REPORT NUMBER: NCAPSIDE-MGA-2005-006

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

NISSAN MOTOR COMPANY Ltd.
2005 NISSAN FRONTIER
NHTSA NUMBER: M55211

PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: February 8, 2005

Report Date: March 23, 2005

FINAL REPORT

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

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-03-D-12005.

Prepared by: Shefalika Naik Date: 3/23/05
Shefalika Naik, Project Engineer

Reviewed by: David Winkelbauer Date: 3/23/05
David Winkelbauer, Facility Director

FINAL REPORT ACCEPTED BY:

_____
COTR, Side Impact

_____
Date of Acceptance

Technical Report Documentation Page

1. Report No. NCAPSIDE-MGA-2005-006	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Testing of 2005 Nissan Frontier NHTSA No.: M55211		*5. Report Date* March 23, 2005 *6. Performing Organization Code* MGA
7. Author(s) Shefalika Naik, Project Engineer		*8. Performing Organization Report No.* NCAPSIDE-MGA-2005-006
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-12005
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards 400 Seventh Street, SW, Room 5311 Washington, D.C. 20590		*13. Type of Report and Period Covered:* *Final Report* 02/08/05 to 3/23/05 *14. Sponsoring Agency Code* NVS-111

15. Supplementary Notes

16. Abstract

A 55/28 km/h 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 2005 Nissan Frontier to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on February 8, 2005. The impact velocity of the Moving Deformable Barrier (MDB) was 61.8 km/h, and the ambient temperature at the struck side (driver's) of the vehicle was 21°C. The target vehicle's maximum post test static crush was 303 mm at level 2. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	23.2	25.8
Left Lower Rib (LLR) Accel., g	29.0	26.5
Lower Spine (T_{12}) Accel., g	28.3	33.6
Thoracic Trauma Index (TTI)	28.7	30.1
Pelvis (PEV) Accel., g	43.1	38.2
HIC	321	76

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection		*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NPO-230) 400 Seventh Street, S.W. Washington, D.C. 20590	
19. Security Classif. (of this report) Unclassified	*20. Security Classif. (of this page)* Unclassified	*21. No. of Pages* 230	22. Price

Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This side impact test was conducted as part of the FY' 2005 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-12005. The purpose of this test was to evaluate side impact protection in a 2005 Nissan Frontier manufactured by Nissan Motor Company Ltd.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated November 2002 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA5. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT TEST

A model year 2005 Nissan Frontier was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.8 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 2339.7 kg and the test weight of the MDB was 1361.2 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on February 8, 2005.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/HIIIs) can be found in Appendix A. Two 50th percentile adult male SID/HIII's were placed in the driver and left rear passenger designated seating positions according to instructions specified in the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated November 2002. Each SID/HIII was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y and Z axes primary and redundant)
- Upper Neck load cell (Fx, Fy, Fz, Mx, My, Mz)

The test vehicle was instrumented with twenty-five (25) structural accelerometers and the MDB was instrumented with six (6) accelerometers and two (2) contact switches on the bumper to compare left side to right side bumper impact timing. All data channels were recorded with a fully self contained on-board DTS TDAS Pro Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 303 mm at level 2, 1500 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 904 and 271 respectively, were calibrated just prior to this test. The SID/HIII's injury criteria are summarized as follows:

Measurements	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	28.7	30.1
Peak Pelvic G's (PEV)	G's	43.1	38.2
Head Injury Criteria (HIC)	none	320.8	75.7

Test summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIII's, vehicle, and MDB response data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

TEST NOTES

The vehicle rolled onto its right side during impact. See Appendix A for photographs.

The following channels did not collect any data:

Left Front Sill Y
Left Rear Sill Y
Left Lower A-Post Y after 14 ms
Left Lower B-Post Y after 60 ms
Driver Seat Track Y after 40 ms
Vehicle CG X, Y, Z after 38 ms
Left Front Door Centerline Y after 20 ms
Midrear of Left Rear Door Y after 70 ms

SECTION 3

SIDE IMPACT HYBRID III DUMMY (SID/HIII) AND VEHICLE TEST DATA

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	English 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 Pressure	lbf/in^2	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	=(tf -32)/1.8
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact
NHTSA No. M55211
Test Date: 02/08/2005

TEST VEHICLE INFORMATION

Make	Nissan Motor Company
Model	Frontier
Body Style	Truck
NHTSA No.	M55211
VIN	1N6AD07W85C405951
Color	Radiant Silver
Delivery Date	1/19/05
Odometer Reading (mile)	157
Dealer	Al Piemonte Nissan Inc.
Transmission	Automatic
Final Drive	4 Wheel
Number of Cylinders	6
Engine Displacement (L)	4
Engine Placement	Longitudinal
Automatic Door Locks (ADL)	No
Owner's Manual Details Instructions on Disabling ADLs	NA

TEST VEHICLE OPTIONS

Front Airbag	Yes
Side Airbags	No
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	Yes
AM/FM/CD	Yes
Anti-theft System	Yes
Cruise Control	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Company
Date of Manufacture	11/04

GVWR (kg)	2638
GAWR Front (kg)	1495
GAWR Rear (kg)	1481

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	240	240
Recommended Tire Size	P265/70R16, P265/75R16, P235/75R15, P245/75R16, P265/65R17	P265/70R16, P265/75R16, P235/75R15, P245/75R16, P265/65R17
Tire Size on Vehicle	P265/70R16	P265/70R16
Tire Manufacturer	General	General

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				589
Cargo Wt. (RCLW) (kg)				136.1

DATA SHEET NO. 1... (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	569.3	454.5		603.7	580.2	
Right	kg	569.7	455.4		582.4	573.4	
Ratio	%	55.6	44.4		50.7	49.3	
Totals	kg	1139.0	909.9	2048.9	1186.1	1153.6	2339.7

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	2048.9
Weight of 2 P572E ATDs	kg	161.5
Rated Cargo/Luggage Weight (RCLW)	kg	136.1
Calculated Vehicle Target Weight (TVTW)	kg	2346.5

* Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG(aft of front axle)
As Delivered	mm	876	872	893	897	1421
As Tested	mm	867	870	861	860	1578
Fully Loaded	mm	857	870	857	860	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	3200
Total Vehicle Length at Left Side	mm	4688
Total Vehicle Length at Centerline	mm	5250
Total Vehicle Length at Right Side	mm	4688
Total Vehicle Width	mm	1780
Weight of Ballast in Cargo Area	kg	91.6
Amount of Stoddard Solvent in Fuel Tank	liters	74.9

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	3200
Target Impact Point Aft of Front Axle	mm	508
Actual Impact Point Aft of Front Axle	mm	438

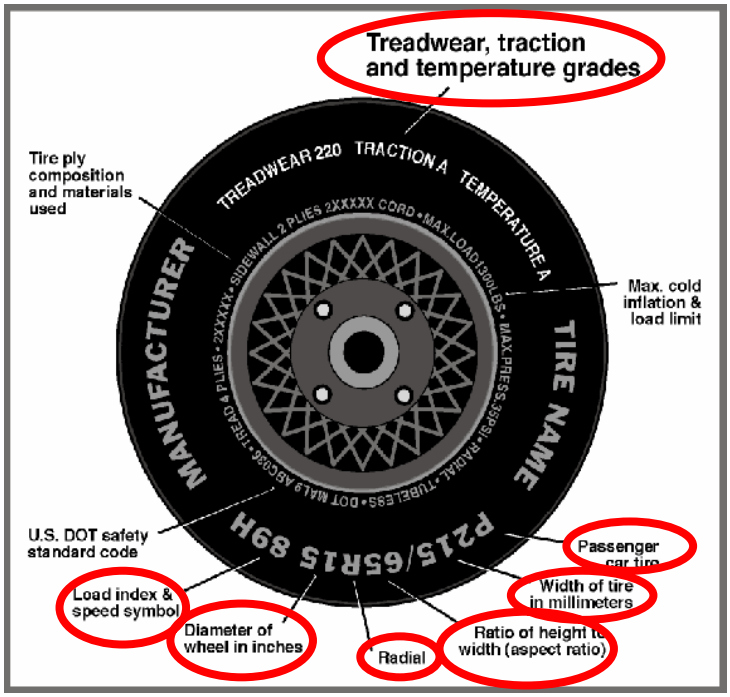
DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No.: M55211
Test Date: 02/08/2005

Vehicle Year	2005	Vehicle Make	Nissan
VIN	1N6AD07W85C405951	Vehicle Model	Frontier



	Front	Rear
Tire Manufacturer	General	General
Tire Name	Grabber AW	Grabber AW
Tire Type	All Season	All Season
Tire Width (mm)	265	265
Ratio of Height to Width (aspect ratio)	70	70
Radial	R	R
Wheel Diameter	16	16
Load Index & Speed Symbol	111S	111S
Treadwear	420	420
Traction Grade	B	B
Temperature Grade	B	B

DATA SHEET NO. 3

TEST VEHICLE INFORMATION

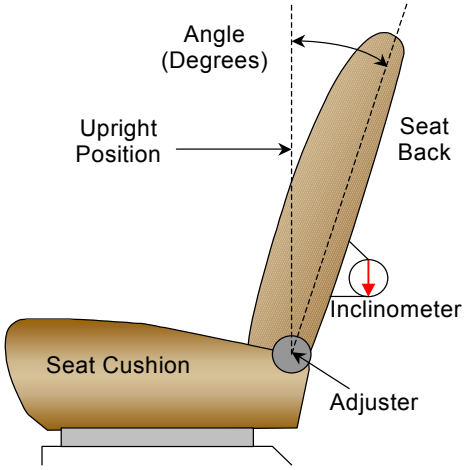
Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle.

Seat back angle at forward-most locking position or forward stop (measured from upright position) is 9°, and seat back angle at test position (measured) from upright position) is 21°



FRONT SEAT ASSEMBLY

Driver seat back angle: 21° on headrest post.
Passenger seat back angle: fixed

SEAT FORE/AFT POSITIONS

Position of the driver seat and the passenger seat:

Driver seat fore/aft total travel:	21 notches
Driver seat fore/aft position:	10 of 21 notches (with the forward-
The rear seat has no adjustable mechanism.	most detent defined as 0)

DATA SHEET NO. 3... (continued)

TEST VEHICLE INFORMATION

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

FUEL TANK CAPACITY DATA

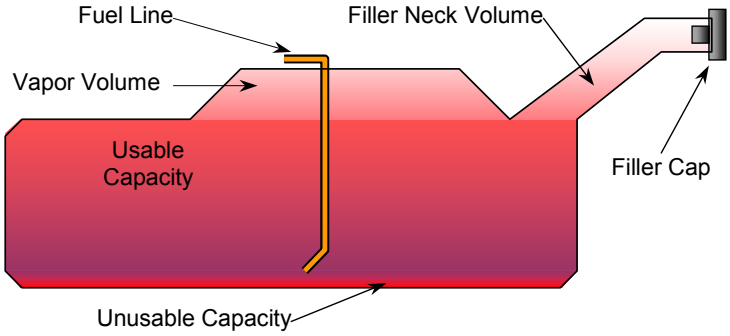
The "Usable Capacity" of the standard equipment fuel tank is: 79.9 liters

The "Usable Capacity" of any optional equipment fuel tank is: N/A liters

The "Usable Capacity" used for certification to FMVSS 301 requirements: 79.9 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 74.9 liters

The fuel door is located on the driver's side of the vehicle.



VEHICLE FUEL TANK ASSEMBLY

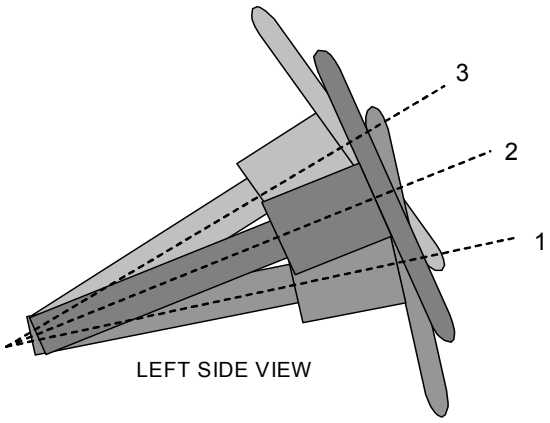
STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when it is moved through its full range of driving positions.

Lowermost, position 1: 15.3°

Geometric center, position 2: 24.3°

Uppermost. Position 3: 33.1°



STEERING COLUMN ASSEMBLY

DATA SHEET NO. 4

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	569.3	454.5		603.7	580.2	
Right	kg	569.7	455.4		582.4	573.4	
Weight Ratio	%	55.6	44.4		50.7	49.3	
Totals	kg	1139.0	909.9	2048.9	1186.1	1153.6	2339.7

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	289	448
Level 2	Occupant H-Point	mm	303	712
Level 3	Mid Door	mm	285	796
Level 4	Window Sill	mm	148	1103
Level 5	Window Top	mm	90	1674
N/A	Maximum Penetration	mm	303	712

INSTRUMENTATION

Driver SID/HIII Instrumentation	24
Passenger SID/HIII Instrumentation	24
Vehicle Structure Accelerometers	25
MDB Accelerometers	6
Total	79

DATA SHEET NO. 5

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2587
C.G. Location aft of Front Axle	1103

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	449.4	239.9	
Right	kg	331.3	340.6	
Ratio	%	57.4	42.6	
Totals	kg	780.7	580.5	1361.2

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.8
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.9
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush
Level	Description	Height	Distance	Direction	
1	Center of Bumper (mm)	432	Left	800	178
2	Top of Bumper (mm)	533	Left	800	233
3	Mid Level (mm)	686	Left	800	137
4	Top of Stack (mm)	813	Left	800	145

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	6
Contact Switches	2
High Speed Cameras	2

DATA SHEET NO. 6

POST TEST OBSERVATIONS

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 904	SID/HIII / 271
Head Contact	Side Header, Headrest	Side Header, Headrest
Upper Torso Contact	Door Panel	Door Panel
Lower Torso Contact	Door Panel	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were unlocked	Doors were unlocked
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Window Damage	None
Other Notable Effects	The vehicle rolled onto its right side during impact.

AIRBAG DEPLOYMENT

	Driver	Front Passenger	Rear Passenger
Front	No	No	
Side (Torso Bag)			
Curtain			

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	70 mm left
Vertical Offset	mm	+/-20	4 mm up

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 7

SID/HIII INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	23.2	62	-1.3	171	25.8	55	-1.2	161
Upper Rib (LUR) (R)	Y	G's	22.9	63	-1.3	160	25.2	48	-1.7	161
Lower Rib (LLR)	Y	G's	29.0	54	-1.9	90	26.5	55	-3.2	220
Lower Rib (LLR) (R)	Y	G's	27.9	54	-1.9	90	26.9	55	-2.3	220
Lower Spine (T_{12})	Y	G's	28.3	48	-13.5	71	33.6	51	-2.8	251
Lower Spine (T_{12}) (R)	Y	G's	28.2	48	-14.0	71	32.8	51	-2.8	145
Pelvis (PEV)	Y	G's	43.1	41	-10.4	75	38.2	47	-3.8	128
Pelvis (PEV) (R)	Y	G's	43.4	43	-9.0	76	38.1	47	-3.6	129

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

Location	Driver				Passenger			
	LLR	T_{12}	TTI(g)	PEV(g)	LLR	T_{12}	TTI(g)	PEV(g)
Rib, Spine, and Pelvis	29.0	28.3	28.7	43.1	26.5	33.6	30.1	38.2
Rib, Spine, and Pelvis (R)	27.9	28.2	28.1	43.4	26.9	32.8	29.9	38.1

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	3.0	36	-16.8	63	7.3	245	-12.4	52
Head CG	Y	G's	105.7	63	-7.3	47	49.4	52	-2.2	219
Head CG	Z	G's	19.3	62	-18.0	68	12.9	51	-10.8	68
Head CG Resultant		G's	108.7	63			52.0	52		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T^1	T^2	Avg G's	HIC	T^1	T^2	Avg G's
Head CG	320.8	57.2	61.8	86.6	75.7	46.8	53.5	41.8

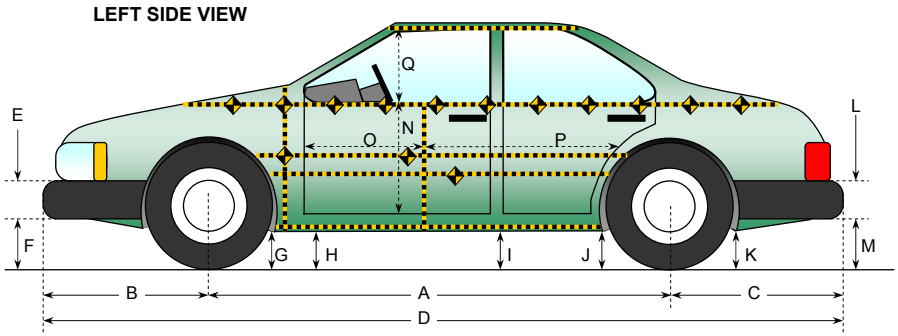
Positive Acceleration Polarities: Longitudinal (X) = Forward
(Conforms to SAE J211) Lateral (Y) = Right
Vertical (Z) = Down

DATA SHEET NO. 8

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005



All Measurements in mm

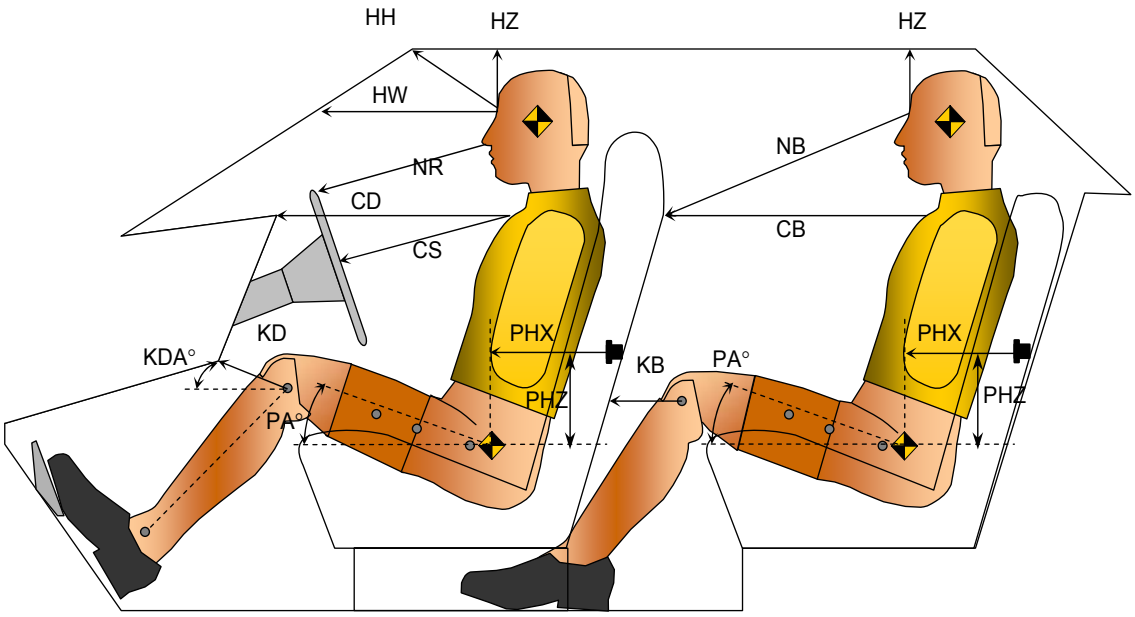
Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3200	3184	16
B	Front Axle to FSOV	825	804	21
C	Rear Axle to RSOV	1225	1188	37
D	Total Length at Centerline	5250	5176	74
E	Front Bumper Thickness	290	290	0
F	Front Bumper Bottom to Ground	406	400	6
G	Sill Height at Front Wheel Well	317	308	9
H	Sill Height at Front Door Leading Edge	329	312	17
I	Sill Height at "B" Pillar	329	344	-15
J1	Sill Height at Rear Wheel Well	339	359	-20
J2	Pinch Weld Height at Rear Wheel Well	336	349	-13
K	Sill Height Aft of Rear Wheel Well	386	425	-39
L	Rear Bumper Thickness	200	200	0
M	Rear Bumper Bottom to Ground	434	454	-20
N	Sill Height to Window Bottom Sill	785	660	125
O	Front Door Leading Edge to Impact CL	728	717	11
P	Rear Door Trailing Edge to Impact CL	1254	1195	59
Q	Front Window Opening	503	505	-2
R	Right Side Length	4688	4690	-2
S	Left Side Length	4688	4585	103
T	Vehicle Width at "B" Post	1780	1610	170

DATA SHEET NO. 9

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005



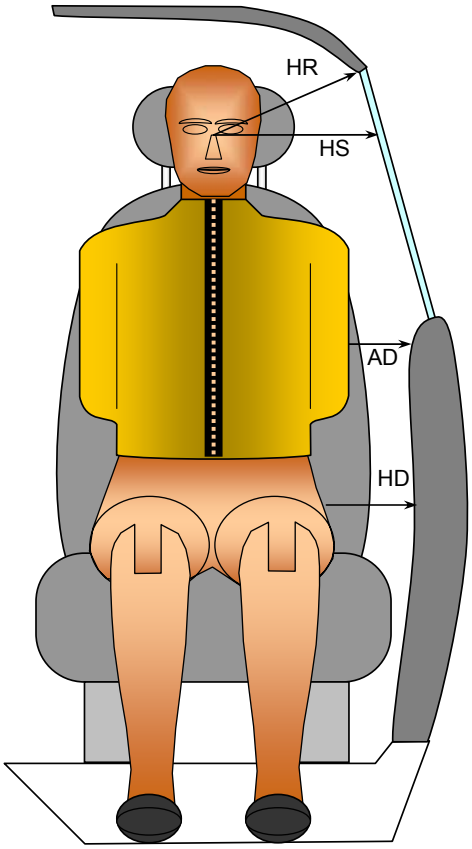
Driver Code	Pass. Code	Measurement Description	Driver S/N 904		Passenger S/N 271	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	412			
HW		Head to Windshield	571			
HZ	HZ	Head to Roof	156		175	
NR	NB	Nose to Rim/Nose to Seatback	452		474	
CD	CB	Chest to Dash or Seatback	565		448	
CS		Chest to Steering Wheel	332			
KDL	KBL	Left Knee to Dash or Seatback	141	10.8	210	38.0
KDR	KBR	Right Knee to Dash or Seatback	128	15.9	222	32.4
PA	PA	Pelvic Angle		23.0		23.8
PHX	PHX	H-Point to Striker (X-Axis)	234		155	
PHZ	PHZ	H-Point to Striker (Z-Axis)	58		44	

DATA SHEET NO. 10

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005



FRONT VIEW OF DUMMY

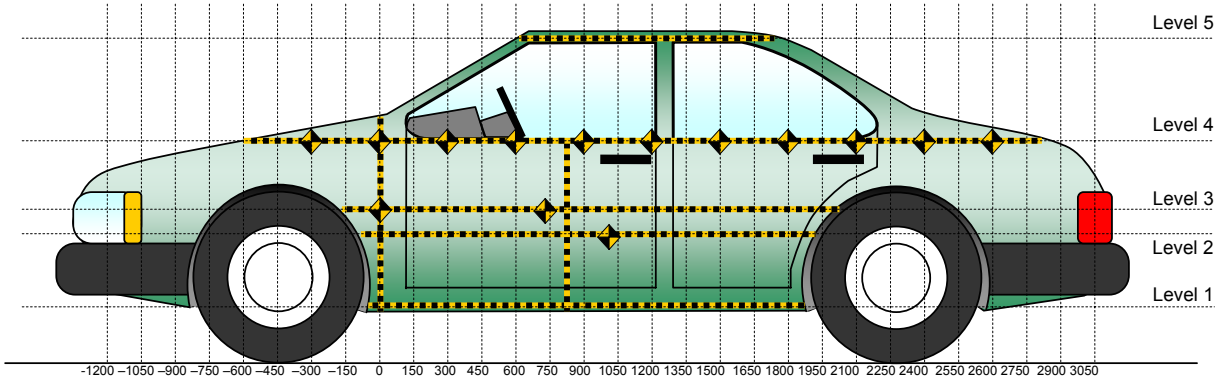
Code	Measurement Description	Units	Driver S/N 904	Passenger S/N 271
HR	Head to Side Header	mm	175	167
HS	Head to Side Window	mm	310	277
AD	Arm to Door	mm	99	65
HD	H-Point to Door	mm	172	121

DATA SHEET NO. 11

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 800 mm.
All measurements below in mm.

Level	Measurement Description	Height Above Ground
5	Window	1674
4	Window Sill	1103
3	Mid Door	796
2	Occupant H-Point	712
1	Sill Top	448

DATA SHEET NO. 12

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900				313					308					-5	
-750				292					298					6	
-600				277					293					16	
-450				268					299					31	
-300				260					305					45	
-150			180	256				290	311				110	55	
0	223	207	224	253		364	340	349	320		141	133	125	67	
150	276	225	223	250		429	402	410	324		153	177	187	74	
300	274	222	220	246		444	465	461	327		170	243	241	81	
450	272	220	218	246		455	493	491	338		183	273	273	92	
600	271	218	216	243		462	504	490	355		191	286	274	112	
750	270	217	215	242	485	467	509	489	380	551	197	292	274	138	66
900	269	215	214	242	480	473	507	499	384	549	204	292	285	142	69
1050	270	215	213	241	480	478	495	487	389	553	208	280	274	148	73
1200	268	214	212	240	480	486	479	455	387	554	218	265	243	147	74
1350	266	214	212	240	477	508	492	487	382	555	242	278	275	142	78
1500	267	215	212	241	476	532	518	481	353	559	265	303	269	112	83
1650	267	216	213	242	476	556	496	446	331	559	289	280	233	89	83
1800	267	216	214	243	476	481	441	395	334	562	214	225	181	91	86
1950	270	217	215	245	477	397	365	347	300	566	127	148	132	55	89
2100		217	215	247	478		321	317	295	568		104	102	48	90
2250		212	223	264			247	260	292			35	37	28	
2400			182	263				212	288				30	25	
2550				260					286					26	
2700				261					284					23	
2850				262					282					20	
3000				263					280					17	

Reference plane is parallel to test vehicle longitudinal centerline.

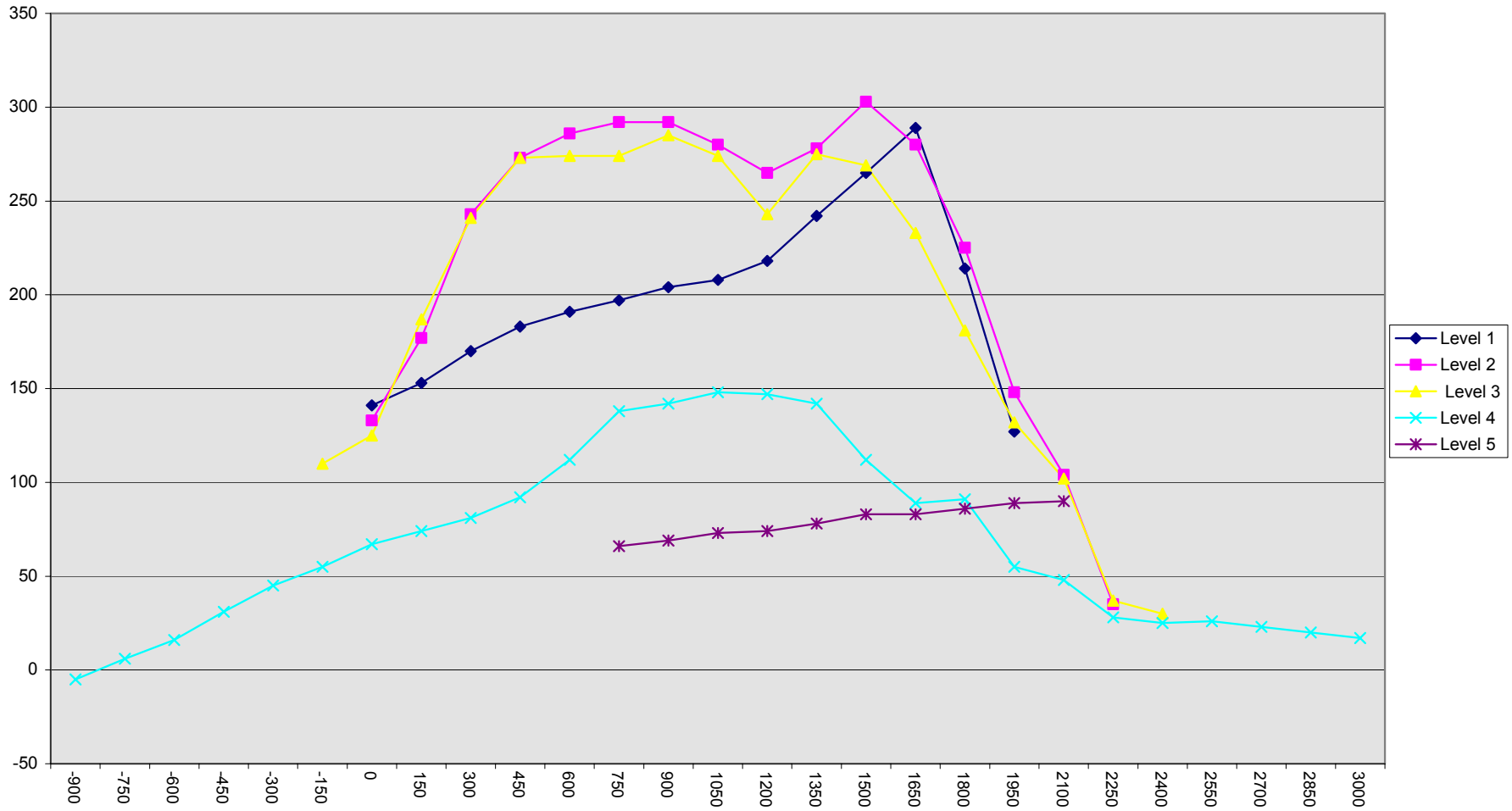
Given dimensions = Reference plane to car body

DATA SHEET NO. 12...(continued)

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

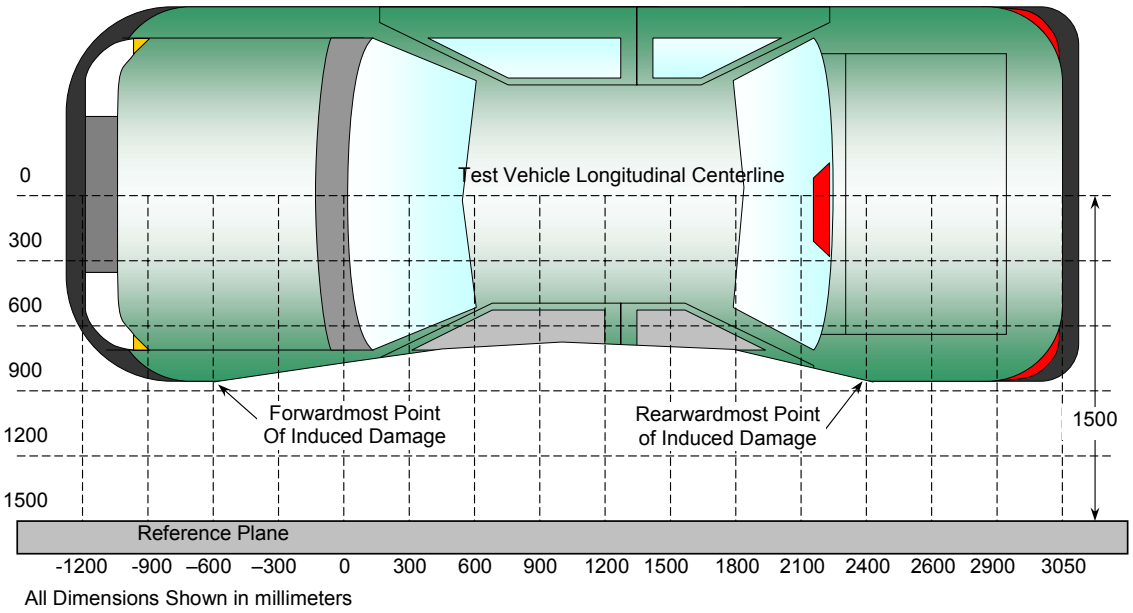
NHTSA No. M55211
Test Date: 02/08/2005



DATA SHEET NO. 13

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	3600 mm	4	272	281	9
2	2713 mm	4	261	287	26
3	1705 mm	1	267	536	269
4	845 mm	2	216	508	292
5	-37 mm	3	214	331	117
6	-900 mm	4	313	308	-5

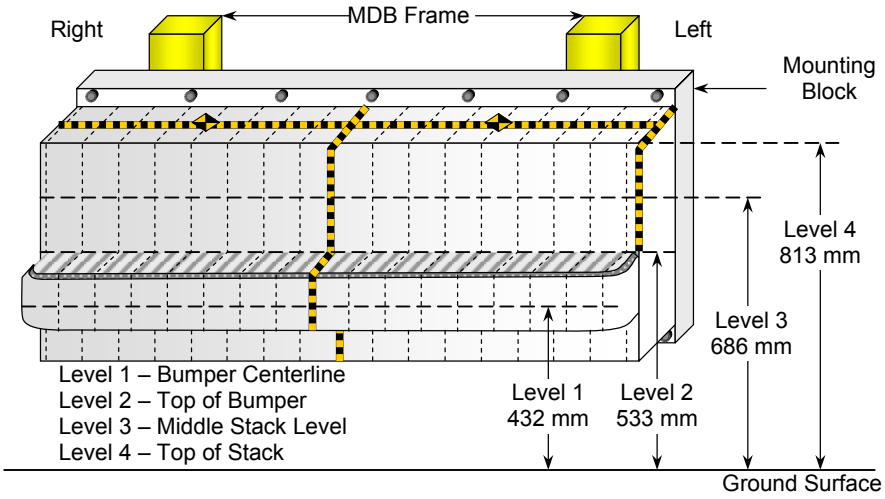
Reference plane is parallel to test vehicle longitudinal centerline.
Given dimensions = Reference plane to car body.

DATA SHEET NO. 14

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C_L	Distance Left of Center							
	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
1	121	124	129	130	135	138	141	143	142	149	152	156	159	162	166	175	178
2	69	76	82	86	101	102	101	104	101	108	111	114	117	122	124	124	233
3	76	42	30	37	74	56	47	21	16	15	15	17	21	32	49	90	137
4	145	110	77	46	89	89	78	39	35	39	41	42	38	43	67	96	145

All Dimensions in mm

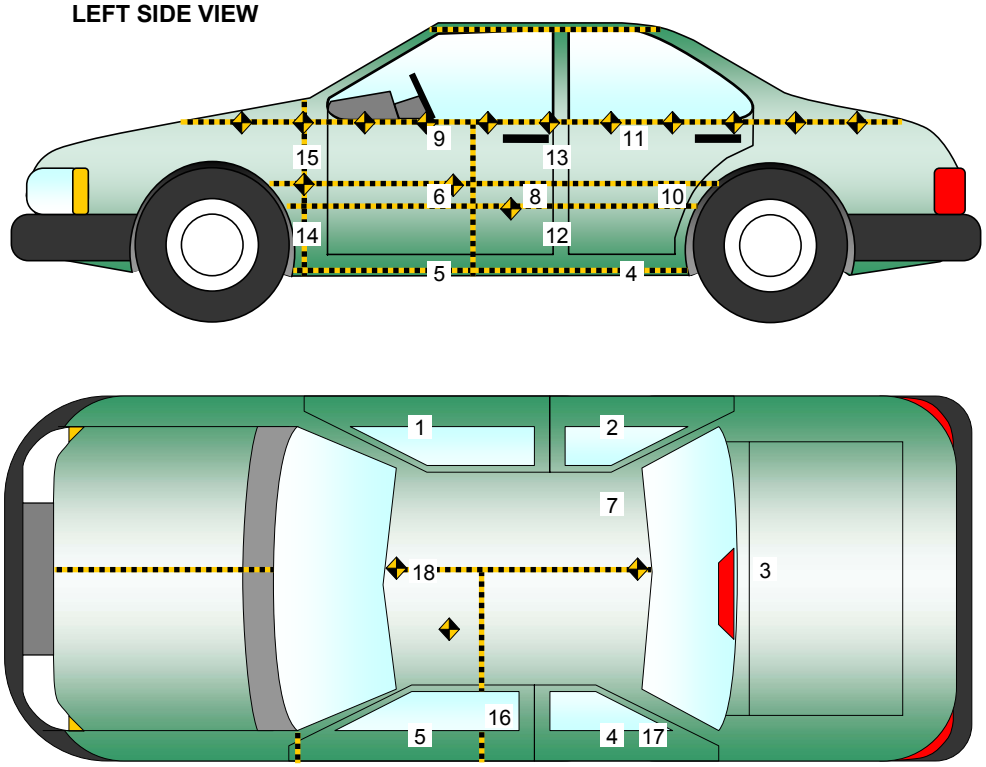
DATA SHEET NO. 15

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005

LEFT SIDE VIEW



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

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

DATA SHEET NO. 15...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	Right Sill at Front Seat	3240	748	380	X	10.4	16	-11.1	9
					Y	41.5	10	-6.0	32
					Z	7.4	39	-17.5	19
					RES	43.0	10		
2	Right Sill at Rear Seat	2735	748	395	X	11.9	16	-9.3	9
					Y	76.5	10	-5.6	69
					Z	6.7	39	-18.5	14
					RES	77.2	10		
3	Rear Floorpan Above Axle	1214	0	785	X	3.8	26	-5.8	72
					Y	19.1	22	-2.8	131
					Z	9.9	18	-10.0	39
					RES	20.2	22		
4	Left Sill at Rear Door	2335	-748	390	Y	(1)	(1)	(1)	(1)
5	Left Sill at Front Door	3160	-748	380	Y	(1)	(1)	(1)	(1)
6	Left Front Door C/L	3263	-790	560	Y	(2)	(2)	(2)	(2)
7	Rear Occupant Compartment	2416	365	630	Y	70.8	13	-15.8	29
8	Left Front Door Mid-Rear	3005	-772	560	Y	113.7	7	-99.2	13
9	Left Front Door Upper C/L	3262	-805	790	Y	114.0	10	-77.9	30
10	Left Rear Door Mid-Rear	2362	-785	682	Y	(3)	(3)	(3)	(3)
11	Left Rear Door Upper C/L	2146	-770	670	Y	164.2	11	-170.4	19
12	Left Lower B-Post	2692	-725	770	Y	(4)	(4)	(4)	(4)
13	Left Middle B-Post	2690	-720	1160	Y	87.3	12	-16.0	54
14	Left Lower A-Post	3785	-840	1085	Y	(5)	(5)	(5)	(5)
15	Left Middle A-Post	3828	-780	630	Y	63.9	11	-26.7	15
16	Front Seat Track				Y	(6)	(6)	(6)	(6)
17	Rear Seat Track or Structure				Y				
18	Vehicle CG	2910	0	340	X	(7)	(7)	(7)	(7)
					Y	(7)	(7)	(7)	(7)
					Z	(7)	(7)	(7)	(7)
					RES	(7)	(7)		

See reference points and notes on the following page.

DATA SHEET NO. 15...(continued)
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

(1) No Valid Data collected
(2) No Valid Data collected after 20ms
(3) No Valid Data collected after 70ms
(4) No Valid Data collected after 60ms
(5) No Valid Data collected after 14ms
(6) No Valid Data collected after 40ms
(7) No Valid Data collected after 38ms

Reference Points X - Test Vehicle Rear Bumper (+ forward)
Y - Test Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

DATA SHEET NO. 16

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

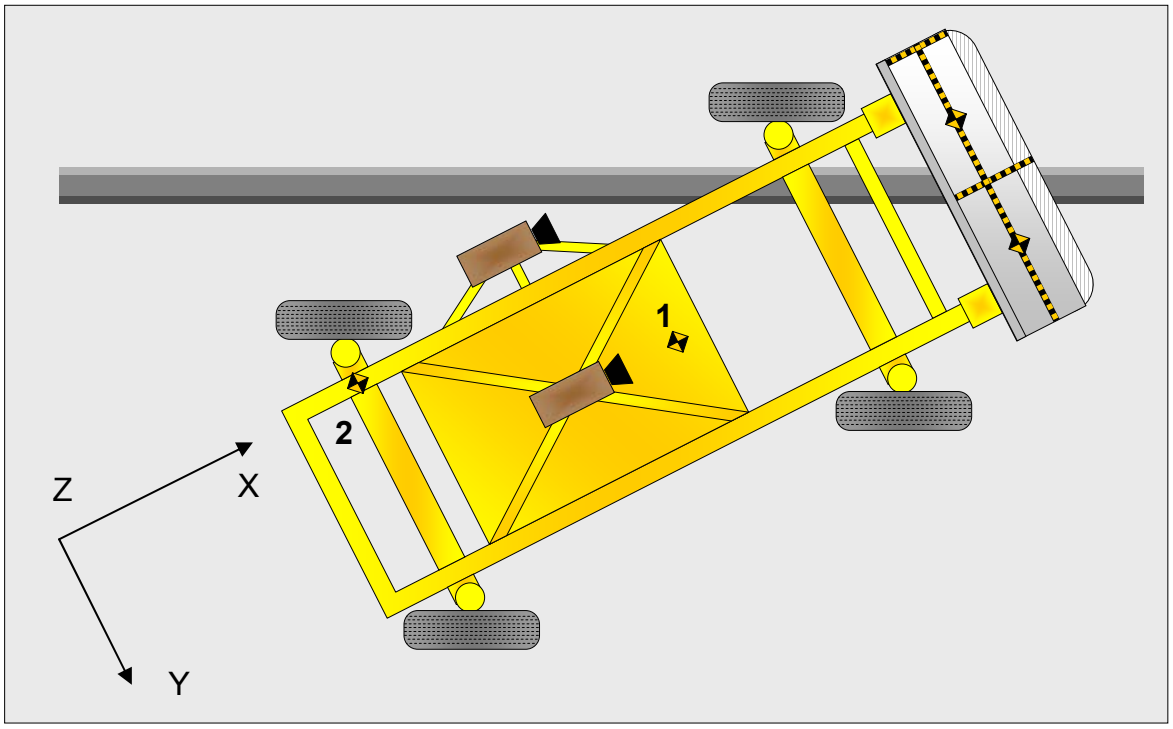
Test Vehicle: 2005 Nissan Frontier
Test Program: NCAP Side Impact

NHTSA No. M55211
Test Date: 02/08/2005

MDB ACCELEROMETER PEAK DATA AND LOCATIONS

Loc. No.	Accelerometer Location	Measurement (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1092	0	-483	X	1.3	224	-19.8	32
					Y	0.4	300	-6.1	39
					Z	24.9	41	-22.9	46
					RES	31.3	40		
2	MDB Rear	-2591	-625	-622	X	2.3	139	-24.3	37
					Y	4.0	51	-3.0	81
					Z	5.2	34	-2.7	129
					RES	24.7	37		

Reference Points X - MDB Front Axle (+ forward)
Y - MDB Centerline (+ to right)
Z - Ground Plane (+ down)



DATA SHEET NO. 17

VEHICLE STRUCTURAL MEASUREMENTS

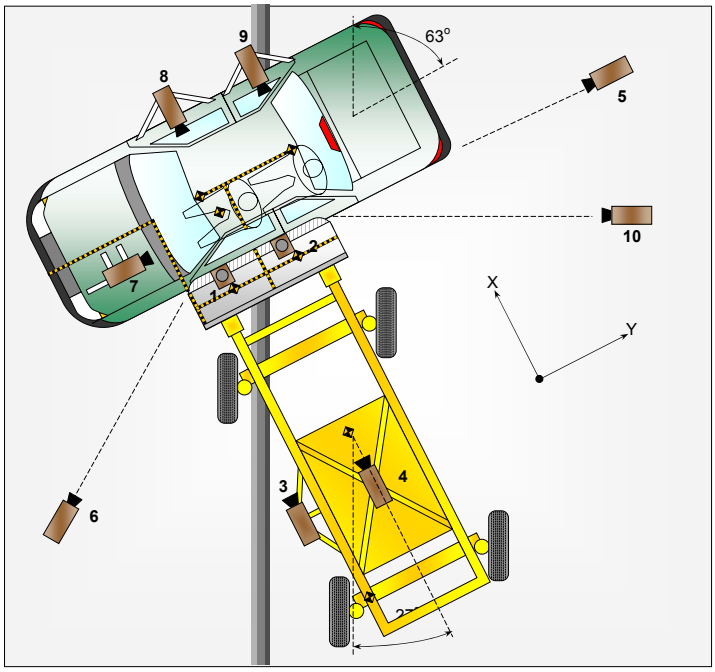
Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

	Elements	Pre-Test (mm)
1	Total Length	5250
2	Total Width	1780
3	Bumper Top Height	700
4	Bumper Bottom Height	334
5	Longitudinal Member Top Height	556
6	Distance between Longitudinal Members	856
7	Longitudinal Member Width	65
8	Engine Top Height	1140
9	Engine Bottom Height	250
10	Engine and gearbox width	565
11	Front bumper-engine distance	570
12	Front shock absorber fixing height	735
13	Bonnet leading edge height	1025
14	Front shock absorber fixing width	896
15	Front bumper – front axle distance	790
16	Front axle – a pillar distance	720
17	A-pillar – B-pillar distance	1040
18	B-Pillar – rear axle distance	1444
19	B-pillar – C-pillar distance	750
20	Roof sill bottom height	1705
21	Roof sill top height	1750
22	Floor sill bottom height	365
23	Floor sill top height	465

DATA SHEET NO. 18

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Close-up	0	-1050	5460	50	1000
2	Overhead Overall	0	970	5470	14	1000
3	MDB Onboard, Impact Point Close-up				25	1000
4	MDB Onboard, Centerline of Impact				13	1000
5	Right Side, Ground Level, Overall	1480	8130	1455	19	1000
6	Left Side, Ground Level, Overall	395	-5432	1395	19	1000
7	Vehicle Onboard Front SID/HIII, Front				13	1000
8	Vehicle Onboard Front SID/HIII, Side				8	1000
9	Vehicle Onboard Rear SID/HIII, Side				8	1000
10	Real Time Coverage				13	24

Reference Points X - Impact Line
Y - MDB Left Edge Impact Point
Z - Ground Plane

DATA SHEET NO. 19

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

Test Time: 12:04 pm Temperature at Time of Impact: 21°C

STODDARD SOLVENT SPILLAGE MEASUREMENTS

A. From impact until vehicle motion ceases: 0 oz.
(Maximum Allowable = 1 ounce)

B. For the 5 minute period after motion ceases: 0 oz.
(Maximum allowable = 5 ounces)

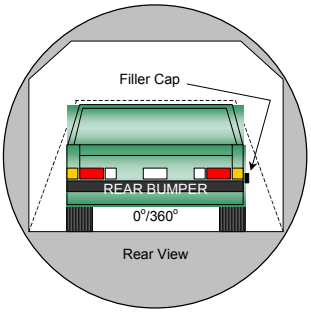
C. For the following 25 minutes: 0 oz.
(Maximum allowable = 1 oz./minute)

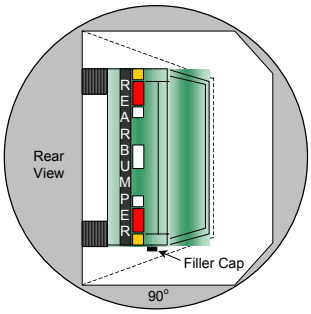
D. Spillage Details: None

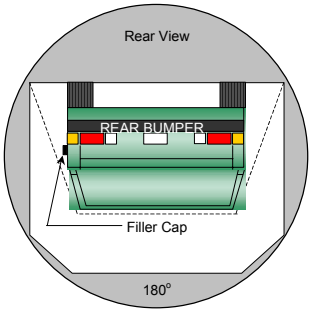
DATA SHEET NO. 20

FMVSS 301 STATIC ROLLOVER DATA SHEET

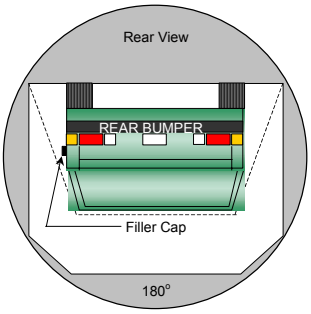
Test Vehicle: 2005 Nissan Frontier NHTSA No. M55211
Test Program: NCAP Side Impact Test Date: 02/08/2005

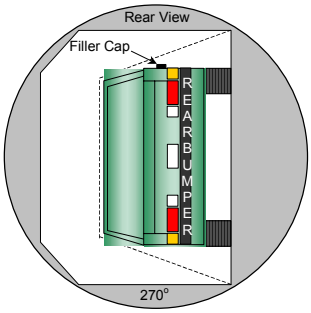


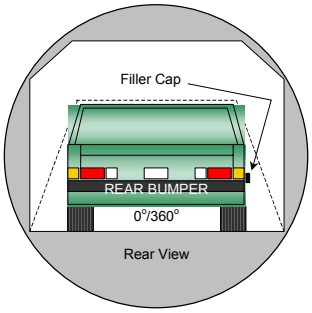




0^O to 90^O 90^O to 180^O







180^O to 270^O 270^O to 360^O

1. The specified fixture rollover rate for each 90^o of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent Spillage locations: None

Rollover Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	175	300	0
90° to 180°	152	300	0
180° to 270°	134	300	0
270° to 360°	159	300	0

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Left Rear of Vehicle As Received

Right Front of Vehicle As Received

Vehicle Certification Label

Tire Placard

Pre-Test Front View of Test Vehicle

Post-Test Front View of Test Vehicle

Pre-Test Right Front ¾ View of Test Vehicle

Post-Test Right Front ¾ View of Test Vehicle

Pre-Test Left Front ¾ View of Test Vehicle

Post-Test Left Front ¾ View of Test Vehicle

Pre-Test Left Side View of Test Vehicle

Post-Test Left Side View of Test Vehicle

Pre-Test Left Rear ¾ View of Test Vehicle

Post-Test Left Rear ¾ View of Test Vehicle

Pre-Test Right Rear ¾ View of Test Vehicle

Post-Test Right Rear ¾ View of Test Vehicle

Pre-Test Rear View of Test Vehicle

Post-Test Rear View of Test Vehicle

Pre-Test MDB (Left Side) Positioned Against Vehicle

Pre-Test MDB (Right Side) Positioned Against Vehicle

Pre-Test MDB Positioned Against Vehicle Overhead View

Post-Test MDB (Front) and Vehicle

Post-Test MDB (Rear) and Vehicle

Pre-Test Impact Point on Vehicle

Post-Test Impact Point on Vehicle

Pre-Test Fuel Filler Cap View

Post-Test Fuel Filler Cap View

Pre-Test Three-Quarter View of Left Side Doors of Test Vehicle

Post-Test Three-Quarter View of Left Side Doors of Test Vehicle

Pre-Test Three-Quarter View of Right Side Doors of Test Vehicle

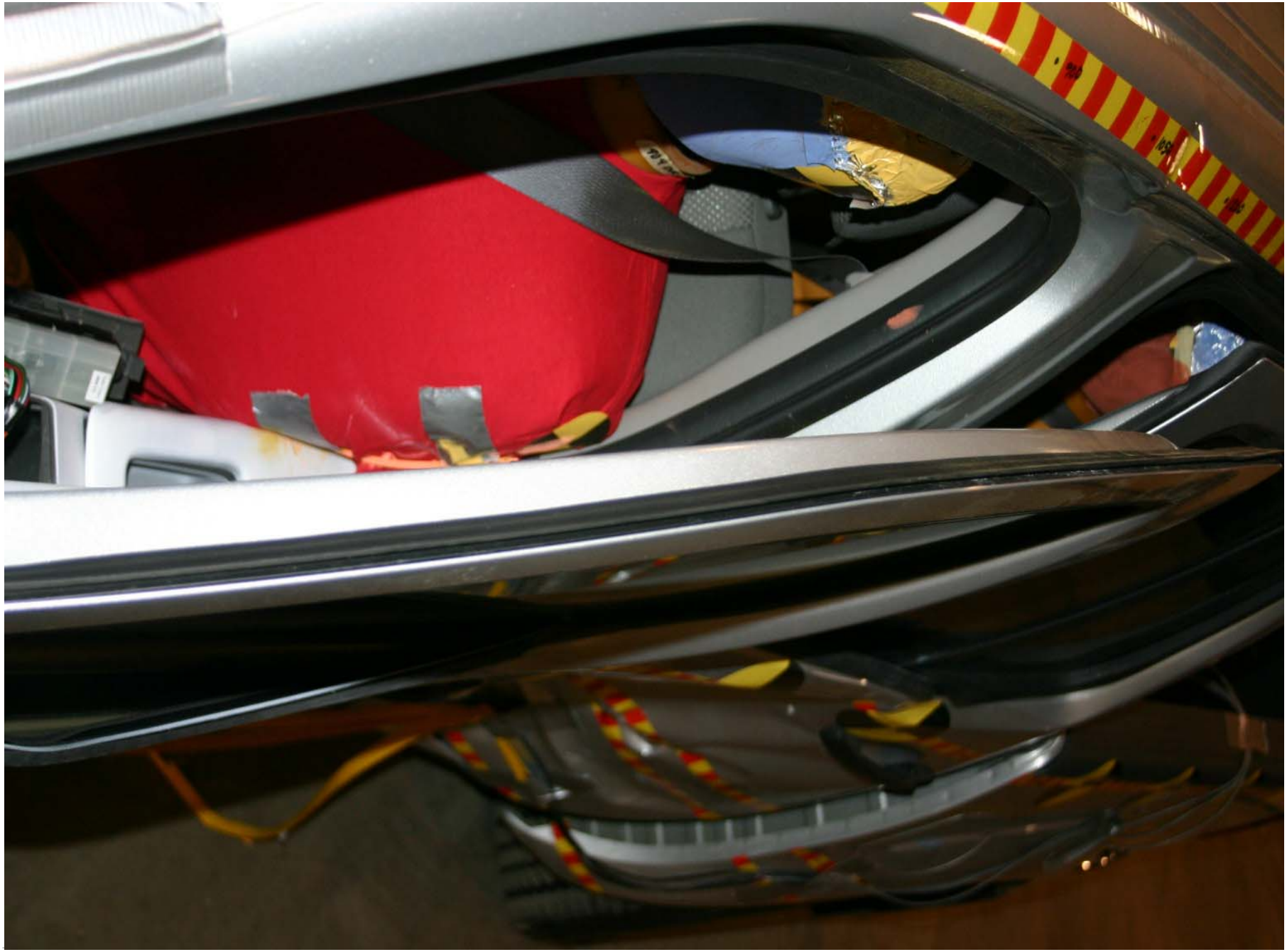
Post-Test Three-Quarter View of Right Side Doors of Test Vehicle

Pre-Test Driver Dummy Left Side View (Door Open)

Pre-Test Driver Dummy Left Side View

Post-Test Driver Dummy Left Side View

Pre-Test Driver Dummy Shoulder and Door Top View



Post-Test Driver Dummy Shoulder and Door Top View

Pre-Test Driver Dummy Right Side View

Post-Test Driver Dummy Right Side View

Post-Test Driver Dummy Head Contact (side header & headrest)

Post-Test Driver Dummy Mid Contact

Post-Test Driver Dummy Mid Contact

Pre-Test Passenger Dummy Left Side View (Door Open)

