

REPORT NUMBER TR-P24161-01-NC

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**GENERAL MOTORS CORPORATION
2005 CHEVROLET MALIBU
4-DOOR SEDAN**

NHTSA NUMBER: G50101

**Prepared By:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



DECEMBER 8, 2004

FINAL REPORT

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Prepared by: _____
Mr. Biren J. Patel, Project Engineer
KARCO Engineering, LLC

Date: 12/20/04

Reviewed by: _____
Mr. Michael L. Dunlap, Quality Assurance Manager
KARCO Engineering, LLC

Date: 12/20/04

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

Date: 12/20/04

FINAL REPORT ACCEPTED BY:

Manager, Side Impact NCAP

Date of Acceptance

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16. Abstract A 55/28 km/h 90 deg. Moving Deformable Barrier Side Impact NCAP Test was conducted on the subject 2005 Chevrolet Malibu 4-Door Sedan in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedures for the generation of consumer information on vehicle side crash protection. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on December 8, 2004. The impact velocity of the Moving Deformable Barrier was 61.43 km/h (38.18 mph), and the outside ambient temperature at the struck (driver's) side of the vehicle was 16.1 deg. C. The target vehicle's maximum post test static crush was 335 mm located at level 2 and level 3. The test vehicle's occupant performance data is as follows:																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Measurement Description</th> <th style="width: 15%;">Driver SID/HIII</th> <th style="width: 15%;">Pass. SID/HIII</th> <th style="width: 35%;"></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) G's</td> <td style="text-align: center;">43.2</td> <td style="text-align: center;">59.9</td> <td></td> </tr> <tr> <td>Left Lower Rib (LLR) G's</td> <td style="text-align: center;">43.0</td> <td style="text-align: center;">65.8</td> <td></td> </tr> <tr> <td>Lower Spine (T₁₂) G's</td> <td style="text-align: center;">68.9</td> <td style="text-align: center;">73.6</td> <td></td> </tr> <tr> <td>Thoracic Trauma Index (TTI) G's</td> <td style="text-align: center;">56.0</td> <td style="text-align: center;">70.0</td> <td></td> </tr> <tr> <td>Pelvis (PEV) G's</td> <td style="text-align: center;">87.0</td> <td style="text-align: center;">98.0</td> <td></td> </tr> </tbody> </table>				Measurement Description	Driver SID/HIII	Pass. SID/HIII		Left Upper Rib (LUR) G's	43.2	59.9		Left Lower Rib (LLR) G's	43.0	65.8		Lower Spine (T ₁₂) G's	68.9	73.6		Thoracic Trauma Index (TTI) G's	56.0	70.0		Pelvis (PEV) G's	87.0	98.0	
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17. Key Words New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) Side Impact Dummy (SID/HIII)		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 400 Seventh St., SW, Room 5108 Washington, DC 20590																									
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TABLE OF CONTENTS

Section		Page
1	Purpose and Test Procedure	1
2	Summary of Side Impact Test	2
3	Occupant and Vehicle Information Sheets	4

Data Sheet No.		Page
1	General Test and Vehicle Parameter Data	5
2	Test Vehicle Summary of Results	10
3	Moving Deformable Barrier (MDB) Summary of Results	11
4	Post-Test Observations	12
5	SID/HIII Injury Criteria and Sensor Data	13
6	Vehicle Pre-Test and Post-Test Measurements	15
7	SID/HIII Longitudinal Clearance Dimensions	16
8	SID/HIII Lateral Clearance Dimensions	17
9	Vehicle Side Measurements	18
10	Vehicle Exterior Crush Profiles	19
11	Vehicle Damage Profile Distances	21
12	Deformable Barrier Honeycomb Face Static Crush	22
13	Vehicle Accelerometer Locations and Data Summary	23
14	MDB Accelerometer Location and Data Summary	25
15	High Speed Camera Locations and Data	26
16	FMVSS 301 Fuel System Integrity Post Impact Data	27
17	FMVSS 301 Static Rollover Data Sheet	28

Appendix		
A	Photographs	A
B	SID/HIII, Vehicle and MDB Response Data	B
C	SID/HIII Configuration and Performance Verification Data	C
D	Test Equipment List and Calibration Information	D

SECTION 1
PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This Side Impact NCAP test is conducted as part of the FY' 2005 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-03-D-32005. The purpose of this test is to generate comparative side impact data on a 2005 Chevrolet Malibu 4-Door Sedan manufactured by General Motors Corporation.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Crashworthiness Standards (OCS), laboratory test procedure NCAP Side Impact Testing, dated November 2002. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

SECTION 2
SUMMARY OF SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT NCAP TEST

A model year 2005 Chevrolet Malibu 4-Door Sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.43 km/h. The specified impact velocity range is from 61.14 to 62.75 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1660 kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on December 8, 2004.

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front Driver		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	No	
Side Torso Airbag	Yes	Yes	No	
Head Airbag	No		No	
Curtain Airbag	Yes	Yes	Yes	Yes

Three (3) real-time cameras and fourteen (14) high-speed cameras were used to document the impact event. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIIIs can be found in Appendix A. Two 50th percentile adult male Side Impact Dummies, Hybrid III (SID/HIIIs) were placed in the driver's and left rear passenger designated seating positions according to the test procedure. Each SID/HIII is instrumented with contact switches on the pelvis, thorax and six-axis neck load cells, and fourteen accelerometers in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes primary and redundant)

The test vehicle was instrumented with twenty-six (26) structural accelerometers and the MDB was instrumented with five (5) accelerometers and one (1) contact switch on the right bumper to compare left side to right side bumper impact timing. All data channels were recorded with the fully self contained on-board Data Acquisition System (DAS). The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The driver door remained closed. The passenger door remained latched, although it separated near the top sill (Figure 68, Appendix A). The test vehicle sustained a maximum static crush of 335 mm at level 2 and level 3, 1350 mm and 1500 mm rearward of the left vertical impact point respectively. The driver SID/Hybrid III, Serial No. 274 and the passenger SID/Hybrid III, Serial No. 275 were calibrated prior to this test. The SID/Hybrid III injury criteria is summarized as follows:

Measurement	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	56.0	70.0
Peak Pelvic G's (PEV)	G's	87.0	98.0

Tests summaries and post-test observations are presented in Section 3. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIIIs, vehicle, and MDB response data. Appendix C contains the SID/HIII Configuration and performance verification data. Appendix D contains test equipment list and calibration information.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION SHEETS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

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	$=(tf - 32)/1.8$
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

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	G50101	Anti-Lock Brakes	Yes
Make	Chevrolet	All Wheel Drive	No
Model	Malibu	Power Steering	Yes
Body Style	4-Door Sedan	Driver Front Airbag	Yes
Vin No.	1G1ZS54F15F157756	Driver Side Torso Airbag	Yes
Color	Blue	Driver Side Head Airbag	No
Delivery Date	12/1/04	Driver Curtain Airbag	Yes
Odometer (miles)	179	Rear Pass. Airbag	No
Dealer	Crest Chevrolet	Rear Pass. Side Airbag	No
Transmission	4-Speed Automatic	Rear Pass. Head Airbag	No
Final Drive	Front	Rear Pass. Curtain Airbag	Yes
Type/No. Cyl.	4-Cylinder	Pre-Tensioners	Yes
Engine Disp. (L)	2.2	Load Limiters	Yes
Engine Placement	Transverse	Bucket Seats	Yes
Roof Rack	No	Air Cond.	Yes
Sunroof/T-Top	No	AM/FM Cassette	Yes
Tinted Glass	No	Tilt Steering	Yes
Traction Control	Yes	Power Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	Yes
Rear Disc	No	Other	

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors Corporation	GVWR (kg)	1855
Date of Manufacture	09/04	GAWR Front (kg)	956
		GAWR Rear (kg)	899

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	N/A	
Number of Occupants	2	3	N/A	5
Capacity Weight (VCW) (kg)				416
Cargo Weight (RCLW) (kg)				76

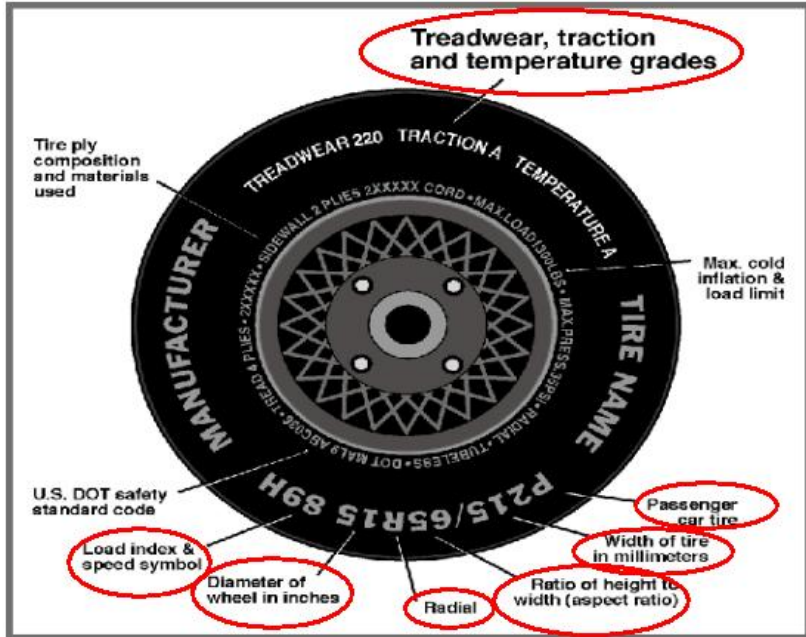
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GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

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)	275	275
Cold Pressure (kpa)	210	210
Recommended Tire Size	P205/65R15	P205/65R15
Tire Size on Vehicle	P205/65R15	P205/65R15
Tire Manufacturer	Bridgestone	Bridgestone
Treadwear	360	360
Traction	B	B
Temperature Grades	B	B
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Ply Polyester + 2 Steel	1 Ply Polyester + 2 Steel
Load Index/Speed Symbol	92S	92S
Tire Material	1 Polyester + 2 Steel + Rubber	1 Polyester + 2 Steel + Rubber
DOT Safety Code Right	DOT OBUR B41 3504	DOT OBUR B41 3604
DOT Safety Code Left	DOT OBUR B41 3504	DOT OBUR B41 3604

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	436	294		501	377	
Right	kg	430	269		460	322	
Ratio	%	60.6	39.4		57.9	42.1	
Totals	kg	866	563	1429	961	699	1660

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1429
Weight of 2 P572 ATD's	kg	161
Rated Cargo/Luggage Wt. (RCLW)	kg	76
Calculated Vehicle Target Wt. (TVTW)	kg	1666

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	725	734	714	720	1065
As Tested	mm	705	715	680	687	1139
Fully Loaded	mm	715	715	665	680	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2704
Total Vehicle Length at Left Side	mm	3170
Total Vehicle Length at Centerline	mm	4792
Total Vehicle Length at Right Side	mm	3170
Weight of Ballast In Cargo Area	kg	23
Amount of Stoddard Solvent in Fuel Tank	Liters	56.67

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2704
Target Impact Point Aft of Front Axle	mm	412
Actual Impact Point Aft of Front Axle	mm	408

DATA SHEET NO. 1...(CONTINUED)

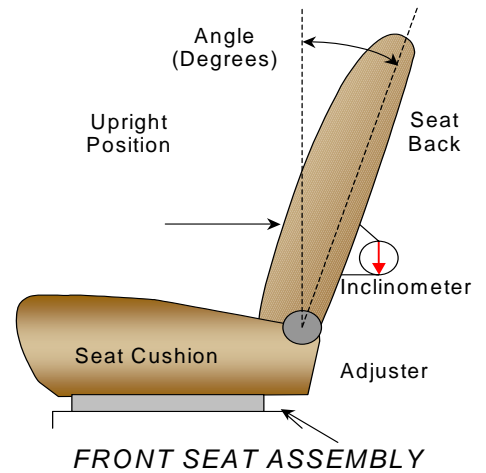
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

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

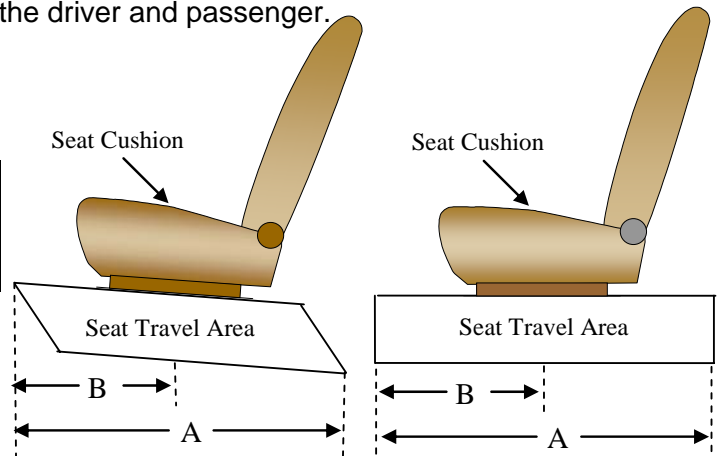
	Deg.
Driver w/seated Dummy	19.0
Passenger w/seated Dummy	19.0

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	25 Detents	13th Detent
Rear Seat	1 Detent	1st Detent



SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	5	2
Rear Seat	1	1

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

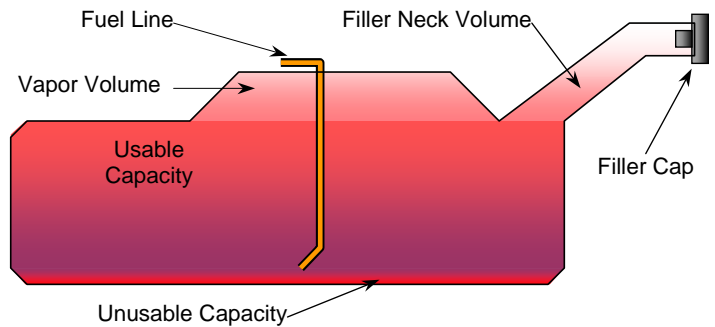
Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
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NHTSA No.: G50101
 Test Date: 12/8/04

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	60.94
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	56.06 to 57.27
Actual Amount of Solvent used	56.67

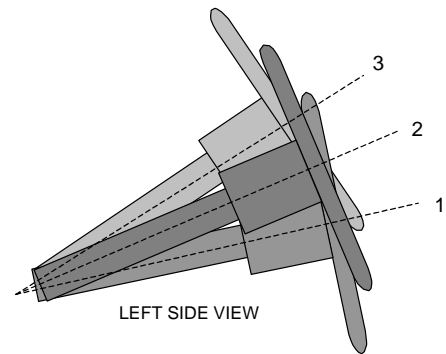
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender.



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

	Degrees	Fore/Aft Position (mm)
Lowermost Position No.1	20.6	0
Geometric Center Position No. 2	22.8	24
Uppermost Position No.3	24.9	48

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	436	294		501	377	
Right	kg	430	269		460	322	
Ratio	%	60.6	39.4	100%	57.9	42.1	100%
Totals	kg	866	563	1429	961	699	1660

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	150	258
Level 2	Occupant H-Point	mm	335	502
Level 3	Mid Door	mm	335	602
Level 4	Window Sill	mm	290	903
Level 5	Window top	mm	105	1385
N/A	Maximum Penetration	mm	335	

INSTRUMENTATION

Driver SID/Hybrid III Accelerometers	20
Passenger SID/Hybrid III Accelerometers	20
Vehicle Structure Accelerometers	26
MDB Accelerometers	5
Total number of Contact Switches	5
Total	76

CAMERA COVERAGE

	Standard	Additional
High Speed, Vehicle On-Board	3	3
High Speed, Off-Board	5	1
High Speed, MDB On-Board	2	0
Real Time, Panning	1	2
Total	11	6

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

MDB SPECIFICATIONS (mm)

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length including Honeycomb Face	4115
Wheel Base of Framework Carriage	2590
C.G. location aft of Front Axle	1127

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	384	308	
Right	kg	385	284	
Ratio	%	56.5	43.5	
Totals	kg	769	592	1361

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.43
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.14
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max. Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Left	190
B	Top of Bumper	533	800	Left	136
C	Mid Level	686	800	Left	176
D	Top of Stack	813	800	Left	186

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	1
High Speed Cameras	2

DATA SHEET NO. 4

POST TEST OBSERVATIONS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	P572F, SID/HIII NO. 274	P572F, SID/HIII NO. 275
Head Contact	Curtain Airbag, B-Pillar	Curtain Airbag, Side Roof Rail
Upper Torso Contact	Side Airbag, Door Panel	Door Panel
Lower Torso Contact	Door Panel	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	None	Left Knee

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Doors Opening	Remained Latch/Inoperable	Remained Latch/Inoperable
Right Side Doors Opening	Remained Closed/Latch Operable	Remained Closed/Latch Operable
Seat Movement (mm)	0	0
Seat Back Failure	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Pillars pushed inward with no apparent failure
Sill Separation	No Apparent Visible Failure
Windshield Damage	Glazing Cracks on Struck Side Only
Window Damage	Both Struck Side Windows Broke
Other Notable Effects	Left Rear Door Separation Near Top Sill

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01		Left Rear (Passenger) Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	Deployed	No	
Side Airbag	Yes	Deployed	No	
Head Airbag	No		No	
Curtain Airbag	Yes	Deployed	Yes	Deployed
Seat Belt Pretensioner	Yes		No	
Seat Belt Load Limiter	Yes		No	

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	-5 (Left)
Vertical Offset	mm	+/- 20	4 (Above)

DATA SHEET NO. 5
SID/HIII INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

THORAX AND PELVIS PEAK ACCELERATIONS, PRIMARY (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	43.2	31.3	-9.4	115.6	59.9	36.3	-12.4	70.6
Lower Rib (LLR)	Y	G's	43.0	31.9	-11.0	85.6	65.8	36.3	-18.5	71.3
Lower Spine (T ₁₂)	Y	G's	68.9	26.3	-11.0	69.4	73.6	40.6	-25.0	65.6
Pelvis (PEV)	Y	G's	87.0	26.3	-12.7	81.3	98.5	35.6	-20.8	69.4

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, PRIMARY (FIR 100 Filtered)

Location	Driver				Passenger			
	LUR	T ₁₂	TTI(g)	PEV(g)	LLR	T ₁₂	TTI(g)	PEV(g)
Primary Rib, Spine, and Pelvis	43.220	68.869	56	87	65.783	73.615	70	98

THORAX AND PELVIS PEAK ACCELERATIONS, REDUNDANT (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	43.7	31.3	-10.7	125.6	60.0	36.3	-12.2	70.6
Lower Rib (LLR)	Y	G's	44.1	31.3	-10.9	125.6	66.0	36.3	-18.7	71.3
Lower Spine (T ₁₂)	Y	G's	68.8	26.3	-10.5	91.3	73.9	40.6	-25.3	66.3
Pelvis (PEV)	Y	G's	87.4	26.3	-12.7	81.3	98.3	35.6	-20.2	69.4

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, REDUNDANT (FIR 100 Filtered)

Location	Driver				Passenger			
	LLR	T ₁₂	TTI(g)	PEV(g)	LLR	T ₁₂	TTI(g)	PEV(g)
Redundant Rib, Spine, and Pelvis	44.065	68.821	56	87	66.003	73.921	70	98

Positive Acceleration Polarities:

- Longitudinal (X) = Forward
- Lateral (Y) = Right
- Vertical (Z) = Down

DATA SHEET NO. 5...(CONTINUED)
SID/HIIL INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

HEAD PRIMARY PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	13.5	171.2	-21.0	50.5	8.3	54.7	-18.0	68.7
Head CG	Y	G's	67.7	44.1	-8.3	157.6	62.0	52.9	-4.6	153.3
Head CG	Z	G's	19.6	116.0	-5.4	47.7	17.6	40.2	-41.6	58.7
Head CG Resultant	N/A	G's	69.4	44.1			65.3	54.7		

HEAD PRIMARY INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG	394.2	36.0	56.9	51.2	294.6	46.7	70.2	43.5

HEAD REDUNDANT PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	13.5	171.2	-21.1	49.7	7.9	54.3	-18.3	68.1
Head CG	Y	G's	68.4	44.1	-8.3	157.6	61.7	53.0	-4.5	167.3
Head CG	Z	G's	19.6	116.0	-5.1	47.8	18.0	40.3	-41.6	58.8
Head CG Resultant	N/A	G's	70.1	44.1			65.4	54.8		

HEAD REDUNDANT INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG	404.4	35.8	56.5	51.9	292.4	46.7	70.3	43.3

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	254.3	70.0	-137.4	44.9	34.4	144.7	-217.1	61.5
Neck Force	Y	Newtons	889.6	45.5	-218.5	127.7	7.8	18.9	-797.4	61.5
Neck Force	Z	Newtons	776.2	128.9	-841.5	58.3	656.8	40.2	-1760.8	61.1
Neck Force Resultant	N/A	Newtons	1066.1	47.9			1939.3	61.1		
Neck Moment	X	N•m	16.4	99.7	-109.7	42.8	11.6	126.7	-146.8	56.5
Neck Moment	Y	N•m	22.4	104.1	-29.3	45.1	0.0	0.0	0.0	0.0
Neck Moment	Z	N•m	2.7	200.0	-18.1	44.5	15.5	79.6	-16.6	56.8
Neck Moment Resultant	N/A	N•m	114.1	42.8			147.7	56.5		

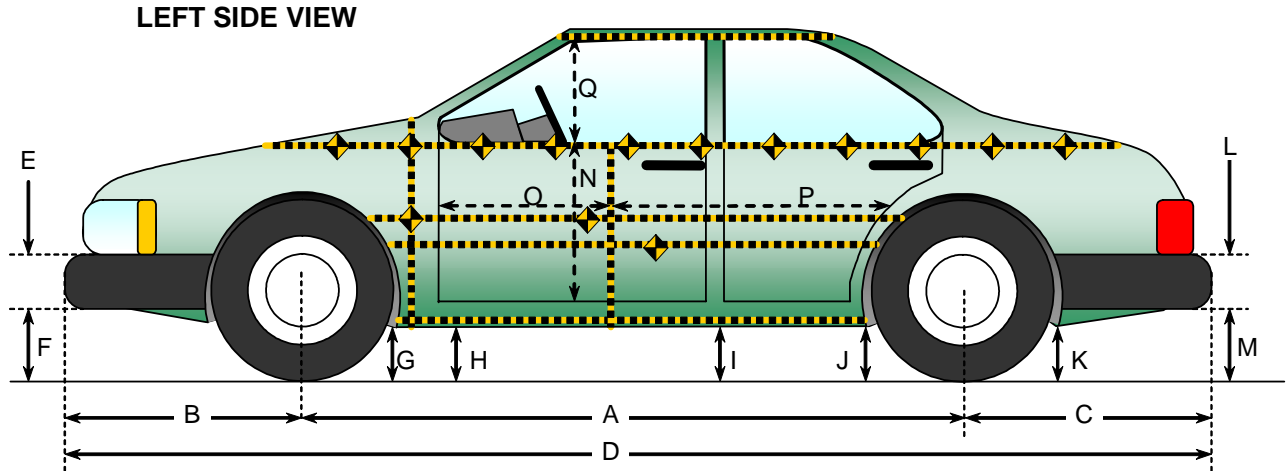
1.) Passenger channel failed, no data

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04



VEHICLE PRE AND POST-TEST MEASUREMENT INFORMATION

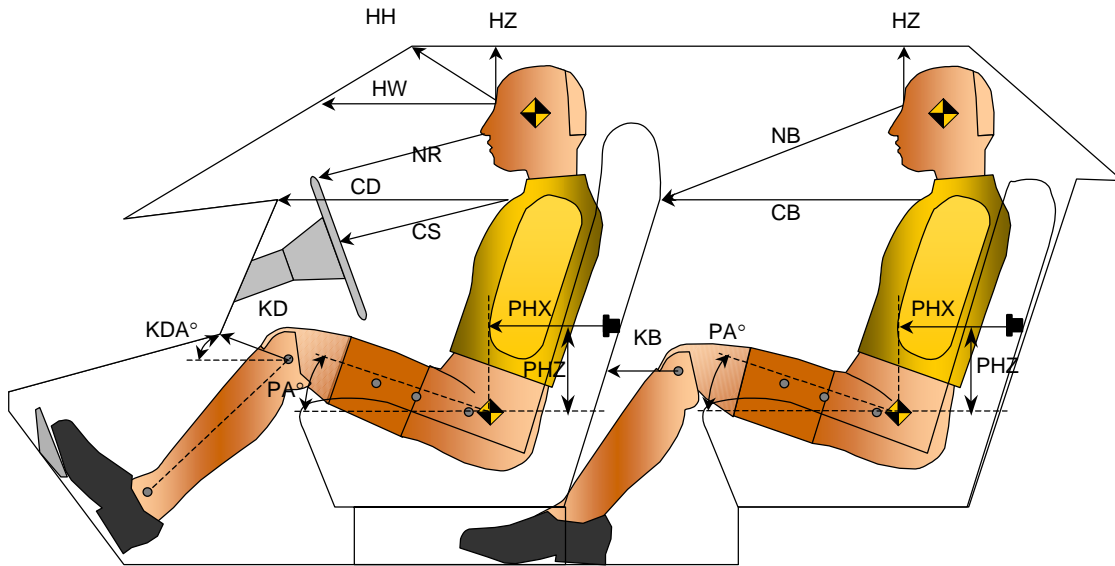
Code	Measurement Description	Pre-Test (mm)	Post-Test (mm)	Difference (mm)
A	Wheelbase	2704	2670	-34
B	Front Axle to FSOV	990	980	-10
C	Rear Axle to RSOV	1100	1070	-30
D	Total Length at Centerline	4792	4780	-12
E	Front Bumper Thickness	405	415	10
F	Front Bumper Bottom to Ground	211	206	-5
G	Sill Height at Front Wheel Well	186	219	33
H	Sill Height at Front Door Leading Edge	186	219	33
I	Sill Height at "B" Pillar	181	241	60
J1	Sill Height at Rear Wheel Well	186	226	40
J2	Pinch Weld Height at Rear Wheel Well	176	206	30
K	Sill Height aft of Rear Wheel Well	216	205	-11
L	Rear Bumper Thickness	290	305	15
M	Rear Bumper Bottom to Ground	296	374	78
N	Sill Height to Window Bottom Sill	670	590	-80
O	Front Door Leading Edge to Impact CL	780	750	-30
P	Rear Door Trailing Edge to Impact CL	1285	1028	-257
Q	Front Window Opening	425	420	-5
R	Right Side Length	3170	3185	15
S	Left Side Length	3170	3110	-60
T	Vehicle Width at "B" Post	1770	1460	-310

DATA SHEET NO. 7

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04



LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle	Length(mm)	Angle
HH		Head to Header	445	16.0		
HW		Head to Windshield	730	0.0		
HZ	HZ	Head to Roof	195		165	
NR	NB	Nose to Rim/Nose to Back of Seat	510	8.5	630	18.0
CD	CB	Chest to Dash/Back of Seat	600	4.2	560	2.5
CS		Chest to Steering Wheel	310	3.2		
KDL	KBL	Left Knee to Dash/Seat Back	200	7.8	165	0.0
KDR	KBR	Right Knee to Dash/Seat Back	195		170	
PA	PA	Pelvic Angle		24.7		23.8
PHX	PHX	H-Point to Striker (X-Axis)	235	37.4	360	50.0
PHZ	PHZ	H-Point to Striker (Z-Axis)	168		285	

DATA SHEET NO. 8

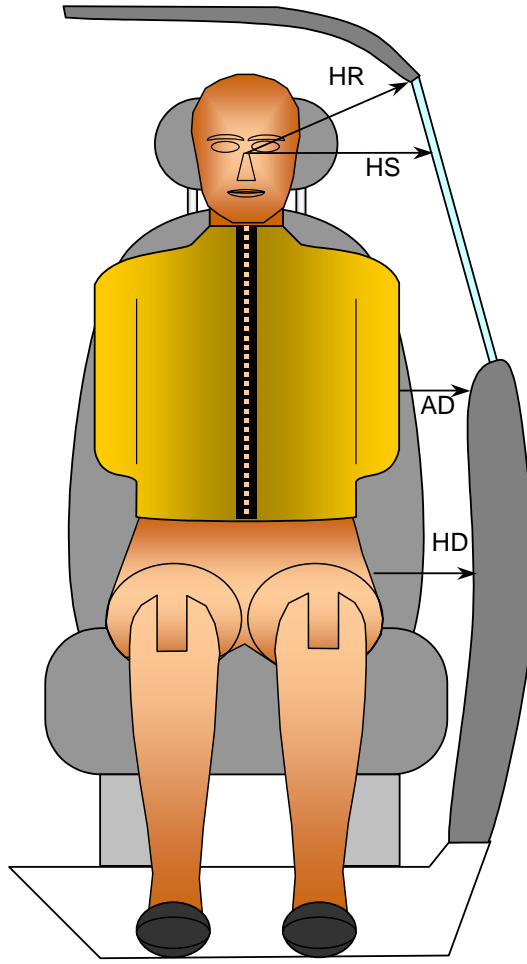
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04



FRONT VIEW OF DUMMY

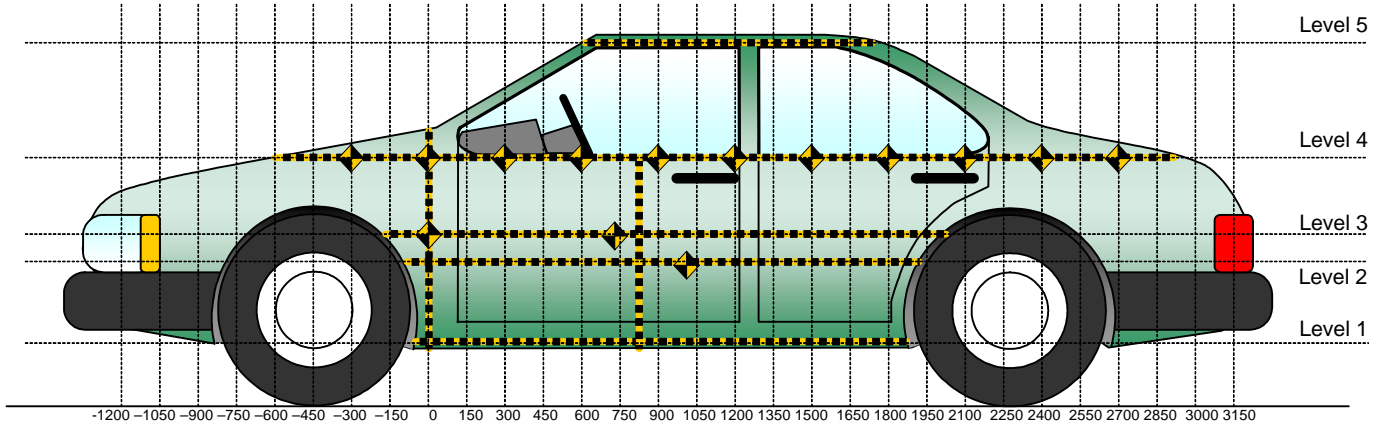
LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	258	255
HS	Head to Side Window	mm	360	360
AD	Arm to Door	mm	140	100
HD	H-Point to Door	mm	145	150

DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
 Measurements taken 900 mm right of impact reference.
 All measurements below in mm.

Level	Measurement Description	Height Above Ground
1	Sill Top	258
2	Occupant H-Point	502
3	Mid Door	602
4	Window Sill	903
5	Window Top	1385

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

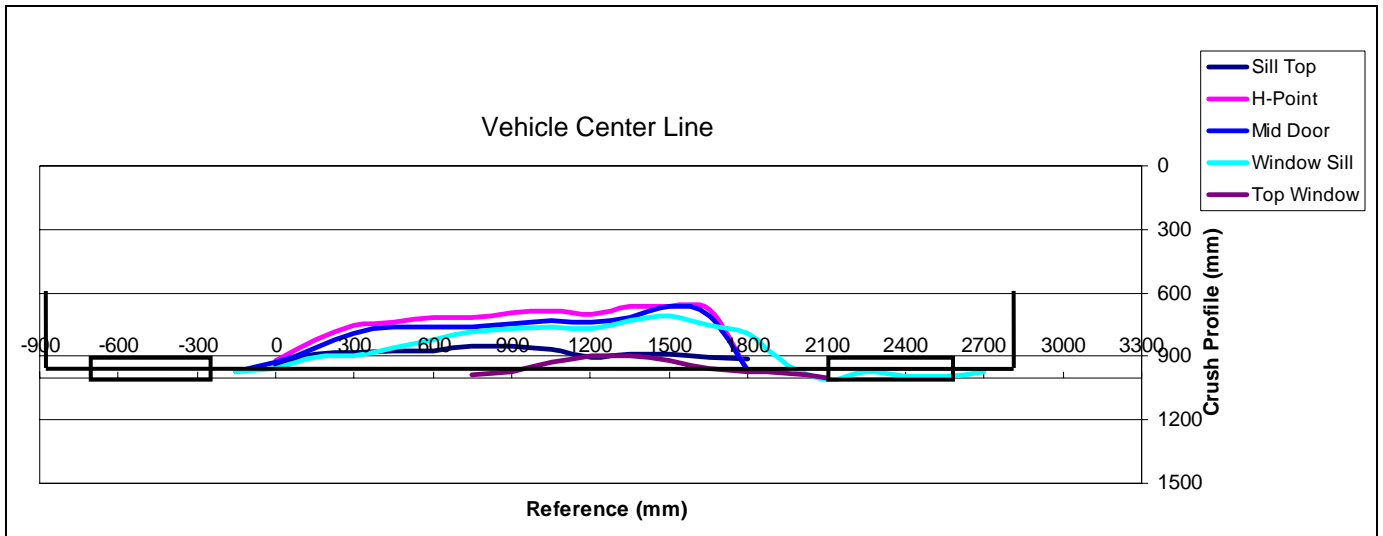
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300															
-150			111	166				136	196				25	30	
0	161	116	111	156		221	196	186	201		60	80	75	45	
150	166	116	111	151		279	296	251	246		113	180	140	95	
300	168	111	111	151		289	359	316	251		121	248	205	100	
450	169	111	110	151		296	376	346	291		127	265	236	140	
600	171	111	111	151		298	396	346	326		127	285	235	175	
750	171	111	111	146	431	316	396	346	361	446	145	285	235	215	15
900	171	112	113	146	418	321	416	366	376	449	150	304	253	230	31
1050	171	116	118	145	409	301	431	386	381	481	130	315	268	236	72
1200	171	121	126	149	406	266	419	391	381	506	95	298	265	232	100
1350	176	121	128	152	401	286	456	411	421	506	110	335	283	269	105
1500	176	126	131	151	406	289	459	466	441	486	113	333	335	290	80
1650	176	131	122	158	406	271	451	416	406	451	95	320	294	248	45
1800	171	136	124	161	416	260	166	156	371	441	89	30	32	210	25
1950				166	416				221	436				55	20
2100				165	421				156	421				-9	0
2250				181					206					25	
2400				191					196					5	
2550				198					196					-2	
2700				221					196					-25	
2850															
3000															

Measurements are taken from fixed reference 1000 mm from vehicle centerline.

DATA SHEET NO. 10...(CONTINUED)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04



	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	150	335	335	290	105
Distance from Impact	mm	900	1350	1500	1350	1350

DATA SHEET NO. 11

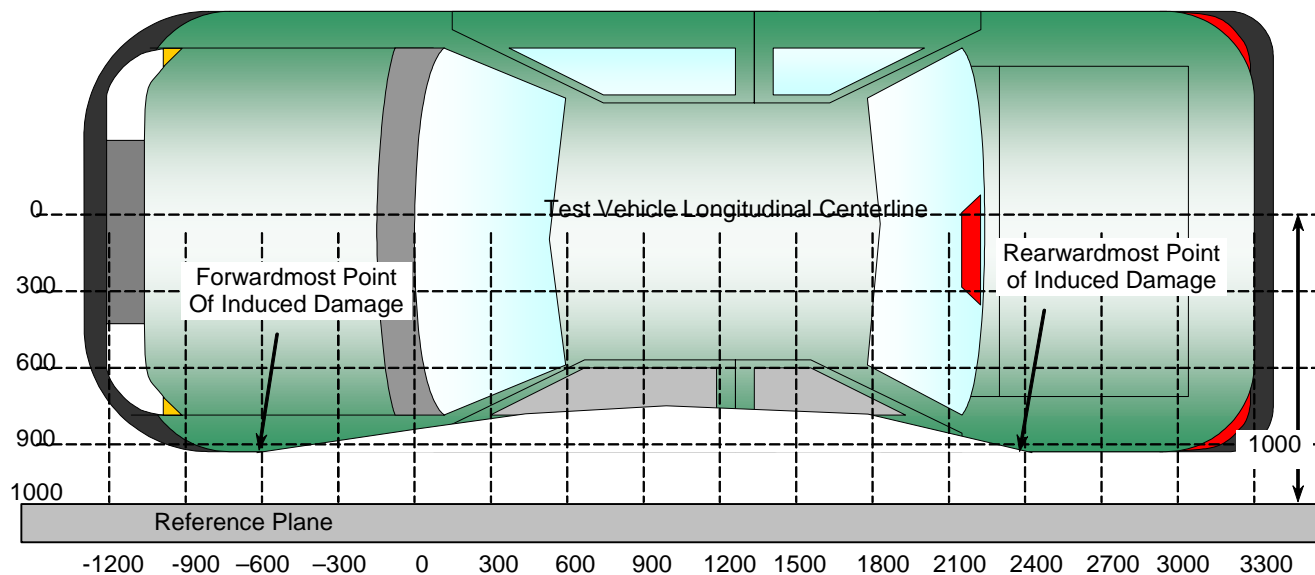
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04



All Dimensions Shown in millimeters

TOP VIEW

DAMAGE PROFILE DISTANCES

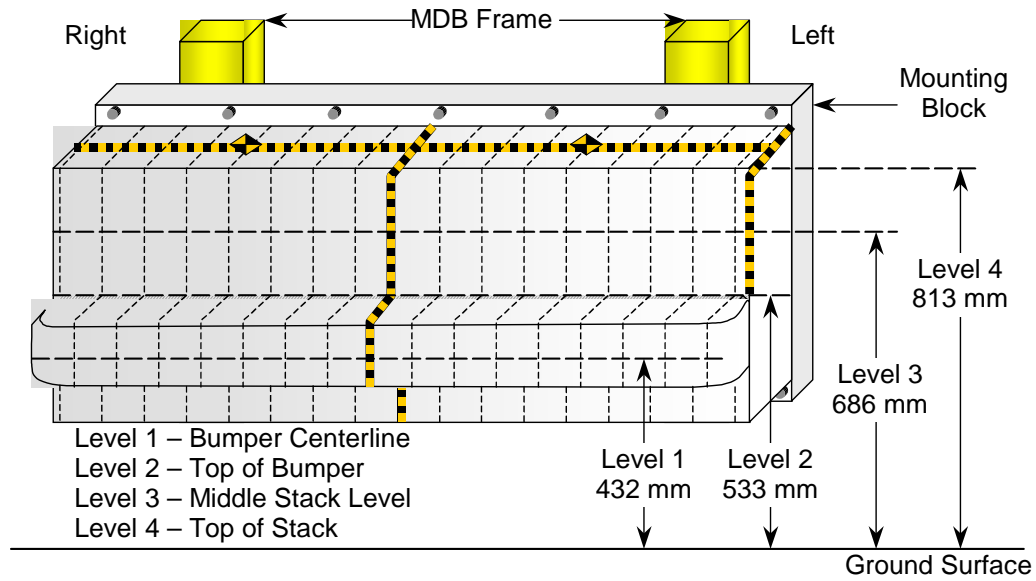
DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	150	2	116	296	180
2	450	2	111	376	265
3	750	2	111	396	285
4	1050	2	116	431	315
5	1350	2	121	456	335
6	1650	2	131	451	320

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	103	74	64	59	63	65	71	74	78	87	90	96	103	108	120	144	190
2	31	36	28	24	25	24	25	30	31	42	53	65	76	84	96	105	136
3	16	-14	-11	-4	1	4	18	15	45	16	17	21	26	36	63	110	176
4	36	-9	-8	-10	-9	11	26	28	28	13	11	15	-19	66	97	133	186

All Dimensions in mm

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

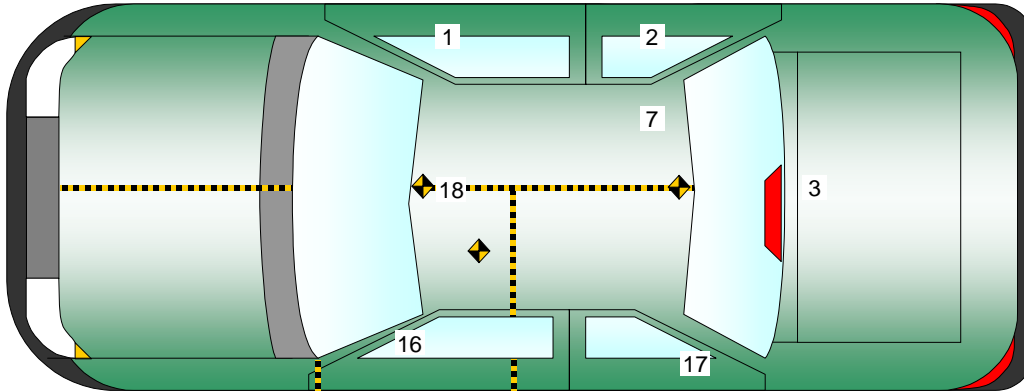
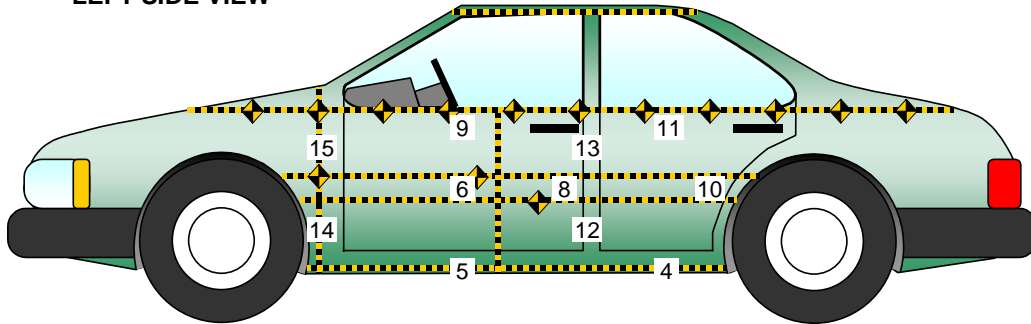
Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	Right Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Sill at Rear Door
5	Left Sill at Front Door
6	Left Front Door Centerline
7	Right Rear Occupant Compartment
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	Left Rear Door Mid-Rear
11	Left Rear Door Upper Centerline
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	Rear Seat Track or Structure
18	Vehicle CG

DATA SHEET NO. 13...(CONTINUED)
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	Right Sill at Front Seat	2850	700	340	X	4.2	40.1	-6.9	12.8
					Y	25.4	7.8	-3.4	59.5
					Z	5.7	40.3	-2.0	26.8
					RES	25.5	7.8		
2	Right Sill at Rear Seat	1770	700	320	X	6.2	39.5	-4.8	12.2
					Y	26.0	19.3	-2.1	100.6
					Z	6.1	57.7	-5.1	22.3
					RES	26.4	19.1		
3	Rear Floorpan Above Axle	600	0	500	X	4.4	98.8	-5.2	30.8
					Y	35.0	27.2	-6.1	103.5
					Z	30.9	20.8	-29.7	25.0
					RES	40.3	25.5		
4	Left Sill at Rear Door	2020	-600	160	Y	36.8	5.8	-2.6	99.0
5	Left Sill at Front Door	2660	-600	200	Y	26.1	4.5	-2.1	54.6
6	Front Door Centerline	2680	-760	730	Y	216.4	5.5	-55.1	24.9 ¹
7	Rt. Rear Occ. Compartment	2210	510	160	Y	25.8	20.2	-3.0	61.5
8	Front Door Mid-Rear	2400	-760	640	Y	222.9	5.3	-67.4	21.1
9	Front Door Upper Centerline	2730	-760	800	Y	131.0	13.6	-82.1	22.4
10	Rear Door Mid-Rear	1800	-770	630	Y	0.0	0.0	0.0	0.0 ²
11	Rear Door Upper Centerline	1600	-770	830	Y	0.0	0.0	0.0	0.0 ²
12	B-Post Lower	2180	-500	400	Y	214.1	4.0	-94.9	13.6
13	B-Post Middle	2180	-500	600	Y	155.6	4.3	-45.2	27.4
14	A-Post Lower	3300	-780	500	Y	74.3	10.2	-39.9	17.0
15	A-Post Middle	3300	-780	730	Y	67.3	9.5	-28.6	15.5
16	Front Seat Track	2740	-600	270	Y	0.0	0.0	0.0	0.0 ²
17	Rear Seat Structure	N/A	N/A	N/A	Y	0.0	0.0	0.0	0.0 ³
18	Vehicle CG	2880	200	200	X	4.3	43.9	-7.1	12.9
					Y	22.0	7.0	-3.1	59.5
					Z	10.1	19.2	-7.8	24.0
					RES	22.1	19.4		

1.) Channel failed at 28.2 msec.

