

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

**MAZDA MOTOR CORPORATION
2004 MAZDA RX-8
4 DOOR SEDAN**

NHTSA NUMBER: Z45400

**PREPARED BY:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
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4/8/04

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2004 Mazda RX-8 4 Door Sedan at Karco Engineering, LLC on 4/8/04. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 55.92 km/h. The ambient temperature at the barrier face at the time of impact is 27.8 degrees Celcius. The vehicle's maximum post test static crush is 548 mm to the right of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:					
Measurement Description		Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)		N/A	1000	484.5	516.7
Max. Chest Accel. (3 msec Clip)		G's	60	46.5	37.6
Left Femur Force		Newtons	10008	-4341.3	-3363.7
Right Femur Force		Newtons	10008	-3208.4	-2240.4
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2004 Mazda RX-8 4 Door Sedan NHTSA No. Z45400				18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
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TABLE OF CONTENTS

Section	Description	Page
1	Purpose and Summary of Test Z45400	1
2	Occupant and Vehicle Information/Data Sheets	3

Data Sheet	Description	Page
1	Crash Test Summary	4
2	General Test and Vehicle Parameter Data	5
3	Post Test Impact Data	8
4	Test Vehicle Information	9
5	Dummy Positioning in Vehicle	11
6	Seatbelt Positioning Data	13
7	Vehicle Accelerometer Location and Data Summary	14
8	Hybrid III ATD Injury Criteria and Sensor Data	15
9	Seatbelt Assessment Test Data	18
10	Summary of FMVSS 212 Data	19
11	Windshield Zone Intrusion FMVSS 219 Data (Partial)	20
12	FMVSS 301 Fuel System Integrity Post Impact Data	21
13	FMVSS 301 Static Rollover Data	22
14	Vehicle Measurements	24
15	Camera Locations	27
16	Photographic Reference Target Locations	28
17	Vehicle Intrusion Measurements	29
18	Fixed Barrier Load Cell Locations	33
19	Accident Investigation Division Data	34
20	Dummy/Vehicle Temperature Stabilization	35

Appendix	Description	Appendix
A	Photographs	A
B	Dummy and Vehicle Response Data Traces	B
C	Load Cell Barrier Data Traces	C
D	Instrumentation and Data Channel Assignments	D
E	Dummy Calibration Data Traces and Tables	E
F	Child Restraint System (Not used For This Test)	F

SECTION 1

PURPOSE AND SUMMARY OF TEST Z45400

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.

The 35 mph (56.3 km/h) frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Test Procedure.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2004 Mazda RX-8 4 Door Sedan at a velocity of 55.92 km/h. The test was performed at Karco Engineering, LLC on April 8, 2004.

One real-time and 14 (fourteen) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in 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 head (primary and redundant), chest (primary and redundant) and pelvis 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. The driver (position 1) ATD (Serial No. 35) and the right-front passenger (position 2) ATD (Serial No. 34) were calibrated previous to this test.

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

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 548 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 and chest contacted the airbag. The abdomen had no contact. Both knees contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD head and chest contacted the airbag. The abdomen had no contact. 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	484.5	46.5	-22.9	-4341.3	-3208.4	213.6
Passenger	516.7	37.6	-24.2	-3363.7	-2240.4	286.9

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

CONVERSION FACTORS USED IN THIS REPORT*

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

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

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.92
Test Weight	kg	1543
Impact Angle	degrees	0
Average Rebound	mm	1452
Maximum Static Crush	mm	548

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)	None	None
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 35	50% Male Hybrid III No. 34
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag
Abdomen Contact	None	None
Left Knee Contact	Knee Bolster	Glovebox
Right Knee Contact	Knee Bolster	Glovebox

16mm MOVIE COVERAGE

High Speed	1
Real Time	14
Total	15

DATA CHANNELS

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

3DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	Z45400	Anti-Lock Brakes	Yes
Make	Mazda	All Wheel Drive	No
Model	RX-8	Power Steering	Yes
Body Style	4-Door	Driver Front Airbag	Yes
Vin No.	JM1FE17N940131257	Driver Side Airbag	Yes
Color	Nordic Green	Driver Head Airbag	Yes
Delivery Date	4/2/2004	Driver Curtain Airbag	No
Odometer	77.0 mi	Pass. Airbag	Yes
Dealer	Redlands Mazda	Pass. Side Airbag	Yes
Transmission	4 Speed Automatic	Pass. Head Airbag	Yes
Final Drive	Front	Pass. Curtain Airbag	No
Type/No. Cyl.	Rotary	Pre-Tensioners	Yes
Engine Disp. (L)	1.3	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	Yes	Tilt Steering	Yes
Traction Control	Yes	Automatic Door Locks	No
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	No
Rear Disc	Yes	Other	None

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

N/A

DATA FROM CERTIFICATION LABEL

Manufactured By	Mazda Motor Corporation	GWR (kg)	1748
Date of Manufacture	01/04	GAWR Front (kg)	841
		GAWR Rear (kg)	907

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

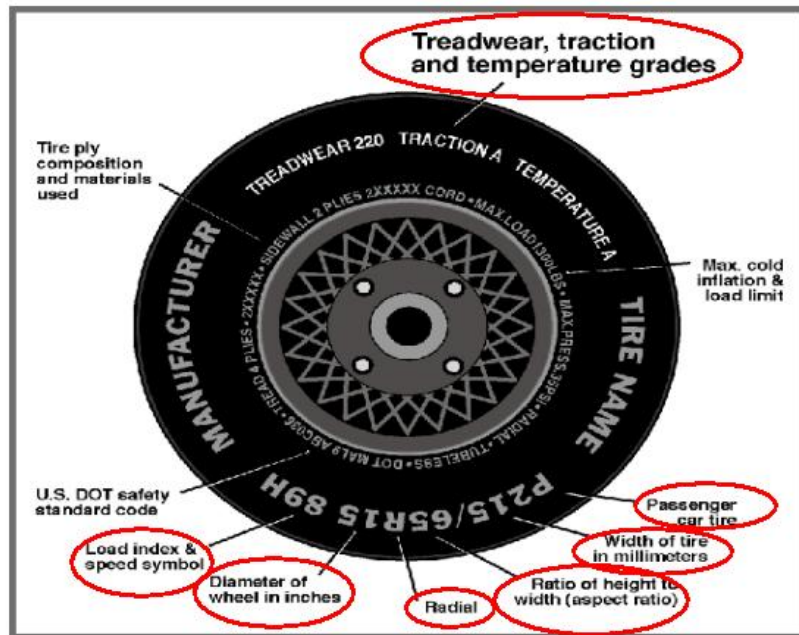
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	None	
Number of Occupants	2	2	N/A	4
Capacity Weight (VCW) (kg)				308
Cargo Weight (RCLW) (kg)				36

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

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



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	357	357
Cold Pressure (kpa)	220	220
Recommended Tire Size	225/45R18	225/45R18
Tire Size on Vehicle	225/45R18	225/45R18
Tire Manufacturer	Bridgestone	Bridgestone
Treadwear	140	140
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	2	2
Load Index/Speed Symbol	91 W	91 W
Tire Material	Polyester/Steel	Polyester/Steel
DOT Safety Code Right	DOT EJJ7CAC0204	DOT EJJ7CAC0204
DOT Safety Code Left	DOT EJJ7CAC0204	DOT EJJ7CAC0204

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	359	330		385	374	
Right	kg	360	313		392	392	
Ratio	%	52.8	47.2		50.3	49.7	
Totals	kg	719	643	1362	777	766	1543

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1362
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	36
Calculated Vehicle Target Wt. (TVTW)	kg	1550

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	700	703	687	692	1275
As Tested	mm	691	691	670	672	1341

Vehicle Wheel Base (mm) 2700

Weight of Ballast Secured in cargo area (kg) 0

Vehicle Components Removed Rear bumper, deck lid, muffler, rear window, rear corner windows and taillights.

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

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 59.81

Usable Capacity Furnished by COTR (L) 59.81

Actual Test Volume with entire fuel System Filled (L) 55.61

1/3 of Usable Capacity (L) 19.94

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: Key operated w/automatic shutoff.

DATA SHEET NO. 3
POST TEST IMPACT DATA

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
Test Date: 4/8/04

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	55.92
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	55.94
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	4195	3900	-295
Center	mm	4410	3862	-548
Right Side	mm	4195	3863	-332

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1445
Center	mm	1500
Right Side	mm	1410
Average	mm	1452

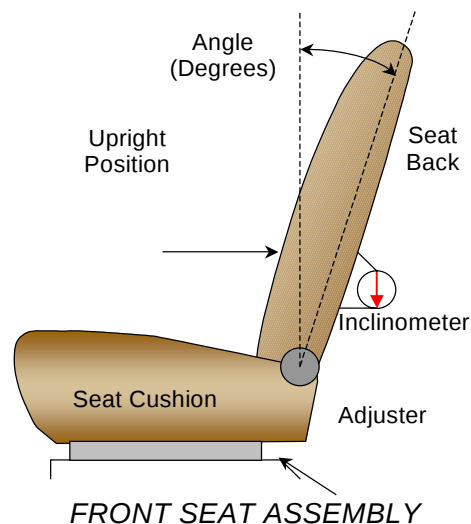
DATA SHEET NO. 4 TEST VEHICLE INFORMATION

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

NOMINAL DESIGN RIDING POSITION

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



SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	2.4
Passenger w/seated Dummy	2.4

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	24	13
Passenger Seat	24	13

SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

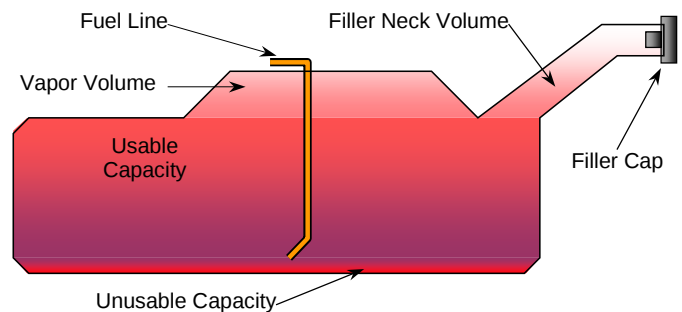
SEAT BELT UPPER ANCHORAGE

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

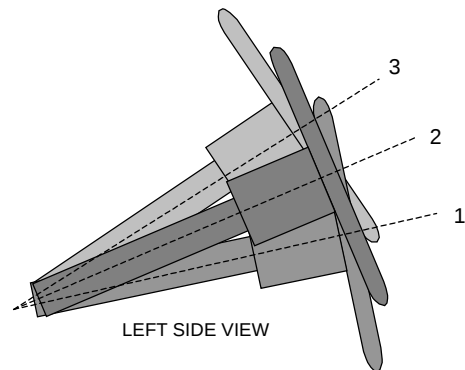
DATA SHEET NO. 4.....(CONTINUED)**TEST VEHICLE INFORMATION**Test Vehicle: 2004 Mazda RX-8 4 Door SedanNHTSA No.: Z45400Test Program: 2004 NHTSA 35mph NCAPTest Date: 4/8/04**FUEL TANK CAPACITY**

	Liters
Usable Capacity of "Standard Tank"	59.81
Usable Capacity of "Optional" Tank	N/A
Usable Capacity used for FMVSS 301	55.00 to 56.21
Actual Amount of Solvent used	55.61
1/3 of Usable Capacity	19.94

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 left 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**

	Degrees
Lowermost position No. 1	17.3
Geometric center position No. 2	19.1
Uppermost position No. 3	21.0

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
Test Date: 4/8/04

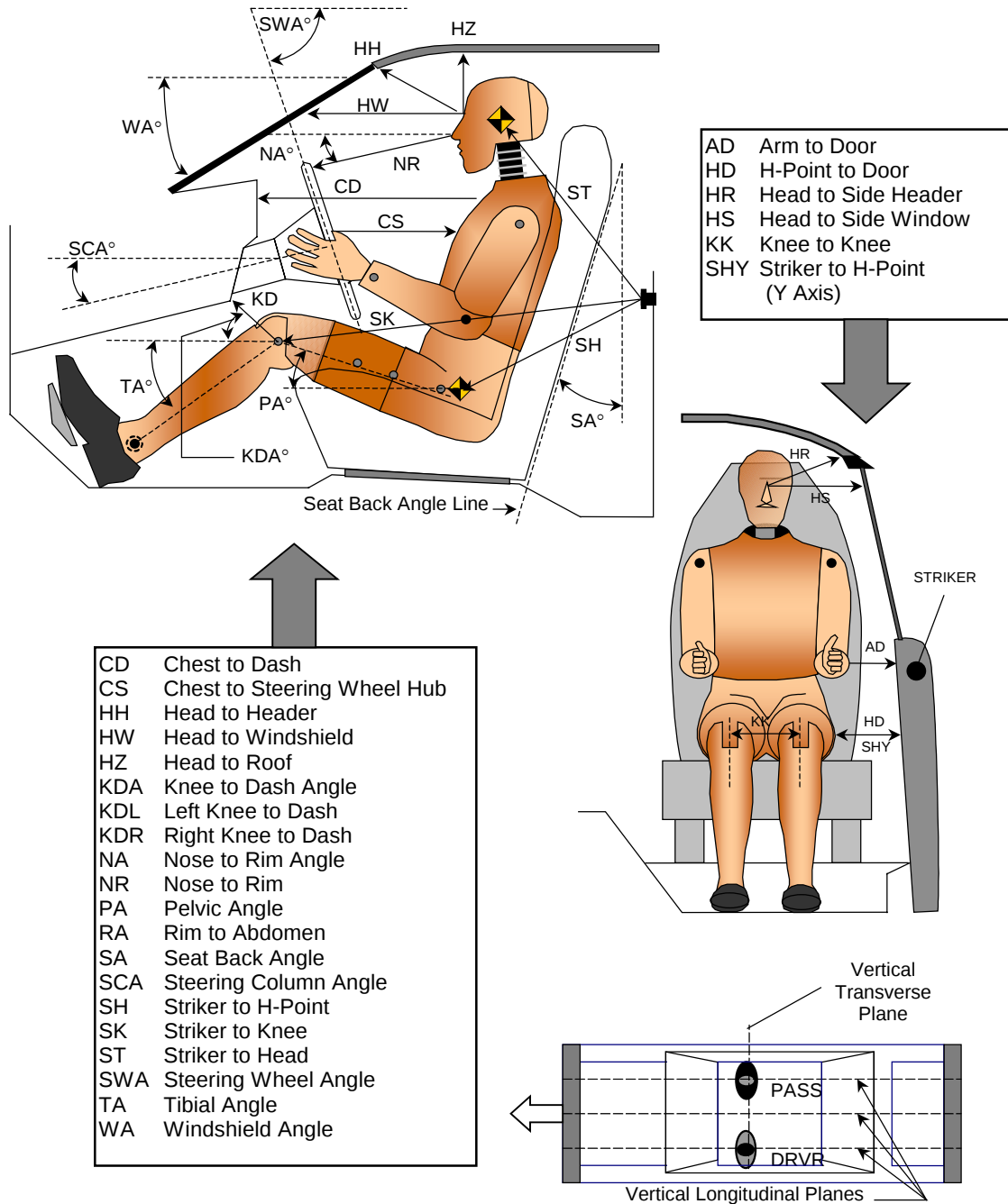
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		26.7		
SWA	Steering Wheel Angle		70.9		
SCA	Steering Column Angle		19.1		
SA	Seat Back Angle		2.4		2.4
HZ	Head to Roof (Z)	157	90	140	90
HH	Head to Header	290		295	
HW	Head to Windshield	580		590	
HR	Head to Side Header (Y)	235		225	
NR	Nose to Rim	367	14		
CD	Chest to Dash	478		490	
CS	Chest to Steering Hub	280			
RA	Rim to Abdomen	200			
KDL	Left Knee to Dash	175	16	140	
KDR	Right Knee to Dash	145		174	26
PA	Pelvic Angle		24		21
TA	Tibia Angle		35		36
KK	Knee to Knee (Y)	315		270	
SK	Striker to Knee	630	8	540	3
ST	Striker to Head	518	74	640	71
SH	Striker to H-Point	270	31	265	28
SHY	Striker to H-Point (Y)	245		243	
HS	Head to Side Window	290		310	
HD	H-Point to Door (Y)	130		130	
AD	Arm to Door (Y)	110		105	

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

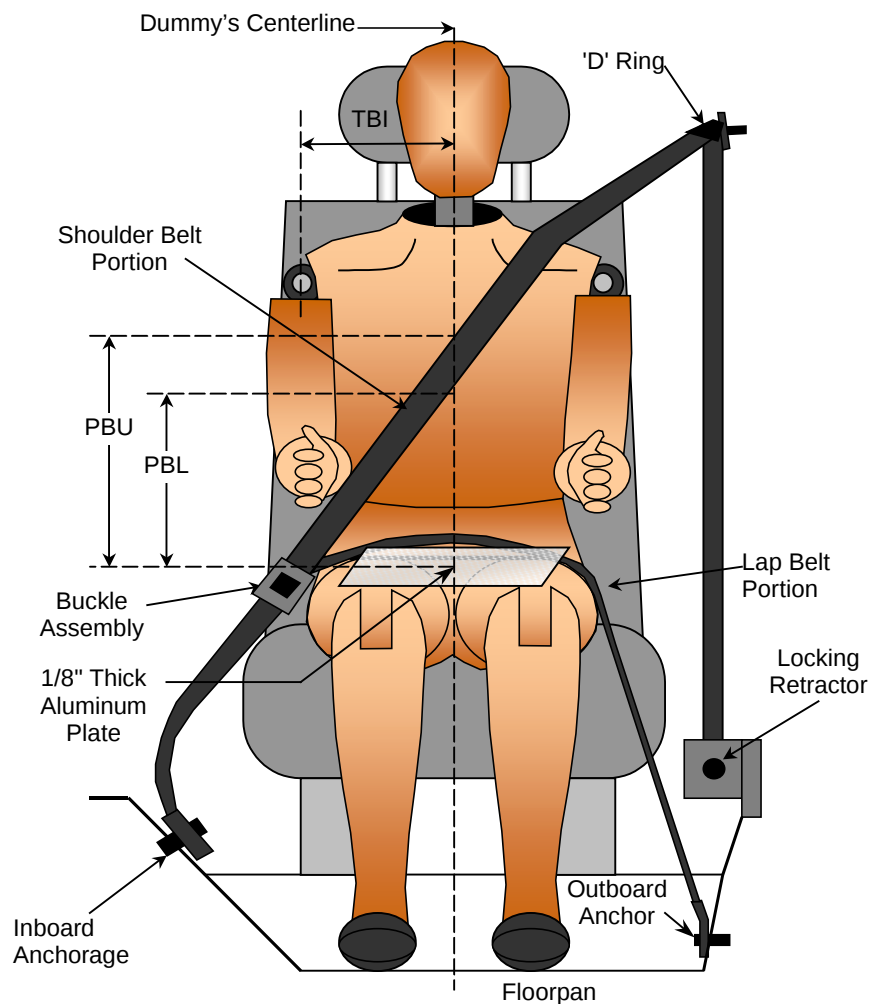


DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6 **SEAT BELT POSITIONING DATA**

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	225	230
PBU - Top Surface of reference to belt upper edge	mm	320	330
PBL - Top Surface of reference to belt lower edge	mm	260	250
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: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

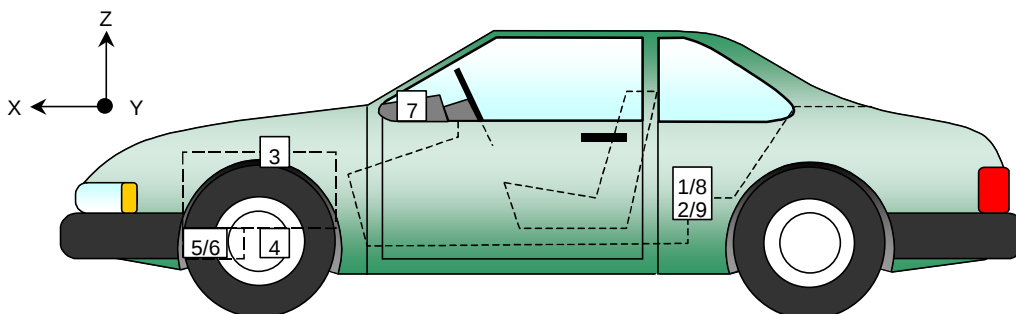
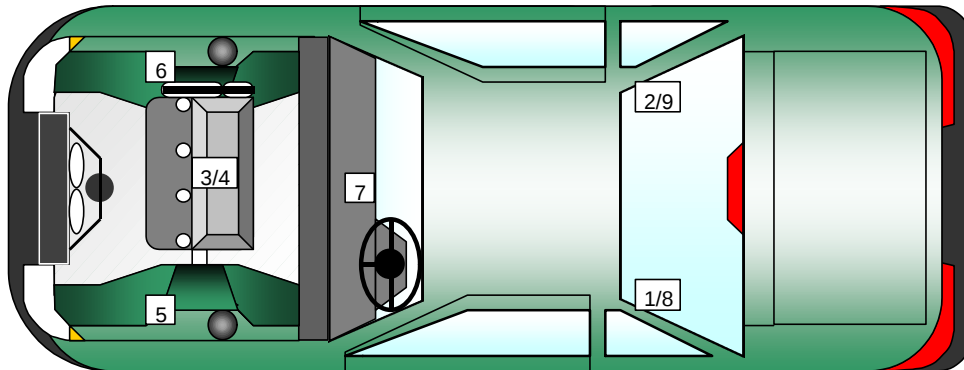
VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member	1940	-640	195	G's	1.6	138.7	-40.9	53.5
2	Right Rear X-Member	1940	640	195	G's	1.7	128.9	-40.6	56.4
3	Engine Top	3510	-112	920	G's	1.4	42.4	-79.6	23.4
4	Engine Bottom	3450	0	170	G's	0.0	0.0	0.0	0.0
5	Left Brake Caliper	3480	-670	280	G's	0.0	0.0	0.0	0.0
6	Right Brake Caliper	3480	670	280	G's	0.0	0.0	0.0	0.0
7	Instrument Panel	2810	0	895	G's	28.3	84.1	-70.1	61.5
8	Left Rear X-Member (Z-Axis)	1880	-640	195	G's	10.6	45.5	-6.1	69.0
9	Right Rear X-Member (Z-Axis)	1880	640	195	G's	10.2	47.0	-7.8	72.3

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

1.) Channel failed at 37.5 msec

2.) Channel failed, no data



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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	0.7	199.3	-57.0	75.6	0.8	9.9	-54.9	85.8
Head CG	Y	G's	2.1	59.0	-5.4	83.6	2.7	33.0	-8.3	88.1
Head CG	Z	G's	17.0	53.1	-25.5	87.8	23.2	61.2	-12.1	101.7
Head CG Resultant	N/A	G's	57.1	75.6			56.4	85.9		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.0	126.3	-46.7	80.4	1.9	173.3	-39.1	83.1
Chest CG	Y	G's	7.4	80.9	-2.9	26.0	3.3	40.7	-8.7	69.0
Chest CG	Z	G's	7.8	46.0	-7.3	89.9	9.7	45.6	-9.3	99.3
Chest CG Resultant	N/A	G's	47.5	80.5			39.8	83.1		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	962.2	46.9	-4341.3	54.8	611.2	29.7	-3363.7	51.1
Right Femur	Z	Newtons	393.8	27.6	-3208.4	57.2	1358.6	45.5	-2240.4	59.4

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Shoulder Belt Pullout	N/A	MM	213.6	96.1	-25.1	46.5	286.9	102.5	-20.4	39.4
Shoulder Belt Stretch	N/A	MM/CM	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Lap Belt Force	N/A	Newtons	4828.8	52.5	-27.4	200.0	8537.9	57.7	-0.4	0.0
Shoulder Belt Force	N/A	Newtons	4254.2	84.0	-46.7	8.1	5470.1	42.6	-38.8	177.3

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	484.5	58.7	94.0	45.1	516.7	65.3	101.3	46.0

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	46.5	79.2	82.2	37.6	81.0	84.0

DATA SHEET NO. 8...(continued)

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	5.1	85.0	-60.6	56.7	7.6	84.0	-62.4	55.9
Pelvis	Y	G's	6.2	71.2	-3.3	45.1	5.7	107.0	-13.5	76.5
Pelvis	Z	G's	1.0	17.0	-31.3	73.0	2.0	23.6	-21.8	81.9
Pelvis Resultant	N/A	G's	66.1	56.7			64.6	55.9		

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	939.5	79.5	-346.6	41.8	416.1	82.3	-331.4	46.0
Neck Force	Y	Newtons	116.8	61.7	-89.9	91.0	81.1	95.8	-166.4	139.4
Neck Force	Z	Newtons	1040.5	60.1	-322.4	92.3	1571.3	65.7	-454.8	102.5
Neck Force Resultant	N/A	Newtons	1150.8	71.0			1586.0	65.7		
Neck Moment	X	N•m	5.0	124.1	-13.1	56.7	25.5	103.4	-15.1	138.1
Neck Moment	Y	N•m	48.6	58.0	-22.3	96.9	18.8	127.6	-30.8	71.2
Neck Moment	Z	N•m	9.3	64.2	-4.6	96.1	12.6	110.3	-7.4	173.2
Neck Moment Resultant	N/A	N•m	50.6	58.0			32.7	103.6		

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	23.8	79.2	-60.7	49.0	23.7	85.9	-100.2	41.7
Left Foot Aft	Z	G's	1.2	166.7	-63.7	46.7	2.8	158.6	-54.7	42.2
Left Foot Fore	Z	G's	2.8	101.8	-129.2	45.2	24.4	57.5	-75.3	30.0
Right Foot Aft	X	G's	22.6	85.0	-40.5	37.4	38.6	61.4	-105.3	43.5
Right Foot Aft	Z	G's	3.1	122.5	-70.2	50.1	2.1	129.9	-55.5	49.5
Right Foot Fore	Z	G's	18.8	59.7	-88.2	33.9	6.3	52.8	-69.8	49.4

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	20.6	49.1	-24.1	83.4	12.3	130.6	-50.9	42.0
Left Upper Moment	Y	N•m	18.6	177.5	-104.4	50.7	23.5	48.2	-71.2	66.9
Right Upper Moment	X	N•m	56.0	44.1	-14.9	89.2	10.2	185.5	-49.5	67.0
Right Upper Moment	Y	N•m	51.5	56.5	-54.7	38.1	15.2	112.9	-80.9	45.0
Left Lower Moment	X	N•m	34.8	73.7	-7.4	196.9	42.7	92.0	-23.4	41.9
Left Lower Moment	Y	N•m	26.4	76.2	-54.5	50.0	115.2	87.2	-29.2	42.7
Left Lower Force	Z	Newtons	53.3	128.4	-1401.1	76.5	49.6	19.4	-2589.8	41.4
Right Lower Moment	X	N•m	21.5	39.0	-79.0	55.3	30.5	84.3	-17.6	49.9
Right Lower Moment	Y	N•m	76.8	85.4	-16.4	36.3	26.2	80.8	-55.0	46.3
Right Lower Force	Z	Newtons	107.8	194.4	-2678.0	47.6	91.1	23.4	-2436.9	79.7

DATA SHEET NO. 8...(continued)

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest	X	MM	0.0	3.2	-22.9	60.3	0.0	0.4	-24.2	92.0

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	0.7	199.6	-57.3	74.8	0.6	9.0	-55.2	85.9
Head CG	Y	G's	1.9	57.1	-5.6	83.7	3.5	31.4	-8.5	88.2
Head CG	Z	G's	17.0	52.9	-25.9	87.7	23.0	61.2	-12.3	101.7
Head CG Resultant	N/A	G's	57.4	76.3			56.6	85.9		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.0	126.4	-46.8	80.4	1.8	173.3	-39.2	83.2
Chest CG	Y	G's	7.6	80.8	-2.9	25.8	3.4	51.5	-8.7	69.1
Chest CG	Z	G's	7.7	46.0	-7.2	88.8	9.3	45.5	-9.2	99.4
Chest CG Resultant	N/A	G's	47.7	80.4			39.8	83.1		

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	492.2	59.0	94.0	45.6	517.8	65.3	101.3	46.0

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	46.6	79.1	82.1	37.9	81.1	84.1

DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
Test Date: 4/8/04

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI -Dummy C/L to Lap/Shoulder Belt Intersect	mm	225	230
PBU - Top Surface of reference to belt upper edge	mm	320	330
PBL - Top Surface of reference to belt lower edge	mm	260	250
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	580	580
Shoulder Belt length as measured on ATD	mm	830	855
Lap Belt length as measured on ATD	mm	710	700
Remainder of belt on reel	mm	905	890
Total belt length for continuous webbing systems	mm	3025	3025

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	150.0	175.0
As determined electronically	mm	213.6	286.9

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: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

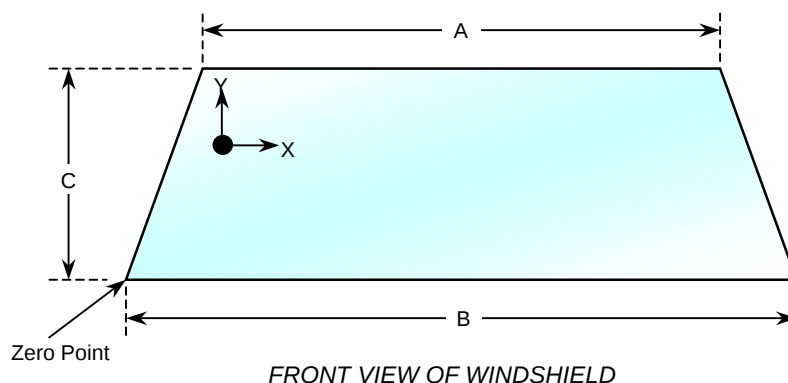
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

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: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2005.0	2005.0	100.0
Right Side	2005.0	2005.0	100.0
Total	4010.0	4010.0	100.0



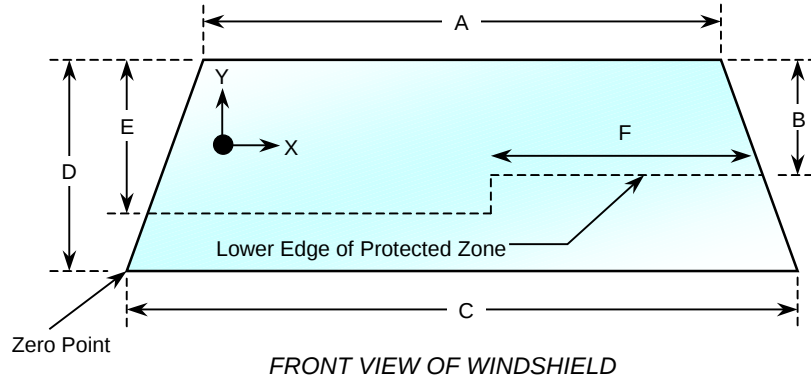
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1120.0	8.0
B	mm	1430.0	16.0
C-Left	mm	730.0	8.0
C-Right	mm	730.0	8.0

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1120
B	mm	335
C	mm	1430
D	mm	730
E	mm	437
F	mm	460

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: 2004 Mazda RX-8 4 Door Sedan NHTSA No.: Z45400
Test Program: 2004 NHTSA 35mph NCAP Test Date: 4/8/04

Test Time: 12:51 PM Temperature: 27.8 Deg. C.

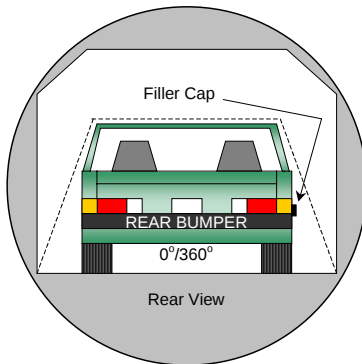
STODDARD SOLVENT SPILLAGE MEASUREMENTS

- 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

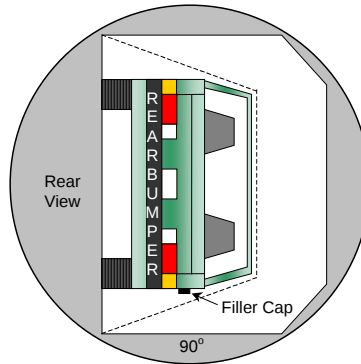
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

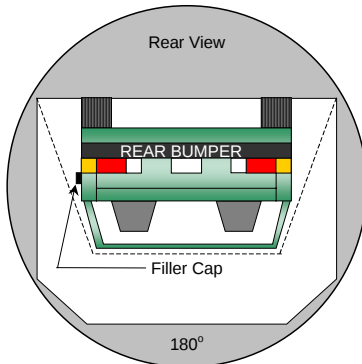
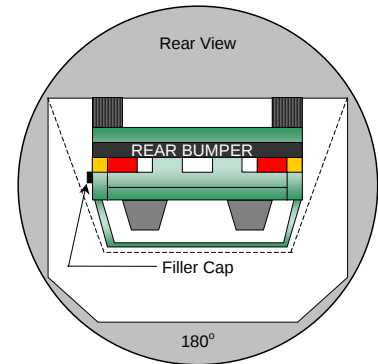
NHTSA No.: Z45400
Test Date: 4/8/04



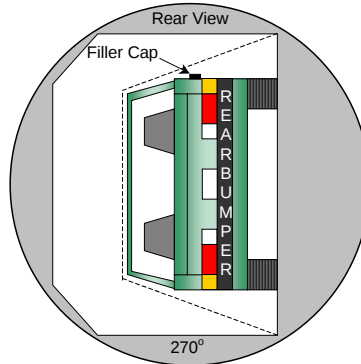
0° to 90°



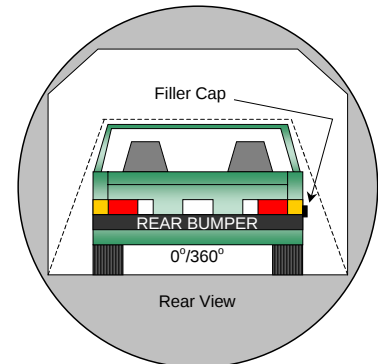
90° to 180°



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: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	85	300	385
90° to 180°	85	300	385
180° to 270°	84	300	384
270° to 360°	85	300	385

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

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

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: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
Test Date: 4/8/04

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	4410	3862	-548
2	RSOV to front of engine	mm	3575	3520	-55
3	RSOV to firewall centerline	mm	3280	3188	-92
4	RSOV to leading edge of right door	mm	2906	2910	4
5	RSOV to leading edge of left door	mm	2908	2910	2
6	RSOV to lower leading edge of right door	mm	2980	2965	-15
7	RSOV to lower leading edge of left door	mm	2985	2968	-17
8	RSOV to upper trailing edge of right door	mm	1806	1813	7
9	RSOV to upper trailing edge of left door	mm	1810	1814	4
10	RSOV to lower trailing edge of right door	mm	1930	1915	-15
11	RSOV to lower trailing edge of left door	mm	1932	1920	-12
12	RSOV to bottom of right 'A' pillar	mm	2929	2937	8
13	RSOV to bottom of left 'A' pillar	mm	2936	2924	-12
14	RSOV to firewall on right side	mm	3211	3188	-23
15	RSOV to firewall on left side	mm	3210	3170	-40
16	RSOV to steering column	mm	2480	2532	52
17	Center of steering column to left 'A' pillar	mm	320	380	60
18	Center of steering column to headlining	mm	420	370	-50
19	RSOV to right side of front bumper	mm	4195	3863	-332
20	RSOV to left side of front bumper	mm	4195	3900	-295
21	Length of engine block	mm	410	410	0
RD	RSOV to right side of dash panel	mm	2665	2698	33
CD	RSOV to center of dash panel	mm	2670	2698	28
LD	RSOV to left side of dash panel	mm	2665	2696	31

All measurements in millimeters

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

VEHICLE STRUCTURAL MEASUREMENT TABLE

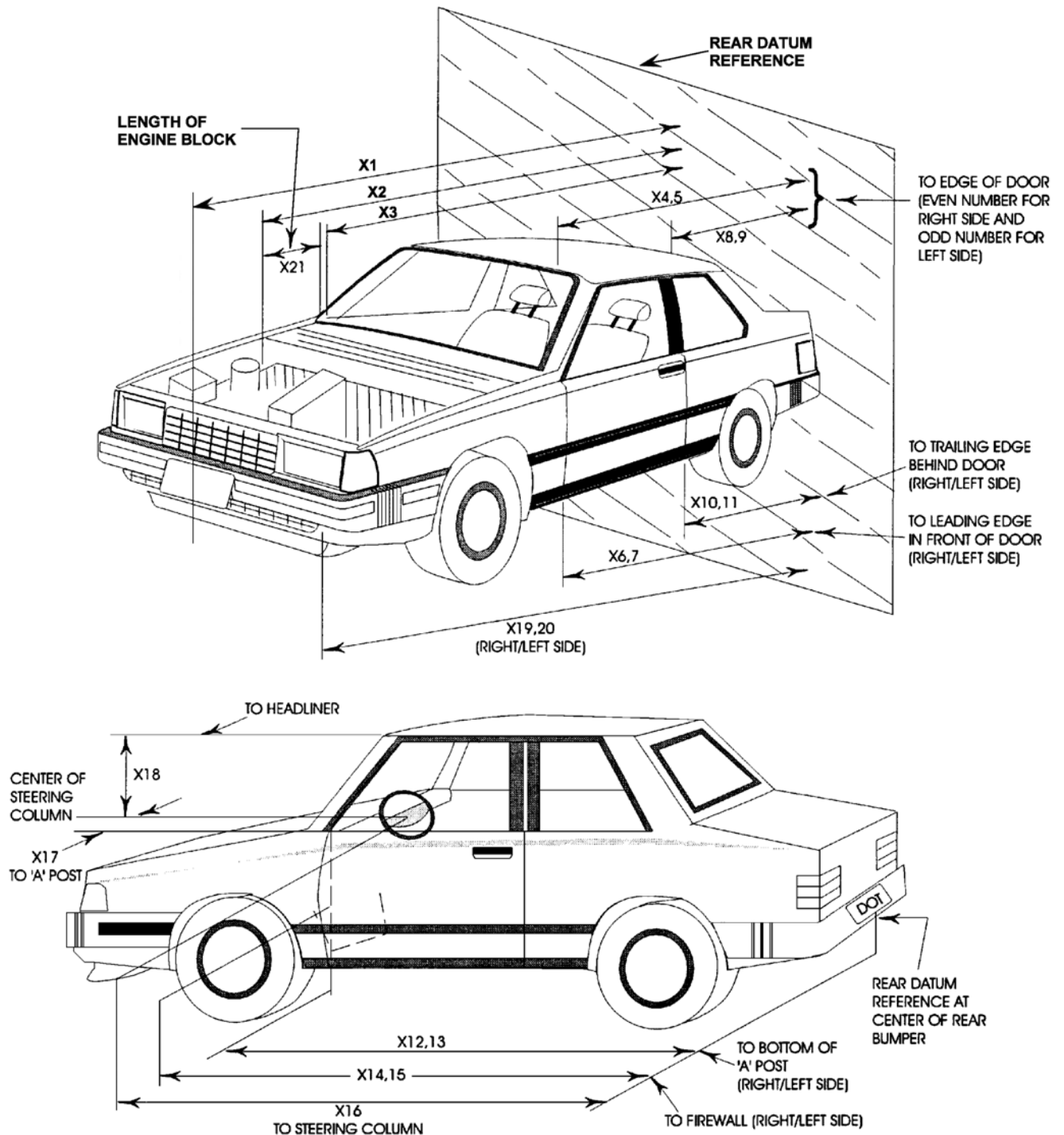
No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	4410	3862	-548
2	Total width	mm	1756	1755	-1
3	Bumper top height	mm	597	635	38
4	Bumper bottom height	mm	200	254	54
5	Longitudinal member top height	mm	553	520	-33
6	Longitudinal member bottom height	mm	432	420	-12
7	Distance between longitudinal members	mm	650	700	50
8	Longitudinal member width	mm	115	115	0
9	Engine top height	mm	700	721	21
10	Engine bottom height	mm	148	169	21
11	Engine and gear box width	mm	510	510	0
12	Front bumper to engine distance	mm	835	450	-385
13	Front shock absorber fixing width	mm	720	720	0
14	Bonnet leading edge height	mm	675	780	105
15	Front shock absorber fixing width	mm	960	930	-30
16	Front bumper to front axle distance	mm	812	500	-312
17	Front axle to 'A' pillar distance	mm	603	530	-73
18	'A' pillar to 'B' pillar distance	mm	1150	1120	-30
19	'B' pillar to rear axle distance	mm	935	1015	80
20	'B' pillar to 'C' pillar distance	mm	545	545	0
21	Roof sill bottom height	mm	1200	1205	5
22	Roof sill top height	mm	1320	1313	-7
23	Floor sill bottom height	mm	195	170	-25
24	Floor sill top height	mm	313	305	-8

All measurements in millimeters

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
Test Date: 4/8/04

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	18288	-22860	2540	10	N/A	17-70	24
2	Driver Overall	1930	8357	1321	4	7865	13	1040
3	Driver Close-Up	1626	8230	1600	4	7776	35	NTM
4	3/4 Driver	6477	10185	4648	13	11134	35-85	1000
5	Steering Column	1524	8230	2997	16	8013	19	1000
6	Steering Column	1524	8230	3404	20	8126	19	1000
7	Passenger Overall	2286	-8230	1524	6	7738	13	1030
8	Passenger Close-Up	1219	-6096	1524	4	5721	35	NTM
9	Passenger Close-Up	1319	-6096	1524	4	5702	35	990
9B	3/4 Passenger	8026	-8941	2997	9	10363	80	980
10	Passenger Door	1626	-8836	1702	4	8386	50	1020
11	Overhead	610	0	6172	90	N/A	13	980
12	Driver Front	-610	406	2743	40	N/A	13	1030
13	Passenger Front	-610	406	2743	40	N/A	13	NTM
14	Pit Engine	762	0	-1499	90	N/A	9	1030
15	Pit Fuel Tank	3658	0	-1499	90	N/A	6	DNR

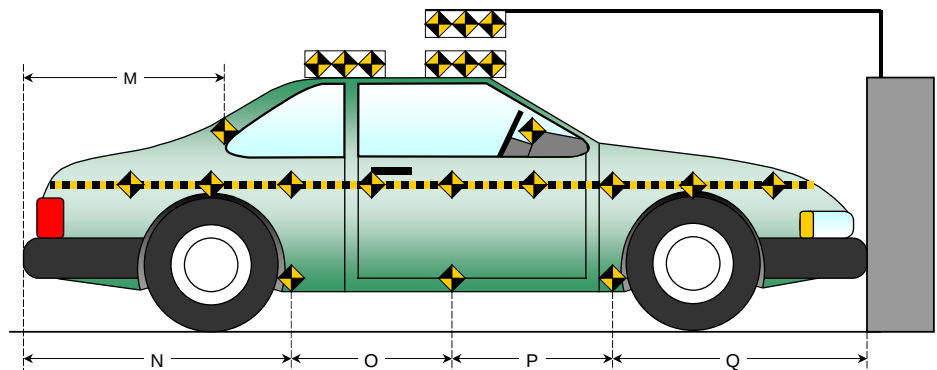
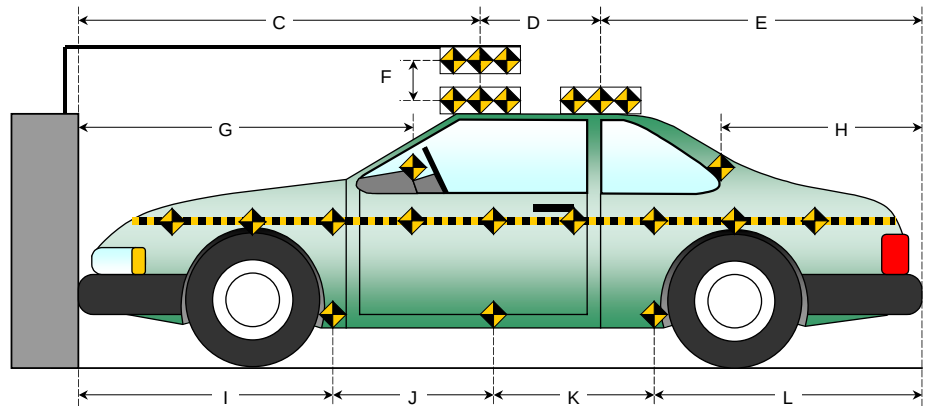
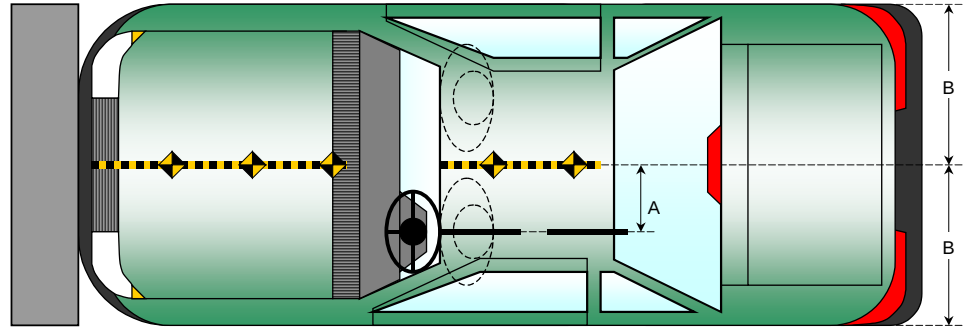
X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run NTM = No Timing Marks

DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

All Dimensions in (mm)	
Item	Value
A	310
B	878
C	2232
D	609
E	1580
F	150
G	1727
H	1240
I	1303
J	880
K	880
L	1363
M	1245
N	1302
O	885
P	885
Q	1360



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

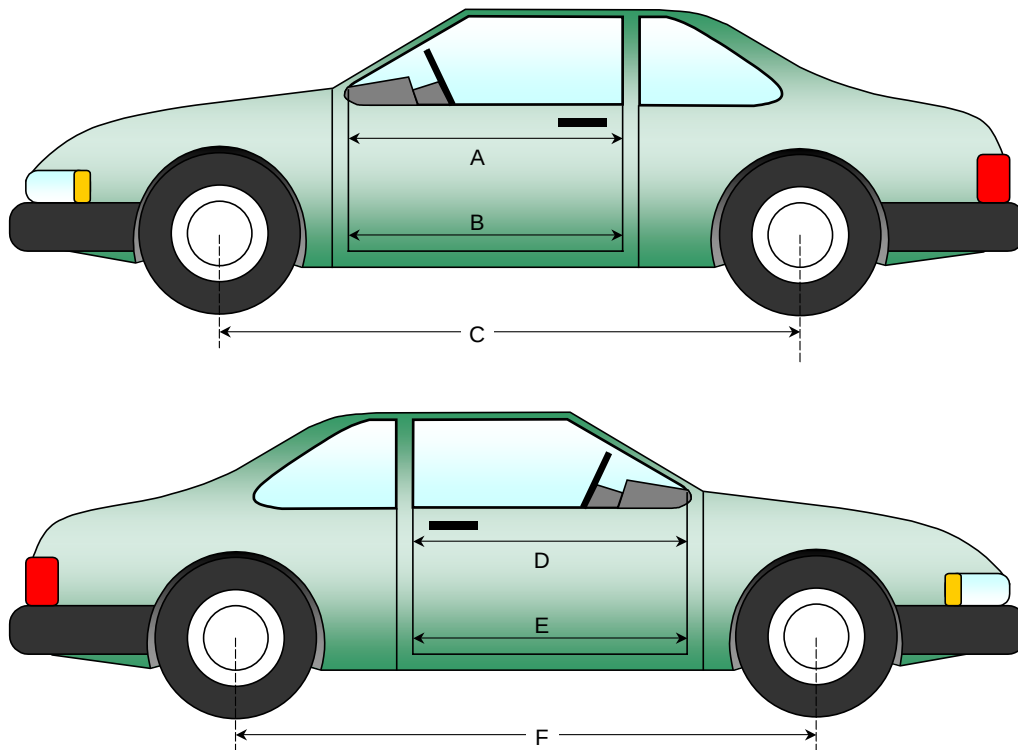
NHTSA No.: Z45400
 Test Date: 4/8/04

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	1034	1033	-1
B	Left Side Lower	mm	983	978	-5
D	Right Side Upper	mm	1035	1028	-7
E	Right Side Lower	mm	984	980	-4

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	2700	2620	-80
F	Right Side Wheel Base	mm	2700	2642	-58



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

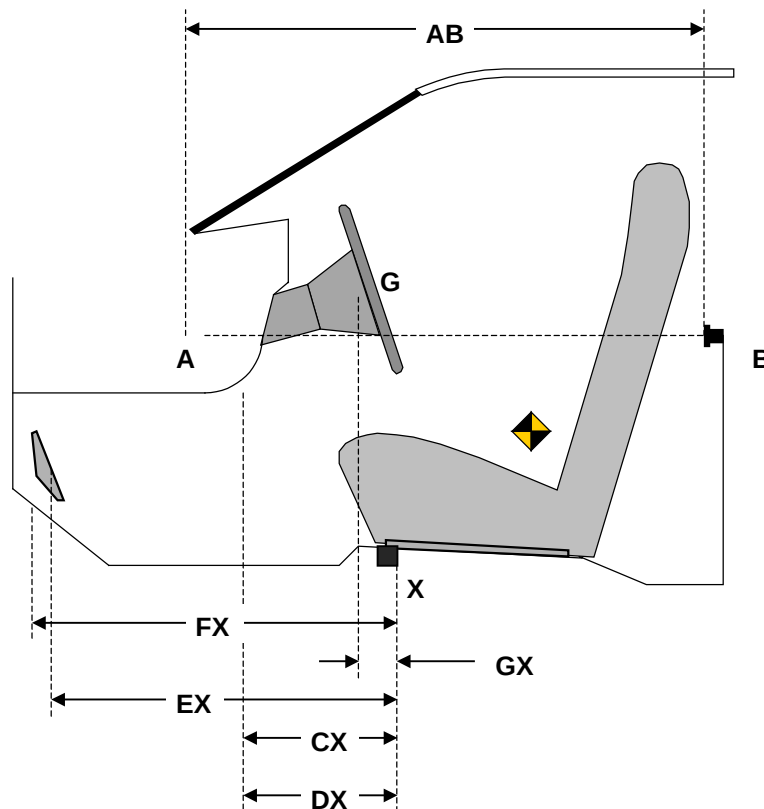
Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	1034	1033	-1
CX	Left Knee Bolster to X	mm	280	302	22
DX	Right Knee Bolster to X	mm	260	281	21
EX	Brake Pedal to X	mm	652	675	23
FX	Foot Rest to X	mm	604	608	4
GX	Center of Steering Wheel Hub to X	mm	110	125	15

