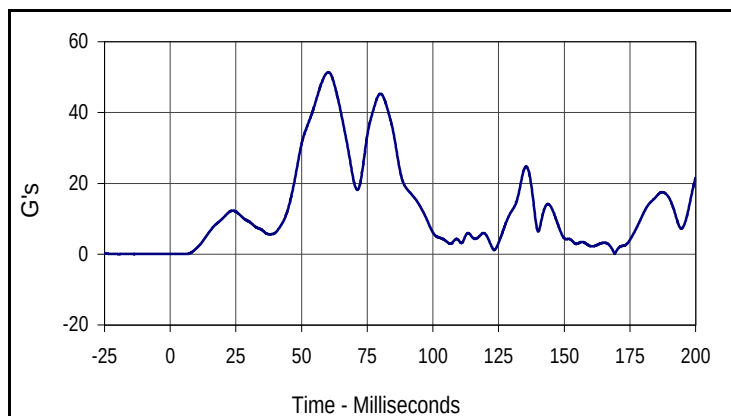
Curve Description			
Right Rear (3 Yr.) Car Seat X			
CURNO	Type	SAE Class	Units
199	FIL	60	G's
Max	Time	Min	Time
10.7	145.0	-51.1	60.3



Curve Description			
Right Rear (3 Yr.) Car Seat Y			
CURNO	Type	SAE Class	Units
200	FIL	60	G's
Max	Time	Min	Time
5.8	200.0	-8.5	85.7



Curve Description			
Right Rear (3 Yr.) Car Seat Z			
CURNO	Type	SAE Class	Units
201	FIL	60	G's
Max	Time	Min	Time
20.8	200.0	-15.7	186.6



Curve Description			
Right Rear (3 Yr.) Car Seat Resultant			
CURNO	Type	SAE Class	Units
199	RES	60	G's
Max	Time	Min	Time
51.4	60.2	0.0	0.0

SECTION F-4

CHILD DUMMY INSTRUMENTATION INFORMATION

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Left Rear Child A.T.D. Serial Number 011 (10 Yr.)
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
134	HEAD CG	X	GPAC047	Accel.,1/2 bridge	Endevco	7264-2000	G
135	HEAD CG	Y	GPAC048	Accel.,1/2 bridge	Endevco	7264-2000	G
136	HEAD CG	Z	GPAC049	Accel.,1/2 bridge	Endevco	7264-2000	G
137	UPPER NECK FORCE	X	10UNFX	Load cell, six axis neck	R. A. Denton	IF-234	N
138	UPPER NECK FORCE	Y	10UNFY	Load cell, six axis neck	R. A. Denton	IF-234	N
139	UPPER NECK FORCE	Z	10UNFZ	Load cell, six axis neck	R. A. Denton	IF-234	N
140	UPPER NECK MOMENT	X	10UNMX	Load cell, six axis neck	R. A. Denton	IF-234	Nm
141	UPPER NECK MOMENT	Y	10UNMY	Load cell, six axis neck	R. A. Denton	IF-234	Nm
142	UPPER NECK MOMENT	Z	10UNMZ	Load cell, six axis neck	R. A. Denton	IF-234	Nm
143	CHEST CG	X	2116-A01	Accel., Full Bridge	Entran	2000JF	G
144	CHEST CG	Y	2116-A06	Accel., Full Bridge	Entran	2000JF	G
145	CHEST CG	Z	2116-A07	Accel., Full Bridge	Entran	2000JF	G
146	CHEST DEFLECTION	X	10CP	Rotary Pot Chest	Servo	14CBI	MM
147	PELVIS	X	2116-N07	Accel., Full Bridge	Entran	2000JF	G
148	PELVIS	Y	2116-A03	Accel., Full Bridge	Entran	2000JF	G
149	PELVIS	Z	2116-A17	Accel., Full Bridge	Entran	2000JF	G
150	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2090	N
151	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2090	N
152	LUMBAR FORCE	X	LUMFX	Load cell, Lumbar	R.A. Denton	2431	N
153	LUMBAR FORCE	Y	LUMFY	Load cell, Lumbar	R.A. Denton	2431	N
154	LUMBAR FORCE	Z	LUMFZ	Load cell, Lumbar	R.A. Denton	2431	N
155	LUMBAR MOMENT	X	LUMMX	Load cell, Lumbar	R.A. Denton	2431	N
156	LUMBAR MOMENT	Y	LUMMY	Load cell, Lumbar	R.A. Denton	2431	N
157	LUMBAR MOMENT	Z	LUMMZ	Load cell, Lumbar	R.A. Denton	2431	N

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Left Rear Child A.T.D. Serial Number 011 (10 Yr.)
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
158	LEFT CLAVICLE FORCE	X	CLFX	Load cell, Clavicle	R.A. Denton	5400J	N
159	LEFT CLAVICLE FORCE	Z	CLFY	Load cell, Clavicle	R.A. Denton	5400J	N
160	RIGHT CLAVICLE FORCE	X	CLRFX	Load cell, Clavicle	R.A. Denton	5410J	N
161	RIGHT CLAVICLE FORCE	Z	CLRFZ	Load cell, Clavicle	R.A. Denton	5410J	N
162	LEFT ASIS UPPER	X	10LUASIS	Load cell, ASIS	R.A. Denton	3475	N
163	LEFT ASIS LOWER	X	10LLASIS	Load cell, ASIS	R.A. Denton	3475	N
164	RIGHT ASIS UPPER	X	10RUASIS	Load cell, ASIS	R.A. Denton	3476	N
165	RIGHT ASIS LOWER	X	10RLASIS	Load cell, ASIS	R.A. Denton	3476	N
166	LAP BELT FORCE	X	BL168	Load cell, Seat belt	First Tech	IF-964	N
167	SHOULDER BELT FORCE	X	BL169	Load cell, Seat belt	First Tech	IF-964	N
168	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
169	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM
170	CAR SEAT	X	KETX5A	Accel.,1/2 bridge	Endevco	7264-200	G
171	CAR SEAT	Y	KETX5B	Accel.,1/2 bridge	Endevco	7264-200	G
172	CAR SEAT	Z	KETX5C	Accel.,1/2 bridge	Endevco	7264-200	G
173	CAR SEAT SEATBACK	X	KETX1A	Accel.,1/2 bridge	Endevco	7264-200	G
174	CAR SEAT SEATBACK	Y	KETX1B	Accel.,1/2 bridge	Endevco	7264-200	G
175	CAR SEAT SEATBACK	Z	KETX1C	Accel.,1/2 bridge	Endevco	7264-200	G

