

REPORT NUMBER TR-P25001-01-NC

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

**NISSAN MOTORS CORPORATION
2005 NISSAN ALTIMA
4-DOOR SEDAN**

NHTSA NUMBER: M55200

**PREPARED BY:
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AUGUST 26, 2004

FINAL REPORT

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

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-01-D-02005.

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Technical Report Documentation Page

1. Report No. TR-P25001-01-NC	2. Government Accession No.	3. Recipients Catalog No.		
4. Title and Subtitle Final Report of New Car Assessment Program 2005 Nissan Altima 4-Door Sedan NHTSA No. M55200		5. Report Date August 26, 2004		
		6. Performing Organization Code		
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9. Performing Organization Name and Address Karco Engineering, LLC 9270 Holly Rd. Adelanto, CA, 92301		10. Work Unit No.		
		11. Contract or Grant No. DTNH22-01-D-02005		
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code NPS-111 400 Seventh Street, SW, Room 5311 Washington, D.C 20590		13. Type of Report and Period Covered Final Test Report Option Year 3		
		14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS		
15. Supplementary Notes				
16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2005 Nissan Altima 4-Door Sedan at Karco Engineering, LLC on August 26, 2004. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.2 km/h. The ambient temperature at the barrier face at the time of impact was 32.2 degrees Celcius. The vehicle's maximum post test static crush is 534 mm at center of the vehicle. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:				
Measurement Description	Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC ₃₆)	N/A	1000	306.4	449.5
Max. Chest Accel. (3 msec Clip)	G's	60	39.9	40.8
Left Femur Force	Newtons	10008	-261.5	0 (Channel Failure)
Right Femur Force	Newtons	10008	-1339.1	-432.6
17. Key Words 56.2 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2005 Nissan Altima 4-Door Sedan NHTSA No. M55200			18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
19. Security Classification (this report) Unclassified	20. Security Classification (this page) Unclassified		21. No. of Pages 222	22. Price

Form DOT F1700.7 (8-72)

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SECTION 1

PURPOSE AND SUMMARY OF TEST M55200

1.1 PURPOSE

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

This 56.20 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated December 1999. Data was obtained indicant of FMVSS 208 "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2005 Nissan Altima 4-Door Sedan at a velocity of 56.20 km/h. The test was performed at Karco Engineering, LLC on August 26, 2004.

Three (3) real-time, four (4) high-speed digital video and twelve (12) high-speed film cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in data sheet number 15 (page number: 27) of this report.

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

Both ATDs were fully instrumented with head (primary and redundant), chest (primary and redundant) and pelvic triaxial accelerometers, chest displacement potentiometers, six-axis upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also placed on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. Also, shoulder belt spool-off was measured for the driver and passenger dummy. The driver (position 1) ATD (Serial No. 34) and the right-front passenger (position 2) ATD (Serial No. 35) were calibrated prior to this test.

One Hundred and seven (107) channels of data were recorded using an on-board data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the vehicle and dummy response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the Instrumentation Data Channel assignments. Appendix E contains the Dummy Calibration data and Appendix F contains the Child Restraint System (CRS).

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

The maximum static crush of the vehicle was 534 mm and both the driver and the passenger side doors remained closed during the impact event and were operable after the impact.

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

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

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC	Clip (g)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)
Driver	306.4	39.9	-25.2	-261.5	-1339.1	19.0
Passenger	449.5	40.8	-25.5	0*	-432.6	123.4

* Passenger left femur load cell failed.

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

CONVERSION FACTORS USED IN THIS REPORT*

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

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

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.20
Test Weight	kg	1619
Impact Angle	degrees	0
Average Rebound	mm	1942
Maximum Static Crush	mm	534

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door opening	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Rear Door Opening	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Seat Track Shift (mm)	2	12
Seat Back Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 34	50% Male Hybrid III No. 35
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag
Abdomen Contact	Airbag	Airbag
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

16mm MOVIE COVERAGE

High Speed	16
Real Time	3
Total	19

DATA CHANNELS

Driver ATD Sensors	46
Passenger ATD Sensors	46
Belt Assessment Sensors	6
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	36
Total	143

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M55200	Anti-Lock Brakes	Yes
Make	Nissan	All Wheel Drive	No
Model	Altima 2.5S	Power Steering	Yes
Body Style	4-Door Sedan	Driver Front Airbag	Yes
Vin No.	1N4AL11D75N402522	Driver Side Airbag	No
Color	Pewter	Driver Head Airbag	No
Delivery Date	8/17/04	Driver Curtain Airbag	No
Odometer	10	Pass. Airbag	Yes
Dealer	Empire Nissan	Pass. Side Airbag	No
Transmission	4	Pass. Head Airbag	No
Final Drive	Front	Pass. Curtain Airbag	No
Type/No. Cyl.	4	Pre-Tensioners	Yes
Engine Disp. (L)	2.5	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	No	Automatic Door Locks	No
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	Yes
Rear Disc	Yes	Other	None

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

N/A

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Corporation	GVWR (kg)	1906
Date of Manufacture	Jul-04	GAWR Front (kg)	1020
		GAWR Rear (kg)	893

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	None	
Number of Occupants	2	3	0	5
Capacity Weight (VCW) (kg)				390
Cargo Weight (RCLW) (kg)				50

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

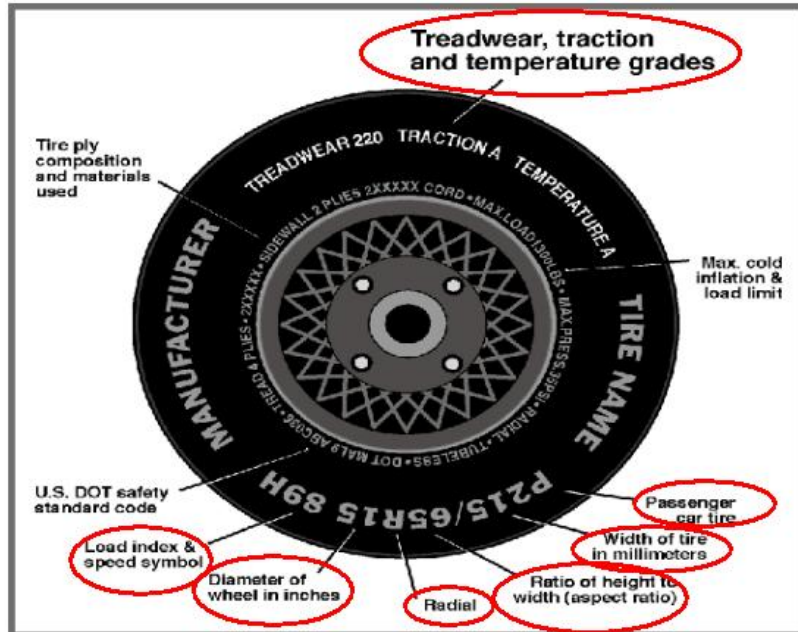
Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

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



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	308	308
Cold Pressure (kpa)	203	203
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P215/60R16
Tire Manufacturer	Continental	Continental
Treadwear	520	520
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	1	1
Tire Plies Body	N/A	N/A
Load Index/Speed Symbol	94T	94T
Tire Material	Steel Belted	Steel Belted
DOT Safety Code Right	ACX8	ACX8
DOT Safety Code Left	ACX8	ACX8

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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	427	280		465	359	
Right	kg	432	286		449	346	
Ratio	%	60.3	39.7		56.5	43.5	
Totals	kg	859	566	1425	914	705	1619

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1425
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	50
Calculated Vehicle Target Wt. (TVTW)	kg	1627

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	720	720	690	675	1118
As Tested	mm	710	714	665	665	1225

Vehicle Wheel Base (mm) 2815

Weight of Ballast Secured in cargo area (kg) 0

Vehicle Components Removed Rear bumper, spare tire, rear windshield, trunk lid, muffler

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

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 75.71

Usable Capacity Furnished by COTR (L) 75.71

Actual Test Volume with entire fuel System Filled (L) 23.09

1/3 of Usable Capacity (L) 25.24

Test Fluid Type: Stoddard Solvent

Kinematic Viscosity: as per ASTM Standard D484-71 Purple

Is Vehicle Fuel Pump Electric or Mechanical? Electric

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

Fuel System Particulars: None

DATA SHEET NO. 3
POST TEST IMPACT DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	56.20
Trap No. 1 Entry Distance	mm	<1524	1524
Trap No.1 Exit Distance	mm	<1524	305
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	56.28
Trap No.2 Entry Distance	mm	<1524	1524
Trap No.2 Exit Distance	mm	<1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4707	4247	-460
Center	mm	4862	4328	-534
Right Side	mm	4707	4234	-473

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1991
Center	mm	1840
Right Side	mm	1995
Average	mm	1942

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

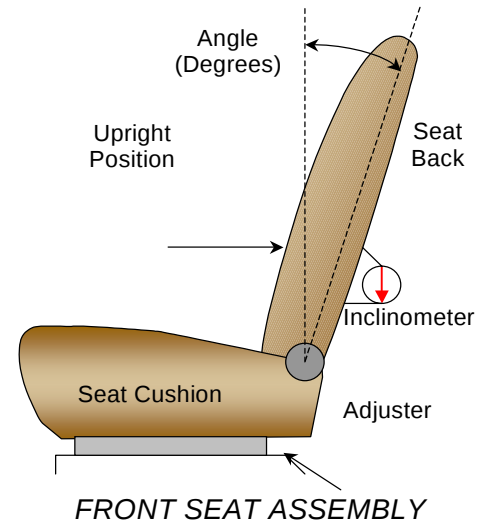
NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows:
Seat back angle was measured at the headrest using a digital inclinometer.



SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	10.5
Passenger w/seated Dummy	10.5

SEAT FORE/AFT POSITIONS

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

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	21	11
Passenger Seat	21	11

SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	1
Passenger Seat	4	1

DATA SHEET NO. 4...(CONTINUED)

TEST VEHICLE INFORMATION

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

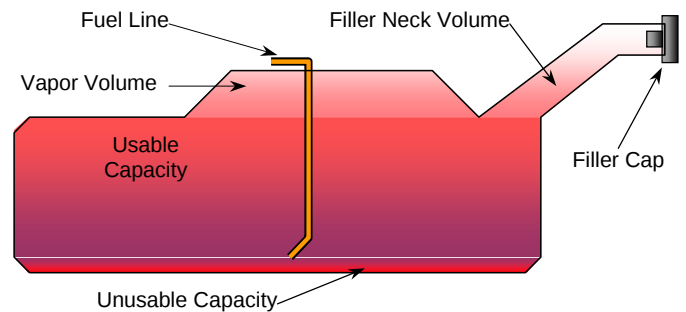
Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	75.71
Usable Capacity of "Optional" Tank	N/A
Usable Capacity used for FMVSS 301	69.65 to 71.17
Actual Amount of Solvent used	23.09
1/3 of Usable Capacity	25.24

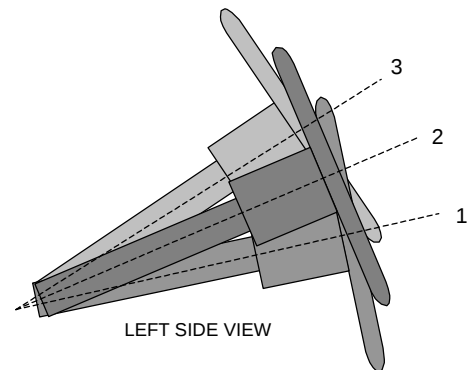
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies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



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Fore/Aft Positon (mm)	Degrees
Lowermost positon No. 1	0	14
Geometric center position No. 2	13	24
Uppermost position No. 3	43	34

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		64.9		
SWA	Steering Wheel Angle		65.1		
SCA	Steering Column Angle		24.9		
SA	Seat Back Angle		10.5		10.5
HZ	Head to Roof (Z)	180	90.0	145	90.0
HH	Head to Header	310		300	
HW	Head to Windshield	640		565	
HR	Head to Side Header (Y)	260		265	
NR	Nose to Rim	375	11.9		
CD	Chest to Dash	545		640	
CS	Chest to Steering Hub	295			
RA	Rim to Abdomen	155			
KDL	Left Knee to Dash	165	15.3	160	
KDR	Right Knee to Dash	140		190	9.8
PA	Pelvic Angle		24.7		24.4
TA	Tibia Angle		44.2		43.8
KK	Knee to Knee (Y)	295		280	
SK	Striker to Knee	660	3.1	651	3.5
ST	Striker to Head	535	75.5	545	71.6
SH	Striker to H-Point	295	26.9	288	27.9
SHY	Striker to H-Point (Y)	230		250	
HS	Head to Side Window	340		345	
HD	H-Point to Door (Y)	120		135	
AD	Arm to Door (Y)	25		30	

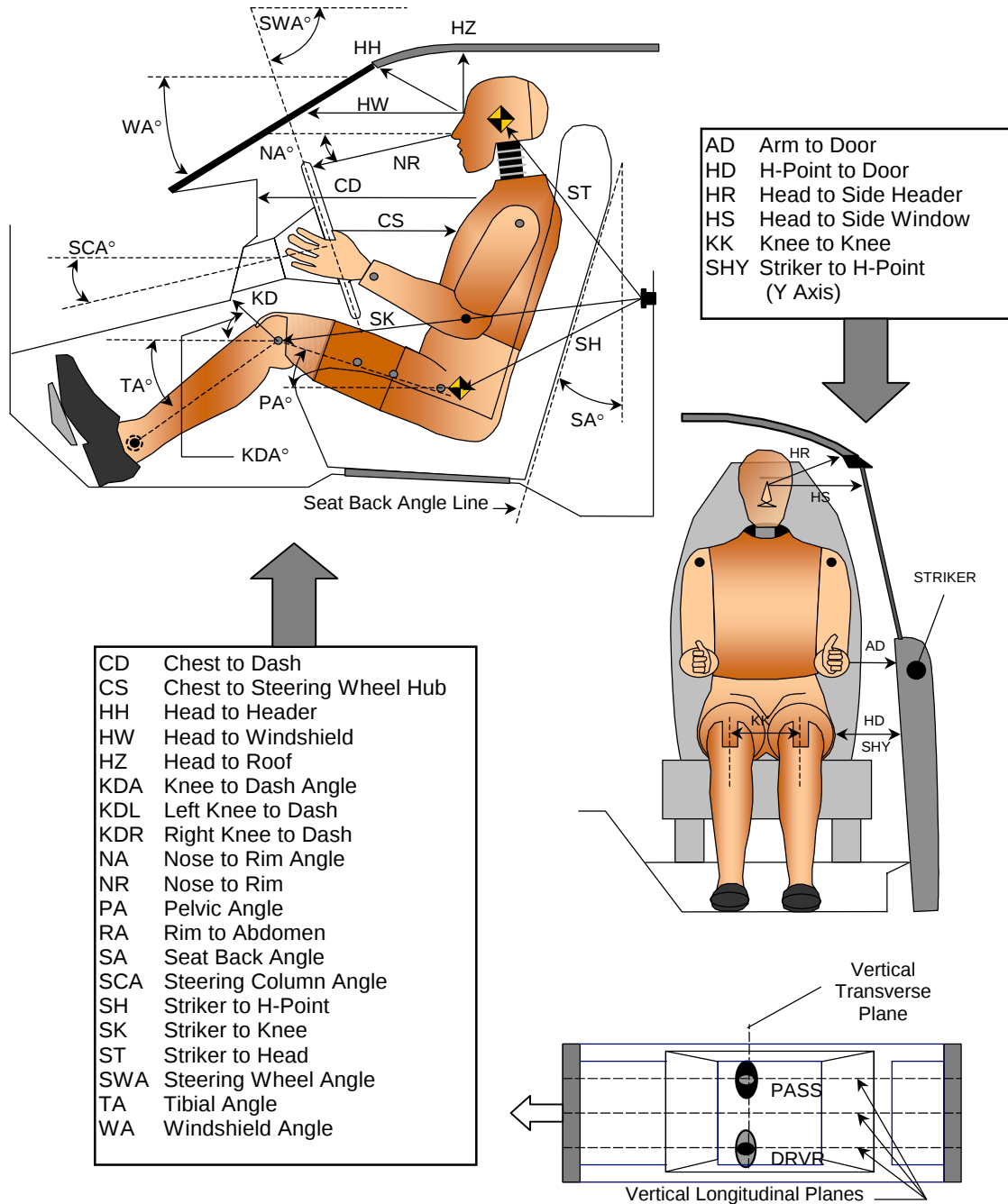
DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

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DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

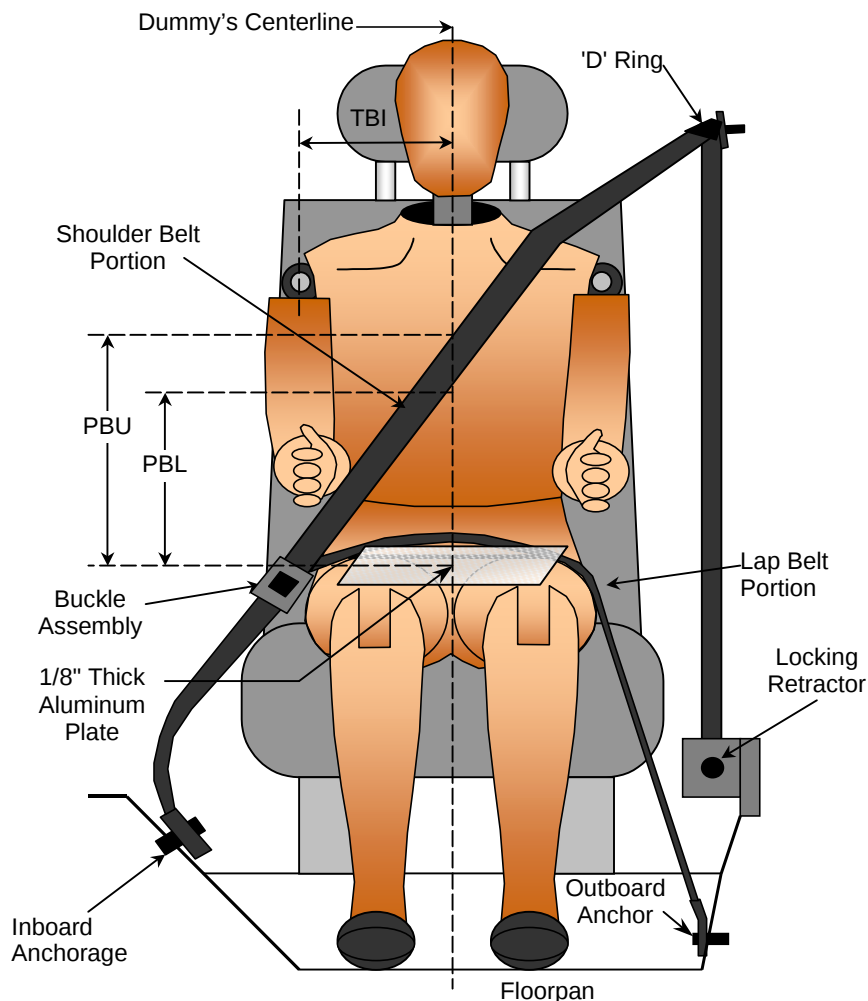
DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	205	255
PBU - Top Surface of reference to belt upper edge	mm	335	320
PBL - Top Surface of reference to belt lower edge	mm	260	240
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

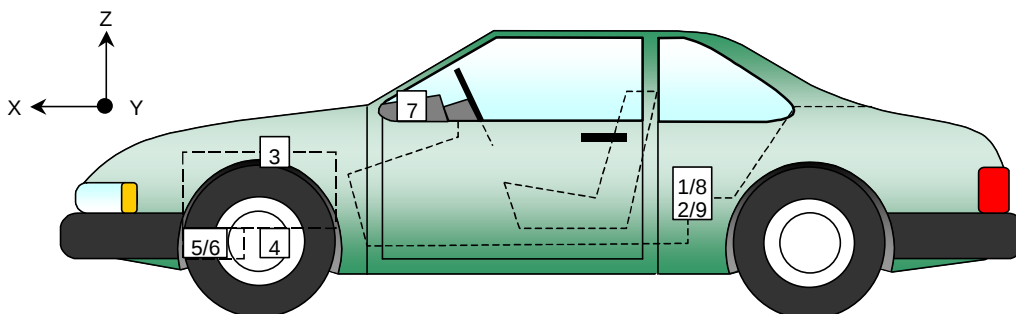
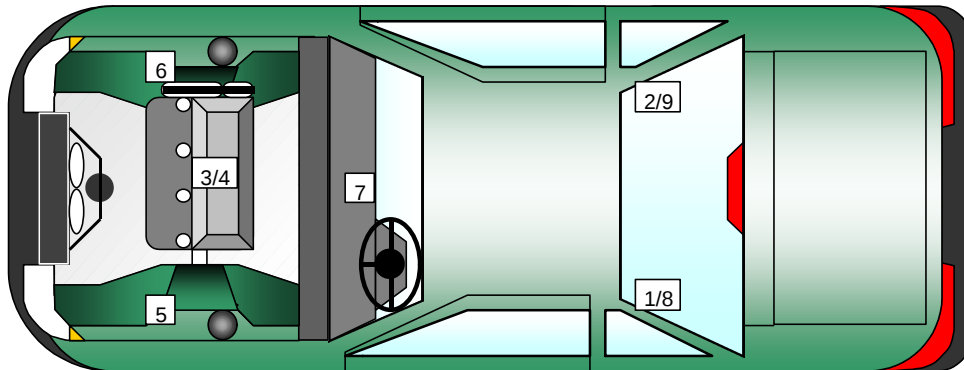
Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member	2062	-675	256	G's	1.6	118.6	-31.2	68.0
2	Right Rear X-Member	2062	675	256	G's	2.0	136.4	-34.0	58.6
3	Engine Top	4220	95	725	G's	46.2	44.2	-122.3	30.1
4	Engine Bottom	4150	315	165	G's	24.0	40.5	-119.6	31.2
5	Left Brake Caliper	4030	-730	285	G's	25.5	64.2	-102.6	46.2
6	Right Brake Caliper	4030	730	285	G's	7.2	104.4	-52.9	41.8
7	Instrument Panel	3250	0	995	G's	14.7	31.1	-58.7	37.4
8	Left Rear X-Member (Z-Axis)	2062	-675	186	G's	12.5	52.6	-9.3	57.8
9	Right Rear X-Member (Z-Axis)	2062	675	186	G's	25.8	60.1	-19.5	56.3

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



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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

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HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	2.9	191.9	-43.3	67.2	2.4	200.0	-48.4	78.0
Head CG	Y	G's	5.2	48.3	-7.0	54.2	3.9	53.0	-12.0	91.5
Head CG	Z	G's	13.9	55.7	-1.4	17.3	19.9	51.9	-5.9	88.5
Head CG Resultant	N/A	G's	44.6	67.2			49.1	72.4		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	2.4	198.8	-39.5	63.6	2.0	161.7	-40.5	80.1
Chest CG	Y	G's	6.0	94.7	-4.6	30.6	2.6	50.3	-9.0	90.3
Chest CG	Z	G's	5.5	23.9	-9.7	83.7	5.9	49.1	-8.7	86.7
Chest CG Resultant	N/A	G's	40.5	63.5			41.4	80.1		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	494.9	43.4	-261.5	46.6	0.0	0.0	0.0	0.0
Right Femur	Z	Newtons	1073.6	49.0	-1339.1	65.4	944.5	48.9	-432.6	39.0

1.) Pass. Channel failed, no data

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Shoulder Belt Pullout	N/A	MM	19.0	89.7	-51.2	200.0	123.4	101.0	-46.8	194.9
Shoulder Belt Stretch	N/A	MM/CM	0.0	0.0	0.0	0.0	0.00	0.0	0.00	0.0
Lap Belt Force	N/A	Newtons	4959.3	60.1	-9.7	12.8	7020.0	59.4	-8.6	184.4
Shoulder Belt Force	N/A	Newtons	6716.0	62.9	-43.0	11.1	6590.6	57.7	-37.5	153.3

1.) Not used with pre-tensioners

PRIMARY HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Primary	306.4	49.6	85.6	37.3	449.5	55.1	91.1	43.5

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	39.9	62.6	65.6	40.8	78.6	81.6

DATA SHEET NO. 8...(CONTINUED)

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	2.1	143.1	-40.7	58.9	2.4	132.0	-40.2	61.5
Pelvis	Y	G's	6.4	84.0	-3.0	21.9	0.0	0.0	0.0	0.0
Pelvis	Z	G's	1.7	192.4	-29.5	72.7	1.4	199.3	-28.1	79.1
Pelvis Resultant	N/A	G's	47.4	58.8			45.5	61.3		

1.) Pass. Channel failed, no data

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	145.6	57.6	-293.1	90.3	176.5	78.9	-385.0	51.1
Neck Force	Y	Newtons	108.3	123.1	-121.3	65.0	67.6	83.9	-118.3	141.5
Neck Force	Z	Newtons	1083.3	55.8	-56.2	18.3	1137.6	56.2	-76.6	108.4
Neck Force Resultant	N/A	Newtons	1094.5	55.8			1188.0	55.7		
Neck Moment	X	N•m	9.6	73.3	-4.9	48.9	18.8	92.1	-11.6	126.6
Neck Moment	Y	N•m	25.4	52.6	-17.4	87.2	8.8	66.9	-28.1	90.5
Neck Moment	Z	N•m	3.1	91.9	-0.5	146.3	16.0	110.0	-6.5	165.3
Neck Moment Resultant	N/A	N•m	25.5	52.9			36.0	90.9		

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	20.6	39.2	-35.3	23.1	9.1	57.0	-84.1	42.4
Left Foot Aft	Z	G's	3.2	170.6	-33.2	36.9	2.8	77.1	-54.9	41.3
Left Foot Fore	Z	G's	22.5	42.1	-48.6	52.2	117.8	41.4	-9.9	54.8
Right Foot Aft	X	G's	16.5	58.7	-94.8	41.4	6.7	136.2	-40.7	44.7
Right Foot Aft	Z	G's	2.0	151.9	-67.6	41.0	5.0	21.1	-43.0	35.9
Right Foot Fore	Z	G's	20.2	34.4	-136.4	40.6	5.8	144.3	-54.3	46.2

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Upper Moment	X	N•m	28.0	47.1	-39.6	76.2	30.0	56.5	-8.9	40.2
Left Upper Moment	Y	N•m	18.4	176.3	-71.8	49.8	22.0	62.2	-119.9	43.1
Right Upper Moment	X	N•m	46.6	63.2	-43.6	50.5	6.5	24.9	-20.7	59.7
Right Upper Moment	Y	N•m	16.1	132.2	-112.7	42.4	26.5	140.7	-80.6	47.6
Left Lower Moment	X	N•m	43.0	67.1	-4.1	30.6	11.3	71.7	-11.2	98.0
Left Lower Moment	Y	N•m	51.3	88.7	-28.2	51.6	24.5	62.7	-22.1	43.4
Left Lower Force	Z	Newtons	142.1	132.3	-2131.6	39.8	110.2	143.3	-3466.1	42.9
Right Lower Moment	X	N•m	58.2	49.3	-56.3	59.5	3.0	24.4	-11.2	78.9
Right Lower Moment	Y	N•m	1.5	148.4	-24.6	44.4	34.8	38.1	-29.1	50.2
Right Lower Force	Z	Newtons	1630.5	46.7	-4913.2	60.7	186.1	158.2	-2699.4	39.8

DATA SHEET NO. 8...(CONTINUED)

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.0	4.5	-25.2	66.3	0.0	5.8	-25.5	86.7

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	3.3	191.9	-43.3	66.9	2.9	200.0	-48.7	72.4
Head CG	Y	G's	5.4	48.3	-7.1	53.8	3.6	52.0	-12.2	91.1
Head CG	Z	G's	13.9	55.7	-1.5	17.3	19.5	51.9	-6.4	88.5
Head CG Resultant	N/A	G's	44.5	66.5			49.4	72.4		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	2.3	199.2	-39.9	63.6	2.0	161.5	-40.4	80.1
Chest CG	Y	G's	6.2	94.7	-4.8	30.6	2.7	37.5	-8.9	90.3
Chest CG	Z	G's	5.8	23.9	-9.9	84.2	5.6	49.2	-8.8	86.8
Chest CG Resultant	N/A	G's	41.0	63.5			41.4	80.2		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Redundant	313.3	50.4	86.4	37.6	454.2	55.2	91.2	43.7

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	40.4	62.6	65.6	40.7	78.5	81.5

DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	205	255
PBU - Top Surface of reference to belt upper edge	mm	335	320
PBL - Top Surface of reference to belt lower edge	mm	260	240
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	675	675
Shoulder Belt length as measured on ATD	mm	850	870
Lap Belt length as measured on ATD	mm	830	805
Remainder of belt on reel	mm	640	600
Total belt length for continuous webbing systems	mm	2995	2950

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	0.0	50.0
As determined electronically	mm	19.0	123.4

BELT STRETCH DATA

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

* Not used with shoulder belt pre-tensioner systems

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

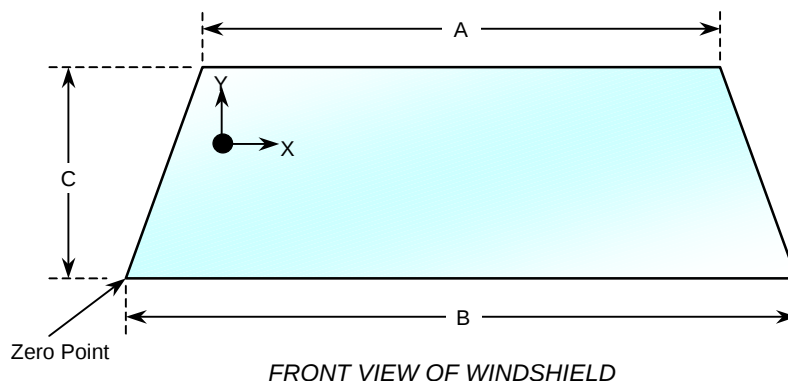
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

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

Temperature of windshield molding during test: 22 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2163	2163	100
Right Side	2163	2163	100
Total	4325	4325	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1165	17
B	mm	1520	10
C-Left	mm	820	15
C-Right	mm	820	15

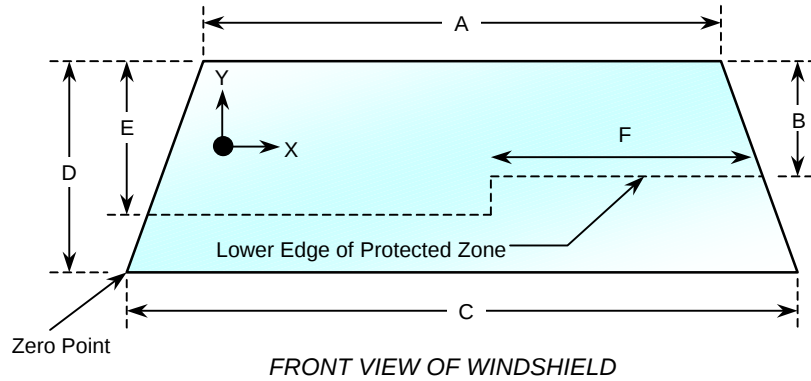
DATA SHEET NO. 11
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1165
B	mm	465
C	mm	1520
D	mm	820
E	mm	560
F	mm	500

AREA OF PROTECTED ZONE FAILURES

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

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

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

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan NHTSA No.: M55200
Test Program: 2005 NHTSA 35mph NCAP Test Date: 8/26/04

Test Time: 12:34PM Temperature: 32.2 Deg. C.

STODDARD SOLVENT SPILLAGE MEASUREMENTS

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

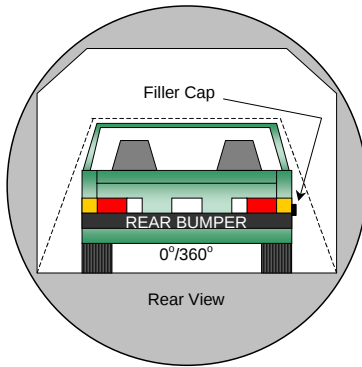
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

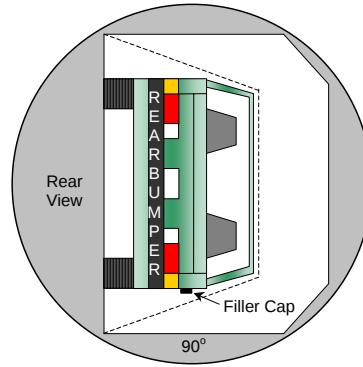
NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

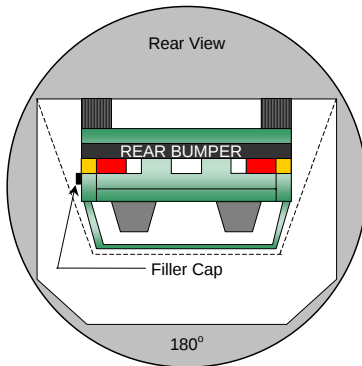
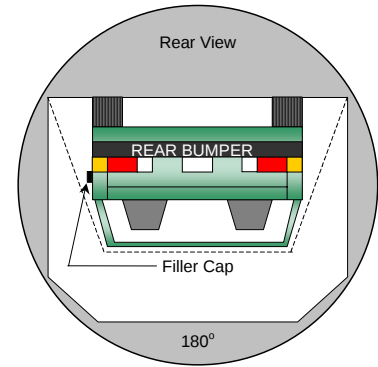
Test Date: 8/26/04



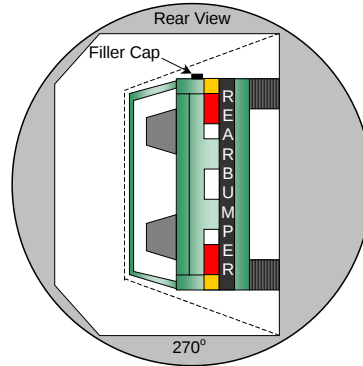
0° to 90°



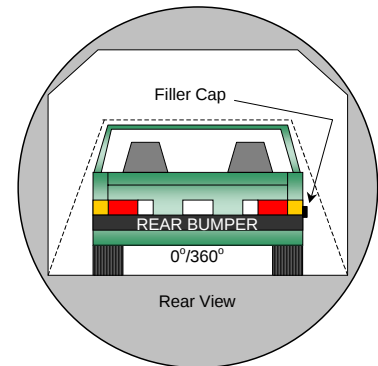
90° to 180°



180° to 270°



270° to 360°



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

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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	85	300	385
90° to 180°	75	300	375
180° to 270°	79	300	379
270° to 360°	78	300	378

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

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

ACTUAL TEST VEHICLE SOLVENT SPILLAGE TABLE (oz.)

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

SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	4862	4328	-534
2	RSOV to front of engine	mm	4222	3997	-225
3	RSOV to firewall centerline	mm	3727	3667	-60
4	RSOV to leading edge of right door	mm	3375	3377	2
5	RSOV to leading edge of left door	mm	3375	3370	-5
6	RSOV to lower leading edge of right door	mm	3365	3375	10
7	RSOV to lower leading edge of left door	mm	3365	3355	-10
8	RSOV to upper trailing edge of right door	mm	2255	2253	-2
9	RSOV to upper trailing edge of left door	mm	2250	2250	0
10	RSOV to lower trailing edge of right door	mm	2260	2256	-4
11	RSOV to lower trailing edge of left door	mm	2255	2252	-3
12	RSOV to bottom of right 'A' pillar	mm	3359	3354	-5
13	RSOV to bottom of left 'A' pillar	mm	3359	3339	-20
14	RSOV to firewall on right side	mm	3758	3562	-196
15	RSOV to firewall on left side	mm	3758	3707	-51
16	RSOV to steering column	mm	2880	2895	15
17	Center of steering column to left 'A' pillar	mm	335	410	75
18	Center of steering column to headlining	mm	410	420	10
19	RSOV to right side of front bumper	mm	4707	4234	-473
20	RSOV to left side of front bumper	mm	4707	4247	-460
21	Length of engine block	mm	350	350	0
RD	RSOV to right side of dash panel	mm	3164	3065	-99
CD	RSOV to center of dash panel	mm	2965	3065	100
LD	RSOV to left side of dash panel	mm	3154	3125	-29

All measurements are in millimeters

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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	4862	4328	-534
2	Total width	mm	1775	1770	-5
3	Bumper top height	mm	620	600	-20
4	Bumper bottom height	mm	220	320	100
5	Longitudinal member top height	mm	595	575	-20
6	Longitudinal member bottom height	mm	415	654	239
7	Distance between longitudinal members	mm	915	845	-70
8	Longitudinal member width	mm	100	100	0
9	Engine top height	mm	905	935	30
10	Engine bottom height	mm	204	249	45
11	Engine and gear box width	mm	755	755	0
12	Front bumper to engine distance	mm	630	395	-235
13	Front shock absorber fixing width	mm	900	960	60
14	Bonnet leading edge height	mm	710	796	86
15	Front shock absorber fixing width	mm	1090	1050	-40
16	Front bumper to front axle distance	mm	980	580	-400
17	Front axle to 'A' pillar distance	mm	510	453	-57
18	'A' pillar to 'B' pillar distance	mm	1120	1135	15
19	'B' pillar to rear axle distance	mm	1170	1167	-3
20	'B' pillar to 'C' pillar distance	mm	735	735	0
21	Roof sill bottom height	mm	1265	1325	60
22	Roof sill top height	mm	1420	1470	50
23	Floor sill bottom height	mm	190	265	75
24	Floor sill top height	mm	348	417	69

All measurements are in millimeters

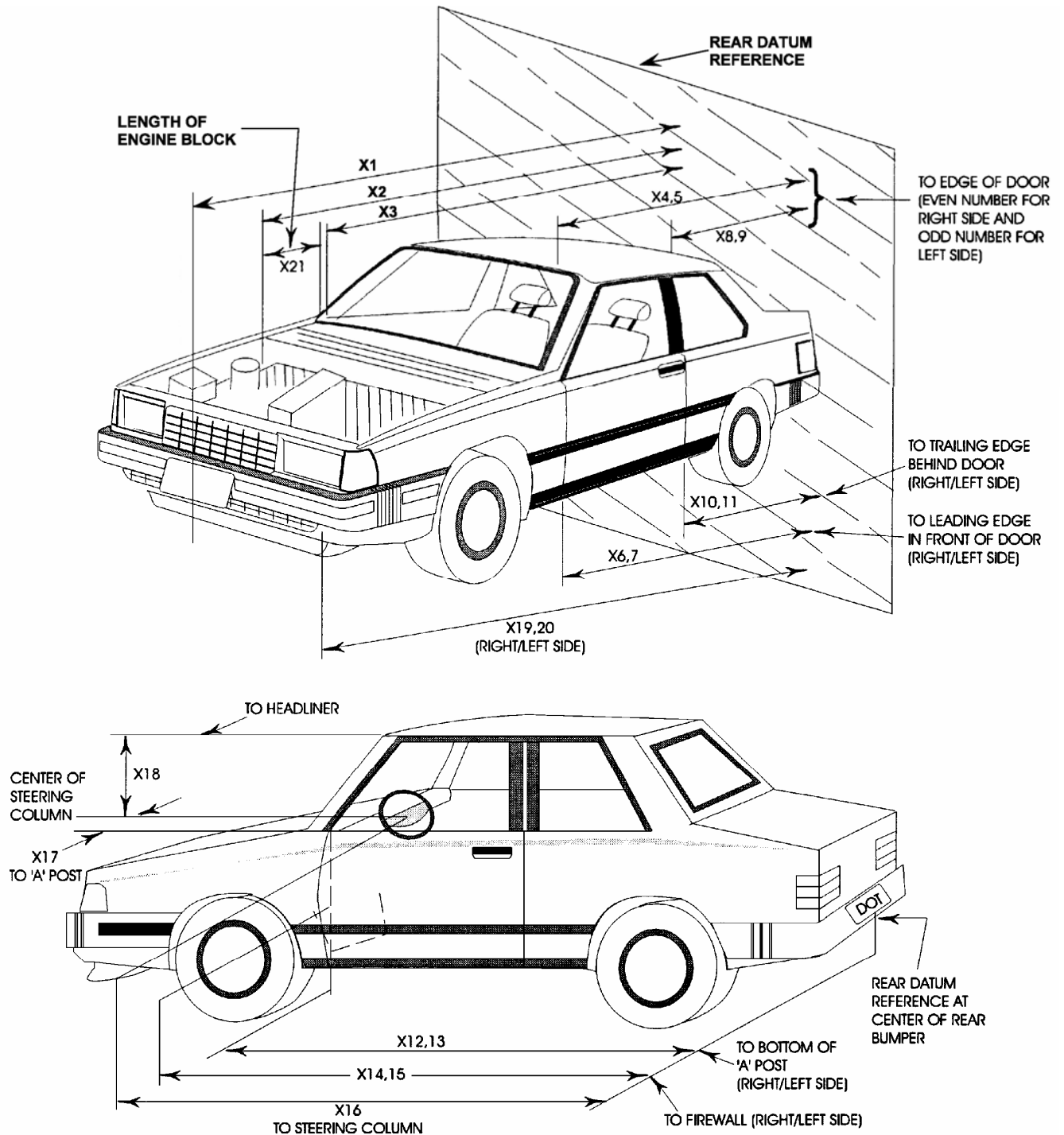
DATA SHEET NO. 14...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location (mm)			Angle (deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-12192	-6096	-1651	-10	N/A	Zoom	30
2	Real Time Camera (Still)	-1219	-8585	-1372	0	8193.8	Zoom	30
3	Real Time Camera (Still)	-1067	7976	-991	0	7622.5	Zoom	30
4	Overall Left Side	-2489	-8280	-1143	-4	7798.2	13	1010
5	Left Side View	-1677	-7773	-1270	-4	7329.6	50	1000
6	Left Side View	-2134	-8230	-1449	-4	7755.0	35	1020
7	Driver and Interior View	-5257	-10897	-4648	-13	11305.2	75	1010
8	Driver and Interior View	-5360	-10846	-4648	-13	11284.5	Zoom	1000
9	Steering Column (Bottom)	-2134	-8230	-2997	-16	7942.9	19	1000
10	Steering Column (Top)	-2134	-8230	-3404	-20	8041.3	19	1010
11	Overall Right Side	-2083	8230	-1270	-6	7755.1	13	1010
12	Right Side View	-1577	10871	-1575	-4	10428.1	105	1000
13	Right Side Passenger View	-1677	10871	-1575	-4	10420.6	80	970
14	Passenger and Interior View	-6477	9144	-2997	-9	9841.6	50	900
15	Passenger and Interior View	-6477	9068	-2946	-9	9634.5	Zoom	1000
16	Right Side View	-2083	8230	-1575	-4	7761.1	35	1020
17	Windshield View	-610	0	-5944	-90	N/A	13	1020
18	Pit View of Engine	-914	0	1499	90	N/A	9	980
19	Pit View of Fuel Tank	-2438	0	1499	90	N/A	6	870

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

DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

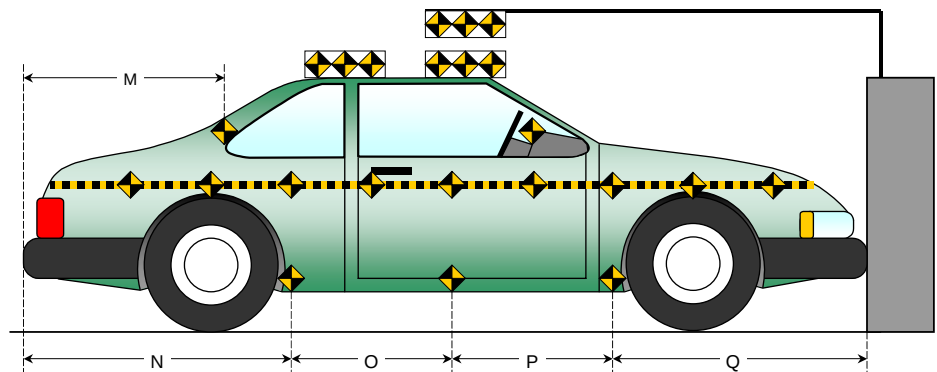
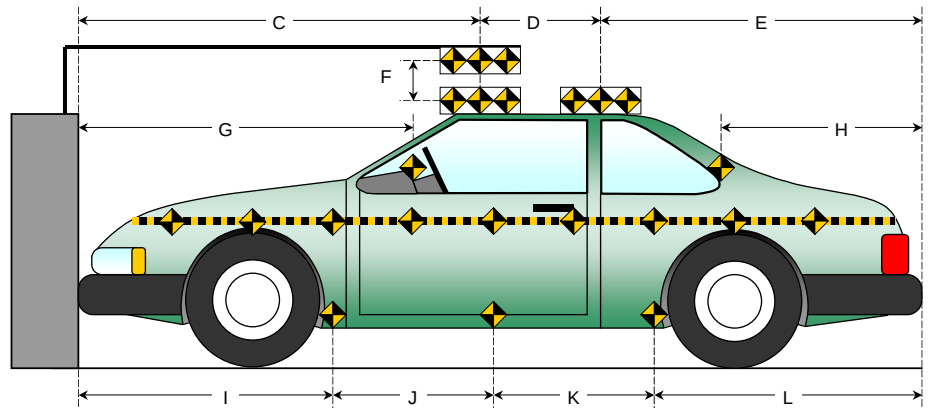
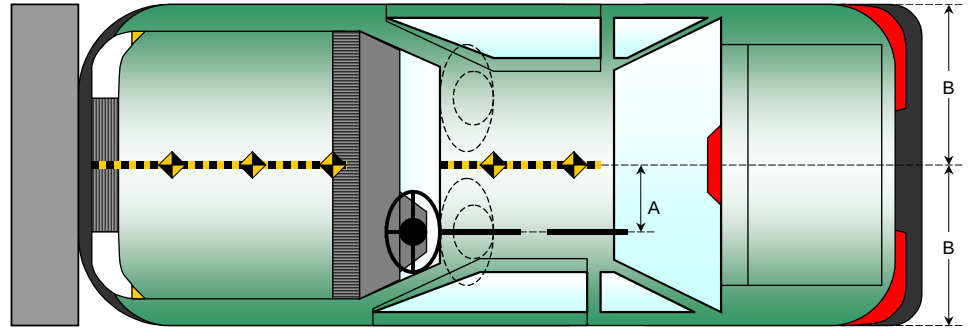
Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

All Dimensions in (mm)	
Item	Value
A	350
B	1775
C	2235
D	600
E	1835
F	150
G	1775
H	1065
I	1473
J	943
K	943
L	1545
M	1070
N	1545
O	943
P	943
Q	1473



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

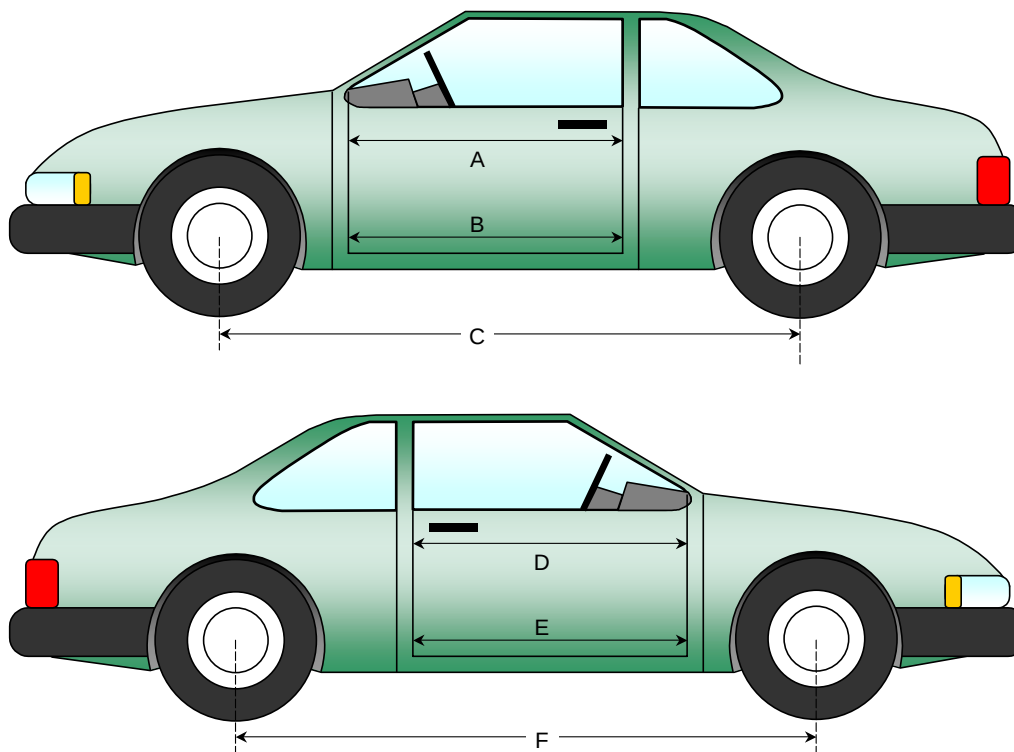
Test Date: 8/26/04

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	1050	1049	-1
B	Left Side Lower	mm	970	969	-1
D	Right Side Upper	mm	1050	1044	-6
E	Right Side Lower	mm	975	969	-6

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	2815	2710	-105
F	Right Side Wheel Base	mm	2815	2735	-80



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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

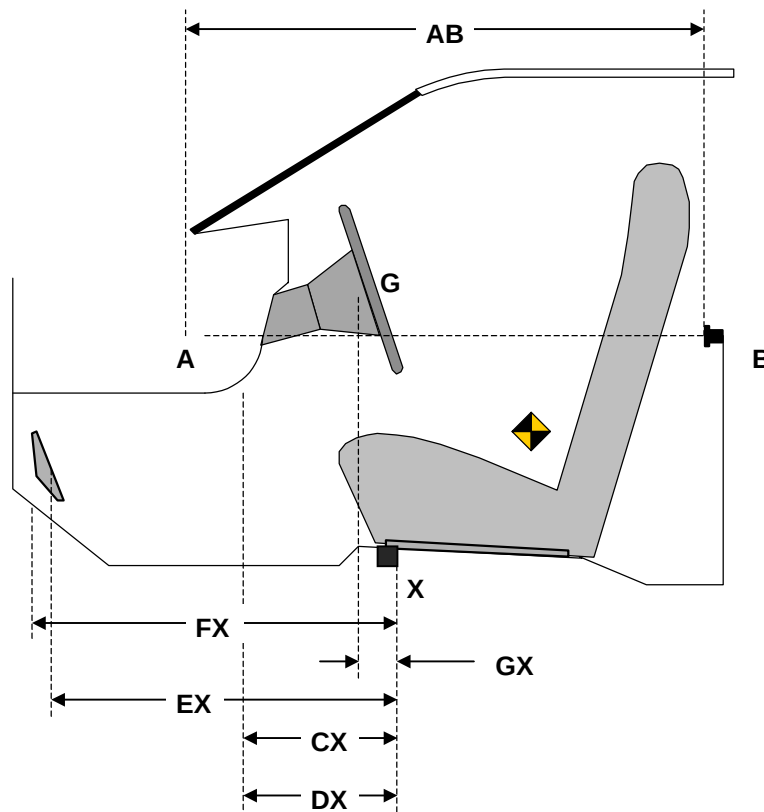
Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	1050	1049	-1
CX	Left Knee Bolster to X	mm	280	290	10
DX	Right Knee Bolster to X	mm	275	290	15
EX	Brake Pedal to X	mm	580	471	-109
FX	Foot Rest to X	mm	595	576	-19
GX	Center of Steering Wheel Hub to X	mm	25	26	1

X = Left Front Seat Outboard Anchor Bolt Head



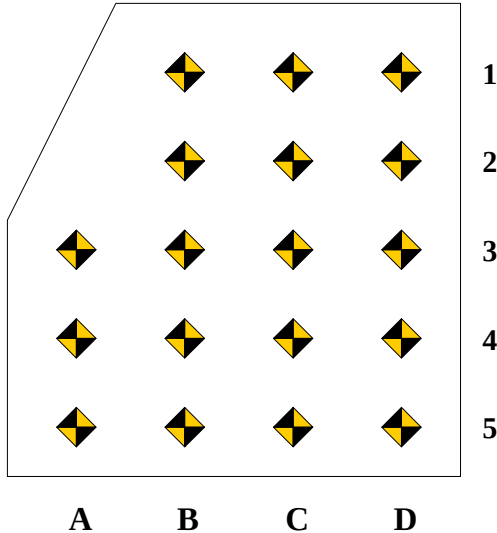
DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04



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

Columns A through D are evenly spaced.

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

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

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		727	722	718		687	691	660		-40	-32	-58
2		648	645	652		632	613	606		-16	-32	-46
3	567	554	556	563	553	560	564	562	-15	6	8	-1
4	464	458	455	451	457	464	474	468	-7	6	19	16
5	361	357	355	325	355	363	372	371	-6	6	17	46

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		-11	-10	-8		-34	-25	-37		-23	-15	-29
2		54	54	65		43	32	40		-11	-22	-25
3	122	54	100	118	121	107	110	121	-1	54	9	3
4	123	107.0	106	100	125	112	117	98	2	5	12	-2
5	124	107.0	105	100	125	113	116	101	1.6	6	11	2

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

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

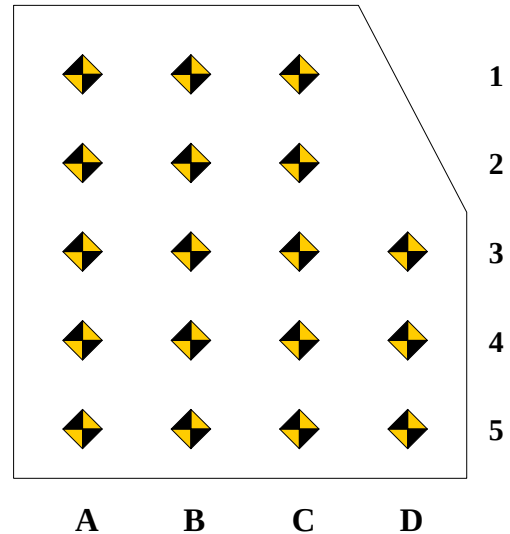
Test Date: 8/26/04

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

Columns A through D are evenly spaced.

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

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



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	738	737	743		674	669	677		-64	-67	-66	
2	671	662	670		612	608	640		-60	-54	-30	
3	586	582	587	595	568	575	576	589	-18	-8	-11	-6
4	477	476	475	479	450	475	472	475	-27	-1	-3	-4
5	381	384	380	385	356	379	378	379	-25	-5	-2	-6

PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-8	-10	-12		-50	-69	-55		-42	-59	-43	
2	63	51	52		14	3	20		-48	-48	-32	
3	123	106	107	118	104	94	96	104	-19	-12	-10	-14
4	103	114	116	129	82	98	98	120	-20	-16	-18	-10
5	100	113	115	128	87	99	103	122	-14	-14	-13	-7

DATA SHEET NO. 18
FIXED BARRIER LOAD CELL LOCATIONS

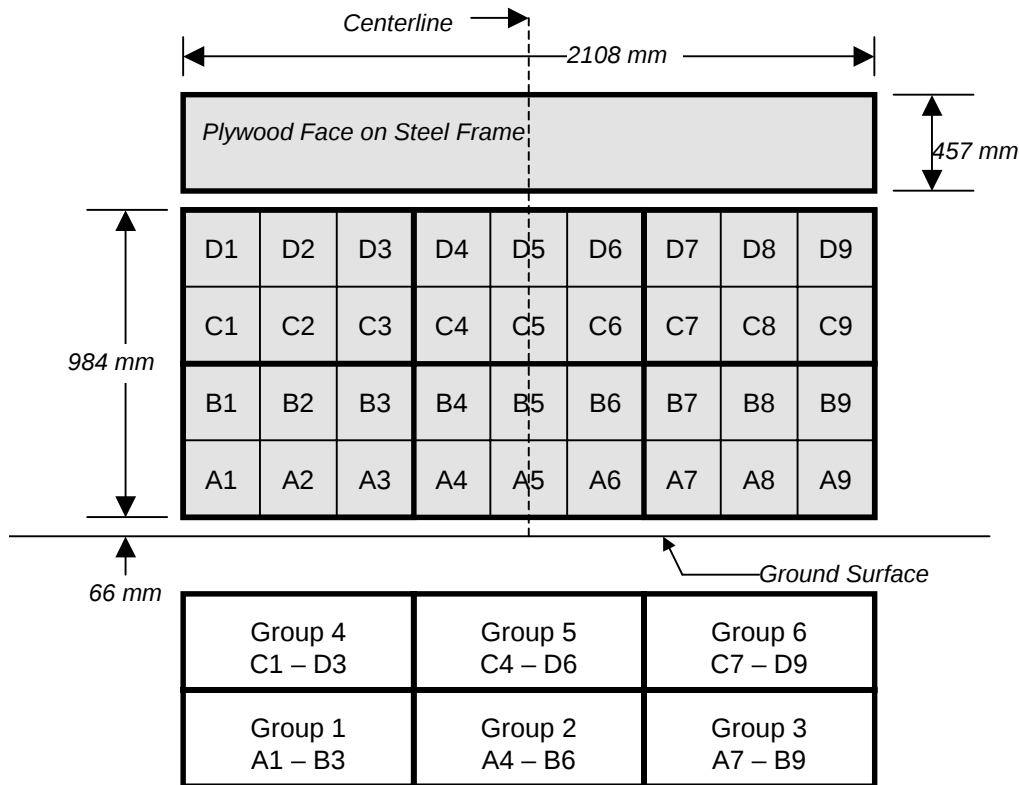
Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

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



6 Groups of 6 Load Cells Each

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

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

DATA SHEET NO. 19
POST-TEST AIRBAG DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

POST-TEST AIRBAG DATA

	DRIVER	PASSENGER
No. of vent holes	2	2
Size of vent holes (mm ²)	713.2	970.8
Total vent area (mm ²)	1426.5	1941.6

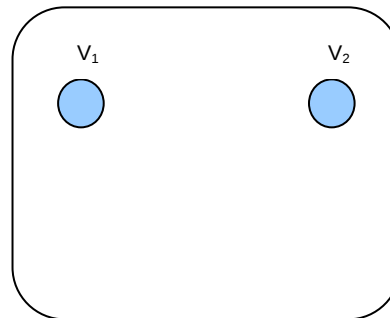
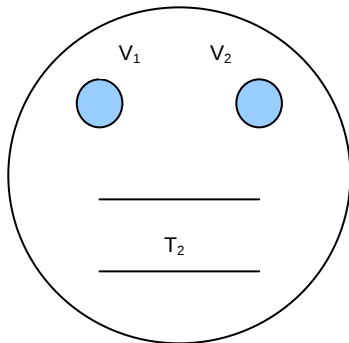
Deflated Airbag Length and Width Dimensions or, If Round, Diameter (mm)		
Length	520	540
Width	615	600
Depth or Diameter	330	660

Tethering Information		
Is the airbag tethered?	NO	NO
Record length of tether (mm)	N/A	N/A

Airbag Manufacturing Information		
Manufacturer	*	*
Part No.	0000297499C	P603264200BB06
Gas Generator	PM7Y0046281257	NPZB0046171137

* Manufacturers label was burned due to air bag explosion.