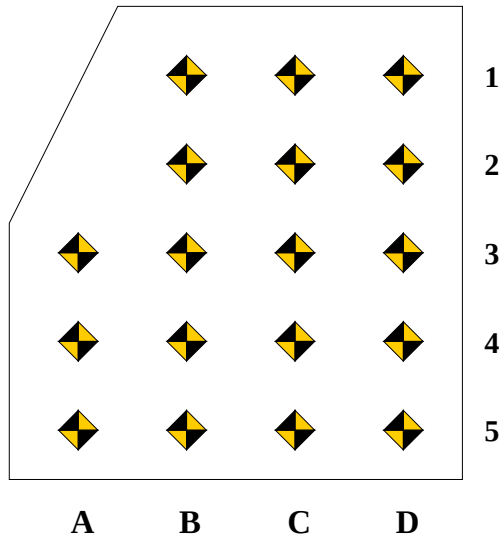
X = Left Front Seat Outboard Anchor Bolt Head



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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04



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

2 Columns A through D are evenly spaced.

3 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		757	749	744		698	686	691		-59	-63	-53
2		685	681	680		640	634	627		-45	-47	-53
3	583	583	577	574	561	548	536	527	-22	-35	-41	-47
4	486	480	474	467	465	456	440	442	-21	-24	-34	-25
5	386	381	377	372	368	361	356	353	-18	-20	-21	-19

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		22	18	25		-50	-61	-72		-72	-79	-97
2		-50	-47	-51		-121	-138	-128		-71	-91	-77
3	-57	-57	-59	-58	-139	-144	-166	-132	-82	-87	-107	-74
4	-62	-62	-56	-58	-137	-165	-143	-130	-75	-103	-87	-72
5	-59	-59	-55	-57	-124	-151	-158	-150	-65	-92	-103	-93

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

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

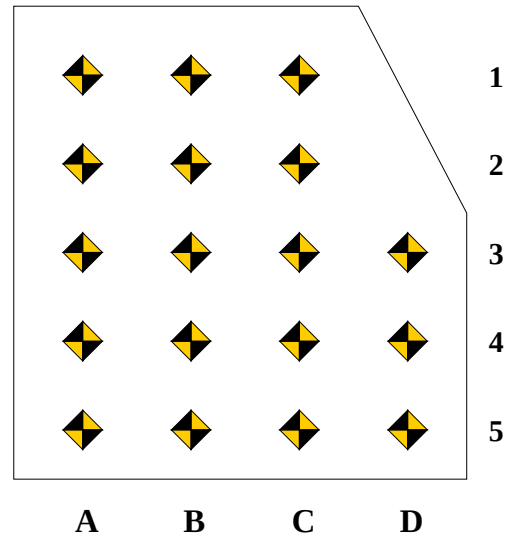
NHTSA No.: Z45400
 Test Date: 4/8/04

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	762	773	771		706	714	717		-56	-59	-54	
2	696	703	707		667	679	689		-29	-24	-18	
3	612	607	609	609	587	586	594	599	-25	-21	-15	-10
4	516	513	514	509	495	493	492	498	-21	-20	-22	-11
5	416	412	412	408	396	396	394	395	-20	-16	-18	-13

PASSENGER FLOOR PAN Z-AXIS

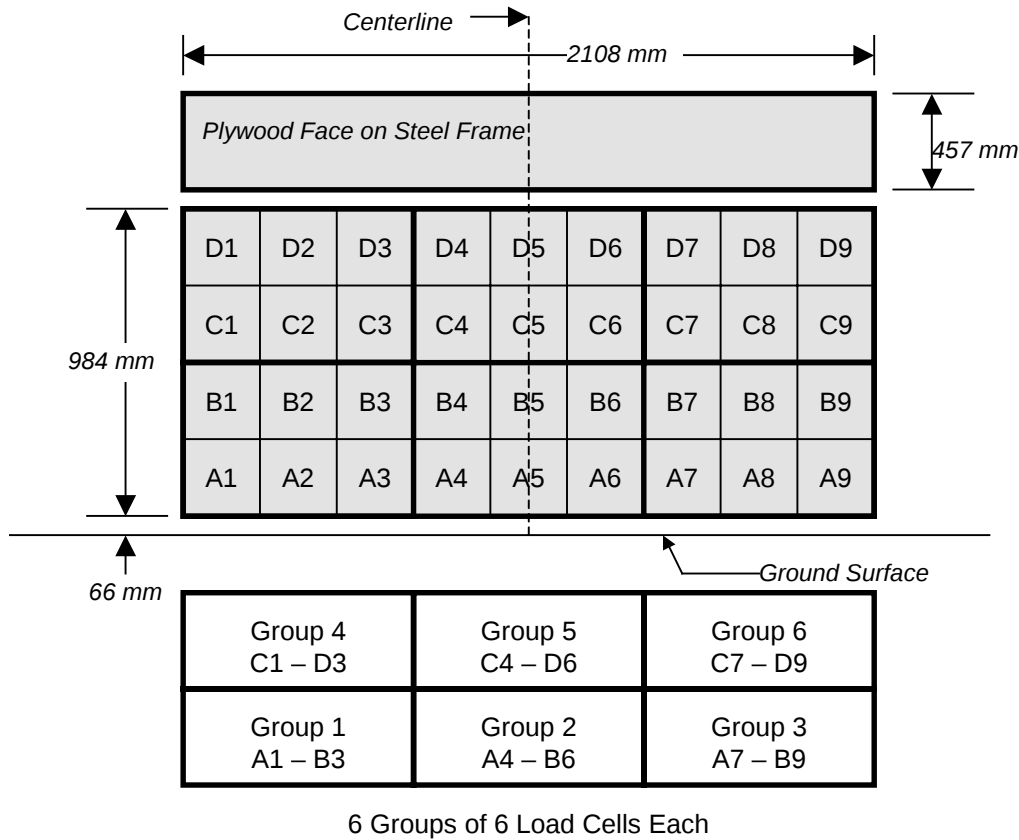
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	48	47	49		-23	-31	-25		-71	-78	-74	
2	-27	-27	-27		-94	-123	-110		-67	-96	-83	
3	-44	-46	-51	-50	-105	-134	-124	-119	-61	-88	-73	-69
4	-45	-46	-54	-52	-110	-120	-126	-109	-65	-74	-72	-57
5	-46	-46	-54	-53	-113	-117	-116	-103	-67	-71	-62	-50

DATA SHEET NO. 18
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

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



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
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
 Test Date: 4/8/04

VEHICLE INFORMATION

VIN: JM1FE17N940131257
 Vehicle Size Category: 4-Door

Wheel base (mm): 2700
 Test Weight (kg): 1544

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 55.92
 Velocity Change (km/h): 64.22

Linearity: Good

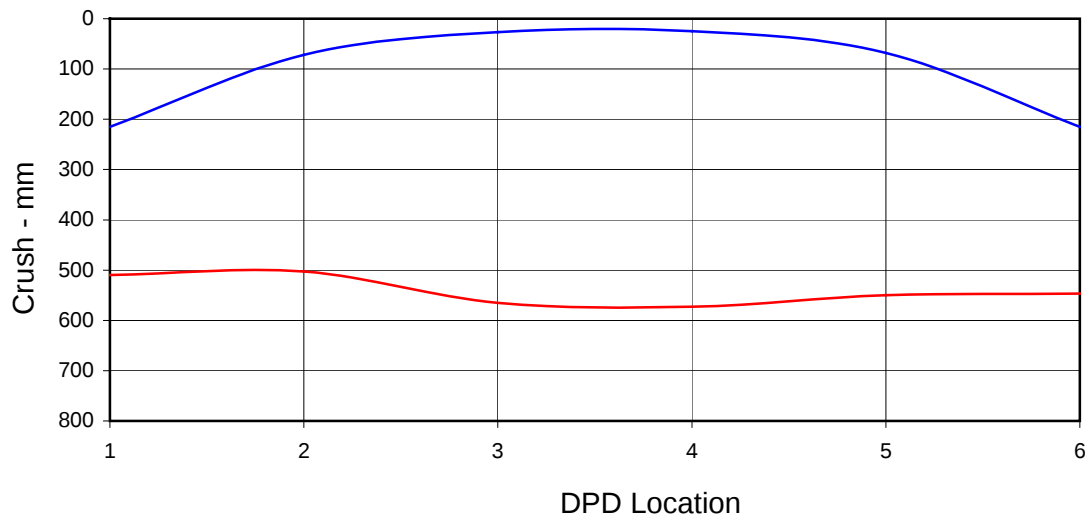
Time of Separation (msec): 67.7

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
 Damage Region Length (mm): 1365

Midpoint of Damage: Vehicle Centerline
 Impact Mode: Full Frontal

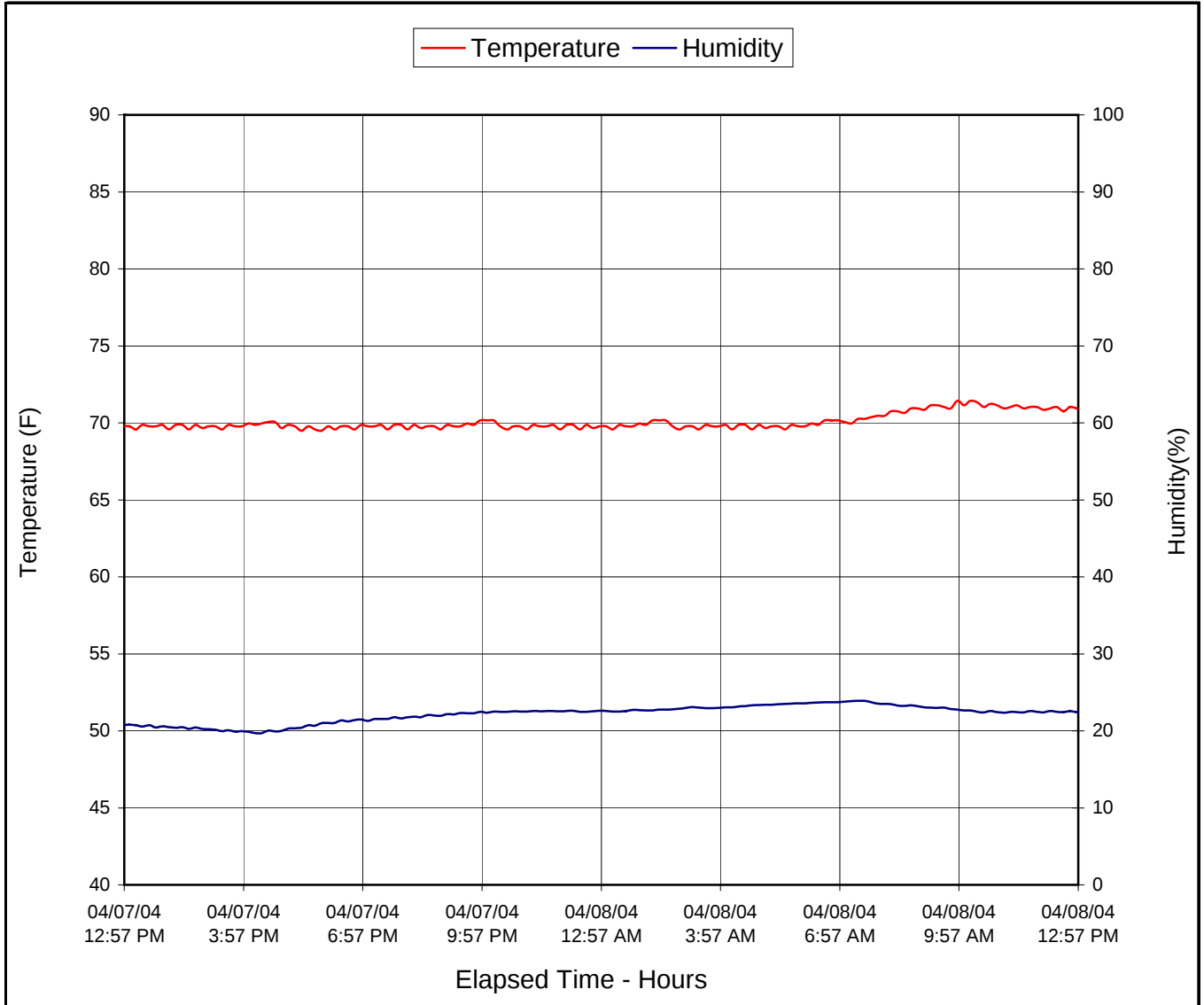
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	215	510	-295
C2	Crush zone 2 on left side	mm	72	503	-431
C3	Crush zone 3 on left side	mm	27	565	-538
C4	Crush zone 4 on right side	mm	25	573	-548
C5	Crush zone 5 on right side	mm	68	550	-482
C6	Crush zone 6 at right side	mm	215	547	-332



DATA SHEET NO. 20
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
Test Program: 2004 NHTSA 35mph NCAP

NHTSA No.: Z45400
Test Date: 4/8/04



APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure		Page
A-1	Load Cell Location	A-1
A-2	Vehicle Certification Label	A-2
A-3	Vehicle Tire Label	A-3
A-4	Right Front $\frac{3}{4}$ View, As Received	A-4
A-5	Left Rear $\frac{3}{4}$ View, As Received	A-5
A-6	Pre-Test Front View	A-6
A-7	Post-Test Front View	A-7
A-8	Pre-Test Left Side View	A-8
A-9	Post-Test Left Side View	A-9
A-10	Pre-Test Right Side View	A-10
A-11	Post-Test Right Side View	A-11
A-12	Pre-Test Right Front $\frac{3}{4}$ View	A-12
A-13	Post-Test Right Front $\frac{3}{4}$ View	A-13
A-14	Pre-Test Left Rear $\frac{3}{4}$ View	A-14
A-15	Post-Test Left Rear $\frac{3}{4}$ View	A-15
A-16	Left Rear $\frac{3}{4}$ View of Doors After Impact	A-16
A-17	Right Rear $\frac{3}{4}$ View of Doors After Impact	A-17
A-18	Pre-Test Windshield View	A-18
A-19	Post-Test Windshield View	A-19
A-20	Pre-Test Engine Compartment	A-20
A-21	Post-Test Engine Compartment	A-21
A-22	Pre-Test Fuel Cap	A-22
A-23	Post-Test Fuel Cap	A-23
A-24	Pre-Test Front Underbody View	A-24
A-25	Post-Test Front Underbody View	A-25
A-26	Pre-Test Mid Underbody View	A-26
A-27	Post-Test Mid Underbody View	A-27
A-28	Pre-Test Rear Underbody View	A-28
A-29	Post-Test Rear Underbody View	A-29
A-30	Pre-Test Driver Dummy Front View (Head Position)	A-30
A-31	Post-Test Driver Dummy Front View (Head Position)	A-31
A-32	Pre-Test Driver Dummy Front Through Window	A-32
A-33	Post-Test Driver Dummy Front Through Window	A-33
A-34	Pre-Test Driver Dummy Door Open	A-34
A-35	Post-Test Driver Dummy Door Open	A-35

LIST OF PHOTOGRAPHS...(Continued)

Figure		Page
A-36	Pre-Test Driver Dummy Feet	A-36
A-37	Post-Test Driver Dummy Feet	A-37
A-38	Pre-Test Driver Side Knee Bolster	A-38
A-39	Post-Test Driver Side Knee Bolster	A-39
A-40	Pre-Test Driver Side Floor Pan	A-40
A-41	Post-Test Driver Side Floor Pan	A-41
A-42	Post-Test Driver Dummy Head	A-42
A-43	Post-Test Driver Dummy Contact to Air Bag	A-43
A-44	Pre-Test Passenger Dummy Front View (Head Position)	A-44
A-45	Post-Test Passenger Dummy Front View (Head Position)	A-45
A-46	Pre-Test Passenger Dummy Front Through Window	A-46
A-47	Post-Test Passenger Dummy Front Through Window	A-47
A-48	Pre-Test Passenger Dummy Door Open	A-48
A-49	Post-Test Passenger Dummy Door Open	A-49
A-50	Pre-Test Passenger Dummy Feet	A-50
A-51	Post-Test Passenger Dummy Feet	A-51
A-52	Pre-Test Passenger Side Knee Bolster	A-52
A-53	Post-Test Passenger Side Knee Bolster	A-53
A-54	Pre-Test Passenger Side Floor Pan	A-54
A-55	Post-Test Passenger Side Floor Pan	A-55
A-56	Post-Test Passenger Dummy Head	A-56
A-57	Post-Test Passenger Dummy Contact to Air Bag	A-57
A-58	Vehicle on Rollover Device	A-58
A-59	Vehicle on Rollover Device	A-59
A-60	Vehicle on Rollover Device	A-60
A-61	Vehicle on Rollover Device	A-61
A-62	Vehicle During Impact	A-62

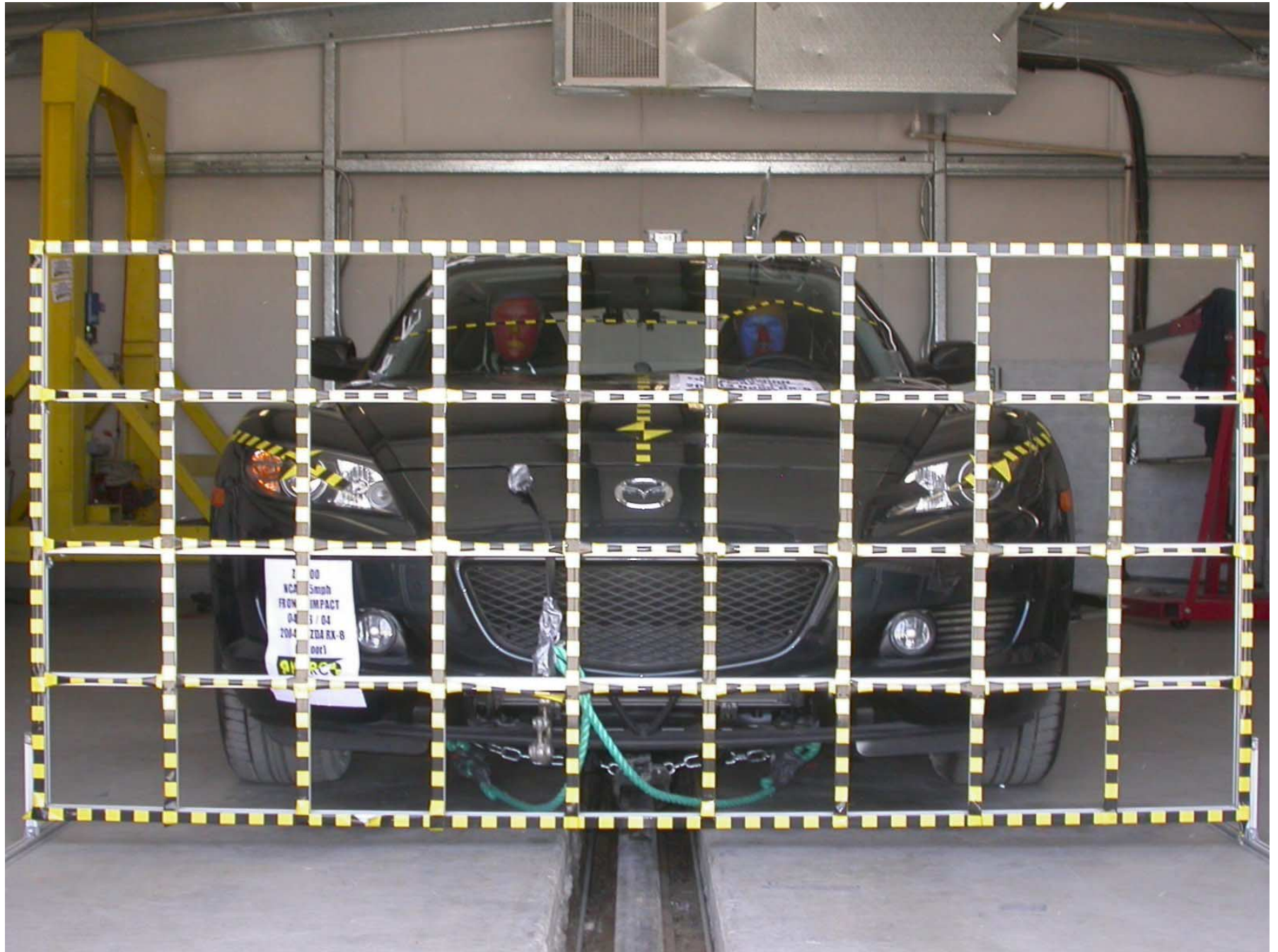


Figure A-1: Load Cell Location

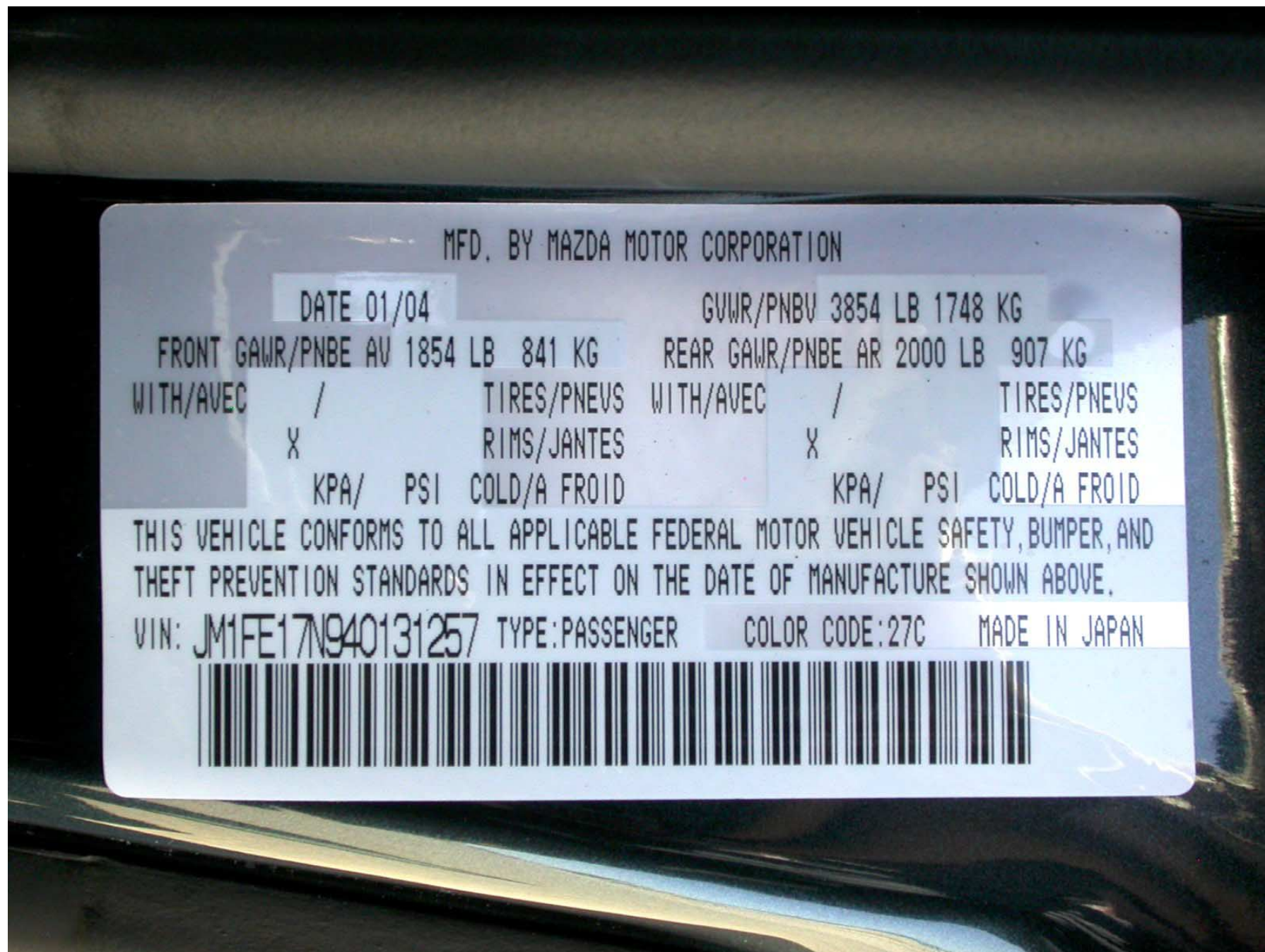


Figure A-2: Vehicle Certification Label

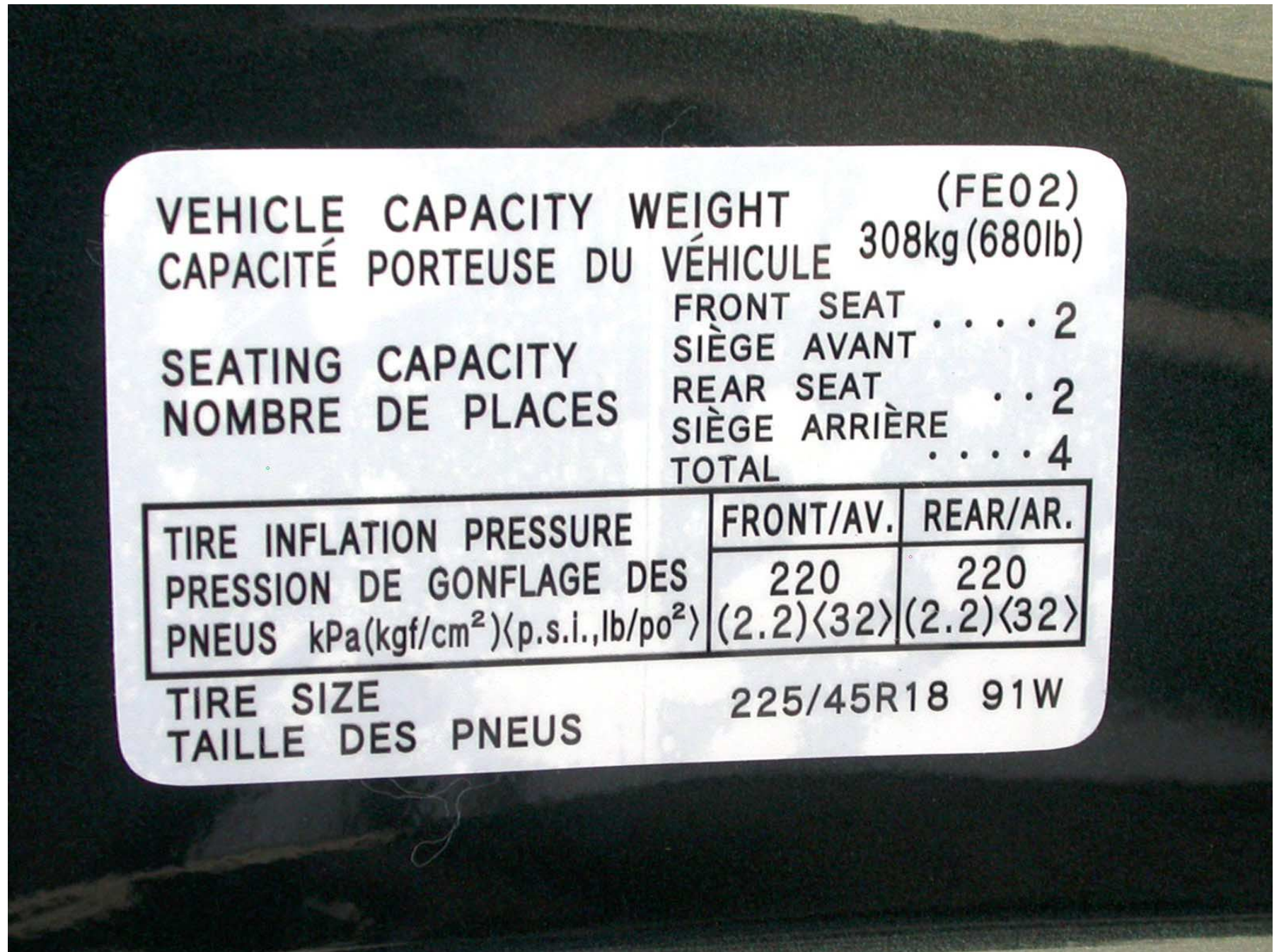


Figure A-3: Vehicle Tire Label



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

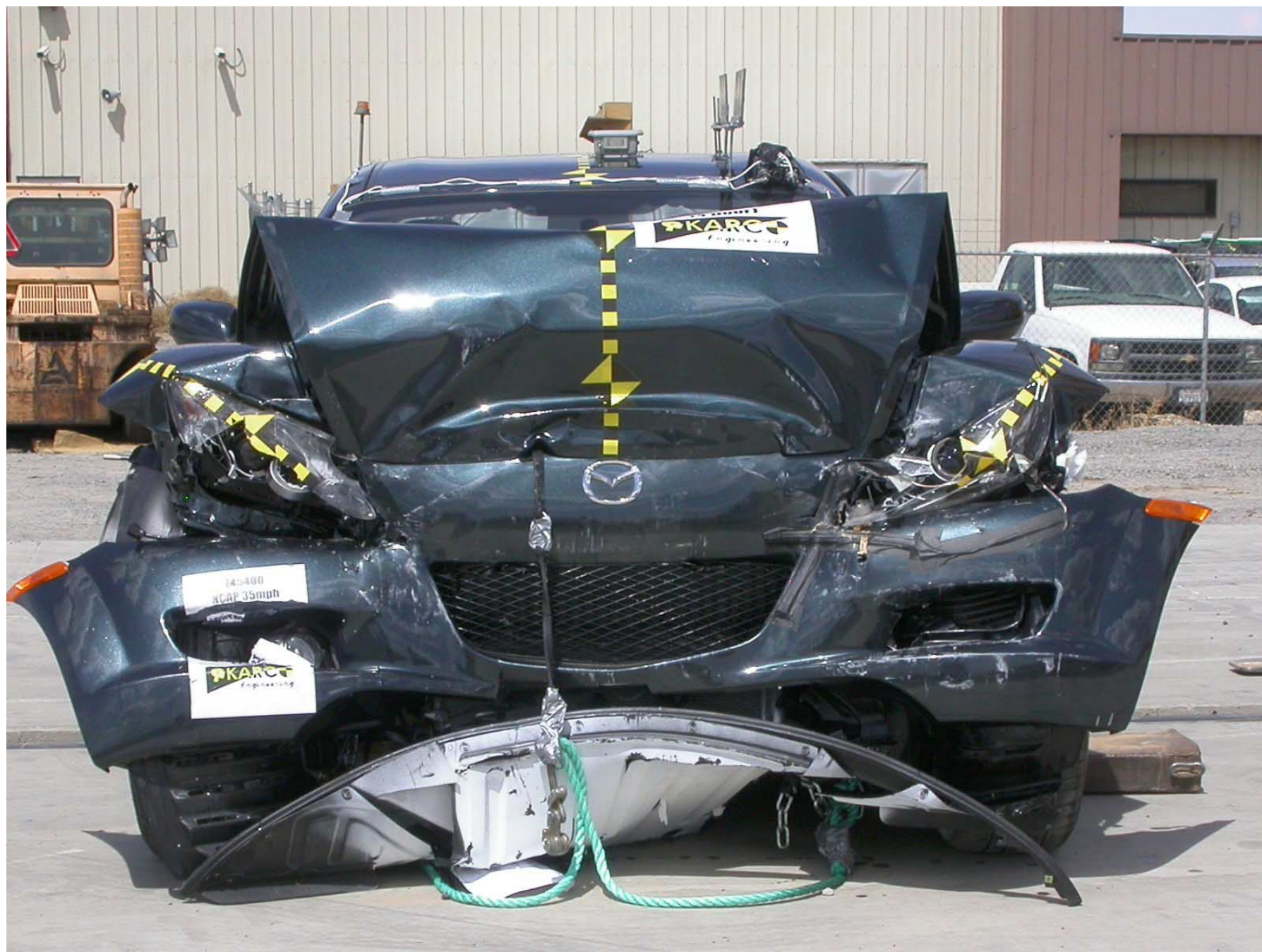


Figure A-7: Post-Test Front View (Vehicle Moved)



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 $\frac{3}{4}$ 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 3/4 View of Doors After Impact

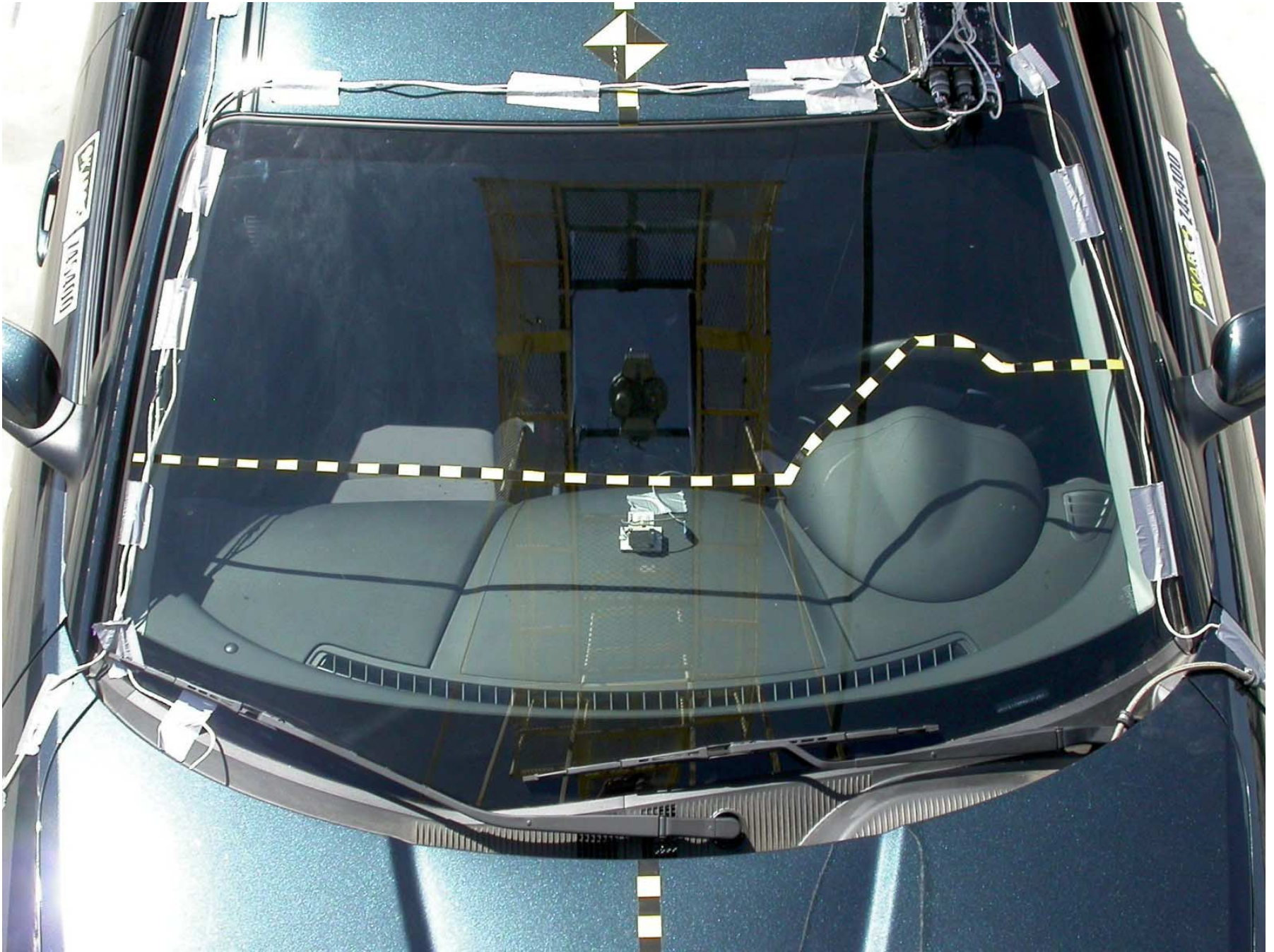


Figure A-18: Pre-Test Windshield View



Figure A-19: Post-Test Windshield View



Figure A-20: Pre-Test Engine Compartment

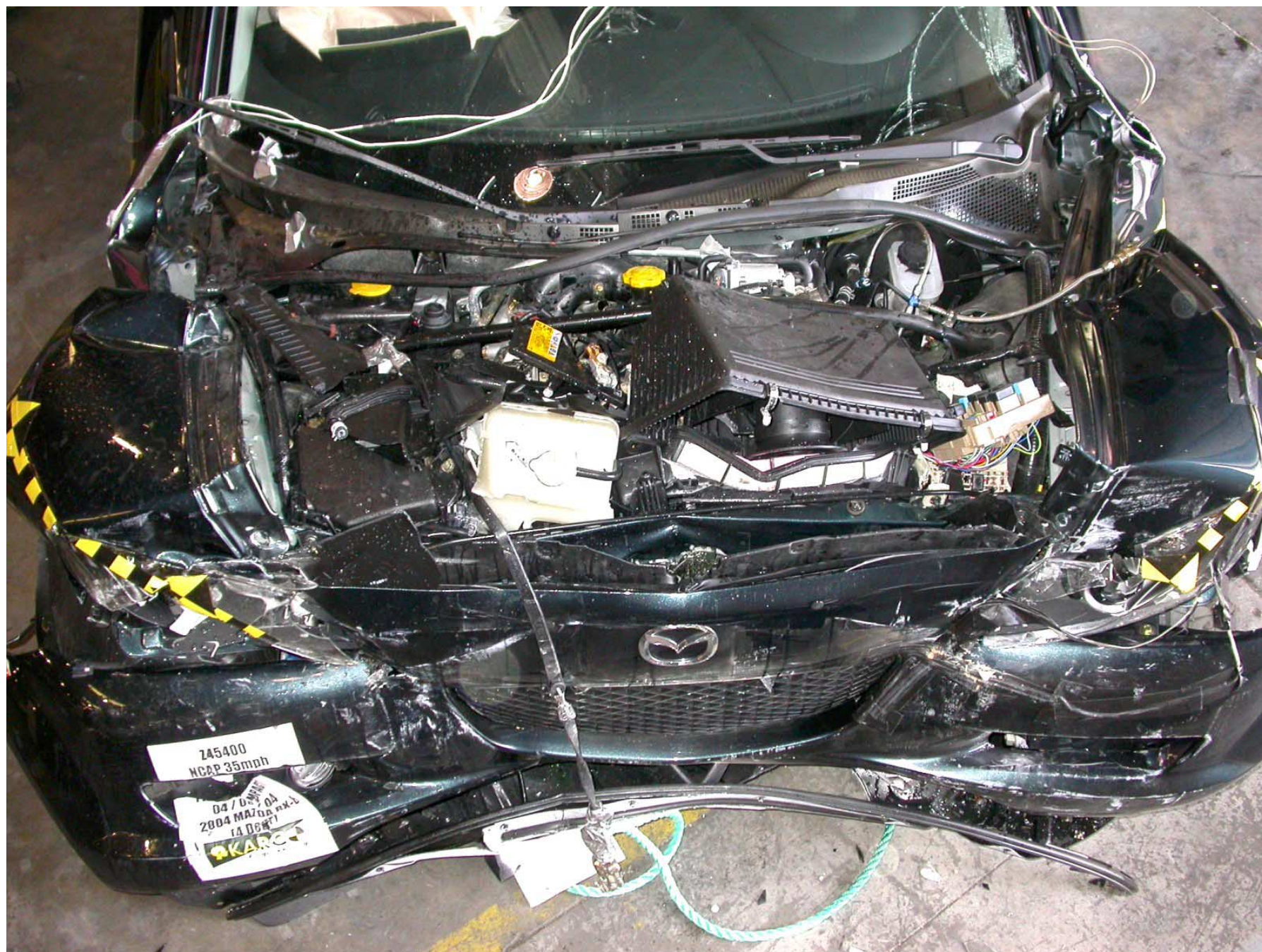


Figure A-21: Post-Test Engine Compartment (Vehicle Moved)



Figure A-22: Pre-Test Fuel Cap

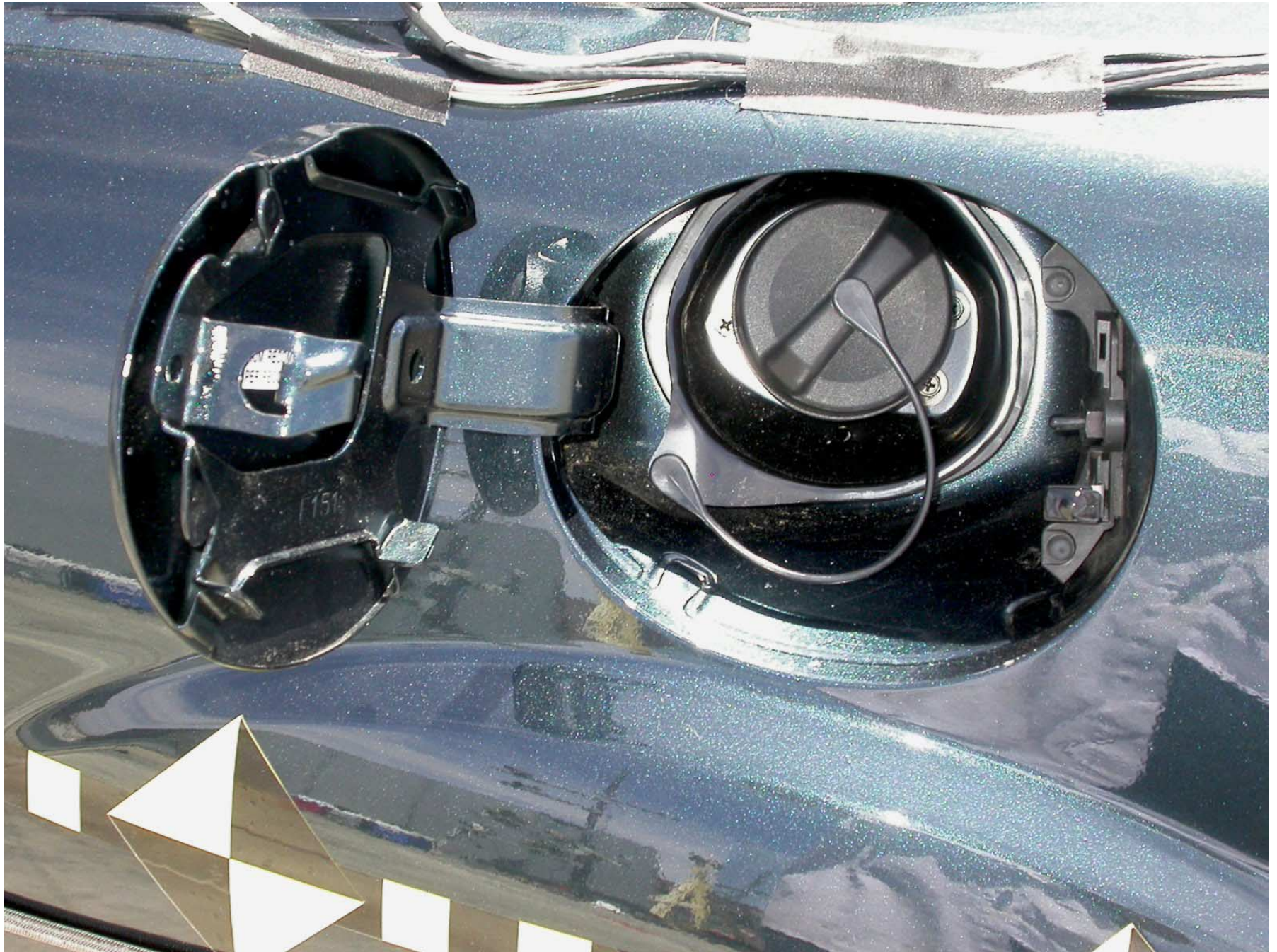


Figure A-23: Post-Test Fuel Cap

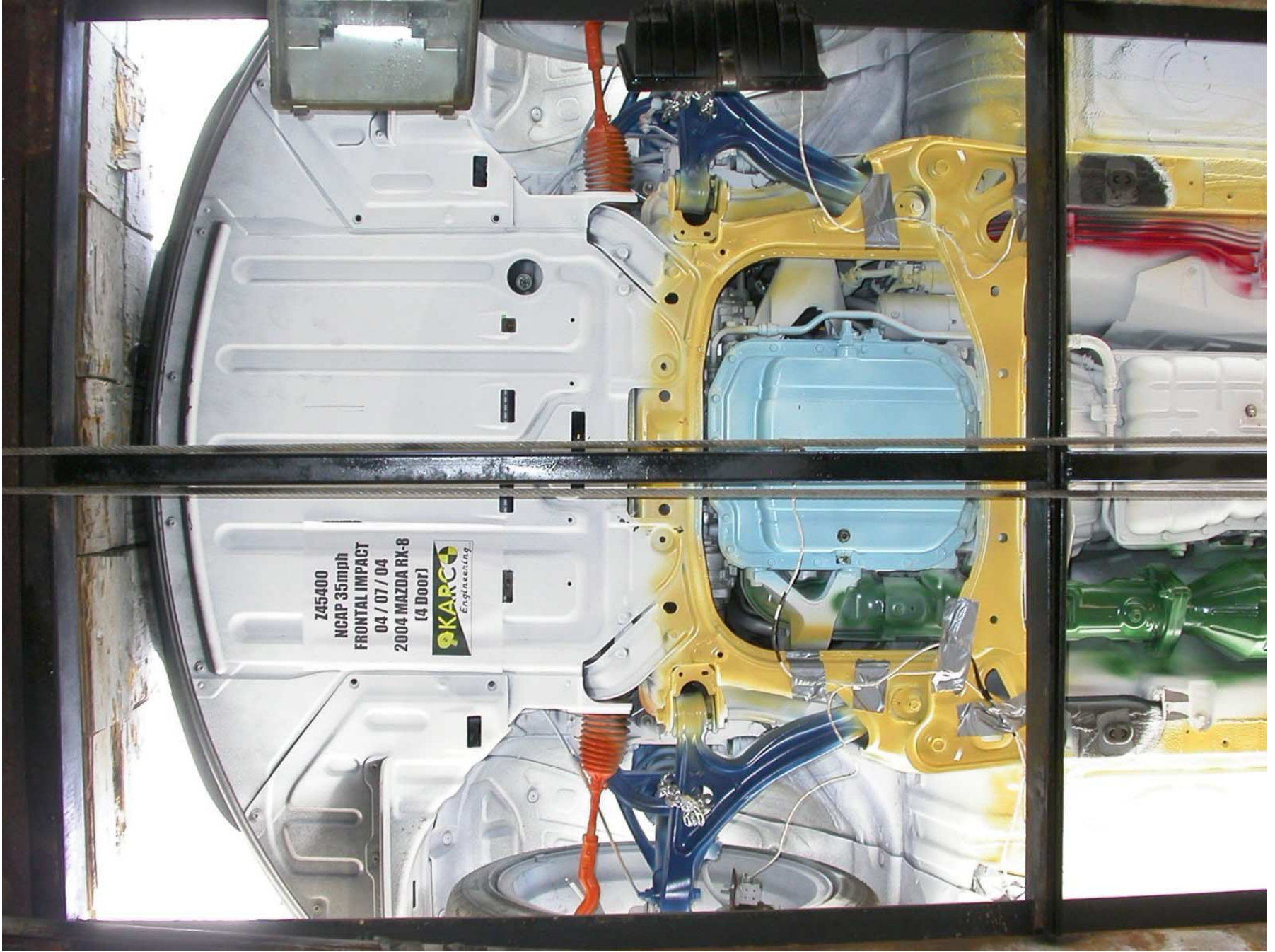


Figure A-24: Pre-Test Front Underbody View

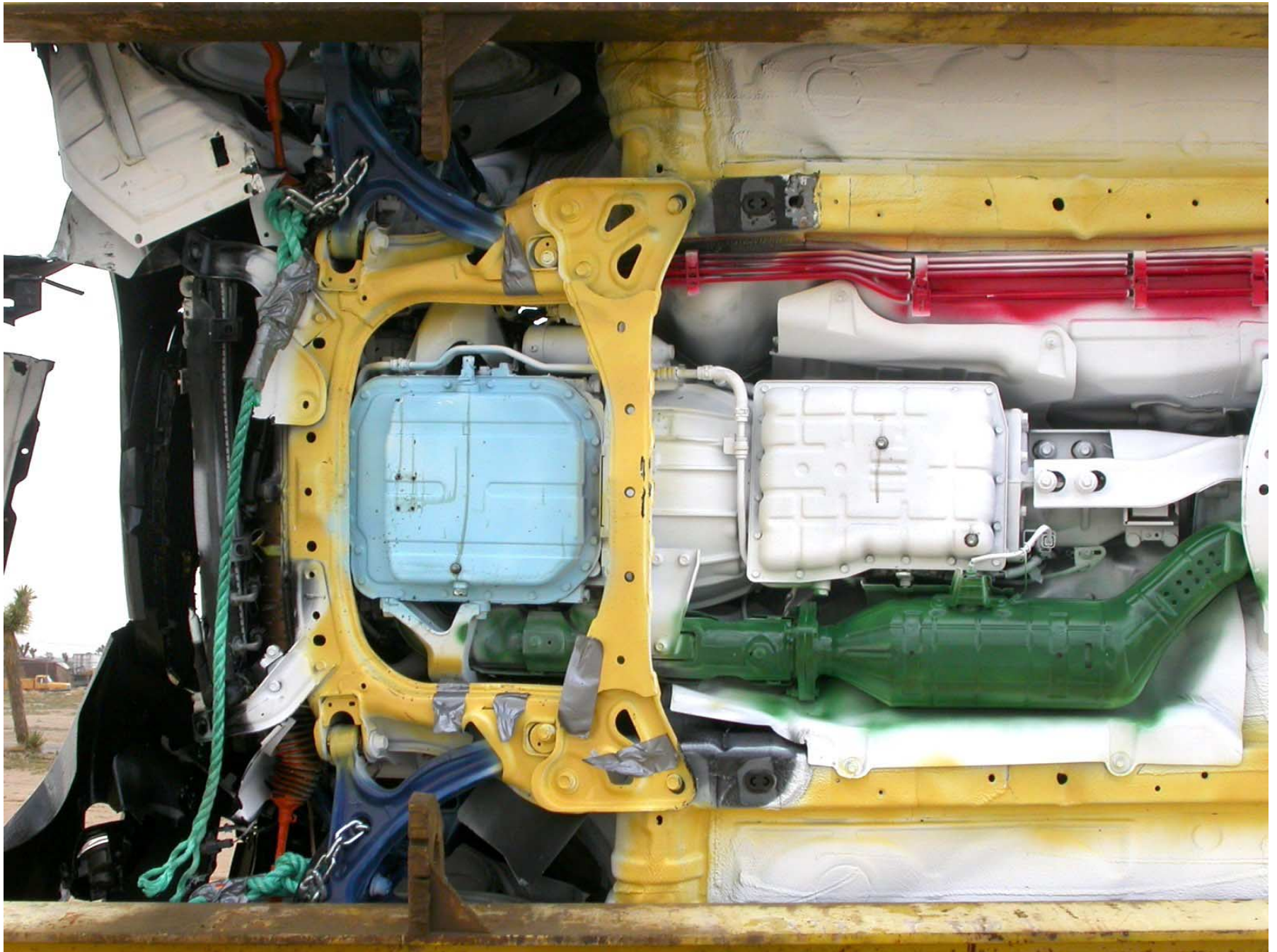


Figure A-25: Post-Test Front Underbody View



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 Front Through Window



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



Figure A-47: Post-Test Passenger Dummy Front 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