2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Right Rear Child A.T.D. Serial Number 082 (3 Yr.)
12/1/04
2005 Chevrolet Uplander 5-Door MPV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
176	HEAD CG	X	GPAC050	Accel.,1/2 bridge	Endevco	7264-2000	G
177	HEAD CG	Y	GPAC051	Accel.,1/2 bridge	Endevco	7264-2000	G
178	HEAD CG	Z	GPAC052	Accel.,1/2 bridge	Endevco	7264-2000	G
179	UPPER NECK FORCE	X	082UNFX	Load cell, six axis neck	R. A. Denton	IF-234	N
180	UPPER NECK FORCE	Y	082UNFY	Load cell, six axis neck	R. A. Denton	IF-234	N
181	UPPER NECK FORCE	Z	082UNFZ	Load cell, six axis neck	R. A. Denton	IF-234	N
182	UPPER NECK MOMENT	X	082UNMX	Load cell, six axis neck	R. A. Denton	IF-234	Nm
183	UPPER NECK MOMENT	Y	082UNMY	Load cell, six axis neck	R. A. Denton	IF-234	Nm
184	UPPER NECK MOMENT	Z	082UNMZ	Load cell, six axis neck	R. A. Denton	IF-234	Nm
185	LOWER NECK FORCE	X	082LNFX	Load cell, six axis neck	R. A. Denton	3303	N
186	LOWER NECK FORCE	Y	082LNFY	Load cell, six axis neck	R. A. Denton	3303	N
187	LOWER NECK FORCE	Z	082LNFZ	Load cell, six axis neck	R. A. Denton	3303	N
188	LOWER NECK MOMENT	X	082LNMX	Load cell, six axis neck	R. A. Denton	3303	Nm
189	LOWER NECK MOMENT	X	082LNMY	Load cell, six axis neck	R. A. Denton	3303	Nm
190	LOWER NECK MOMENT	Z	082LNMZ	Load cell, six axis neck	R. A. Denton	3303	Nm
191	CHEST CG	X	2116-A11	Accel., Full Bridge	Entran	2000JF	G
192	CHEST CG	Y	2116-A14	Accel., Full Bridge	Entran	2000JF	G
193	CHEST CG	Z	2116-A23	Accel., Full Bridge	Entran	2000JF	G
194	CHEST DEFLECTION	X	082CP	Rotary Pot Chest	Servo	14CBI	MM
195	PELVIS	X	2116-A12	Accel., Full Bridge	Entran	2000JF	G
196	PELVIS	Y	2116-A19	Accel., Full Bridge	Entran	2000JF	G
197	PELVIS	Z	2116-A17	Accel., Full Bridge	Entran	2000JF	G
198	CAR SEAT UPPER TETHER FORCE	X	BL112	Load cell, Seat belt	FGP	FN4060	N
199	CAR SEAT	X	KETX4A	Accel.,1/2 bridge	Endevco	7264-200	G
200	CAR SEAT	Y	KETX4B	Accel.,1/2 bridge	Endevco	7264-201	G
201	CAR SEAT	Z	KETX4C	Accel.,1/2 bridge	Endevco	7264-202	G

SECTION F-5

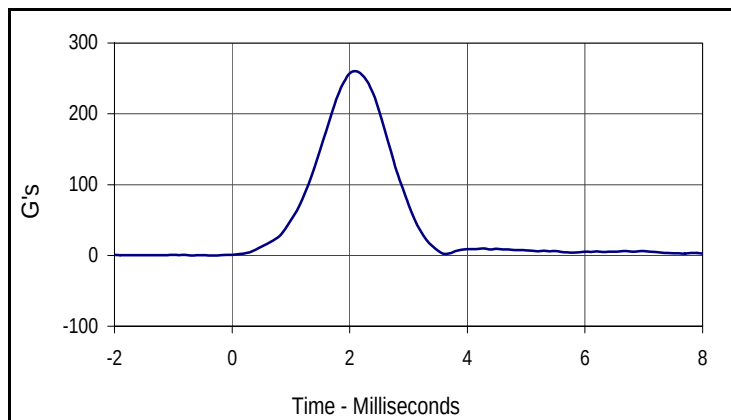
CHILD DUMMY CALIBRATION INFORMATION

Test Program: Hybrid III 3 Year Old Head Drop Test
 ATD Serial No.: 082

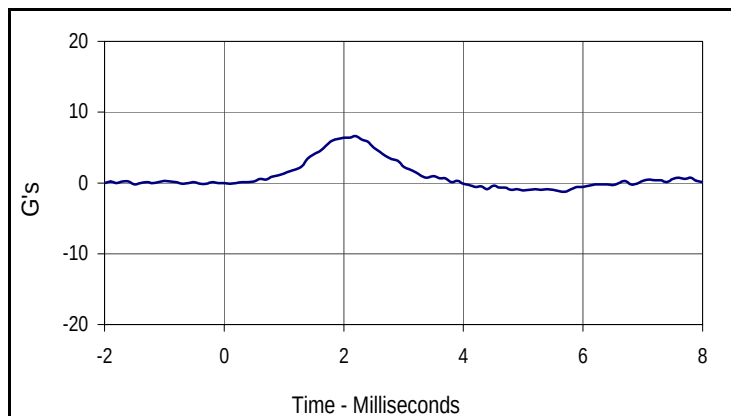
Test Date: 8/24/04
 Test I.D.: HD08A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 280.0	260.1	Pass
Peak Lateral Acceleration	G's	≤15.0	6.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.7	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
260.1	2.1	0.1	-0.7