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



DATA SHEET NO. 20
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan NHTSA No.: M55200
 Test Program: 2005 NHTSA 35mph NCAP Test Date: 8/26/04

VEHICLE INFORMATION

VIN: 1N4AL11D75N402522 Wheel base (mm): 2815
 Vehicle Size Category: 4-Door Sedan Test Weight (kg): 1619

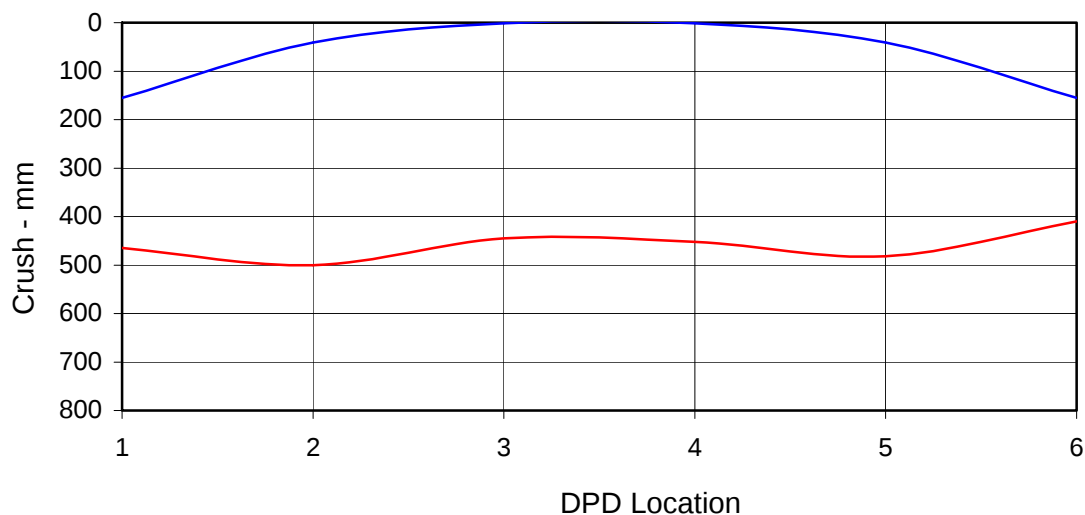
ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard Linearity: Good
 Impact Velocity (km/h): 56.20
 Velocity Change (km/h): 63.68 Time of Separation (msec): 75.7

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
 Damage Region Length (mm): 1408 Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	155	465	-310
C2	Crush zone 2 on left side	mm	41	500	-459
C3	Crush zone 3 on left side	mm	1	445	-444
C4	Crush zone 4 on right side	mm	1	452	-451
C5	Crush zone 5 on right side	mm	41	482	-441
C6	Crush zone 6 at right side	mm	155	410	-255



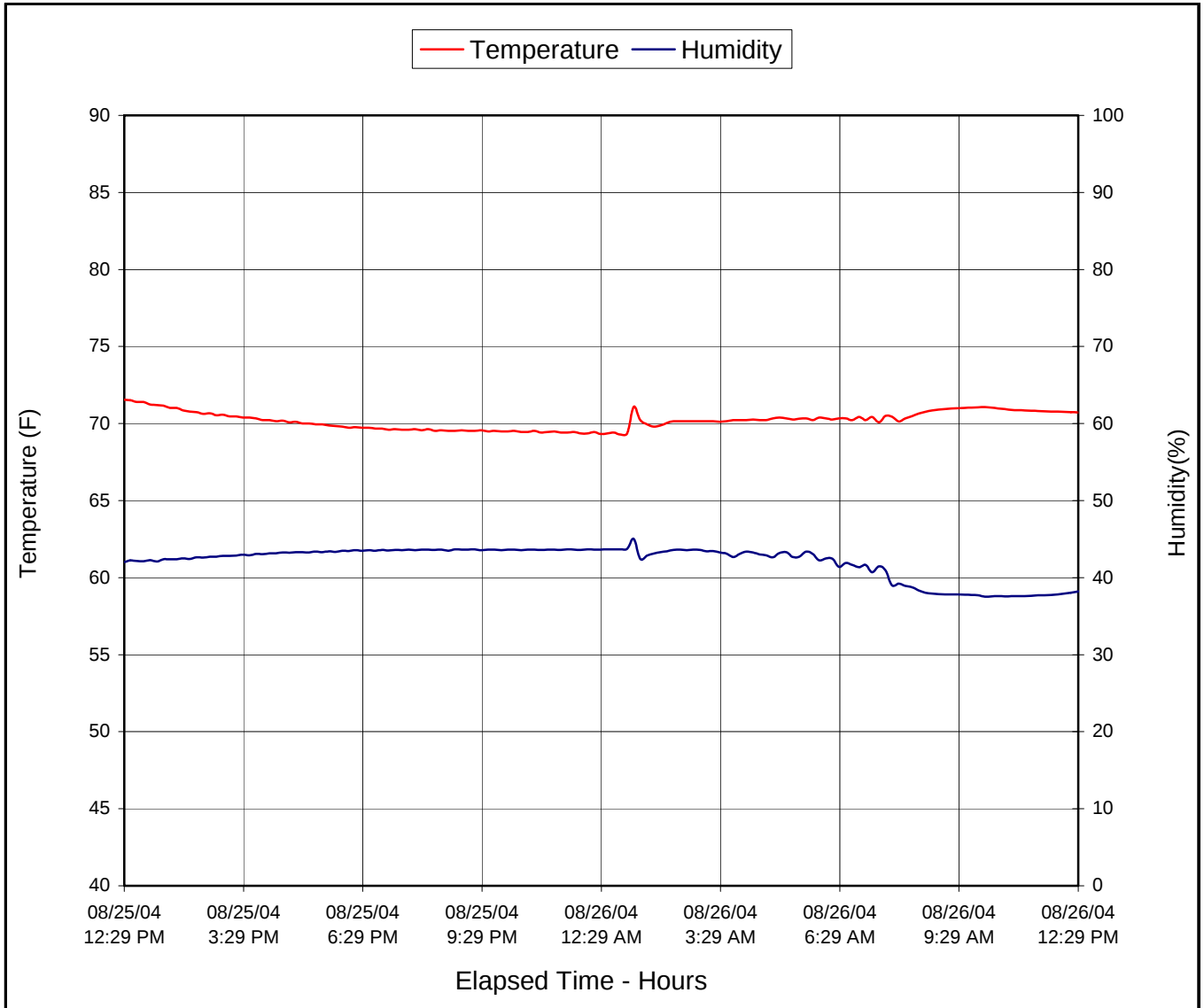
DATA SHEET NO. 21
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04



APPENDIX A
PHOTOGRAPHS

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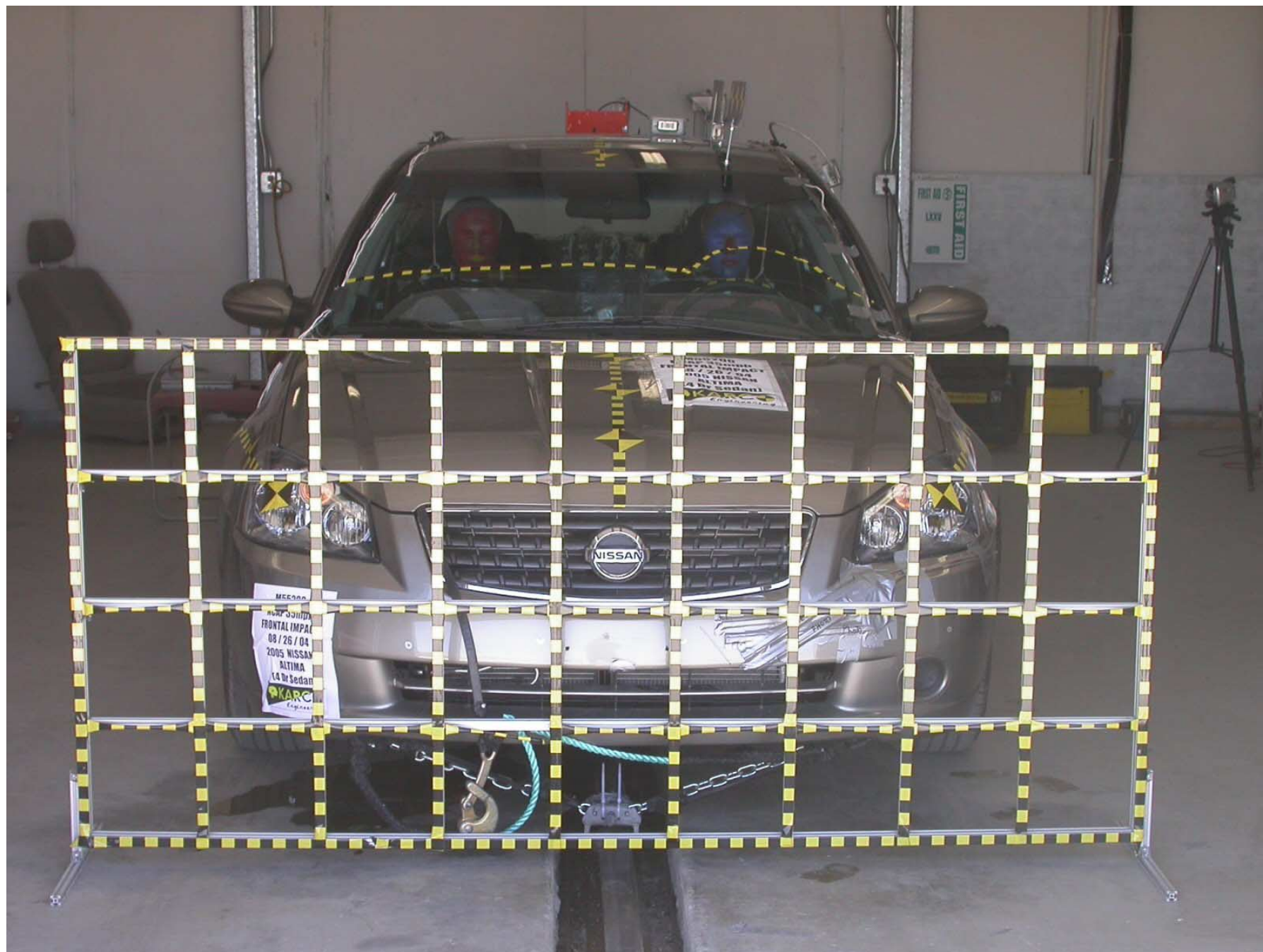


Figure A-1: Load Cell Location

MANUFACTURED BY NISSAN MOTOR CO., LTD.

DATE 07/04 GVWR 4202 LB
GAWR FR. 2249 LB GAWR RR. 1969 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION

VIN: 1N4AL11D75N402522 PASSENGER CAR
COLOR TRIM TRANS AXLE ENGINE
KY2 G RE4F04B FT44 QR25DE 2488CC
MODEL: DBALBA-EVA 516 0Z000



1N4AL11D75N402522

Figure A-2: Vehicle Certification Label

VEHICLE CAPACITY WEIGHT	860 lbs	SEATING CAPACITY	FRONT AVANT 2	TOTAL TOTAL	SPARE TIRE ROUE DE SECOURS	psi (kPa)
POIDS UTILE DU VEHICULE	390 kg	NOMBRE DE PLACES	REAR ARRIERE 3	5	T135/90R16	60 (420)
RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE RECOMMANDEE DES PNEUS FROIDS.					DO NOT USE IN EXCESS OF 50 MPH. 80 km/h SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. UTILISATION A UNE VITESSE MAX 50 MPH. 80 km/h POUR LES DETAILS SE REFERER AU MANUEL DU CONDUCTEUR.	
TIRE SIZE DIMENSIONS	FRONT psi AVANT (kPa)		REAR psi ARRIERE (kPa)			
P215/60R16 94T	29 (200)		29 (200)			

ZB100

ZB100

Figure A-3: Vehicle Tire Label



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



Figure A-5: Left Rear $\frac{3}{4}$ View, as Received



Figure A-6: Pre-Test Front View

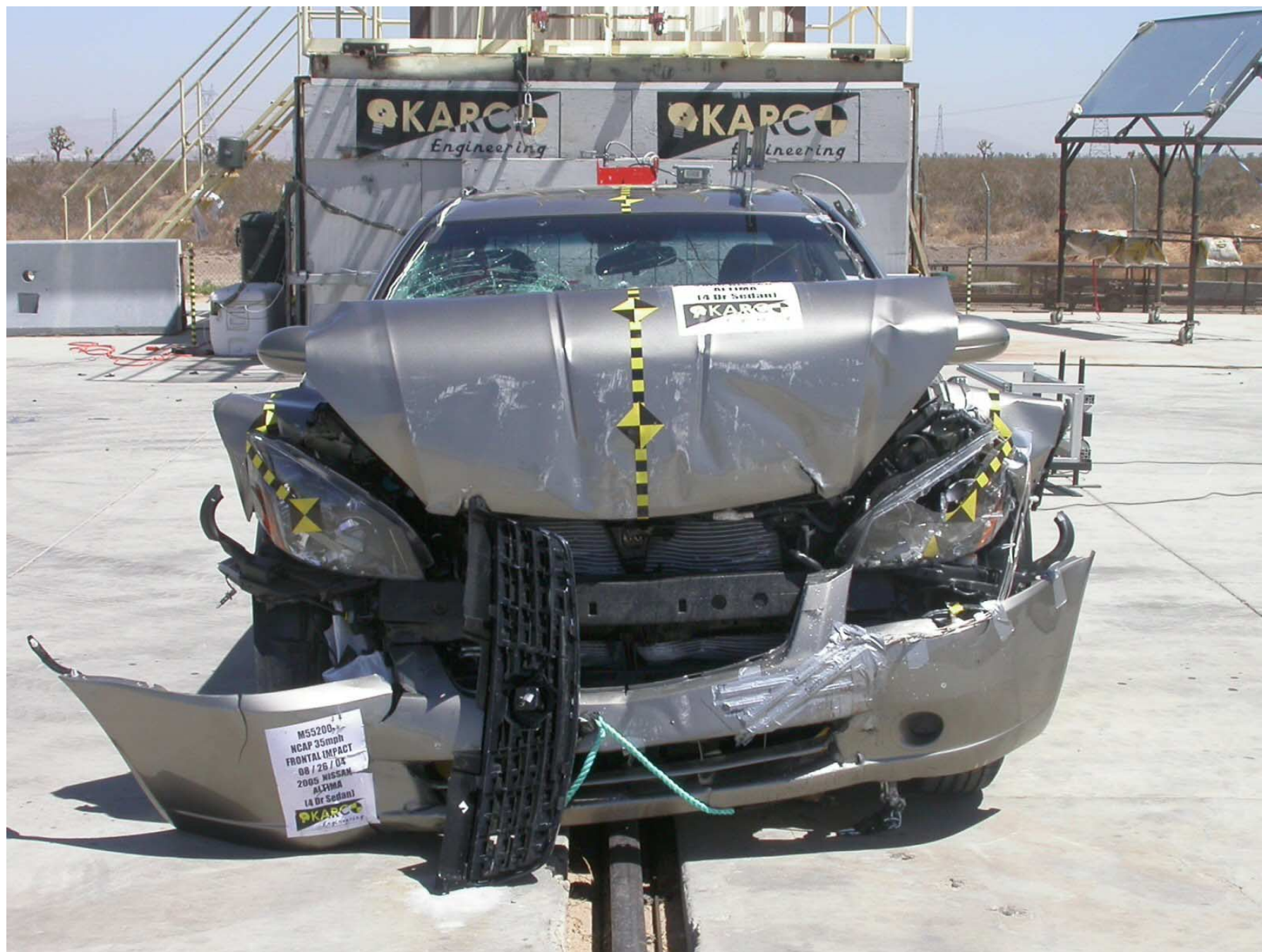


Figure A-7: Post-Test Front View (Vehicle Moved)



Figure A-8: Pre-Test Left Side View

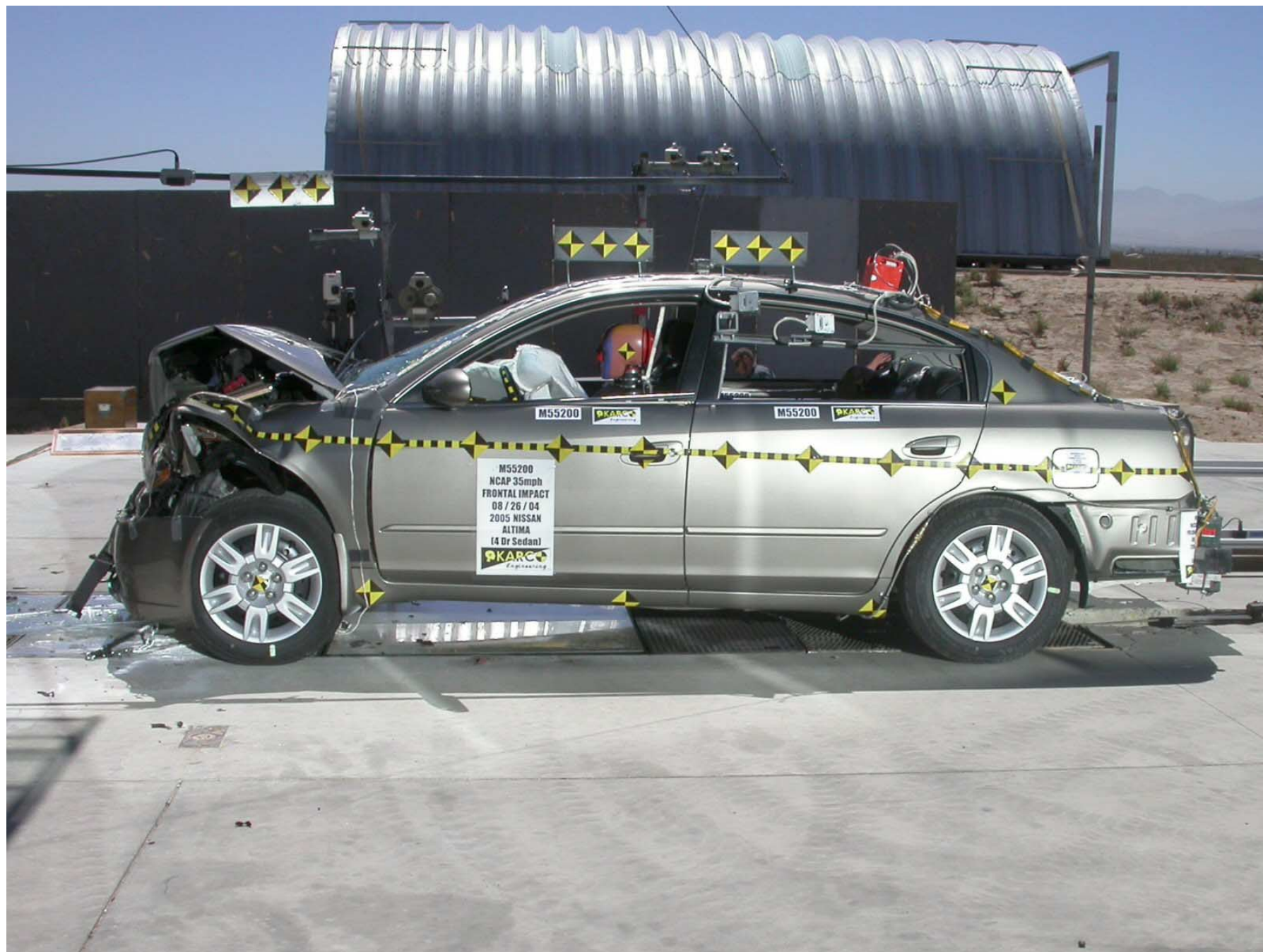


Figure A-9: Post-Test Left Side View



Figure A-10: Pre-Test Right Side View



Figure A-11: Post-Test Right Side View



Figure A-12: Pre-Test Right Front 3/4 View



Figure A-13: Post-Test Right Front ¾ View (Vehicle Moved)



Figure A-14: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-15: Post-Test Left Rear $\frac{3}{4}$ View

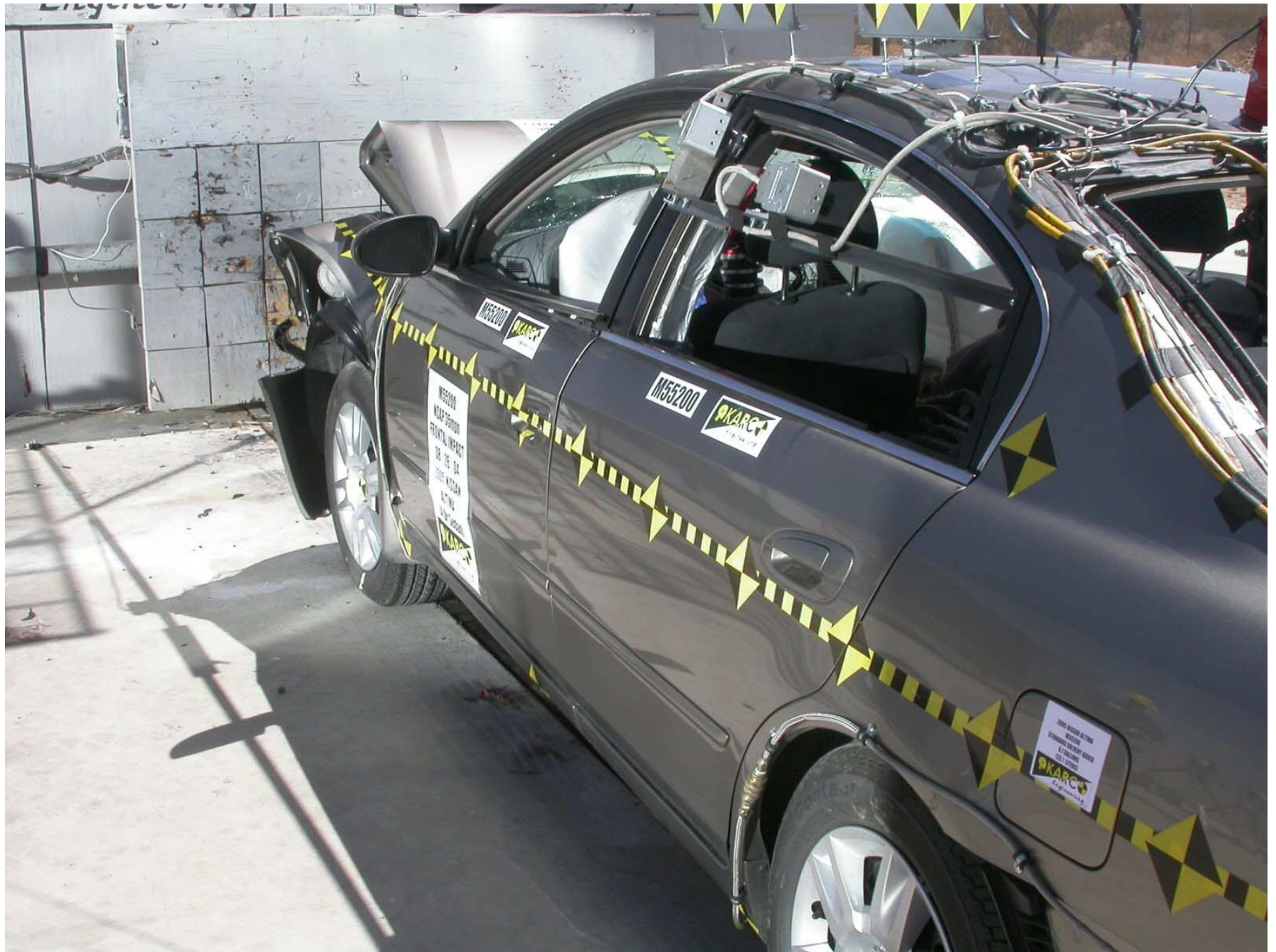


Figure A-16: Left Rear $\frac{3}{4}$ View of Doors After Impact



Figure A-17: Right Rear ¾ View of Doors After Impact

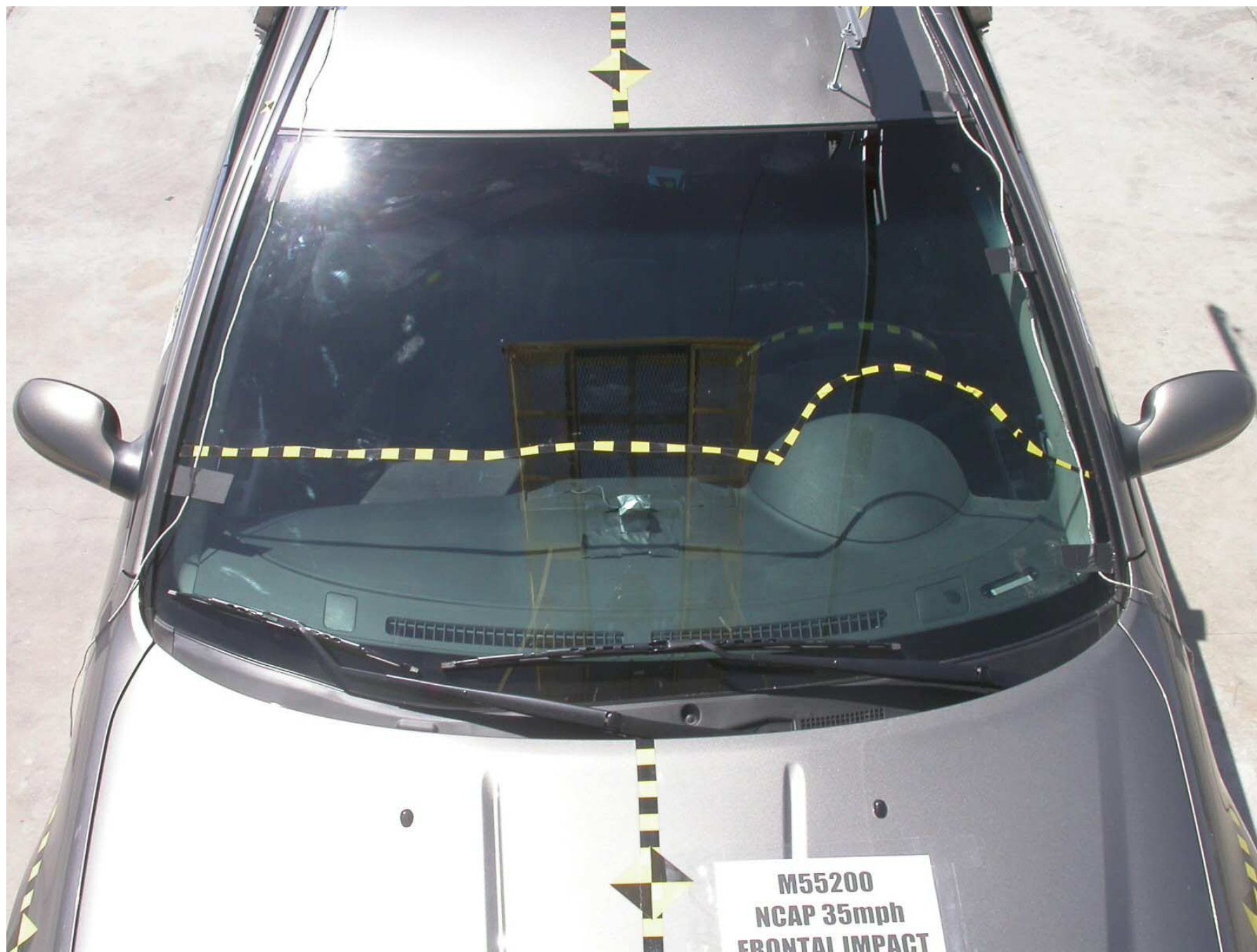


Figure A-18: Pre-Test Windshield View

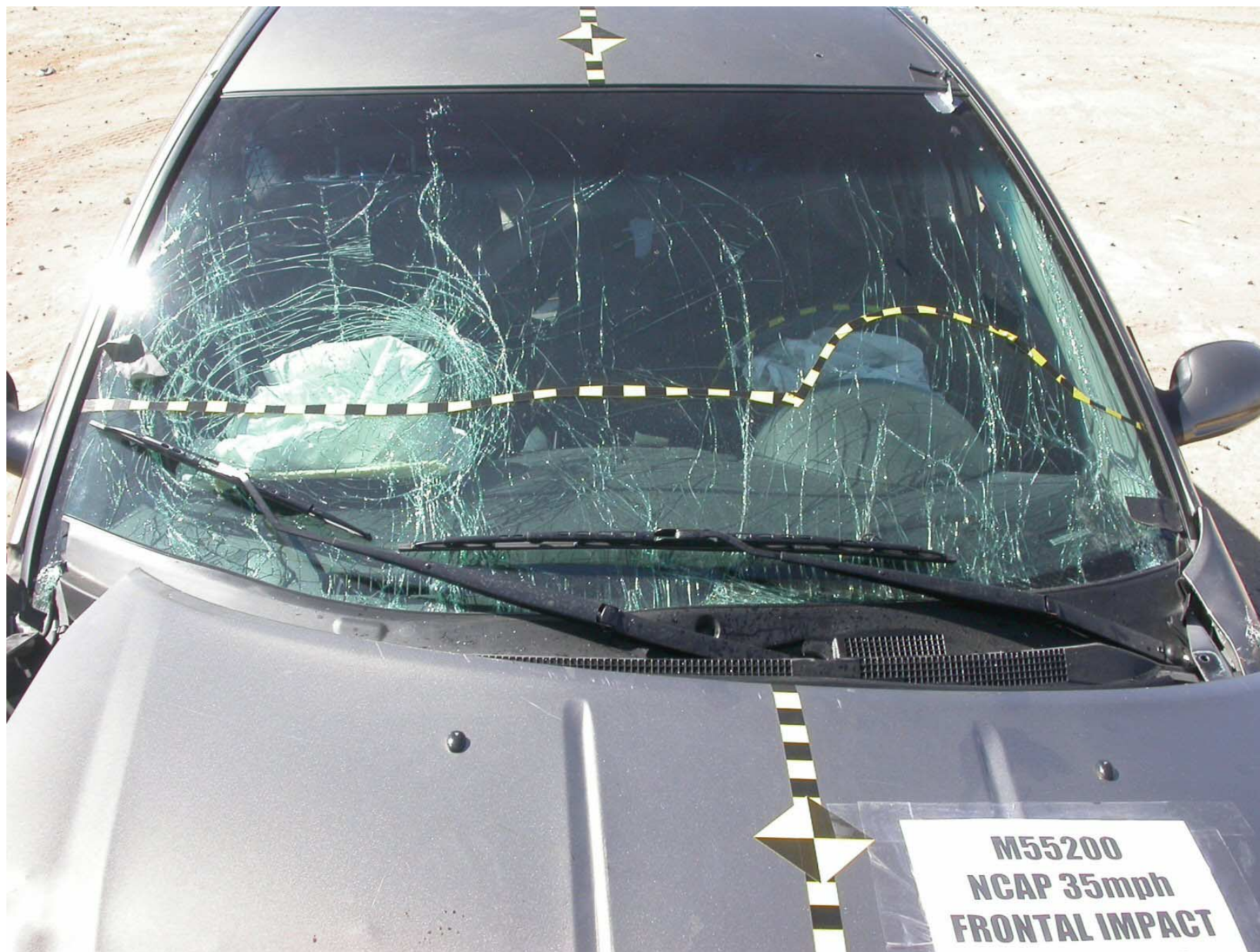


Figure A-19: Post-Test Windshield View



Figure A-20: Pre-Test Engine Compartment



Figure A-21: Post-Test Engine Compartment (Vehicle Moved)

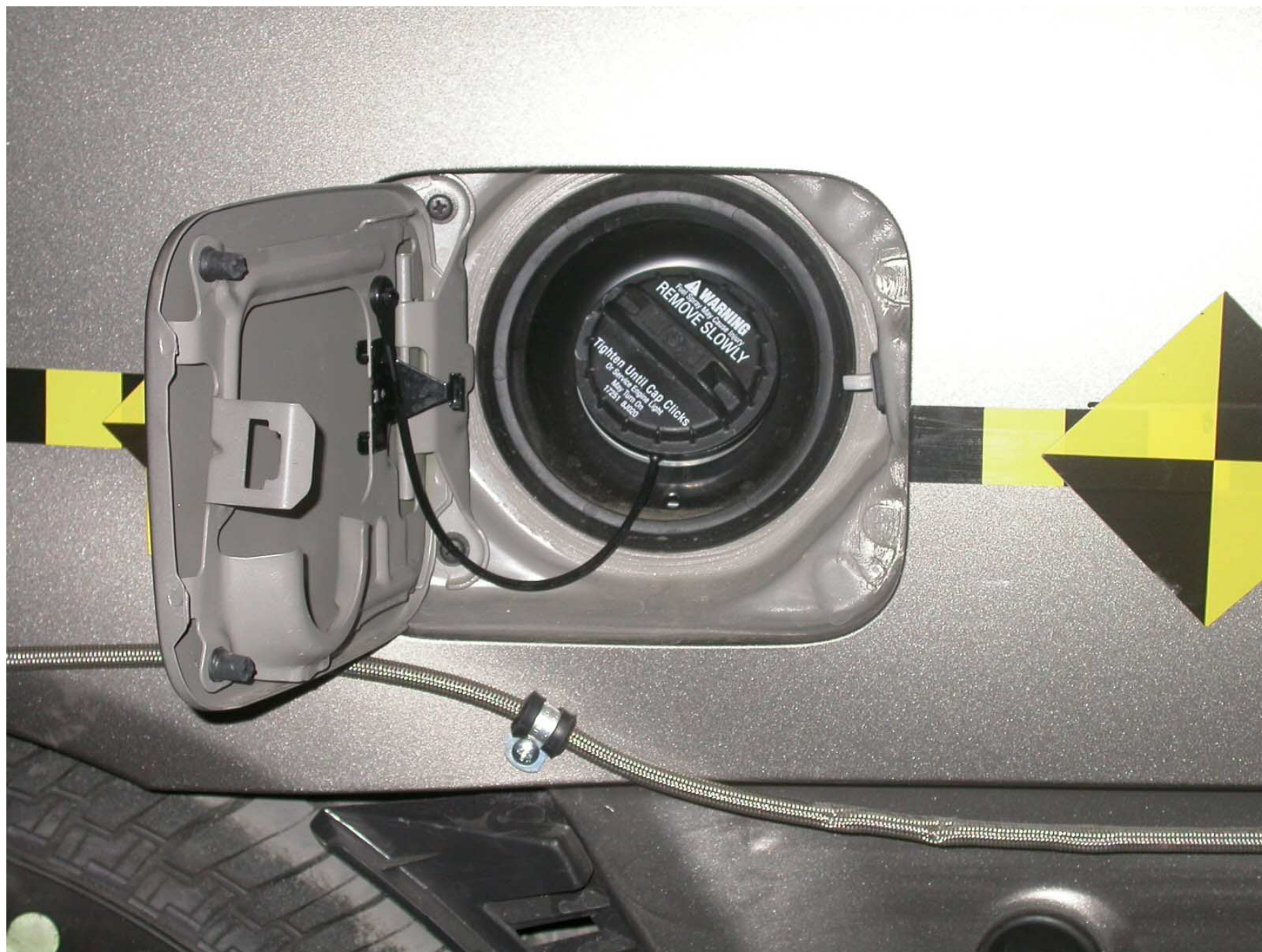


Figure A-22: Pre-Test Fuel Cap



Figure A-23: Post-Test Fuel Cap

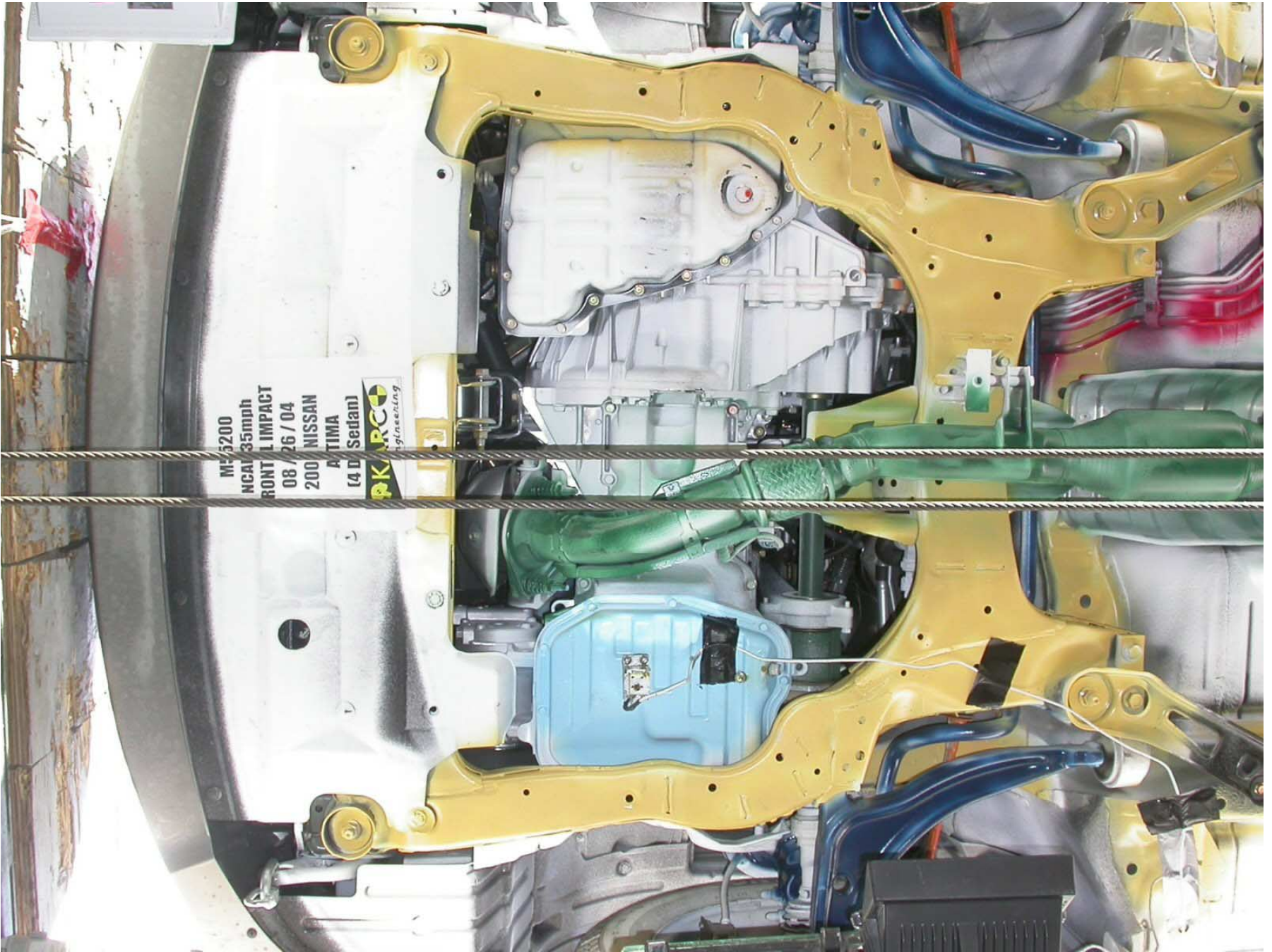


Figure A-24: Pre-Test Front Underbody View



Figure A-25: Post-Test Front Underbody View

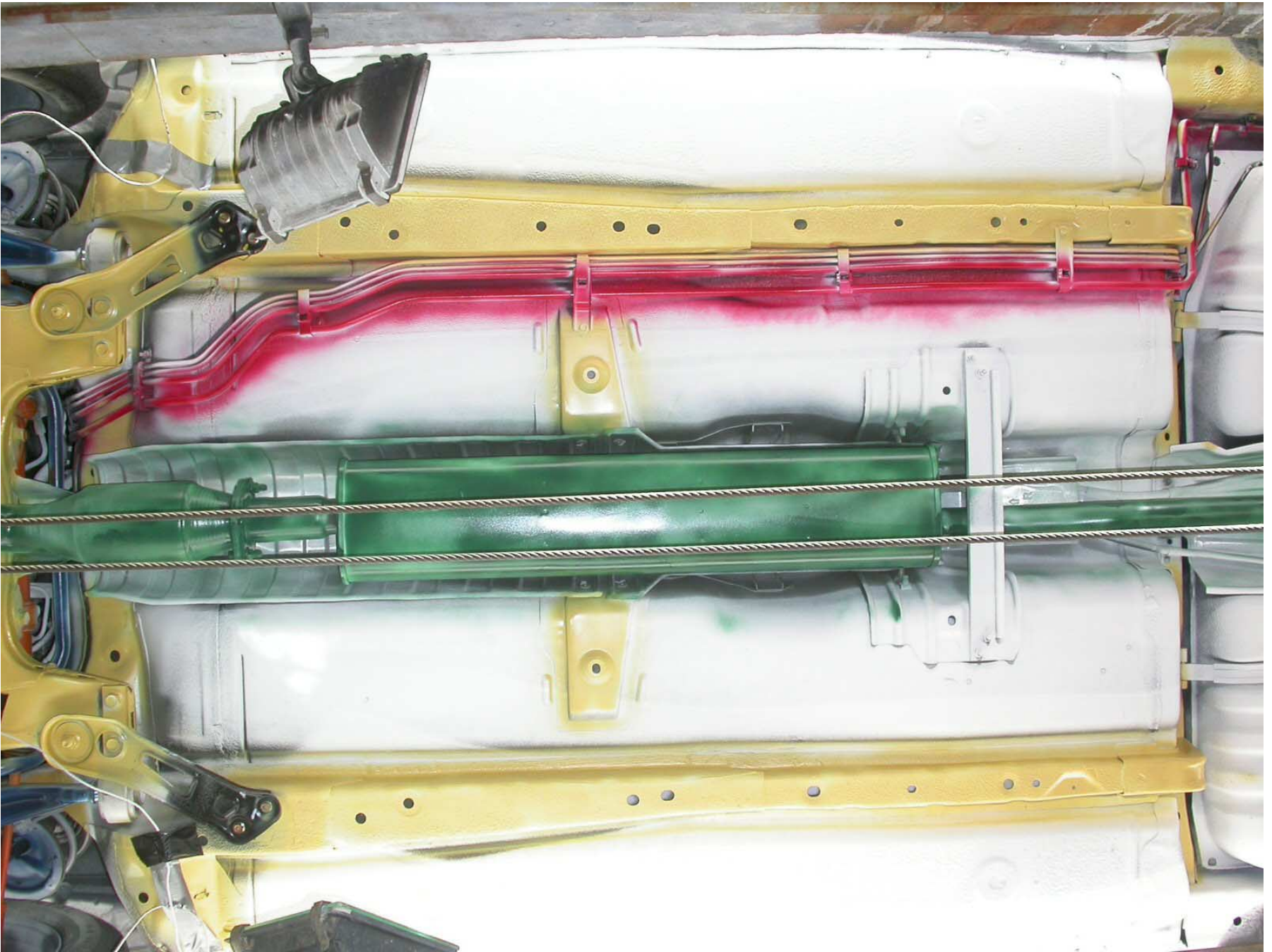


Figure A-26: Pre-Test Mid Underbody View

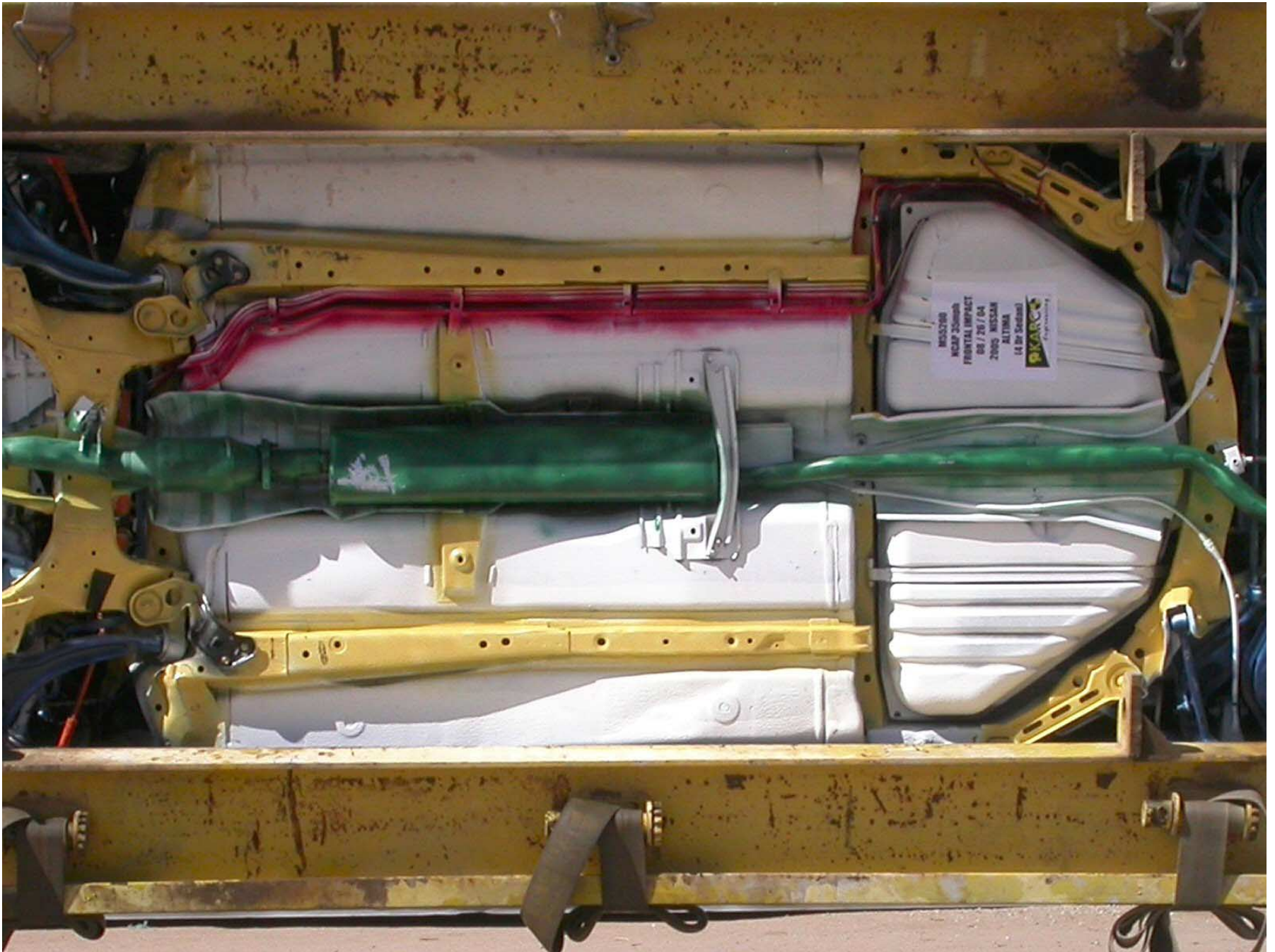


Figure A-27: Post-Test Mid Underbody View

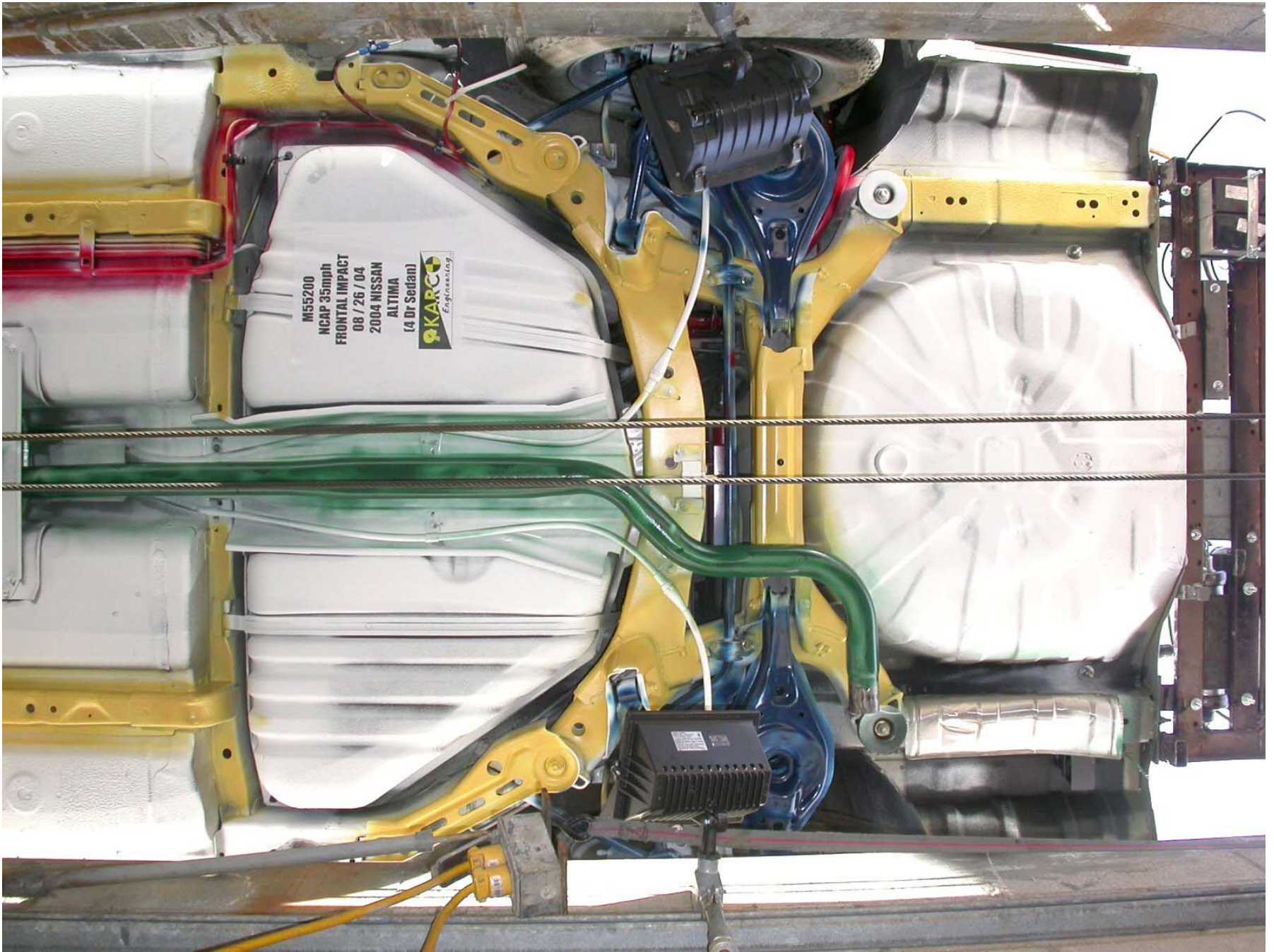


Figure A-28: Pre-Test Rear Underbody View

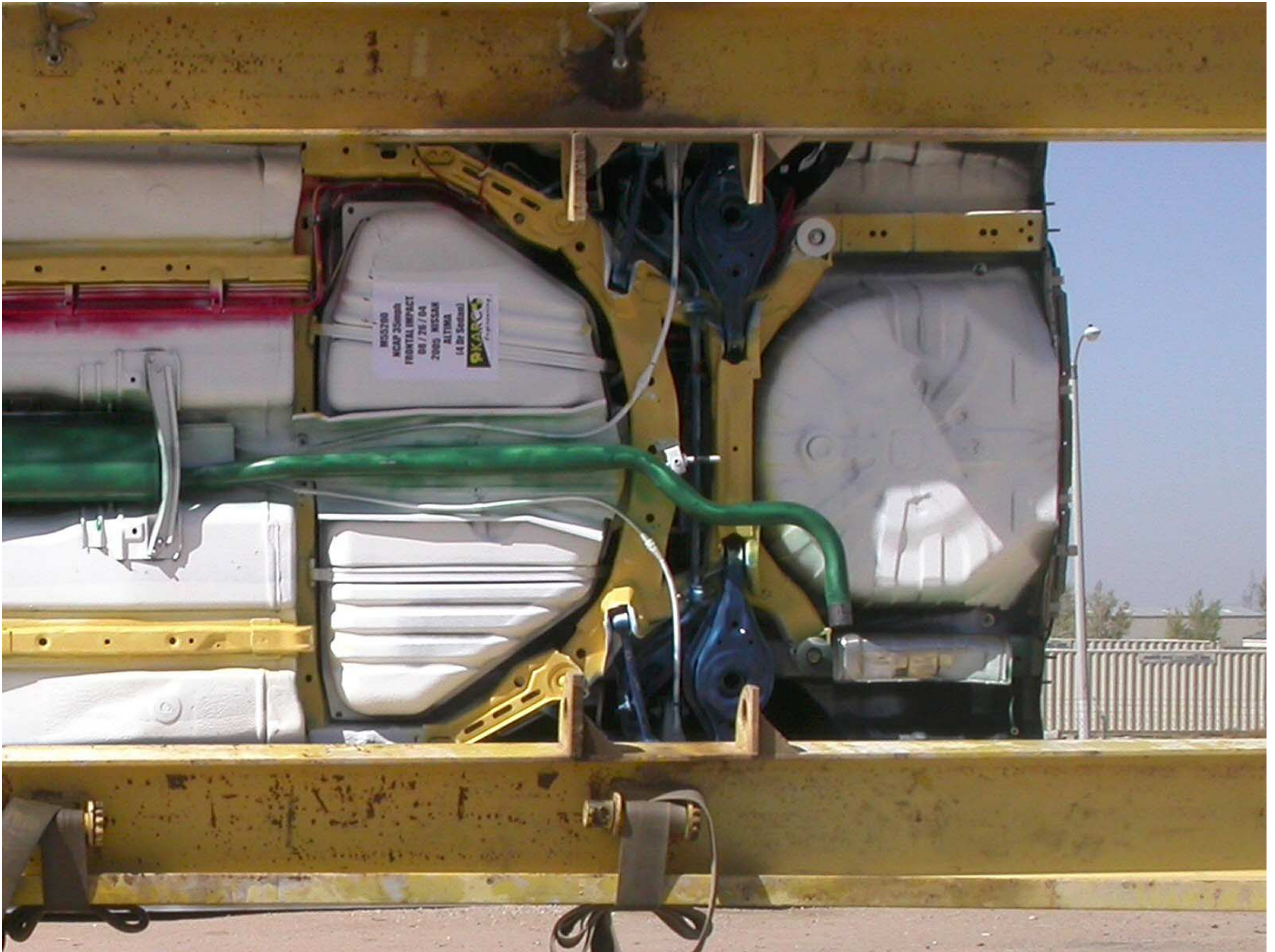


Figure A-29: Post-Test Rear Underbody View



Figure A-30: Pre-Test Driver Dummy Front View (Head Position)



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



Figure A-32: Pre-Test Driver Dummy Through Window



Figure A-33: Post-Test Driver Dummy Through Window



Figure A-34: Pre-Test Driver Dummy Door Open



Figure A-35: Post-Test Driver Dummy Door Open



Figure A-36: Pre-Test Driver Dummy Feet



Figure A-37: Post-Test Driver Dummy Feet



Figure A-38: Pre-Test Driver Side Knee Bolster



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



Figure A-40: Pre-Test Driver Side Floor Pan



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



Figure A-42: Post-Test Driver Dummy Head



Figure A-43: Post-Test Driver Dummy Contact to Air Bag



Figure A-44: Pre-Test Passenger Dummy Front View (Head Position)



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



Figure A-46: Pre-Test Passenger Dummy Through Window



Figure A-47: Post-Test Passenger Dummy Through Window



Figure A-48: Pre-Test Passenger Dummy Door Open



Figure A-49: Post-Test Passenger Dummy Door Open

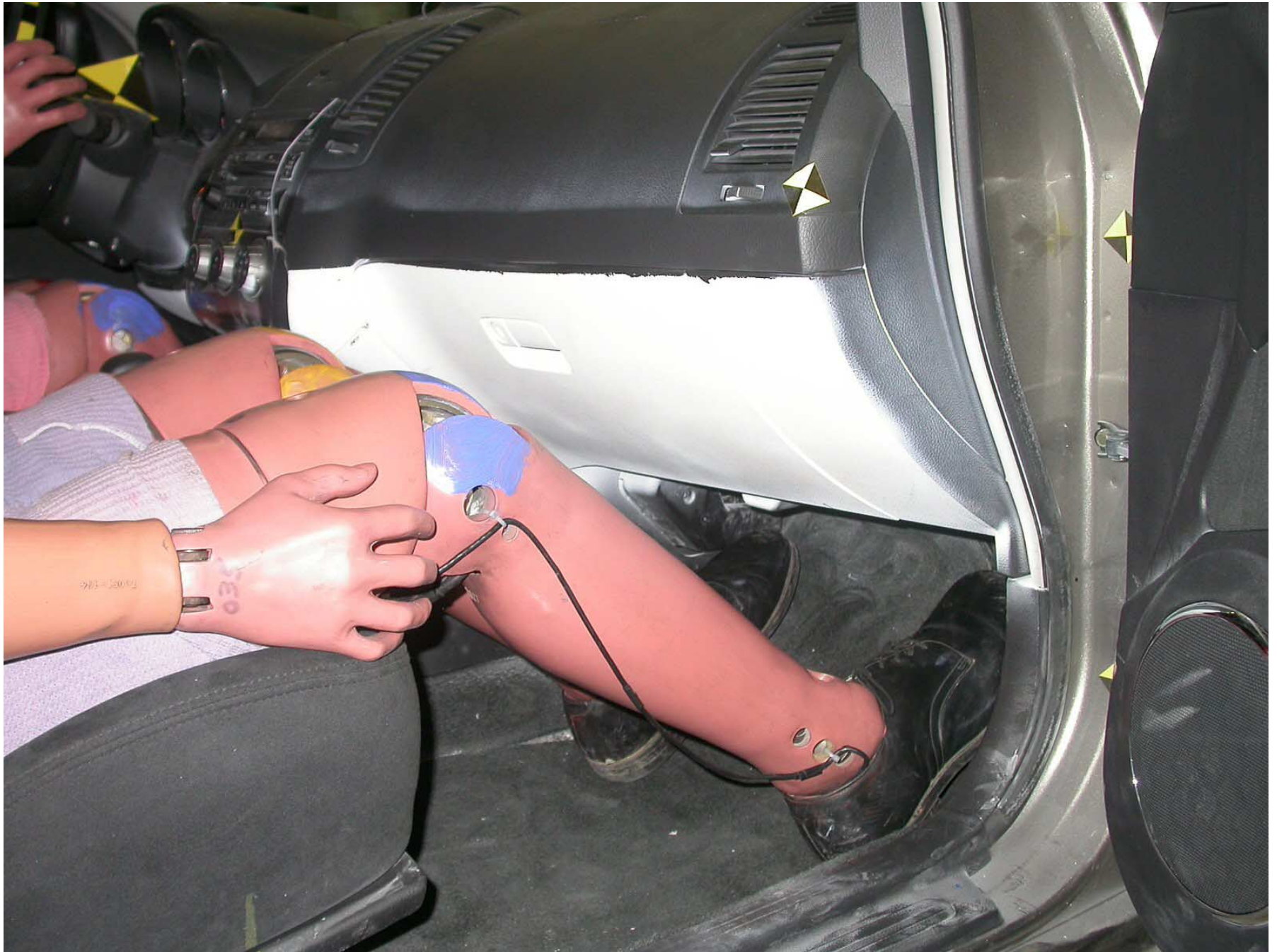


Figure A-50: Pre-Test Passenger Dummy Feet



Figure A-51: Post-Test Passenger Dummy Feet



Figure A-52: Pre-Test Passenger Side Knee Bolster



Figure A-53: Post-Test Passenger Side Knee Bolster



Figure A-54: Pre-Test Passenger Side Floor Pan



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



Figure A-56: Post-Test Passenger Dummy Head



Figure A-57: Post-Test Passenger Dummy Contact to Air Bag



Figure A-58: Vehicle on Rollover Device



Figure A-59: Vehicle on Rollover Device



Figure A-60: Vehicle on Rollover Device

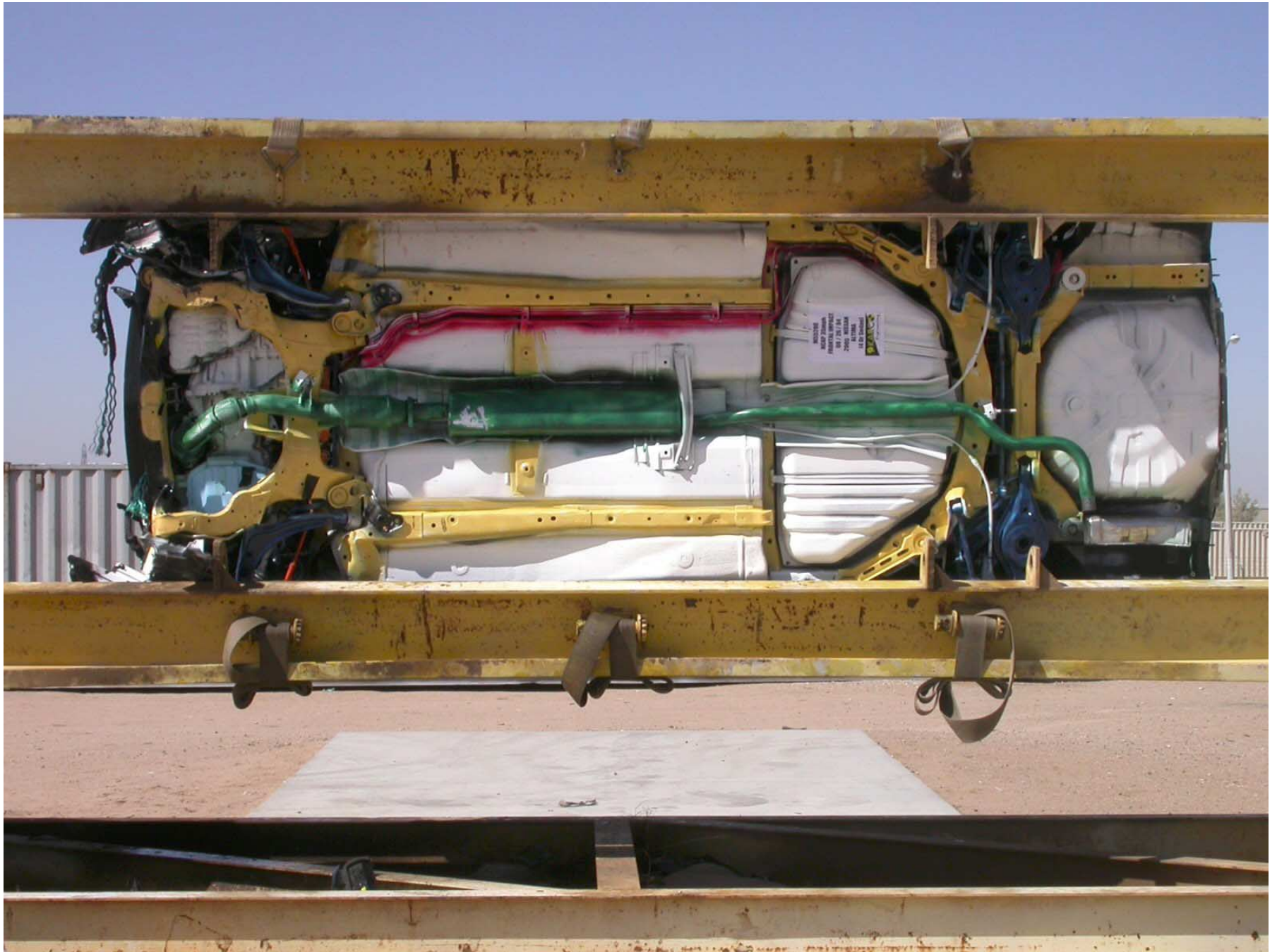


Figure A-61: Vehicle on Rollover Device



Figure A-62: Vehicle During Impact

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

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	Driver Head Primary Y	B-1
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	Driver Head Primary X Displacement	B-2
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	Driver Chest Resultant Redundant	B-9
10	Driver Chest Redundant X Velocity	B-10
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	Driver Pelvis X Displacement
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	Driver Right Femur Force
15	Driver Left Upper Tibia Moment X
	Driver Left Upper Tibia Moment Y
	Driver Right Upper Tibia Moment X
	Driver Right Upper Tibia Moment Y
16	Driver Left Lower Tibia Moment X
	Driver Left Lower Tibia Moment Y
	Driver Left Lower Tibia Force Z
17	Driver Right Lower Tibia Moment X
	Driver Right Lower Tibia Moment Y
	Driver Right Lower Tibia Force Z
18	Driver Left Foot Aft X
	Driver Left Foot Aft Z
	Driver Left Foot Fore Z
19	Driver Right Foot Aft X
	Driver Right Foot Aft Z
	Driver Right Foot Fore Z
20	Driver Lap Belt Force
	Driver Shoulder Belt Force
	Driver Shoulder Belt Pullout
	Driver Shoulder Belt Elongation
21	Passenger Head Primary X
	Passenger Head Primary Y
	Passenger Head Primary Z
	Passenger Head Resultant Primary
22	Passenger Head Primary X Velocity
	Passenger Head Primary X Displacement