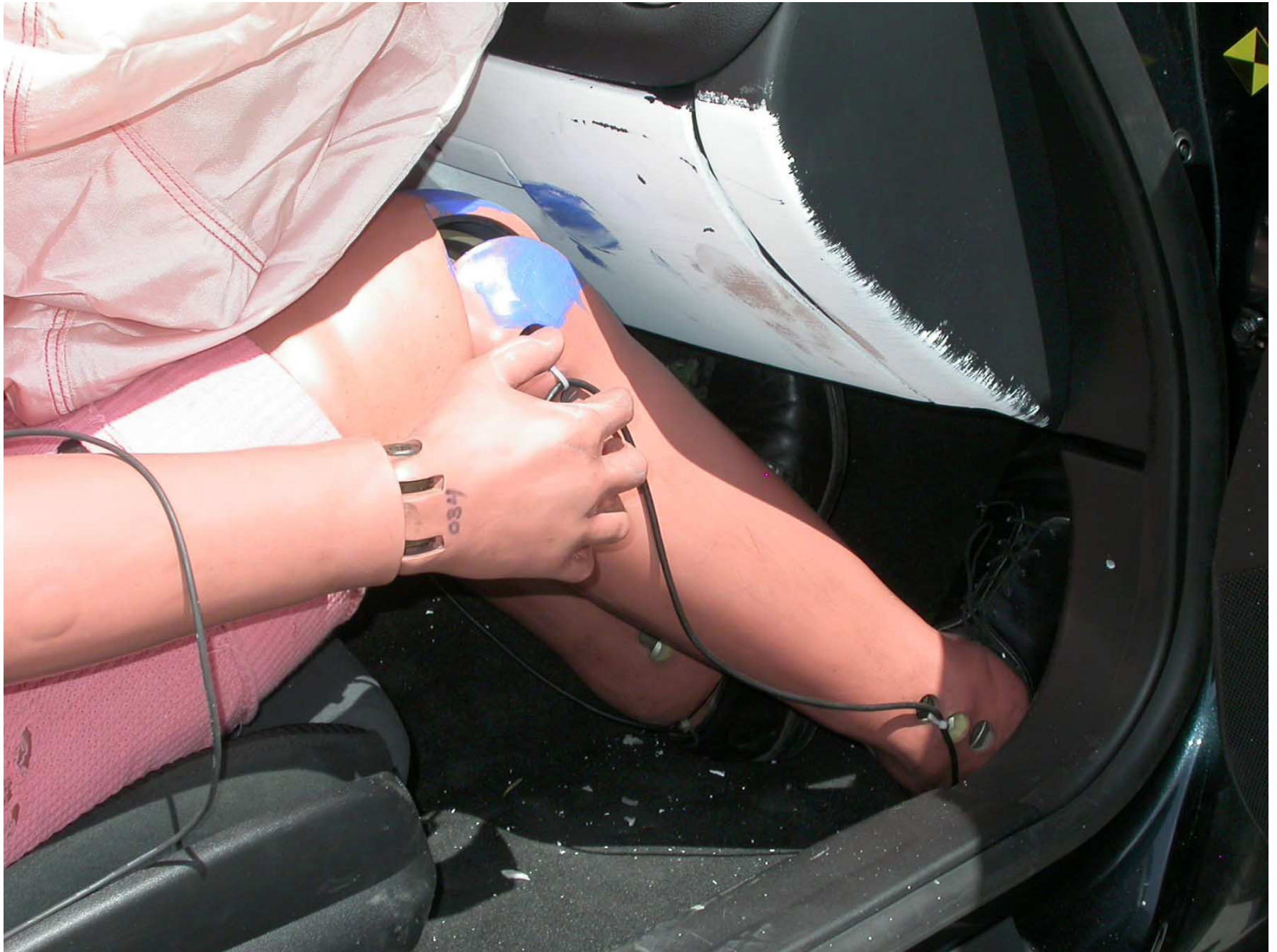


Figure A-51: Post-Test Passenger Dummy Feet



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

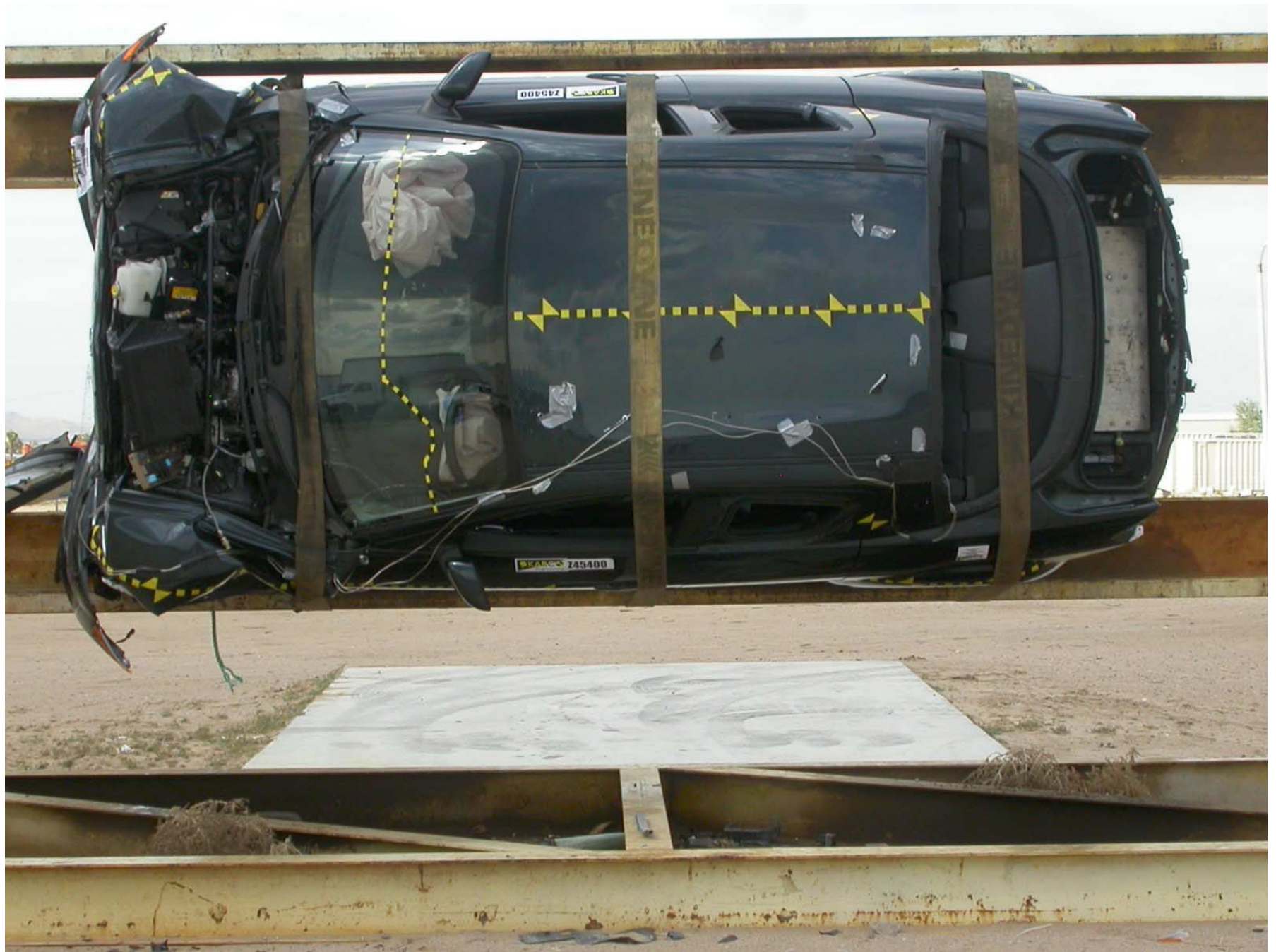


Figure A-59: Vehicle on Rollover Device



Figure A-60: Vehicle on Rollover Device

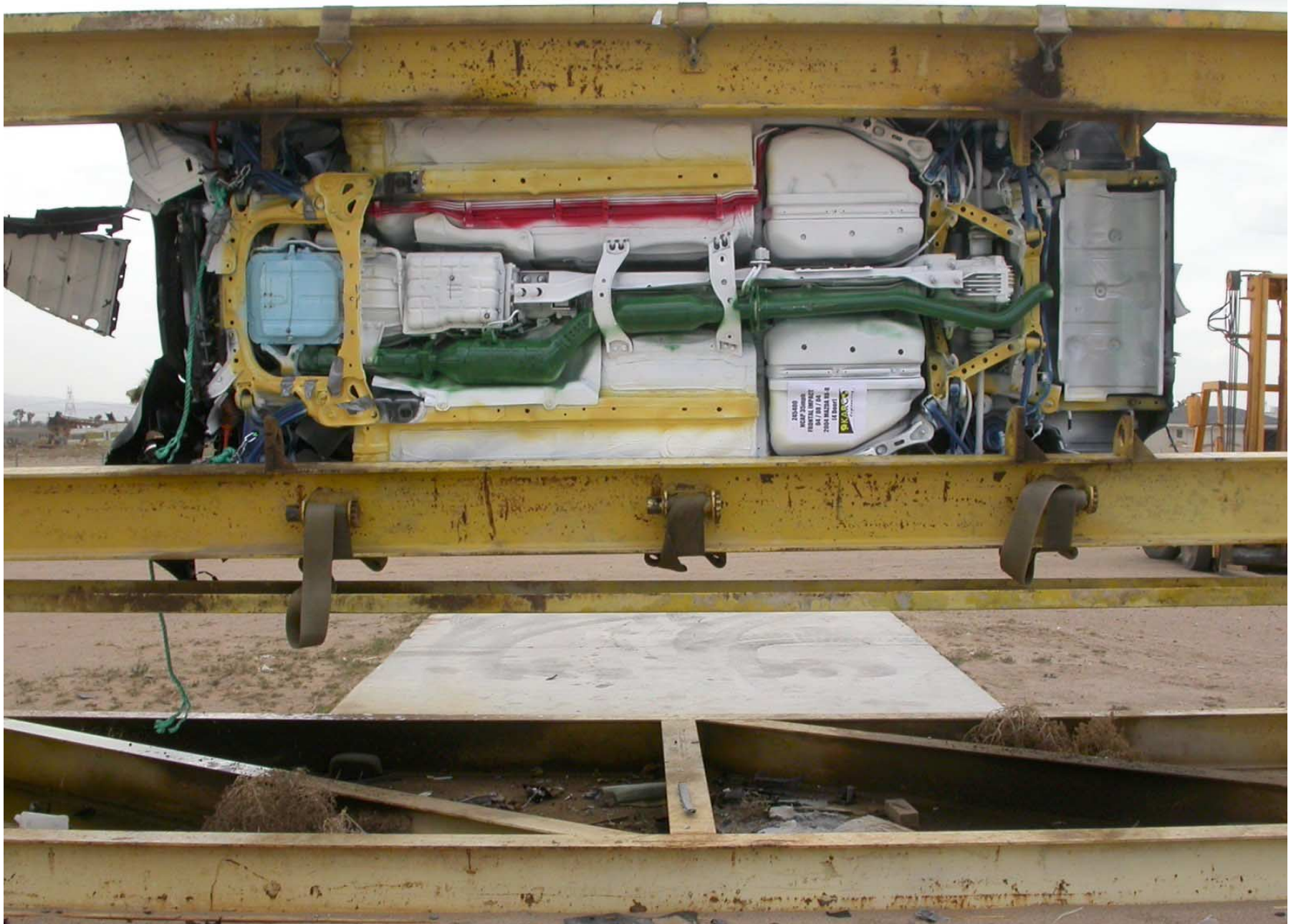


Figure A-61: Vehicle on Rollover Device



Figure A-62: Vehicle During Impact

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

Data Plot	Page
B-1	Driver Head Primary X
	Driver Head Primary Y
	Driver Head Primary Z
	Driver Head Resultant Primary
B-2	Driver Head Primary X Velocity
	Driver Head Primary X Displacement
B-3	Driver Head Redundant X
	Driver Head Redundant Y
	Driver Head Redundant Z
	Driver Head Resultant Redundant
B-4	Driver Head Redundant X Velocity
	Driver Head Redundant X Displacement
B-5	Driver Upper Neck Force X
	Driver Upper Neck Force Y
	Driver Upper Neck Force Z
	Driver Upper Neck Force Resultant
B-6	Driver Upper Neck Moment X
	Driver Upper Neck Moment Y
	Driver Upper Neck Moment Z
	Driver Upper Neck Moment Resultant
B-7	Driver Chest Primary X
	Driver Chest Primary Y
	Driver Chest Primary Z
	Driver Chest Resultant Primary
B-8	Driver Chest Primary X Velocity
	Driver Chest Primary X Displacement
B-9	Driver Chest Redundant X
	Driver Chest Redundant Y
	Driver Chest Redundant Z
	Driver Chest Resultant Redundant
B-10	Driver Chest Redundant X Velocity
	Driver Chest Redundant X Displacement
B-11	Driver Chest Displacement

LIST OF DATA PLOTS...(Continued)

Data Plot	Page
B-12	Driver Pelvis X
	Driver Pelvis Y
	Driver Pelvis Z
	Driver Pelvis Resultant
B-13	Driver Pelvis X Velocity
	Driver Pelvis X Displacement
B-14	Driver Left Femur Force
	Driver Right Femur Force
B-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
B-16	Driver Left Lower Tibia Moment X
	Driver Left Lower Tibia Moment Y
	Driver Left Lower Tibia Force Z
B-17	Driver Right Lower Tibia Moment X
	Driver Right Lower Tibia Moment Y
	Driver Right Lower Tibia Force Z
B-18	Driver Left Foot Aft X
	Driver Left Foot Aft Z
	Driver Left Foot Fore Z
B-19	Driver Right Foot Aft X
	Driver Right Foot Aft Z
	Driver Right Foot Fore Z
B-20	Driver Lap Belt Force
	Driver Shoulder Belt Force
	Driver Shoulder Belt Pullout
	Driver Shoulder Belt Elongation
B-21	Passenger Head Primary X
	Passenger Head Primary Y
	Passenger Head Primary Z
	Passenger Head Resultant Primary
B-22	Passenger Head Primary X Velocity
	Passenger Head Primary X Displacement

LIST OF DATA PLOTS...(Continued)

Data Plot	Page
B-23	Passenger Head Redundant X
	Passenger Head Redundant Y
	Passenger Head Redundant Z
	Passenger Head Resultant Redundant
B-24	Passenger Head Redundant X Velocity
	Passenger Head Redundant X Displacement
B-25	Passenger Upper Neck Force X
	Passenger Upper Neck Force Y
	Passenger Upper Neck Force Z
	Passenger Upper Neck Force Resultant
B-26	Passenger Upper Neck Moment X
	Passenger Upper Neck Moment Y
	Passenger Upper Neck Moment Z
	Passenger Upper Neck Moment Resultant
B-27	Passenger Chest Primary X
	Passenger Chest Primary Y
	Passenger Chest Primary Z
	Passenger Chest Resultant Primary
B-28	Passenger Chest Primary X Velocity
	Passenger Chest Primary X Displacement
B-29	Passenger Chest Redundant X
	Passenger Chest Redundant Y
	Passenger Chest Redundant Z
	Passenger Chest Resultant Redundant
B-30	Passenger Chest Redundant X Velocity
	Passenger Chest Redundant X Displacement
B-31	Passenger Chest Displacement
B-32	Passenger Pelvis X
	Passenger Pelvis Y
	Passenger Pelvis Z
	Passenger Pelvis Resultant
B-33	Passenger Pelvis X Velocity
	Passenger Pelvis X Displacement

LIST OF DATA PLOTS...(Continued)

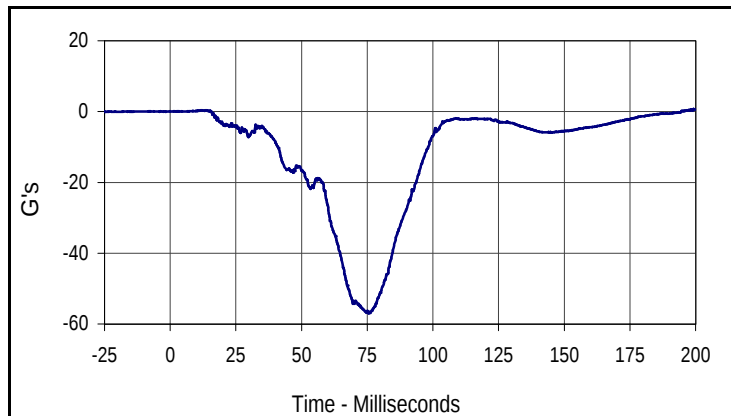
Data Plot		Page
B-34	Passenger Left Femur Force	B-34
	Passenger Right Femur Force	B-34
B-35	Passenger Left Upper Tibia Moment X	B-35
	Passenger Left Upper Tibia Moment Y	B-35
	Passenger Right Upper Tibia Moment X	B-35
	Passenger Right Upper Tibia Moment Y	B-35
B-36	Passenger Left Lower Tibia Moment X	B-36
	Passenger Left Lower Tibia Moment Y	B-36
	Passenger Left Lower Tibia Force Z	B-36
B-37	Passenger Right Lower Tibia Moment X	B-37
	Passenger Right Lower Tibia Moment Y	B-37
	Passenger Right Lower Tibia Force Z	B-37
B-38	Passenger Left Foot Aft X	B-38
	Passenger Left Foot Aft Z	B-38
	Passenger Left Foot Fore Z	B-38
B-39	Passenger Right Foot Aft X	B-39
	Passenger Right Foot Aft Z	B-39
	Passenger Right Foot Fore Z	B-39
B-40	Passenger Lap Belt Force	B-40
	Passenger Shoulder Belt Force	B-40
	Passenger Shoulder Belt Pullout	B-40
	Passenger Shoulder Belt Elongation	B-40
B-41	Vehicle Left Rear X	B-41
	Vehicle Left Rear X Velocity	B-41
	Vehicle Left Rear X Displacement	B-41
B-42	Vehicle Right Rear X	B-42
	Vehicle Right Rear X Velocity	B-42
	Vehicle Right Rear X Displacement	B-42
B-43	Vehicle Engine Top	B-43
	Vehicle Engine Top Velocity	B-43
	Vehicle Engine Top Displacement	B-43
B-44	Vehicle Engine Bottom	B-44
	Vehicle Engine Bottom Velocity	B-44
	Vehicle Engine Bottom Displacement	B-44

LIST OF DATA PLOTS...(Continued)

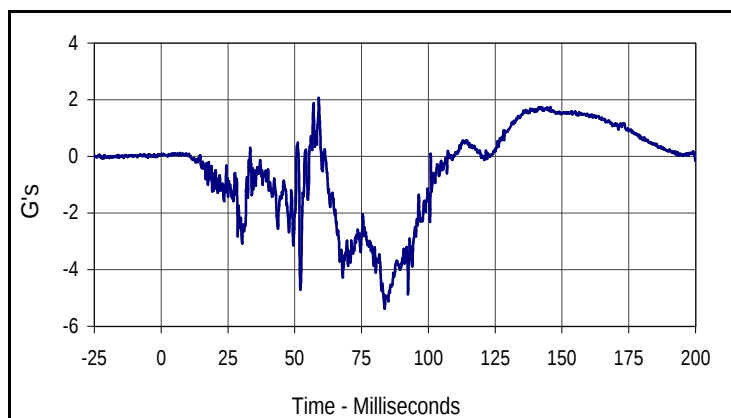
Data Plot		Page
B-45	Vehicle Left Brake Caliper	B-45
	Vehicle Left Brake Caliper Velocity	B-45
	Vehicle Left Brake Caliper Displacement	B-45
B-46	Vehicle Right Brake Caliper	B-46
	Vehicle Right Brake Caliper Velocity	B-46
	Vehicle Right Brake Caliper Displacement	B-46
B-47	Vehicle Instrument Panel	B-47
	Vehicle Instrument Panel Velocity	B-47
	Vehicle Instrument Panel Displacement	B-47
B-48	Vehicle Left Rear Z	B-48
	Vehicle Left Rear Z Velocity	B-48
	Vehicle Left Rear Z Displacement	B-48
B-49	Vehicle Right Rear Z	B-49
	Vehicle Right Rear Z Velocity	B-49
	Vehicle Right Rear Z Displacement	B-49

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

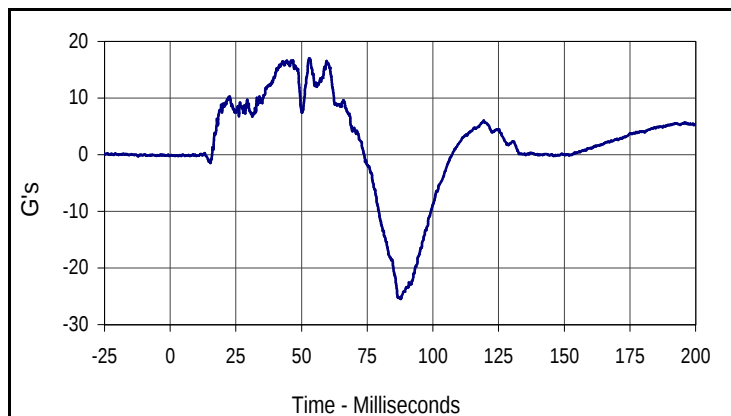
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 NHTSA No.: Z45400



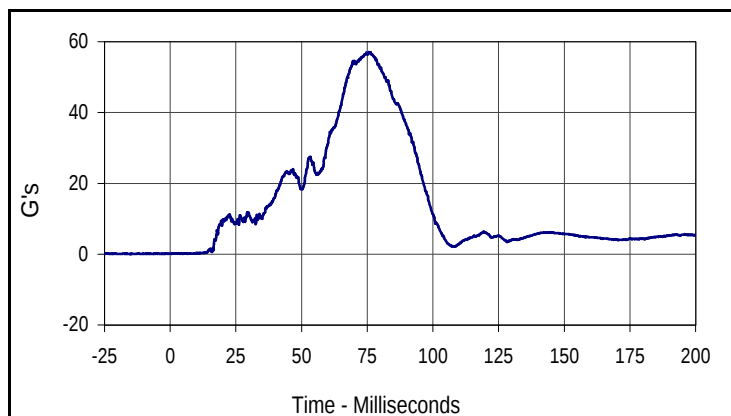
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Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
0.7	199.3	-57.0	75.6



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.1	59.0	-5.4	83.6



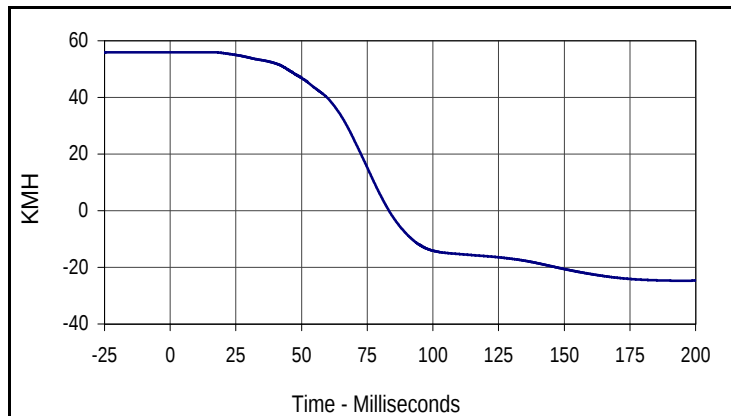
Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
17.0	53.1	-25.5	87.8



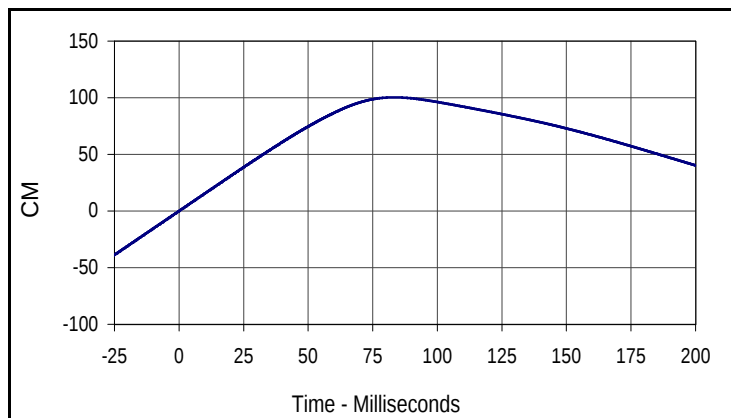
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
57.1	75.6	0.1	4.7

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



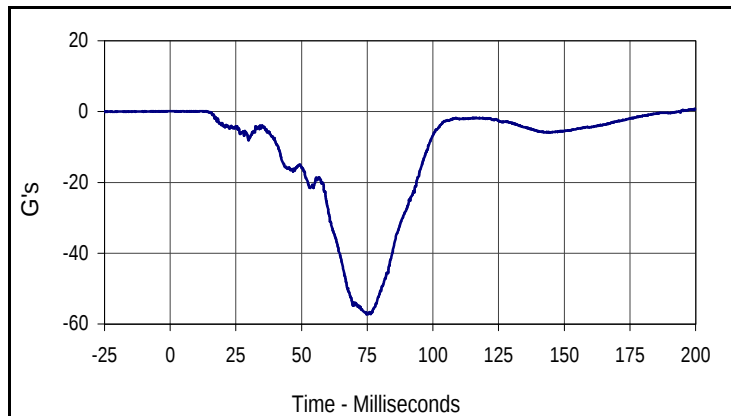
Curve Description			
Driver Head Primary X Velocity			
CURNO	Type	SAE Class	Units
001	IN1	180	KMH
Max	Time	Min	Time
56.0	15.4	-24.7	194.6



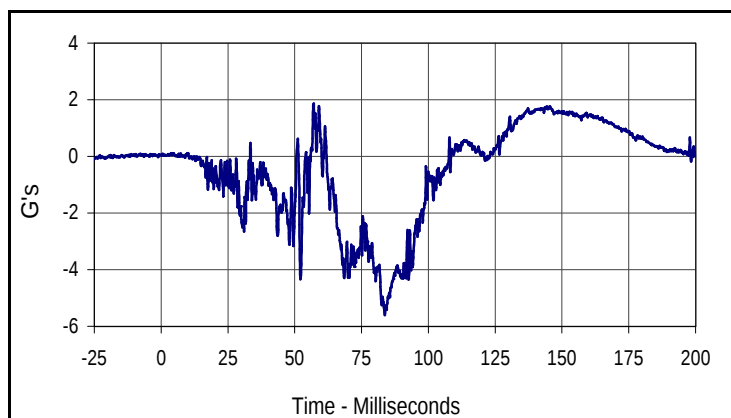
Curve Description			
Driver Head Primary X Displacement			
CURNO	Type	SAE Class	Units
001	IN2	180	CM
Max	Time	Min	Time
100.3	83.3	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

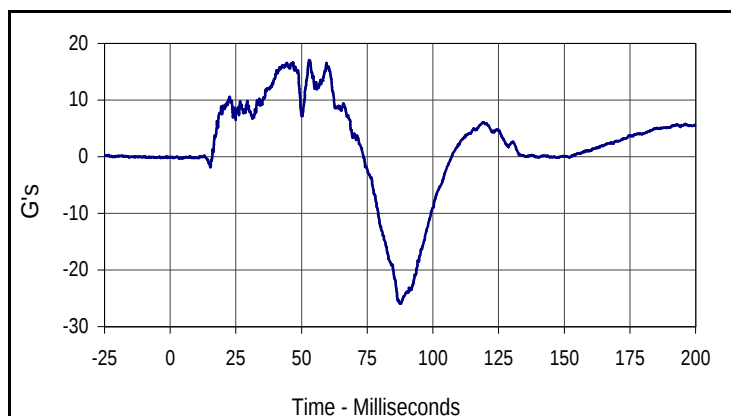
Test Date: 4/8/04
 NHTSA No.: Z45400



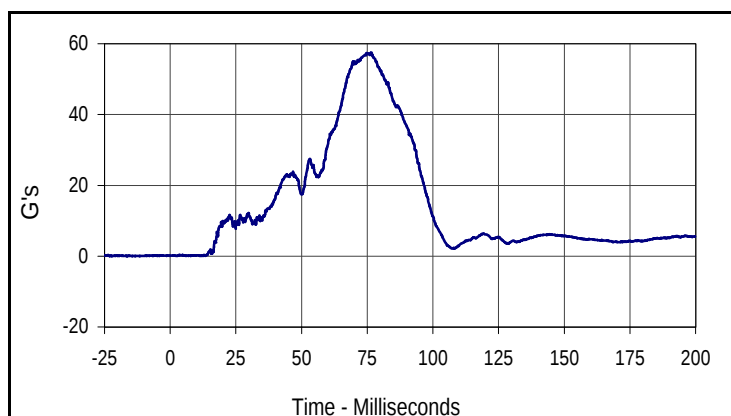
Curve Description			
Driver Head Redundant X			
CURNO	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
0.7	199.6	-57.3	74.8



Curve Description			
Driver Head Redundant Y			
CURNO	Type	SAE Class	Units
005	FIL	1000	G's
Max	Time	Min	Time
1.9	57.1	-5.6	83.7



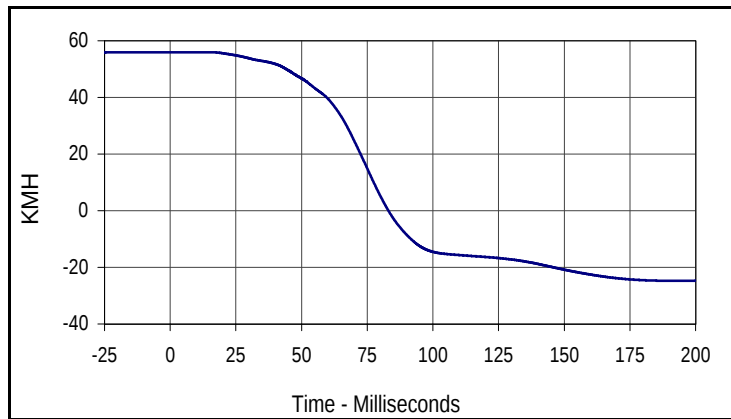
Curve Description			
Driver Head Redundant Z			
CURNO	Type	SAE Class	Units
006	FIL	1000	G's
Max	Time	Min	Time
17.0	52.9	-25.9	87.7



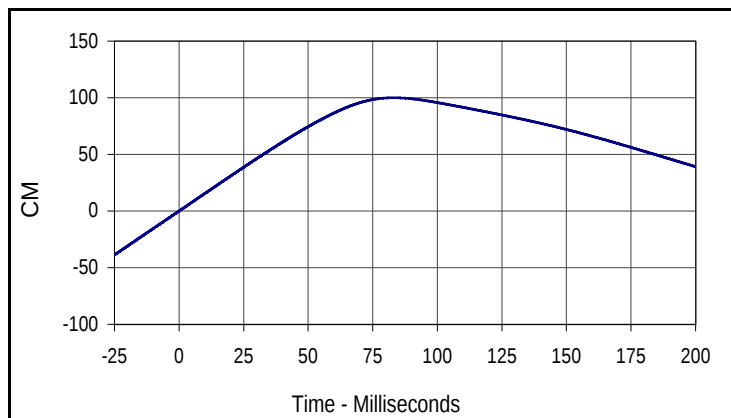
Curve Description			
Driver Head Resultant Redundant			
CURNO	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
57.4	76.3	0.1	12.5

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



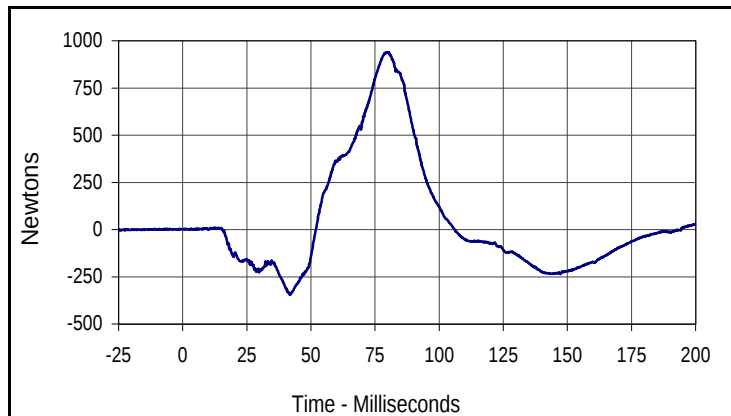
Curve Description			
Driver Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
004	IN1	180	KMH
Max	Time	Min	Time
56.0	14.0	-24.8	194.2



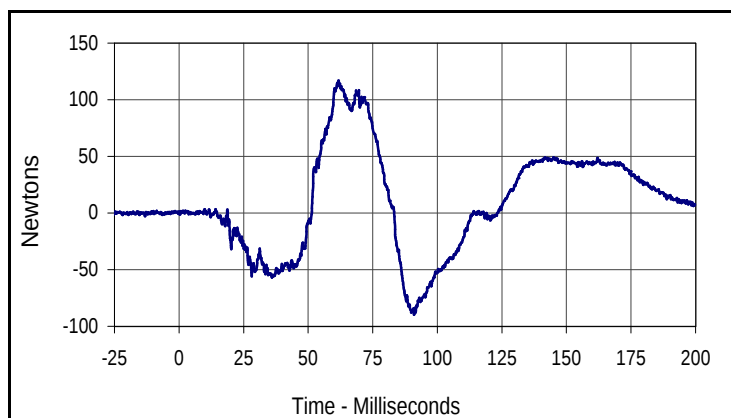
Curve Description			
Driver Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
004	IN2	180	CM
Max	Time	Min	Time
100.0	83.1	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

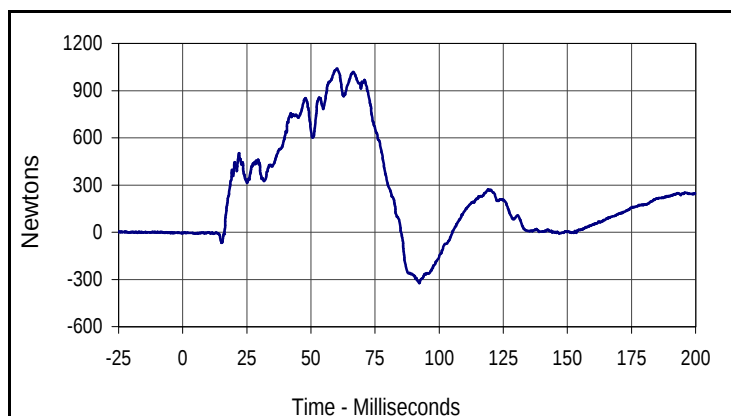
Test Date: 4/8/04
 NHTSA No.: Z45400



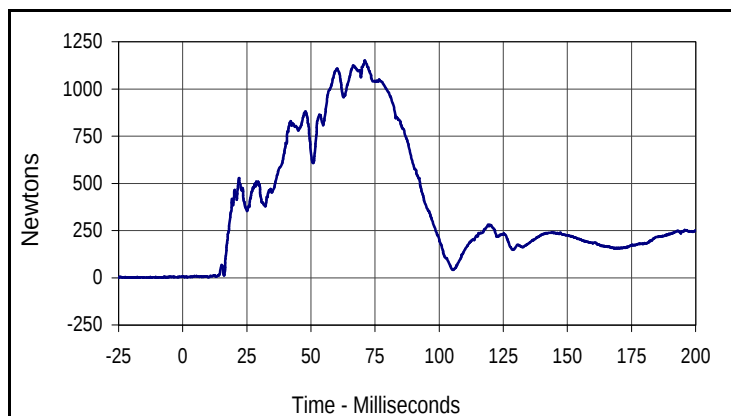
Curve Description			
Driver Upper Neck Force X			
CURNO	Type	SAE Class	Units
007	FIL	1000	Newtons
Max	Time	Min	Time
939.5	79.5	-346.6	41.8



Curve Description			
Driver Upper Neck Force Y			
CURNO	Type	SAE Class	Units
008	FIL	1000	Newtons
Max	Time	Min	Time
116.8	61.7	-89.9	91.0



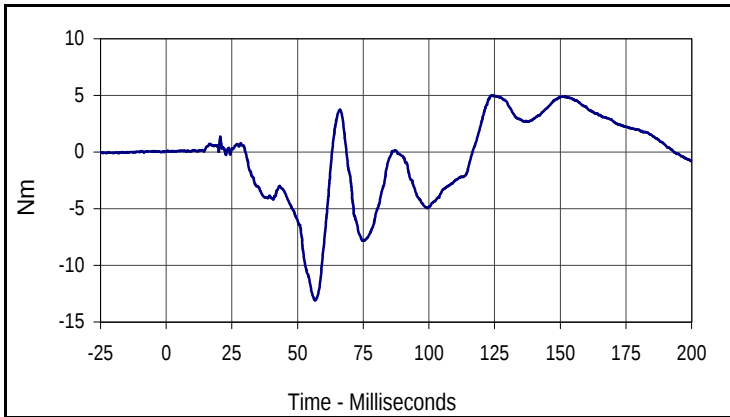
Curve Description			
Driver Upper Neck Force Z			
CURNO	Type	SAE Class	Units
009	FIL	1000	Newtons
Max	Time	Min	Time
1040.5	60.1	-322.4	92.3



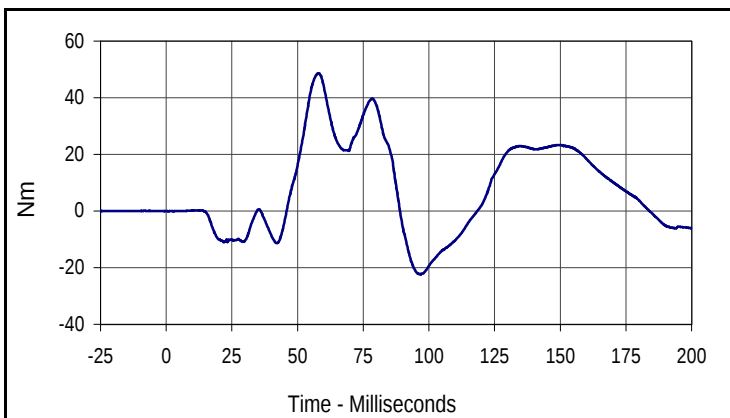
Curve Description			
Driver Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
007	RES	1000	Newtons
Max	Time	Min	Time
1150.8	71.0	2.7	0.8

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

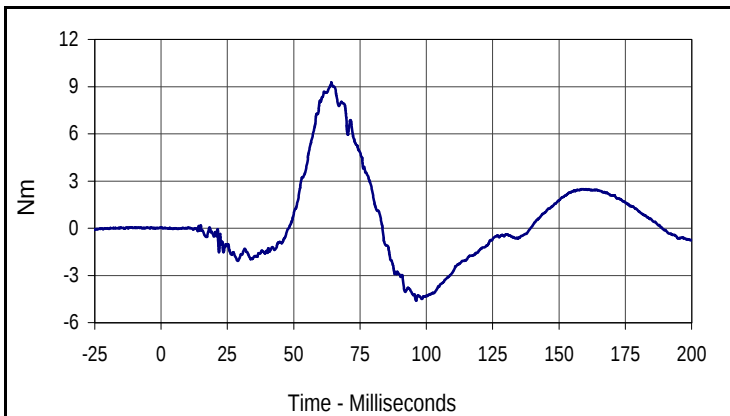
Test Date: 4/8/04
 NHTSA No.: Z45400



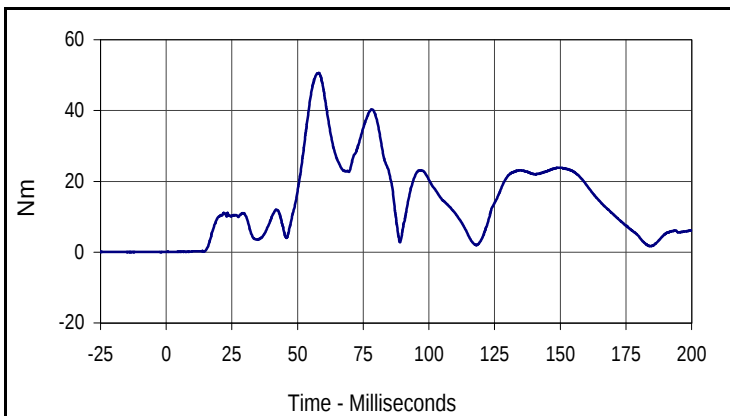
Curve Description			
Driver Upper Neck Moment X			
CURNO	Type	SAE Class	Units
010	FIL	600	Nm
Max	Time	Min	Time
5.0	124.1	-13.1	56.7



Curve Description			
Driver Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
011	FIL	600	Nm
Max	Time	Min	Time
48.6	58.0	-22.3	96.9



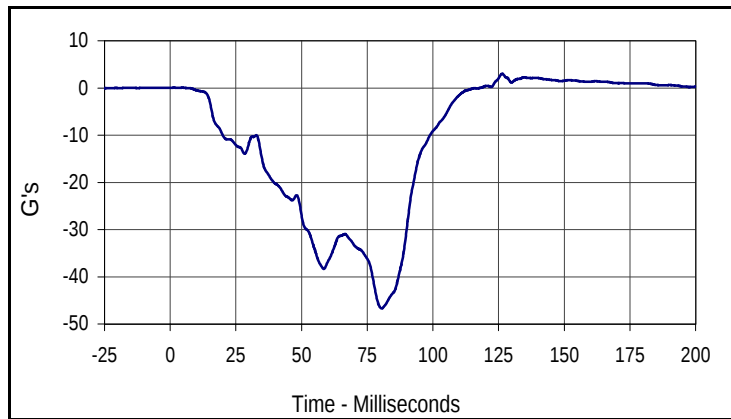
Curve Description			
Driver Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
9.3	64.2	-4.6	96.1



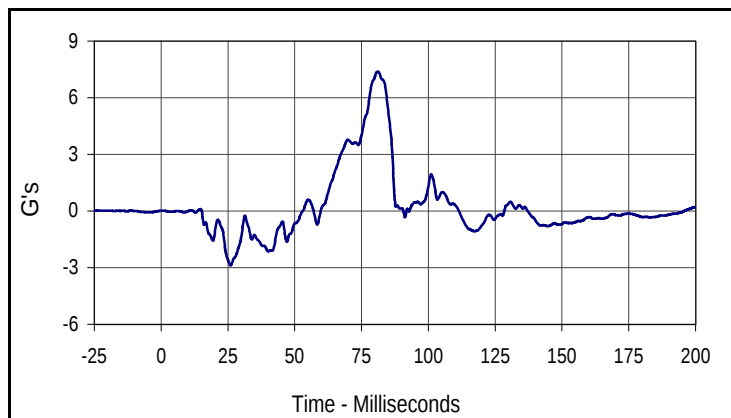
Curve Description			
Driver Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
010	RES	600	Nm
Max	Time	Min	Time
50.6	58.0	0.0	3.5

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

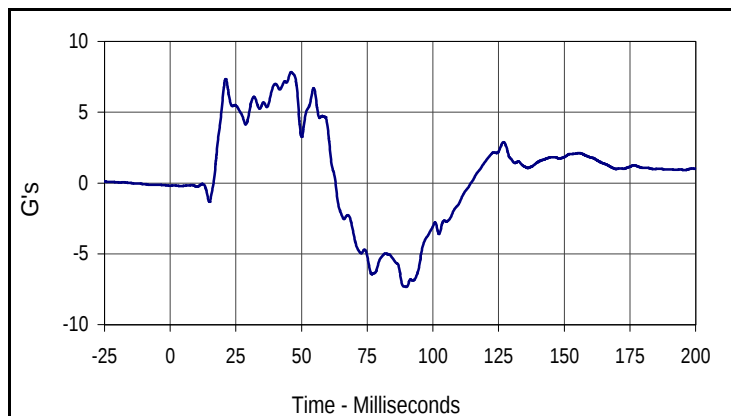
Test Date: 4/8/04
 NHTSA No.: Z45400



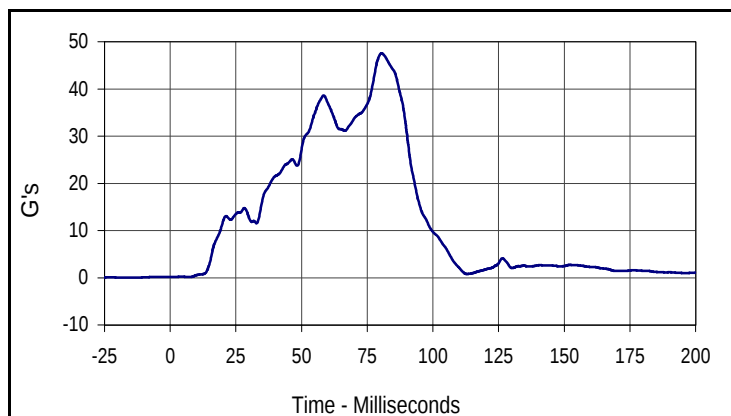
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
3.0	126.3	-46.7	80.4



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
7.4	80.9	-2.9	26.0



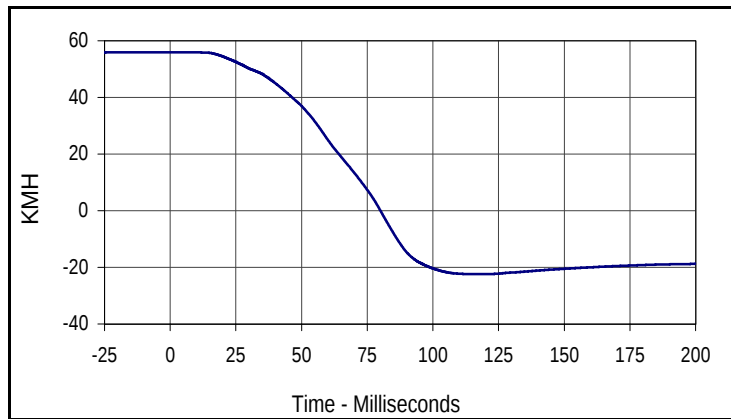
Curve Description			
Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
015	FIL	180	G's
Max	Time	Min	Time
7.8	46.0	-7.3	89.9



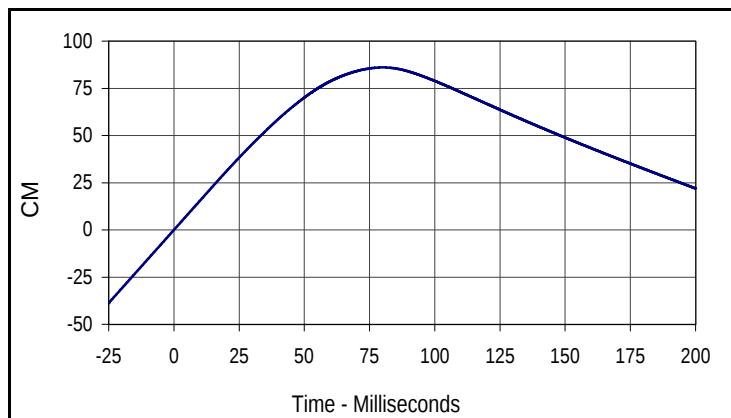
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
013	RES	180	G's
Max	Time	Min	Time
47.5	80.5	0.2	6.9