2.) Channels failed, no data

3.) Not installed

DATA SHEET NO. 14
MDB ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

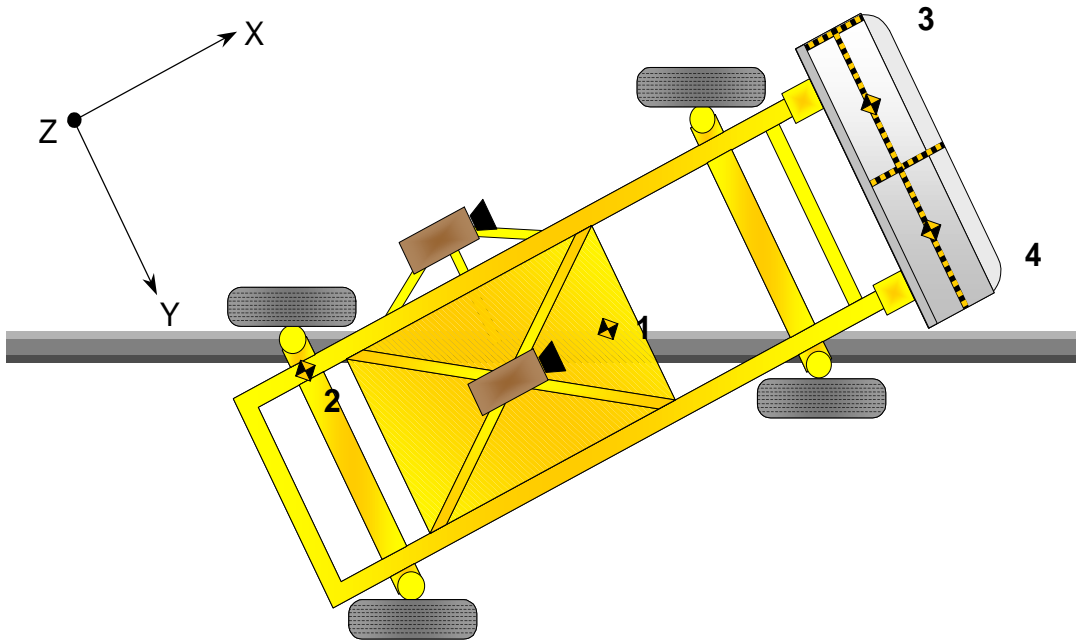
MDB ACCELEROMETER PEAK DATA AND LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1195	0	430	X	3.8	174.9	-22.6	37.5
					Y	3.8	79.5	-6.7	138.7
					Z	18.3	114.2	-23.0	123.9
					RES	23.5	37.4		
2	MDB Rear	-2642	-593	608	X	2.5	110.0	-22.1	31.6
					Y	3.5	119.4	-6.0	19.7

Reference Points X - MDB Front Axle Y - MDB Centerline Z - Ground Plane

MDB BUMPER CONTACT SWITCH DATA

Loc. No.	Contact Switch Location	Units	Peak and 50% Crossing Point			
			Max	Time	50%	Time
3	MDB Left Bumper (T=0)	% F.S.	100.0	0.0	50.0	0.0
4	MDB Right Bumper	% F.S.	99.8	28.2	50.0	0.3



DATA SHEET NO. 15

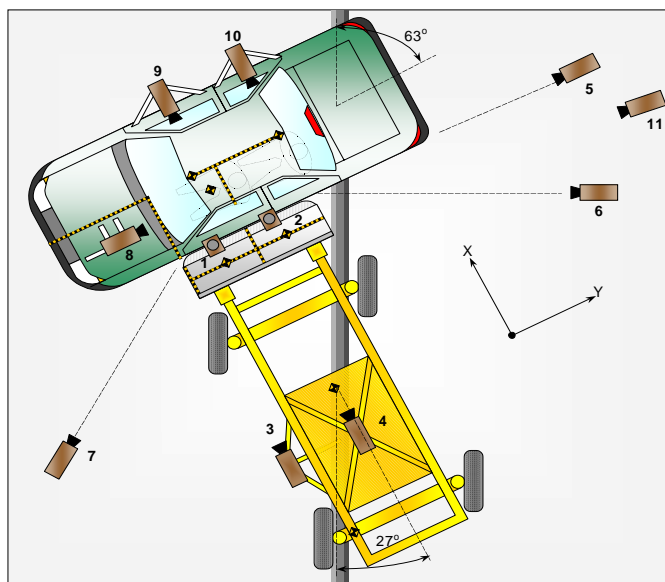
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04



No.	Camera View	Location (mm)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Overall	2488	609	486	-90	8	
2	Overhead Close Up	1676	-1067	-5486	-90	35	
3	Impact Point	0	-2134	-1143	-7	13	
4	Side Overall	838	-3912	-1829	-11	13	
5	Rear	15545	228	-1371	-1	35	
6	Left Rear	16459	-7188	-939	-1	80	
7	Left Front	-4775	-2666	-1473	-7	13	
8	Driver Front	-381	457	-1295	-20	19	
9	Driver Side	914	1626	-1067	-5	6	
10	Rear Passenger	1201	1626	-1067	-5	6	
11	Real Time Film	22860	3658	-1727	-5	N/A	
12	Additional Real Time Digital	16459	-7100	-839	0	N/A	
13	Additional Real Time Digital	-4700	-2600	-1473	-1	N/A	
14	Additional Left Front	-4650	-2652	-1603	-2	15-60	
15	Additional Driver Front	-305	457	-1219	-20	12	
16	Additional Driver Side	838	1626	-1067	-5	13	
17	Additional Rear Passenger	1905	1626	-1067	-5	13	

X = Barrier Face Y = Monorail Centerline Z = Ground NTM: No Timing Marks

DNR: Did Not Run

DATA SHEET NO. 16

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan

NHTSA No.: G50101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04

Test Time: 12:20 PM

Temperature: 16.1 Deg. C.

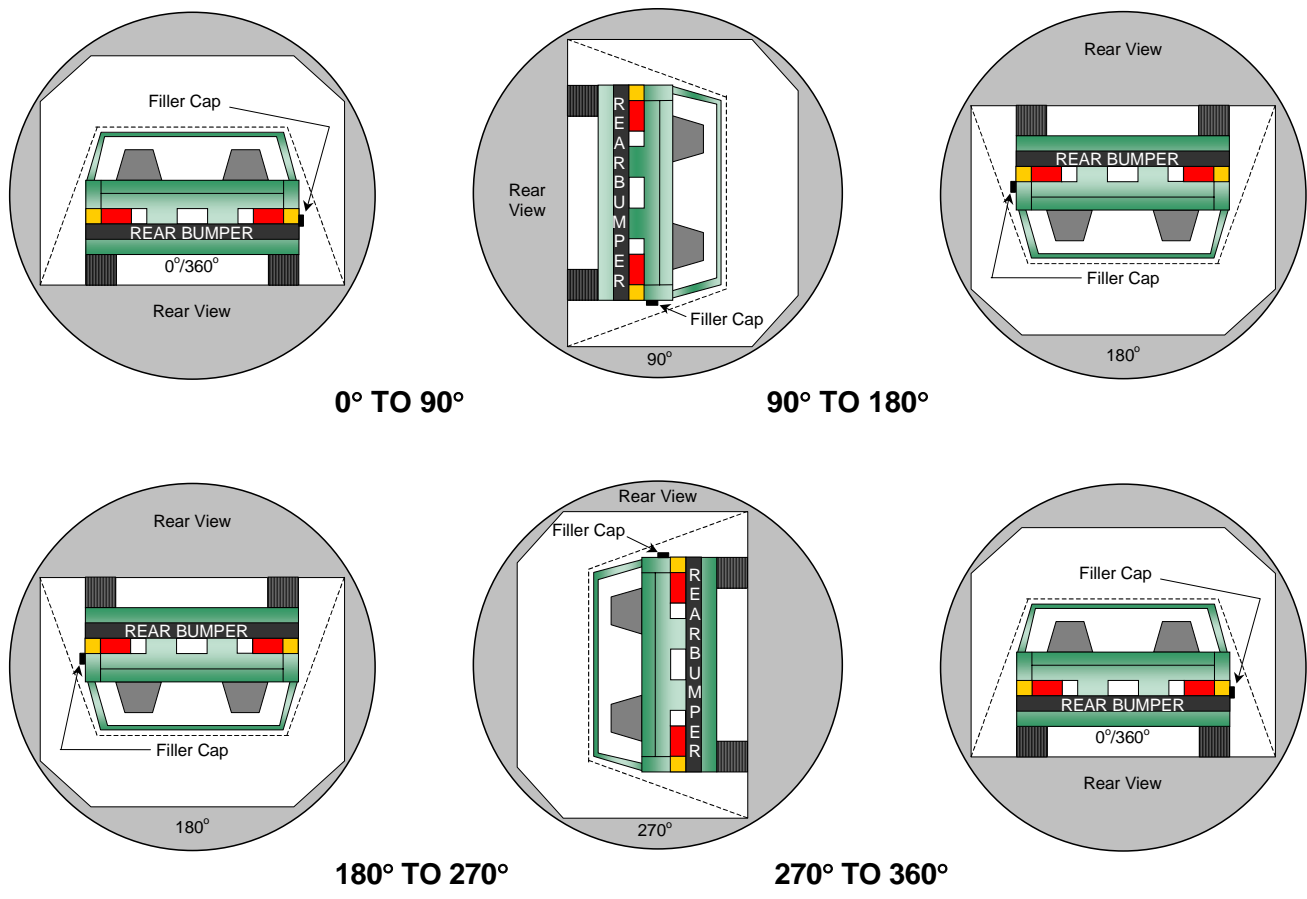
Stoddard Solvent Spillage Measurements

- 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 Details: No leakage occurred

DATA SHEET NO. 17
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04



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. Details of Stoddard Solvent spillage locations.

No solvent leakage occurred during static rollover testing.

DATA SHEET NO. 17...(CONTINUED)
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: G50101
 Test Date: 12/8/04

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	84	300	384
90° to 180°	76	300	376
180° to 270°	76	300	376
270° to 360°	78	300	378

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5.0
Sixth Minute	1.0
Seventh Minute	1.0
Eighth Minute	1.0

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

APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure		Page
A-1	Left Front $\frac{3}{4}$ View, as Received	A-1
A-2	Right Rear $\frac{3}{4}$ View, as Received	A-2
A-3	Manufacturer's Label	A-3
A-4	Tire Placard	A-4
A-5	Pre-Test Front View	A-5
A-6	Post-Test Front View	A-6
A-7	Pre-Test Left Front $\frac{3}{4}$ View	A-7
A-8	Post-Test Left Front $\frac{3}{4}$ View	A-8
A-9	Pre-Test Left Side View	A-9
A-10	Post-Test Left Side View	A-10
A-11	Pre-Test Left Rear $\frac{3}{4}$ View	A-11
A-12	Post-Test Left Rear $\frac{3}{4}$ View (Vehicle Moved)	A-12
A-13	Pre-Test Rear View	A-13
A-14	Post-Test Rear View	A-14
A-15	Pre-Test Right Rear $\frac{3}{4}$ View	A-15
A-16	Post-Test Right Rear $\frac{3}{4}$ View	A-16
A-17	Pre-Test Right Side View	A-17
A-18	Post-Test Right Side View	A-18
A-19	Pre-Test Right Front $\frac{3}{4}$ View	A-19
A-20	Post-Test Right Front $\frac{3}{4}$ View	A-20
A-21	Pre-Test Overhead View	A-21
A-22	Post-Test Overhead View	A-22
A-23	Pre-Test Overhead Close-up View	A-23
A-24	Post-Test Overhead Close-up View	A-24
A-25	Pre-Test Left Impact Point	A-25
A-26	Post-Test left Impact Point	A-26
A-27	Pre-Test Right Impact Point	A-27
A-28	Post-Test Right Impact Point	A-28
A-29	Pre-Test Front $\frac{3}{4}$ View of Left Side Doors	A-29
A-30	Post-Test Front $\frac{3}{4}$ View of Left Side Doors	A-30
A-31	Pre-Test Rear $\frac{3}{4}$ View of Left Side Doors	A-31
A-32	Post-Test Rear $\frac{3}{4}$ View of Left Side Doors (Vehicle Moved)	A-32
A-33	Pre-Test Left Front Door	A-33
A-34	Post-Test Left Front Door	A-34

LIST OF PHOTOGRAPHS ...(CONTINUED)

Figure		Page
A-35	Pre-Test Left Rear Door	A-35
A-36	Post-Test Left Rear Door	A-36
A-37	Pre-Test Driver Dummy (Door Open)	A-37
A-38	Pre-Test Driver Dummy (Through Window)	A-38
A-39	Post-Test Driver Dummy (Through Window)	A-39
A-40	Pre-Test Driver Dummy Clearance from Door	A-40
A-41	Post-Test Driver Dummy Clearance from Door	A-41
A-42	Pre-Test Driver Dummy Right Side View	A-42
A-43	Post-Test Driver Dummy Right Side View	A-43
A-44	Pre-Test Front Door Panel (Interior)	A-44
A-45	Post-Test Front Door Panel (Interior)	A-45
A-46	Pre-Test Passenger Dummy Left Side (Door Open)	A-46
A-47	Pre-Test Passenger Dummy Left Side (Through Window)	A-47
A-48	Post-Test Passenger Dummy Left Side (Through Window)	A-48
A-49	Pre-Test Passenger Dummy Clearance from Door	A-49
A-50	Post-Test Passenger Dummy Clearance from Door	A-50
A-51	Pre-Test Passenger Dummy Right Side View	A-51
A-52	Post-Test Passenger Dummy Right Side View	A-52
A-53	Pre-Test Rear Door Panel (Interior)	A-53
A-54	Post-Test Rear Door Panel (Interior)	A-54
A-55	Pre-Test Front View of Deformable Barrier	A-55
A-56	Post-Test Front View of Deformable Barrier	A-56
A-57	Pre-Test Top View of Deformable Barrier	A-57
A-58	Post-Test Top View of Deformable Barrier	A-58
A-59	Pre-Test Right Side View of Deformable Barrier	A-59
A-60	Post-Test Right Side View of Deformable Barrier	A-60
A-61	Pre-Test Left Side View of Deformable Barrier	A-61
A-62	Post-Test Left Side View of Deformable Barrier	A-62
A-63	Vehicle on Rollover Device (0°)	A-63
A-64	Vehicle on Rollover Device (90°)	A-64
A-65	Vehicle on Rollover Device (180°)	A-65
A-66	Vehicle on Rollover Device (270°)	A-66
A-67	Vehicle Impact	A-67
A-68	Post-Test Impacted Rear Door	A-68
A-69	Post-Test Impacted Rear Door Interlock	A-69

LIST OF PHOTOGRAPHS ...(CONTINUED)

<u>Figure</u>		<u>Page</u>
A-70	Post-Test Impacted Rear Door Interlock	A-70



Figure A-1: Left Front $\frac{3}{4}$ View, as Received



A-2

TR-P24161-01-NC

Figure A-2: Right Rear $\frac{3}{4}$ View, as Received



MFD BY GENERAL MOTORS CORP

DATE
09/04

GVWR
1855 KG
4091 LB

GAWR FRT
956 KG
2108 LB

GAWR RR
899 KG
1983 LB

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

1G1ZS54F15F157756

TYPE: PASS CAR

Figure A-3: Manufacturer's Label



Figure A-4: Tire Placard



Figure A-5: Pre-Test Front View



Figure A-6: Post-Test Front View



Figure A-7: Pre-Test Left Front ¾ View



Figure A-8: Post-Test Left Front ¾ View



Figure A-9: Pre-Test Left Side View



Figure A-10: Post-Test Left Side View (Vehicle Moved)



Figure A-11: Pre-Test Left Rear ¾ View



Figure A-12: Post-Test Left Rear ¾ View (Vehicle Moved)



A-13

TR-P24161-01-NC

Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View



Figure A-15: Pre-Test Right Rear ¾ View



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



6500
60101
60491
33/28 100% TO
YOUR IMPACT
17 / 08 / 04
2005 CHEVROLET
MALIBU (400 0000)

Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View



A-19

TR-P24161-01-NC

Figure A-19: Pre-Test Right Front ¾ View



Figure A-20: Post-Test Right Front $\frac{3}{4}$ View



Figure A-21: Pre-Test Overhead View



Figure A-22: Post-Test Overhead View

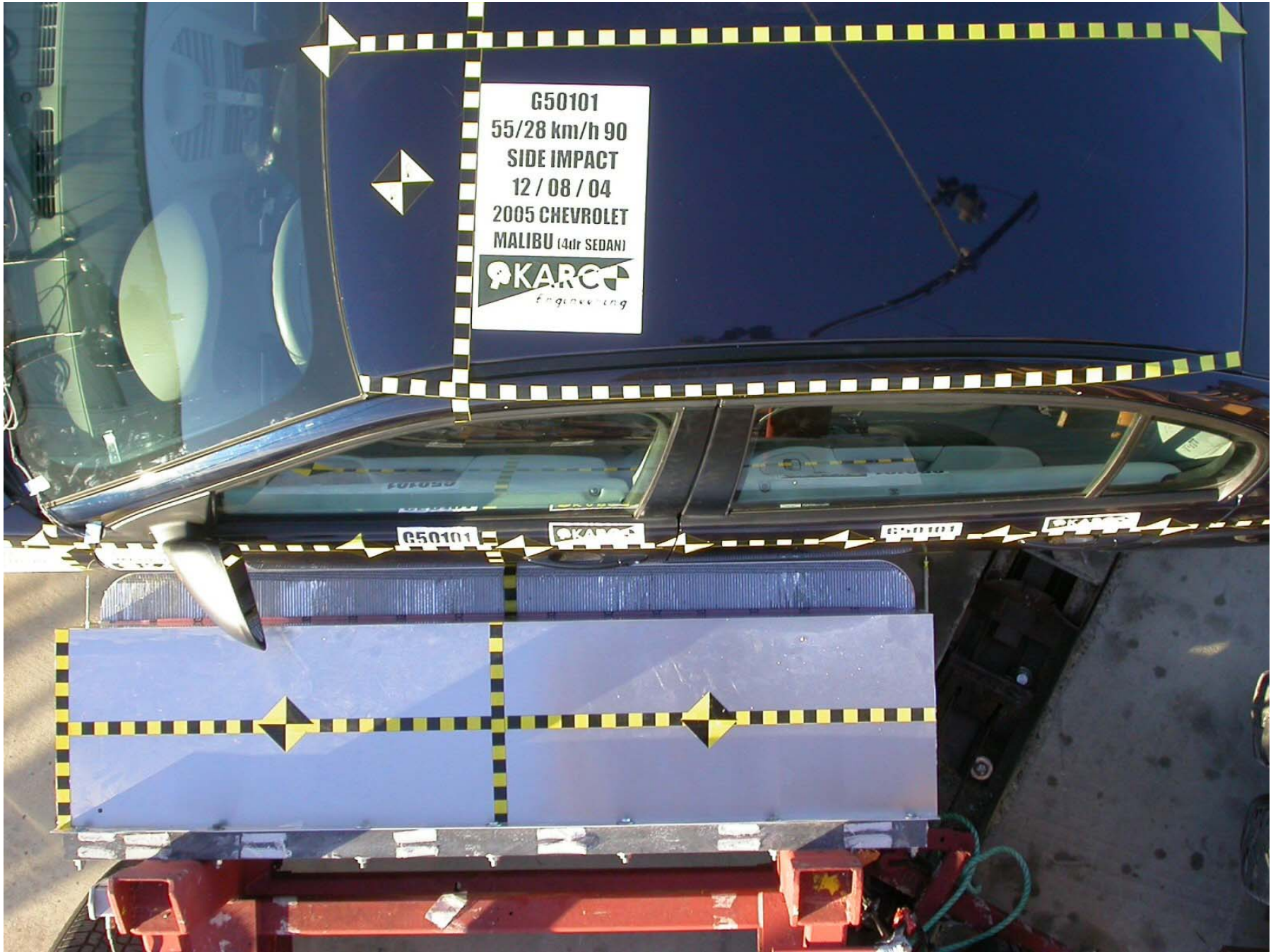


Figure A-23: Pre-Test Overhead Close-up View



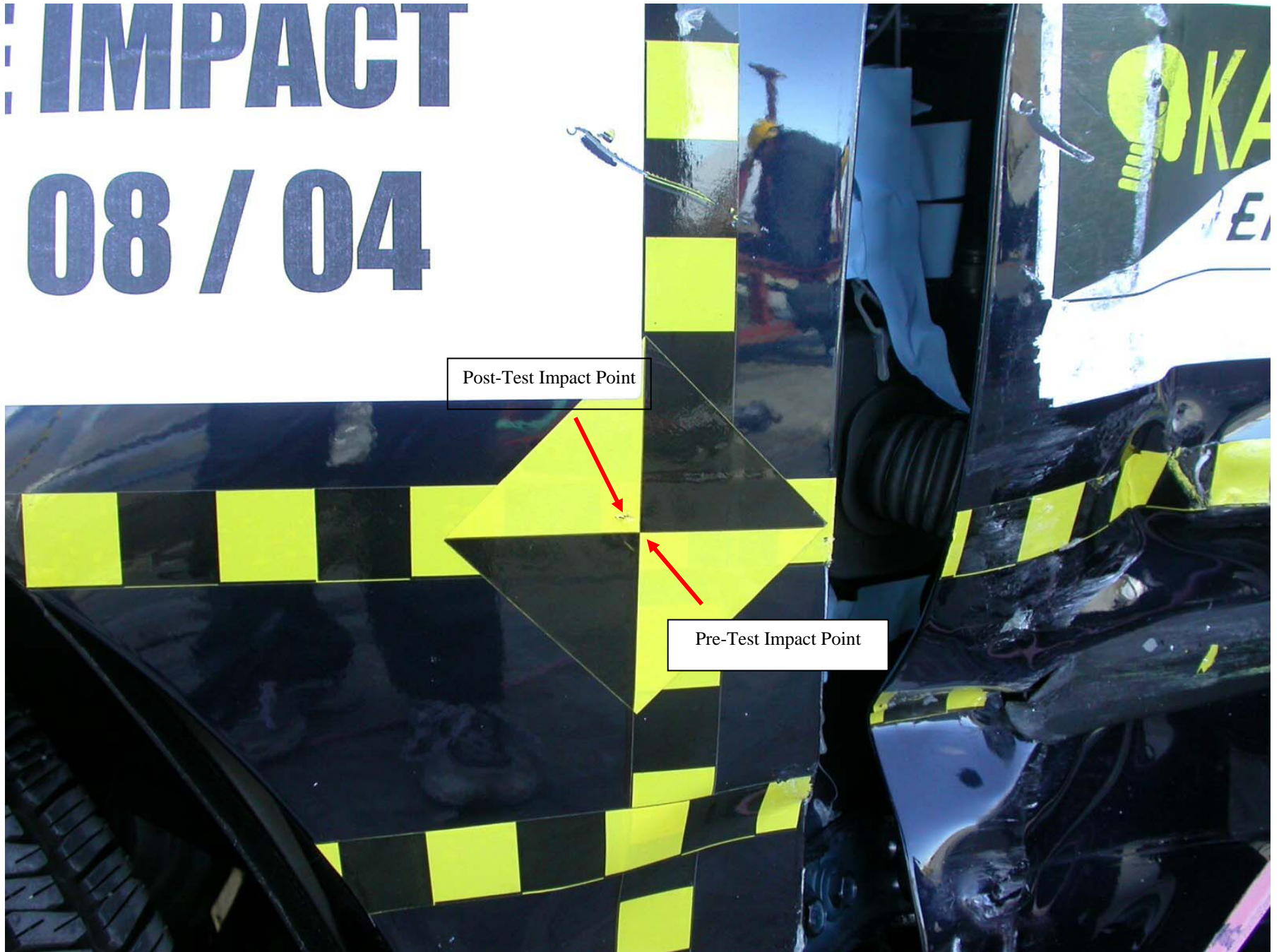
Figure A-24: Post-Test Overhead Close-up View



Figure A-25: Pre-Test Left Impact Point

IMPACT

08 / 04



Post-Test Impact Point

Pre-Test Impact Point

Figure A-26: Post-Test Left Impact Point



Figure A-27: Pre-Test Right Impact Point

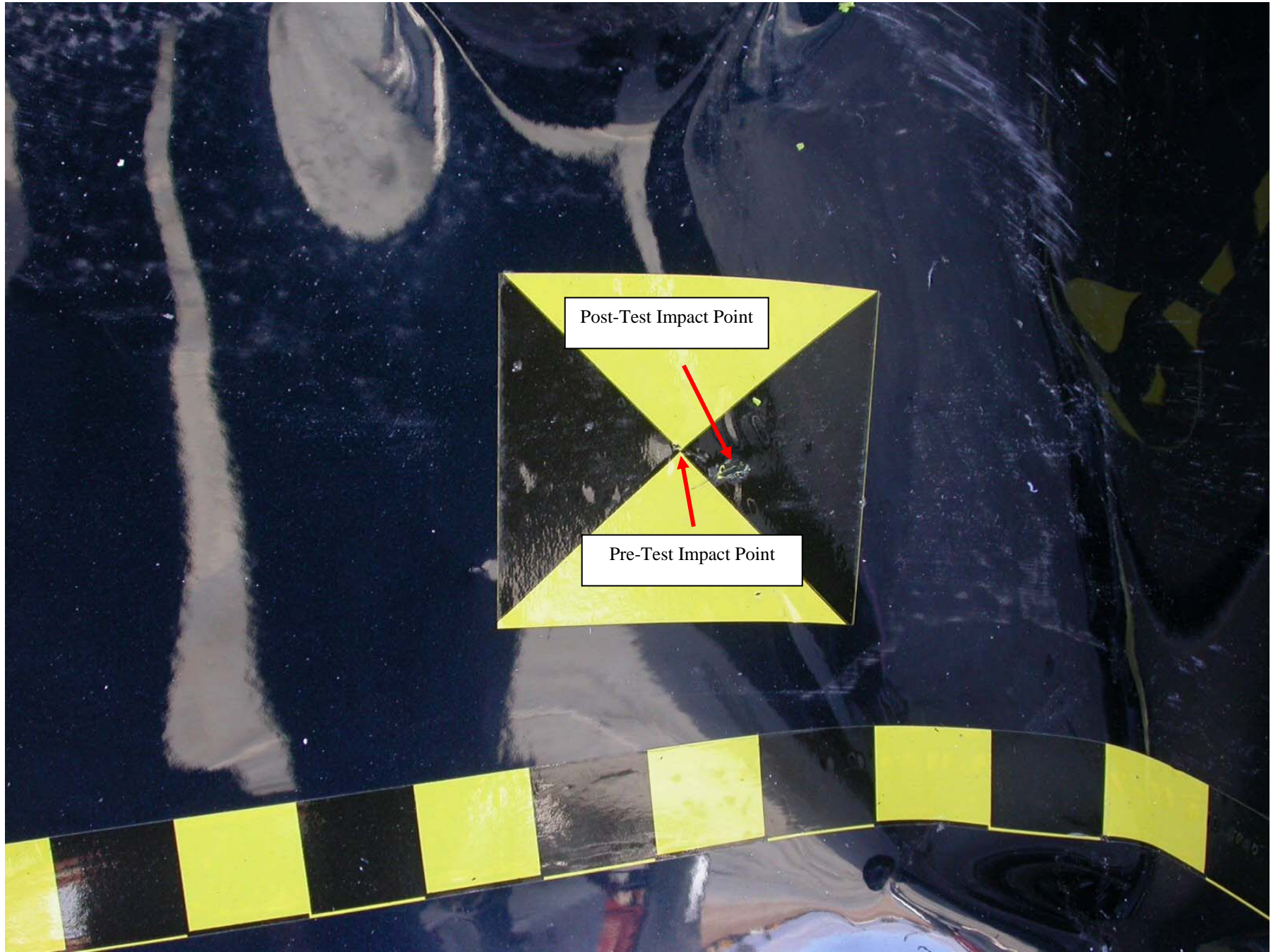


Figure A-28: Post-Test Right Impact Point



Figure A-29: Pre-Test Front ¾ View of Left Side Doors



Figure A-30: Post-Test Front ¾ View of Left Side Doors (Vehicle Moved)



Figure A-31: Pre-Test Rear ¾ View of Left Side Doors



Figure A-32: Post-Test Rear ¾ View of Left Side Doors (Vehicle Moved)



Figure A-33: Pre-Test Left Front Door



Figure A-34: Post-Test Left Front Door



Figure A-35: Post-Test Left Rear Door



Figure A-36: Post-Test Left Rear Door



Figure A-37: Pre-Test Driver Dummy (Door Open)



Figure A-38: Pre-Test Driver Dummy (Through Window)



Figure A-39: Post-Test Driver Dummy (Through Window)



Figure A-40: Pre-Test Driver Dummy Clearance From Door



Figure A-41: Post-Test Driver Dummy Clearance From Door



Figure A-42: Pre-Test Driver Dummy Right Side View



Figure A-43: Post-Test Driver Dummy Right Side View



Figure A-44: Pre-Test Front Door Panel (Interior)



Figure A-45: Post-Test Front Door Panel (Interior)



Figure A-46: Pre-Test Passenger Dummy Left Side (Door Open)



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



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



Figure A-49: Pre-Test Passenger Dummy Clearance From Door



350101
8 km/h 90
IE IMPACT
/ 08 / 04
CHEVROLET
BU (4dr SEDAN)
ARC
Engineering

A-50

TR-P24161-01-NC

Figure A-50: Post-Test Passenger Dummy Clearance From Door



Figure A-51: Pre-Test Passenger Dummy Right Side View



Figure A-52: Post-Test Passenger Dummy Right Side View



Figure A-53: Pre-Test Passenger Door Panel (Interior)



Figure A-54: Post-Test Passenger Door Panel (Interior)



Figure A-55: Pre-Test Front View of Deformable Barrier



Figure A-56: Post-Test Front View of Deformable Barrier

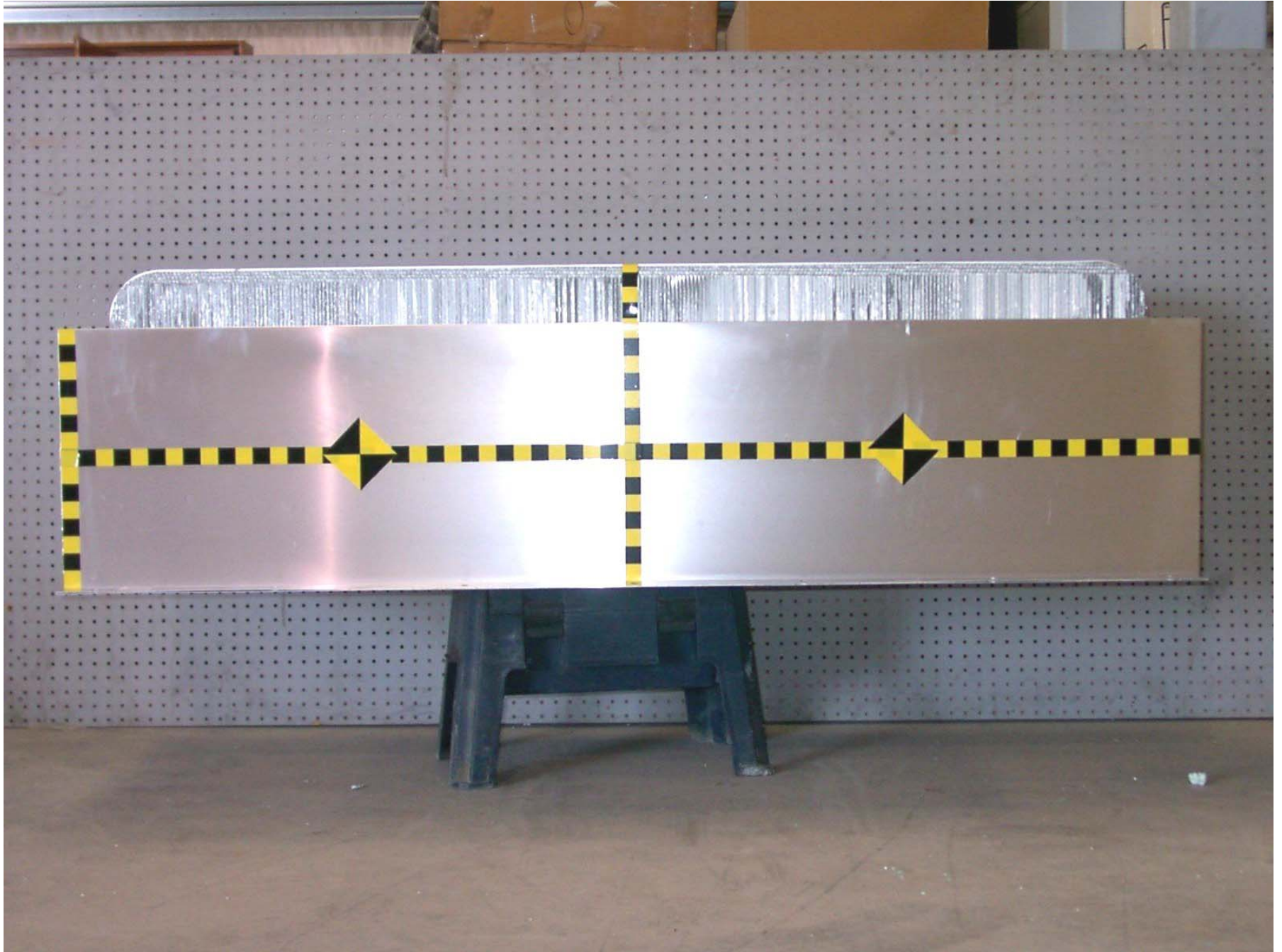


Figure A-57: Pre-Test Top View of Deformable Barrier

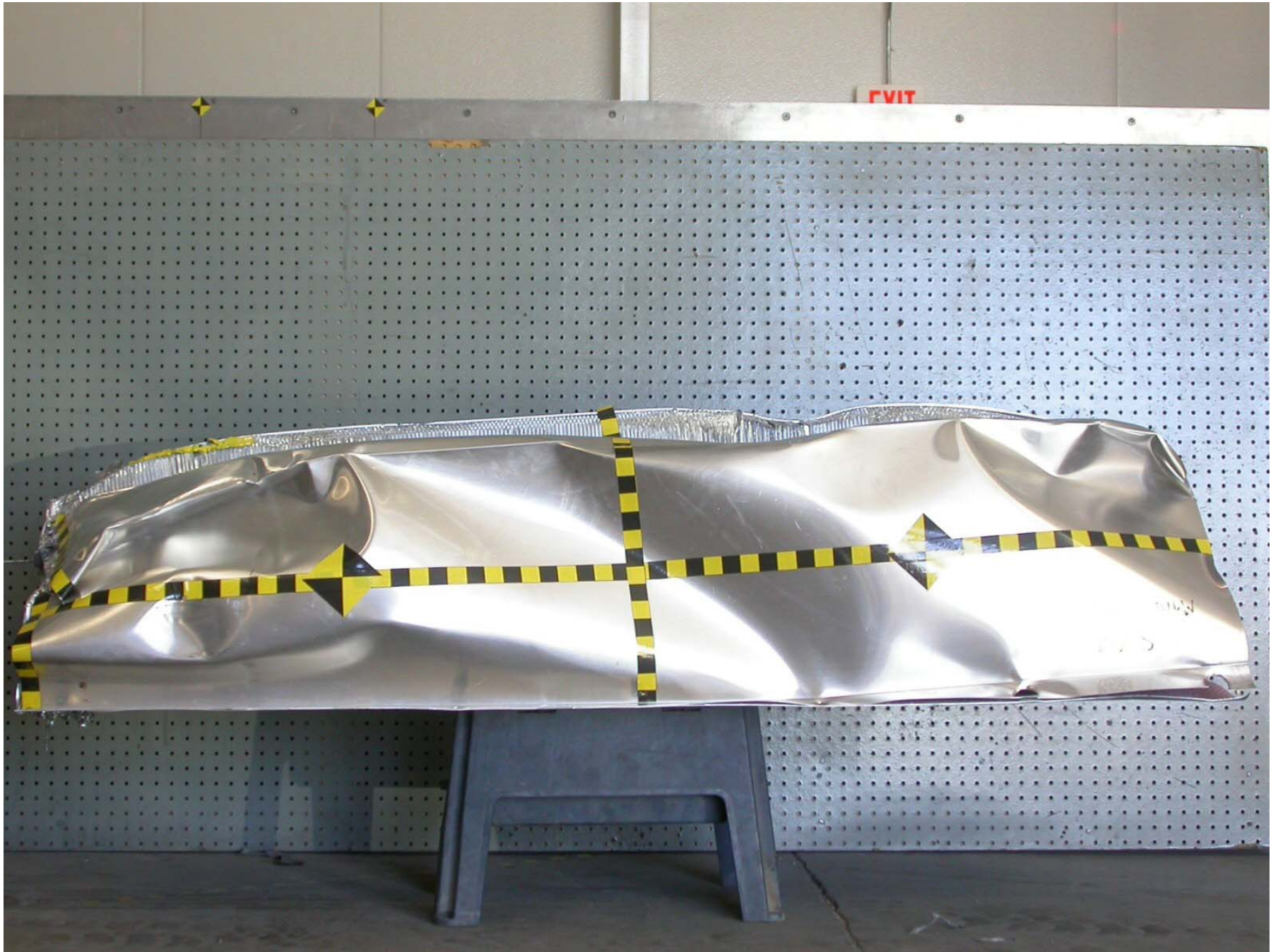


Figure A-58: Post-Test Top View of Deformable Barrier



Figure A-59: Pre-Test Right Side View of Deformable Barrier



Figure A-60: Post-Test Right Side View of Deformable Barrier



Figure A-61: Pre-Test Left Side View of Deformable Barrier



Figure A-62: Post-Test Left Side View of Deformable Barrier



A-63

TR-P24161-01-NC

Figure A-63: Vehicle on Rollover Device (0°)

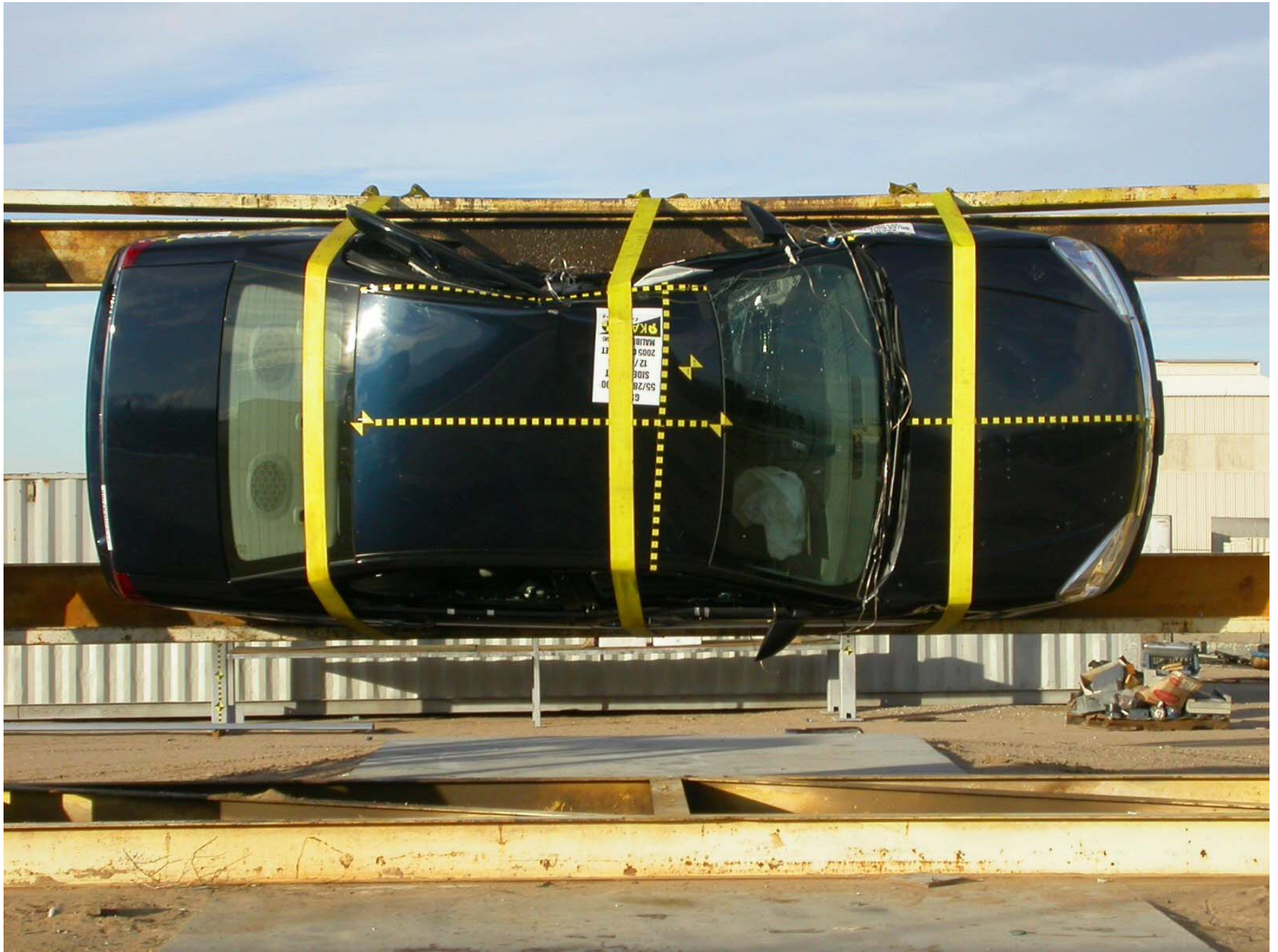


Figure A-64: Vehicle on Rollover Device (90°)