Pre-Test Passenger Dummy Left Side View

Post-Test Passenger Dummy Left Side View

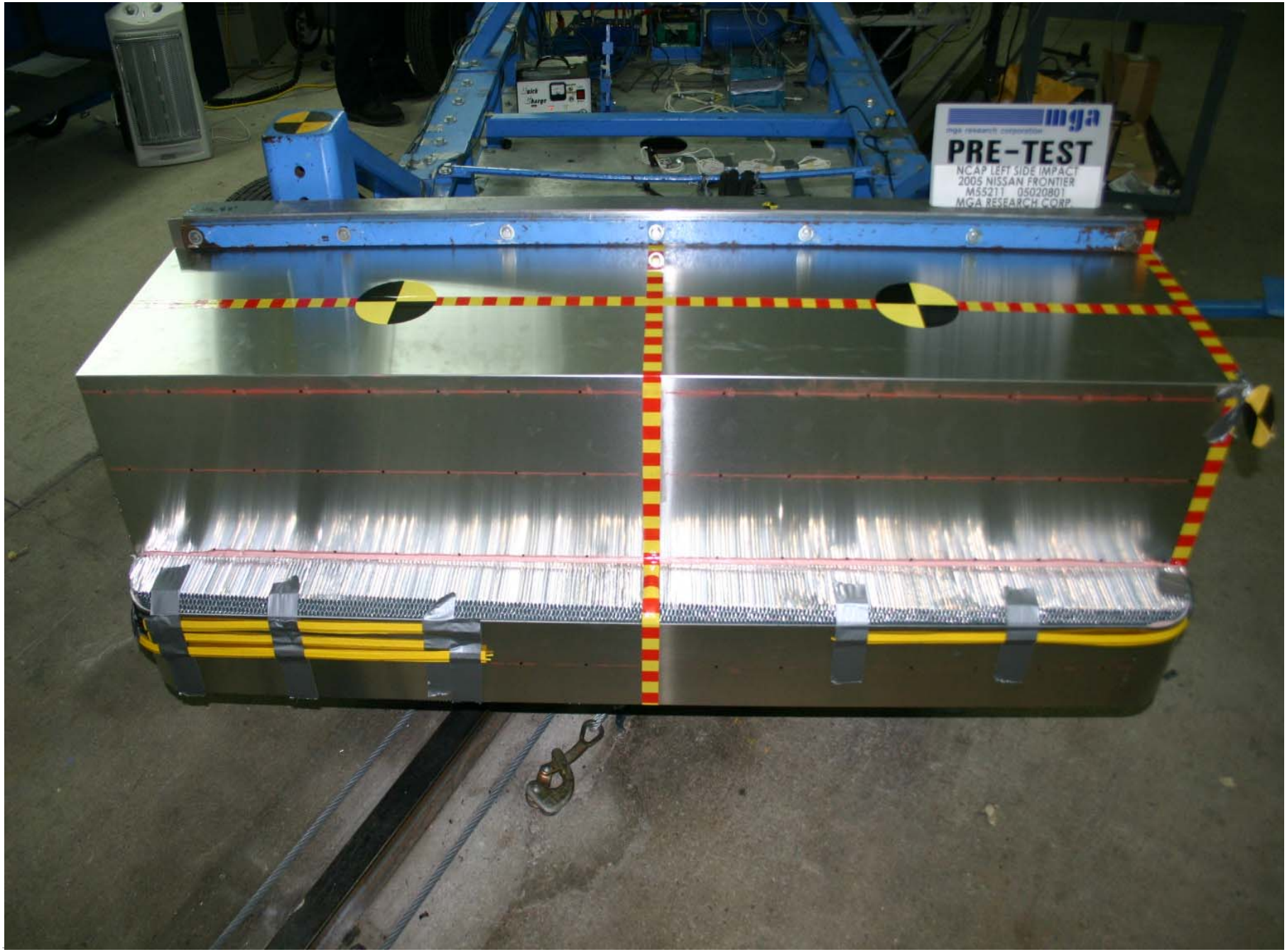
Pre-Test Passenger Dummy Shoulder and Door Top View

Pre-Test Passenger Dummy Right Side View

Post-Test Passenger Dummy Right Side View

Post-Test Passenger Dummy Head Contact (side header)

Post-Test Passenger Dummy Mid Contact



Pre-Test MDB Front View

Post-Test MDB Front View

Pre-Test MDB Top View

Post-Test MDB Top View

Pre-Test MDB Right Side View

Post-Test MDB Right Side View

Pre-Test MDB Left Side View

Post-Test MDB Left Side View

Rollover 180 Degrees

Rollover 270 Degrees

Rollover 360 Degrees

Vehicle Impact

Vehicle After Impact Rear ¾ Underbody View

Vehicle After Impact Front ¾ Roof View

Vehicle After Impact Rear ¾ Roof View

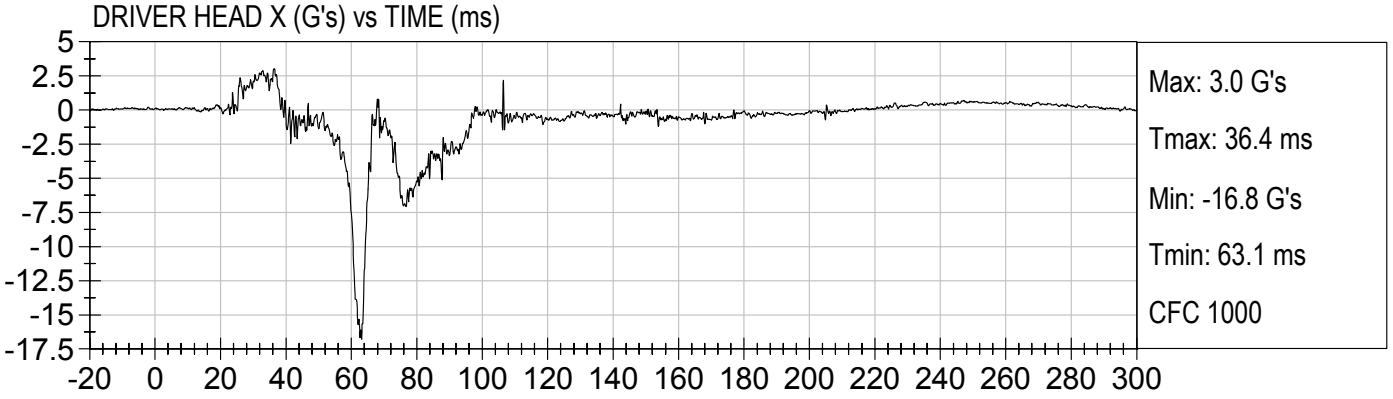
APPENDIX B

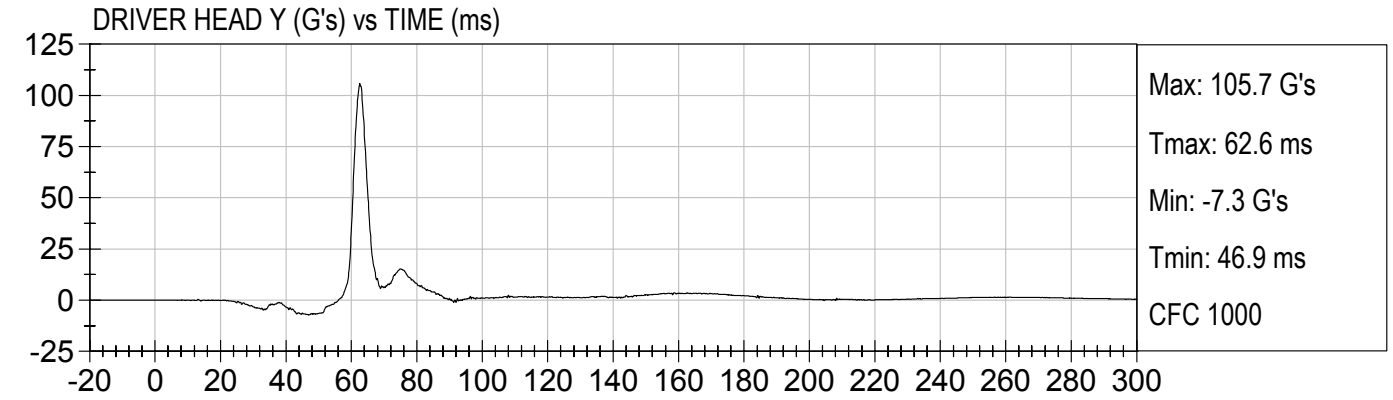
SID/HIII, VEHICLE, AND MDB RESPONSE DATA

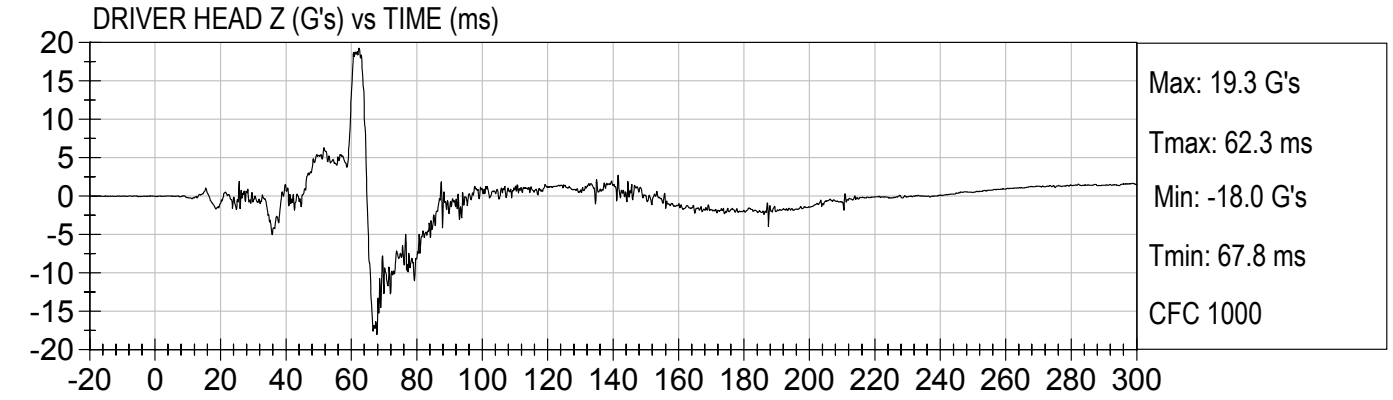
TABLE OF DATA PLOTS

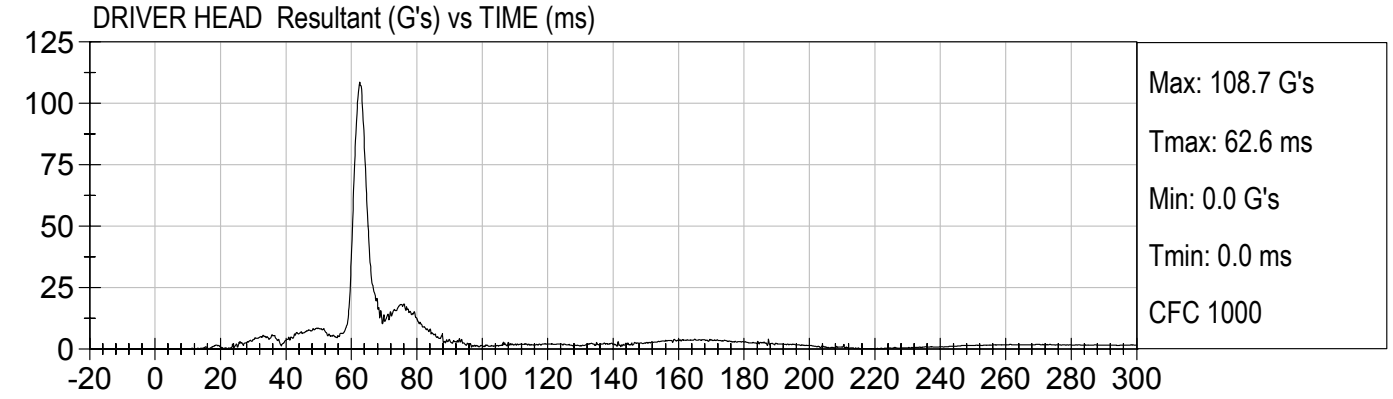
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

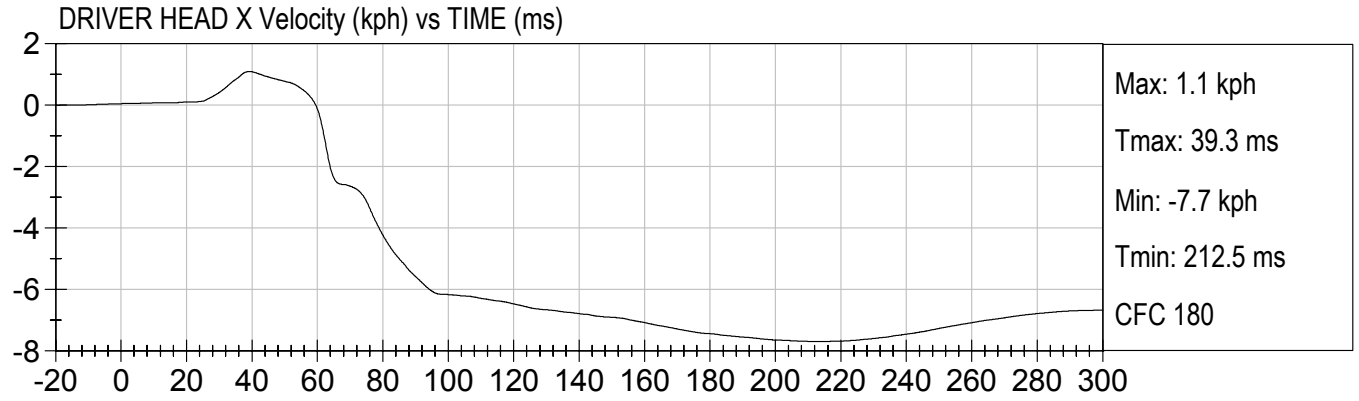
Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

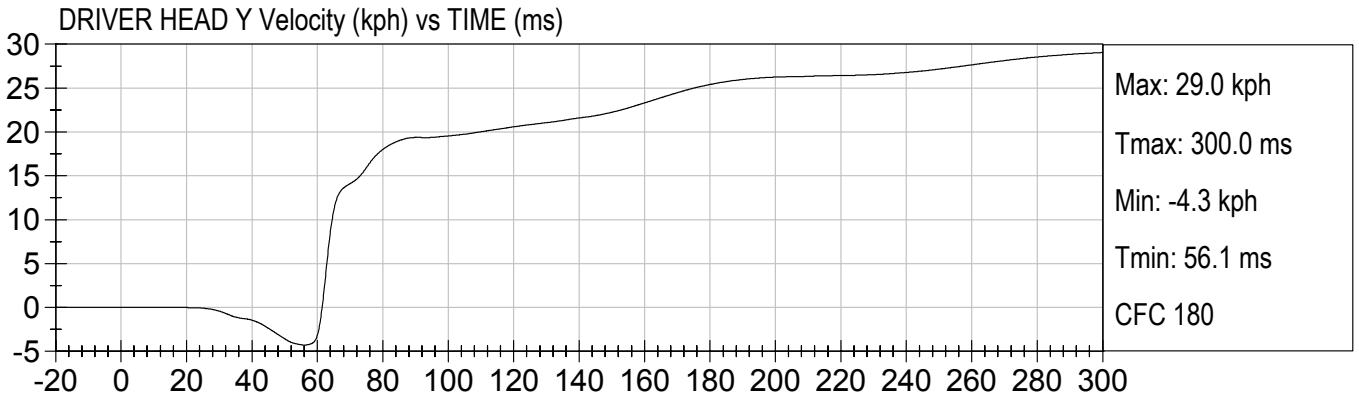


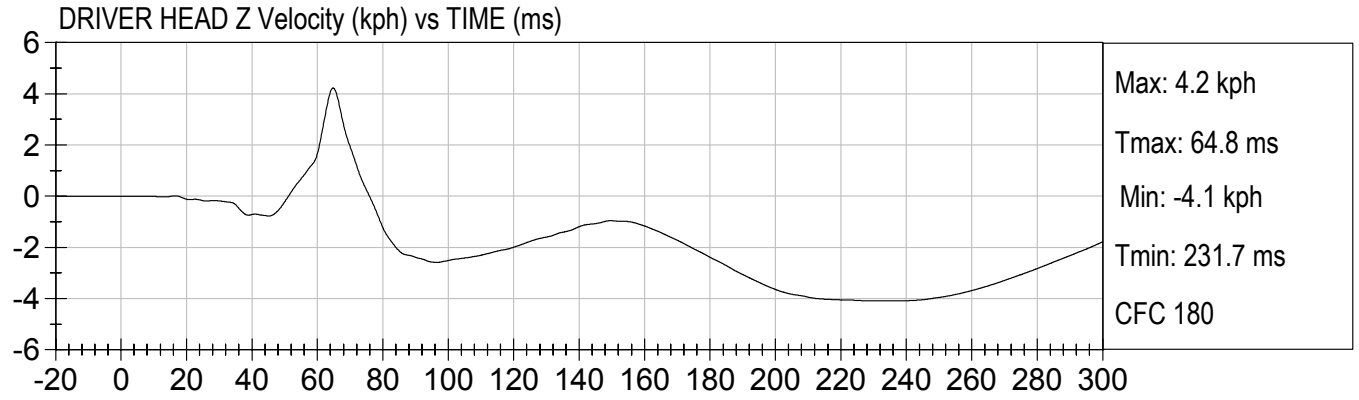







DRIVER HEAD X Velocity (kph) vs TIME (ms)
2
0
-2
-4
-6
-8
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 1.1 kph
Tmax: 39.3 ms
Min: -7.7 kph
Tmin: 212.5 ms
CFC 180

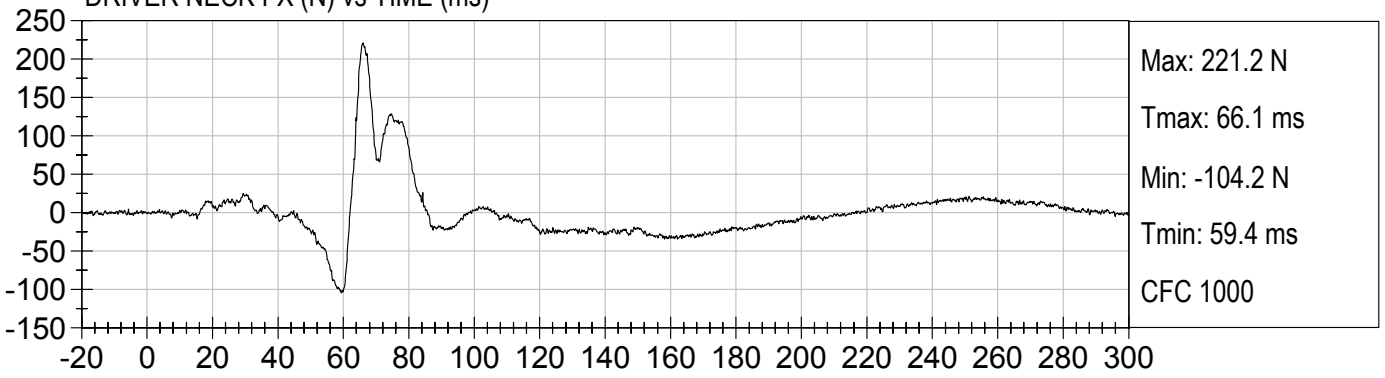

DRIVER HEAD Y Velocity (kph) vs TIME (ms)
30
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 29.0 kph
Tmax: 300.0 ms
Min: -4.3 kph
Tmin: 56.1 ms
CFC 180


DRIVER HEAD Z Velocity (kph) vs TIME (ms)
6
4
2
0
-2
-4
-6
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 4.2 kph
Tmax: 64.8 ms
Min: -4.1 kph
Tmin: 231.7 ms
CFC 180

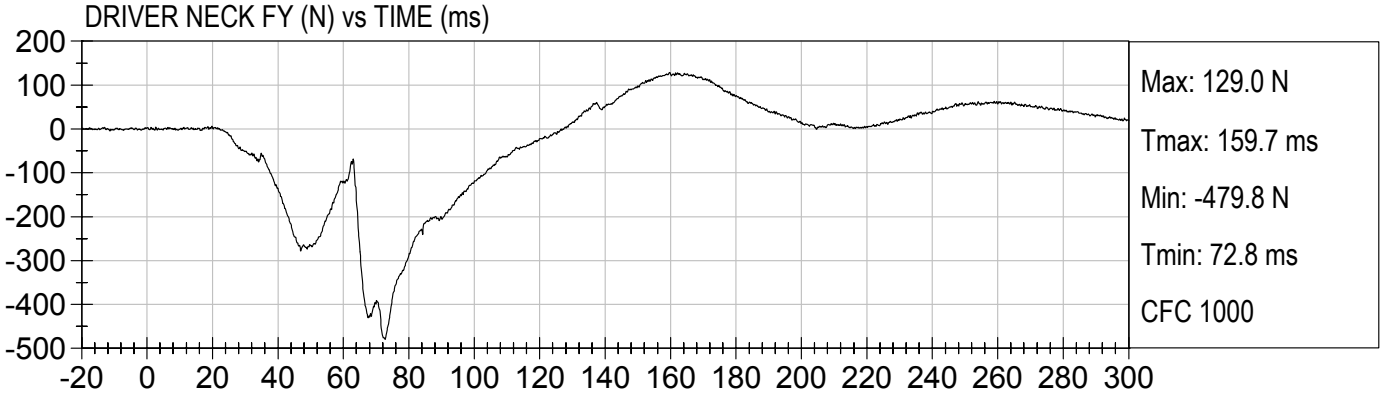
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

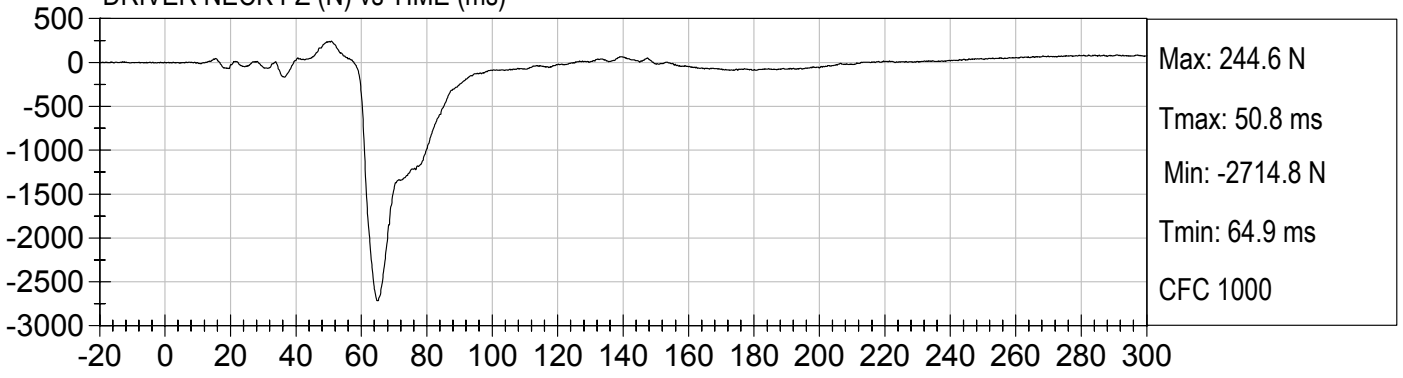
DRIVER NECK FX (N) vs TIME (ms)



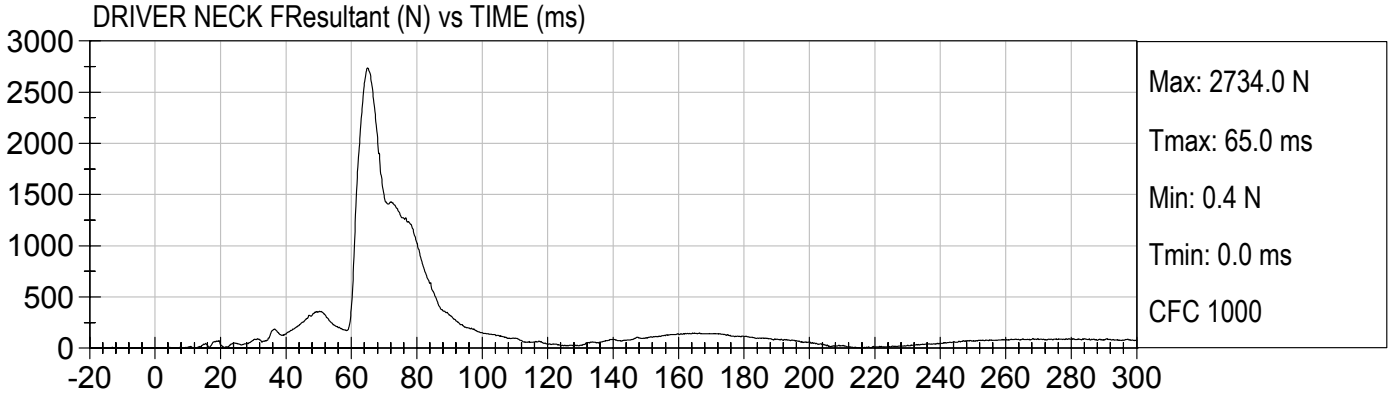
DRIVER NECK FY (N) vs TIME (ms)



DRIVER NECK FZ (N) vs TIME (ms)



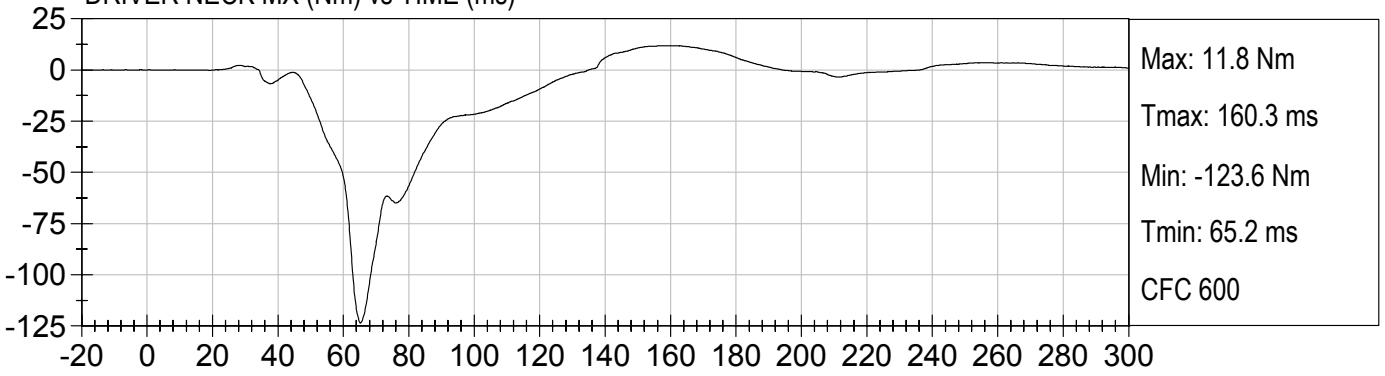
DRIVER NECK FResultant (N) vs TIME (ms)



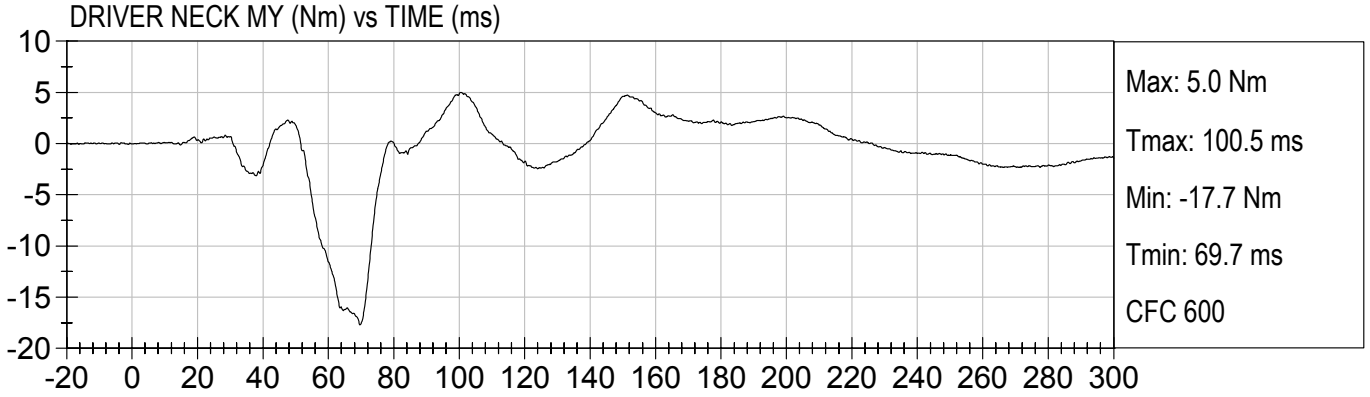
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

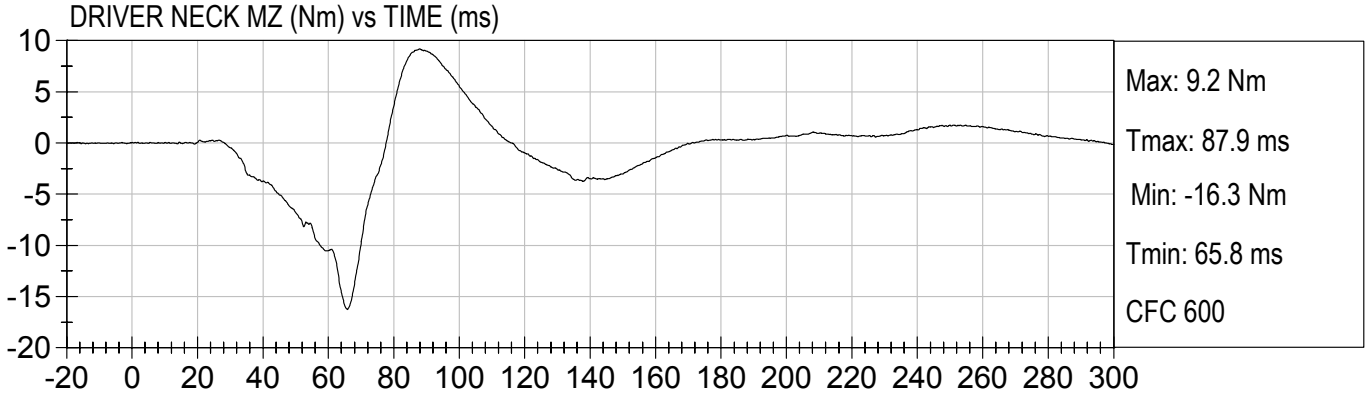
DRIVER NECK MX (Nm) vs TIME (ms)



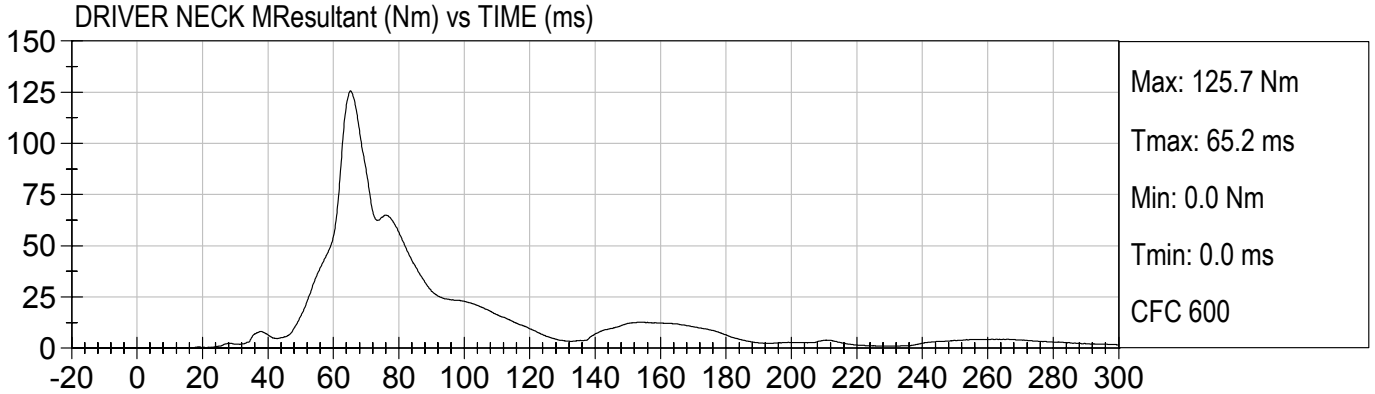
DRIVER NECK MY (Nm) vs TIME (ms)



DRIVER NECK MZ (Nm) vs TIME (ms)



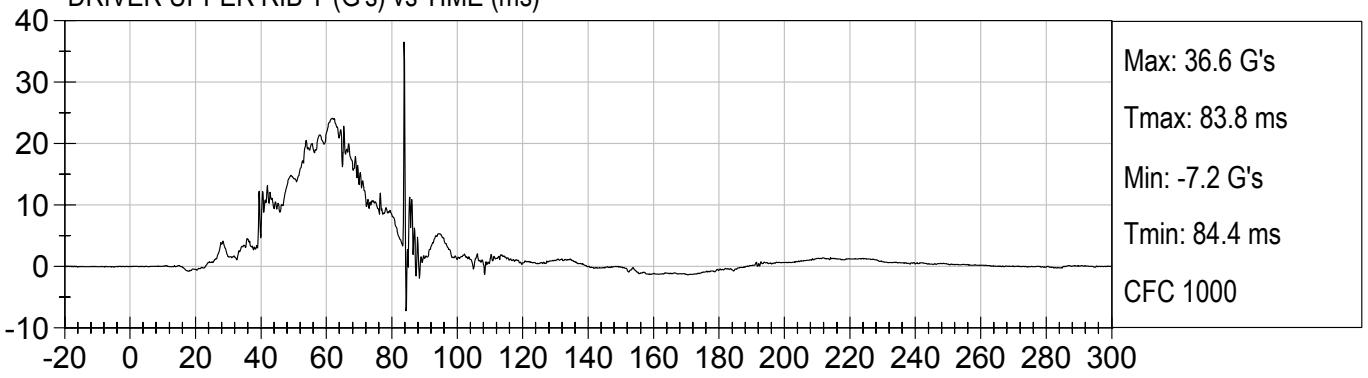
DRIVER NECK MResultant (Nm) vs TIME (ms)



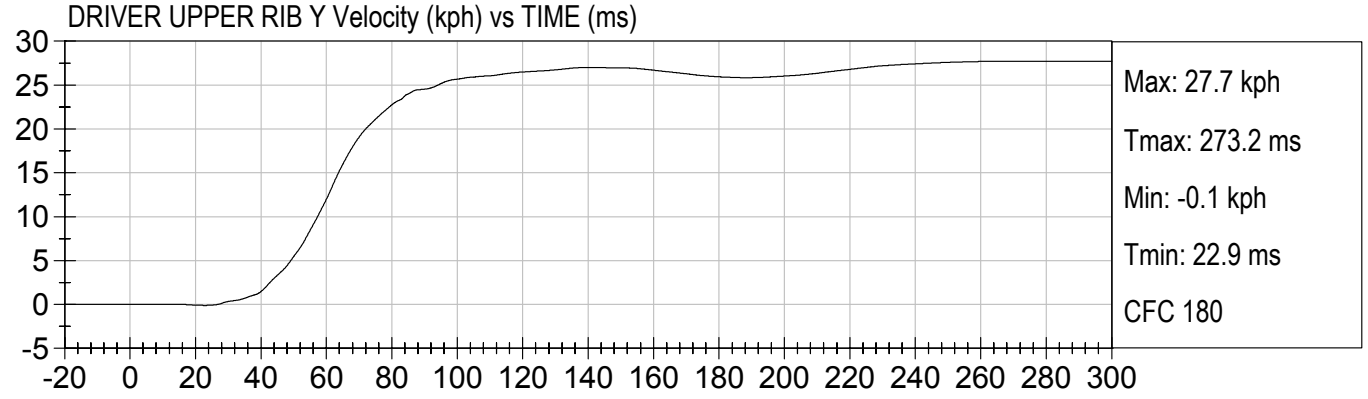
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

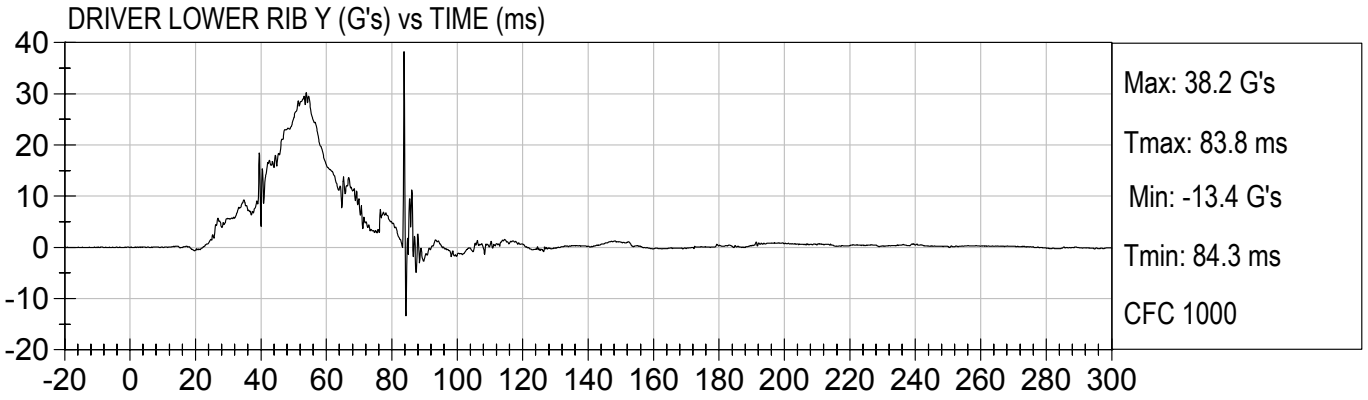
DRIVER UPPER RIB Y (G's) vs TIME (ms)



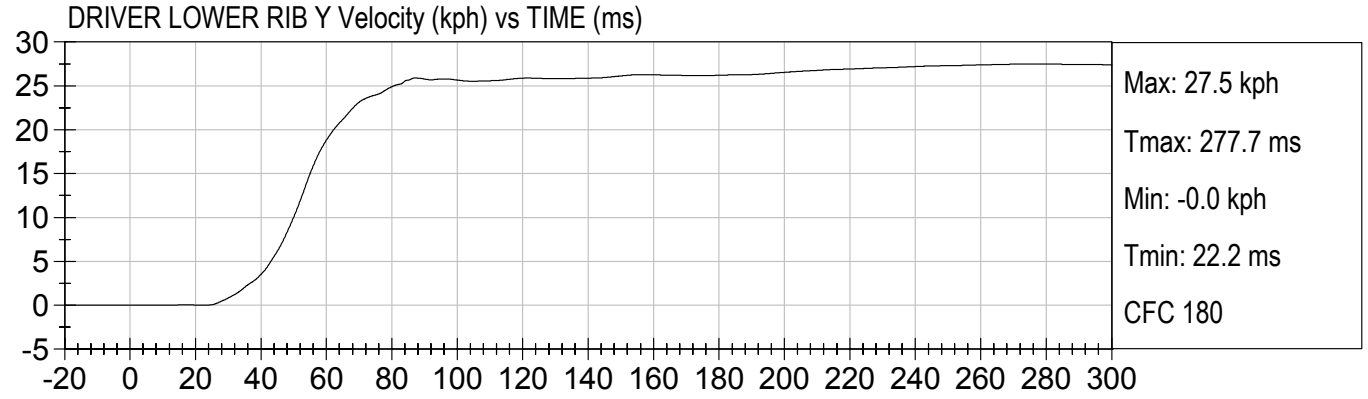
DRIVER UPPER RIB Y Velocity (kph) vs TIME (ms)



DRIVER LOWER RIB Y (G's) vs TIME (ms)



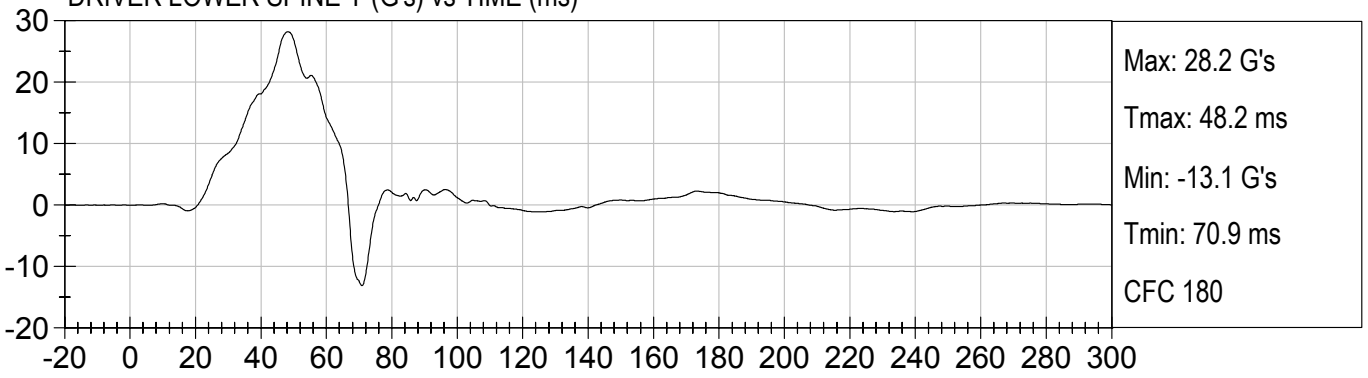
DRIVER LOWER RIB Y Velocity (kph) vs TIME (ms)



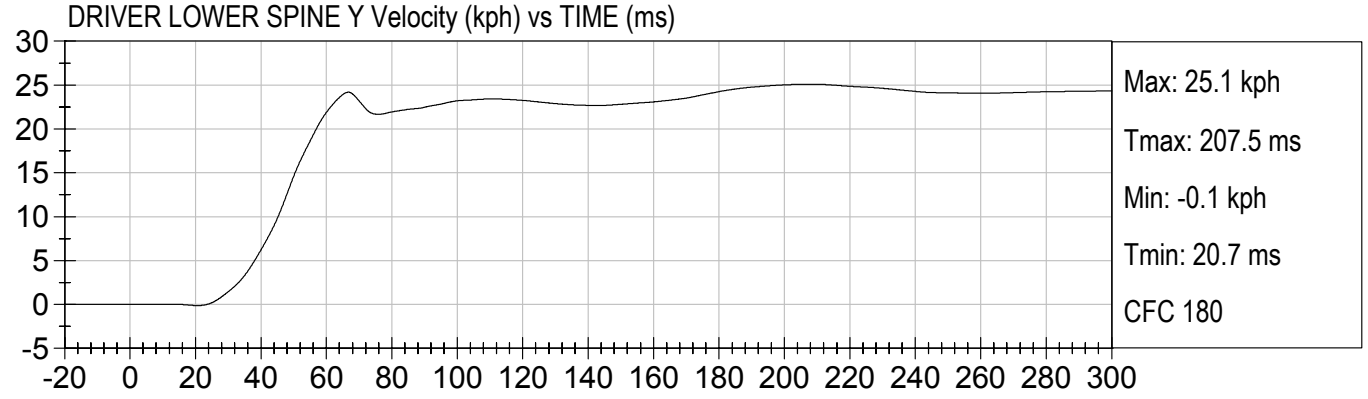
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

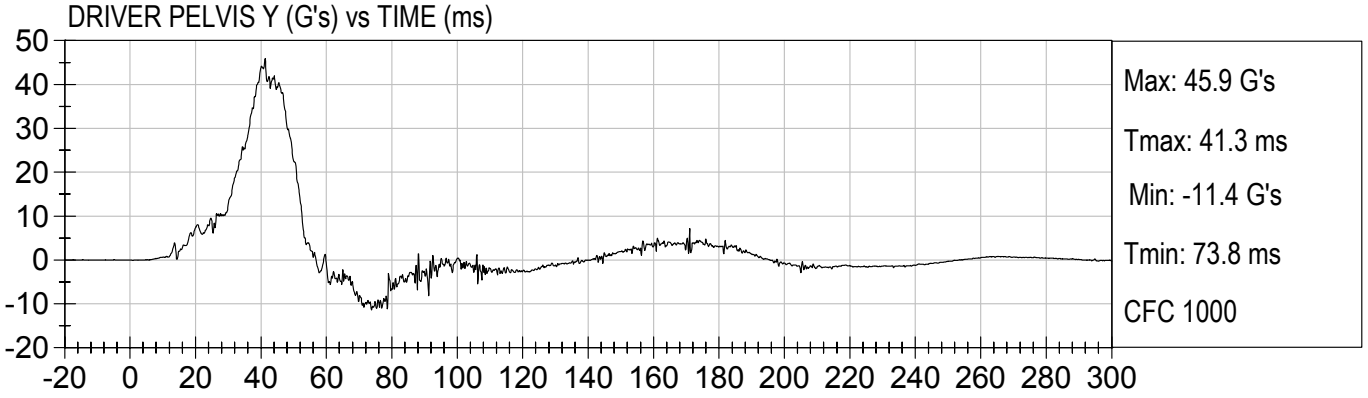
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



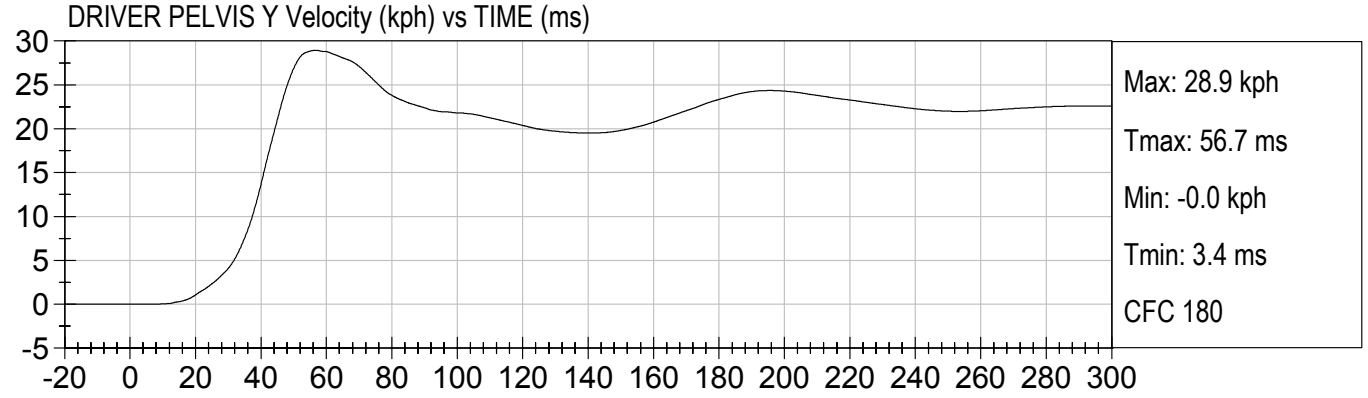
DRIVER LOWER SPINE Y Velocity (kph) vs TIME (ms)



DRIVER PELVIS Y (G's) vs TIME (ms)



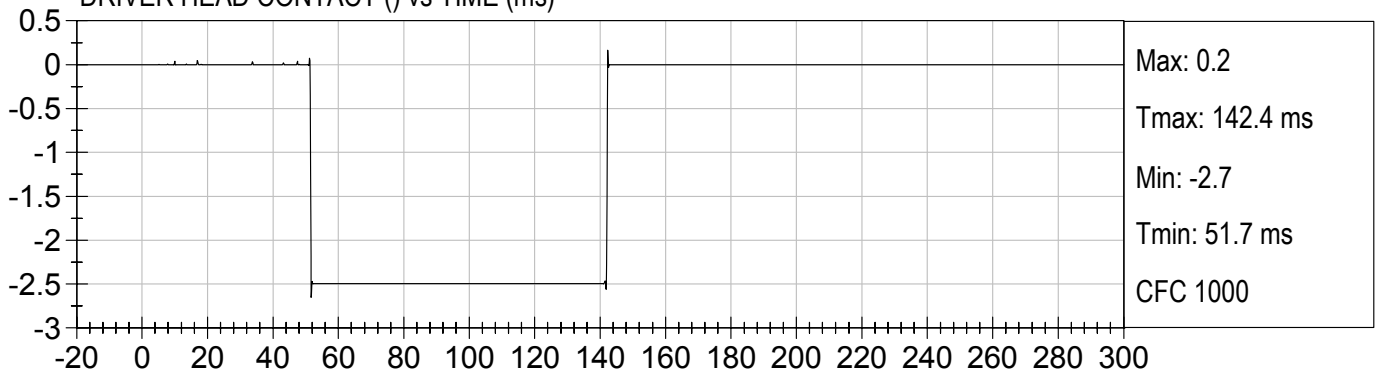
DRIVER PELVIS Y Velocity (kph) vs TIME (ms)



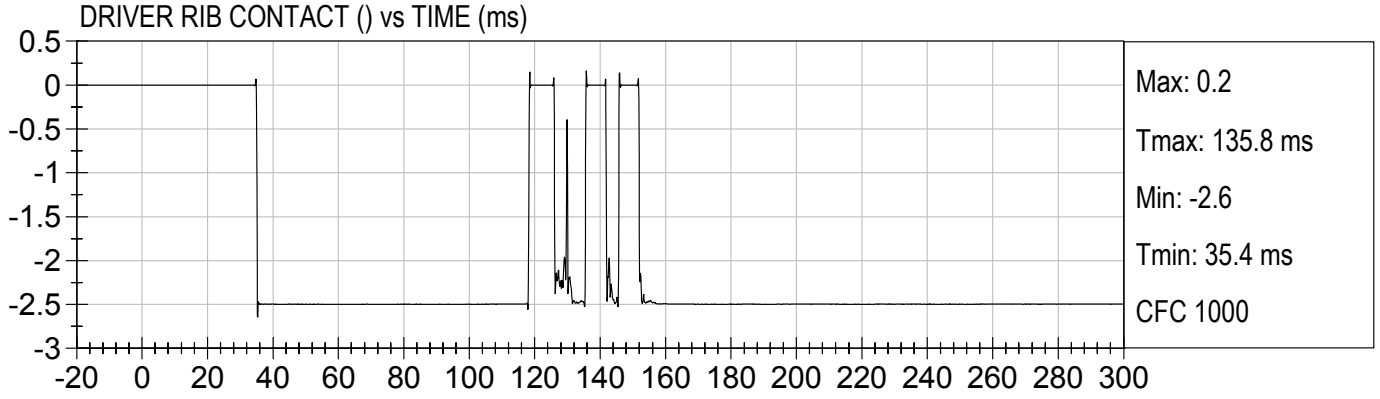
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

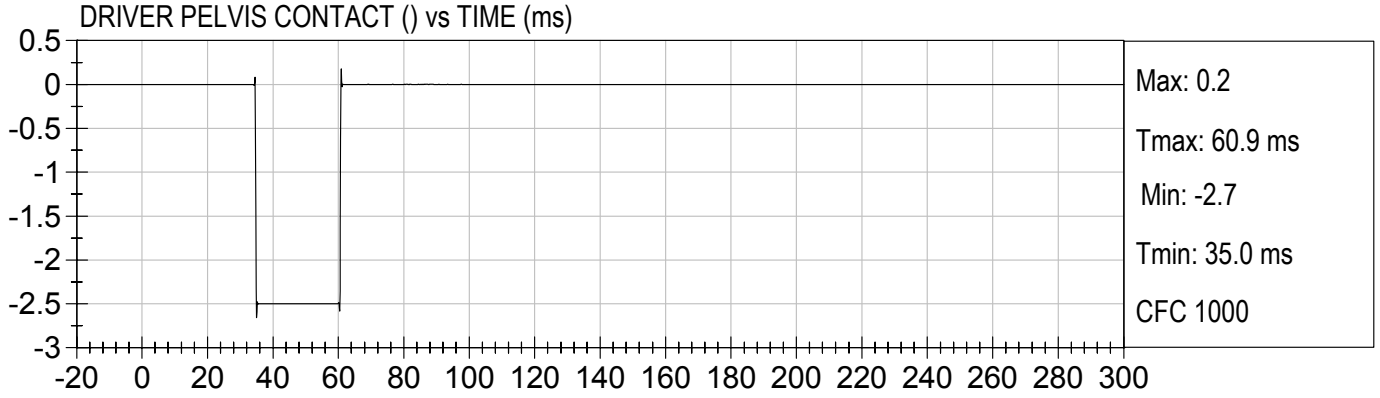
DRIVER HEAD CONTACT () vs TIME (ms)



DRIVER RIB CONTACT () vs TIME (ms)

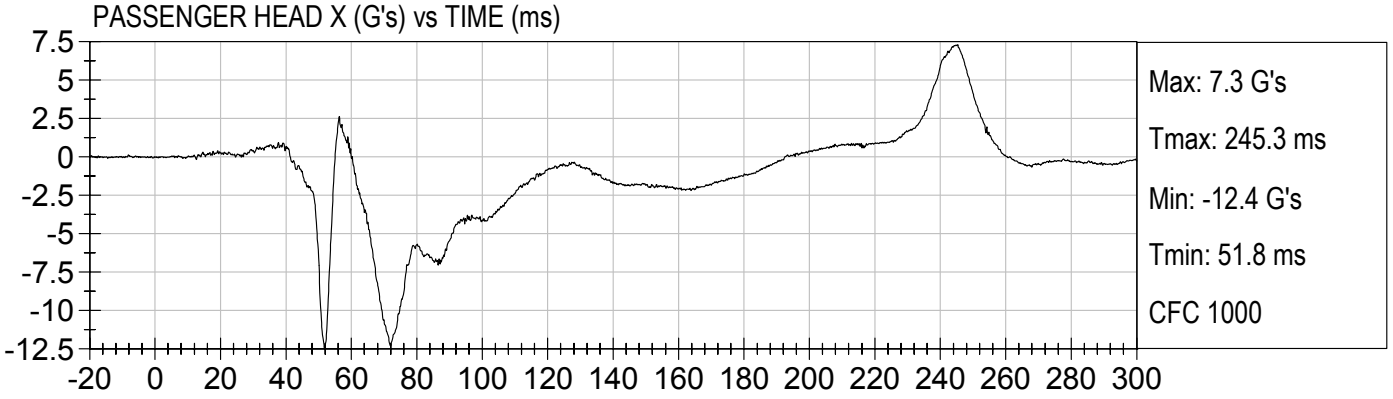


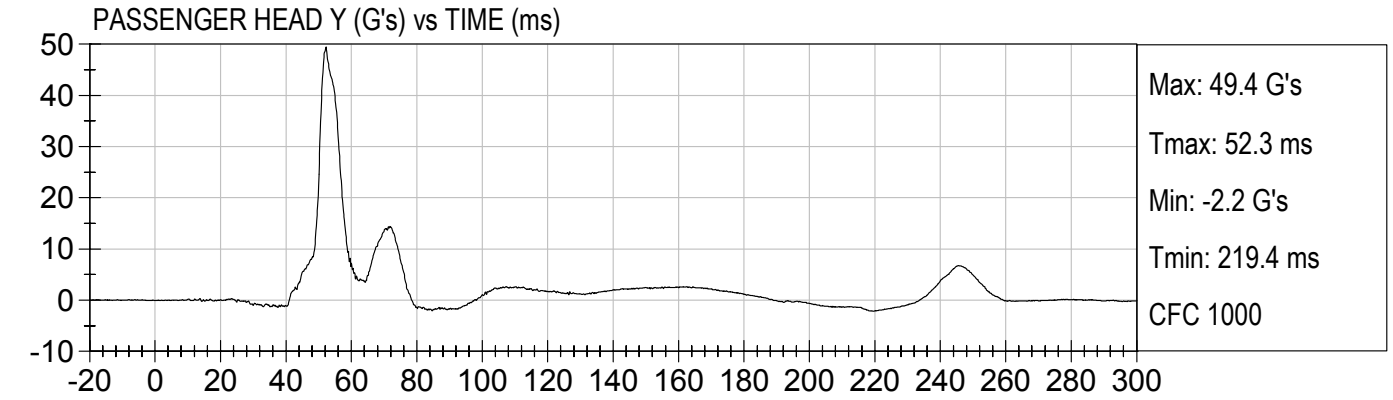
DRIVER PELVIS CONTACT () vs TIME (ms)

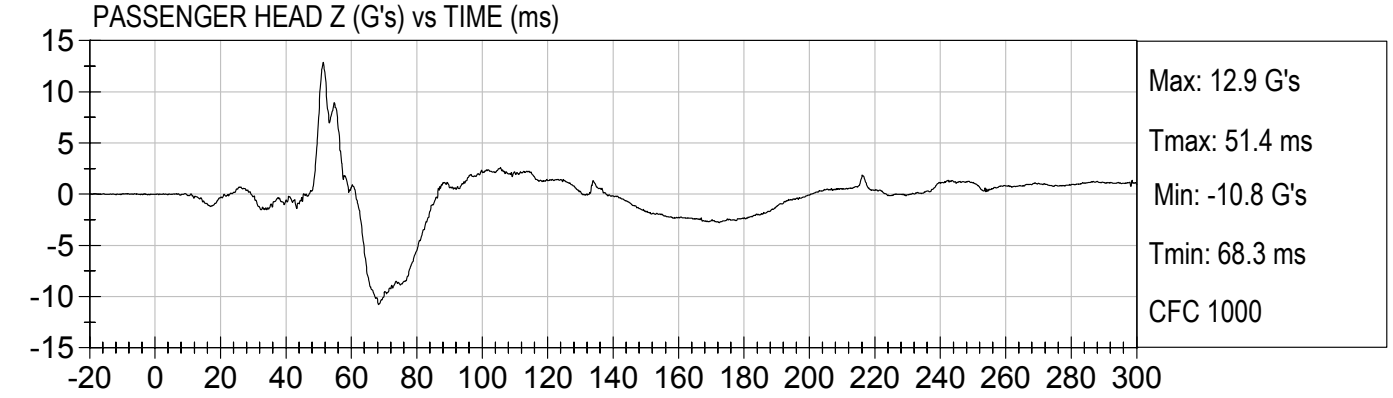


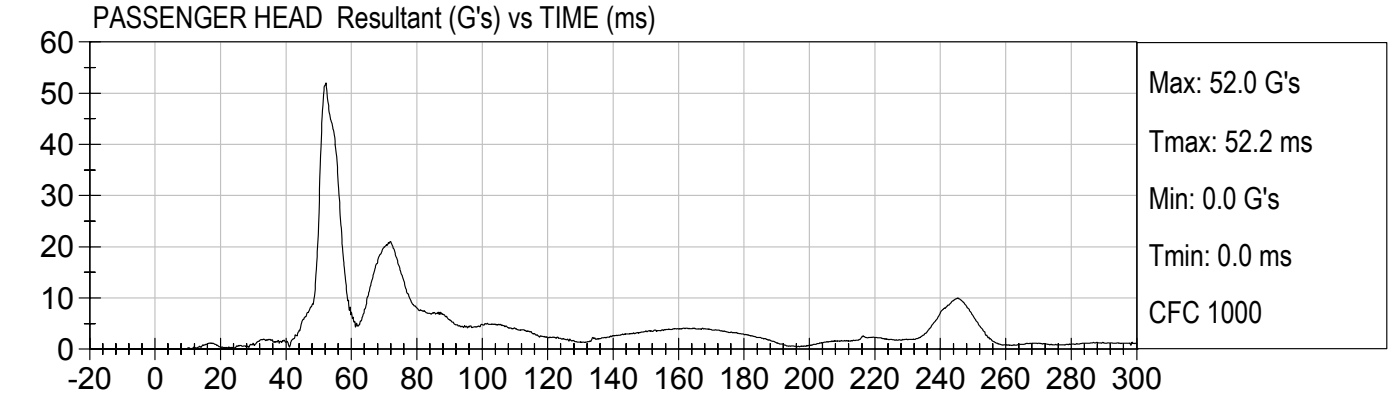
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