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



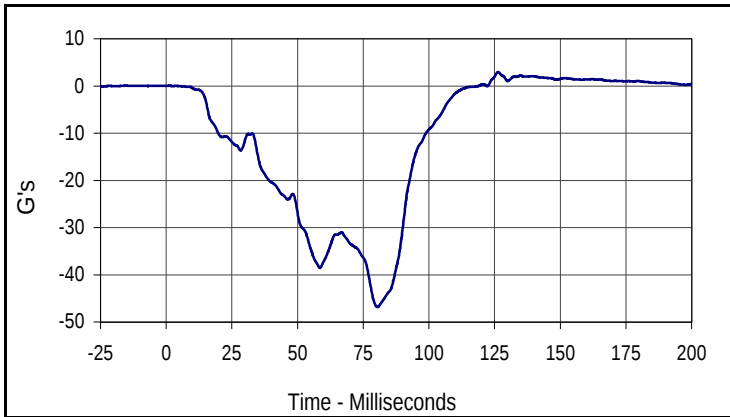
Curve Description			
Driver Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
013	IN1	180	KMH
Max	Time	Min	Time
55.9	6.0	-22.4	117.9



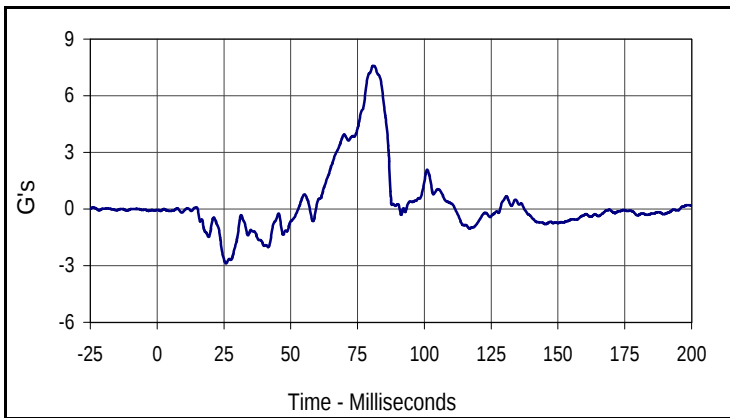
Curve Description			
Driver Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
013	IN2	180	CM
Max	Time	Min	Time
86.1	80.0	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

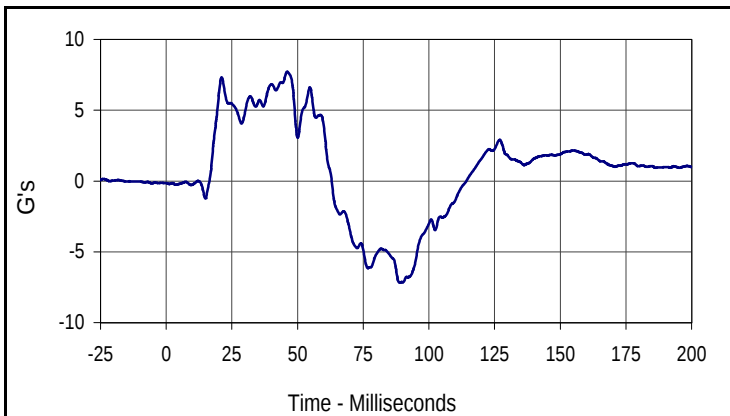
Test Date: 4/8/04
 NHTSA No.: Z45400



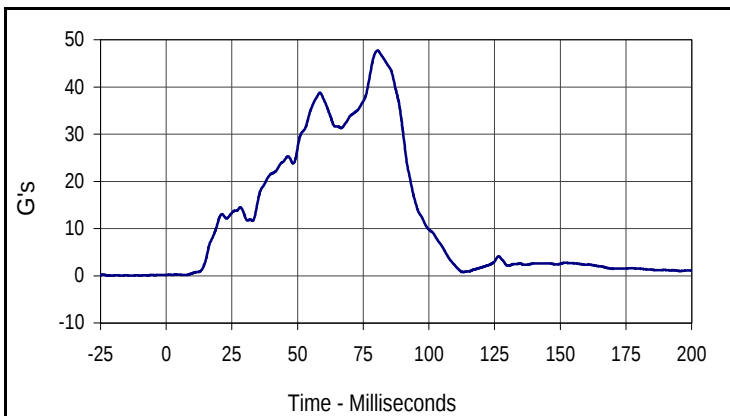
Curve Description			
Driver Chest Redundant X			
CURNO	Type	SAE Class	Units
016	FIL	180	G's
Max	Time	Min	Time
3.0	126.4	-46.8	80.4



Curve Description			
Driver Chest Redundant Y			
CURNO	Type	SAE Class	Units
017	FIL	180	G's
Max	Time	Min	Time
7.6	80.8	-2.9	25.8



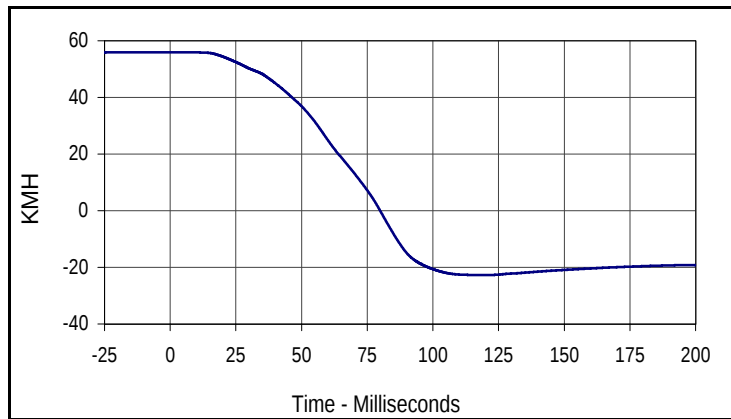
Curve Description			
Driver Chest Redundant Z			
CURNO	Type	SAE Class	Units
018	FIL	180	G's
Max	Time	Min	Time
7.7	46.0	-7.2	88.8



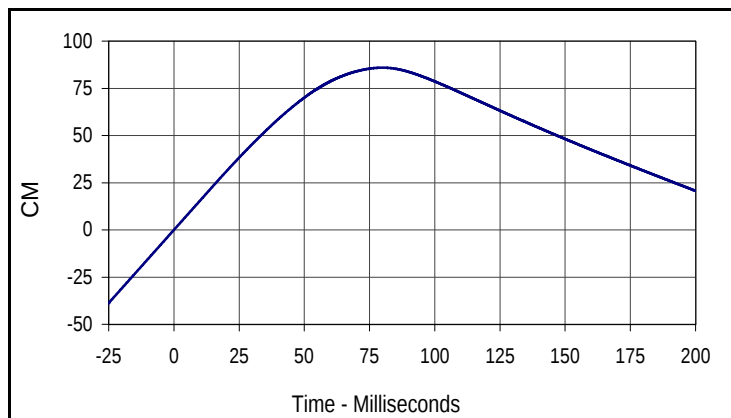
Curve Description			
Driver Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
016	RES	180	G's
Max	Time	Min	Time
47.7	80.4	0.1	7.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



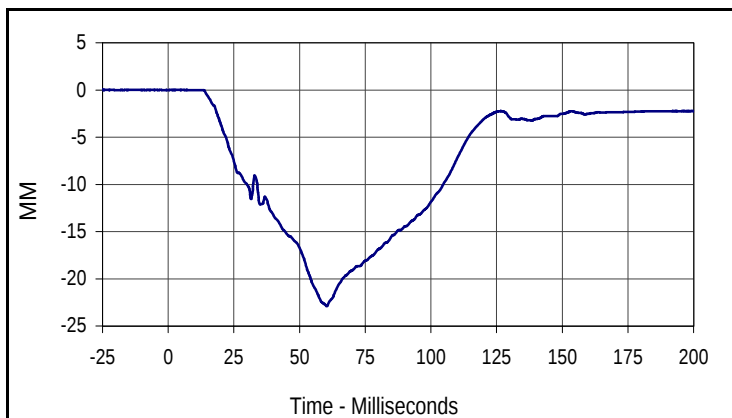
Curve Description			
Driver Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
016	IN1	180	KMH
Max	Time	Min	Time
55.9	4.4	-22.7	118.9



Curve Description			
Driver Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
016	IN2	180	CM
Max	Time	Min	Time
85.9	79.9	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

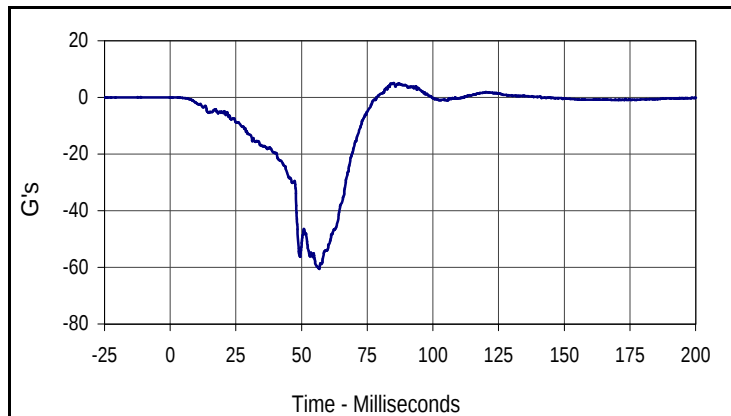
Test Date: 4/8/04
 NHTSA No.: Z45400



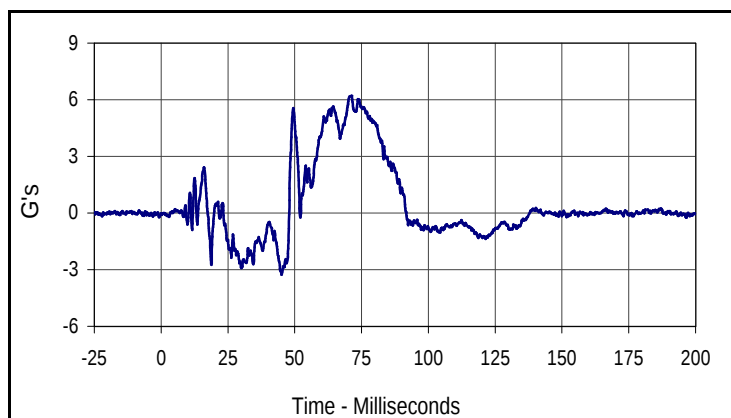
Curve Description			
Driver Chest Displacement			
CURNO	Type	SAE Class	Units
019	FIL	600	MM
Max	Time	Min	Time
0.0	3.2	-22.9	60.3

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

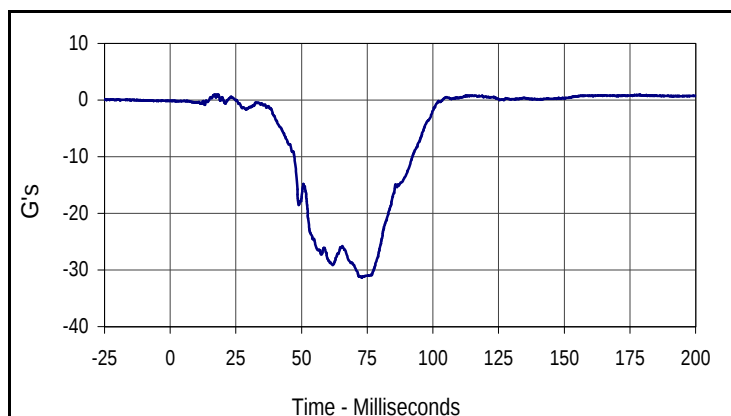
Test Date: 4/8/04
 NHTSA No.: Z45400



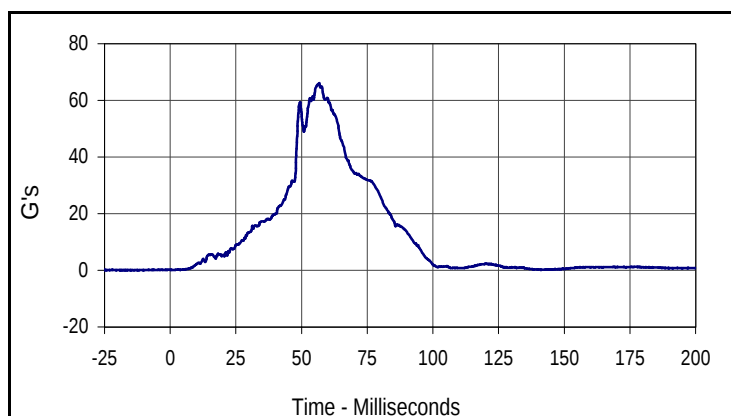
Curve Description			
Driver Pelvis X			
CURNO	Type	SAE Class	Units
020	FIL	1000	G's
Max	Time	Min	Time
5.1	85.0	-60.6	56.7



Curve Description			
Driver Pelvis Y			
CURNO	Type	SAE Class	Units
021	FIL	1000	G's
Max	Time	Min	Time
6.2	71.2	-3.3	45.1



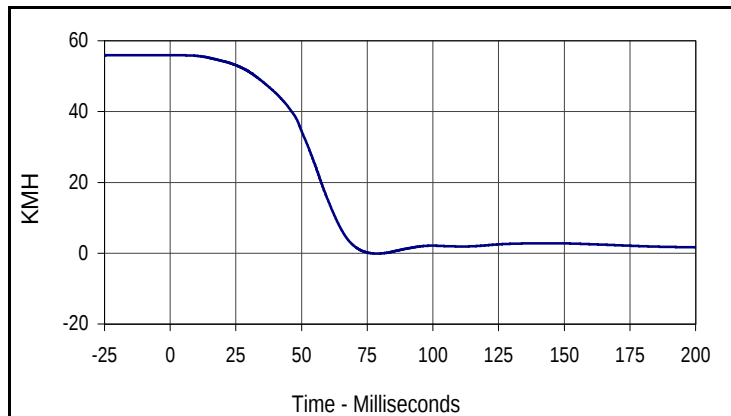
Curve Description			
Driver Pelvis Z			
CURNO	Type	SAE Class	Units
022	FIL	1000	G's
Max	Time	Min	Time
1.0	17.0	-31.3	73.0



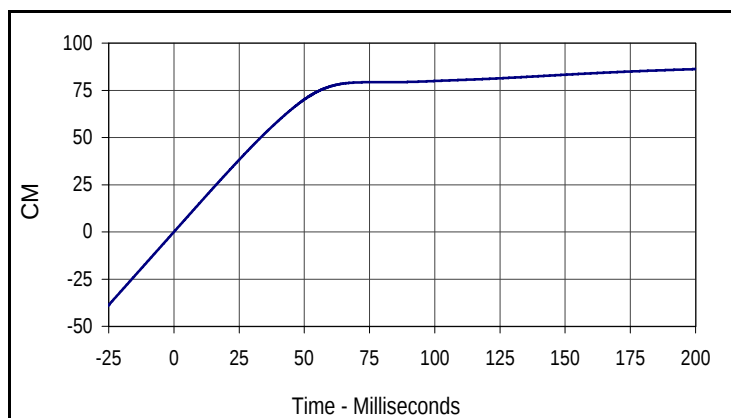
Curve Description			
Driver Pelvis Resultant			
CURNO	Type	SAE Class	Units
020	RES	1000	G's
Max	Time	Min	Time
66.1	56.7	0.1	3.8

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



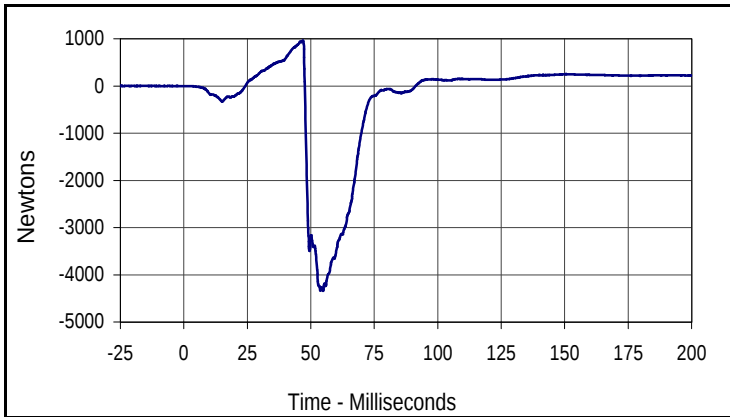
Curve Description			
Driver Pelvis X Velocity			
CURNO	Type	SAE Class	Units
020	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-0.1	78.7



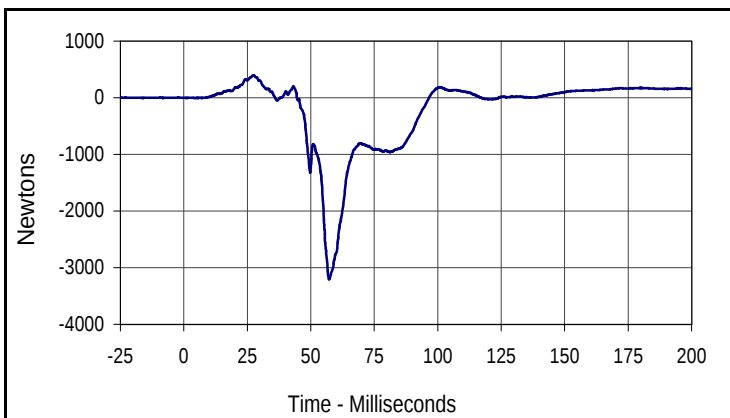
Curve Description			
Driver Pelvis X Displacement			
CURNO	Type	SAE Class	Units
020	IN2	180	CM
Max	Time	Min	Time
86.2	200.0	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



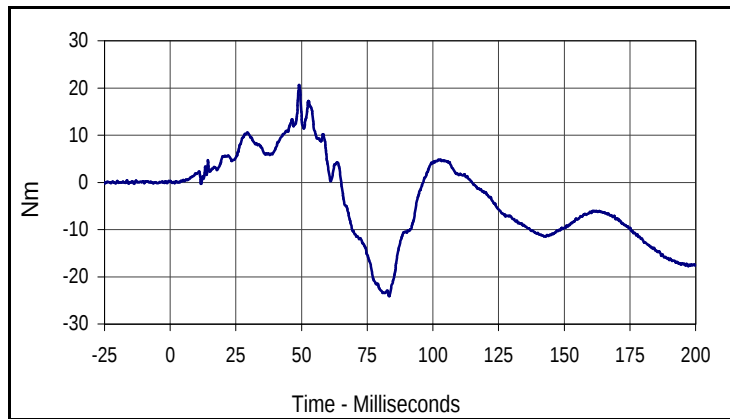
Curve Description			
Driver Left Femur Force			
CURNO	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
962.2	46.9	-4341.3	54.8



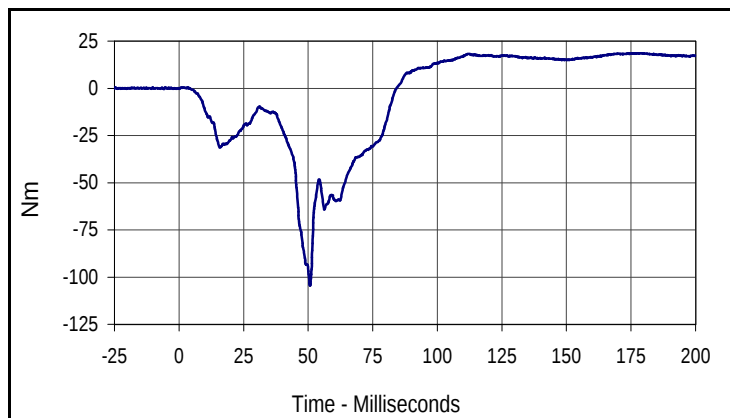
Curve Description			
Driver Right Femur Force			
CURNO	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
393.8	27.6	-3208.4	57.2

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

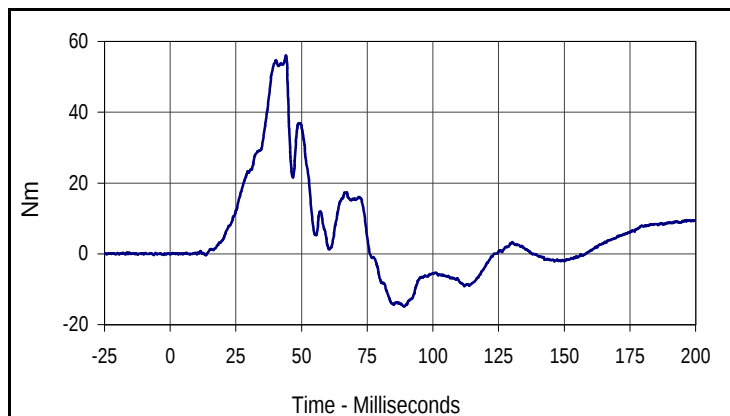
Test Date: 4/8/04
 NHTSA No.: Z45400



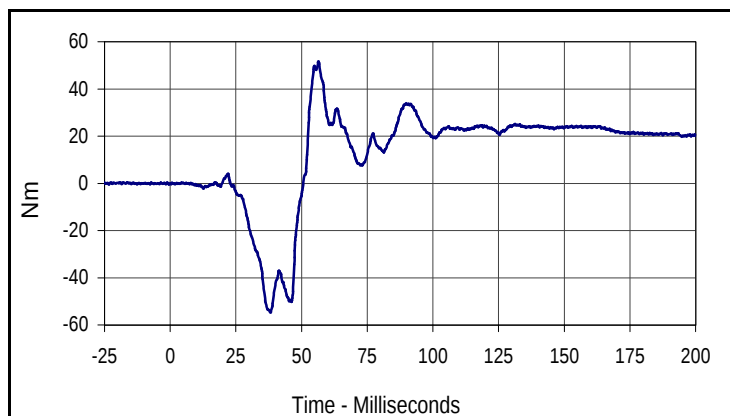
Curve Description			
Driver Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
025	FIL	600	Nm
Max	Time	Min	Time
20.6	49.1	-24.1	83.4



Curve Description			
Driver Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
18.6	177.5	-104.4	50.7



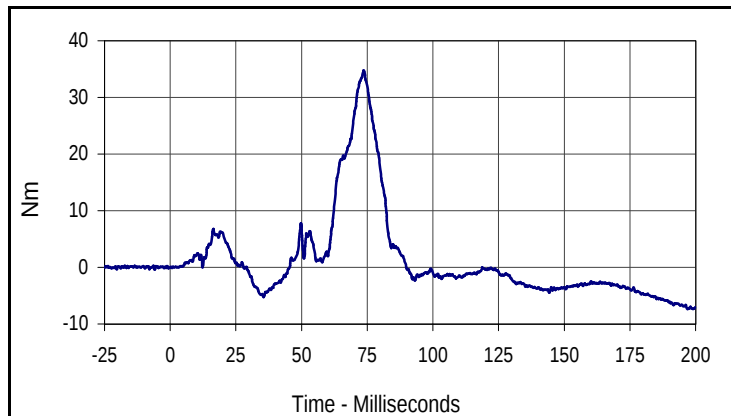
Curve Description			
Driver Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
027	FIL	600	Nm
Max	Time	Min	Time
56.0	44.1	-14.9	89.2



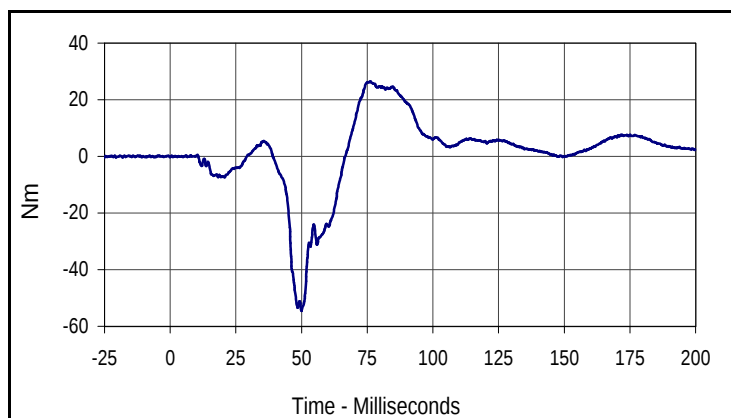
Curve Description			
Driver Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
028	FIL	600	Nm
Max	Time	Min	Time
51.5	56.5	-54.7	38.1

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

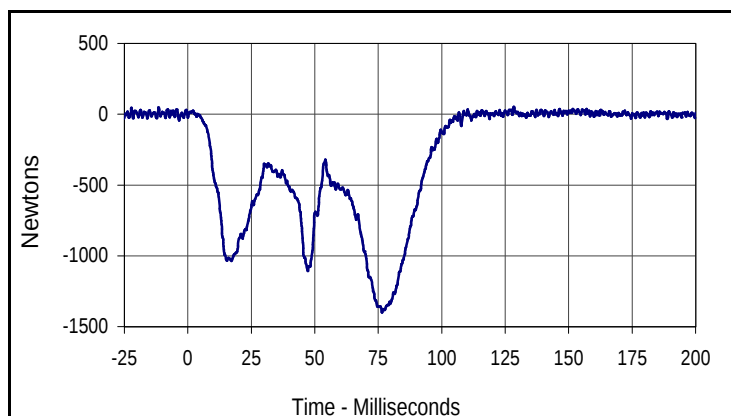
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
029	FIL	600	Nm
Max	Time	Min	Time
34.8	73.7	-7.4	196.9



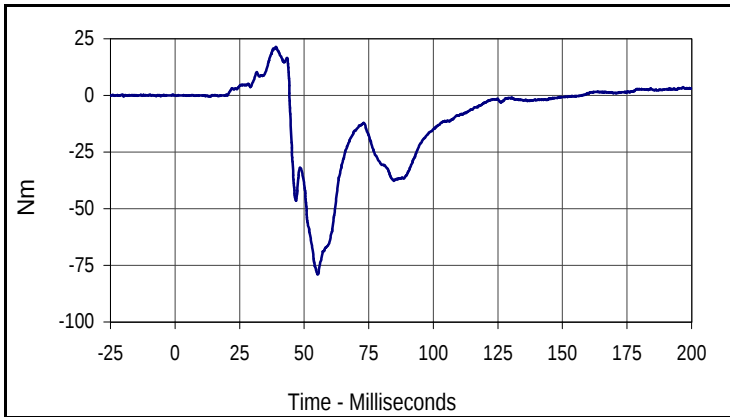
Curve Description			
Driver Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
030	FIL	600	Nm
Max	Time	Min	Time
26.4	76.2	-54.5	50.0



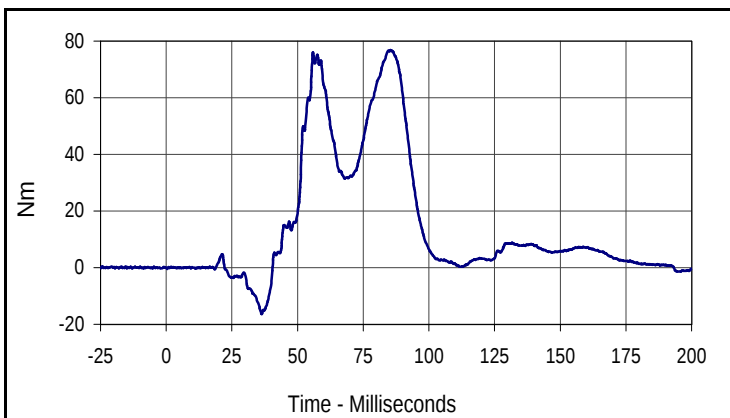
Curve Description			
Driver Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
031	FIL	600	Newtons
Max	Time	Min	Time
53.3	128.4	-1401.1	76.5

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

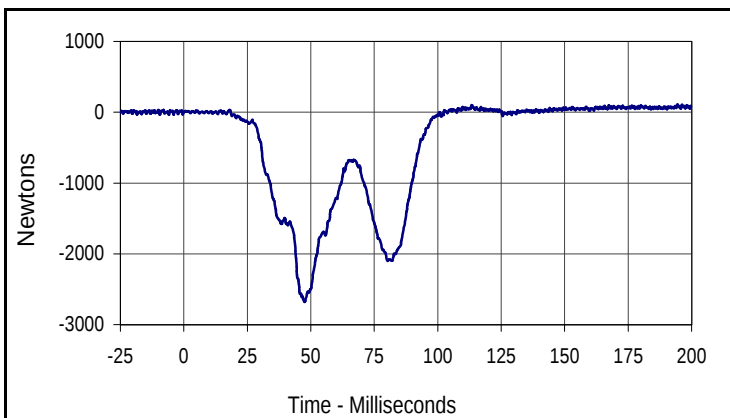
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
032	FIL	600	Nm
Max	Time	Min	Time
21.5	39.0	-79.0	55.3



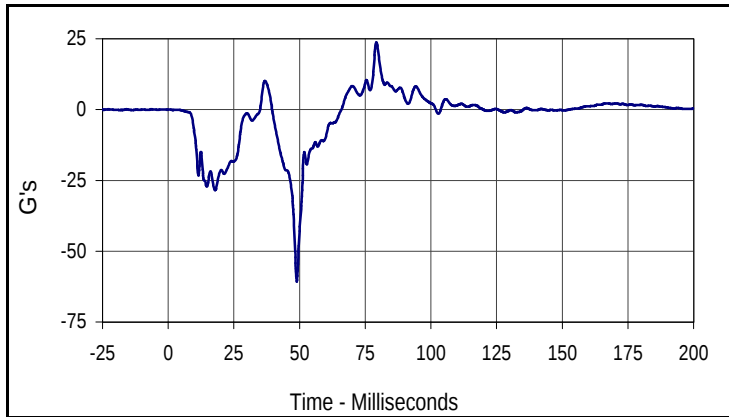
Curve Description			
Driver Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
033	FIL	600	Nm
Max	Time	Min	Time
76.8	85.4	-16.4	36.3



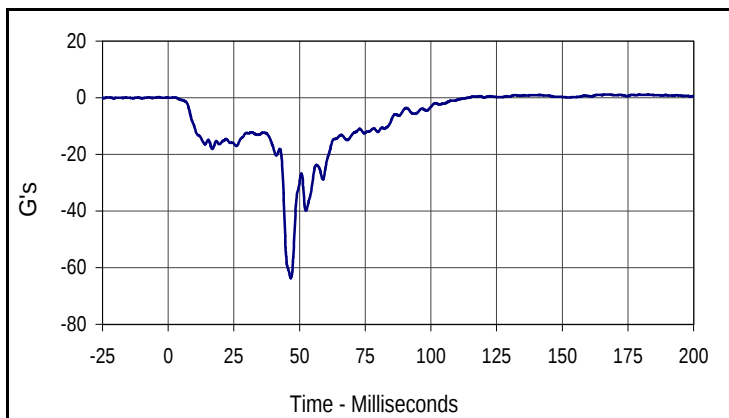
Curve Description			
Driver Right lower Tibia Force Z			
CURNO	Type	SAE Class	Units
034	FIL	600	Newtons
Max	Time	Min	Time
107.8	194.4	-2678.0	47.6

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

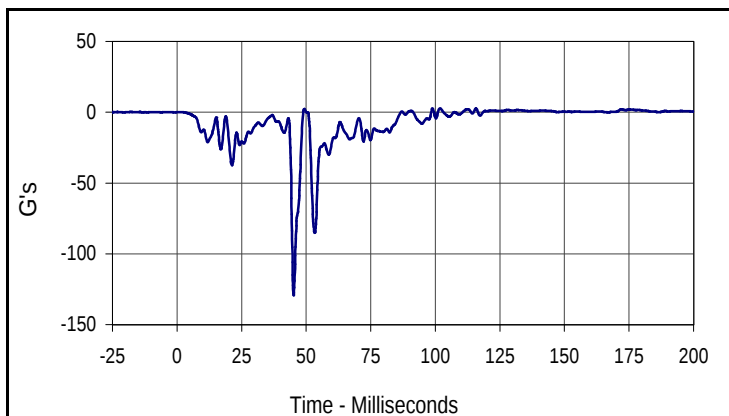
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Left Foot Aft X			
CURNO	Type	SAE Class	Units
035	FIL	180	G's
Max	Time	Min	Time
23.8	79.2	-60.7	49.0



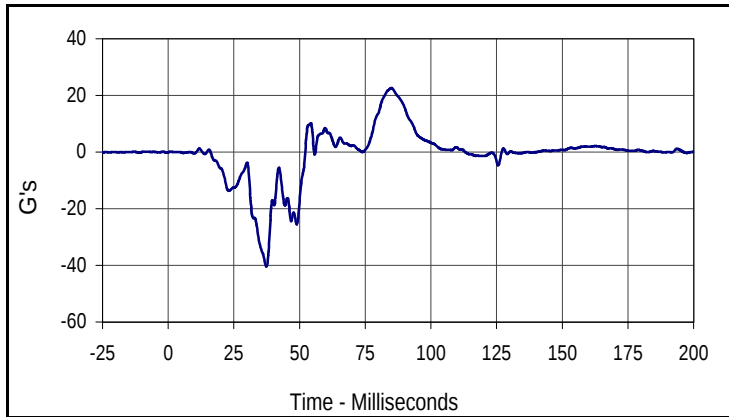
Curve Description			
Driver Left Foot Aft Z			
CURNO	Type	SAE Class	Units
036	FIL	180	G's
Max	Time	Min	Time
1.2	166.7	-63.7	46.7



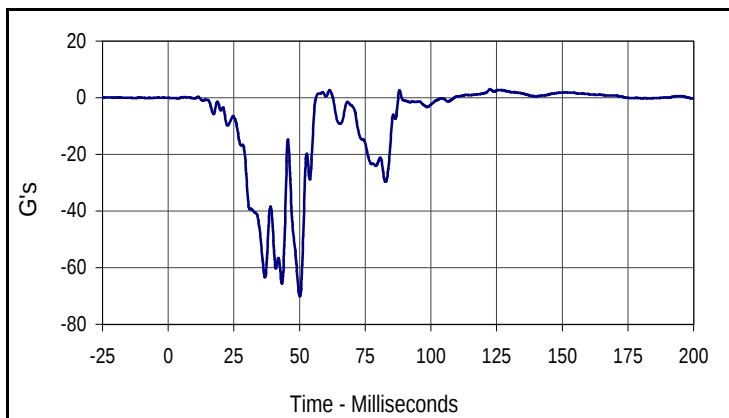
Curve Description			
Driver Left Foot Fore Z			
CURNO	Type	SAE Class	Units
037	FIL	180	G's
Max	Time	Min	Time
2.8	101.8	-129.2	45.2

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

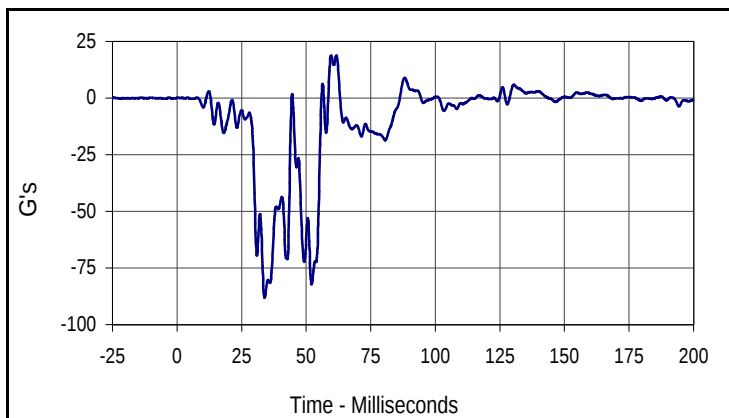
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Right Foot Aft X			
CURNO	Type	SAE Class	Units
038	FIL	180	G's
Max	Time	Min	Time
22.6	85.0	-40.5	37.4



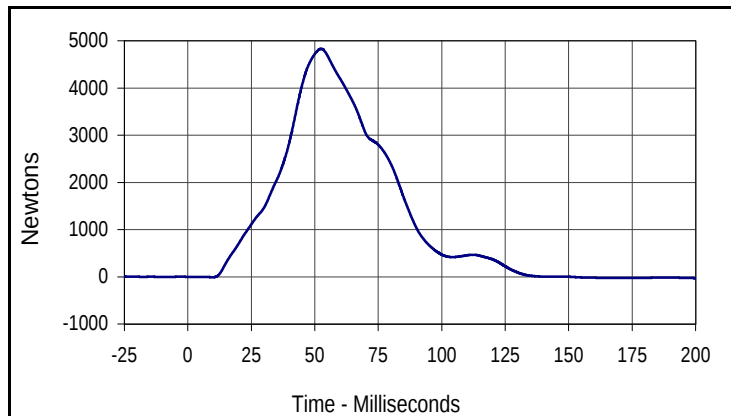
Curve Description			
Driver Right Foot Aft Z			
CURNO	Type	SAE Class	Units
039	FIL	180	G's
Max	Time	Min	Time
3.1	122.5	-70.2	50.1



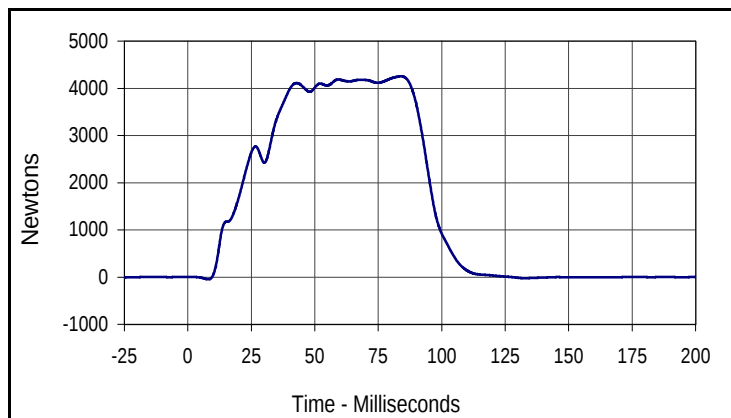
Curve Description			
Driver Right Foot Fore Z			
CURNO	Type	SAE Class	Units
040	FIL	180	G's
Max	Time	Min	Time
18.8	59.7	-88.2	33.9

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

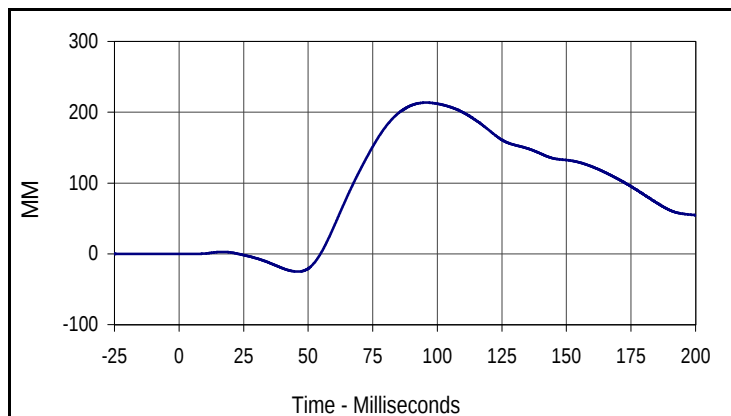
Test Date: 4/8/04
 NHTSA No.: Z45400



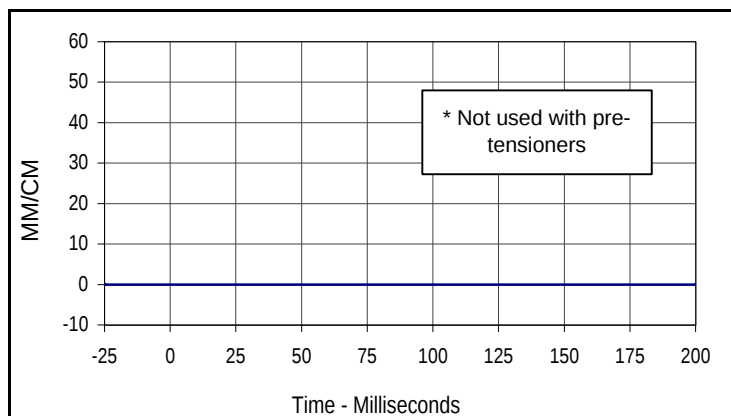
Curve Description			
Driver Lap Belt Force			
CURNO	Type	SAE Class	Units
041	FIL	60	Newtons
Max	Time	Min	Time
4828.8	52.5	-27.4	200.0



Curve Description			
Driver Shoulder Belt Force			
CURNO	Type	SAE Class	Units
042	FIL	60	Newtons
Max	Time	Min	Time
4254.2	84.0	-46.7	8.1



Curve Description			
Driver Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
043	FIL	60	MM
Max	Time	Min	Time
213.6	96.1	-25.1	46.5

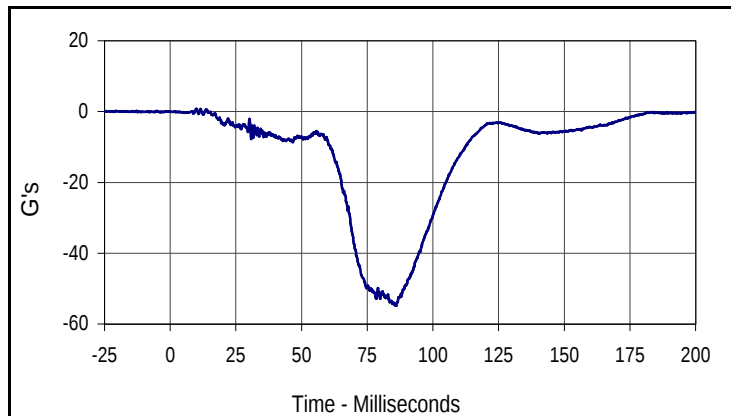


Curve Description			
Driver Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
044	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

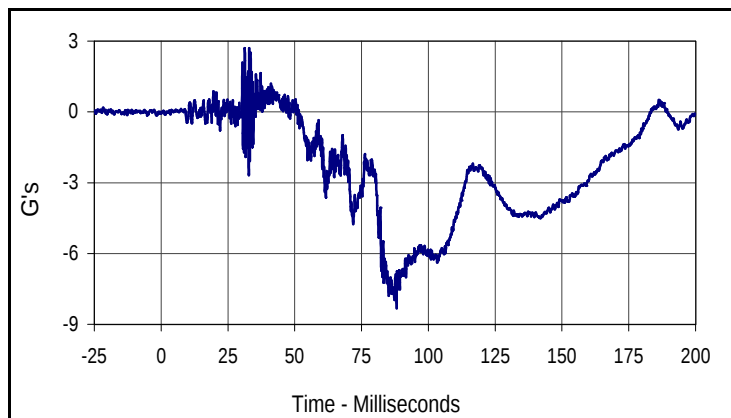
* Not used with pre-tensioners

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

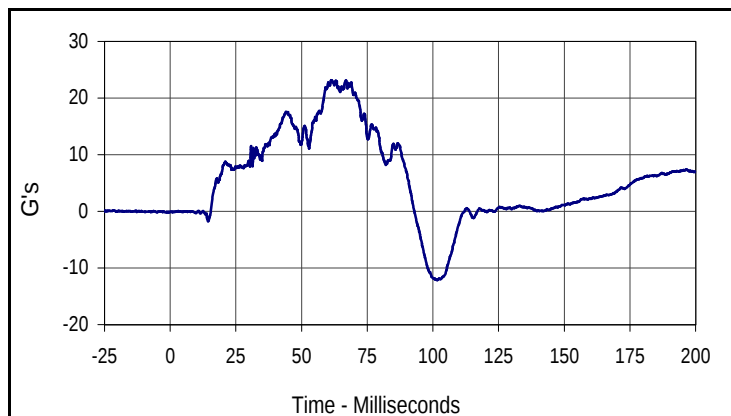
Test Date: 4/8/04
 NHTSA No.: Z45400



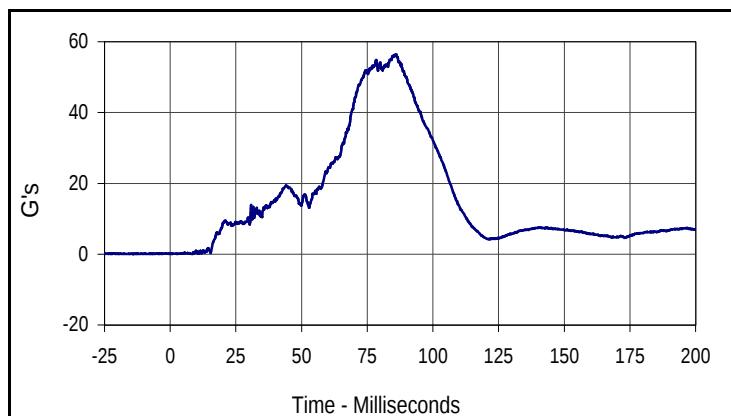
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
0.8	9.9	-54.9	85.8



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
2.7	33.0	-8.3	88.1



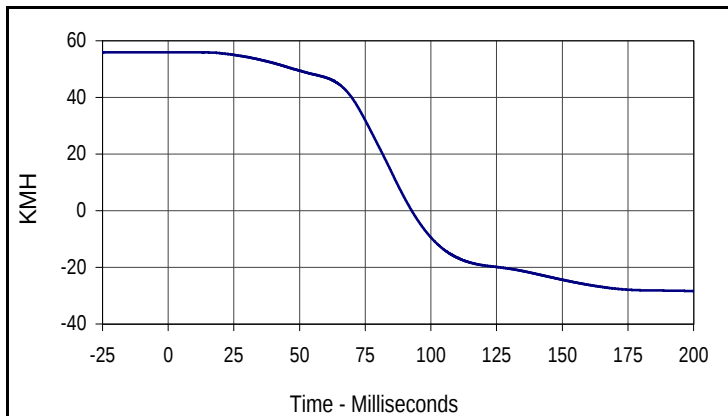
Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
23.2	61.2	-12.1	101.7



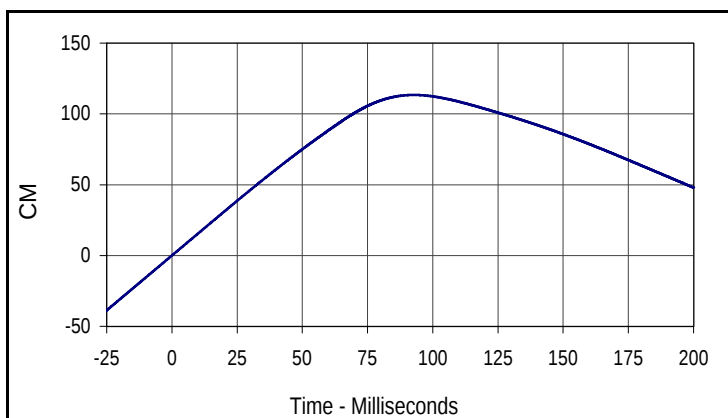
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
045	RES	1000	G's
Max	Time	Min	Time
56.4	85.9	0.0	8.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



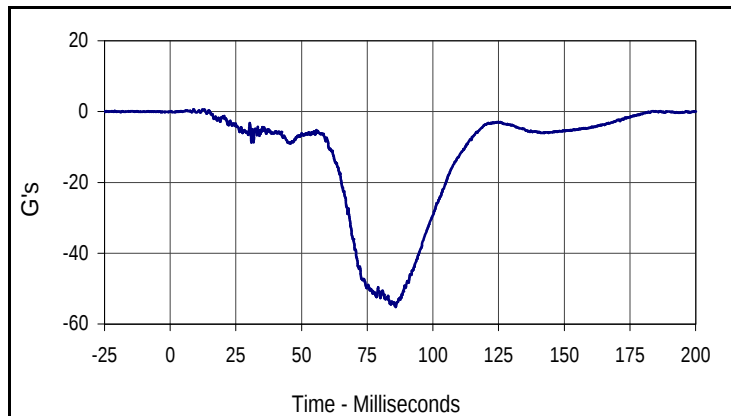
Curve Description			
Passenger Head Primary X Velocity			
CURNO	Type	SAE Class	Units
045	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-28.3	200.0



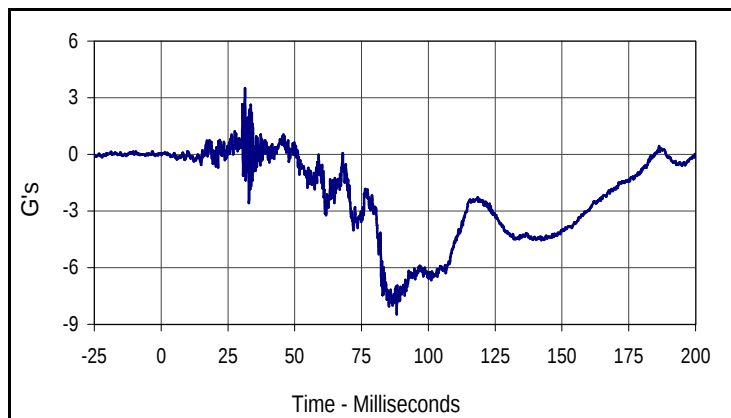
Curve Description			
Passenger Head Primary X Displacement			
CURNO	Type	SAE Class	Units
045	IN2	180	CM
Max	Time	Min	Time
113.4	92.7	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

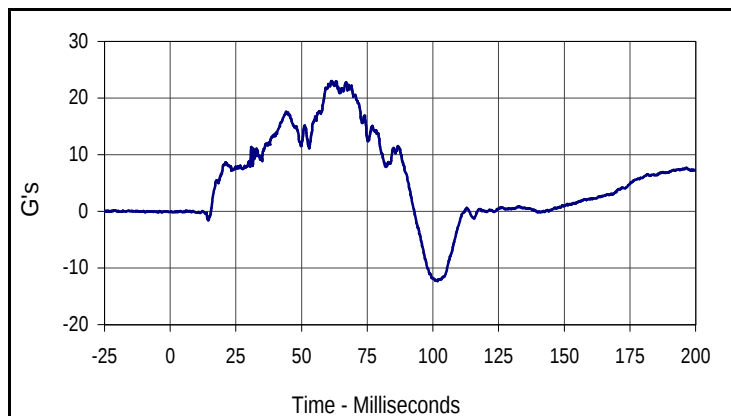
Test Date: 4/8/04
 NHTSA No.: Z45400



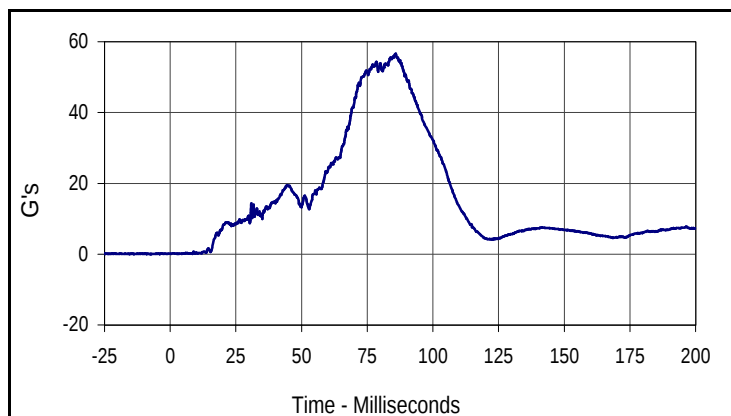
Curve Description			
Passenger Head Redundant X			
CURNO	Type	SAE Class	Units
048	FIL	1000	G's
Max	Time	Min	Time
0.6	9.0	-55.2	85.9