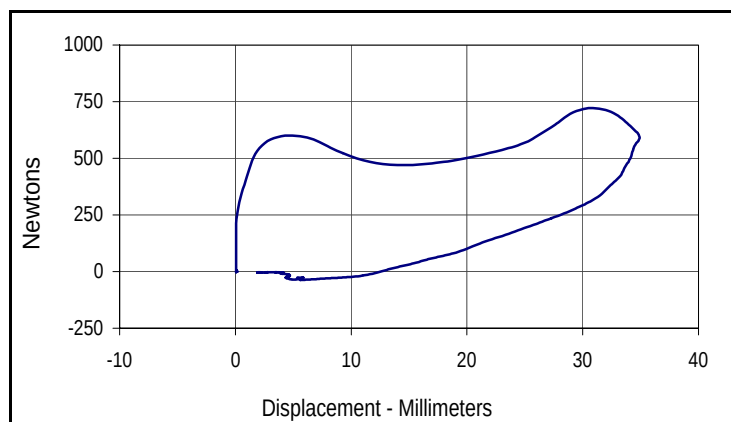
Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.6	2.2	-1.2	5.7

Test Program: Hybrid III 3 Year Old Thorax Impact Test
 ATD Serial No.: 082

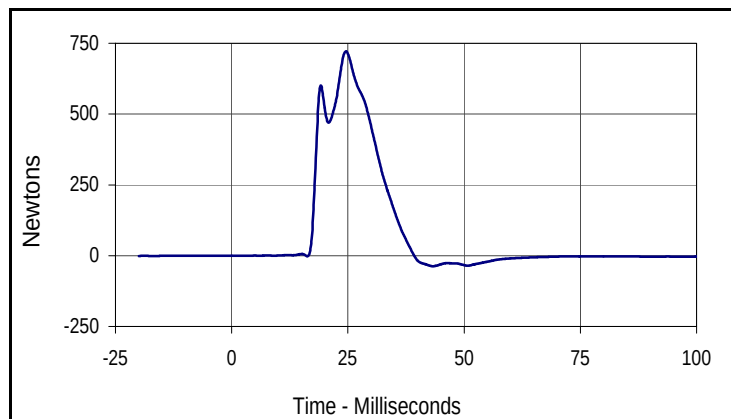
Test Date: 8/25/04
 Test I.D.: CH08A



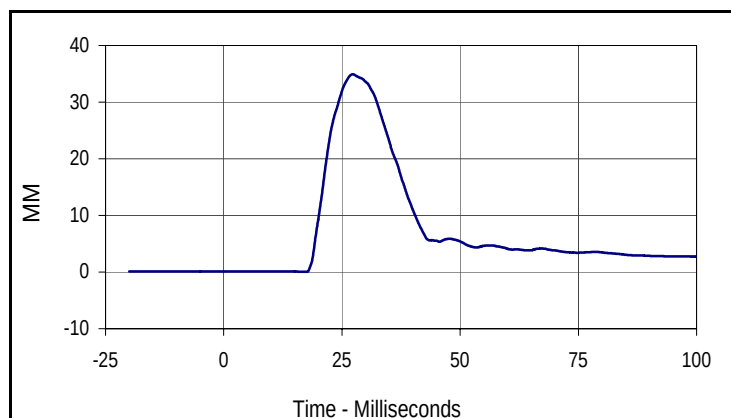
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	5.9 to 6.1	5.93	Pass
Peak Chest Compression	MM	32 to 38	34.9	Pass
Peak Force Between 32 and 38 MM	Newtons	680 to 810	709.2	Pass
Peak Force Between 12.5 and 32 MM	Newtons	≤860	721.5	Pass
Internal Hysteresis	%	65 to 85	78.2	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
004	FIL	180/600	78.2
Peak Probe Force		Peak Chest Displ.	
721.5		34.9	



Curve Description			
Probe Force			
CURNO	Type	SAE Class	Units
003	FIL	180	Newtons
Max	Time	Min	Time
721.5	24.6	-37.2	43.3



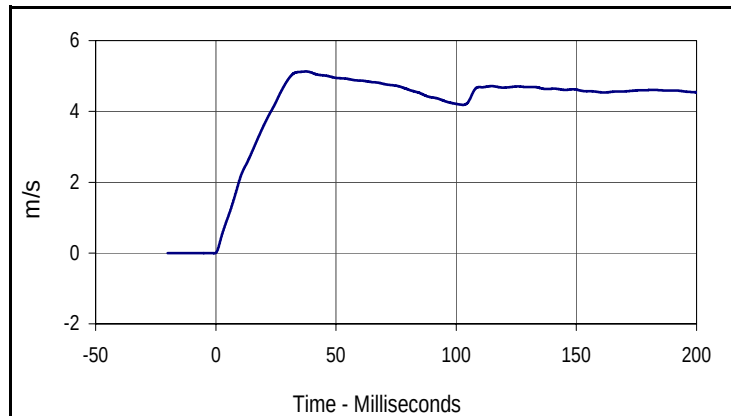
Curve Description			
Chest Compression			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
34.9	27.3	0.1	17.6