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	Passenger Chest Redundant Z	B-29
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32	Passenger Pelvis X	B-32
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	Passenger Pelvis Resultant	B-32
33	Passenger Pelvis X Velocity	B-33
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LIST OF DATA PLOTS...(Continued)

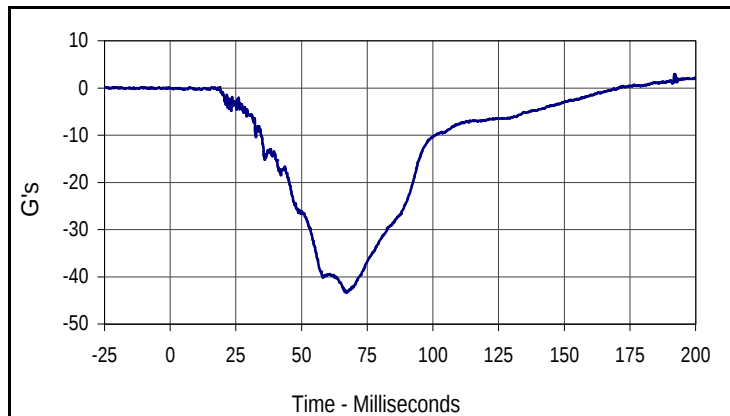
Data Plot	Page
34	Passenger Left Femur Force
	Passenger Right Femur Force
35	Passenger Left Upper Tibia Moment X
	Passenger Left Upper Tibia Moment Y
	Passenger Right Upper Tibia Moment X
	Passenger Right Upper Tibia Moment Y
36	Passenger Left Lower Tibia Moment X
	Passenger Left Lower Tibia Moment Y
	Passenger Left Lower Tibia Force Z
37	Passenger Right Lower Tibia Moment X
	Passenger Right Lower Tibia Moment Y
	Passenger Right Lower Tibia Force Z
38	Passenger Left Foot Aft X
	Passenger Left Foot Aft Z
	Passenger Left Foot Fore Z
39	Passenger Right Foot Aft X
	Passenger Right Foot Aft Z
	Passenger Right Foot Fore Z
40	Passenger Lap Belt Force
	Passenger Shoulder Belt Force
	Passenger Shoulder Belt Pullout
	Passenger Shoulder Belt Elongation
41	Vehicle Left Rear X
	Vehicle Left Rear X Velocity
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43	Vehicle Engine Top X
	Vehicle Engine Top X Velocity
	Vehicle Engine Top X Displacement
44	Vehicle Engine Bottom X
	Vehicle Engine Bottom X Velocity
	Vehicle Engine Bottom X Displacement

LIST OF DATA PLOTS...(Continued)

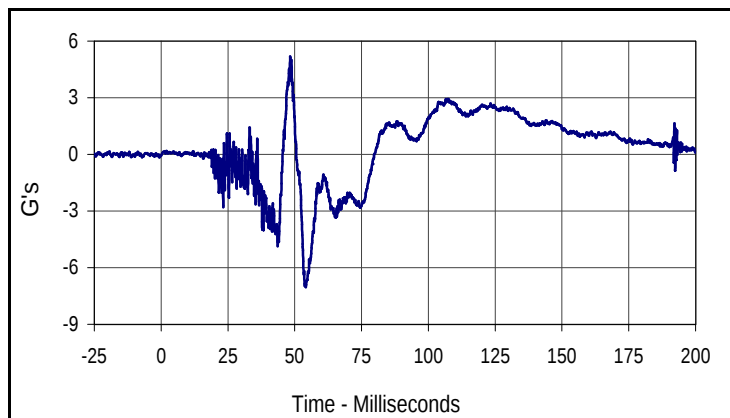
Data Plot	Page	
45	Vehicle Left Brake Caliper	B-45
	Vehicle Left Brake Caliper Velocity	B-45
	Vehicle Left Brake Caliper Displacement	B-45
46	Vehicle Right Brake Caliper	B-46
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48	Vehicle Left Rear Z	B-48
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	Vehicle Left Rear Z Displacement	B-48
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	Vehicle Right Rear Z Velocity	B-49
	Vehicle Right Rear Z Displacement	B-49

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

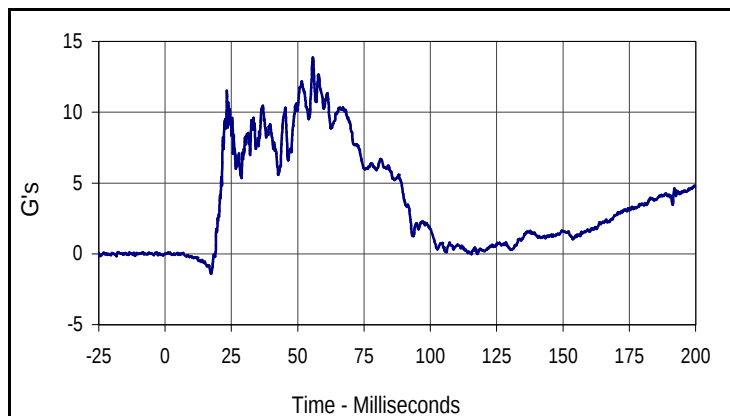
Test Date: 8/26/04
 NHTSA No.: M55200



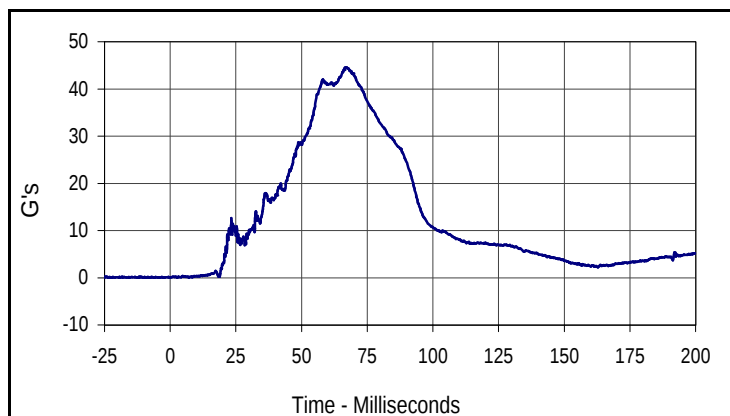
Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.9	191.9	-43.3	67.2



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.2	48.3	-7.0	54.2



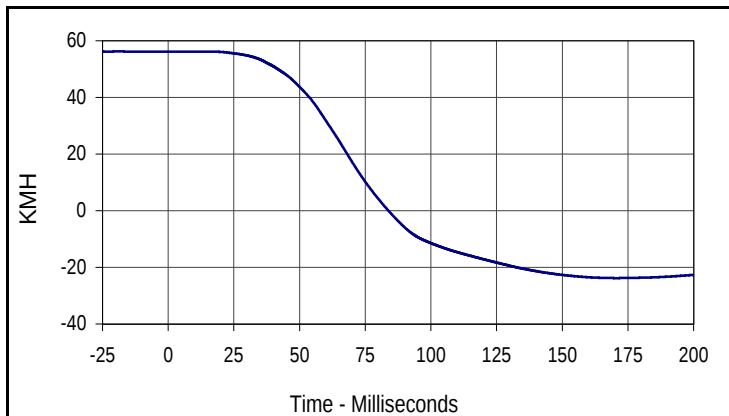
Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.9	55.7	-1.4	17.3



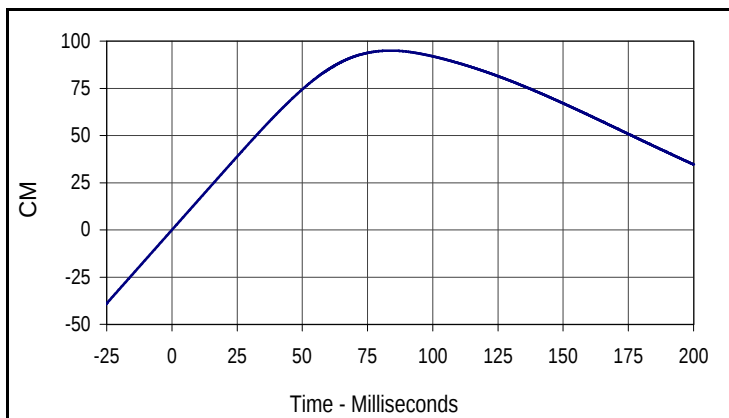
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
44.6	67.2	0.0	0.3

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



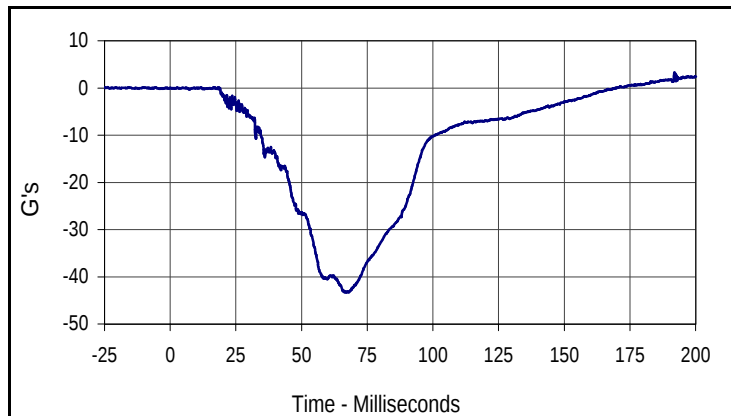
Curve Description			
Driver Head Primary X Velocity			
CURNO	Type	SAE Class	Units
001	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-23.8	170.7



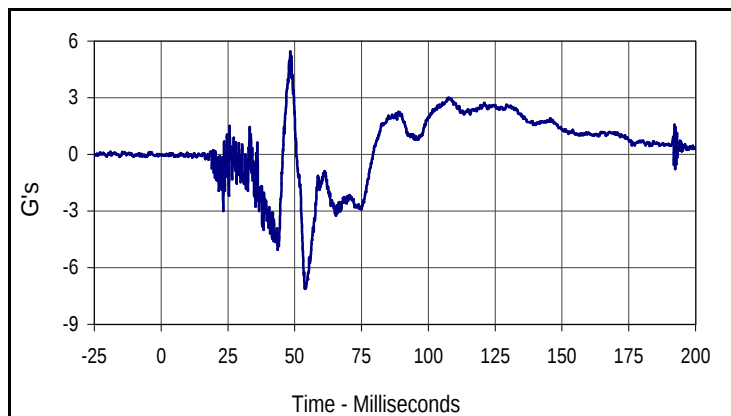
Curve Description			
Driver Head Primary X Displacement			
CURNO	Type	SAE Class	Units
001	IN2	180	CM
Max	Time	Min	Time
95.0	83.8	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

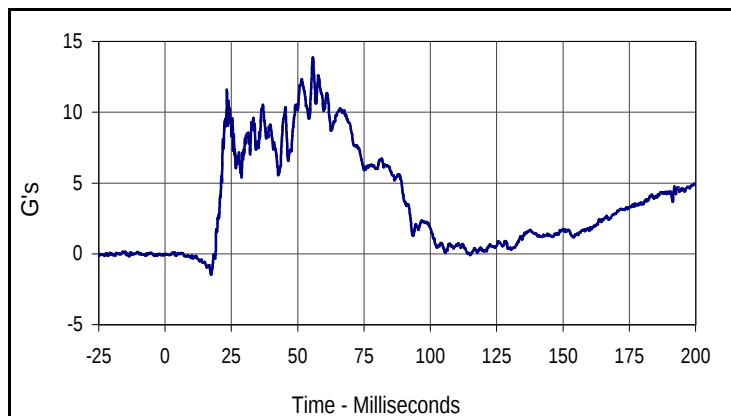
Test Date: 8/26/04
 NHTSA No.: M55200



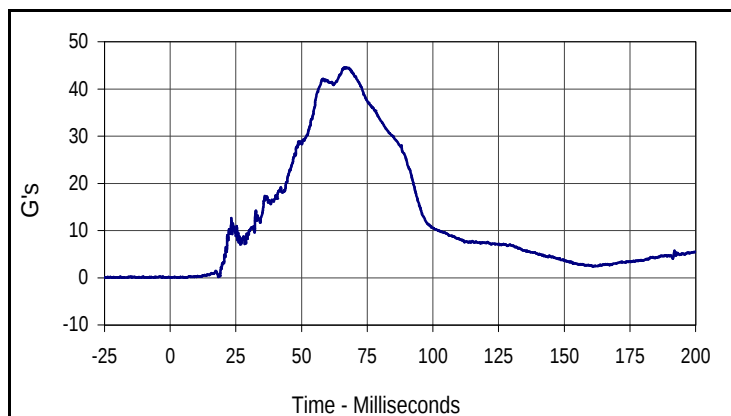
Curve Description			
Driver Head Redundant X			
CURNO	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
3.3	191.9	-43.3	66.9



Curve Description			
Driver Head Redundant Y			
CURNO	Type	SAE Class	Units
005	FIL	1000	G's
Max	Time	Min	Time
5.4	48.3	-7.1	53.8



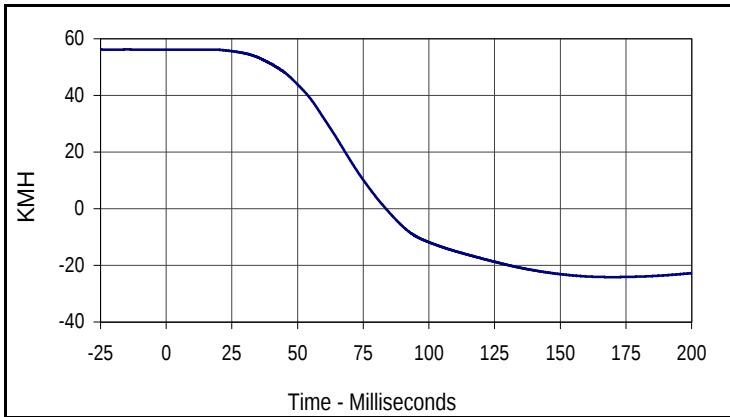
Curve Description			
Driver Head Redundant Z			
CURNO	Type	SAE Class	Units
006	FIL	1000	G's
Max	Time	Min	Time
13.9	55.7	-1.5	17.3



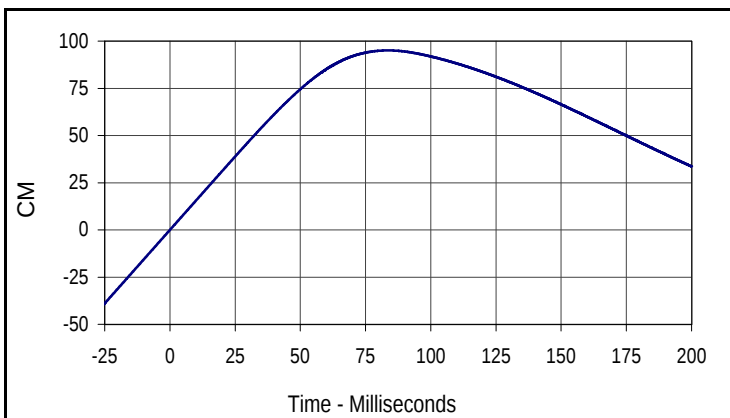
Curve Description			
Driver Head Resultant Redundant			
CURNO	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
44.5	66.5	0.0	3.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



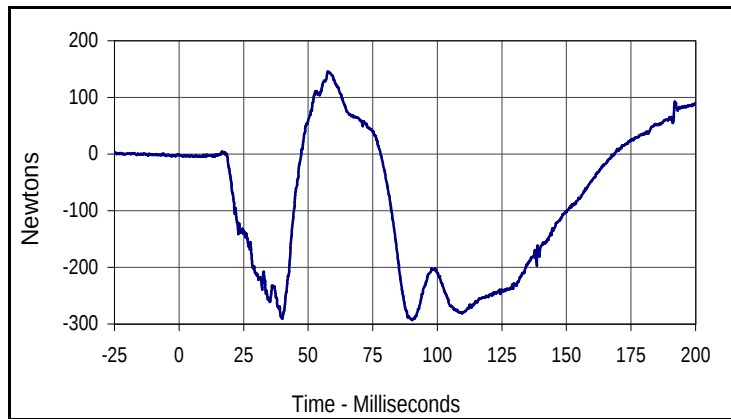
Curve Description			
Driver Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
004	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-24.1	169.6



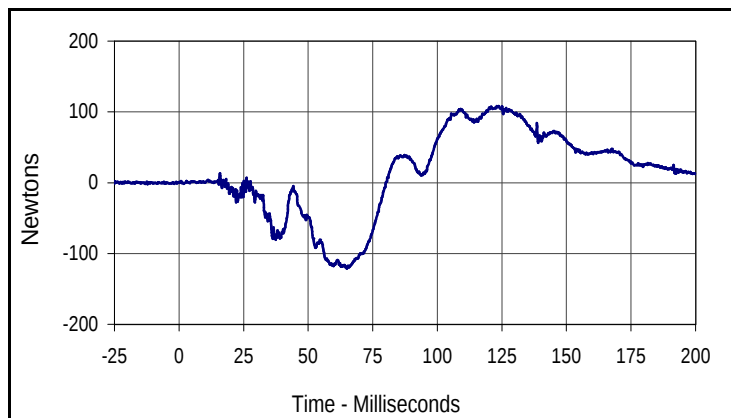
Curve Description			
Driver Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
004	IN2	180	CM
Max	Time	Min	Time
95.1	83.6	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

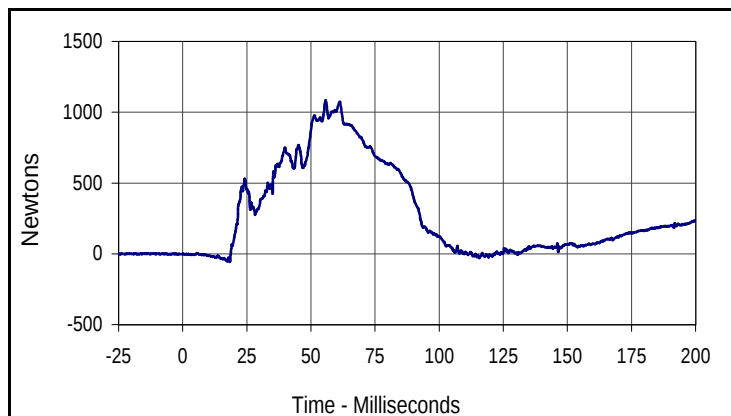
Test Date: 8/26/04
 NHTSA No.: M55200



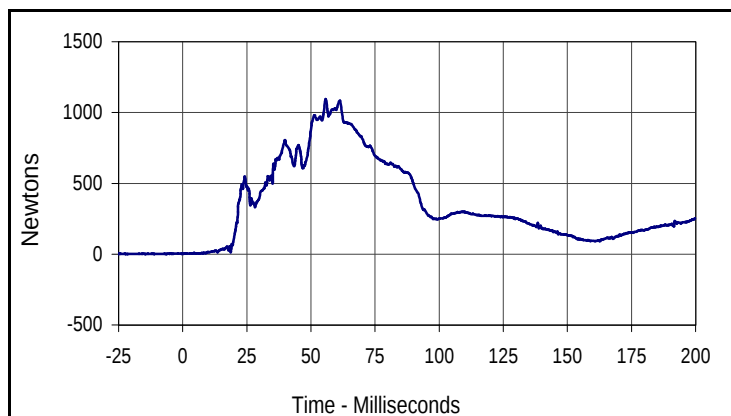
Curve Description			
Driver Upper Neck Force X			
CURNO	Type	SAE Class	Units
007	FIL	1000	Newtons
Max	Time	Min	Time
145.6	57.6	-293.1	90.3



Curve Description			
Driver Upper Neck Force Y			
CURNO	Type	SAE Class	Units
008	FIL	1000	Newtons
Max	Time	Min	Time
108.3	123.1	-121.3	65.0



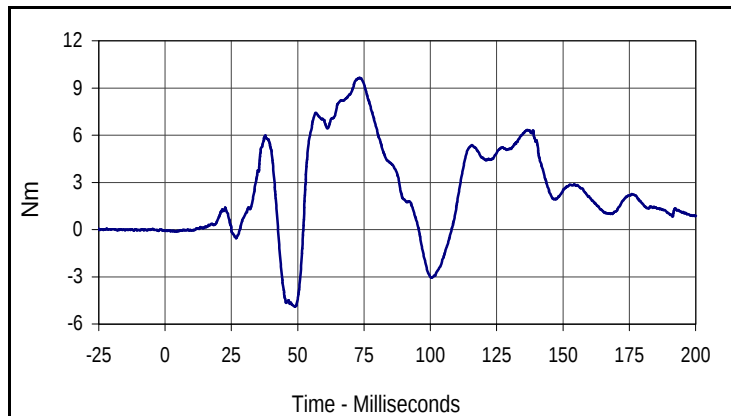
Curve Description			
Driver Upper Neck Force Z			
CURNO	Type	SAE Class	Units
009	FIL	1000	Newtons
Max	Time	Min	Time
1083.3	55.8	-56.2	18.3



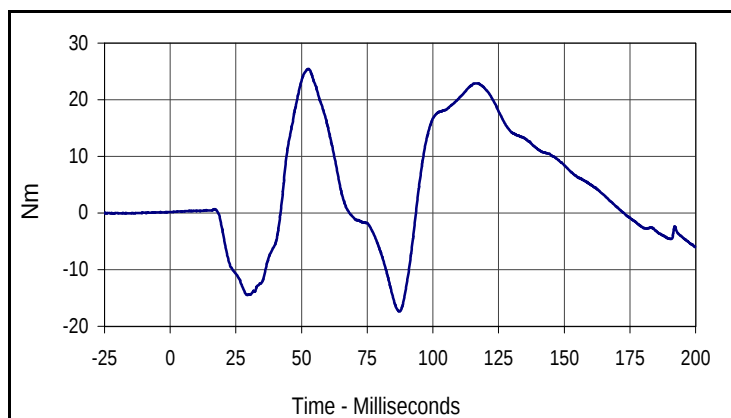
Curve Description			
Driver Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
007	RES	1000	Newtons
Max	Time	Min	Time
1094.5	55.8	2.2	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

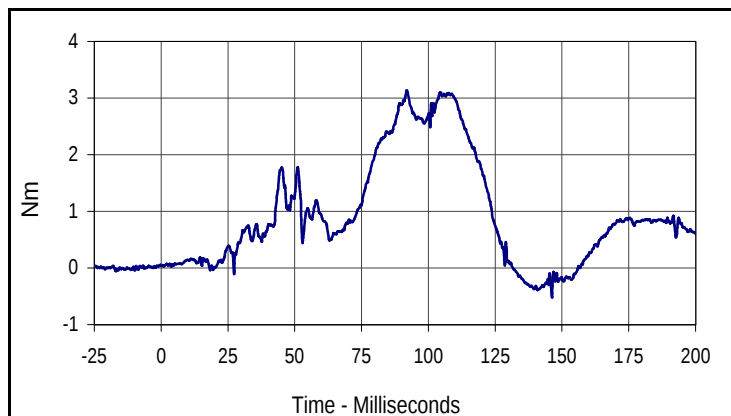
Test Date: 8/26/04
 NHTSA No.: M55200



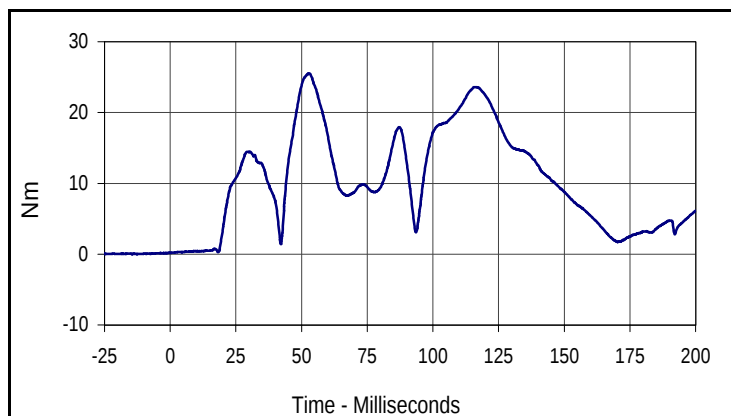
Curve Description			
Driver Upper Neck Moment X			
CURNO	Type	SAE Class	Units
010	FIL	600	Nm
Max	Time	Min	Time
9.6	73.3	-4.9	48.9



Curve Description			
Driver Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
011	FIL	600	Nm
Max	Time	Min	Time
25.4	52.6	-17.4	87.2



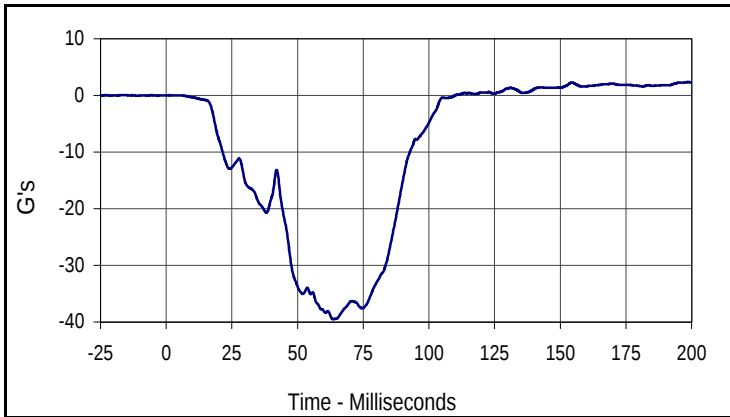
Curve Description			
Driver Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
3.1	91.9	-0.5	146.3



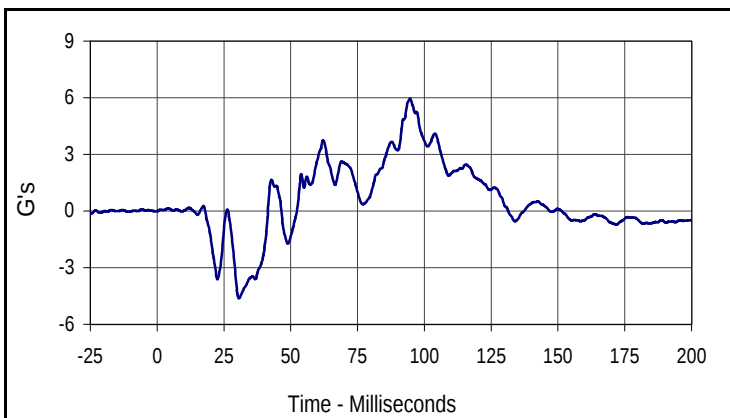
Curve Description			
Driver Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
010	RES	600	Nm
Max	Time	Min	Time
25.5	52.9	0.2	0.1

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

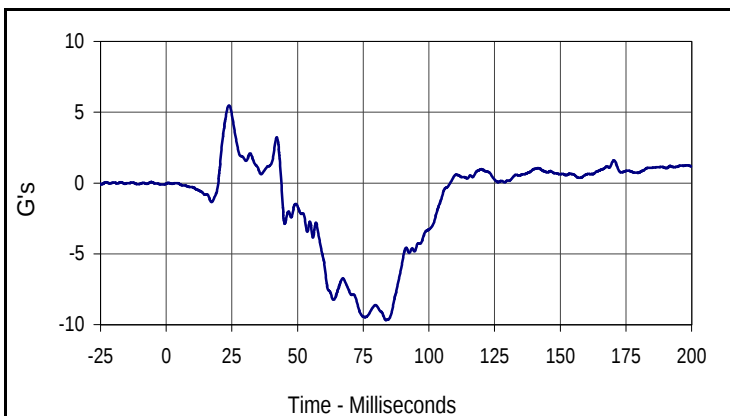
Test Date: 8/26/04
 NHTSA No.: M55200



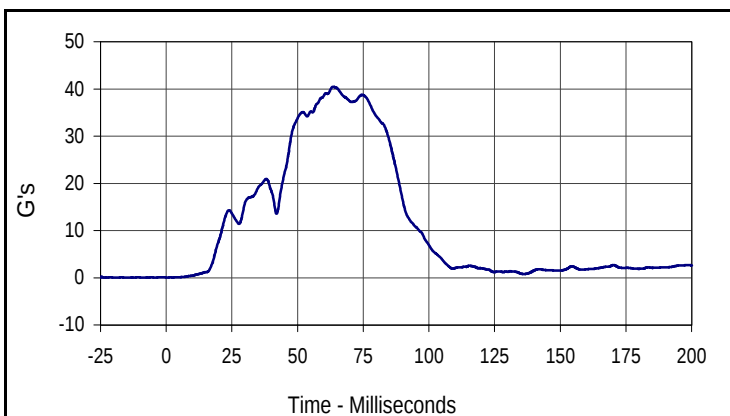
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
2.4	198.8	-39.5	63.6



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
6.0	94.7	-4.6	30.6



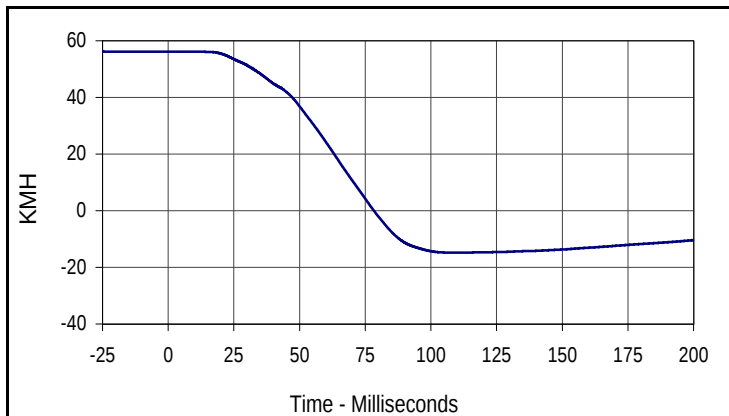
Curve Description			
Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
015	FIL	180	G's
Max	Time	Min	Time
5.5	23.9	-9.7	83.7



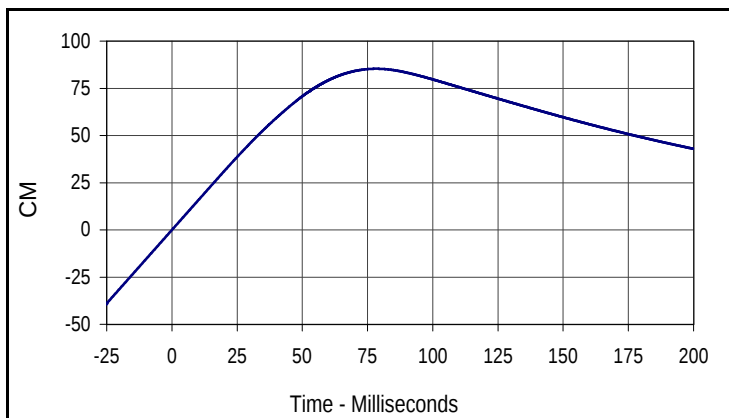
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
013	RES	180	G's
Max	Time	Min	Time
40.5	63.5	0.0	0.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



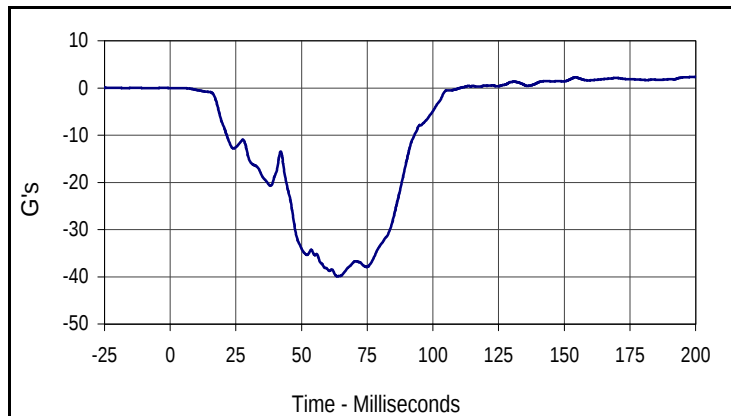
Curve Description			
Driver Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
013	IN1	180	KMH
Max	Time	Min	Time
56.2	5.4	-14.8	109.9



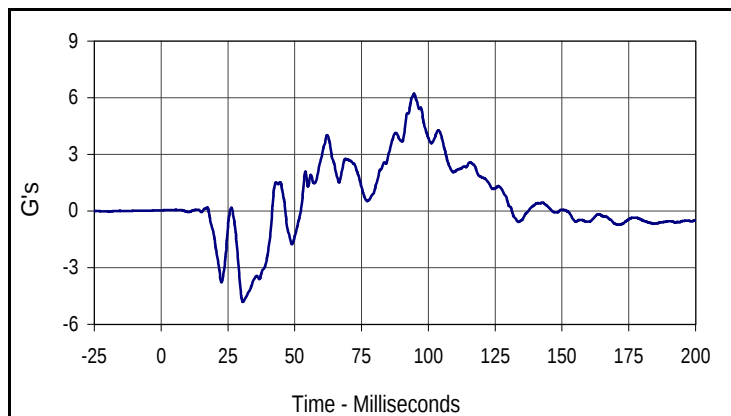
Curve Description			
Driver Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
013	IN2	180	CM
Max	Time	Min	Time
85.4	78.3	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

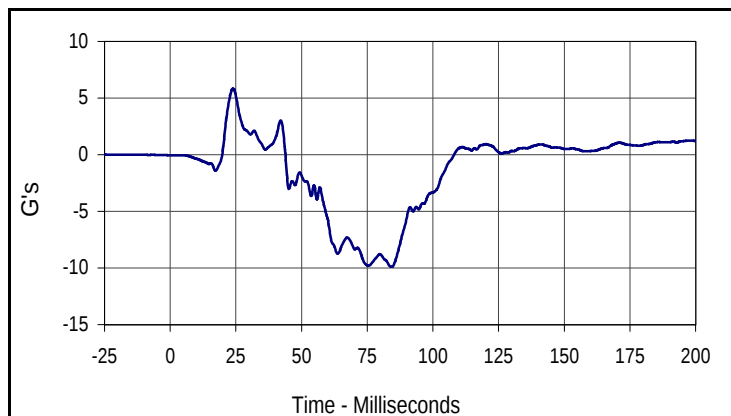
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 NHTSA No.: M55200



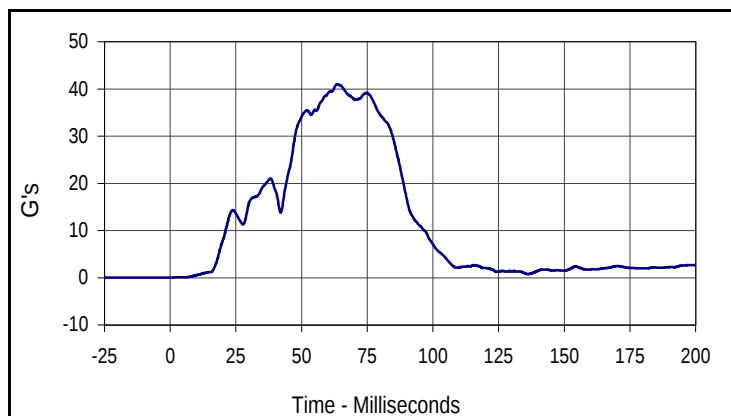
Curve Description			
Driver Chest Redundant X			
CURNO	Type	SAE Class	Units
016	FIL	180	G's
Max	Time	Min	Time
2.3	199.2	-39.9	63.6



Curve Description			
Driver Chest Redundant Y			
CURNO	Type	SAE Class	Units
017	FIL	180	G's
Max	Time	Min	Time
6.2	94.7	-4.8	30.6



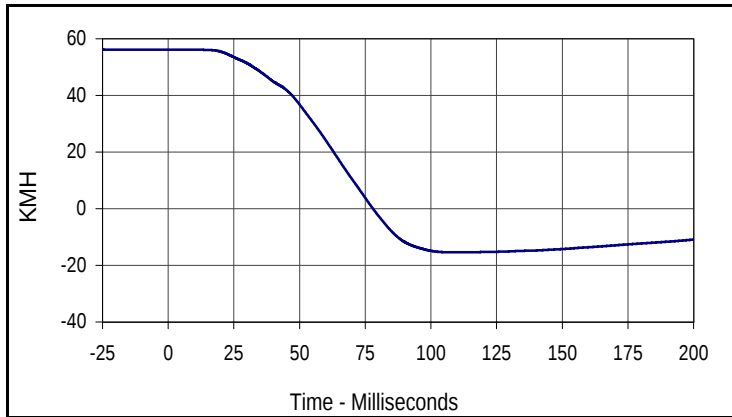
Curve Description			
Driver Chest Redundant Z			
CURNO	Type	SAE Class	Units
018	FIL	180	G's
Max	Time	Min	Time
5.8	23.9	-9.9	84.2



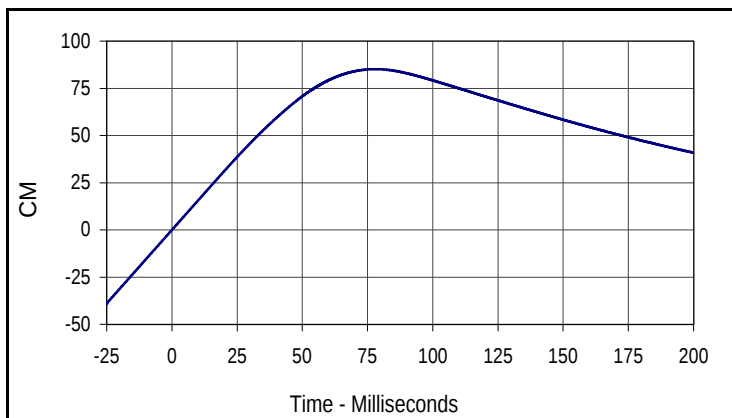
Curve Description			
Driver Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
016	RES	180	G's
Max	Time	Min	Time
41.0	63.5	0.1	0.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



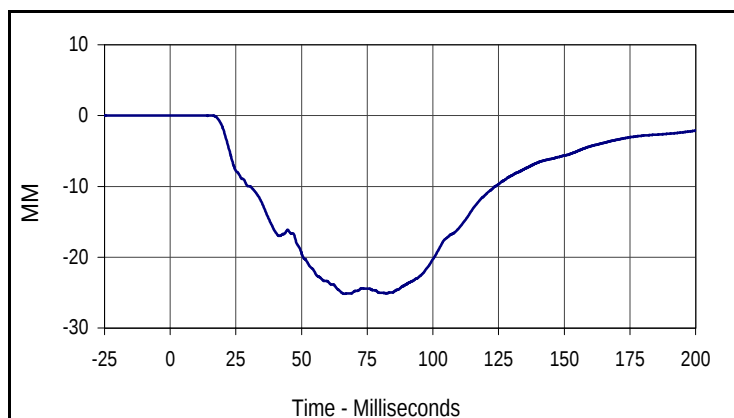
Curve Description			
Driver Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
016	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-15.4	110.4



Curve Description			
Driver Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
016	IN2	180	CM
Max	Time	Min	Time
85.2	78.0	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

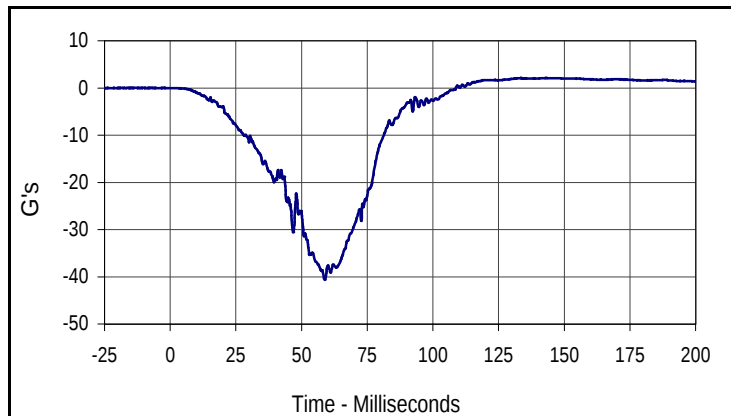
Test Date: 8/26/04
 NHTSA No.: M55200



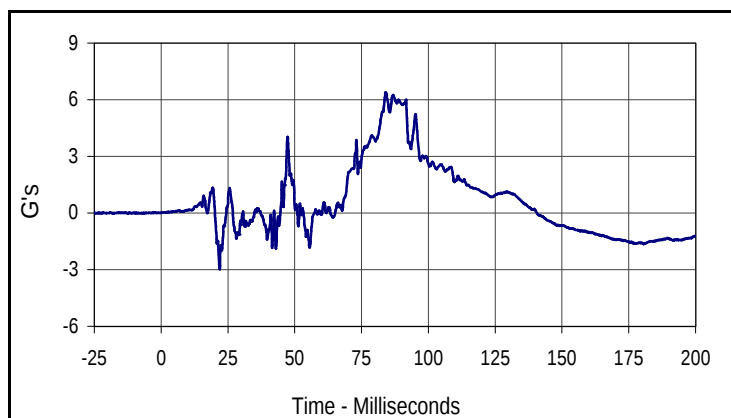
Curve Description			
Driver Chest Displacement			
CURNO	Type	SAE Class	Units
019	FIL	600	MM
Max	Time	Min	Time
0.0	4.5	-25.2	66.3

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

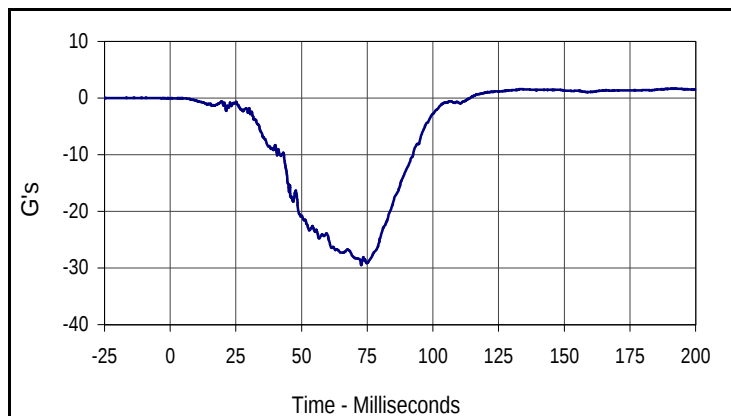
Test Date: 8/26/04
 NHTSA No.: M55200



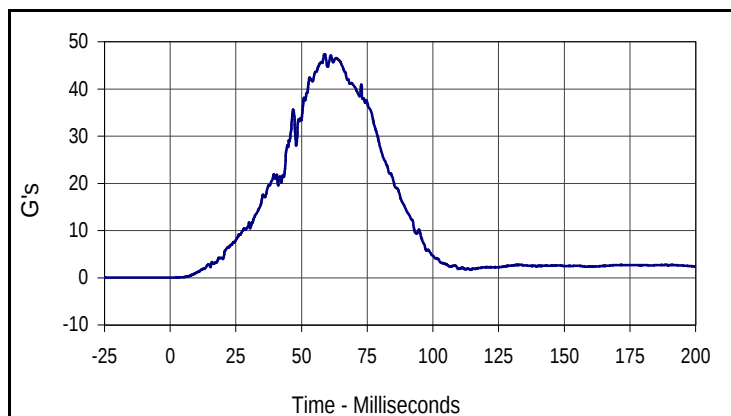
Curve Description			
Driver Pelvis X			
CURNO	Type	SAE Class	Units
020	FIL	1000	G's
Max	Time	Min	Time
2.1	143.1	-40.7	58.9



Curve Description			
Driver Pelvis Y			
CURNO	Type	SAE Class	Units
021	FIL	1000	G's
Max	Time	Min	Time
6.4	84.0	-3.0	21.9



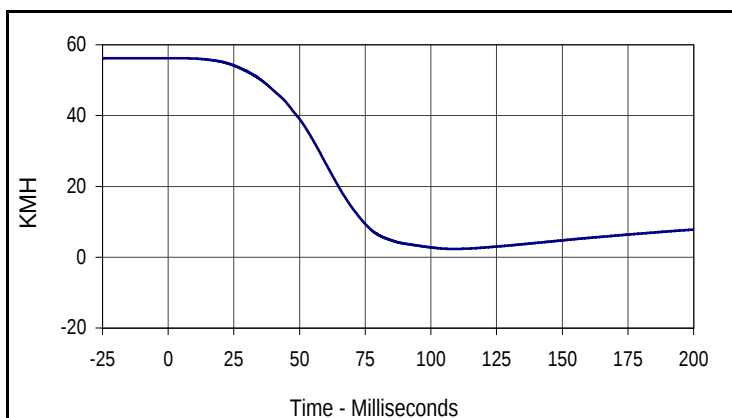
Curve Description			
Driver Pelvis Z			
CURNO	Type	SAE Class	Units
022	FIL	1000	G's
Max	Time	Min	Time
1.7	192.4	-29.5	72.7



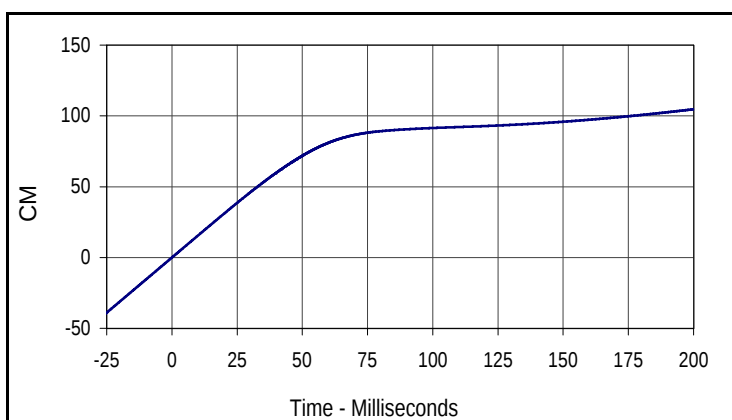
Curve Description			
Driver Pelvis Resultant			
CURNO	Type	SAE Class	Units
020	RES	1000	G's
Max	Time	Min	Time
47.4	58.8	0.0	0.5

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



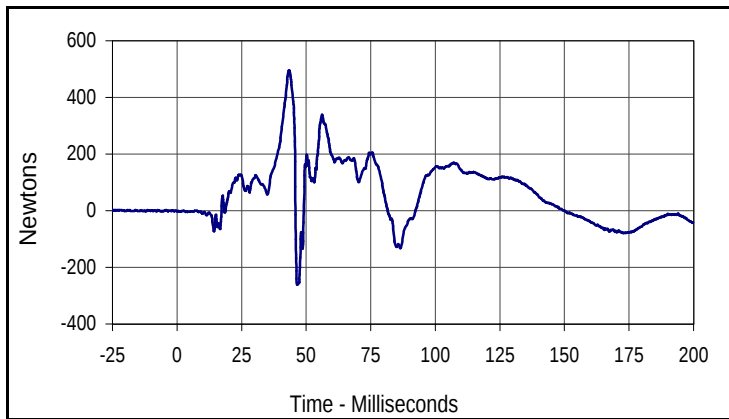
Curve Description			
Driver Pelvis X Velocity			
CURNO	Type	SAE Class	Units
020	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	2.3	108.7



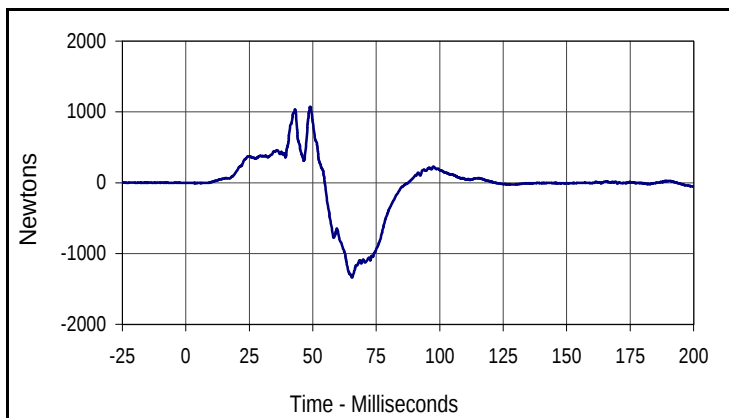
Curve Description			
Driver Pelvis X Displacement			
CURNO	Type	SAE Class	Units
020	IN2	180	CM
Max	Time	Min	Time
104.7	200.0	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



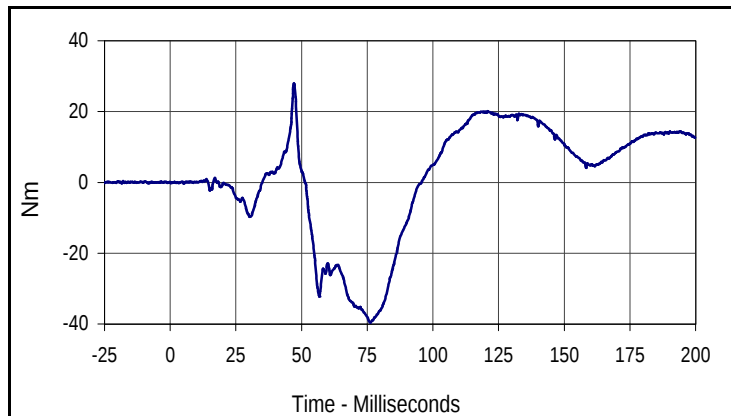
Curve Description			
Driver Left Femur Force			
CURNO	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
494.9	43.4	-261.5	46.6



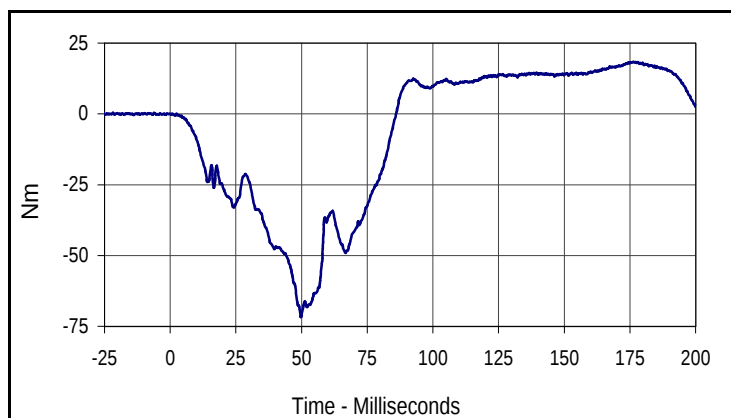
Curve Description			
Driver Right Femur Force			
CURNO	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
1073.6	49.0	-1339.1	65.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

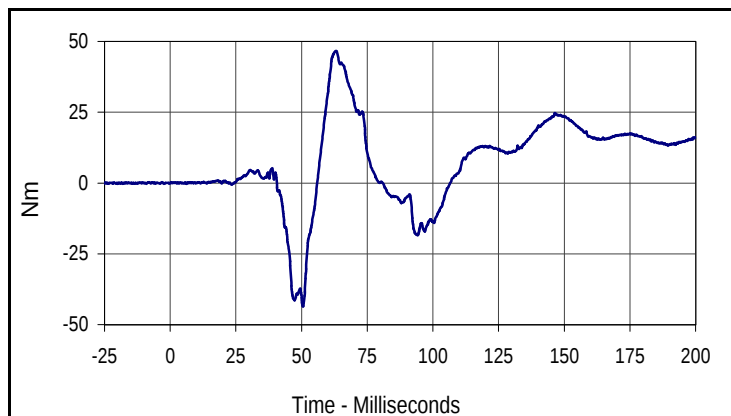
Test Date: 8/26/04
 NHTSA No.: M55200



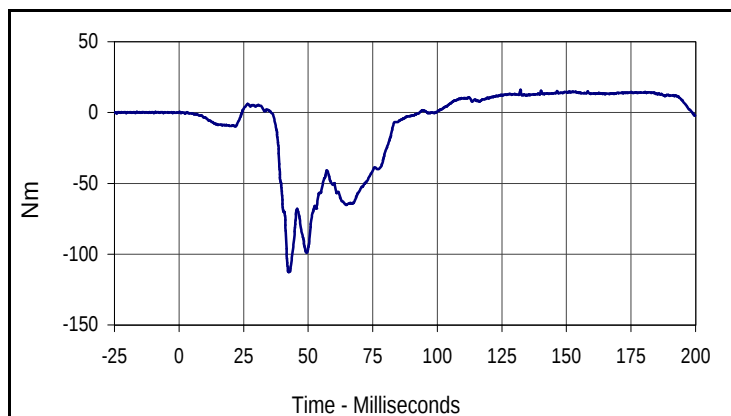
Curve Description			
Driver Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
025	FIL	600	Nm
Max	Time	Min	Time
28.0	47.1	-39.6	76.2



Curve Description			
Driver Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
18.4	176.3	-71.8	49.8



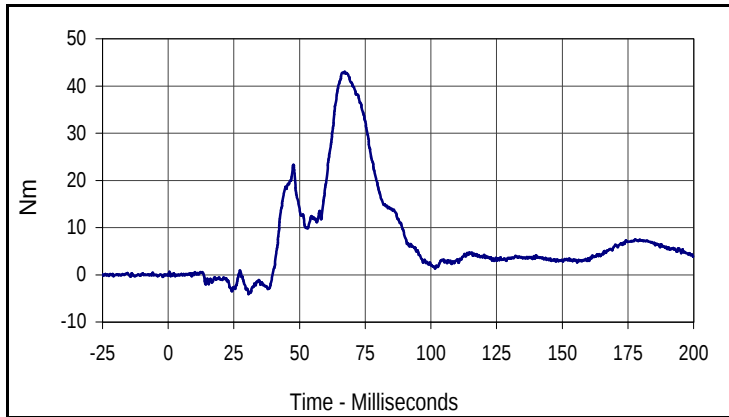
Curve Description			
Driver Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
027	FIL	600	Nm
Max	Time	Min	Time
46.6	63.2	-43.6	50.5



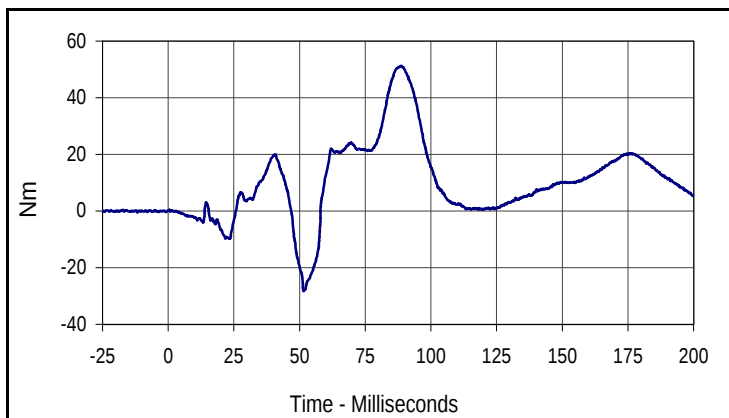
Curve Description			
Driver Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
028	FIL	600	Nm
Max	Time	Min	Time
16.1	132.2	-112.7	42.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