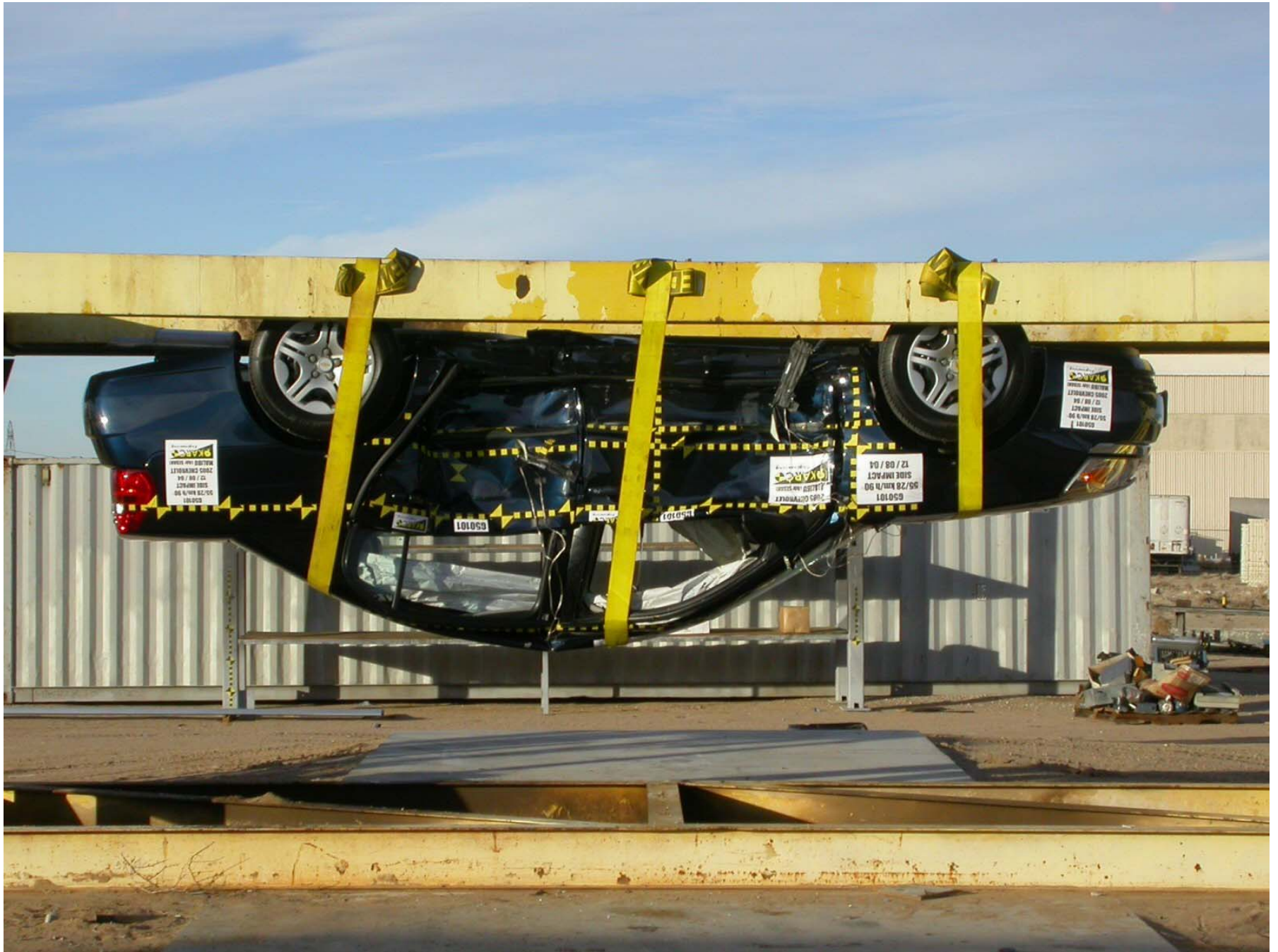


Figure A-65: Vehicle on Rollover Device (180°)

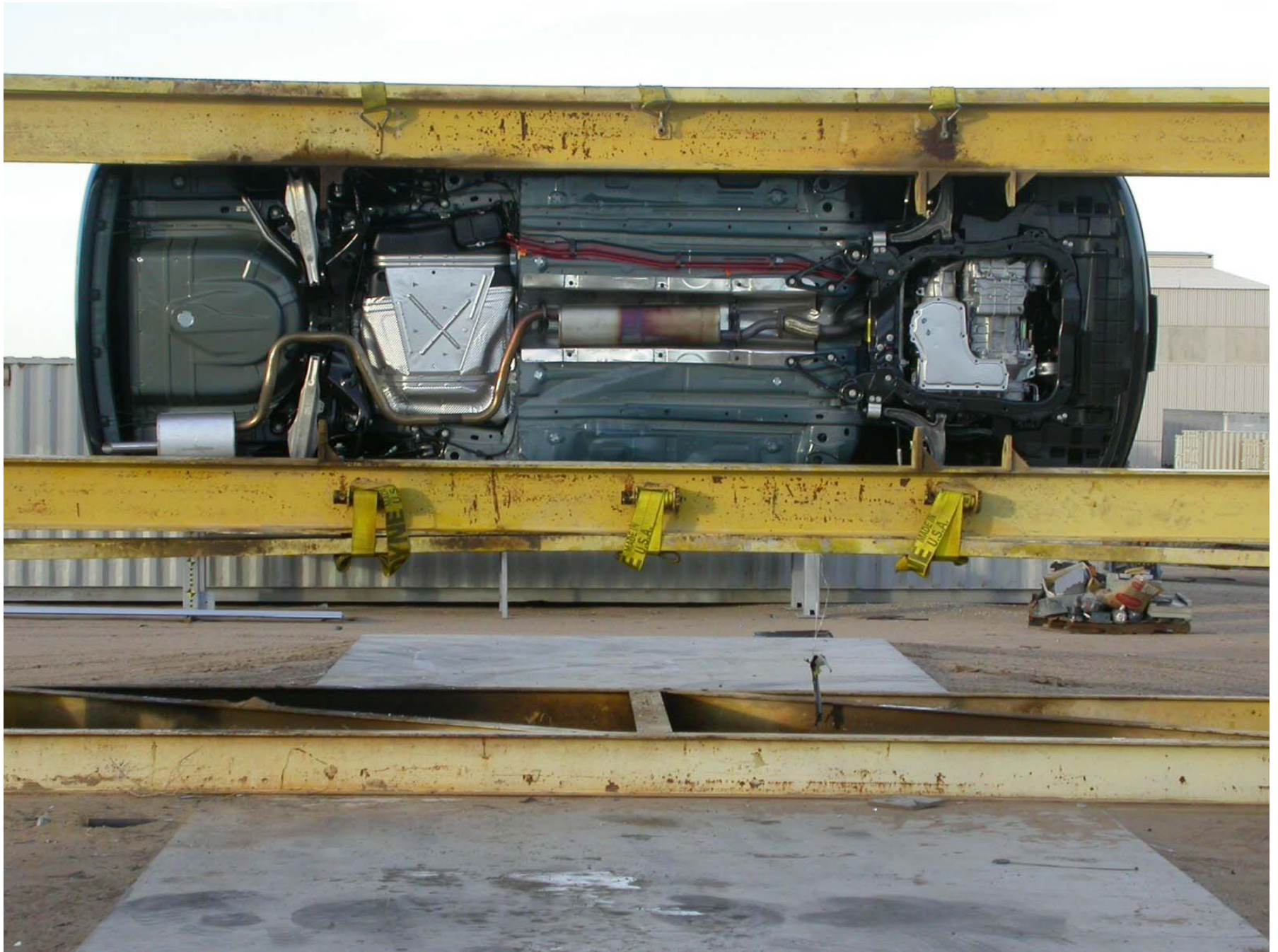


Figure A-66: Vehicle on Rollover Device (270°)

A-66

TR-P24161-01-NC



A-67

TR-P24161-01-NC

Figure A-67: Vehicle Impact



Figure A-68: Post-Test Impacted Rear Door



Figure A-69: Post-Test Impacted Rear Door Interlock



Figure A-70: Post-Test Impacted Rear Door Interlock

APPENDIX B
SID/HIII, VEHICLE AND MDB RESPONSE DATA

LIST OF DATA PLOTS

Data Plot	Page	
B-1	Driver Head X Primary	B-1
	Driver Head Y Primary	B-1
	Driver Head Z Primary	B-1
	Driver Head Resultant Primary	B-1
B-2	Driver Head Primary X Velocity	B-2
	Driver Head Primary Y Velocity	B-2
	Driver Head Primary Z Velocity	B-2
B-3	Driver Head X Redundant	B-3
	Driver Head Y Redundant	B-3
	Driver Head Z Redundant	B-3
	Driver Head Resultant Redundant	B-3
B-4	Driver Head Redundant X Velocity	B-4
	Driver Head Redundant Y Velocity	B-4
	Driver Head Redundant Z Velocity	B-4
B-5	Driver Upper Neck Force X	B-5
	Driver Upper Neck Force Y	B-5
	Driver Upper Neck Force Z	B-5
	Driver Upper Neck Force Resultant	B-5
B-6	Driver Upper Neck Moment X	B-6
	Driver Upper Neck Moment Y	B-6
	Driver Upper Neck Moment Z	B-6
	Driver Upper Neck Moment Resultant	B-6
B-7	Driver Upper Rib Primary Y	B-7
	Driver Lower Rib Primary Y	B-7
	Driver Lower Spine Primary Y	B-7
	Driver Pelvis Primary Y	B-7
B-8	Driver Upper Rib Primary Y Velocity	B-8
	Driver Lower Rib Primary Y Velocity	B-8
	Driver Lower Spine Primary Y Velocity	B-8
	Driver Pelvis Primary Y Velocity	B-8
B-9	Driver Upper Rib Redundant Y	B-9
	Driver Lower Rib Redundant Y	B-9
	Driver Lower Spine Redundant Y	B-9
	Driver Pelvis Redundant Y	B-9
B-10	Driver Upper Rib Redundant Y Velocity	B-10

LIST OF DATA PLOTS...(CONTINUED)

Data Plot	Page	
	Driver Lower Rib Redundant Y Velocity	B-10
	Driver Lower Spine Redundant Y Velocity	B-10
	Driver Pelvis Redundant Y Velocity	B-10
B-11	Driver Thorax Contact	B-11
	Driver Pelvis Contact	B-11
B-12	Passenger Head X Primary	B-12
	Passenger Head Y Primary	B-12
	Passenger Head Z Primary	B-12
	Passenger Head Resultant Primary	B-12
B-13	Passenger Head Primary X Velocity	B-13
	Passenger Head Primary Y Velocity	B-13
	Passenger Head Primary Z Velocity	B-13
B-14	Passenger Head X Redundant	B-14
	Passenger Head Y Redundant	B-14
	Passenger Head Z Redundant	B-14
	Passenger Head Resultant Redundant	B-14
B-15	Passenger Head Redundant X Velocity	B-15
	Passenger Head Redundant Y Velocity	B-15
	Passenger Head Redundant Z Velocity	B-15
B-16	Passenger Upper Neck Force X	B-16
	Passenger Upper Neck Force Y	B-16
	Passenger Upper Neck Force Z	B-16
	Passenger Upper Neck Force Resultant	B-16
B-17	Passenger Upper Neck Moment X	B-17
	Passenger Upper Neck Moment Y	B-17
	Passenger Upper Neck Moment Z	B-17
	Passenger Upper Neck Moment Resultant	B-17
B-18	Passenger Upper Rib Primary Y	B-18
	Passenger Lower Rib Primary Y	B-18
	Passenger Lower Spine Primary Y	B-18
	Passenger Pelvis Primary Y	B-18
B-19	Passenger Upper Rib Primary Y Velocity	B-19
	Passenger Lower Rib Primary Y Velocity	B-19
	Passenger Lower Spine Primary Y Velocity	B-19
	Passenger Pelvis Primary Y Velocity	B-19

LIST OF DATA PLOTS...(CONTINUED)

Data Plot	Page	
B-20	Passenger Upper Rib Redundant Y	B-20
	Passenger Lower Rib Redundant Y	B-20
	Passenger Lower Spine Redundant Y	B-20
	Passenger Pelvis Redundant Y	B-20
B-21	Passenger Upper Rib Redundant Y Velocity	B-21
	Passenger Lower Rib Redundant Y Velocity	B-21
	Passenger Lower Spine Redundant Y Velocity	B-21
	Passenger Pelvis Redundant Y Velocity	B-21
B-22	Passenger Thorax Contact	B-22
	Passenger Pelvis Contact	B-22
B-23	Vehicle Right Sill at Front Seat X	B-23
	Vehicle Right Sill at Front Seat Y	B-23
	Vehicle Right Sill at Front Seat Z	B-23
	Vehicle Right Sill Front Seat Resultant	B-23
B-24	Vehicle Right Sill at Front Seat X Velocity	B-24
	Vehicle Right Sill at Front Seat Y Velocity	B-24
	Vehicle Right Sill at Front Seat Z Velocity	B-24
B-25	Vehicle Right Sill at Rear Seat X	B-25
	Vehicle Right Sill at Rear Seat Y	B-25
	Vehicle Right Sill at Rear Seat Z	B-25
	Vehicle Right Sill Rear Seat Resultant	B-25
B-26	Vehicle Right Sill at Rear Seat X Velocity	B-26
	Vehicle Right Sill at Rear Seat Y Velocity	B-26
	Vehicle Right Sill at Rear Seat Z Velocity	B-26
B-27	Vehicle Rear Floor Above Axle X	B-27
	Vehicle Rear Floor Above Axle Y	B-27
	Vehicle Rear Floor Above Axle Z	B-27
	Vehicle Rear Floor Above Axle Resultant	B-27
B-28	Vehicle Rear Floor Above Axle X Velocity	B-28
	Vehicle Rear Floor Above Axle Y Velocity	B-28
	Vehicle Rear Floor Above Axle Z Velocity	B-28
B-29	Vehicle Left Sill at Rear Door Y	B-29
	Vehicle Left Sill at Front Door Y	B-29
	Vehicle Left Sill at Rear Door Y Velocity	B-29
	Vehicle Left Sill at Front Door Y Velocity	B-29

LIST OF DATA PLOTS...(CONTINUED)

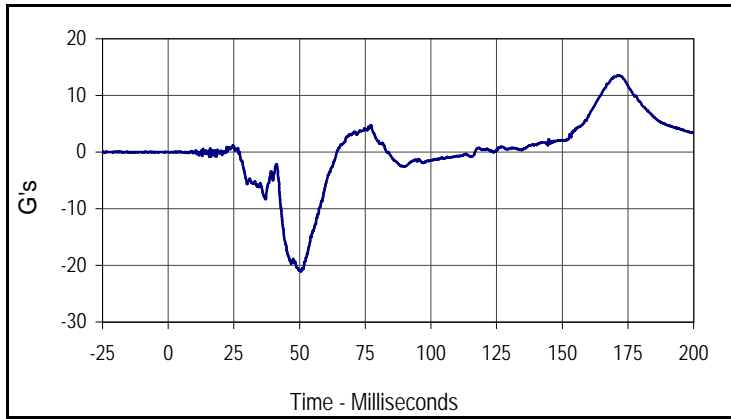
Data Plot	Page	
B-30	Vehicle Left Front Door CL Y	B-30
	Vehicle Right Rear Occupant Compartment	B-30
	Vehicle Left Front Door Mid Rear Y	B-30
	Vehicle Left Front Door Upper CL Y	B-30
B-31	Vehicle Left Front Door CL Y Velocity	B-31
	Vehicle Right Rear Occupant Compartment Y Velocity	B-31
	Vehicle Left Front Door Mid Rear Y Velocity	B-31
	Vehicle Left Rear Door Upper CL Y Velocity	B-31
B-32	Vehicle Left Rear Door Mid Rear Y	B-32
	Vehicle Left Rear Door Upper CL Y	B-32
	Vehicle Left Rear Door Mid Rear Y Velocity	B-32
	Vehicle Left Rear Door Upper CL Y Velocity	B-32
B-33	Vehicle B-Post Lower Y	B-33
	Vehicle B-Post Middle Y	B-33
	Vehicle B-Post Lower Y Velocity	B-33
	Vehicle B-Post Middle Y Velocity	B-33
B-34	Vehicle A-Post Lower Y	B-34
	Vehicle A-Post Middle Y	B-34
	Vehicle A-Post Lower Y Velocity	B-34
	Vehicle A-Post Middle Y Velocity	B-34
B-35	Vehicle Left Front Seat Track	B-35
	Vehicle Rear Seat Structure	B-35
	Vehicle Left Front Seat Track Y Velocity	B-35
	Vehicle Rear Seat Structure Y Velocity	B-35
B-36	Vehicle CG X	B-36
	Vehicle CG Y	B-36
	Vehicle CG Z	B-36
	Vehicle CG Resultant	B-36
B-37	Vehicle CG X Velocity	B-37
	Vehicle CG Y Velocity	B-37
	Vehicle CG Z Velocity	B-37
B-38	Driver Upper Rib Primary Y	B-38
	Driver Lower Rib Primary Y	B-38
	Driver Lower Spine Primary Y	B-38
	Driver Pelvis Primary Y	B-38

LIST OF DATA PLOTS...(CONTINUED)

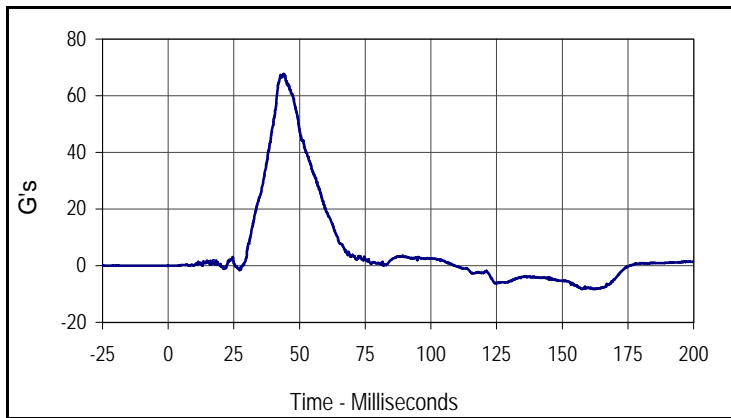
<u>Data Plot</u>		<u>Page</u>
B-39	Driver Upper Rib Redundant Y	B-39
	Driver Lower Rib Redundant Y	B-39
	Driver Lower Spine Redundant Y	B-39
	Driver Pelvis Redundant Y	B-39
B-40	Passenger Upper Rib Primary Y	B-40
	Passenger Lower Rib Primary Y	B-40
	Passenger Lower Spine Primary Y	B-40
	Passenger Pelvis Primary Y	B-40
B-41	Passenger Upper Rib Redundant Y	B-41
	Passenger Lower Rib Redundant Y	B-41
	Passenger Lower Spine Redundant Y	B-41
	Passenger Pelvis Redundant Y	B-41
B-42	MDB CG X	B-42
	MDB CG Y	B-42
	MDB CG Z	B-42
	MDB CG Resultant	B-42
B-43	MDB CG X Velocity	B-43
	MDB CG Y Velocity	B-43
	MDB CG Z Velocity	B-43
B-44	MDB Rear X	B-44
	MDB Rear Y	B-44
	MDB Rear X Velocity	B-44
	MDB Rear Y Velocity	B-44
B-45	MDB Right Bumper Contact	B-45

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

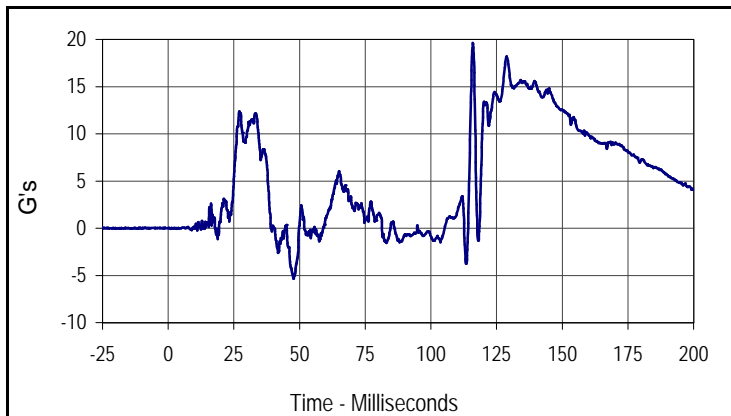
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 NHTSA No.: G50101



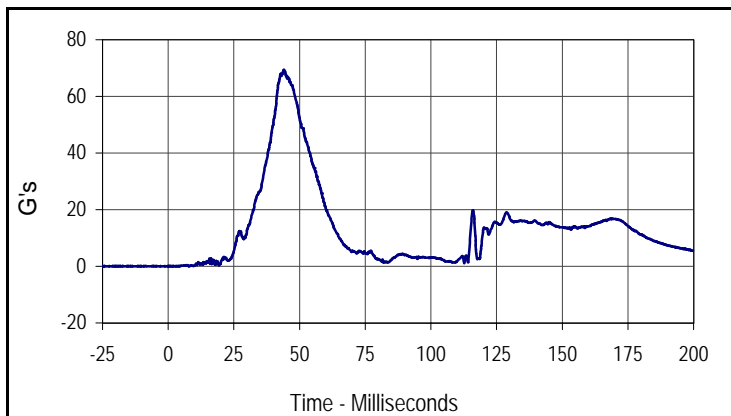
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Driver Head X Primary			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
13.5	171.2	-21.0	50.5



Curve Description			
Driver Head Y Primary			
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Max	Time	Min	Time
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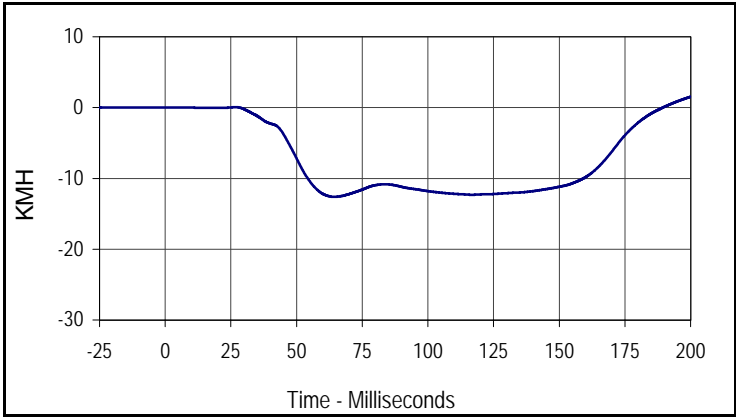
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Driver Head Z Primary			
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Max	Time	Min	Time
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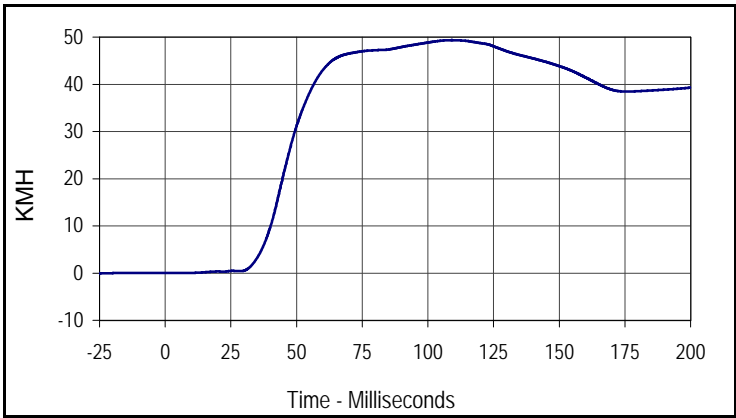
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Driver Head Resultant Primary			
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001	RES	1000	G's
Max	Time	Min	Time
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Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

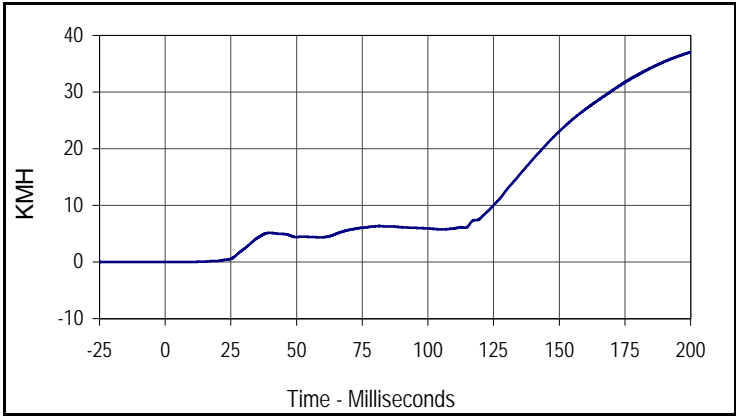
Test Date: 12/8/04
 NHTSA No.: G50101



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Driver Head Primary X Velocity			
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Max	Time	Min	Time
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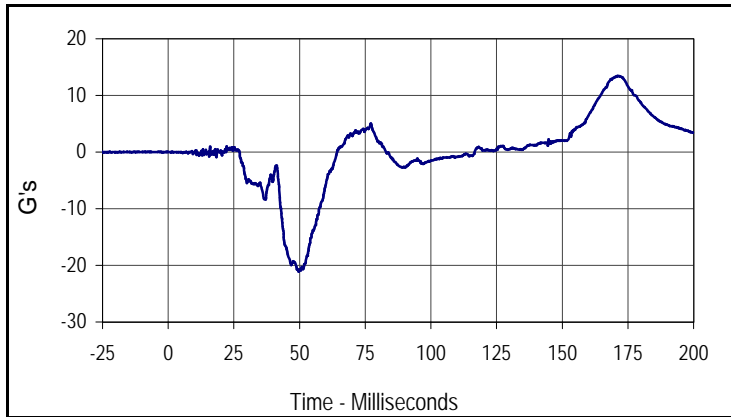
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Driver Head Primary Y Velocity			
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Max	Time	Min	Time
49.4	109.1	0.0	3.3



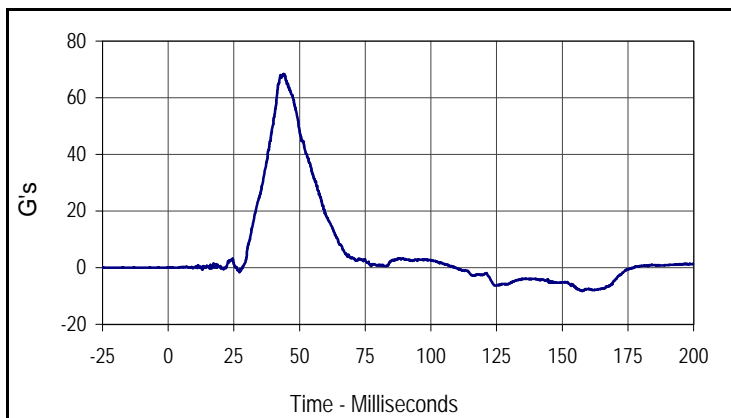
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Driver Head Primary Z Velocity			
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Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

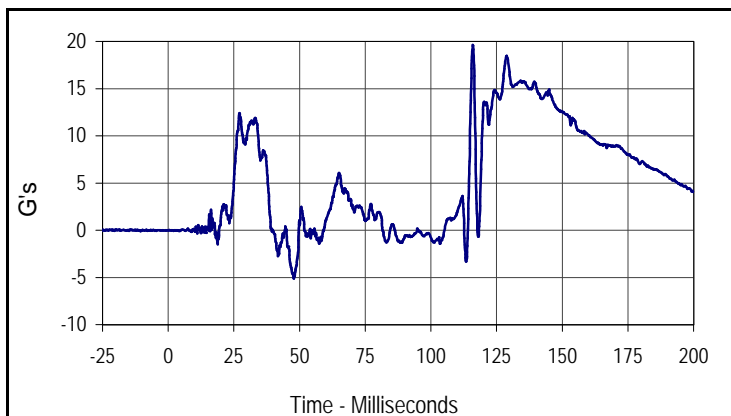
Test Date: 12/8/04
 NHTSA No.: G50101



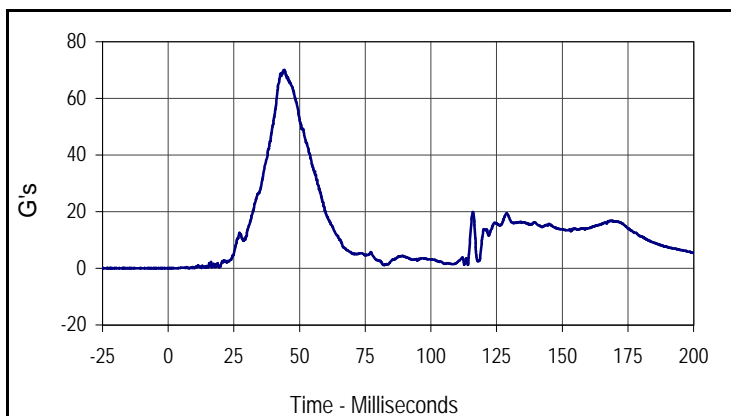
Curve Description			
Driver Head X Redundant			
CURNO	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
13.5	171.2	-21.1	49.7



Curve Description			
Driver Head Y Redundant			
CURNO	Type	SAE Class	Units
005	FIL	1000	G's
Max	Time	Min	Time
68.4	44.1	-8.3	157.6



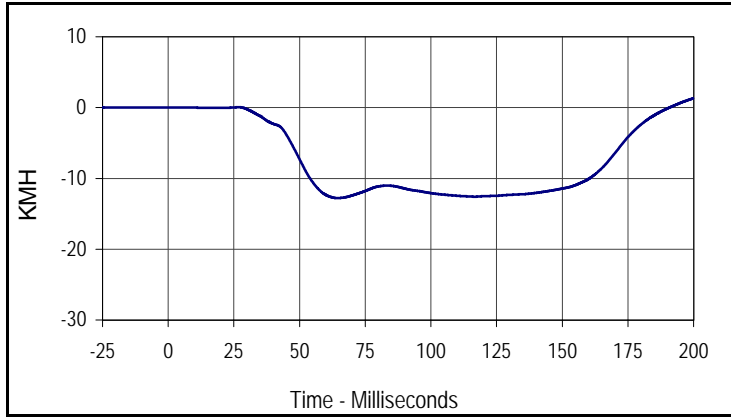
Curve Description			
Driver Head Z Redundant			
CURNO	Type	SAE Class	Units
006	FIL	1000	G's
Max	Time	Min	Time
19.6	116.0	-5.1	47.8



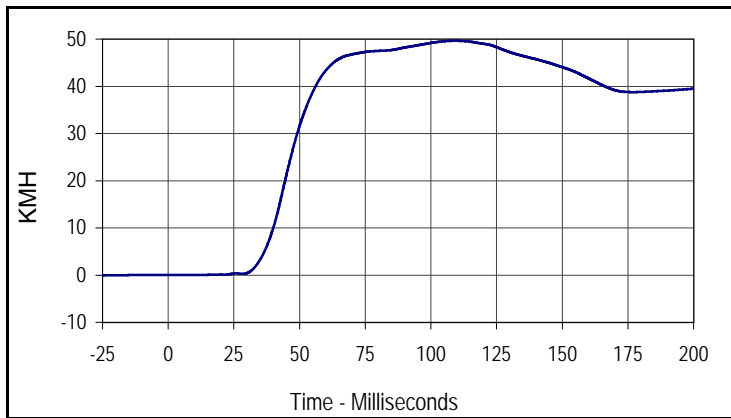
Curve Description			
Driver Head Resultant Redundant			
CURNO	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
70.1	44.1	0.0	3.5

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

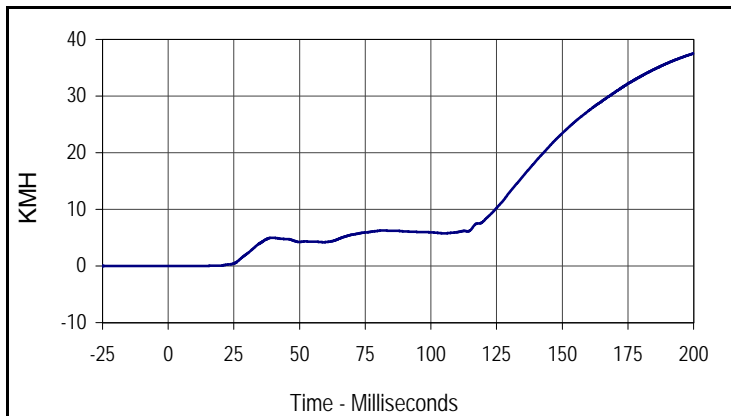
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Driver Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
004	IN1	180	KMH
Max	Time	Min	Time
1.3	200.0	-12.8	64.3



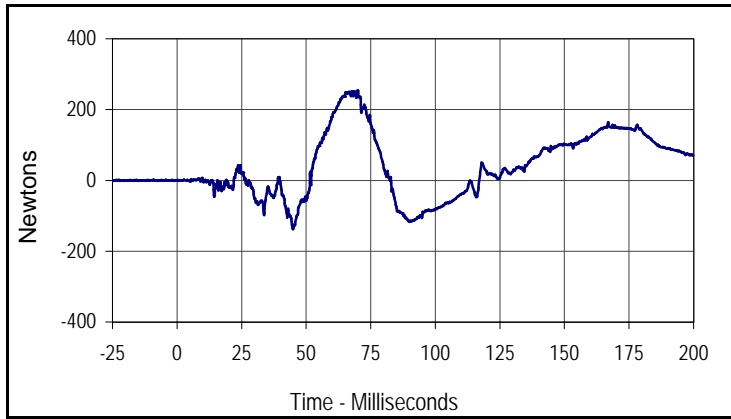
Curve Description			
Driver Head Redundant Y Velocity			
CURNO	Type	SAE Class	Units
005	IN1	180	KMH
Max	Time	Min	Time
49.6	109.3	0.0	0.0



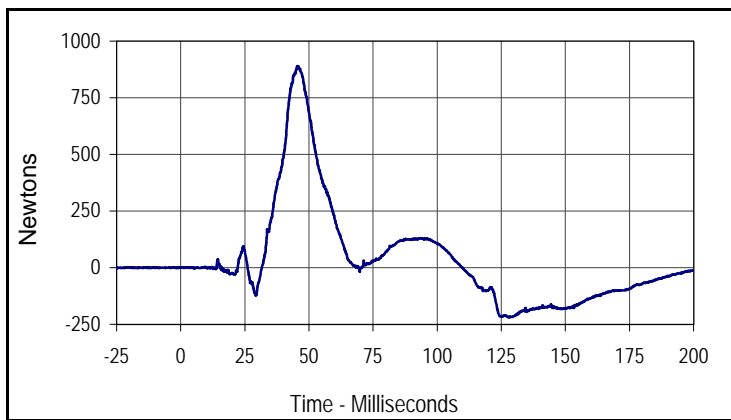
Curve Description			
Driver Head Redundant Z Velocity			
CURNO	Type	SAE Class	Units
006	IN1	180	KMH
Max	Time	Min	Time
37.5	200.0	0.0	4.9

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

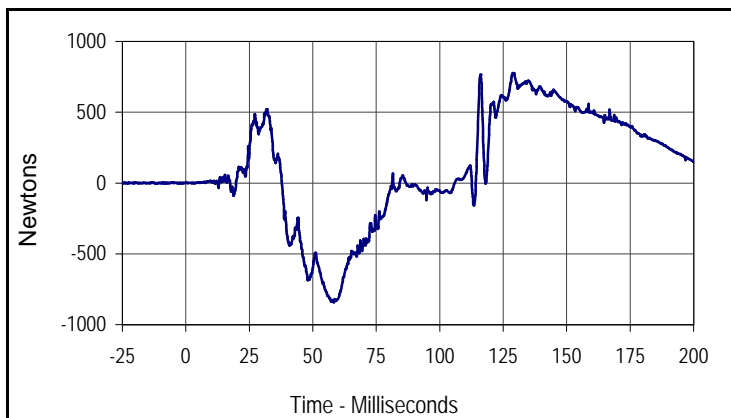
Test Date: 12/8/04
 NHTSA No.: G50101



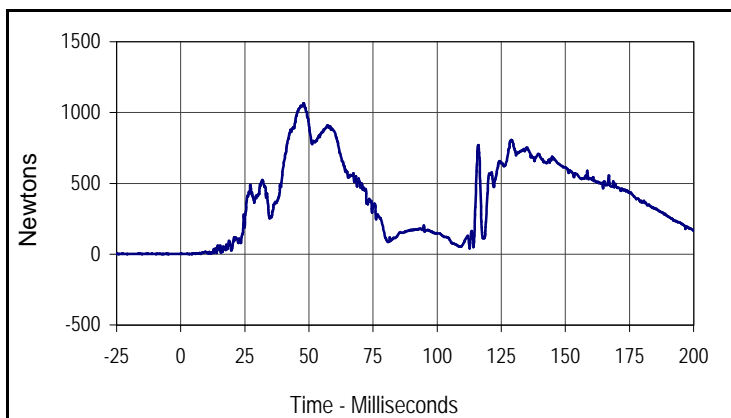
Curve Description			
Driver Upper Neck Force X			
CURNO	Type	SAE Class	Units
007	FIL	1000	Newtons
Max	Time	Min	Time
254.3	70.0	-137.4	44.9



Curve Description			
Driver Upper Neck Force Y			
CURNO	Type	SAE Class	Units
008	FIL	1000	Newtons
Max	Time	Min	Time
889.6	45.5	-218.5	127.7



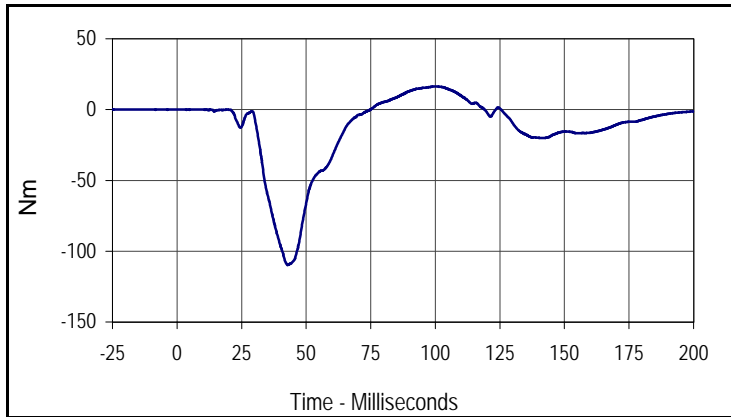
Curve Description			
Driver Upper Neck Force Z			
CURNO	Type	SAE Class	Units
009	FIL	1000	Newtons
Max	Time	Min	Time
776.2	128.9	-841.5	58.3



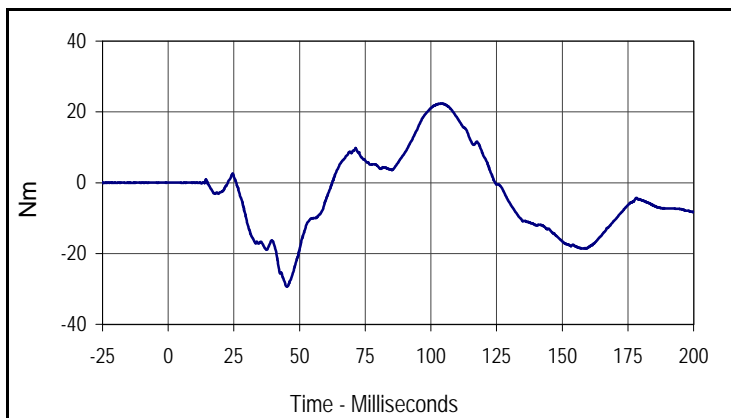
Curve Description			
Driver Upper Neck Force Resultant			
CURNO	Type	SAE Class	Units
007	RES	1000	Newtons
Max	Time	Min	Time
1066.1	47.9	0.3	4.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

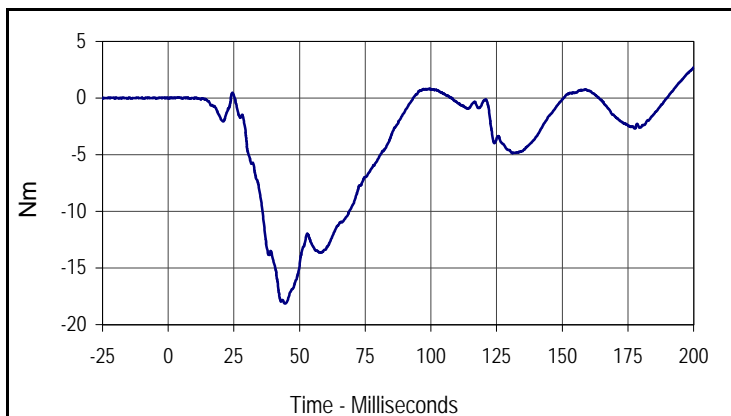
Test Date: 12/8/04
 NHTSA No.: G50101



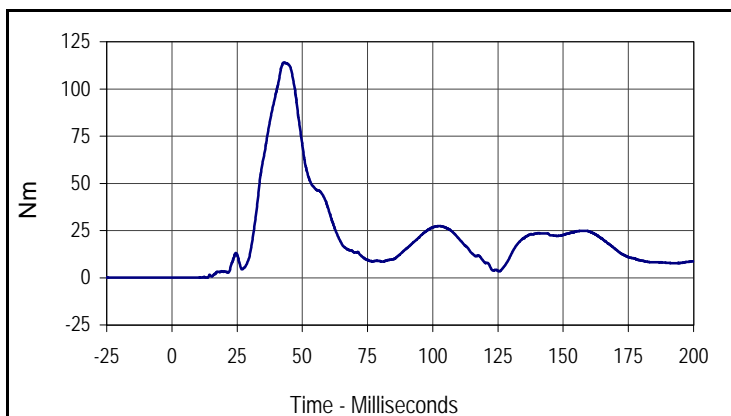
Curve Description			
Driver Upper Neck Moment X			
CURNO	Type	SAE Class	Units
010	FIL	600	Nm
Max	Time	Min	Time
16.4	99.7	-109.7	42.8



Curve Description			
Driver Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
011	FIL	600	Nm
Max	Time	Min	Time
22.4	104.1	-29.3	45.1



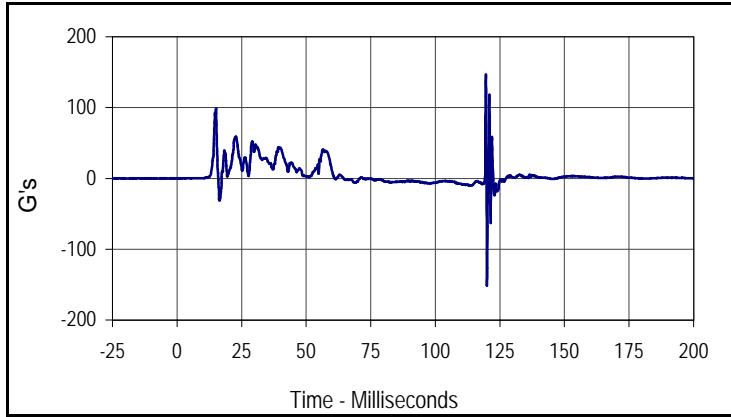
Curve Description			
Driver Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
2.7	200.0	-18.1	44.5