Test Program: 3 Year Old Hybrid III Neck Flexion Test
 ATD Serial No.: 082

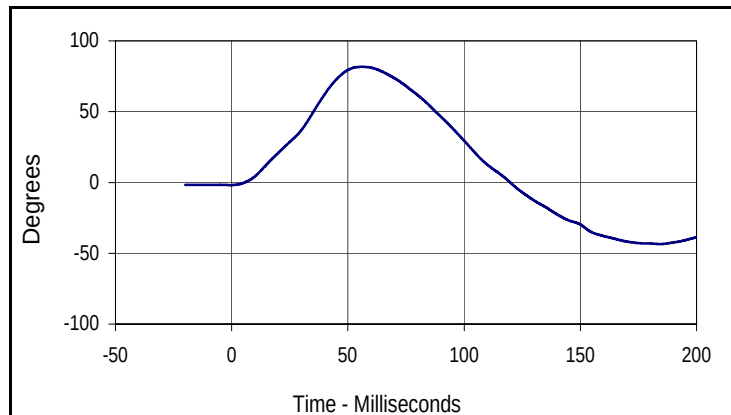
Test Date: 8/25/04
 Test I.D.: NF08A



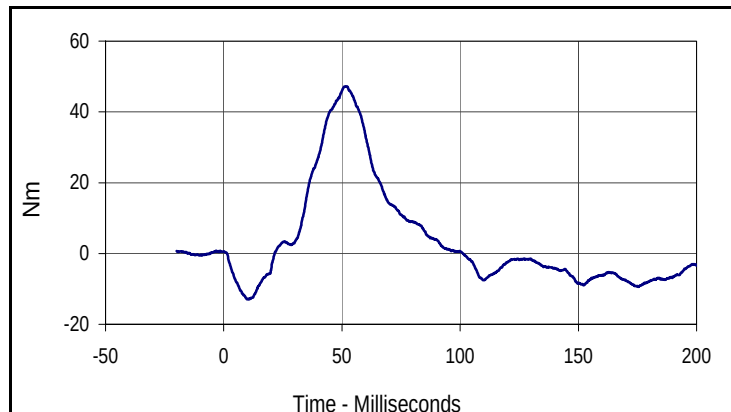
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.40 to 5.60	5.55	Pass
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.1	Pass
	20 Msec.	m/s	3.0 to 4.0	3.6	Pass
	30 Msec.	m/s	4.0 to 5.1	4.9	Pass
"D" Plane Rotation	Max	Degrees	70.0 to 82.0	81.6	Pass
Peak Moment in Rotation	Max	Nm	42.0 to 53.0	47.2	Pass
Positive Moment Decay, Time To 10Nm		Msec.	60.0 to 80.0	76.7	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
5.1	37.4	0.0	-0.6



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
81.6	56.2	-43.5	184.3



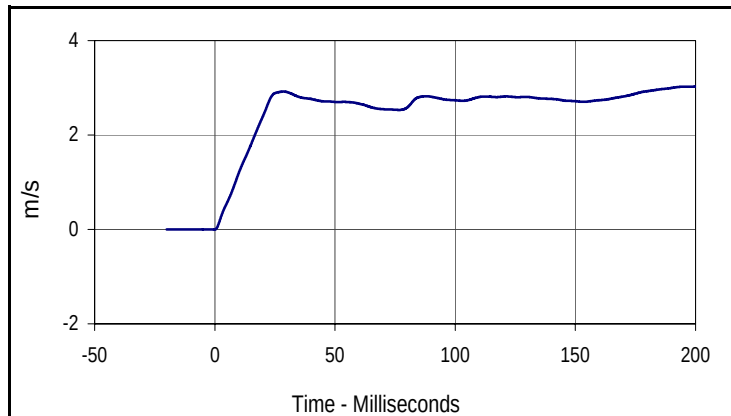
Curve Description			
Neck Moment Y			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
47.2	51.7	-13.0	10.0

Test Program: 3 Year Old Hybrid III Neck Extension Test
 ATD Serial No.: 082

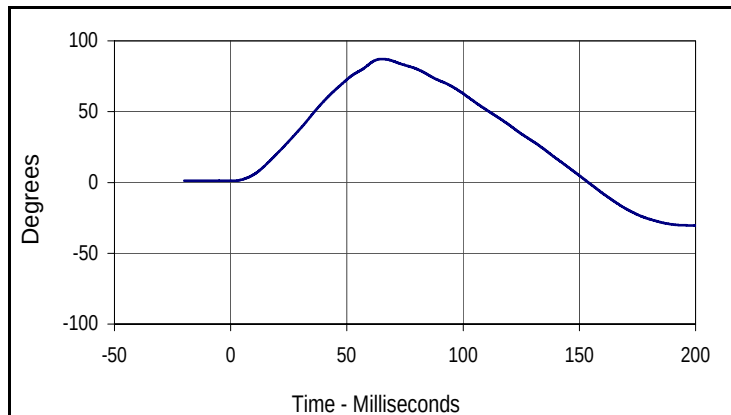
Test Date: 8/25/04
 Test I.D.: NE04J



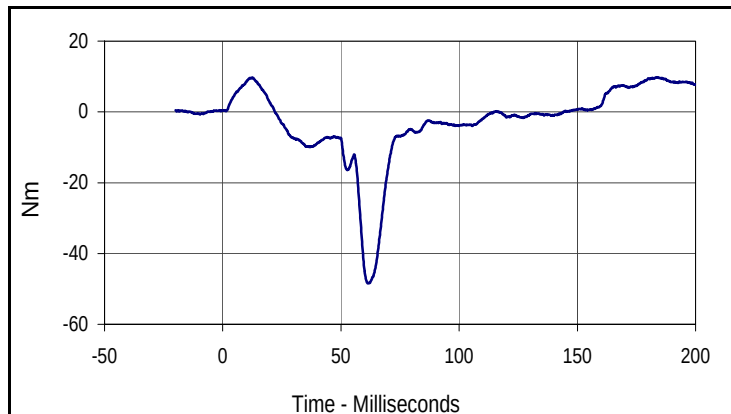
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	3.55 to 3.75	3.72	Pass
Pendulum Deceleration	10 Msec.	m/s	1.0 to 1.4	1.2	Pass
	20 Msec.	m/s	1.9 to 2.5	2.4	Pass
	30 Msec.	m/s	2.8 to 3.5	2.9	Pass
"D" Plane Rotation	Max	Degrees	83.0 to 93.0	87.2	Pass
Peak Moment in Rotation	Max	Nm	-43.7 to -53.3	-48.5	Pass
Positive Moment Decay, Time To 10Nm		Msec.	60.0 to 80.0	71.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
3.1	220.0	0.0	-0.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
87.2	65.1	-30.4	201.1