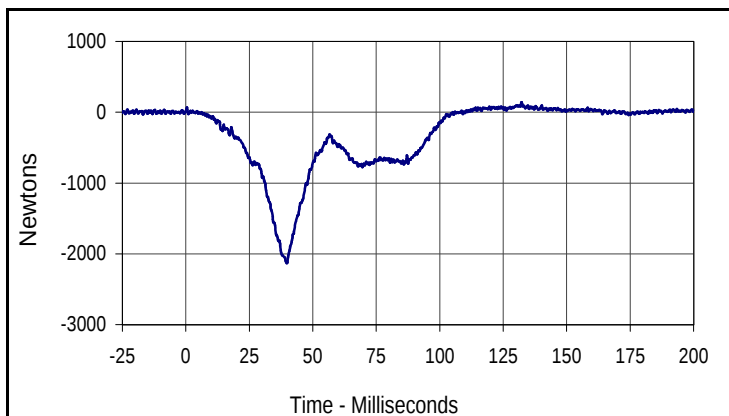
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
029	FIL	600	Nm
Max	Time	Min	Time
43.0	67.1	-4.1	30.6



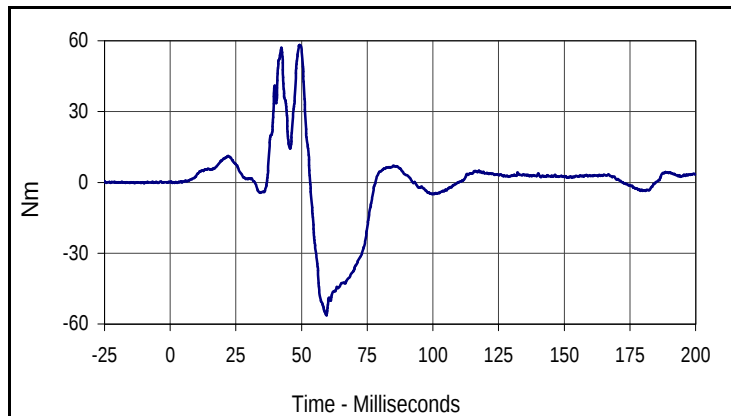
Curve Description			
Driver Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
030	FIL	600	Nm
Max	Time	Min	Time
51.3	88.7	-28.2	51.6



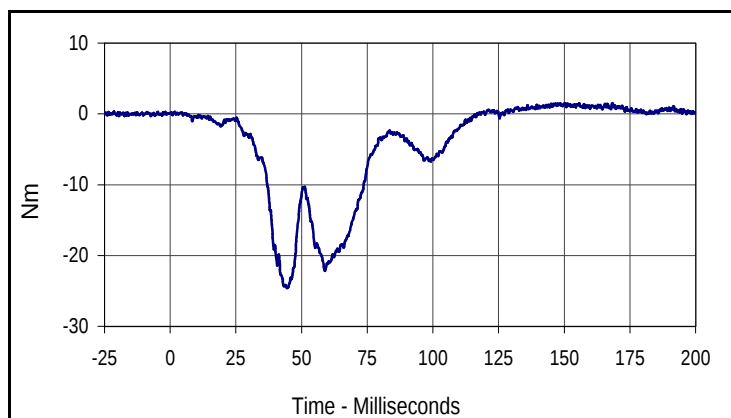
Curve Description			
Driver Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
031	FIL	600	Newtons
Max	Time	Min	Time
142.1	132.3	-2131.6	39.8

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

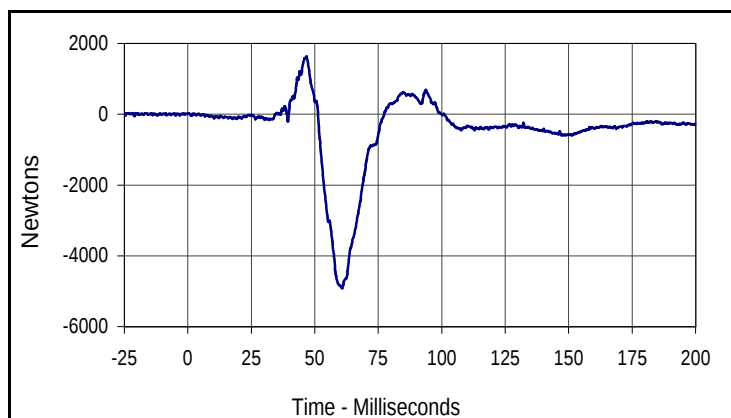
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
032	FIL	600	Nm
Max	Time	Min	Time
58.2	49.3	-56.3	59.5



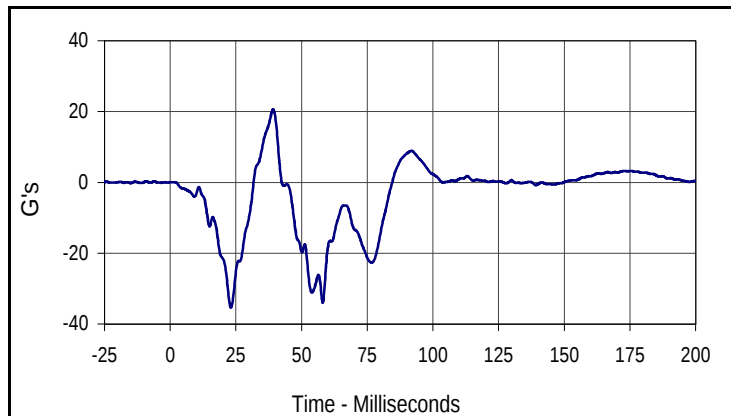
Curve Description			
Driver Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
033	FIL	600	Nm
Max	Time	Min	Time
1.5	148.4	-24.6	44.4



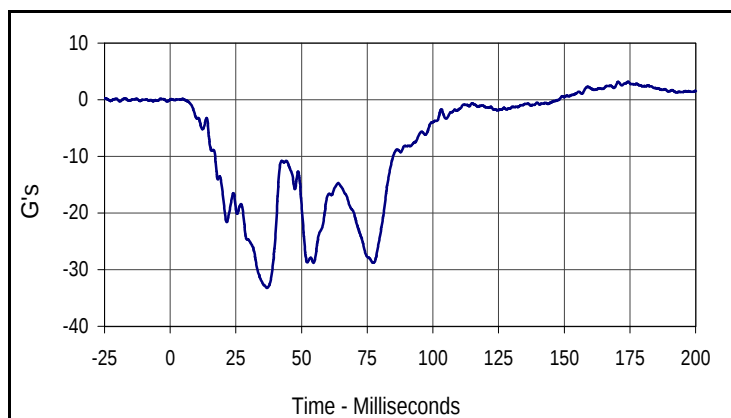
Curve Description			
Driver Right Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
034	FIL	600	Newtons
Max	Time	Min	Time
1630.5	46.7	-4913.2	60.7

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

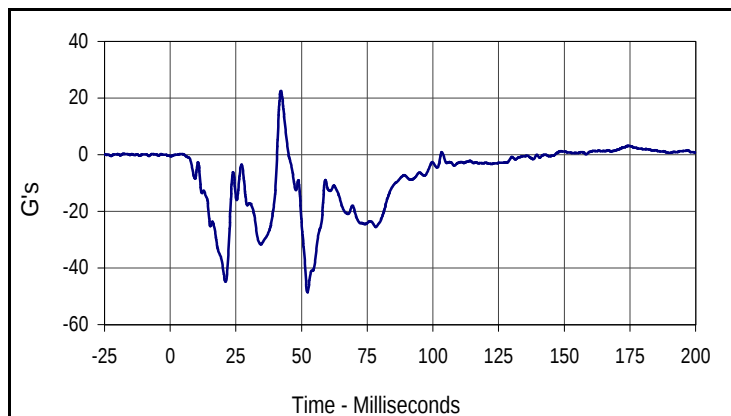
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Left Foot Aft X			
CURNO	Type	SAE Class	Units
035	FIL	180	G's
Max	Time	Min	Time
20.6	39.2	-35.3	23.1



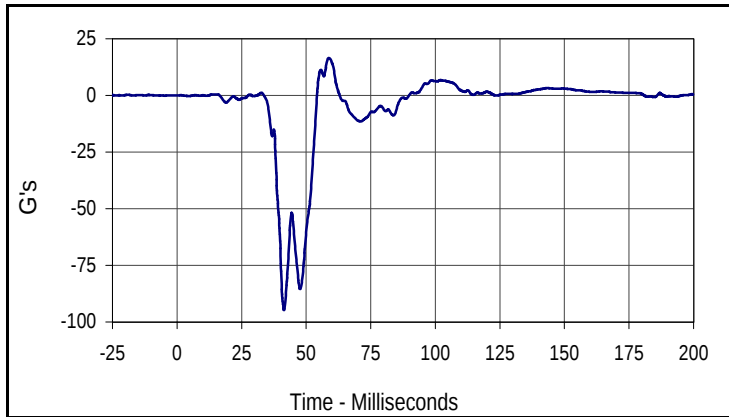
Curve Description			
Driver Left Foot Aft Z			
CURNO	Type	SAE Class	Units
036	FIL	180	G's
Max	Time	Min	Time
3.2	170.6	-33.2	36.9



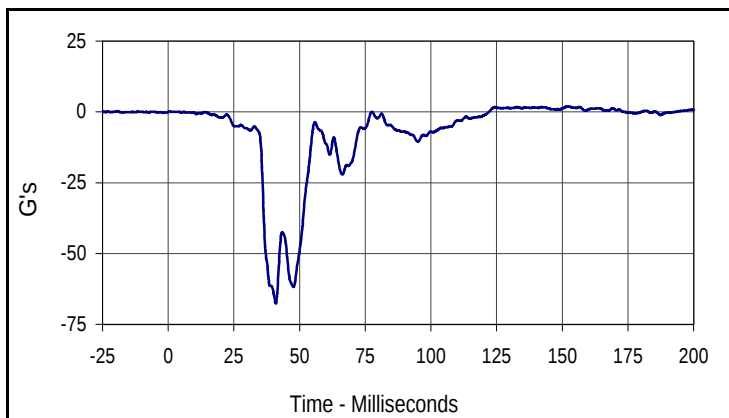
Curve Description			
Driver Left Foot Fore Z			
CURNO	Type	SAE Class	Units
037	FIL	180	G's
Max	Time	Min	Time
22.5	42.1	-48.6	52.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

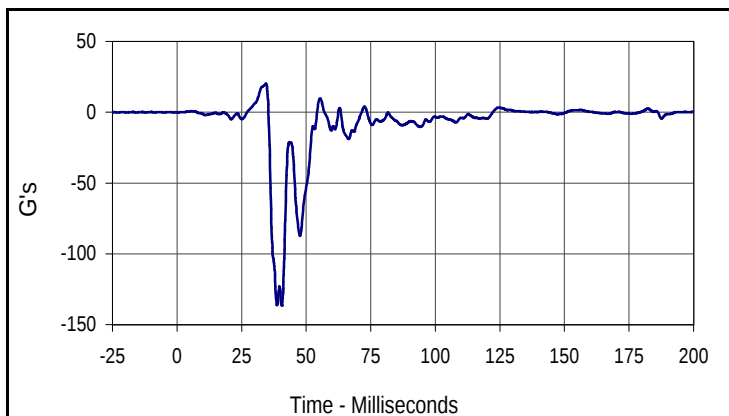
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Right Foot Aft X			
CURNO	Type	SAE Class	Units
038	FIL	180	G's
Max	Time	Min	Time
16.5	58.7	-94.8	41.4



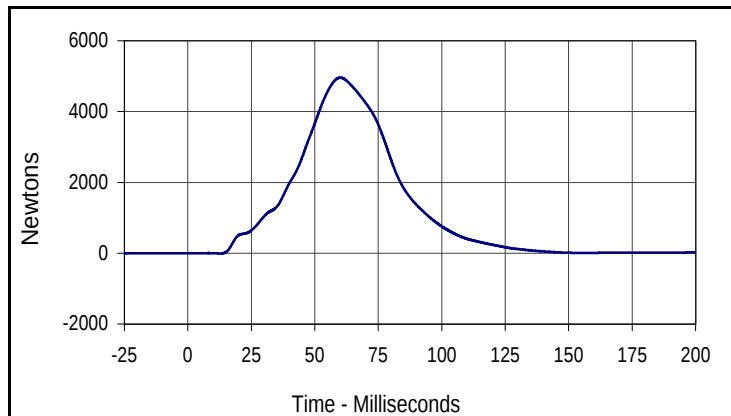
Curve Description			
Driver Right Foot Aft Z			
CURNO	Type	SAE Class	Units
039	FIL	180	G's
Max	Time	Min	Time
2.0	151.9	-67.6	41.0



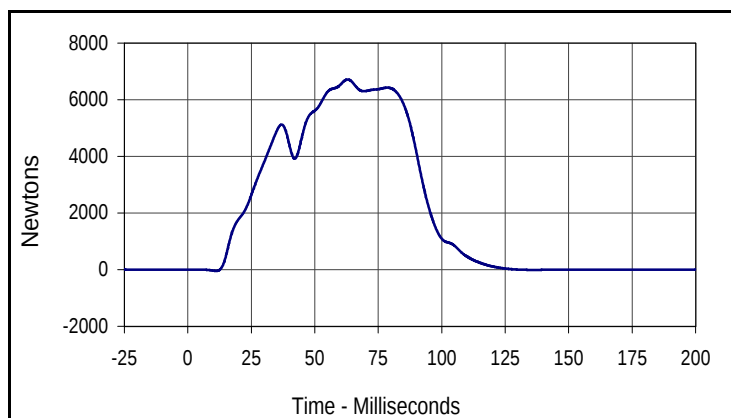
Curve Description			
Driver Right Foot Fore Z			
CURNO	Type	SAE Class	Units
040	FIL	180	G's
Max	Time	Min	Time
20.2	34.4	-136.4	40.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

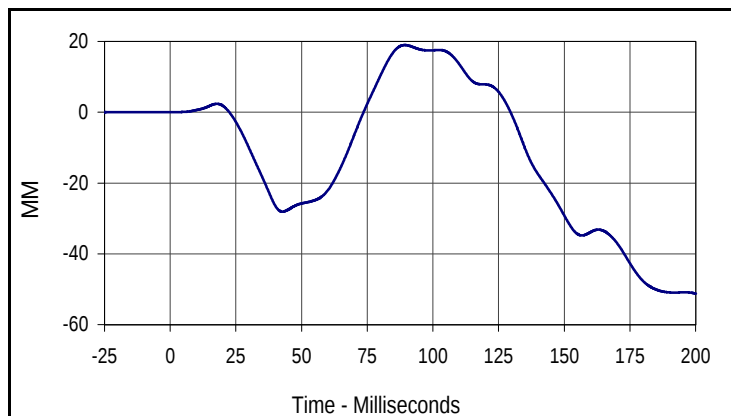
Test Date: 8/26/04
 NHTSA No.: M55200



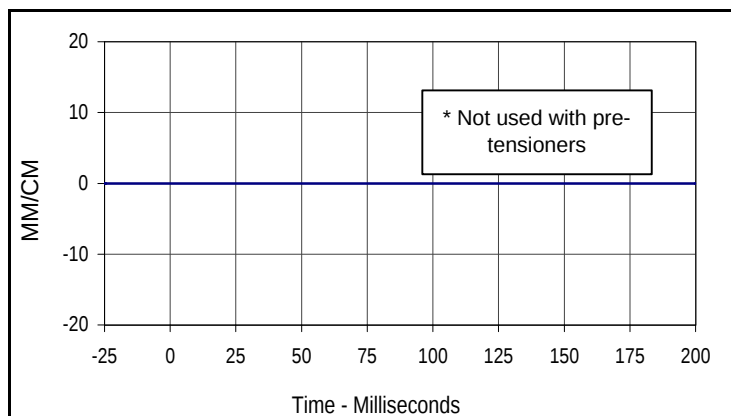
Curve Description			
Driver Lap Belt Force			
CURNO	Type	SAE Class	Units
041	FIL	60	Newtons
Max	Time	Min	Time
4959.3	60.1	-9.7	12.8



Curve Description			
Driver Shoulder Belt Force			
CURNO	Type	SAE Class	Units
042	FIL	60	Newtons
Max	Time	Min	Time
6716.0	62.9	-43.0	11.1



Curve Description			
Driver Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
043	FIL	60	MM
Max	Time	Min	Time
19.0	89.7	-51.2	200.0

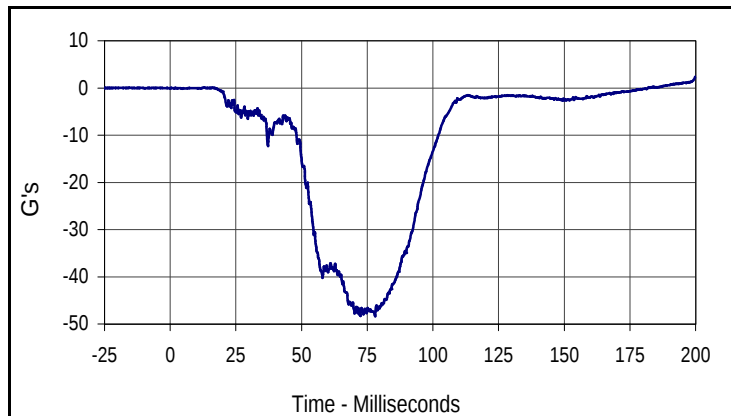


Curve Description			
Driver Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
044	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

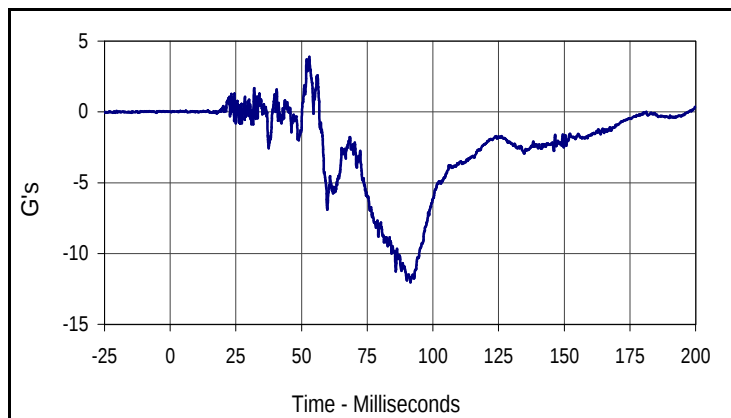
* Not used with pre-tensioners

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

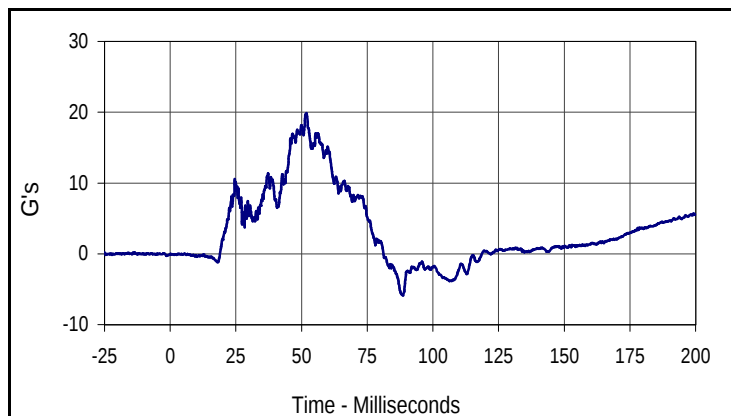
Test Date: 8/26/04
 NHTSA No.: M55200



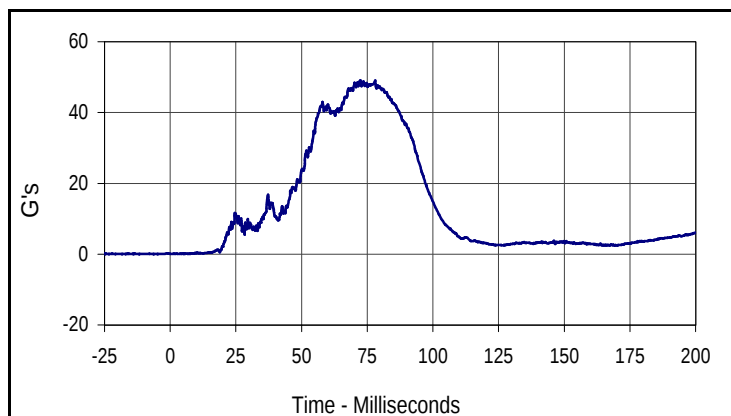
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
2.4	200.0	-48.4	78.0



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
3.9	53.0	-12.0	91.5



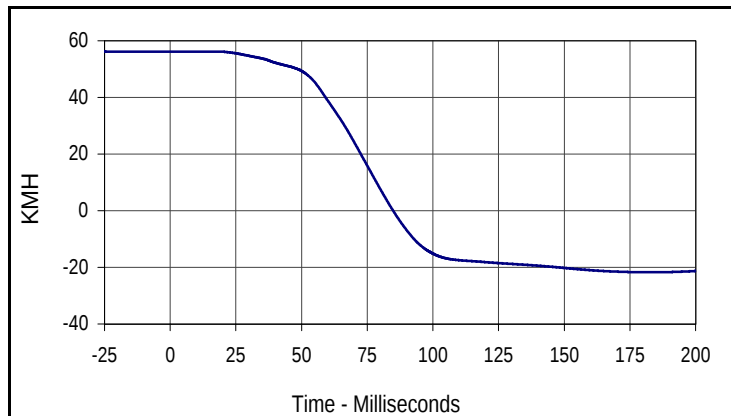
Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
19.9	51.9	-5.9	88.5



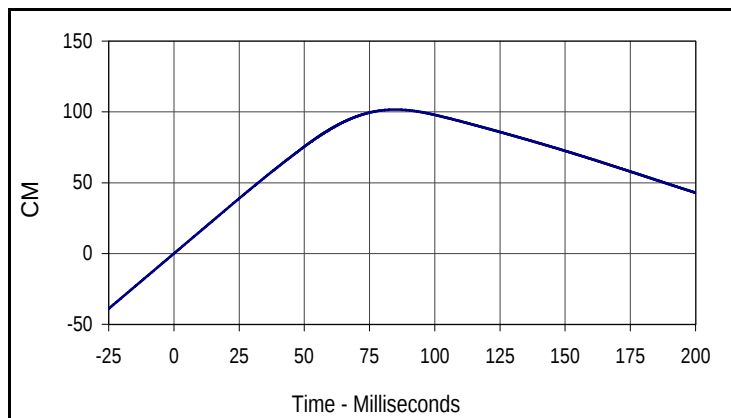
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
045	RES	1000	G's
Max	Time	Min	Time
49.1	72.4	0.0	0.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



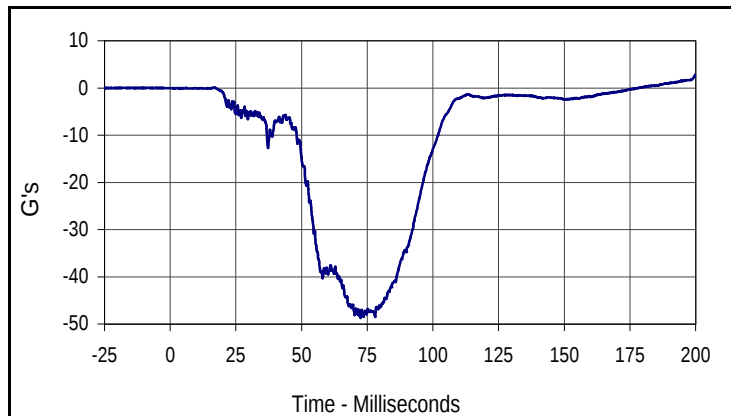
Curve Description			
Passenger Head Primary X Velocity			
CURNO	Type	SAE Class	Units
045	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-21.7	182.0



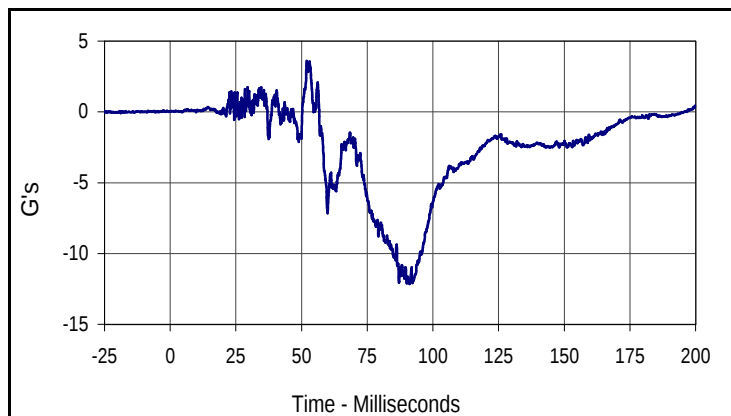
Curve Description			
Passenger Head Primary X Displacement			
CURNO	Type	SAE Class	Units
045	IN2	180	CM
Max	Time	Min	Time
101.6	84.9	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

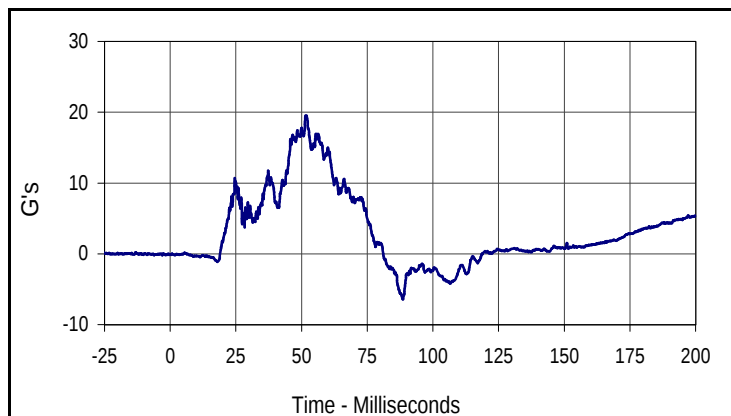
Test Date: 8/26/04
 NHTSA No.: M55200



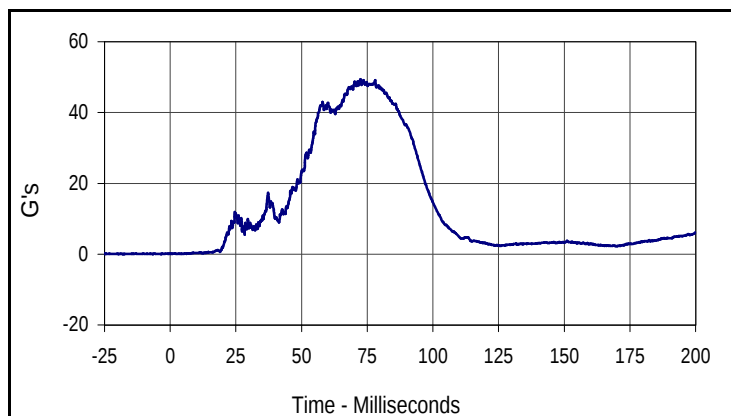
Curve Description			
Passenger Head Redundant X			
CURNO	Type	SAE Class	Units
048	FIL	1000	G's
Max	Time	Min	Time
2.9	200.0	-48.7	72.4



Curve Description			
Passenger Head Redundant Y			
CURNO	Type	SAE Class	Units
049	FIL	1000	G's
Max	Time	Min	Time
3.6	52.0	-12.2	91.1



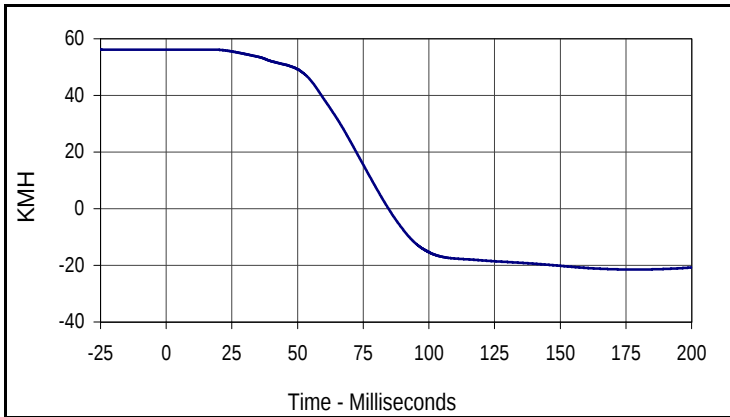
Curve Description			
Passenger Head Redundant Z			
CURNO	Type	SAE Class	Units
050	FIL	1000	G's
Max	Time	Min	Time
19.5	51.9	-6.4	88.5



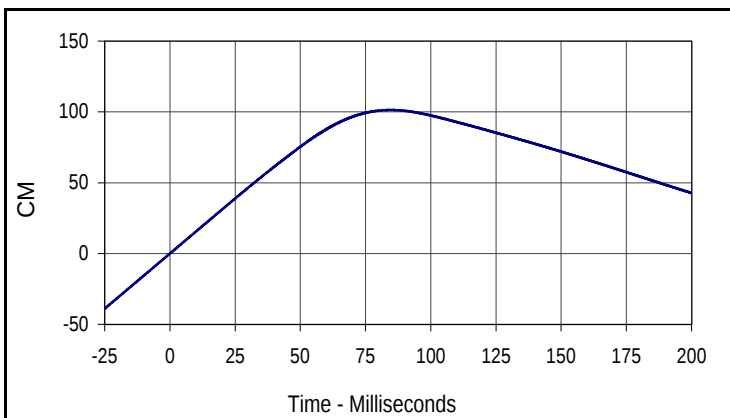
Curve Description			
Passenger Head Resultant Redundant			
CURNO	Type	SAE Class	Units
048	RES	1000	G's
Max	Time	Min	Time
49.4	72.4	0.0	4.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



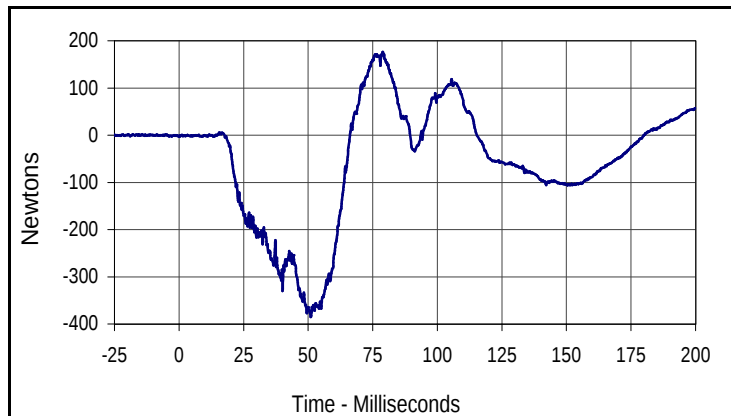
Curve Description			
Passenger Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
048	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-21.5	178.3



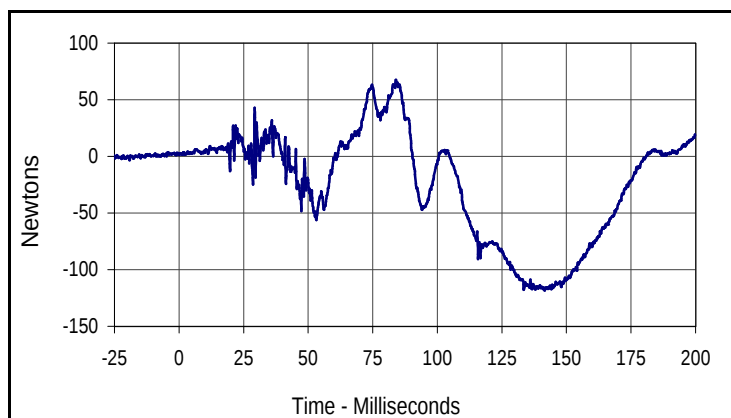
Curve Description			
Passenger Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
048	IN2	180	CM
Max	Time	Min	Time
101.3	84.6	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

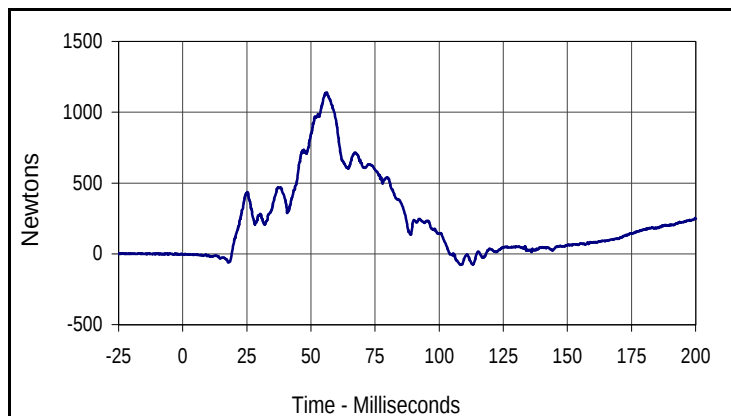
Test Date: 8/26/04
 NHTSA No.: M55200



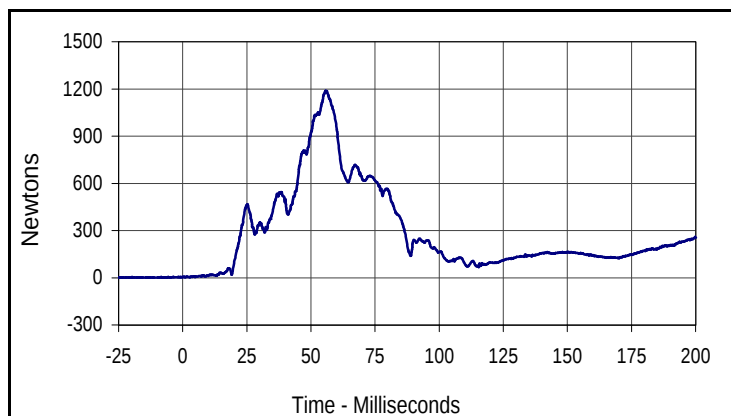
Curve Description			
Passenger Upper Neck Force X			
CURNO	Type	SAE Class	Units
051	FIL	1000	Newtons
Max	Time	Min	Time
176.5	78.9	-385.0	51.1



Curve Description			
Passenger Upper Neck Force Y			
CURNO	Type	SAE Class	Units
052	FIL	1000	Newtons
Max	Time	Min	Time
67.6	83.9	-118.3	141.5



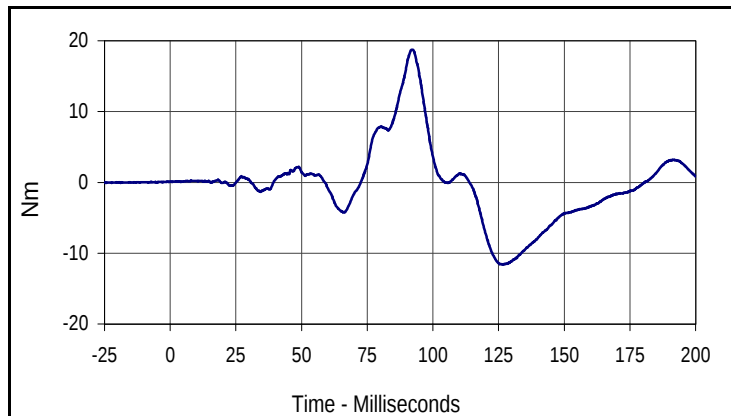
Curve Description			
Passenger Upper Neck Force Z			
CURNO	Type	SAE Class	Units
053	FIL	1000	Newtons
Max	Time	Min	Time
1137.6	56.2	-76.6	108.4



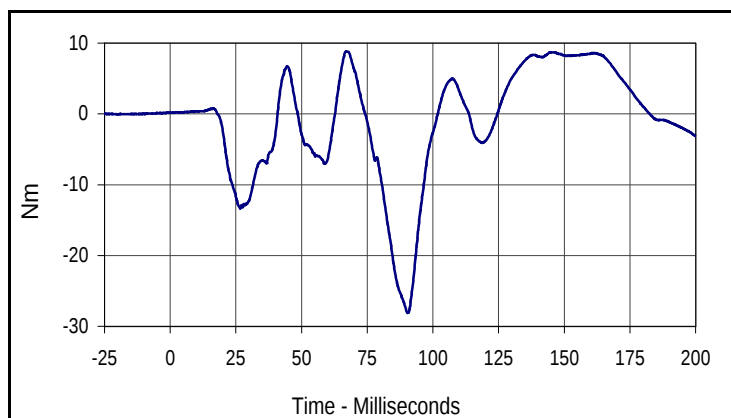
Curve Description			
Passenger Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
051	RES	1000	Newtons
Max	Time	Min	Time
1188.0	55.7	2.4	0.9

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

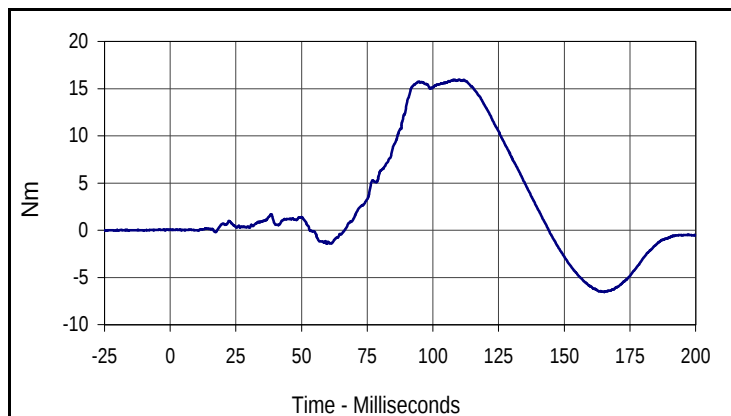
Test Date: 8/26/04
 NHTSA No.: M55200



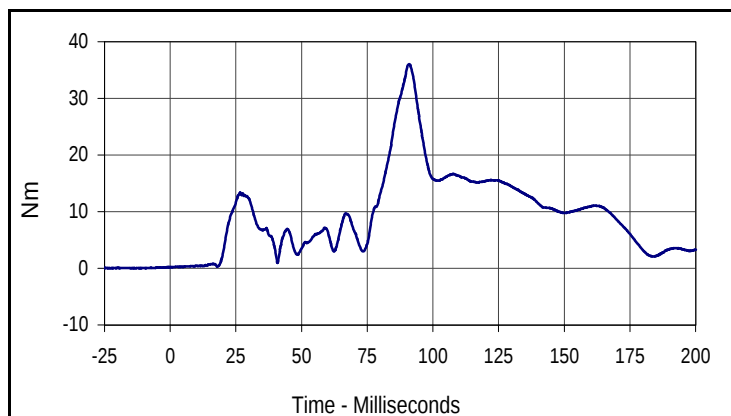
Curve Description			
Passenger Upper Neck Moment X			
CURNO	Type	SAE Class	Units
054	FIL	600	Nm
Max	Time	Min	Time
18.8	92.1	-11.6	126.6



Curve Description			
Passenger Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
055	FIL	600	Nm
Max	Time	Min	Time
8.8	66.9	-28.1	90.5



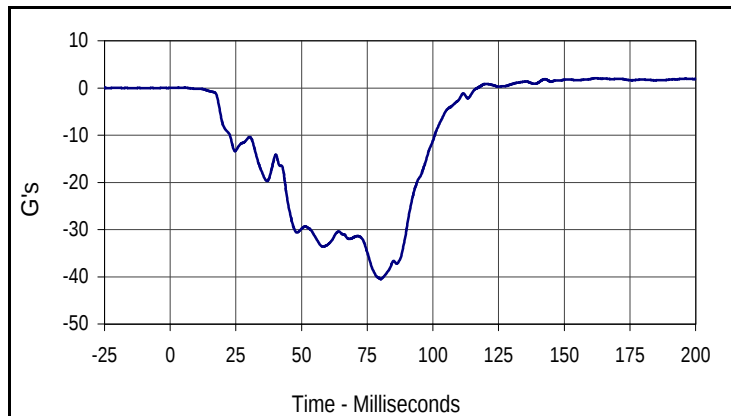
Curve Description			
Passenger Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
056	FIL	600	Nm
Max	Time	Min	Time
16.0	110.0	-6.5	165.3



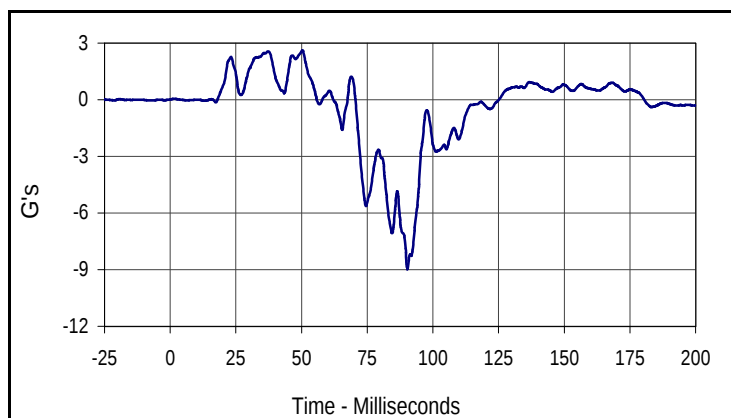
Curve Description			
Passenger Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
054	RES	600	Nm
Max	Time	Min	Time
36.0	90.9	0.2	0.7

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

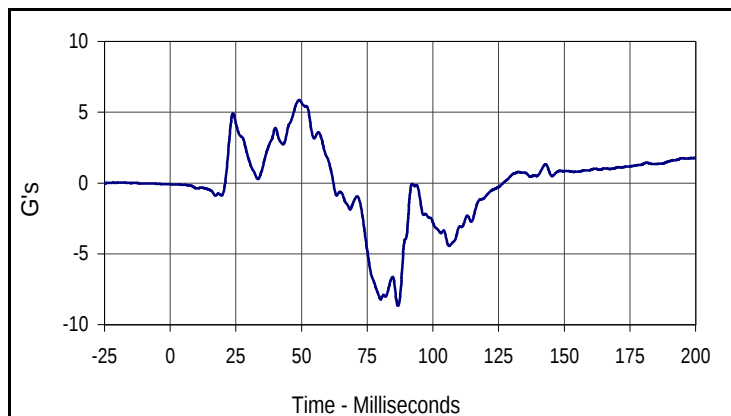
Test Date: 8/26/04
 NHTSA No.: M55200



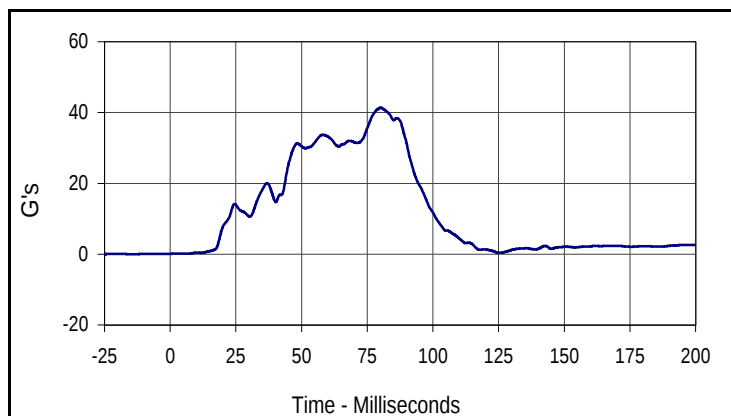
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
057	FIL	180	G's
Max	Time	Min	Time
2.0	161.7	-40.5	80.1



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
058	FIL	180	G's
Max	Time	Min	Time
2.6	50.3	-9.0	90.3



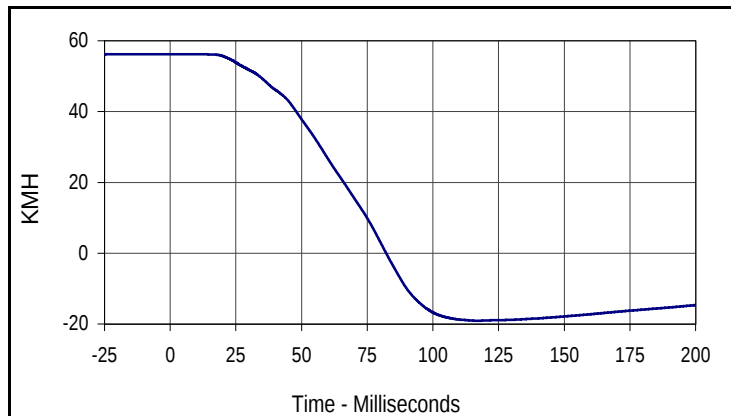
Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
059	FIL	180	G's
Max	Time	Min	Time
5.9	49.1	-8.7	86.7



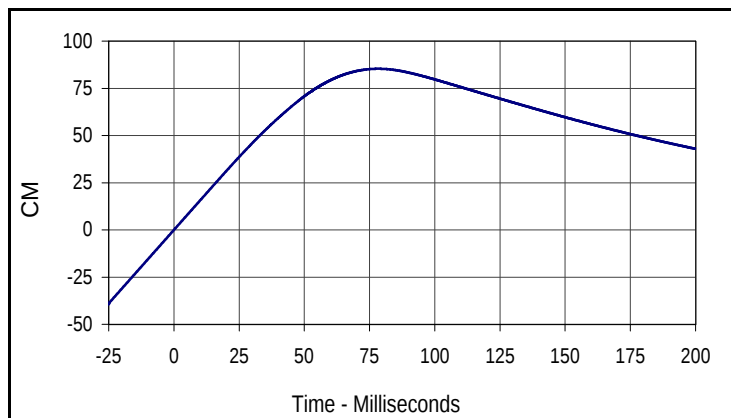
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
057	RES	180	G's
Max	Time	Min	Time
41.4	80.1	0.1	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



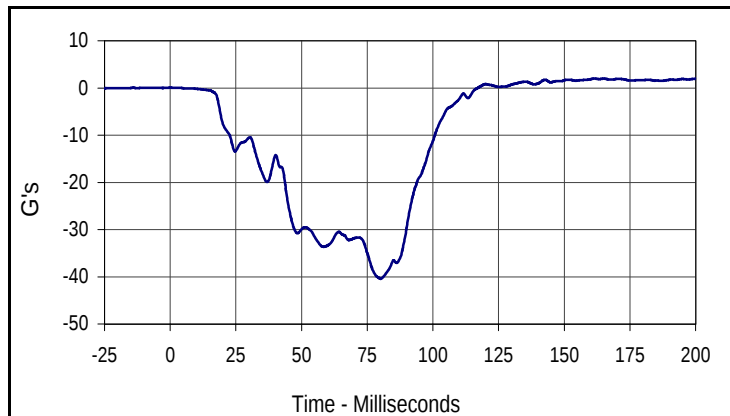
Curve Description			
Passenger Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
057	IN1	180	KMH
Max	Time	Min	Time
56.2	6.7	-19.1	116.9



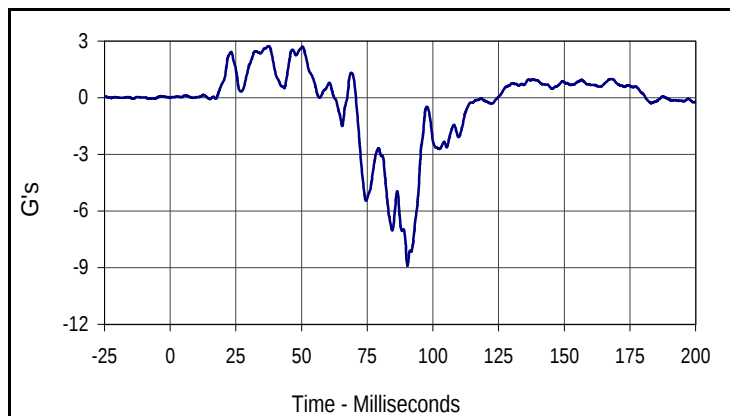
Curve Description			
Passenger Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
057	IN2	180	CM
Max	Time	Min	Time
85.4	78.3	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

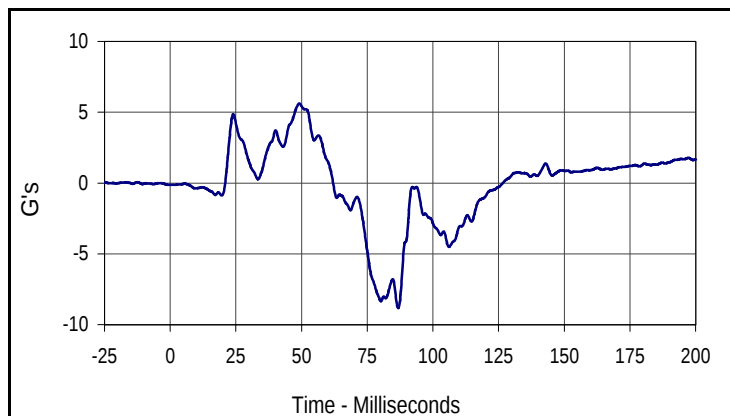
Test Date: 8/26/04
 NHTSA No.: M55200



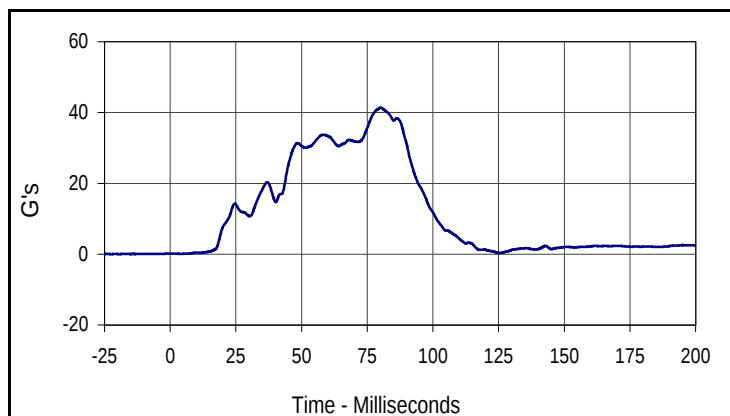
Curve Description			
Passenger Chest Redundant X			
CURNO	Type	SAE Class	Units
060	FIL	180	G's
Max	Time	Min	Time
2.0	161.5	-40.4	80.1



Curve Description			
Passenger Chest Redundant Y			
CURNO	Type	SAE Class	Units
061	FIL	180	G's
Max	Time	Min	Time
2.7	37.5	-8.9	90.3



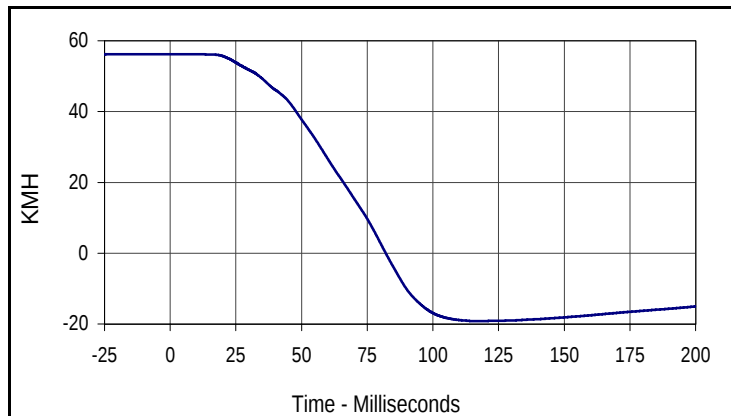
Curve Description			
Passenger Chest Redundant Z			
CURNO	Type	SAE Class	Units
062	FIL	180	G's
Max	Time	Min	Time
5.6	49.2	-8.8	86.8



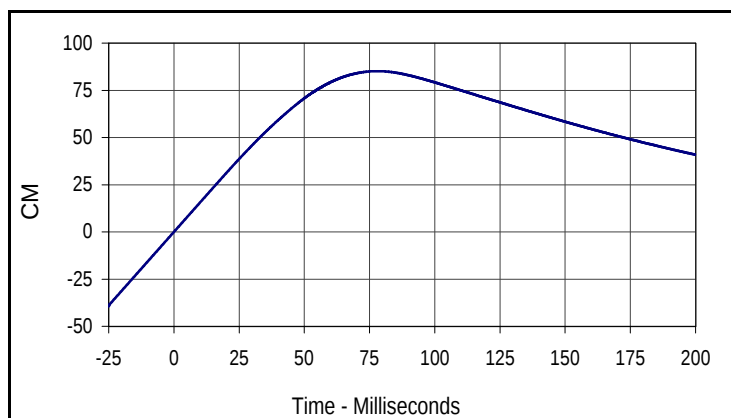
Curve Description			
Passenger Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
060	RES	180	G's
Max	Time	Min	Time
41.4	80.2	0.1	4.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



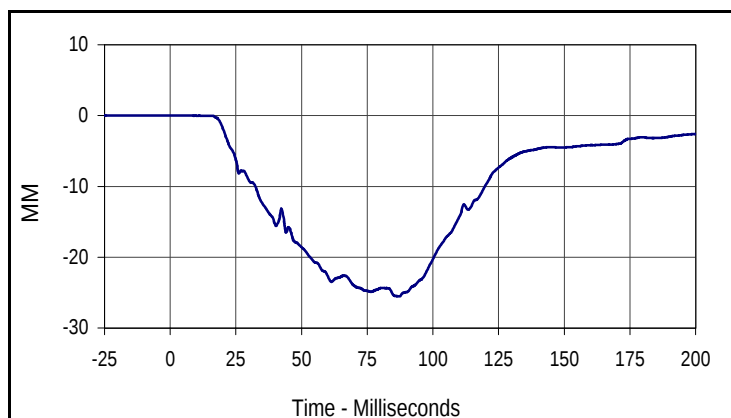
Curve Description			
Passenger Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
060	IN1	180	KMH
Max	Time	Min	Time
56.2	4.5	-19.2	117.0



Curve Description			
Passenger Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
060	IN2	180	CM
Max	Time	Min	Time
85.2	78.0	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

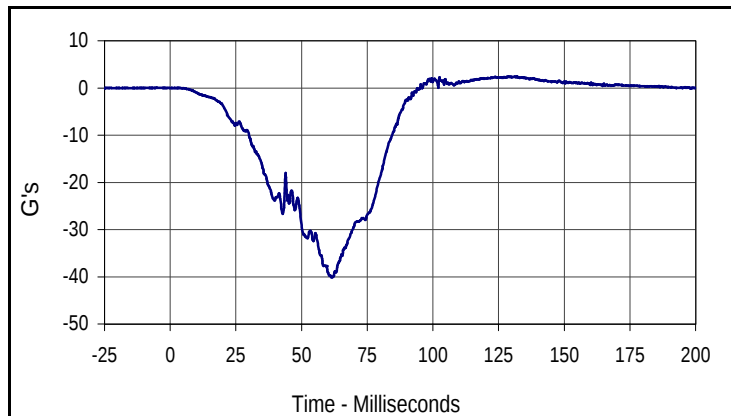
Test Date: 8/26/04
 NHTSA No.: M55200



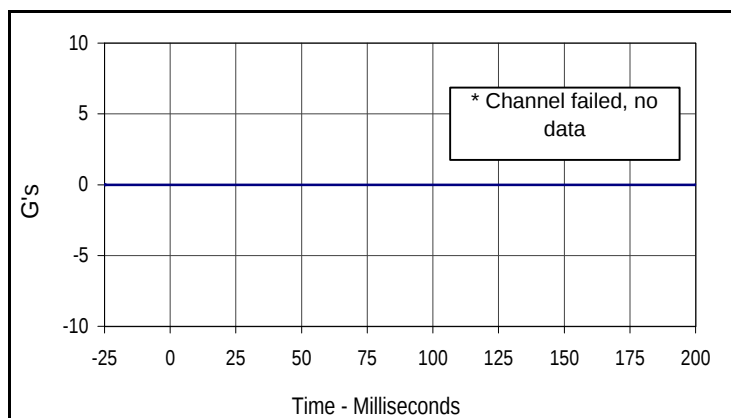
Curve Description			
Passenger Chest Displacement			
CURNO	Type	SAE Class	Units
063	FIL	600	MM
Max	Time	Min	Time
0.0	5.8	-25.5	86.7

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200

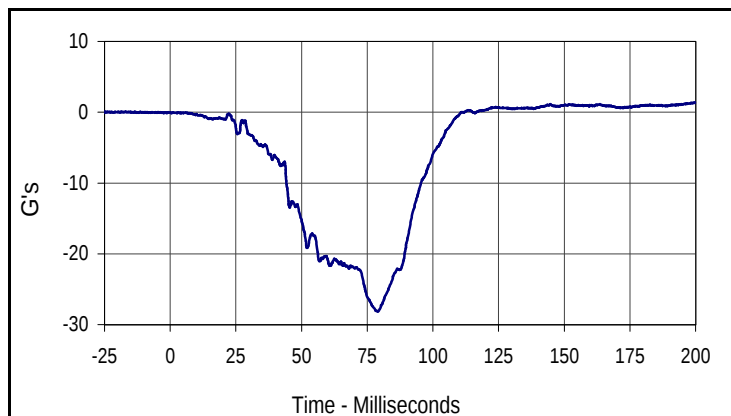


Curve Description			
Passenger Pelvis X			
CURNO	Type	SAE Class	Units
064	FIL	1000	G's
Max	Time	Min	Time
2.4	132.0	-40.2	61.5

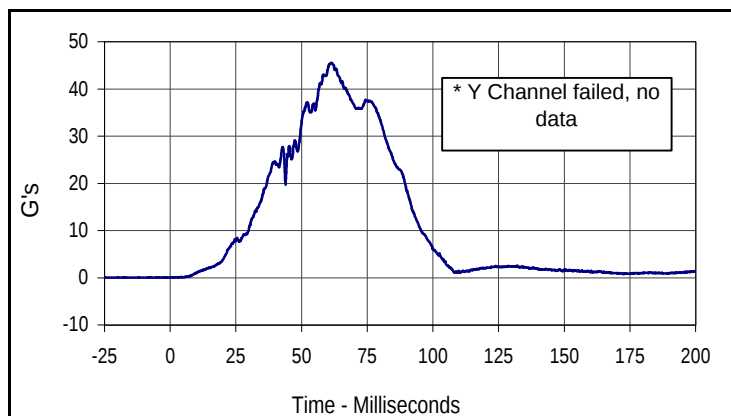


Curve Description			
Passenger Pelvis Y			
CURNO	Type	SAE Class	Units
065	FIL	1000	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



Curve Description			
Passenger Pelvis Z			
CURNO	Type	SAE Class	Units
066	FIL	1000	G's
Max	Time	Min	Time
1.4	199.3	-28.1	79.1

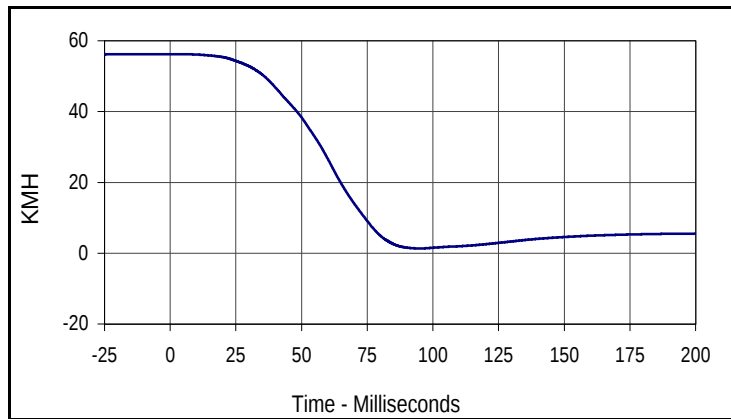


Curve Description			
Passenger Pelvis Resultant			
CURNO	Type	SAE Class	Units
064	RES	1000	G's
Max	Time	Min	Time
45.5	61.3	0.0	1.1

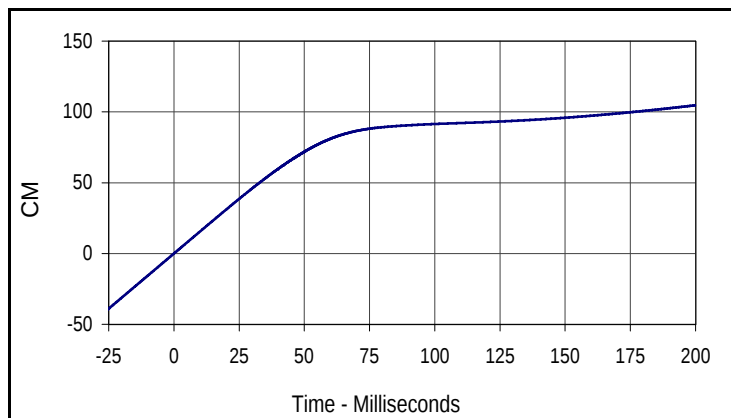
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Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