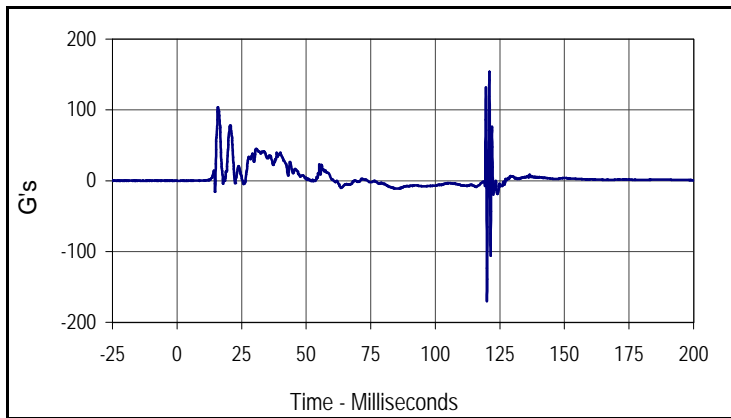
Curve Description			
Driver Upper Neck Moment Resultant			
CURNO	Type	SAE Class	Units
010	RES	600	Nm
Max	Time	Min	Time
114.1	42.8	0.0	9.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

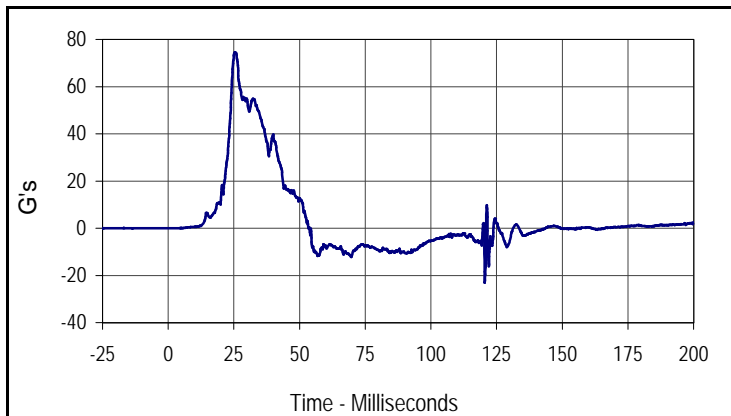
Test Date: 12/8/04
 NHTSA No.: G50101



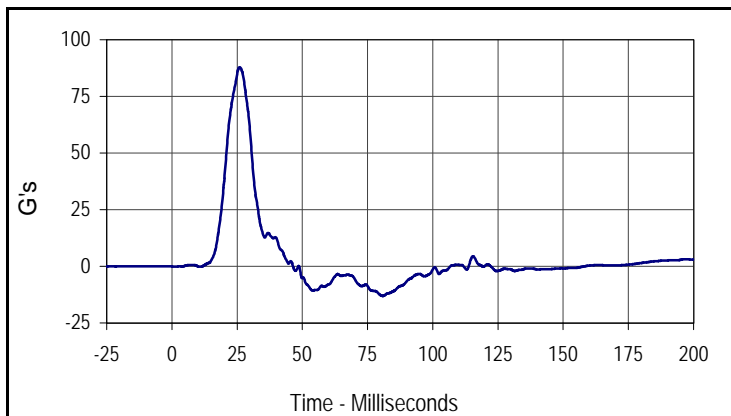
Curve Description			
Driver Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
013	FIL	1000	G's
Max	Time	Min	Time
146.8	119.6	-150.9	120.0



Curve Description			
Driver Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
014	FIL	1000	G's
Max	Time	Min	Time
153.5	120.9	-170.2	120.0



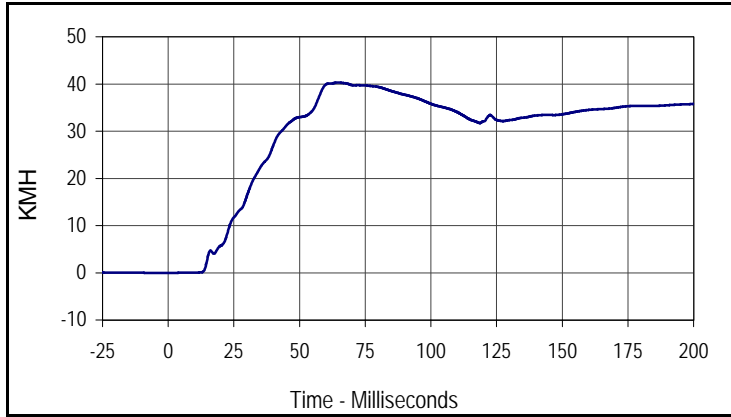
Curve Description			
Driver Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
74.5	25.4	-22.9	120.5



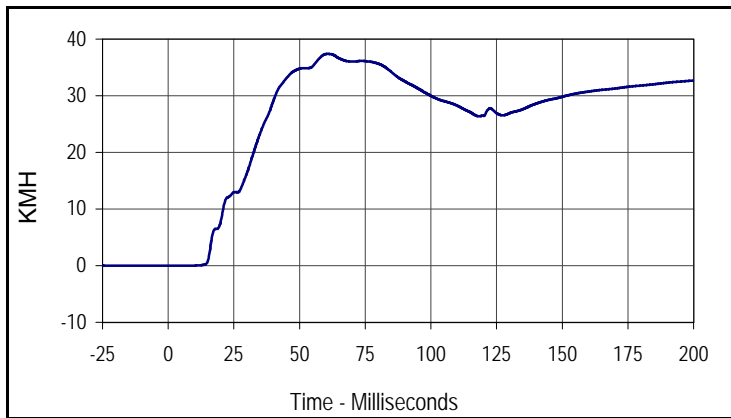
Curve Description			
Driver Pelvis Primary Y			
CURNO	Type	SAE Class	Units
016	FIL	180	G's
Max	Time	Min	Time
87.9	26.0	-13.1	80.9

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

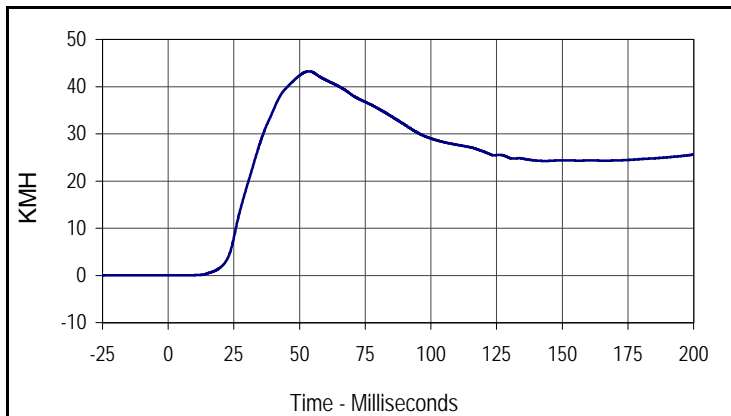
Test Date: 12/8/04
 NHTSA No.: G50101



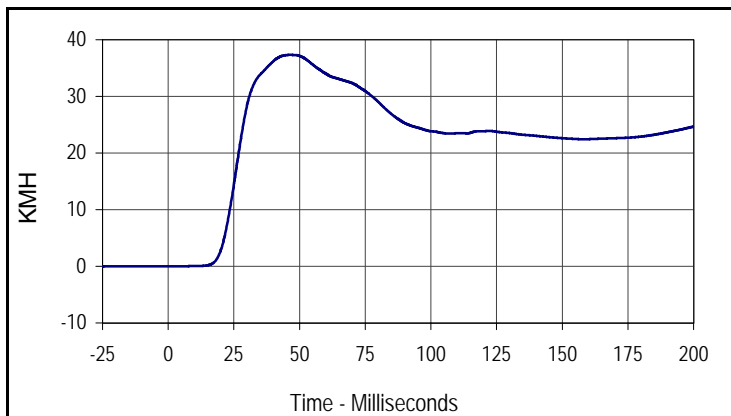
Curve Description			
Driver Upper Rib Primary Y Velocity			
CURNO	Type	SAE Class	Units
013	IN1	180	KMH
Max	Time	Min	Time
40.3	64.5	0.0	0.0



Curve Description			
Driver Lower Rib Primary Y Velocity			
CURNO	Type	SAE Class	Units
014	IN1	180	KMH
Max	Time	Min	Time
37.4	60.7	0.0	4.4



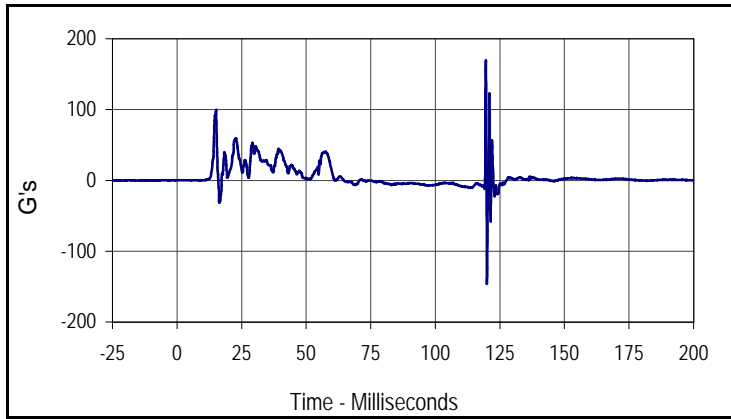
Curve Description			
Driver Lower Spine Primary Y Velocity			
CURNO	Type	SAE Class	Units
015	IN1	180	KMH
Max	Time	Min	Time
43.2	53.6	0.0	0.0



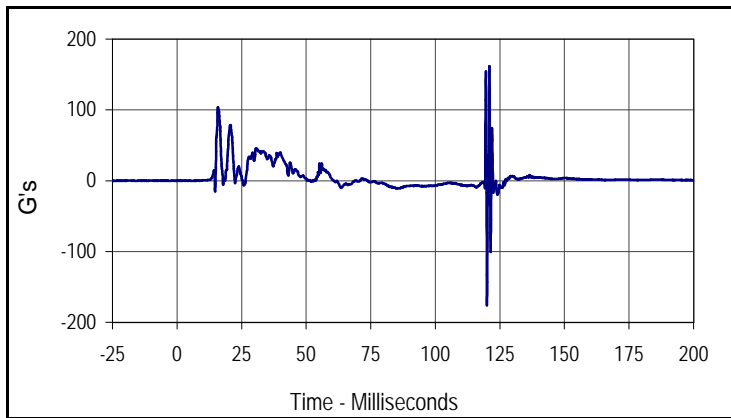
Curve Description			
Driver Pelvis Primary Y Velocity			
CURNO	Type	SAE Class	Units
016	IN1	180	KMH
Max	Time	Min	Time
37.4	46.4	0.0	4.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

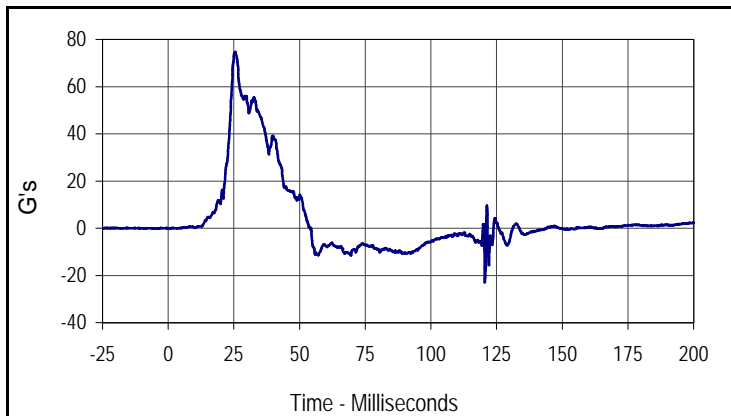
Test Date: 12/8/04
 NHTSA No.: G50101



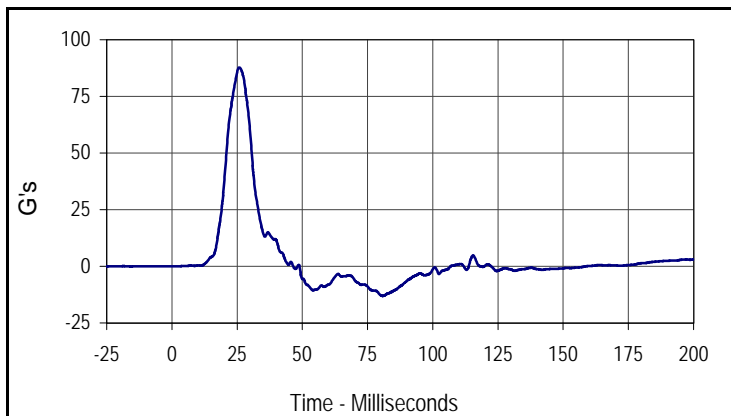
Curve Description			
Driver Upper Rib Redundant Y			
CURNO	Type	SAE Class	Units
017	FIL	1000	G's
Max	Time	Min	Time
168.4	119.6	-145.8	120.0



Curve Description			
Driver Lower Rib Redundant Y			
CURNO	Type	SAE Class	Units
018	FIL	1000	G's
Max	Time	Min	Time
161.0	121.0	-176.2	120.0



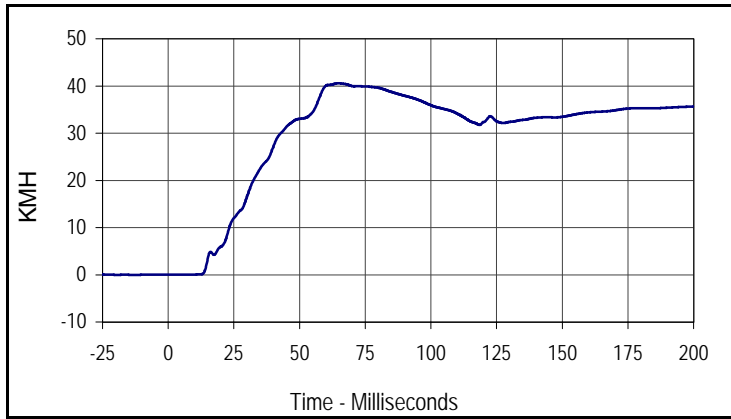
Curve Description			
Driver Lower Spine Redundant Y			
CURNO	Type	SAE Class	Units
019	FIL	1000	G's
Max	Time	Min	Time
74.8	25.5	-22.9	120.5



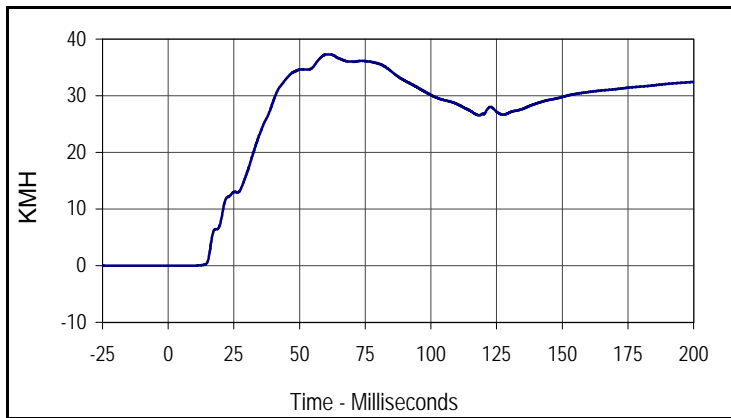
Curve Description			
Driver Pelvis Redundant Y			
CURNO	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
87.8	25.8	-13.1	80.8

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

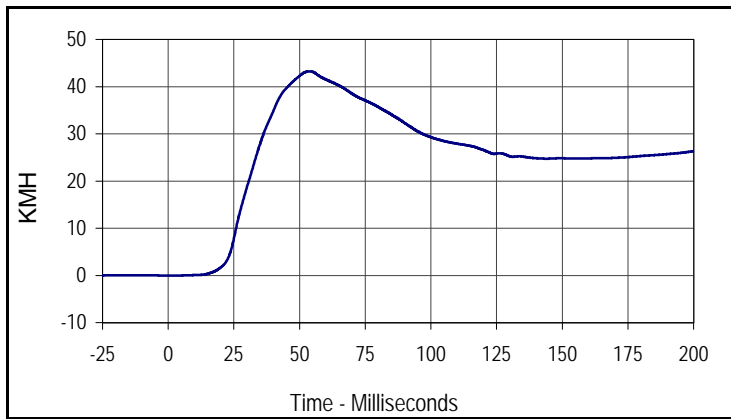
Test Date: 12/8/04
 NHTSA No.: G50101



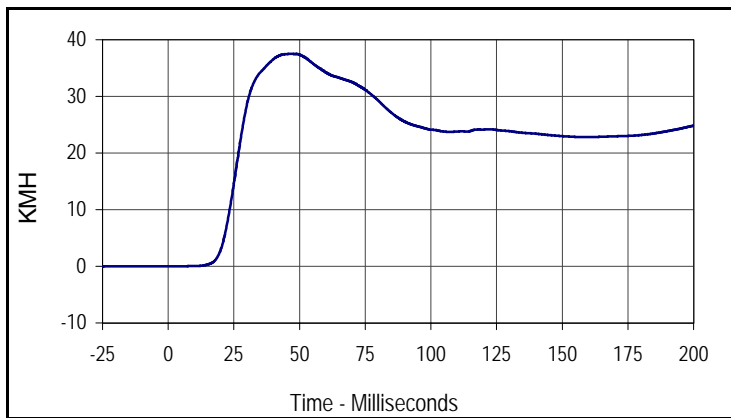
Curve Description			
Driver Upper Rib Redundant Y Velocity			
CURNO	Type	SAE Class	Units
017	IN1	180	KMH
Max	Time	Min	Time
40.6	64.7	0.0	0.0



Curve Description			
Driver Lower Rib Redundant Y Velocity			
CURNO	Type	SAE Class	Units
018	IN1	180	KMH
Max	Time	Min	Time
37.3	60.7	0.0	7.3



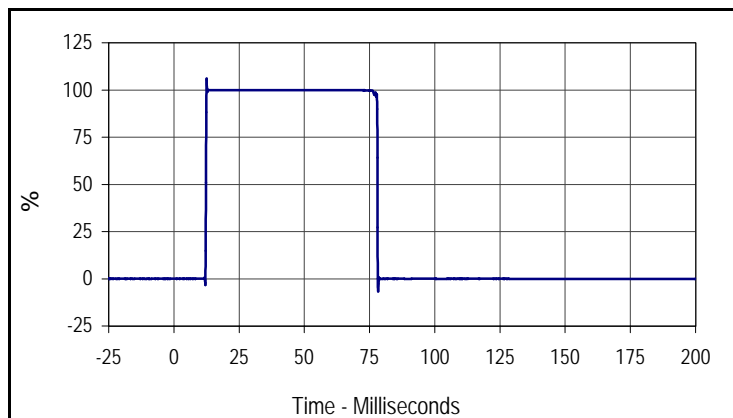
Curve Description			
Driver Lower Spine Redundant Y Velocity			
CURNO	Type	SAE Class	Units
019	IN1	180	KMH
Max	Time	Min	Time
43.2	53.9	0.0	1.3



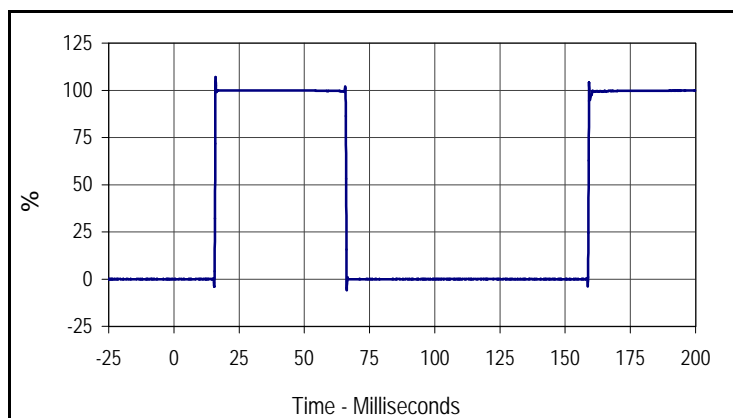
Curve Description			
Driver Pelvis Redundant Y Velocity			
CURNO	Type	SAE Class	Units
020	IN1	180	KMH
Max	Time	Min	Time
37.5	46.5	0.0	0.0

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101



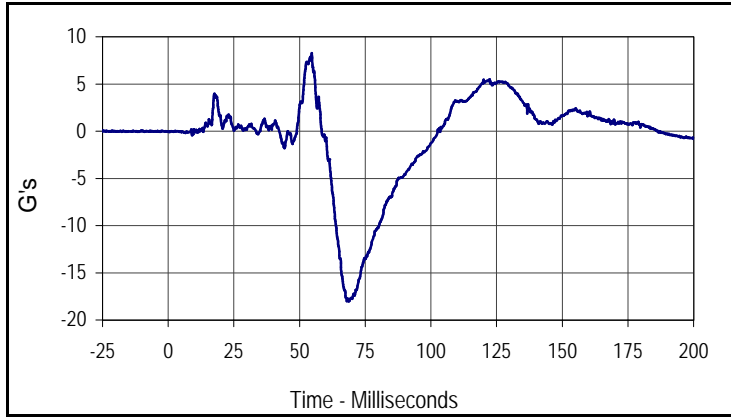
Curve Description			
Driver Thorax Contact			
CURNO	Type	SAE Class	Units
021	FIL	1000	%
Max	Time	Cross %	Time
106.1	12.5	50.0	12.4



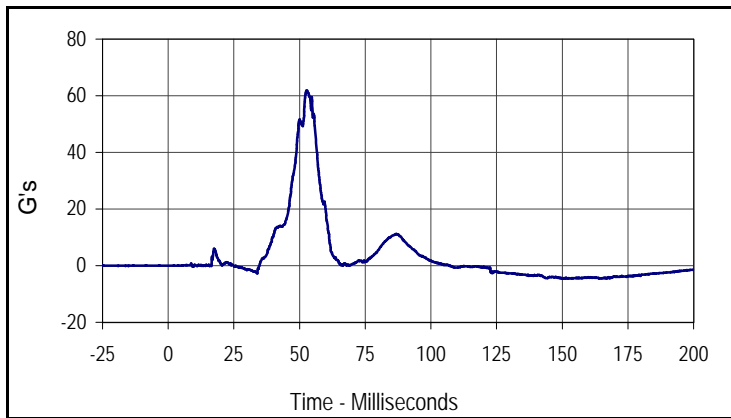
Curve Description			
Driver Pelvis Contact			
CURNO	Type	SAE Class	Units
022	FIL	1000	%
Max	Time	Cross %	Time
107.0	16.0	50.0	15.8

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

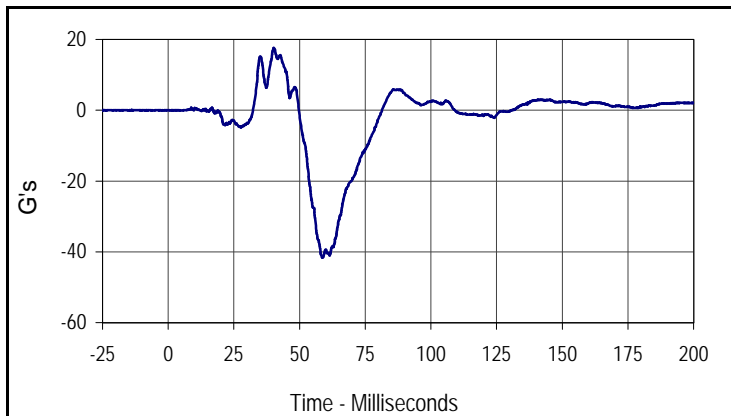
Test Date: 12/8/04
 NHTSA No.: G50101



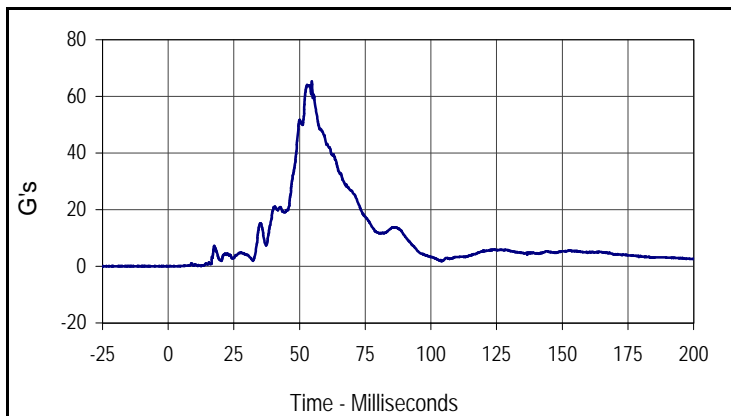
Curve Description			
Passenger Head X Primary			
CURNO	Type	SAE Class	Units
023	FIL	1000	G's
Max	Time	Min	Time
8.3	54.7	-18.0	68.7



Curve Description			
Passenger Head Y Primary			
CURNO	Type	SAE Class	Units
024	FIL	1000	G's
Max	Time	Min	Time
62.0	52.9	-4.6	153.3



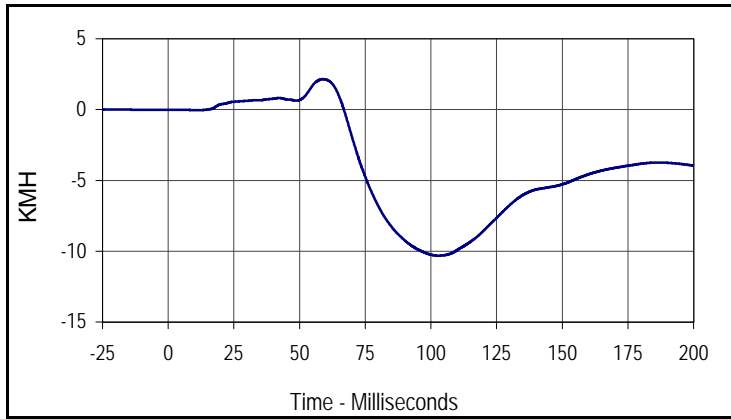
Curve Description			
Passenger Head Z Primary			
CURNO	Type	SAE Class	Units
025	FIL	1000	G's
Max	Time	Min	Time
17.6	40.2	-41.6	58.7



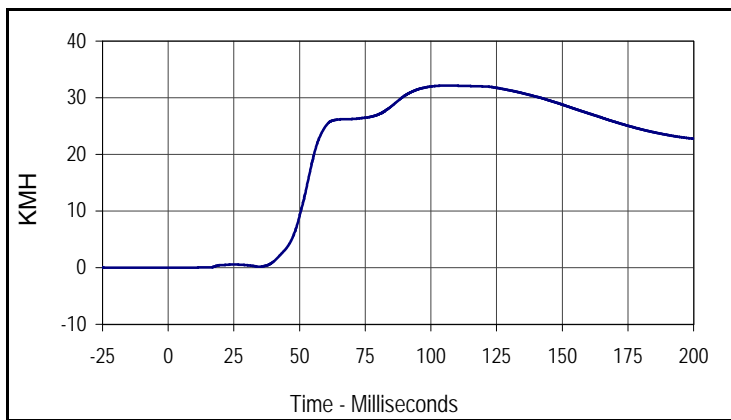
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
023	RES	1000	G's
Max	Time	Min	Time
65.3	54.7	0.0	3.1

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

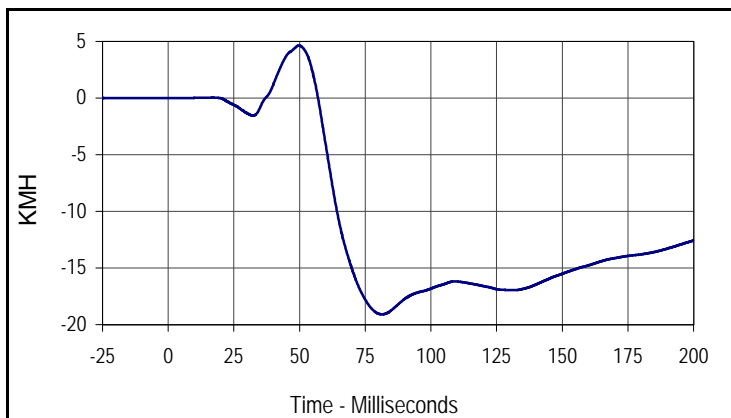
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Passenger Head Primary X Velocity			
CURNO	Type	SAE Class	Units
023	IN1	180	KMH
Max	Time	Min	Time
2.1	58.7	-10.3	102.8



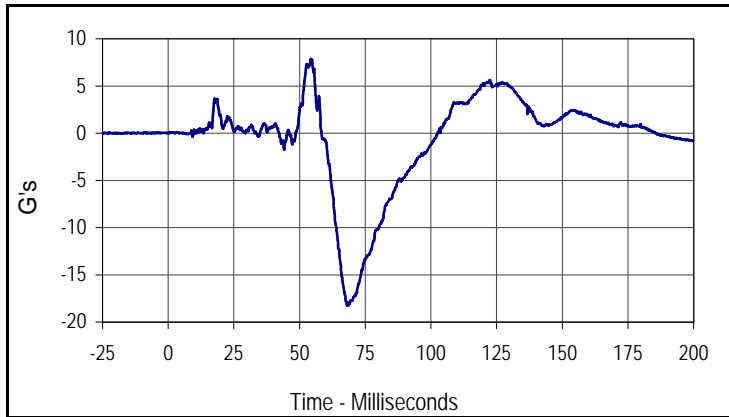
Curve Description			
Passenger Head Primary Y Velocity			
CURNO	Type	SAE Class	Units
024	IN1	180	KMH
Max	Time	Min	Time
32.2	107.2	0.0	1.5



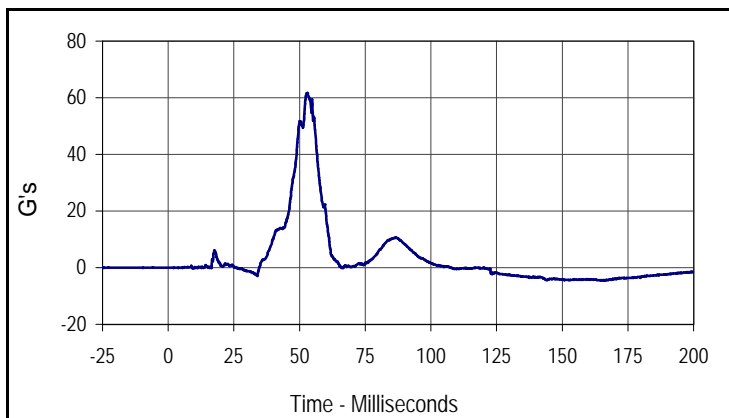
Curve Description			
Passenger Head Primary Z Velocity			
CURNO	Type	SAE Class	Units
025	IN1	180	KMH
Max	Time	Min	Time
4.6	49.8	-19.1	81.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

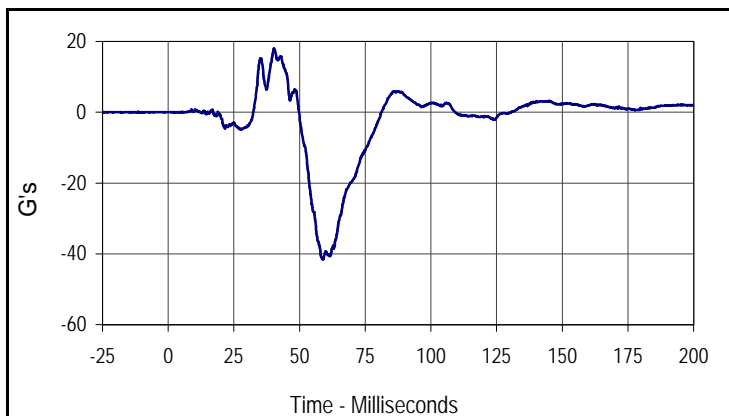
Test Date: 12/8/04
 NHTSA No.: G50101



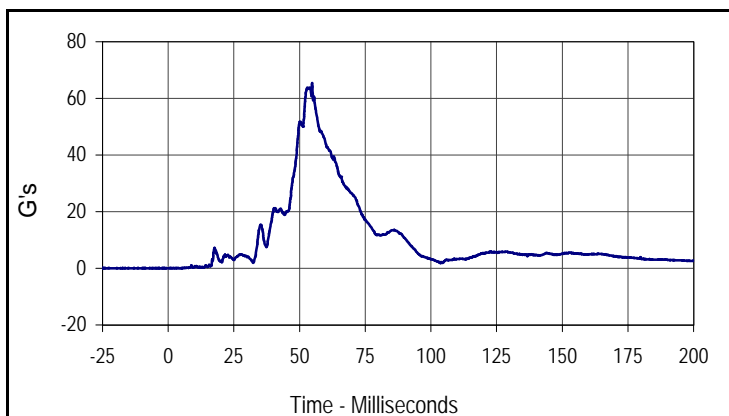
Curve Description			
Passenger Head X Redundant			
CURNO	Type	SAE Class	Units
026	FIL	1000	G's
Max	Time	Min	Time
7.9	54.3	-18.3	68.1



Curve Description			
Passenger Head Y Redundant			
CURNO	Type	SAE Class	Units
027	FIL	1000	G's
Max	Time	Min	Time
61.7	53.0	-4.5	167.3



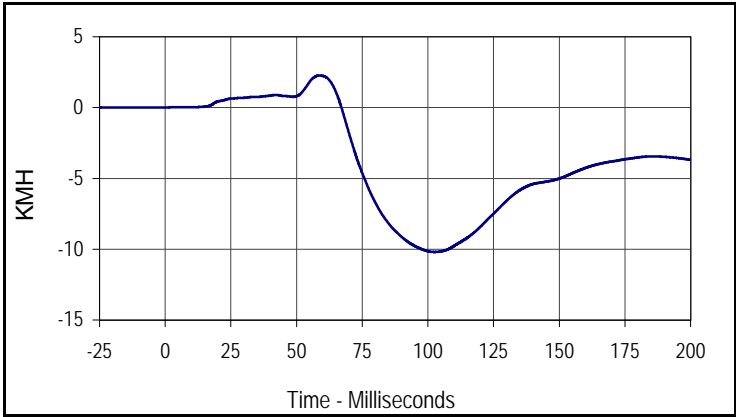
Curve Description			
Passenger Head Z Redundant			
CURNO	Type	SAE Class	Units
028	FIL	1000	G's
Max	Time	Min	Time
18.0	40.3	-41.6	58.8



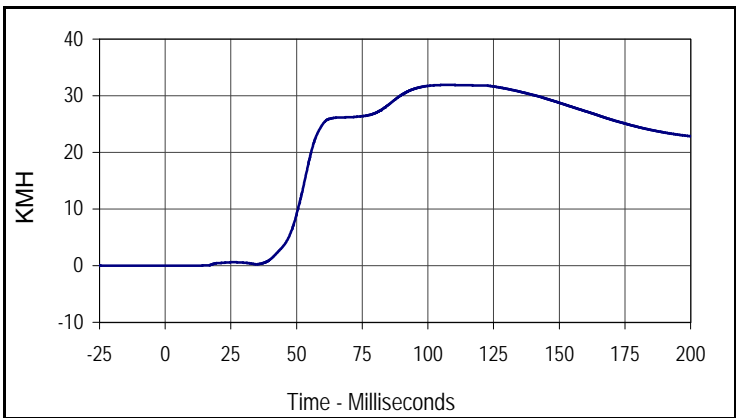
Curve Description			
Passenger Head Resultant Redundant			
CURNO	Type	SAE Class	Units
026	RES	1000	G's
Max	Time	Min	Time
65.4	54.8	0.0	4.2

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

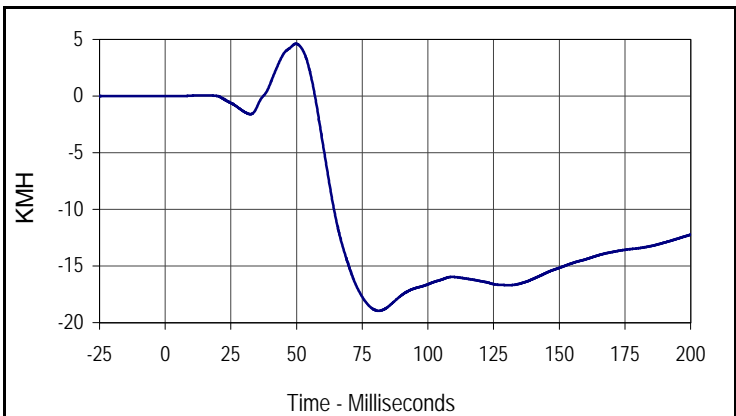
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Passenger Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
026	IN1	180	KMH
Max	Time	Min	Time
2.3	58.6	-10.2	102.5



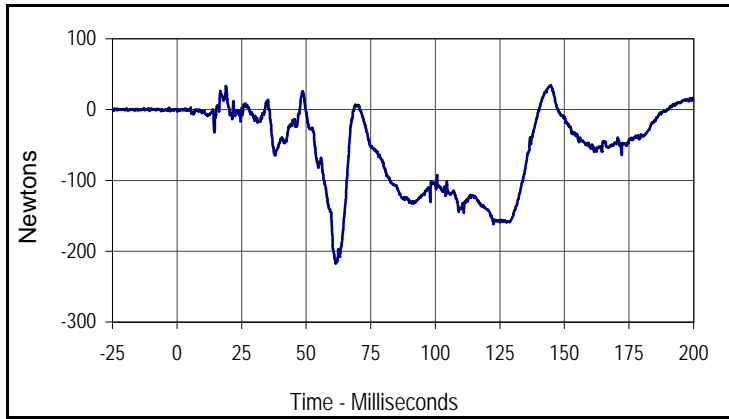
Curve Description			
Passenger Head Redundant Y Velocity			
CURNO	Type	SAE Class	Units
027	IN1	180	KMH
Max	Time	Min	Time
31.9	107.7	0.0	5.1



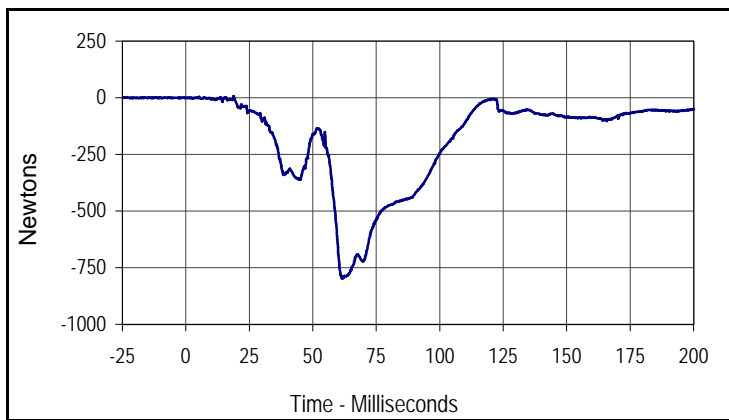
Curve Description			
Passenger Head Redundant Z Velocity			
CURNO	Type	SAE Class	Units
028	IN1	180	KMH
Max	Time	Min	Time
4.6	49.8	-19.0	81.2

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

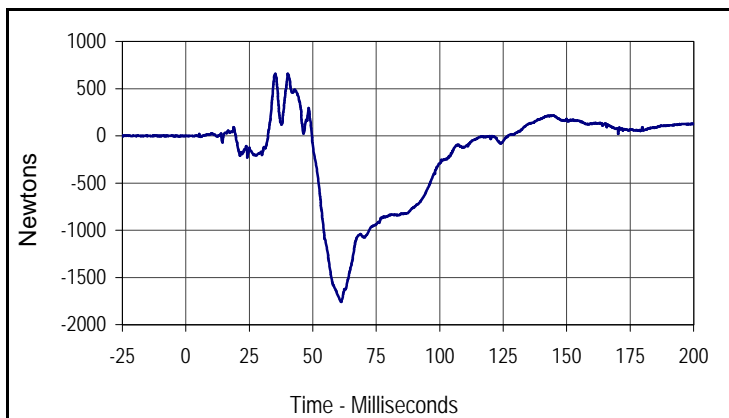
Test Date: 12/8/04
 NHTSA No.: G50101



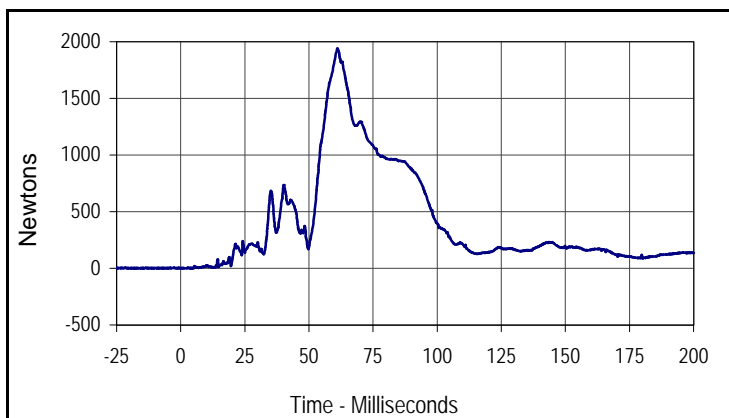
Curve Description			
Passenger Upper Neck Force X			
CURNO	Type	SAE Class	Units
029	FIL	1000	Newtons
Max	Time	Min	Time
34.4	144.7	-217.1	61.5



Curve Description			
Passenger Upper Neck Force Y			
CURNO	Type	SAE Class	Units
030	FIL	1000	Newtons
Max	Time	Min	Time
7.8	18.9	-797.4	61.5



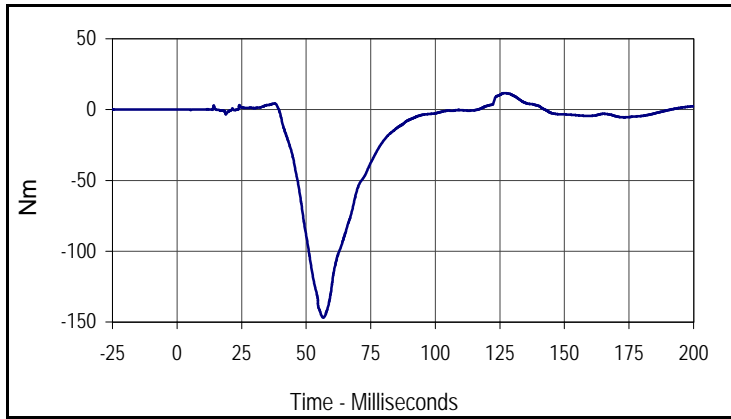
Curve Description			
Passenger Upper Neck Force Z			
CURNO	Type	SAE Class	Units
031	FIL	1000	Newtons
Max	Time	Min	Time
656.8	40.2	-1760.8	61.1



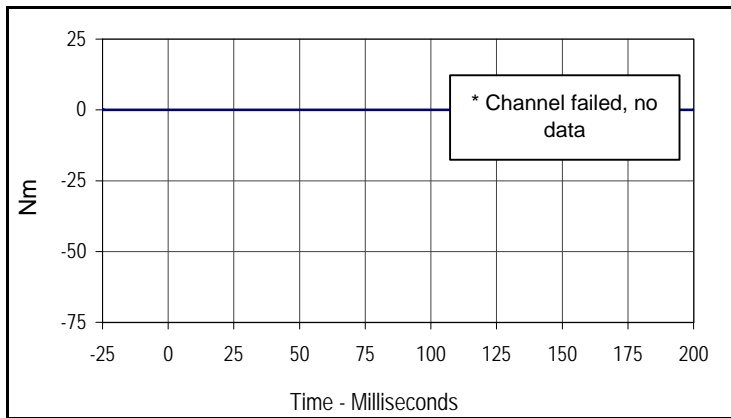
Curve Description			
Passenger Upper Neck Force Resultant			
CURNO	Type	SAE Class	Units
029	RES	1000	Newtons
Max	Time	Min	Time
1939.3	61.1	0.5	1.9