Curve Description			
Neck Moment Y			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
9.8	184.0	-48.5	61.5

Test Program: Hybrid III 3 Year Old Torso Flexion Test
ATD Serial No.: 082

Test Date: 8/25/04
Test I.D.: TF08A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Initial reference plane angle	Degrees	≤15.0	3.5	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	130.0 to 180.0	175.2	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	0.7	Pass
Final reference plane angle	Degrees	+/-10	2.1	Pass
Overall Test Results				Pass

Test Program: Hybrid III 3 Year Old External Measurements

Test Date: 8/25/04

ATD Serial No.: 082

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	539 to 554	545	Pass
B - Shoulder pivot height	mm	307 to 323	320	Pass
C - "H" point height	mm	34 to 45	40	Pass
D - "H" point from backline	mm	57 to 67	64	Pass
E - Shoulder pivot from back	mm	61 to 71	66	Pass
F - Thigh clearance	mm	81 to 91	84	Pass
G - Elbow back to wrist pivot	mm	247 to 263	260	Pass
H - Skull cap to back line	mm	48 to 58	49	Pass
I - Shoulder to elbow length	mm	185 to 201	190	Pass
J - Elbow rest height	mm	134 to 149	148	Pass
K - Buttock to knee length	mm	285 to 300	299	Pass
L - Popliteal length	mm	219 to 234	225	Pass
M - Knee pivot height	mm	242 to 257	256	Pass
N - Buttock popliteal length	mm	218 to 233	225	Pass
O - Chest depth with jacket	mm	139 to 154	148	Pass
P - Foot length	mm	138 to 148	139	Pass
R - Buttock to knee pivot length	mm	251 to 262	255	Pass
S - Head Breadth	mm	128 to 144	140	Pass
T - Head Depth	mm	167 to 183	169	Pass
U - Hip breadth	mm	201 to 216	208	Pass
V - Shoulder breadth	mm	237 to 252	250	Pass
W - Foot breadth	mm	54 to 64	55	Pass
X - Head circumference	mm	500 to 516	510	Pass
Y - Chest circumference with jacket	mm	527 to 553	532	Pass
Z - Waist circumference	mm	527 to 553	550	Pass
AA - Location for chest circumference	mm	249 to 259	255	Pass
BB - Location for waist circumference	mm	160 to 170	165	Pass
Overall Test Results				Pass

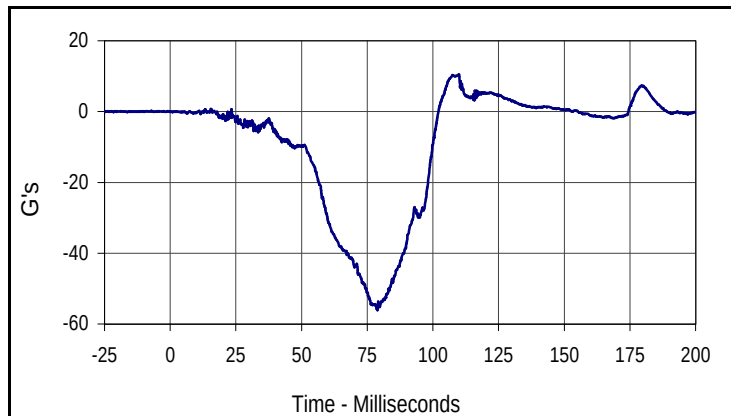
HYBRID III 10 YEAR OLD S/N 011 CALIBRATED BY VRTC PRIOR TO TEST PROGRAM

APPENDIX G

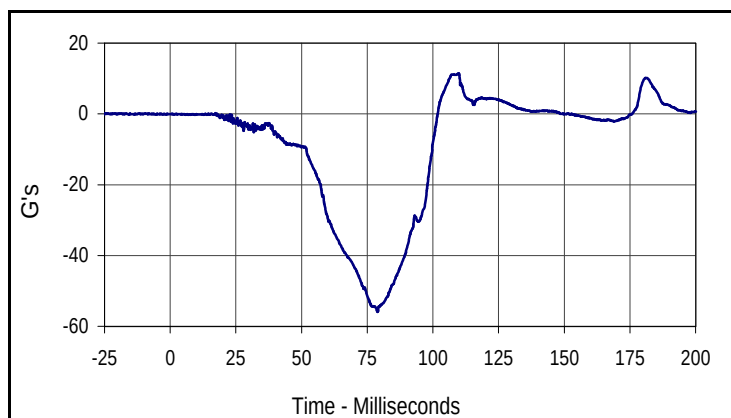
NAAH DATA

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

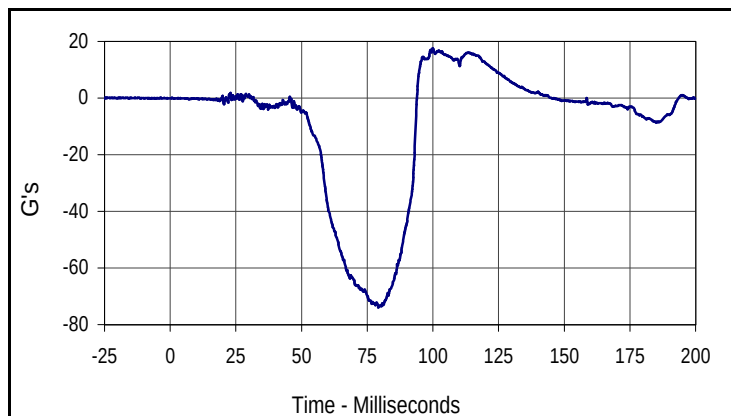
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
10.5	109.9	-56.1	78.9