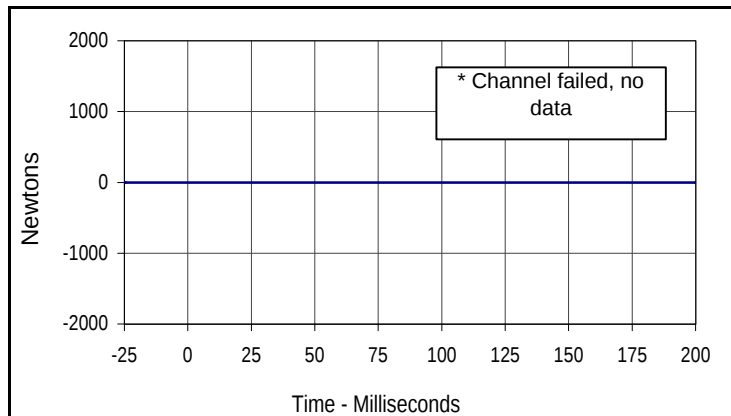
Curve Description			
Passenger Pelvis X Velocity			
CURNO	Type	SAE Class	Units
064	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	1.3	95.0



Curve Description			
Passenger Pelvis X Displacement			
CURNO	Type	SAE Class	Units
064	IN2	180	CM
Max	Time	Min	Time
104.7	200.0	0.0	0.0

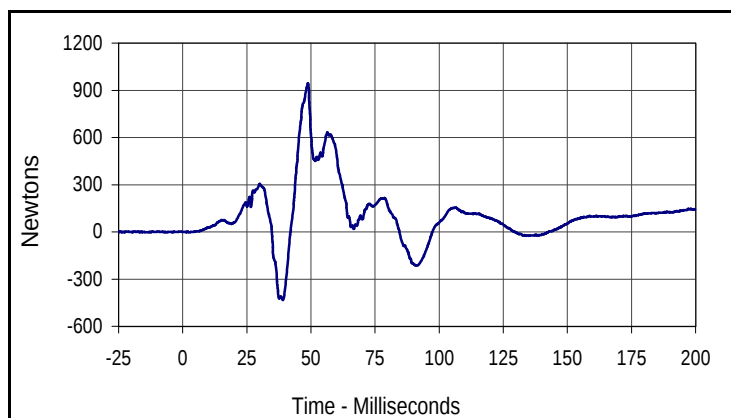
Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Left Femur Force			
CURNO	Type	SAE Class	Units
067	FIL	600	Newtons
Max	Time	Min	Time
0.0	0.0	0.0	0.0

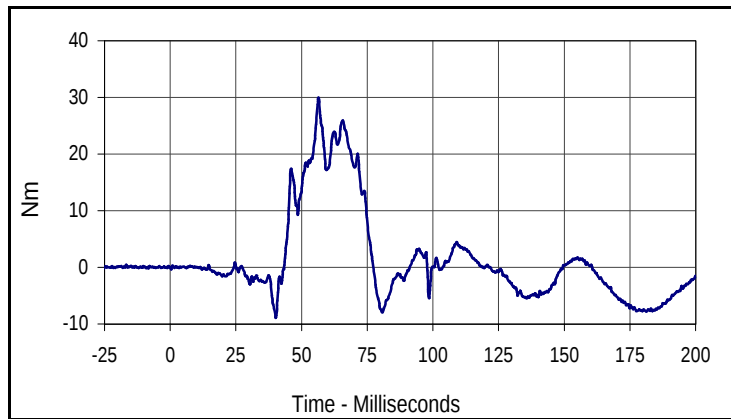
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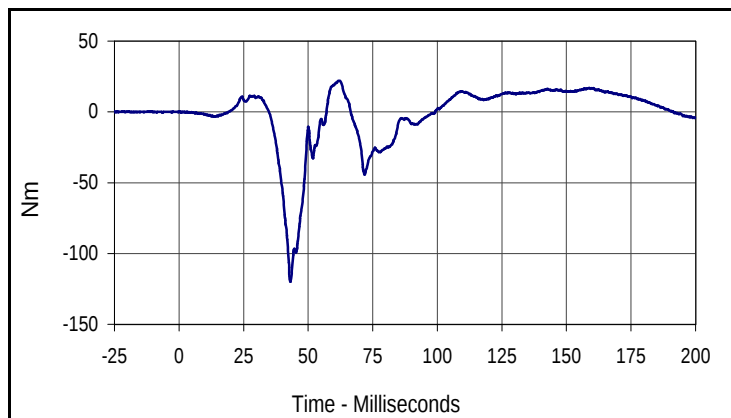
Curve Description			
Passenger Right Femur Force			
CURNO	Type	SAE Class	Units
068	FIL	600	Newtons
Max	Time	Min	Time
944.5	48.9	-432.6	39.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

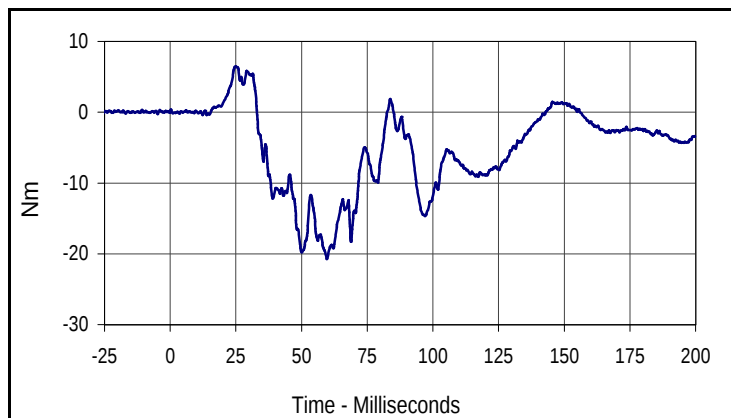
Test Date: 8/26/04
 NHTSA No.: M55200



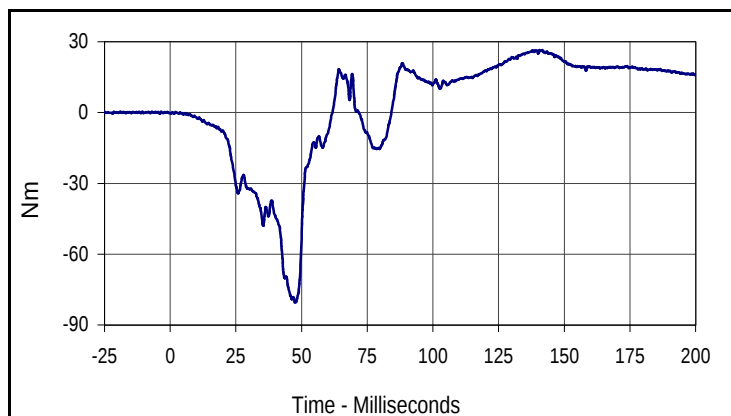
Curve Description			
Passenger Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
069	FIL	600	Nm
Max	Time	Min	Time
30.0	56.5	-8.9	40.2



Curve Description			
Passenger Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
070	FIL	600	Nm
Max	Time	Min	Time
22.0	62.2	-119.9	43.1



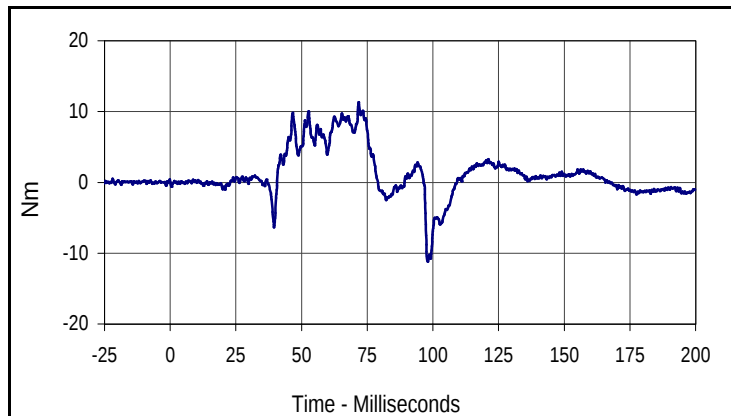
Curve Description			
Passenger Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
071	FIL	600	Nm
Max	Time	Min	Time
6.5	24.9	-20.7	59.7



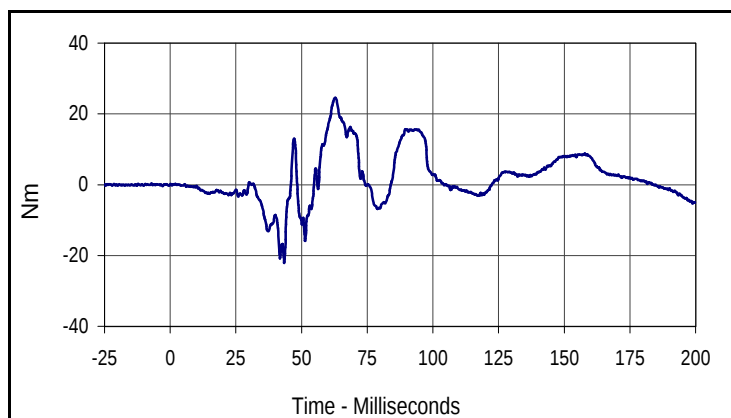
Curve Description			
Passenger Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
072	FIL	600	Nm
Max	Time	Min	Time
26.5	140.7	-80.6	47.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

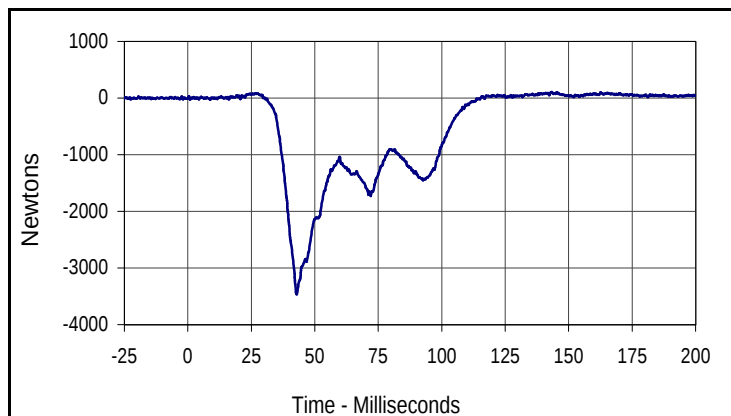
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
073	FIL	600	Nm
Max	Time	Min	Time
11.3	71.7	-11.2	98.0



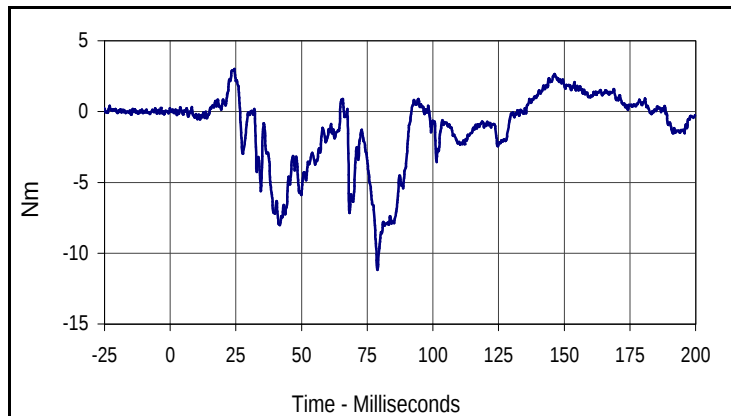
Curve Description			
Passenger Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
074	FIL	600	Nm
Max	Time	Min	Time
24.5	62.7	-22.1	43.4



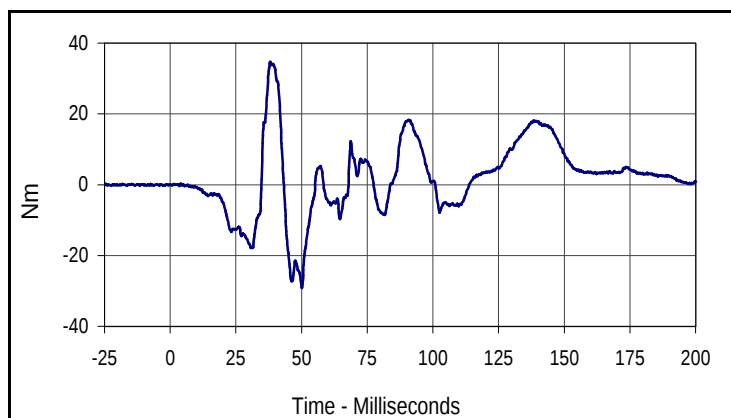
Curve Description			
Passenger Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
075	FIL	600	Newtons
Max	Time	Min	Time
110.2	143.3	-3466.1	42.9

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

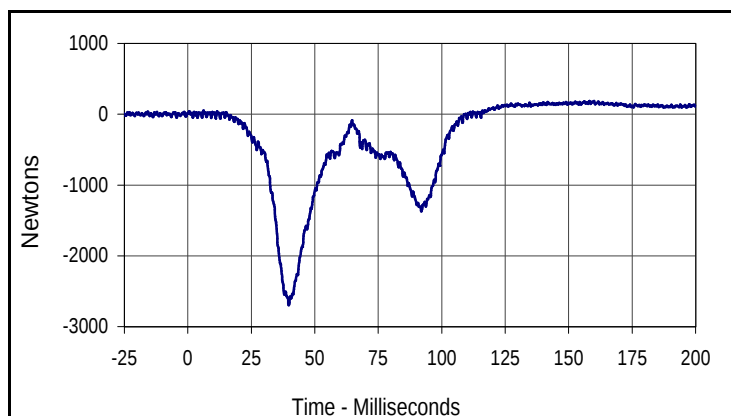
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
076	FIL	600	Nm
Max	Time	Min	Time
3.0	24.4	-11.2	78.9



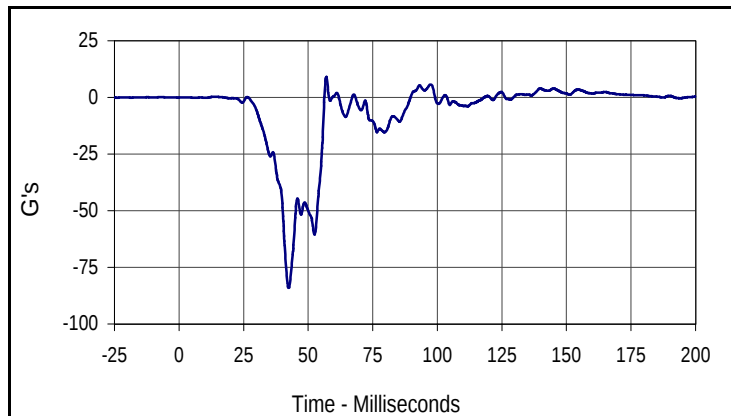
Curve Description			
Passenger Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
077	FIL	600	Nm
Max	Time	Min	Time
34.8	38.1	-29.1	50.2



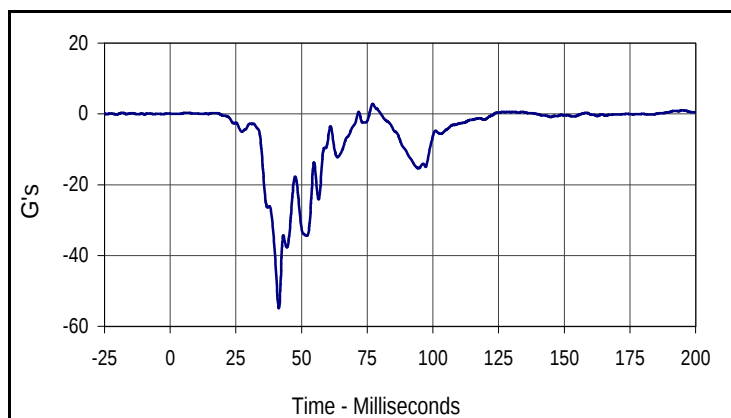
Curve Description			
Passenger Right lower Tibia Force Z			
CURNO	Type	SAE Class	Units
078	FIL	600	Newtons
Max	Time	Min	Time
186.1	158.2	-2699.4	39.8

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

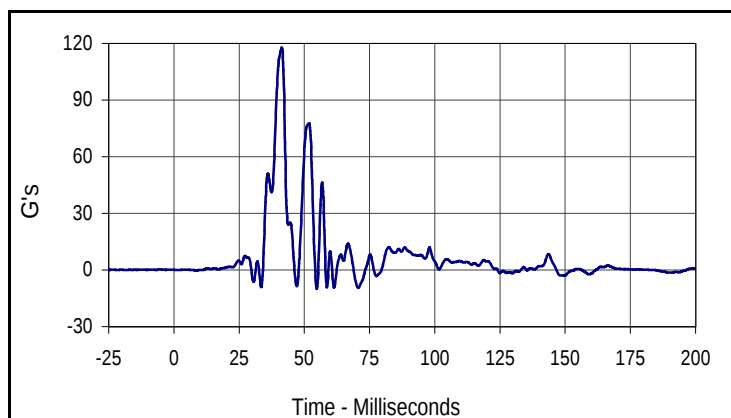
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Left Foot Aft X			
CURNO	Type	SAE Class	Units
079	FIL	180	G's
Max	Time	Min	Time
9.1	57.0	-84.1	42.4



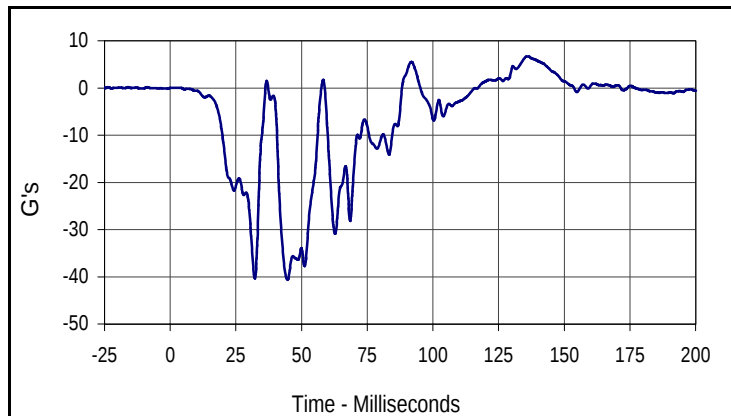
Curve Description			
Passenger Left Foot Aft Z			
CURNO	Type	SAE Class	Units
080	FIL	180	G's
Max	Time	Min	Time
2.8	77.1	-54.9	41.3



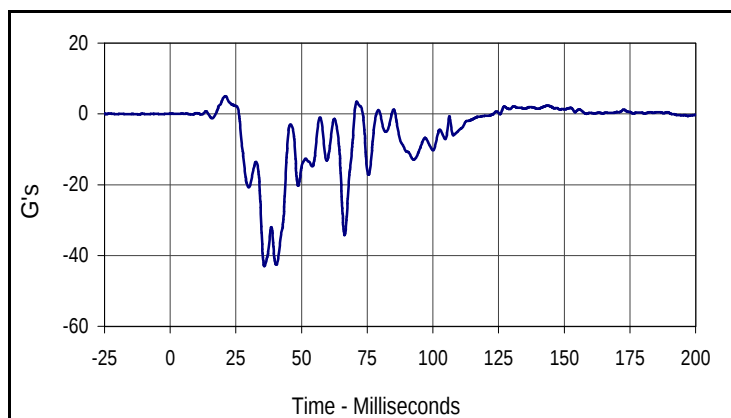
Curve Description			
Passenger Left Foot Fore Z			
CURNO	Type	SAE Class	Units
081	FIL	180	G's
Max	Time	Min	Time
117.8	41.4	-9.9	54.8

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

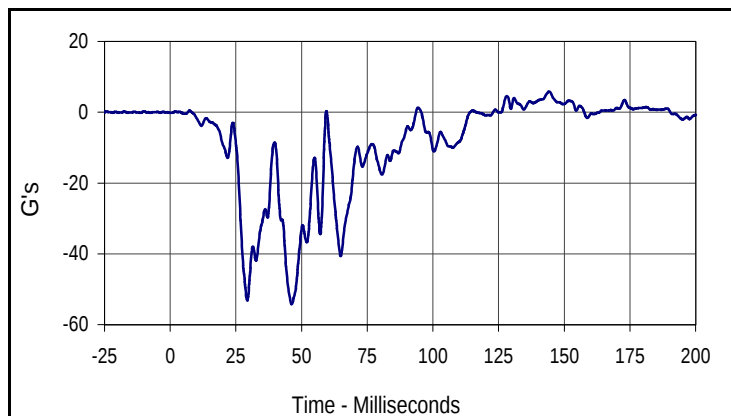
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Right Foot Aft X			
CURNO	Type	SAE Class	Units
082	FIL	180	G's
Max	Time	Min	Time
6.7	136.2	-40.7	44.7



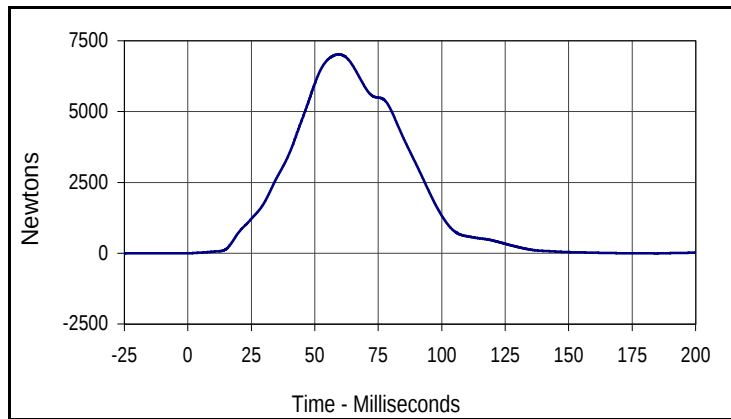
Curve Description			
Passenger Right Foot Aft Z			
CURNO	Type	SAE Class	Units
083	FIL	180	G's
Max	Time	Min	Time
5.0	21.1	-43.0	35.9



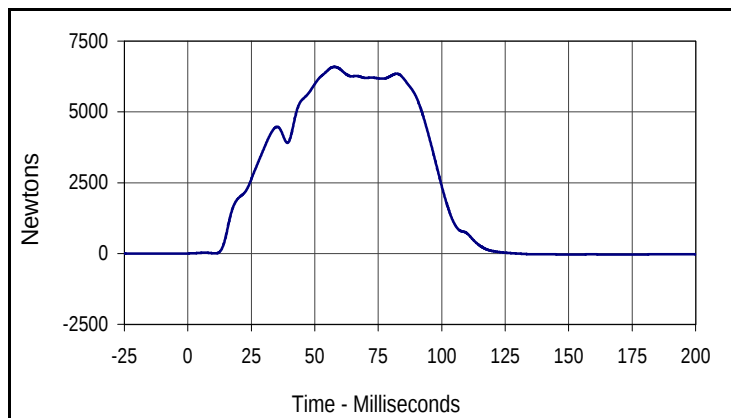
Curve Description			
Passenger Right Foot Fore Z			
CURNO	Type	SAE Class	Units
084	FIL	180	G's
Max	Time	Min	Time
5.8	144.3	-54.3	46.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

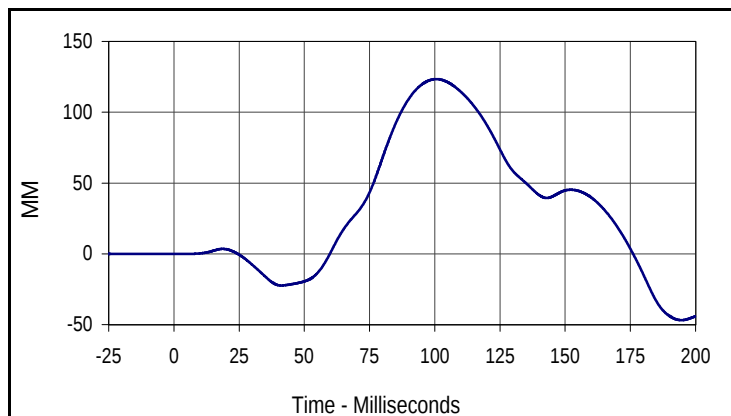
Test Date: 8/26/04
 NHTSA No.: M55200



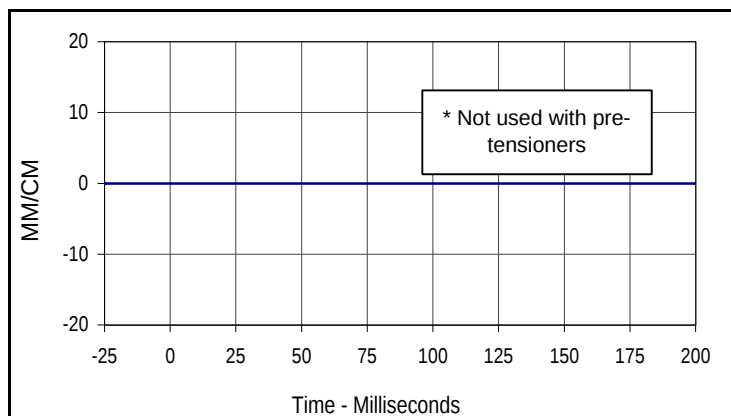
Curve Description			
Passenger Lap Belt Force			
CURNO	Type	SAE Class	Units
085	FIL	60	Newtons
Max	Time	Min	Time
7020.0	59.4	-8.6	184.4



Curve Description			
Passenger Shoulder Belt Force			
CURNO	Type	SAE Class	Units
086	FIL	60	Newtons
Max	Time	Min	Time
6590.6	57.7	-37.5	153.3



Curve Description			
Passenger Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
087	FIL	60	MM
Max	Time	Min	Time
123.4	101.0	-46.8	194.9

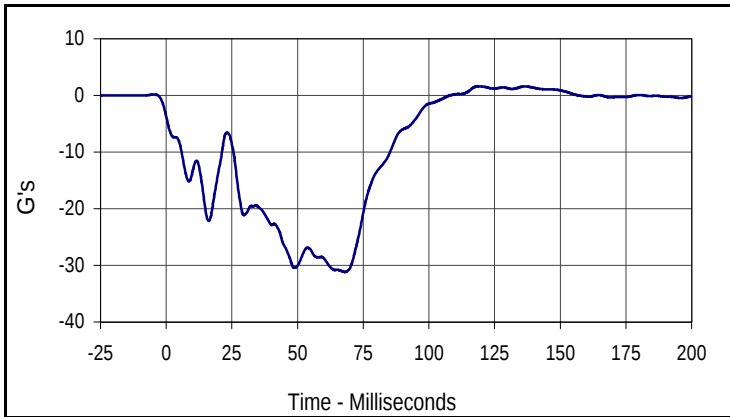


Curve Description			
Passenger Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
088	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

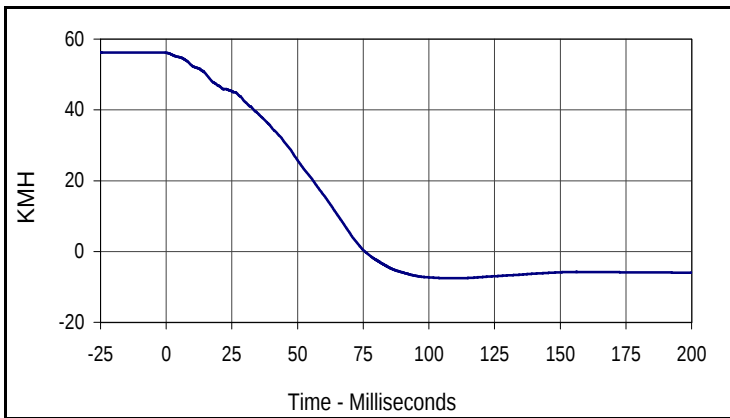
* Not used with pre-tensioners

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

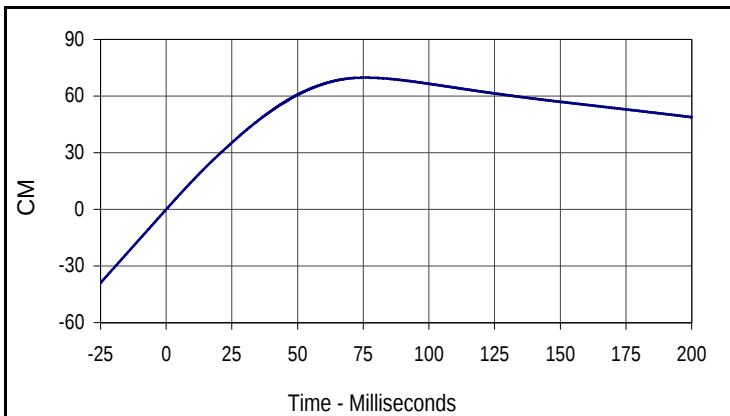
Test Date: 8/26/04
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Curve Description			
Vehicle Left Rear X			
CURNO	Type	SAE Class	Units
089	FIL	60	G's
Max	Time	Min	Time
1.6	118.6	-31.2	68.0



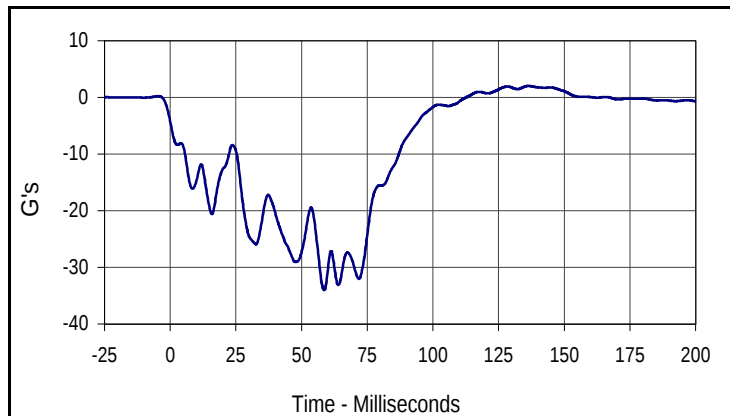
Curve Description			
Vehicle Left Rear X Velocity			
CURNO	Type	SAE Class	Units
089	IN1	180	KMH
Max	Time	Min	Time
56.1	0.0	-7.5	106.0



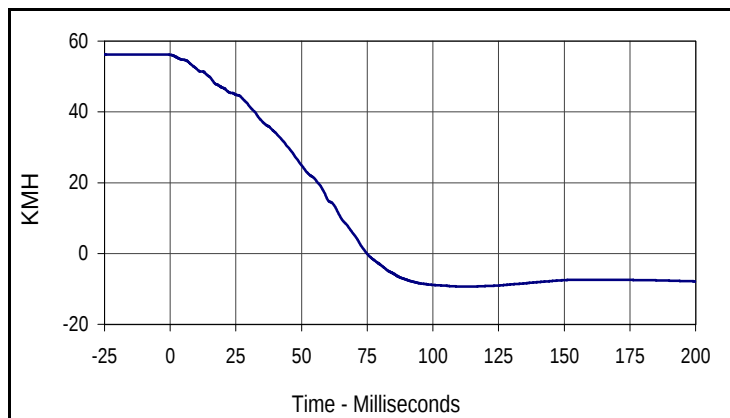
Curve Description			
Vehicle Left Rear X Displacement			
CURNO	Type	SAE Class	Units
089	IN2	180	CM
Max	Time	Min	Time
69.8	75.6	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

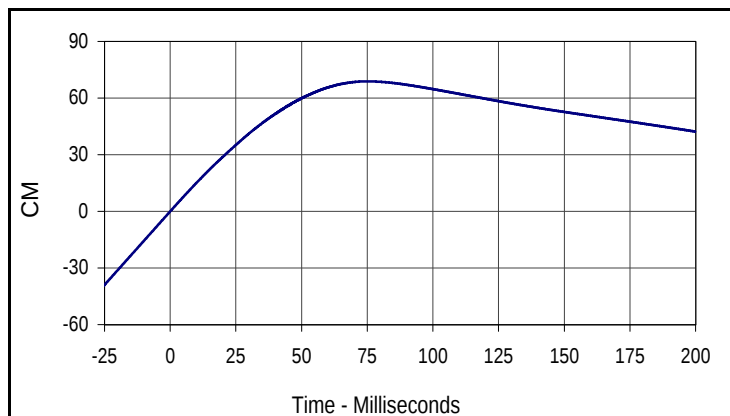
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Right Rear X			
CURNO	Type	SAE Class	Units
090	FIL	60	G's
Max	Time	Min	Time
2.0	136.4	-34.0	58.6



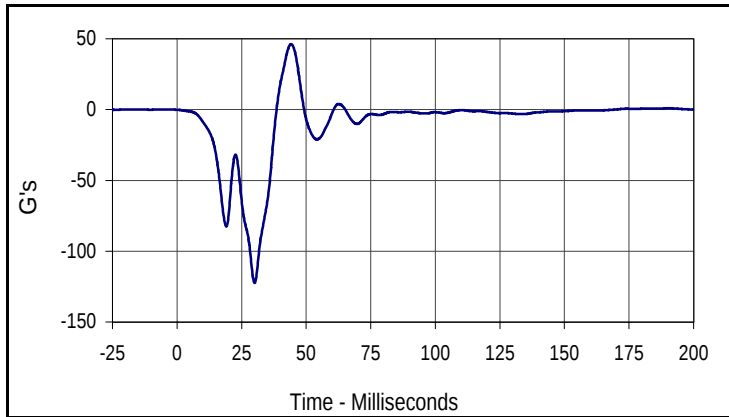
Curve Description			
Vehicle Right Rear X Velocity			
CURNO	Type	SAE Class	Units
090	IN1	180	KMH
Max	Time	Min	Time
56.1	0.0	-9.4	112.9



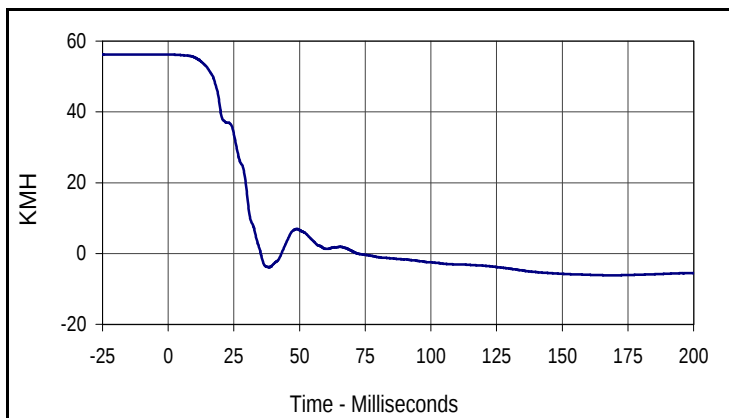
Curve Description			
Vehicle Right Rear X Displacement			
CURNO	Type	SAE Class	Units
090	IN2	180	CM
Max	Time	Min	Time
68.8	74.8	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

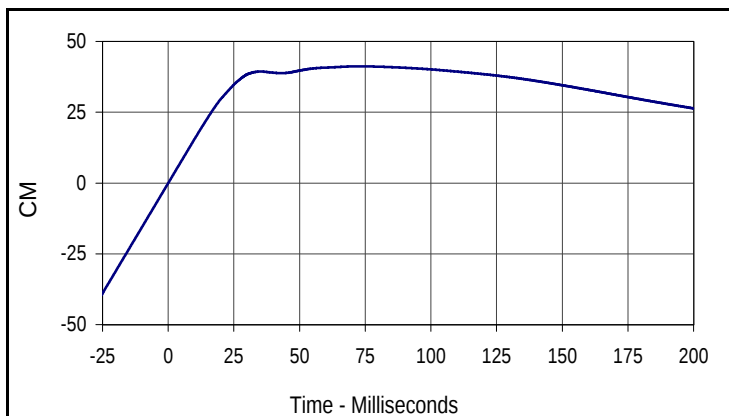
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Engine Top X			
CURNO	Type	SAE Class	Units
091	FIL	60	G's
Max	Time	Min	Time
46.2	44.2	-122.3	30.1



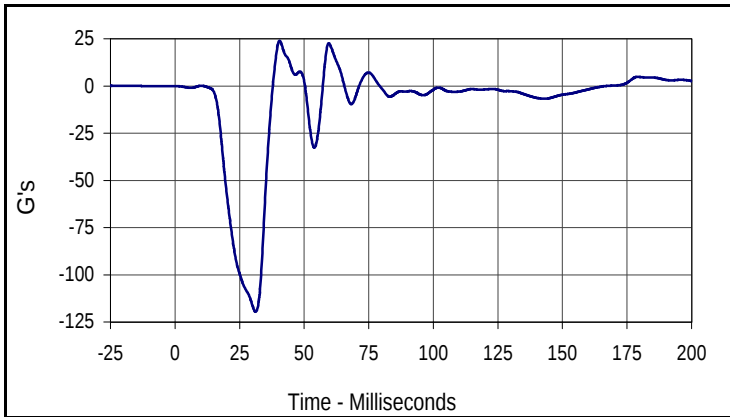
Curve Description			
Vehicle Engine Top X Velocity			
CURNO	Type	SAE Class	Units
091	IN1	180	KMH
Max	Time	Min	Time
56.2	1.0	-6.2	169.0



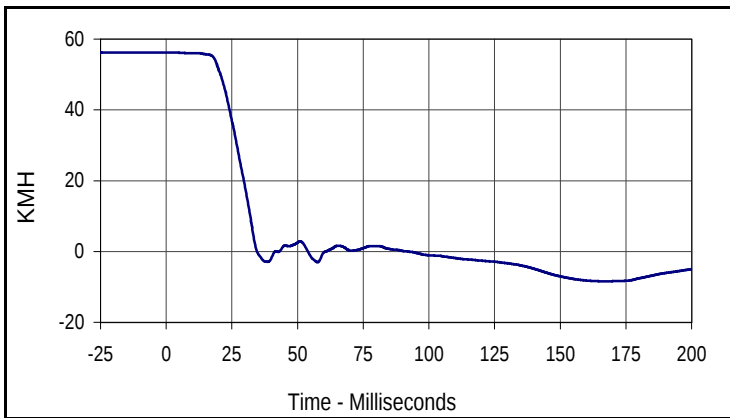
Curve Description			
Vehicle Engine Top X Displacement			
CURNO	Type	SAE Class	Units
091	IN2	180	CM
Max	Time	Min	Time
41.2	72.0	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

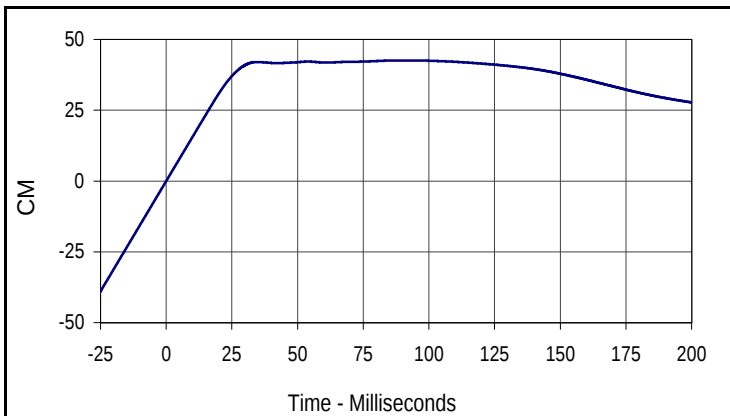
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Engine Bottom X			
CURNO	Type	SAE Class	Units
092	FIL	60	G's
Max	Time	Min	Time
24.0	40.5	-119.6	31.2



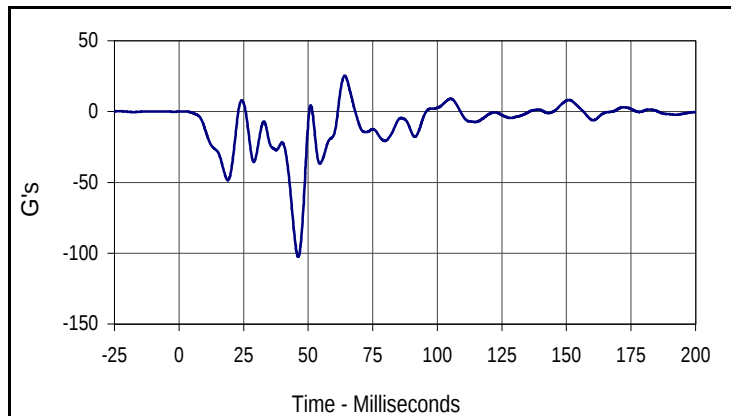
Curve Description			
Vehicle Engine Bottom X Velocity			
CURNO	Type	SAE Class	Units
092	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-8.4	165.7



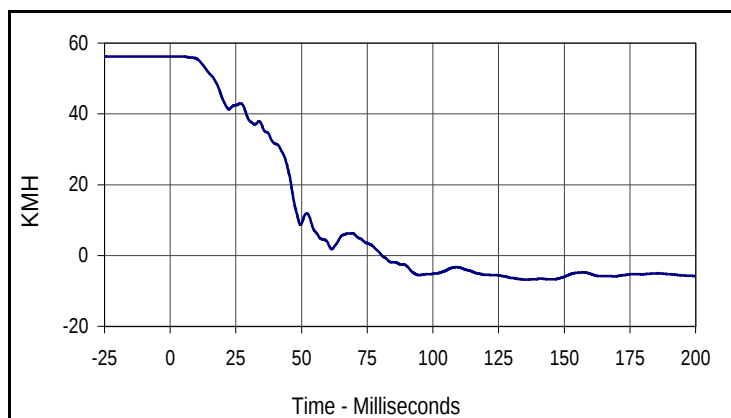
Curve Description			
Vehicle Engine Bottom X Displacement			
CURNO	Type	SAE Class	Units
092	IN2	180	CM
Max	Time	Min	Time
42.6	92.1	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

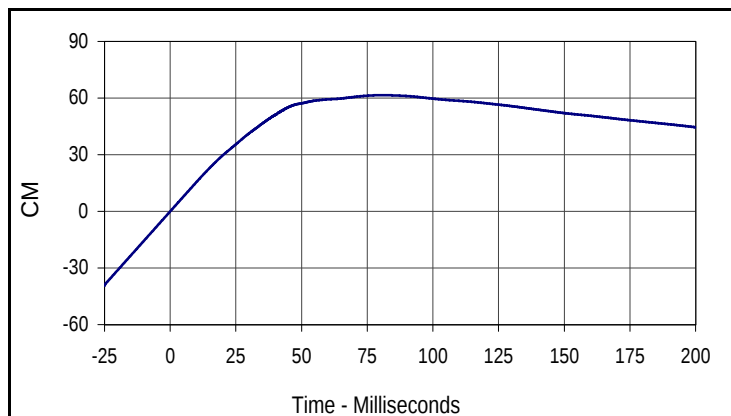
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Left Brake Caliper X			
CURNO	Type	SAE Class	Units
093	FIL	60	G's
Max	Time	Min	Time
25.5	64.2	-102.6	46.2



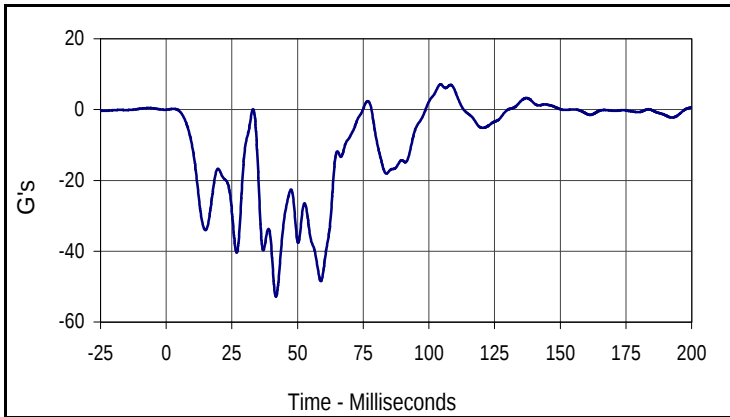
Curve Description			
Vehicle Left Brake Caliper X Velocity			
CURNO	Type	SAE Class	Units
093	IN1	180	KMH
Max	Time	Min	Time
56.2	4.3	-6.8	135.8



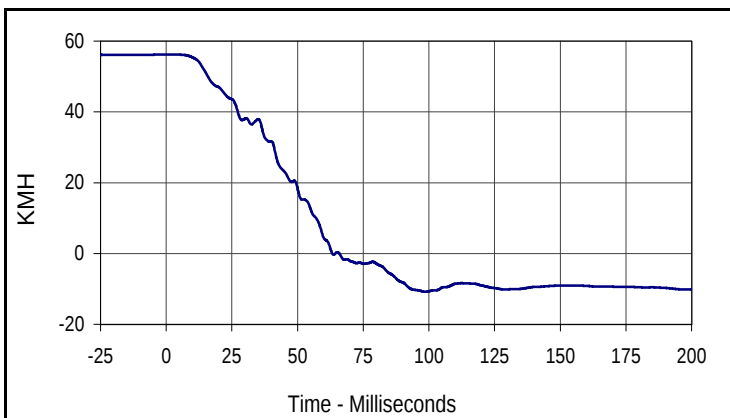
Curve Description			
Vehicle Left Brake Caliper X Displacement			
CURNO	Type	SAE Class	Units
093	IN2	180	CM
Max	Time	Min	Time
61.6	80.6	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

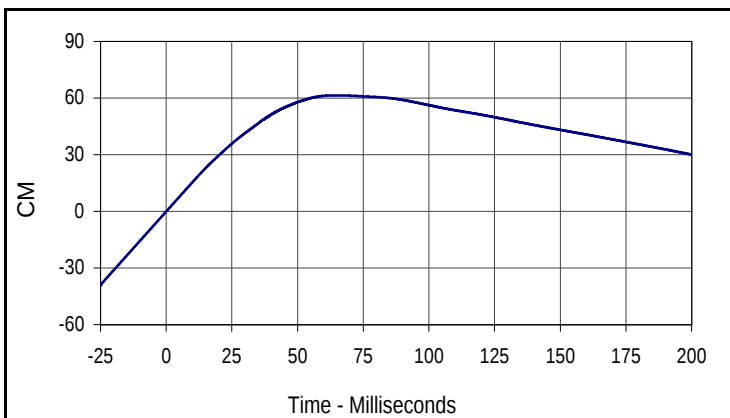
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Right Brake Caliper X			
CURNO	Type	SAE Class	Units
094	FIL	60	G's
Max	Time	Min	Time
7.2	104.4	-52.9	41.8



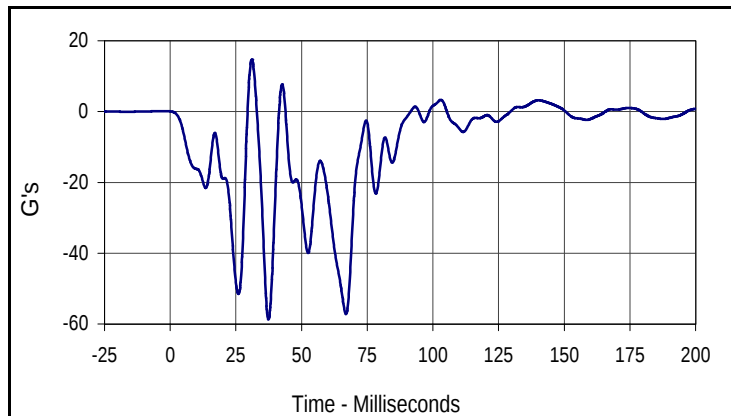
Curve Description			
Vehicle Right Brake Caliper X Velocity			
CURNO	Type	SAE Class	Units
094	IN1	180	KMH
Max	Time	Min	Time
56.2	4.1	-10.8	98.6



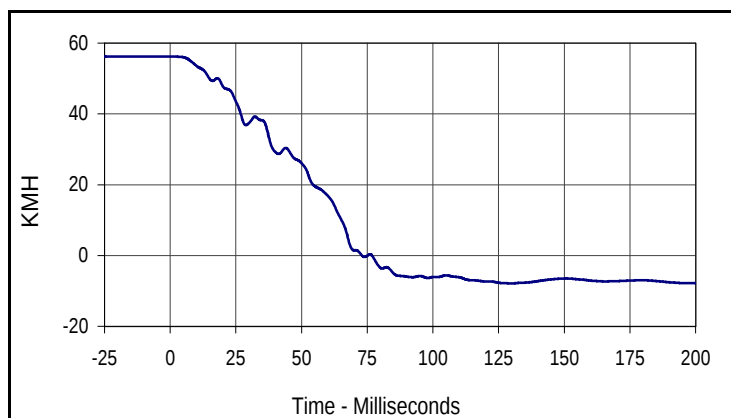
Curve Description			
Vehicle Right Brake Caliper X Displacement			
CURNO	Type	SAE Class	Units
094	IN2	180	CM
Max	Time	Min	Time
61.4	65.9	-0.1	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

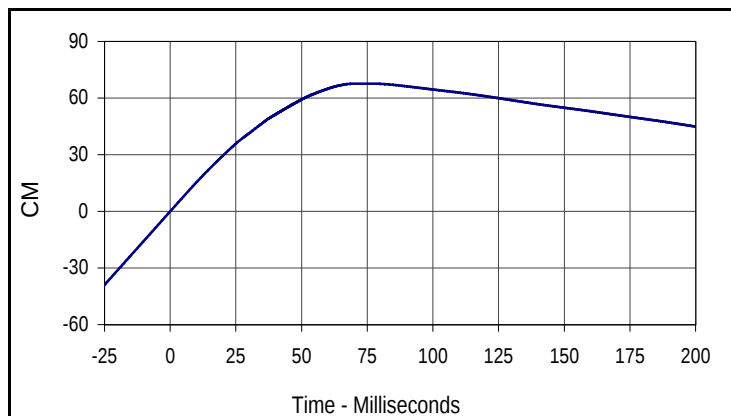
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Instrument Panel X			
CURNO	Type	SAE Class	Units
095	FIL	60	G's
Max	Time	Min	Time
14.7	31.1	-58.7	37.4



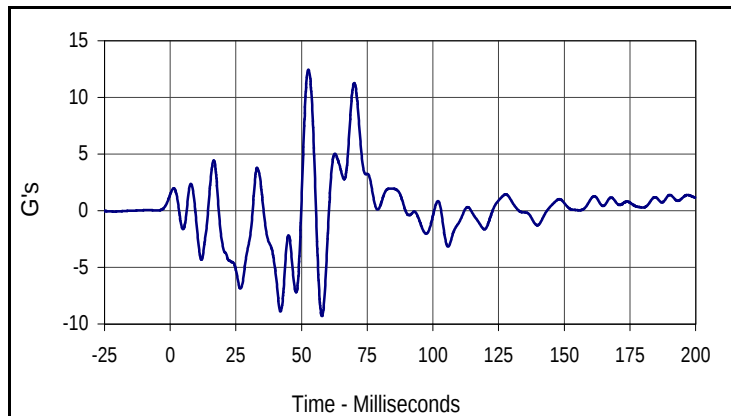
Curve Description			
Vehicle Instrument Panel X Velocity			
CURNO	Type	SAE Class	Units
095	IN1	180	KMH
Max	Time	Min	Time
56.2	0.0	-7.9	129.9



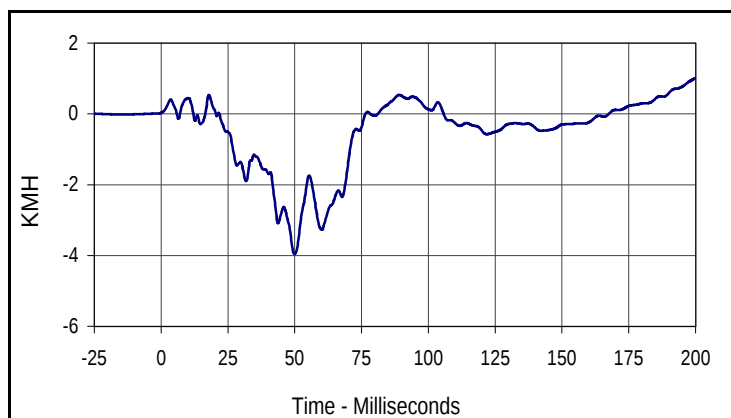
Curve Description			
Vehicle Instrument Panel X Displacement			
CURNO	Type	SAE Class	Units
095	IN2	180	CM
Max	Time	Min	Time
67.7	73.0	0.0	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

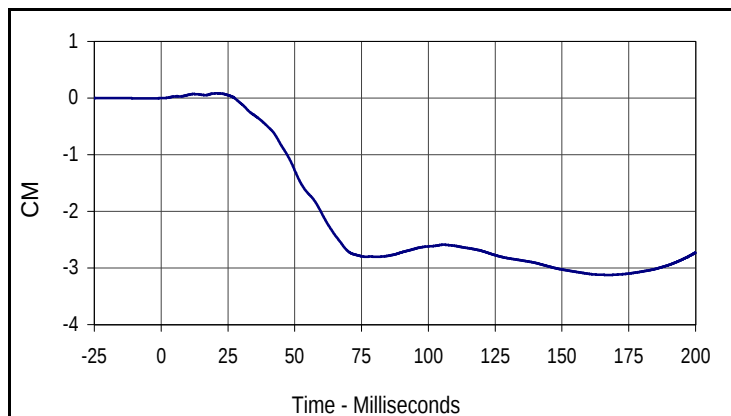
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Left Rear Z			
CURNO	Type	SAE Class	Units
096	FIL	60	G's
Max	Time	Min	Time
12.5	52.6	-9.3	57.8



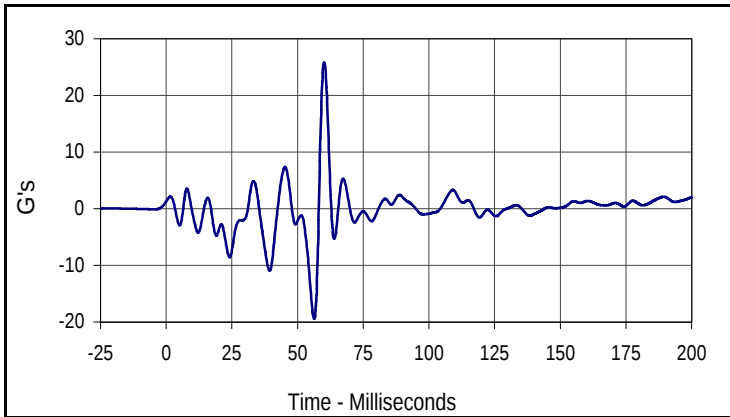
Curve Description			
Vehicle Left Rear Z Velocity			
CURNO	Type	SAE Class	Units
096	IN1	180	KMH
Max	Time	Min	Time
1.0	200.0	-4.0	49.9



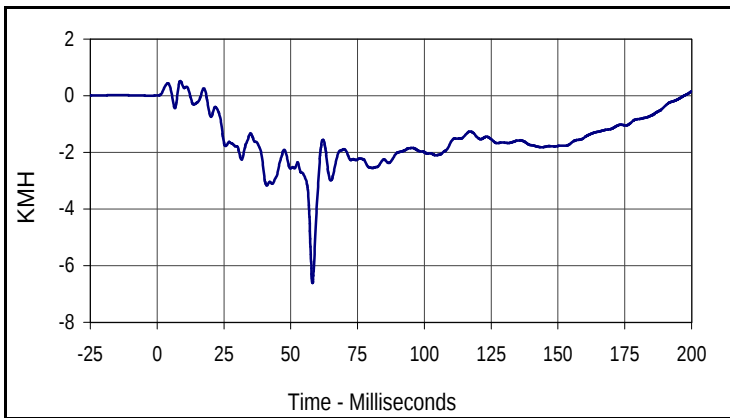
Curve Description			
Vehicle Left Rear Z Displacement			
CURNO	Type	SAE Class	Units
096	IN2	180	CM
Max	Time	Min	Time
0.1	20.5	-3.1	167.5

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

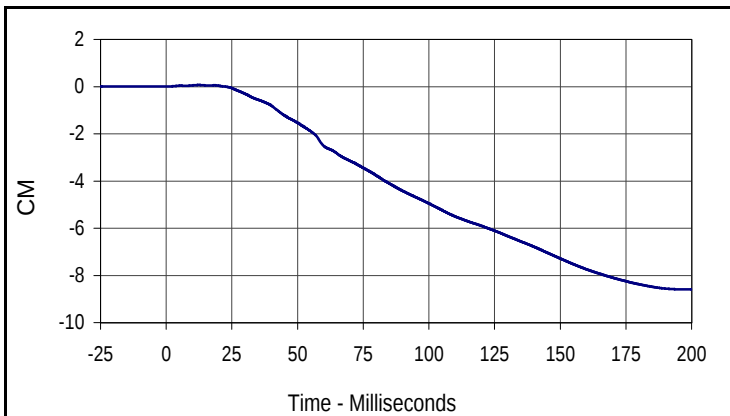
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Vehicle Right Rear Z			
CURNO	Type	SAE Class	Units
097	FIL	60	G's
Max	Time	Min	Time
25.8	60.1	-19.5	56.3



Curve Description			
Vehicle Right Rear Z Velocity			
CURNO	Type	SAE Class	Units
097	IN1	180	KMH
Max	Time	Min	Time
0.5	8.7	-6.6	58.2



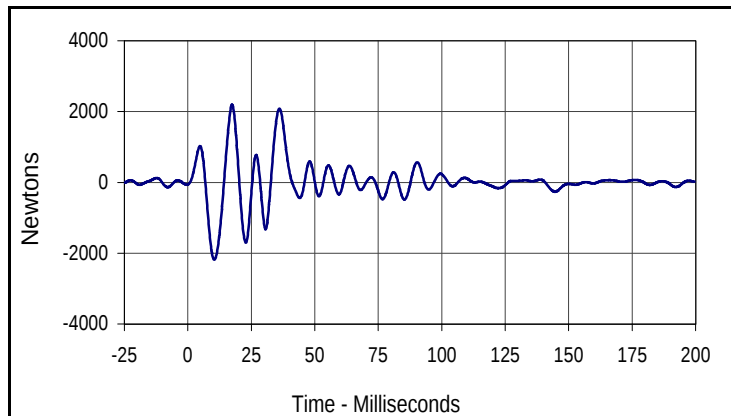
Curve Description			
Vehicle Right Rear Z Displacement			
CURNO	Type	SAE Class	Units
097	IN2	180	CM
Max	Time	Min	Time
0.1	12.4	-8.6	197.2