Curve Description			
Passenger Head Redundant Y			
CURNO	Type	SAE Class	Units
049	FIL	1000	G's
Max	Time	Min	Time
3.5	31.4	-8.5	88.2



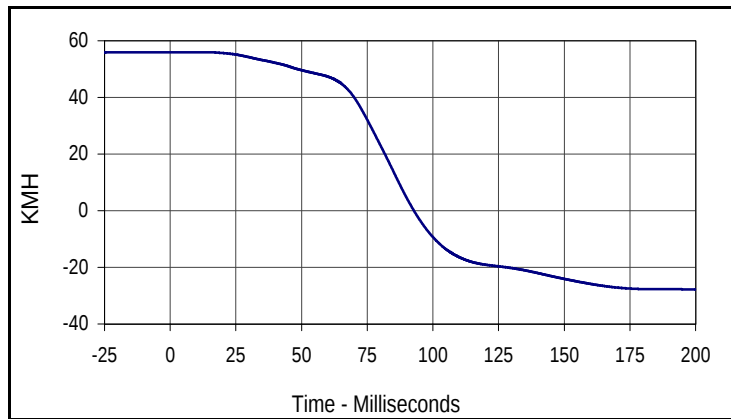
Curve Description			
Passenger Head Redundant Z			
CURNO	Type	SAE Class	Units
050	FIL	1000	G's
Max	Time	Min	Time
23.0	61.2	-12.3	101.7



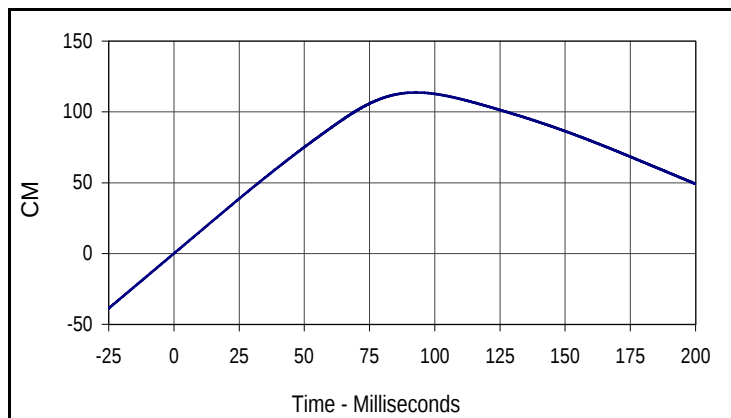
Curve Description			
Passenger Head Resultant Redundant			
CURNO	Type	SAE Class	Units
048	RES	1000	G's
Max	Time	Min	Time
56.6	85.9	0.0	2.5

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



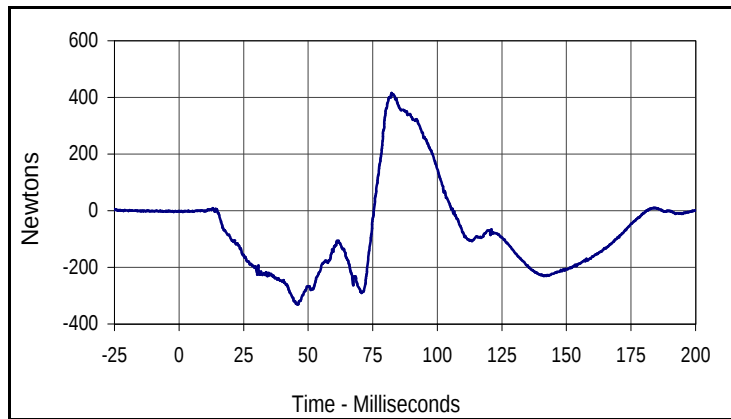
Curve Description			
Passenger Head Redundant X Velocity			
CURNO	Type	SAE Class	Units
048	IN1	180	KMH
Max	Time	Min	Time
56.0	13.6	-27.8	199.6



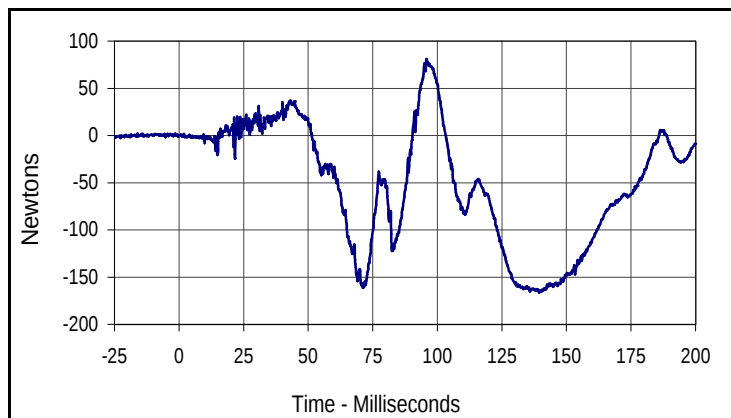
Curve Description			
Passenger Head Redundant X Displacement			
CURNO	Type	SAE Class	Units
048	IN2	180	CM
Max	Time	Min	Time
113.7	92.8	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

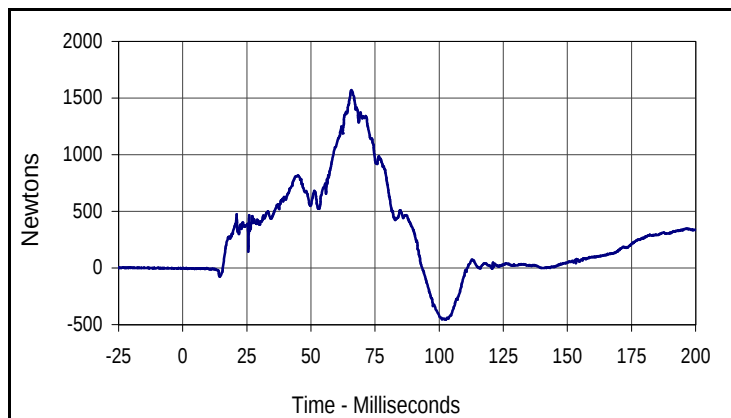
Test Date: 4/8/04
 NHTSA No.: Z45400



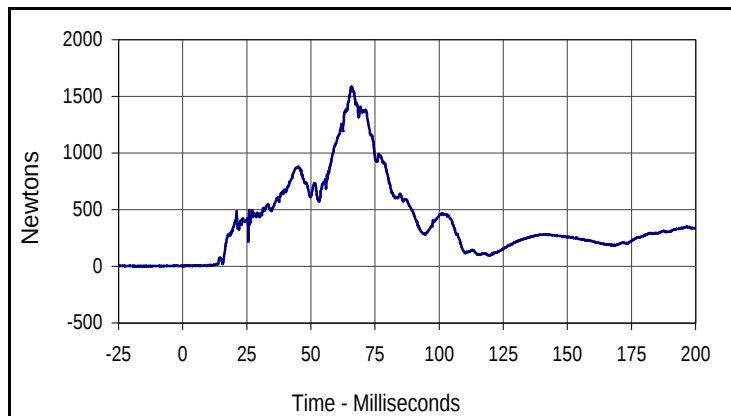
Curve Description			
Passenger Upper Neck Force X			
CURNO	Type	SAE Class	Units
051	FIL	1000	Newtons
Max	Time	Min	Time
416.1	82.3	-331.4	46.0



Curve Description			
Passenger Upper Neck Force Y			
CURNO	Type	SAE Class	Units
052	FIL	1000	Newtons
Max	Time	Min	Time
81.1	95.8	-166.4	139.4



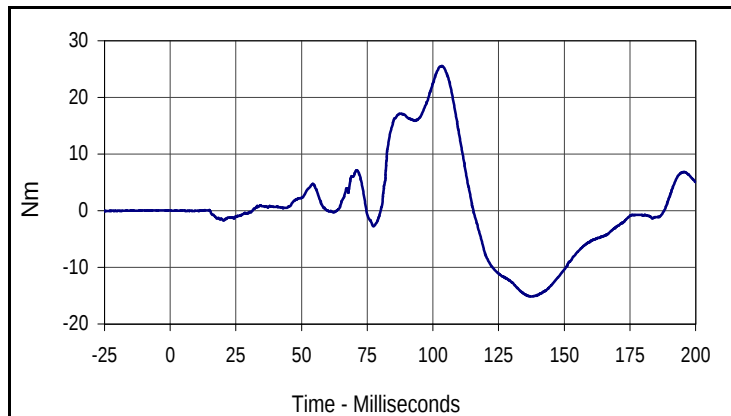
Curve Description			
Passenger Upper Neck Force Z			
CURNO	Type	SAE Class	Units
053	FIL	1000	Newtons
Max	Time	Min	Time
1571.3	65.7	-454.8	102.5



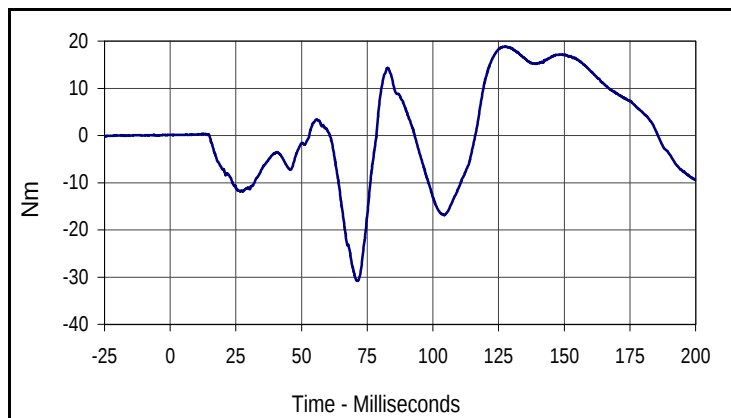
Curve Description			
Passenger Upper Neck Force Res.			
CURNO	Type	SAE Class	Units
051	RES	1000	Newtons
Max	Time	Min	Time
1586.0	65.7	1.4	0.2

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

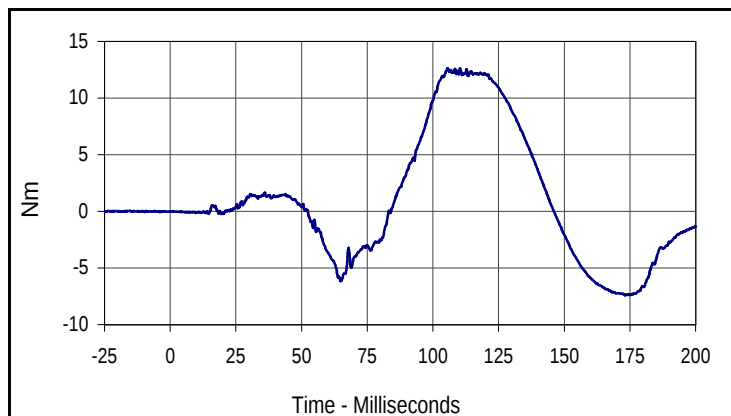
Test Date: 4/8/04
 NHTSA No.: Z45400



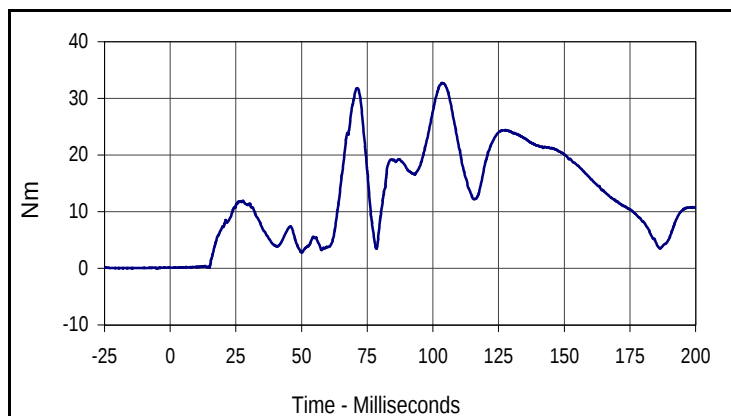
Curve Description			
Passenger Upper Neck Moment X			
CURNO	Type	SAE Class	Units
054	FIL	600	Nm
Max	Time	Min	Time
25.5	103.4	-15.1	138.1



Curve Description			
Passenger Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
055	FIL	600	Nm
Max	Time	Min	Time
18.8	127.6	-30.8	71.2



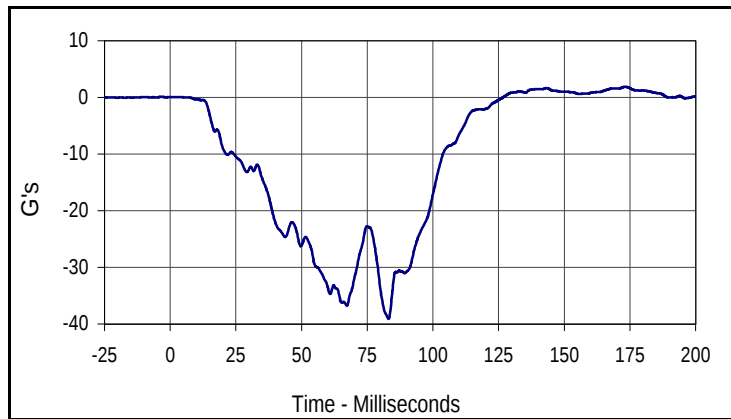
Curve Description			
Passenger Upper Neck Moment Z			
CURNO	Type	SAE Class	Units
056	FIL	600	Nm
Max	Time	Min	Time
12.6	110.3	-7.4	173.2



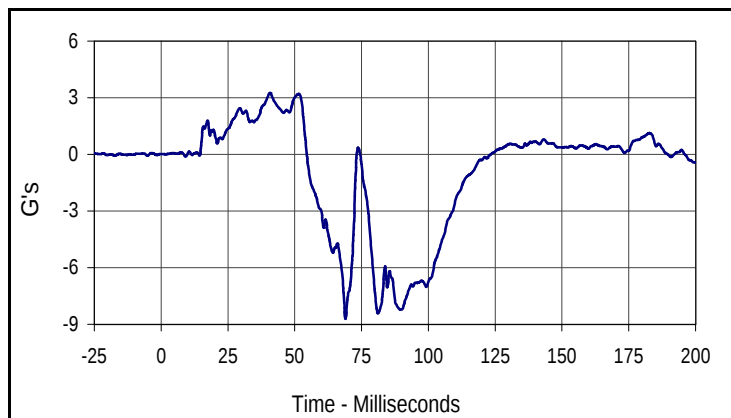
Curve Description			
Passenger Upper Neck Moment Res.			
CURNO	Type	SAE Class	Units
054	RES	600	Nm
Max	Time	Min	Time
32.7	103.6	0.1	1.1

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

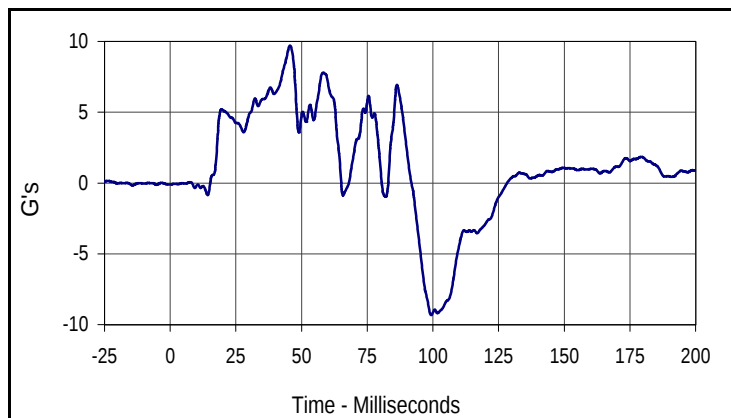
Test Date: 4/8/04
 NHTSA No.: Z45400



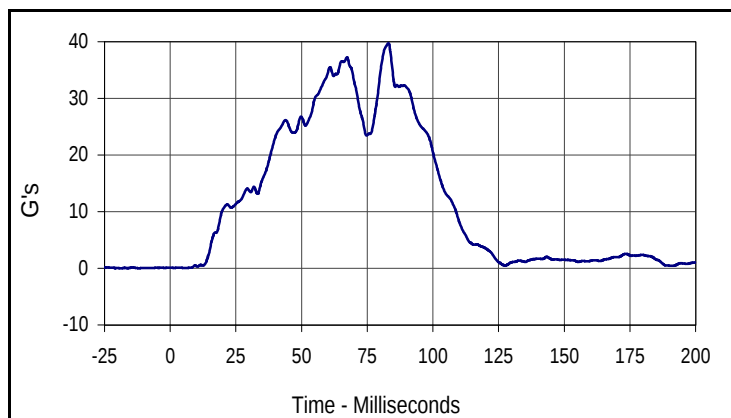
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
057	FIL	180	G's
Max	Time	Min	Time
1.9	173.3	-39.1	83.1



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
058	FIL	180	G's
Max	Time	Min	Time
3.3	40.7	-8.7	69.0



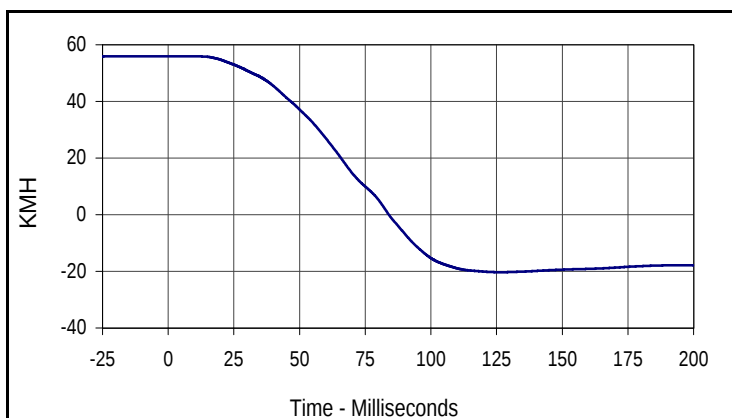
Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
059	FIL	180	G's
Max	Time	Min	Time
9.7	45.6	-9.3	99.3



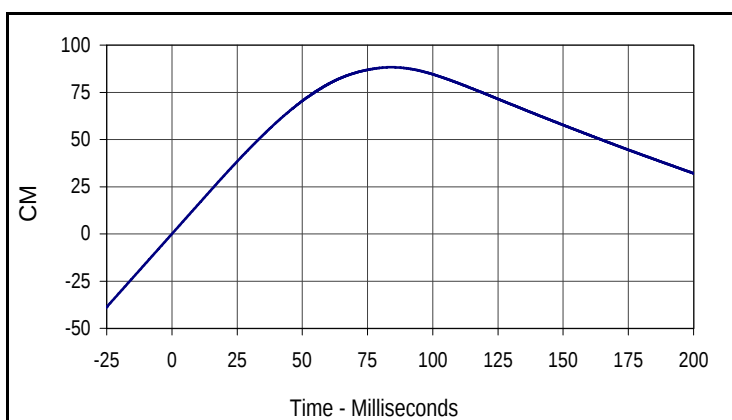
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
057	RES	180	G's
Max	Time	Min	Time
39.8	83.1	0.0	6.3

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



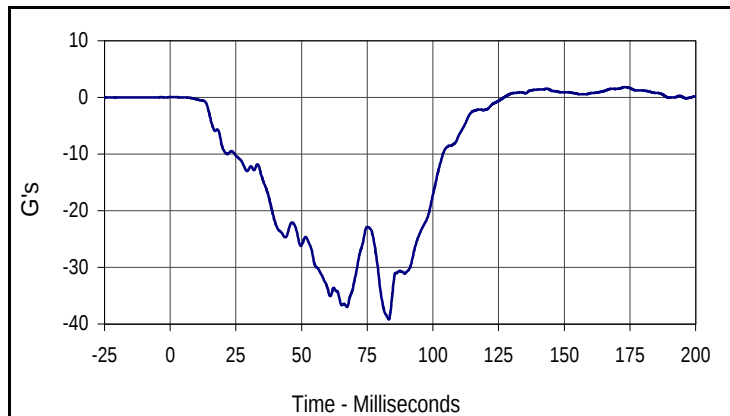
Curve Description			
Passenger Chest Primary X Velocity			
CURNO	Type	SAE Class	Units
057	IN1	180	KMH
Max	Time	Min	Time
55.9	6.1	-20.3	126.6



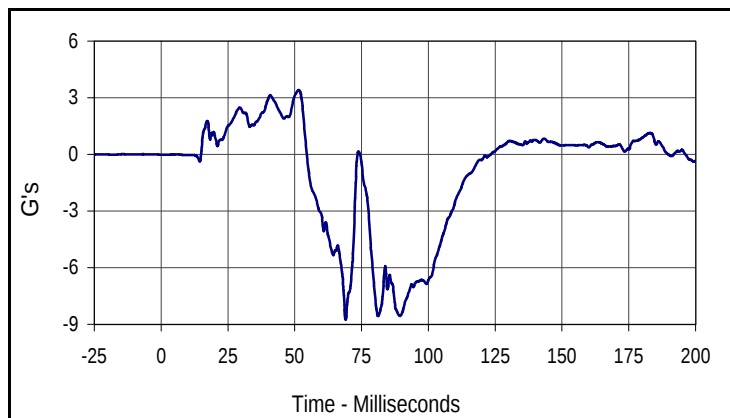
Curve Description			
Passenger Chest Primary X Displacement			
CURNO	Type	SAE Class	Units
057	IN2	180	CM
Max	Time	Min	Time
88.3	84.0	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

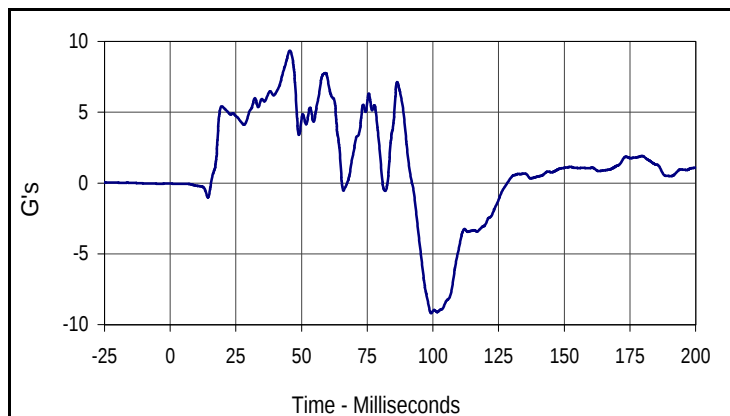
Test Date: 4/8/04
 NHTSA No.: Z45400



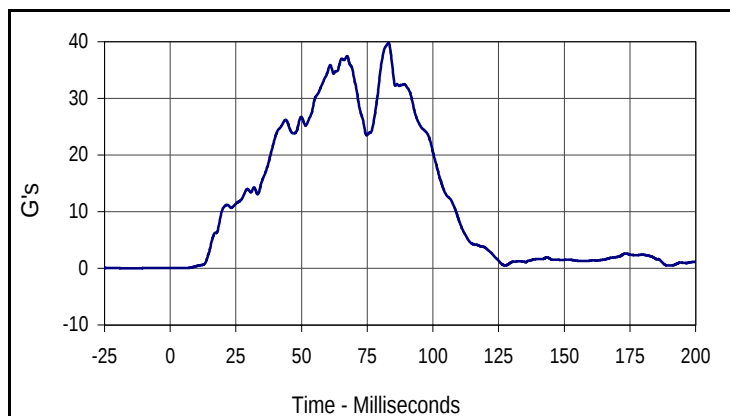
Curve Description			
Passenger Chest Redundant X			
CURNO	Type	SAE Class	Units
060	FIL	180	G's
Max	Time	Min	Time
1.8	173.3	-39.2	83.2



Curve Description			
Passenger Chest Redundant Y			
CURNO	Type	SAE Class	Units
061	FIL	180	G's
Max	Time	Min	Time
3.4	51.5	-8.7	69.1



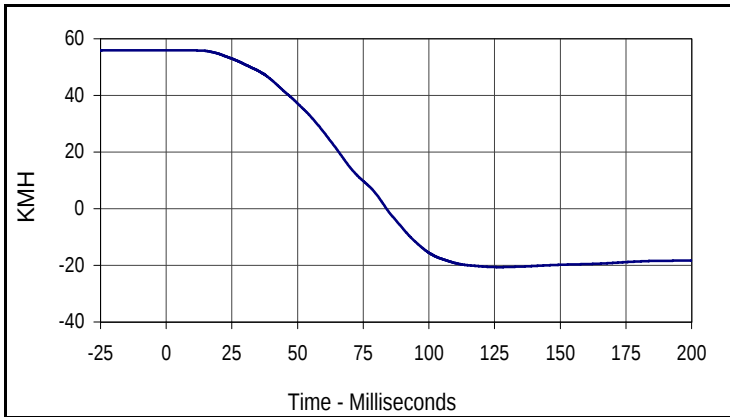
Curve Description			
Passenger Chest Redundant Z			
CURNO	Type	SAE Class	Units
062	FIL	180	G's
Max	Time	Min	Time
9.3	45.5	-9.2	99.4



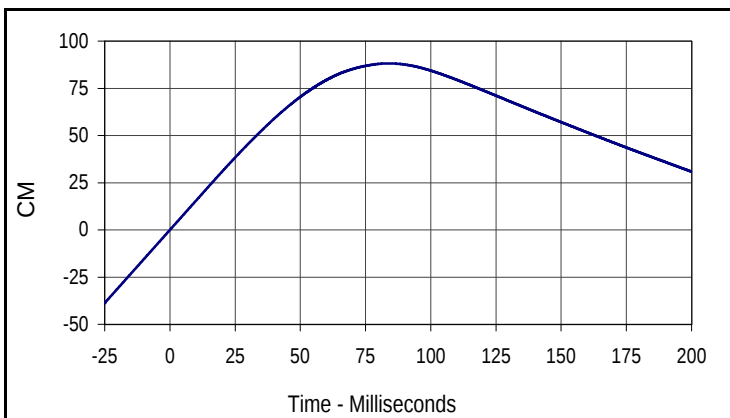
Curve Description			
Passenger Chest Resultant Redundant			
CURNO	Type	SAE Class	Units
060	RES	180	G's
Max	Time	Min	Time
39.8	83.1	0.1	0.3

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



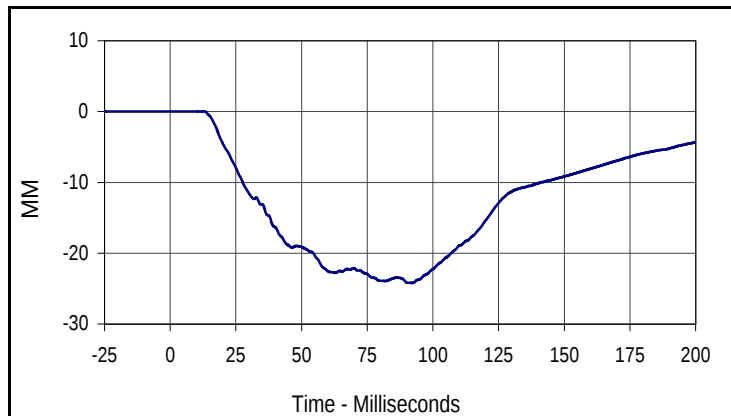
Curve Description			
Passenger Chest Redundant X Velocity			
CURNO	Type	SAE Class	Units
060	IN1	180	KMH
Max	Time	Min	Time
55.9	5.6	-20.6	127.0



Curve Description			
Passenger Chest Redundant X Displacement			
CURNO	Type	SAE Class	Units
060	IN2	180	CM
Max	Time	Min	Time
88.2	83.8	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

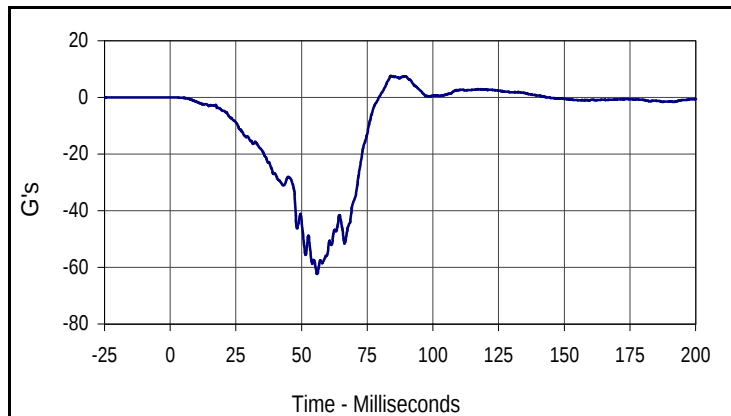
Test Date: 4/8/04
 NHTSA No.: Z45400



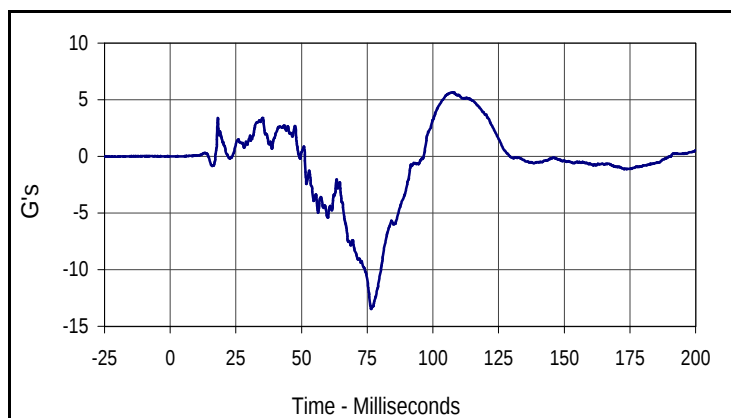
Curve Description			
Passenger Chest Displacement			
CURNO	Type	SAE Class	Units
063	FIL	600	MM
Max	Time	Min	Time
0.0	0.4	-24.2	92.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

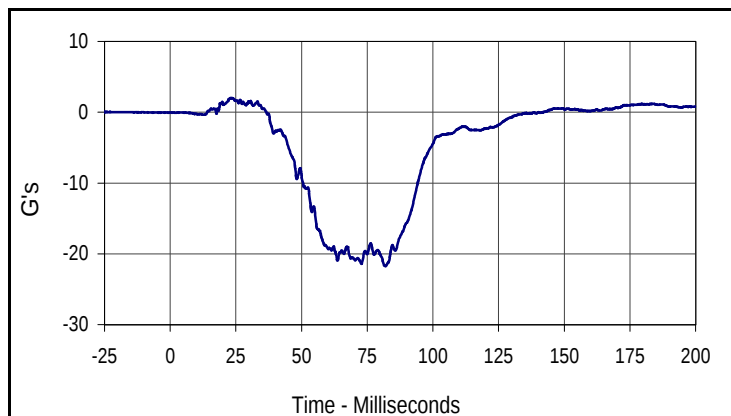
Test Date: 4/8/04
 NHTSA No.: Z45400



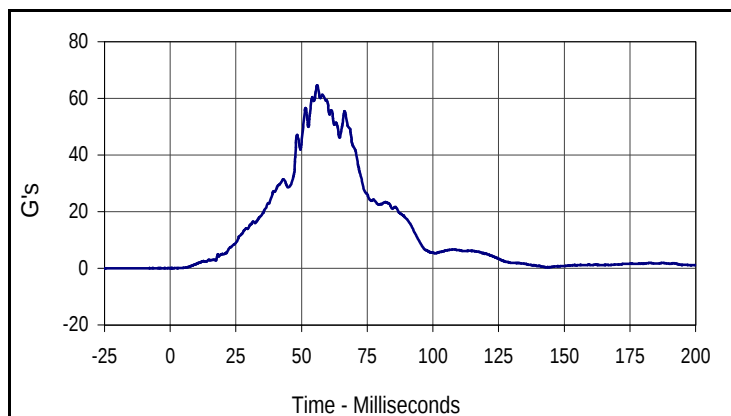
Curve Description			
Passenger Pelvis X			
CURNO	Type	SAE Class	Units
064	FIL	1000	G's
Max	Time	Min	Time
7.6	84.0	-62.4	55.9



Curve Description			
Passenger Pelvis Y			
CURNO	Type	SAE Class	Units
065	FIL	1000	G's
Max	Time	Min	Time
5.7	107.0	-13.5	76.5



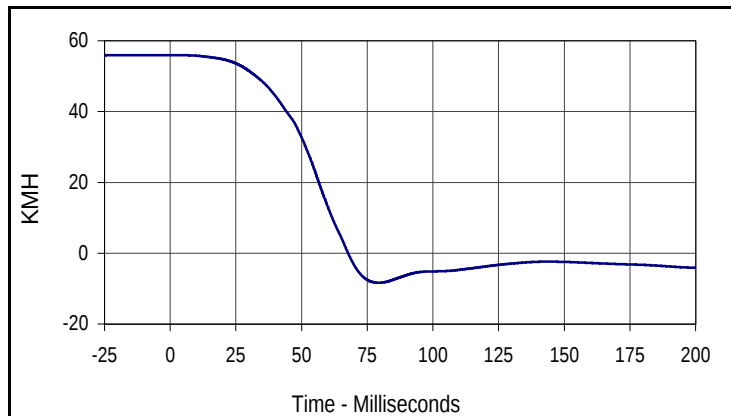
Curve Description			
Passenger Pelvis Z			
CURNO	Type	SAE Class	Units
066	FIL	1000	G's
Max	Time	Min	Time
2.0	23.6	-21.8	81.9



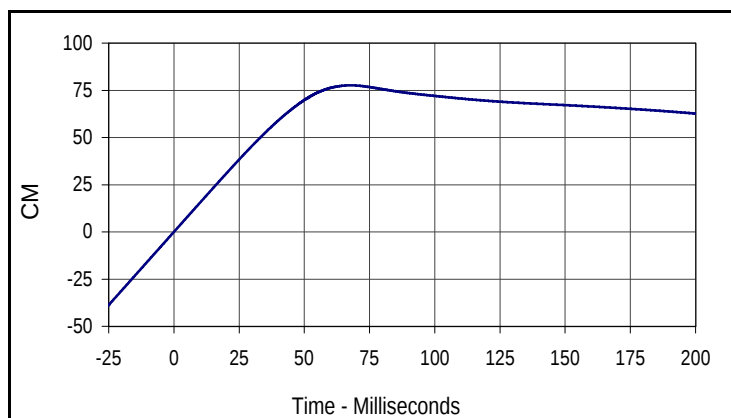
Curve Description			
Passenger Pelvis Resultant			
CURNO	Type	SAE Class	Units
064	RES	1000	G's
Max	Time	Min	Time
64.6	55.9	0.0	1.3

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



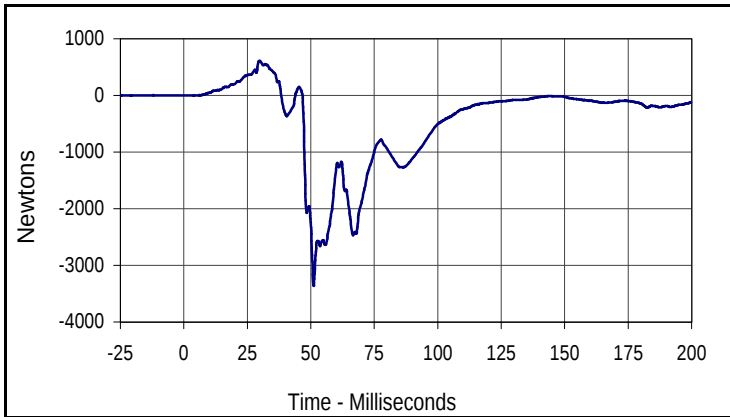
Curve Description			
Passenger Pelvis X Velocity			
CURNO	Type	SAE Class	Units
064	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-8.3	79.5



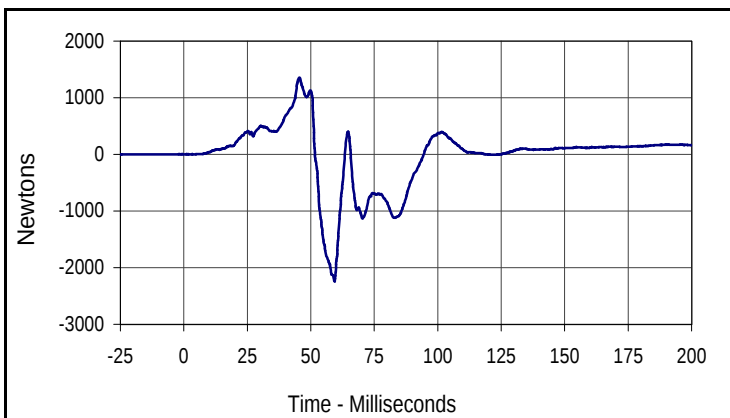
Curve Description			
Passenger Pelvis X Displacement			
CURNO	Type	SAE Class	Units
064	IN2	180	CM
Max	Time	Min	Time
77.6	67.7	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



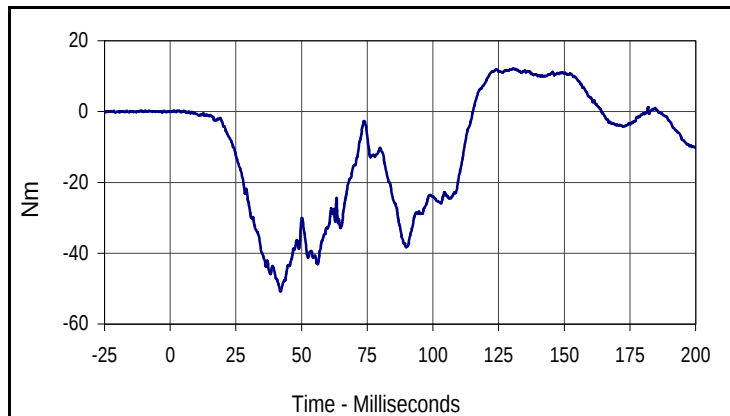
Curve Description			
Passenger Left Femur Force			
CURNO	Type	SAE Class	Units
067	FIL	600	Newtons
Max	Time	Min	Time
611.2	29.7	-3363.7	51.1



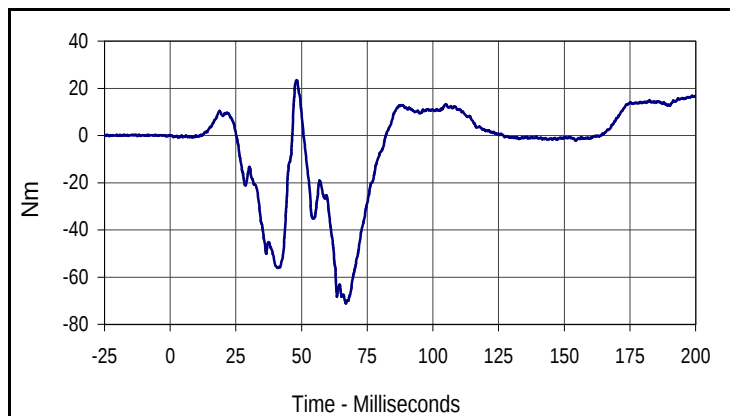
Curve Description			
Passenger Right Femur Force			
CURNO	Type	SAE Class	Units
068	FIL	600	Newtons
Max	Time	Min	Time
1358.6	45.5	-2240.4	59.4

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

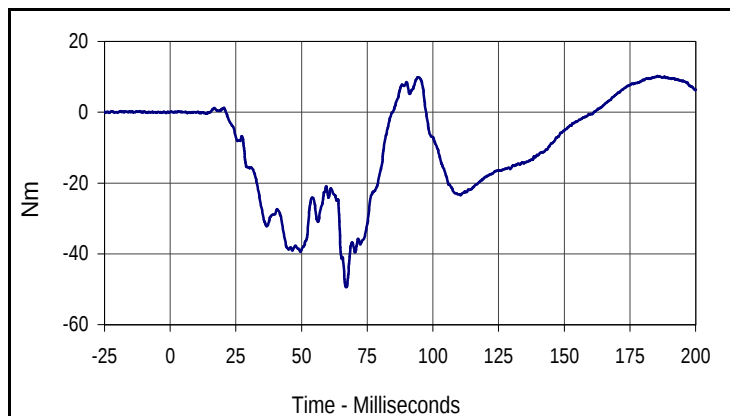
Test Date: 4/8/04
 NHTSA No.: Z45400



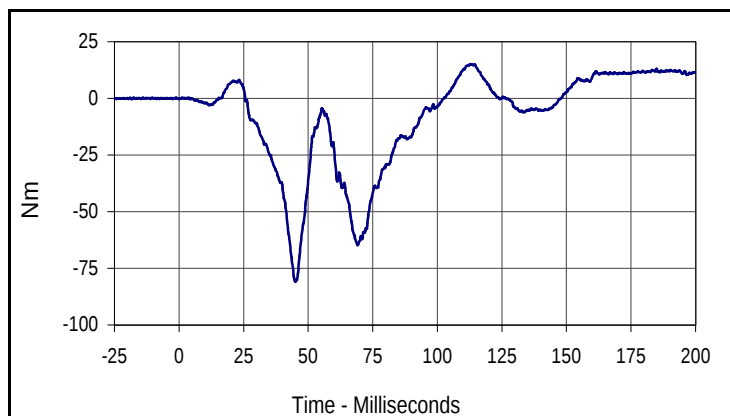
Curve Description			
Passenger Left Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
069	FIL	600	Nm
Max	Time	Min	Time
12.3	130.6	-50.9	42.0



Curve Description			
Passenger Left Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
070	FIL	600	Nm
Max	Time	Min	Time
23.5	48.2	-71.2	66.9



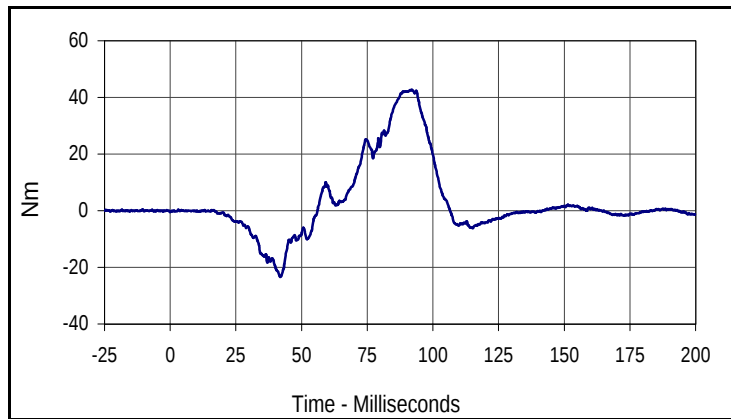
Curve Description			
Passenger Right Upper Tibia Moment X			
CURNO	Type	SAE Class	Units
071	FIL	600	Nm
Max	Time	Min	Time
10.2	185.5	-49.5	67.0



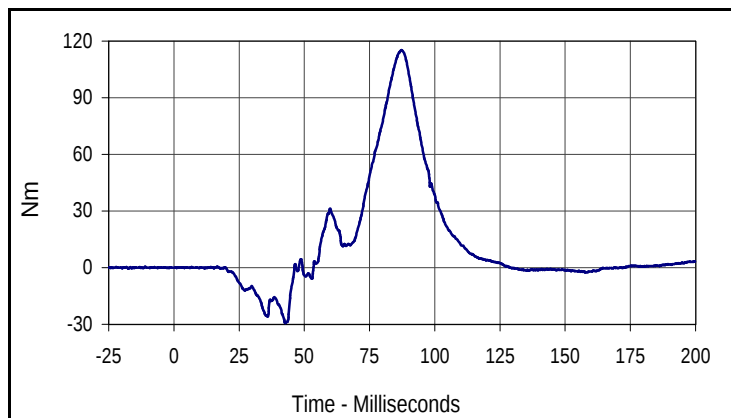
Curve Description			
Passenger Right Upper Tibia Moment Y			
CURNO	Type	SAE Class	Units
072	FIL	600	Nm
Max	Time	Min	Time
15.2	112.9	-80.9	45.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

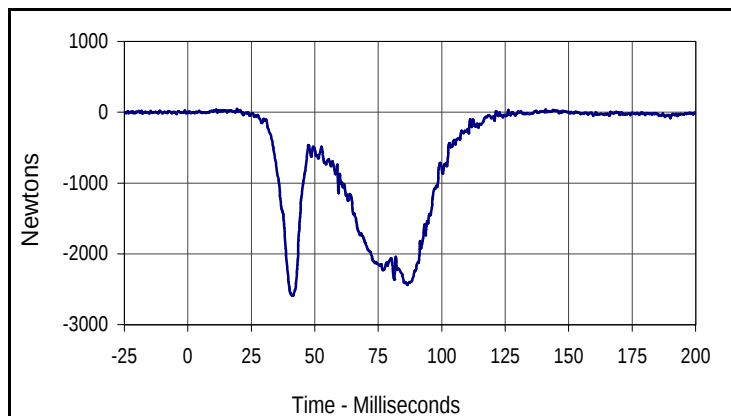
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Left Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
073	FIL	600	Nm
Max	Time	Min	Time
42.7	92.0	-23.4	41.9



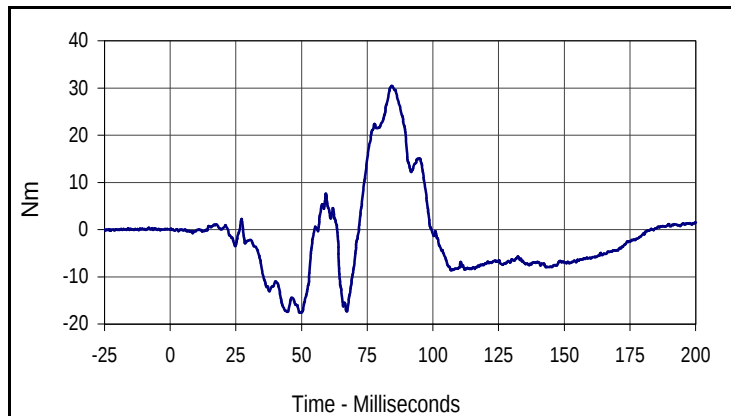
Curve Description			
Passenger Left Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
074	FIL	600	Nm
Max	Time	Min	Time
115.2	87.2	-29.2	42.7



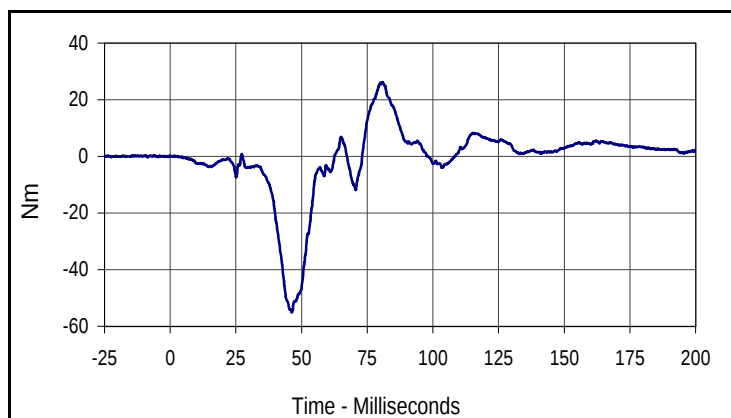
Curve Description			
Passenger Left Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
075	FIL	600	Newtons
Max	Time	Min	Time
49.6	19.4	-2589.8	41.4

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

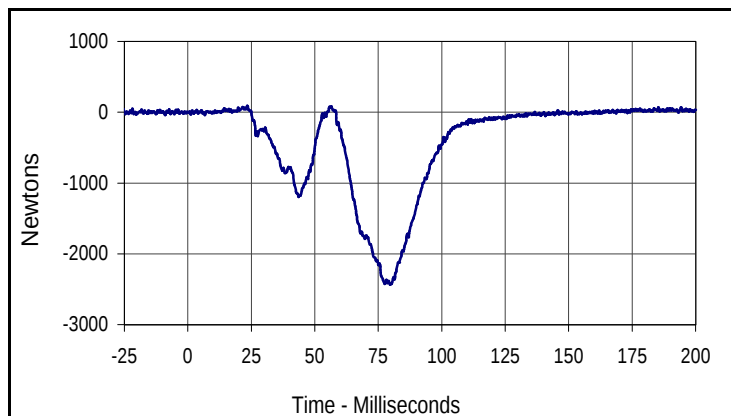
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Right Lower Tibia Moment X			
CURNO	Type	SAE Class	Units
076	FIL	600	Nm
Max	Time	Min	Time
30.5	84.3	-17.6	49.9



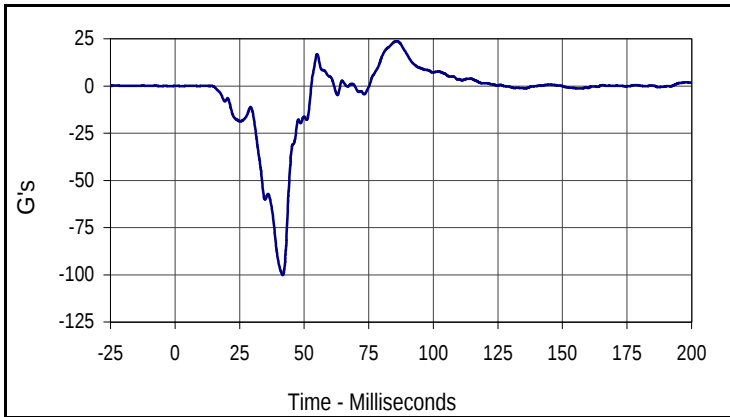
Curve Description			
Passenger Right Lower Tibia Moment Y			
CURNO	Type	SAE Class	Units
077	FIL	600	Nm
Max	Time	Min	Time
26.2	80.8	-55.0	46.3