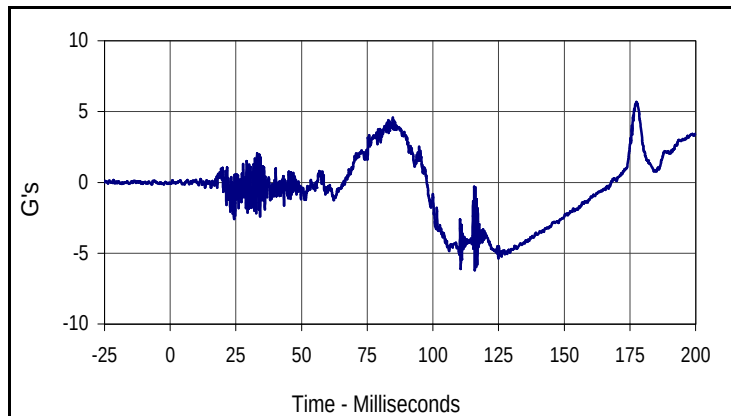
Curve Description			
Driver NAAH Yarm-X			
CURNO	Type	SAE Class	Units
204	FIL	1000	G's
Max	Time	Min	Time
11.4	109.9	-55.9	78.9



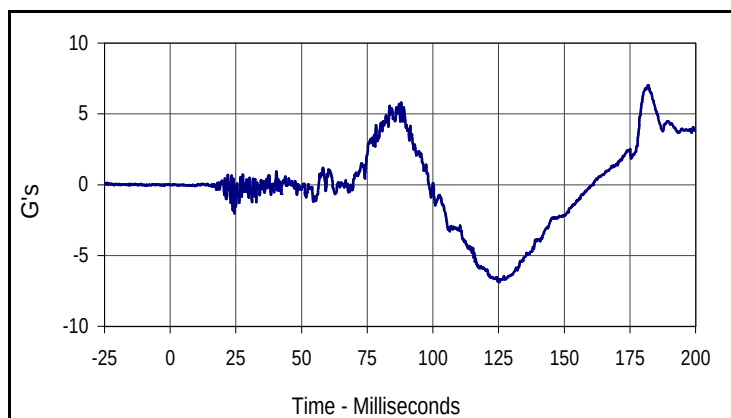
Curve Description			
Driver NAAH Zarm-X			
CURNO	Type	SAE Class	Units
206	FIL	1000	G's
Max	Time	Min	Time
17.6	100.0	-73.9	79.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

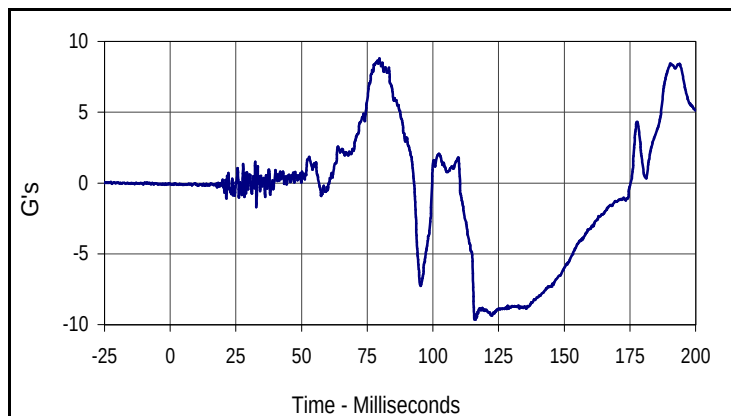
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.7	177.5	-6.2	116.0



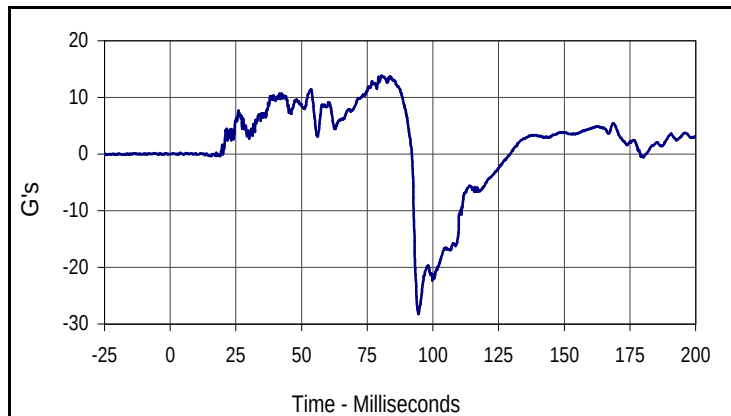
Curve Description			
Driver NAAH Xarm-Y			
CURNO	Type	SAE Class	Units
202	FIL	1000	G's
Max	Time	Min	Time
7.0	181.8	-6.9	125.2



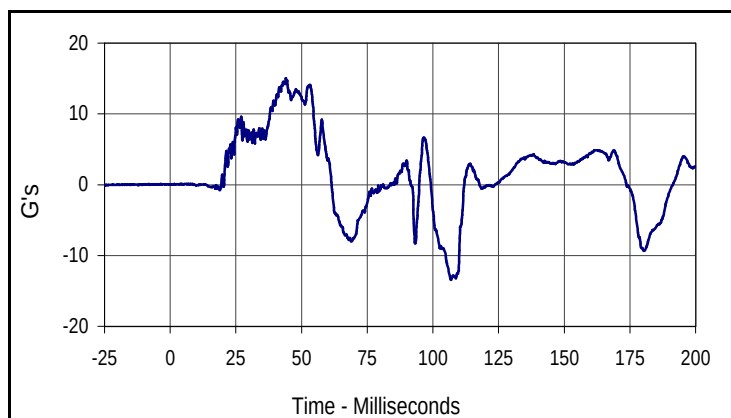
Curve Description			
Driver NAAH Zarm-Y			
CURNO	Type	SAE Class	Units
207	FIL	1000	G's
Max	Time	Min	Time
8.8	79.6	-9.6	116.3