APPENDIX C

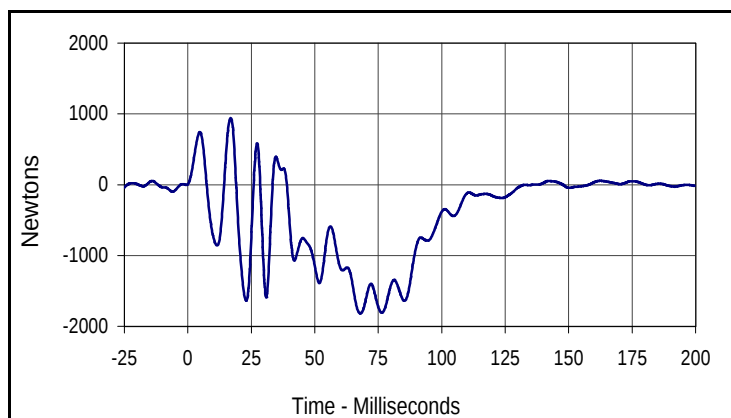
LOAD CELL BARRIER DATA PLOTS

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

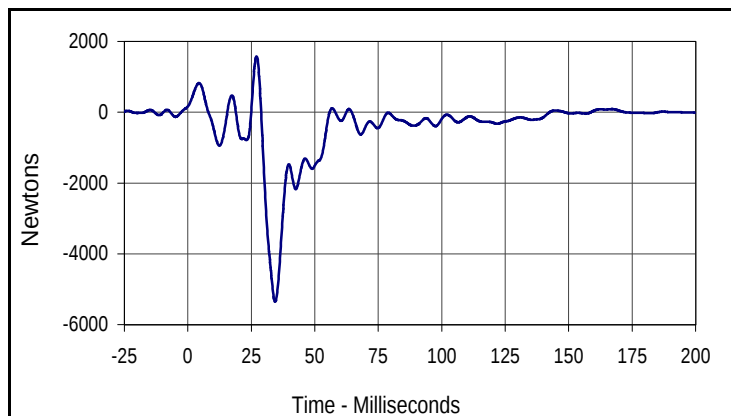
Test Date: 8/26/04
 NHTSA No.: M55200



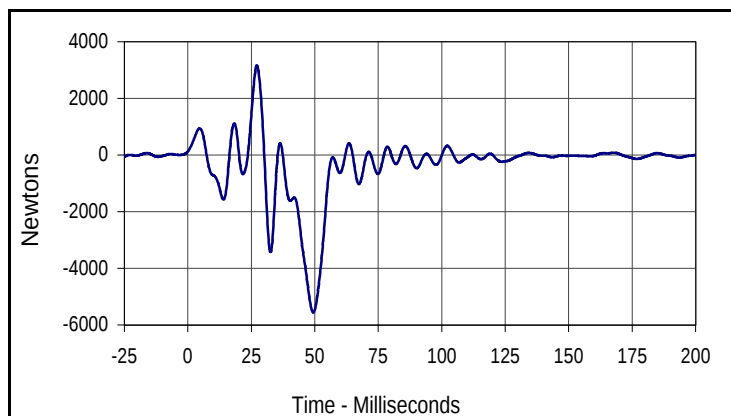
Curve Description			
Barrier Force A1			
CURNO	Type	SAE Class	Units
098	FIL	60	Newtons
Max	Time	Min	Time
2200.8	17.4	-2184.0	10.4



Curve Description			
Barrier Force B1			
CURNO	Type	SAE Class	Units
107	FIL	60	Newtons
Max	Time	Min	Time
942.0	16.9	-1817.1	67.9



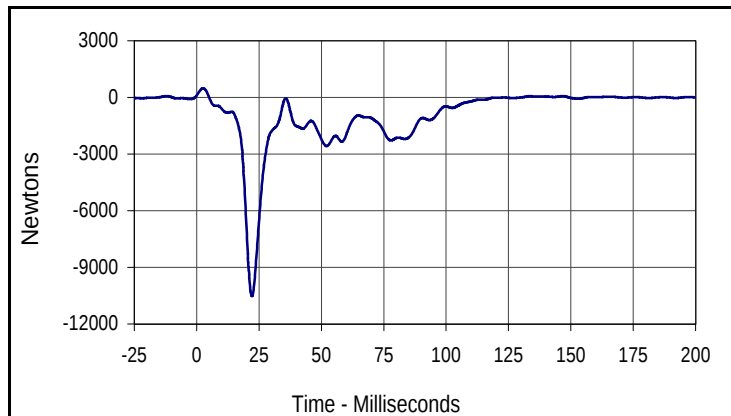
Curve Description			
Barrier Force C1			
CURNO	Type	SAE Class	Units
116	FIL	60	Newtons
Max	Time	Min	Time
1576.8	27.1	-5348.0	34.4



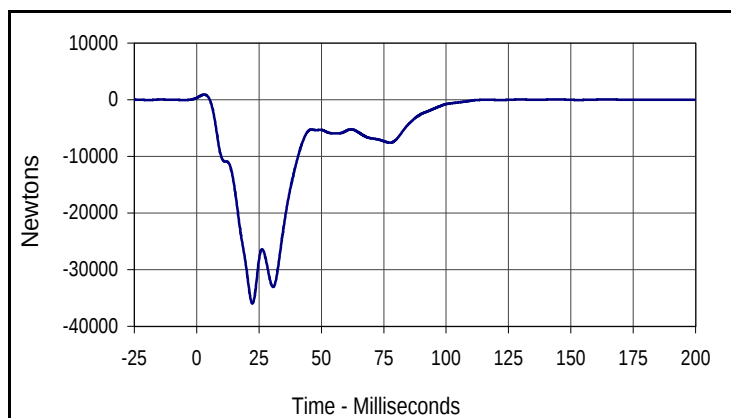
Curve Description			
Barrier Force D1			
CURNO	Type	SAE Class	Units
125	FIL	60	Newtons
Max	Time	Min	Time
3159.9	27.2	-5555.8	49.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

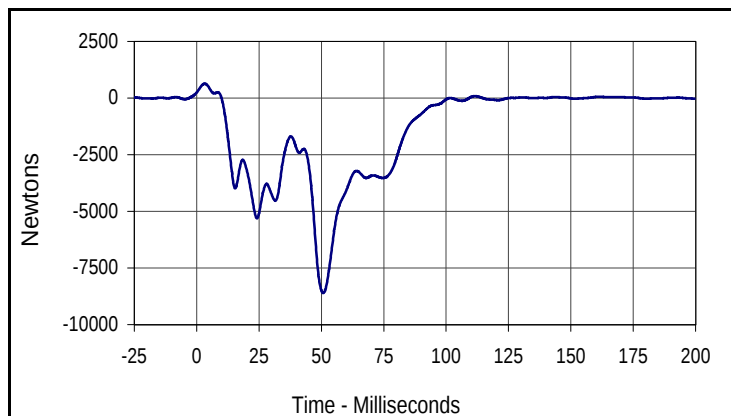
Test Date: 8/26/04
 NHTSA No.: M55200



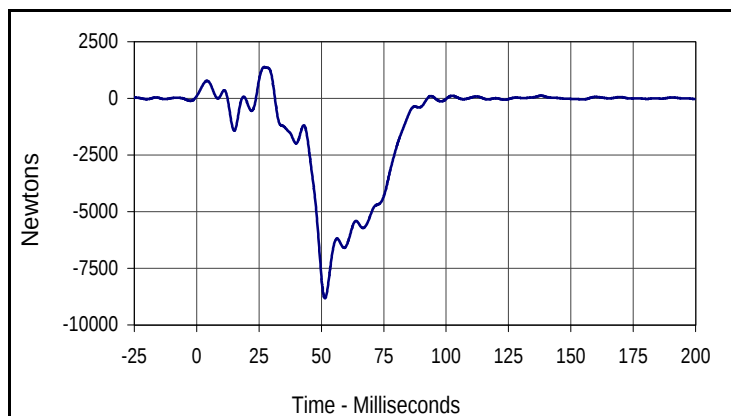
Curve Description			
Barrier Force A2			
CURNO	Type	SAE Class	Units
099	FIL	60	Newtons
Max	Time	Min	Time
480.3	2.6	-10528.7	22.2



Curve Description			
Barrier Force B2			
CURNO	Type	SAE Class	Units
108	FIL	60	Newtons
Max	Time	Min	Time
898.8	3.1	-35944.7	22.4



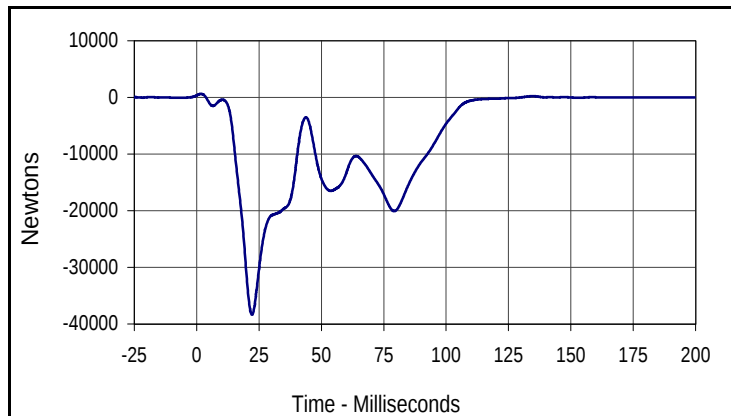
Curve Description			
Barrier Force C2			
CURNO	Type	SAE Class	Units
117	FIL	60	Newtons
Max	Time	Min	Time
630.8	3.3	-8604.5	50.7



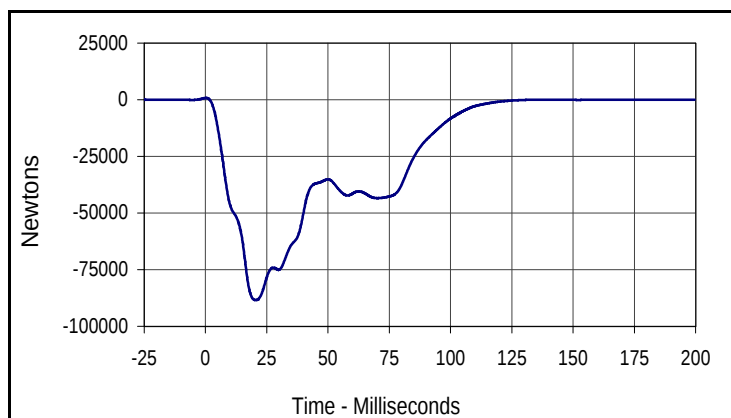
Curve Description			
Barrier Force D2			
CURNO	Type	SAE Class	Units
126	FIL	60	Newtons
Max	Time	Min	Time
1378.7	27.1	-8824.7	51.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

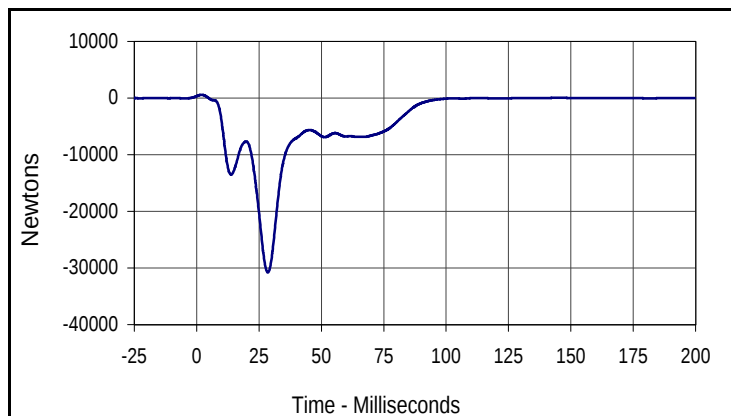
Test Date: 8/26/04
 NHTSA No.: M55200



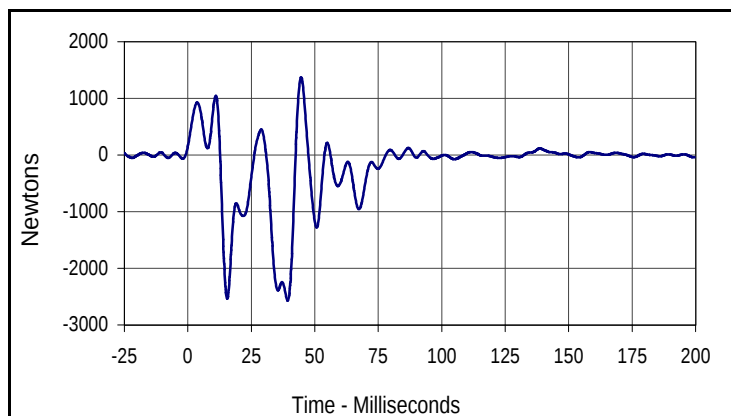
Curve Description			
Barrier Force A3			
CURNO	Type	SAE Class	Units
100	FIL	60	Newtons
Max	Time	Min	Time
621.1	1.7	-38367.1	22.2



Curve Description			
Barrier Force B3			
CURNO	Type	SAE Class	Units
109	FIL	60	Newtons
Max	Time	Min	Time
800.5	0.3	-88432.6	20.5



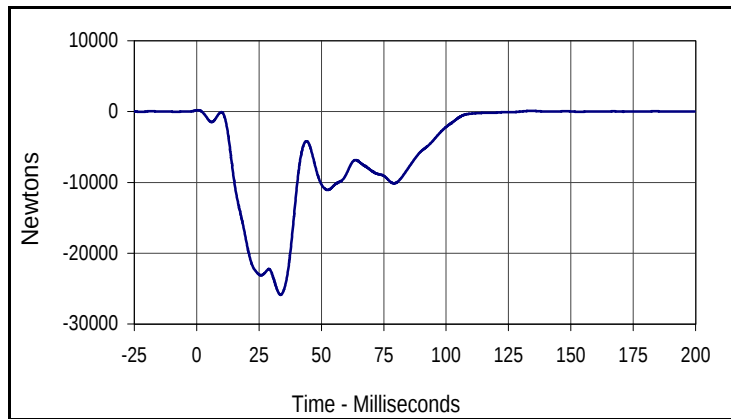
Curve Description			
Barrier Force C3			
CURNO	Type	SAE Class	Units
118	FIL	60	Newtons
Max	Time	Min	Time
574.7	2.0	-30788.4	28.5



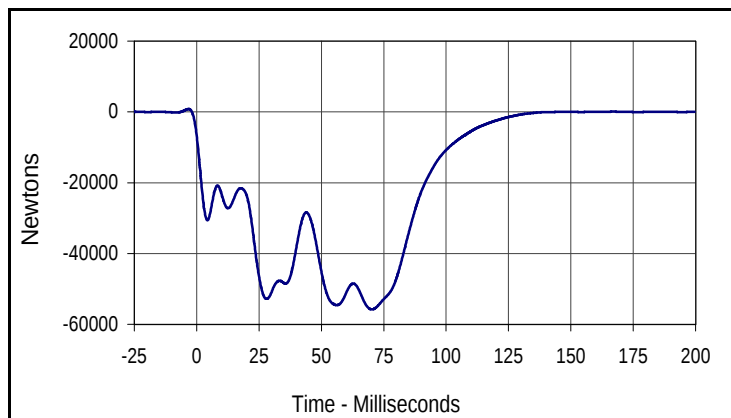
Curve Description			
Barrier Force D3			
CURNO	Type	SAE Class	Units
127	FIL	60	Newtons
Max	Time	Min	Time
1368.5	44.6	-2567.9	39.3

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

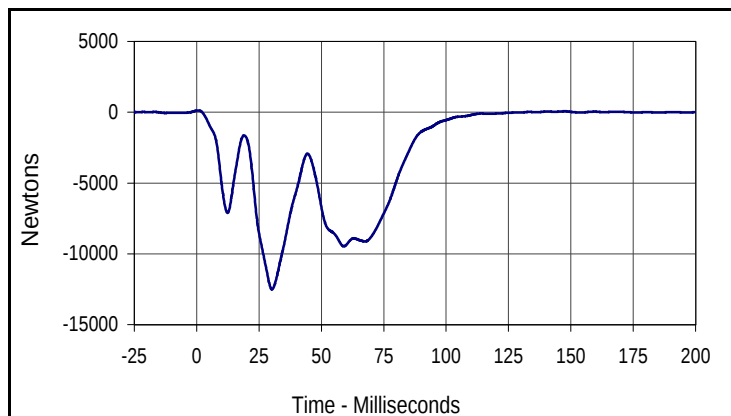
Test Date: 8/26/04
 NHTSA No.: M55200



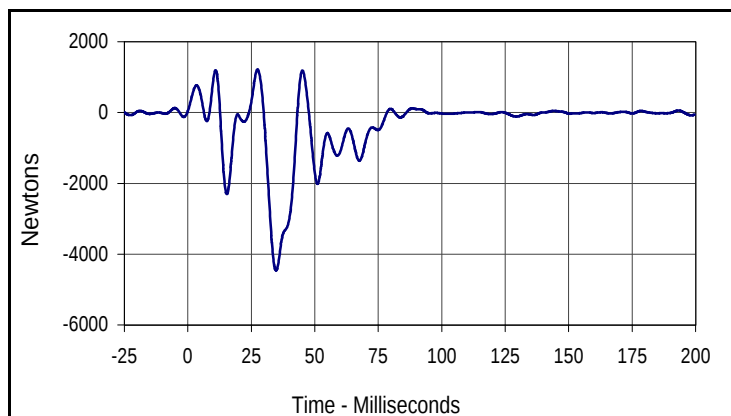
Curve Description			
Barrier Force A4			
CURNO	Type	SAE Class	Units
101	FIL	60	Newtons
Max	Time	Min	Time
195.2	0.5	-25864.9	33.6



Curve Description			
Barrier Force B4			
CURNO	Type	SAE Class	Units
110	FIL	60	Newtons
Max	Time	Min	Time
74.5	167.0	-55793.8	70.2



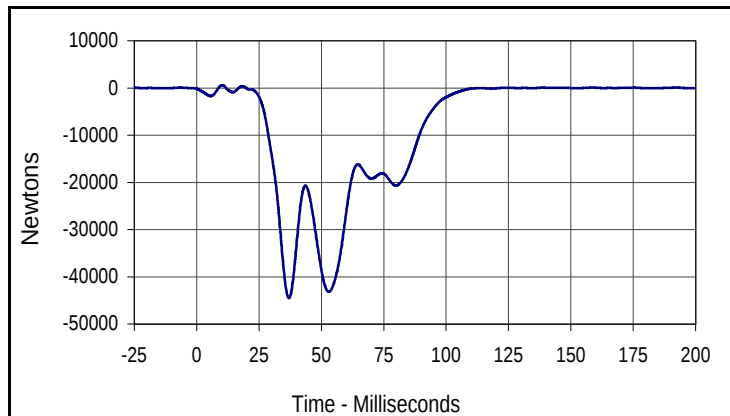
Curve Description			
Barrier Force C4			
CURNO	Type	SAE Class	Units
119	FIL	60	Newtons
Max	Time	Min	Time
129.5	0.4	-12514.2	30.2



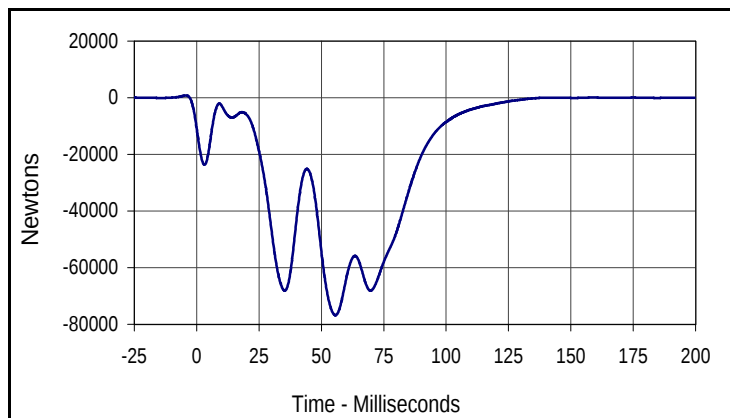
Curve Description			
Barrier Force D4			
CURNO	Type	SAE Class	Units
128	FIL	60	Newtons
Max	Time	Min	Time
1221.3	27.4	-4459.1	34.7

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

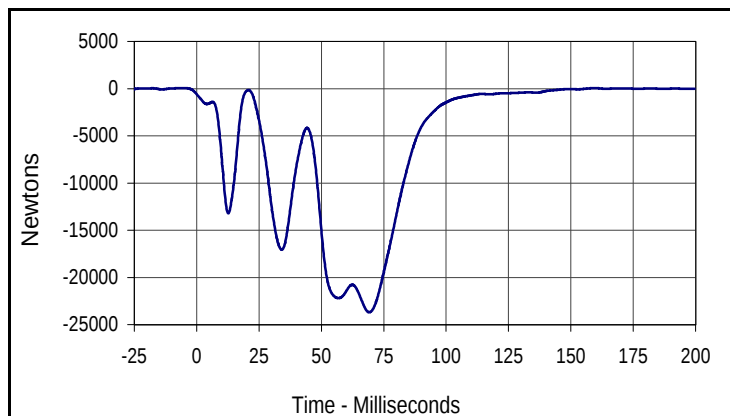
Test Date: 8/26/04
 NHTSA No.: M55200



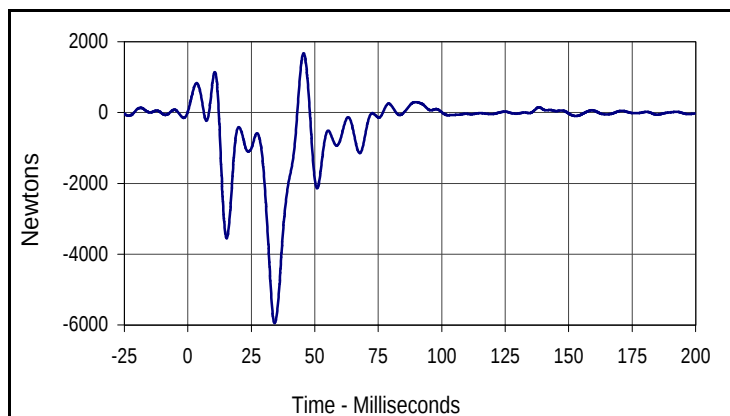
Curve Description			
Barrier Force A5			
CURNO	Type	SAE Class	Units
102	FIL	60	Newtons
Max	Time	Min	Time
608.4	10.2	-44497.7	37.0



Curve Description			
Barrier Force B5			
CURNO	Type	SAE Class	Units
111	FIL	60	Newtons
Max	Time	Min	Time
99.7	159.1	-76801.2	55.6



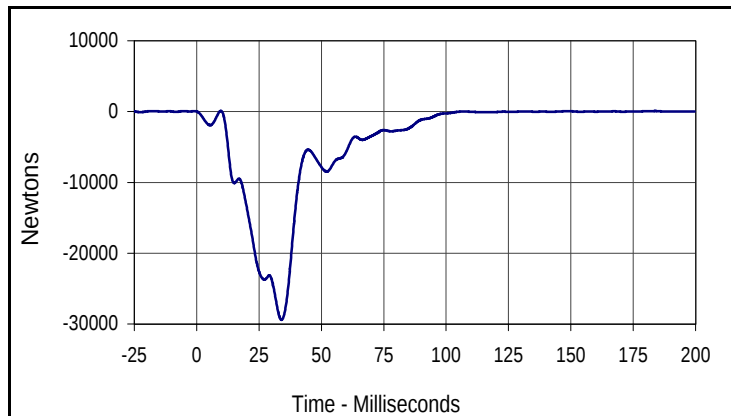
Curve Description			
Barrier Force C5			
CURNO	Type	SAE Class	Units
120	FIL	60	Newtons
Max	Time	Min	Time
63.5	159.5	-23689.5	69.2



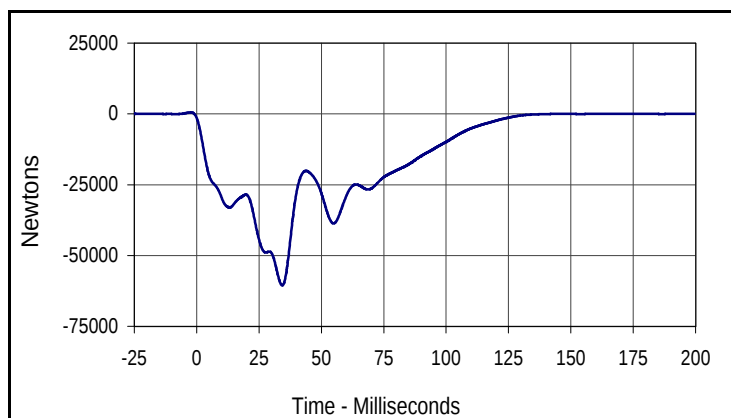
Curve Description			
Barrier Force D5			
CURNO	Type	SAE Class	Units
129	FIL	60	Newtons
Max	Time	Min	Time
1677.0	45.6	-5947.3	34.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

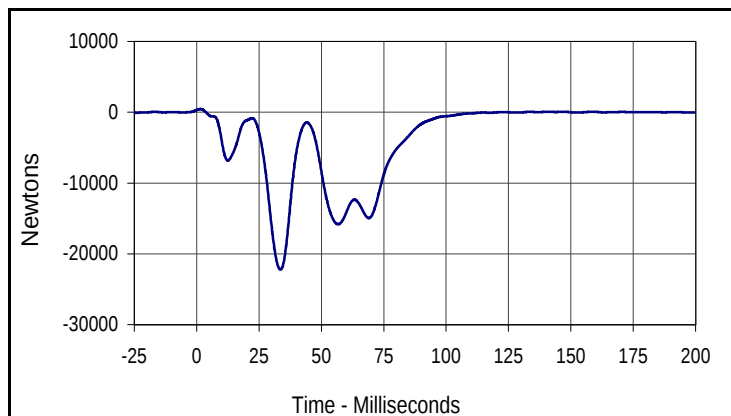
Test Date: 8/26/04
 NHTSA No.: M55200



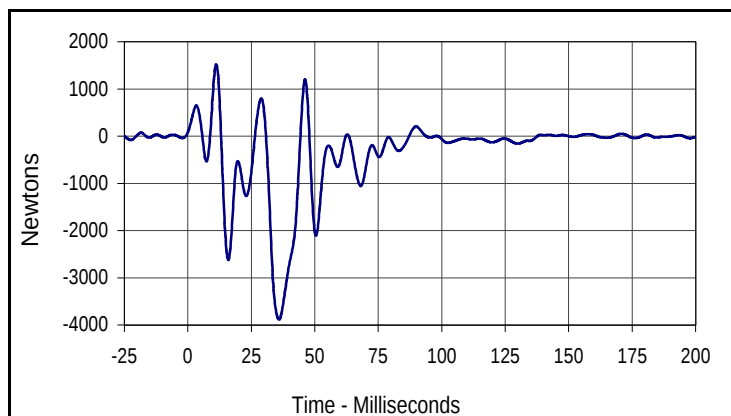
Curve Description			
Barrier Force A6			
CURNO	Type	SAE Class	Units
103	FIL	60	Newtons
Max	Time	Min	Time
101.0	9.7	-29413.5	34.0



Curve Description			
Barrier Force B6			
CURNO	Type	SAE Class	Units
112	FIL	60	Newtons
Max	Time	Min	Time
28.5	159.1	-60539.4	34.3



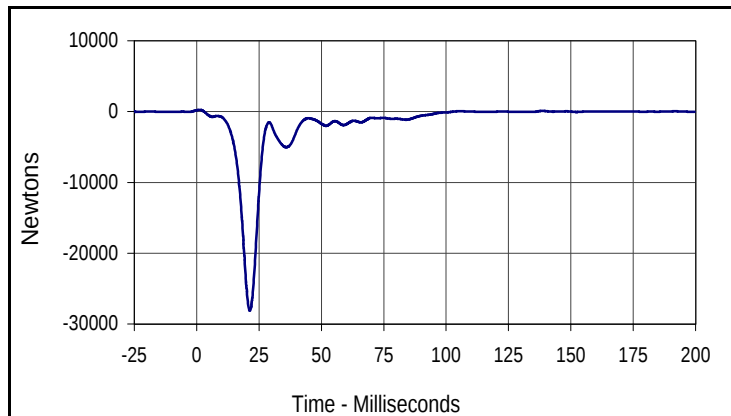
Curve Description			
Barrier Force C6			
CURNO	Type	SAE Class	Units
121	FIL	60	Newtons
Max	Time	Min	Time
447.1	1.5	-22241.1	33.6



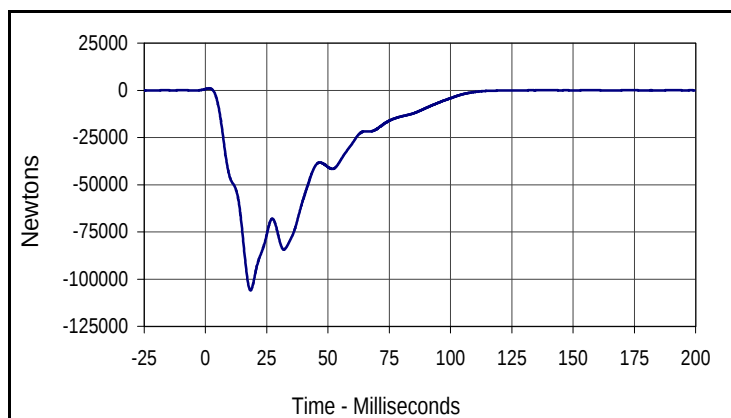
Curve Description			
Barrier Force D6			
CURNO	Type	SAE Class	Units
130	FIL	60	Newtons
Max	Time	Min	Time
1521.1	11.2	-3887.3	35.9

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

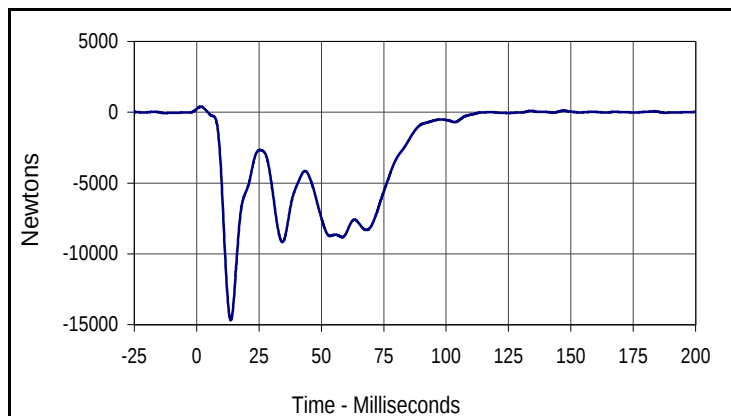
Test Date: 8/26/04
 NHTSA No.: M55200



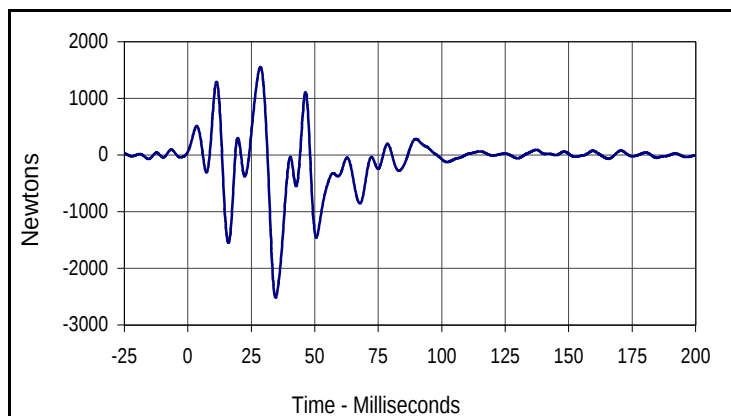
Curve Description			
Barrier Force A7			
CURNO	Type	SAE Class	Units
104	FIL	60	Newtons
Max	Time	Min	Time
243.7	1.2	-28113.8	21.3



Curve Description			
Barrier Force B7			
CURNO	Type	SAE Class	Units
113	FIL	60	Newtons
Max	Time	Min	Time
1042.8	1.5	-106037.9	18.4



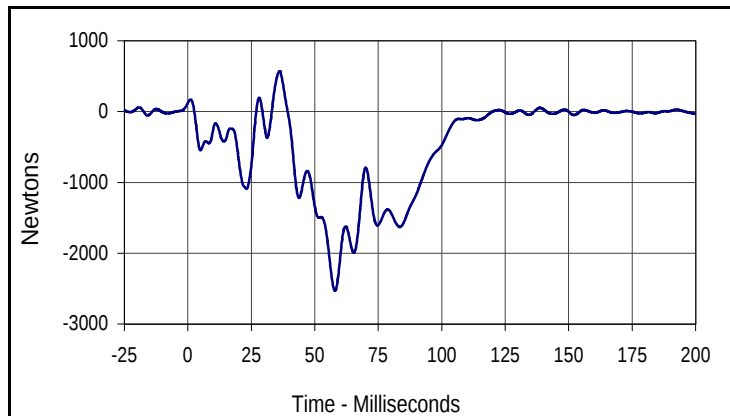
Curve Description			
Barrier Force C7			
CURNO	Type	SAE Class	Units
122	FIL	60	Newtons
Max	Time	Min	Time
400.1	1.7	-14680.7	13.7



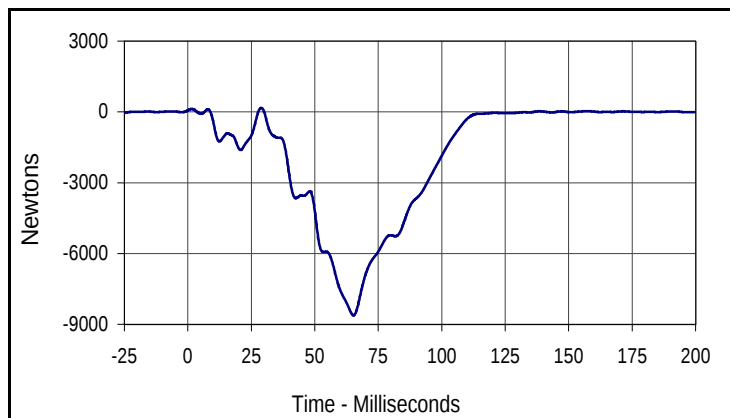
Curve Description			
Barrier Force D7			
CURNO	Type	SAE Class	Units
131	FIL	60	Newtons
Max	Time	Min	Time
1556.0	28.6	-2516.3	34.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

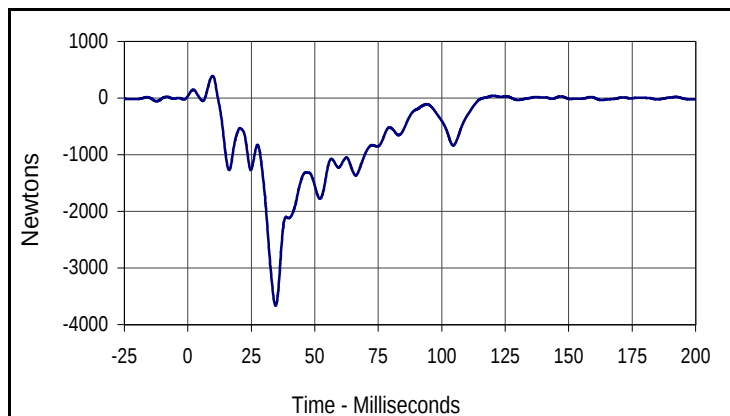
Test Date: 8/26/04
 NHTSA No.: M55200



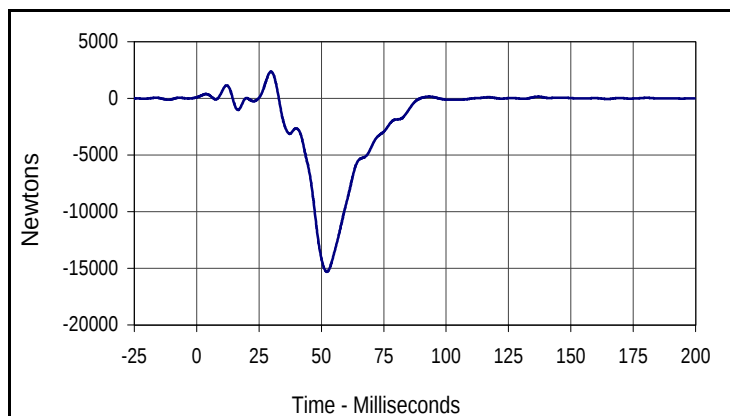
Curve Description			
Barrier Force A8			
CURNO	Type	SAE Class	Units
105	FIL	60	Newtons
Max	Time	Min	Time
569.7	36.1	-2531.3	57.9



Curve Description			
Barrier Force B8			
CURNO	Type	SAE Class	Units
114	FIL	60	Newtons
Max	Time	Min	Time
171.0	28.9	-8616.7	65.3



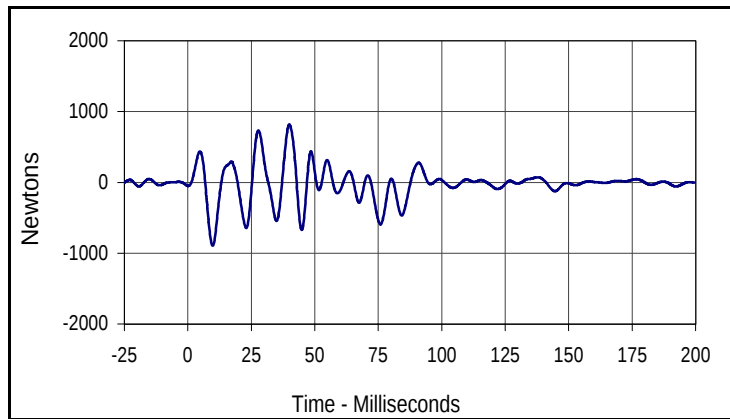
Curve Description			
Barrier Force C8			
CURNO	Type	SAE Class	Units
123	FIL	60	Newtons
Max	Time	Min	Time
390.6	9.8	-3665.4	34.6



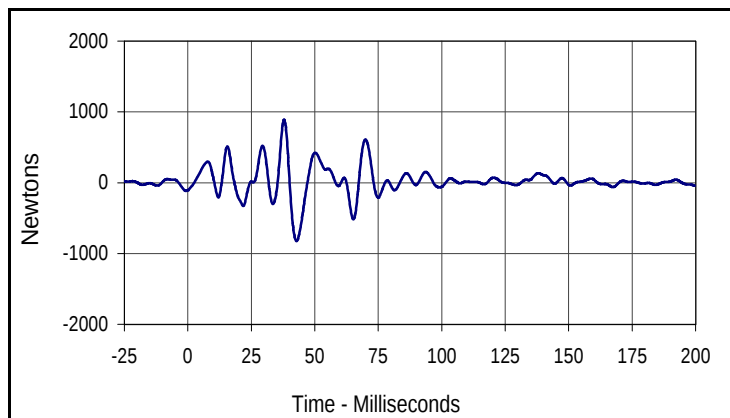
Curve Description			
Barrier Force D8			
CURNO	Type	SAE Class	Units
132	FIL	60	Newtons
Max	Time	Min	Time
2360.6	29.8	-15308.1	52.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

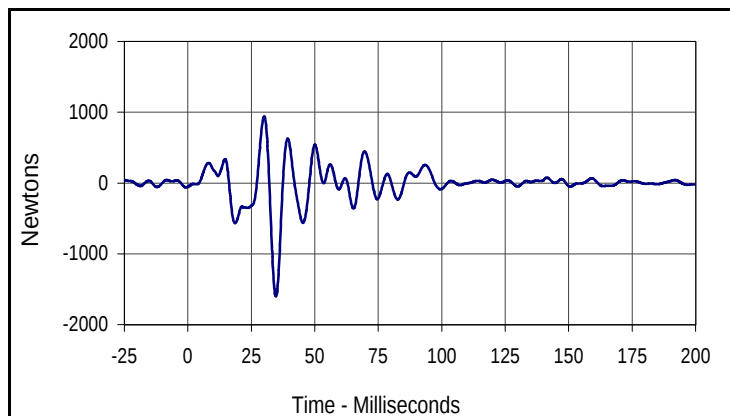
Test Date: 8/26/04
 NHTSA No.: M55200



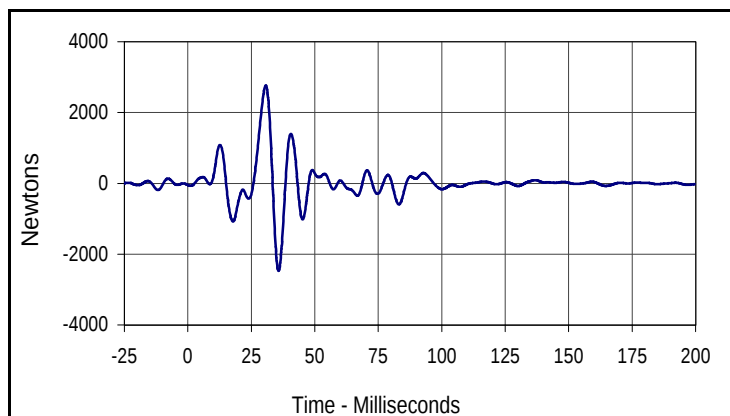
Curve Description			
Barrier Force A9			
CURNO	Type	SAE Class	Units
106	FIL	60	Newtons
Max	Time	Min	Time
819.9	40.0	-894.3	9.8



Curve Description			
Barrier Force B9			
CURNO	Type	SAE Class	Units
115	FIL	60	Newtons
Max	Time	Min	Time
889.0	37.9	-824.2	42.8



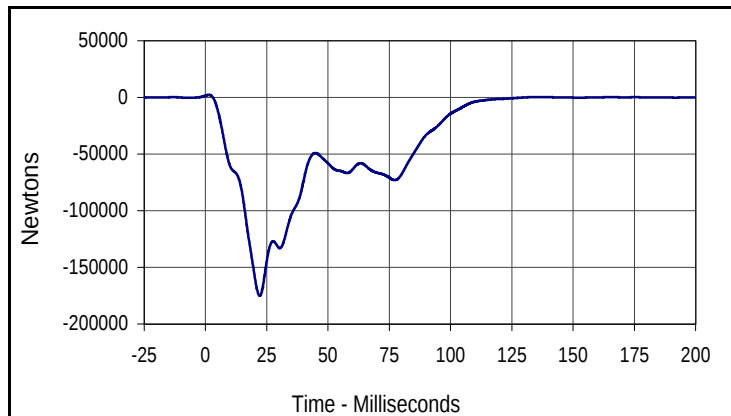
Curve Description			
Barrier Force C9			
CURNO	Type	SAE Class	Units
124	FIL	60	Newtons
Max	Time	Min	Time
939.9	30.1	-1603.5	34.7



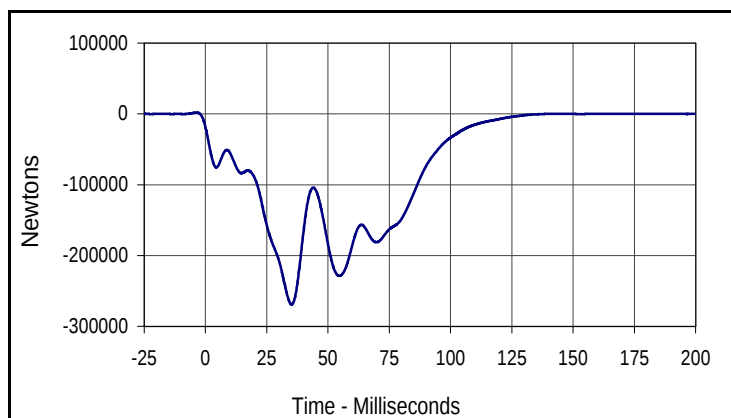
Curve Description			
Barrier Force D9			
CURNO	Type	SAE Class	Units
133	FIL	60	Newtons
Max	Time	Min	Time
2763.9	30.7	-2471.8	35.7

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

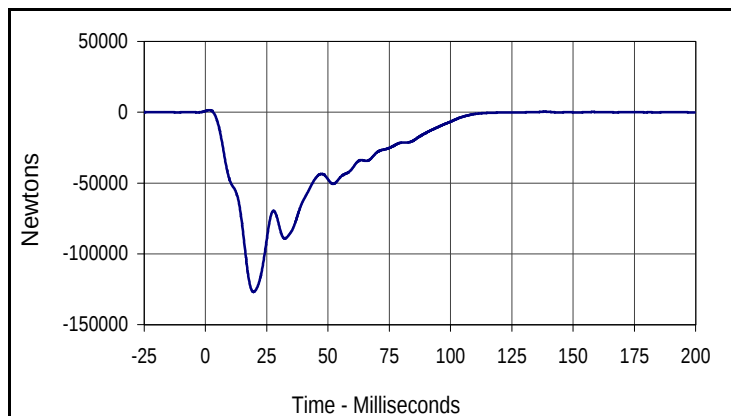
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Barrier Force Sum Group 1			
CURNO	Type	SAE Class	Units
001	SUM	60	Newtons
Max	Time	Min	Time
2274.2	1.4	-175088.7	22.1



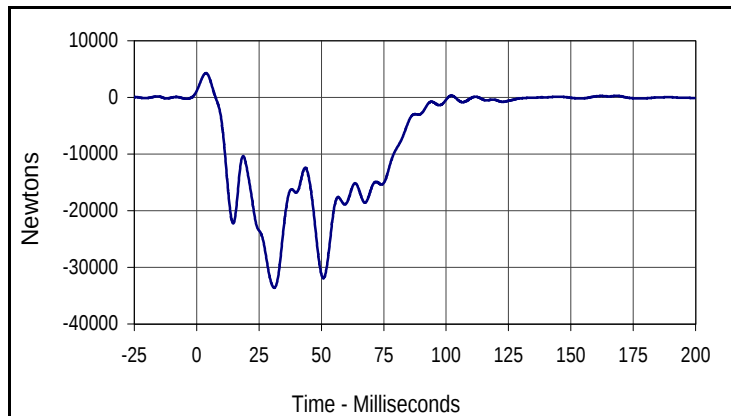
Curve Description			
Barrier Force Sum Group 2			
CURNO	Type	SAE Class	Units
002	SUM	60	Newtons
Max	Time	Min	Time
229.7	158.7	-269135.0	35.1



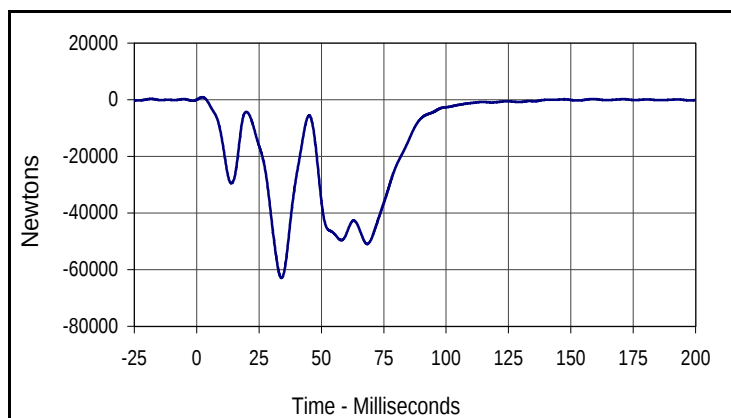
Curve Description			
Barrier Force Sum Group 3			
CURNO	Type	SAE Class	Units
003	SUM	60	Newtons
Max	Time	Min	Time
1521.7	1.5	-126843.2	19.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

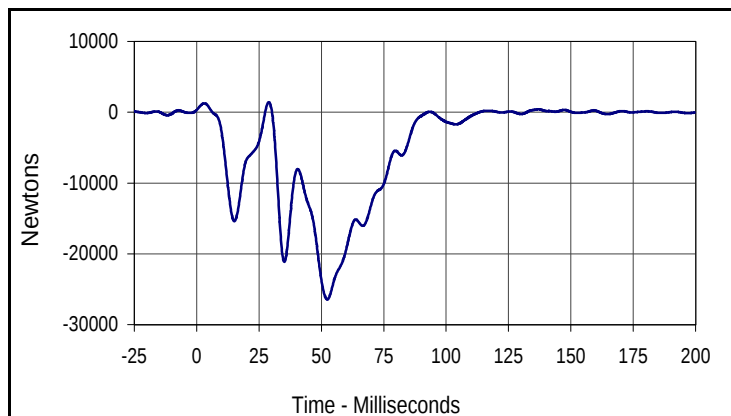
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Barrier Force Sum Group 4			
CURNO	Type	SAE Class	Units
004	SUM	60	Newtons
Max	Time	Min	Time
4272.0	3.7	-33605.1	31.1



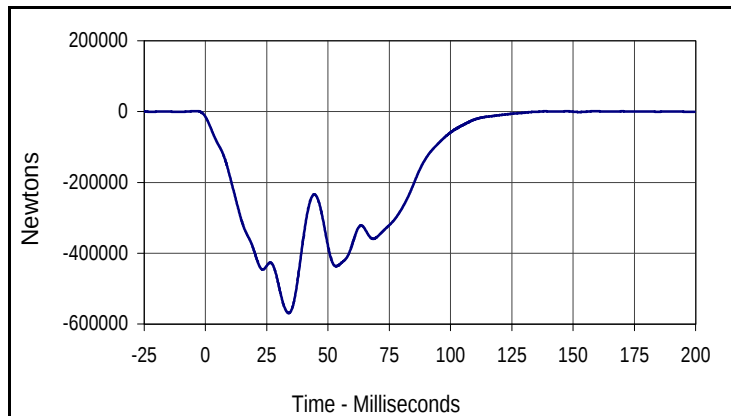
Curve Description			
Barrier Force Sum Group 5			
CURNO	Type	SAE Class	Units
005	SUM	60	Newtons
Max	Time	Min	Time
908.1	2.3	-62974.9	34.0



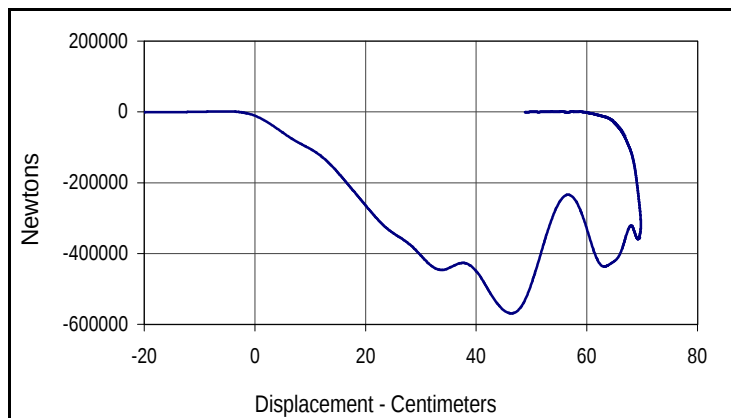
Curve Description			
Barrier Force Sum Group 6			
CURNO	Type	SAE Class	Units
006	SUM	60	Newtons
Max	Time	Min	Time
1428.8	28.9	-26432.7	52.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Barrier Force Total Sum			
CURNO	Type	SAE Class	Units
007	SUM	60	Newtons
Max	Time	Min	Time
1161.9	159.2	-569013.7	33.9



Curve Description			
Barrier Force Total Sum vs. Displ.			
CURNO	Type	SAE Class	Units
001	XVY	60	Newtons
Max	CM	Min	CM
1161.9	55.4	-569013.7	46.3

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program: 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

Location	Units	Max	Time	Min	Time
Barrier Force A1	Newtons	2200.8	17.4	-2184.0	10.4
Barrier Force A2	Newtons	480.3	2.6	-10528.7	22.2
Barrier Force A3	Newtons	621.1	1.7	-38367.1	22.2
Barrier Force A4	Newtons	195.2	0.5	-25864.9	33.6
Barrier Force A5	Newtons	608.4	10.2	-44497.7	37.0
Barrier Force A6	Newtons	101.0	9.7	-29413.5	34.0
Barrier Force A7	Newtons	243.7	1.2	-28113.8	21.3
Barrier Force A8	Newtons	569.7	36.1	-2531.3	57.9
Barrier Force A9	Newtons	819.9	40.0	-894.3	9.8
Barrier Force B1	Newtons	942.0	16.9	-1817.1	67.9
Barrier Force B2	Newtons	898.8	3.1	-35944.7	22.4
Barrier Force B3	Newtons	800.5	0.3	-88432.6	20.5
Barrier Force B4	Newtons	74.5	167.0	-55793.8	70.2
Barrier Force B5	Newtons	99.7	159.1	-76801.2	55.6
Barrier Force B6	Newtons	28.5	159.1	-60539.4	34.3
Barrier Force B7	Newtons	1042.8	1.5	-106037.9	18.4
Barrier Force B8	Newtons	171.0	28.9	-8616.7	65.3
Barrier Force B9	Newtons	889.0	37.9	-824.2	42.8
Barrier Force C1	Newtons	1576.8	27.1	-5348.0	34.4
Barrier Force C2	Newtons	630.8	3.3	-8604.5	50.7
Barrier Force C3	Newtons	574.7	2.0	-30788.4	28.5
Barrier Force C4	Newtons	129.5	0.4	-12514.2	30.2
Barrier Force C5	Newtons	63.5	159.5	-23689.5	69.2
Barrier Force C6	Newtons	447.1	1.5	-22241.1	33.6
Barrier Force C7	Newtons	400.1	1.7	-14680.7	13.7
Barrier Force C8	Newtons	390.6	9.8	-3665.4	34.6
Barrier Force C9	Newtons	939.9	30.1	-1603.5	34.7
Barrier Force D1	Newtons	3159.9	27.2	-5555.8	49.4
Barrier Force D2	Newtons	1378.7	27.1	-8824.7	51.4
Barrier Force D3	Newtons	1368.5	44.6	-2567.9	39.3
Barrier Force D4	Newtons	1221.3	27.4	-4459.1	34.7
Barrier Force D5	Newtons	1677.0	45.6	-5947.3	34.2
Barrier Force D6	Newtons	1521.1	11.2	-3887.3	35.9
Barrier Force D7	Newtons	1556.0	28.6	-2516.3	34.6
Barrier Force D8	Newtons	2360.6	29.8	-15308.1	52.2
Barrier Force D9	Newtons	2763.9	30.7	-2471.8	35.7
Barrier Force Sum Group 1	Newtons	2274.2	1.4	-175088.7	22.1
Barrier Force Sum Group 2	Newtons	229.7	158.7	-269135.0	35.1
Barrier Force Sum Group 3	Newtons	1521.7	1.5	-126843.2	19.6
Barrier Force Sum Group 4	Newtons	4272.0	3.7	-33605.1	31.1
Barrier Force Sum Group 5	Newtons	908.1	2.3	-62974.9	34.0
Barrier Force Sum Group 6	Newtons	1428.8	28.9	-26432.7	52.4
Barrier Force Total Sum	Newtons	1161.9	159.2	-569013.7	33.9

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
8/26/04
2005 Nissan Altima 4-Door Sedan**

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

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Nine Accelerometer Array Head
8/26/04
2005 Nissan Altima 4-Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
160	DRIVER X-ARM	Y	GPAC016	Accel., 1/2 bridge	Endevco	7264-2000	G
161	DRIVER X-ARM	Z	GPAC015	Accel., 1/2 bridge	Endevco	7264-2000	G
162	DRIVER Y-ARM	X	GPAC004	Accel., 1/2 bridge	Endevco	7264-2000	G
163	DRIVER Y-ARM	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
164	DRIVER Z-ARM	X	GPAC006	Accel., 1/2 bridge	Endevco	7264-2000	G
165	DRIVER Z-ARM	Y	GPAC007	Accel., 1/2 bridge	Endevco	7264-2000	G
166	PASS. X-ARM	Y	GPAC012	Accel., 1/2 bridge	Endevco	7264-2000	G
167	PASS. X-ARM	Z	GPAC001	Accel., 1/2 bridge	Endevco	7264-2000	G
168	PASS. Y-ARM	X	GPAC036	Accel., 1/2 bridge	Endevco	7264-2000	G
169	PASS. Y-ARM	Z	GPAC014	Accel., 1/2 bridge	Endevco	7264-2000	G
170	PASS. Z-ARM	X	GPAC030	Accel., 1/2 bridge	Endevco	7264-2000	G
171	PASS. Z-ARM	Y	GPAC037	Accel., 1/2 bridge	Endevco	7264-2000	G

APPENDIX E

DUMMY CALIBRATION DATA

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

Test Date: 8/24/04

ATD Serial No.: 034

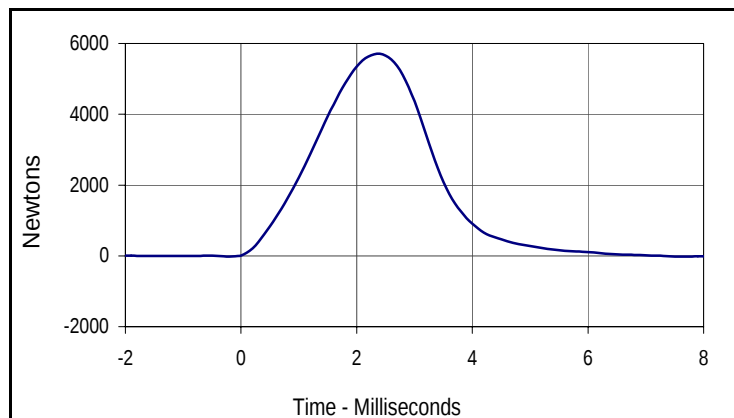
Test I.D.: LK08A , RK08A

**Left Knee**

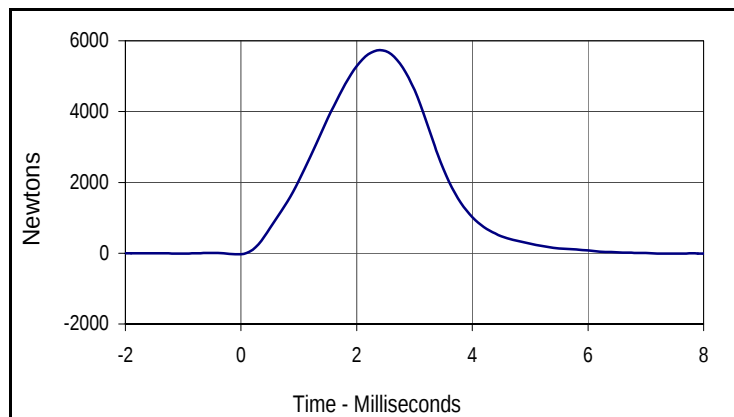
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	Newtons	4715 to 5782	5707	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5736	Pass
Overall Test Results				Pass

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

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5706.8	2.4	-24.4	9.9

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

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5735.9	2.4	-29.0	-0.1

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

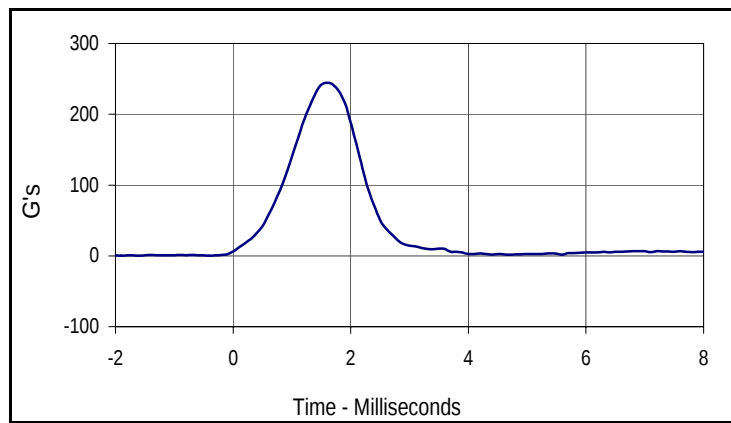
Test Date: 8/24/04

ATD Serial No.: 034

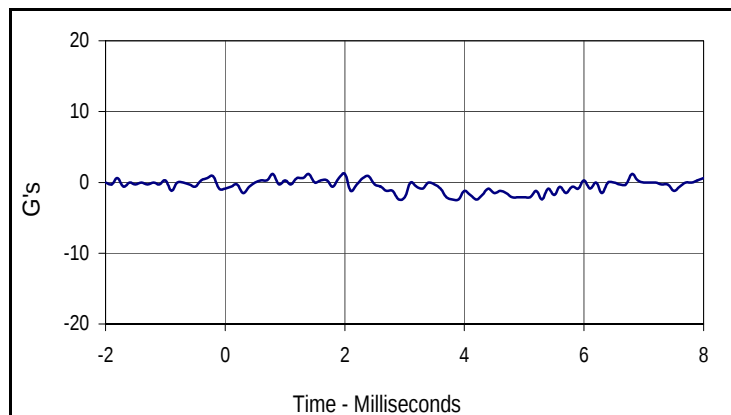
Test I.D.: HD08A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	244.6	Pass
Peak Lateral Acceleration	G's	≤15.0	2.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
244.6	1.6	0.4	-1.6