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101

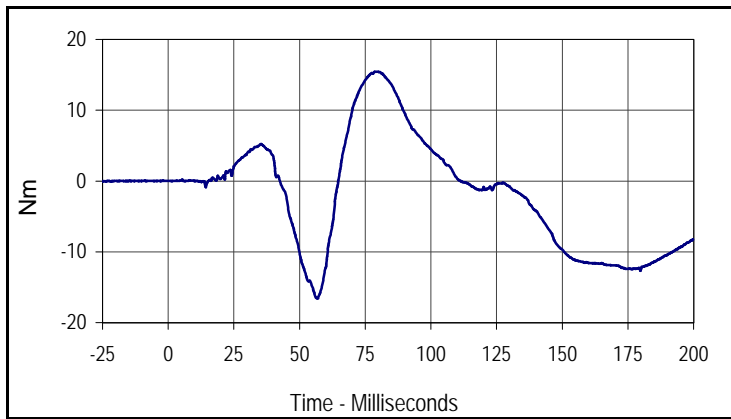


Curve Description			
Passenger Upper Neck Moment X			
CURNO	Type	SAE Class	Units
032	FIL	600	Nm
Max	Time	Min	Time
11.6	126.7	-146.8	56.5

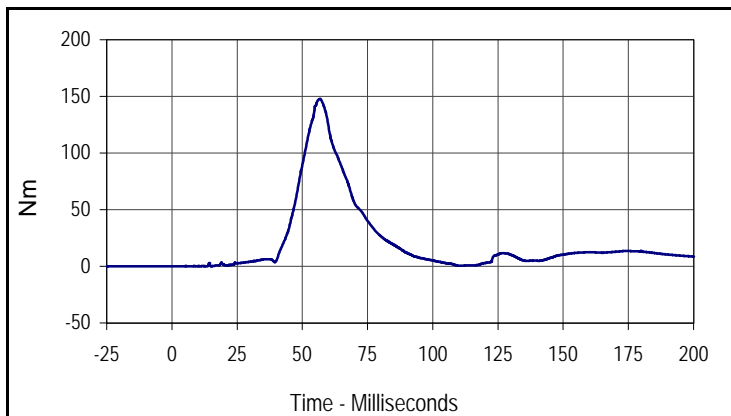


Curve Description			
Passenger Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
033	FIL	600	Nm
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



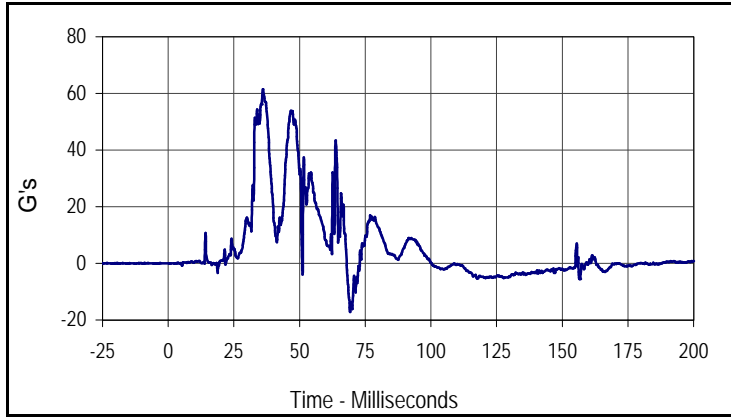
Curve Description			
Passenger Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
034	FIL	600	Nm
Max	Time	Min	Time
15.5	79.6	-16.6	56.8



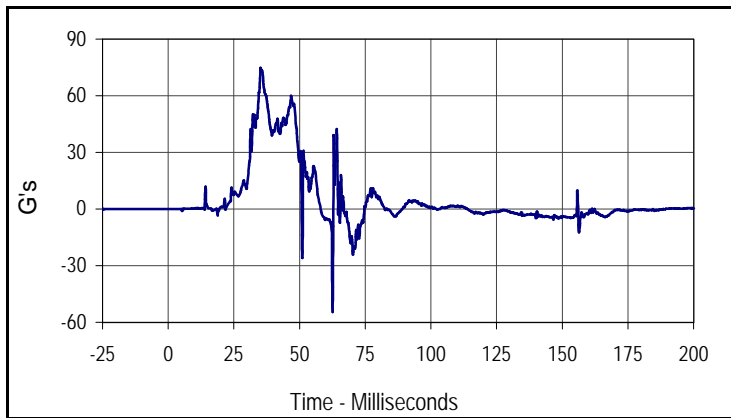
Curve Description			
Passenger Upper Neck Moment Resultant			
CURNO	Type	SAE Class	Units
032	RES	600	Nm
Max	Time	Min	Time
147.7	56.5	0.0	1.6

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

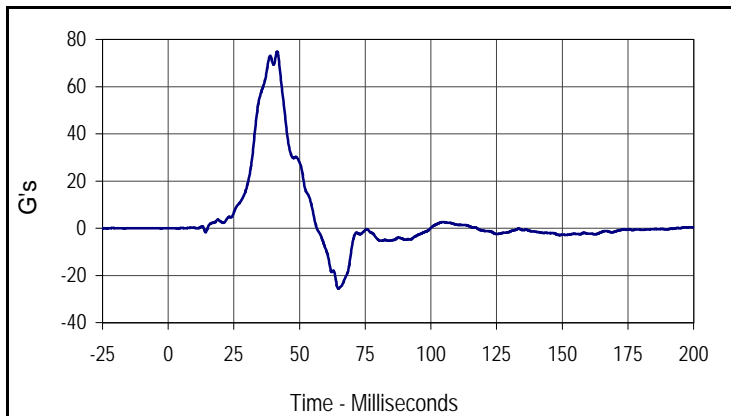
Test Date: 12/8/04
 NHTSA No.: G50101



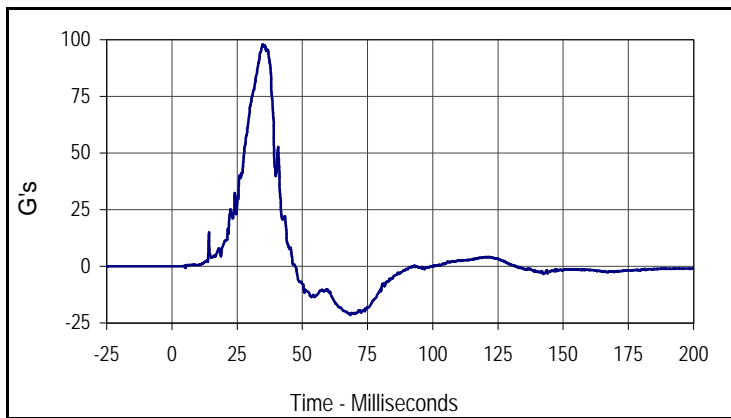
Curve Description			
Passenger Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
035	FIL	1000	G's
Max	Time	Min	Time
61.5	36.1	-17.2	69.3



Curve Description			
Passenger Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
036	FIL	1000	G's
Max	Time	Min	Time
74.8	35.1	-54.5	62.6



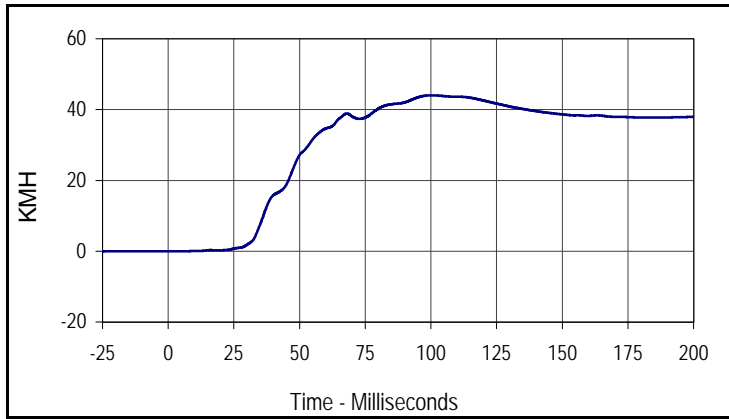
Curve Description			
Passenger Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
037	FIL	180	G's
Max	Time	Min	Time
74.8	41.5	-25.6	64.7



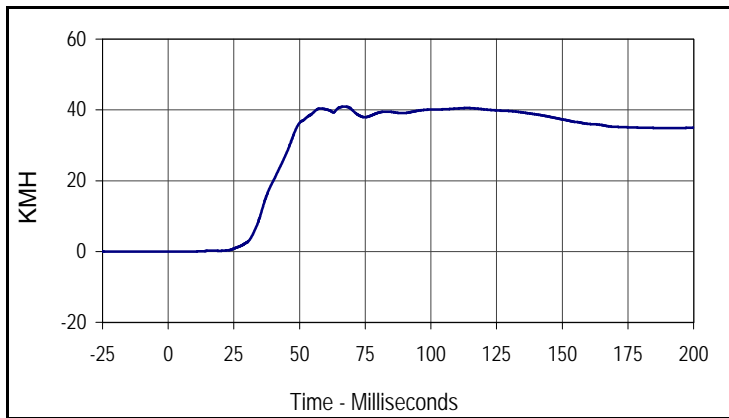
Curve Description			
Passenger Pelvis Primary Y			
CURNO	Type	SAE Class	Units
038	FIL	1000	G's
Max	Time	Min	Time
97.9	34.8	-21.4	68.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

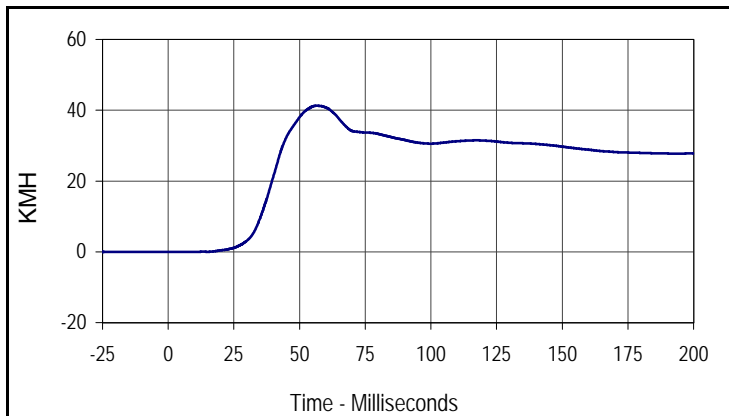
Test Date: 12/8/04
 NHTSA No.: G50101



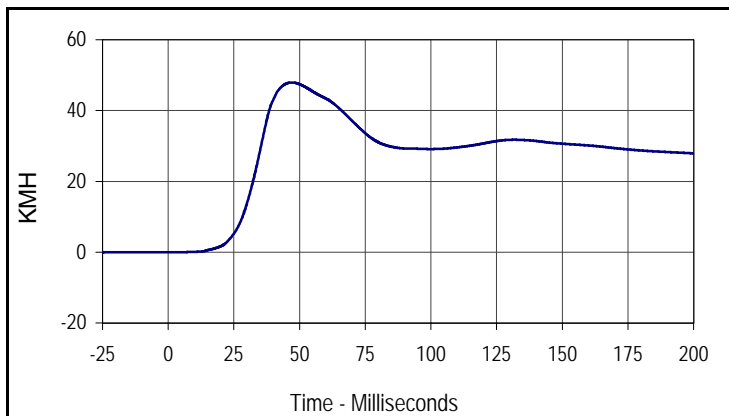
Curve Description			
Passenger Upper Rib Primary Y Velocity			
CURNO	Type	SAE Class	Units
035	IN1	180	KMH
Max	Time	Min	Time
44.0	100.2	0.0	5.5



Curve Description			
Passenger Lower Rib Primary Y Velocity			
CURNO	Type	SAE Class	Units
036	IN1	180	KMH
Max	Time	Min	Time
41.0	67.1	0.0	6.0



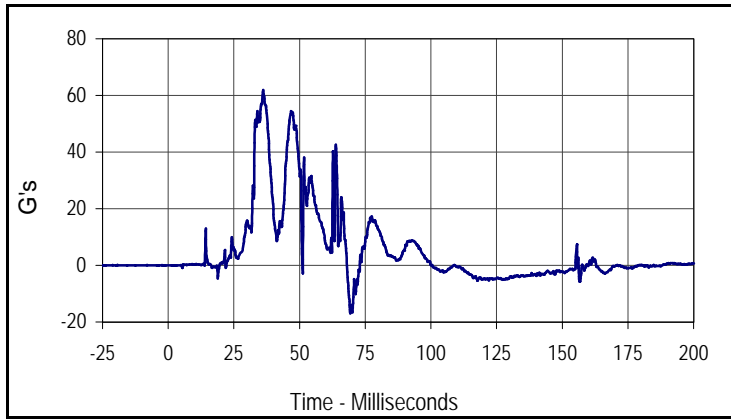
Curve Description			
Passenger Lower Spine Primary Y Velocity			
CURNO	Type	SAE Class	Units
037	IN1	180	KMH
Max	Time	Min	Time
41.3	56.6	0.0	4.4



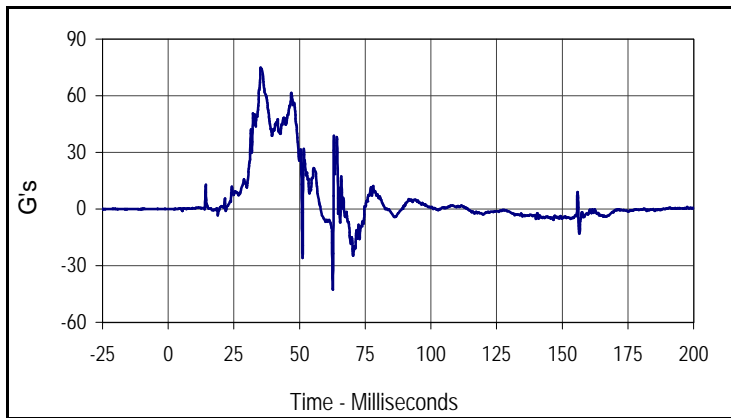
Curve Description			
Passenger Pelvis Primary Y Velocity			
CURNO	Type	SAE Class	Units
038	IN1	180	KMH
Max	Time	Min	Time
47.9	47.1	0.0	0.0

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

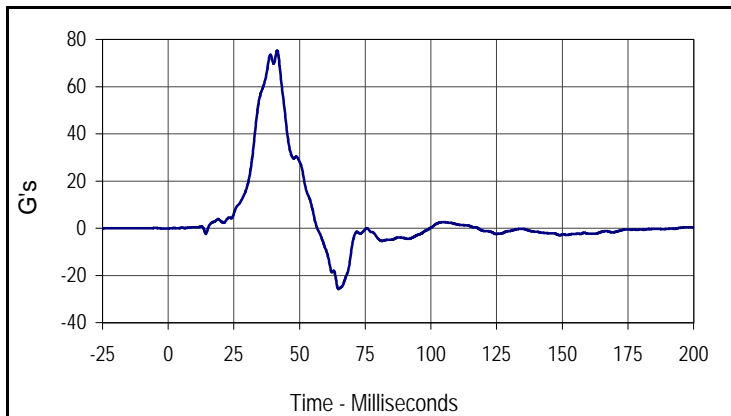
Test Date: 12/8/04
 NHTSA No.: G50101



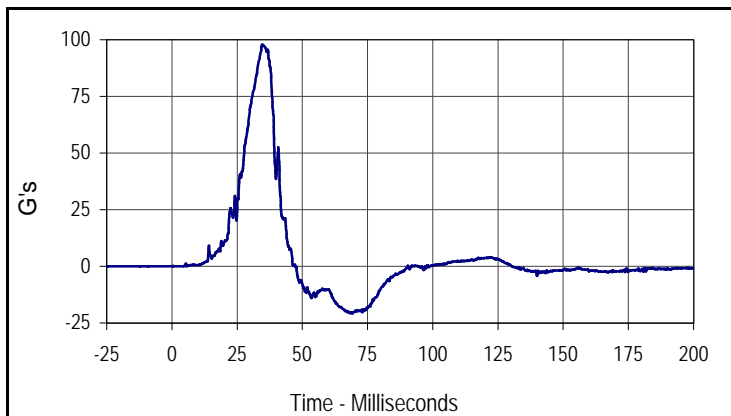
Curve Description			
Passenger Upper Rib Redundant Y			
CURNO	Type	SAE Class	Units
039	FIL	1000	G's
Max	Time	Min	Time
61.9	36.1	-16.9	69.3



Curve Description			
Passenger Lower Rib Redundant Y			
CURNO	Type	SAE Class	Units
040	FIL	1000	G's
Max	Time	Min	Time
74.9	35.2	-42.7	62.7



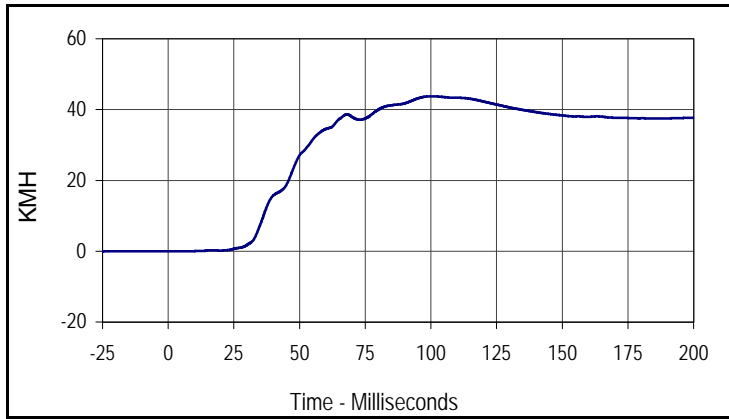
Curve Description			
Passenger Lower Spine Redundant Y			
CURNO	Type	SAE Class	Units
041	FIL	180	G's
Max	Time	Min	Time
75.2	41.5	-25.8	64.8



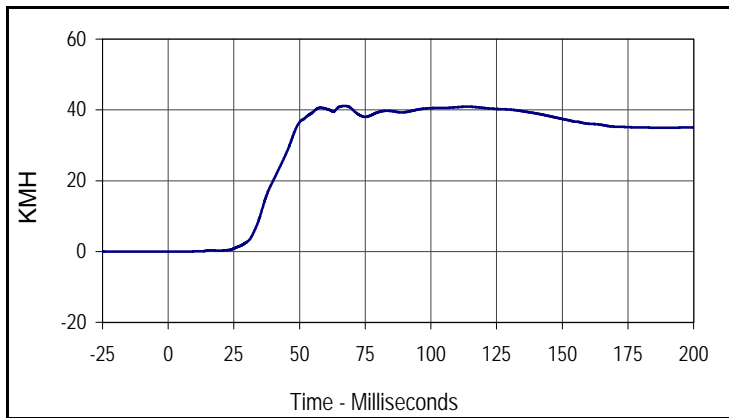
Curve Description			
Passenger Pelvis Redundant Y			
CURNO	Type	SAE Class	Units
042	FIL	1000	G's
Max	Time	Min	Time
97.9	34.6	-20.8	68.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

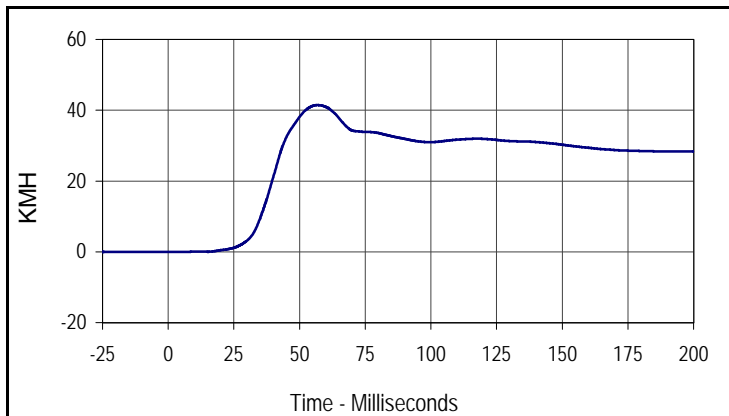
Test Date: 12/8/04
 NHTSA No.: G50101



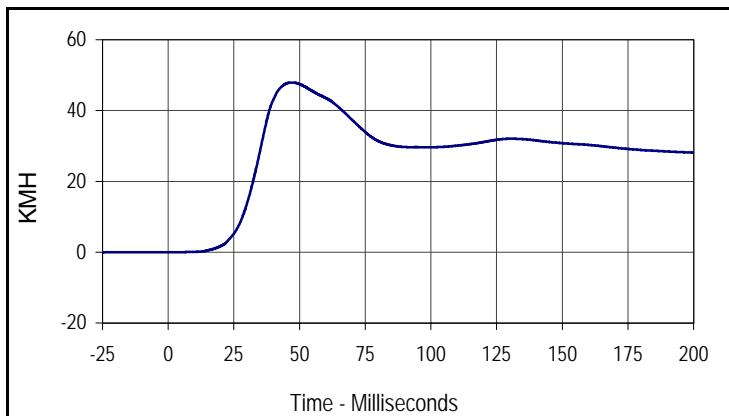
Curve Description			
Passenger Upper Rib Redundant Y Velocity			
CURNO	Type	SAE Class	Units
039	IN1	180	KMH
Max	Time	Min	Time
43.8	100.4	0.0	5.8



Curve Description			
Passenger Lower Rib Redundant Y Velocity			
CURNO	Type	SAE Class	Units
040	IN1	180	KMH
Max	Time	Min	Time
41.1	67.1	0.0	2.5



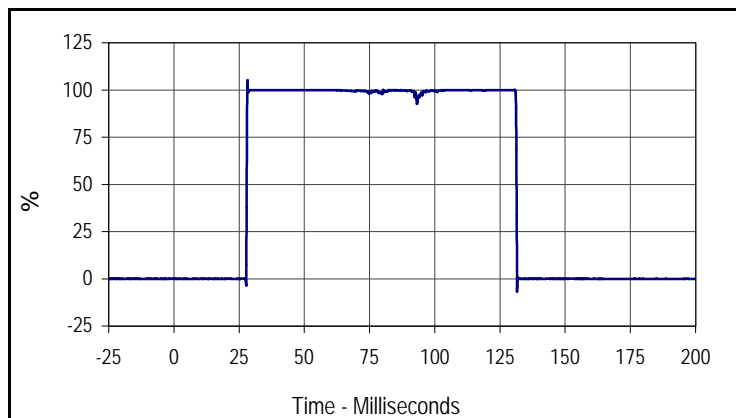
Curve Description			
Passenger Lower Spine Redundant Y Velocity			
CURNO	Type	SAE Class	Units
041	IN1	180	KMH
Max	Time	Min	Time
41.4	56.7	0.0	1.1



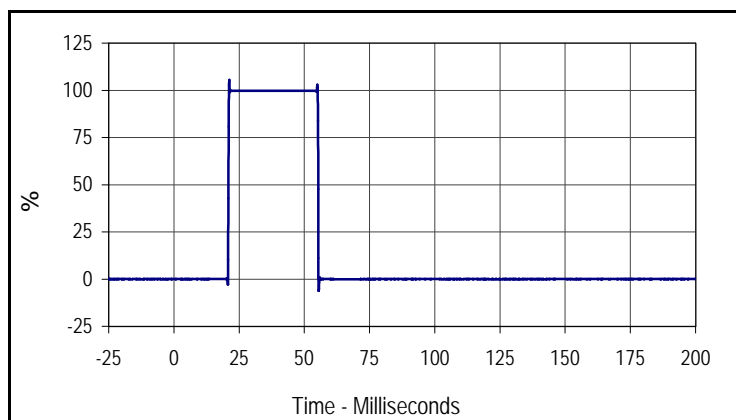
Curve Description			
Passenger Pelvis Redundant Y Velocity			
CURNO	Type	SAE Class	Units
042	IN1	180	KMH
Max	Time	Min	Time
47.9	47.1	0.0	0.0

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101



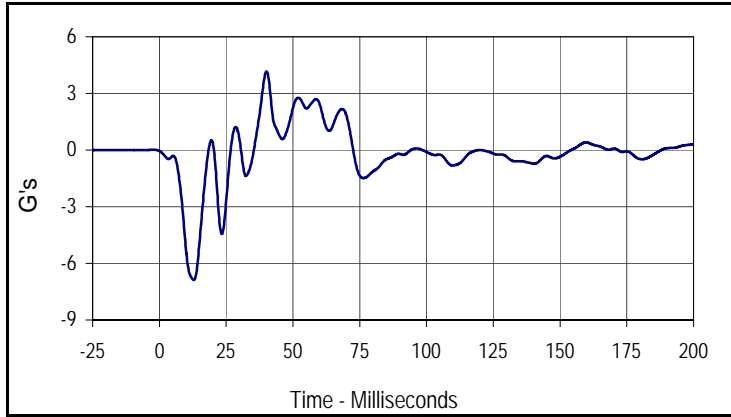
Curve Description			
Passenger Thorax Contact			
CURNO	Type	SAE Class	Units
043	FIL	1000	%
Max	Time	Cross %	Time
105.2	28.2	50.0	28.0



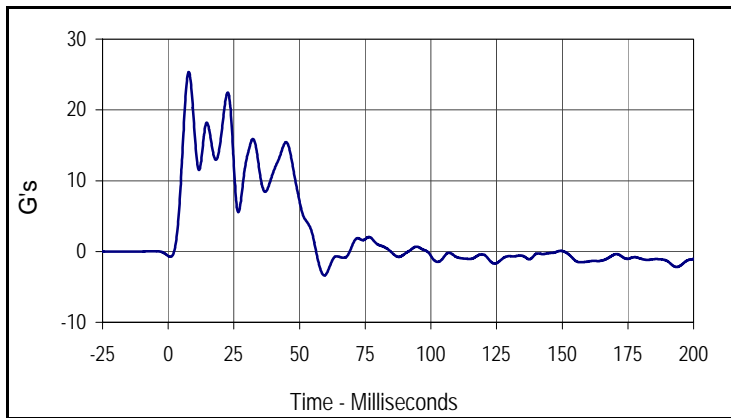
Curve Description			
Passenger Pelvis Contact			
CURNO	Type	SAE Class	Units
044	FIL	1000	%
Max	Time	Cross %	Time
105.5	21.2	50.0	21.0

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

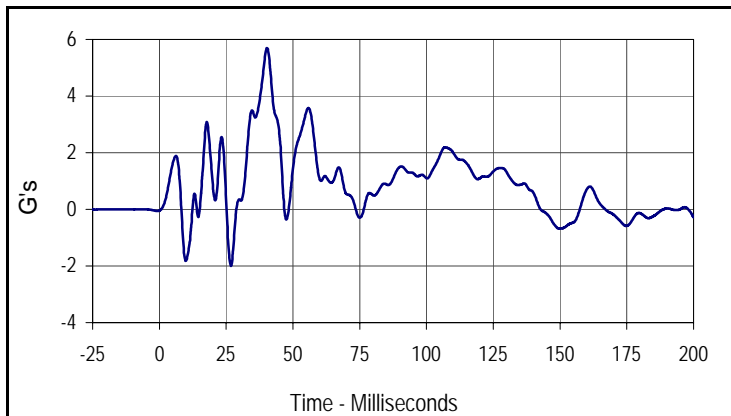
Test Date: 12/8/04
 NHTSA No.: G50101



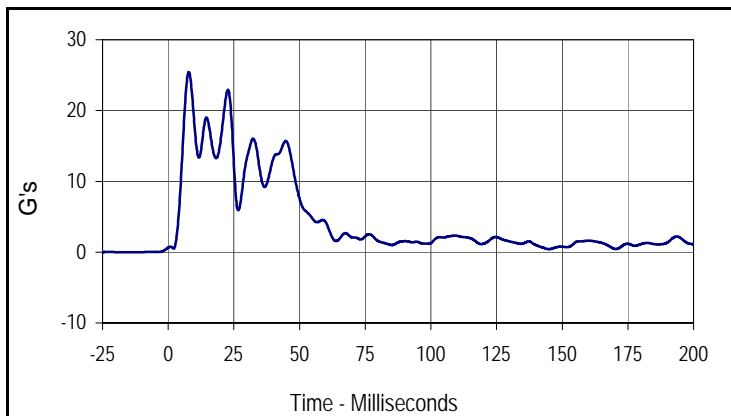
Curve Description			
Vehicle Right Sill at Front Seat X			
CURNO	Type	SAE Class	Units
045	FIL	60	G's
Max	Time	Min	Time
4.2	40.1	-6.9	12.8



Curve Description			
Vehicle Right Sill at Front Seat Y			
CURNO	Type	SAE Class	Units
046	FIL	60	G's
Max	Time	Min	Time
25.4	7.8	-3.4	59.5



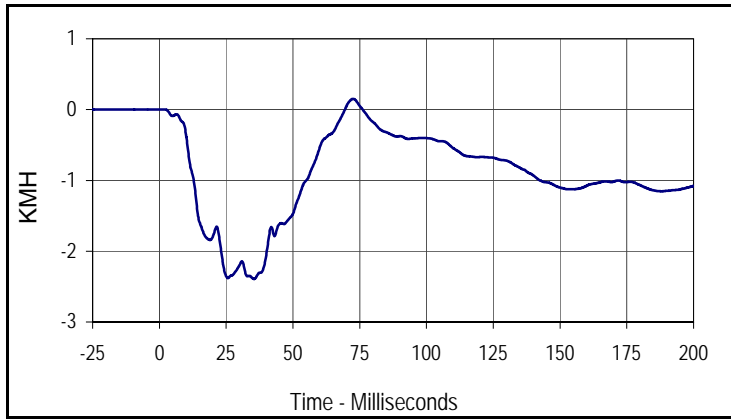
Curve Description			
Vehicle Right Sill at Front Seat Z			
CURNO	Type	SAE Class	Units
047	FIL	60	G's
Max	Time	Min	Time
5.7	40.3	-2.0	26.8



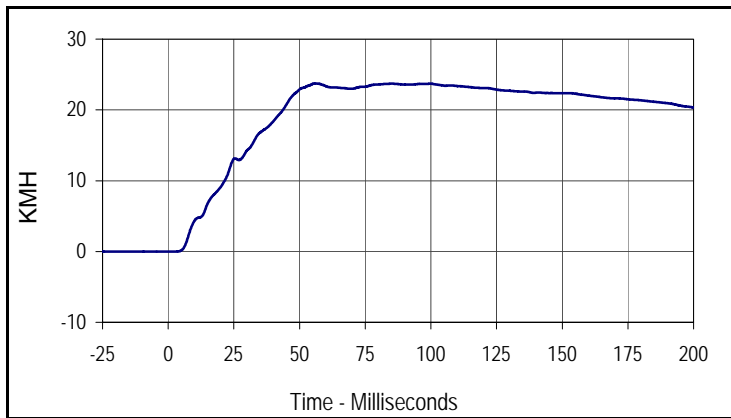
Curve Description			
Vehicle Right Sill Front Seat Resultant			
CURNO	Type	SAE Class	Units
045	RES	60	G's
Max	Time	Min	Time
25.5	7.8	0.4	145.0

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

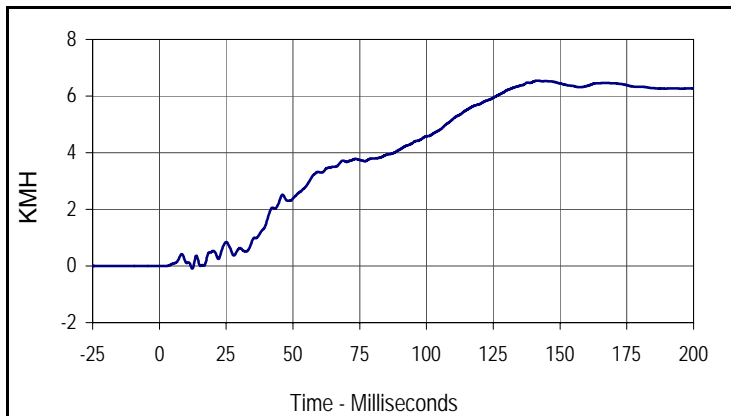
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Vehicle Right Sill at Front Seat X Velocity			
CURNO	Type	SAE Class	Units
045	IN1	180	KMH
Max	Time	Min	Time
0.2	72.6	-2.4	35.4



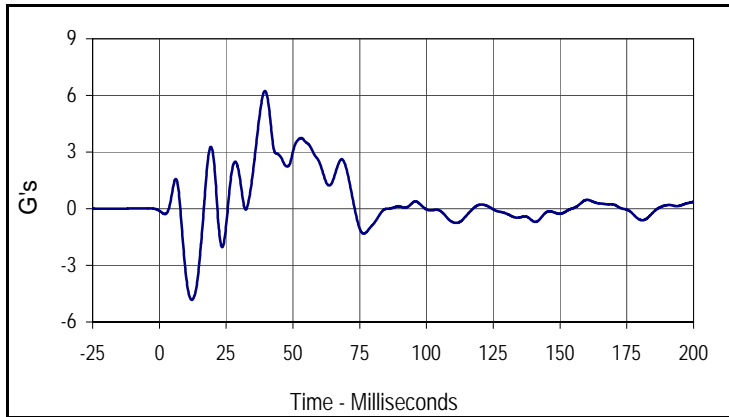
Curve Description			
Vehicle Right Sill at Front Seat Y Velocity			
CURNO	Type	SAE Class	Units
046	IN1	180	KMH
Max	Time	Min	Time
23.7	55.8	0.0	0.0



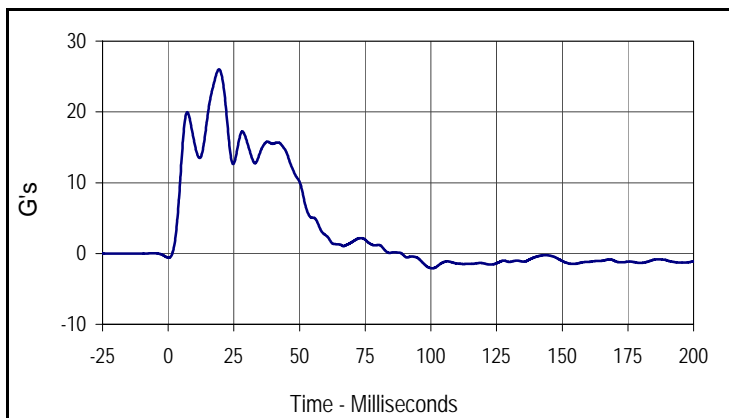
Curve Description			
Vehicle Right Sill at Front Seat Z Velocity			
CURNO	Type	SAE Class	Units
047	IN1	180	KMH
Max	Time	Min	Time
6.5	141.6	-0.1	12.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

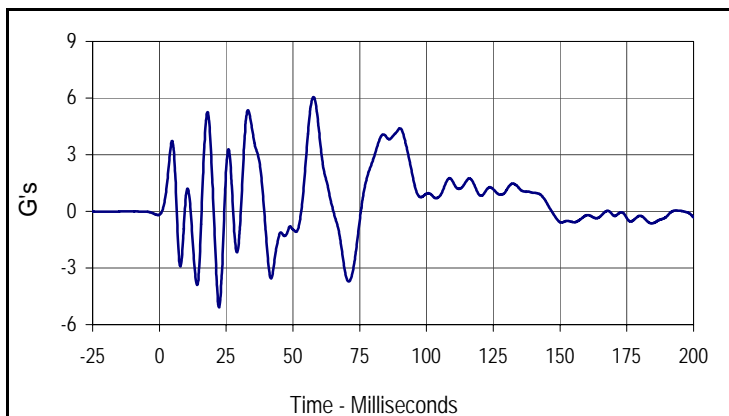
Test Date: 12/8/04
 NHTSA No.: G50101



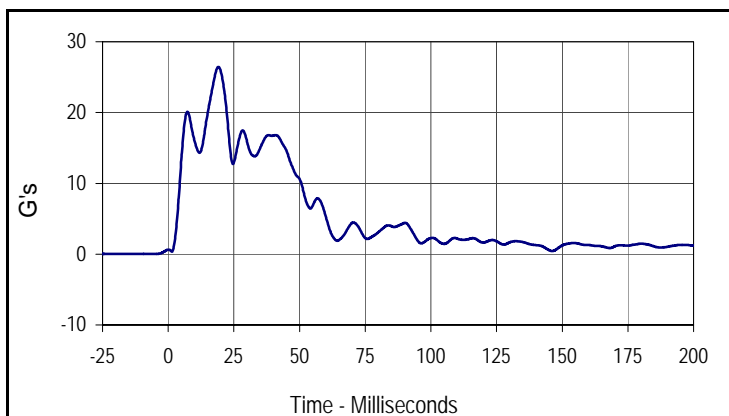
Curve Description			
Vehicle Right Sill at Rear Seat X			
CURNO	Type	SAE Class	Units
048	FIL	60	G's
Max	Time	Min	Time
6.2	39.5	-4.8	12.2



Curve Description			
Vehicle Right Sill at Rear Seat Y			
CURNO	Type	SAE Class	Units
049	FIL	60	G's
Max	Time	Min	Time
26.0	19.3	-2.1	100.6



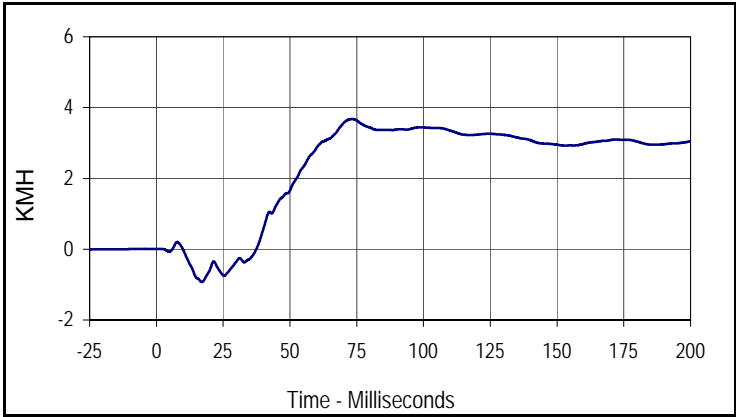
Curve Description			
Vehicle Right Sill at Rear Seat Z			
CURNO	Type	SAE Class	Units
050	FIL	60	G's
Max	Time	Min	Time
6.1	57.7	-5.1	22.3



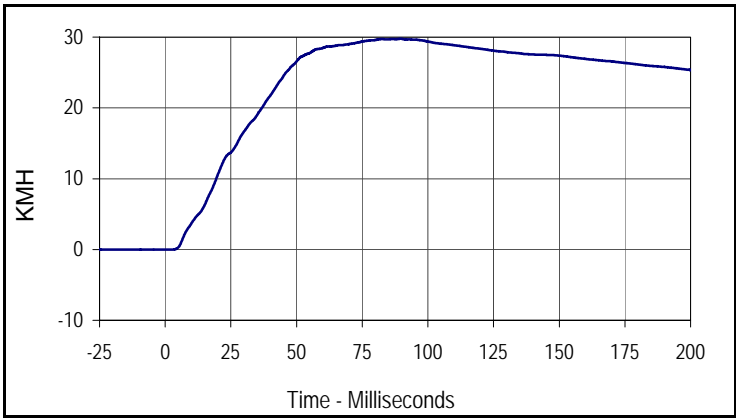
Curve Description			
Vehicle Right Sill Rear Seat Resultant			
CURNO	Type	SAE Class	Units
048	RES	60	G's
Max	Time	Min	Time
26.4	19.1	0.3	1.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

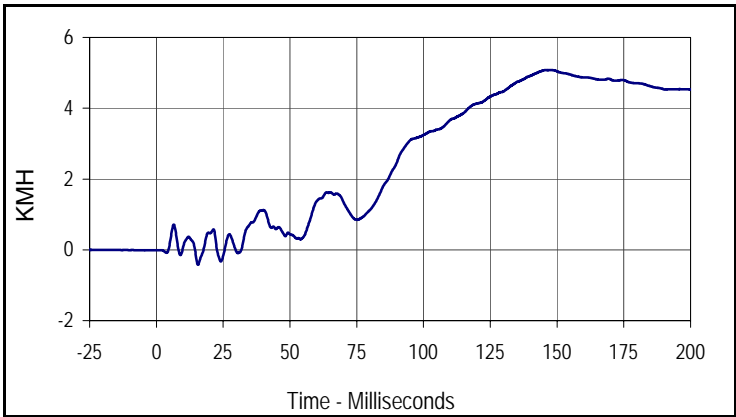
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Vehicle Right Sill at Rear Seat X Velocity			
CURNO	Type	SAE Class	Units
048	IN1	180	KMH
Max	Time	Min	Time
3.7	73.5	-0.9	17.0



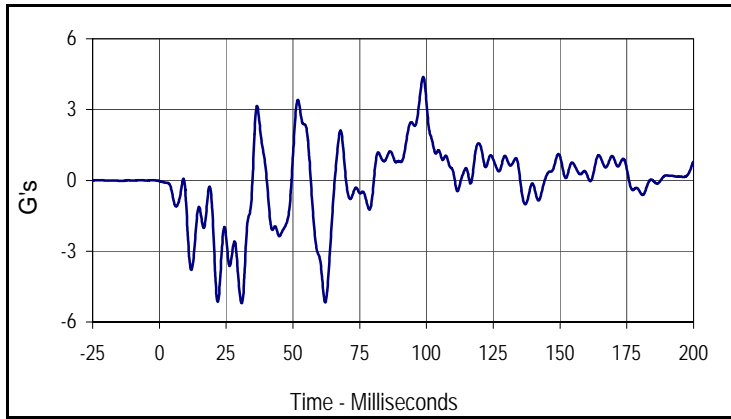
Curve Description			
Vehicle Right Sill at Rear Seat Y Velocity			
CURNO	Type	SAE Class	Units
049	IN1	180	KMH
Max	Time	Min	Time
29.8	89.6	0.0	2.6



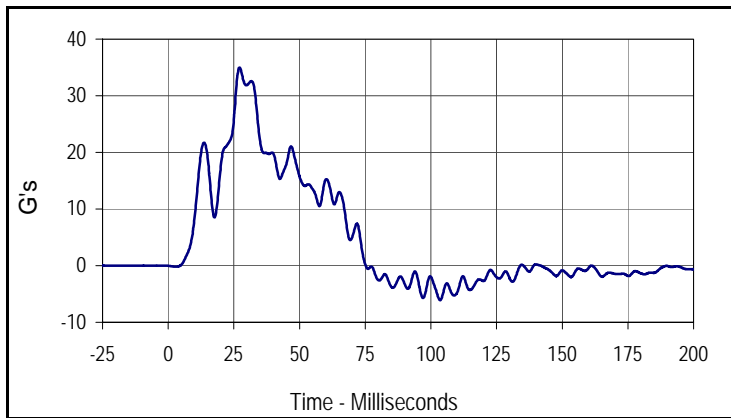
Curve Description			
Vehicle Right Sill at Rear Seat Z Velocity			
CURNO	Type	SAE Class	Units
050	IN1	180	KMH
Max	Time	Min	Time
5.1	147.5	-0.4	15.6