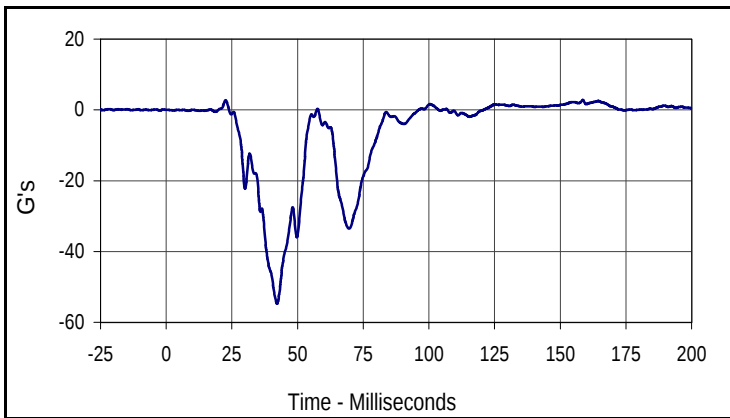
Curve Description			
Passenger Right Lower Tibia Force Z			
CURNO	Type	SAE Class	Units
078	FIL	600	Newtons
Max	Time	Min	Time
91.1	23.4	-2436.9	79.7

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

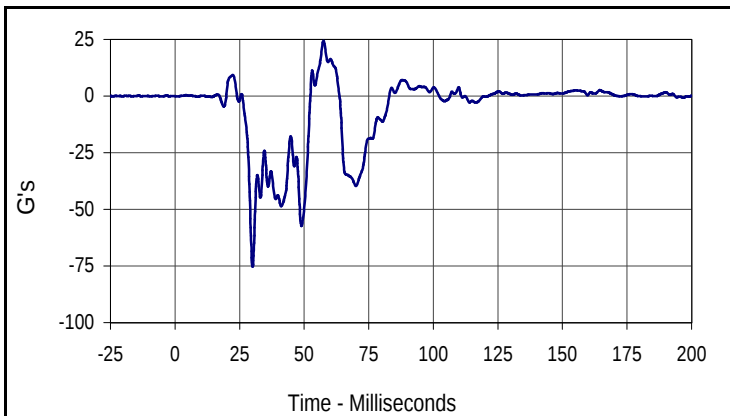
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Left Foot Aft X			
CURNO	Type	SAE Class	Units
079	FIL	180	G's
Max	Time	Min	Time
23.7	85.9	-100.2	41.7



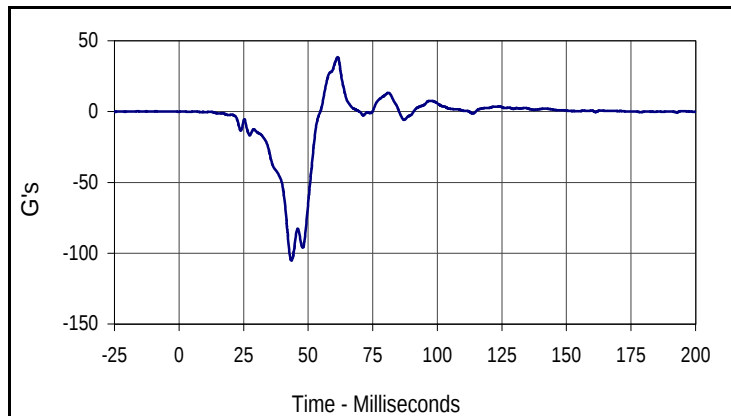
Curve Description			
Passenger Left Foot Aft Z			
CURNO	Type	SAE Class	Units
080	FIL	180	G's
Max	Time	Min	Time
2.8	158.6	-54.7	42.2



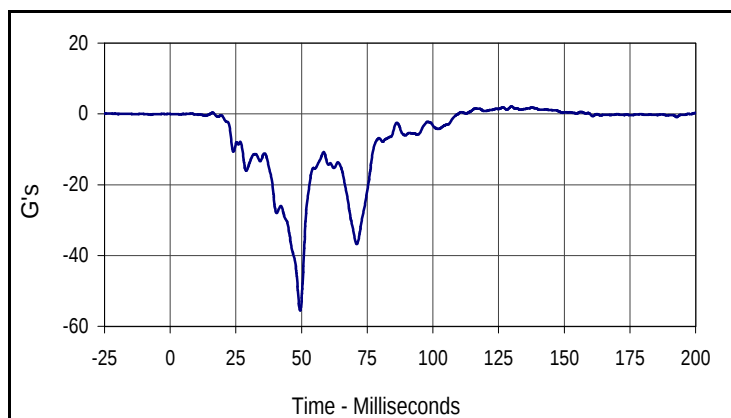
Curve Description			
Passenger Left Foot Fore Z			
CURNO	Type	SAE Class	Units
081	FIL	180	G's
Max	Time	Min	Time
24.4	57.5	-75.3	30.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

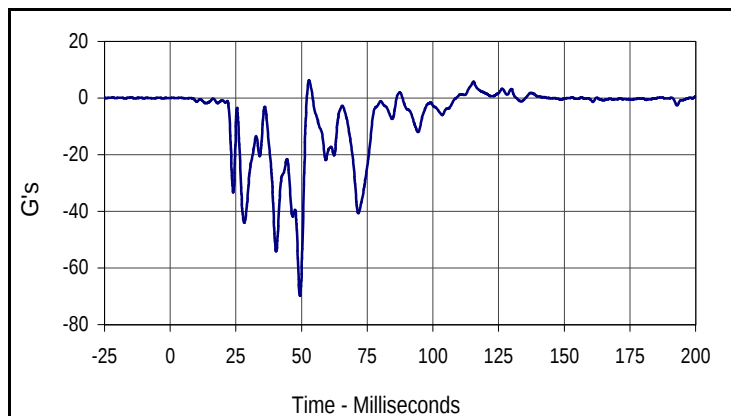
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Right Foot Aft X			
CURNO	Type	SAE Class	Units
082	FIL	180	G's
Max	Time	Min	Time
38.6	61.4	-105.3	43.5



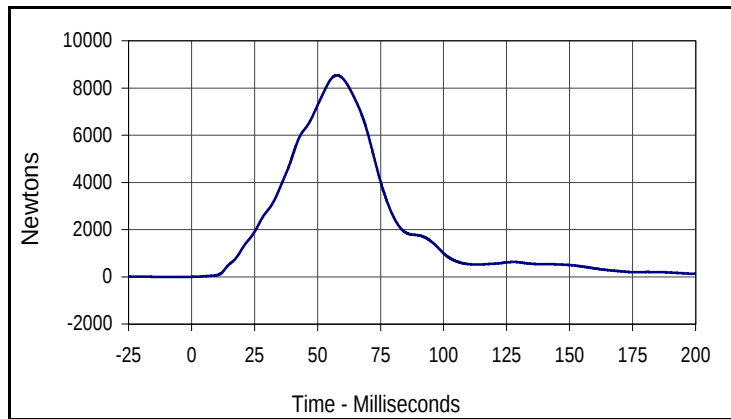
Curve Description			
Passenger Right Foot Aft Z			
CURNO	Type	SAE Class	Units
083	FIL	180	G's
Max	Time	Min	Time
2.1	129.9	-55.5	49.5



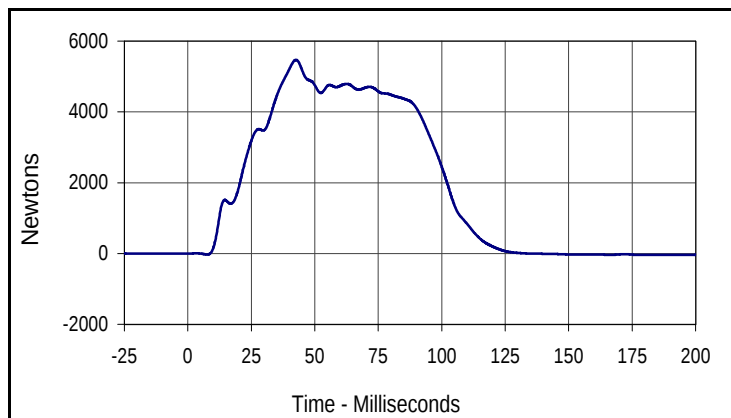
Curve Description			
Passenger Right Foot Fore Z			
CURNO	Type	SAE Class	Units
084	FIL	180	G's
Max	Time	Min	Time
6.3	52.8	-69.8	49.4

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

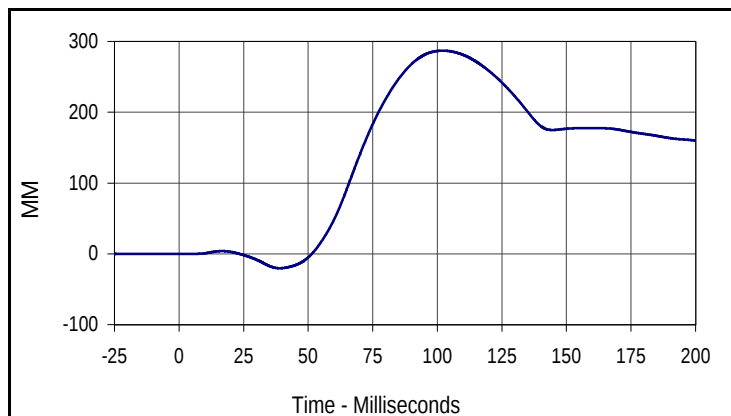
Test Date: 4/8/04
 NHTSA No.: Z45400



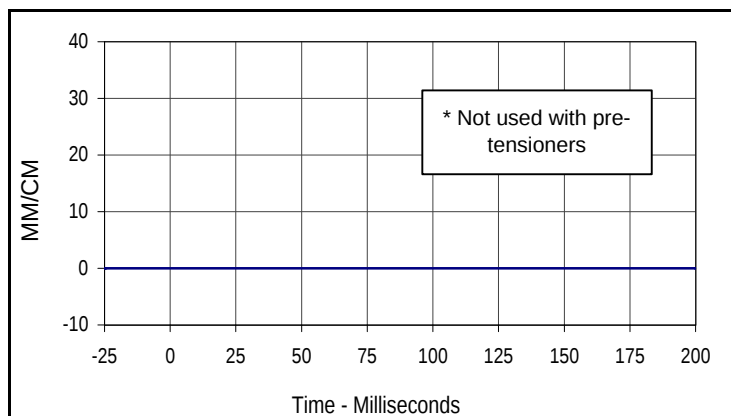
Curve Description			
Passenger Lap Belt Force			
CURNO	Type	SAE Class	Units
085	FIL	60	Newtons
Max	Time	Min	Time
8537.9	57.7	-0.4	0.0



Curve Description			
Passenger Shoulder Belt Force			
CURNO	Type	SAE Class	Units
086	FIL	60	Newtons
Max	Time	Min	Time
5470.1	42.6	-38.8	177.3



Curve Description			
Passenger Shoulder Belt Pullout			
CURNO	Type	SAE Class	Units
087	FIL	60	MM
Max	Time	Min	Time
286.9	102.5	-20.4	39.4

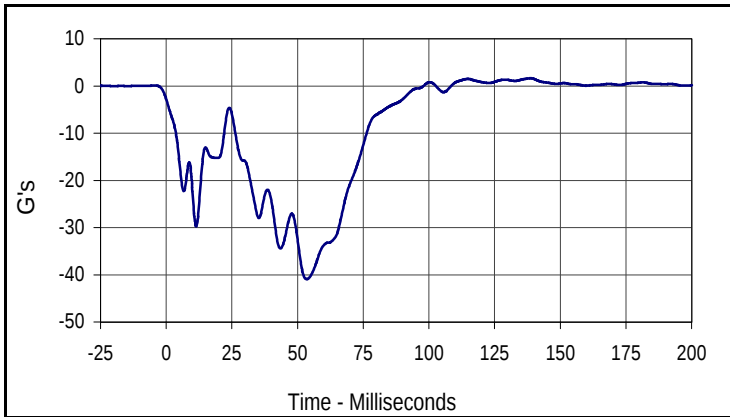


Curve Description			
Passenger Shoulder Belt Elongation			
CURNO	Type	SAE Class	Units
088	FIL	60	MM/CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

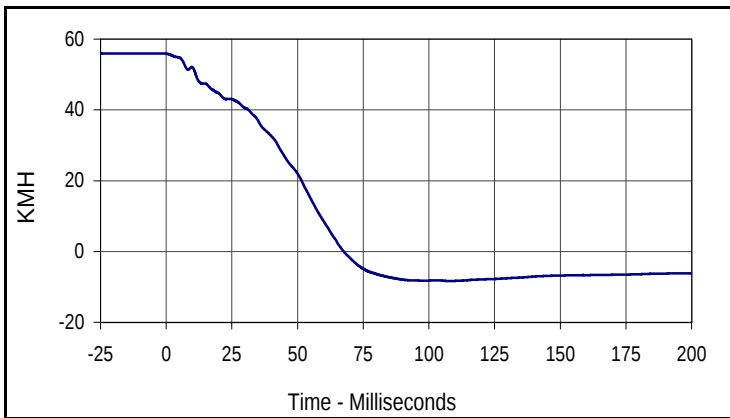
* Not used with pre-tensioners

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

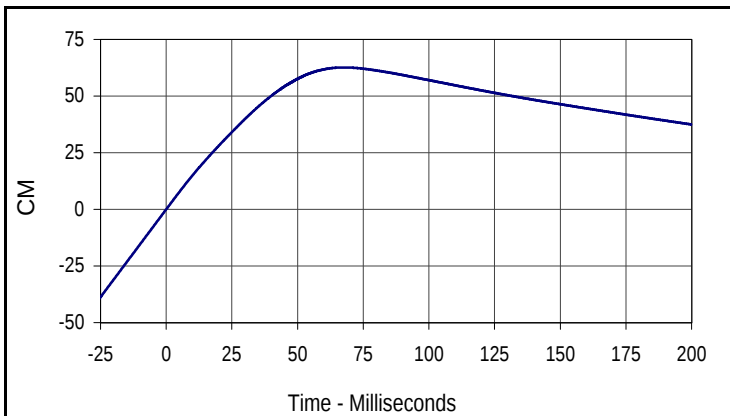
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Vehicle Left Rear X			
CURNO	Type	SAE Class	Units
089	FIL	60	G's
Max	Time	Min	Time
1.6	138.7	-40.9	53.5



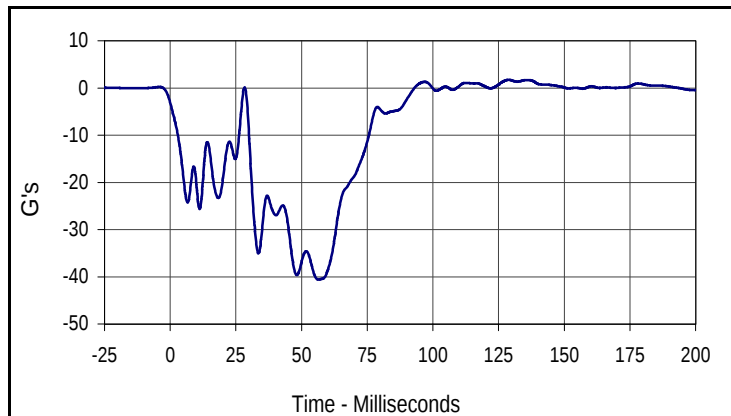
Curve Description			
Vehicle Left Rear X Velocity			
CURNO	Type	SAE Class	Units
089	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-8.3	108.1



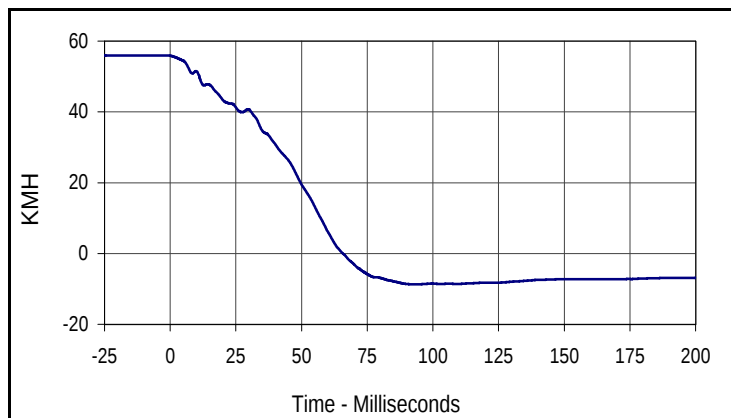
Curve Description			
Vehicle Left Rear X Displacement			
CURNO	Type	SAE Class	Units
089	IN2	180	CM
Max	Time	Min	Time
62.6	67.6	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

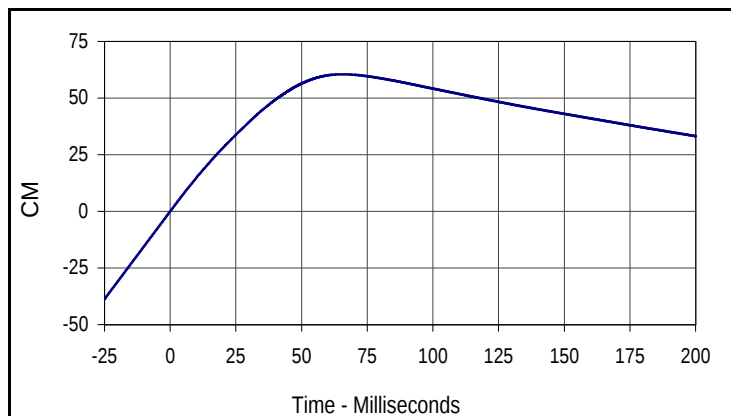
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Vehicle Right Rear X			
CURNO	Type	SAE Class	Units
090	FIL	60	G's
Max	Time	Min	Time
1.7	128.9	-40.6	56.4



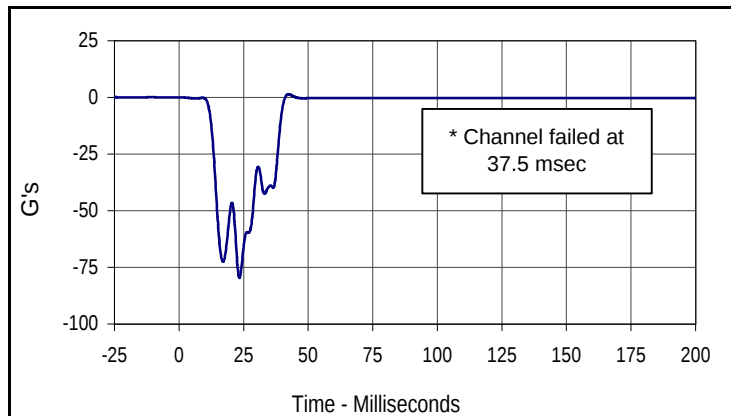
Curve Description			
Vehicle Right Rear X Velocity			
CURNO	Type	SAE Class	Units
090	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-8.7	92.6



Curve Description			
Vehicle Right Rear X Displacement			
CURNO	Type	SAE Class	Units
090	IN2	180	CM
Max	Time	Min	Time
60.5	65.7	0.0	0.0

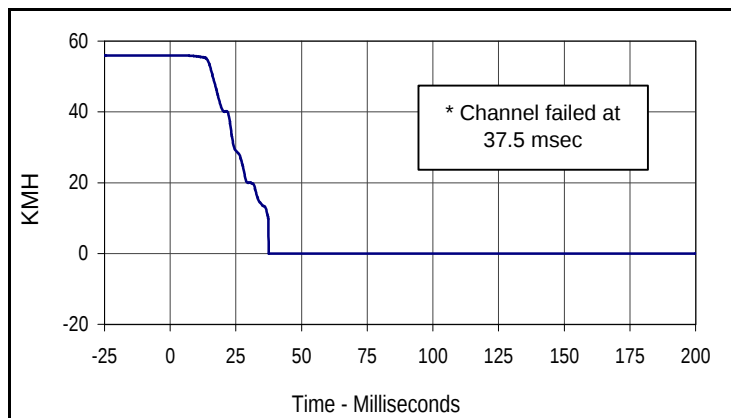
Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



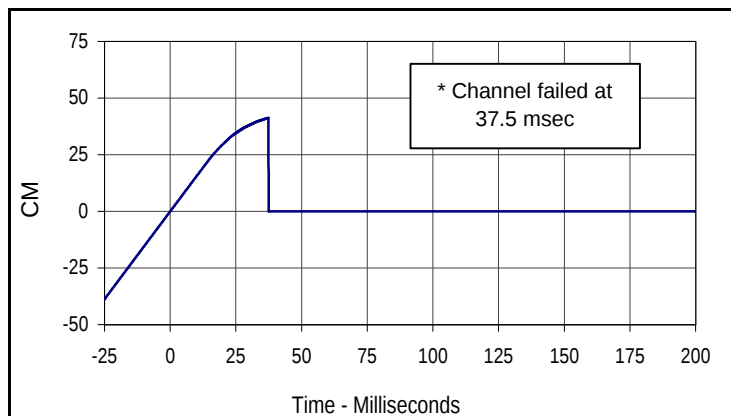
Curve Description			
Vehicle Engine Top			
CURNO	Type	SAE Class	Units
091	FIL	60	G's
Max	Time	Min	Time
1.4	42.4	-79.6	23.4

* Channel failed at 37.5 msec



Curve Description			
Vehicle Engine Top Velocity			
CURNO	Type	SAE Class	Units
091	IN1	180	KMH
Max	Time	Min	Time
55.9	0.9	0.0	37.5

* Channel failed at 37.5 msec

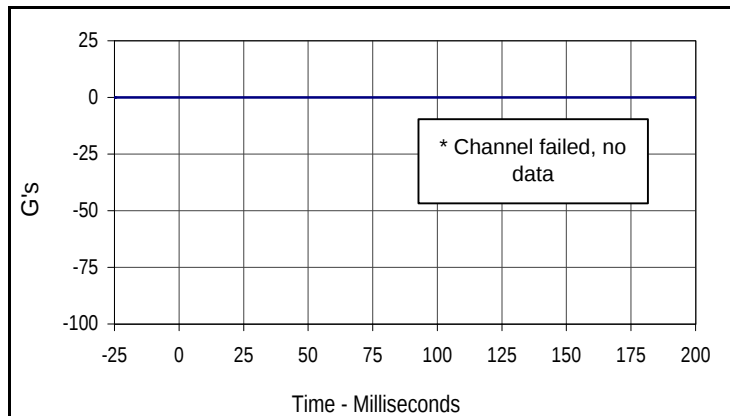


Curve Description			
Vehicle Engine Top Displacement			
CURNO	Type	SAE Class	Units
091	IN2	180	CM
Max	Time	Min	Time
41.2	37.4	0.0	37.5

* Channel failed at 37.5 msec

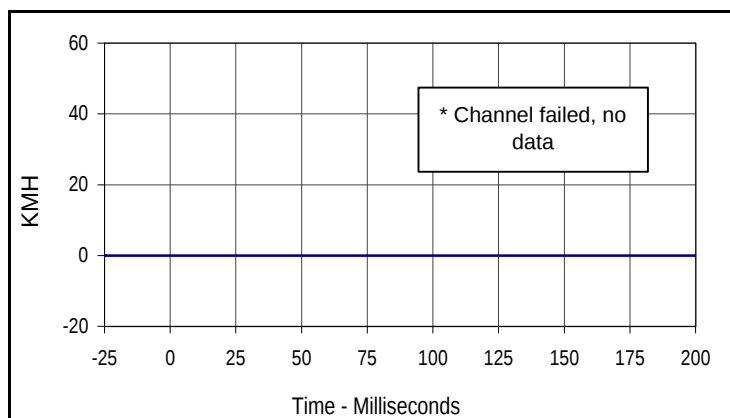
Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



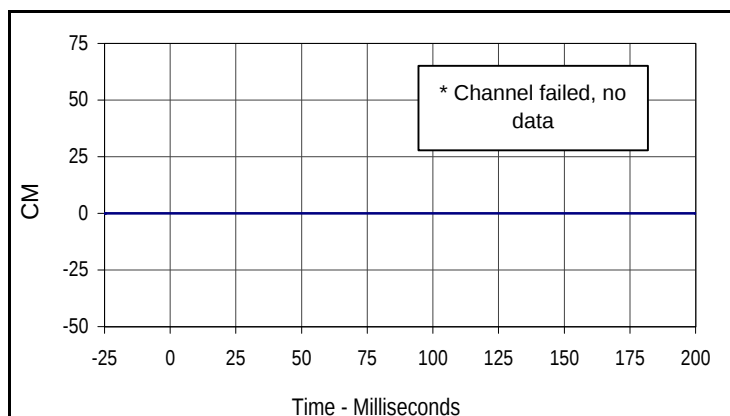
Curve Description			
Vehicle Engine Bottom			
CURNO	Type	SAE Class	Units
092	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



Curve Description			
Vehicle Engine Bottom Velocity			
CURNO	Type	SAE Class	Units
092	IN1	60	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

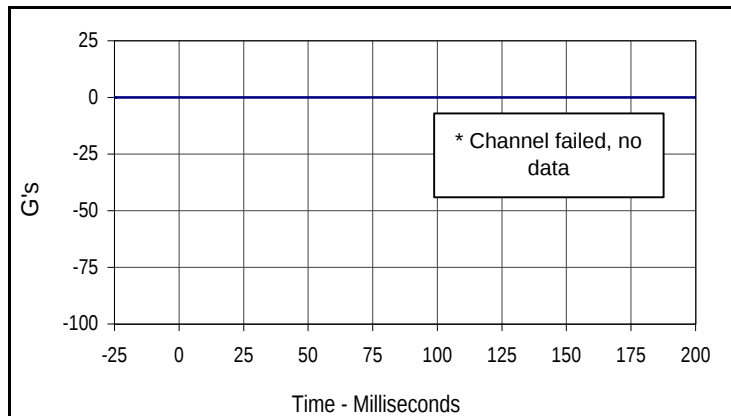


Curve Description			
Vehicle Engine Bottom Displacement			
CURNO	Type	SAE Class	Units
092	IN2	60	CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

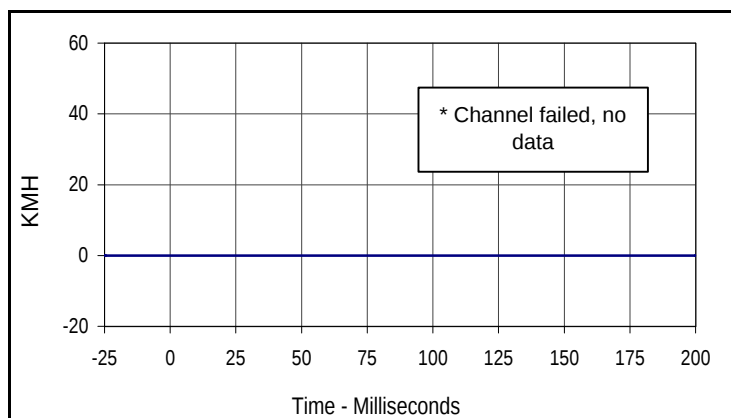
Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



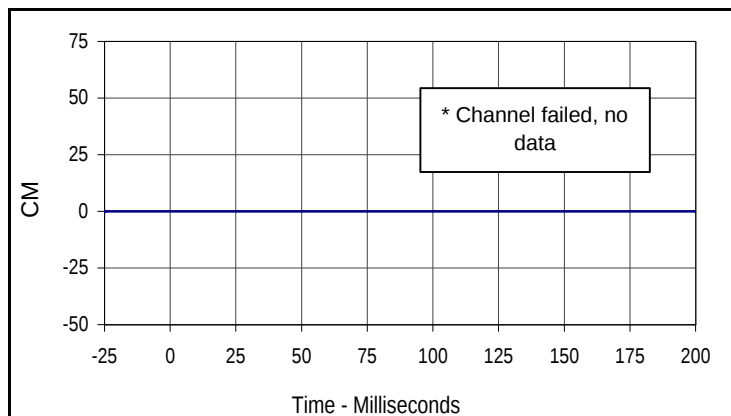
Curve Description			
Vehicle Left Brake Caliper			
CURNO	Type	SAE Class	Units
093	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



Curve Description			
Vehicle Left Brake Caliper Velocity			
CURNO	Type	SAE Class	Units
093	IN1	60	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

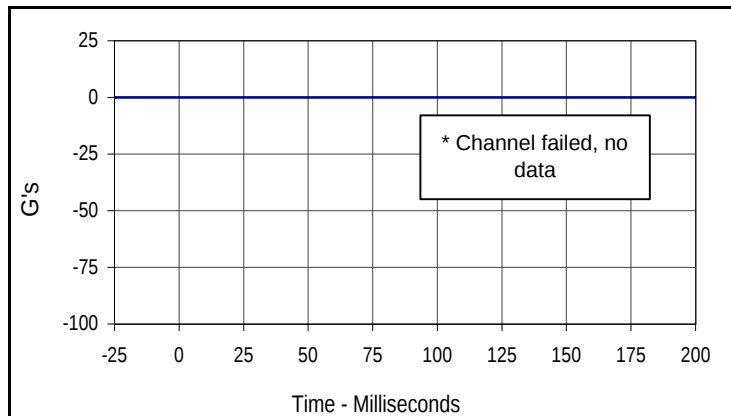


Curve Description			
Vehicle Left Brake Caliper Displacement			
CURNO	Type	SAE Class	Units
093	IN2	60	CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

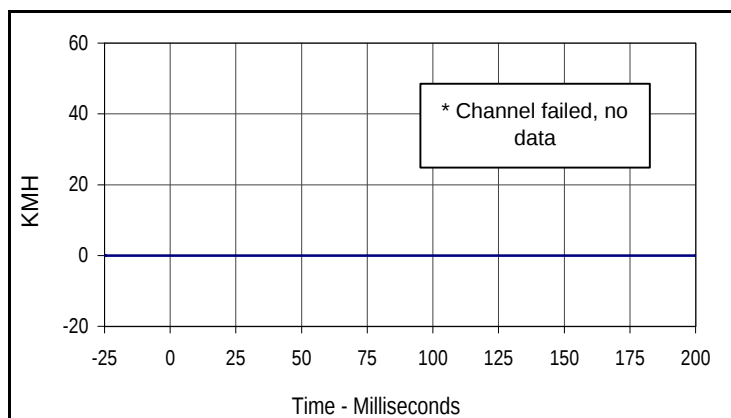
Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



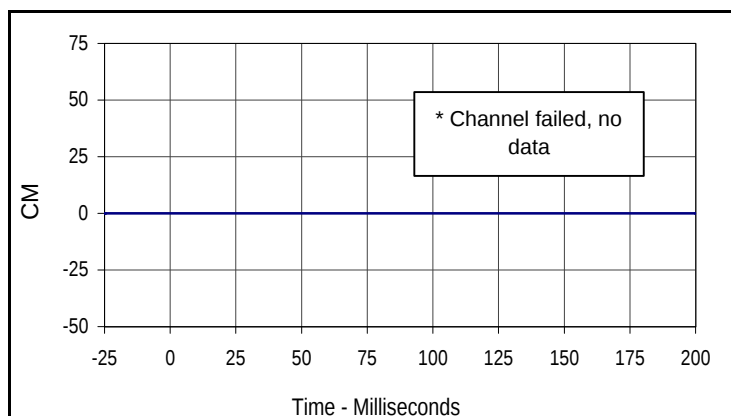
Curve Description			
Vehicle Right Brake Caliper			
CURNO	Type	SAE Class	Units
094	FIL	60	G's
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data



Curve Description			
Vehicle Right Brake Caliper Velocity			
CURNO	Type	SAE Class	Units
094	IN1	60	KMH
Max	Time	Min	Time
0.0	0.0	0.0	0.0

* Channel failed, no data

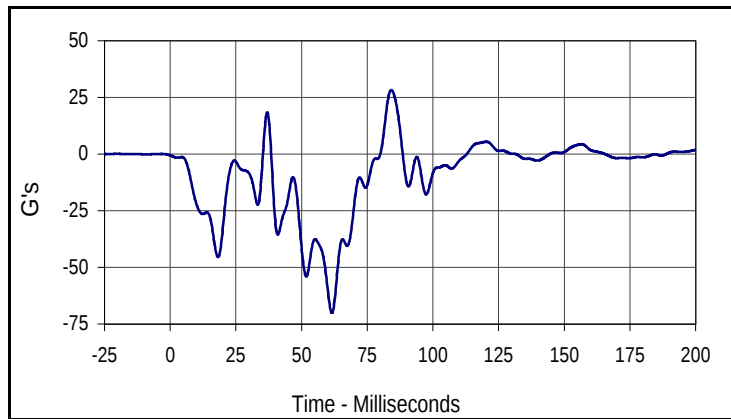


Curve Description			
Vehicle Right Brake Caliper Displacement			
CURNO	Type	SAE Class	Units
094	IN2	60	CM
Max	Time	Min	Time
0.0	0.0	0.0	0.0

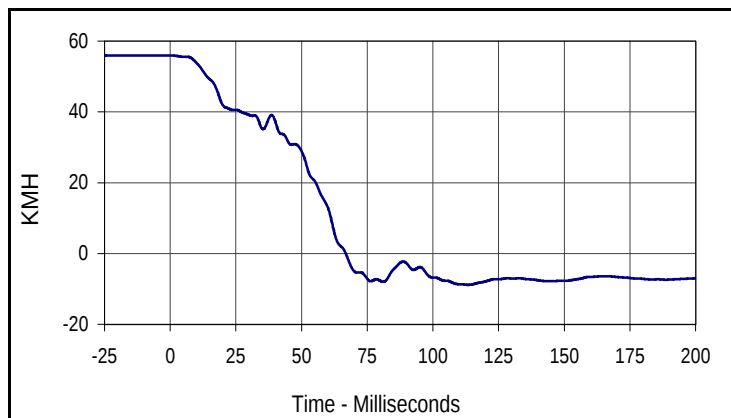
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Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

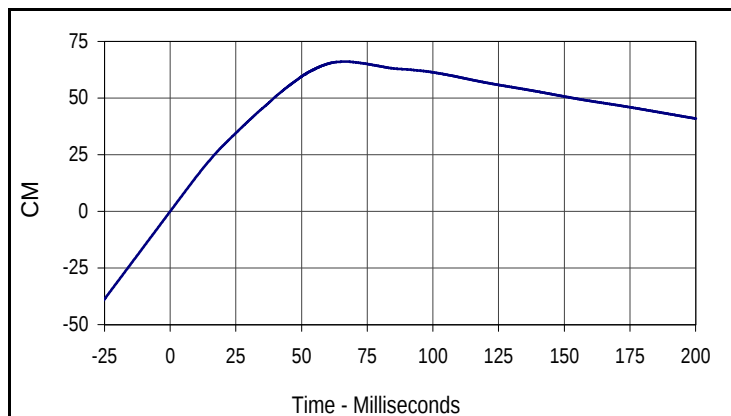
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Vehicle Instrument Panel			
CURNO	Type	SAE Class	Units
095	FIL	60	G's
Max	Time	Min	Time
28.3	84.1	-70.1	61.5



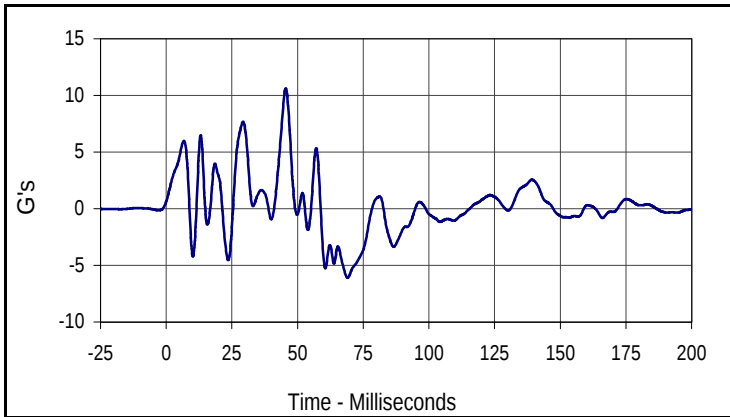
Curve Description			
Vehicle Instrument Panel Velocity			
CURNO	Type	SAE Class	Units
095	IN1	180	KMH
Max	Time	Min	Time
55.9	0.0	-8.8	113.4



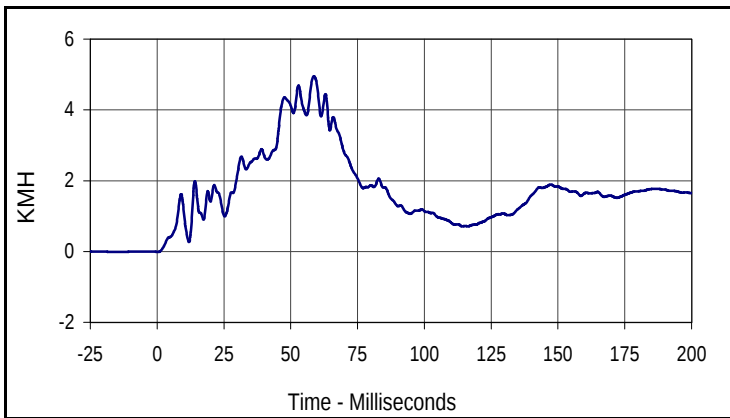
Curve Description			
Vehicle Instrument Panel Displacement			
CURNO	Type	SAE Class	Units
095	IN2	180	CM
Max	Time	Min	Time
66.1	66.8	0.0	0.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

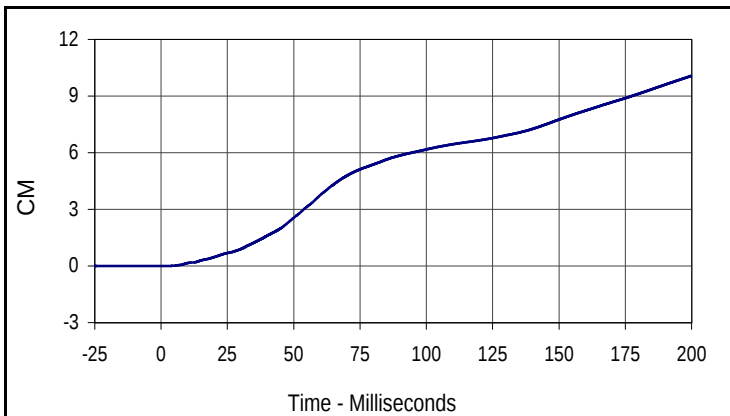
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Vehicle Left Rear Z			
CURNO	Type	SAE Class	Units
096	FIL	60	G's
Max	Time	Min	Time
10.6	45.5	-6.1	69.0



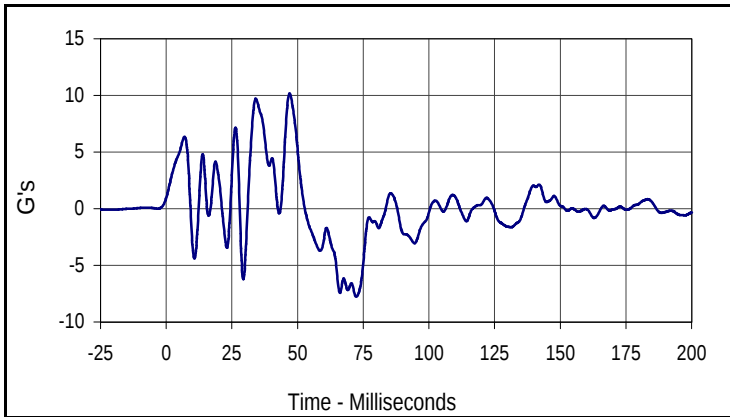
Curve Description			
Vehicle Left Rear Z Velocity			
CURNO	Type	SAE Class	Units
096	IN1	180	KMH
Max	Time	Min	Time
4.9	58.7	0.0	0.4



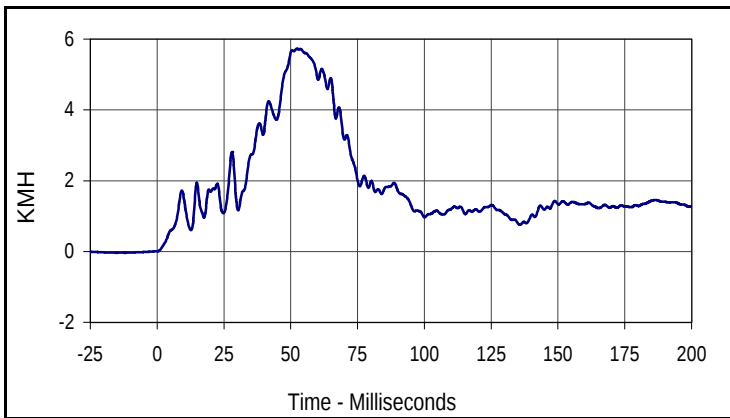
Curve Description			
Vehicle Left Rear Z Displacement			
CURNO	Type	SAE Class	Units
096	IN2	180	CM
Max	Time	Min	Time
10.1	200.0	0.0	1.0

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

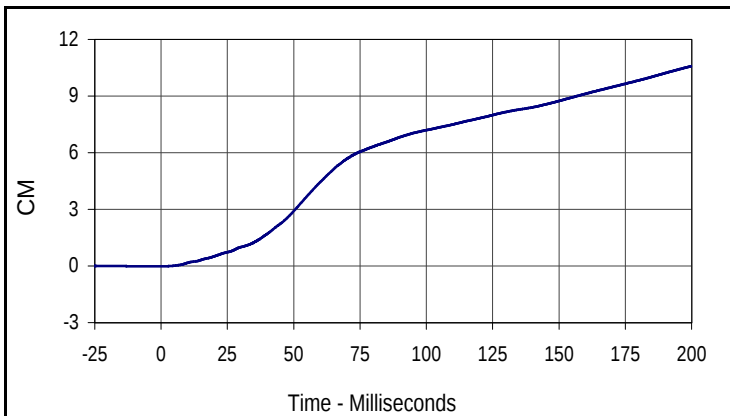
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Vehicle Right Rear Z			
CURNO	Type	SAE Class	Units
097	FIL	60	G's
Max	Time	Min	Time
10.2	47.0	-7.8	72.3



Curve Description			
Vehicle Right Rear Z Velocity			
CURNO	Type	SAE Class	Units
097	IN1	180	KMH
Max	Time	Min	Time
5.7	52.3	0.0	0.4



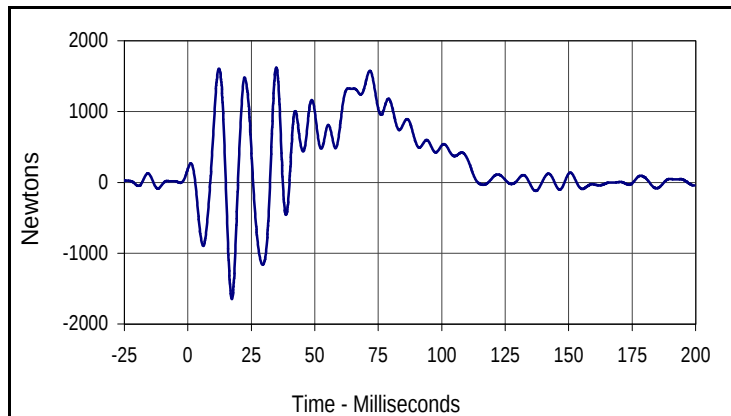
Curve Description			
Vehicle Right Rear Z Displacement			
CURNO	Type	SAE Class	Units
097	IN2	180	CM
Max	Time	Min	Time
10.6	200.0	0.0	0.4

APPENDIX C

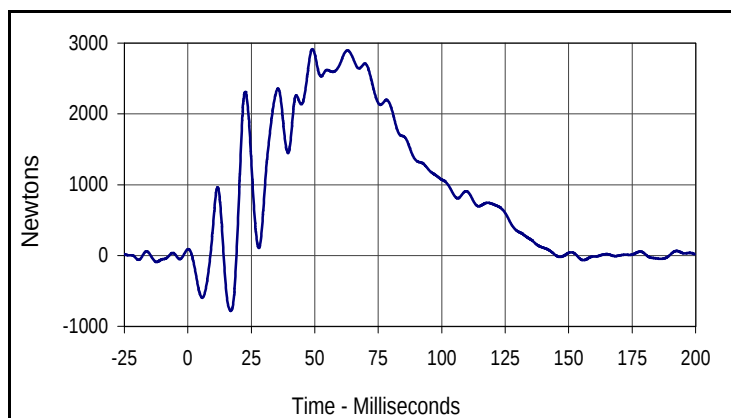
LOAD CELL BARRIER DATA PLOTS

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

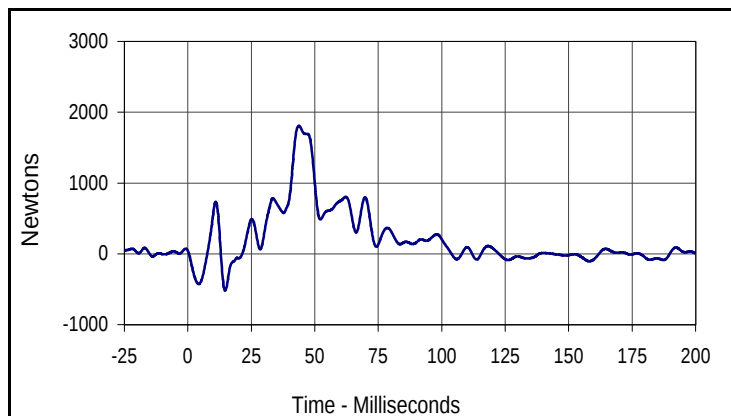
Test Date: 4/8/04
 NHTSA No.: Z45400



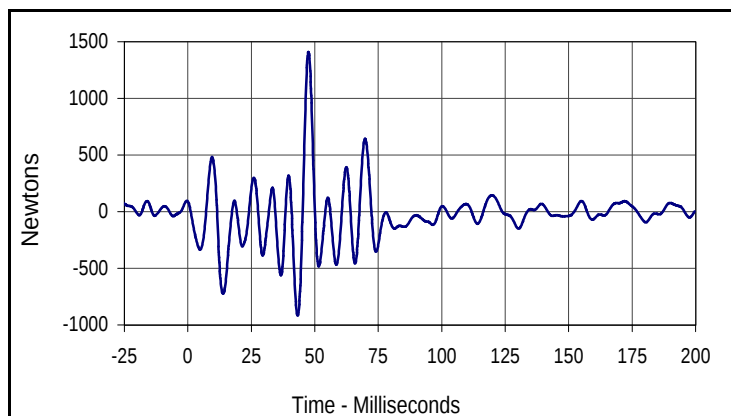
Curve Description			
Barrier Force A1			
CURNO	Type	SAE Class	Units
098	FIL	60	Newtons
Max	Time	Min	Time
1621.3	34.8	-1646.8	17.3



Curve Description			
Barrier Force B1			
CURNO	Type	SAE Class	Units
107	FIL	60	Newtons
Max	Time	Min	Time
2914.8	49.0	-781.6	17.0



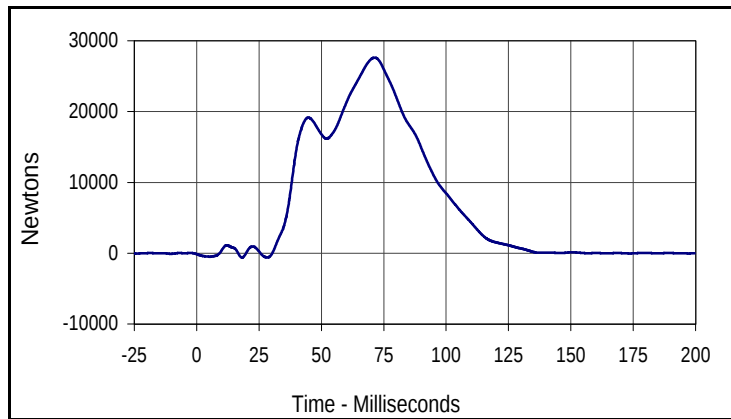
Curve Description			
Barrier Force C1			
CURNO	Type	SAE Class	Units
116	FIL	60	Newtons
Max	Time	Min	Time
1805.4	43.7	-520.4	14.7



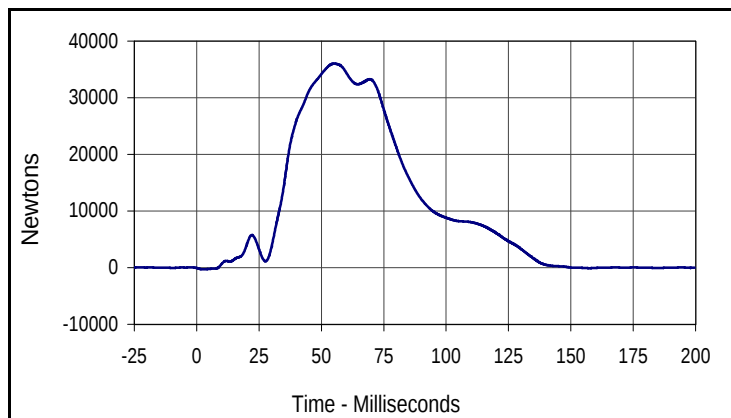
Curve Description			
Barrier Force D1			
CURNO	Type	SAE Class	Units
125	FIL	60	Newtons
Max	Time	Min	Time
1409.5	47.5	-914.9	43.3