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.2	0.8	-2.4	2.9

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

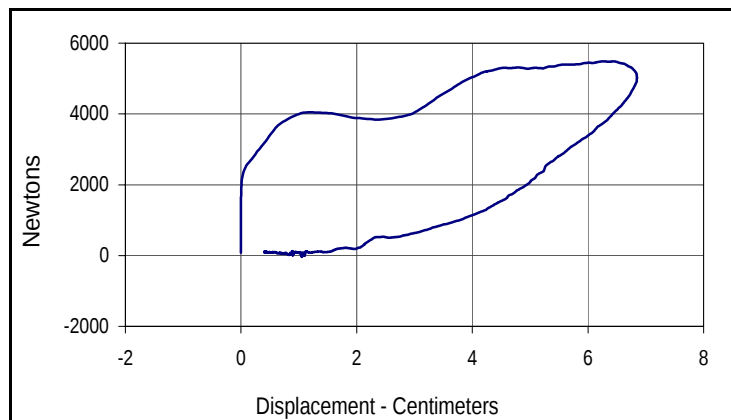
Test Date: 8/25/04

ATD Serial No.: 034

Test I.D.: CH08A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5486	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.85	Pass
Internal Hysteresis	%	69 to 85	69.8	Pass
Overall Test Results			Pass	



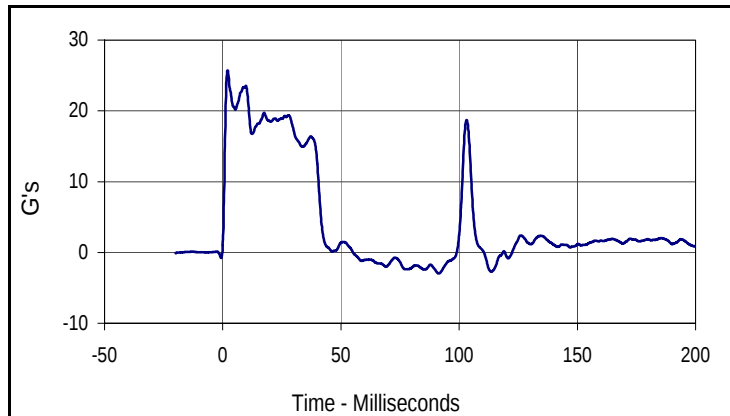
Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	600	69.8
Peak Probe Force		Peak Chest Displ.	
5486		6.85	

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

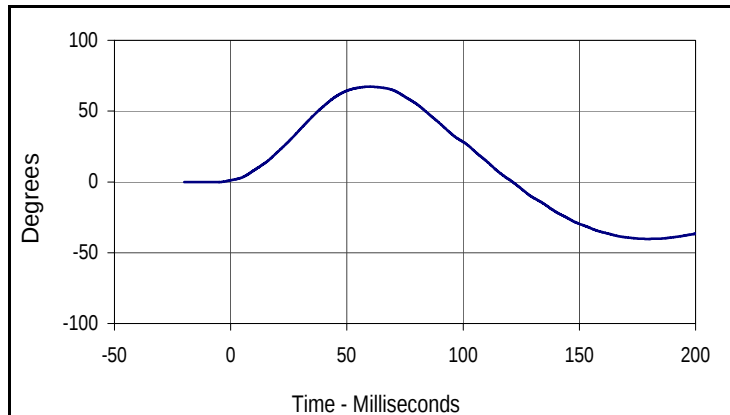
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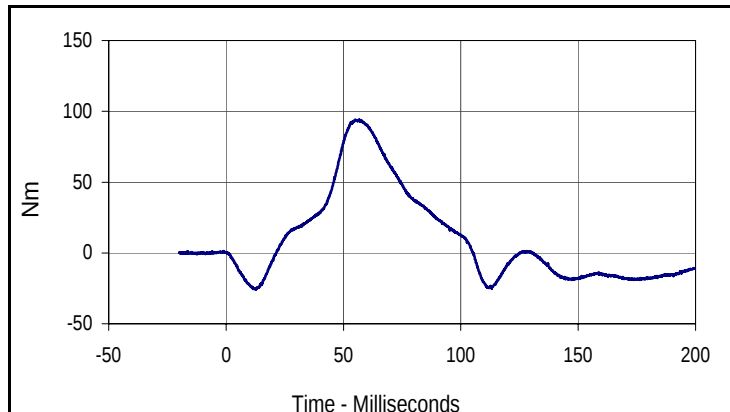
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.4	Pass
	20 Msec.	G's	17.6 to 22.6	18.5	Pass
	30 Msec.	G's	12.5 to 18.5	17.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	41.6	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	67.3	Pass
	Time	Msec.	57.0 to 64.0	59.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	121.3	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	94.3	Pass
	Time	Msec.	47.0 to 58.0	56.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	105.2	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
25.7	2.0	-3.0	91.4



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
67.3	59.7	-40.2	179.2



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
94.3	56.8	-25.7	12.6

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

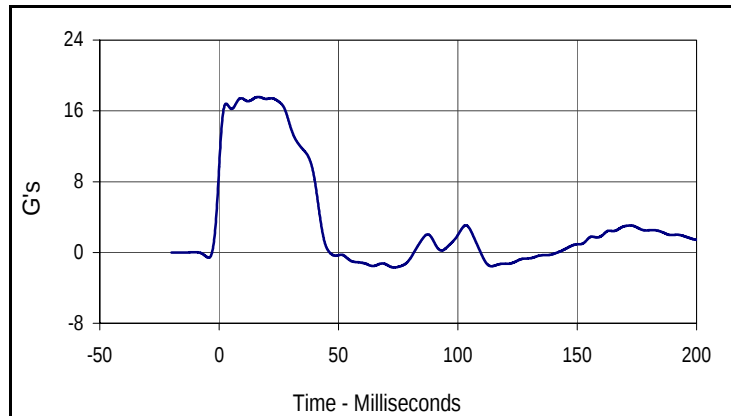
Test Date: 8/25/04

ATD Serial No.: 034

Test I.D.: NE08A



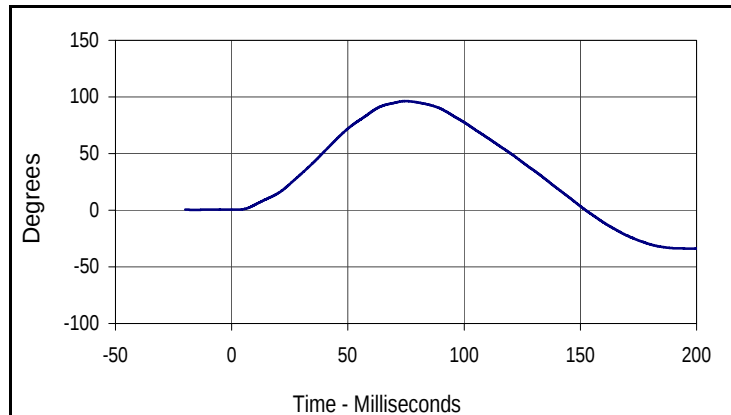
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.03	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.4	Pass
	20 Msec.	G's	14.0 to 19.0	17.4	Pass
	30 Msec.	G's	11.0 to 16.0	14.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	41.8	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	96.3	Pass
	Time	Msec.	72.0 to 82.0	74.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	152.3	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-78.8	Pass
	Time	Msec.	65.0 to 79.0	68.1	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	140.3	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

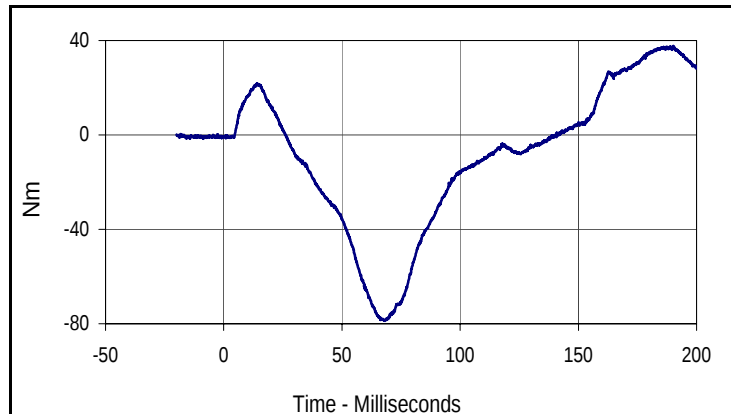
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.6	16.5	-1.7	73.3



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
96.3	74.8	-33.9	198.5



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
37.7	190.1	-78.8	68.1

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 8/25/04

ATD Serial No.: 034

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	886	Pass
B - Shoulder pivot height	mm	505 to 521	520	Pass
C - "H" point height	mm	84 to 89	87	Pass
D - "H" point from seat back	mm	135 to 140	136	Pass
E - Shoulder pivot from back	mm	84 to 94	89	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	301	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	339	Pass
J - Elbow rest height	mm	190 to 211	198	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	451	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock popliteal length	mm	452 to 477	459	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	265	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	990	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

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

Test Date: 8/24/04

ATD Serial No.: 035

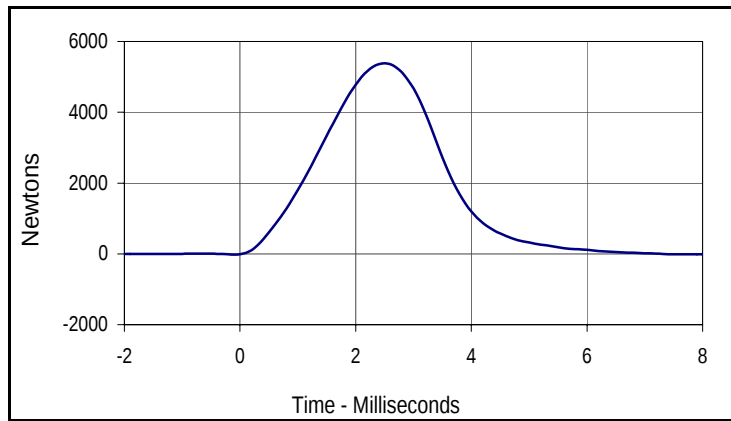
Test I.D.: LK08B , RK08B

**Left Knee**

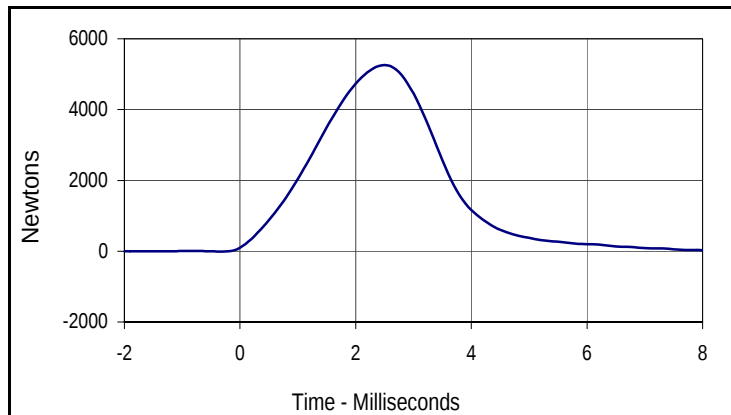
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5383	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.13	Pass
Peak Probe Force	Newtons	4715 to 5782	5260	Pass
Overall Test Results				Pass

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

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5383.4	2.5	-21.8	9.9

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

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5260.1	2.5	-24.1	9.2

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

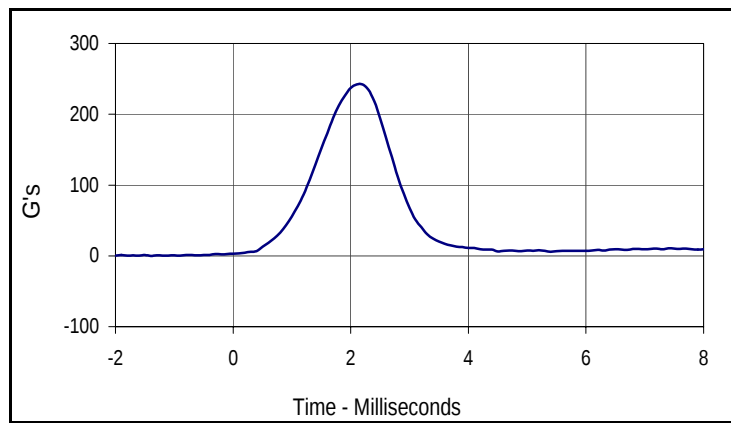
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ATD Serial No.: 035

Test I.D.: HD08B



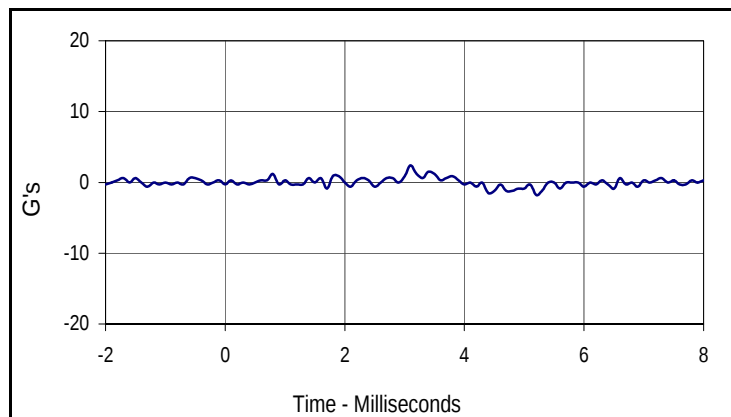
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	242.1	Pass
Peak Lateral Acceleration	G's	≤15.0	2.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
242.1	2.2	0.0	-1.4



Curve Description

Head Y

CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.4	3.1	-1.8	5.2

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

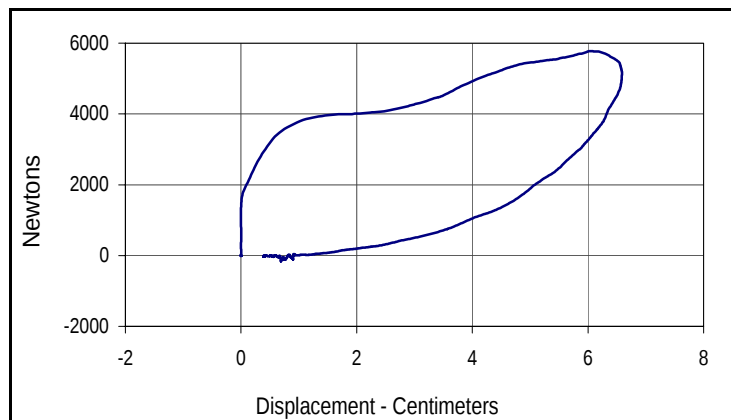
Test Date: 8/25/04

ATD Serial No.: 035

Test I.D.: CH08B



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5773	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.59	Pass
Internal Hysteresis	%	69 to 85	75.1	Pass
Overall Test Results			Pass	



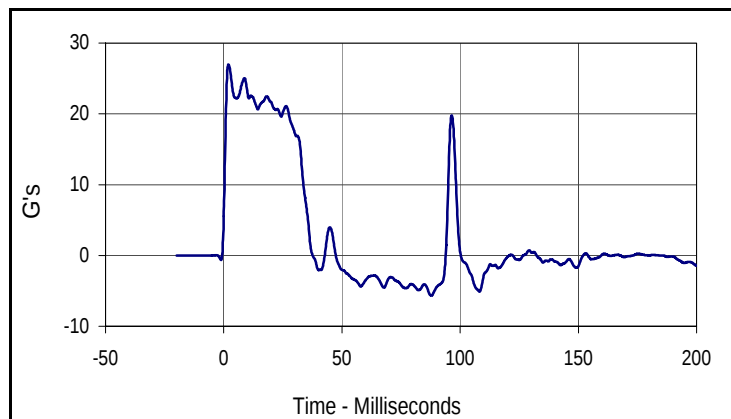
Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	600	75.1
Peak Probe Force		Peak Chest Displ.	
5773		6.59	

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

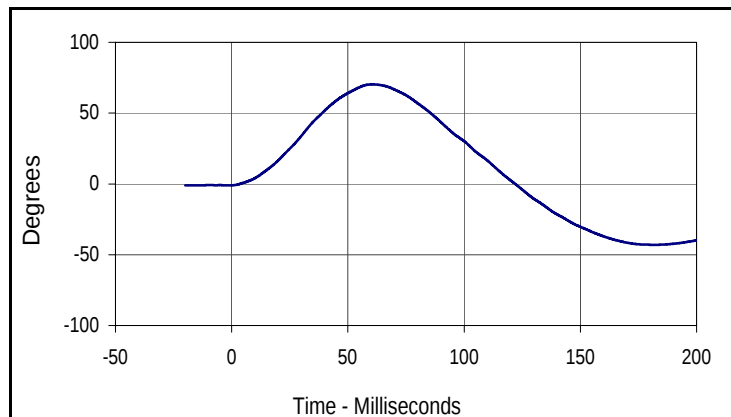
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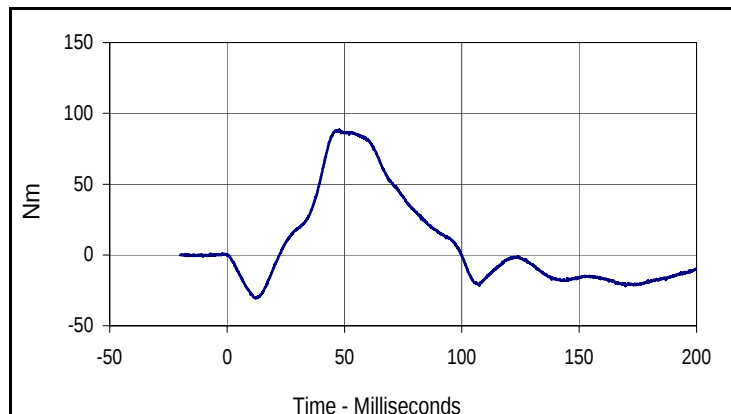
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.0	Pass
	20 Msec.	G's	17.6 to 22.6	21.7	Pass
	30 Msec.	G's	12.5 to 18.5	17.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	19.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	70.3	Pass
	Time	Msec.	57.0 to 64.0	60.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	122	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	88.6	Pass
	Time	Msec.	47.0 to 58.0	47.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	99.9	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
27.0	2.0	-5.7	87.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
70.3	60.3	-43.0	181.7



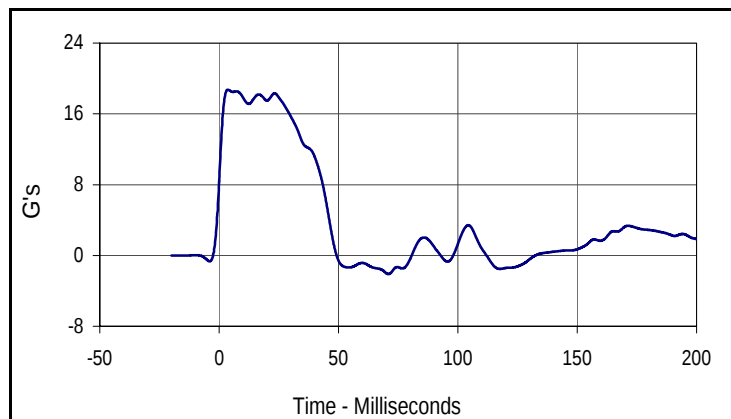
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
88.6	47.7	-30.5	12.1

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

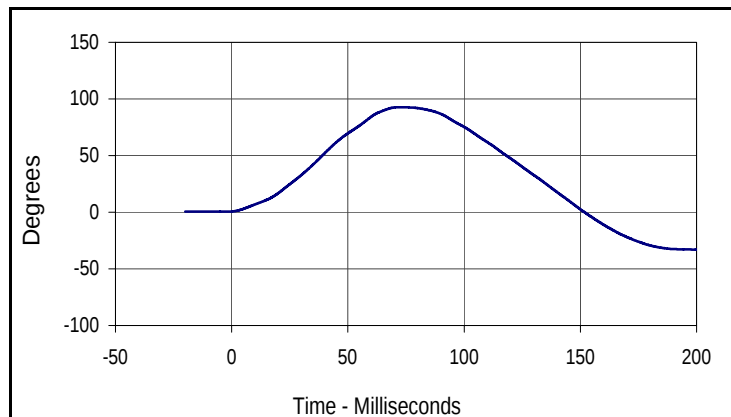
Test Date: 8/25/04
 Test I.D.: NE08B



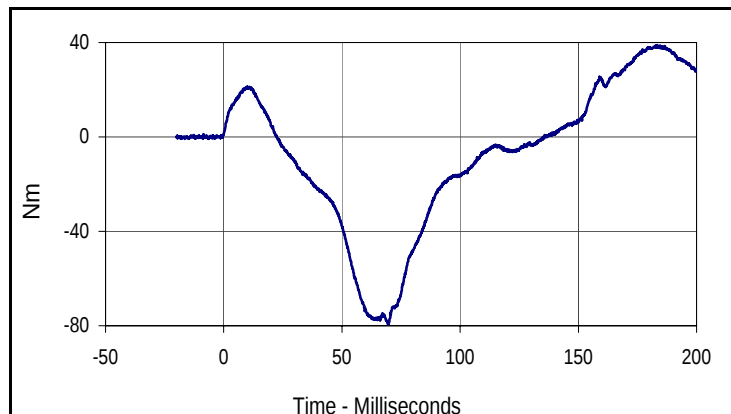
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.8	Pass
	20 Msec.	G's	14.0 to 19.0	17.5	Pass
	30 Msec.	G's	11.0 to 16.0	15.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.6	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	92.7	Pass
	Time	Msec.	72.0 to 82.0	72.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-79.4	Pass
	Time	Msec.	65.0 to 79.0	69.6	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.2	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.7	3.6	-2.1	70.9



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
92.7	72.7	-33.0	199.8



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
38.9	183.4	-79.4	69.6

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 8/25/04

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	138	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	295	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	341	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	445	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	255	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	1000	Pass
Z - Waist circumference	mm	836 to 866	865	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	228	Pass
Overall Test Results				Pass

APPENDIX F

CHILD RESTRAINT SYSTEM

REPORT NUMBER TR-P25001-01-NC

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

**NISSAN MOTOR CORPORATION
2005 NISSAN ALTIMA
4-DOOR SEDAN**

NHTSA NUMBER: M55200

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



AUGUST 26, 2004

FINAL REPORT

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

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-01-D-02005.

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KARCO Engineering, LLC

Date: 8/26/04

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

Date: 8/26/04

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

1. Report No. TR-P25001-01-NC		2. Government Accession No.		3. Recipients Catalog No.	
4. Title and Subtitle Final Report of a Evenflo Vanguard 5 Convertible CRS NHTSA NO. M55200				5. Report Date August 26, 2004	
				6. Performing Organization Code	
7. Authors Mr. Biren J. Patel, Project Engineer, Karco Mr. Frank Richardson, Program Manager, Karco				8. Performing Organization Report No. TR-P25001-01-NC	
9. Performing Organization Name and Address Karco Engineering, LLC 9270 Holly Rd. Adelanto, CA, 92301				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-01-D-02005	
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code NPS-111 400 Seventh Street, SW, Room 5311 Washington, D.C 20590				13. Type of Report and Period Covered Final Test Report Option Year 3	
				14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS	
15. Supplementary Notes					
16. Abstract A frontal test was conducted on the subject Evenflo Vanguard 5 Convertible CRS in conjunction with frontal NCAP testing on a 2005 Nissan Altima 4-Door Sedan and in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the determination of CRS crashworthiness. This test was conducted at Karco Engineering, LLC on August 26, 2004					
Measurement Description		Units		Left Rear	
Head Injury Criteria (HIC) 36		N/A			
Head Injury Criteria (HIC) 15		N/A			
3 msec. Chest Clip		G's			
Peak Chest Displacement		mm			
				Right Rear	
				680.9	
				434.1	
				48.9	
				-18.4	
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) Final Report of a Vanguard 5 Convertible NHTSA NO. M55200				18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
19. Security Classification (this report) Unclassified		20. Security Classification (this page) Unclassified		21. No. of Pages 45	
				22. Price	

Form DOT F1700.7 (8-72)

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SECTION F-1

PURPOSE AND SUMMARY OF TEST M55200

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

The 56.20 km/h NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

One three year old child Hybrid III dummy was instrumented with head, chest, and pelvic triaxial accelerometers, a chest displacement potentiometer and six axis upper and lower neck cells. In addition a triaxial accelerometer was installed on the CRS and a seat belt load cell was placed on the upper tether.

The right rear (Position 3) child dummy (Serial No. 082) was calibrated prior to this test. Child dummy certification information is found in Section F-5.

CHILD DUMMY VALUES

Location	HIC 36 Values	HIC 15 Values	3 Msec. Chest Clip	Peak Chest Disp.
Right Rear Child	680.9	434.1	48.9	-18.4
Left Rear Child				

DATA SHEET NO.1 CRASH TEST SUMMARYTest Vehicle: 2005 Nissan Altima 4-Door SedanNHTSA No.: M55200Test Program 2005 NHTSA 35mph NCAPTest Date: 8/26/04**CHILD RESTRAINT SYSTEM INFORMATION**

Description	Position #3 CRS	Position #4 CRS
Manufacturer	Evenflo	
Model Name	Vanguard 5	
Serial No.	3691261 P1	
Type	Convertible	
Forward/Rearward	Forward	

VISIBLE DUMMY CONTACT POINTS

Description	Position #3 CRS	Position #4 CRS
Head Contact	None	
Chest Contact	None	
Abdomen Contact	None	
Left Knee Contact	None	
Right Knee Contact	None	
Left Toe Contact	Front seatback	
Right Toe Contact	Front seatback	

POST TEST DOOR OPENINGS

Description	Position #3 CRS	Position #4 CRS
Left Side Doors	Remained closed/latched, opened w/o tools	
Right Side Doors	Remained closed/latched, opened w/o tools	
Hatch/Other Door	None	

POST TEST SEAT DATA

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

CAMERA COVERAGE

High Speed	2
Real Time	0
Total	2

DATA CHANNELS

Child Sensors	26
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DATA SHEET NO.2 CRS PARAMETER DATATest Vehicle: 2005 Nissan Altima 4-Door SedanNHTSA No.: M55200Test Program 2005 NHTSA 35mph NCAPTest Date: 8/26/04**RETAINING CLIP INFORMATION**

Description	Position #3 CRS	Position #4 CRS
Ret. Clip Movement	53 mm	

CHILD HARNESS STRETCH

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

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	427	280		465	359	
Right	kg	432	286		449	346	
Ratio	%	60.3	39.7		56.5	43.5	
Totals	kg	859	566	1425	914	705	1619

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1425
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	50
Calculated Vehicle Target Wt. (TVTW)	kg	1627

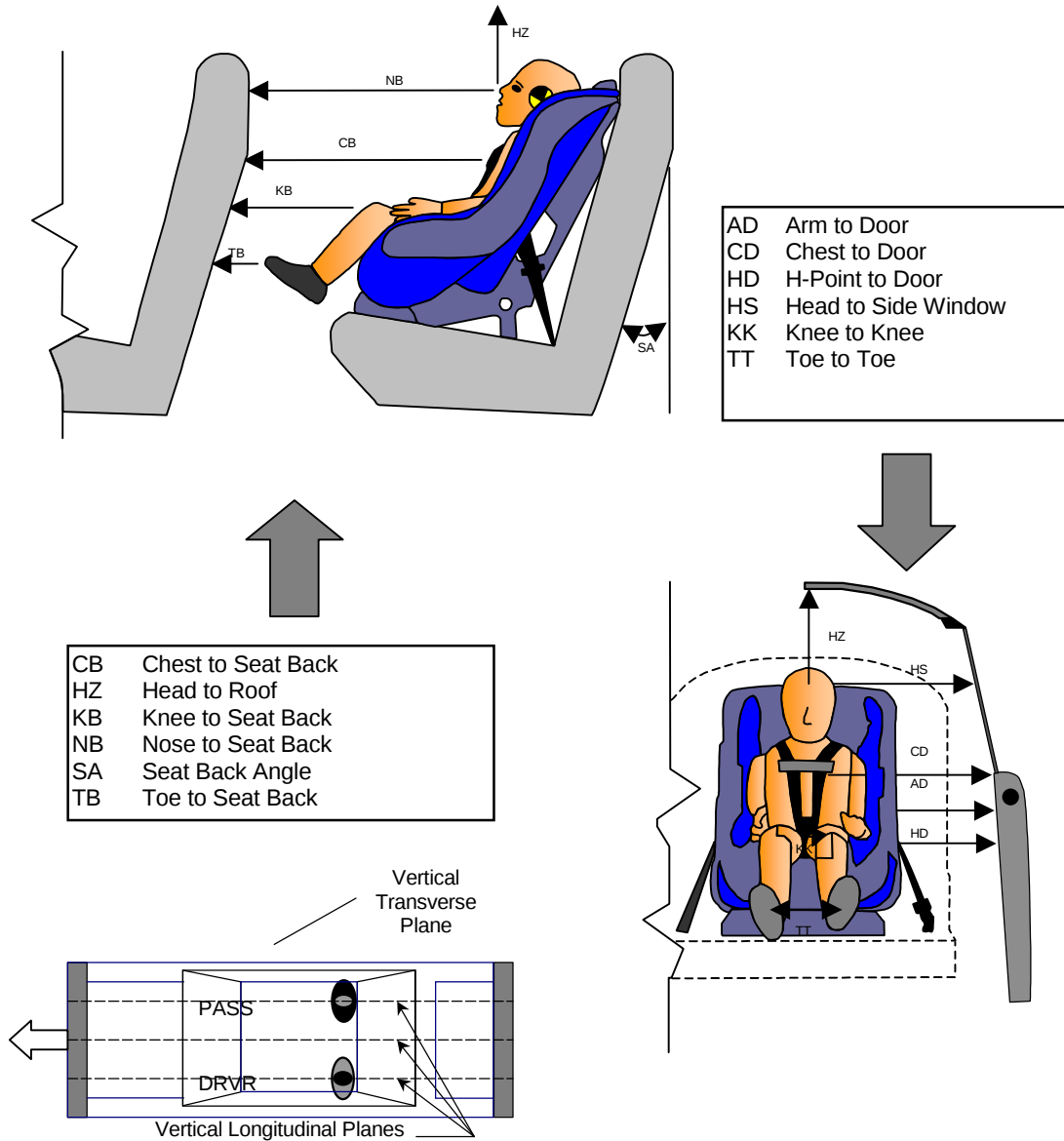
DATA SHEET NO.3 CHILD DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program 2005 NHTSA 35mph NCAP

Test Date: 8/26/04



DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

DATA SHEET NO.3 CHILD DUMMY POSITIONING IN VEHICLE...(CONTINUED)Test Vehicle: 2005 Nissan Altima 4-Door SedanNHTSA No.: M55200Test Program 2005 NHTSA 35mph NCAPTest Date: 8/26/04**CHILD DUMMY POSITION MEASUREMENTS**

Code	Measurement	Units	P3 CRS Serial No. 082		
			Pre-Test	Post-Test	Diff.
SA	Seat Back Angle	deg.	23.8	23.8	0
HZ	Head to Roof (Z)	mm	340	345	5
CD	Chest to Dash	mm	440	445	5
KK	Knee to Knee (Y)	mm	185	215	30
HS	Head to Side Window	mm	420	440	20
HD	H-Point to Door (Y)	mm	350	320	-30
AD	Arm to Door	mm	300	260	-40
NB	Nose to Seat Back	mm	620	640	20
CB	Chest to Seat Back	mm	600	630	30
FF	Foot to Foot	mm	180	250	70
KB-Left	Knee to Seat Back	mm	400	430	30
KB-Right	Knee to Seat Back	mm	380	410	30
TB-Left	Toe to Seat Back	mm	190	190	0
TB-Right	Toe to Seat Back	mm	180	150	-30

DATA SHEET NO. 4 - 3 YEAR OLD HYBRID III ATD INJURY CRITERIA AND SENSOR DATATest Vehicle: 2005 Nissan Altima 4-Door SedanNHTSA No.: M55200Test Program: 2005 NHTSA 35mph NCAPTest Date: 8/26/04**HEAD PEAK ACCELERATIONS**

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Head CG	X	G's	43.6	190.6	-29.5	106.0
Head CG	Y	G's	4.7	200.0	-15.4	105.9
Head CG	Z	G's	61.7	83.8	-8.2	45.1
Head CG Resultant	N/A	G's	66.5	84.2		

HEAD INJURY CRITERIA (HIC)

Location	Right Rear (3 Yr.)			
	HIC	T ¹	T ²	Avg G
Head CG Primary (HIC36)	680.9	65.8	101.8	51.3
Head CG Primary (HIC15)	434.1	75.5	90.5	60.9

CHEST PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Chest CG	X	G's	9.7	185.7	-57.1	75.6
Chest CG	Y	G's	4.1	70.1	-1.8	92.9
Chest CG	Z	G's	14.2	90.8	-29.8	64.3
Chest CG Resultant	N/A	G's	61.8	75.6		

CHEST CLIP (3MSEC)

Location	Right Rear (3 Yr.)		
	CLIP	T ¹	T ²
Chest CG Primary	48.9	73.5	76.5

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Chest	X	MM	0.0	18.0	-18.4	103.7

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Pelvis	X	G's	5.7	155.9	-47.4	69.7
Pelvis	Y	G's	4.3	97.5	-13.1	53.8
Pelvis	Z	G's	13.6	200.0	-32.9	53.9
Pelvis Resultant	N/A	G's	56.3	69.6		

DATA SHEET NO. 4...(CONTINUED)Test Vehicle: 2005 Nissan Altima 4-Door SedanNHTSA No.: M55200Test Program: 2005 NHTSA 35mph NCAPTest Date: 8/26/04**UPPER NECK PEAK FORCES AND MOMENTS**

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Neck Force	X	Newtons	28.8	185.3	-692.7	84.3
Neck Force	Y	Newtons	24.5	120.9	-43.6	114.2
Neck Force	Z	Newtons	2126.7	84.0	-229.9	41.6
Neck Force Resultant	N/A	Newtons	2235.7	84.1		
Neck Moment	X	Nm	2.3	124.5	-6.2	88.2
Neck Moment	Y	Nm	3.5	142.7	-7.2	85.2
Neck Moment	Z	Nm	2.3	104.1	-1.4	75.6
Neck Moment Resultant	N/A	Nm	9.3	85.2		

LOWER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Neck Force	X	Newtons	121.3	190.8	-1006.8	84.4
Neck Force	Y	Newtons	218.8	70.6	-81.3	91.3
Neck Force	Z	Newtons	1215.2	84.0	-383.9	53.9
Neck Force Resultant	N/A	Newtons	1572.4	84.0		
Neck Moment	X	Nm	1.6	70.8	-10.7	93.1
Neck Moment	Y	Nm	113.4	84.4	-9.2	190.8
Neck Moment	Z	Nm	2.2	125.5	-7.5	85.9
Neck Moment Resultant	N/A	Nm	113.9	84.4		

CHILD SEAT TETHER BELT SENSOR PEAK VALUES

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Car Seat Upper Tether Force	N/A	Newtons	2307.1	74.8	-71.6	174.1

CHILD SEAT ACCELEROMETER PEAK VALUES

Location	Axis	Units	Right Rear (3 Yr.)			
			Max	Time	Min	Time
Child Seat	X	G's	6.5	163.2	-45.0	68.6
Child Seat	Y	G's	3.0	200.0	-4.7	75.3
Child Seat	Z	G's	10.4	193.6	-5.3	95.2
Child Seat Resultant	N/A	G's	45.7	68.6		

DATA SHEET NO.5 CRS PERFORMANCE DATA

Test Vehicle: 2005 Nissan Altima 4-Door Sedan

NHTSA No.: M55200

Test Program 2005 NHTSA 35mph NCAP

Test Date: 8/26/04

CRS PERFORMANCE DATA

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

DATA SHEET NO.6 CRS CAMERA DATATest Vehicle: 2005 Nissan Altima 4-Door SedanNHTSA No.: M55200Test Program 2005 NHTSA 35mph NCAPTest Date: 8/26/04**CAMERA LOCATIONS**

No.	Camera View	Location(mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Rear Dummy Onboard	-3048	-711	-1321	-25	1122.5	5.7	1000
2	Left Rear Dummy Onboard	-2743	-711	-1397	-25	1285.7	4.2	1000

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

SECTION F-2
PHOTOGRAPHS

LIST OF PHOTOGRAPHS CRS #3

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3	Post-Test Frontal View of Position 3 CRS	F-3
4	Pre-Test Rear View of Position 3 CRS	F-4
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12	Pre-Test Position 3 Right Side View (Door Open)	F-12
13	Post-Test Position 3 Right Side View (Door Open)	F-13
14	Pre-Test Position 3 Right Side View	F-14
15	Post-Test Position 3 Right Side View	F-15
16	Post-Test Position 3 Contact Point	F-16



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



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



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



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



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



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



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



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



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



Figure F2-10: Pre-Test Position 3 Front View



Figure F2-11: Post-Test Position 3 Front View



Figure F2-12: Pre-Test Position 3 Right Side View (Door Open)



Figure F2-13: Post-Test Position 3 Right Side View (Door Open)



Figure F2-14: Pre-Test Position 3 Right Side View



Figure F2-15: Post-Test Position 3 Right Side View

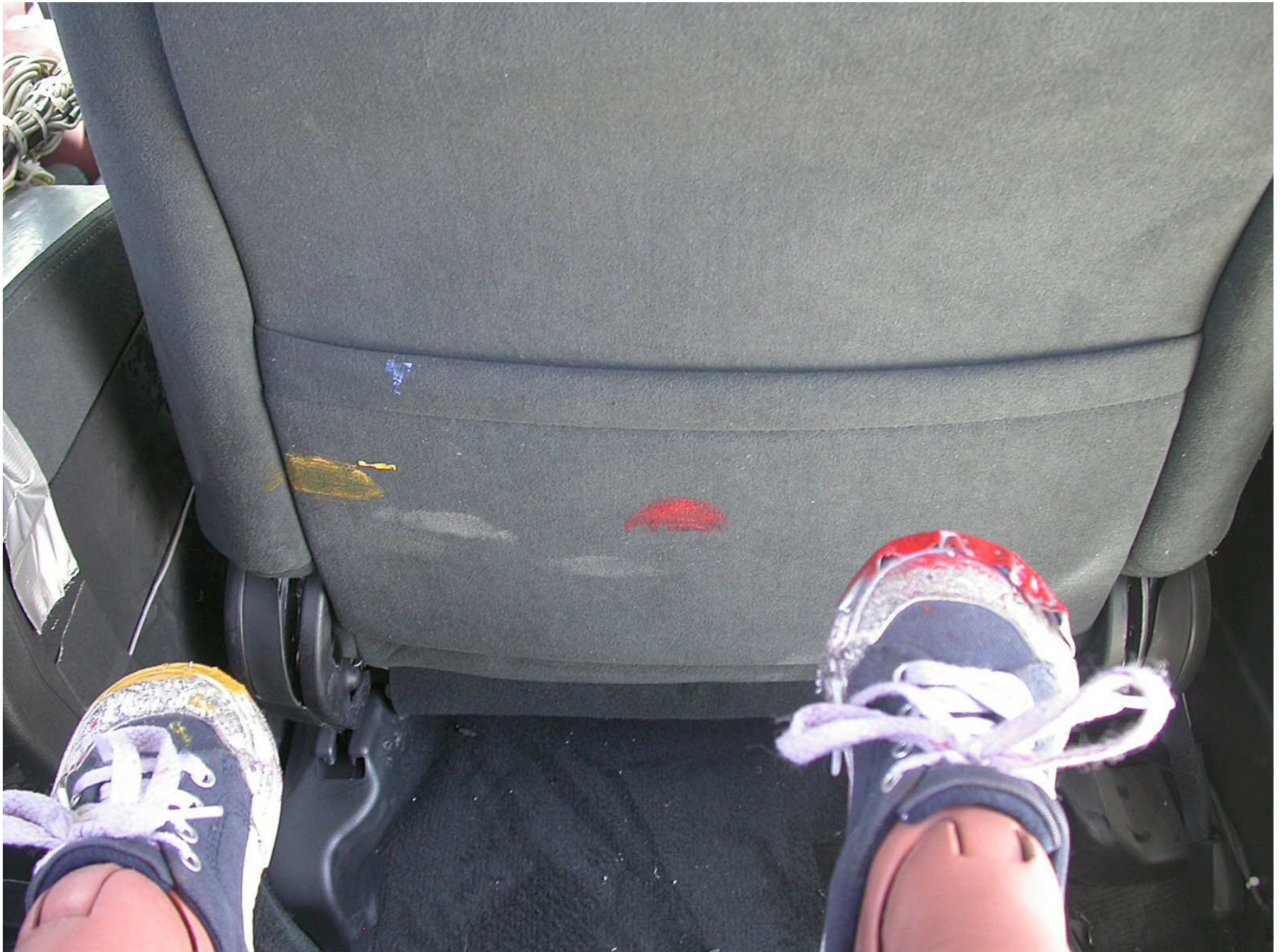


Figure F2-16: Post-Test Position 3 Contact Points

SECTION F-3

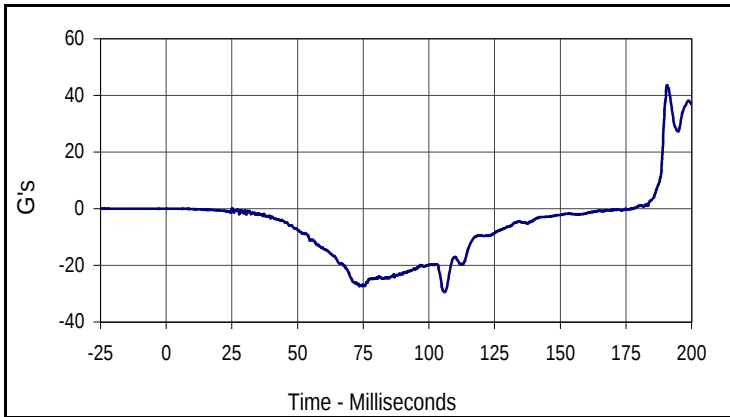
CHILD DUMMY RESPONSE AND CRS DATA TRACES

LIST OF DATA PLOTS #4

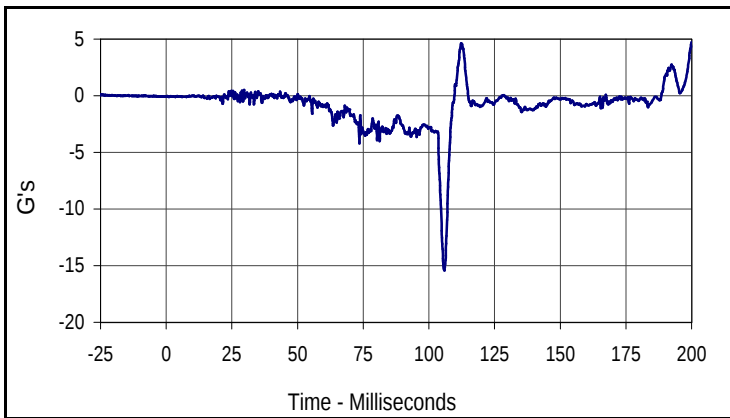
Data Plot		Page
F3-1	Right Rear (3 Yr.) Head X	F3-1
	Right Rear (3 Yr.) Head Y	F3-1
	Right Rear (3 Yr.) Head Z	F3-1
	Right Rear (3 Yr.) Head Resultant	F3-1
F3-2	Right Rear (3 Yr.) Upper Neck Force X	F3-2
	Right Rear (3 Yr.) Upper Neck Force Y	F3-2
	Right Rear (3 Yr.) Upper Neck Force Z	F3-2
	Right Rear (3 Yr.) Upper Neck Force Resultant	F3-2
F3-3	Right Rear (3 Yr.) Upper Neck Moment X	F3-3
	Right Rear (3 Yr.) Upper Neck Moment Y	F3-3
	Right Rear (3 Yr.) Upper Neck Moment Z	F3-3
	Right Rear (3 Yr.) Upper Neck Moment Resultant	F3-3
F3-4	Right Rear (3 Yr.) Lower Neck Force X	F3-4
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	Right Rear (3 Yr.) Lower Neck Force Resultant	F3-4
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	Right Rear (3 Yr.) Lower Neck Moment Y	F3-5
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	Right Rear (3 Yr.) Chest Y	F3-6
	Right Rear (3 Yr.) Chest Z	F3-6
	Right Rear (3 Yr.) Chest Resultant	F3-6
F3-7	Right Rear (3 Yr.) Chest Displacement	F3-7
F3-8	Right Rear (3 Yr.) Pelvis X	F3-8
	Right Rear (3 Yr.) Pelvis Y	F3-8
	Right Rear (3 Yr.) Pelvis Z	F3-8
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F3-9	Right Rear (3 Yr.) Car Seat Tether Force	F3-9
F3-10	Right Rear (3 Yr.) Car Seat X	F3-10
	Right Rear (3 Yr.) Car Seat Y	F3-10
	Right Rear (3 Yr.) Car Seat Z	F3-10
	Right Rear (3 Yr.) Car Seat Resultant	F3-10

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

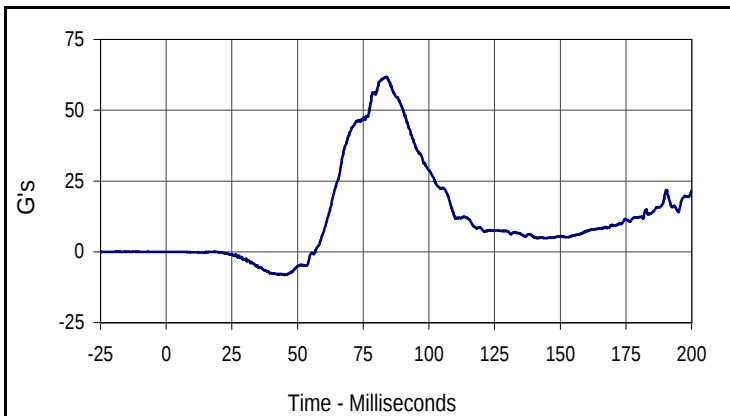
Test Date: 8/26/04
 NHTSA No.: M55200



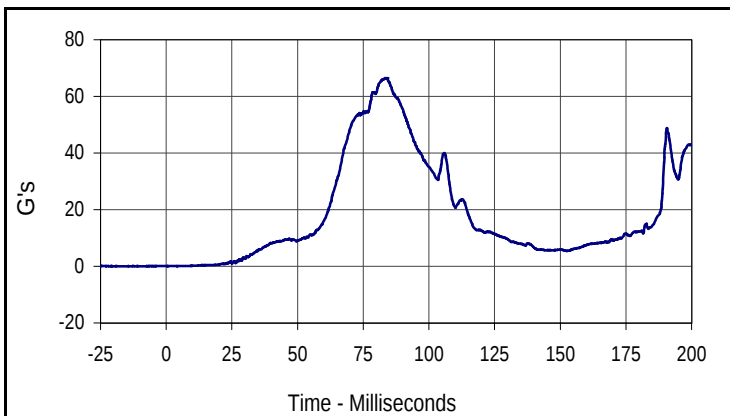
Curve Description			
Right Rear (3 Yr.) Head X			
CURNO	Type	SAE Class	Units
134	FIL	1000	G's
Max	Time	Min	Time
43.6	190.6	-29.5	106.0



Curve Description			
Right Rear (3 Yr.) Head Y			
CURNO	Type	SAE Class	Units
135	FIL	1000	G's
Max	Time	Min	Time
4.7	200.0	-15.4	105.9



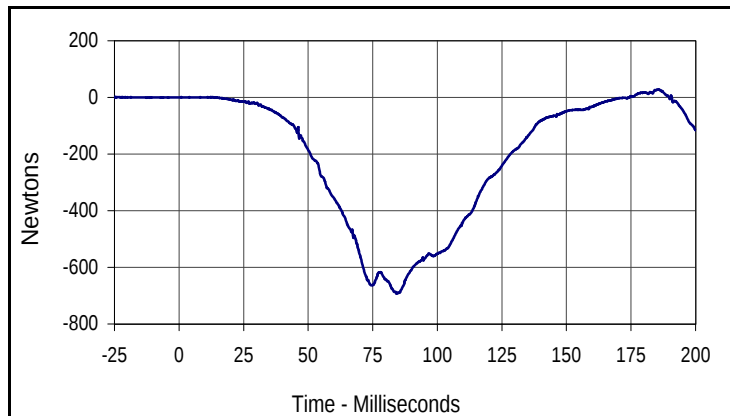
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Right Rear (3 Yr.) Head Z			
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136	FIL	1000	G's
Max	Time	Min	Time
61.7	83.8	-8.2	45.1



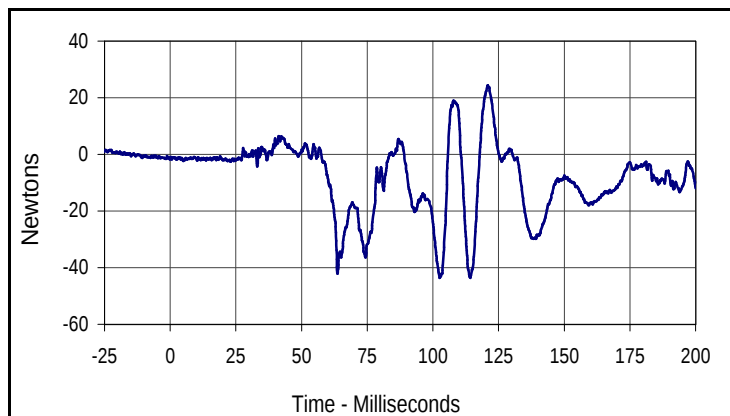
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Right Rear (3 Yr.) Head Resultant			
CURNO	Type	SAE Class	Units
134	RES	1000	G's
Max	Time	Min	Time
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Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

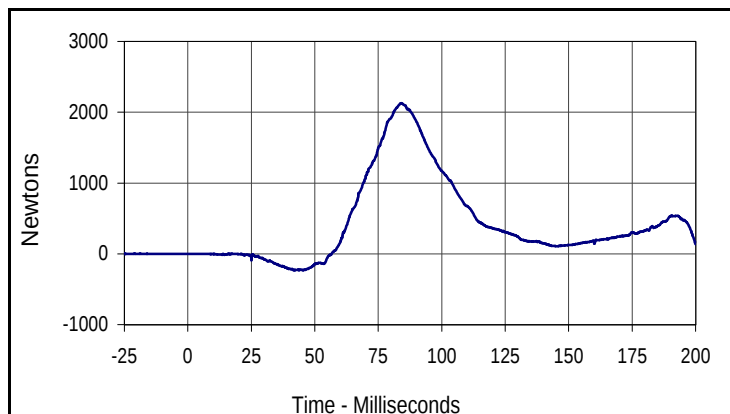
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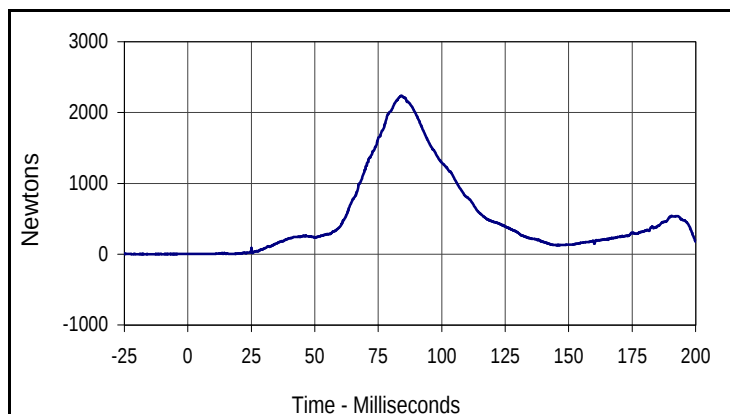
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Right Rear (3 Yr.) Upper Neck Force X			
CURNO	Type	SAE Class	Units
137	FIL	1000	Newtons
Max	Time	Min	Time
28.8	185.3	-692.7	84.3



Curve Description			
Right Rear (3 Yr.) Upper Neck Force Y			
CURNO	Type	SAE Class	Units
138	FIL	1000	Newtons
Max	Time	Min	Time
24.5	120.9	-43.6	114.2



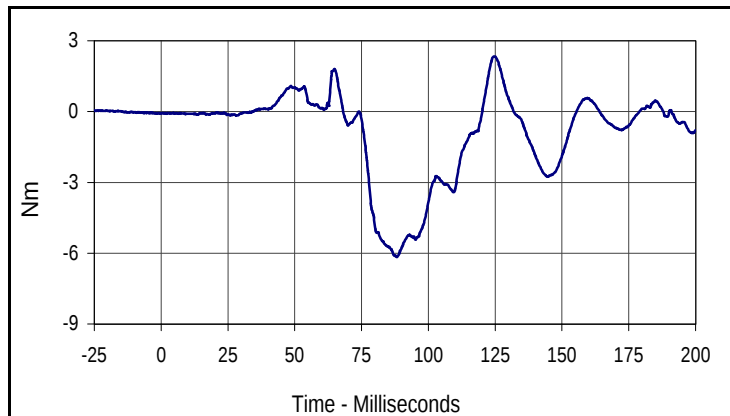
Curve Description			
Right Rear (3 Yr.) Upper Neck Force Z			
CURNO	Type	SAE Class	Units
139	FIL	1000	Newtons
Max	Time	Min	Time
2126.7	84.0	-229.9	41.6



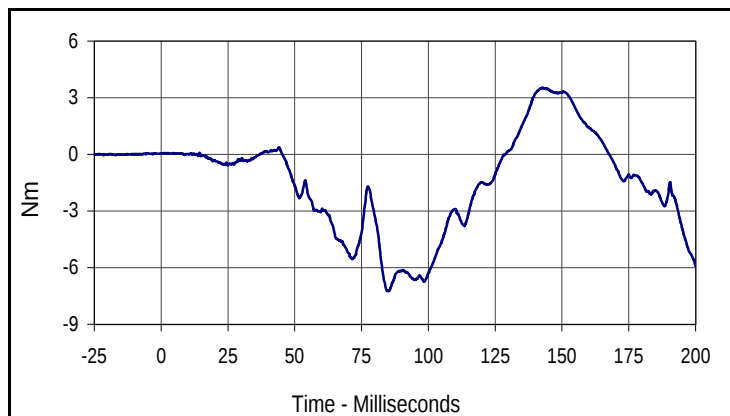
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Right Rear (3 Yr.) Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
137	RES	1000	Newtons
Max	Time	Min	Time
2235.7	84.1	1.3	1.2

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

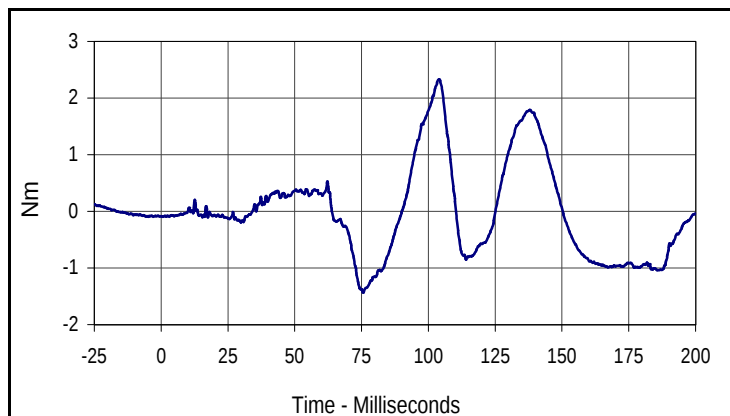
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 NHTSA No.: M55200



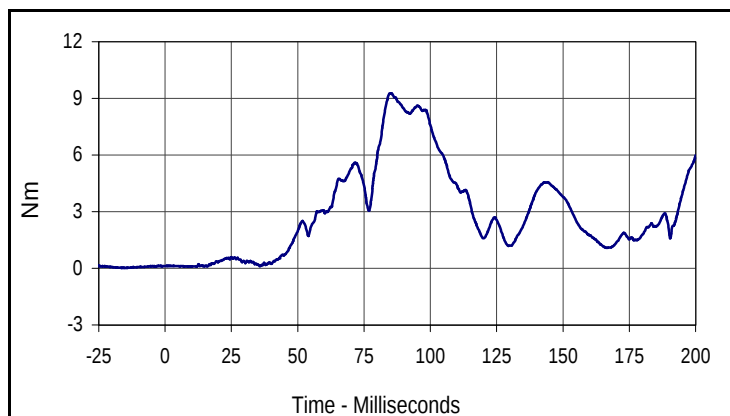
Curve Description			
Right Rear (3 Yr.) Upper Neck Moment X			
CURNO	Type	SAE Class	Units
140	FIL	600	Nm
Max	Time	Min	Time
2.3	124.5	-6.2	88.2



Curve Description			
Right Rear (3 Yr.) Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
141	FIL	600	Nm
Max	Time	Min	Time
3.5	142.7	-7.2	85.2



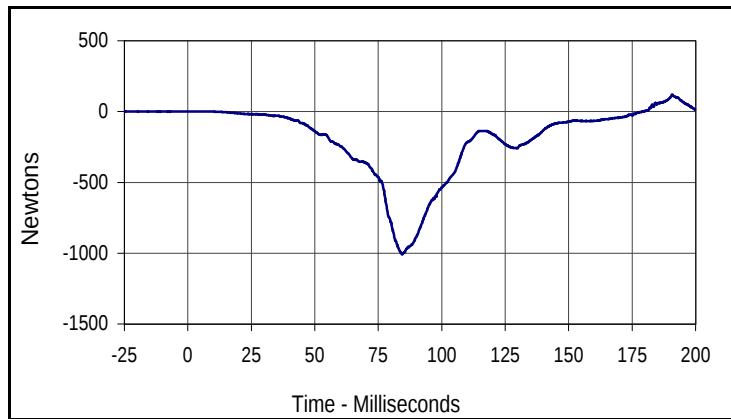
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Right Rear (3 Yr.) Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
142	FIL	600	Nm
Max	Time	Min	Time
2.3	104.1	-1.4	75.6



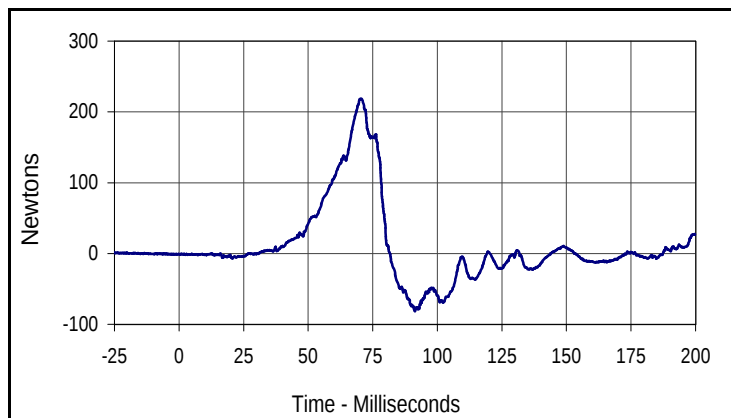
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Right Rear (3 Yr.) Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
140	RES	600	Nm
Max	Time	Min	Time
9.3	85.2	0.1	8.6