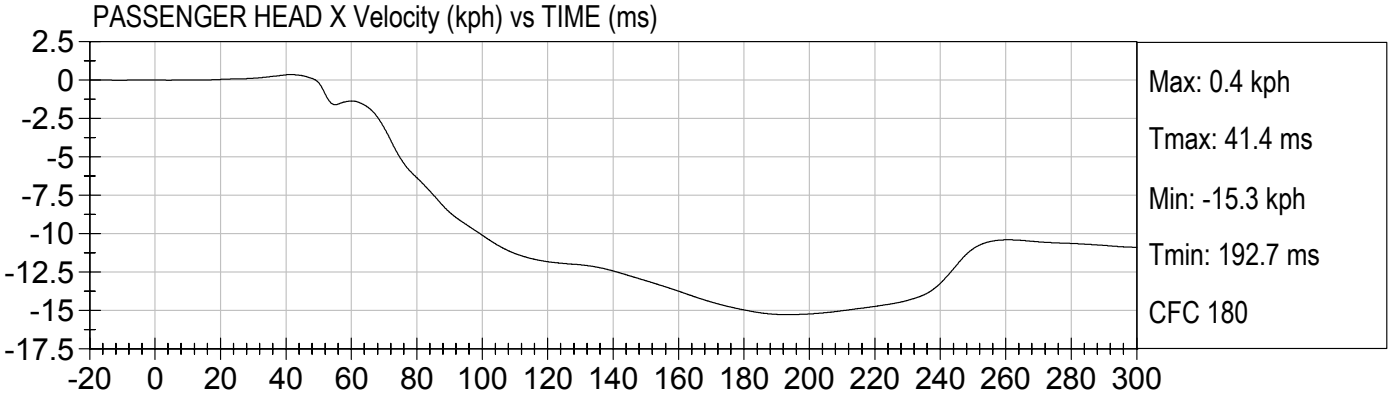
Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

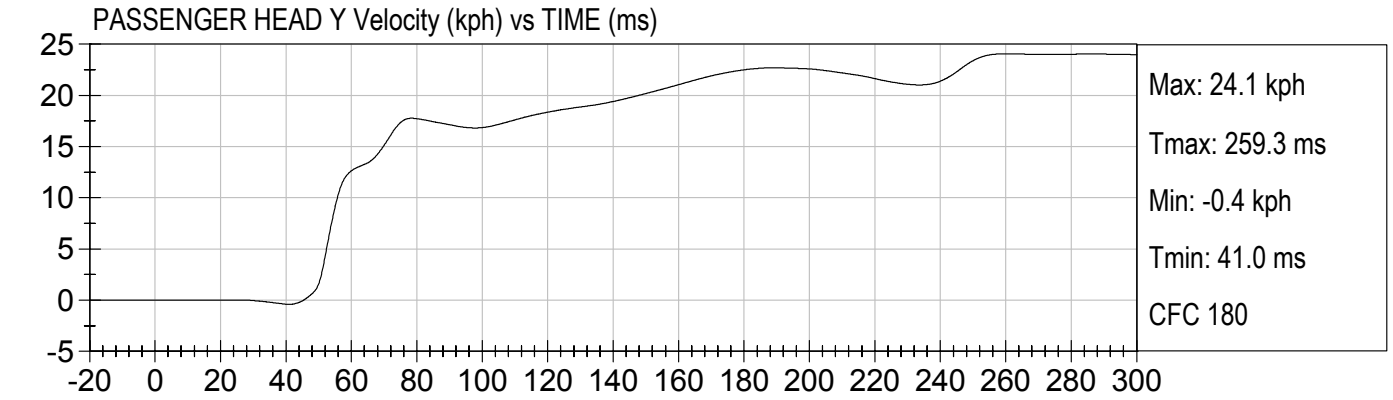


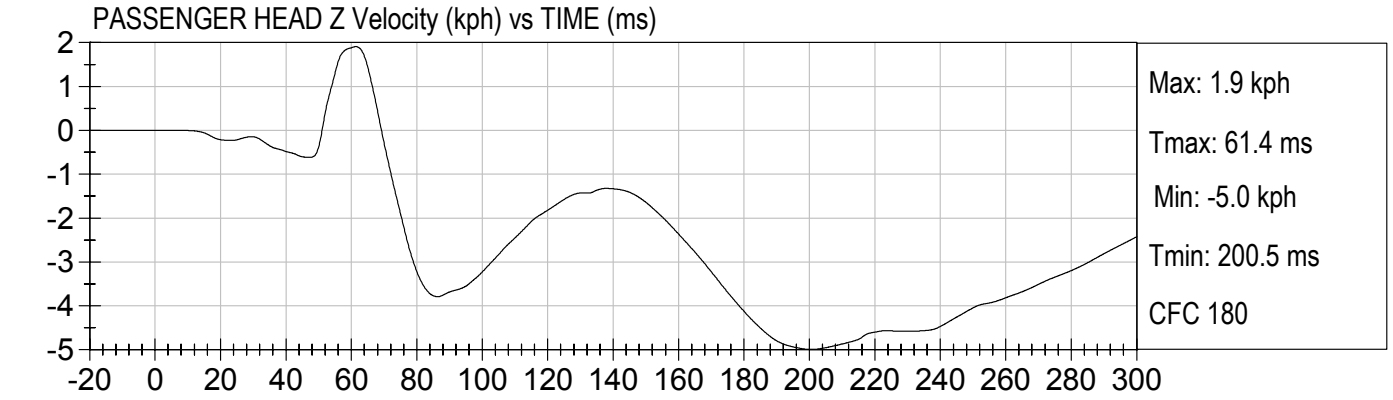






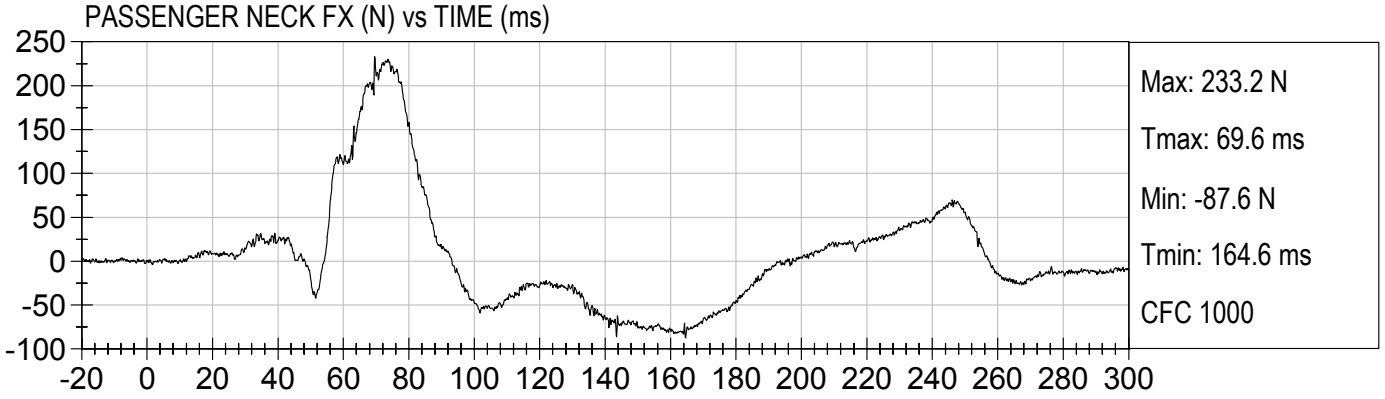

PASSENGER HEAD X Velocity (kph) vs TIME (ms)
2.5
0
-2.5
-5
-7.5
-10
-12.5
-15
-17.5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.4 kph
Tmax: 41.4 ms
Min: -15.3 kph
Tmin: 192.7 ms
CFC 180

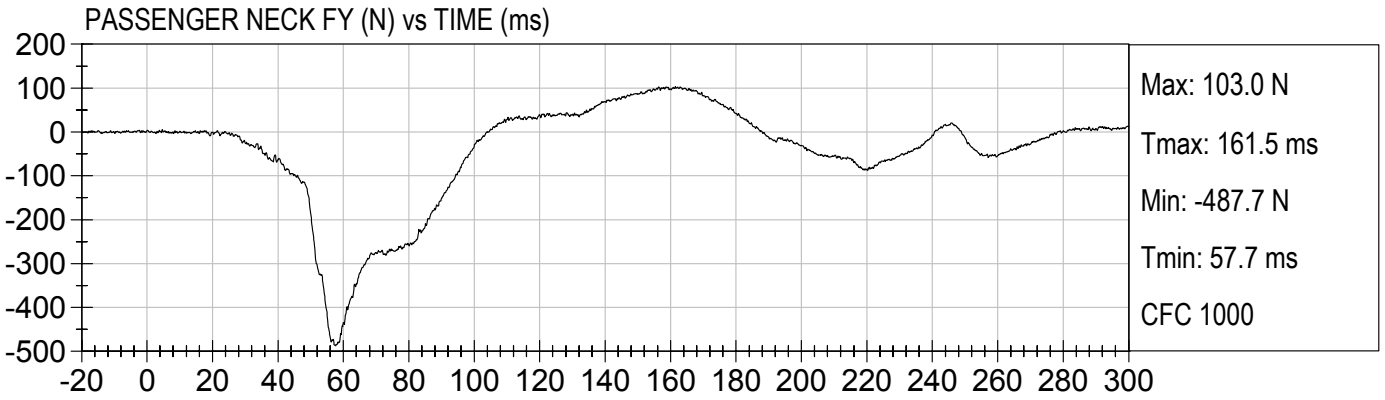

PASSENGER HEAD Y Velocity (kph) vs TIME (ms)
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 24.1 kph
Tmax: 259.3 ms
Min: -0.4 kph
Tmin: 41.0 ms
CFC 180

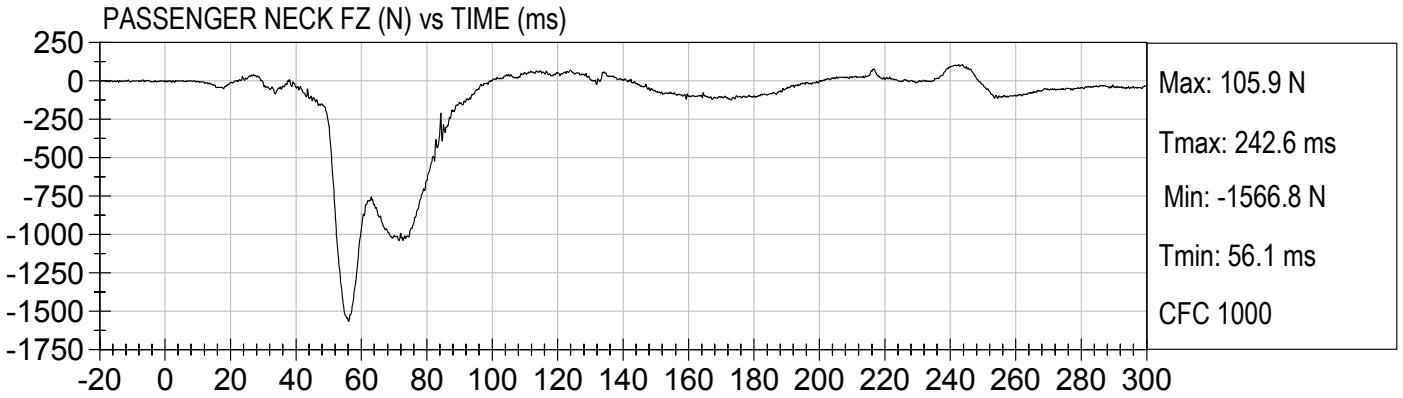

PASSENGER HEAD Z Velocity (kph) vs TIME (ms)
2
1
0
-1
-2
-3
-4
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 1.9 kph
Tmax: 61.4 ms
Min: -5.0 kph
Tmin: 200.5 ms
CFC 180

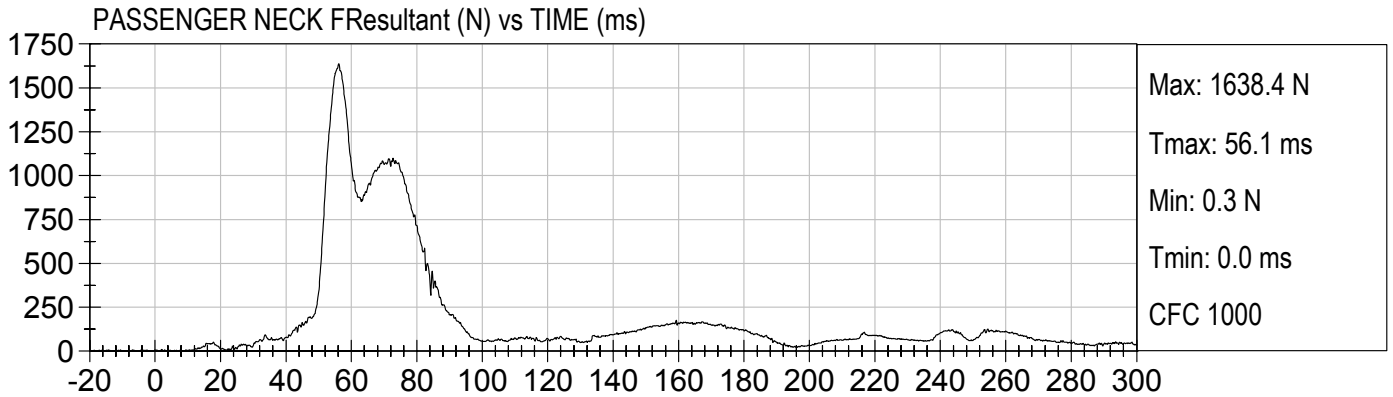
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)





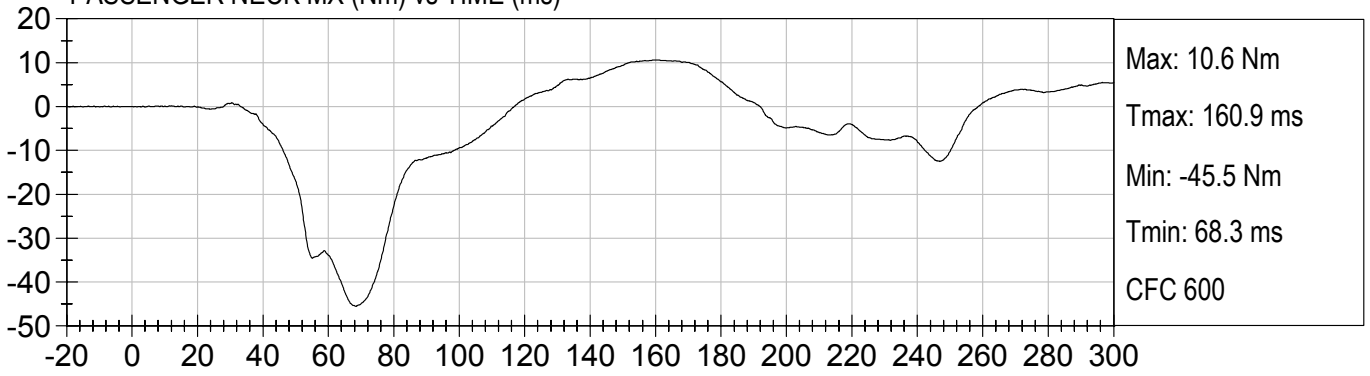




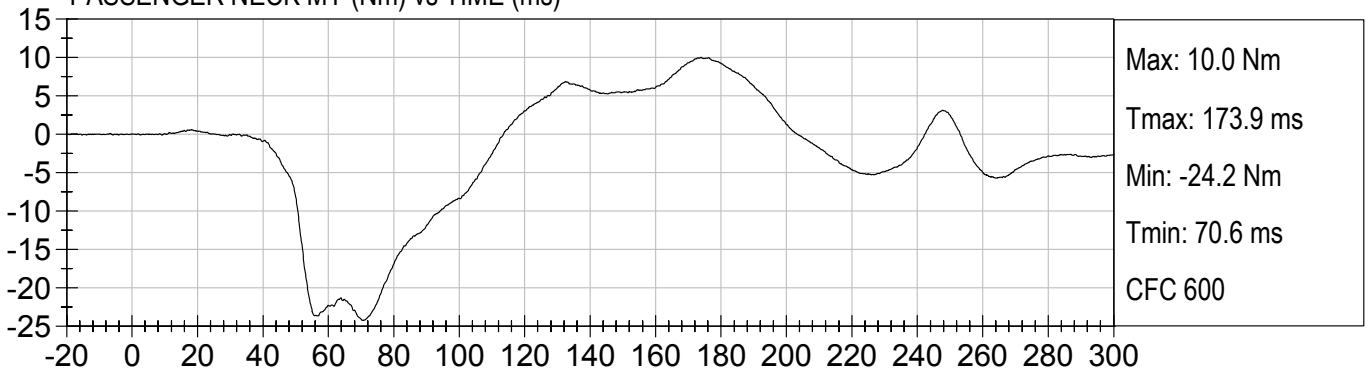
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

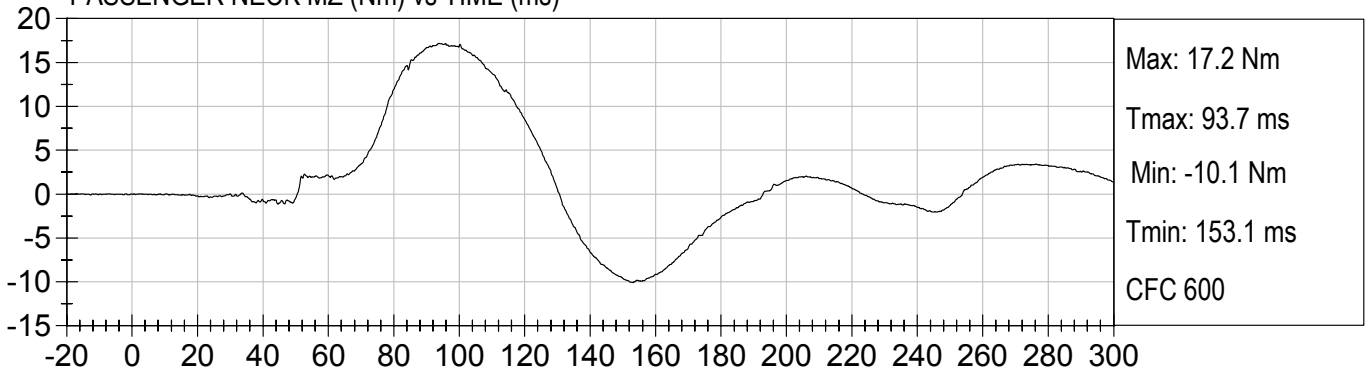
PASSENGER NECK MX (Nm) vs TIME (ms)



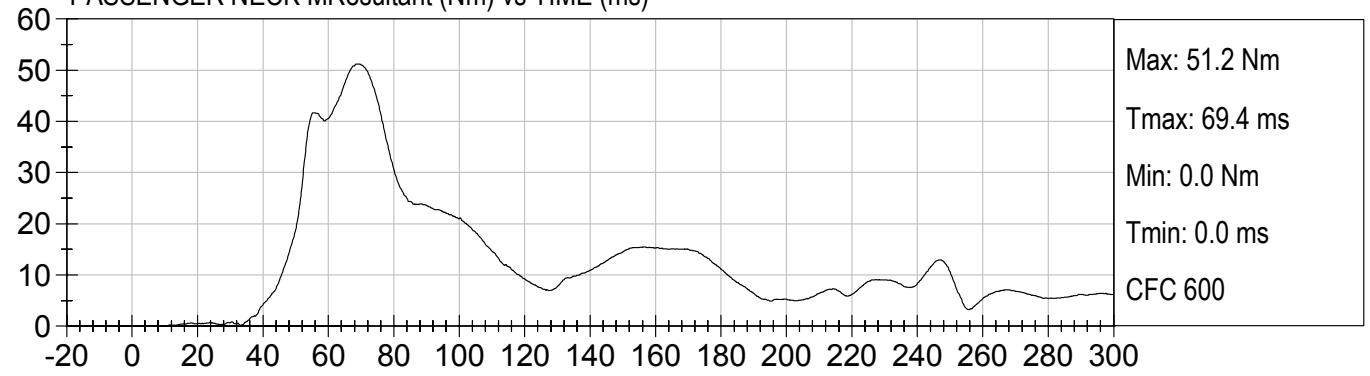
PASSENGER NECK MY (Nm) vs TIME (ms)



PASSENGER NECK MZ (Nm) vs TIME (ms)



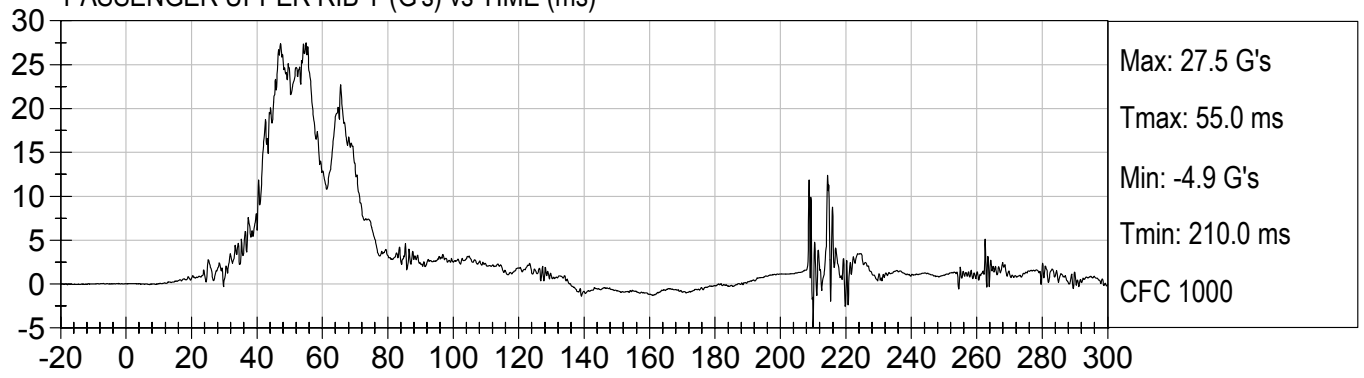
PASSENGER NECK MResultant (Nm) vs TIME (ms)



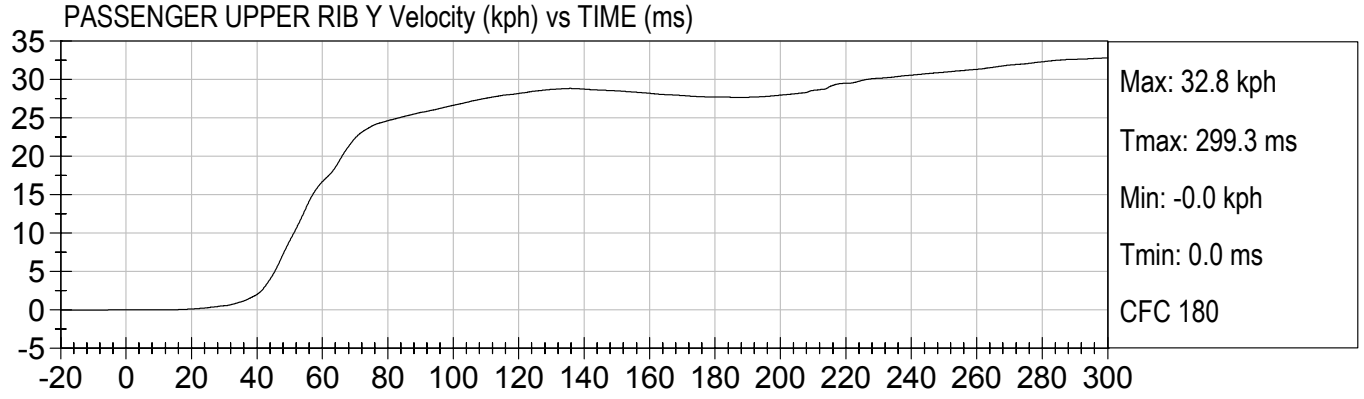
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

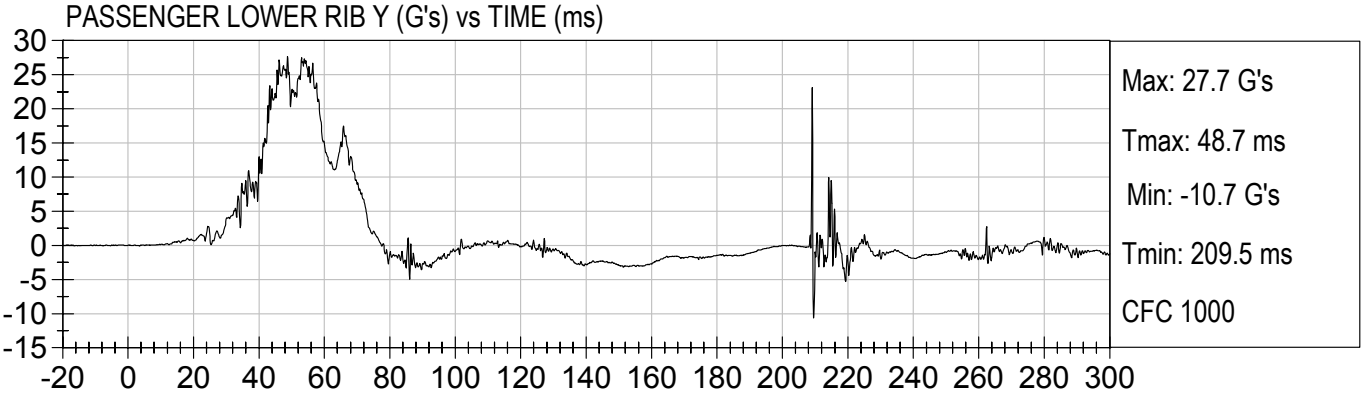
PASSENGER UPPER RIB Y (G's) vs TIME (ms)



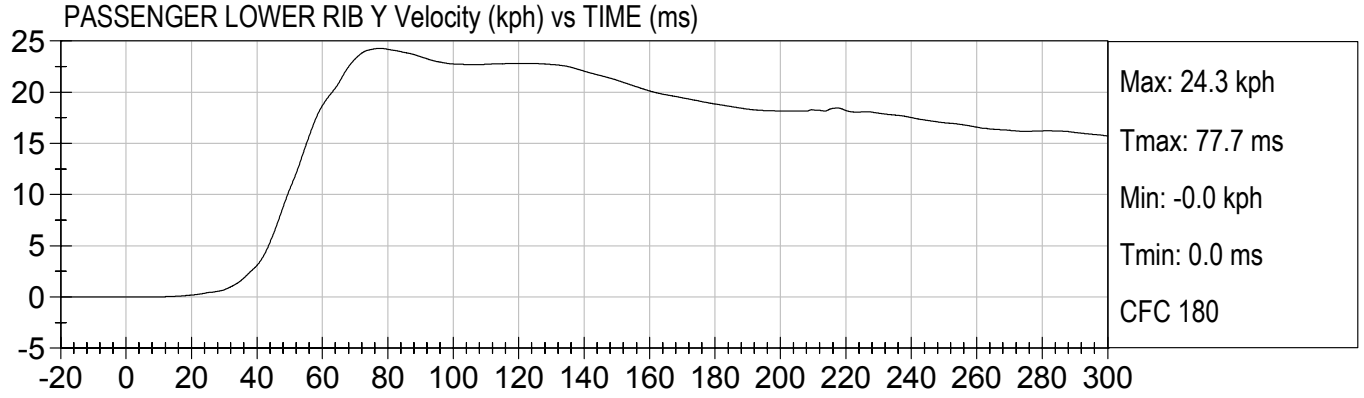
PASSENGER UPPER RIB Y Velocity (kph) vs TIME (ms)



PASSENGER LOWER RIB Y (G's) vs TIME (ms)



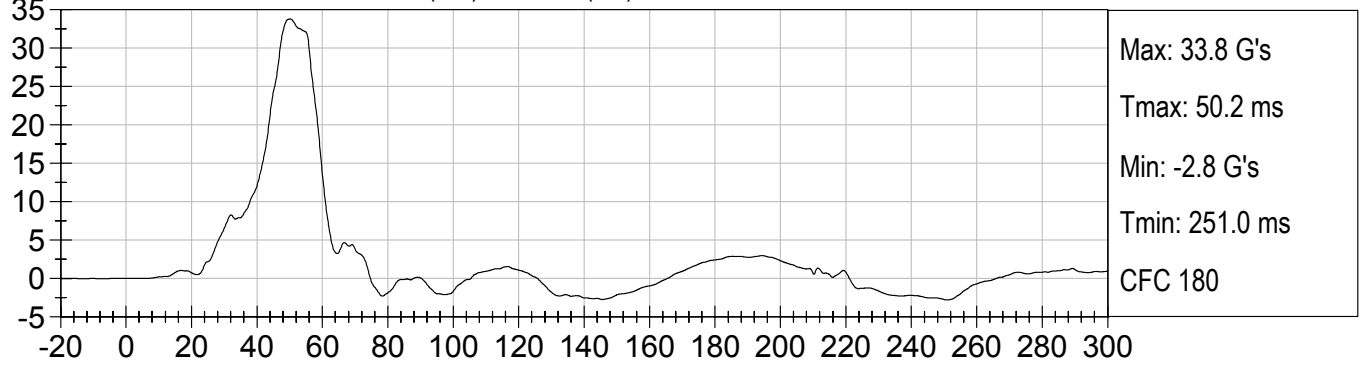
PASSENGER LOWER RIB Y Velocity (kph) vs TIME (ms)



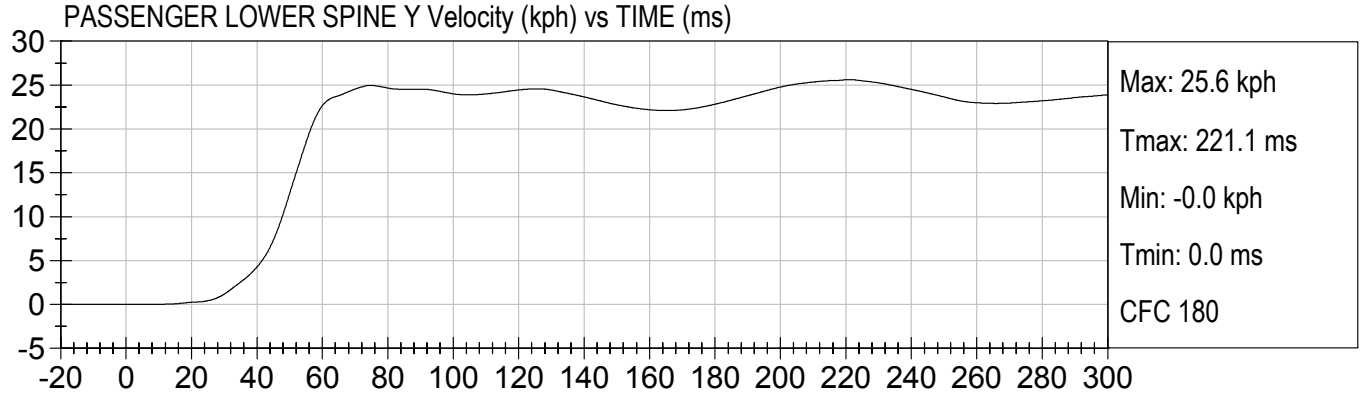
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

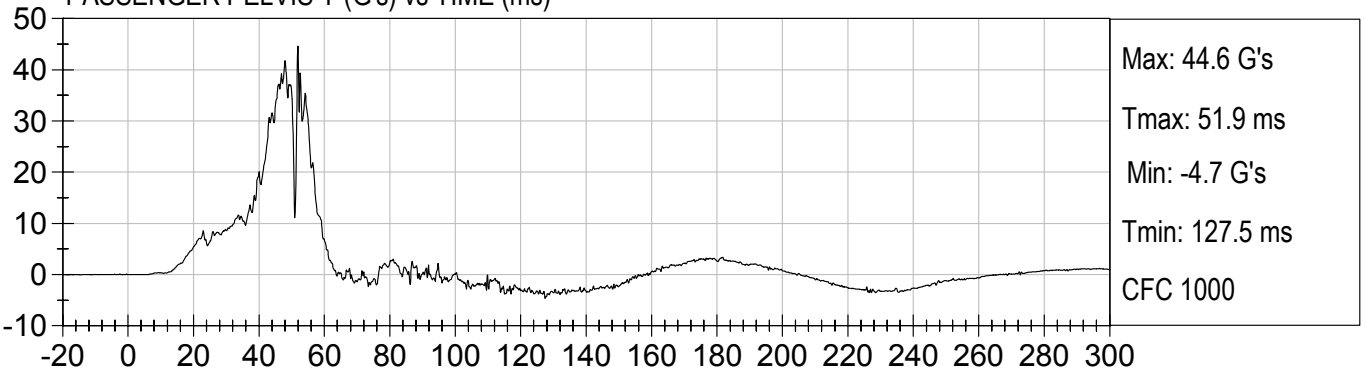
PASSENGER LOWER SPINE Y (G's) vs TIME (ms)



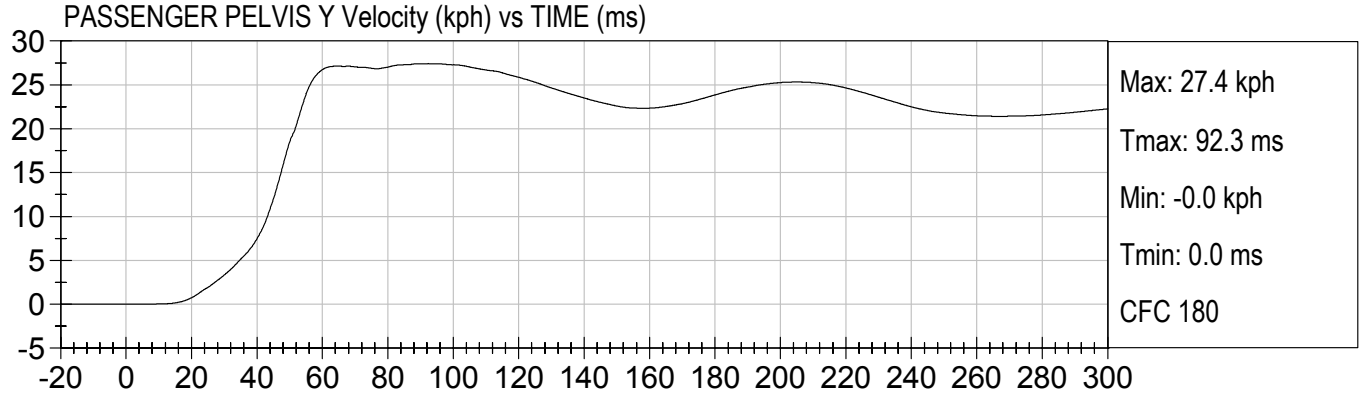
PASSENGER LOWER SPINE Y Velocity (kph) vs TIME (ms)



PASSENGER PELVIS Y (G's) vs TIME (ms)

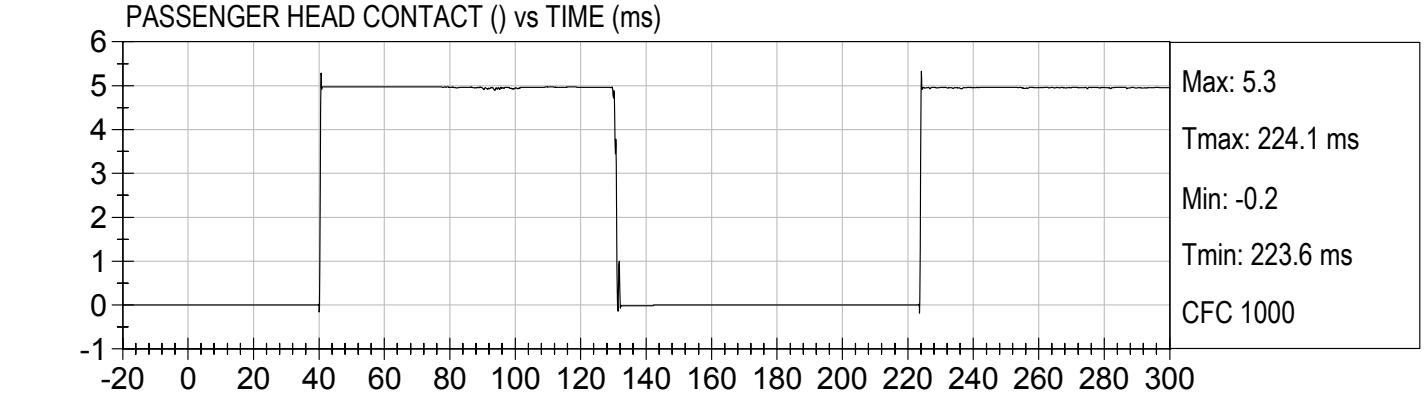


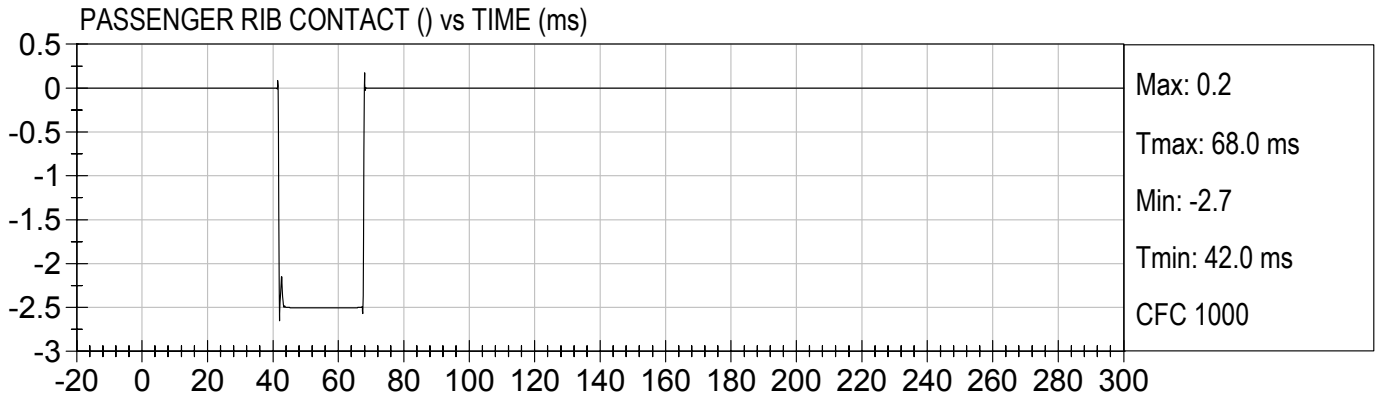
PASSENGER PELVIS Y Velocity (kph) vs TIME (ms)

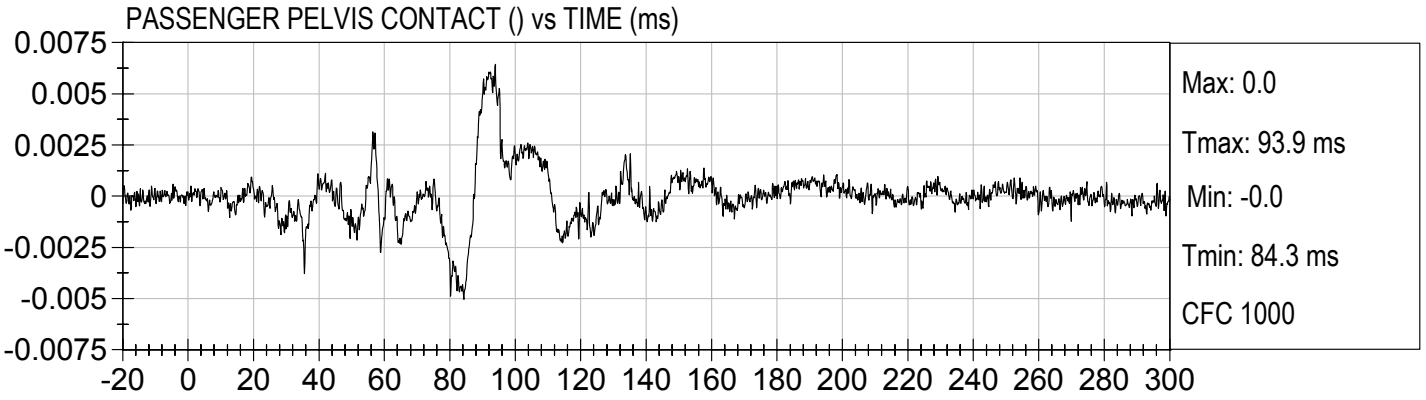


NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

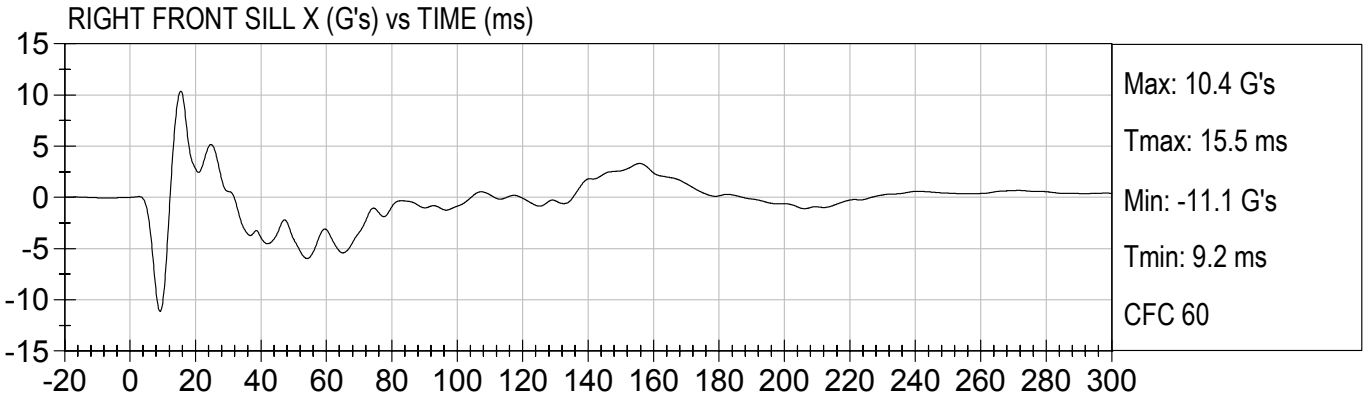


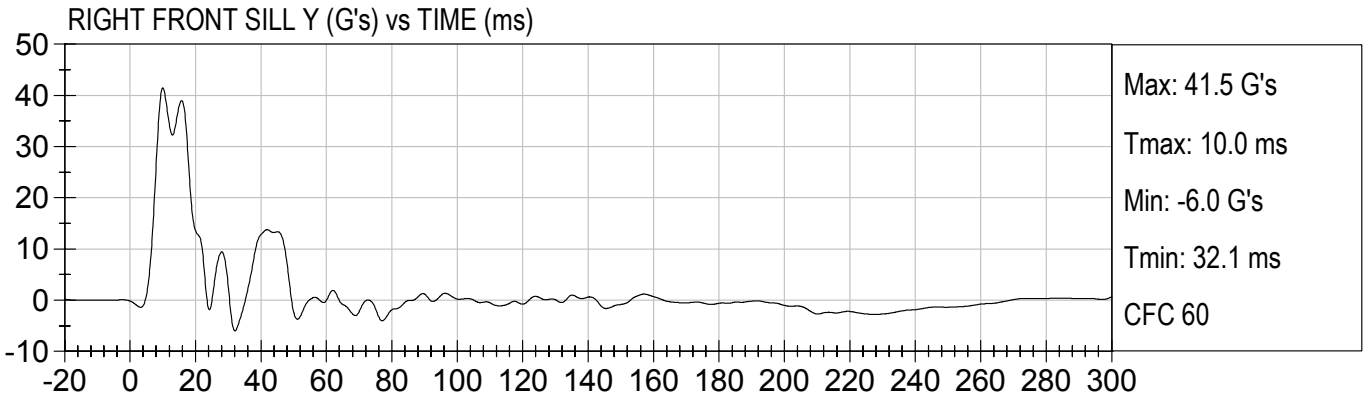


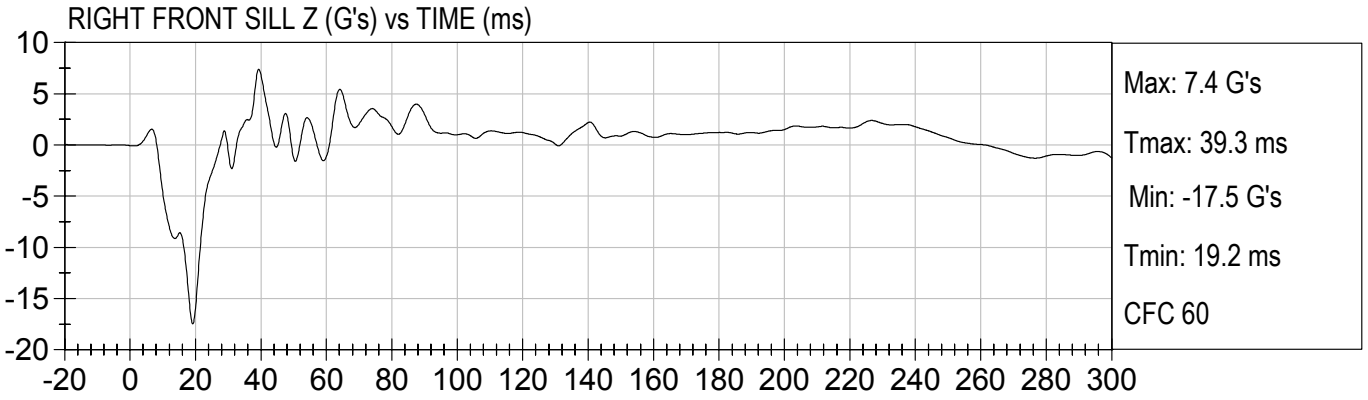


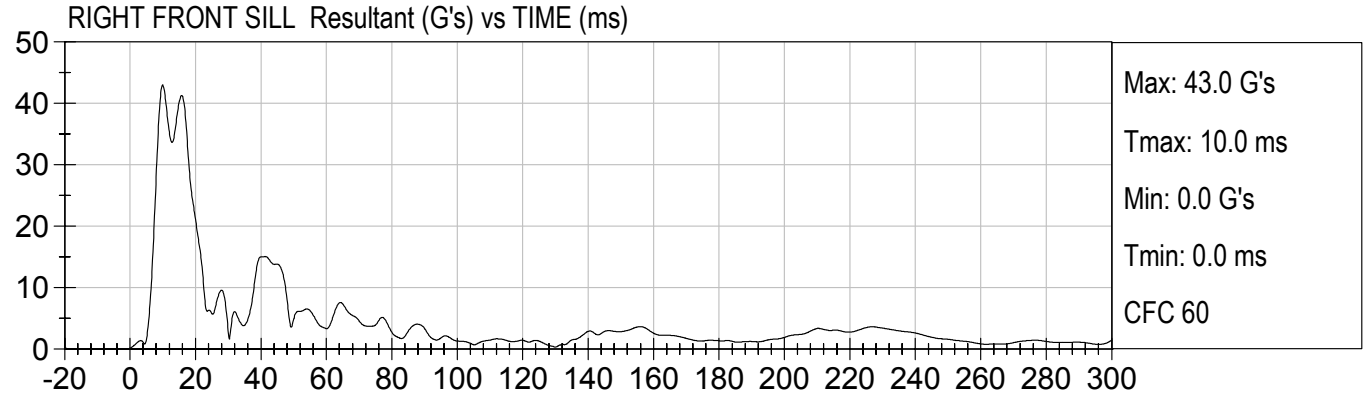
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

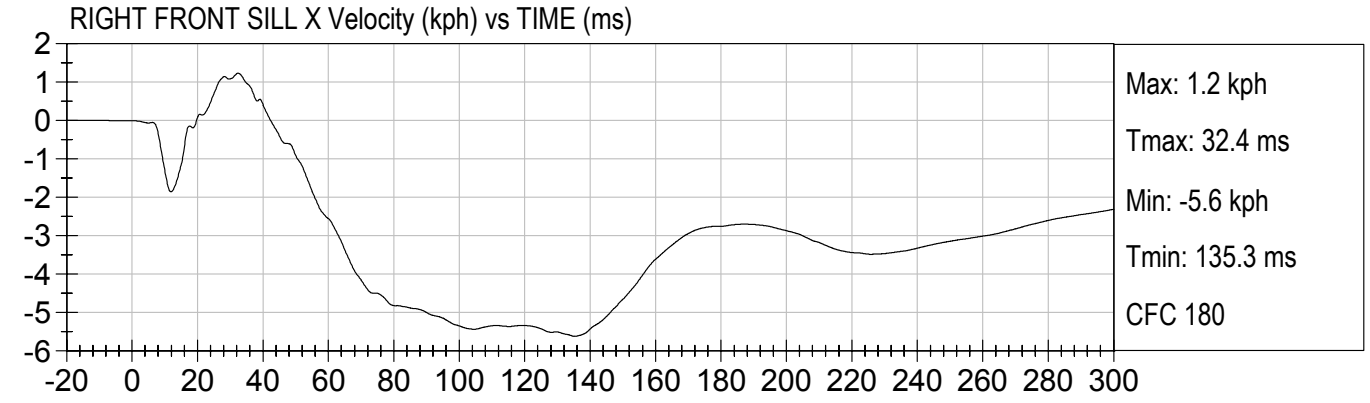
Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

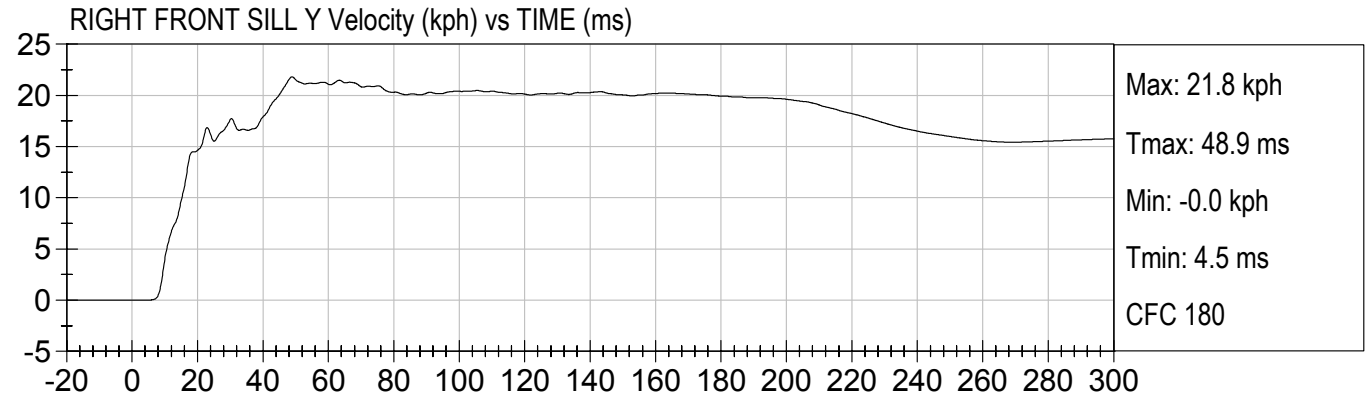


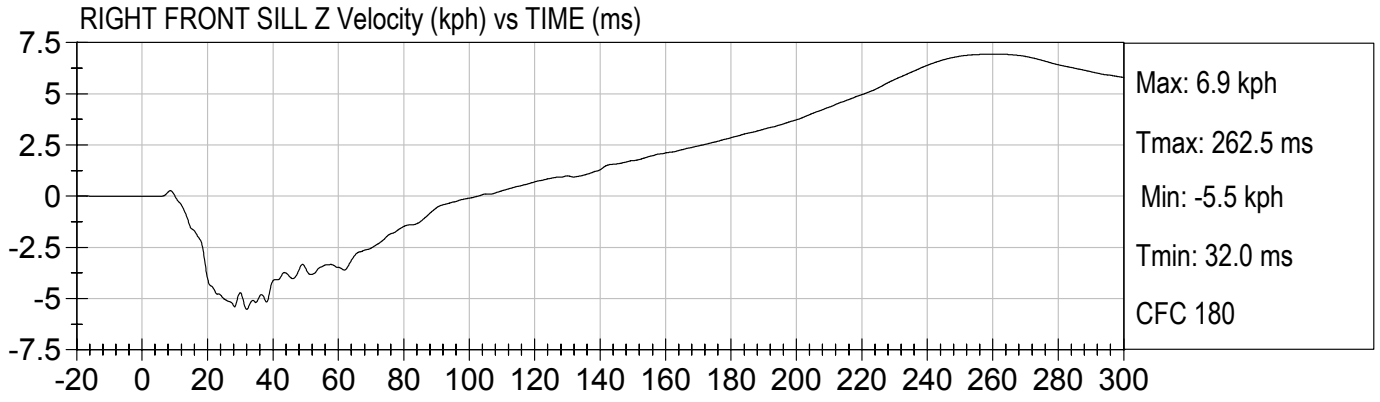




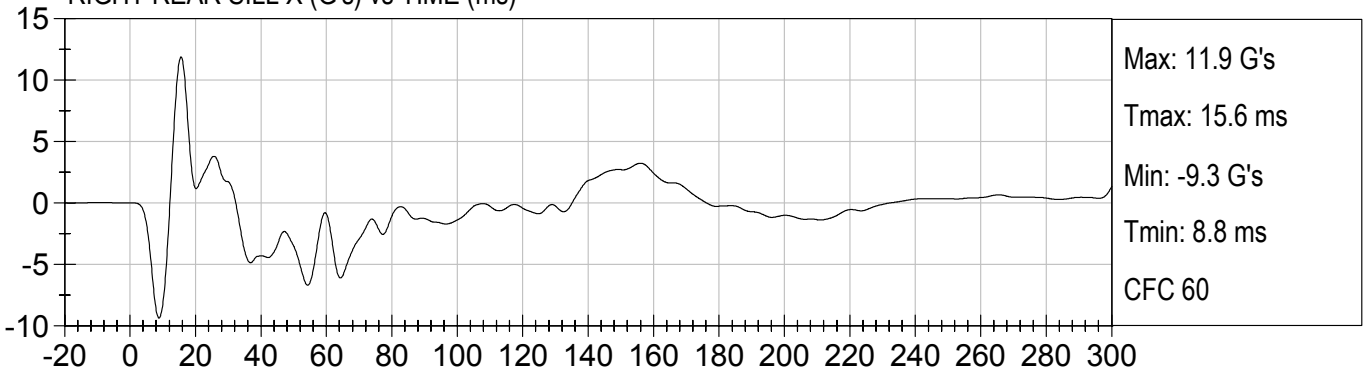



RIGHT FRONT SILL X Velocity (kph) vs TIME (ms)
2
1
0
-1
-2
-3
-4
-5
-6
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 1.2 kph
Tmax: 32.4 ms
Min: -5.6 kph
Tmin: 135.3 ms
CFC 180

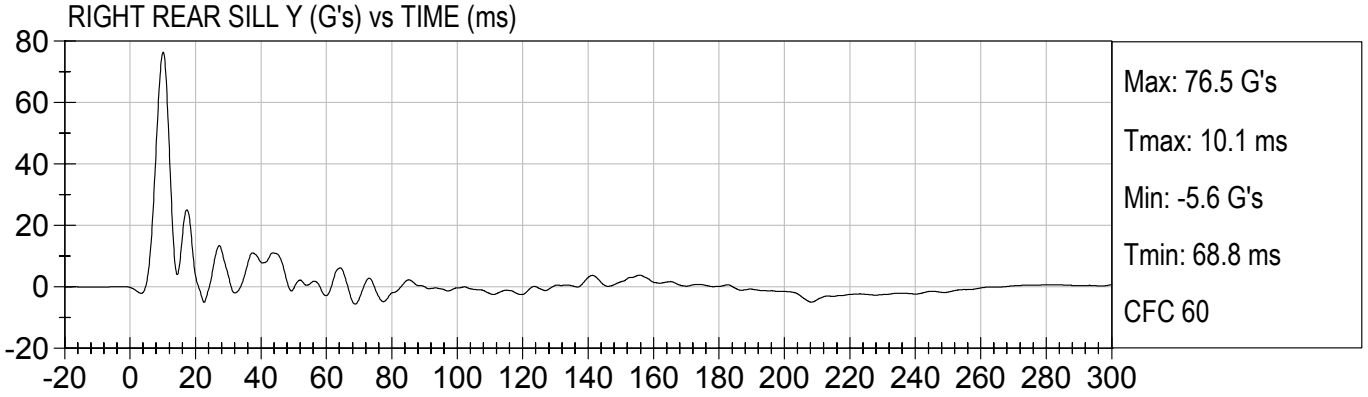

RIGHT FRONT SILL Y Velocity (kph) vs TIME (ms)
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 21.8 kph
Tmax: 48.9 ms
Min: -0.0 kph
Tmin: 4.5 ms
CFC 180