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

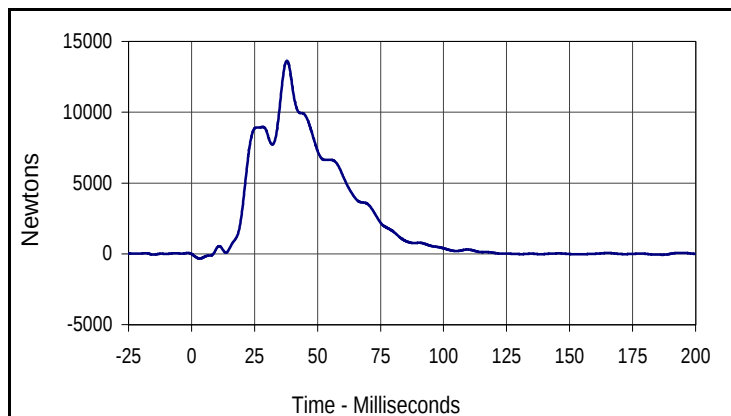
Test Date: 4/8/04
 NHTSA No.: Z45400



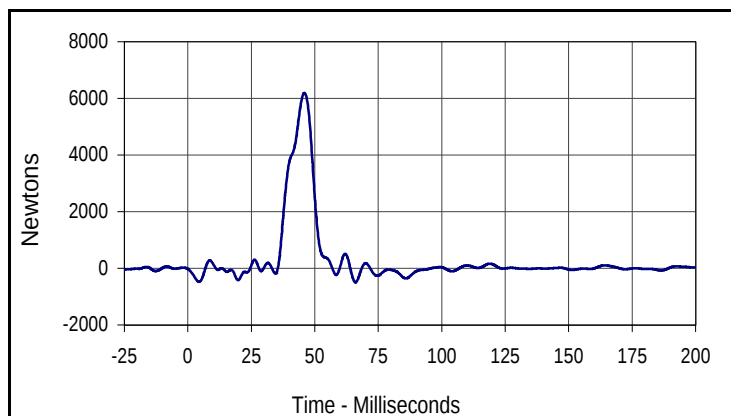
Curve Description			
Barrier Force A2			
CURNO	Type	SAE Class	Units
099	FIL	60	Newtons
Max	Time	Min	Time
27621.6	71.4	-622.2	18.2



Curve Description			
Barrier Force B2			
CURNO	Type	SAE Class	Units
108	FIL	60	Newtons
Max	Time	Min	Time
36031.4	55.1	-308.6	2.8



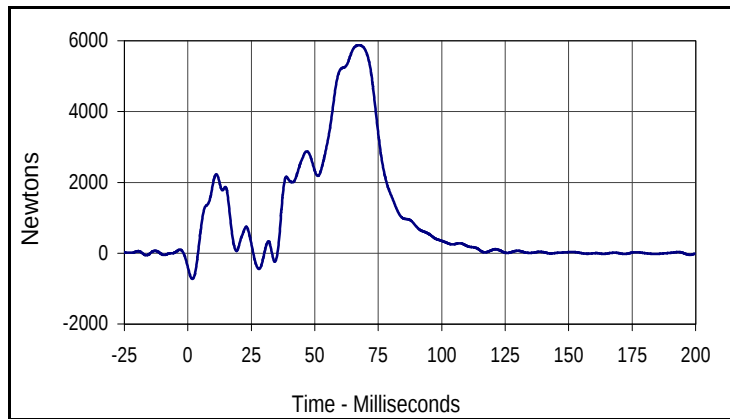
Curve Description			
Barrier Force C2			
CURNO	Type	SAE Class	Units
117	FIL	60	Newtons
Max	Time	Min	Time
13636.7	37.8	-333.4	3.2



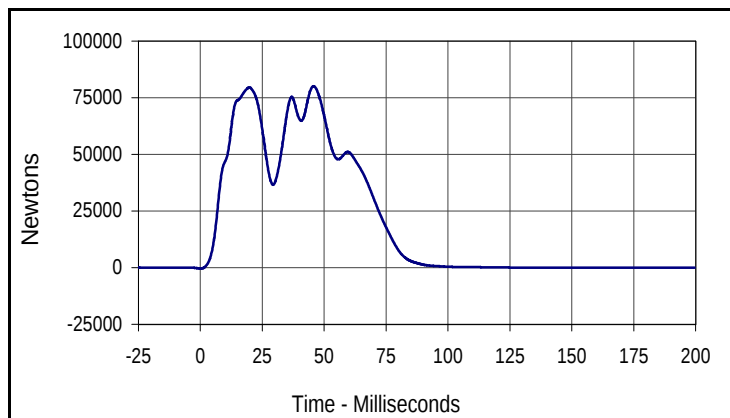
Curve Description			
Barrier Force D2			
CURNO	Type	SAE Class	Units
126	FIL	60	Newtons
Max	Time	Min	Time
6194.4	45.9	-491.9	66.0

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

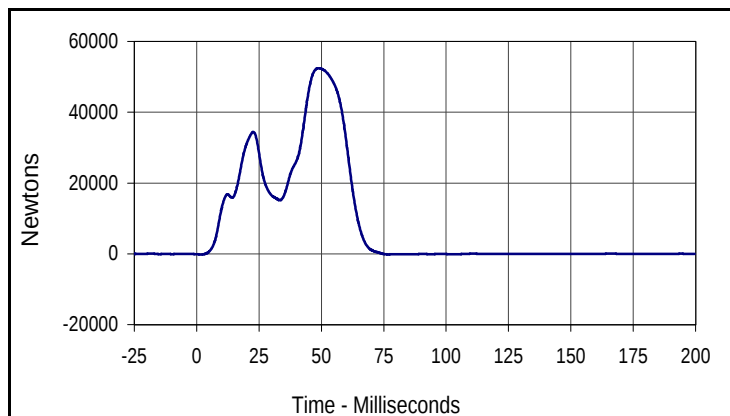
Test Date: 4/8/04
 NHTSA No.: Z45400



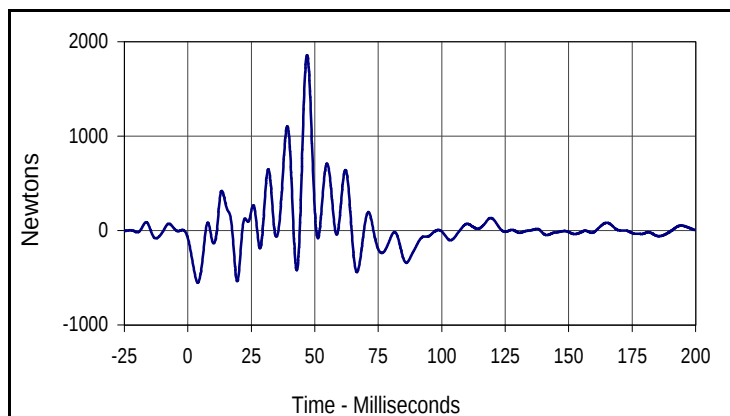
Curve Description			
Barrier Force A3			
CURNO	Type	SAE Class	Units
100	FIL	60	Newtons
Max	Time	Min	Time
5877.8	67.4	-728.9	1.8



Curve Description			
Barrier Force B3			
CURNO	Type	SAE Class	Units
109	FIL	60	Newtons
Max	Time	Min	Time
80070.5	45.7	-381.5	0.0



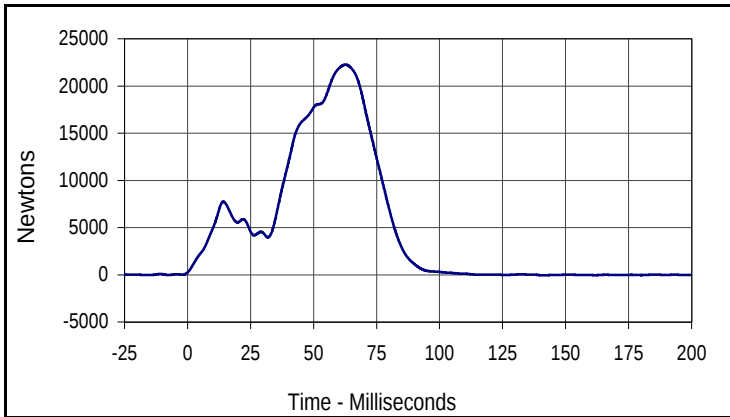
Curve Description			
Barrier Force C3			
CURNO	Type	SAE Class	Units
118	FIL	60	Newtons
Max	Time	Min	Time
52411.1	48.8	-172.0	1.7



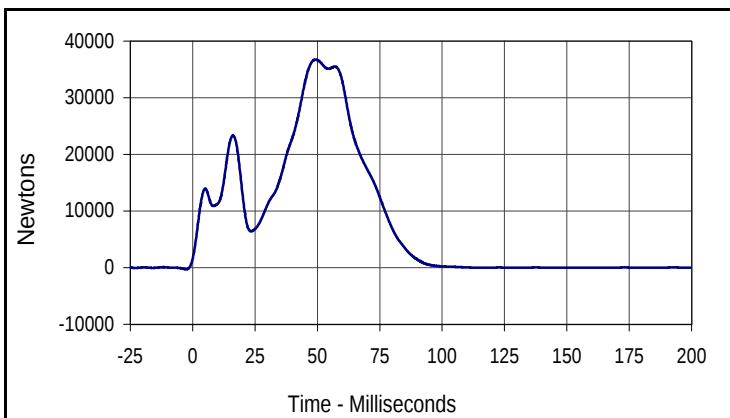
Curve Description			
Barrier Force D3			
CURNO	Type	SAE Class	Units
127	FIL	60	Newtons
Max	Time	Min	Time
1859.2	47.0	-551.2	3.9

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

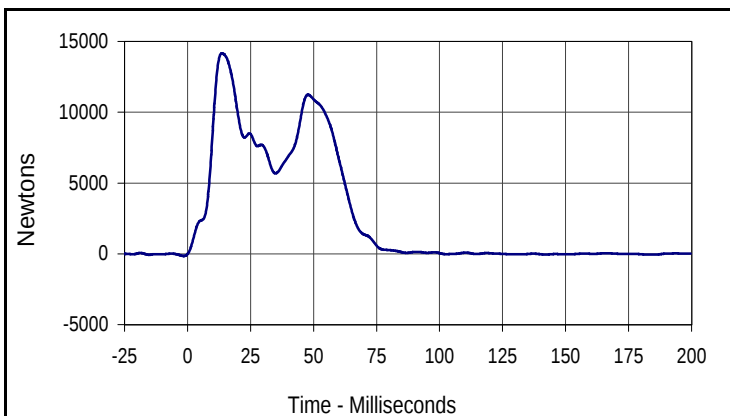
Test Date: 4/8/04
 NHTSA No.: Z45400



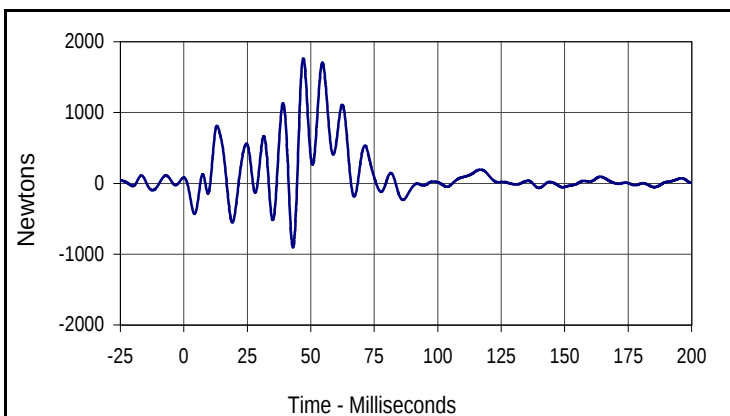
Curve Description			
Barrier Force A4			
CURNO	Type	SAE Class	Units
101	FIL	60	Newtons
Max	Time	Min	Time
22256.6	62.6	-57.1	141.1



Curve Description			
Barrier Force B4			
CURNO	Type	SAE Class	Units
110	FIL	60	Newtons
Max	Time	Min	Time
36733.1	49.3	-28.0	114.2



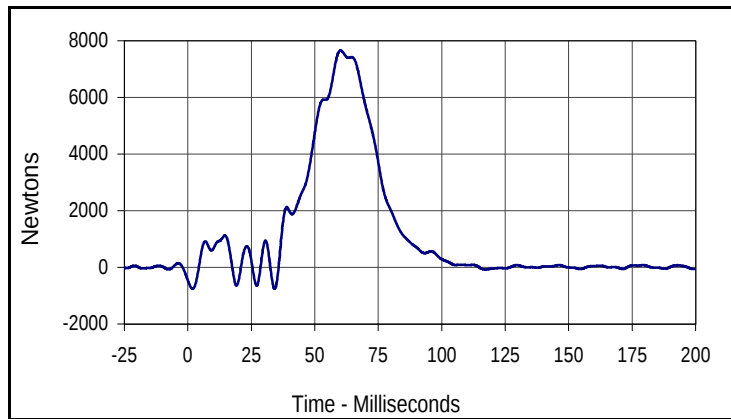
Curve Description			
Barrier Force C4			
CURNO	Type	SAE Class	Units
119	FIL	60	Newtons
Max	Time	Min	Time
14159.6	13.6	-54.6	185.3



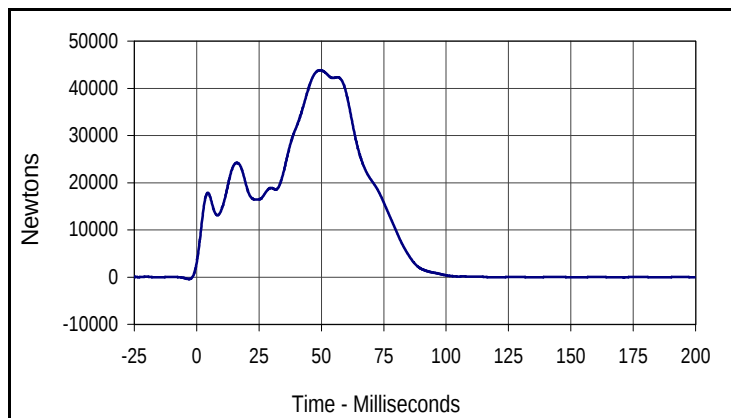
Curve Description			
Barrier Force D4			
CURNO	Type	SAE Class	Units
128	FIL	60	Newtons
Max	Time	Min	Time
1766.7	47.1	-907.7	43.0

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

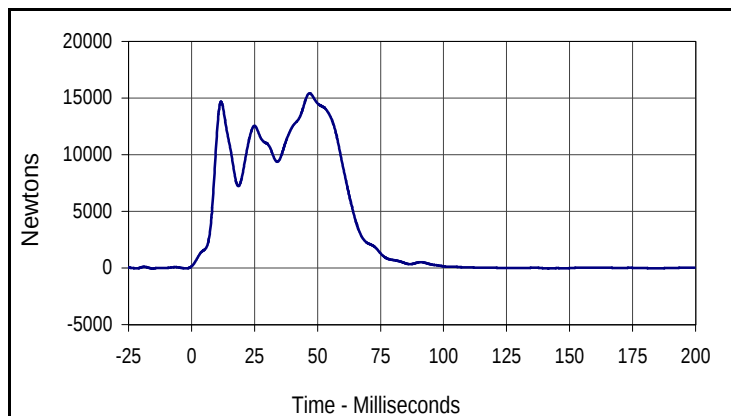
Test Date: 4/8/04
 NHTSA No.: Z45400



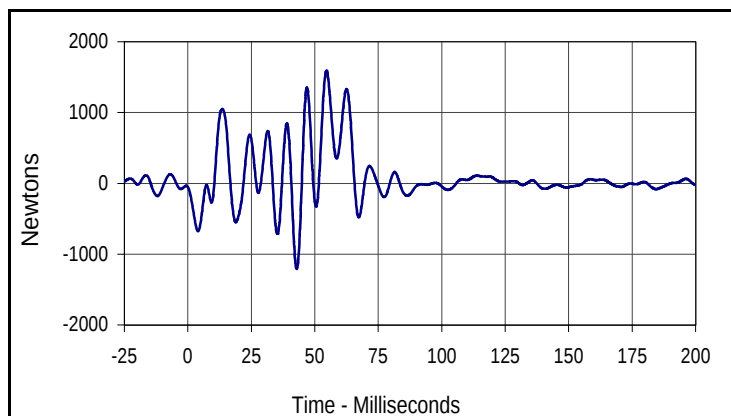
Curve Description			
Barrier Force A5			
CURNO	Type	SAE Class	Units
102	FIL	60	Newtons
Max	Time	Min	Time
7656.0	60.1	-757.8	1.9



Curve Description			
Barrier Force B5			
CURNO	Type	SAE Class	Units
111	FIL	60	Newtons
Max	Time	Min	Time
43807.9	49.5	-68.1	171.2



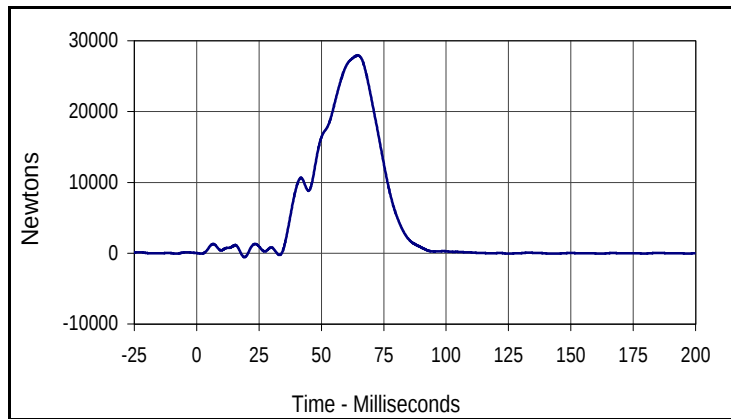
Curve Description			
Barrier Force C5			
CURNO	Type	SAE Class	Units
120	FIL	60	Newtons
Max	Time	Min	Time
15421.8	46.8	-42.4	141.6



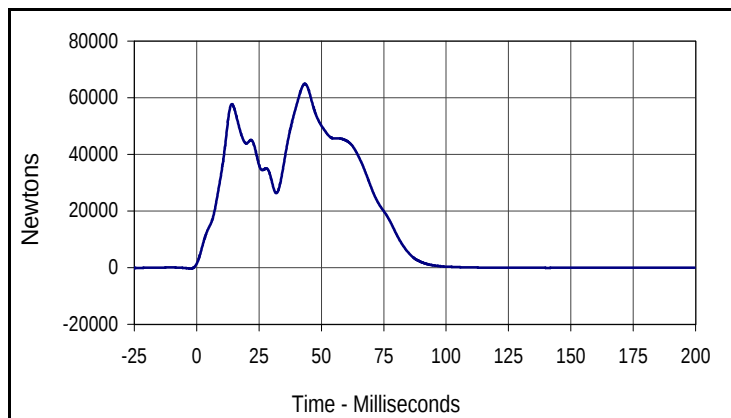
Curve Description			
Barrier Force D5			
CURNO	Type	SAE Class	Units
129	FIL	60	Newtons
Max	Time	Min	Time
1590.0	54.6	-1208.1	42.9

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

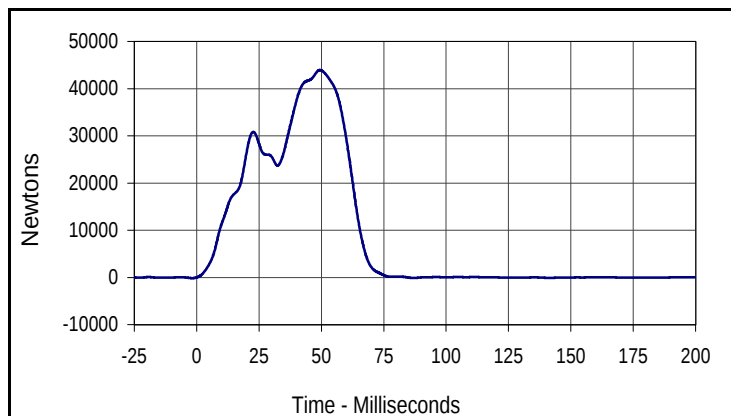
Test Date: 4/8/04
 NHTSA No.: Z45400



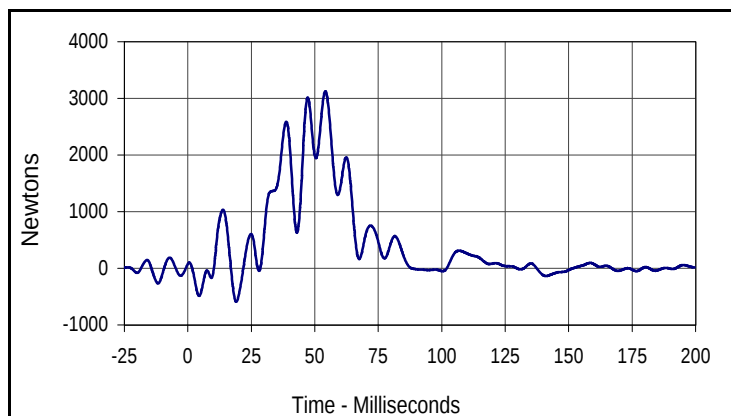
Curve Description			
Barrier Force A6			
CURNO	Type	SAE Class	Units
103	FIL	60	Newtons
Max	Time	Min	Time
27946.5	64.6	-548.1	19.1



Curve Description			
Barrier Force B6			
CURNO	Type	SAE Class	Units
112	FIL	60	Newtons
Max	Time	Min	Time
64919.3	43.4	-70.1	140.7



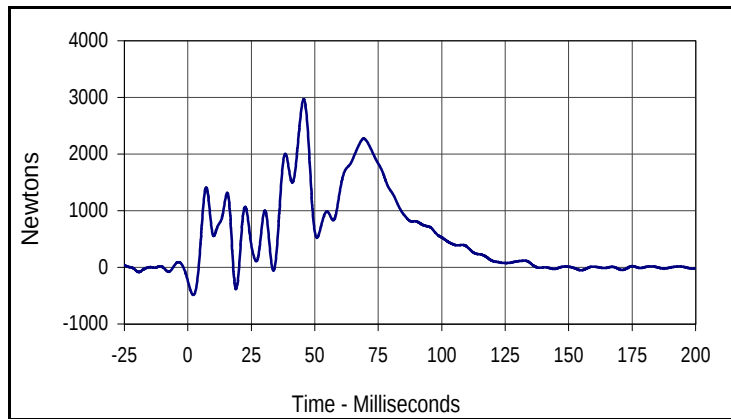
Curve Description			
Barrier Force C6			
CURNO	Type	SAE Class	Units
121	FIL	60	Newtons
Max	Time	Min	Time
43932.6	49.4	-119.9	87.0



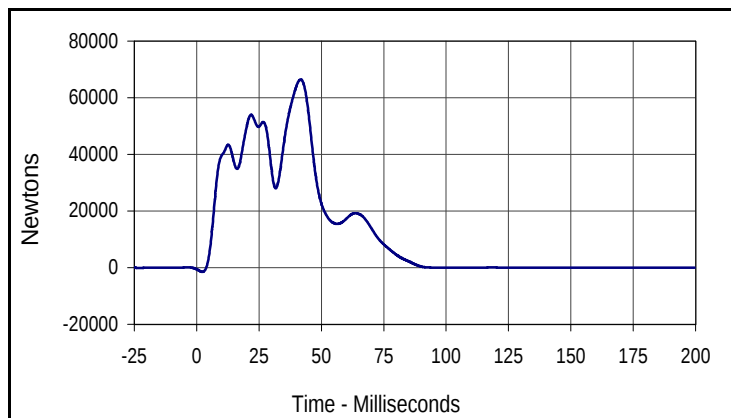
Curve Description			
Barrier Force D6			
CURNO	Type	SAE Class	Units
130	FIL	60	Newtons
Max	Time	Min	Time
3126.1	54.2	-589.7	19.1

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

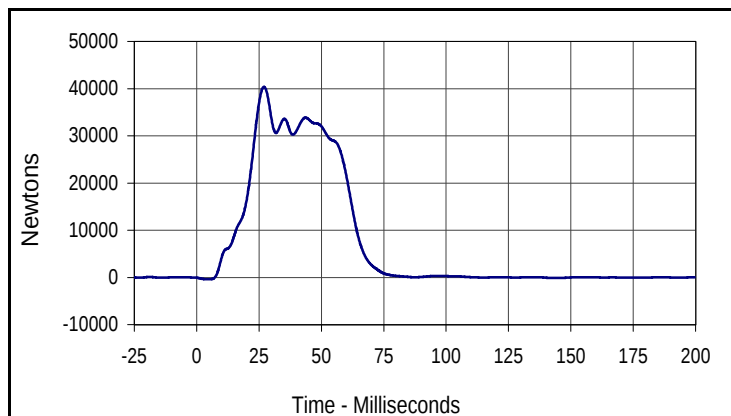
Test Date: 4/8/04
 NHTSA No.: Z45400



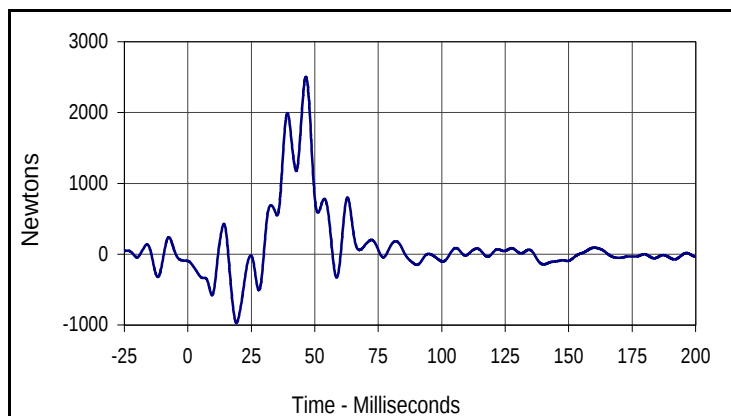
Curve Description			
Barrier Force A7			
CURNO	Type	SAE Class	Units
104	FIL	60	Newtons
Max	Time	Min	Time
2968.8	45.6	-488.3	2.2



Curve Description			
Barrier Force B7			
CURNO	Type	SAE Class	Units
113	FIL	60	Newtons
Max	Time	Min	Time
66476.5	41.7	-1458.7	2.3



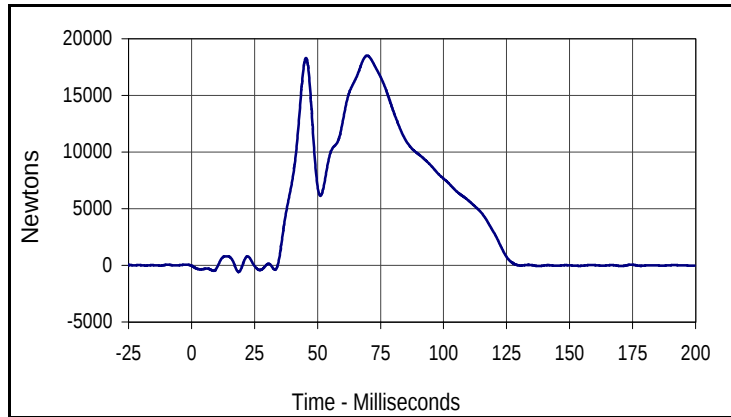
Curve Description			
Barrier Force C7			
CURNO	Type	SAE Class	Units
122	FIL	60	Newtons
Max	Time	Min	Time
40383.6	27.0	-391.6	4.6



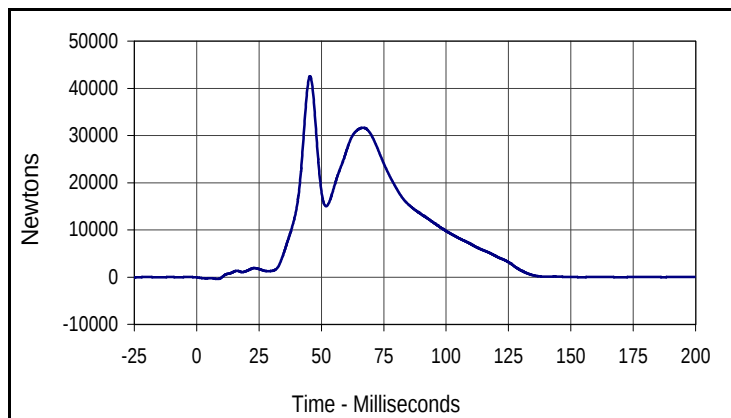
Curve Description			
Barrier Force D7			
CURNO	Type	SAE Class	Units
131	FIL	60	Newtons
Max	Time	Min	Time
2504.8	46.5	-974.7	19.2

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

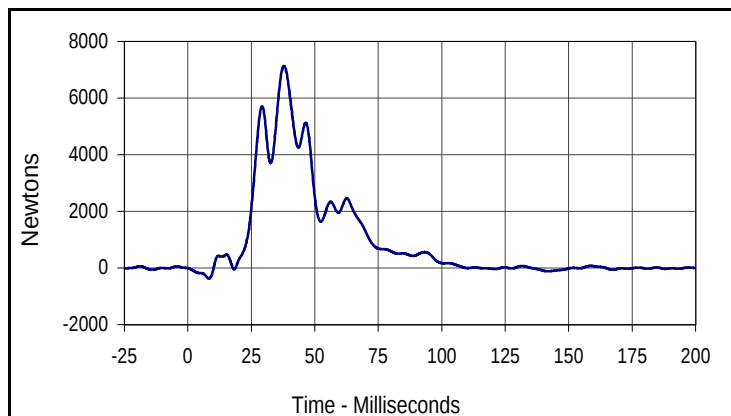
Test Date: 4/8/04
 NHTSA No.: Z45400



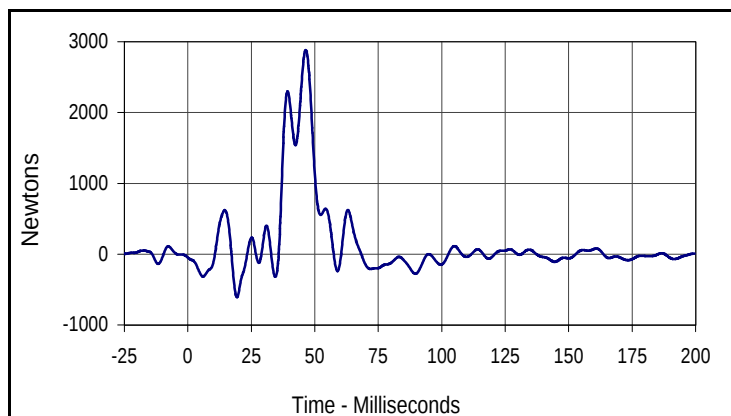
Curve Description			
Barrier Force A8			
CURNO	Type	SAE Class	Units
105	FIL	60	Newtons
Max	Time	Min	Time
18511.3	69.7	-583.6	18.7



Curve Description			
Barrier Force B8			
CURNO	Type	SAE Class	Units
114	FIL	60	Newtons
Max	Time	Min	Time
42553.1	45.4	-392.0	8.3



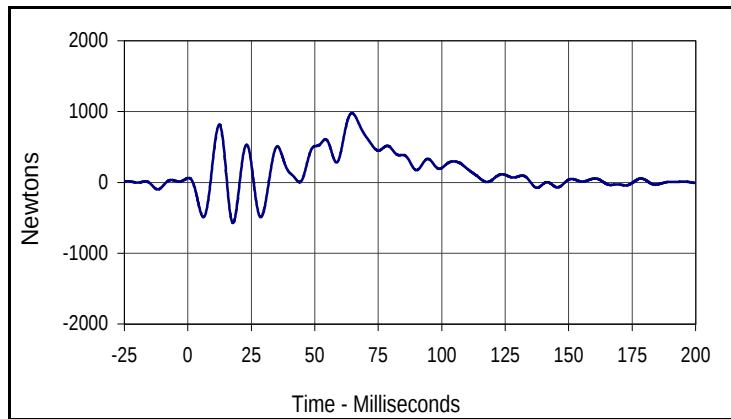
Curve Description			
Barrier Force C8			
CURNO	Type	SAE Class	Units
123	FIL	60	Newtons
Max	Time	Min	Time
7127.3	37.8	-370.3	8.3



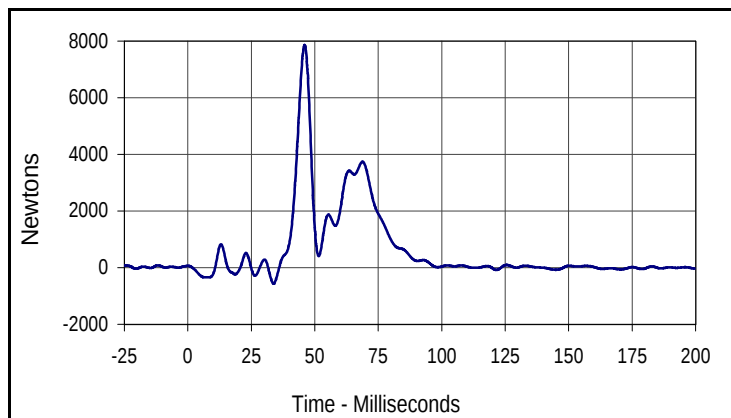
Curve Description			
Barrier Force D8			
CURNO	Type	SAE Class	Units
132	FIL	60	Newtons
Max	Time	Min	Time
2883.2	46.4	-607.2	19.4

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

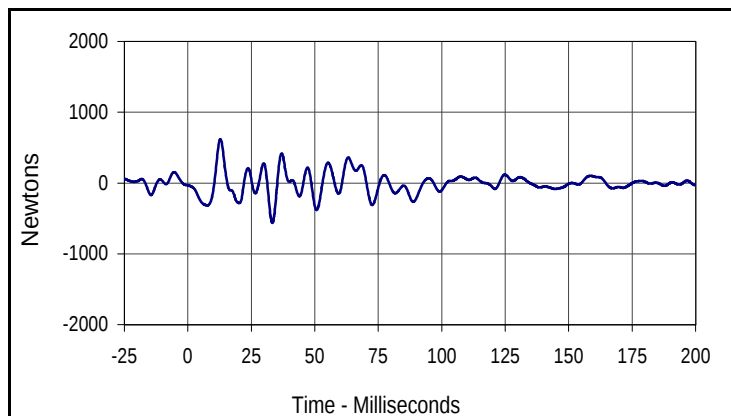
Test Date: 4/8/04
 NHTSA No.: Z45400



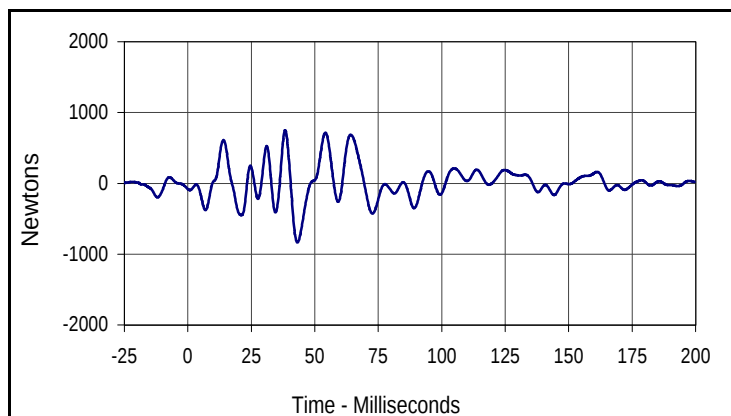
Curve Description			
Barrier Force A9			
CURNO	Type	SAE Class	Units
106	FIL	60	Newtons
Max	Time	Min	Time
977.1	64.6	-573.0	17.8



Curve Description			
Barrier Force B9			
CURNO	Type	SAE Class	Units
115	FIL	60	Newtons
Max	Time	Min	Time
7860.1	46.0	-560.9	33.7



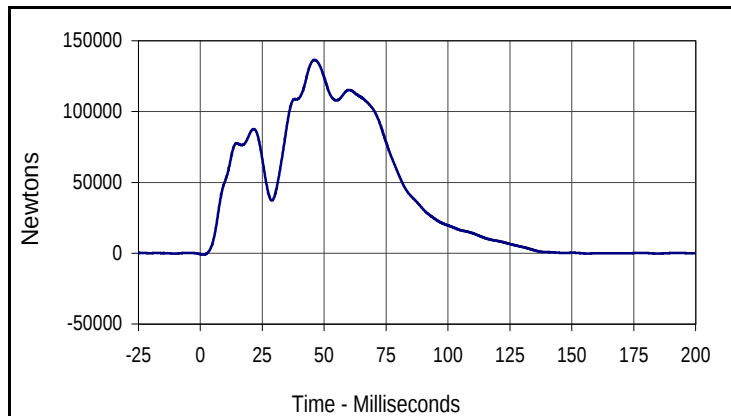
Curve Description			
Barrier Force C9			
CURNO	Type	SAE Class	Units
124	FIL	60	Newtons
Max	Time	Min	Time
617.7	12.8	-562.1	33.3



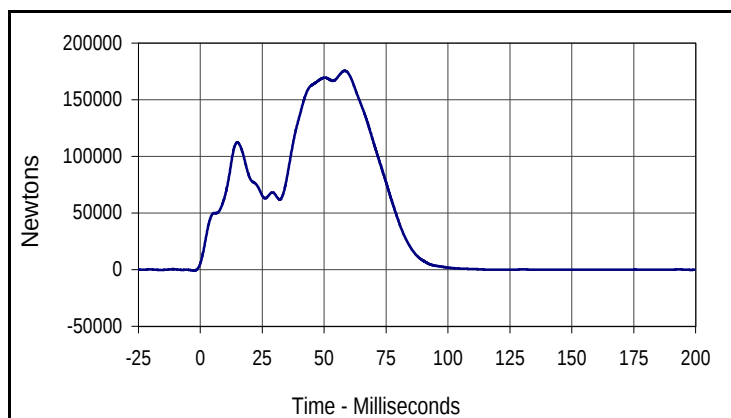
Curve Description			
Barrier Force D9			
CURNO	Type	SAE Class	Units
133	FIL	60	Newtons
Max	Time	Min	Time
749.6	38.3	-836.0	43.2

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

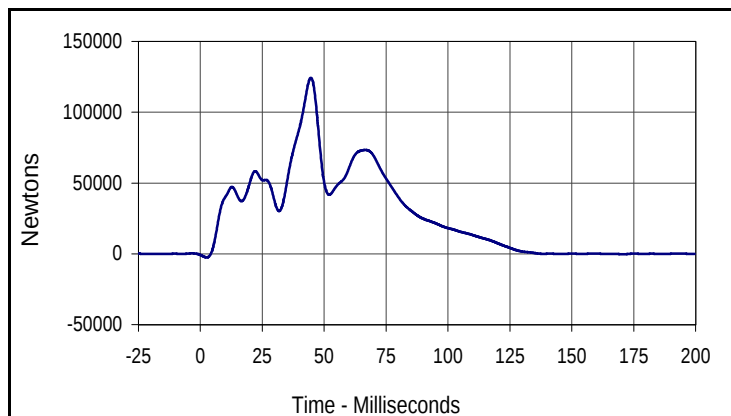
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Barrier Force Sum Group 1			
CURNO	Type	SAE Class	Units
001	SUM	60	Newtons
Max	Time	Min	Time
136454.3	46.1	-983.0	1.2



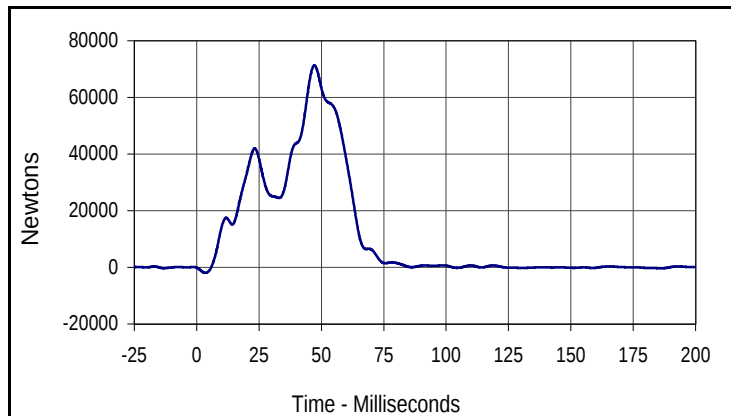
Curve Description			
Barrier Force Sum Group 2			
CURNO	Type	SAE Class	Units
002	SUM	60	Newtons
Max	Time	Min	Time
175588.7	58.3	-152.1	198.3



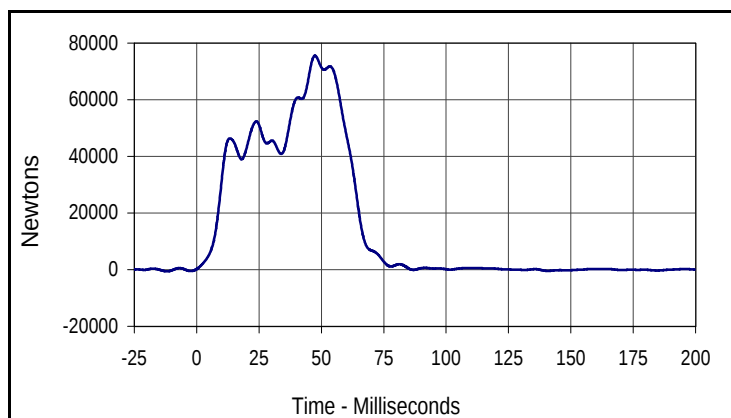
Curve Description			
Barrier Force Sum Group 3			
CURNO	Type	SAE Class	Units
003	SUM	60	Newtons
Max	Time	Min	Time
124346.8	44.6	-2579.0	2.6

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

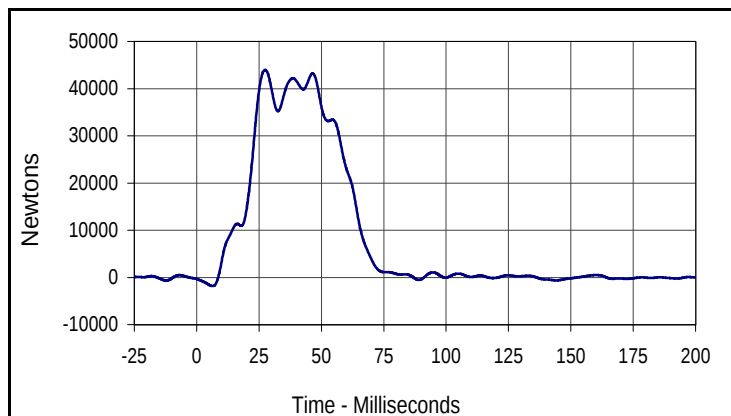
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Barrier Force Sum Group 4			
CURNO	Type	SAE Class	Units
004	SUM	60	Newtons
Max	Time	Min	Time
71280.3	47.2	-1954.7	3.6



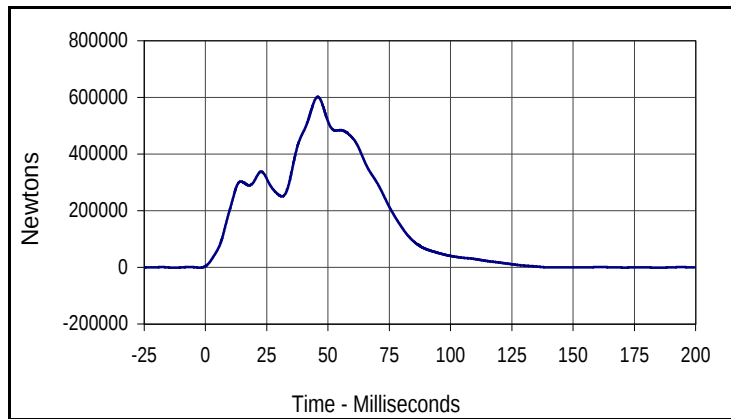
Curve Description			
Barrier Force Sum Group 5			
CURNO	Type	SAE Class	Units
005	SUM	60	Newtons
Max	Time	Min	Time
75570.9	47.4	-429.0	140.9



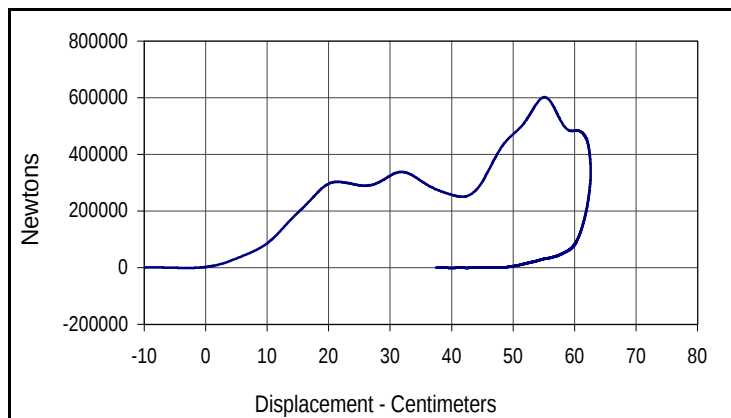
Curve Description			
Barrier Force Sum Group 6			
CURNO	Type	SAE Class	Units
006	SUM	60	Newtons
Max	Time	Min	Time
43965.9	27.4	-1828.9	6.3

Test Vehicle: 2004 Mazda RX-8
 Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Barrier Force Total Sum			
CURNO	Type	SAE Class	Units
007	SUM	60	Newtons
Max	Time	Min	Time
601906.4	45.8	-886.7	185.2



Curve Description			
Barrier Force Total Sum vs. Displ.			
CURNO	Type	SAE Class	Units
001	XVY	60	Newtons
Max	CM	Min	CM
601906.4	55.1	-886.7	39.9

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan

NHTSA No.: Z45400

Test Program: 2004 NHTSA 35mph NCAP

Test Date: 4/8/04

Location	Units	Max	Time	Min	Time
Barrier Force A1	Newtons	1621.3	34.8	-1646.8	17.3
Barrier Force A2	Newtons	27621.6	71.4	-622.2	18.2
Barrier Force A3	Newtons	5877.8	67.4	-728.9	1.8
Barrier Force A4	Newtons	22256.6	62.6	-57.1	141.1
Barrier Force A5	Newtons	7656.0	60.1	-757.8	1.9
Barrier Force A6	Newtons	27946.5	64.6	-548.1	19.1
Barrier Force A7	Newtons	2968.8	45.6	-488.3	2.2
Barrier Force A8	Newtons	18511.3	69.7	-583.6	18.7
Barrier Force A9	Newtons	977.1	64.6	-573.0	17.8
Barrier Force B1	Newtons	2914.8	49.0	-781.6	17.0
Barrier Force B2	Newtons	36031.4	55.1	-308.6	2.8
Barrier Force B3	Newtons	80070.5	45.7	-381.5	0.0
Barrier Force B4	Newtons	36733.1	49.3	-28.0	114.2
Barrier Force B5	Newtons	43807.9	49.5	-68.1	171.2
Barrier Force B6	Newtons	64919.3	43.4	-70.1	140.7
Barrier Force B7	Newtons	66476.5	41.7	-1458.7	2.3
Barrier Force B8	Newtons	42553.1	45.4	-392.0	8.3
Barrier Force B9	Newtons	7860.1	46.0	-560.9	33.7
Barrier Force C1	Newtons	1805.4	43.7	-520.4	14.7
Barrier Force C2	Newtons	13636.7	37.8	-333.4	3.2
Barrier Force C3	Newtons	52411.1	48.8	-172.0	1.7
Barrier Force C4	Newtons	14159.6	13.6	-54.6	185.3
Barrier Force C5	Newtons	15421.8	46.8	-42.4	141.6
Barrier Force C6	Newtons	43932.6	49.4	-119.9	87.0
Barrier Force C7	Newtons	40383.6	27.0	-391.6	4.6
Barrier Force C8	Newtons	7127.3	37.8	-370.3	8.3
Barrier Force C9	Newtons	617.7	12.8	-562.1	33.3
Barrier Force D1	Newtons	1409.5	47.5	-914.9	43.3
Barrier Force D2	Newtons	6194.4	45.9	-491.9	66.0
Barrier Force D3	Newtons	1859.2	47.0	-551.2	3.9
Barrier Force D4	Newtons	1766.7	47.1	-907.7	43.0
Barrier Force D5	Newtons	1590.0	54.6	-1208.1	42.9
Barrier Force D6	Newtons	3126.1	54.2	-589.7	19.1
Barrier Force D7	Newtons	2504.8	46.5	-974.7	19.2
Barrier Force D8	Newtons	2883.2	46.4	-607.2	19.4
Barrier Force D9	Newtons	749.6	38.3	-836.0	43.2
Barrier Force Sum Group 1	Newtons	136454.3	46.1	-983.0	1.2
Barrier Force Sum Group 2	Newtons	175588.7	58.3	-152.1	198.3
Barrier Force Sum Group 3	Newtons	124346.8	44.6	-2579.0	2.6
Barrier Force Sum Group 4	Newtons	71280.3	47.2	-1954.7	3.6
Barrier Force Sum Group 5	Newtons	75570.9	47.4	-429.0	140.9
Barrier Force Sum Group 6	Newtons	43965.9	27.4	-1828.9	6.3
Barrier Force Total Sum	Newtons	601906.4	45.8	-886.7	185.2