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

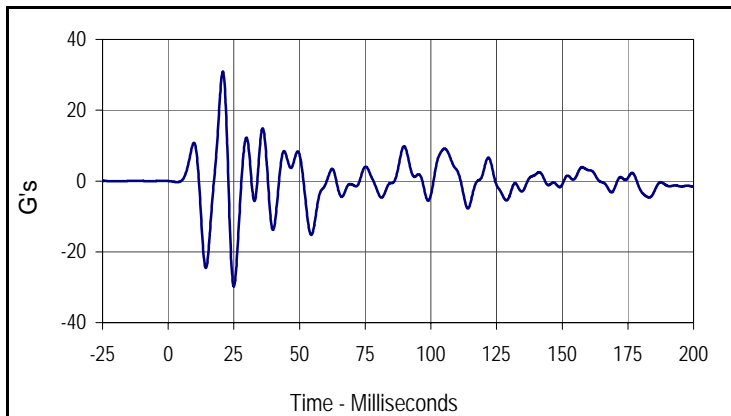
Test Date: 12/8/04
 NHTSA No.: G50101



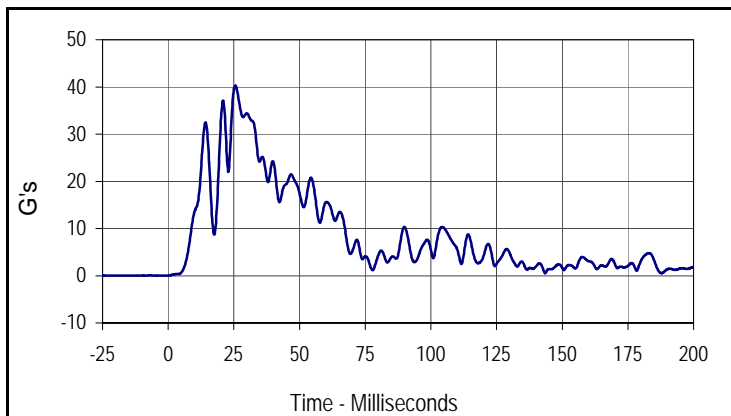
Curve Description			
Vehicle Rear Floor Above Axle X			
CURNO	Type	SAE Class	Units
051	FIL	60	G's
Max	Time	Min	Time
4.4	98.8	-5.2	30.8



Curve Description			
Vehicle Rear Floor Above Axle Y			
CURNO	Type	SAE Class	Units
052	FIL	60	G's
Max	Time	Min	Time
35.0	27.2	-6.1	103.5



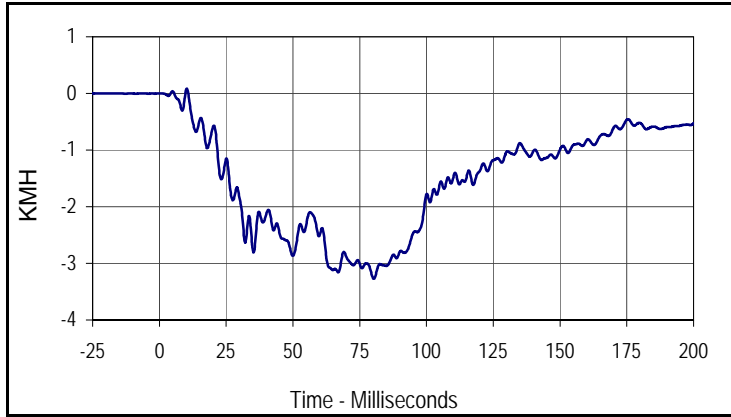
Curve Description			
Vehicle Rear Floor Above Axle Z			
CURNO	Type	SAE Class	Units
053	FIL	60	G's
Max	Time	Min	Time
30.9	20.8	-29.7	25.0



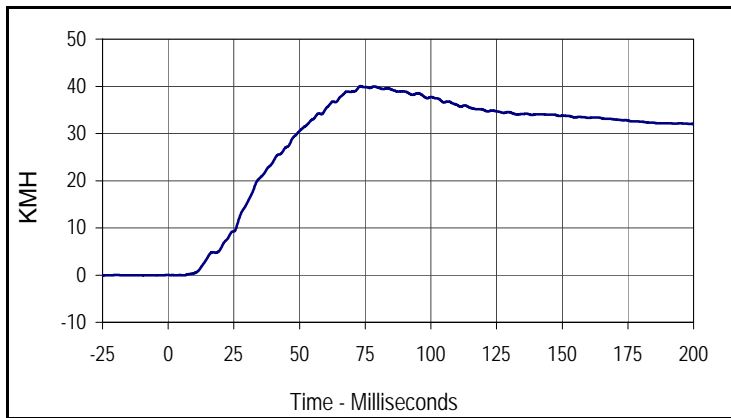
Curve Description			
Vehicle Rear Floor Above Axle Resultant			
CURNO	Type	SAE Class	Units
051	RES	60	G's
Max	Time	Min	Time
40.3	25.5	0.0	0.0

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

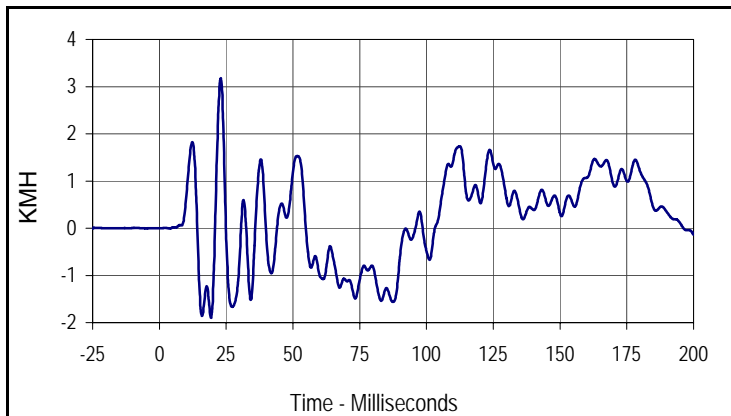
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Vehicle Rear Floor Above Axle X Velocity			
CURNO	Type	SAE Class	Units
051	FIL	180	KMH
Max	Time	Min	Time
0.1	10.3	-3.3	80.3



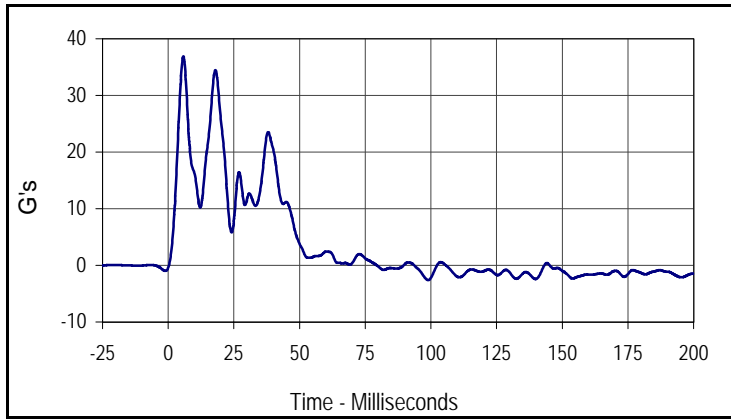
Curve Description			
Vehicle Rear Floor Above Axle Y Velocity			
CURNO	Type	SAE Class	Units
052	FIL	180	KMH
Max	Time	Min	Time
40.0	73.2	0.0	5.9



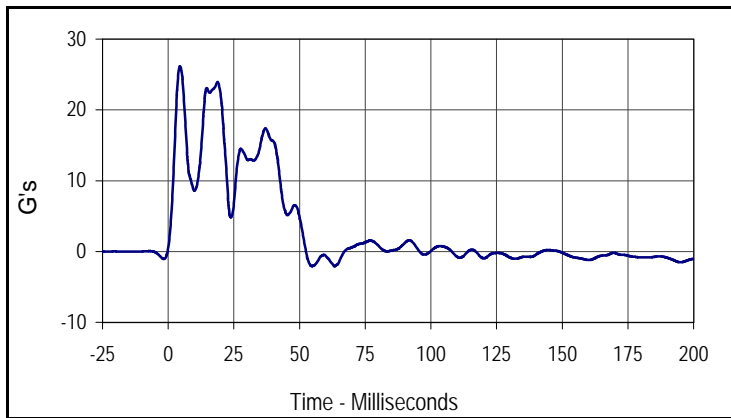
Curve Description			
Vehicle Rear Floor Above Axle Z Velocity			
CURNO	Type	SAE Class	Units
053	FIL	180	KMH
Max	Time	Min	Time
3.2	23.0	-1.9	19.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

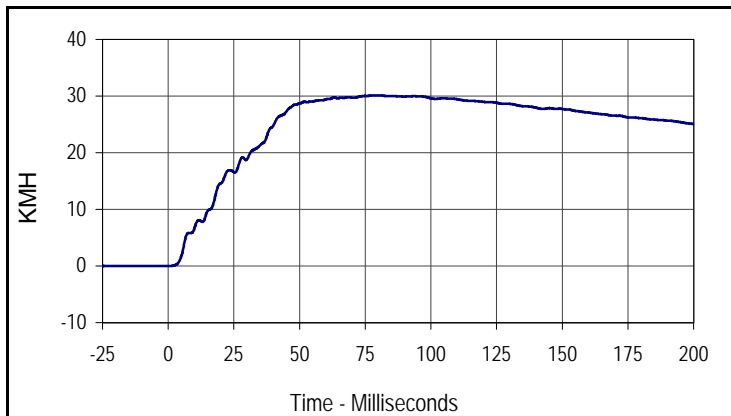
Test Date: 12/8/04
 NHTSA No.: G50101



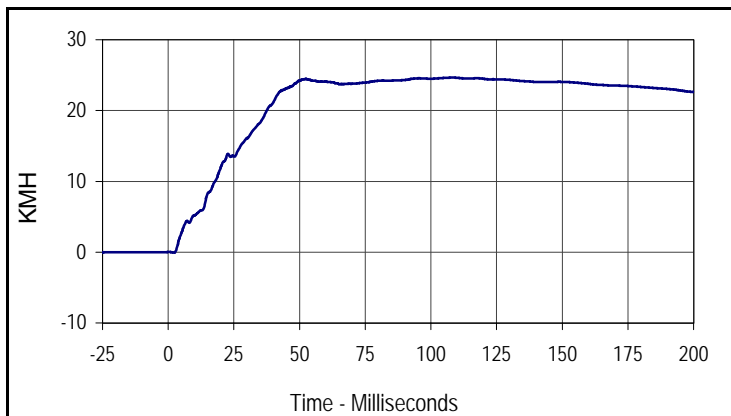
Curve Description			
Vehicle Left Sill at Rear Door Y			
CURNO	Type	SAE Class	Units
054	FIL	60	G's
Max	Time	Min	Time
36.8	5.8	-2.6	99.0



Curve Description			
Vehicle Left Sill at Front Door Y			
CURNO	Type	SAE Class	Units
055	FIL	60	G's
Max	Time	Min	Time
26.1	4.5	-2.1	54.6



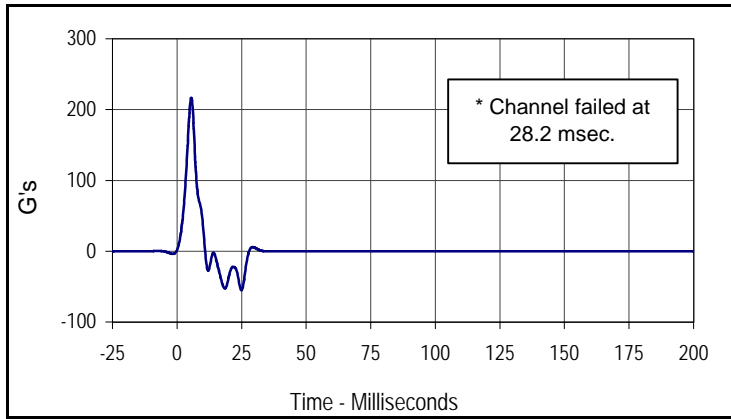
Curve Description			
Vehicle Left Sill at Rear Door Y Velocity			
CURNO	Type	SAE Class	Units
054	IN1	180	KMH
Max	Time	Min	Time
30.1	80.7	0.0	0.4



Curve Description			
Vehicle Left Sill at Front Door Y Velocity			
CURNO	Type	SAE Class	Units
055	IN1	180	KMH
Max	Time	Min	Time
24.7	108.4	-0.1	2.1

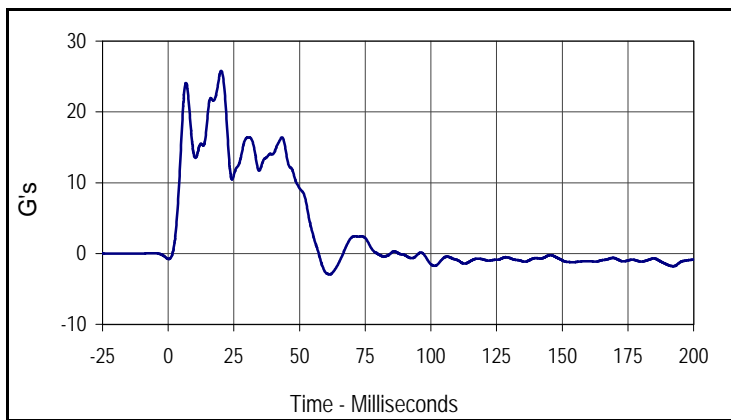
Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101

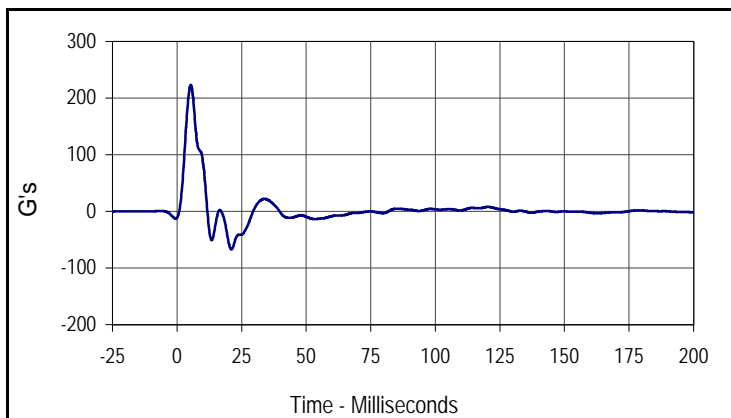


Curve Description			
Vehicle Left Front Door CL Y			
CURNO	Type	SAE Class	Units
056	FIL	60	G's
Max	Time	Min	Time
216.4	5.5	-55.1	24.9

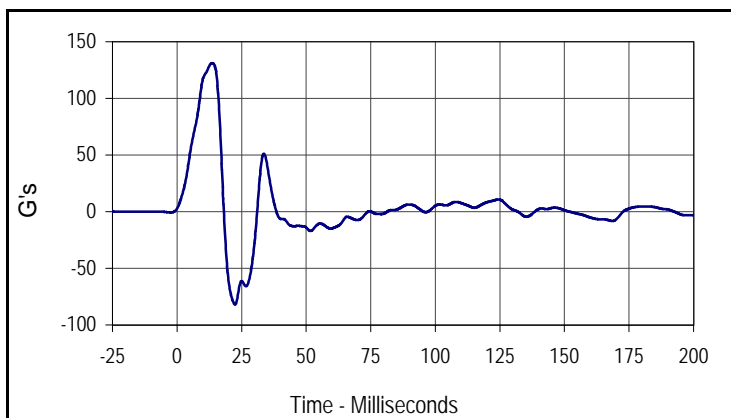
* Channel failed at 28.2 msec.



Curve Description			
Vehicle Right Rear Occupant Compartment			
CURNO	Type	SAE Class	Units
057	FIL	60	G's
Max	Time	Min	Time
25.8	20.2	-3.0	61.5



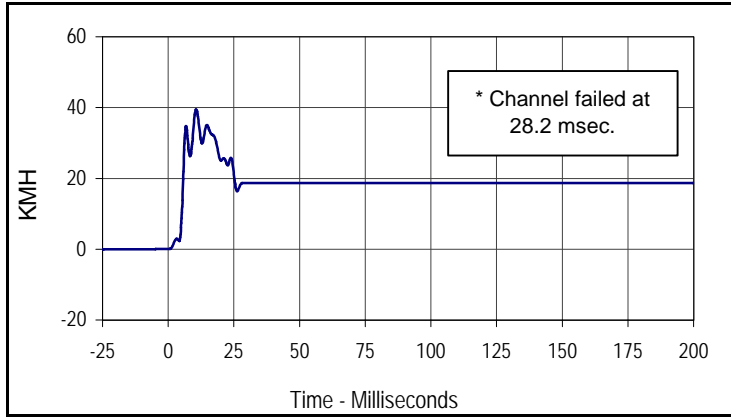
Curve Description			
Vehicle Left Front Door Mid Rear Y			
CURNO	Type	SAE Class	Units
058	FIL	60	G's
Max	Time	Min	Time
222.9	5.3	-67.4	21.1



Curve Description			
Vehicle Left Front Door Upper CL Y			
CURNO	Type	SAE Class	Units
059	FIL	60	G's
Max	Time	Min	Time
131.0	13.6	-82.1	22.4

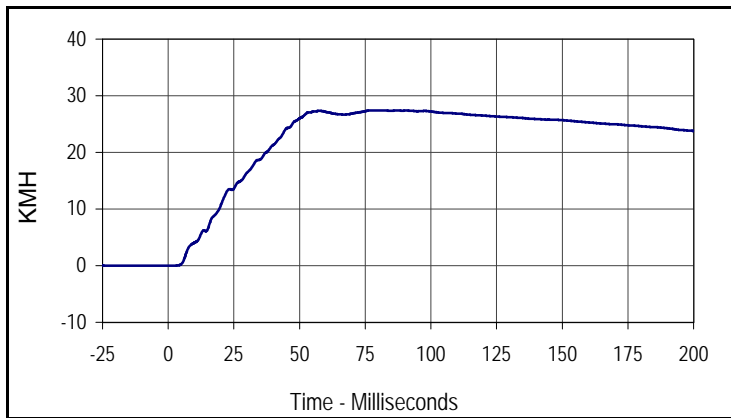
Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101

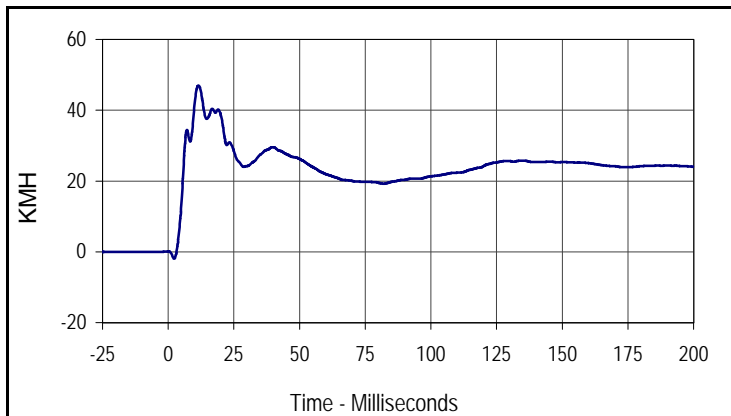


Curve Description			
Vehicle Left Front Door CL Y Velocity			
CURNO	Type	SAE Class	Units
056	IN1	180	KMH
Max	Time	Min	Time
39.4	10.6	0.0	0.1

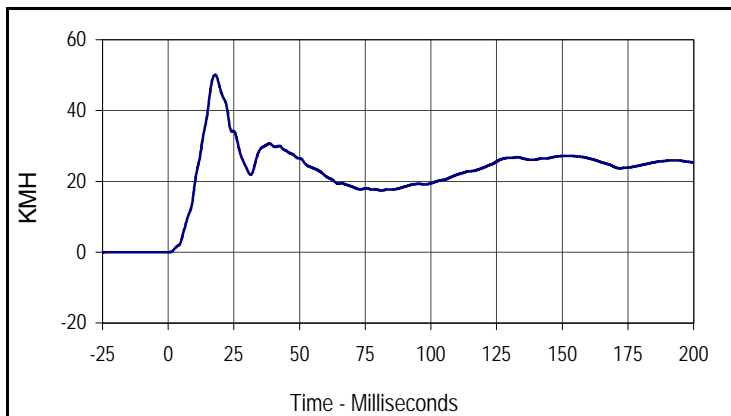
* Channel failed at 28.2 msec.



Curve Description			
Vehicle Right Rear Occupant Compartment Y Velocity			
CURNO	Type	SAE Class	Units
057	IN1	180	KMH
Max	Time	Min	Time
27.4	80.8	0.0	0.0



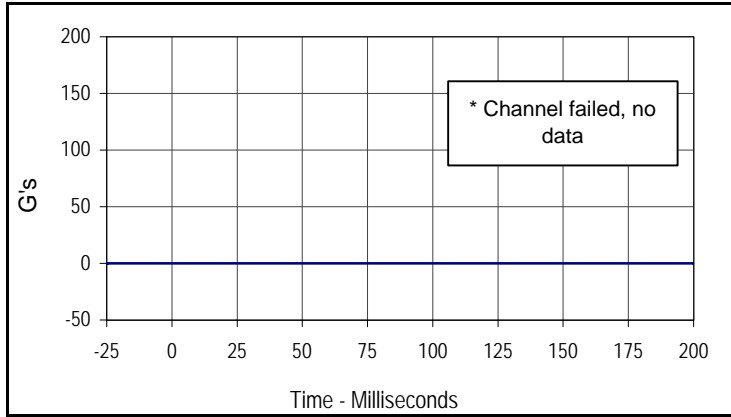
Curve Description			
Vehicle Left Front Door Mid Rear Y Velocity			
CURNO	Type	SAE Class	Units
058	IN1	180	KMH
Max	Time	Min	Time
47.0	11.5	-2.0	2.3



Curve Description			
Vehicle Left Front Door Upper CL Y Velocity			
CURNO	Type	SAE Class	Units
059	IN1	180	KMH
Max	Time	Min	Time
50.1	17.9	0.0	0.4

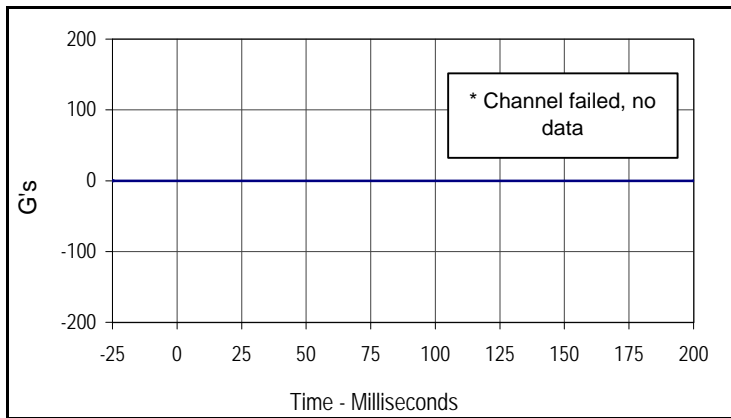
Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101



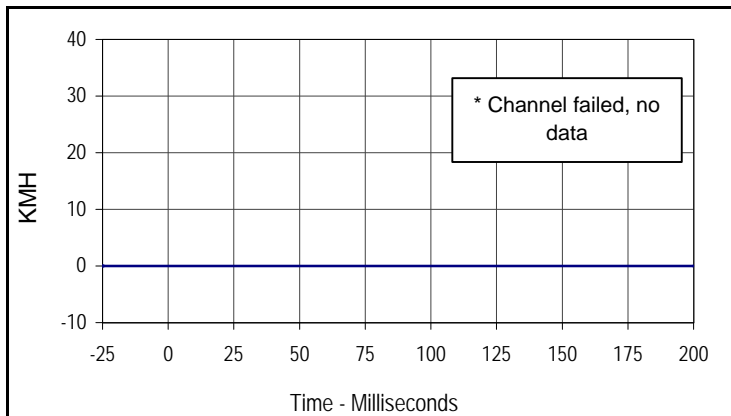
Curve Description			
Vehicle Left Rear Door Mid Rear Y			
CURNO	Type	SAE Class	Units
060	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



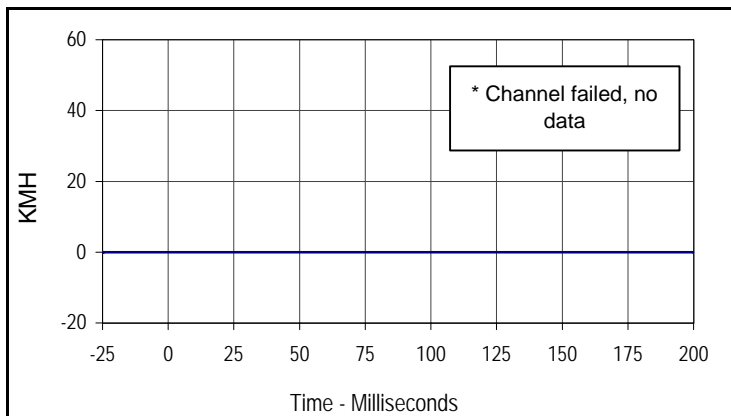
Curve Description			
Vehicle Left Rear Door Upper CL Y			
CURNO	Type	SAE Class	Units
061	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



Curve Description			
Vehicle Left Rear Door Mid Rear Y Velocity			
CURNO	Type	SAE Class	Units
060	IN1	180	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

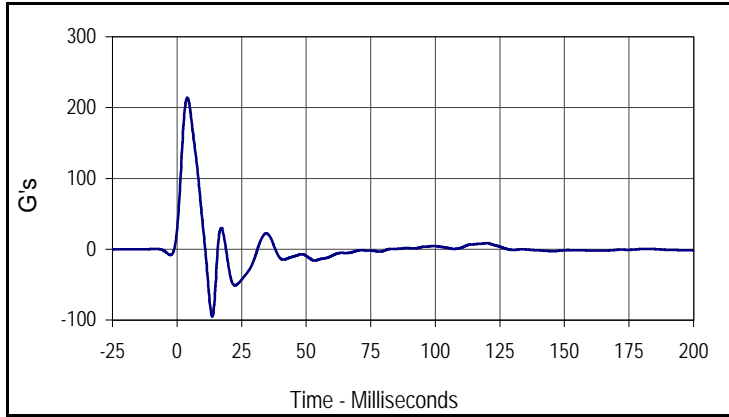


Curve Description			
Vehicle Left Rear Door Upper CL Y Velocity			
CURNO	Type	SAE Class	Units
061	IN1	180	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

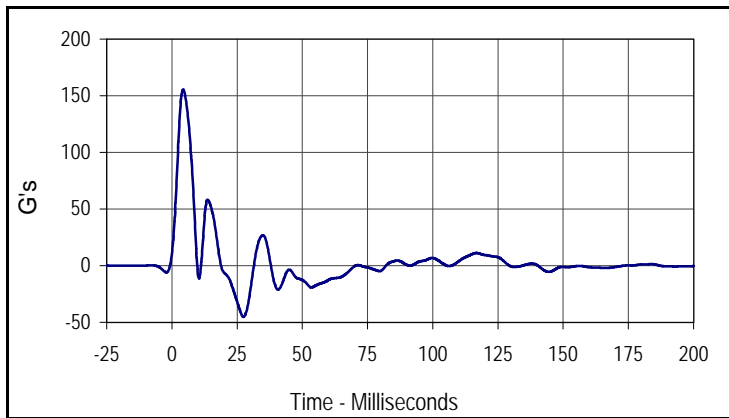
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Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

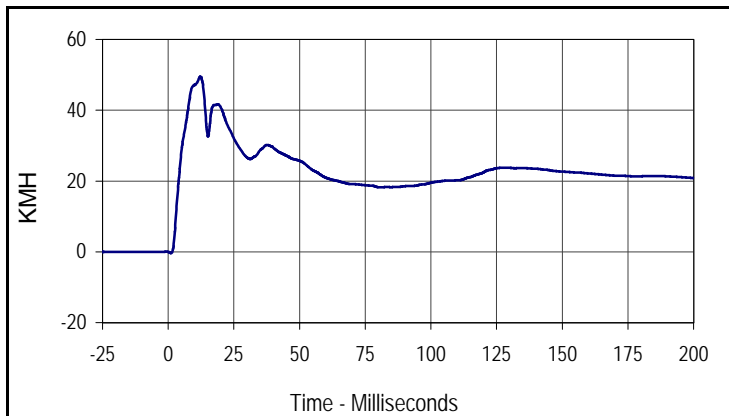
Test Date: 12/8/04
 NHTSA No.: G50101



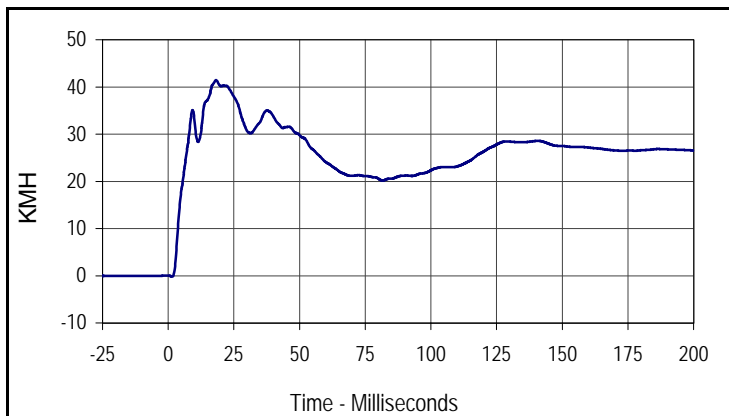
Curve Description			
Vehicle B-Post Lower Y			
CURNO	Type	SAE Class	Units
062	FIL	60	G's
Max	Time	Min	Time
214.1	4.0	-94.9	13.6



Curve Description			
Vehicle B-Post Middle Y			
CURNO	Type	SAE Class	Units
063	FIL	60	G's
Max	Time	Min	Time
155.6	4.3	-45.2	27.4



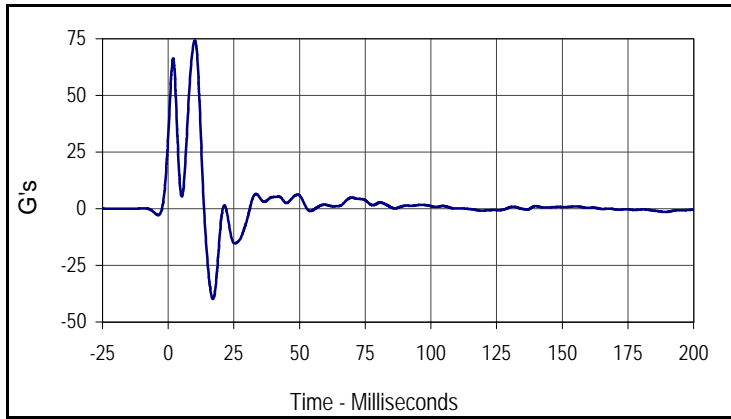
Curve Description			
Vehicle B-Post Lower Y Velocity			
CURNO	Type	SAE Class	Units
062	IN1	180	KMH
Max	Time	Min	Time
49.5	12.2	-0.4	1.1



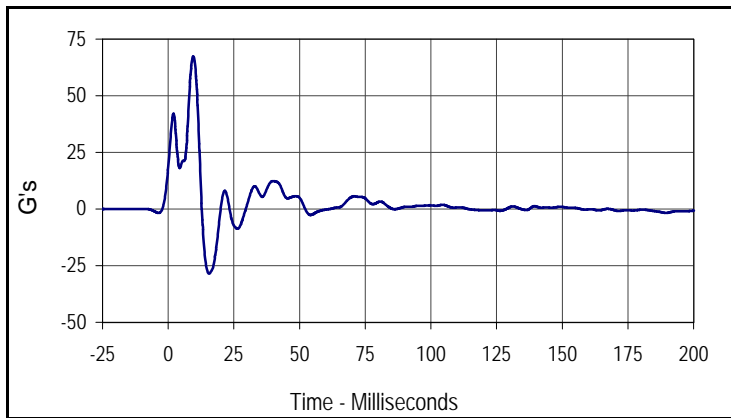
Curve Description			
Vehicle B-Post Middle Y Velocity			
CURNO	Type	SAE Class	Units
063	IN1	180	KMH
Max	Time	Min	Time
41.4	18.2	-0.2	1.5

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

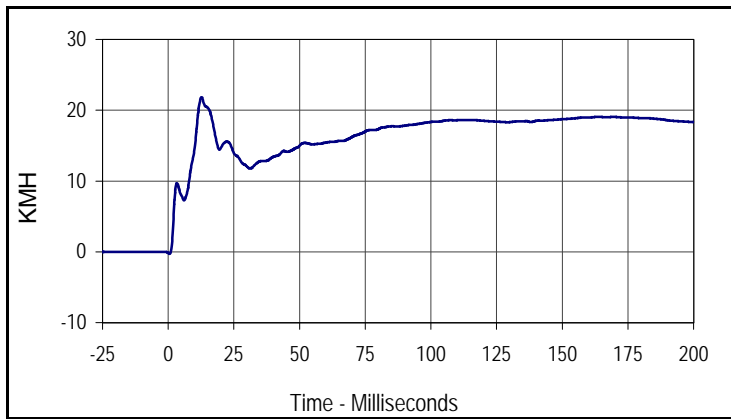
Test Date: 12/8/04
 NHTSA No.: G50101



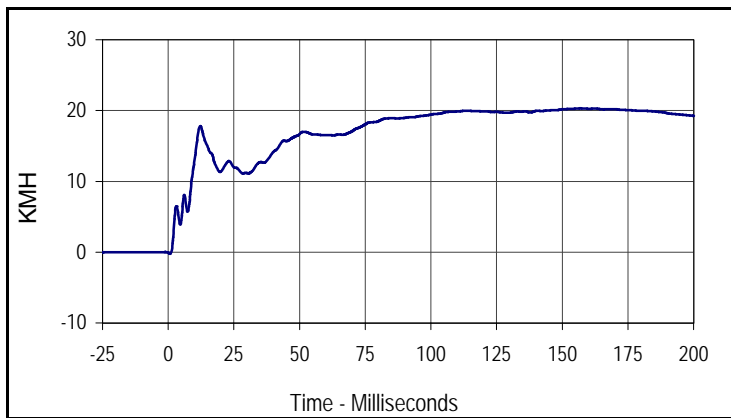
Curve Description			
Vehicle A-Post Lower Y			
CURNO	Type	SAE Class	Units
064	FIL	60	G's
Max	Time	Min	Time
74.3	10.2	-39.9	17.0



Curve Description			
Vehicle A-Post Middle Y			
CURNO	Type	SAE Class	Units
065	FIL	60	G's
Max	Time	Min	Time
67.3	9.5	-28.6	15.5



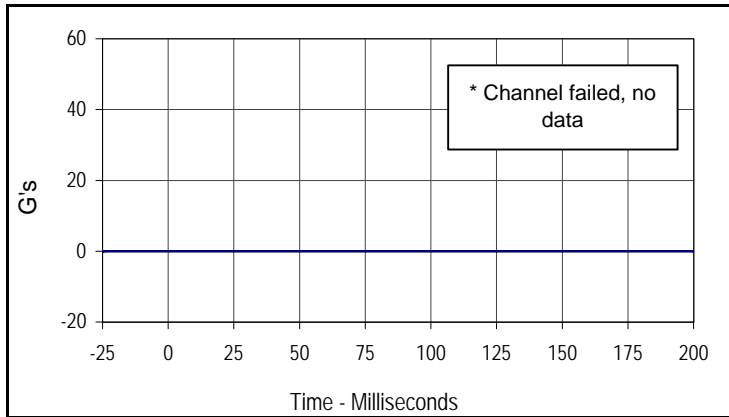
Curve Description			
Vehicle A-Post Lower Y Velocity			
CURNO	Type	SAE Class	Units
064	IN1	180	KMH
Max	Time	Min	Time
21.8	12.7	-0.3	0.5



Curve Description			
Vehicle A-Post Middle Y Velocity			
CURNO	Type	SAE Class	Units
065	IN1	180	KMH
Max	Time	Min	Time
20.3	157.0	-0.2	0.7

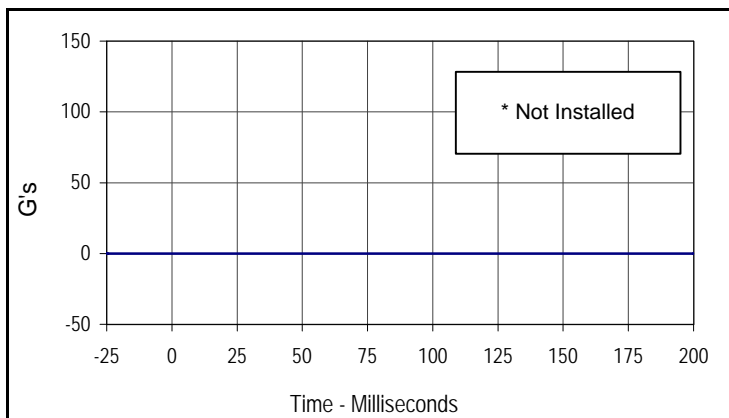
Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101



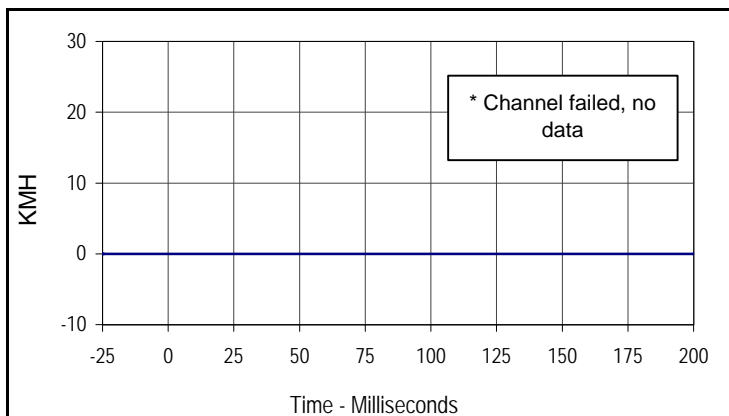
Curve Description			
Vehicle Left Front Seat Track			
CURNO	Type	SAE Class	Units
066	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



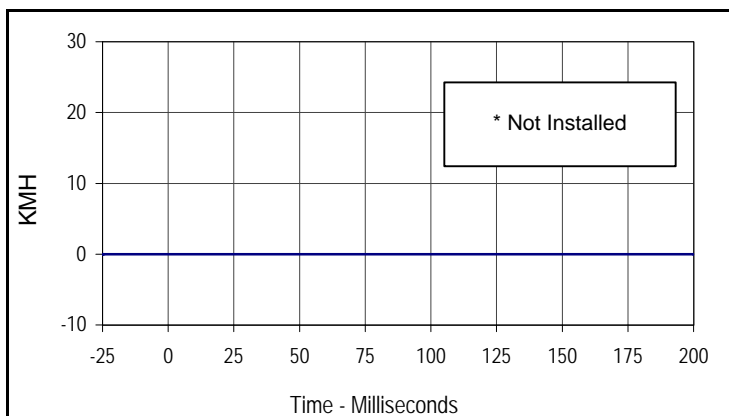
Curve Description			
Vehicle Rear Seat Structure			
CURNO	Type	SAE Class	Units
067	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Not installed



Curve Description			
Vehicle Left Front Seat Track Y Velocity			
CURNO	Type	SAE Class	Units
066	IN1	180	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

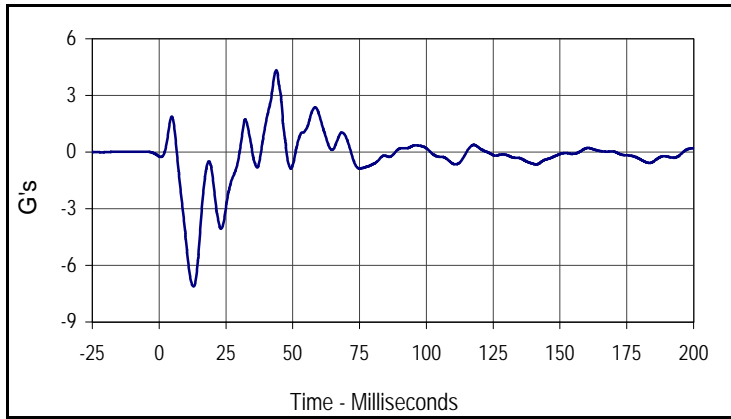


Curve Description			
Vehicle Rear Seat Structure Y Velocity			
CURNO	Type	SAE Class	Units
067	IN1	180	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

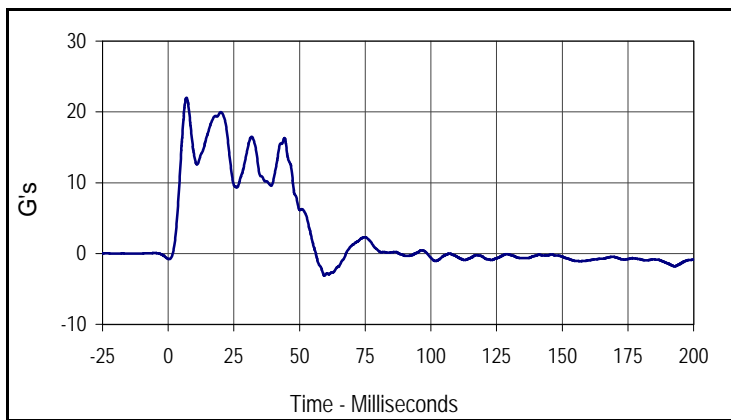
* Not installed

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

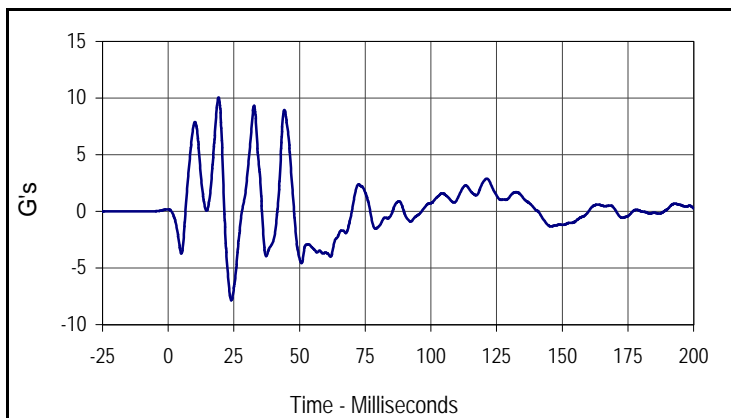
Test Date: 12/8/04
 NHTSA No.: G50101



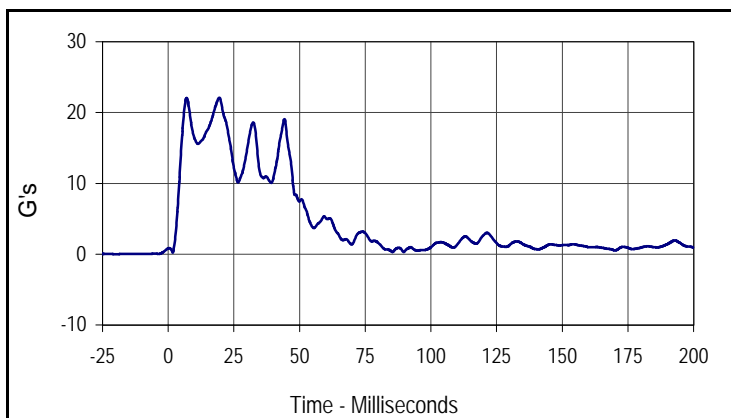
Curve Description			
Vehicle CG X			
CURNO	Type	SAE Class	Units
068	FIL	60	G's
Max	Time	Min	Time
4.3	43.9	-7.1	12.9



Curve Description			
Vehicle CG Y			
CURNO	Type	SAE Class	Units
069	FIL	60	G's
Max	Time	Min	Time
22.0	7.0	-3.1	59.5