RIGHT FRONT SILL Z Velocity (kph) vs TIME (ms)
7.5
5
2.5
0
-2.5
-5
-7.5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 6.9 kph
Tmax: 262.5 ms
Min: -5.5 kph
Tmin: 32.0 ms
CFC 180

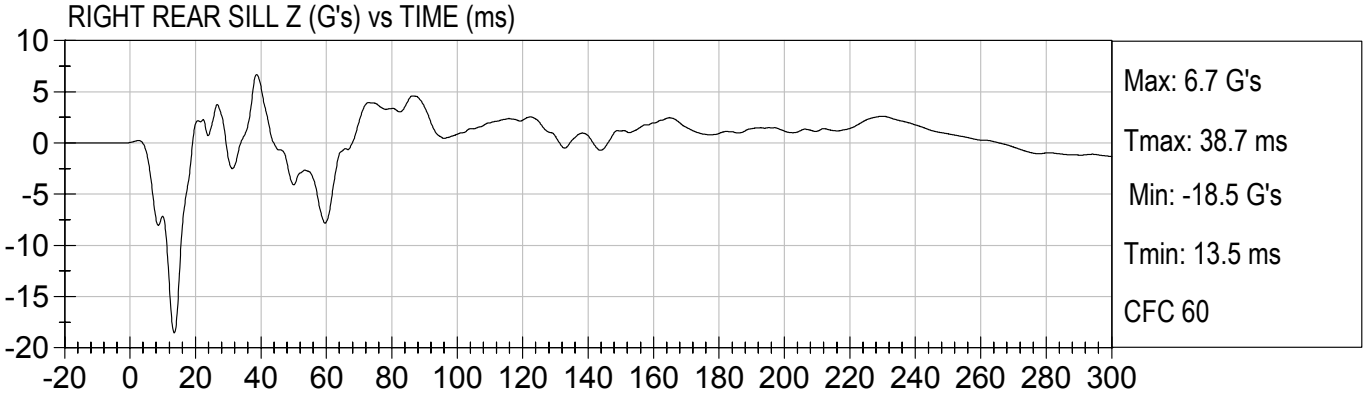
RIGHT REAR SILL X (G's) vs TIME (ms)



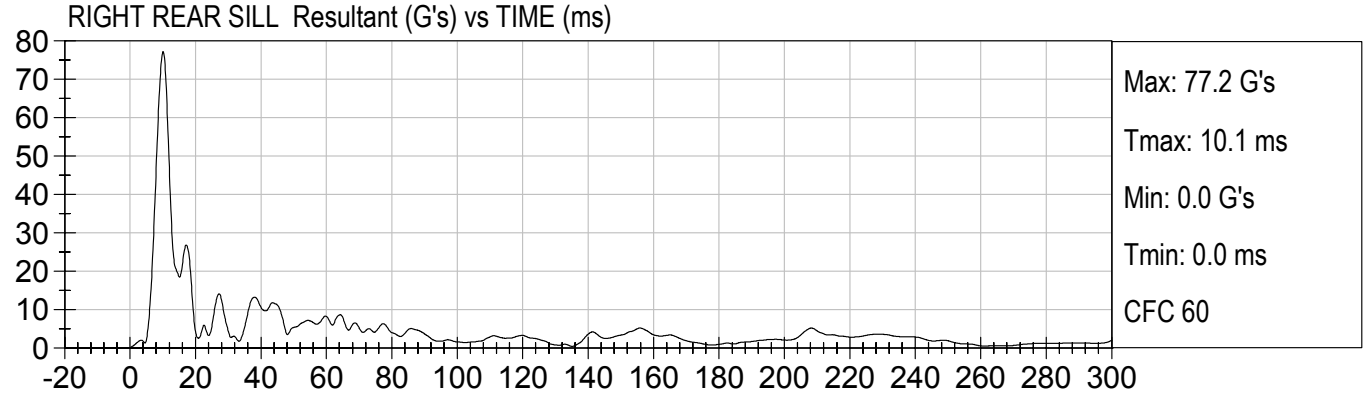
RIGHT REAR SILL Y (G's) vs TIME (ms)

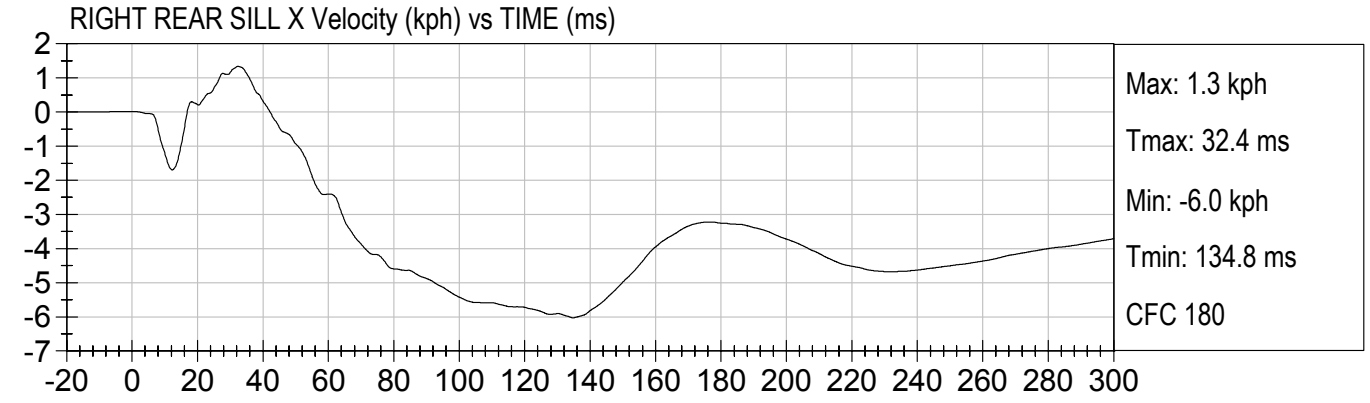


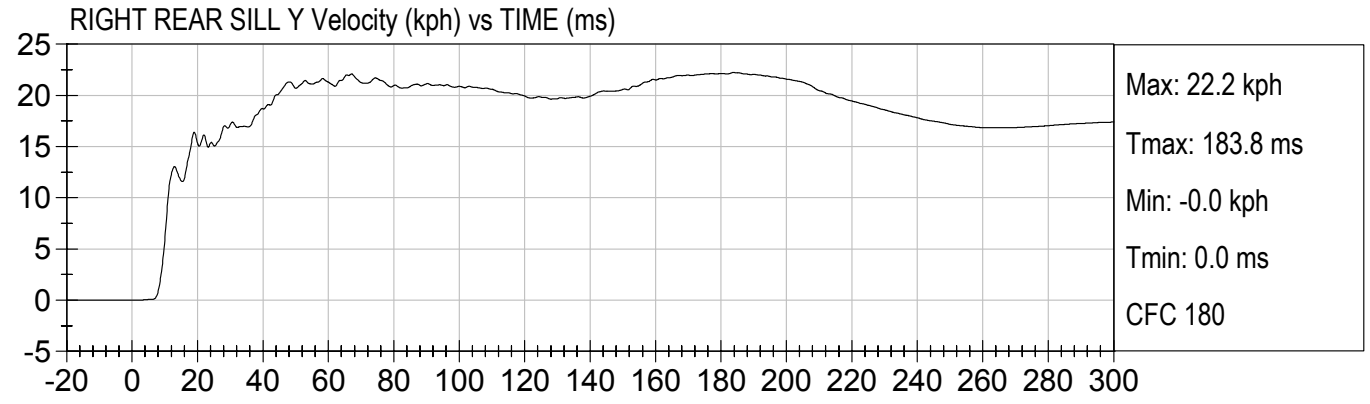
RIGHT REAR SILL Z (G's) vs TIME (ms)

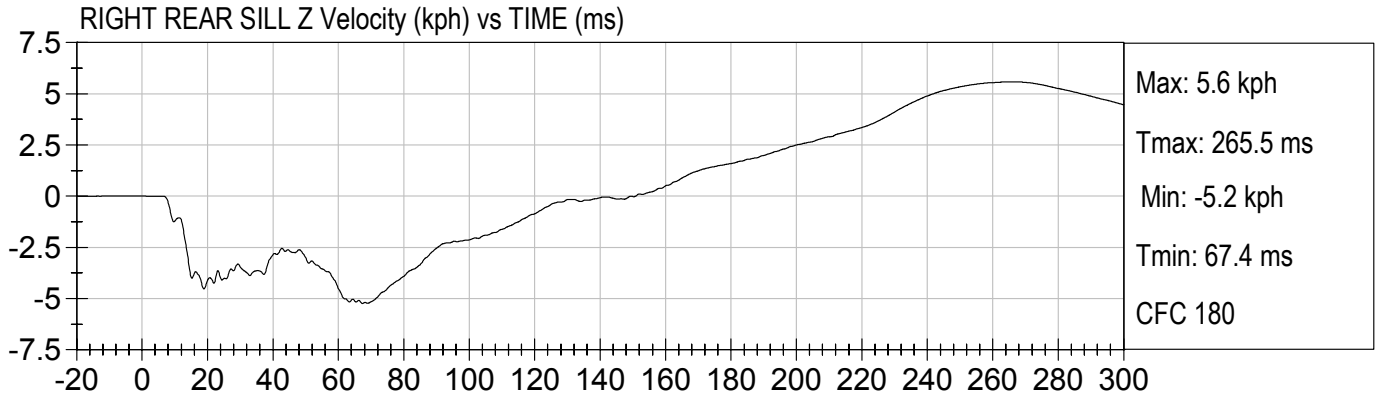


RIGHT REAR SILL Resultant (G's) vs TIME (ms)




RIGHT REAR SILL X Velocity (kph) vs TIME (ms)
2
1
0
-1
-2
-3
-4
-5
-6
-7
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 1.3 kph
Tmax: 32.4 ms
Min: -6.0 kph
Tmin: 134.8 ms
CFC 180

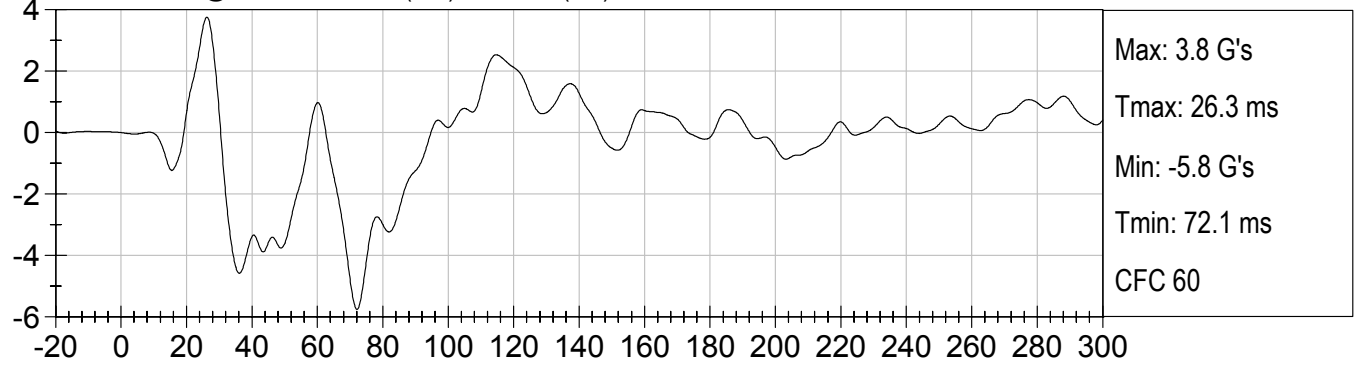

RIGHT REAR SILL Y Velocity (kph) vs TIME (ms)
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 22.2 kph
Tmax: 183.8 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180


RIGHT REAR SILL Z Velocity (kph) vs TIME (ms)
7.5
5
2.5
0
-2.5
-5
-7.5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 5.6 kph
Tmax: 265.5 ms
Min: -5.2 kph
Tmin: 67.4 ms
CFC 180

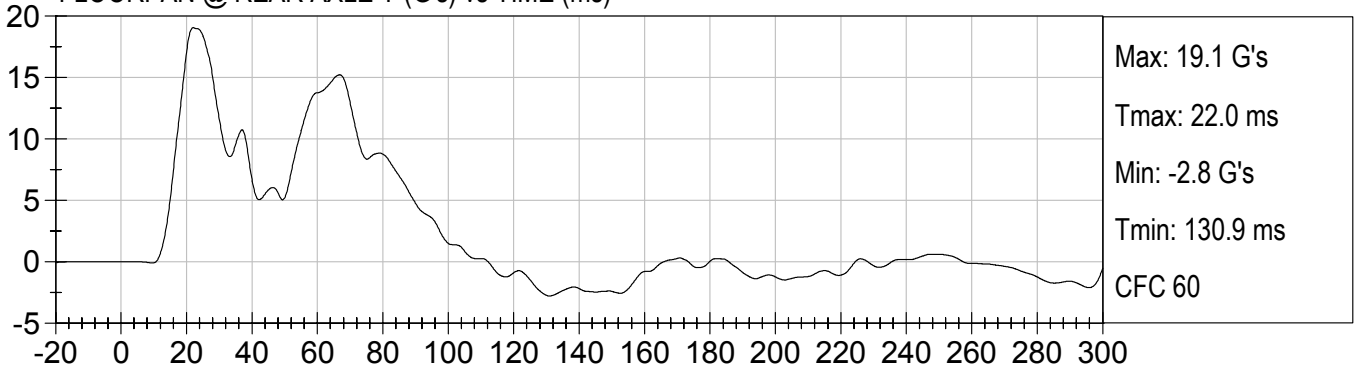
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

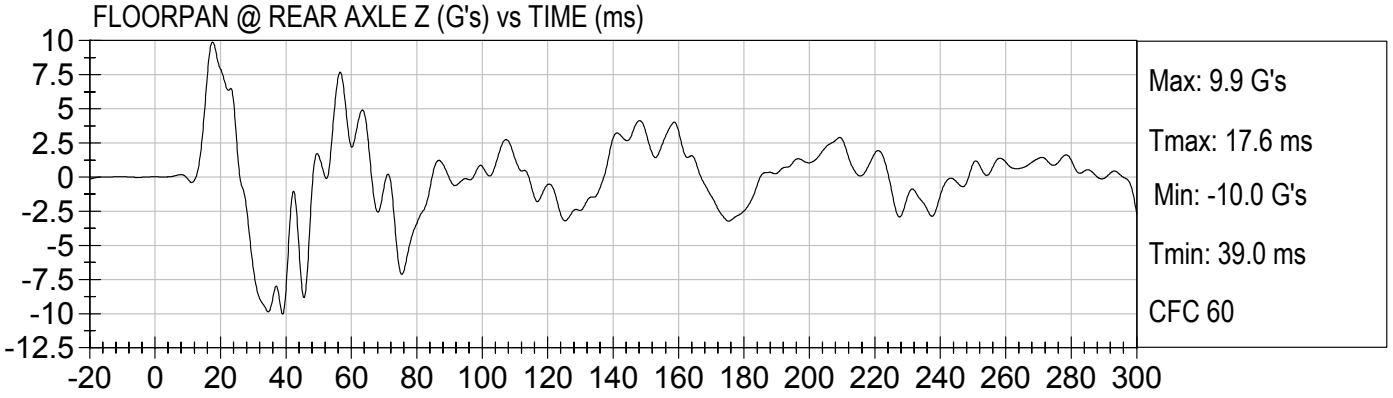
FLOORPAN @ REAR AXLE X (G's) vs TIME (ms)



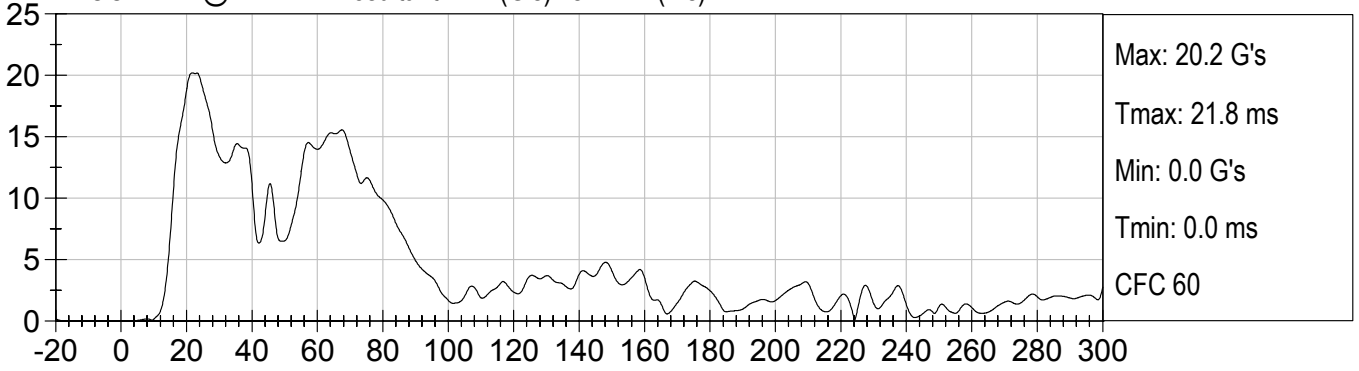
FLOORPAN @ REAR AXLE Y (G's) vs TIME (ms)

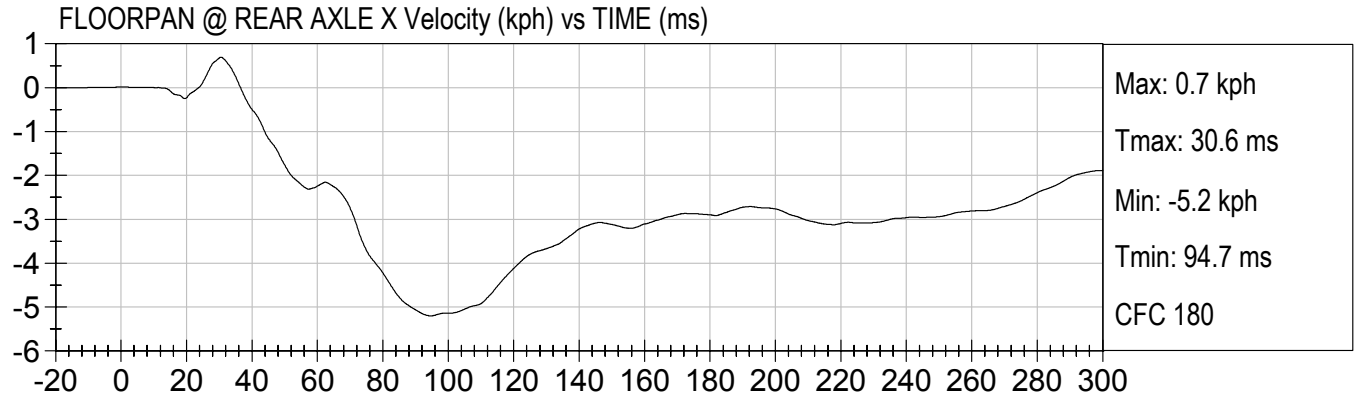


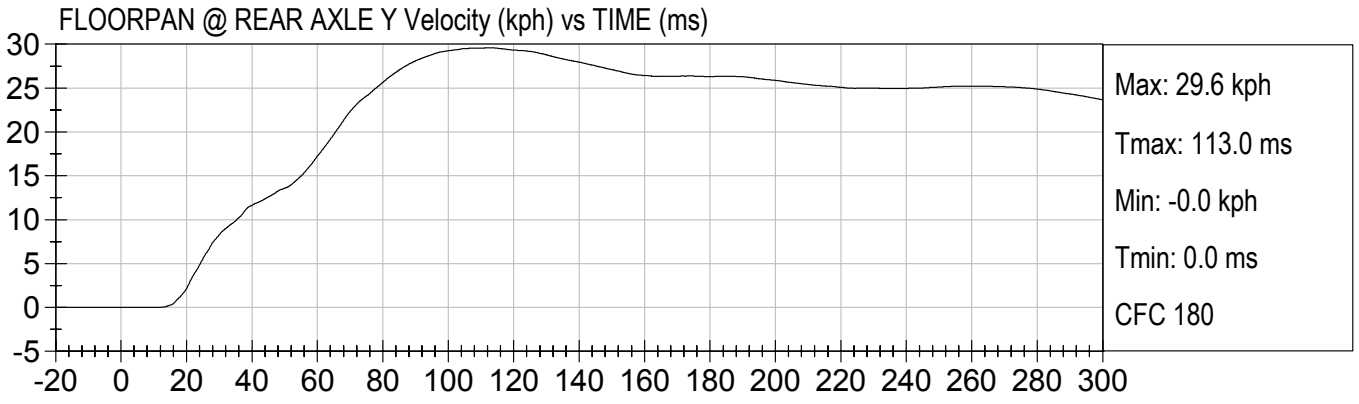
FLOORPAN @ REAR AXLE Z (G's) vs TIME (ms)

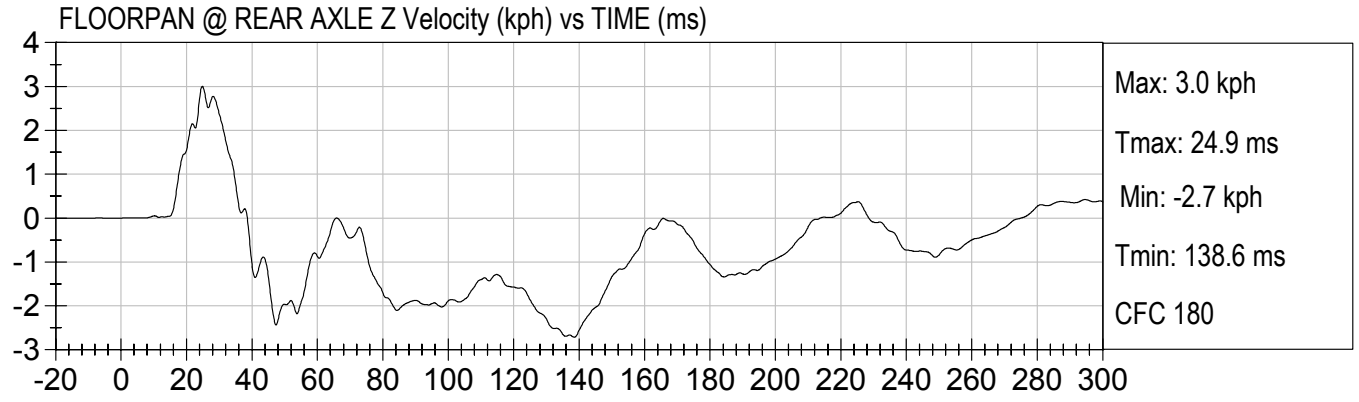


FLOORPAN @ REAR A ResultantLE X (G's) vs TIME (ms)




FLOORPAN @ REAR AXLE X Velocity (kph) vs TIME (ms)
1
0
-1
-2
-3
-4
-5
-6
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.7 kph
Tmax: 30.6 ms
Min: -5.2 kph
Tmin: 94.7 ms
CFC 180

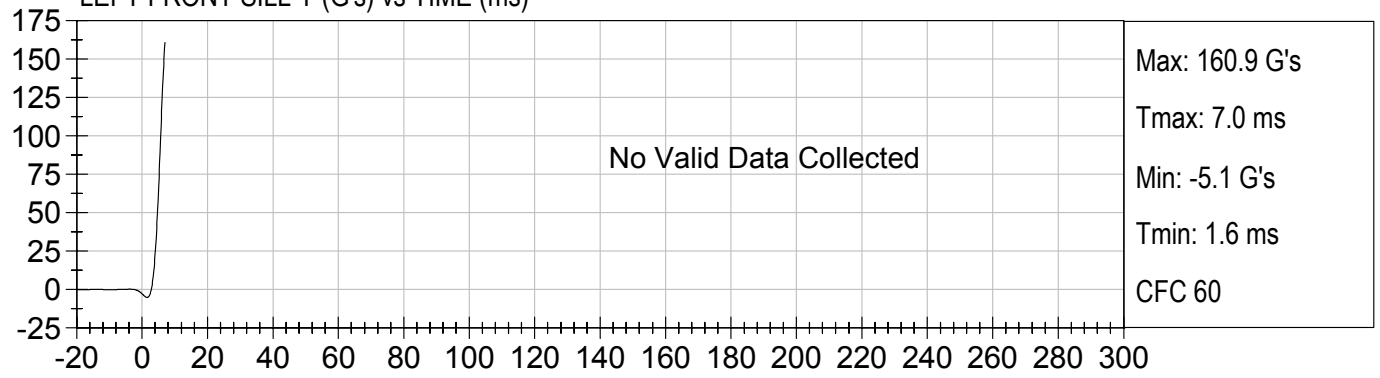

FLOORPAN @ REAR AXLE Y Velocity (kph) vs TIME (ms)
30
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 29.6 kph
Tmax: 113.0 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180


FLOORPAN @ REAR AXLE Z Velocity (kph) vs TIME (ms)
4
3
2
1
0
-1
-2
-3
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 3.0 kph
Tmax: 24.9 ms
Min: -2.7 kph
Tmin: 138.6 ms
CFC 180

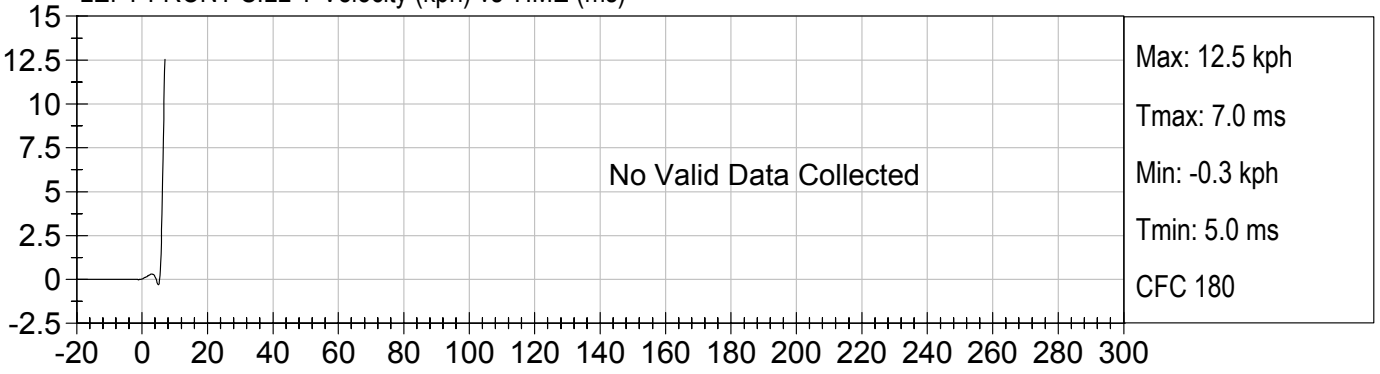
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

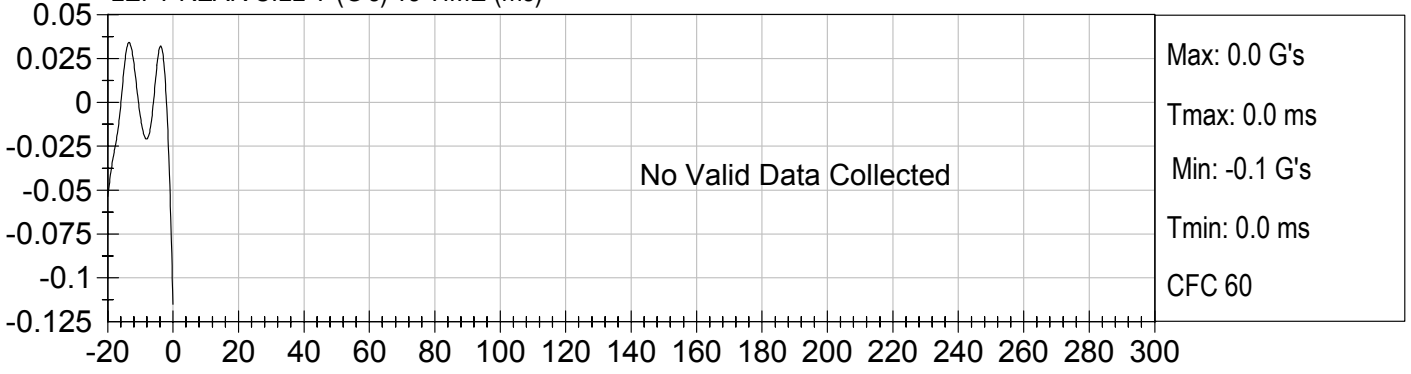
LEFT FRONT SILL Y (G's) vs TIME (ms)



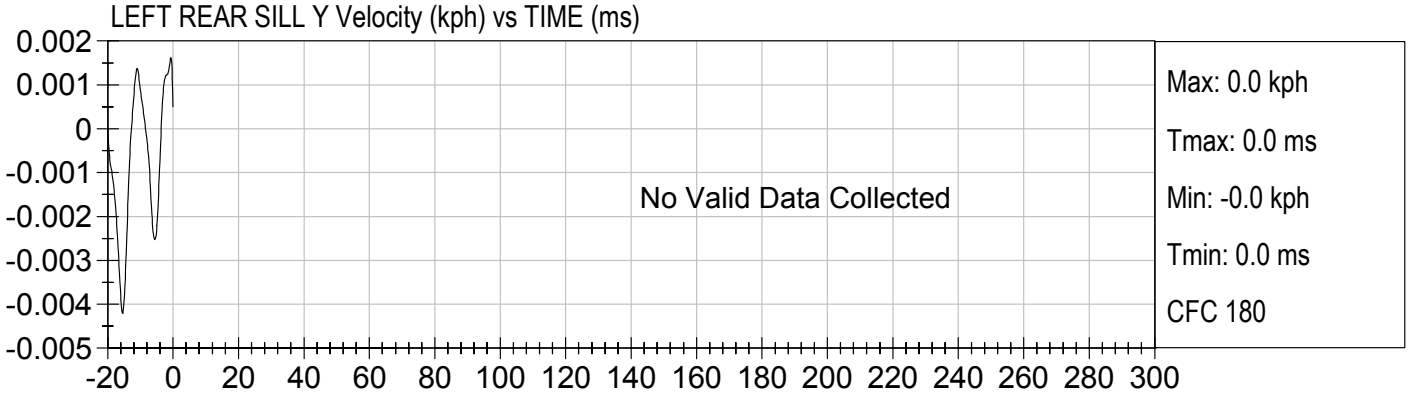
LEFT FRONT SILL Y Velocity (kph) vs TIME (ms)



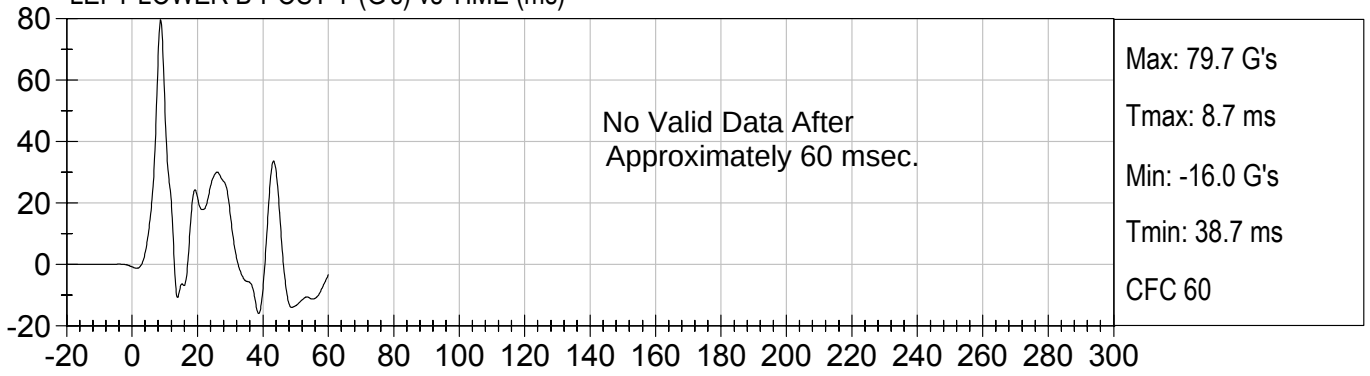
LEFT REAR SILL Y (G's) vs TIME (ms)



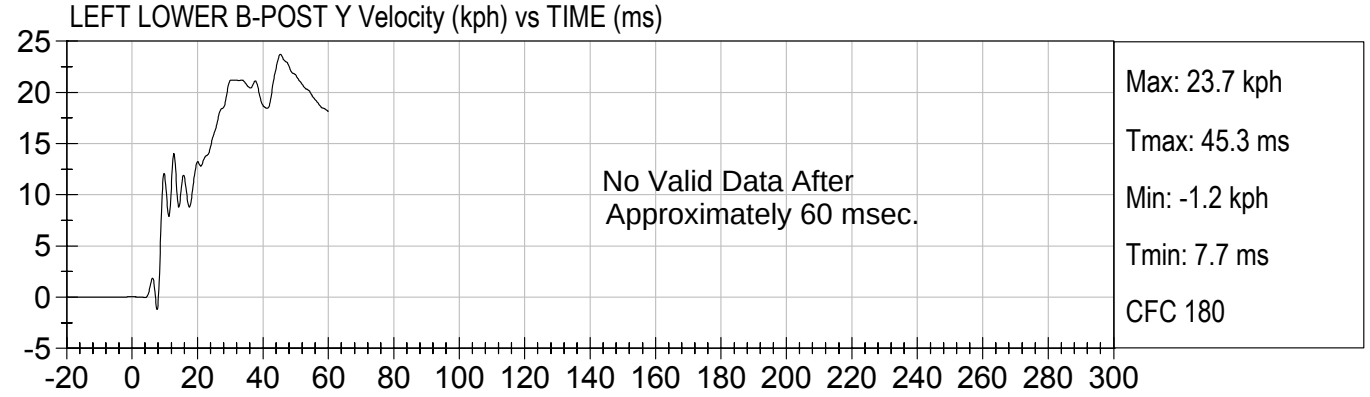
LEFT REAR SILL Y Velocity (kph) vs TIME (ms)



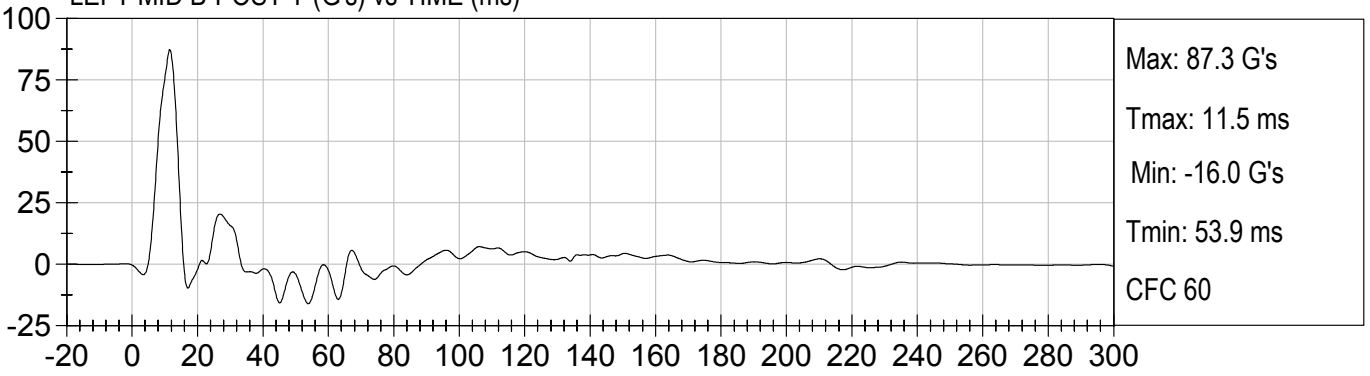
LEFT LOWER B-POST Y (G's) vs TIME (ms)



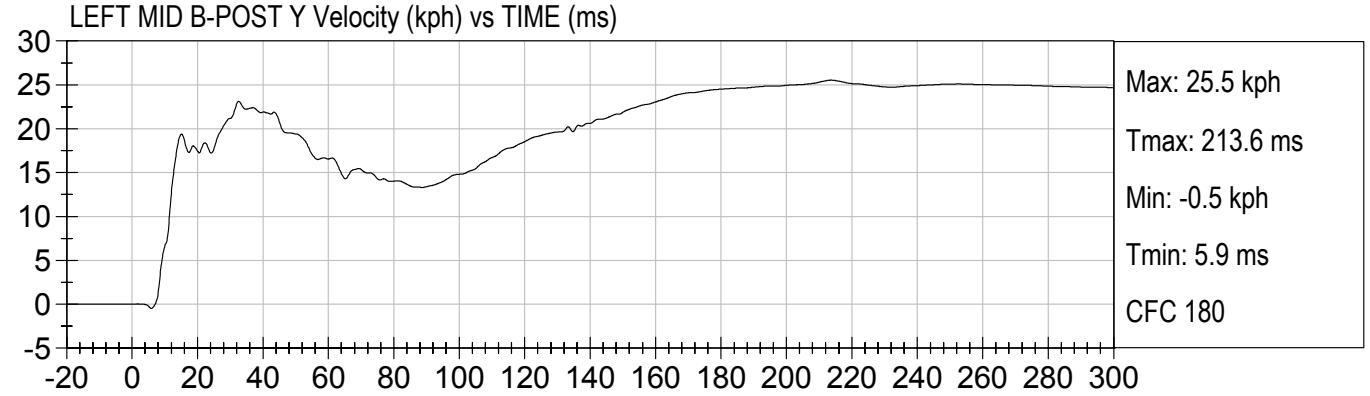
LEFT LOWER B-POST Y Velocity (kph) vs TIME (ms)



LEFT MID B-POST Y (G's) vs TIME (ms)



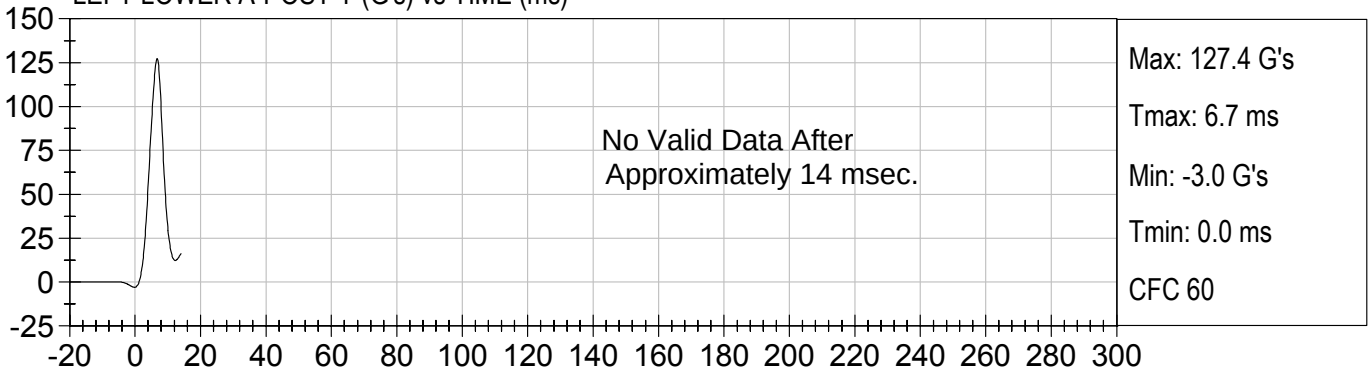
LEFT MID B-POST Y Velocity (kph) vs TIME (ms)



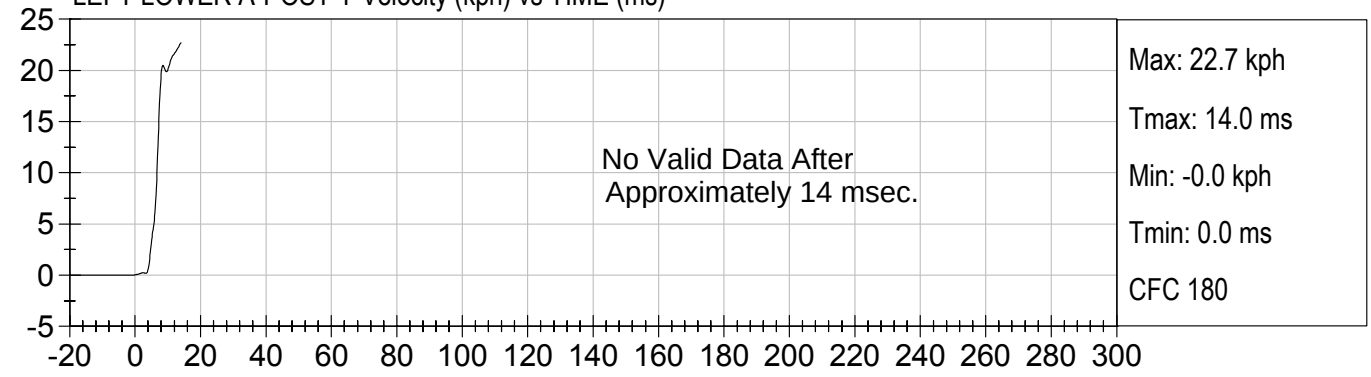
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

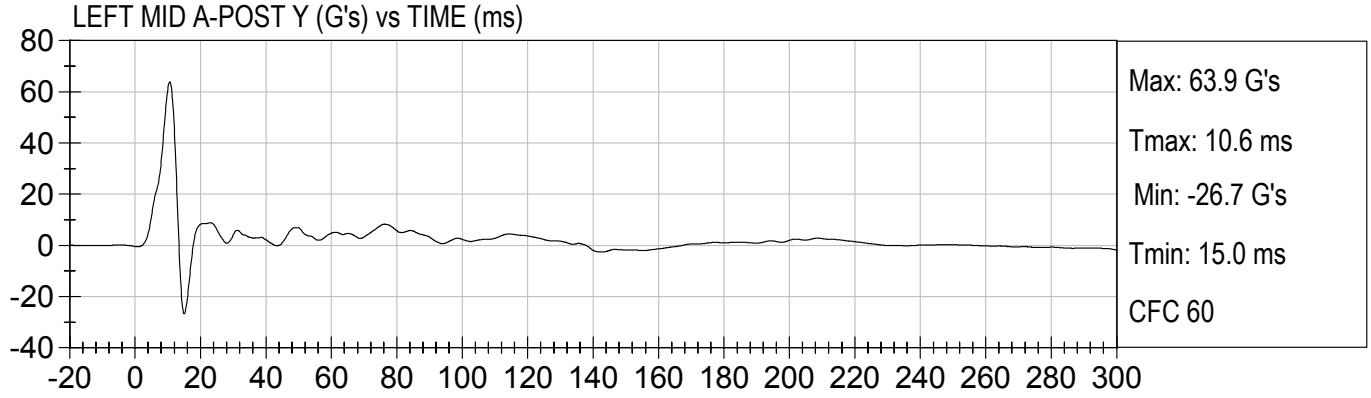
LEFT LOWER A-POST Y (G's) vs TIME (ms)



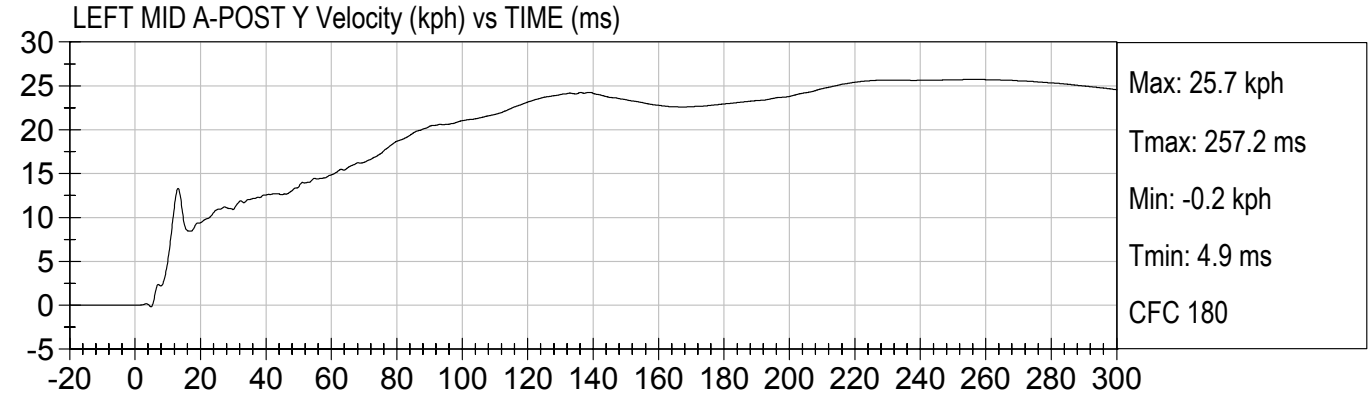
LEFT LOWER A-POST Y Velocity (kph) vs TIME (ms)



LEFT MID A-POST Y (G's) vs TIME (ms)



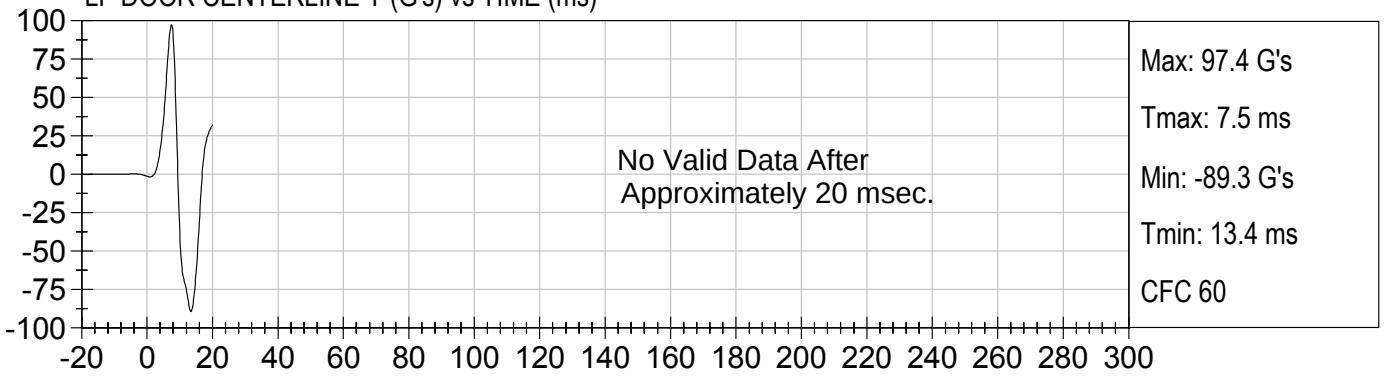
LEFT MID A-POST Y Velocity (kph) vs TIME (ms)



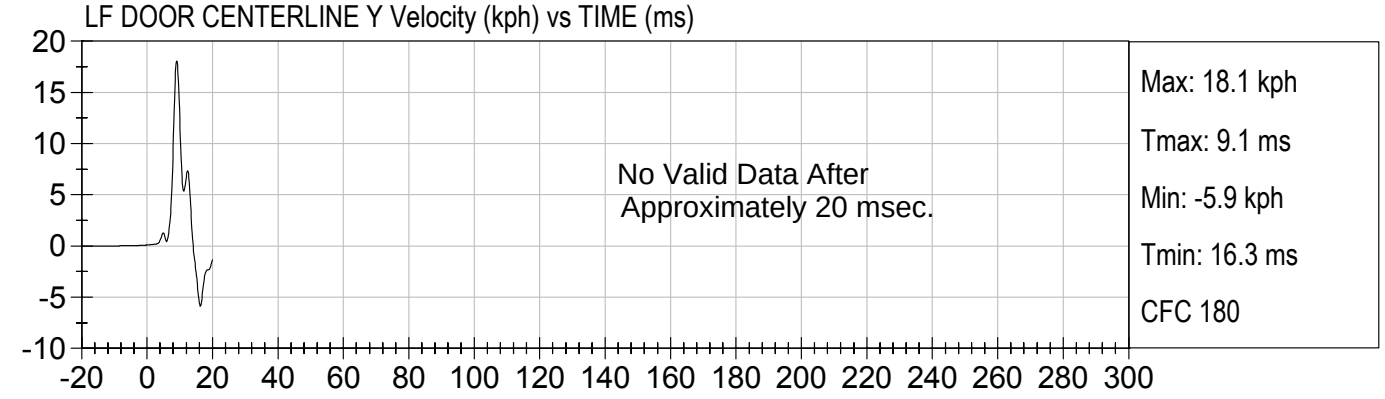
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

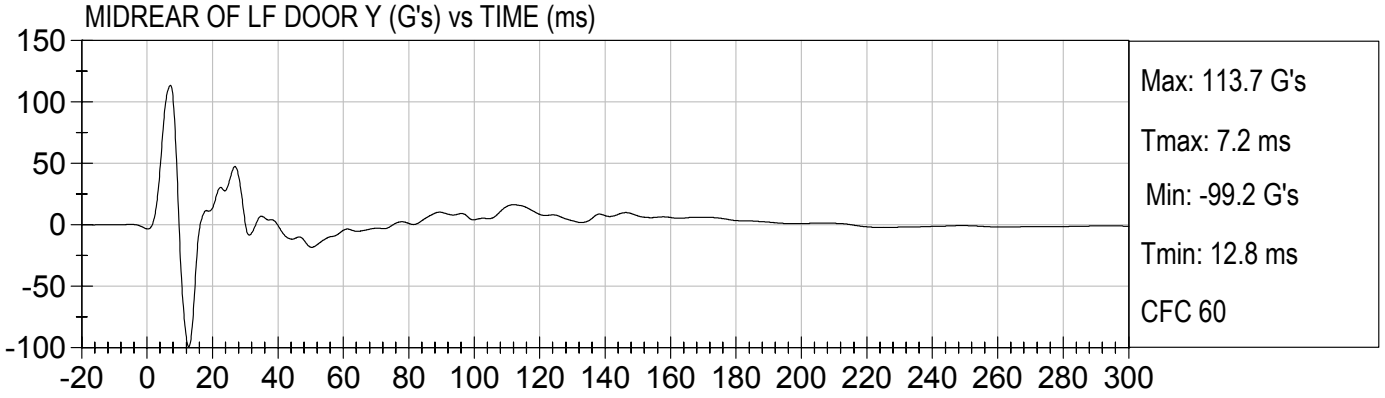
LF DOOR CENTERLINE Y (G's) vs TIME (ms)



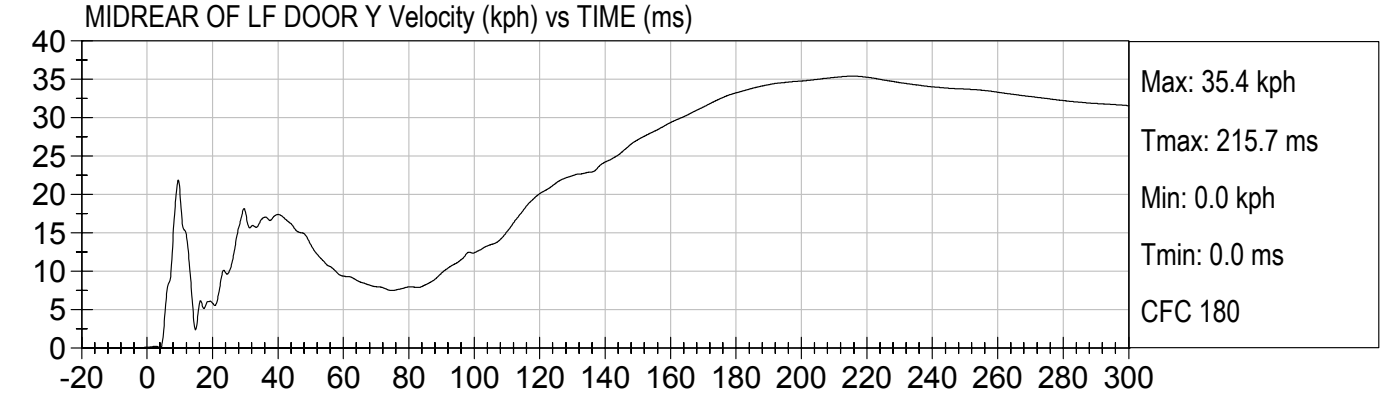
LF DOOR CENTERLINE Y Velocity (kph) vs TIME (ms)



MIDREAR OF LF DOOR Y (G's) vs TIME (ms)



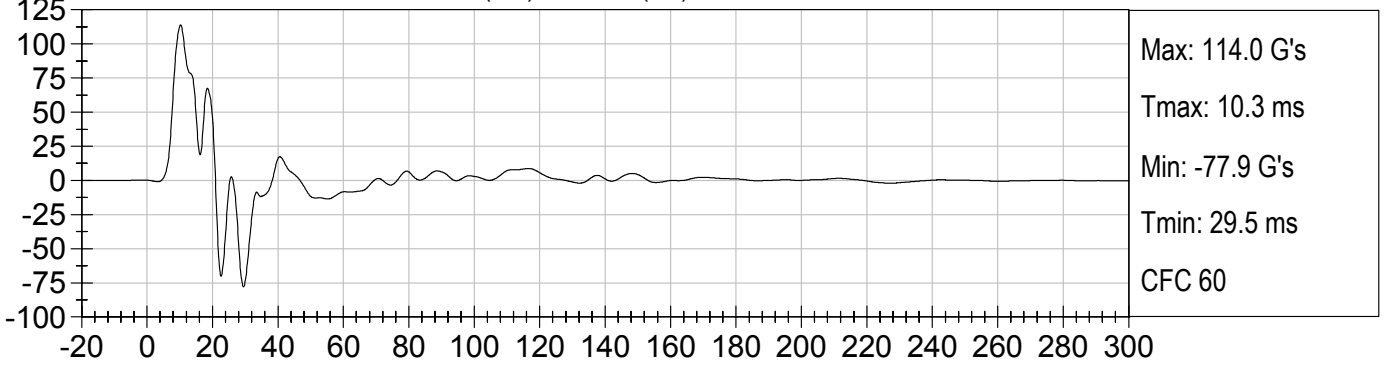
MIDREAR OF LF DOOR Y Velocity (kph) vs TIME (ms)



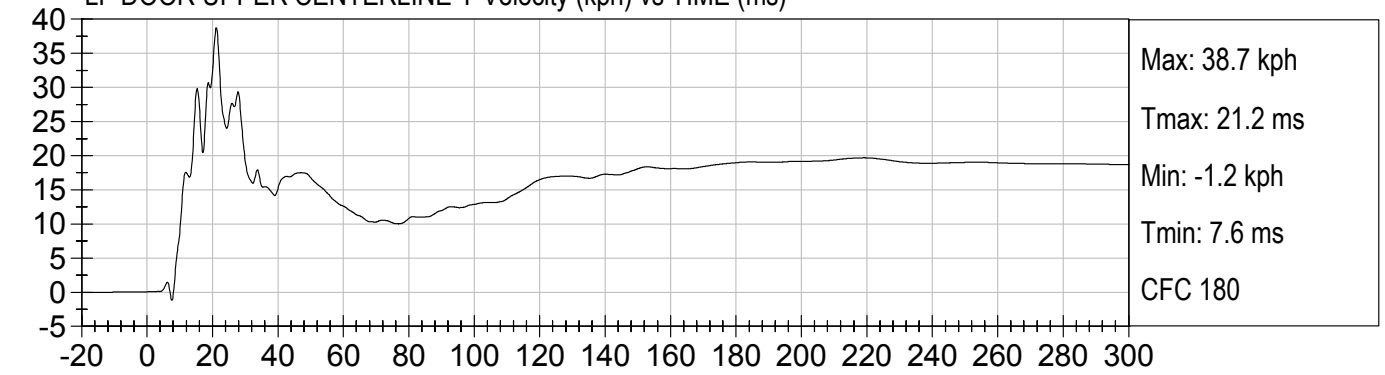
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

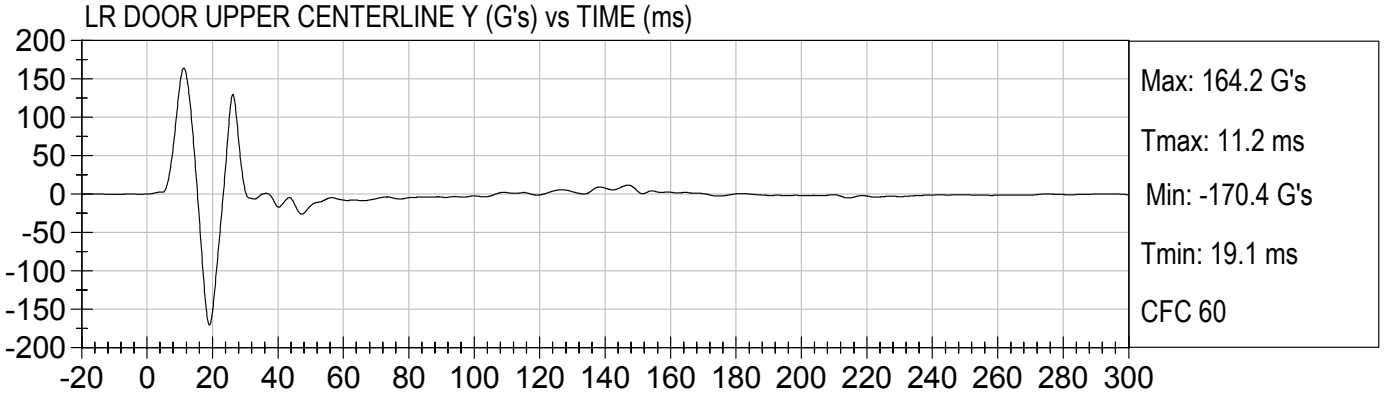
LF DOOR UPPER CENTERLINE Y (G's) vs TIME (ms)