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

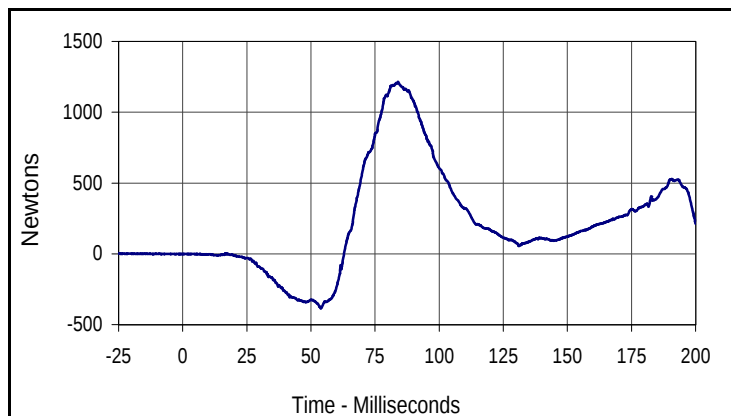
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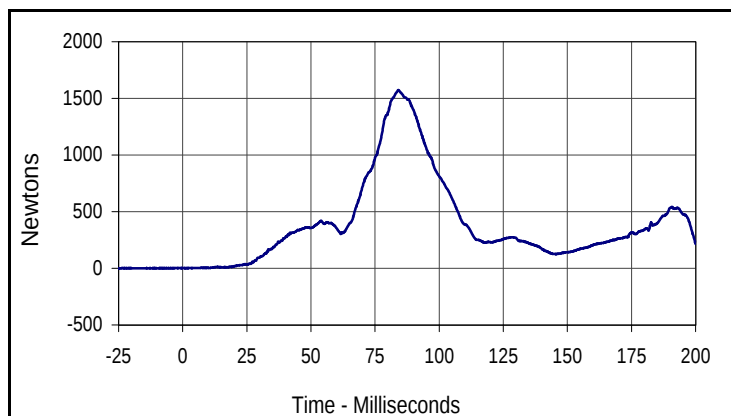
Curve Description			
Right Rear (3 Yr.) Lower Neck Force X			
CURNO	Type	SAE Class	Units
143	FIL	1000	Newtons
Max	Time	Min	Time
121.3	190.8	-1006.8	84.4



Curve Description			
Right Rear (3 Yr.) Lower Neck Force Y			
CURNO	Type	SAE Class	Units
144	FIL	1000	Newtons
Max	Time	Min	Time
218.8	70.6	-81.3	91.3



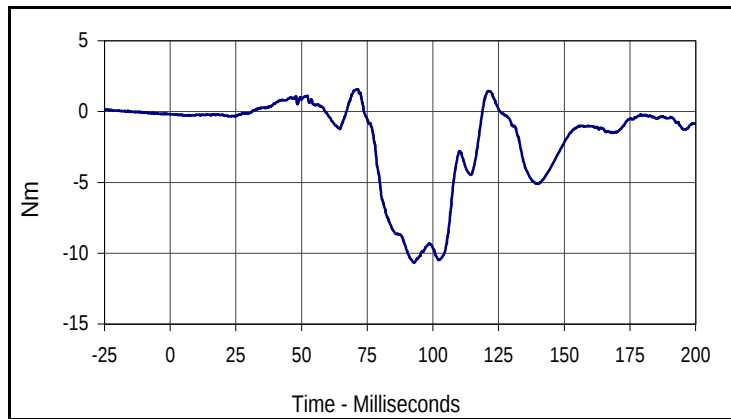
Curve Description			
Right Rear (3 Yr.) Lower Neck Force Z			
CURNO	Type	SAE Class	Units
145	FIL	1000	Newtons
Max	Time	Min	Time
1215.2	84.0	-383.9	53.9



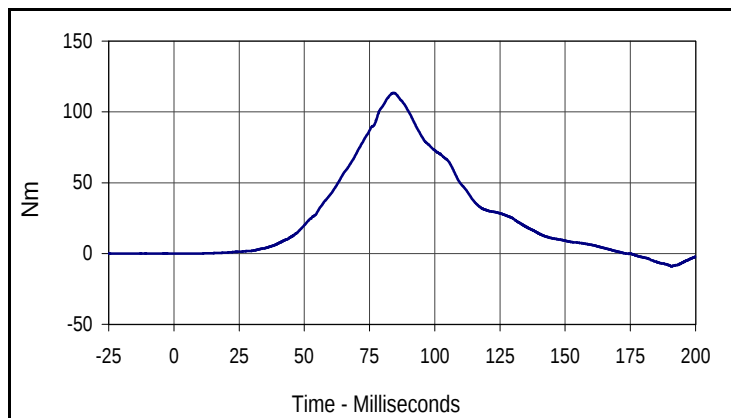
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Right Rear (3 Yr.) Lower Neck Force Res.			
CURNO	Type	SAE Class	Units
143	RES	1000	Newtons
Max	Time	Min	Time
1572.4	84.0	0.9	1.1

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

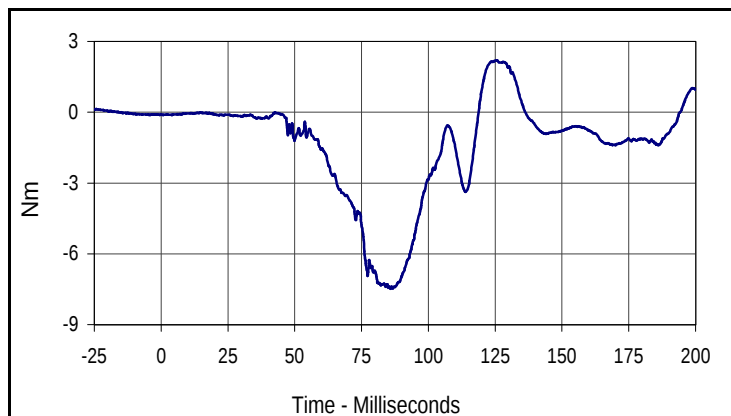
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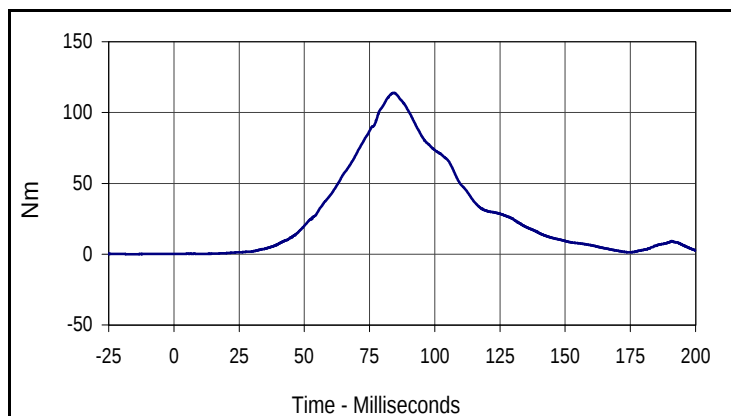
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment X			
CURNO	Type	SAE Class	Units
146	FIL	600	Nm
Max	Time	Min	Time
1.6	70.8	-10.7	93.1



Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Y			
CURNO	Type	SAE Class	Units
147	FIL	600	Nm
Max	Time	Min	Time
113.4	84.4	-9.2	190.8



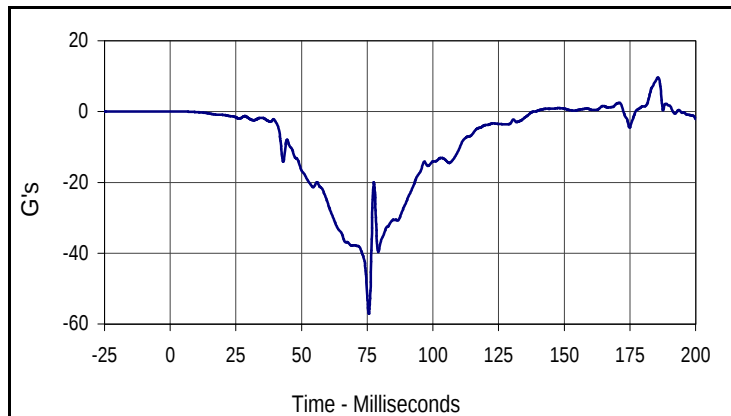
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Z			
CURNO	Type	SAE Class	Units
148	FIL	600	Nm
Max	Time	Min	Time
2.2	125.5	-7.5	85.9



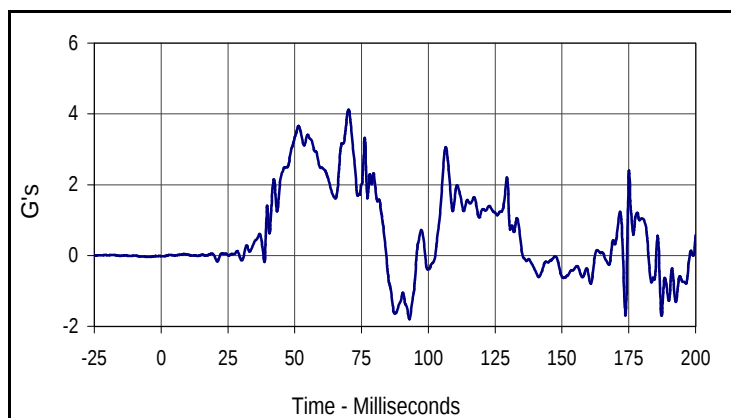
Curve Description			
Right Rear (3 Yr.) Lower Neck Moment Res.			
CURNO	Type	SAE Class	Units
146	RES	600	Nm
Max	Time	Min	Time
113.9	84.4	0.2	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

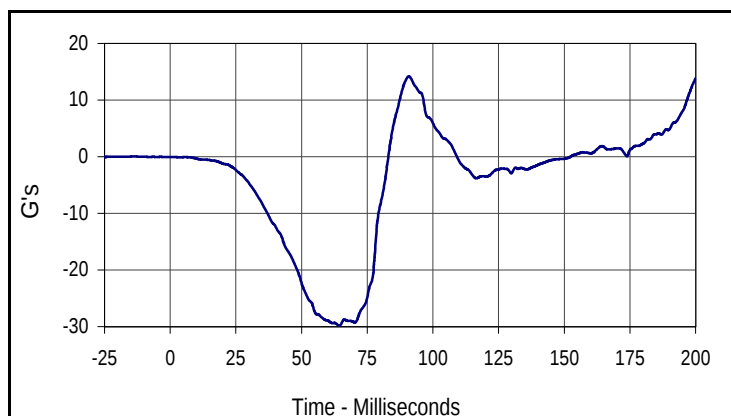
Test Date: 8/26/04
 NHTSA No.: M55200



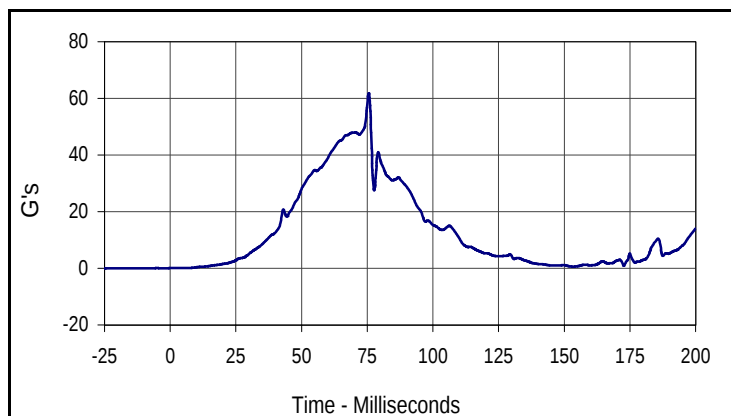
Curve Description			
Right Rear (3 Yr.) Chest X			
CURNO	Type	SAE Class	Units
149	FIL	180	G's
Max	Time	Min	Time
9.7	185.7	-57.1	75.6



Curve Description			
Right Rear (3 Yr.) Chest Y			
CURNO	Type	SAE Class	Units
150	FIL	180	G's
Max	Time	Min	Time
4.1	70.1	-1.8	92.9



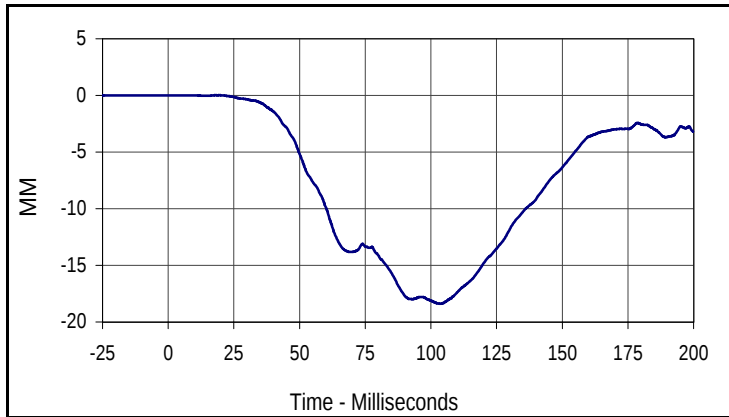
Curve Description			
Right Rear (3 Yr.) Chest Z			
CURNO	Type	SAE Class	Units
151	FIL	180	G's
Max	Time	Min	Time
14.2	90.8	-29.8	64.3



Curve Description			
Right Rear (3 Yr.) Chest Resultant			
CURNO	Type	SAE Class	Units
149	RES	180	G's
Max	Time	Min	Time
61.8	75.6	0.1	0.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

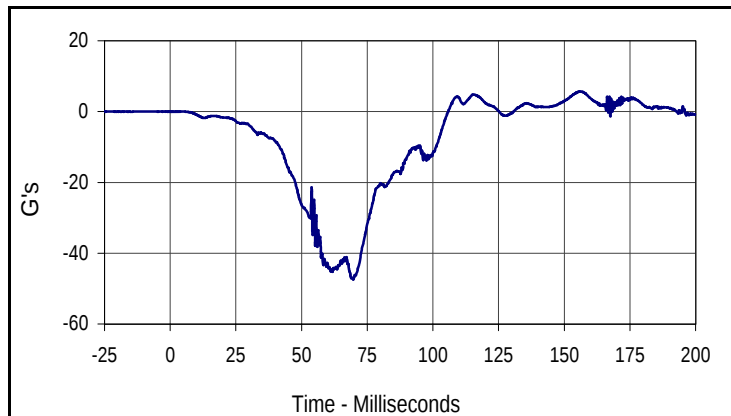
Test Date: 8/26/04
 NHTSA No.: M55200



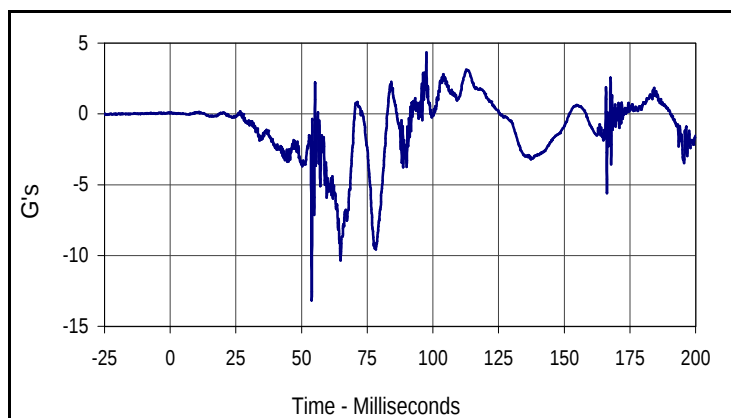
Curve Description			
Right Rear (3 Yr.) Chest Deflection			
CURNO	Type	SAE Class	Units
152	FIL	600	MM
Max	Time	Min	Time
0.0	18.0	-18.4	103.7

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

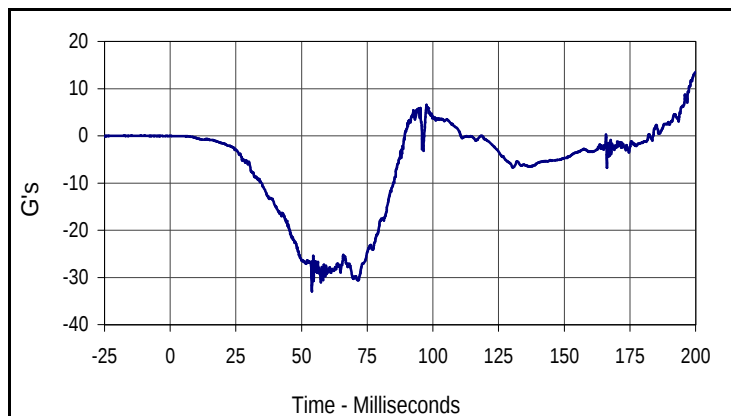
Test Date: 8/26/04
 NHTSA No.: M55200



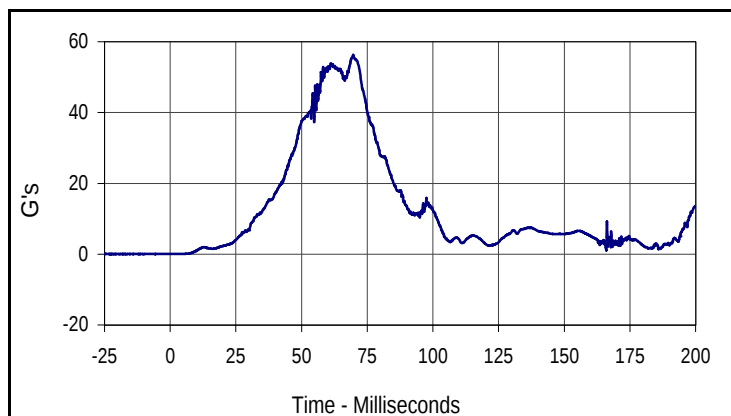
Curve Description			
Right Rear (3 Yr.) Pelvis X			
CURNO	Type	SAE Class	Units
153	FIL	1000	G's
Max	Time	Min	Time
5.7	155.9	-47.4	69.7



Curve Description			
Right Rear (3 Yr.) Pelvis Y			
CURNO	Type	SAE Class	Units
154	FIL	1000	G's
Max	Time	Min	Time
4.3	97.5	-13.1	53.8



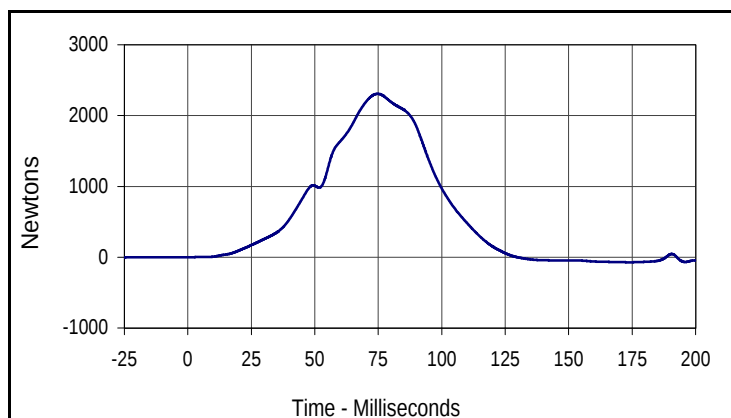
Curve Description			
Right Rear (3 Yr.) Pelvis Z			
CURNO	Type	SAE Class	Units
155	FIL	1000	G's
Max	Time	Min	Time
13.6	200.0	-32.9	53.9



Curve Description			
Right Rear (3 Yr.) Pelvis Resultant			
CURNO	Type	SAE Class	Units
153	RES	1000	G's
Max	Time	Min	Time
56.3	69.6	0.0	4.0

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

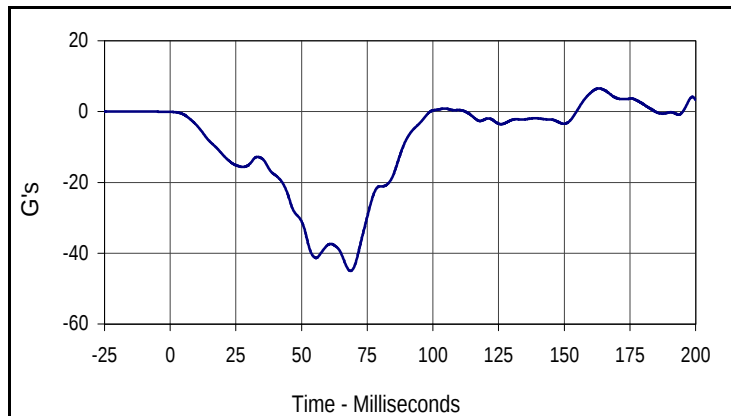
Test Date: 8/26/04
 NHTSA No.: M55200



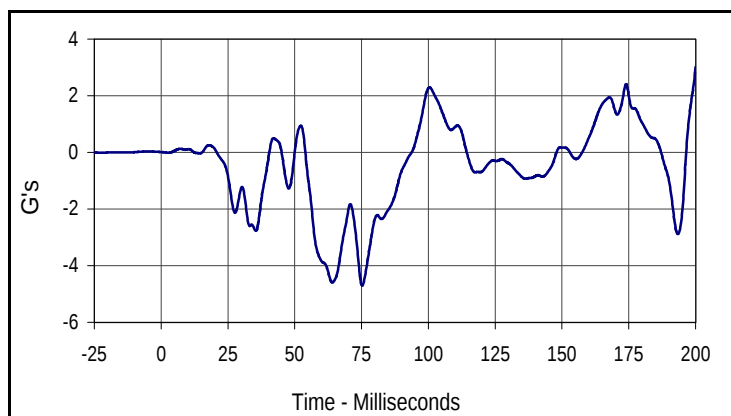
Curve Description			
Right Rear (3 Yr.) Child Seat Tether Force			
CURNO	Type	SAE Class	Units
156	FIL	60	Newtons
Max	Time	Min	Time
2307.1	74.8	-71.6	174.1

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

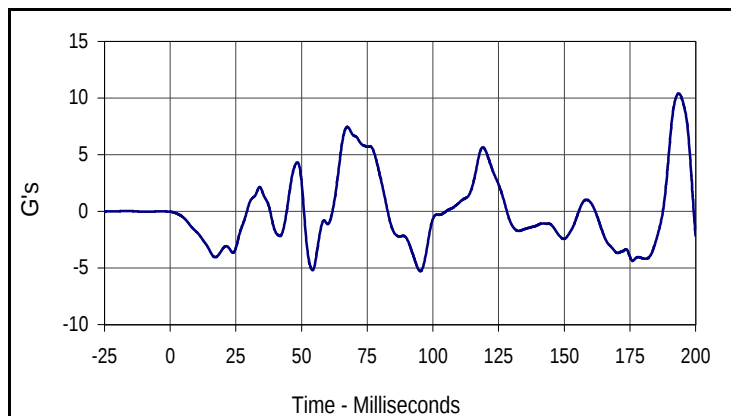
Test Date: 8/26/04
 NHTSA No.: M55200



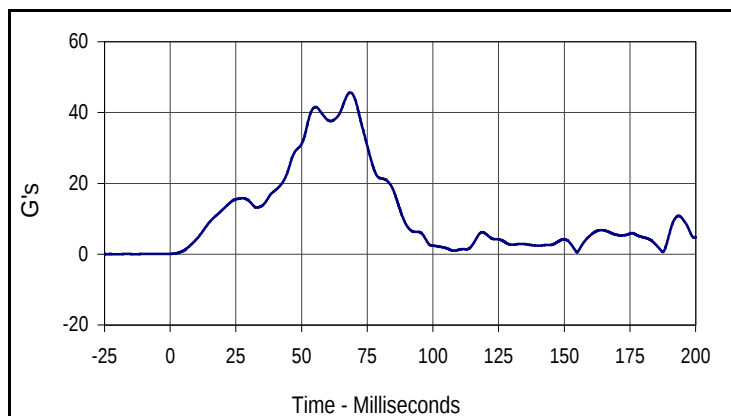
Curve Description			
Right Rear (3 Yr.) Car Seat X			
CURNO	Type	SAE Class	Units
157	FIL	60	G's
Max	Time	Min	Time
6.5	163.2	-45.0	68.6



Curve Description			
Right Rear (3 Yr.) Car Seat Y			
CURNO	Type	SAE Class	Units
158	FIL	60	G's
Max	Time	Min	Time
3.0	200.0	-4.7	75.3



Curve Description			
Right Rear (3 Yr.) Car Seat Z			
CURNO	Type	SAE Class	Units
159	FIL	60	G's
Max	Time	Min	Time
10.4	193.6	-5.3	95.2



Curve Description			
Right Rear (3 Yr.) Car Seat Resultant			
CURNO	Type	SAE Class	Units
157	RES	60	G's
Max	Time	Min	Time
45.7	68.6	0.1	0.0

SECTION F-4

CHILD DUMMY INSTRUMENTATION INFORMATION

**2005 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Left Rear Child A.T.D. Serial Number 082 (3 Yr.)
8/26/04
2005 Nissan Altima 4-Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
134	HEAD CG	X	GPAC050	Accel.,1/2 bridge	Endevco	7264-2000	G
135	HEAD CG	Y	GPAC051	Accel.,1/2 bridge	Endevco	7264-2000	G
136	HEAD CG	Z	GPAC052	Accel.,1/2 bridge	Endevco	7264-2000	G
137	UPPER NECK FORCE	X	082UNFX	Load cell, six axis neck	R. A. Denton	IF-234	N
138	UPPER NECK FORCE	Y	082UNFY	Load cell, six axis neck	R. A. Denton	IF-234	N
139	UPPER NECK FORCE	Z	082UNFZ	Load cell, six axis neck	R. A. Denton	IF-234	N
140	UPPER NECK MOMENT	X	082UNMX	Load cell, six axis neck	R. A. Denton	IF-234	Nm
141	UPPER NECK MOMENT	Y	082UNMY	Load cell, six axis neck	R. A. Denton	IF-234	Nm
142	UPPER NECK MOMENT	Z	082UNMZ	Load cell, six axis neck	R. A. Denton	IF-234	Nm
143	LOWER NECK FORCE	X	082LNFX	Load cell, six axis neck	R. A. Denton	3303	N
144	LOWER NECK FORCE	Y	082LNFY	Load cell, six axis neck	R. A. Denton	3303	N
145	LOWER NECK FORCE	Z	082LNFZ	Load cell, six axis neck	R. A. Denton	3303	N
146	LOWER NECK MOMENT	X	082LNMX	Load cell, six axis neck	R. A. Denton	3303	Nm
147	LOWER NECK MOMENT	Y	082LNMY	Load cell, six axis neck	R. A. Denton	3303	Nm
148	LOWER NECK MOMENT	Z	082LNMZ	Load cell, six axis neck	R. A. Denton	3303	Nm
149	CHEST CG	X	2116-A11	Accel., Full Bridge	Entran	2000JF	G
150	CHEST CG	Y	2116-A14	Accel., Full Bridge	Entran	2000JF	G
151	CHEST CG	Z	2116-A23	Accel., Full Bridge	Entran	2000JF	G
152	CHEST DISPLACEMENT	X	082CP	Rotary Pot Chest	Servo	14CBI	MM
153	PELVIS	X	2116-A12	Accel., Full Bridge	Entran	2000JF	G
154	PELVIS	Y	2116-A19	Accel., Full Bridge	Entran	2000JF	G
155	PELVIS	Z	2116-A17	Accel., Full Bridge	Entran	2000JF	G
156	CAR SEAT UPPER TETHER FORCE	X	BL112	Load cell, Seat belt	FGP	FN4060	N
157	CAR SEAT	X	KETX1A	Accel.,1/2 bridge	Endevco	7264-200	G
158	CAR SEAT	Y	KETX1B	Accel.,1/2 bridge	Endevco	7264-200	G
159	CAR SEAT	Z	KETX1C	Accel.,1/2 bridge	Endevco	7264-200	G

SECTION F-5

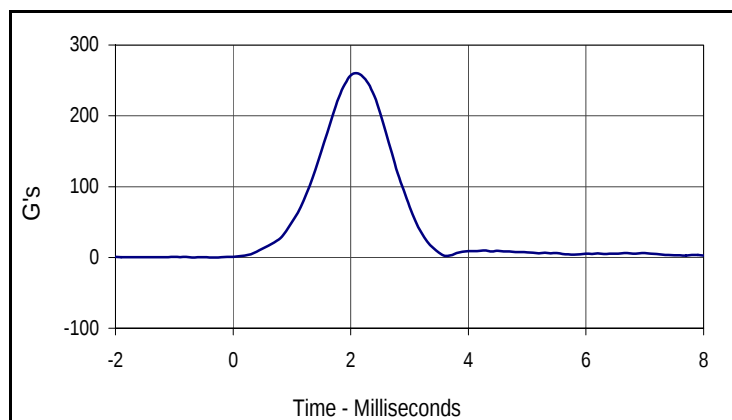
CHILD DUMMY CALIBRATION INFORMATION

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

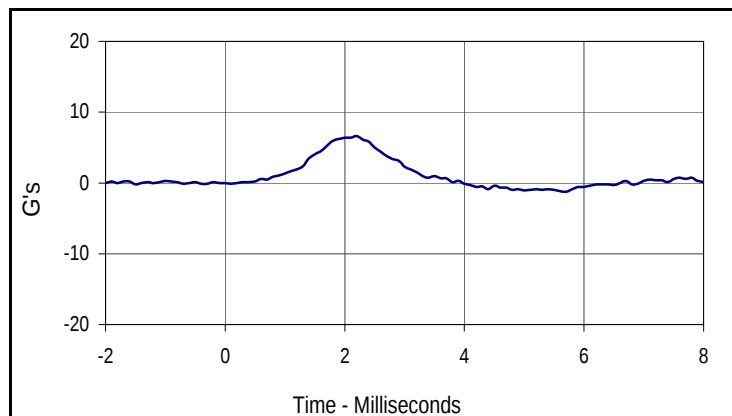
Test Date: 8/24/04
 Test I.D.: HD08A



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



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



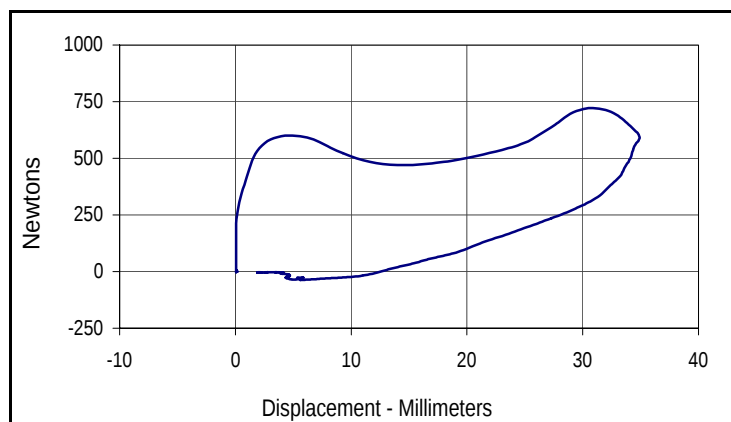
Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.6	2.2	-1.2	5.7

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

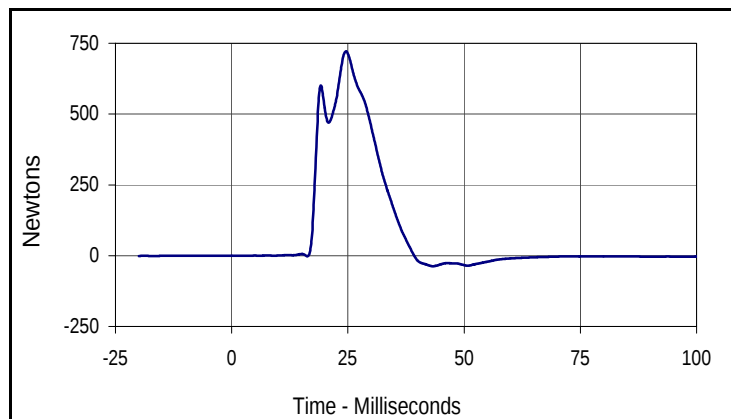
Test Date: 8/25/04
 Test I.D.: CH08A



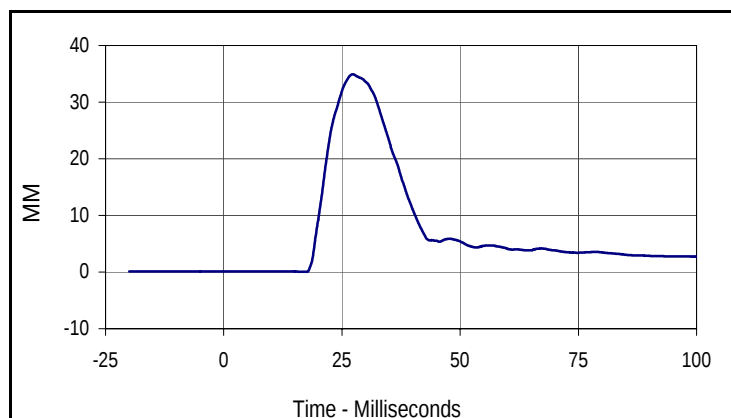
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	5.9 to 6.1	5.93	Pass
Peak Chest Compression	MM	32 to 38	34.9	Pass
Peak Force Between 32 and 38 MM	Newtons	680 to 810	709.2	Pass
Peak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



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



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



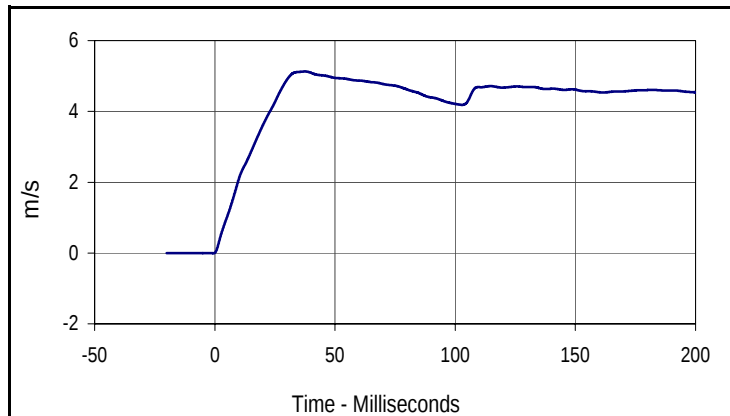
Curve Description			
Chest Compression			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
34.9	27.3	0.1	17.6

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

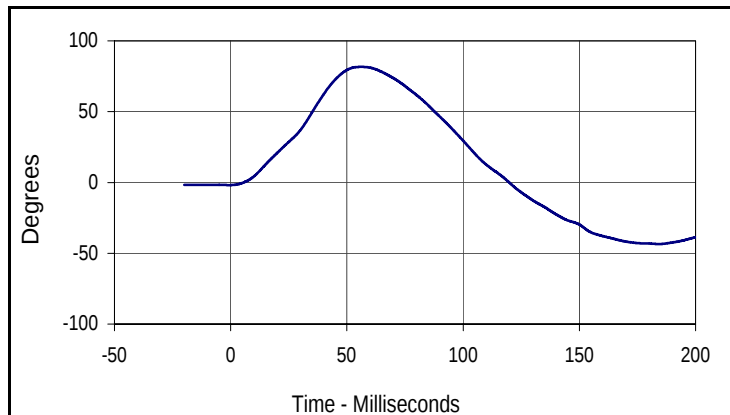
Test Date: 8/25/04
 Test I.D.: NF08A



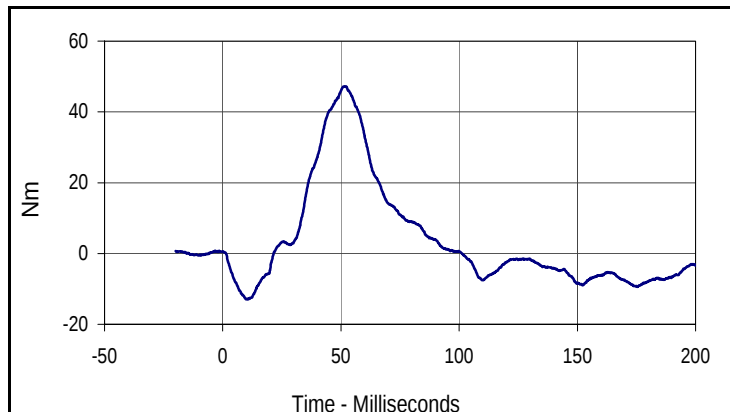
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.40 to 5.60	5.55	Pass
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.1	Pass
	20 Msec.	m/s	3.0 to 4.0	3.6	Pass
	30 Msec.	m/s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



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



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



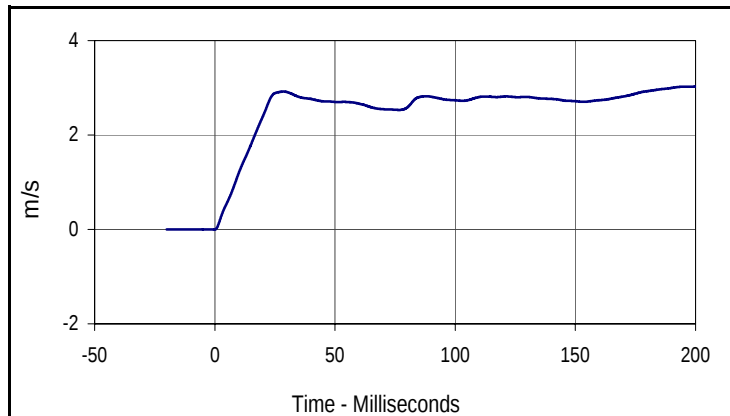
Curve Description			
Neck Moment Y			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
47.2	51.7	-13.0	10.0

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

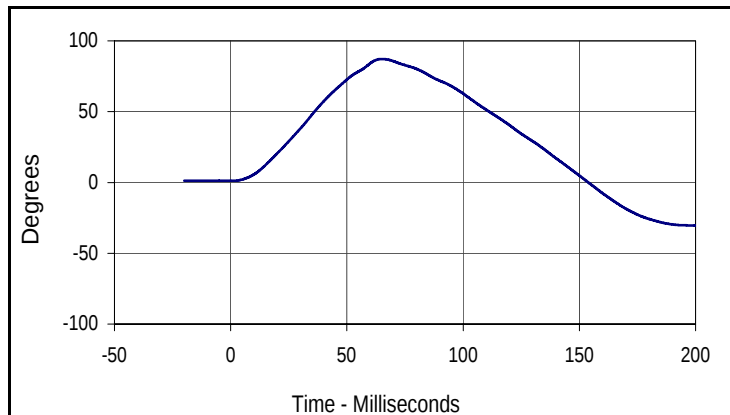
Test Date: 8/25/04
 Test I.D.: NE04J



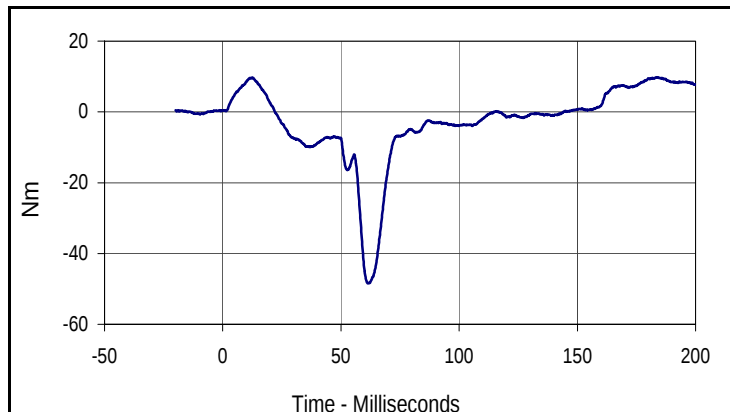
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	3.55 to 3.75	3.72	Pass
Pendulum Deceleration	10 Msec.	m/s	1.0 to 1.4	1.2	Pass
	20 Msec.	m/s	1.9 to 2.5	2.4	Pass
	30 Msec.	m/s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



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



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



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

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

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



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

Test Program: Hybrid III 3 Year Old External Measurements

Test Date: 8/25/04

ATD Serial No.: 082

Test I.D.: N/A



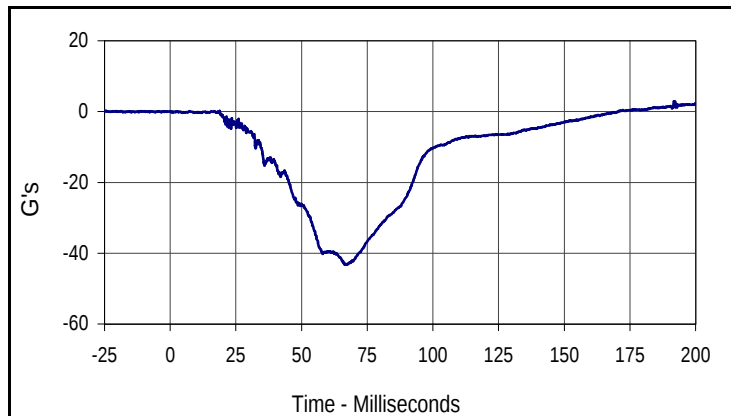
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	539 to 554	545	Pass
B - Shoulder pivot height	mm	307 to 323	320	Pass
C - "H" point height	mm	34 to 45	40	Pass
D - "H" point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

APPENDIX G

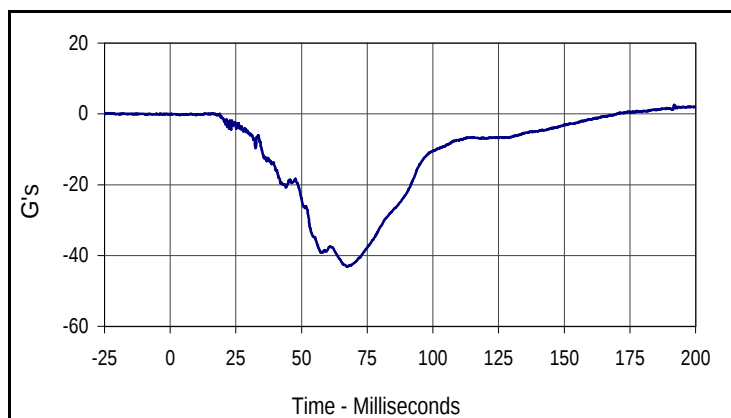
NINE ACCELEROMETER HEAD ARRAY

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

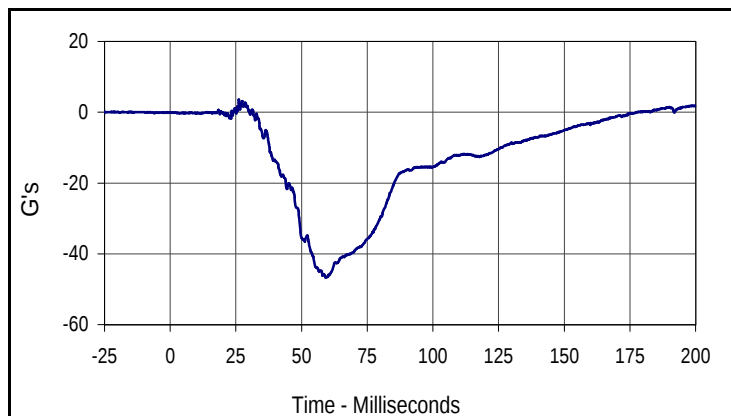
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.9	191.8	-43.3	67.1



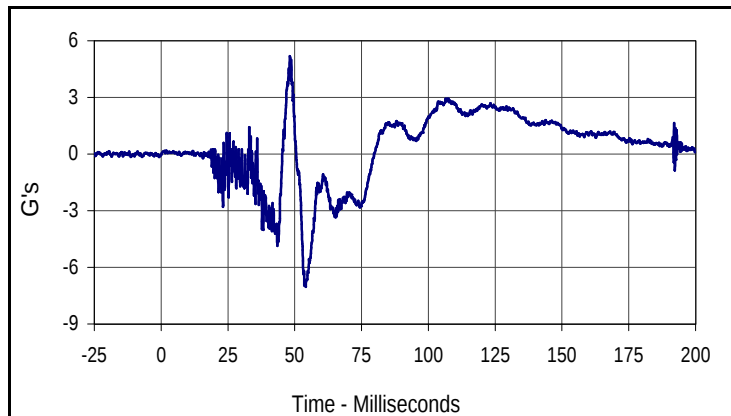
Curve Description			
Driver NAHA Yarm-X			
CURNO	Type	SAE Class	Units
162	FIL	1000	G's
Max	Time	Min	Time
2.6	191.8	-43.2	67.3



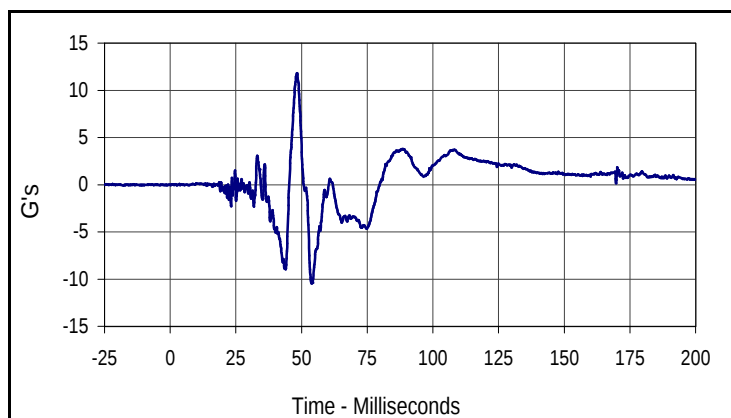
Curve Description			
Driver NAHA Zarm-X			
CURNO	Type	SAE Class	Units
164	FIL	1000	G's
Max	Time	Min	Time
3.6	26.1	-46.7	59.1

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

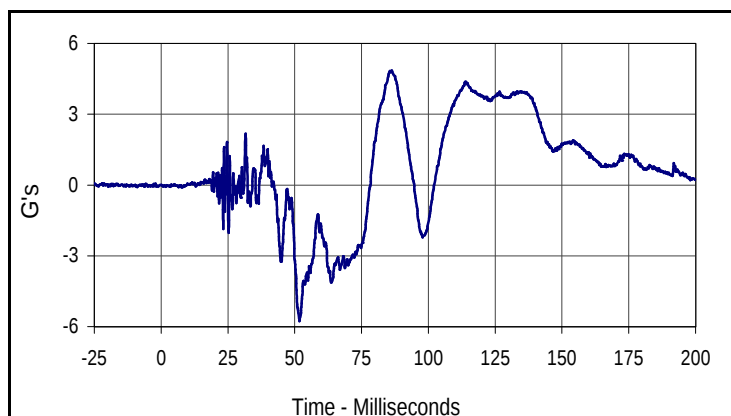
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.2	48.2	-7.0	54.1



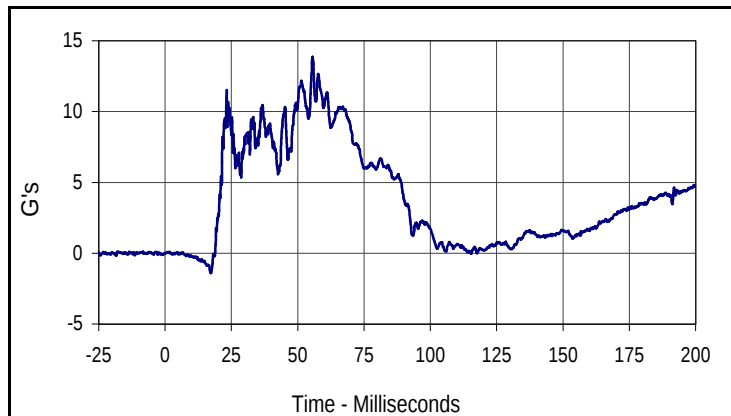
Curve Description			
Driver NAHA Xarm-Y			
CURNO	Type	SAE Class	Units
160	FIL	1000	G's
Max	Time	Min	Time
11.8	48.3	-10.5	53.8



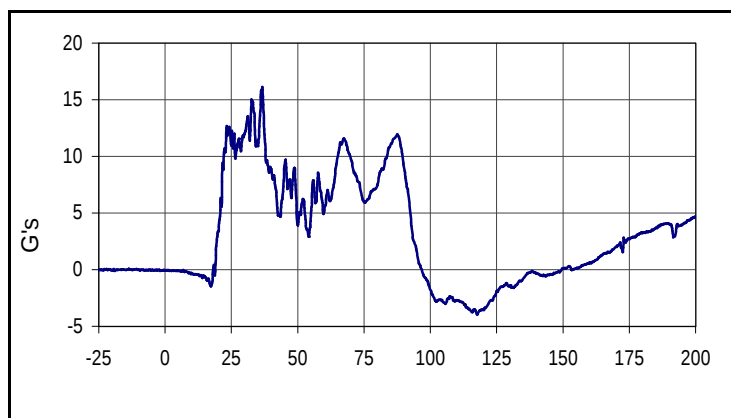
Curve Description			
Driver NAHA Zarm-Y			
CURNO	Type	SAE Class	Units
165	FIL	1000	G's
Max	Time	Min	Time
4.8	86.3	-5.8	51.8

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

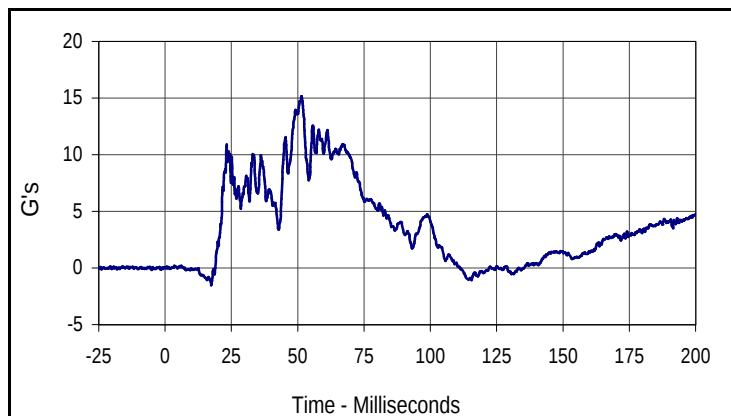
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.9	55.6	-1.4	17.2



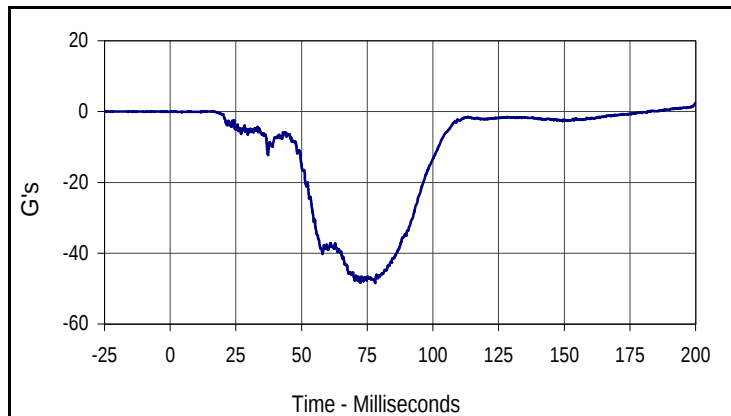
Curve Description			
Driver NAHA Xarm-Z			
CURNO	Type	SAE Class	Units
161	FIL	1000	G's
Max	Time	Min	Time
16.1	36.7	-4.0	117.7



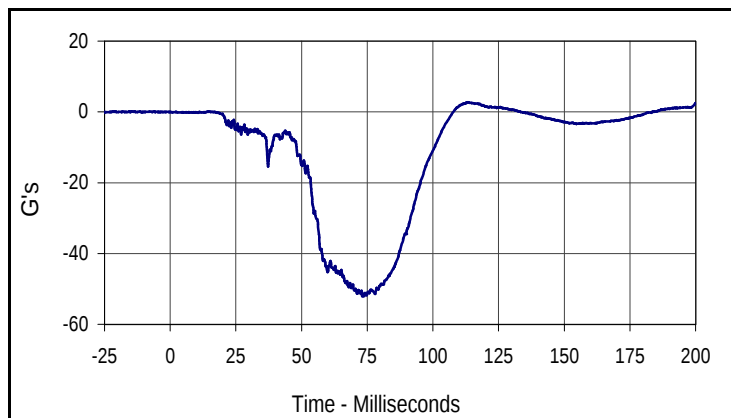
Curve Description			
Driver NAHA Yarm-Z			
CURNO	Type	SAE Class	Units
163	FIL	1000	G's
Max	Time	Min	Time
15.2	51.5	-1.5	17.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

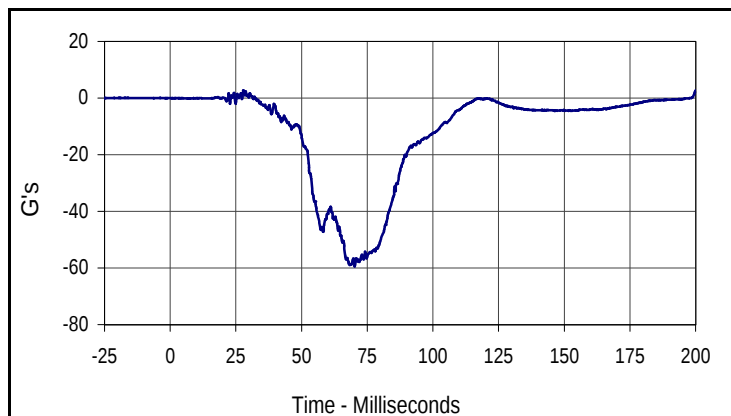
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
2.4	200.0	-48.4	78.0



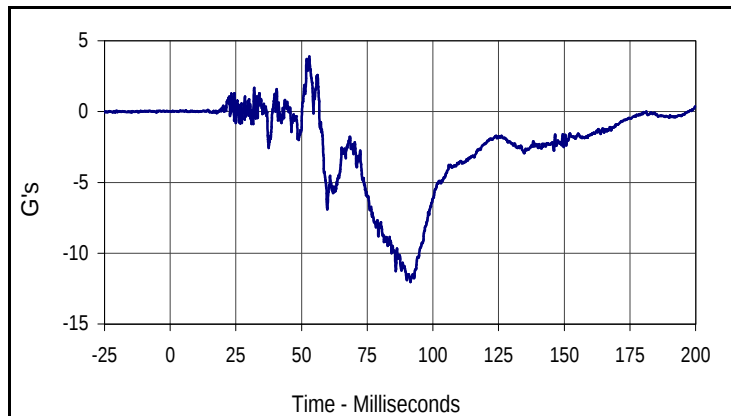
Curve Description			
Passenger NAHA Yarm-X			
CURNO	Type	SAE Class	Units
168	FIL	1000	G's
Max	Time	Min	Time
2.8	113.3	-52.1	73.2



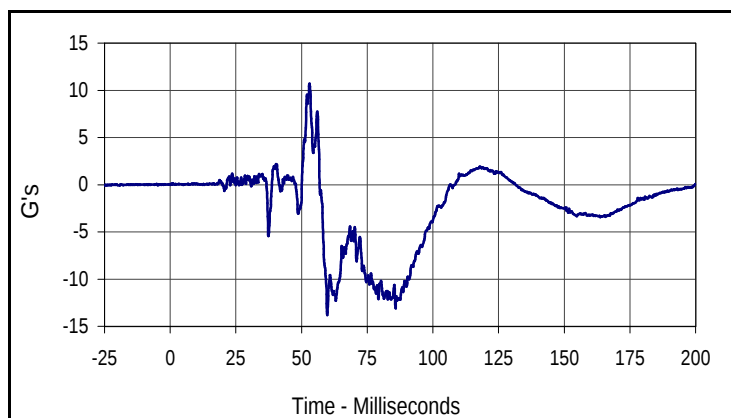
Curve Description			
Passenger NAHA Zarm-X			
CURNO	Type	SAE Class	Units
170	FIL	1000	G's
Max	Time	Min	Time
2.7	27.9	-59.4	70.3

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

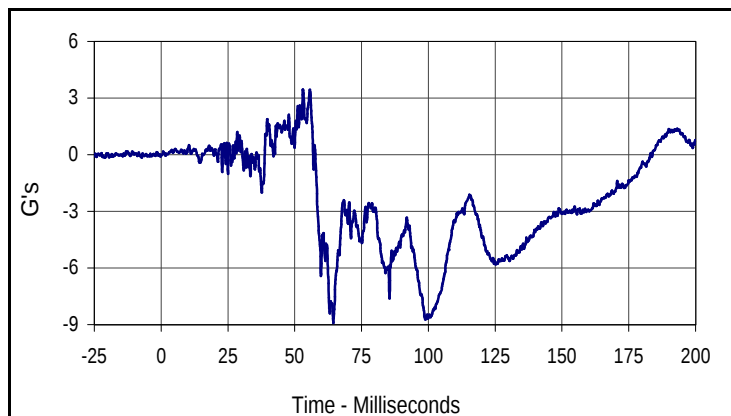
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
3.9	53.0	-12.0	91.5



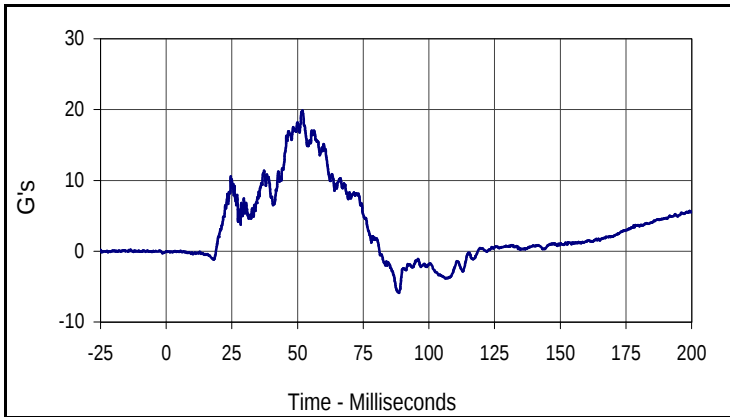
Curve Description			
Passenger NAHA Xarm-Y			
CURNO	Type	SAE Class	Units
166	FIL	1000	G's
Max	Time	Min	Time
10.7	53.0	-13.8	59.8



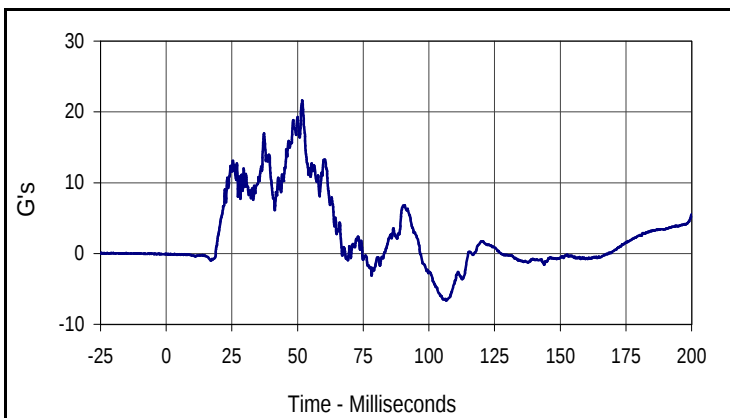
Curve Description			
Passenger NAHA Zarm-Y			
CURNO	Type	SAE Class	Units
171	FIL	1000	G's
Max	Time	Min	Time
3.5	53.1	-8.9	64.4

Test Vehicle: 2005 Nissan Altima 4-Door Sedan
 Test Program: 2005 NHTSA 35mph NCAP

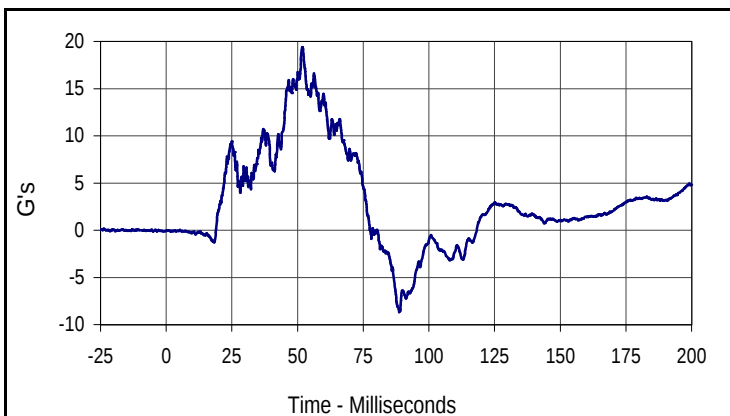
Test Date: 8/26/04
 NHTSA No.: M55200



Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
19.9	51.9	-5.9	88.5



Curve Description			
Passenger NAHA Xarm-Z			
CURNO	Type	SAE Class	Units
167	FIL	1000	G's
Max	Time	Min	Time
21.6	51.8	-6.7	106.7



Curve Description			
Passenger NAHA Yarm-Z			
CURNO	Type	SAE Class	Units
169	FIL	1000	G's
Max	Time	Min	Time
19.4	51.7	-8.7	88.7