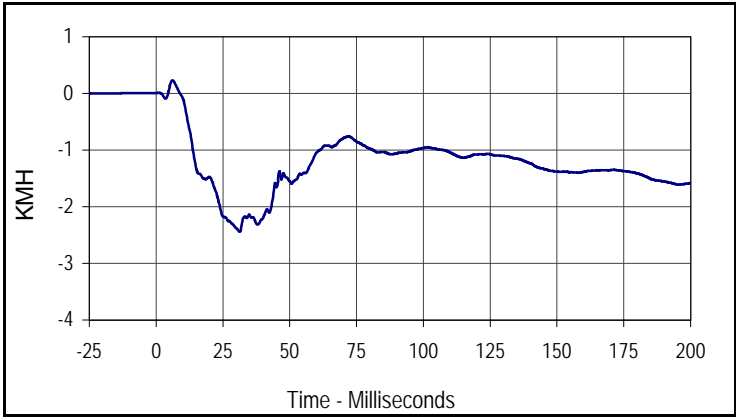
Curve Description			
Vehicle CG Z			
CURNO	Type	SAE Class	Units
070	FIL	60	G's
Max	Time	Min	Time
10.1	19.2	-7.8	24.0



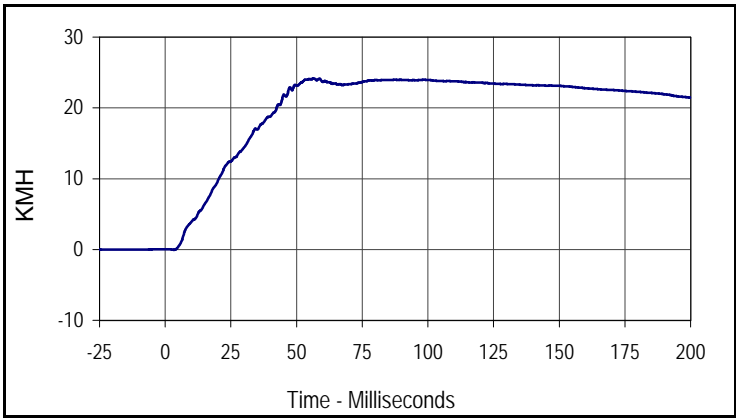
Curve Description			
Vehicle CG Resultant			
CURNO	Type	SAE Class	Units
068	RES	60	G's
Max	Time	Min	Time
22.1	19.4	0.2	1.7

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

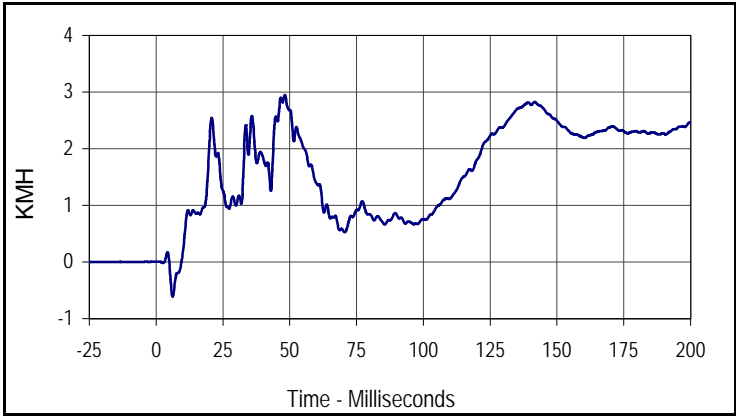
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
Vehicle CG X Velocity			
CURNO	Type	SAE Class	Units
068	IN1	180	KMH
Max	Time	Min	Time
0.2	6.2	-2.4	31.3



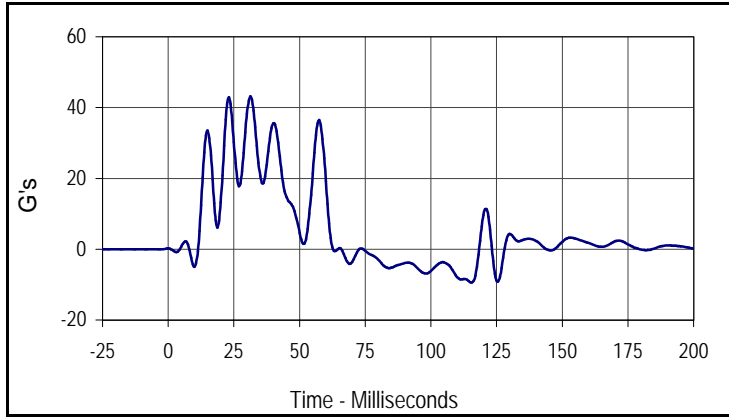
Curve Description			
Vehicle CG Y Velocity			
CURNO	Type	SAE Class	Units
069	IN1	180	KMH
Max	Time	Min	Time
24.2	56.5	0.0	3.4



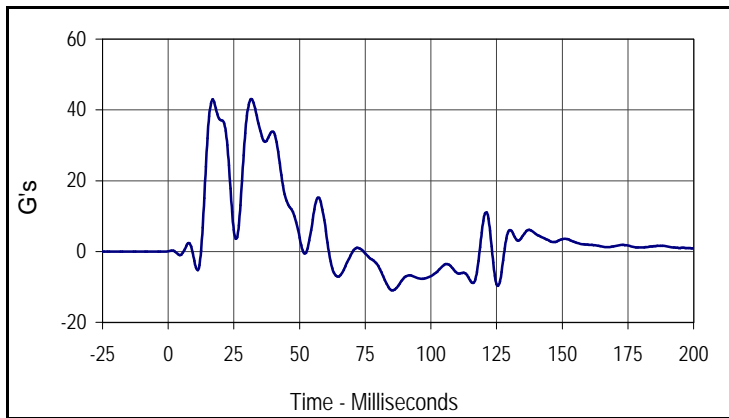
Curve Description			
Vehicle CG Z Velocity			
CURNO	Type	SAE Class	Units
070	IN1	180	KMH
Max	Time	Min	Time
2.9	48.2	-0.6	6.2

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

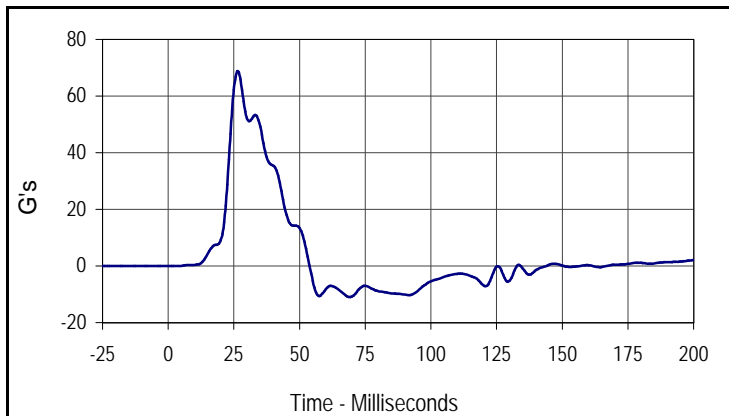
Test Date: 12/8/04
 NHTSA No.: G50101



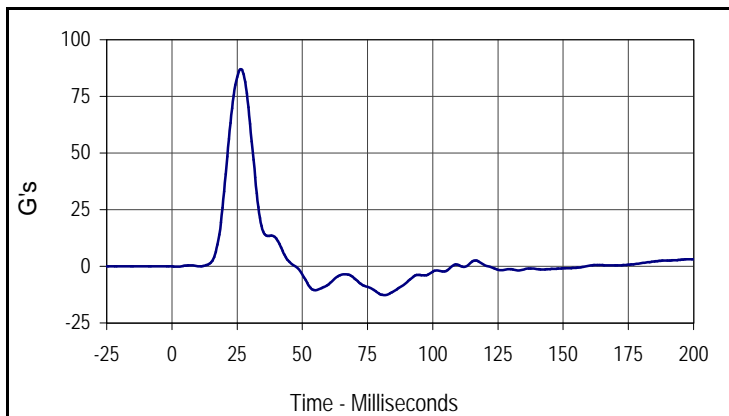
Curve Description			
Driver Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
013	FIR	FIR100	G's
Max	Time	Min	Time
43.2	31.3	-9.4	115.6



Curve Description			
Driver Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
014	FIR	FIR100	G's
Max	Time	Min	Time
43.0	31.9	-11.0	85.6



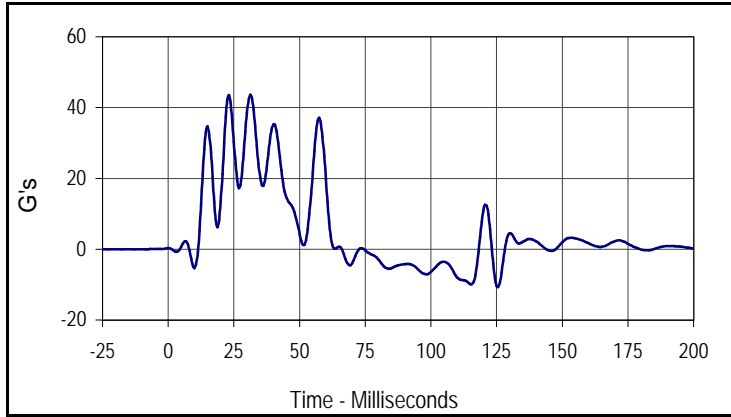
Curve Description			
Driver Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
015	FIR	FIR100	G's
Max	Time	Min	Time
68.9	26.3	-11.0	69.4



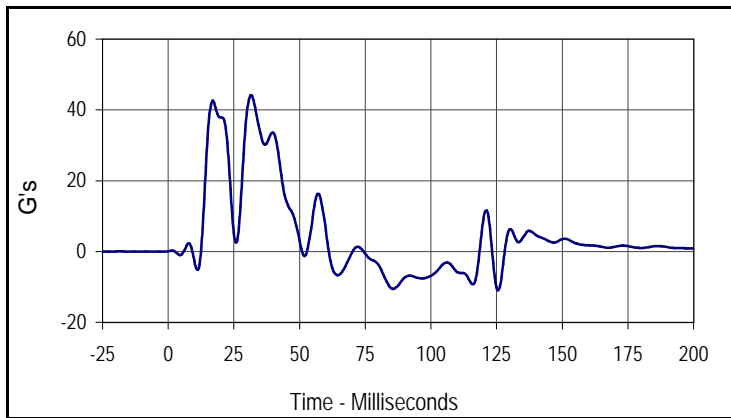
Curve Description			
Driver Pelvis Primary Y			
CURNO	Type	SAE Class	Units
016	FIR	FIR100	G's
Max	Time	Min	Time
87.0	26.3	-12.7	81.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

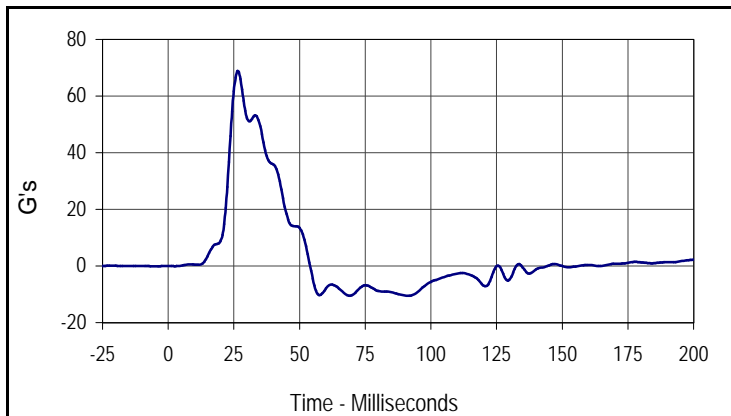
Test Date: 12/8/04
 NHTSA No.: G50101



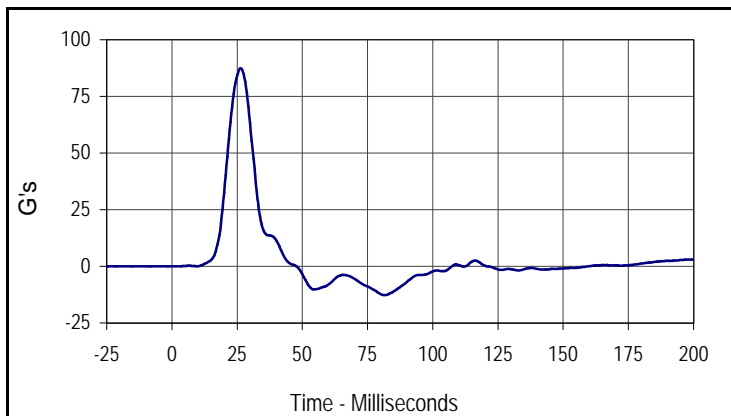
Curve Description			
Driver Upper Rib Redundant Y			
CURNO	Type	SAE Class	Units
017	FIR	FIR100	G's
Max	Time	Min	Time
43.7	31.3	-10.7	125.6



Curve Description			
Driver Lower Rib Redundant Y			
CURNO	Type	SAE Class	Units
018	FIR	FIR100	G's
Max	Time	Min	Time
44.1	31.3	-10.9	125.6



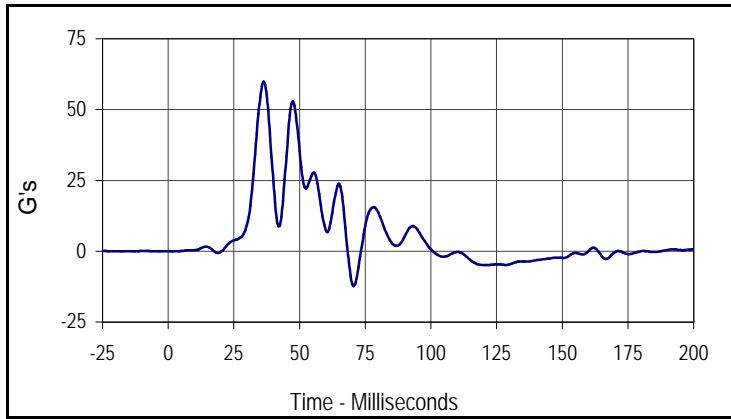
Curve Description			
Driver Lower Spine Redundant Y			
CURNO	Type	SAE Class	Units
019	FIR	FIR100	G's
Max	Time	Min	Time
68.8	26.3	-10.5	91.3



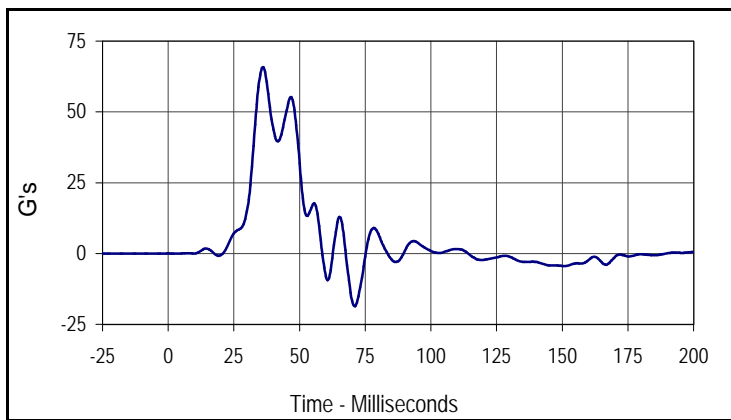
Curve Description			
Driver Pelvis Redundant Y			
CURNO	Type	SAE Class	Units
020	FIR	FIR100	G's
Max	Time	Min	Time
87.4	26.3	-12.7	81.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

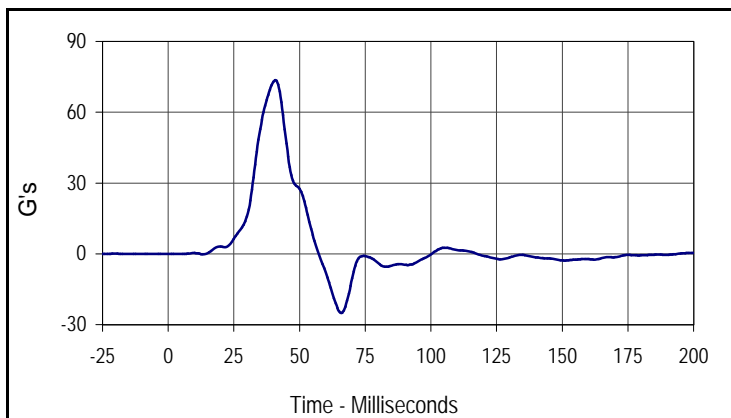
Test Date: 12/8/04
 NHTSA No.: G50101



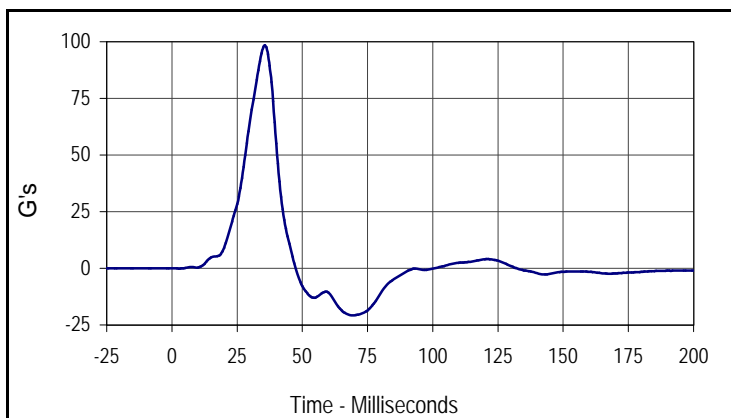
Curve Description			
Passenger Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
035	FIR	FIR100	G's
Max	Time	Min	Time
59.9	36.3	-12.4	70.6



Curve Description			
Passenger Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
036	FIR	FIR100	G's
Max	Time	Min	Time
65.8	36.3	-18.5	71.3



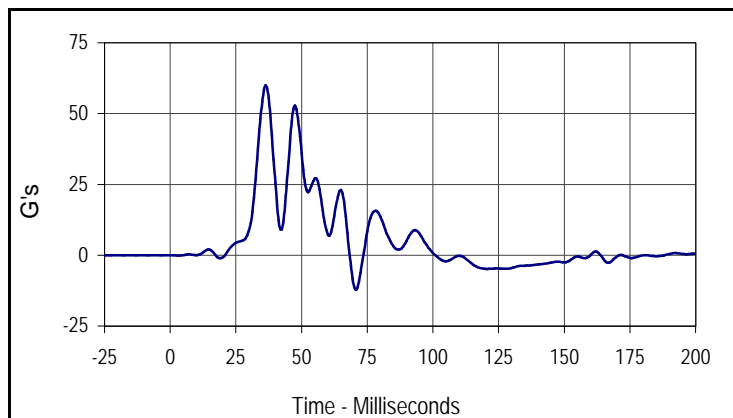
Curve Description			
Passenger Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
037	FIR	FIR100	G's
Max	Time	Min	Time
73.6	40.6	-25.0	65.6



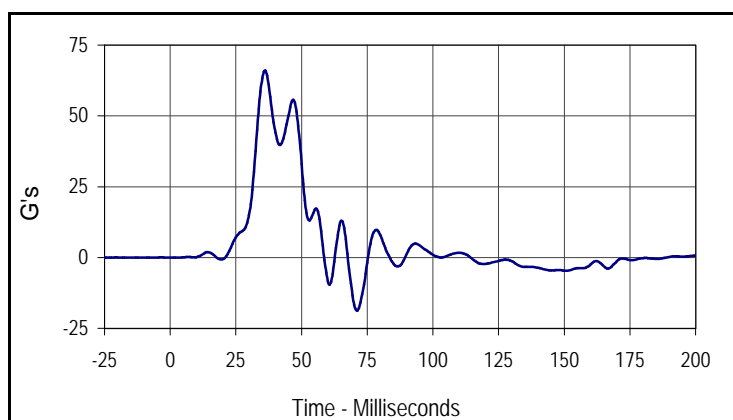
Curve Description			
Passenger Pelvis Primary Y			
CURNO	Type	SAE Class	Units
038	FIR	FIR100	G's
Max	Time	Min	Time
98.5	35.6	-20.8	69.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

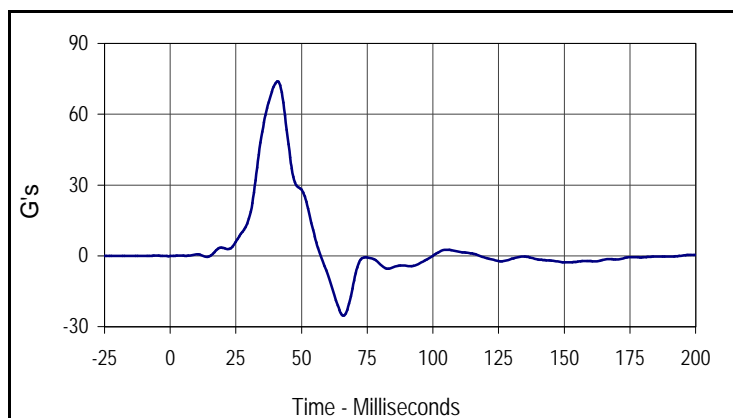
Test Date: 12/8/04
 NHTSA No.: G50101



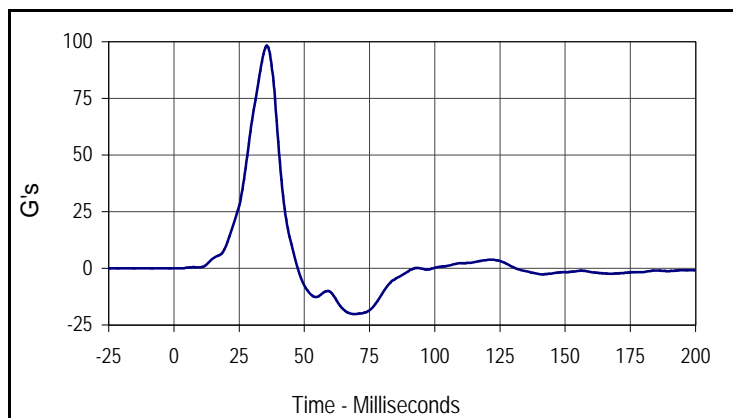
Curve Description			
Passenger Upper Rib Redundant Y			
CURNO	Type	SAE Class	Units
039	FIR	FIR100	G's
Max	Time	Min	Time
60.0	36.3	-12.2	70.6



Curve Description			
Passenger Lower Rib Redundant Y			
CURNO	Type	SAE Class	Units
040	FIR	FIR100	G's
Max	Time	Min	Time
66.0	36.3	-18.7	71.3



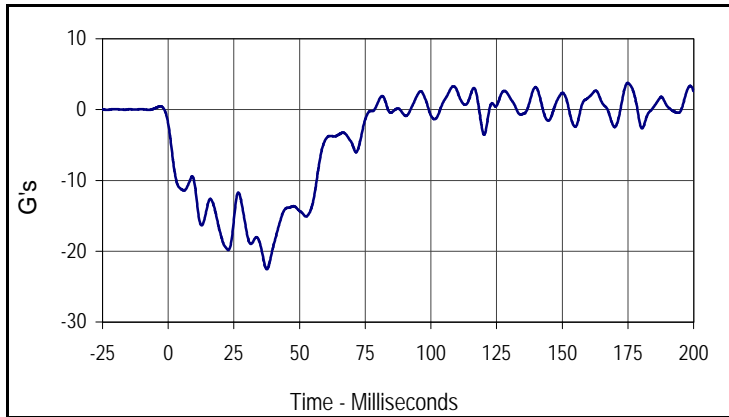
Curve Description			
Passenger Lower Spine Redundant Y			
CURNO	Type	SAE Class	Units
041	FIR	FIR100	G's
Max	Time	Min	Time
73.9	40.6	-25.3	66.3



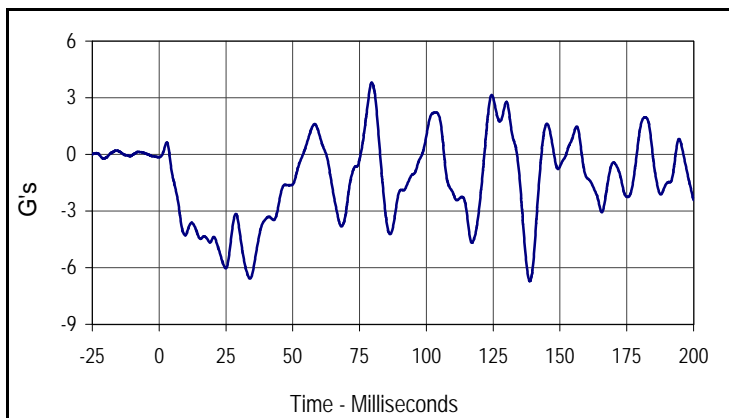
Curve Description			
Passenger Pelvis Redundant Y			
CURNO	Type	SAE Class	Units
042	FIR	FIR100	G's
Max	Time	Min	Time
98.3	35.6	-20.2	69.4

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

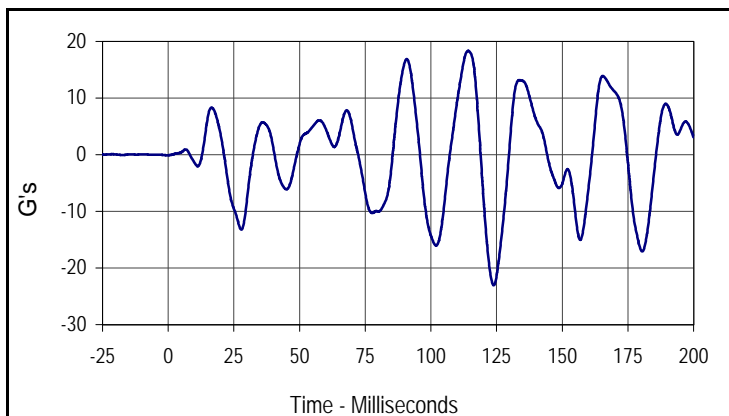
Test Date: 12/8/04
 NHTSA No.: G50101



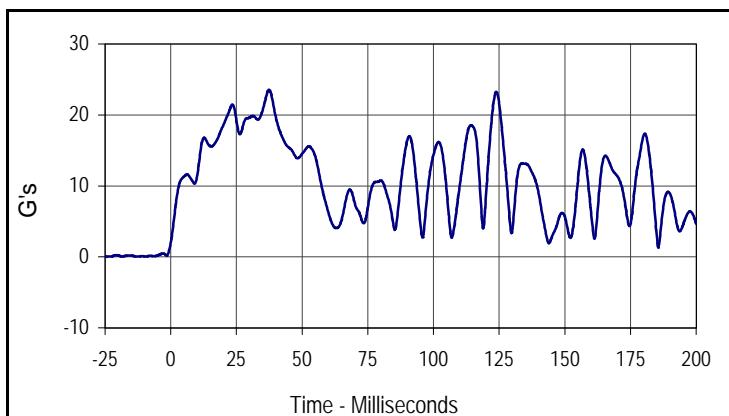
Curve Description			
MDB CG X			
CURNO	Type	SAE Class	Units
071	FIL	60	G's
Max	Time	Min	Time
3.8	174.9	-22.6	37.5



Curve Description			
MDB CG Y			
CURNO	Type	SAE Class	Units
072	FIL	60	G's
Max	Time	Min	Time
3.8	79.5	-6.7	138.7



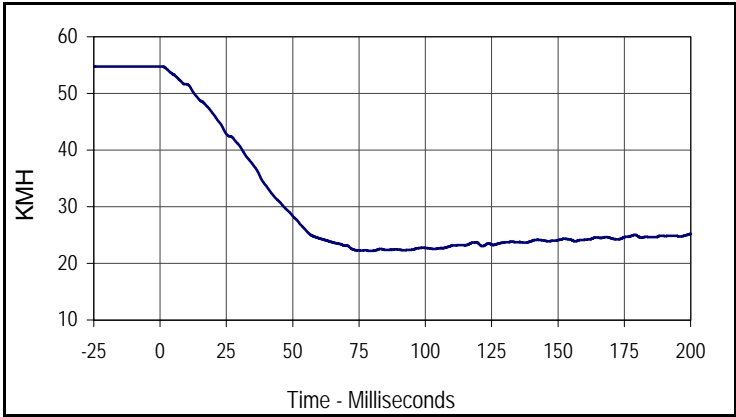
Curve Description			
MDB CG Z			
CURNO	Type	SAE Class	Units
073	FIL	60	G's
Max	Time	Min	Time
18.3	114.2	-23.0	123.9



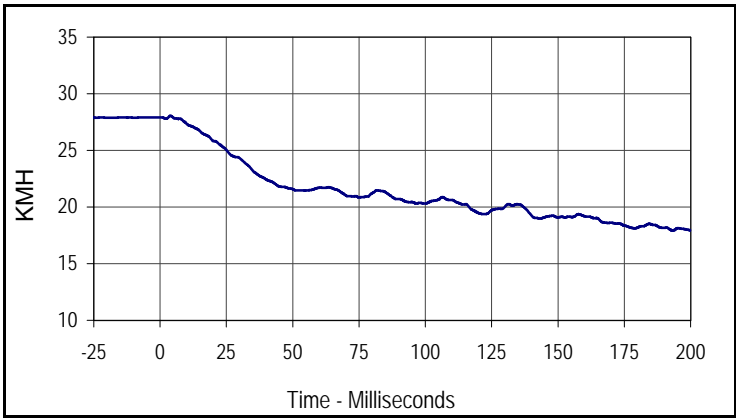
Curve Description			
MDB CG Resultant			
CURNO	Type	SAE Class	Units
071	RES	60	G's
Max	Time	Min	Time
23.5	37.4	1.3	185.6

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

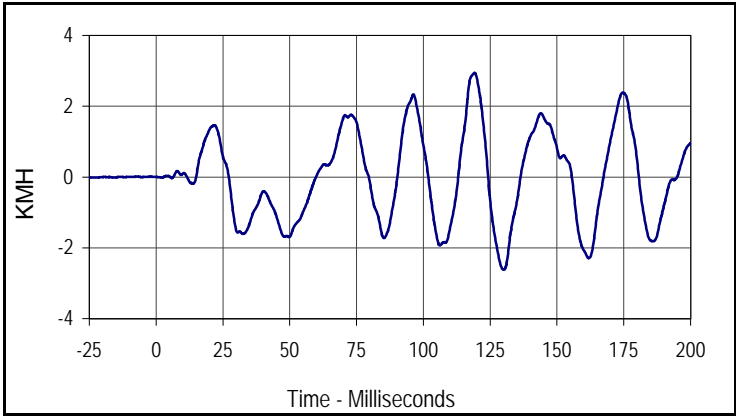
Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
MDB CG X Velocity			
CURNO	Type	SAE Class	Units
071	IN1	180	KMH
Max	Time	Min	Time
54.8	0.4	22.2	79.7



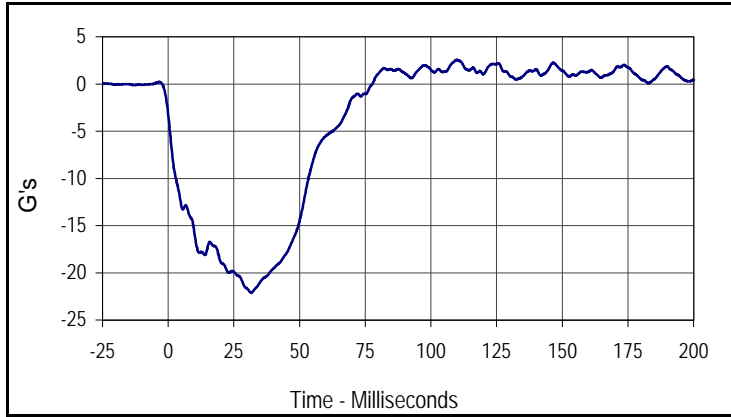
Curve Description			
MDB CG Y Velocity			
CURNO	Type	SAE Class	Units
072	IN1	180	KMH
Max	Time	Min	Time
28.1	3.9	17.9	193.2



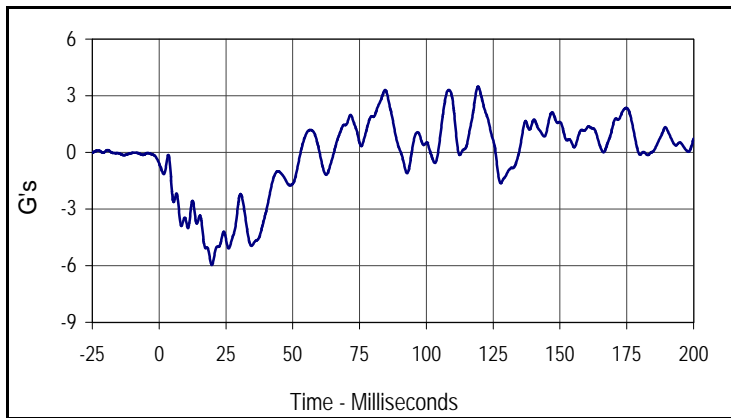
Curve Description			
MDB CG Z Velocity			
CURNO	Type	SAE Class	Units
073	IN1	180	KMH
Max	Time	Min	Time
2.9	119.1	-2.6	130.1

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

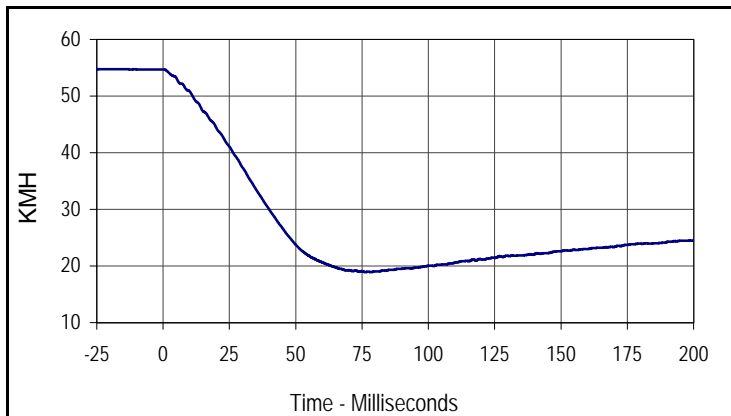
Test Date: 12/8/04
 NHTSA No.: G50101



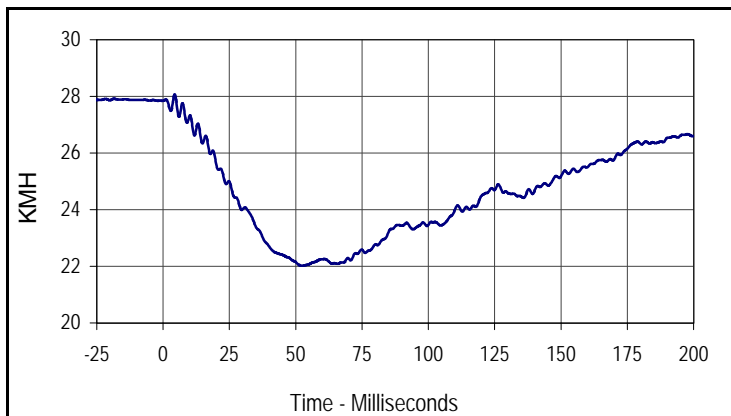
Curve Description			
MDB Rear X			
CURNO	Type	SAE Class	Units
074	FIL	60	G's
Max	Time	Min	Time
2.5	110.0	-22.1	31.6



Curve Description			
MDB Rear Y			
CURNO	Type	SAE Class	Units
075	FIL	60	G's
Max	Time	Min	Time
3.5	119.4	-6.0	19.7



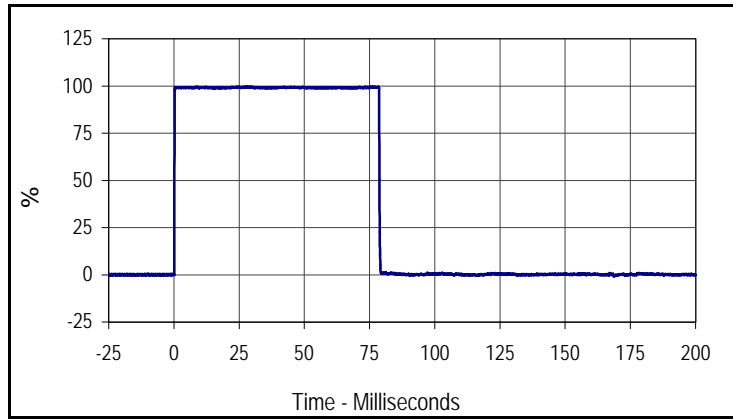
Curve Description			
MDB Rear X Velocity			
CURNO	Type	SAE Class	Units
074	IN1	180	KMH
Max	Time	Min	Time
54.7	0.0	18.9	76.2



Curve Description			
MDB Rear Y Velocity			
CURNO	Type	SAE Class	Units
075	IN1	180	KMH
Max	Time	Min	Time
28.1	4.4	22.0	52.3

Test Vehicle: 2005 Chevrolet Malibu 4-Door Sedan
 Test Program: 55/28 km/h Side Impact NCAP

Test Date: 12/8/04
 NHTSA No.: G50101



Curve Description			
MDB Right Bumper Contact			
CURNO	Type	SAE Class	Units
076	FIL	1000	%
Max	Time	Cross %	Time
99.8	28.2	50.0	0.3

APPENDIX C

SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID / HIII External Measurements

Test Date: 12/3/04

ATD Serial No.: 274

Test I.D.: N/A



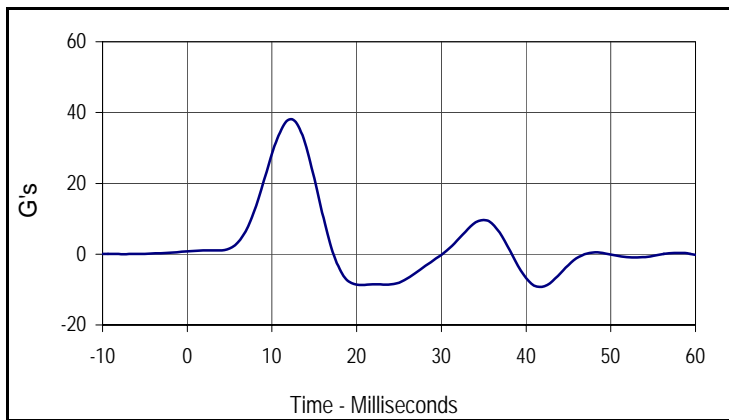
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	510	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	385	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 274

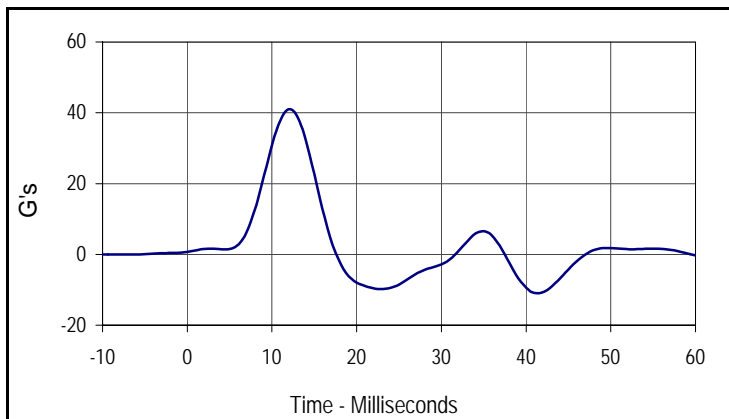
Test Date: 12/6/04
 Test I.D.: TH12A



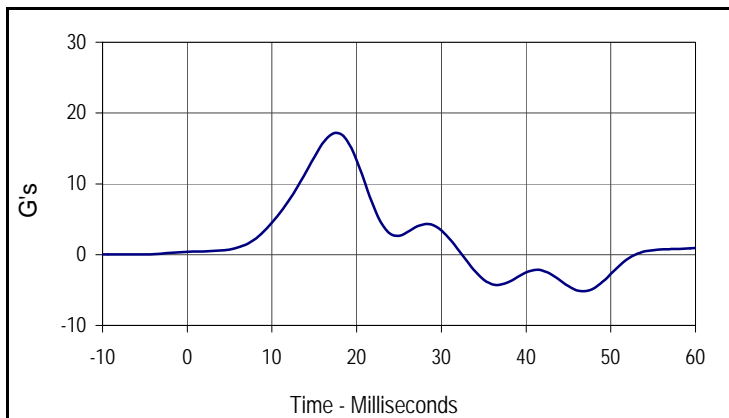
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.24	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	37.9	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	40.9	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	17.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
37.9	12.5	-9.3	41.9



Curve Description			
Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
40.9	11.9	-11.0	41.3



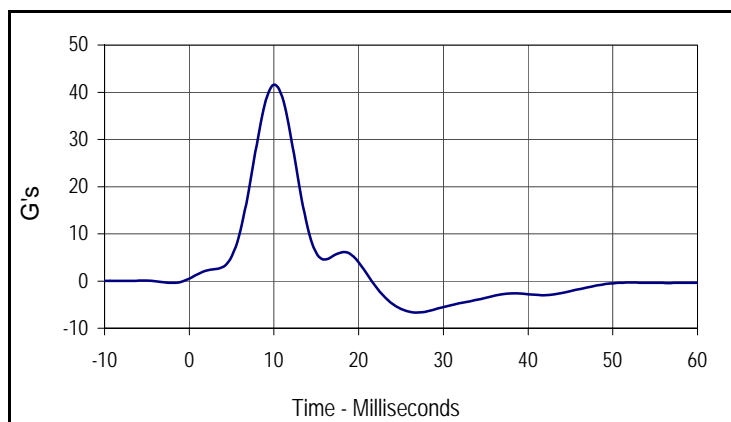
Curve Description			
Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
17.2	17.5	-5.2	46.9

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 274

Test Date: 12/6/04
 Test I.D.: PL12A



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
Probe Velocity	m/s	4.21 to 4.33	4.28	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.6	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	5.63	Pass
Overall Test Results				Pass



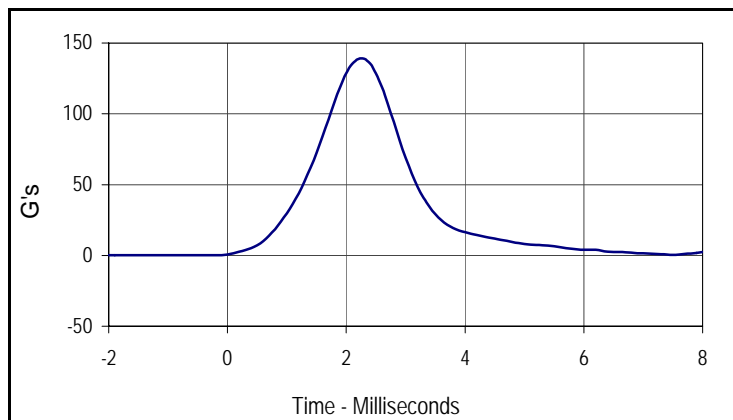
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.6	10.0	-6.7	26.9

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 274

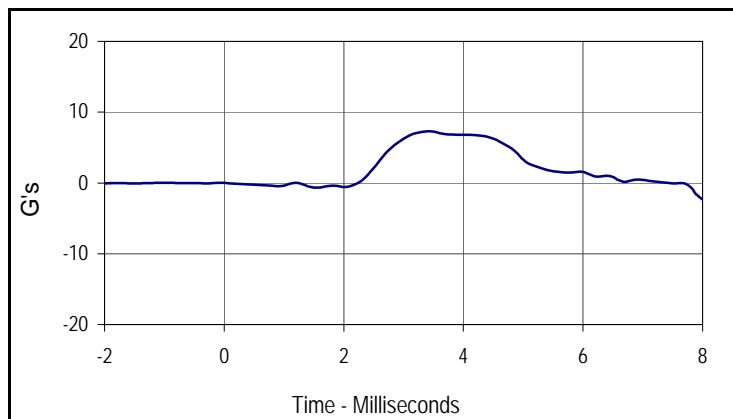
Test Date: 12/3/04
 Test I.D.: HD12A



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	120.0 to 150.0	138.9	Pass
Peak Longitudinal Acceleration	G's	≤15.0	7.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	5.8	Pass
Overall Test Results			Pass	Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
138.9	2.3	0.1	-0.6