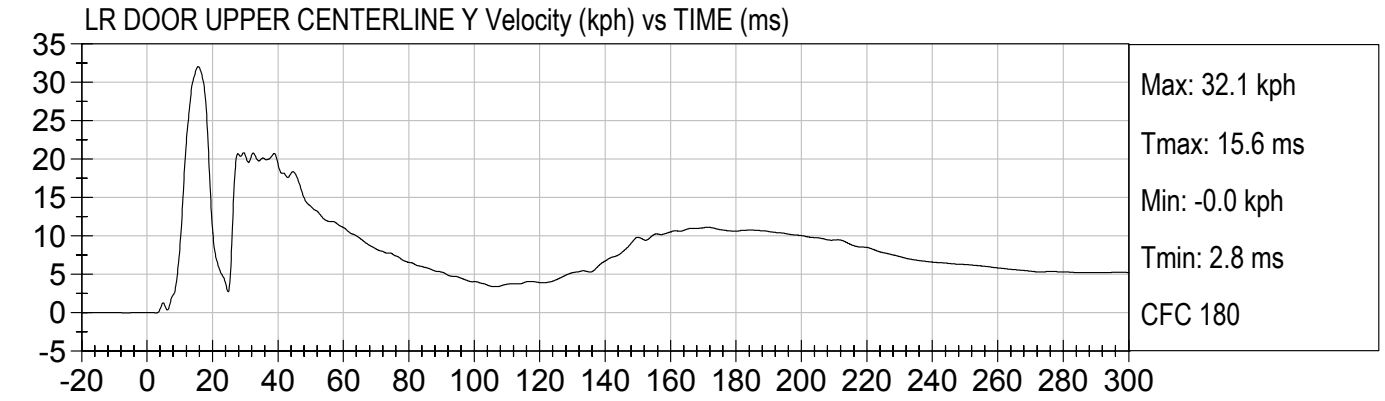
LF DOOR UPPER CENTERLINE Y Velocity (kph) vs TIME (ms)



LR DOOR UPPER CENTERLINE Y (G's) vs TIME (ms)



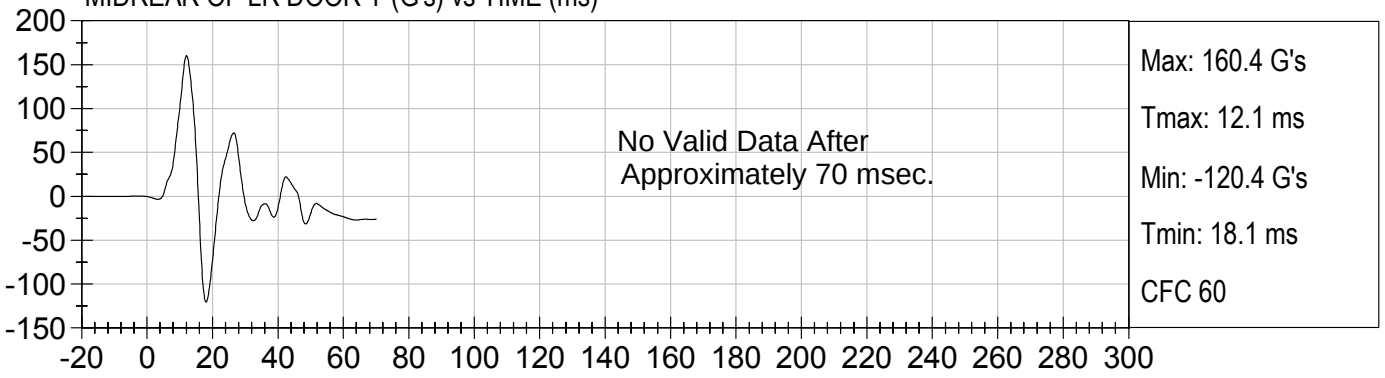
LR DOOR UPPER CENTERLINE Y Velocity (kph) vs TIME (ms)



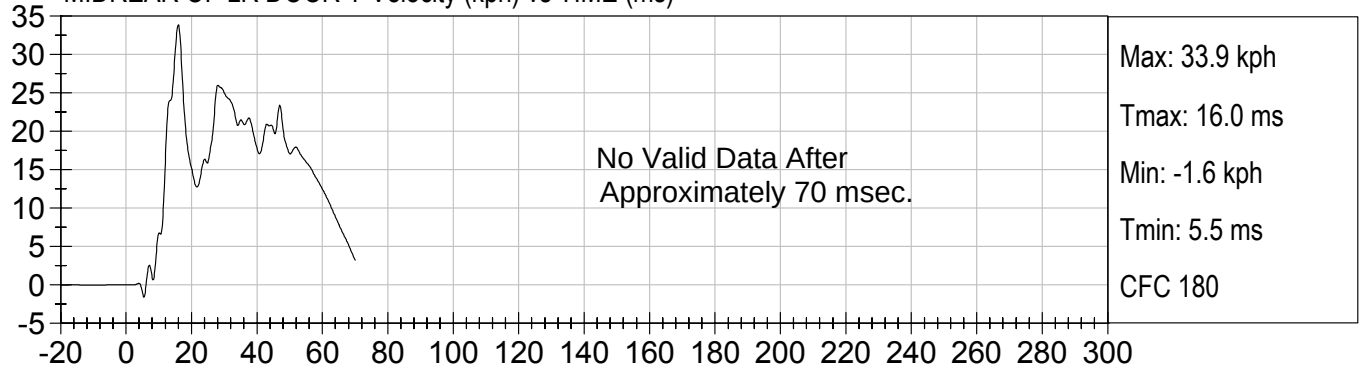
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

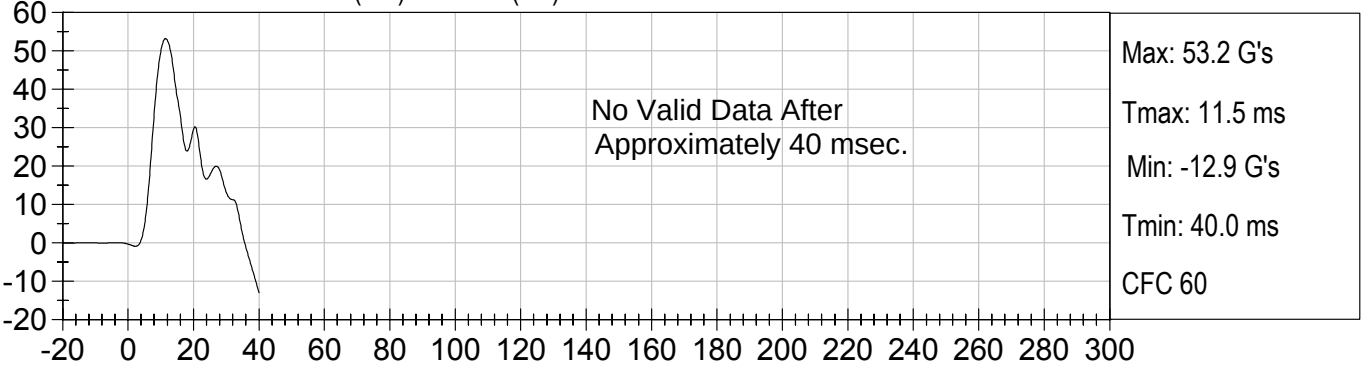
MIDREAR OF LR DOOR Y (G's) vs TIME (ms)



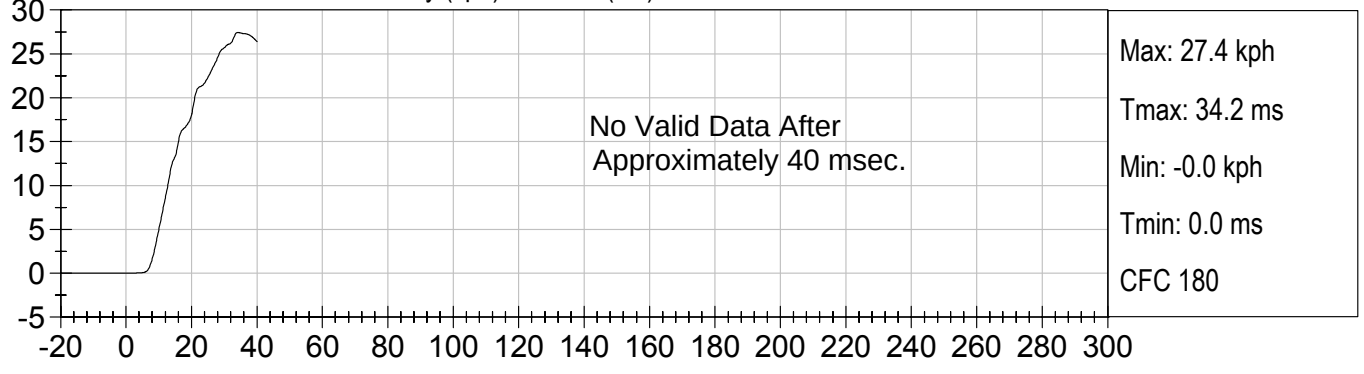
MIDREAR OF LR DOOR Y Velocity (kph) vs TIME (ms)



DRIVER SEAT TRACK Y (G's) vs TIME (ms)



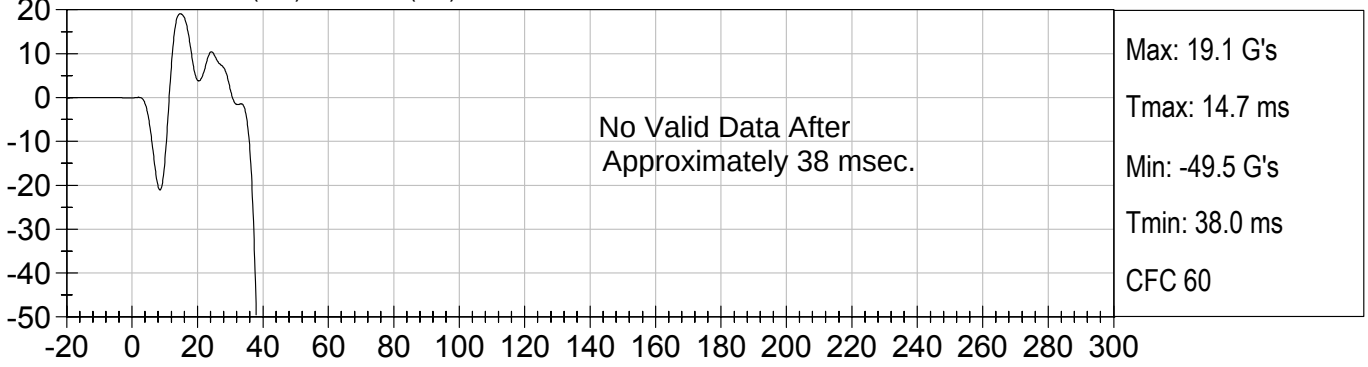
DRIVER SEAT TRACK Y Velocity (kph) vs TIME (ms)



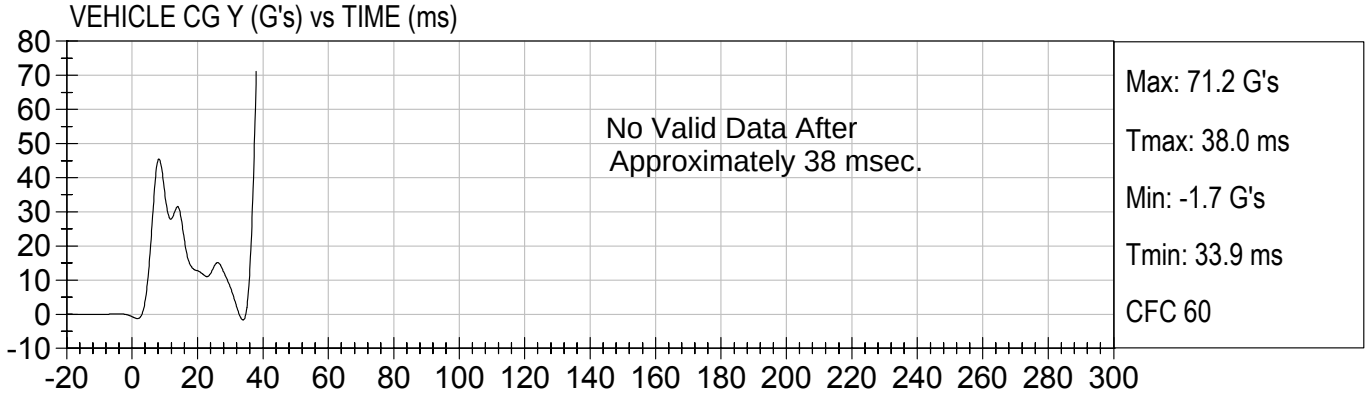
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

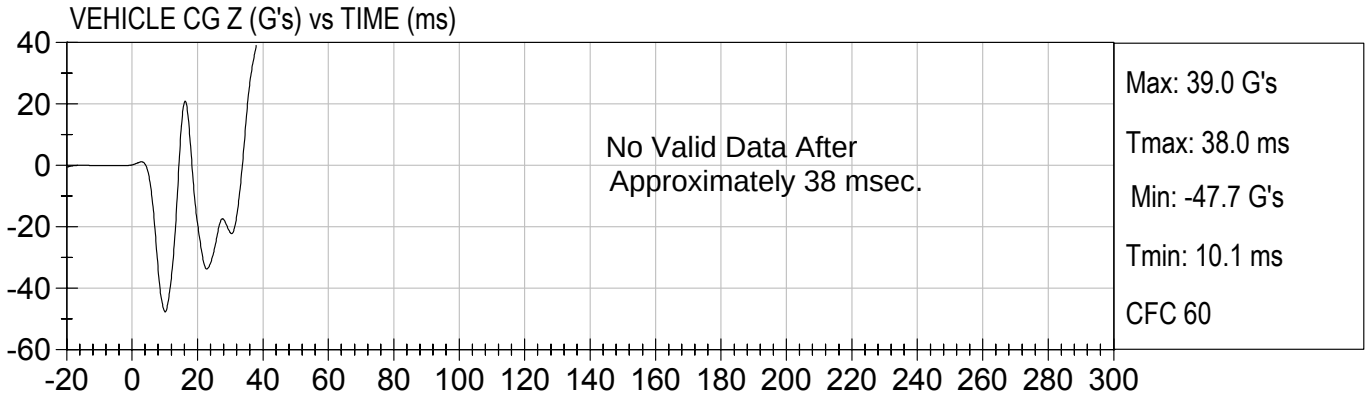
VEHICLE CG X (G's) vs TIME (ms)



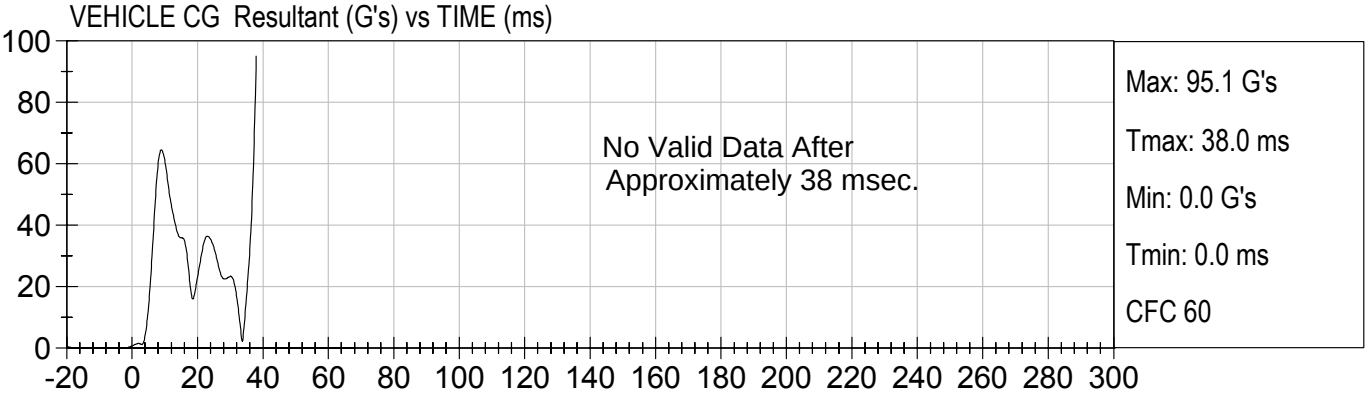
VEHICLE CG Y (G's) vs TIME (ms)

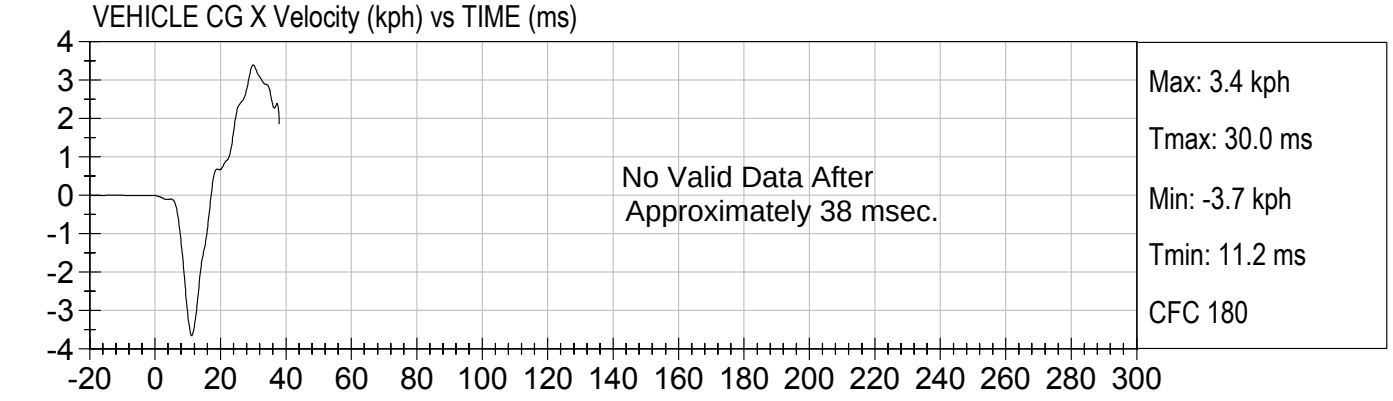


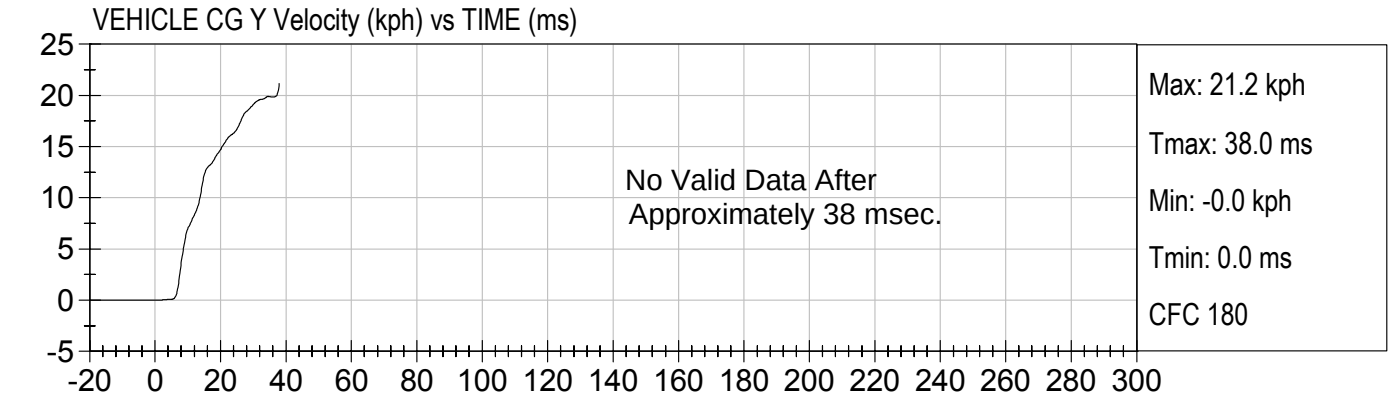
VEHICLE CG Z (G's) vs TIME (ms)

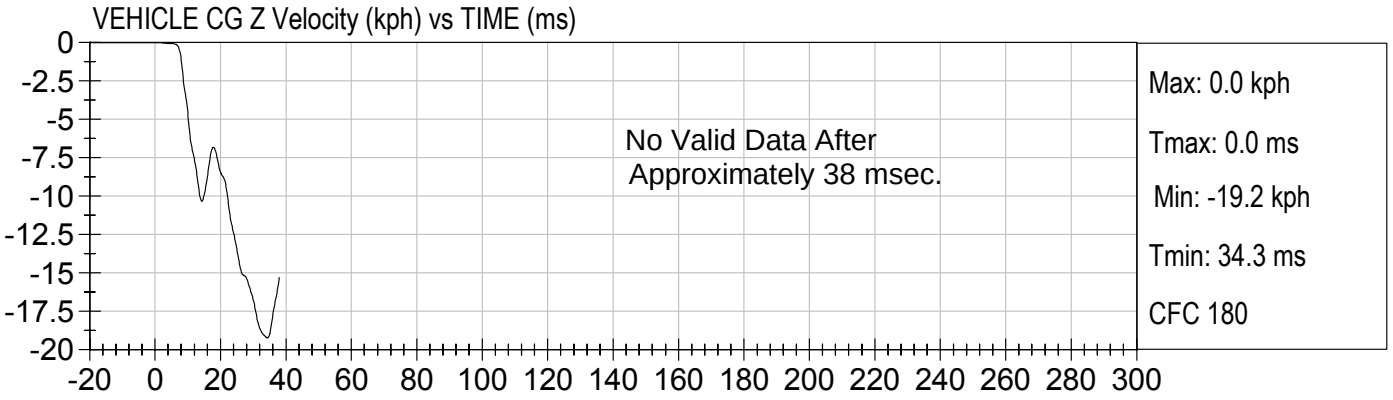


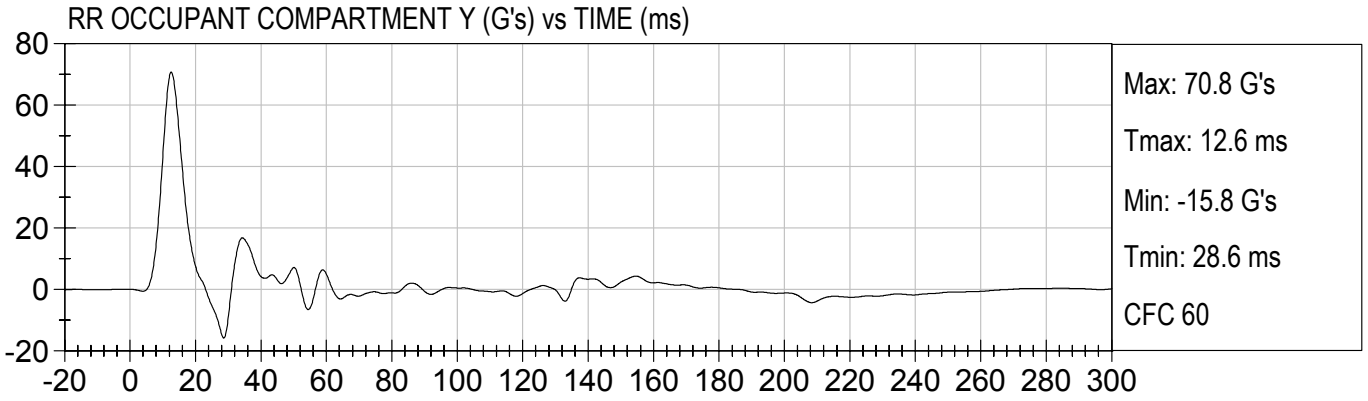
VEHICLE CG Resultant (G's) vs TIME (ms)

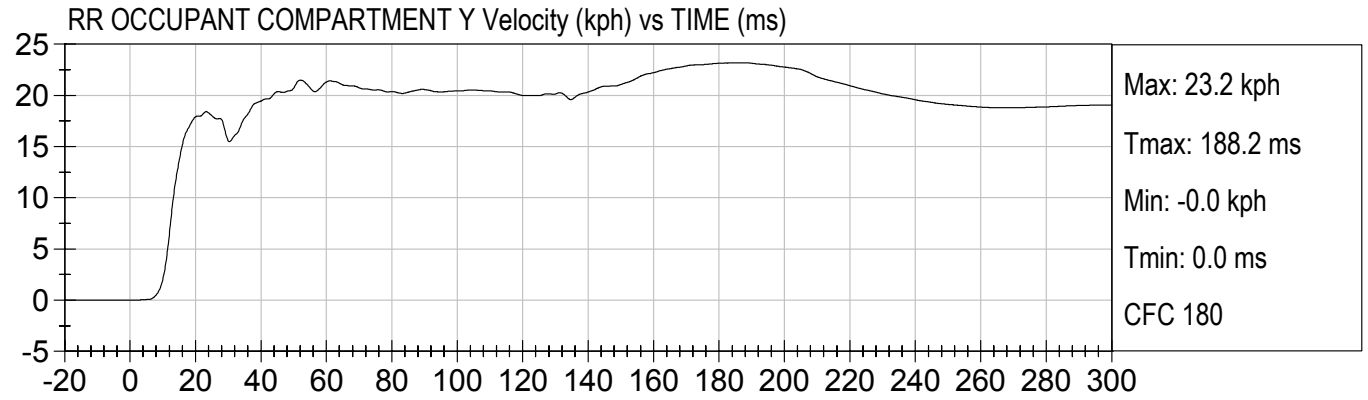


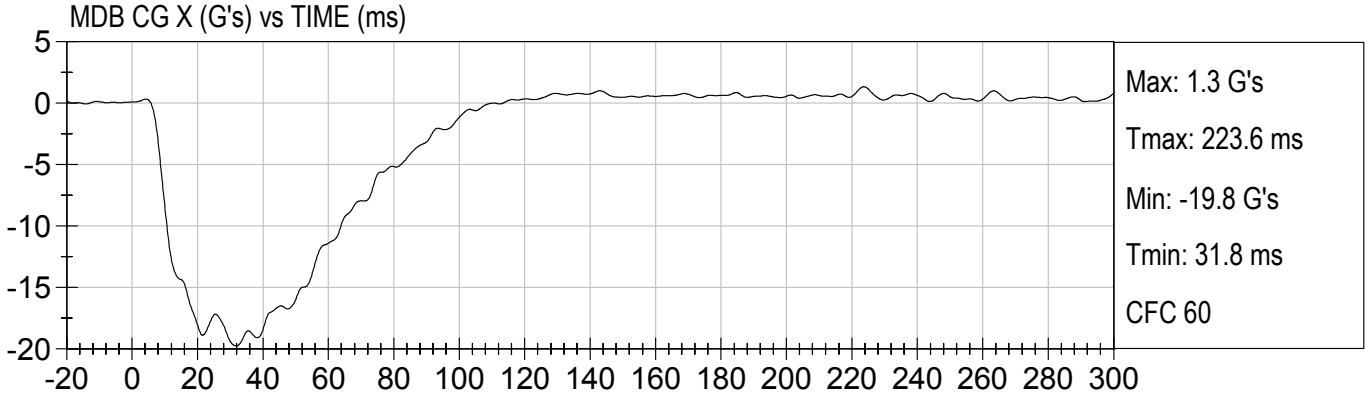

VEHICLE CG X Velocity (kph) vs TIME (ms)
No Valid Data After
Approximately 38 msec.
Max: 3.4 kph
Tmax: 30.0 ms
Min: -3.7 kph
Tmin: 11.2 ms
CFC 180

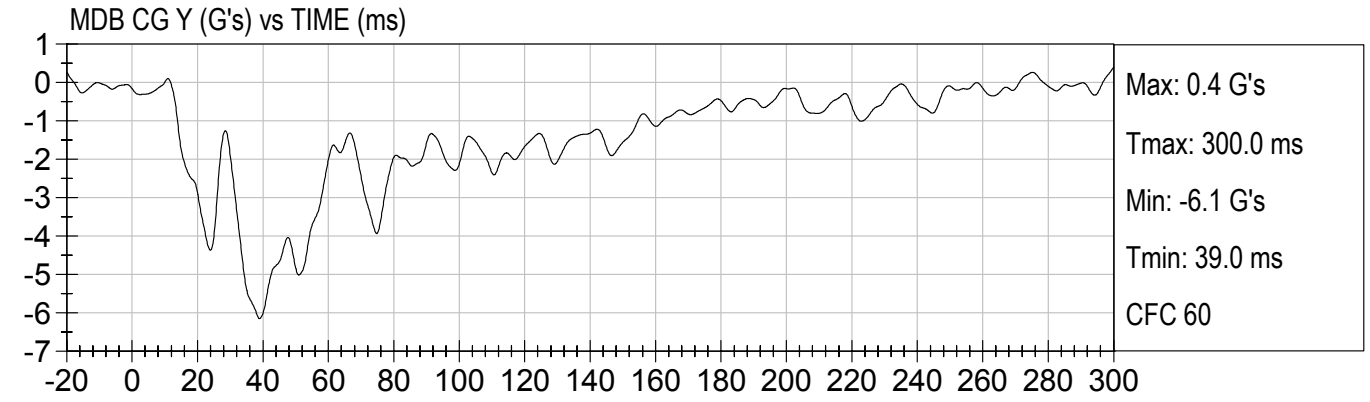

VEHICLE CG Y Velocity (kph) vs TIME (ms)
No Valid Data After
Approximately 38 msec.
Max: 21.2 kph
Tmax: 38.0 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180

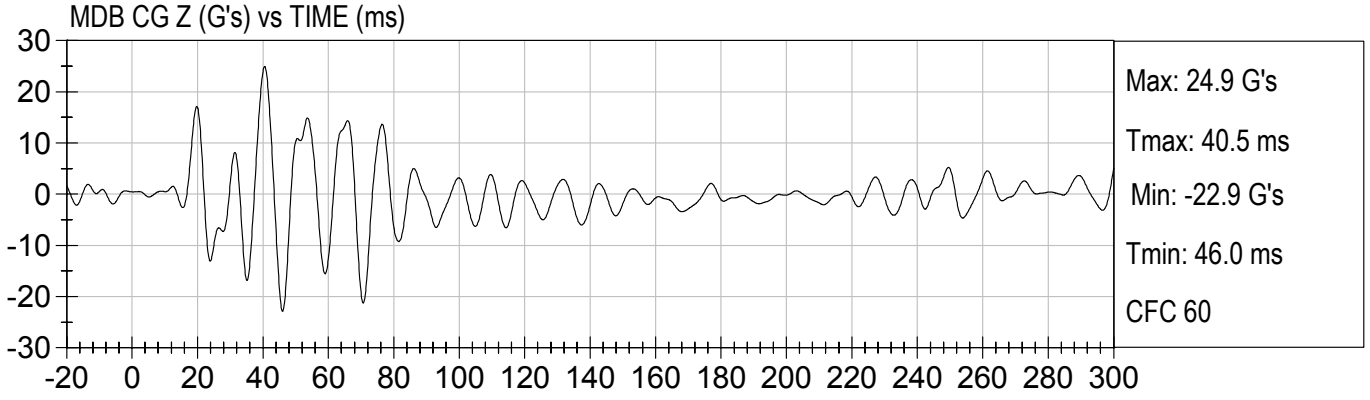

VEHICLE CG Z Velocity (kph) vs TIME (ms)
No Valid Data After
Approximately 38 msec.
Max: 0.0 kph
Tmax: 0.0 ms
Min: -19.2 kph
Tmin: 34.3 ms
CFC 180

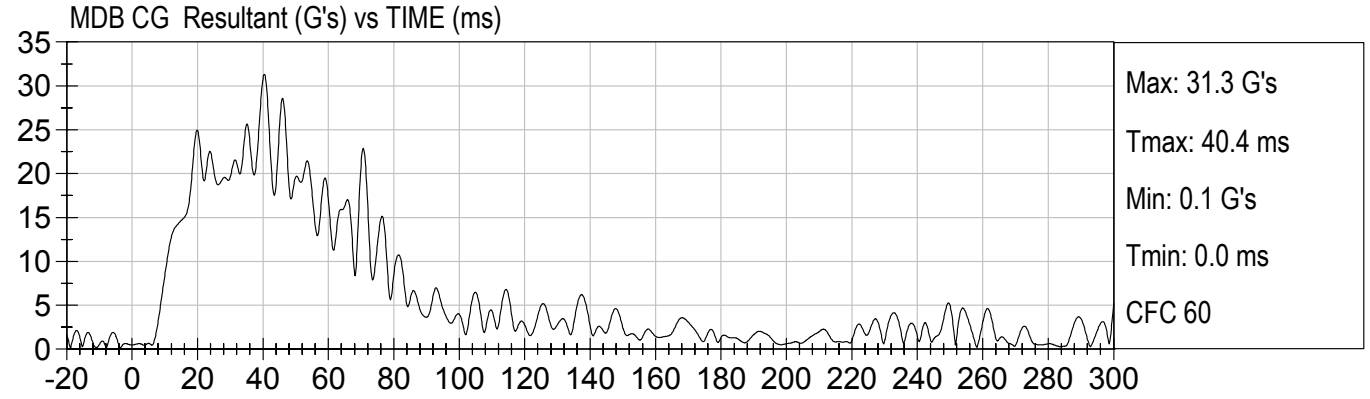

RR OCCUPANT COMPARTMENT Y (G's) vs TIME (ms)
80
60
40
20
0
-20
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 70.8 G's
Tmax: 12.6 ms
Min: -15.8 G's
Tmin: 28.6 ms
CFC 60


RR OCCUPANT COMPARTMENT Y Velocity (kph) vs TIME (ms)
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 23.2 kph
Tmax: 188.2 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180


MDB CG X (G's) vs TIME (ms)
Max: 1.3 G's
Tmax: 223.6 ms
Min: -19.8 G's
Tmin: 31.8 ms
CFC 60

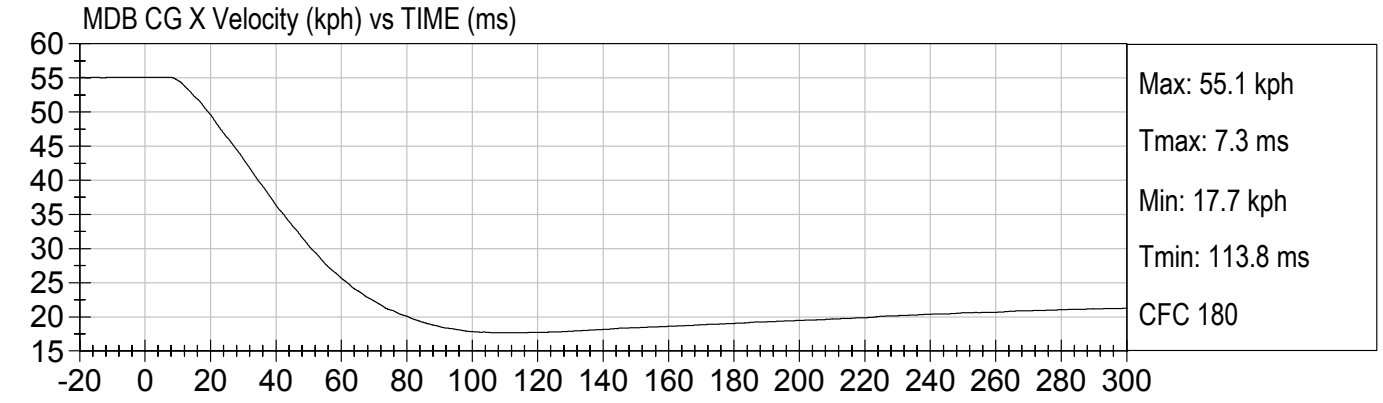

MDB CG Y (G's) vs TIME (ms)
Max: 0.4 G's
Tmax: 300.0 ms
Min: -6.1 G's
Tmin: 39.0 ms
CFC 60

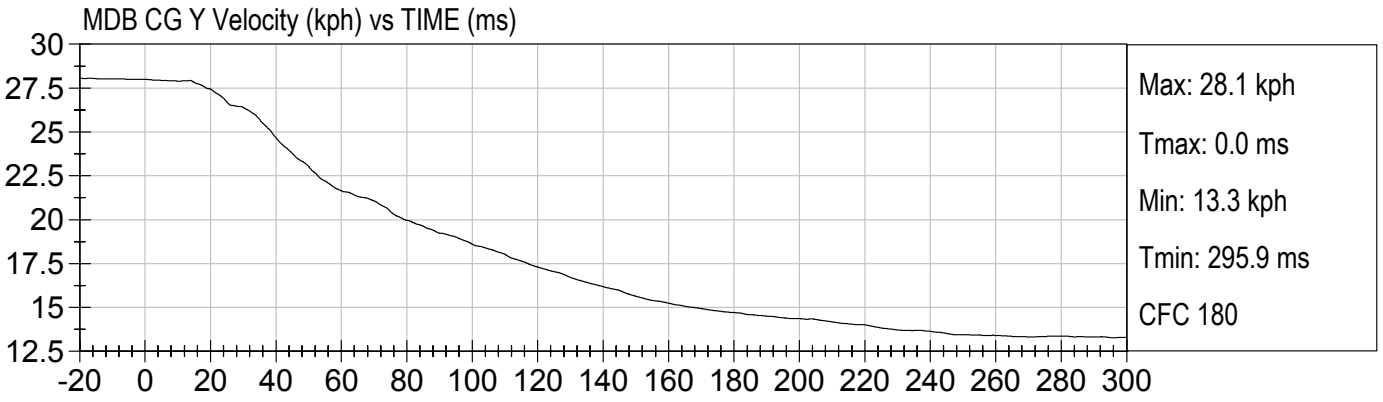

MDB CG Z (G's) vs TIME (ms)
Max: 24.9 G's
Tmax: 40.5 ms
Min: -22.9 G's
Tmin: 46.0 ms
CFC 60

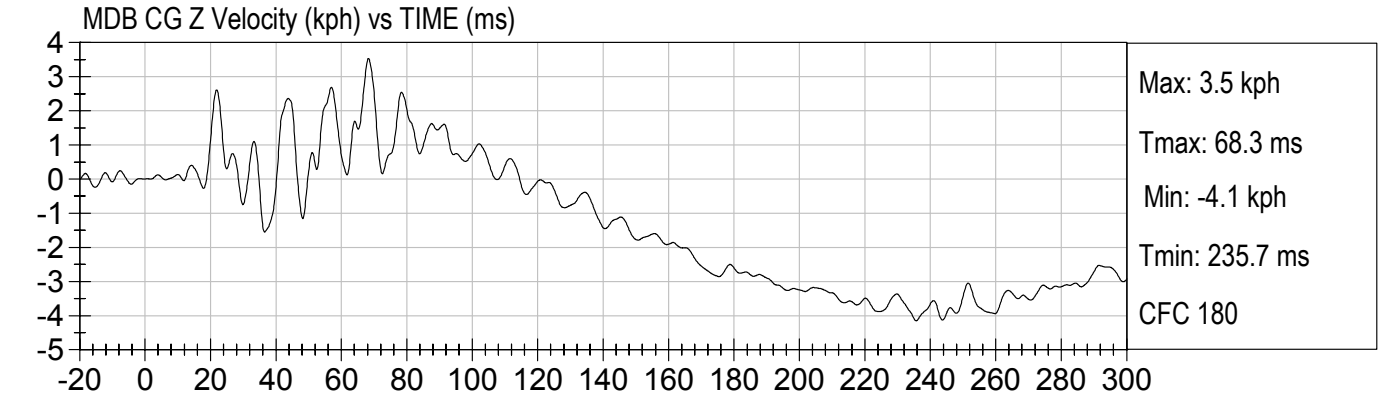

MDB CG Resultant (G's) vs TIME (ms)
Max: 31.3 G's
Tmax: 40.4 ms
Min: 0.1 G's
Tmin: 0.0 ms
CFC 60

NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

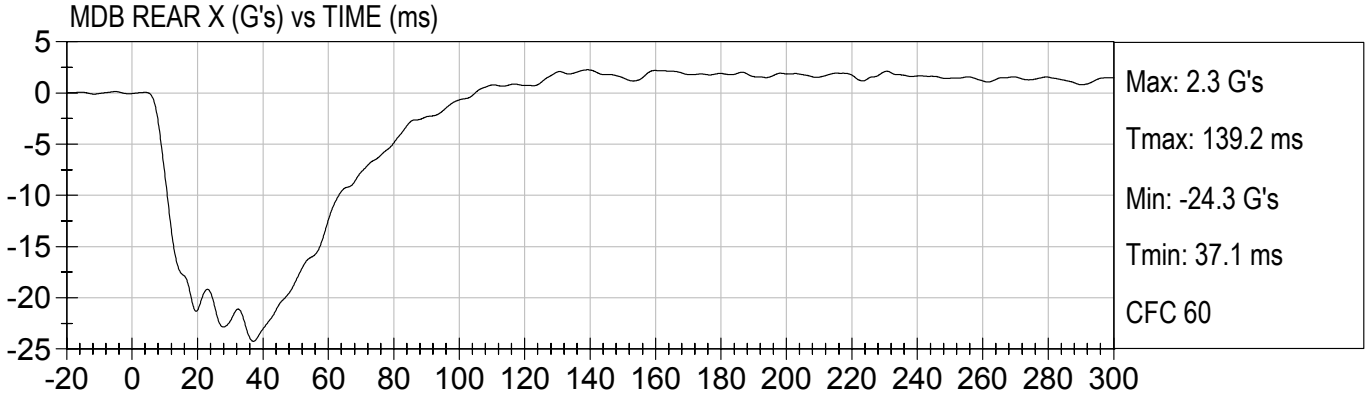


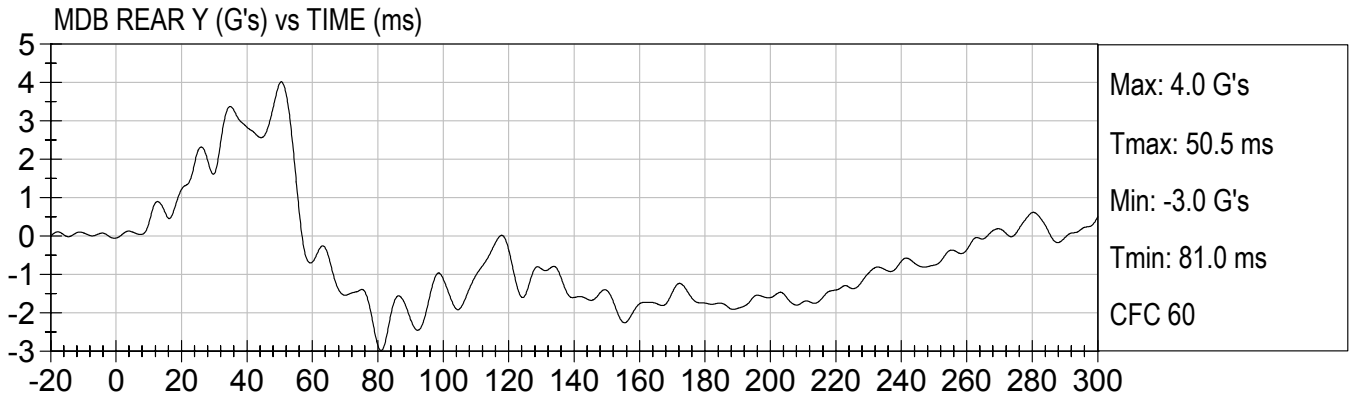


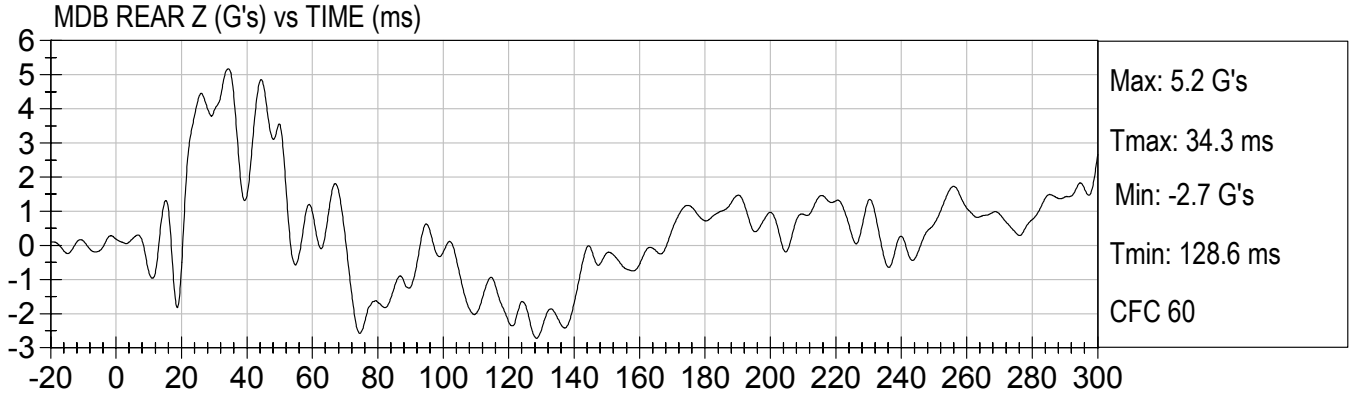


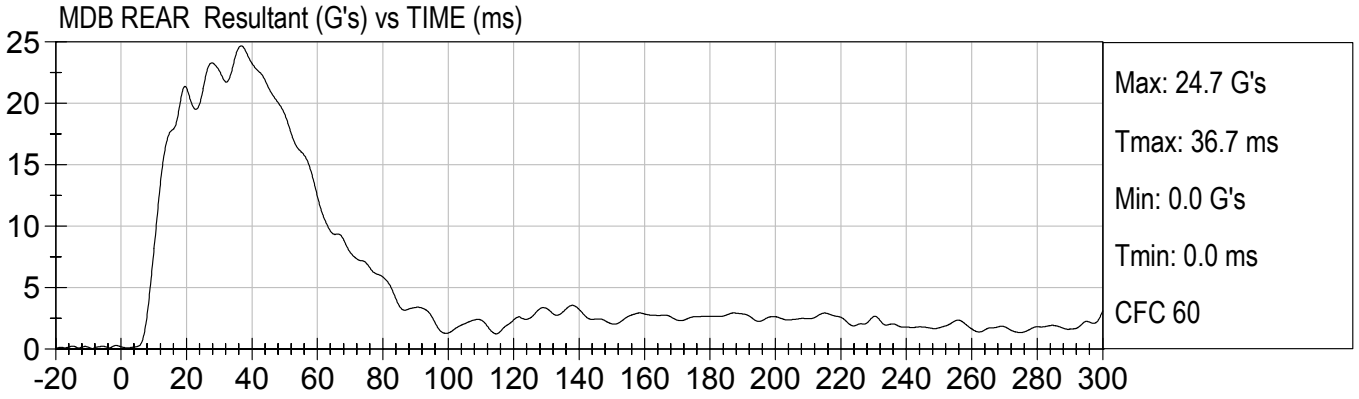
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

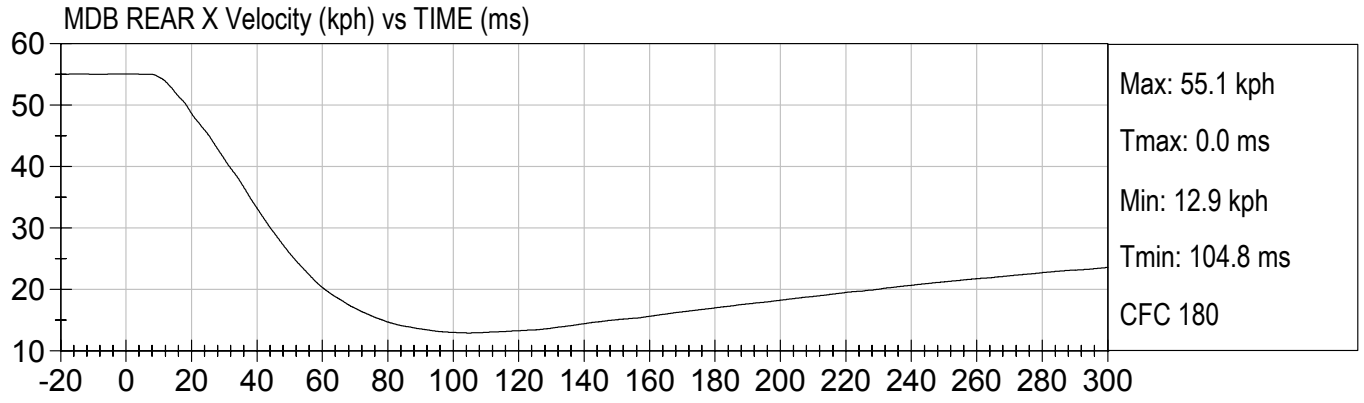
Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

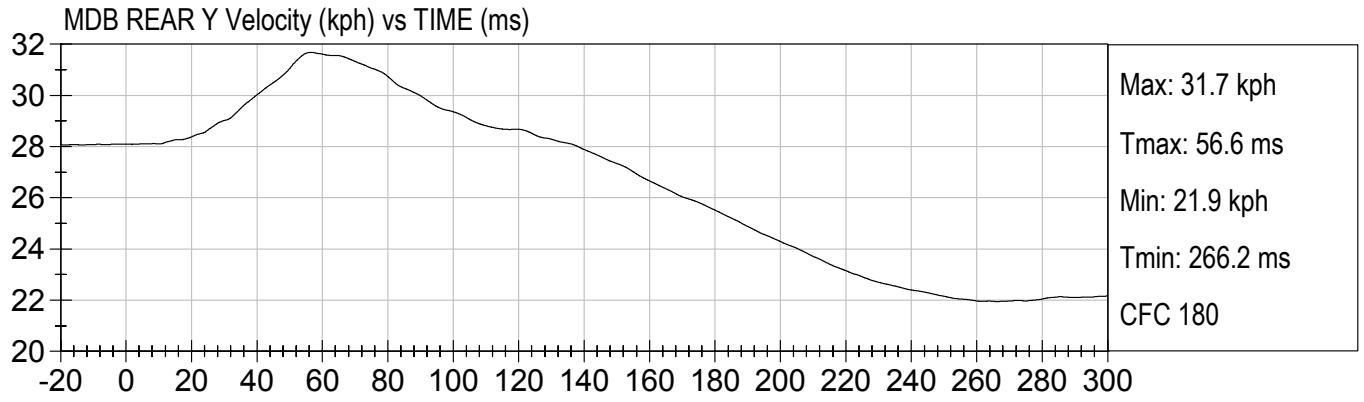


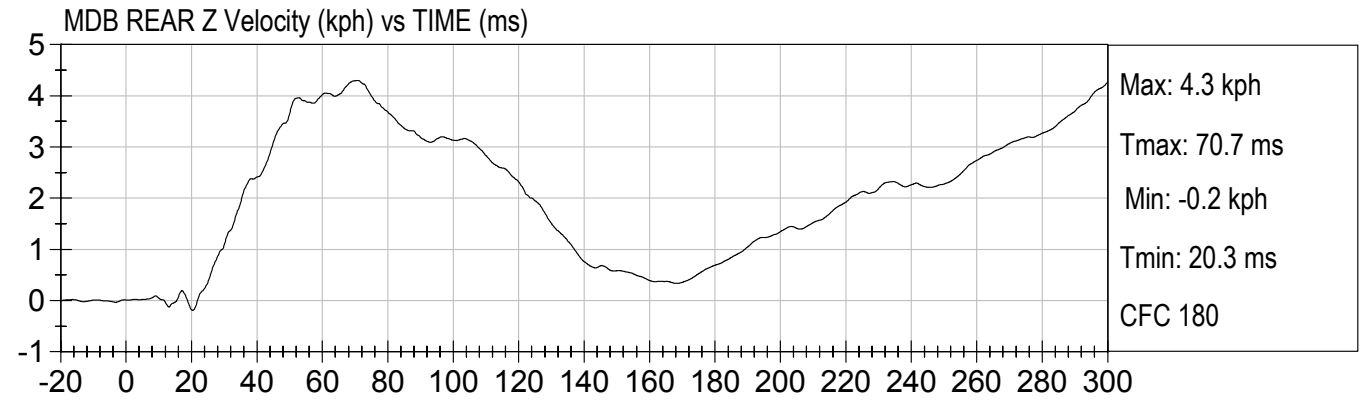


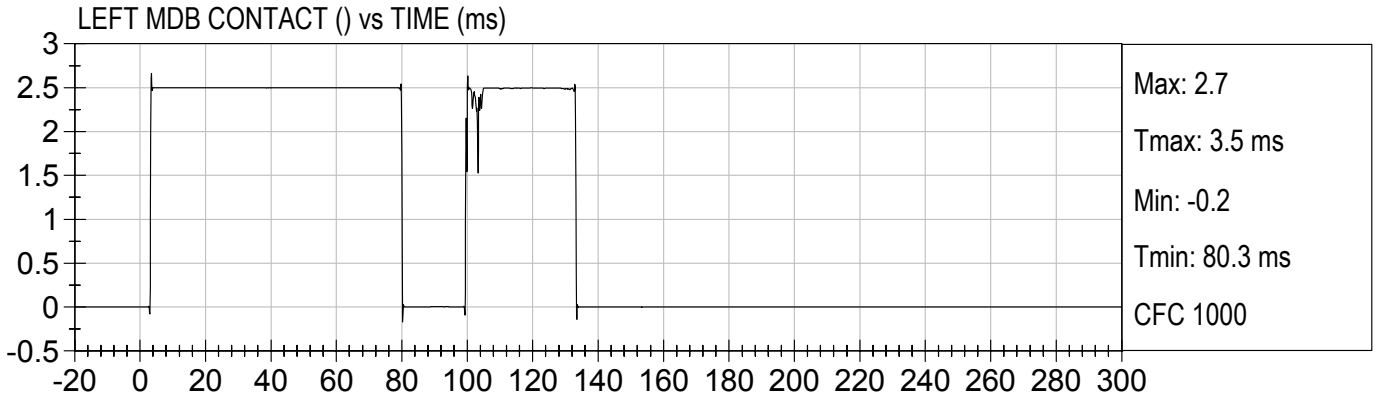


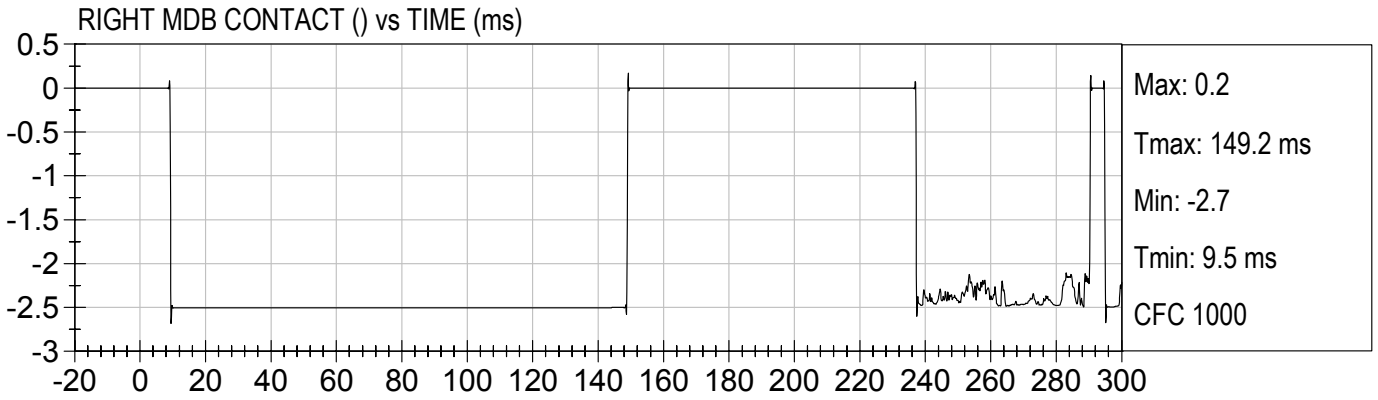



MDB REAR X Velocity (kph) vs TIME (ms)
60
50
40
30
20
10
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 55.1 kph
Tmax: 0.0 ms
Min: 12.9 kph
Tmin: 104.8 ms
CFC 180


MDB REAR Y Velocity (kph) vs TIME (ms)
32
30
28
26
24
22
20
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 31.7 kph
Tmax: 56.6 ms
Min: 21.9 kph
Tmin: 266.2 ms
CFC 180


MDB REAR Z Velocity (kph) vs TIME (ms)
5
4
3
2
1
0
-1
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 4.3 kph
Tmax: 70.7 ms
Min: -0.2 kph
Tmin: 20.3 ms
CFC 180