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

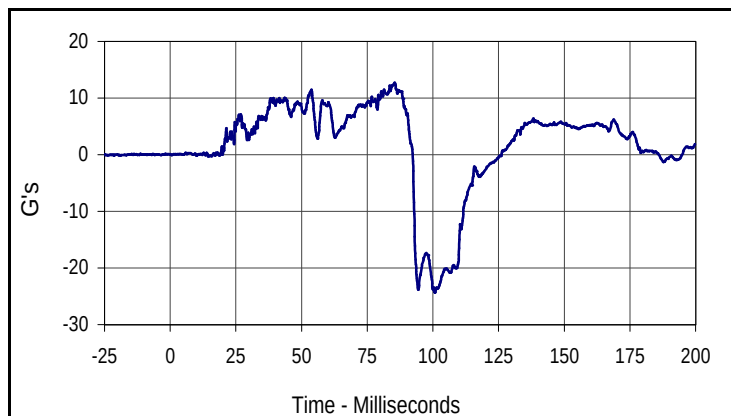
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.8	80.4	-28.3	94.5



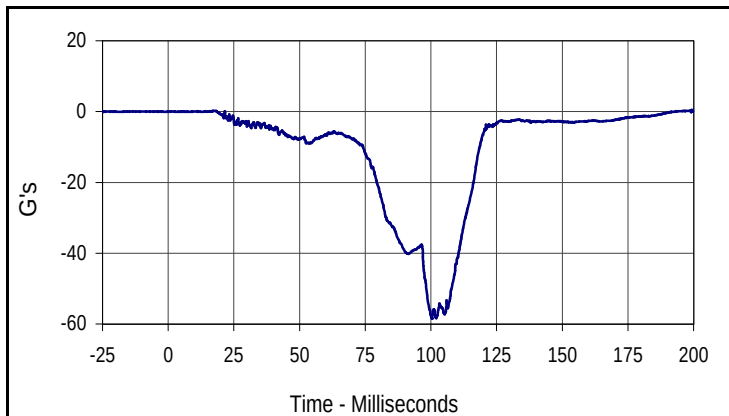
Curve Description			
Driver NAAH Xarm-Z			
CURNO	Type	SAE Class	Units
203	FIL	1000	G's
Max	Time	Min	Time
15.0	44.1	-13.4	106.9



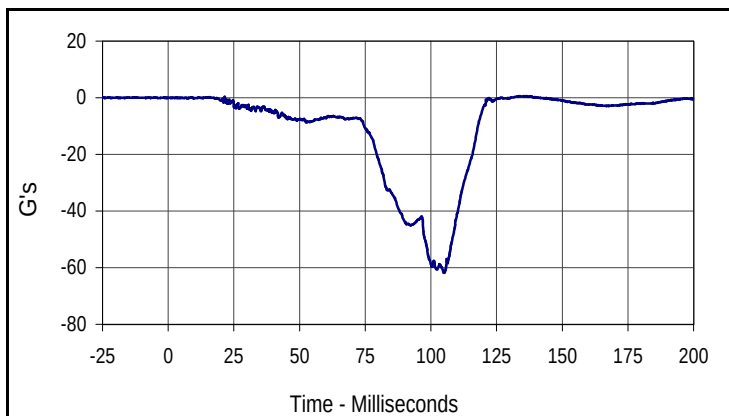
Curve Description			
Driver NAAH Yarm-Z			
CURNO	Type	SAE Class	Units
205	FIL	1000	G's
Max	Time	Min	Time
12.7	85.5	-24.3	100.9

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

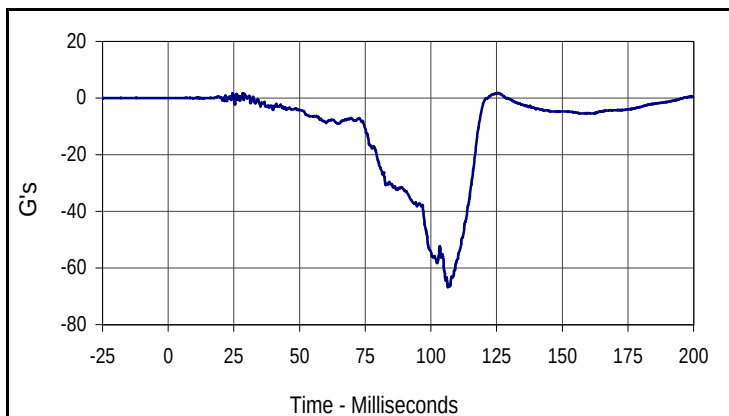
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
0.5	199.3	-58.5	100.4



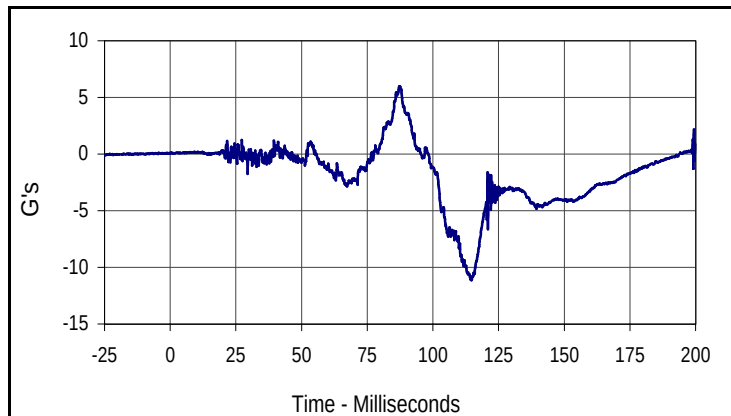
Curve Description			
Passenger NAAH Yarm-X			
CURNO	Type	SAE Class	Units
210	FIL	1000	G's
Max	Time	Min	Time
0.6	133.8	-61.8	104.9