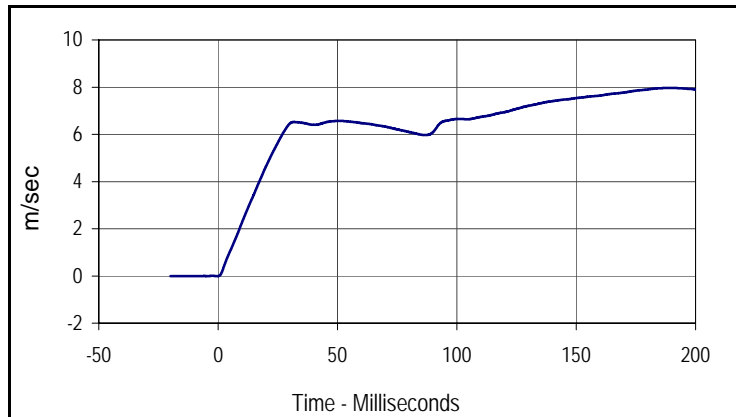
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.3	3.4	-0.7	1.5

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 274

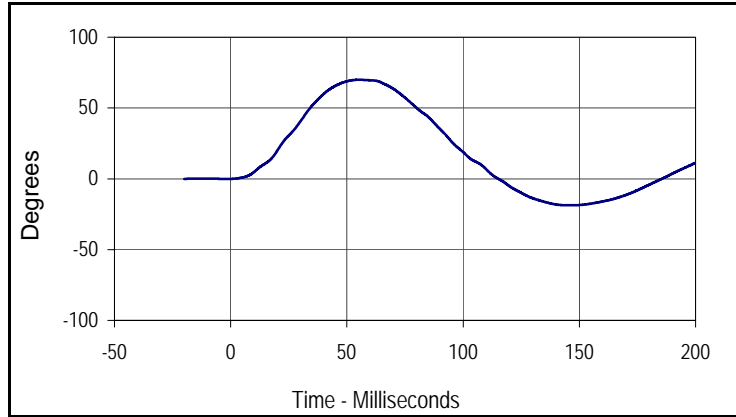
Test Date: 12/3/04
 Test I.D.: NB12G



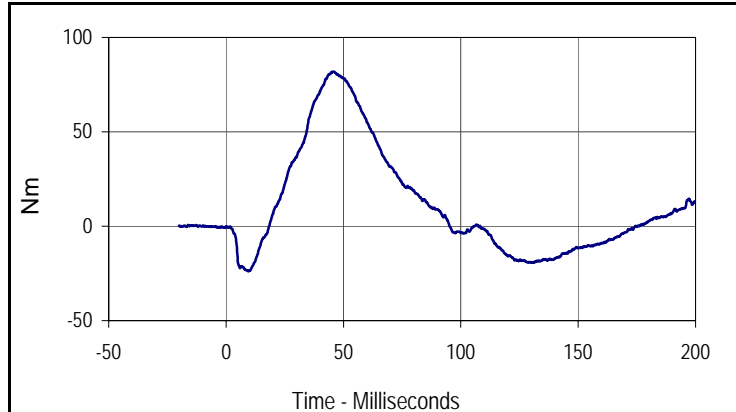
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	7.04	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.27	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.63	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.46	Pass
	40 to 70	m/sec	6.27 to 7.64	6.57	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	69.9	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	9.1	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	60.2	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	81.9	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.4	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.0	189.5	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
69.9	55.0	-18.7	146.6



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
81.9	45.9	-23.8	9.6

Test Program: SID / HIII External Measurements

Test Date: 12/3/04

ATD Serial No.: 275

Test I.D.: N/A



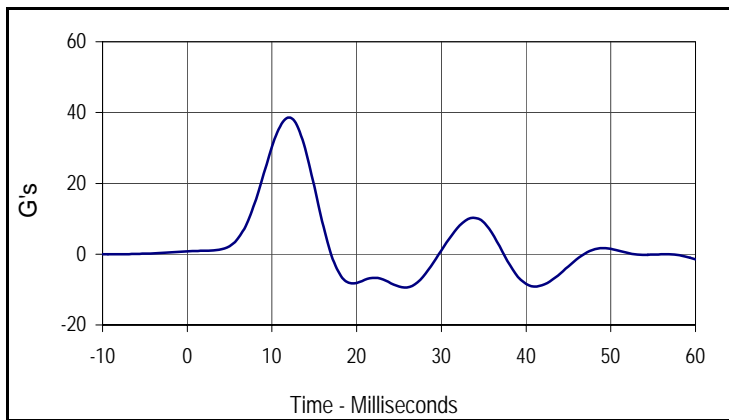
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	905	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	513	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	500	Pass
HW- Hip Width	mm	356 to 391	365	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 275

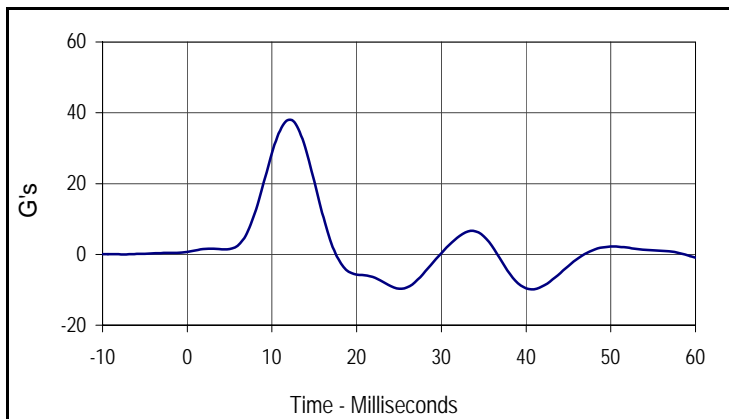
Test Date: 12/6/04
 Test I.D.: TH12B



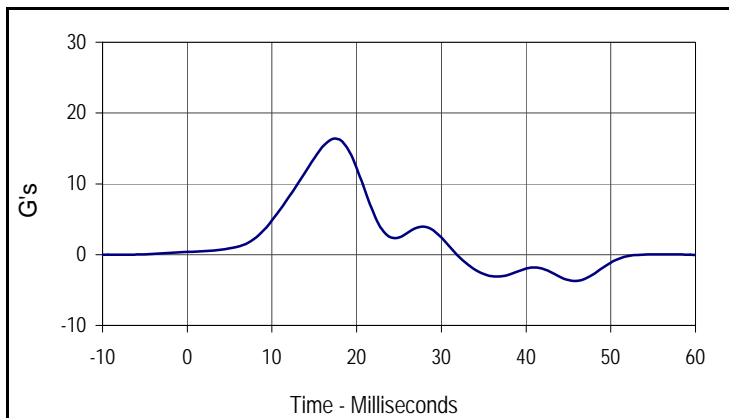
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.30	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	38.6	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.0	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	16.4	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
38.6	11.9	-9.4	25.6



Curve Description			
Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.0	11.9	-9.9	40.6



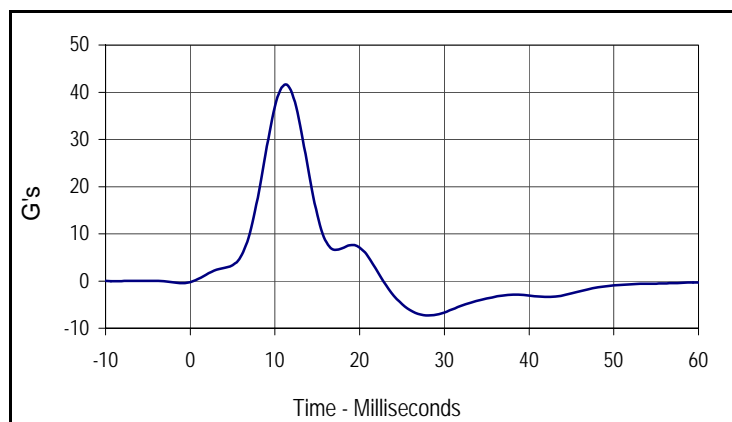
Curve Description			
Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
16.4	17.5	-3.7	45.6

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 275

Test Date: 12/6/04
 Test I.D.: PL12B



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
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.7	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	5.63	Pass
Overall Test Results				Pass



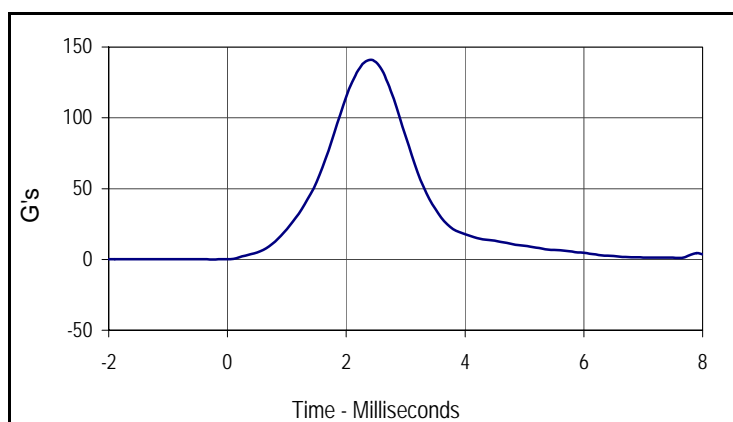
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.7	11.3	-7.3	28.1

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 275

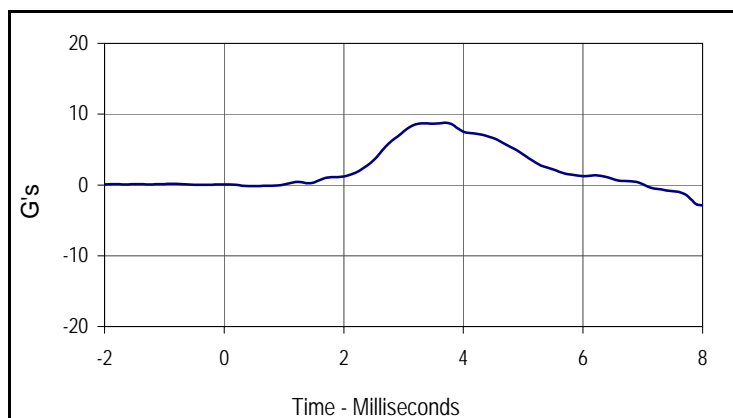
Test Date: 12/3/04
 Test I.D.: HD12B



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	120.0 to 150.0	141.1	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	6.8	Pass
Overall Test Results			Pass	Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
141.1	2.4	0.0	-0.2



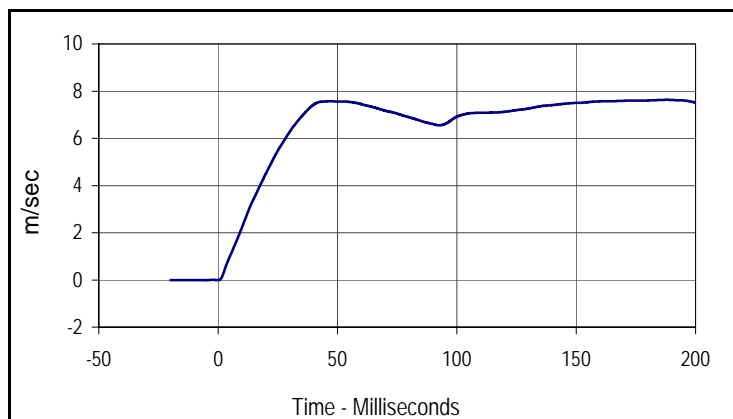
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
8.8	3.7	-0.2	0.4

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 275

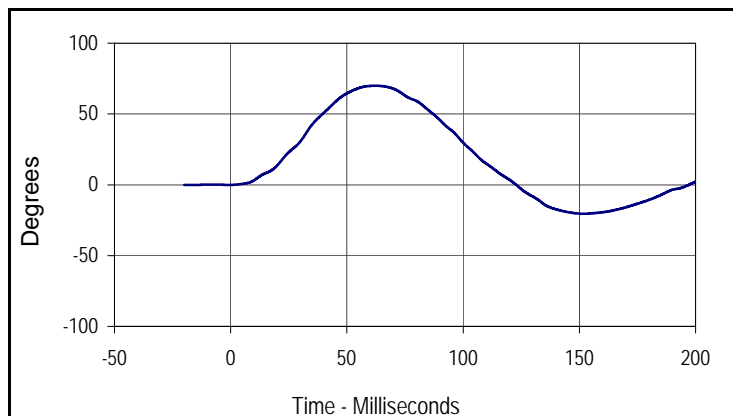
Test Date: 12/3/04
 Test I.D.: NB12H



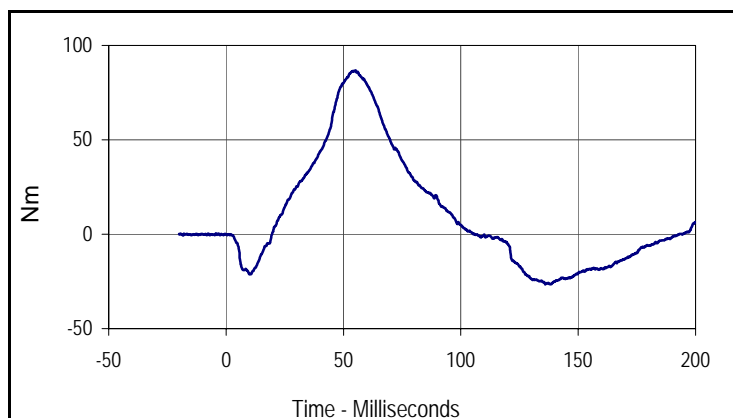
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	7.06	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.23	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.51	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.28	Pass
	40 to 70	m/sec	6.27 to 7.64	7.57	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	69.9	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	7.2	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	60.6	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	86.7	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	50.3	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
7.6	188.0	0.0	0.0



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
69.9	62.3	-20.4	151.8



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
86.7	55.1	-26.6	136.0

APPENDIX C
POST-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID / HIII External Measurements

Test Date: 12/13/04

ATD Serial No.: 274

Test I.D.: N/A



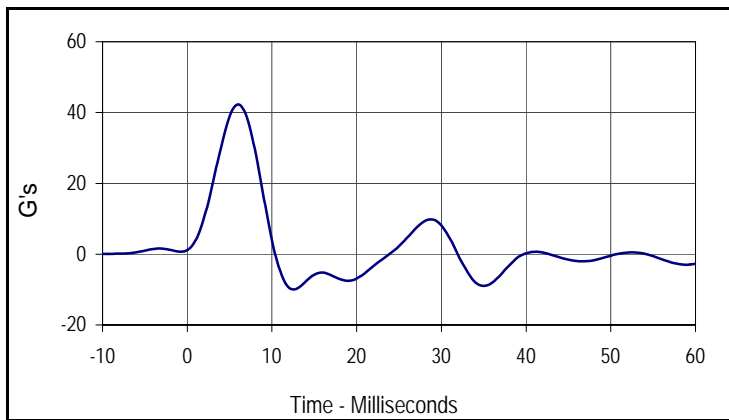
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	902	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	501	Pass
HW- Hip Width	mm	356 to 391	365	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 274

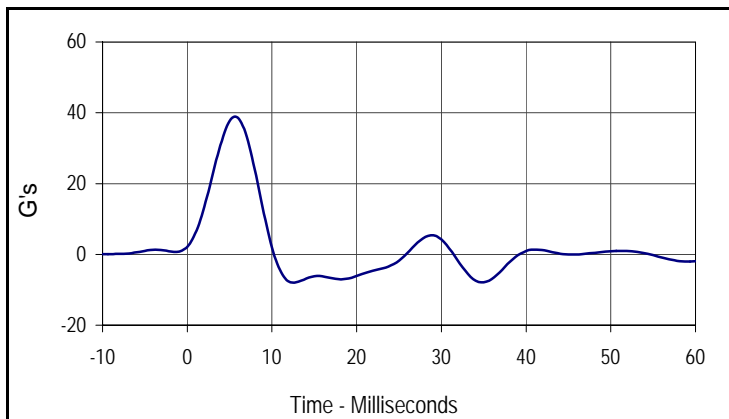
Test Date: 12/9/04
 Test I.D.: TH01A



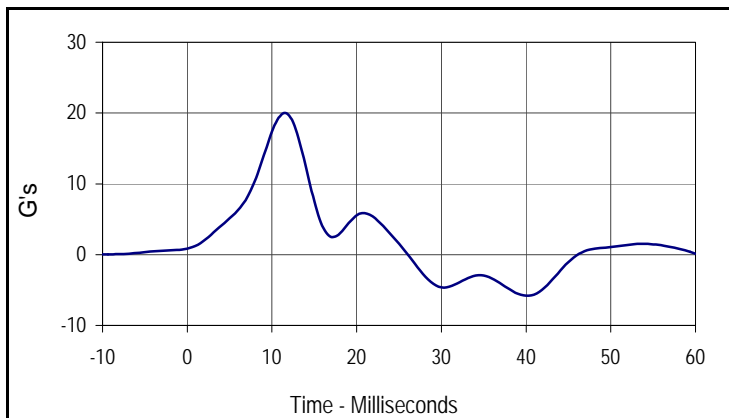
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	42.1	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.9	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	19.9	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
42.1	6.3	-9.9	12.5



Curve Description			
Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.9	5.6	-8.0	12.5



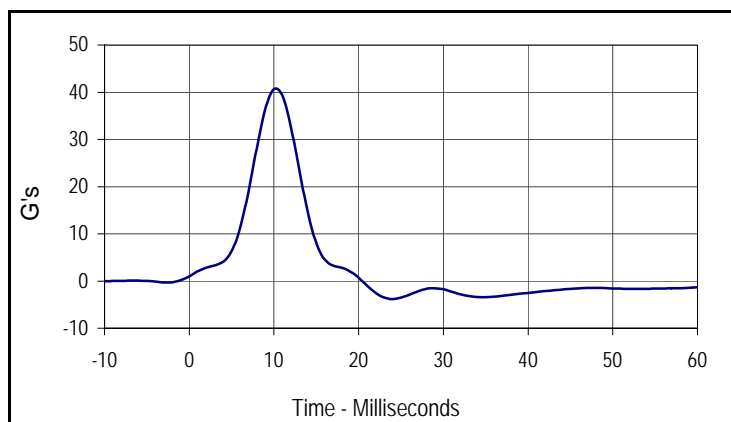
Curve Description			
Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
19.9	11.3	-5.8	40.0

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 274

Test Date: 12/9/04
 Test I.D.: PI01A



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
Probe Velocity	m/s	4.21 to 4.33	4.22	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	40.6	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.25	Pass
Overall Test Results				Pass



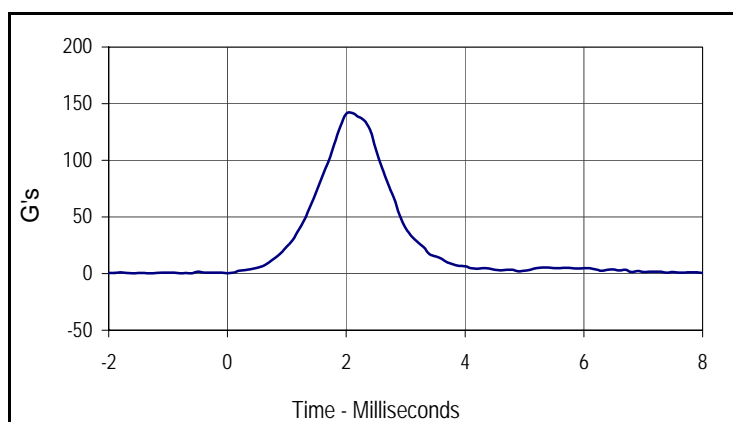
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
40.6	10.0	-3.8	23.8

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 274

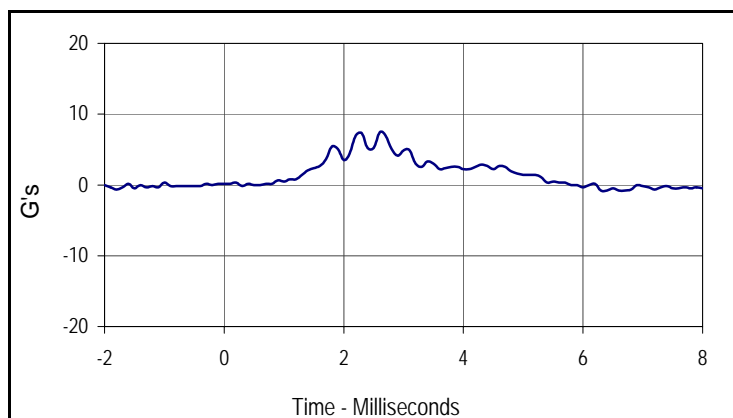
Test Date: 12/13/04
 Test I.D.: HD01A



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	120.0 to 150.0	141.7	Pass
Peak Longitudinal Acceleration	G's	≤15.0	7.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.8	Pass
Overall Test Results				Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
141.7	2.1	0.2	-0.8



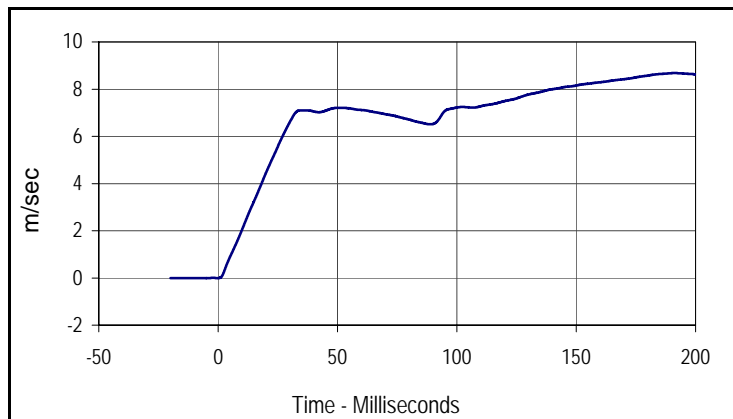
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.5	2.6	-0.6	-1.8

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 274

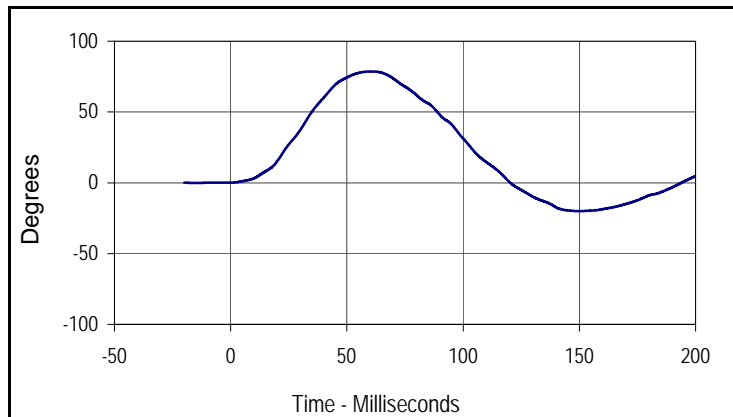
Test Date: 12/13/04
 Test I.D.: NB01A



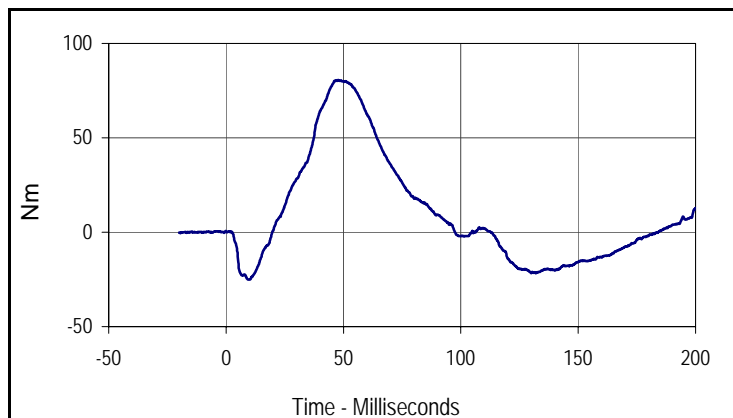
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	7.06	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.04	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.44	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.60	Pass
	40 to 70	m/sec	6.27 to 7.64	7.21	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	78.6	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	12.8	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	59.7	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	80.6	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.7	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.7	191.2	0.0	0.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
78.6	60.6	-20.0	149.9



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
80.6	47.8	-25.1	9.8

Test Program: SID / HIII External Measurements

Test Date: 12/13/04

ATD Serial No.: 275

Test I.D.: N/A



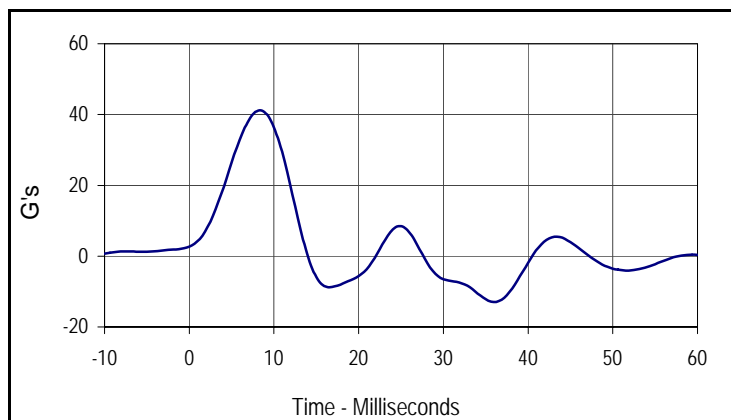
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	509	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	501	Pass
HW- Hip Width	mm	356 to 391	375	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 275

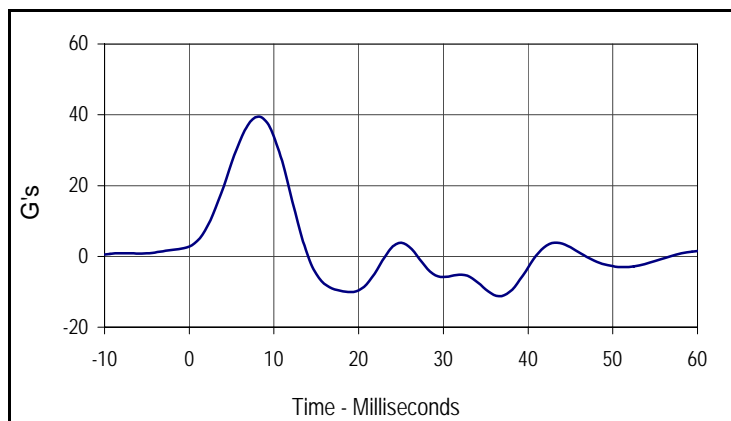
Test Date: 12/9/04
 Test I.D.: TH01B



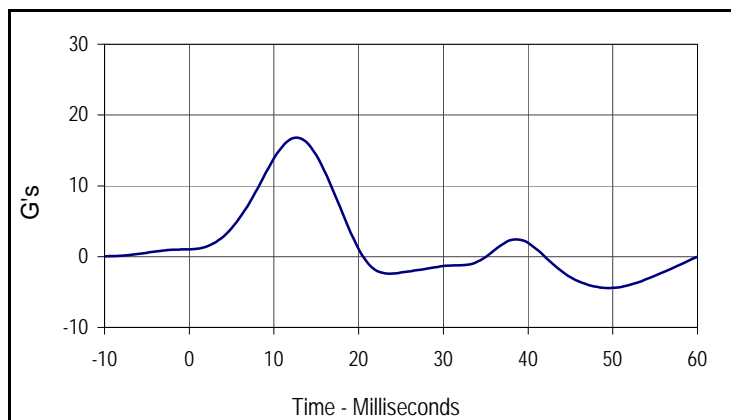
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	41.1	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	39.5	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	16.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.1	8.1	-12.9	36.3



Curve Description			
Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
39.5	8.1	-11.2	36.9



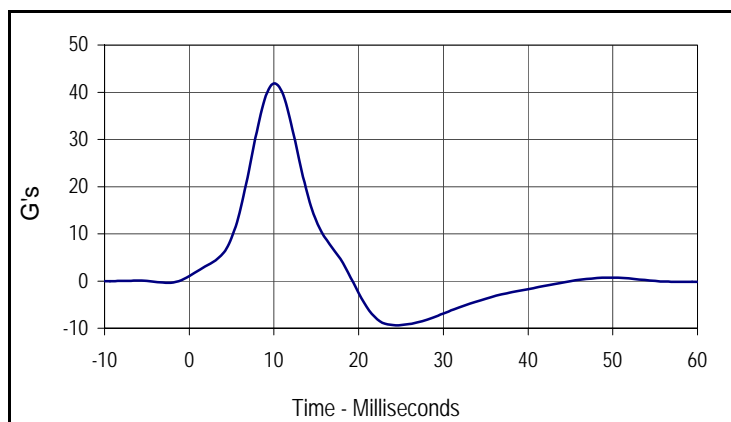
Curve Description			
Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
16.8	12.5	-4.4	49.4

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 275

Test Date: 12/9/04
 Test I.D.: PI01B



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
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.9	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.88	Pass
Overall Test Results				Pass



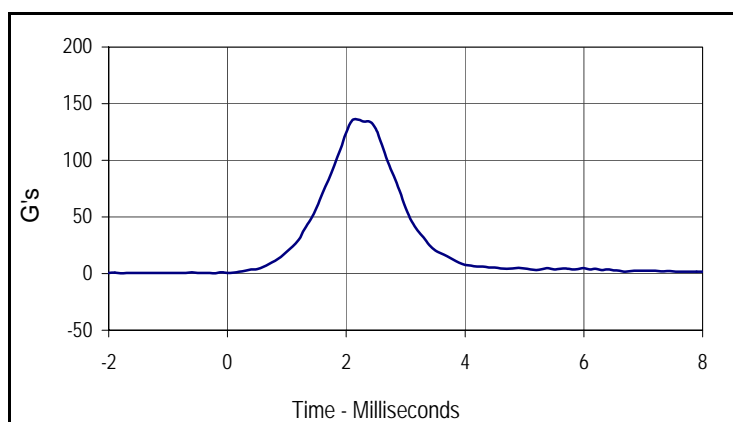
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.9	10.0	-9.4	24.4

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 275

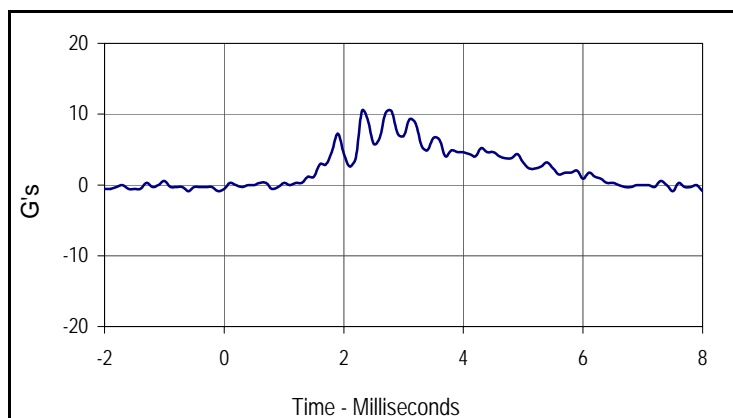
Test Date: 12/13/04
 Test I.D.: HD01B



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	120.0 to 150.0	135.9	Pass
Peak Longitudinal Acceleration	G's	≤15.0	10.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.6	Pass
Overall Test Results				Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
135.9	2.2	0.4	-1.8



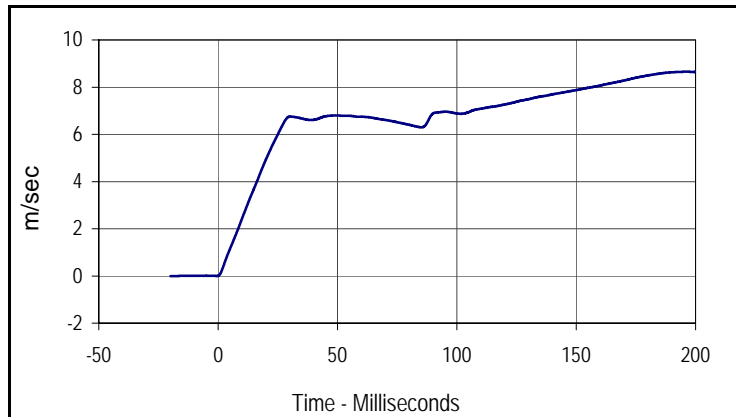
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
10.4	2.3	-0.9	-0.6

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 275

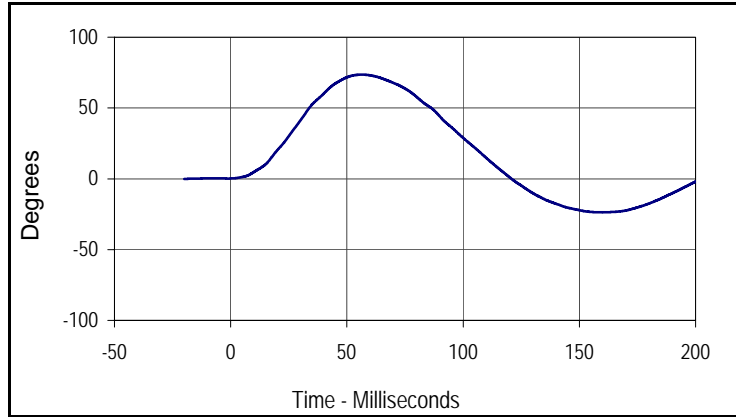
Test Date: 12/13/04
 Test I.D.: NB01B



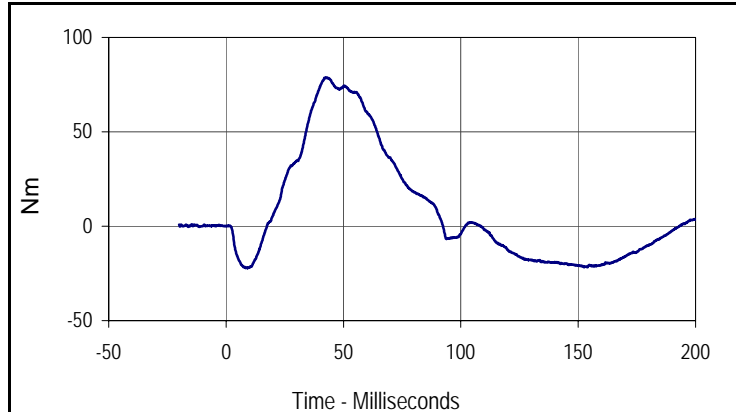
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	7.06	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.44	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.93	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.75	Pass
	40 to 70	m/sec	6.27 to 7.64	6.80	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	73.5	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	13.4	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	64.6	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	78.9	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.7	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.7	196.0	0.0	-0.5



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
73.5	56.2	-23.7	159.4



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
78.9	42.8	-22.2	9.2

APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

**55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Driver SID/HIII Serial Number 274
12/8/04
2005 Chevrolet Malibu 4-Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	Head CG	X	GPAC066X	Accel., Full Bridge	Entran	2000JF	G
2	Head CG	Y	GPAC067Y	Accel., Full Bridge	Entran	2000JF	G
3	Head CG	Z	GPAC068Z	Accel., Full Bridge	Entran	2000JF	G
4	Head CG, Redundant	X	GPAC069X	Accel., Full Bridge	Entran	2000JF	G
5	Head CG, Redundant	Y	GPAC070Y	Accel., Full Bridge	Entran	2000JF	G
6	Head CG, Redundant	Z	GPAC071Z	Accel., Full Bridge	Entran	2000JF	G
7	Neck Force	X	274_NFX	Load cell, six axis neck	R. A. Denton	1716A	N
8	Neck Force	Y	274_NFY	Load cell, six axis neck	R. A. Denton	1716A	N
9	Neck Force	Z	274_NFZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	Neck Moment	X	274_NMX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	Neck Moment	Y	274_NMY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	Neck Moment	Z	274_NMZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	Upper Rib Primary	Y	KEAC070X	Accel., 1/2 bridge	Endevco	7264-2000X	G
14	Lower Rib, Primary	Y	KEAC071Y	Accel., 1/2 bridge	Endevco	7264-2000Y	G
15	Lower Spine, Primary	Y	KEAC072Z	Accel., 1/2 bridge	Endevco	7264-2000Z	G
16	Pelvis, Primary	Y	GPAC065X	Accel., Full bridge	Endevco	7264A-2000	G
17	Upper Rib Redundant	Y	KEAC076X	Accel., 1/2 bridge	Endevco	7264-2000X	G
18	Lower Rib, Redundant	Y	KEAC077Y	Accel., 1/2 bridge	Endevco	7264-2000Y	G
19	Lower Spine, Redundant	Y	KEAC078Z	Accel., 1/2 bridge	Endevco	7264-2000Z	G
20	Pelvis, Redundant	Y	KEAC089X	Accel., 1/2 bridge	Endevco	7264-2000X	G
21	Thorax Contact	N/A	T0	Contact Switch	Tapeswitch	8 oz. Yellow	%
22	Pelvis Contact	N/A	T0	Contact Switch	Tapeswitch	8 oz. Yellow	%

**55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Passenger SID/HIII Serial Number 275
12/8/04
2005 Chevrolet Malibu 4-Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
23	Head CG	X	GPAC072X	Accel., Full Bridge	Entran	2000JF	G
24	Head CG	Y	GPAC073Y	Accel., Full Bridge	Entran	2000JF	G
25	Head CG	Z	GPAC074Z	Accel., Full Bridge	Entran	2000JF	G
26	Head CG, Redundant	X	GPAC075X	Accel., Full Bridge	Entran	2000JF	G
27	Head CG, Redundant	Y	GPAC077Y	Accel., Full Bridge	Entran	2000JF	G
28	Head CG, Redundant	Z	GPAC078Z	Accel., Full Bridge	Entran	2000JF	G
29	Neck Force	X	275_NFX	Load cell, six axis neck	R. A. Denton	1716A	N
30	Neck Force	Y	275_NFY	Load cell, six axis neck	R. A. Denton	1716A	N
31	Neck Force	Z	275_NFZ	Load cell, six axis neck	R. A. Denton	1716A	N
32	Neck Moment	X	275_NMX	Load cell, six axis neck	R. A. Denton	1716A	Nm
33	Neck Moment	Y	275_NMY	Load cell, six axis neck	R. A. Denton	1716A	Nm
34	Neck Moment	Z	275_NMZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
35	Upper Rib Primary	Y	KEAC066X	Accel., 1/2 bridge	Endevco	7264-2000X	G
36	Lower Rib, Primary	Y	KEAC067Y	Accel., 1/2 bridge	Endevco	7264-2000Y	G
37	Lower Spine, Primary	Y	KEAC068Z	Accel., 1/2 bridge	Endevco	7264-2000Z	G
38	Pelvis, Primary	Y	KEAC079X	Accel., 1/2 bridge	Endevco	7264-2000X	G
39	Upper Rib Redundant	Y	KEAC073X	Accel., 1/2 bridge	Endevco	7264-2000X	G
40	Lower Rib, Redundant	Y	KEAC074Y	Accel., 1/2 bridge	Endevco	7264-2000Y	G
41	Lower Spine, Redundant	Y	KEAC075Z	Accel., 1/2 bridge	Endevco	7264-2000Z	G
42	Pelvis, Redundant	Y	KEAC081X	Accel., 1/2 bridge	Endevco	7264-2000X	G
43	Thorax Contact	Y	T0	Contact Switch	Tapeswitch	8 oz. Yellow	%
44	Pelvis Contact	Y	T0	Contact Switch	Tapeswitch	8 oz. Yellow	%

**55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
12/8/04
2005 Chevrolet Malibu 4-Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	Right at Sill Front Seat	X	KETX1A	Accel., Triax	I.C. Sensor	3031-200	G
46	Right at Sill Front Seat	Y	KETX1B	Accel., Triax	I.C. Sensor	3031-200	G
47	Right at Sill Front Seat	Z	KETX1C	Accel., Triax	I.C. Sensor	3031-200	G
48	Right at Sill Rear Seat	X	KETX4A	Accel., Triax	I.C. Sensor	3031-500	G
49	Right at Sill Rear Seat	Y	KETX4B	Accel., Triax	I.C. Sensor	3031-500	G
50	Right at Sill Rear Seat	Z	KETX4C	Accel., Triax	I.C. Sensor	3031-500	G
51	Rear Floorpan Above Axle	X	KETX5A	Accel., Triax	I.C. Sensor	3031-500	G
52	Rear Floorpan Above Axle	Y	KETX5B	Accel., Triax	I.C. Sensor	3031-500	G
53	Rear Floorpan Above Axle	Z	KETX5C	Accel., Triax	I.C. Sensor	3031-500	G
54	Left Sill at Rear Door	Y	KEVA012	Accel., Vehicle block	I.C. Sensor	3031-500	G
55	Left Sill at Front Door	Y	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-500	G
56	Left Front Door Centerline	Y	ICST004X	Accel., Triax	I.C. Sensor	3031-500	G
57	Rear Occupant Compartment	Y	KEVA013	Accel., Vehicle block	I.C. Sensor	3031-200	G
58	Left Front Door Mid-Rear	Y	ICST004Y	Accel., Triax	I.C. Sensor	3031-500	G
59	Left Front Door Upper Centerline	Y	ICST004Z	Accel., Triax	I.C. Sensor	3031-500	G
60	Rear Door Mid-Rear	Y	ICST005X	Accel., Triax	I.C. Sensor	3031-500	G
61	Rear Door Upper Centerline	Y	ICST005Y	Accel., Triax	I.C. Sensor	3031-500	G
62	B-Post Lower	Y	KEBX2A	Accel., Biax	I.C. Sensor	3031-500	G
63	B-Post Middle	Y	KEBX2B	Accel., Biax	I.C. Sensor	3031-500	G
64	A-Post Lower	Y	KEBX1A	Accel., Biax	I.C. Sensor	3031-500	G
65	A-Post Middle	Y	KEBX1B	Accel., Biax	I.C. Sensor	3031-500	G
66	Front Seat Track	Y	KEIC008Y	Single	I.C. Sensor	3031-500	G
67	Rear Seat Structure	Y	N/A	N/A	N/A	N/A	N/A
68	Vehicle CG	X	KETX4A	Accel., Triax	I.C. Sensor	3031-200	G
69	Vehicle CG	Y	KETX4B	Accel., Triax	I.C. Sensor	3031-200	G
70	Vehicle CG	Z	KETX4C	Accel., Triax	I.C. Sensor	3031-200	G

**55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Moving Deformable Barrier
12/8/04
2005 Chevrolet Malibu 4-Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
71	MDB CG	X	MDASX	Accel., Triax	I.C. Sensor	3031-500	G
72	MDB CG	Y	MDASY	Accel., Triax	I.C. Sensor	3031-500	G
73	MDB CG	Z	MDASZ	Accel., Triax	I.C. Sensor	3031-500	G
74	MDB Rear Centerline	X	SLDBX	Accel., Triax	I.C. Sensor	3031-50	G
75	MDB Rear Centerline	Y	SLDBY	Accel., Triax	I.C. Sensor	3031-50	G
76	Right Bumper Contact	N/A	T0	Contact Switch	Tapeswitch	40 oz. Grey	%