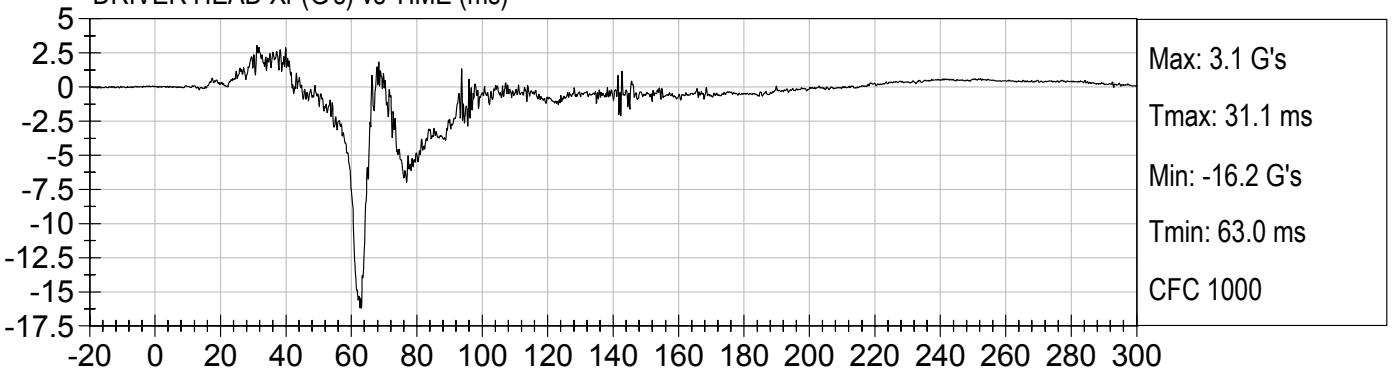

LEFT MDB CONTACT () vs TIME (ms)
3
2.5
2
1.5
1
0.5
0
-0.5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 2.7
Tmax: 3.5 ms
Min: -0.2
Tmin: 80.3 ms
CFC 1000


RIGHT MDB CONTACT () vs TIME (ms)
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.2
Tmax: 149.2 ms
Min: -2.7
Tmin: 9.5 ms
CFC 1000

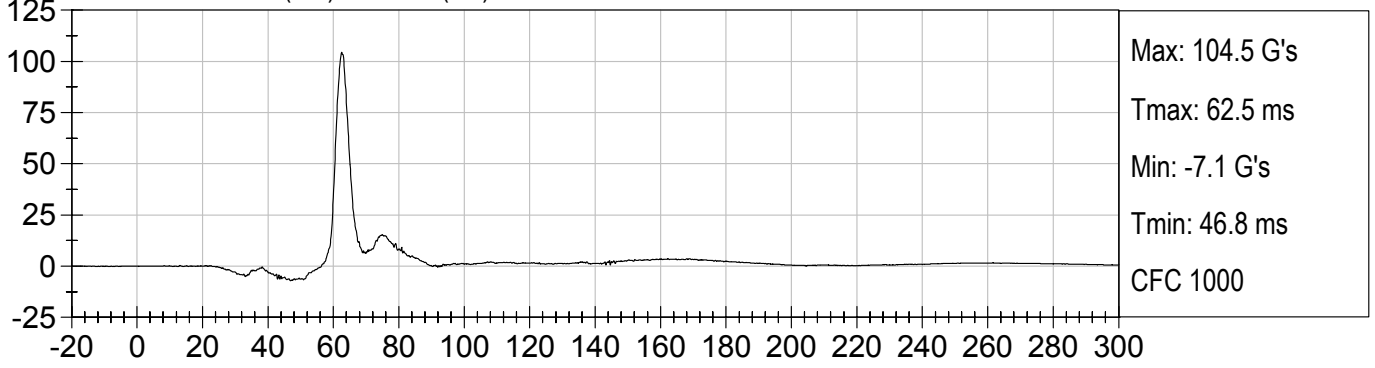
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

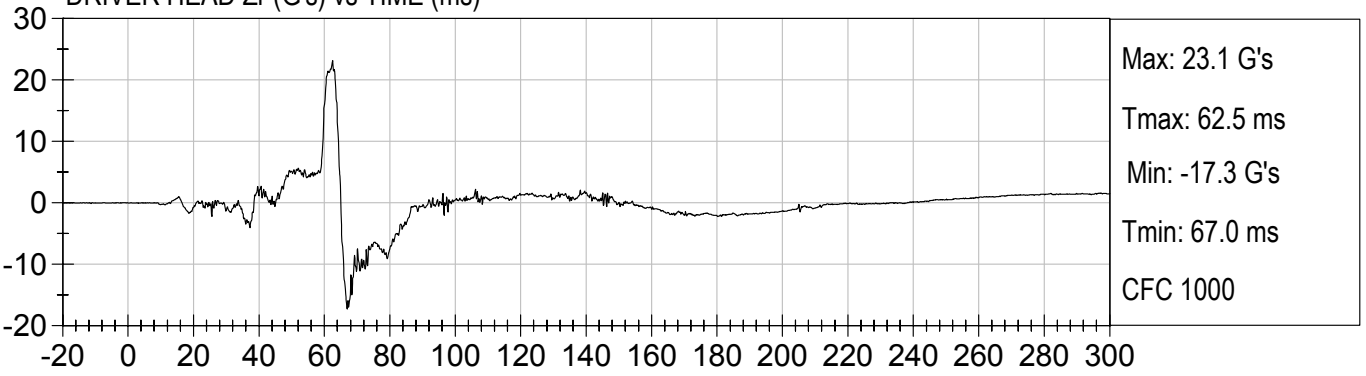
DRIVER HEAD Xr (G's) vs TIME (ms)



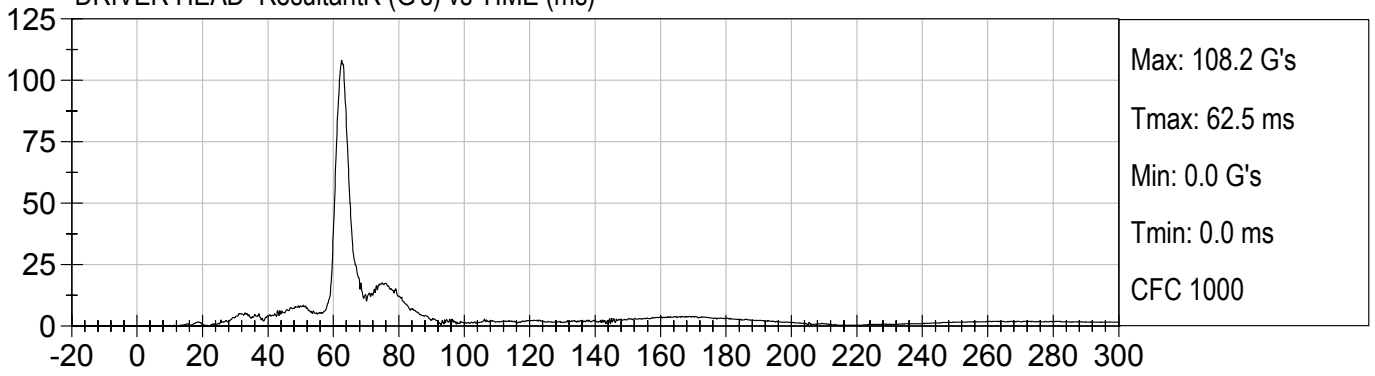
DRIVER HEAD Yr (G's) vs TIME (ms)

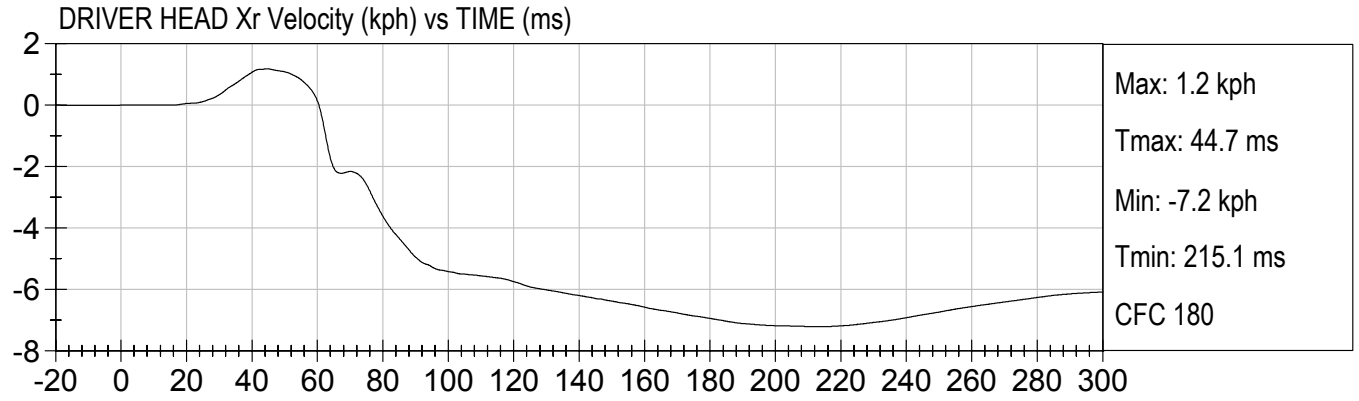


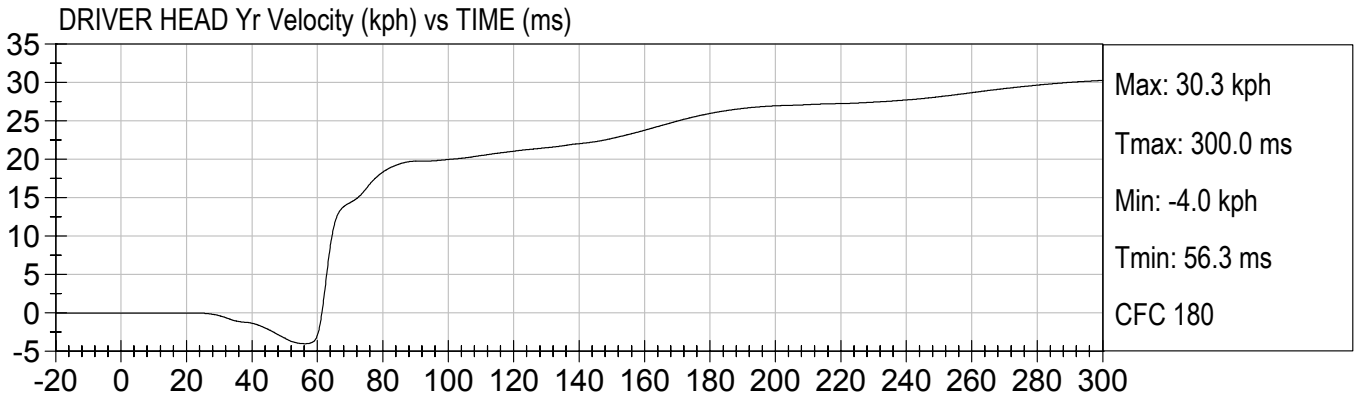
DRIVER HEAD Zr (G's) vs TIME (ms)

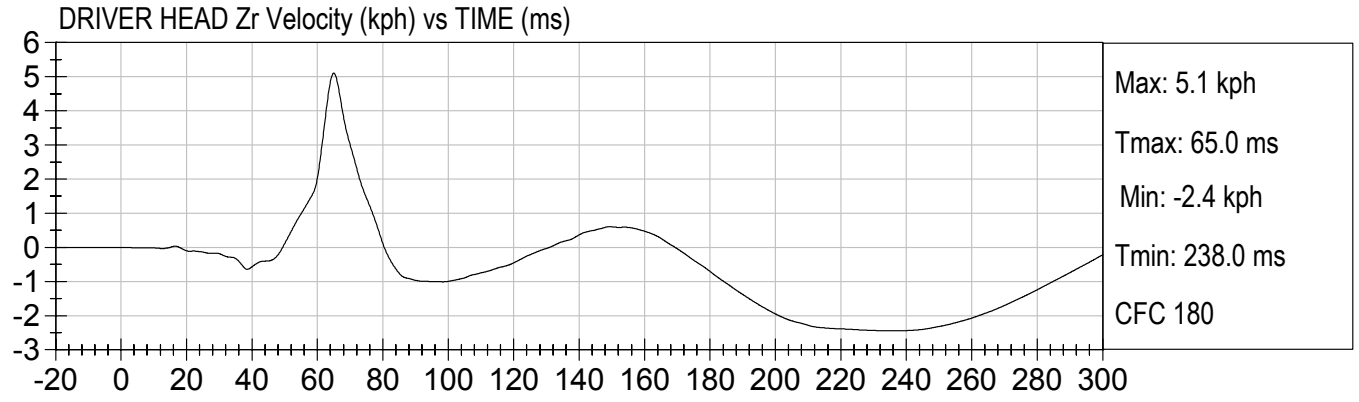


DRIVER HEAD ResultantR (G's) vs TIME (ms)

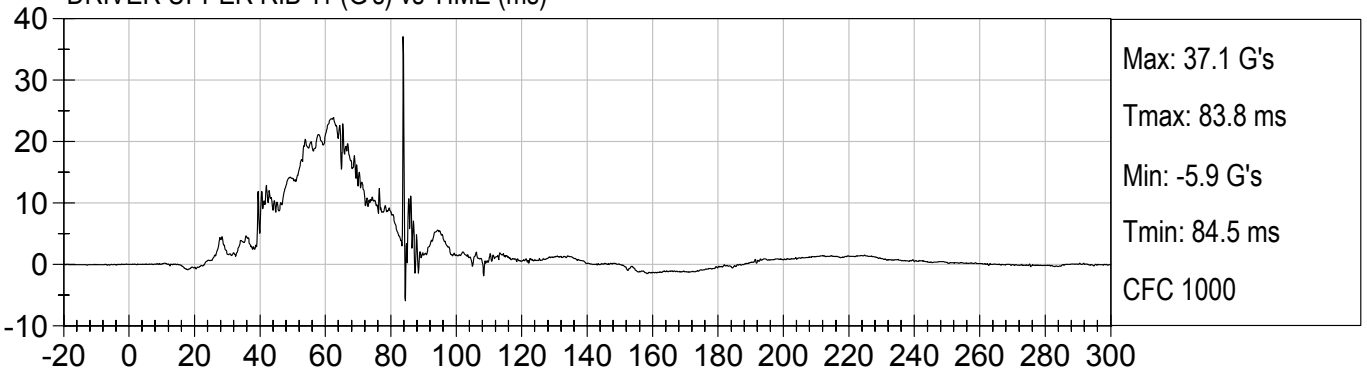



DRIVER HEAD Xr Velocity (kph) vs TIME (ms)
2
0
-2
-4
-6
-8
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 1.2 kph
Tmax: 44.7 ms
Min: -7.2 kph
Tmin: 215.1 ms
CFC 180

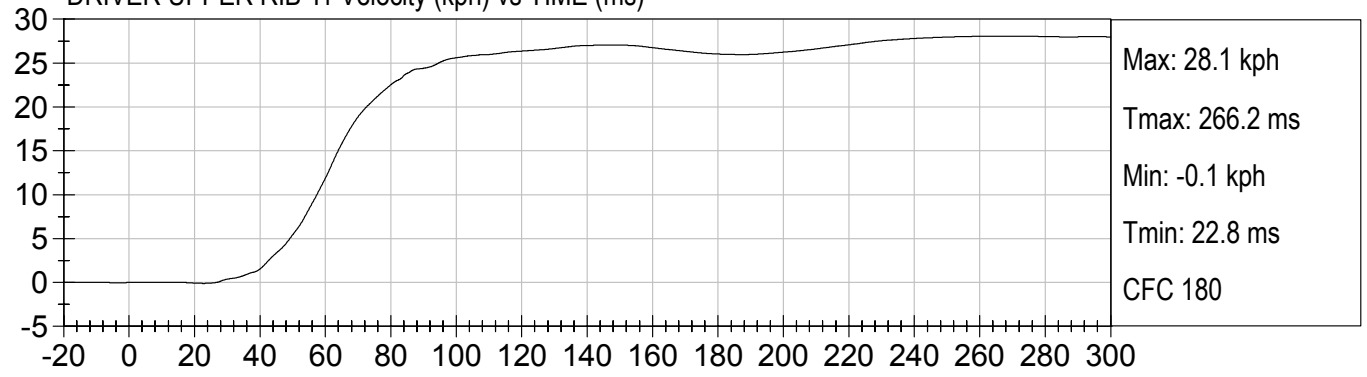

DRIVER HEAD Yr Velocity (kph) vs TIME (ms)
35
30
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 30.3 kph
Tmax: 300.0 ms
Min: -4.0 kph
Tmin: 56.3 ms
CFC 180


DRIVER HEAD Zr Velocity (kph) vs TIME (ms)
6
5
4
3
2
1
0
-1
-2
-3
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 5.1 kph
Tmax: 65.0 ms
Min: -2.4 kph
Tmin: 238.0 ms
CFC 180

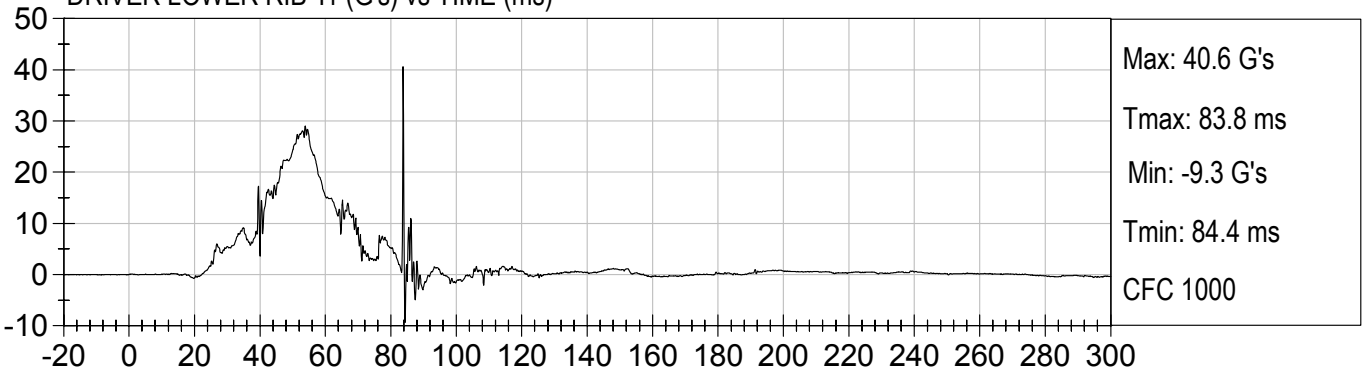
DRIVER UPPER RIB Yr (G's) vs TIME (ms)



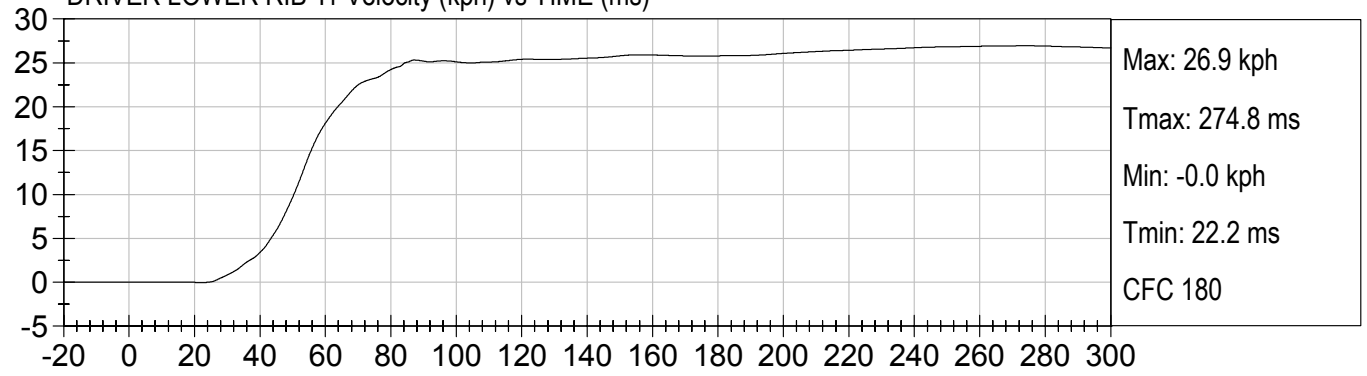
DRIVER UPPER RIB Yr Velocity (kph) vs TIME (ms)



DRIVER LOWER RIB Yr (G's) vs TIME (ms)



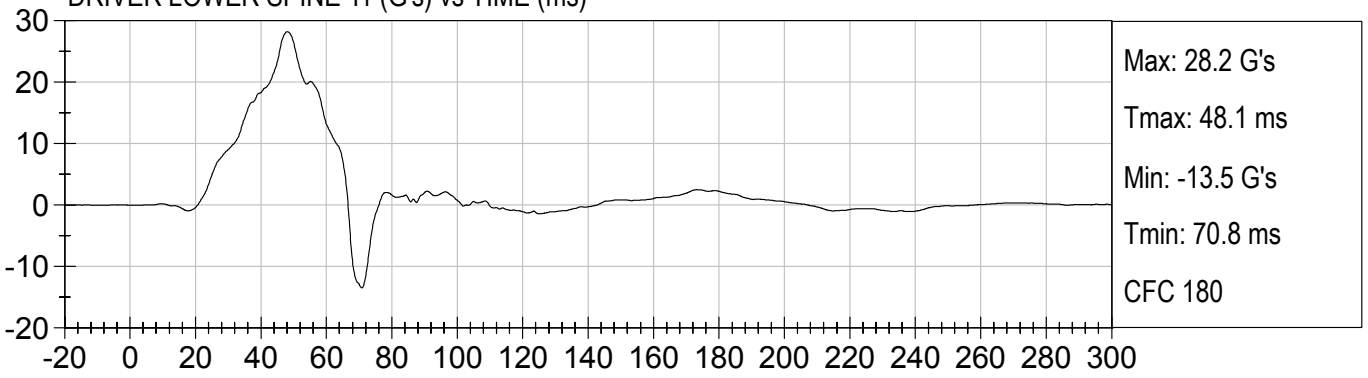
DRIVER LOWER RIB Yr Velocity (kph) vs TIME (ms)



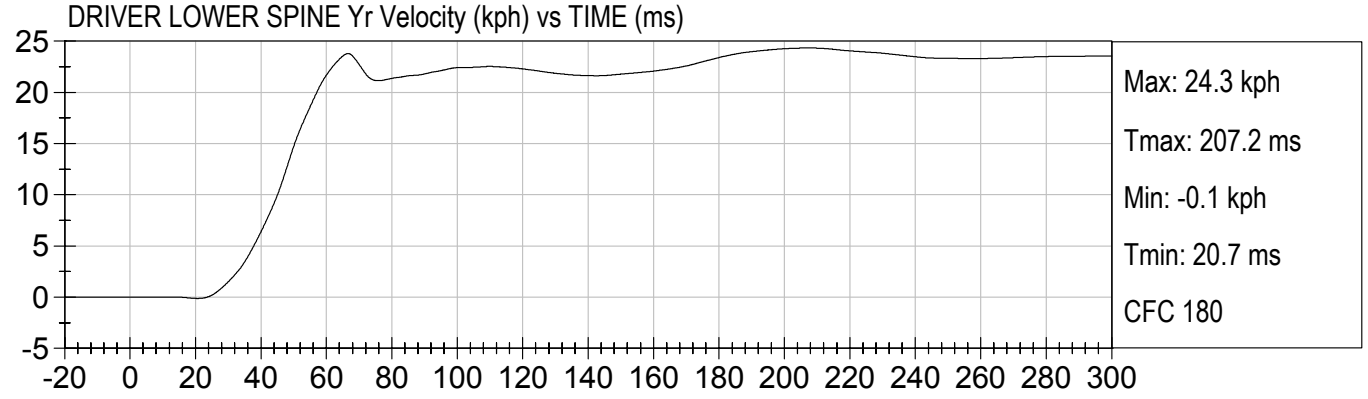
NCAP LEFT SIDE IMPACT
2005 NISSAN FRONTIER (M55211)

Test Date: 02/08/05
Speed: 38.4 mph (61.8 km/h)

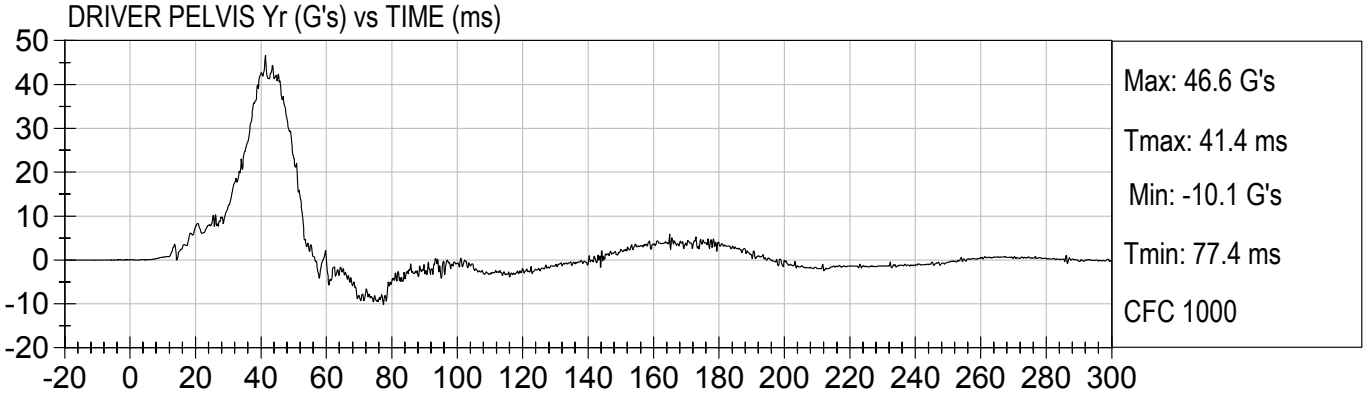
DRIVER LOWER SPINE Yr (G's) vs TIME (ms)



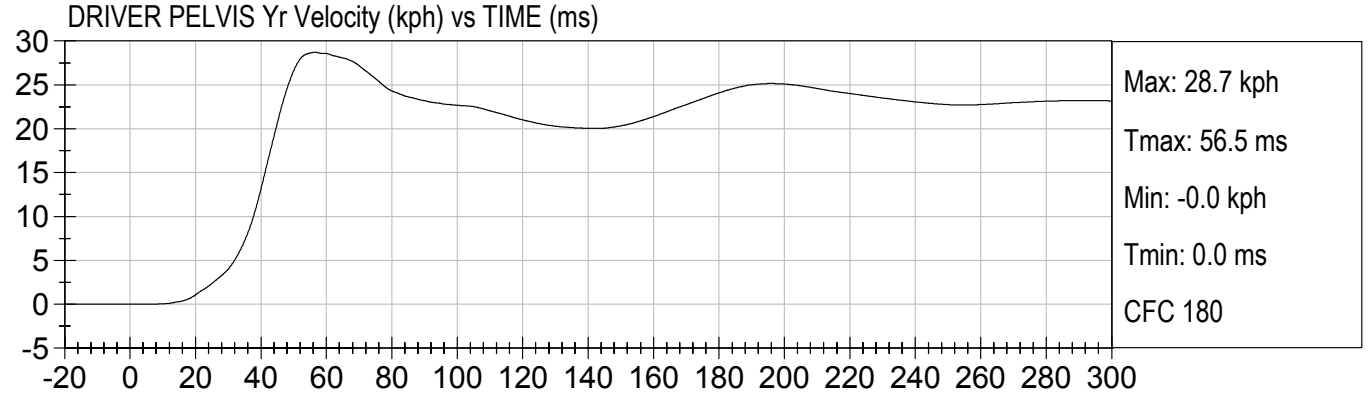
DRIVER LOWER SPINE Yr Velocity (kph) vs TIME (ms)



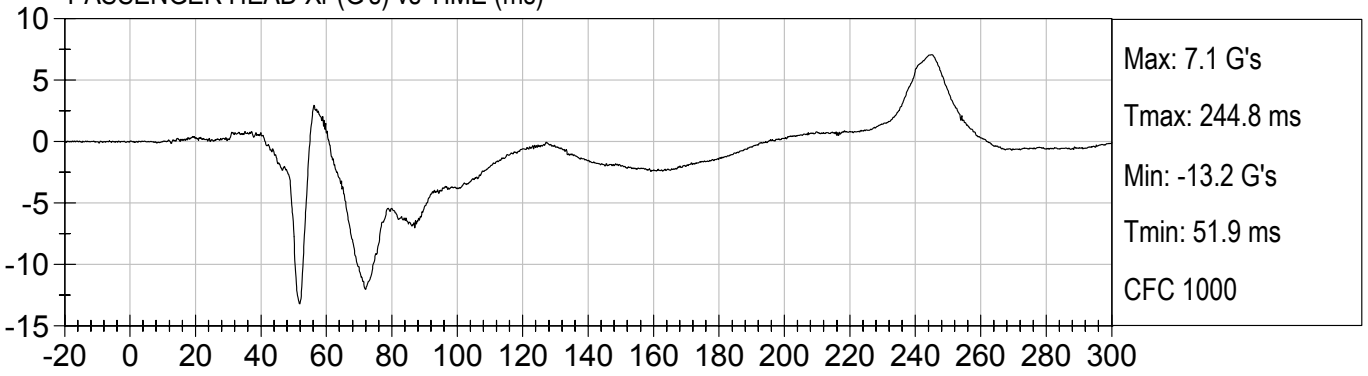
DRIVER PELVIS Yr (G's) vs TIME (ms)



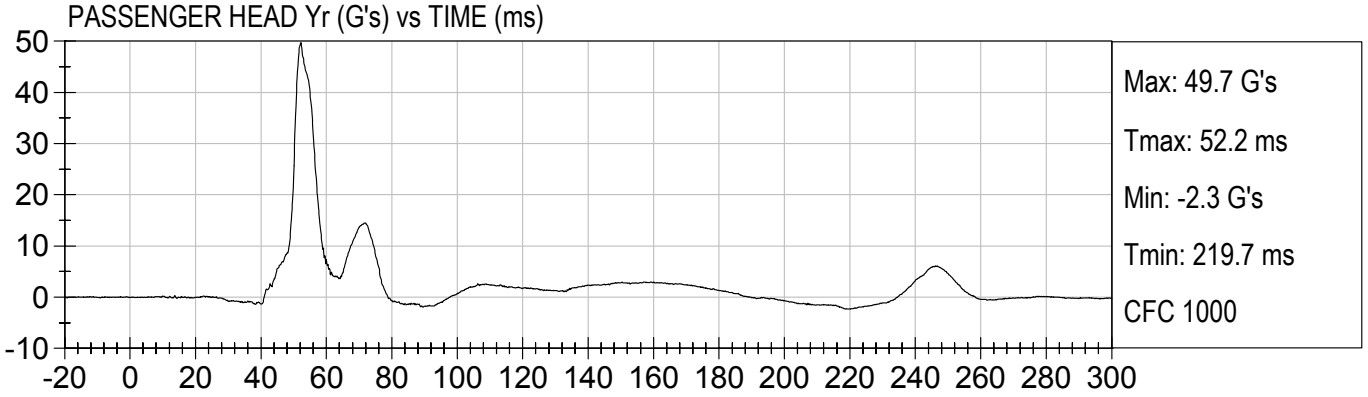
DRIVER PELVIS Yr Velocity (kph) vs TIME (ms)



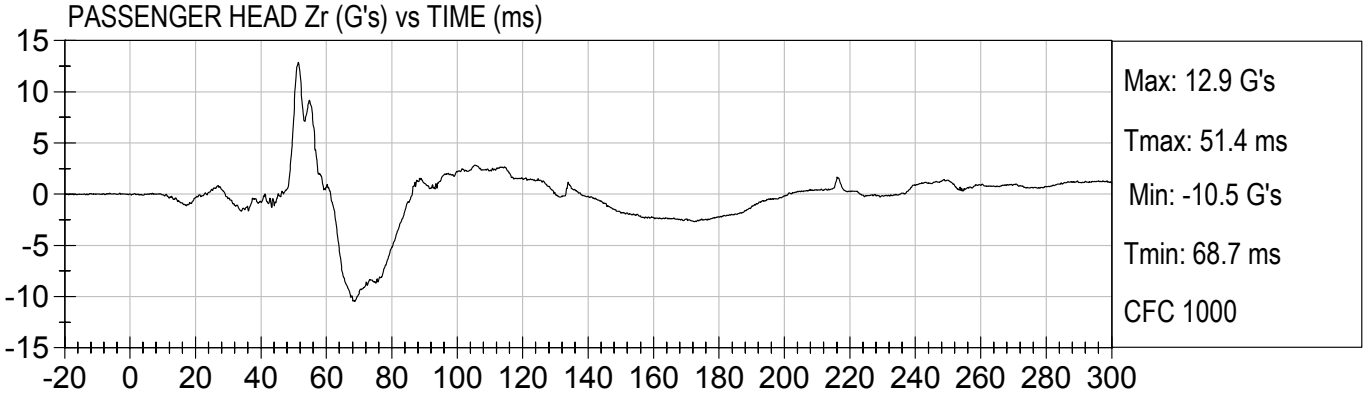
PASSENGER HEAD Xr (G's) vs TIME (ms)



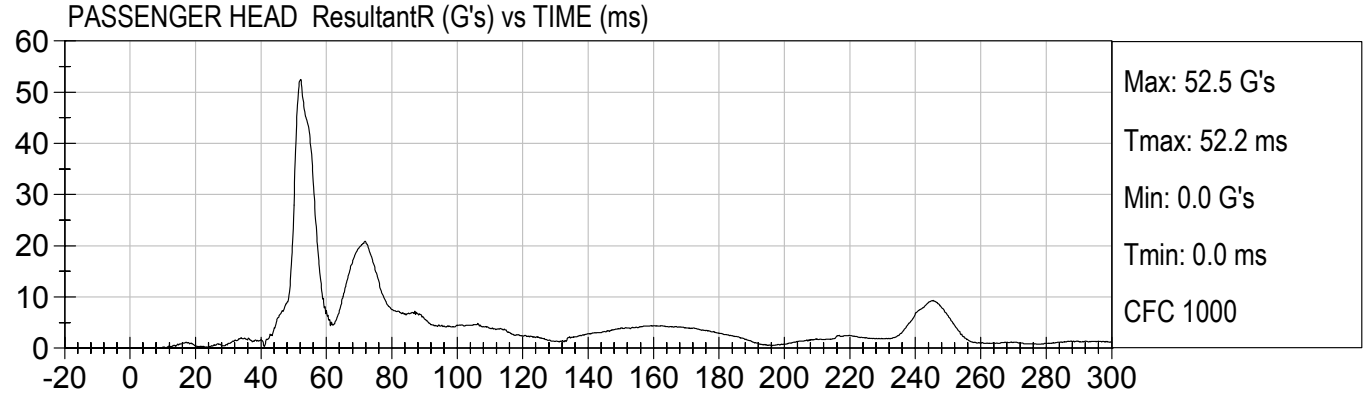
PASSENGER HEAD Yr (G's) vs TIME (ms)

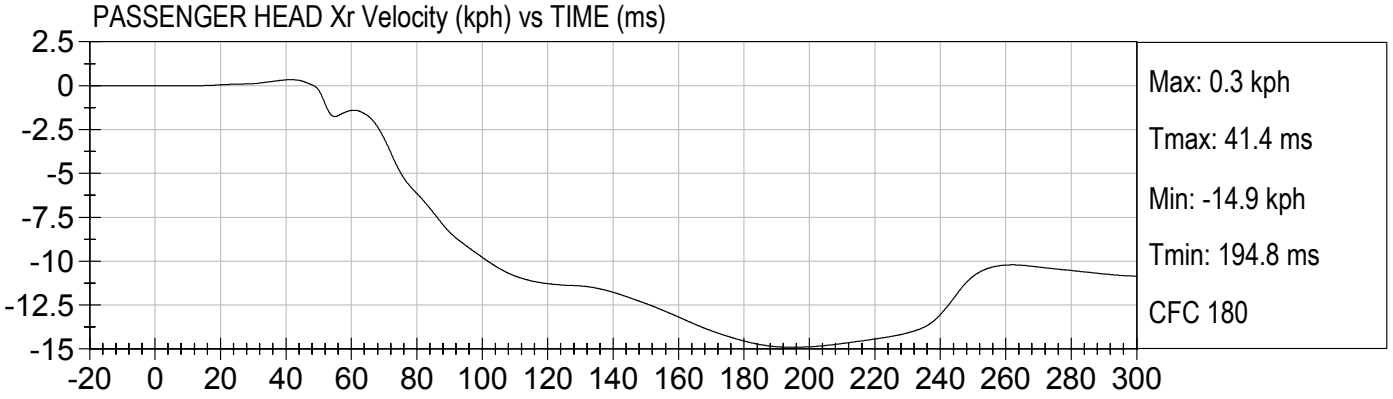


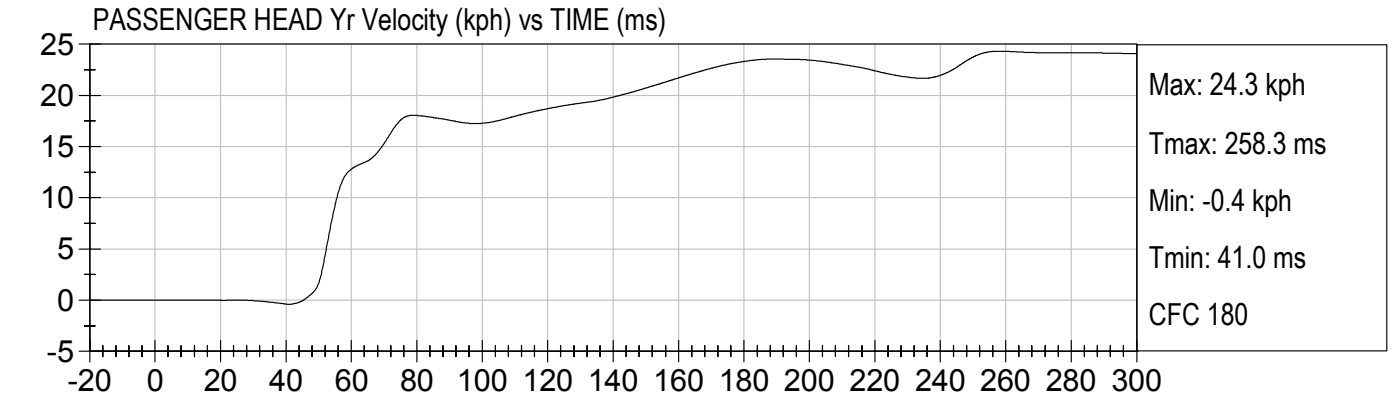
PASSENGER HEAD Zr (G's) vs TIME (ms)

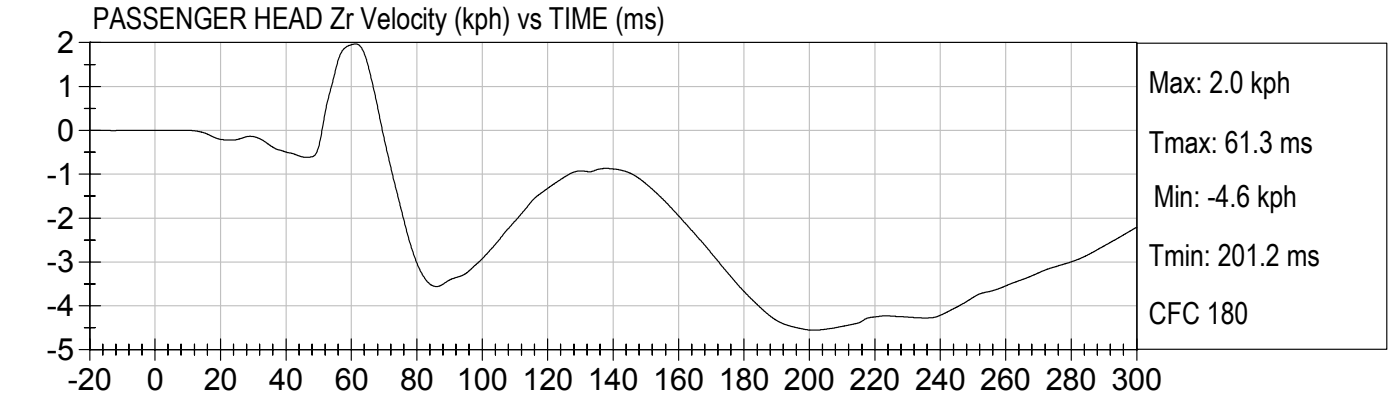


PASSENGER HEAD ResultantR (G's) vs TIME (ms)

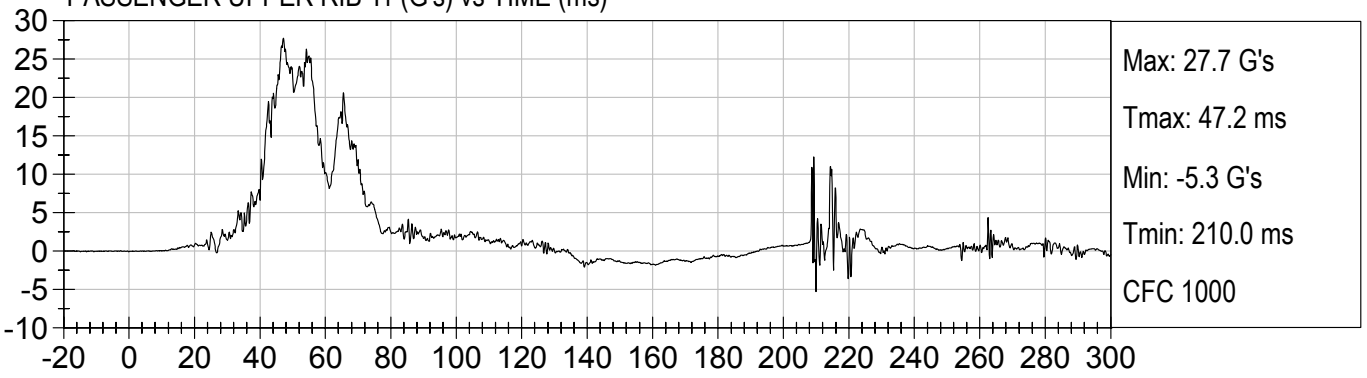



PASSENGER HEAD Xr Velocity (kph) vs TIME (ms)
2.5
0
-2.5
-5
-7.5
-10
-12.5
-15
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.3 kph
Tmax: 41.4 ms
Min: -14.9 kph
Tmin: 194.8 ms
CFC 180

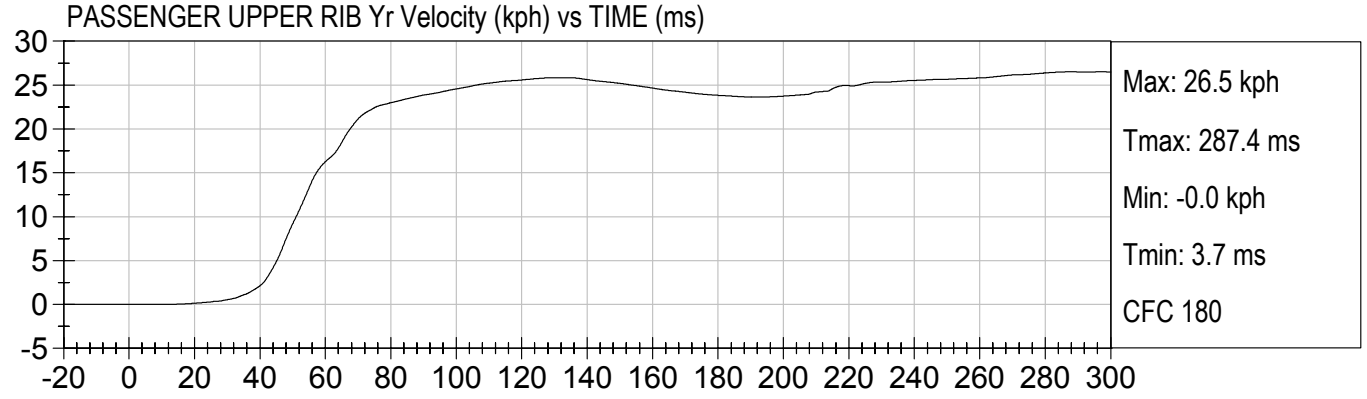

PASSENGER HEAD Yr Velocity (kph) vs TIME (ms)
25
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 24.3 kph
Tmax: 258.3 ms
Min: -0.4 kph
Tmin: 41.0 ms
CFC 180


PASSENGER HEAD Zr Velocity (kph) vs TIME (ms)
2
1
0
-1
-2
-3
-4
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 2.0 kph
Tmax: 61.3 ms
Min: -4.6 kph
Tmin: 201.2 ms
CFC 180

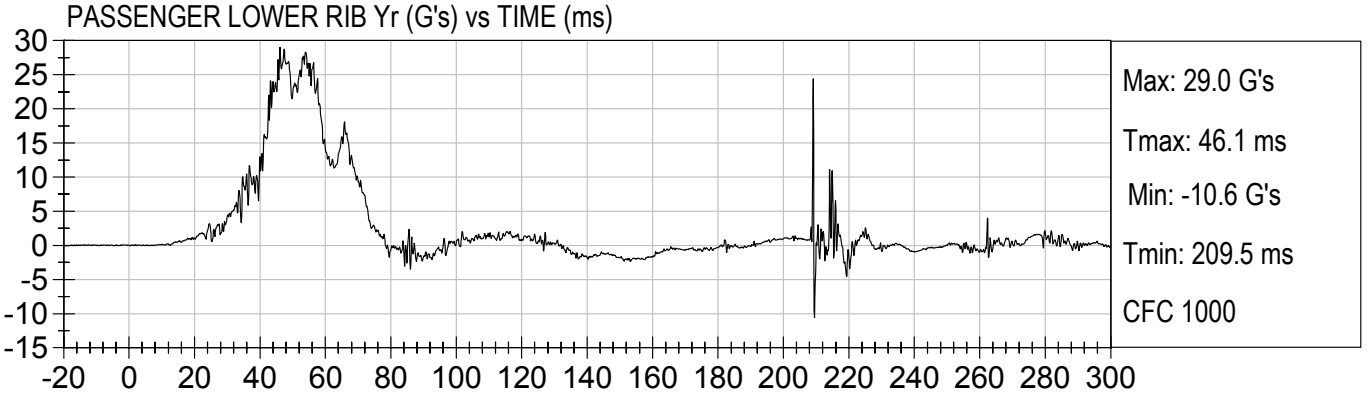
PASSENGER UPPER RIB Yr (G's) vs TIME (ms)



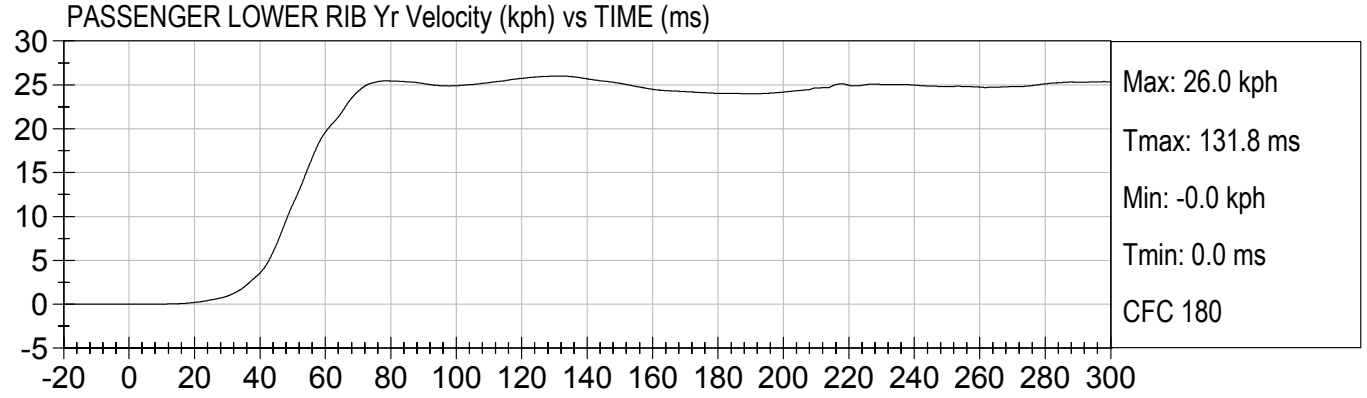
PASSENGER UPPER RIB Yr Velocity (kph) vs TIME (ms)



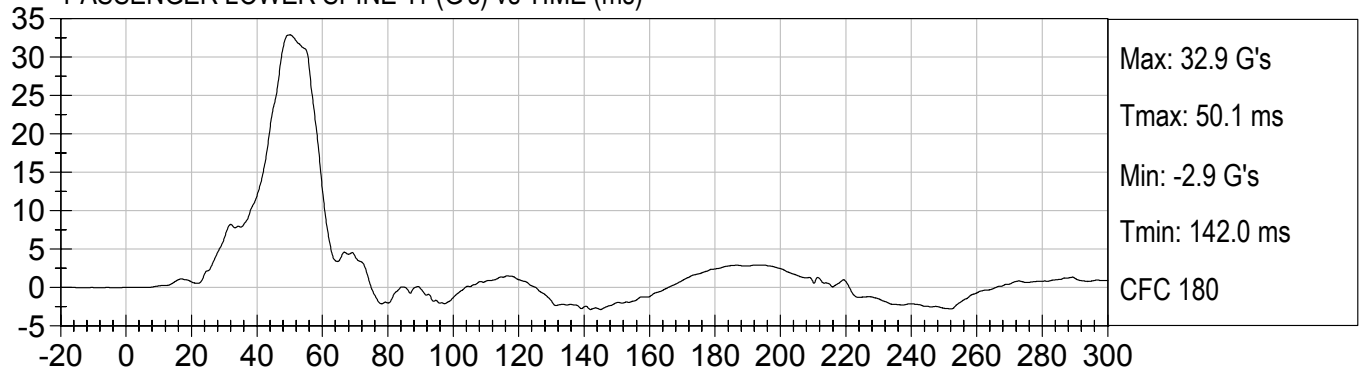
PASSENGER LOWER RIB Yr (G's) vs TIME (ms)



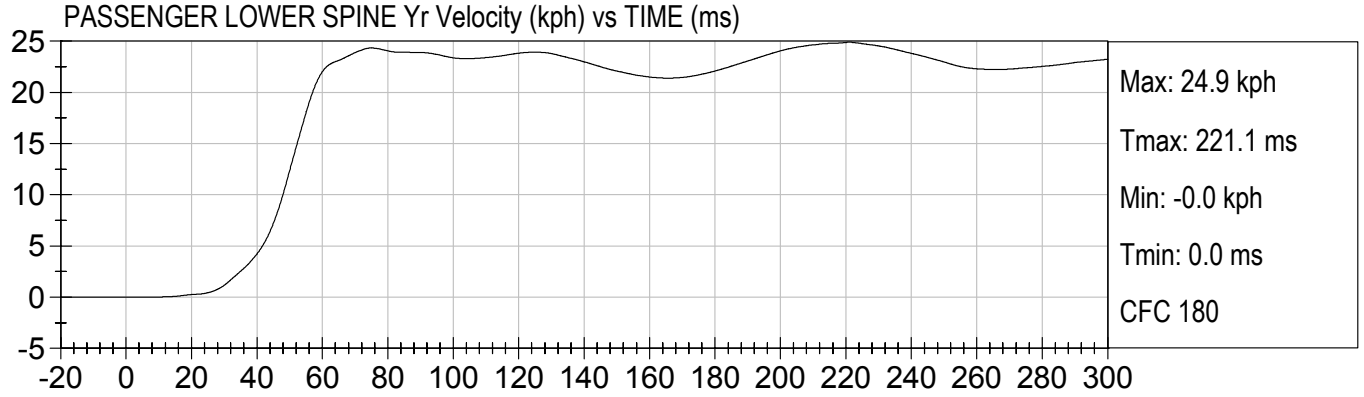
PASSENGER LOWER RIB Yr Velocity (kph) vs TIME (ms)



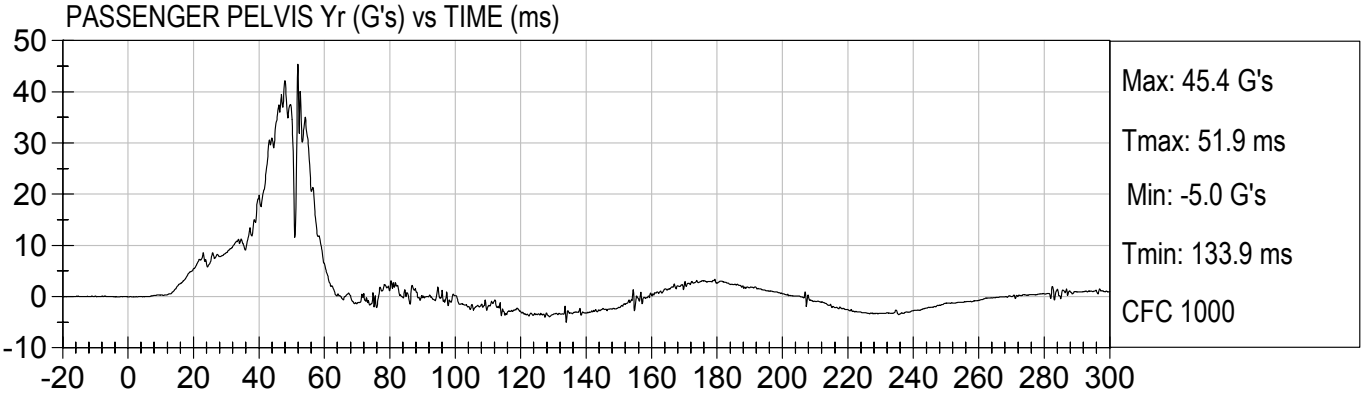
PASSENGER LOWER SPINE Yr (G's) vs TIME (ms)



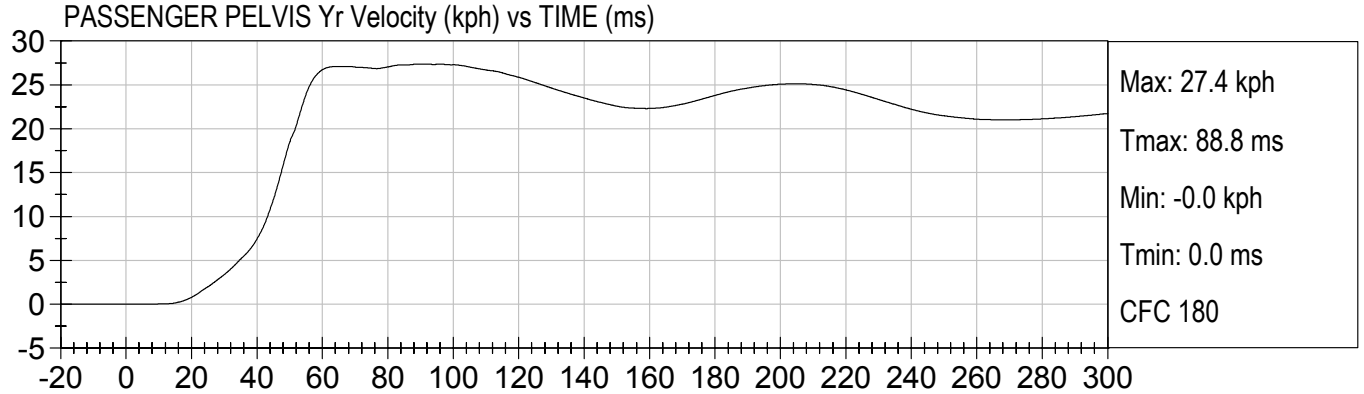
PASSENGER LOWER SPINE Yr Velocity (kph) vs TIME (ms)



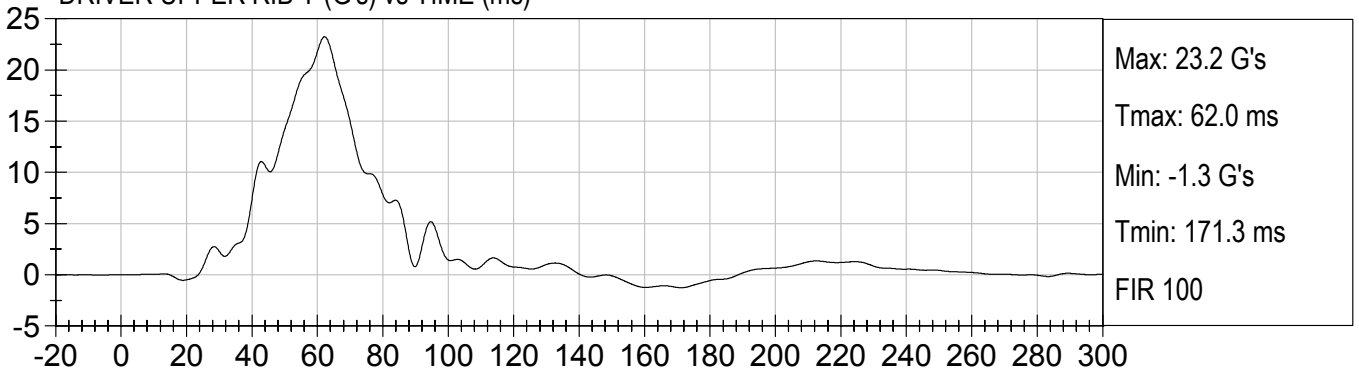
PASSENGER PELVIS Yr (G's) vs TIME (ms)