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 35
4/8/04
2004 Mazda RX-8 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST, PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST, PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST, PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST, REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST, REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST, REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 35
4/8/04
2004 Mazda RX-8 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	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT, AFT	Z	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT, FORE	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT, AFT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT, AFT	Z	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT, FORE	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	N/A	BL134	Load cell, Seat belt	FGP	FN4060	N
42	SHOULDER BELT FORCE	N/A	BL135	Load cell, Seat belt	FGP	FN4060	N
43	SHOULDER BELT SPOOL	N/A	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	N/A	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 34
4/8/04
2004 Mazda RX-8 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	KEAC027	Accel.,1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	KEAC031	Accel.,1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	KEAC032	Accel.,1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	KEAC026	Accel.,1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST, PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST, PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST, PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST, REDUNDANT	X	KEAC023	Accel.,1/2 bridge	Endevco	7264-200	G
61	CHEST, REDUNDANT	Y	KEAC022	Accel.,1/2 bridge	Endevco	7264-200	G
62	CHEST, REDUNDANT	Z	KEAC024	Accel.,1/2 bridge	Endevco	7264-200	G
63	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	KEAC019	Accel.,1/2 bridge	Endevco	7264-200	G
65	PELVIS, PRIMARY	Y	KEAC020	Accel.,1/2 bridge	Endevco	7264-200	G
66	PELVIS, PRIMARY	Z	KEAC021	Accel.,1/2 bridge	Endevco	7264-200	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 34
4/8/04
2004 Mazda RX-8 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPOT09MY	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	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT, AFT	Z	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT, FORE	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT, AFT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT, AFT	Z	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT, FORE	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	N/A	BL168	Load cell, Seat belt	First Tech	IF-964	N
86	SHOULDER BELT FORCE	N/A	BL169	Load cell, Seat belt	First Tech	IF-964	N
87	SHOULDER BELT SPOOL	N/A	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
88	SHOULDER BELT ELONG.	N/A	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
4/8/04
2004 Mazda RX-8 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR	X	KEVA003	Accel., Pre-Amp	I.C.S/Karco	3031-500	G
90	RIGHT REAR	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	ENGINE TOP	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	ENGINE BOTTOM	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	LEFT BRAKE CALIPER	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT BRAKE CALIPER	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	INSTRUMENT PANEL	X	KEVA002	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	LEFT REAR	Z	KEVA020	Accel., Vehicle block	I.C. Sensor	3031-500	G
97	RIGHT REAR	Z	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-200	G

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
4/8/04
2004 Mazda RX-8 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

2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
4/8/04
2004 Mazda RX-8 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

**2004 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Nine Accelerometer Array Head
4/8/04
2004 Mazda RX-8 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
134	DRIVER X-ARM	Y	GPAC012	Accel., 1/2 bridge	Endevco	7264-2000	G
135	DRIVER X-ARM	Z	GPAC001	Accel., 1/2 bridge	Endevco	7264-2000	G
136	DRIVER Y-ARM	X	GPAC036	Accel., 1/2 bridge	Endevco	7264-2000	G
137	DRIVER Y-ARM	Z	GPAC014	Accel., 1/2 bridge	Endevco	7264-2000	G
138	DRIVER Z-ARM	X	GPAC030	Accel., 1/2 bridge	Endevco	7264-2000	G
139	DRIVER Z-ARM	Y	GPAC037	Accel., 1/2 bridge	Endevco	7264-2000	G
140	PASS. X-ARM	Y	GPAC016	Accel., 1/2 bridge	Endevco	7264-2000	G
141	PASS. X-ARM	Z	GPAC015	Accel., 1/2 bridge	Endevco	7264-2000	G
142	PASS. Y-ARM	X	GPAC004	Accel., 1/2 bridge	Endevco	7264-2000	G
143	PASS. Y-ARM	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
144	PASS. Z-ARM	X	GPAC006	Accel., 1/2 bridge	Endevco	7264-2000	G
145	PASS. Z-ARM	Y	GPAC007	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: 4/5/04

ATD Serial No.: 034

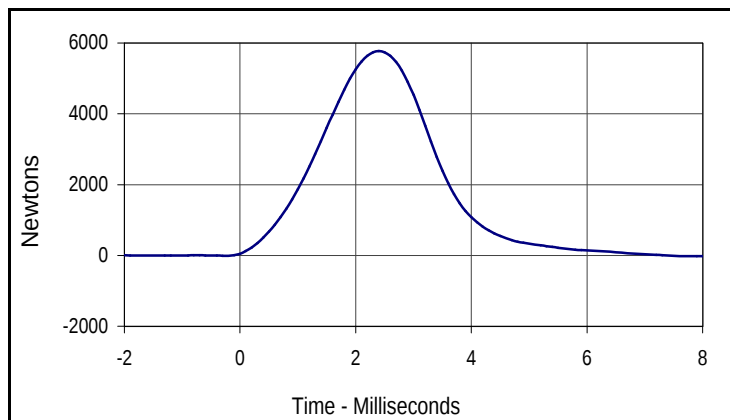
Test I.D.: LK04A , RK04A

**Left Knee**

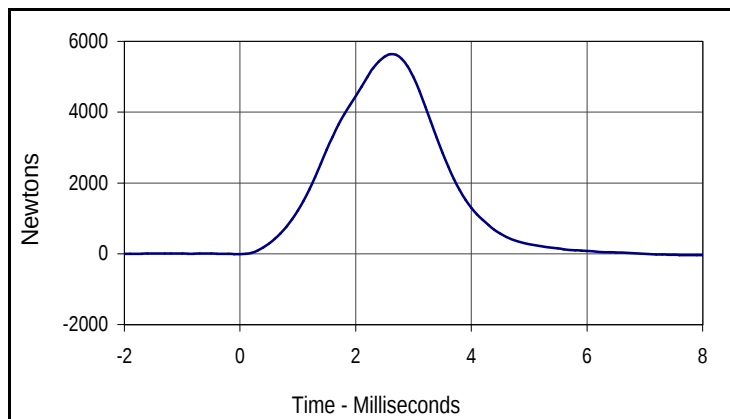
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	Newtons	4715 to 5782	5770	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5635	Pass
Overall Test Results				Pass

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

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5770.4	2.4	-22.3	9.8

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

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5634.7	2.6	-43.0	8.1

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

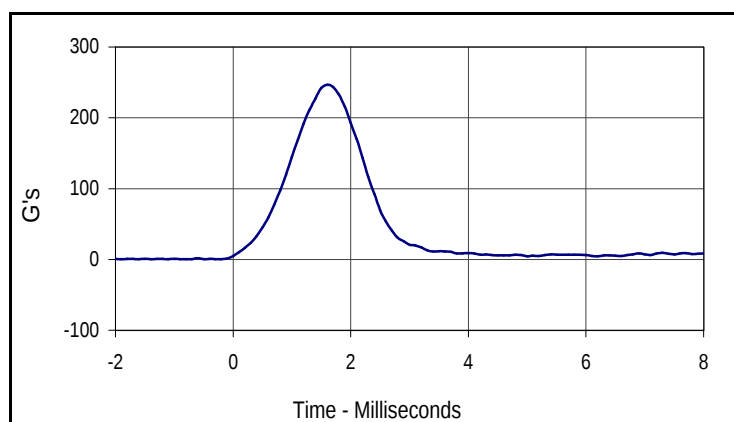
Test Date: 4/5/04

ATD Serial No.: 034

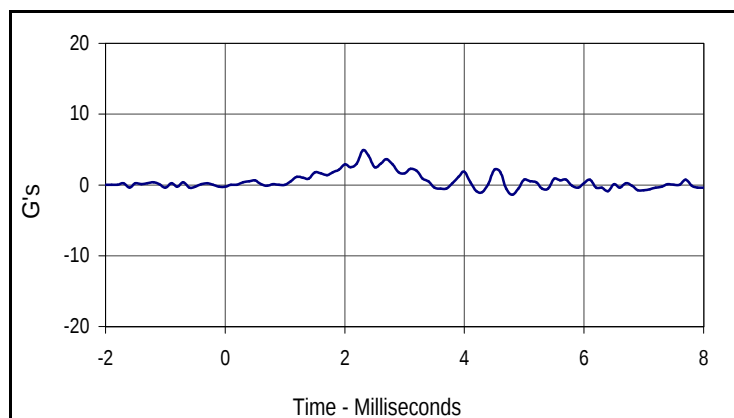
Test I.D.: HD04R



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	246.5	Pass
Peak Lateral Acceleration	G's	≤15.0	4.9	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
246.5	1.6	0.3	-0.8



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.9	2.3	-1.4	4.8

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

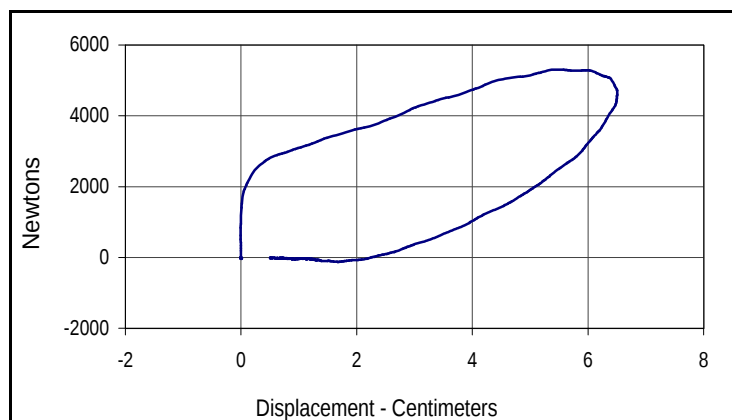
Test Date: 4/7/04

ATD Serial No.: 034

Test I.D.: CH04A



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	5307	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.51	Pass
Internal Hysteresis	%	69 to 85	75.7	Pass
Overall Test Results				Pass



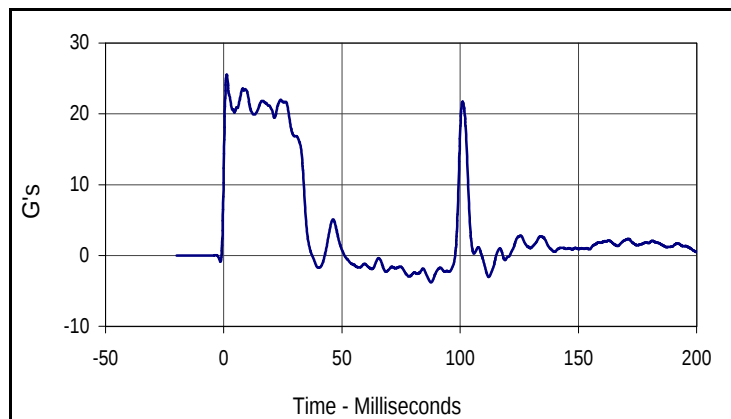
Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	75.7
Peak Probe Force		Peak Chest Displ.	
5306.8		6.51	

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

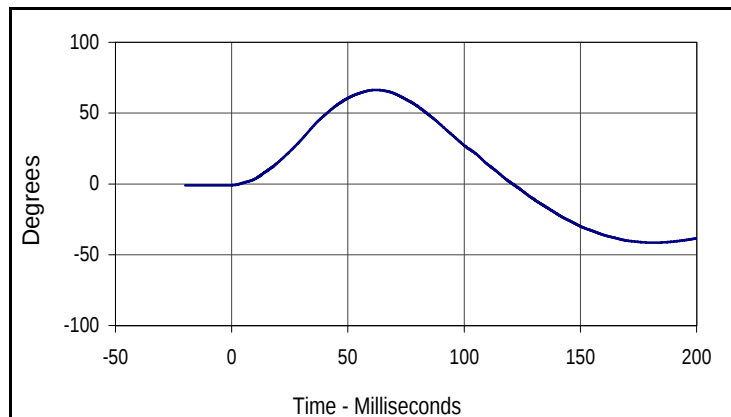
Test Date: 4/6/04
 Test I.D.: NF05X



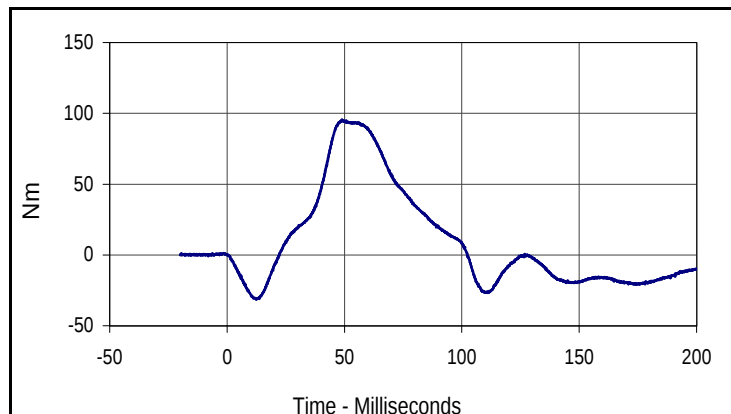
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.9	Pass
	20 Msec.	G's	17.6 to 22.6	20.8	Pass
	30 Msec.	G's	12.5 to 18.5	16.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	21.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	34.8	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	66.3	Pass
	Time	Msec.	57.0 to 64.0	62.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	120.8	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	95.4	Pass
	Time	Msec.	47.0 to 58.0	48.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	102.4	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
25.5	1.2	-3.8	87.6



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
66.3	62.1	-41.5	181.8



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
95.4	48.9	-31.5	12.4

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

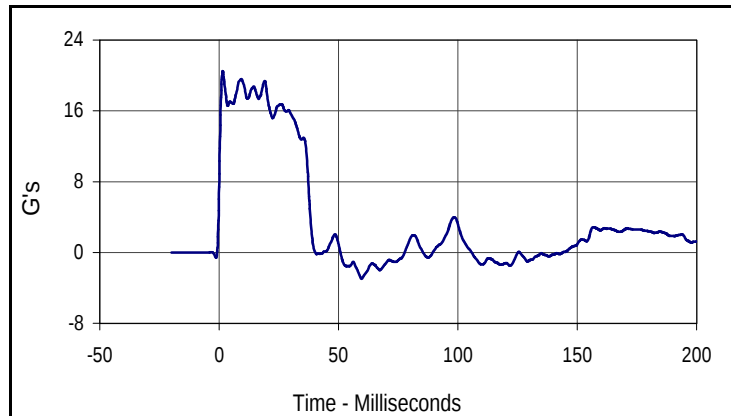
Test Date: 4/6/04

ATD Serial No.: 034

Test I.D.: NE05X



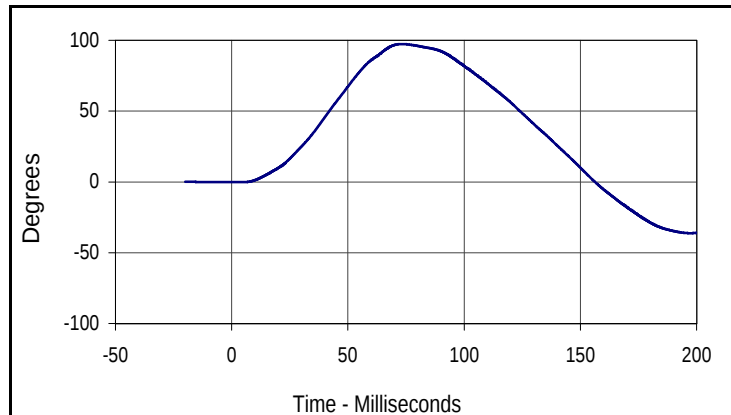
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.13	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.2	Pass
	20 Msec.	G's	14.0 to 19.0	18.0	Pass
	30 Msec.	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	38.0	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	97.4	Pass
	Time	Msec.	72.0 to 82.0	73.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	156.3	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-75.7	Pass
	Time	Msec.	65.0 to 79.0	65.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.3	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

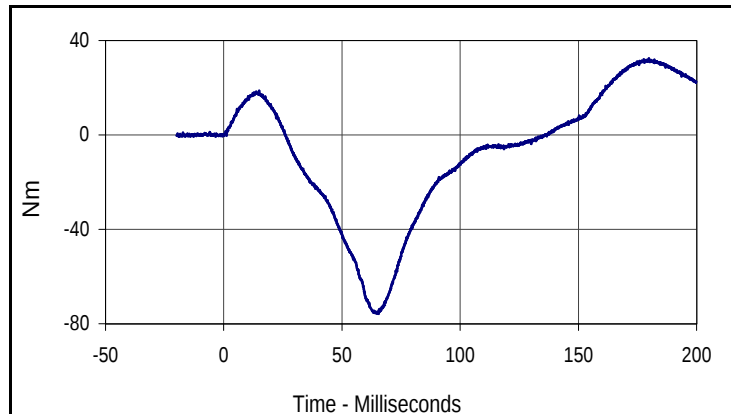
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
20.5	1.5	-3.0	59.7



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
97.4	73.3	-36.2	197.3



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
32.5	179.8	-75.7	65.4

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 4/7/04

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	885	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	85	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	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	465	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	430	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	850	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	227	Pass
Overall Test Results				Pass

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

Test Date: 4/5/04

ATD Serial No.: 035

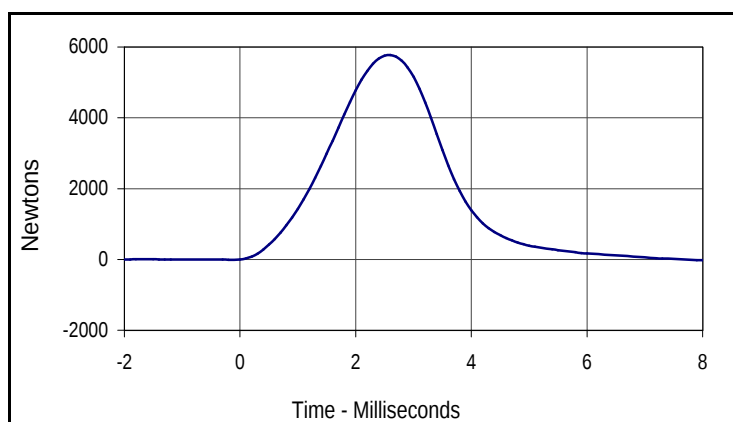
Test I.D.: LK04B , RK04B

**Left Knee**

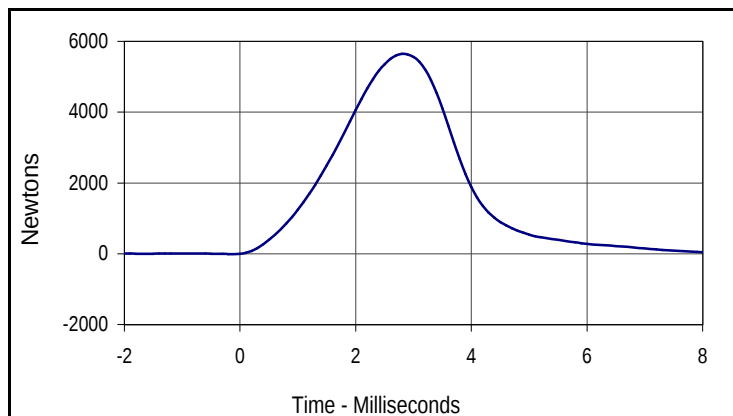
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5775	Pass
Overall Test Results			Pass	

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5645	Pass
Overall Test Results			Pass	

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

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5775.0	2.6	-24.9	10.0

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

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5645.0	2.8	-26.4	9.3

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

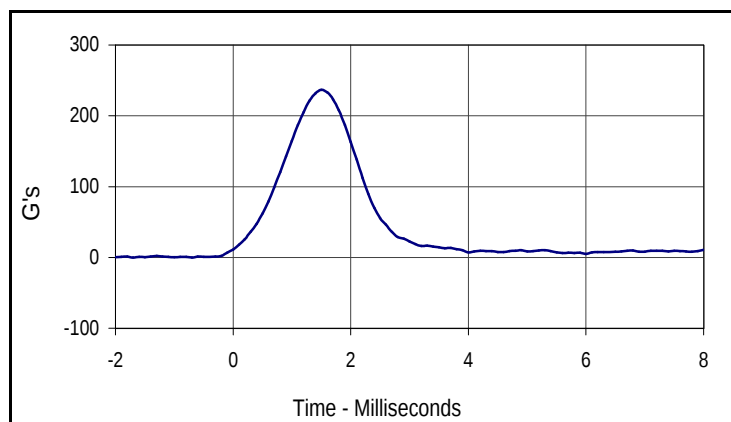
Test Date: 4/5/04

ATD Serial No.: 035

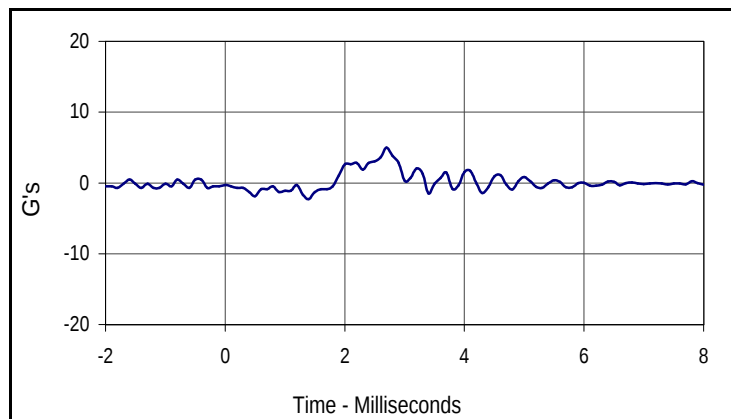
Test I.D.: HD04S



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	236.7	Pass
Peak Lateral Acceleration	G's	≤15.0	5.0	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
236.7	1.5	0.1	-1.7



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.0	2.7	-2.3	1.4

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

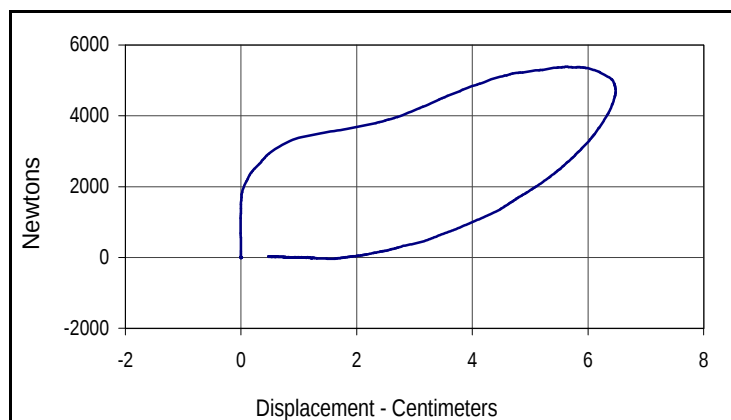
Test Date: 4/7/04

ATD Serial No.: 035

Test I.D.: CH04B



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	6.61	Pass
Peak Probe Force	Newtons	5159 to 5893	5382	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.48	Pass
Internal Hysteresis	%	69 to 85	76.0	Pass
Overall Test Results				Pass



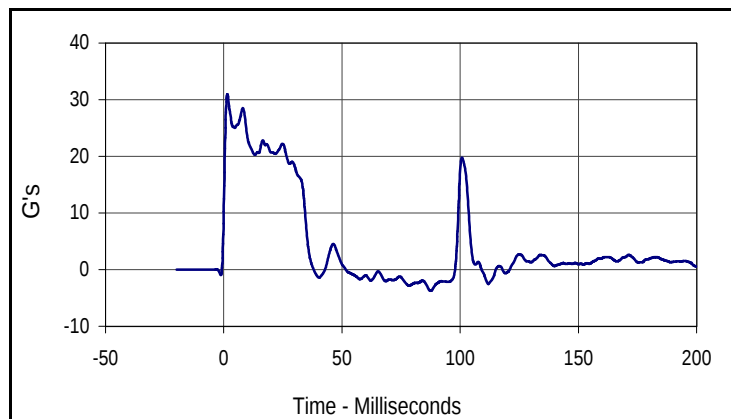
Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	76.0
Peak Probe Force		Peak Chest Displ.	
5382.0		6.48	

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

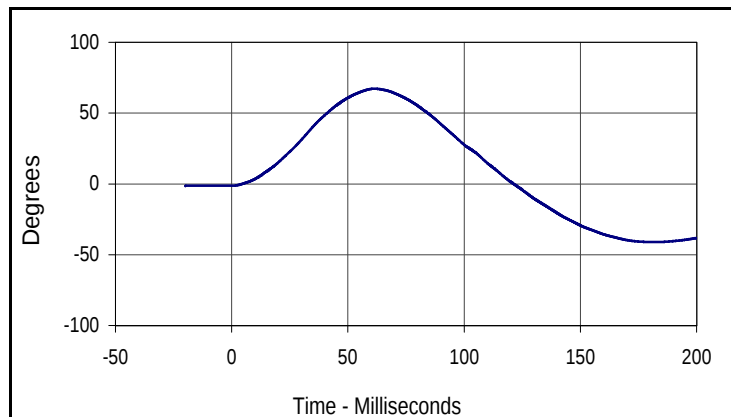
Test Date: 4/6/04
 Test I.D.: NF05Z



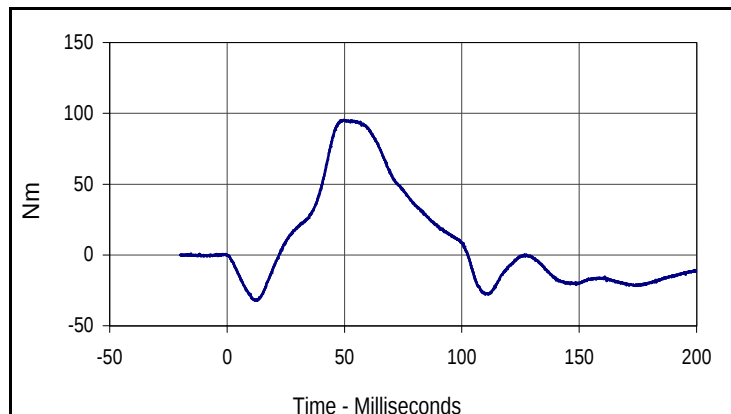
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.4	Pass
	20 Msec.	G's	17.6 to 22.6	20.7	Pass
	30 Msec.	G's	12.5 to 18.5	18.2	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	35.5	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	67.2	Pass
	Time	Msec.	57.0 to 64.0	61.4	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	95.4	Pass
	Time	Msec.	47.0 to 58.0	49.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	102.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
31.0	1.5	-3.7	87.6



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
67.2	61.4	-41.1	182.6



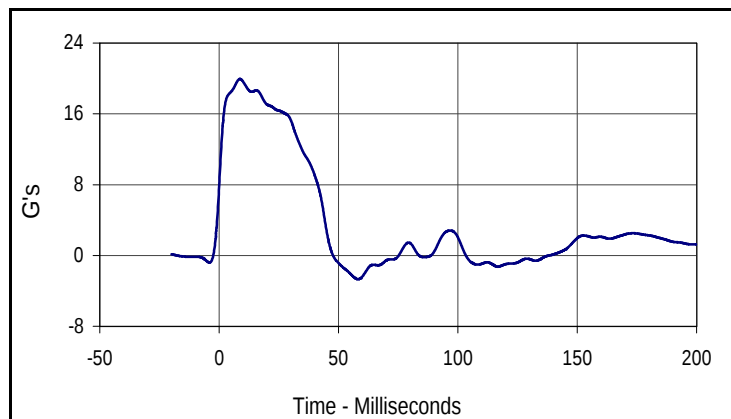
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
95.4	49.7	-32.3	12.9

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

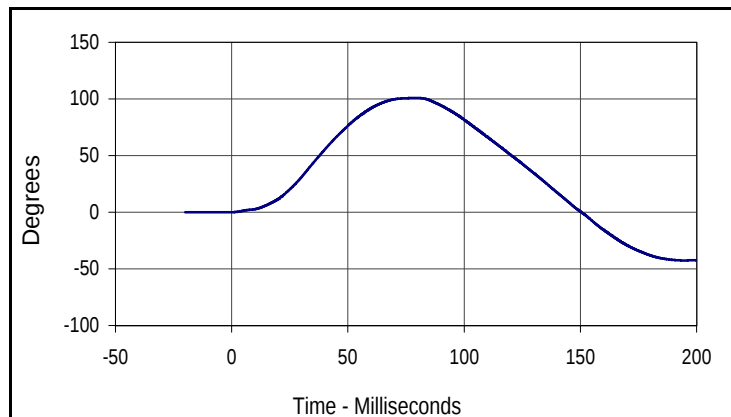
Test Date: 4/6/04
 Test I.D.: NE05Z



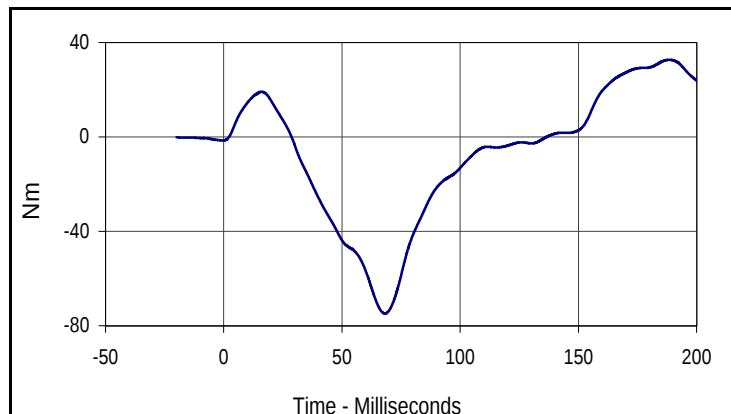
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.03	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.6	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	43.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	100.9	Pass
	Time	Msec.	72.0 to 82.0	79.0	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	150.5	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-74.8	Pass
	Time	Msec.	65.0 to 79.0	68.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.9	8.7	-2.7	58.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
100.9	79.0	-42.6	194.5



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
32.7	188.6	-74.8	68.2

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 4/7/04

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	883	Pass
B - Shoulder pivot height	mm	505 to 521	510	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	85	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	43	Pass
I - Shoulder to elbow length	mm	330 to 345	336	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	475	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	105	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	845	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

APPENDIX F

CHILD RESTRAINT SYSTEM

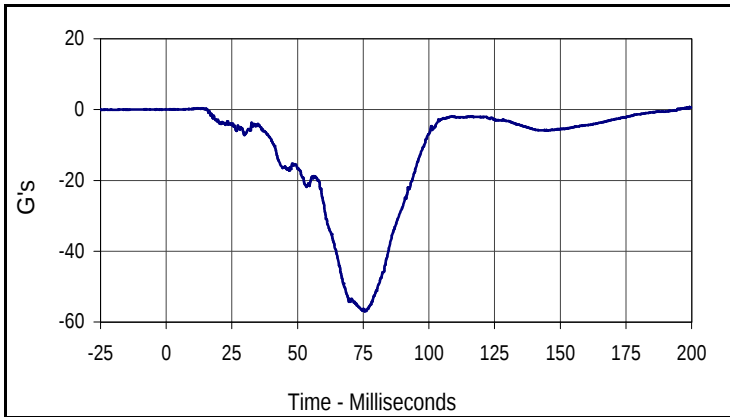
NOT USED IN THIS TEST

APPENDIX G

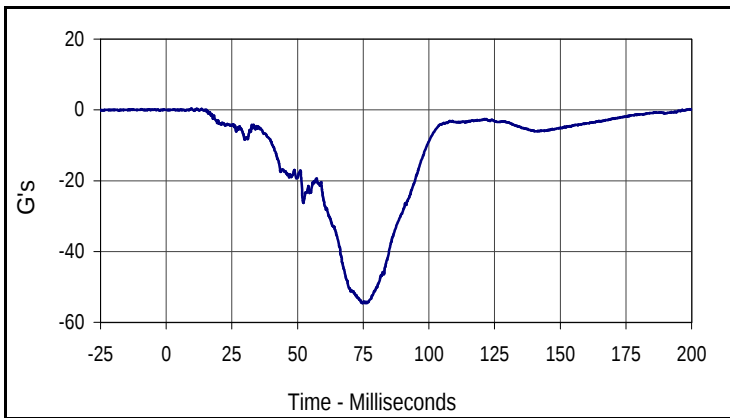
NINE ACCELEROMETER ARRAY HEAD

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

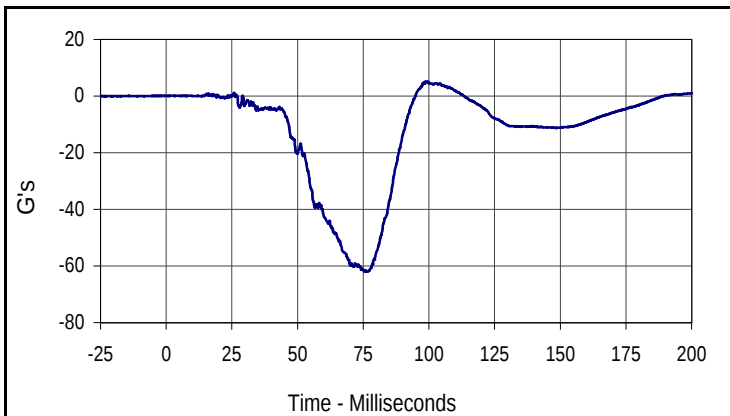
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
0.7	199.3	-57.0	75.6



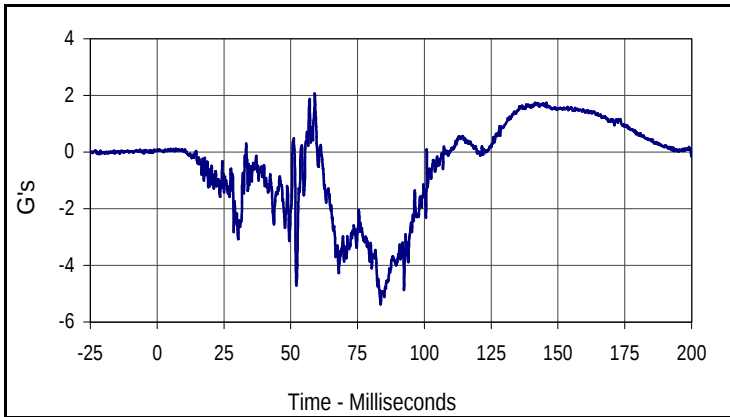
Curve Description			
Driver NAAH Yarm-X			
CURNO	Type	SAE Class	Units
136	FIL	1000	G's
Max	Time	Min	Time
0.4	9.6	-54.6	74.8



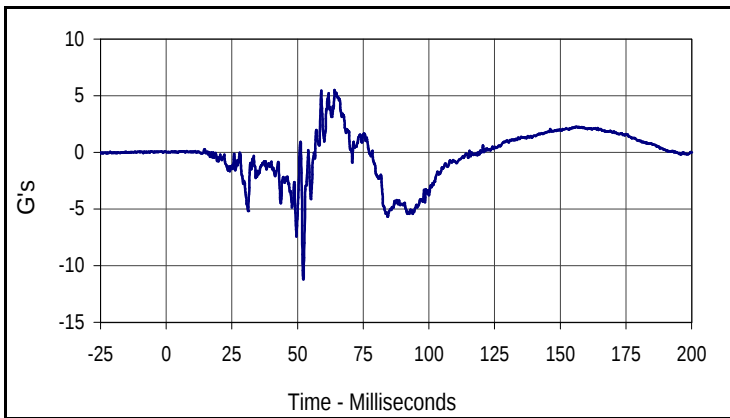
Curve Description			
Driver NAAH Zarm-X			
CURNO	Type	SAE Class	Units
138	FIL	1000	G's
Max	Time	Min	Time
5.1	99.2	-62.1	75.6

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

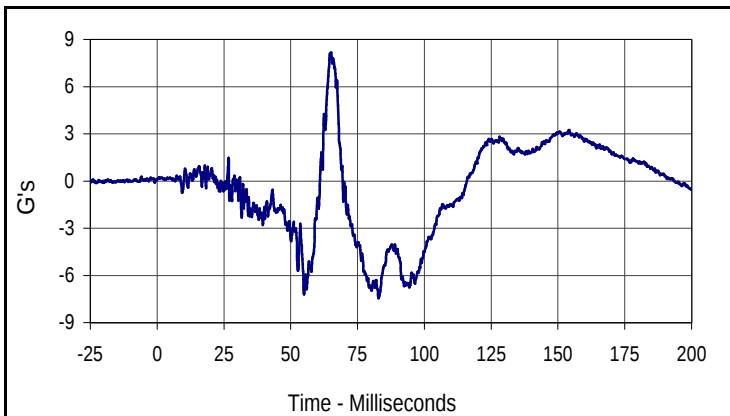
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.1	59.0	-5.4	83.6



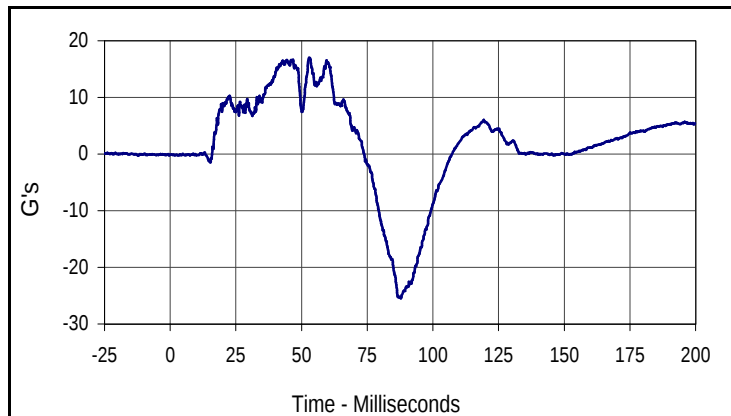
Curve Description			
Driver NAAH Xarm-Y			
CURNO	Type	SAE Class	Units
134	FIL	1000	G's
Max	Time	Min	Time
5.5	64.1	-11.2	52.2



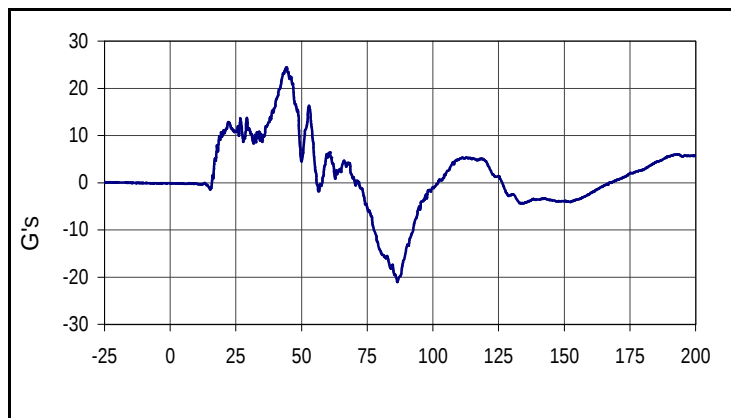
Curve Description			
Driver NAAH Zarm-Y			
CURNO	Type	SAE Class	Units
139	FIL	1000	G's
Max	Time	Min	Time
8.2	65.2	-7.5	82.9

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

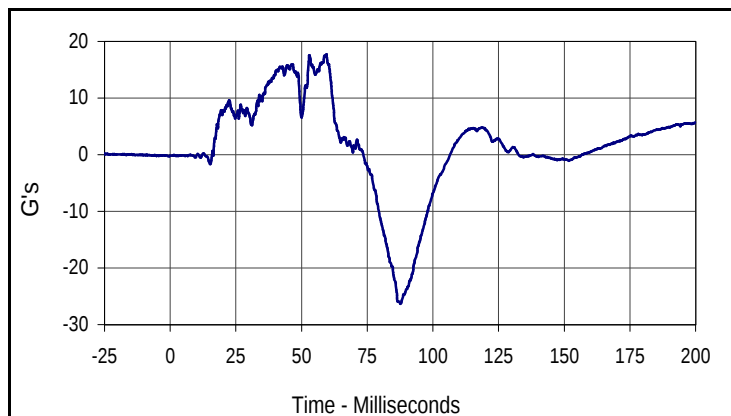
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
17.0	53.1	-25.5	87.8



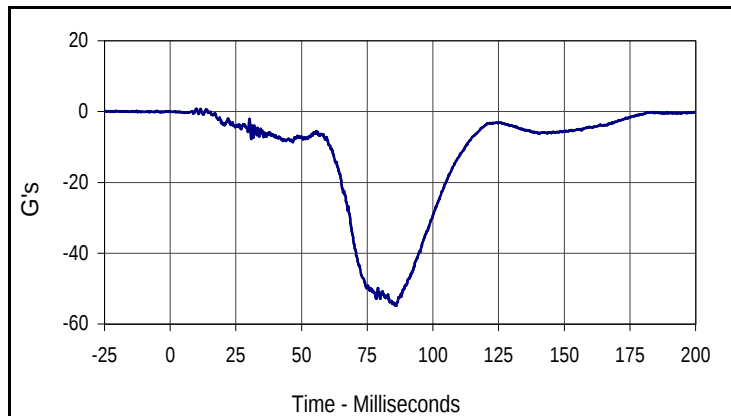
Curve Description			
Driver NAAH Xarm-Z			
CURNO	Type	SAE Class	Units
135	FIL	1000	G's
Max	Time	Min	Time
24.4	44.3	-21.0	86.5



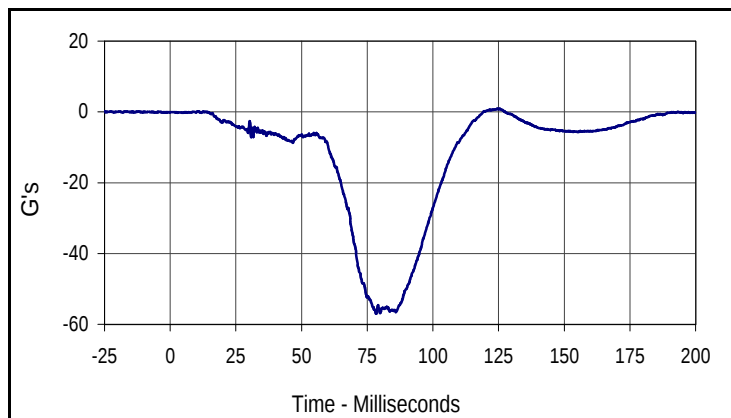
Curve Description			
Driver NAAH Yarm-Z			
CURNO	Type	SAE Class	Units
137	FIL	1000	G's
Max	Time	Min	Time
17.8	59.5	-26.3	87.7

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

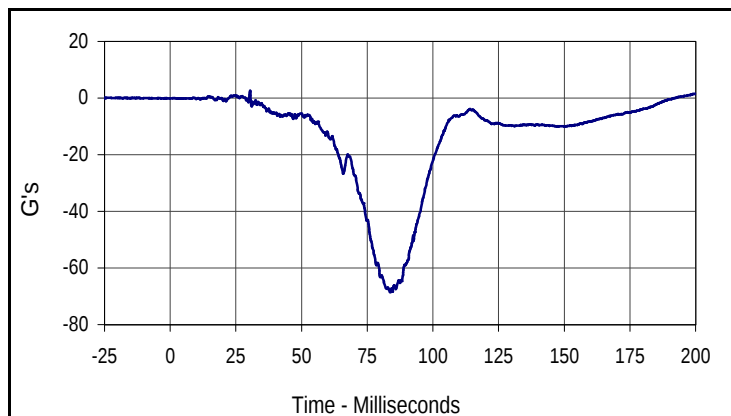
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
0.8	9.9	-54.9	85.8



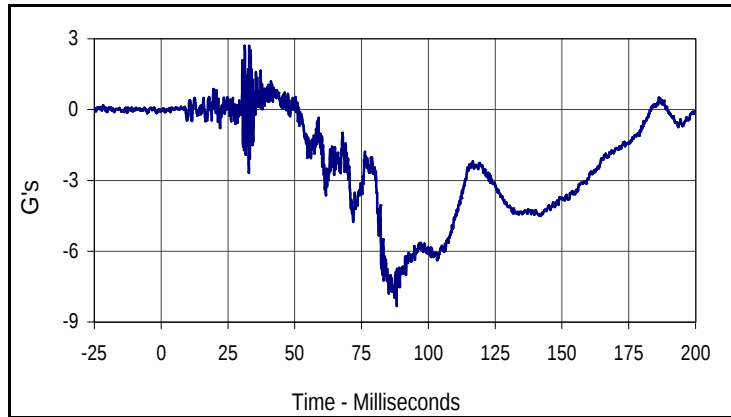
Curve Description			
Passenger NAAH Yarm-X			
CURNO	Type	SAE Class	Units
142	FIL	1000	G's
Max	Time	Min	Time
0.9	125.5	-57.0	78.4



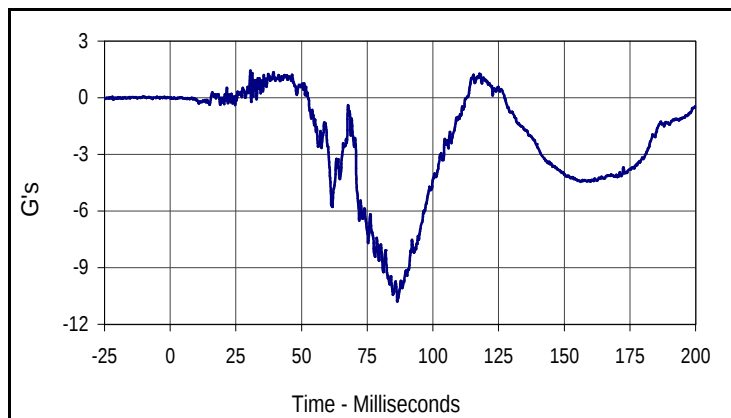
Curve Description			
Passenger NAAH Zarm-X			
CURNO	Type	SAE Class	Units
144	FIL	1000	G's
Max	Time	Min	Time
2.6	30.4	-68.6	83.8

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

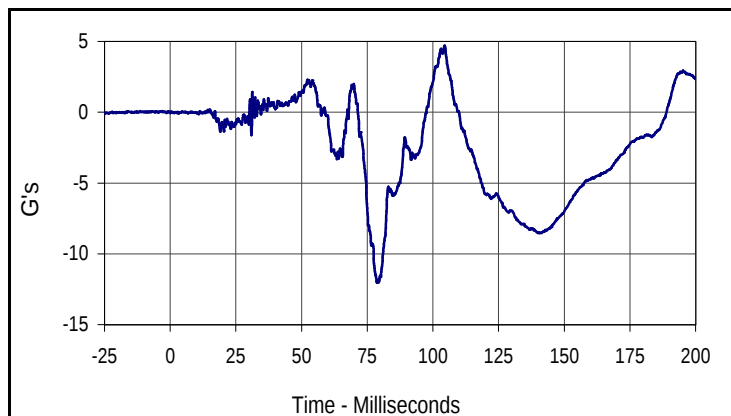
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
2.7	33.0	-8.3	88.1



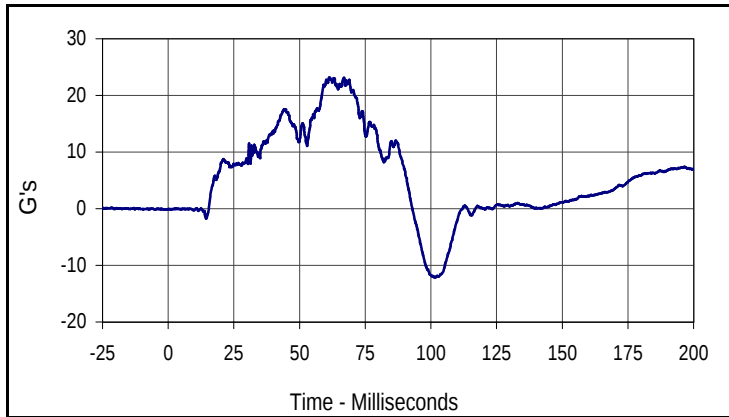
Curve Description			
Passenger NAAH Xarm-Y			
CURNO	Type	SAE Class	Units
140	FIL	1000	G's
Max	Time	Min	Time
1.4	30.5	-10.8	86.5



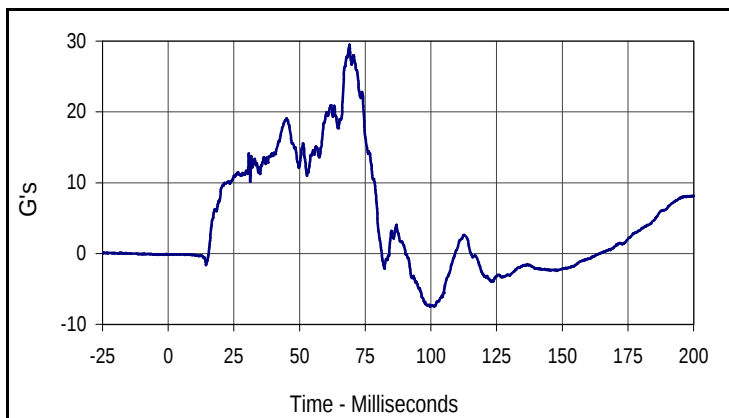
Curve Description			
Passenger NAAH Zarm-Y			
CURNO	Type	SAE Class	Units
145	FIL	1000	G's
Max	Time	Min	Time
4.7	104.5	-12.0	78.8

Test Vehicle: 2004 Mazda RX-8 4 Door Sedan
 Test Program: 2004 NHTSA 35mph NCAP

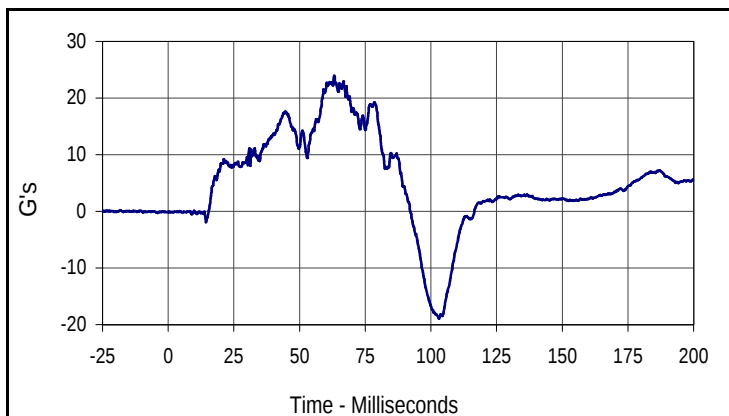
Test Date: 4/8/04
 NHTSA No.: Z45400



Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
23.2	61.2	-12.1	101.7



Curve Description			
Passenger NAAH Xarm-Z			
CURNO	Type	SAE Class	Units
141	FIL	1000	G's
Max	Time	Min	Time
29.5	69.0	-7.5	99.7



Curve Description			
Passenger NAAH Yarm-Z			
CURNO	Type	SAE Class	Units
143	FIL	1000	G's
Max	Time	Min	Time
24.0	63.2	-18.9	103.0