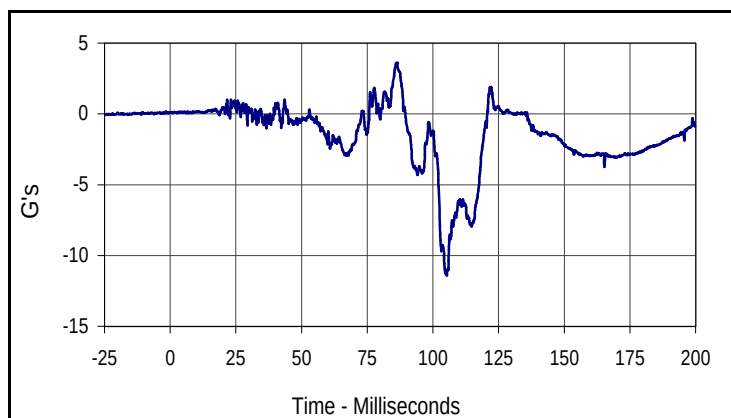
Curve Description			
Passenger NAAH Zarm-X			
CURNO	Type	SAE Class	Units
212	FIL	1000	G's
Max	Time	Min	Time
1.8	125.6	-66.7	106.4

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

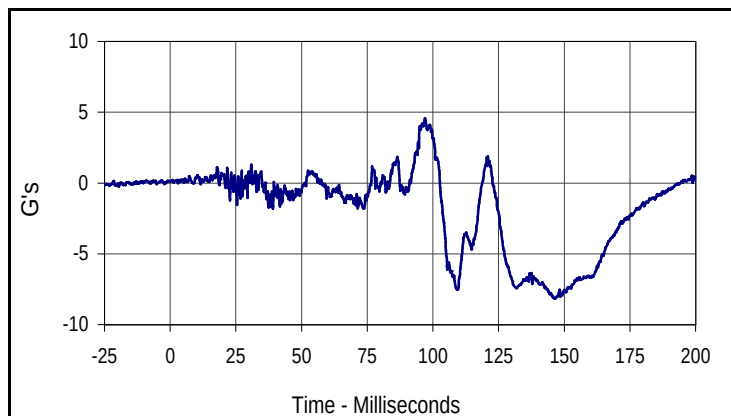
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
6.0	87.2	-11.1	114.6



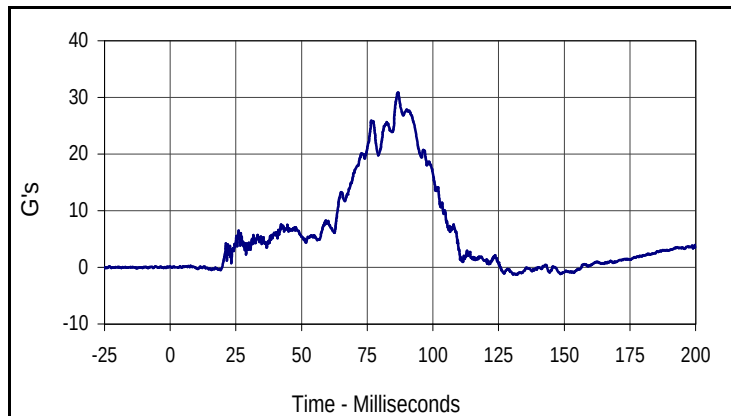
Curve Description			
Passenger NAAH Xarm-Y			
CURNO	Type	SAE Class	Units
208	FIL	1000	G's
Max	Time	Min	Time
3.6	86.4	-11.4	105.3



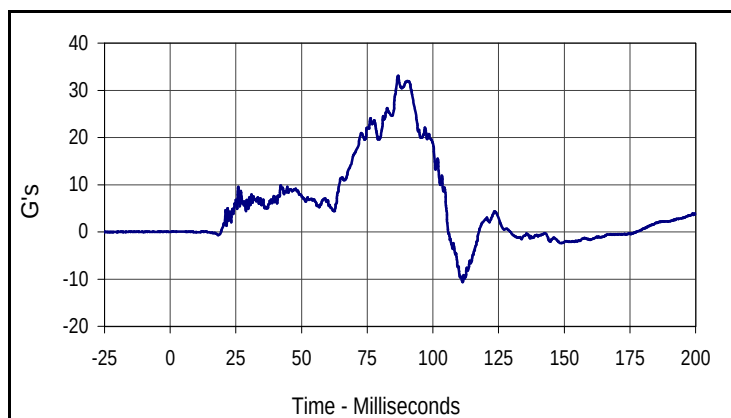
Curve Description			
Passenger NAAH Zarm-Y			
CURNO	Type	SAE Class	Units
213	FIL	1000	G's
Max	Time	Min	Time
4.6	97.0	-8.1	146.7

Test Vehicle: 2005 Chevrolet Uplander 5-Door MPV
 Test Program: 2005 NHTSA 35mph NCAP

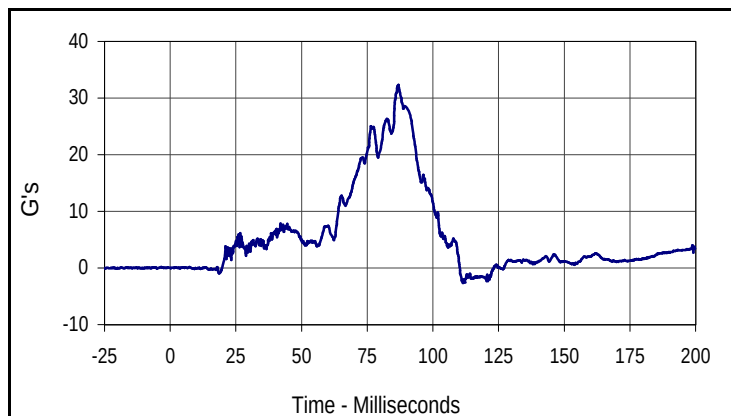
Test Date: 12/1/04
 NHTSA No.: M50112



Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
30.9	86.7	-1.3	132.0



Curve Description			
Passenger NAAH Xarm-Z			
CURNO	Type	SAE Class	Units
209	FIL	1000	G's
Max	Time	Min	Time
33.1	86.7	-10.6	111.3



Curve Description			
Passenger NAAH Yarm-Z			
CURNO	Type	SAE Class	Units
211	FIL	1000	G's
Max	Time	Min	Time
32.3	86.8	-2.6	111.4