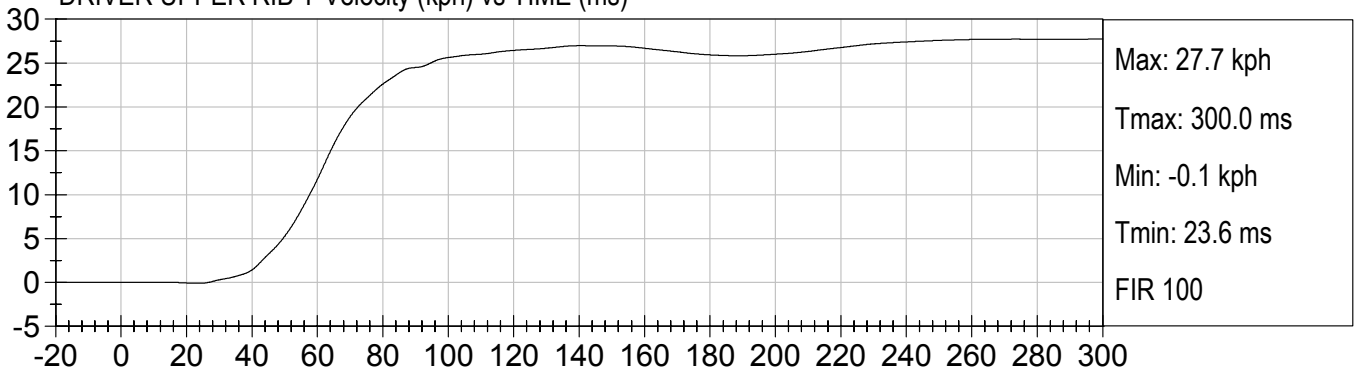
PASSENGER PELVIS Yr Velocity (kph) vs TIME (ms)



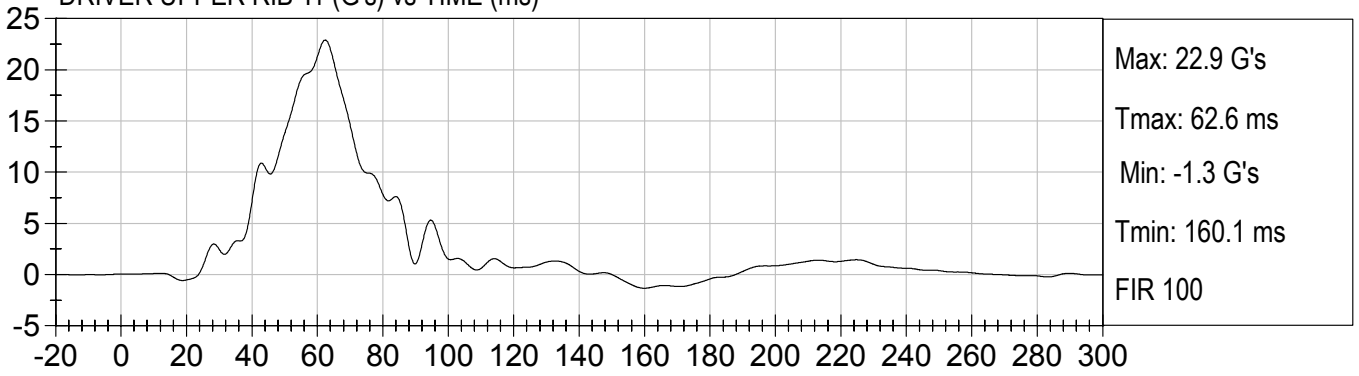
DRIVER UPPER RIB Y (G's) vs TIME (ms)



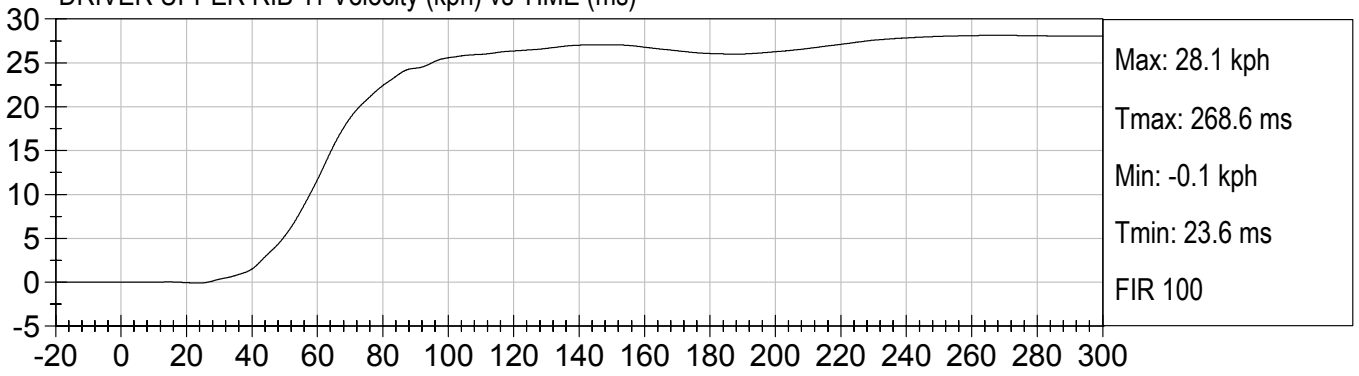
DRIVER UPPER RIB Y Velocity (kph) vs TIME (ms)



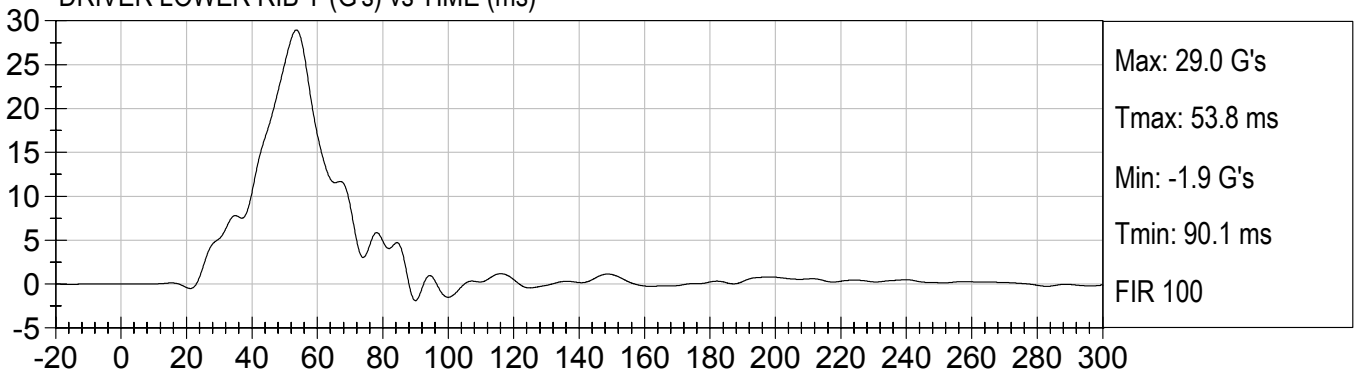
DRIVER UPPER RIB Yr (G's) vs TIME (ms)



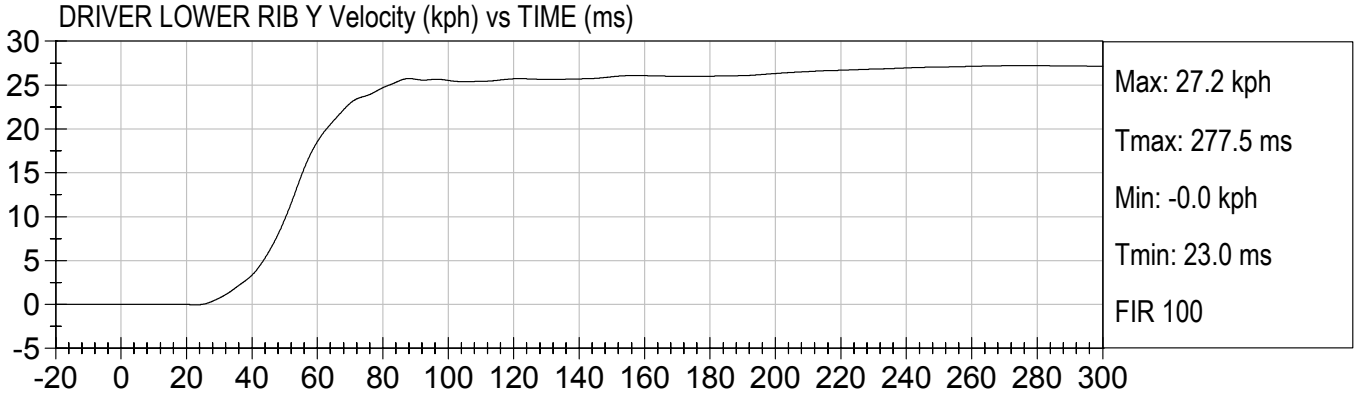
DRIVER UPPER RIB Yr Velocity (kph) vs TIME (ms)



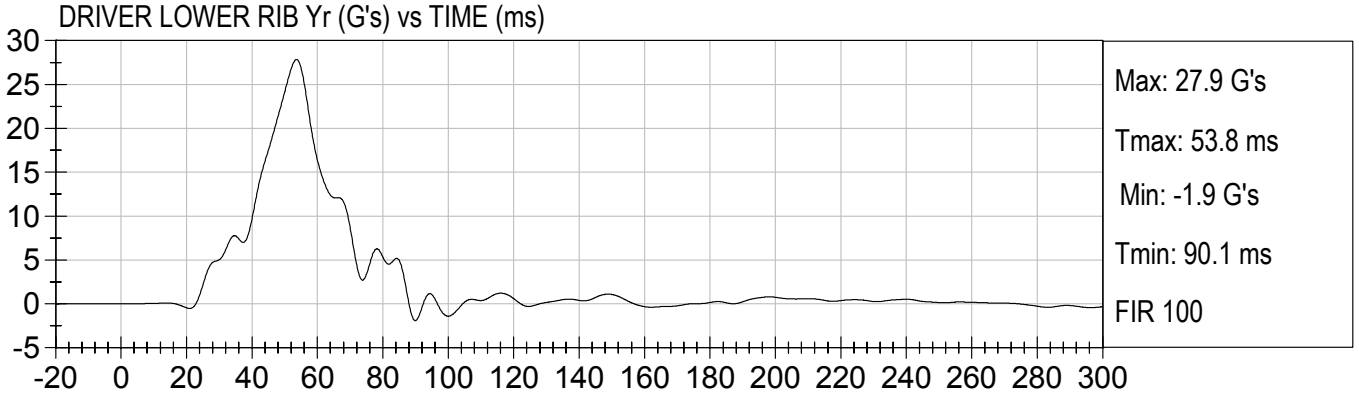
DRIVER LOWER RIB Y (G's) vs TIME (ms)



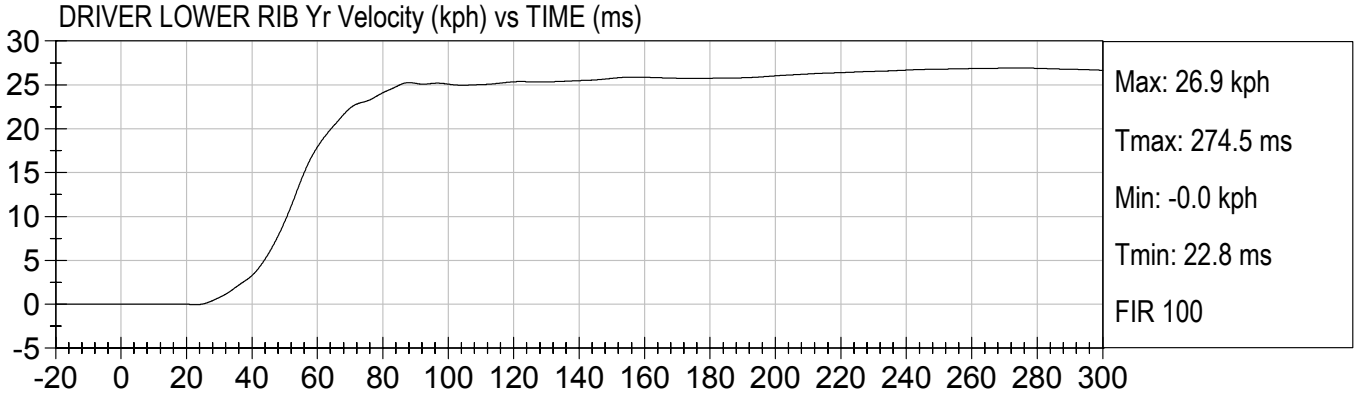
DRIVER LOWER RIB Y Velocity (kph) vs TIME (ms)



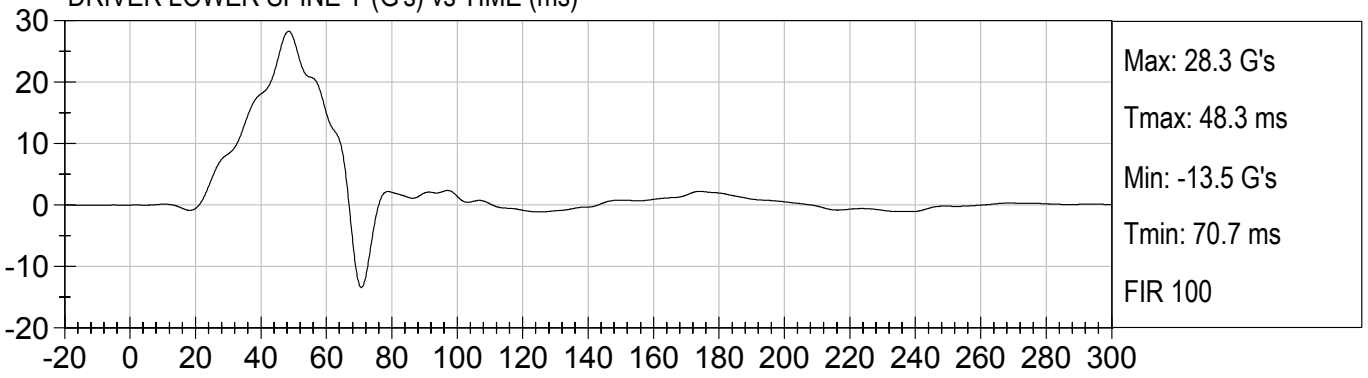
DRIVER LOWER RIB Yr (G's) vs TIME (ms)



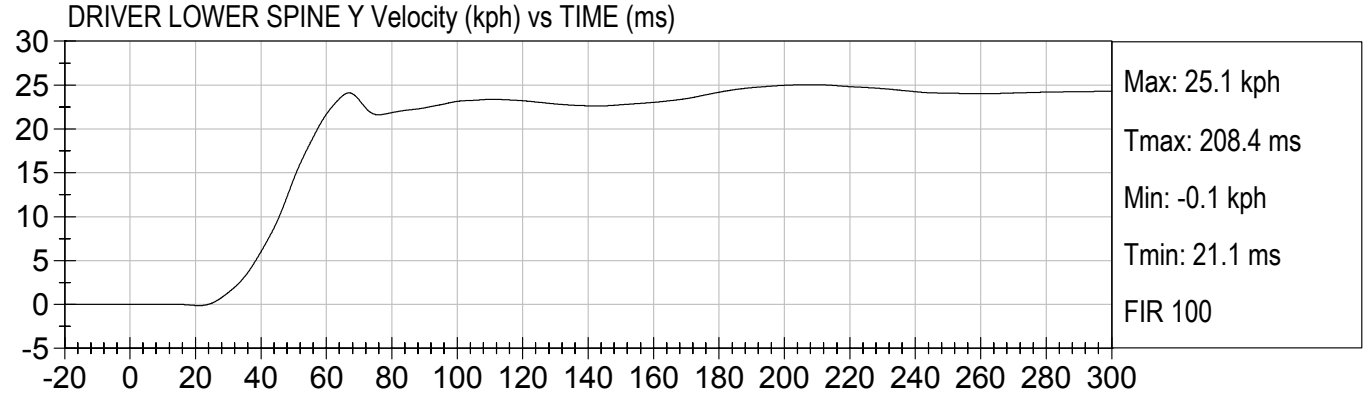
DRIVER LOWER RIB Yr Velocity (kph) vs TIME (ms)



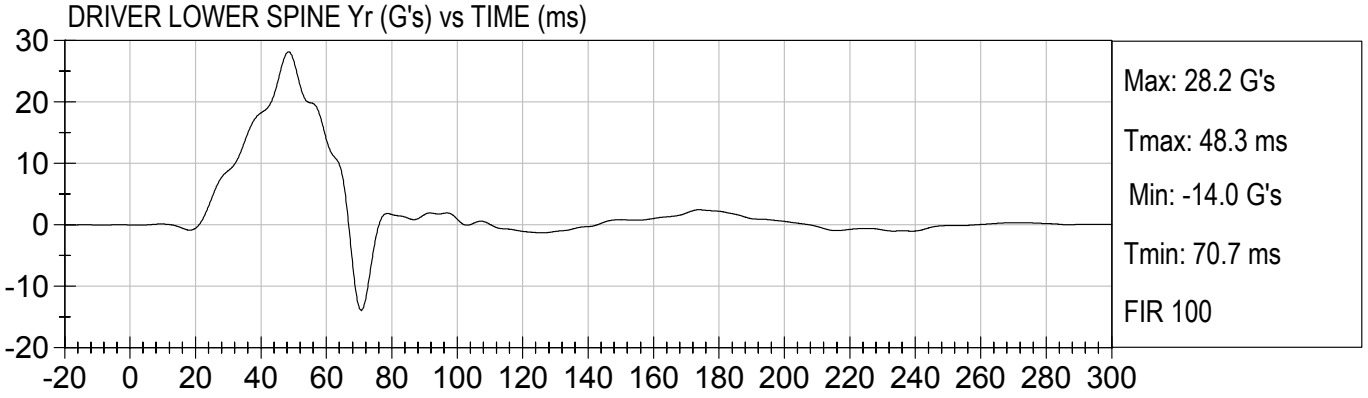
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



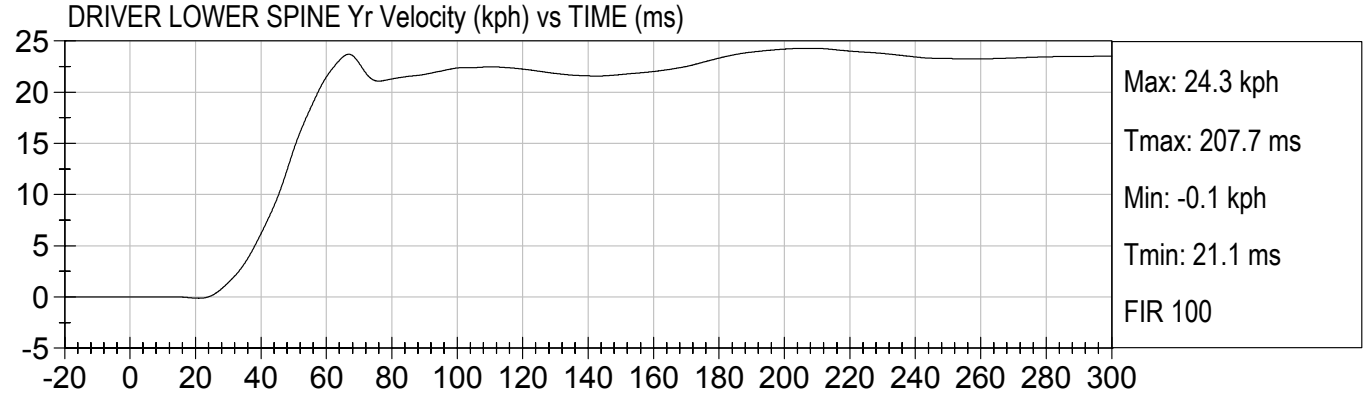
DRIVER LOWER SPINE Y Velocity (kph) vs TIME (ms)



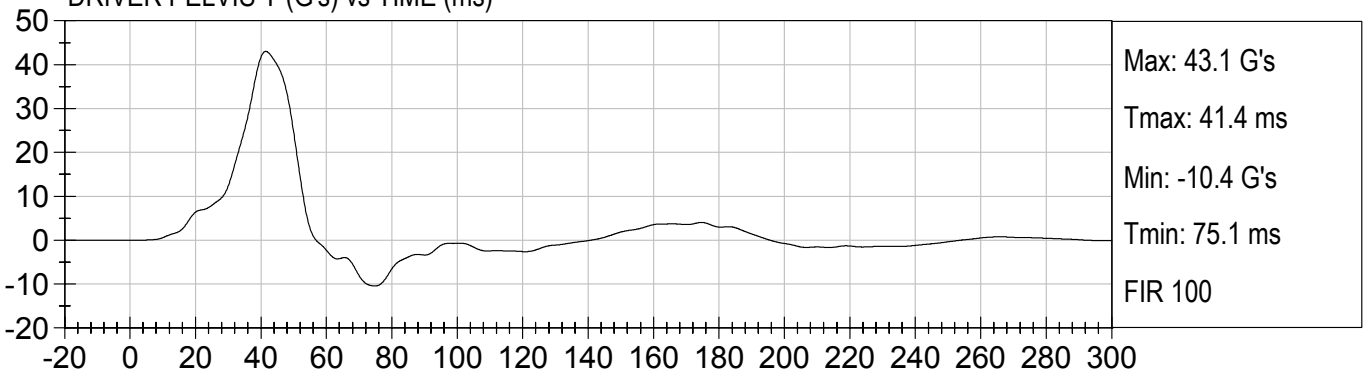
DRIVER LOWER SPINE Yr (G's) vs TIME (ms)



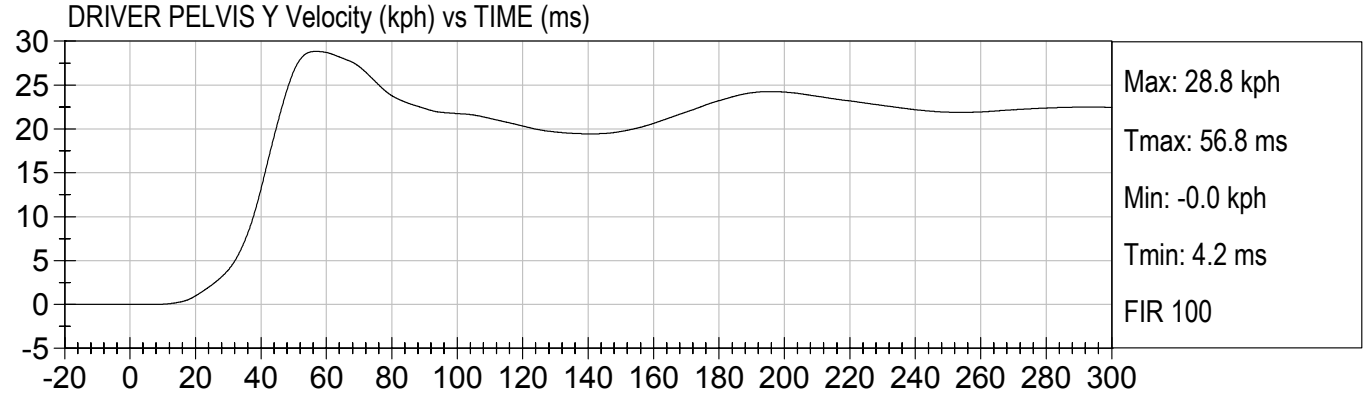
DRIVER LOWER SPINE Yr Velocity (kph) vs TIME (ms)



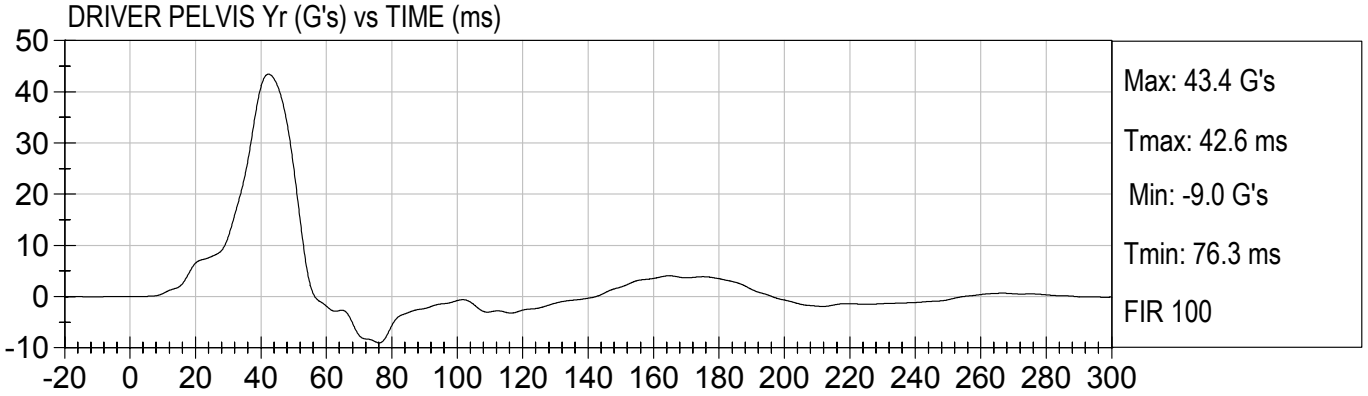
DRIVER PELVIS Y (G's) vs TIME (ms)



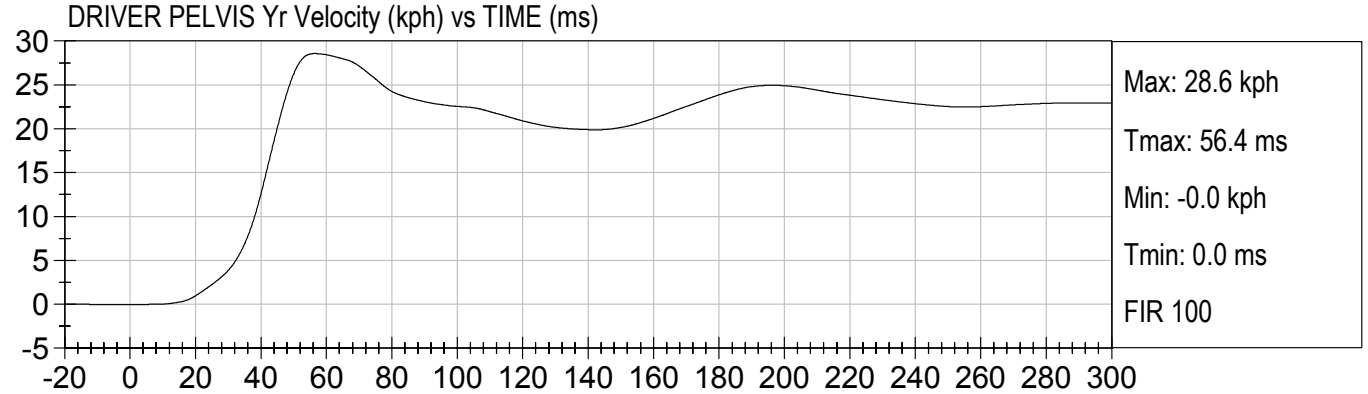
DRIVER PELVIS Y Velocity (kph) vs TIME (ms)



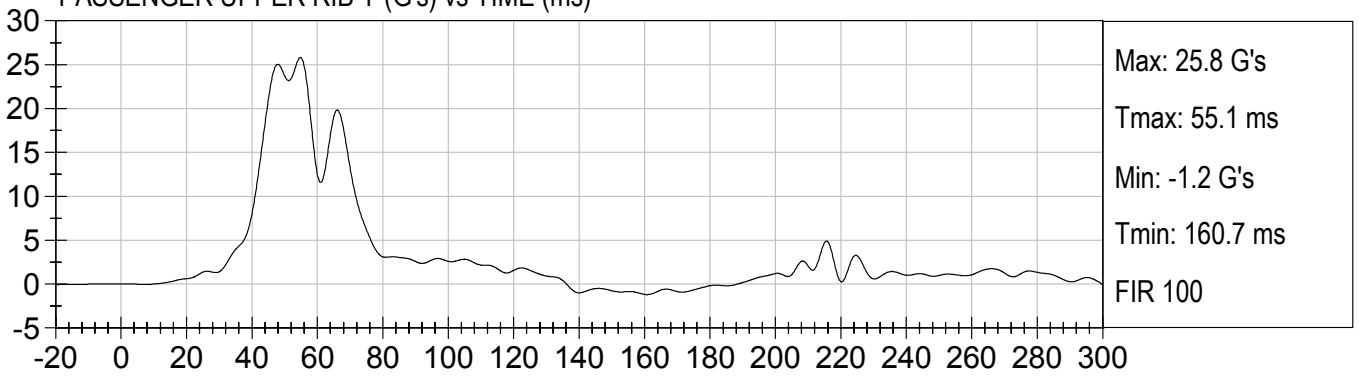
DRIVER PELVIS Yr (G's) vs TIME (ms)



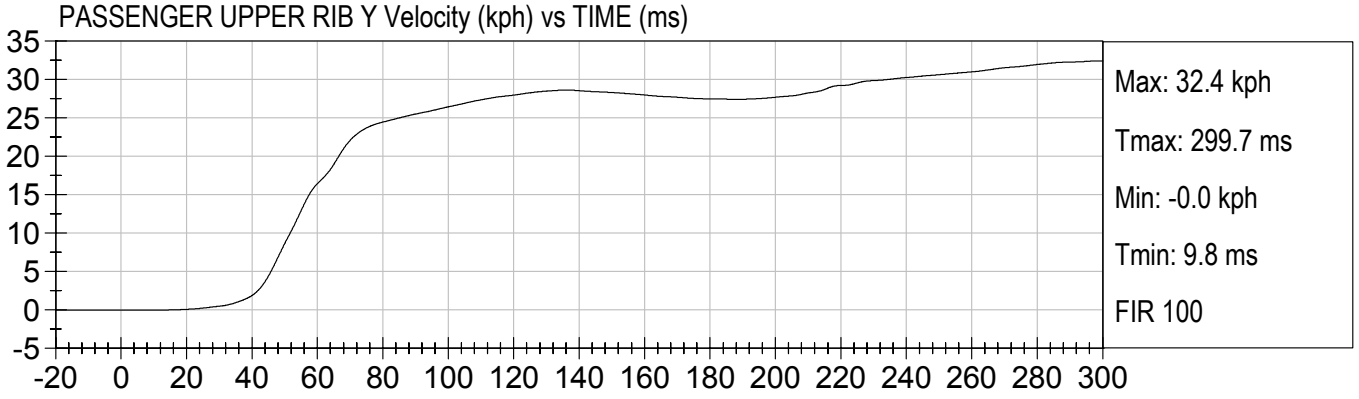
DRIVER PELVIS Yr Velocity (kph) vs TIME (ms)



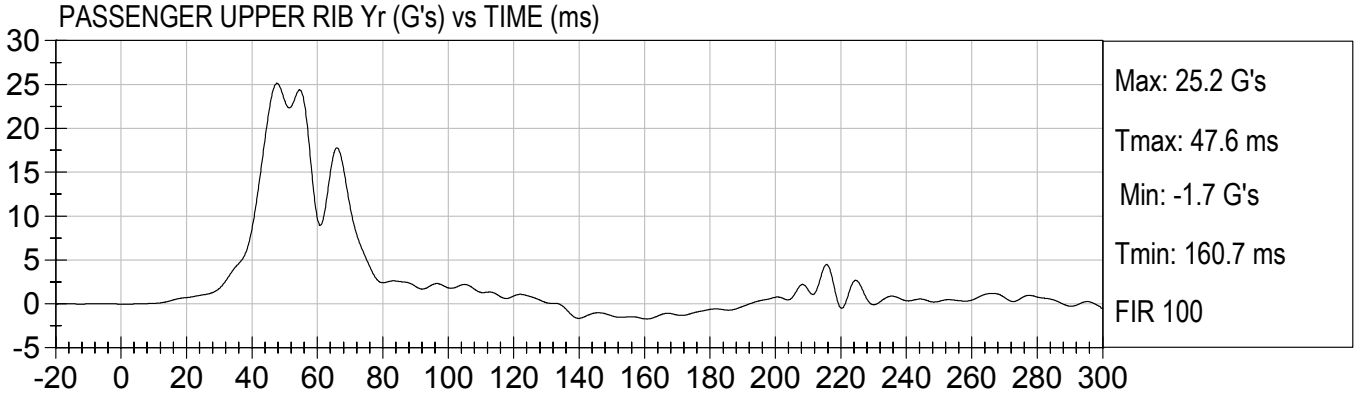
PASSENGER UPPER RIB Y (G's) vs TIME (ms)



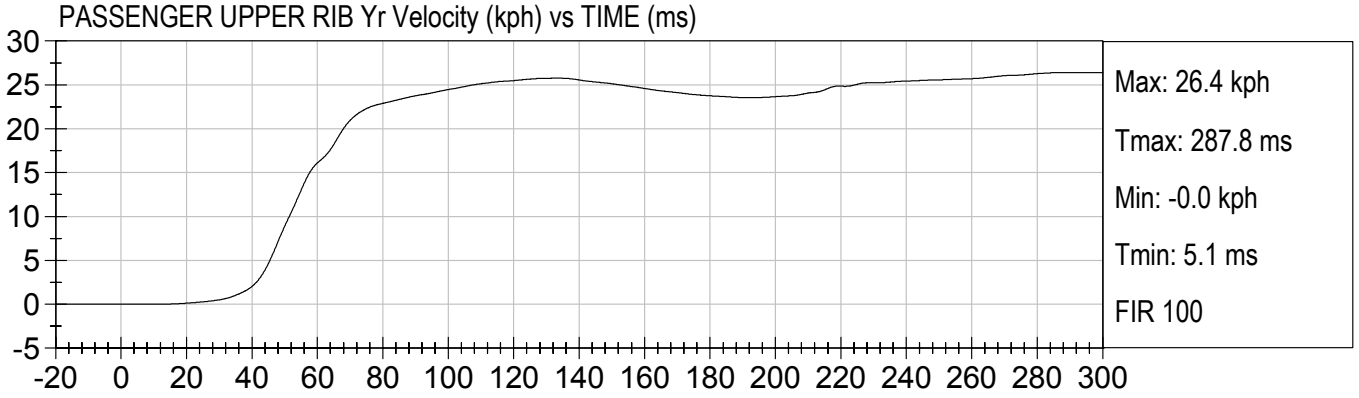
PASSENGER UPPER RIB Y Velocity (kph) vs TIME (ms)



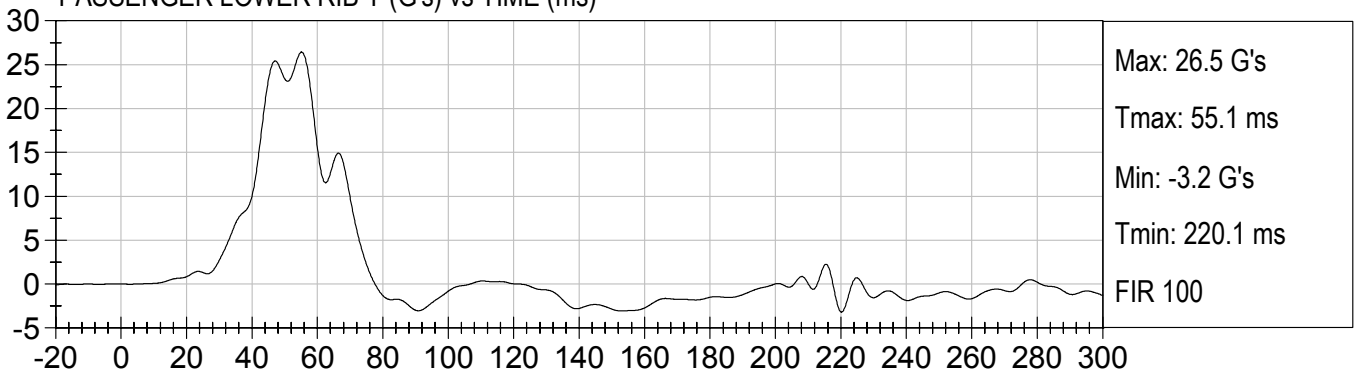
PASSENGER UPPER RIB Yr (G's) vs TIME (ms)



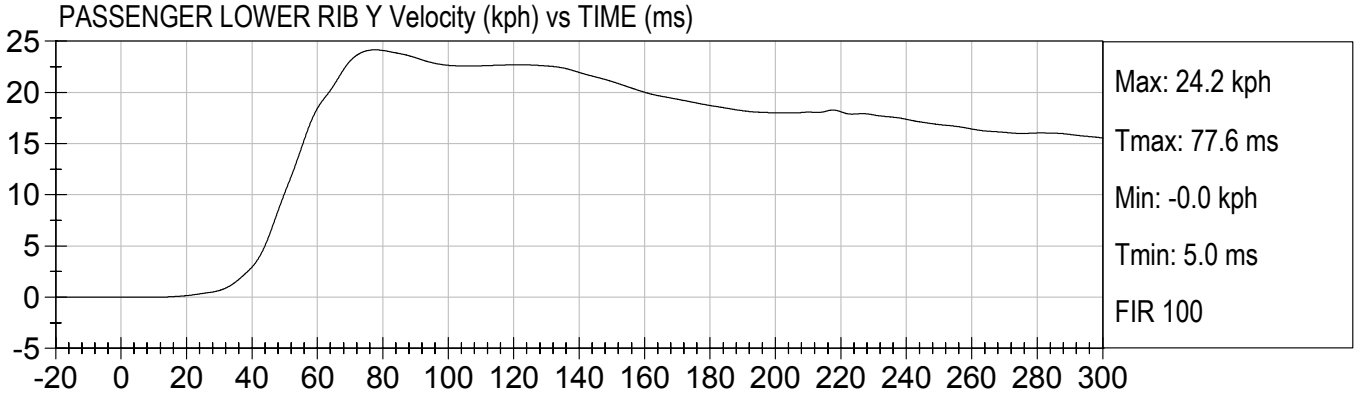
PASSENGER UPPER RIB Yr Velocity (kph) vs TIME (ms)



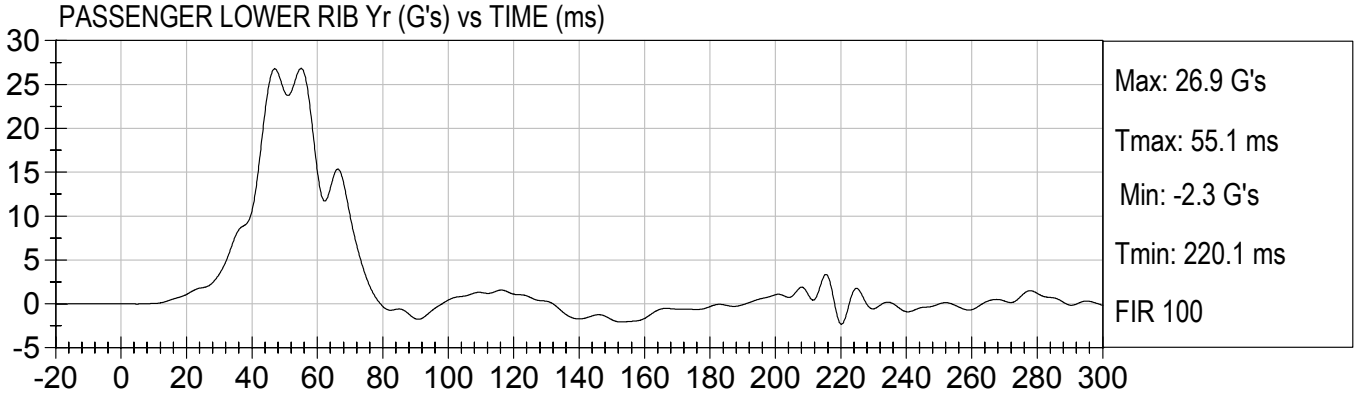
PASSENGER LOWER RIB Y (G's) vs TIME (ms)



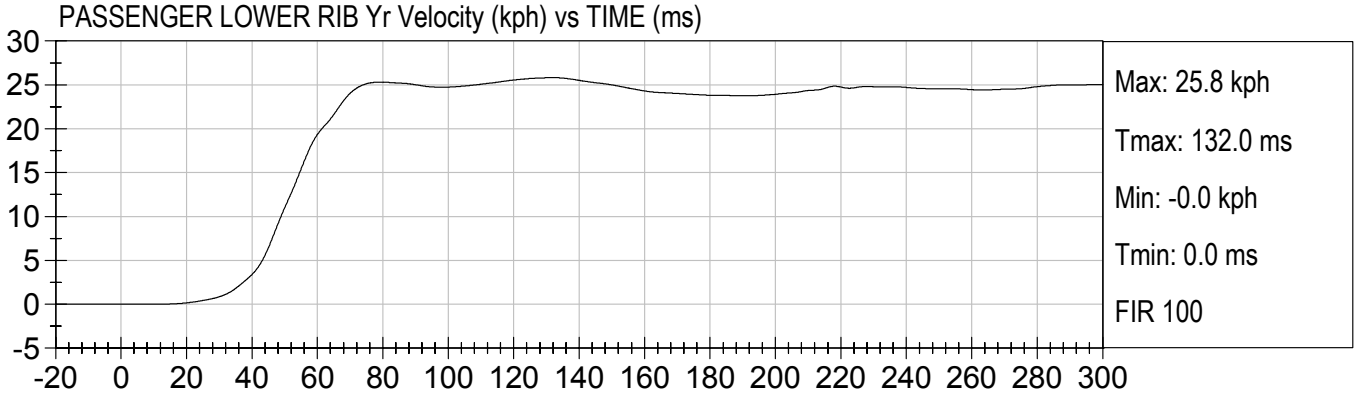
PASSENGER LOWER RIB Y Velocity (kph) vs TIME (ms)



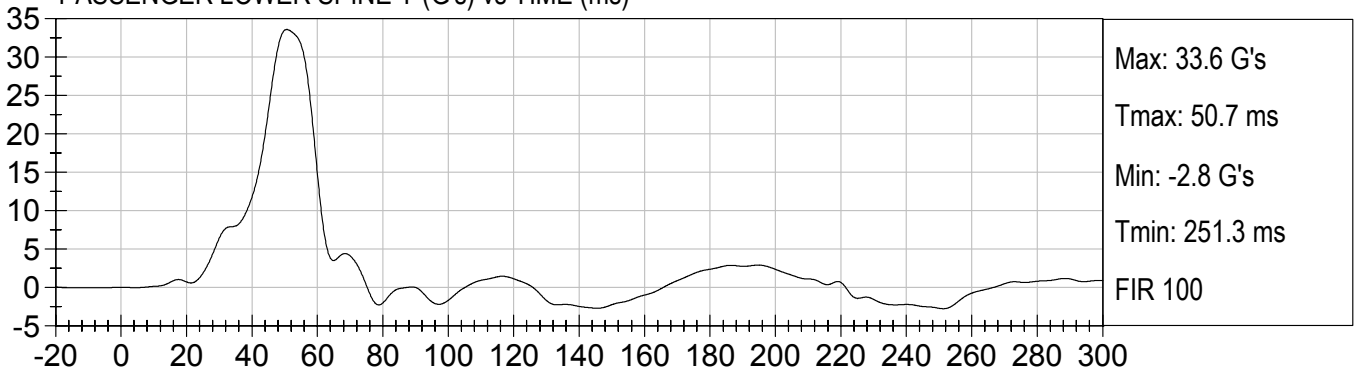
PASSENGER LOWER RIB Yr (G's) vs TIME (ms)



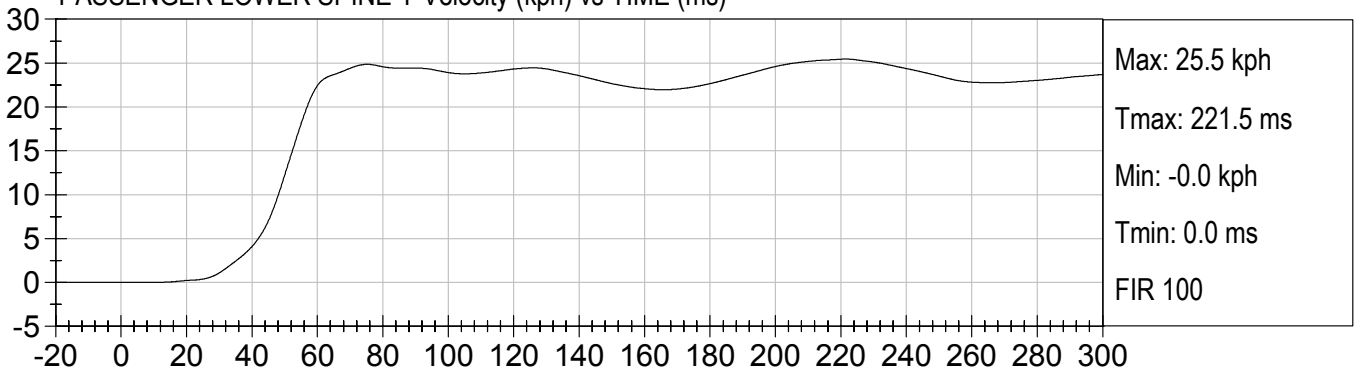
PASSENGER LOWER RIB Yr Velocity (kph) vs TIME (ms)



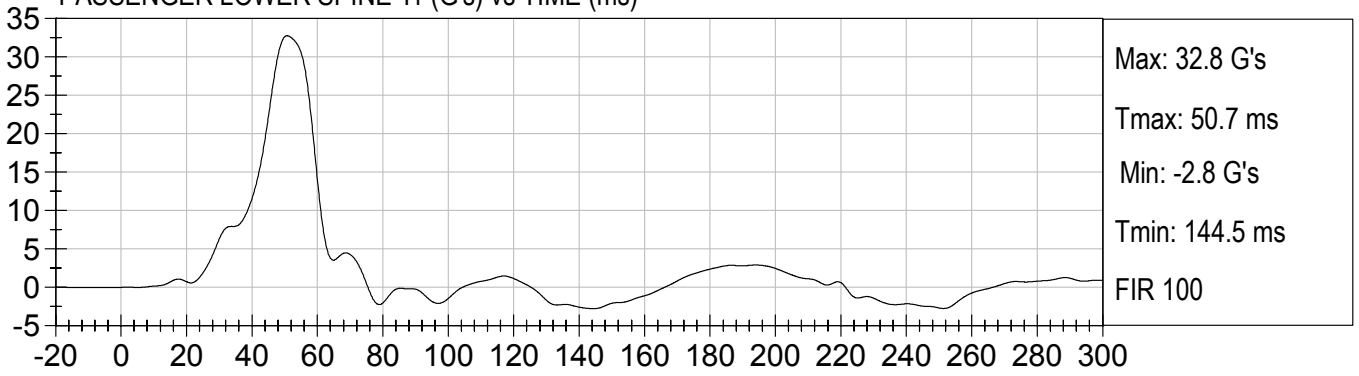
PASSENGER LOWER SPINE Y (G's) vs TIME (ms)



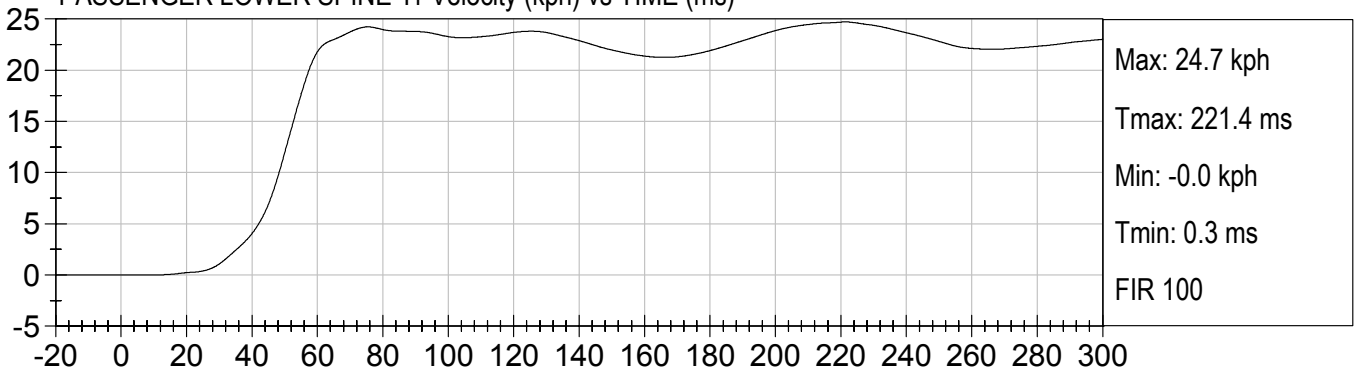
PASSENGER LOWER SPINE Y Velocity (kph) vs TIME (ms)



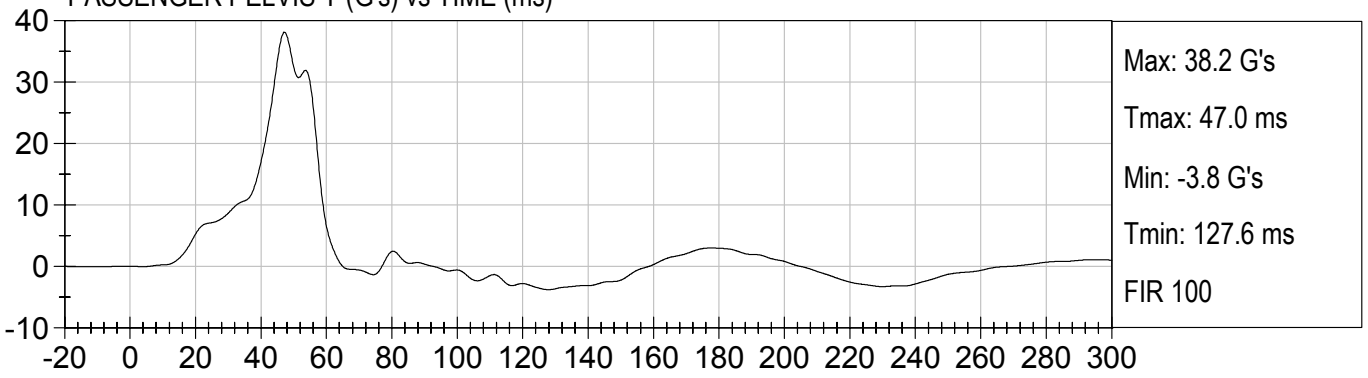
PASSENGER LOWER SPINE Yr (G's) vs TIME (ms)



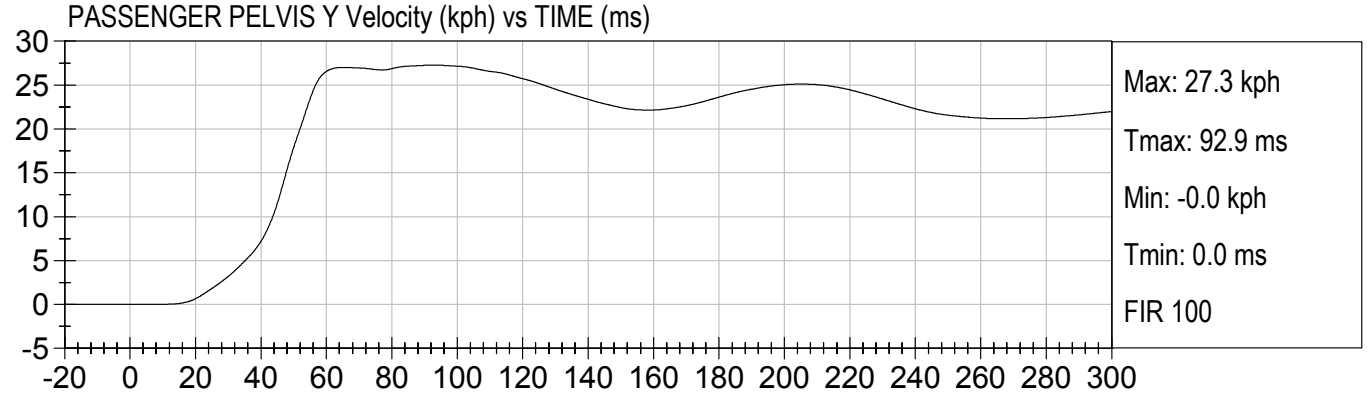
PASSENGER LOWER SPINE Yr Velocity (kph) vs TIME (ms)



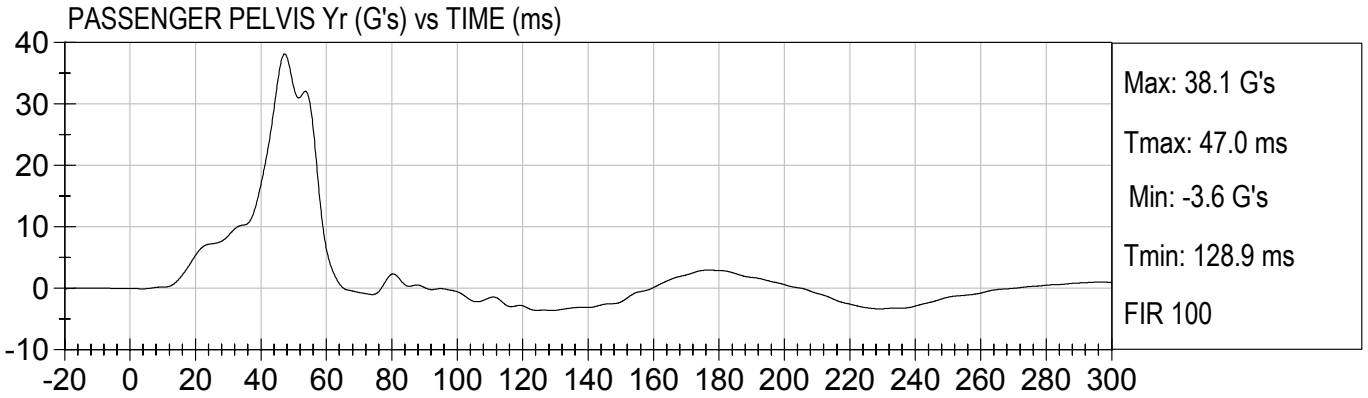
PASSENGER PELVIS Y (G's) vs TIME (ms)



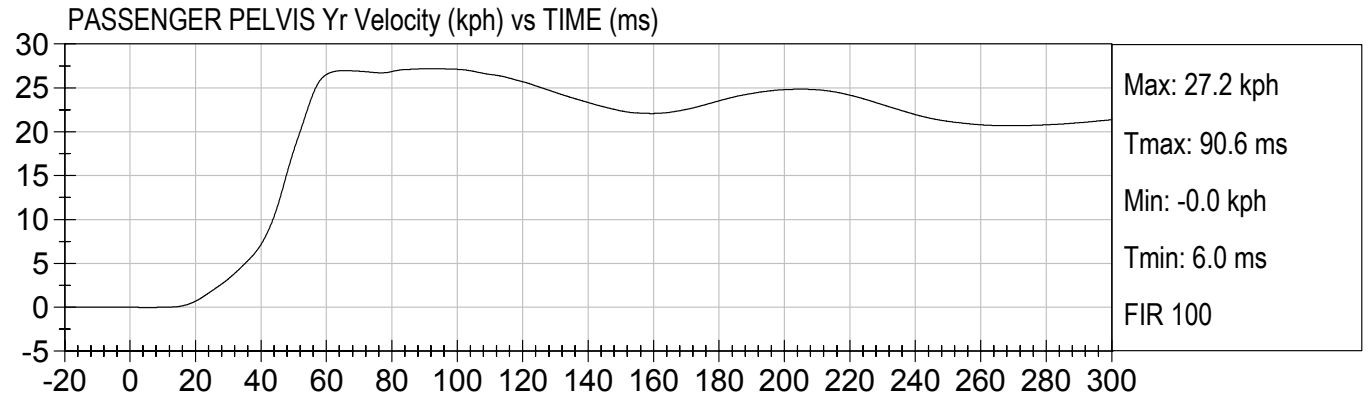
PASSENGER PELVIS Y Velocity (kph) vs TIME (ms)



PASSENGER PELVIS Yr (G's) vs TIME (ms)



PASSENGER PELVIS Yr Velocity (kph) vs TIME (ms)



APPENDIX C

SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CERTIFICATION DATA

Dummy Serial Number: 904

Calibration Test Results Summary

Dummy Serial Number: 904

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet

Side Impact Dummy

External Measurements

ATD Serial No: 904 **Test I.D:** D0508

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	903	Pass
RH - Rib Height	mm	501 - 521	509	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	240	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	525	Pass
SW - Knee Pivot to Floor	mm	490 - 505	500	Pass
HW - Hip Width	mm	356 - 391	368	Pass
		Overall Test Results		Pass

James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

SID Calibration Data Sheet

Side Impact Dummy

Head Drop Calibration (Lateral)

ATD Serial No: 904 **Test I.D:** D05081

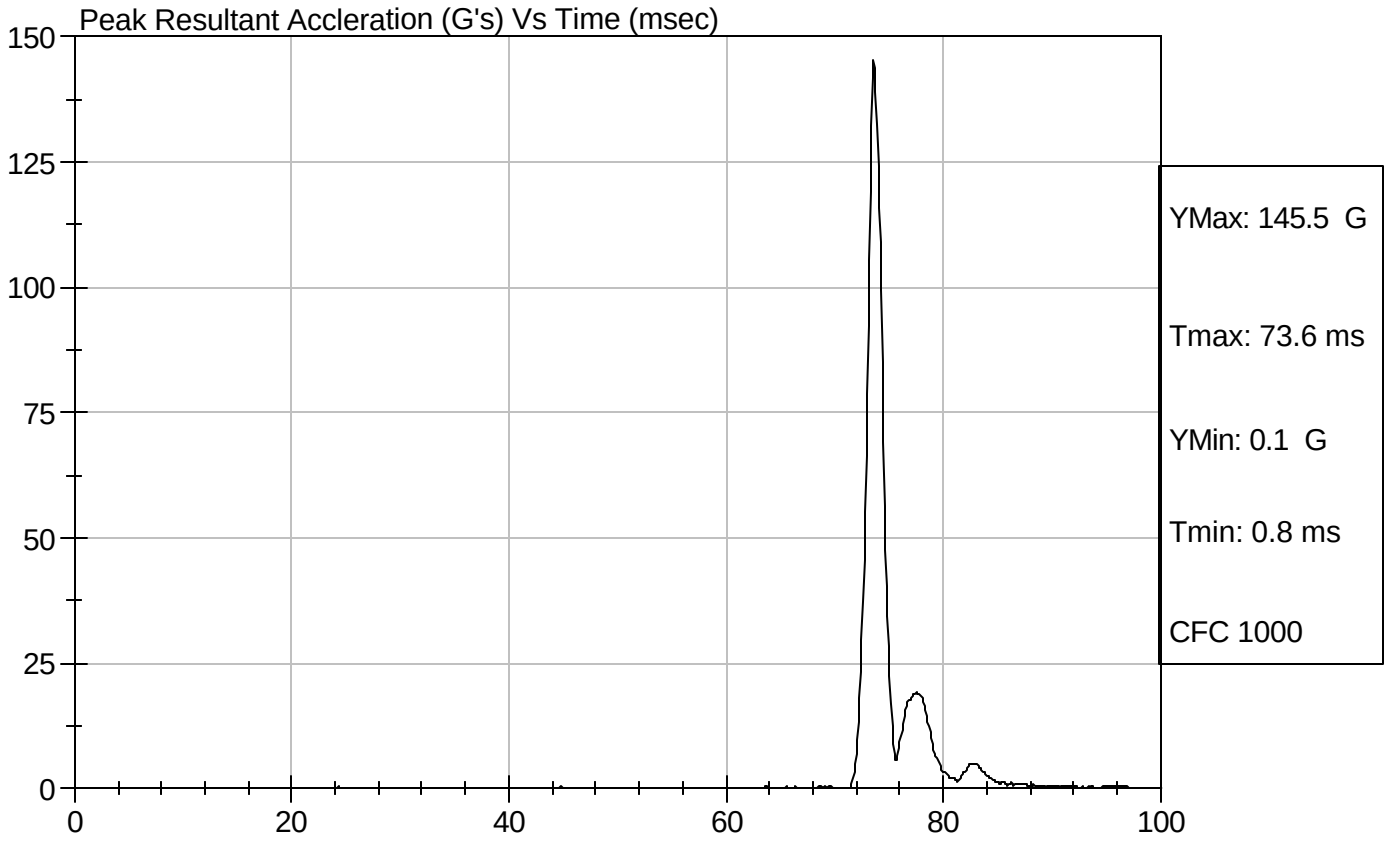
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Peak Resultant Acceleration	G's	120 to 150	146	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	12	Pass
		Overall Test Results		Pass

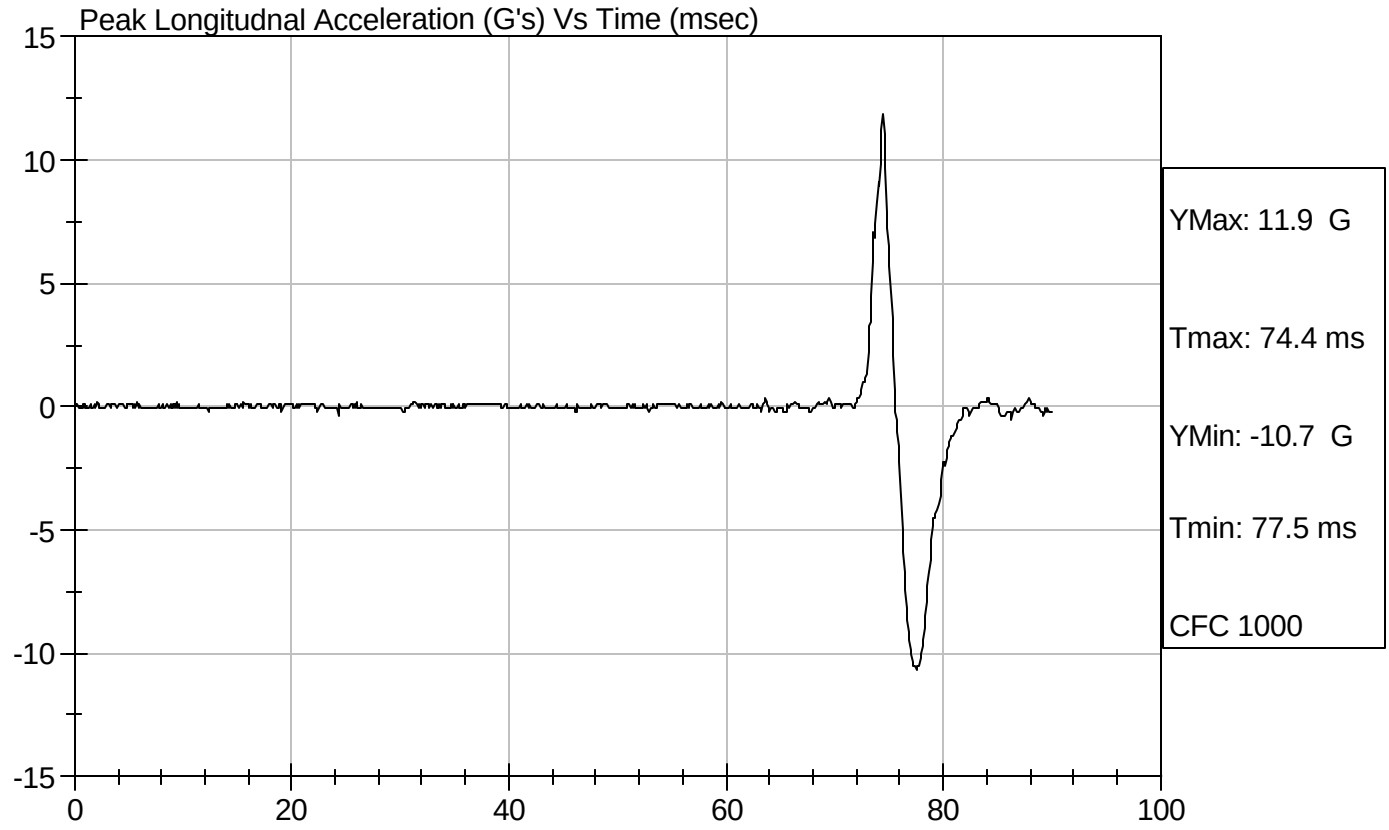
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

	Test Description: Head Drop	Test Date: 01/10/2005
	Component: D05081	Speed: 0 ft/s, 0.00 m/s





SID Calibration Data Sheet

Side Impact Dummy

Thorax Impact Test

ATD Serial No: 904 **Test I.D:** D05082

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Upper Rib	G's	37 - 46	38	Pass
Lower Rib	G's	37 - 46	37	Pass
Lower Spine	G's	15 - 22	22	Pass
		Overall Test Results		Pass

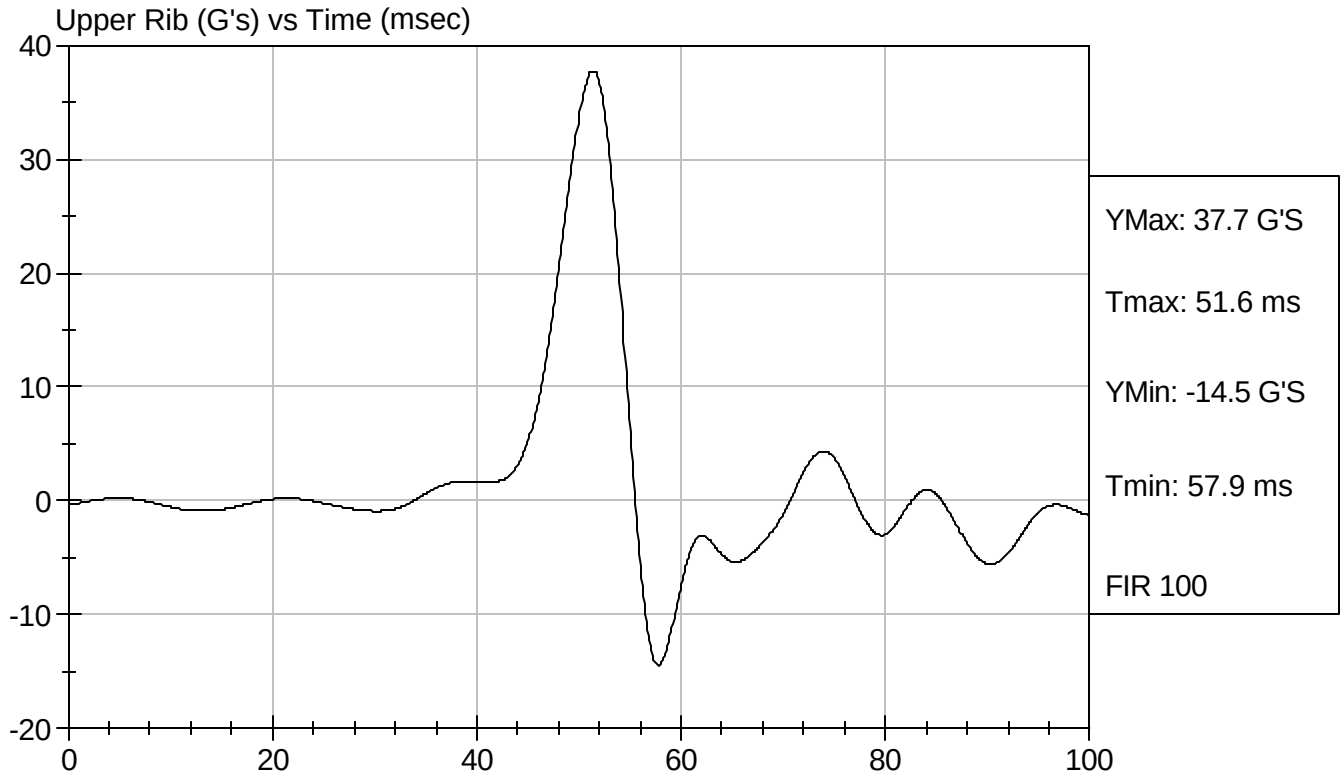
James Carney
Laboratory Technician

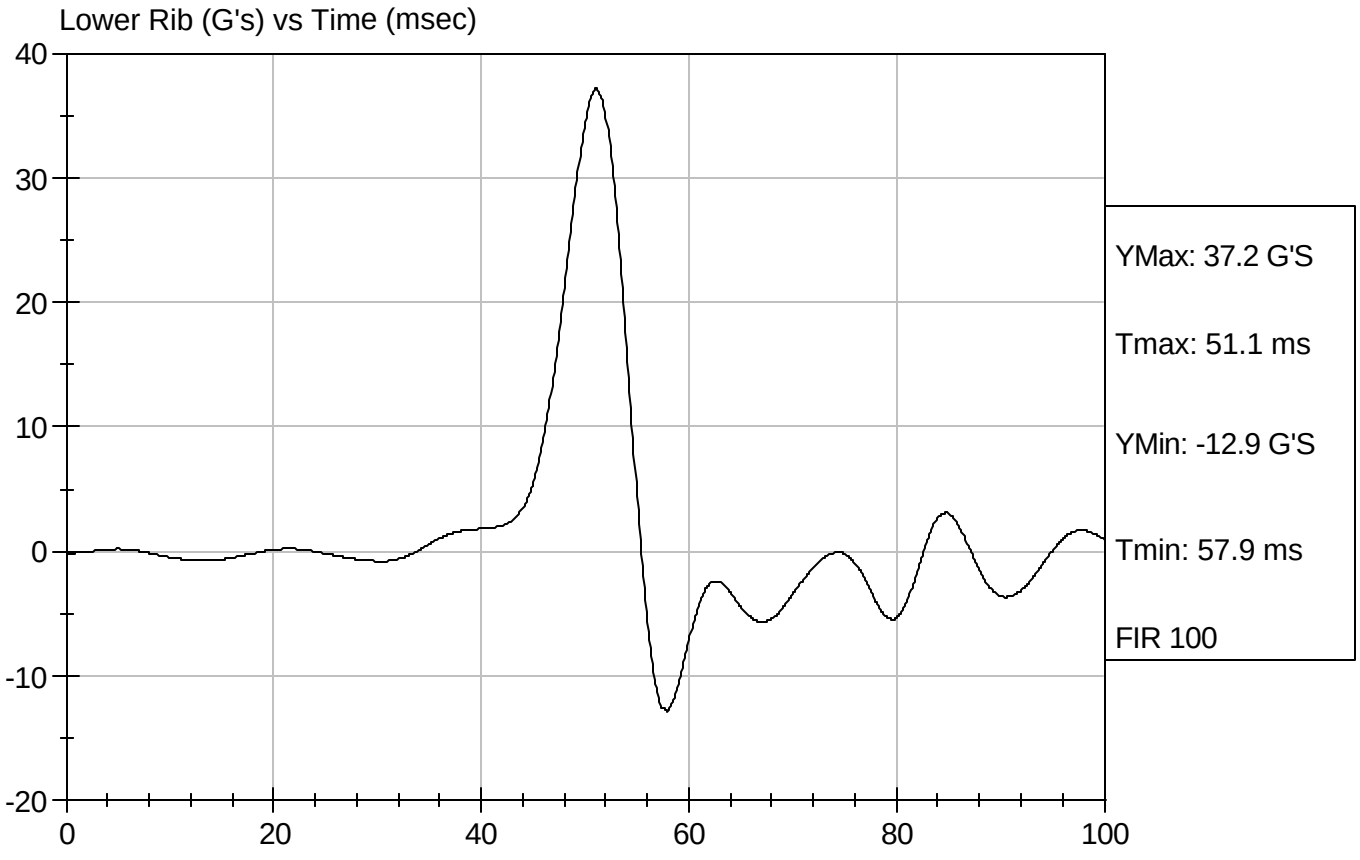
01/10/2005
Test Date

Jessica Hall
Approved By

Test Desc: Thorax Impact
Component ID: D05082

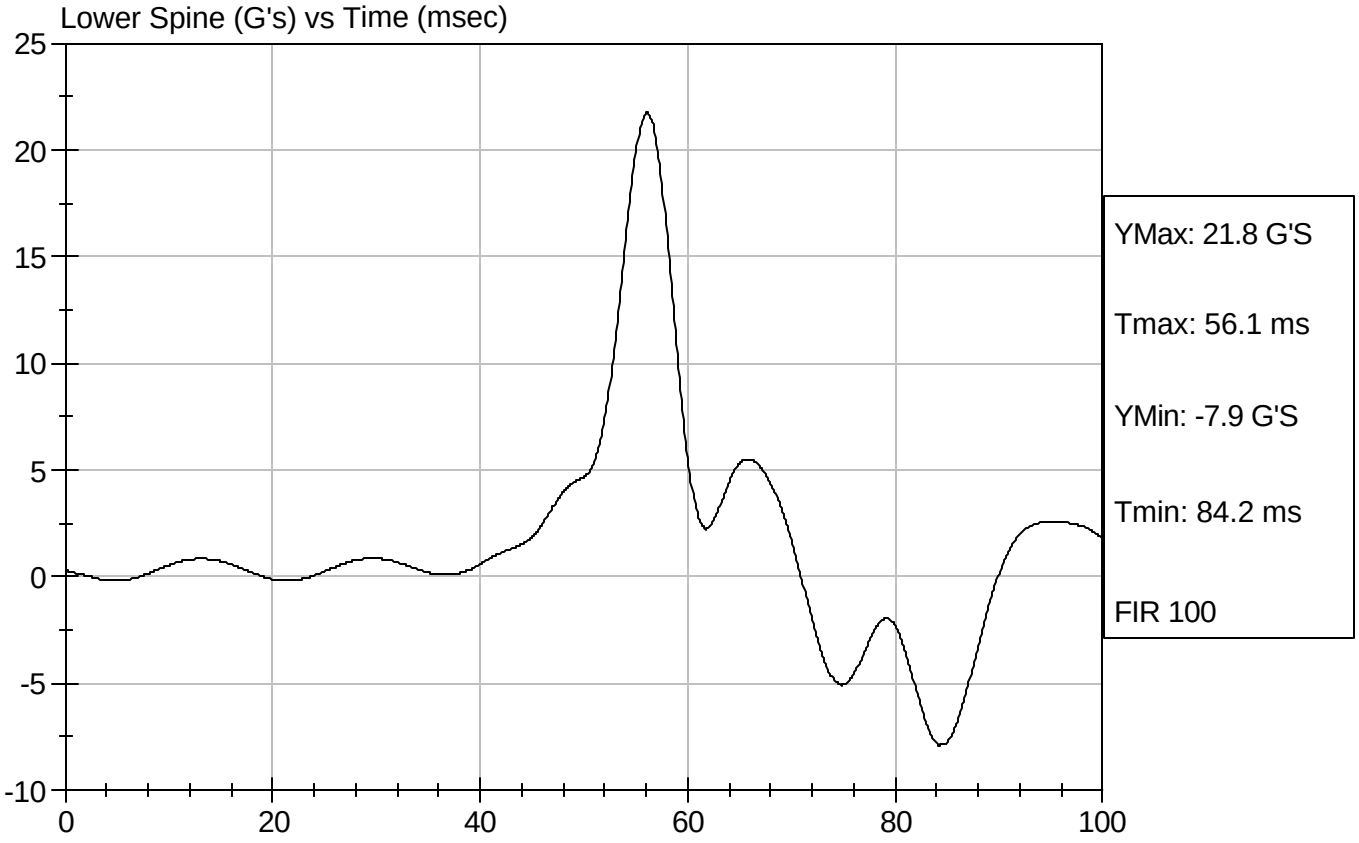
Test Date: 01/10/2005
Speed: 14.06 ft/sec, 4.29 m/sec





Test Desc: Thorax Impact
Component ID: D05082

Test Date: 01/10/2005
Speed: 14.06 ft/sec, 4.29 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 904 **Test I.D:** D05083

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Pelvis Acceleration	G's	40 - 60	49	Pass
		Overall Test Results		Pass

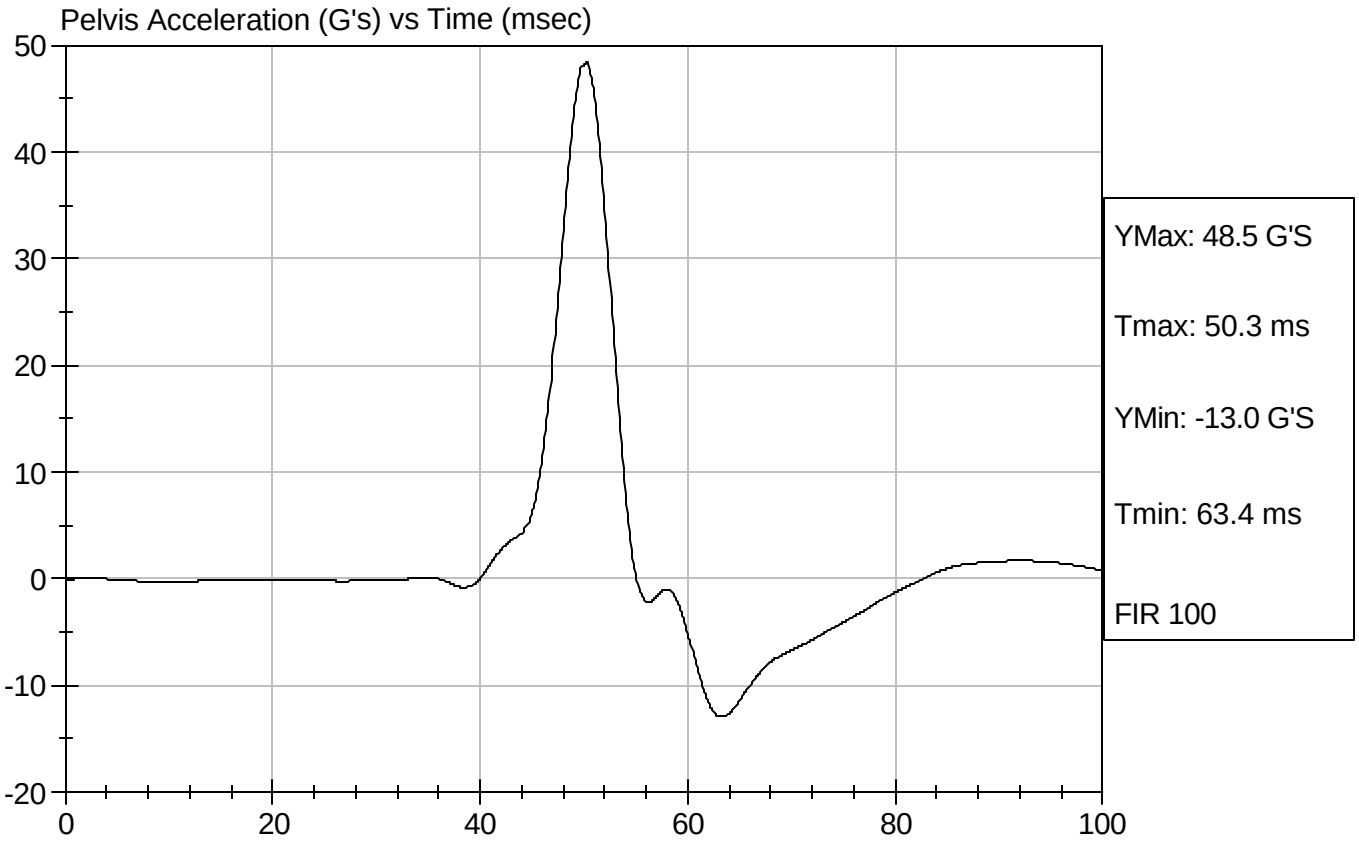
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

Test Desc: Pelvis Impact
Component ID: D05083

Test Date: 01/10/2005
Speed: 14.07 ft/sec, 4.29 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 904 **Test I.D:** D05084

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 12.7 mm	N	104 -162	145	Pass
Force At 19 mm	N	163 - 222	200	Pass
Force At 25.4 mm	N	222 - 280	266	Pass
Force At 33 mm	N	325 - 391	372	Pass
		Overall Test Results		Pass

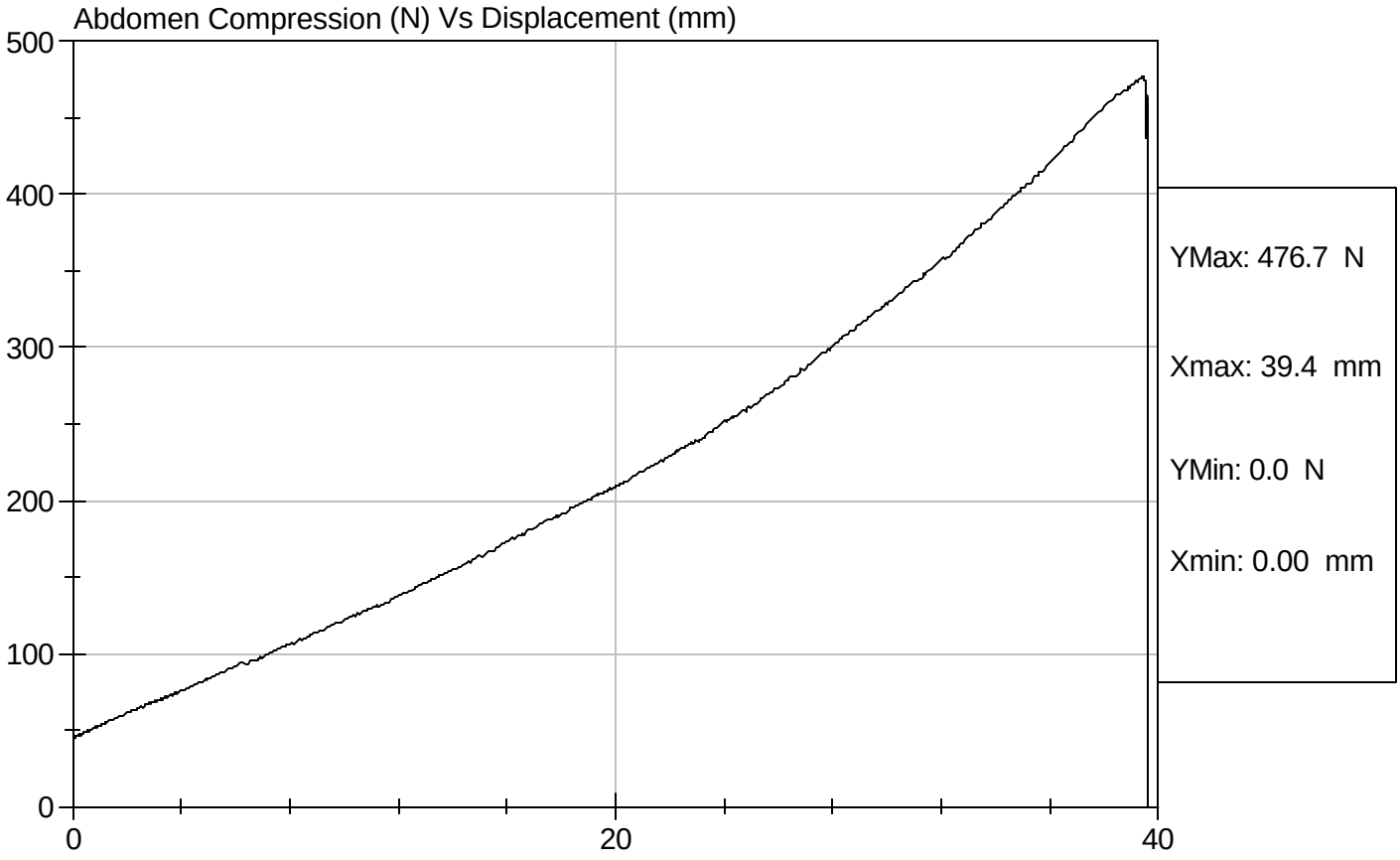
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

Test Description: Abdomen Compression Test Date: 01/10/2005

Component: D05084 Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Lumbar Flexion Calibration

ATD Serial No: 904 **Test I.D:** D05085

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	129.3	Pass
Force At 30 deg	N	151.2 - 204.6	185.2	Pass
Force At 40 deg	N	204.6 - 258.0	246.3	Pass
Return Angle	Deg	12 Maximum	4	Pass
		Overall Test Results		Pass

James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

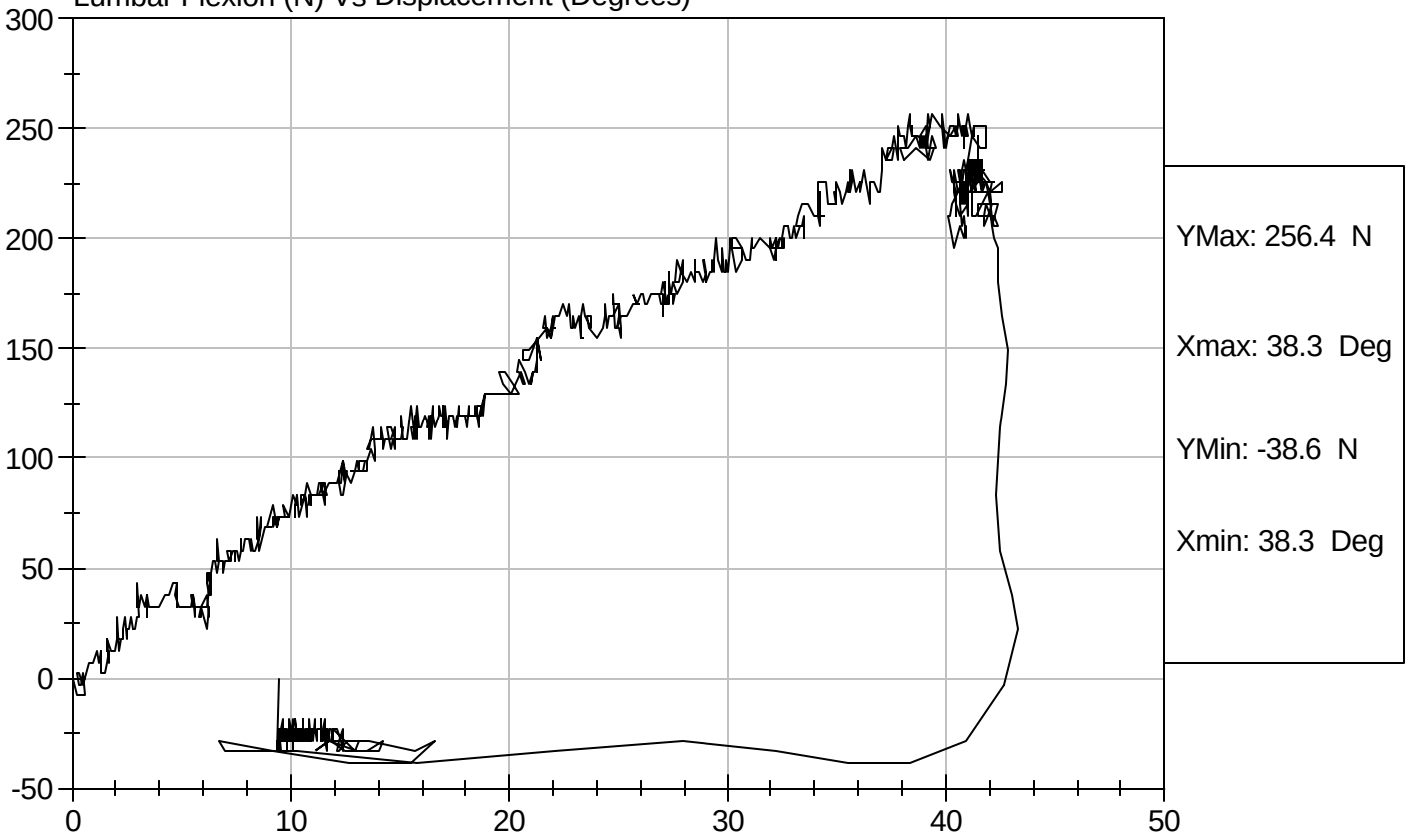
Test Description: Lumbar Flexion

Test Date: 01/10/2005

Component: D05085

Speed: 0 ft/sec, 0 m/sec

Lumbar Flexion (N) Vs Displacement (Degrees)



SID Calibration Data Sheet

Side Impact Dummy (SID)

Neck Pendulum Test

ATD Serial No: 904 **Test I.D:** D05089

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Impact Velocity		m/s	6.89 to 7.13	7.02	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.36	Pass
	20 msec	m/s	4.12 to 5.10	4.72	Pass
	30 msec	m/s	5.73 to 7.01	6.63	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.21	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	76	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	79	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	61	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass

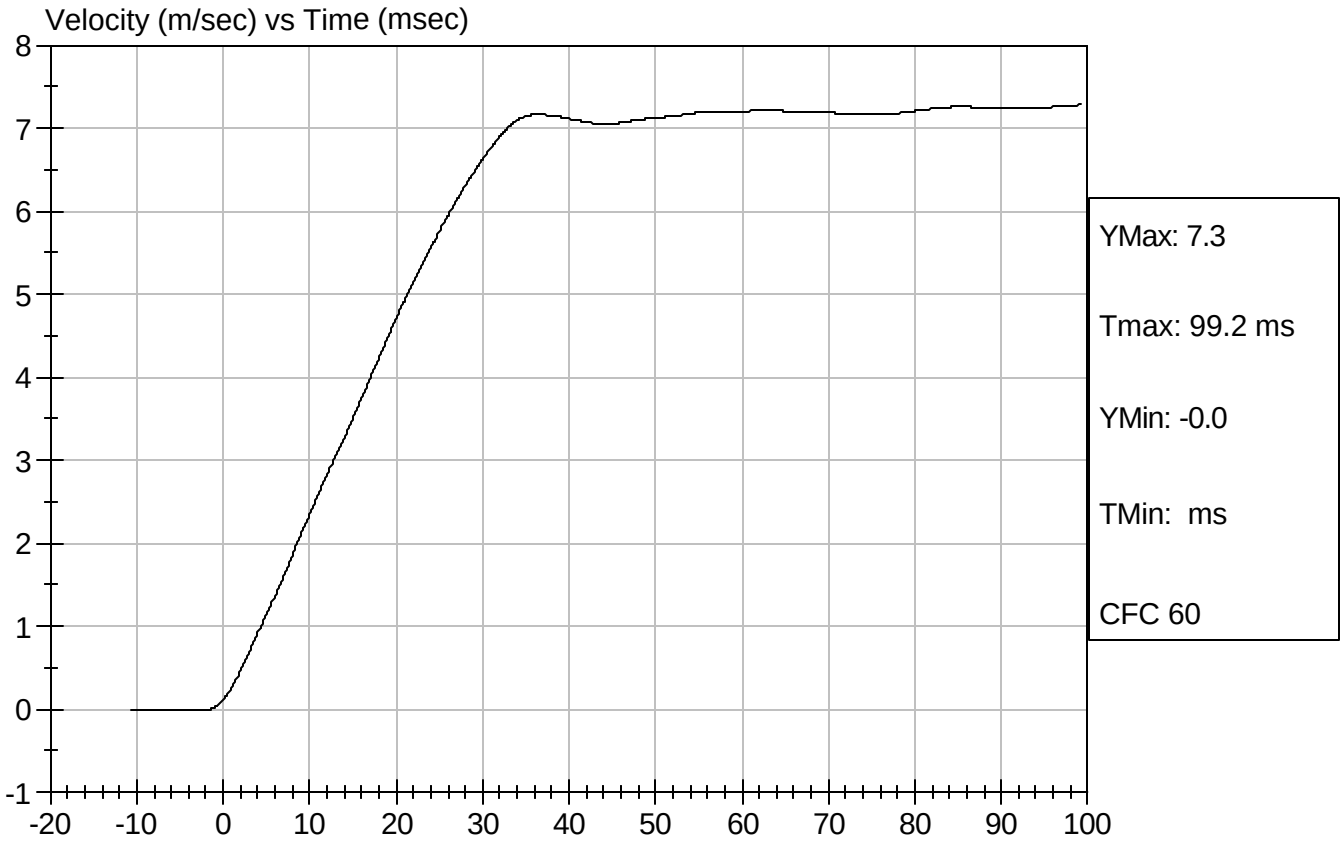
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

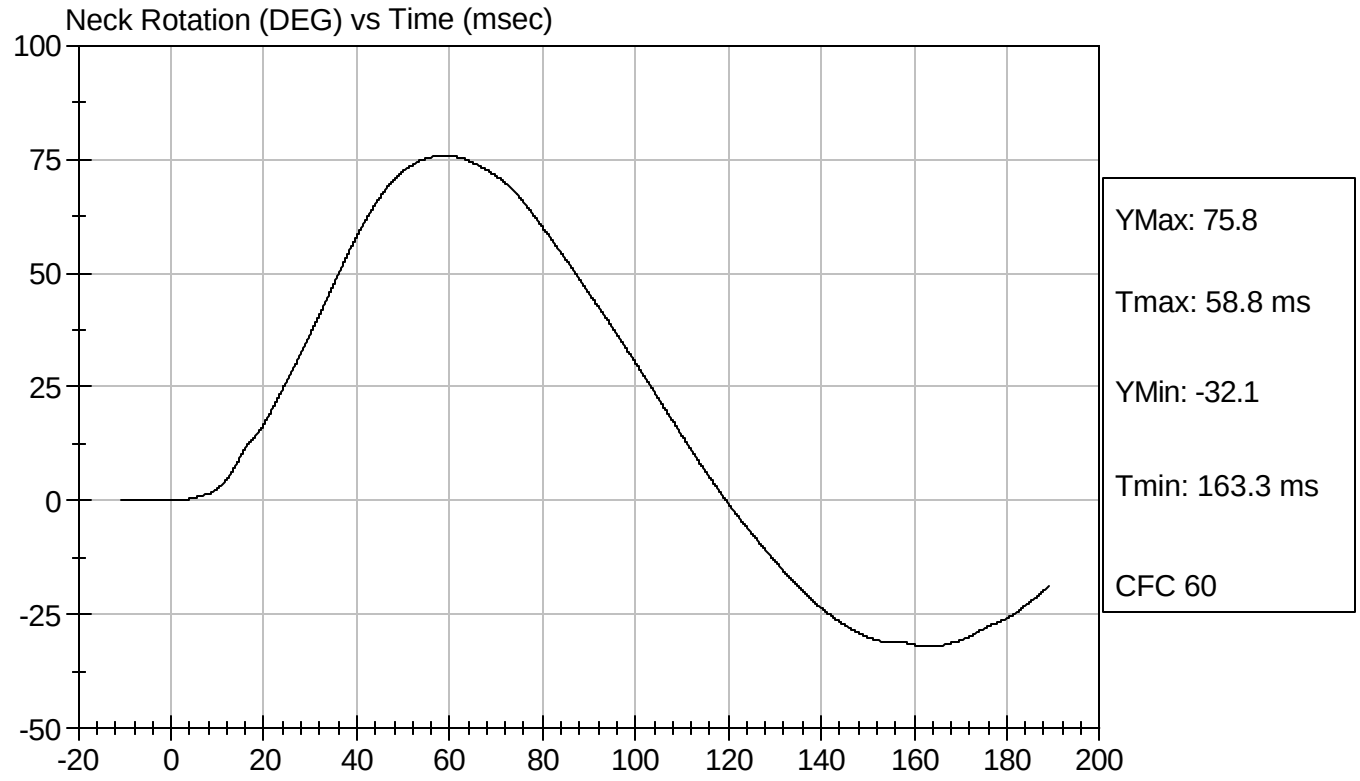
Test Desc: Neck Bending
Component ID: D05089

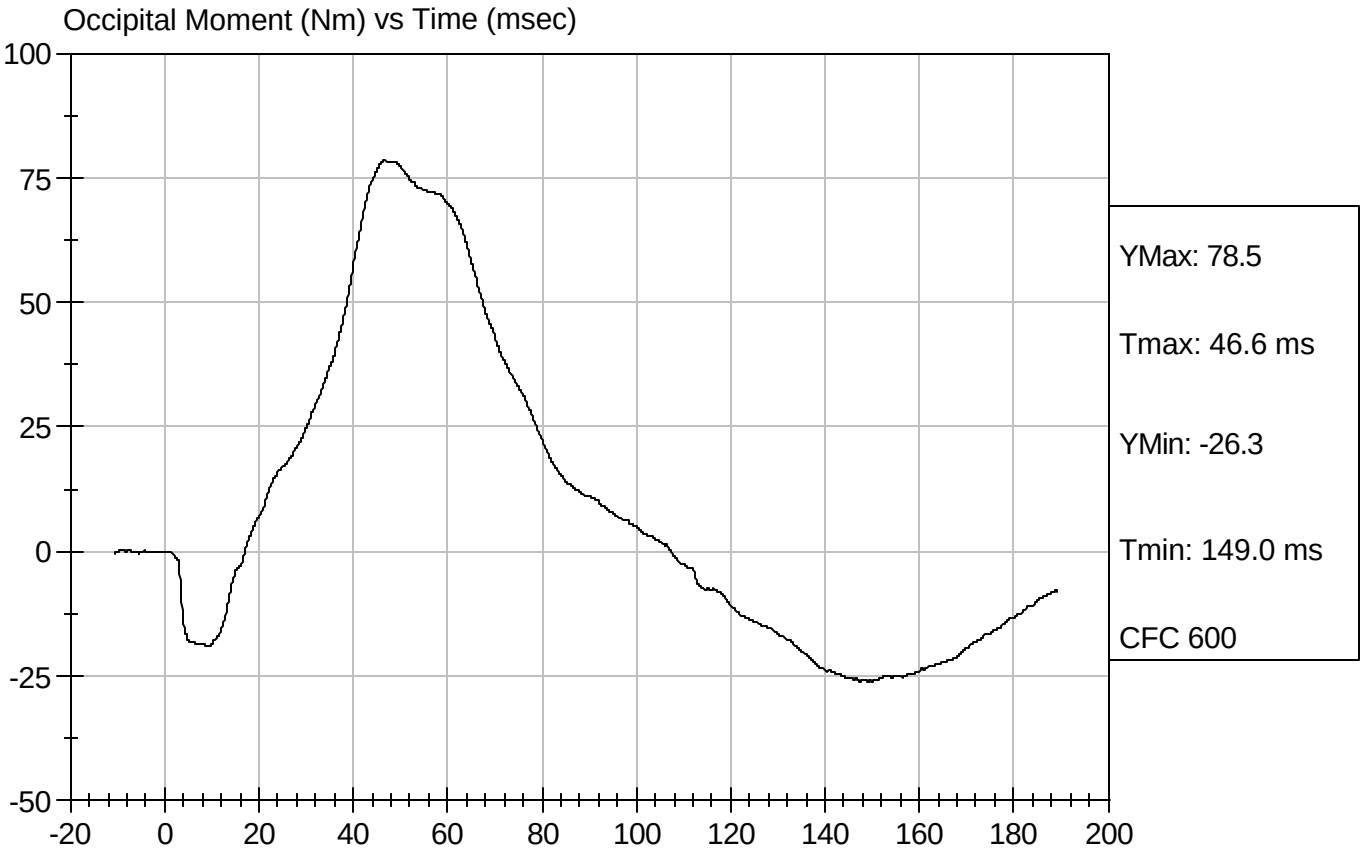
Test Date: 01/10/2005
Speed: 23.02 ft/sec, 7.02 m/sec



Test Desc: Neck Bending
Component ID: D05089

Test Date: 01/10/2005
Speed: 23.02 ft/sec, 7.02 m/sec





Calibration Test Results Summary

Dummy Serial Number: 904

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet

Side Impact Dummy

Head Drop Calibration (Lateral)

ATD Serial No: 904 **Test I.D:** D05321

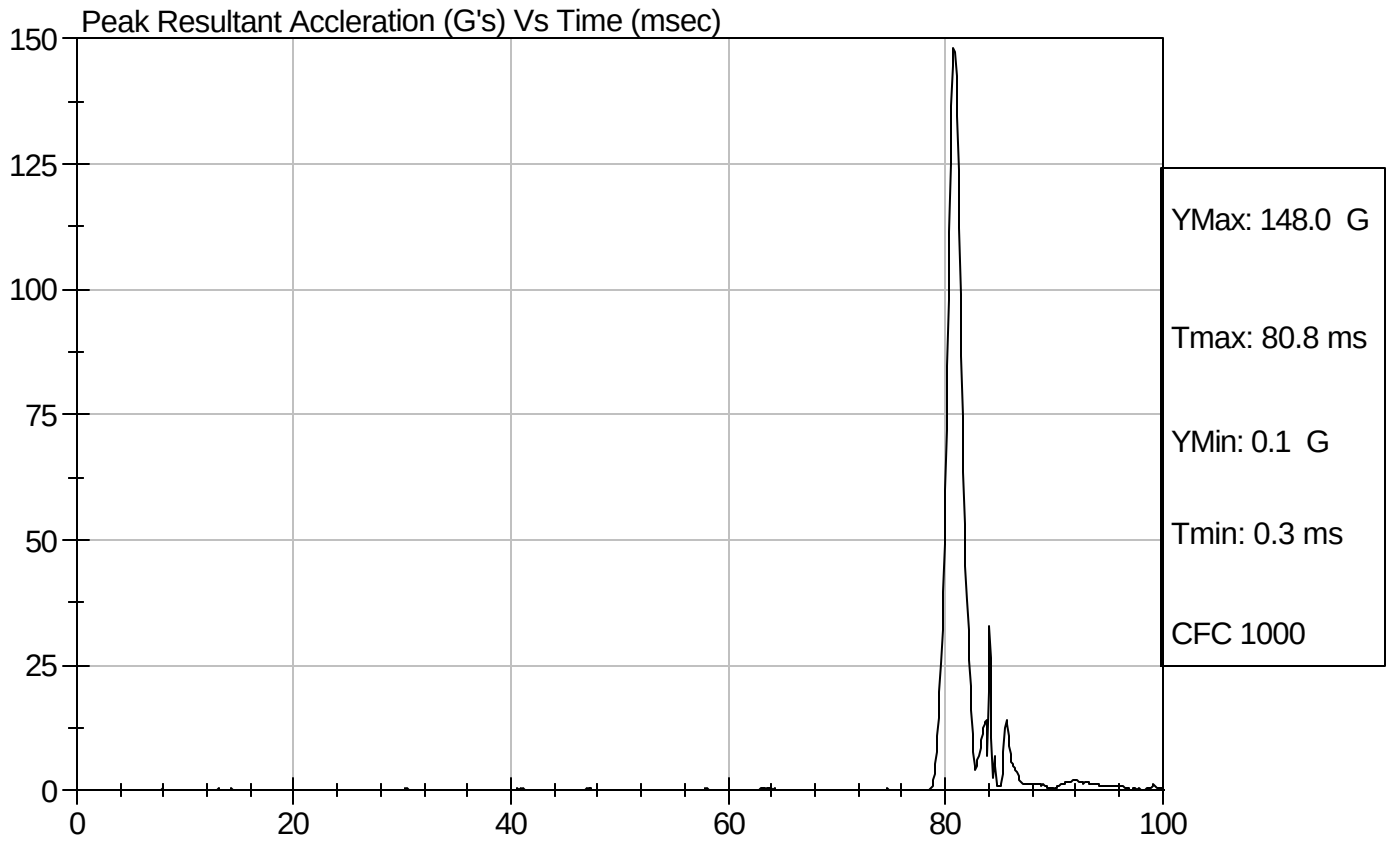
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Peak Resultant Acceleration	G's	120 to 150	148	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	7.5	Pass
		Overall Test Results		Pass

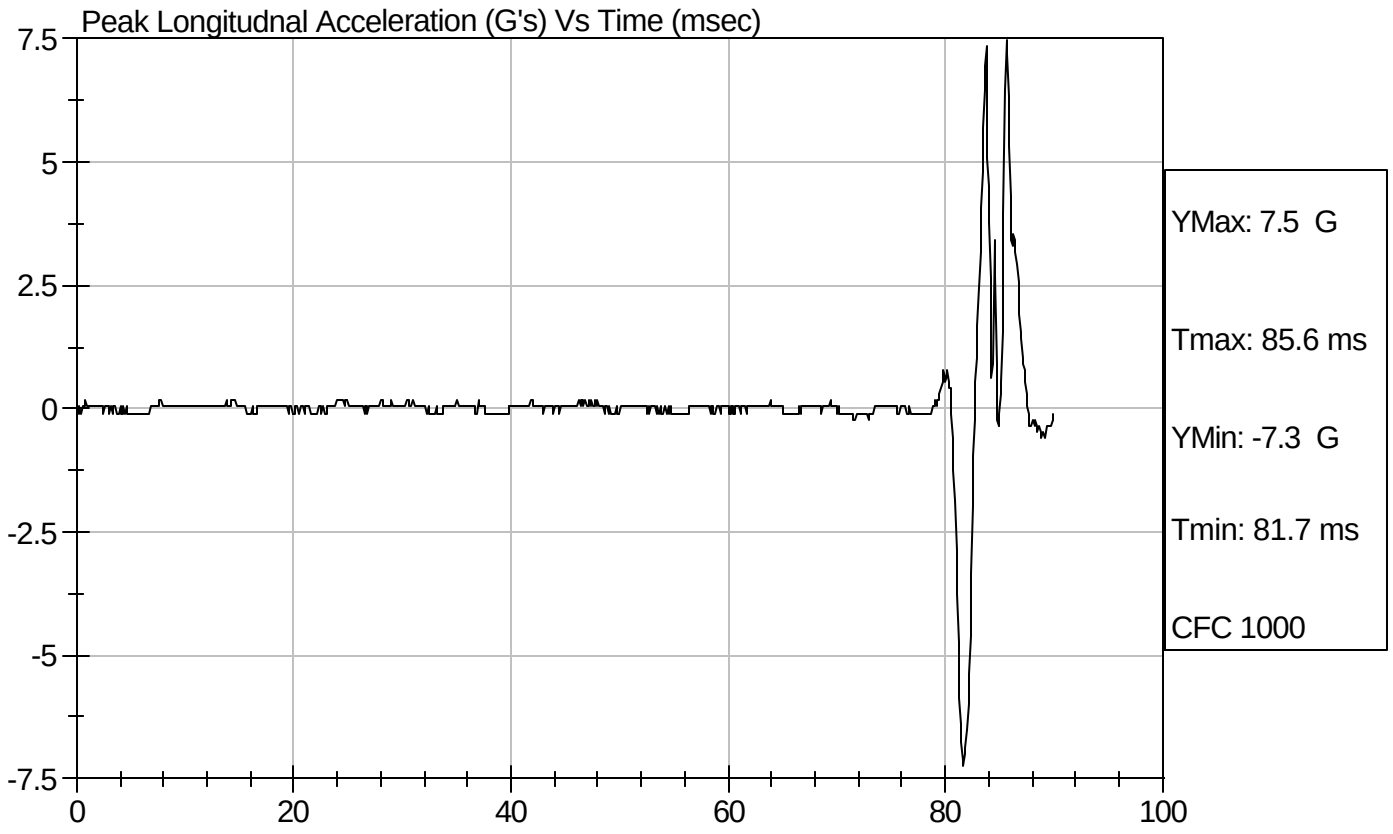
James Carney
Laboratory Technician

02/08/2005
Test Date

Jessica Hall
Approved By

	Test Description: Head Drop	Test Date: 02/08/2005
	Component: D05321	Speed: 0 ft/s, 0.00 m/s





SID Calibration Data Sheet

Side Impact Dummy

Thorax Impact Test

ATD Serial No: 904 **Test I.D:** D05322

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Upper Rib	G's	37 - 46	39	Pass
Lower Rib	G's	37 - 46	38	Pass
Lower Spine	G's	15 - 22	21	Pass
		Overall Test Results		Pass

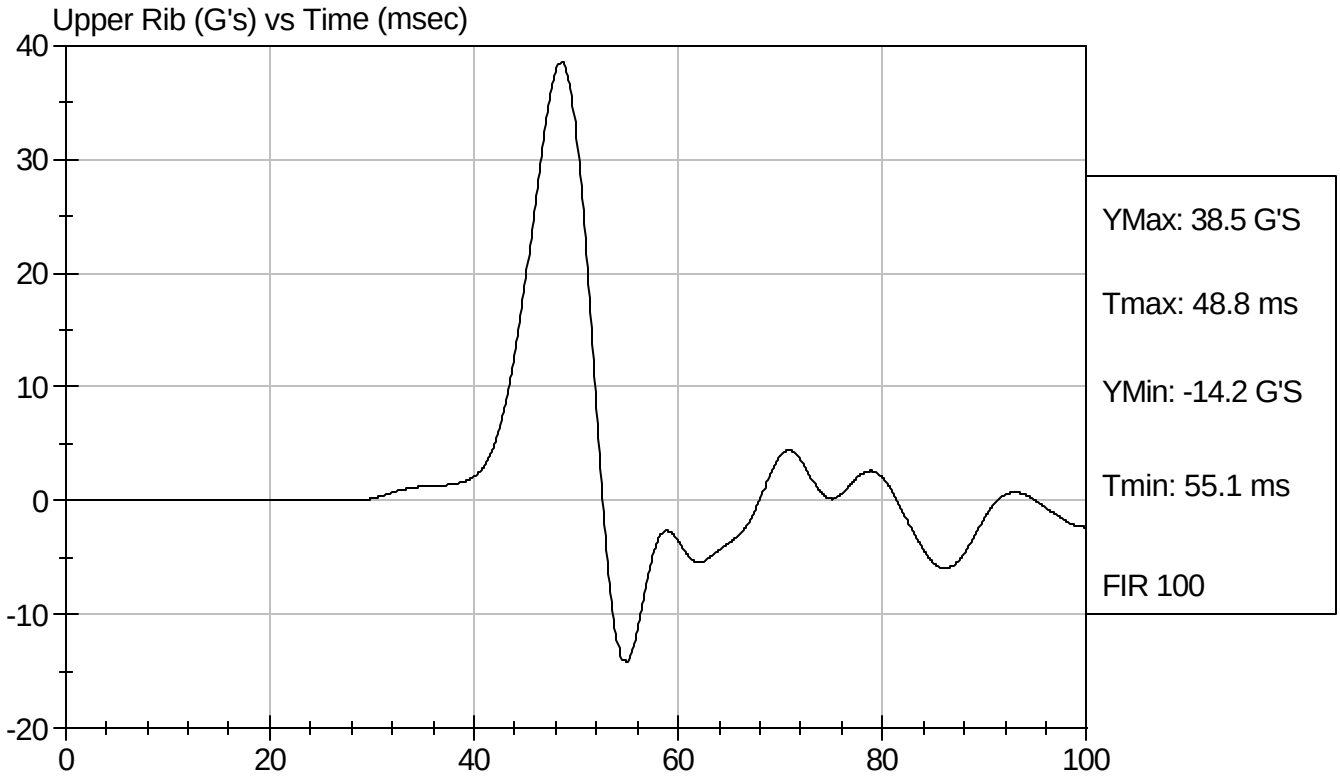
James Carney
Laboratory Technician

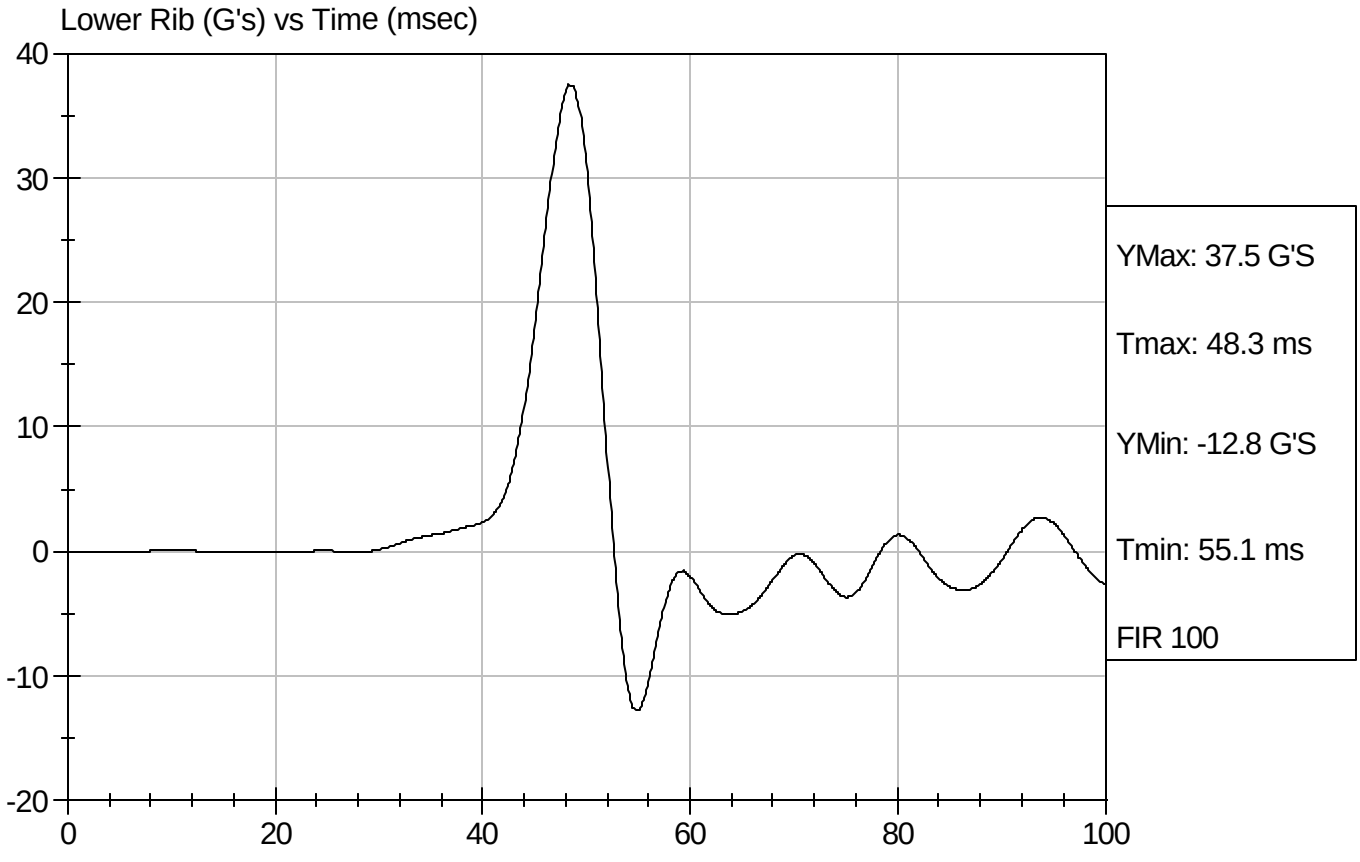
02/09/2005
Test Date

Jessica Hall
Approved By

Test Desc: Thorax Impact
Component ID: D05322

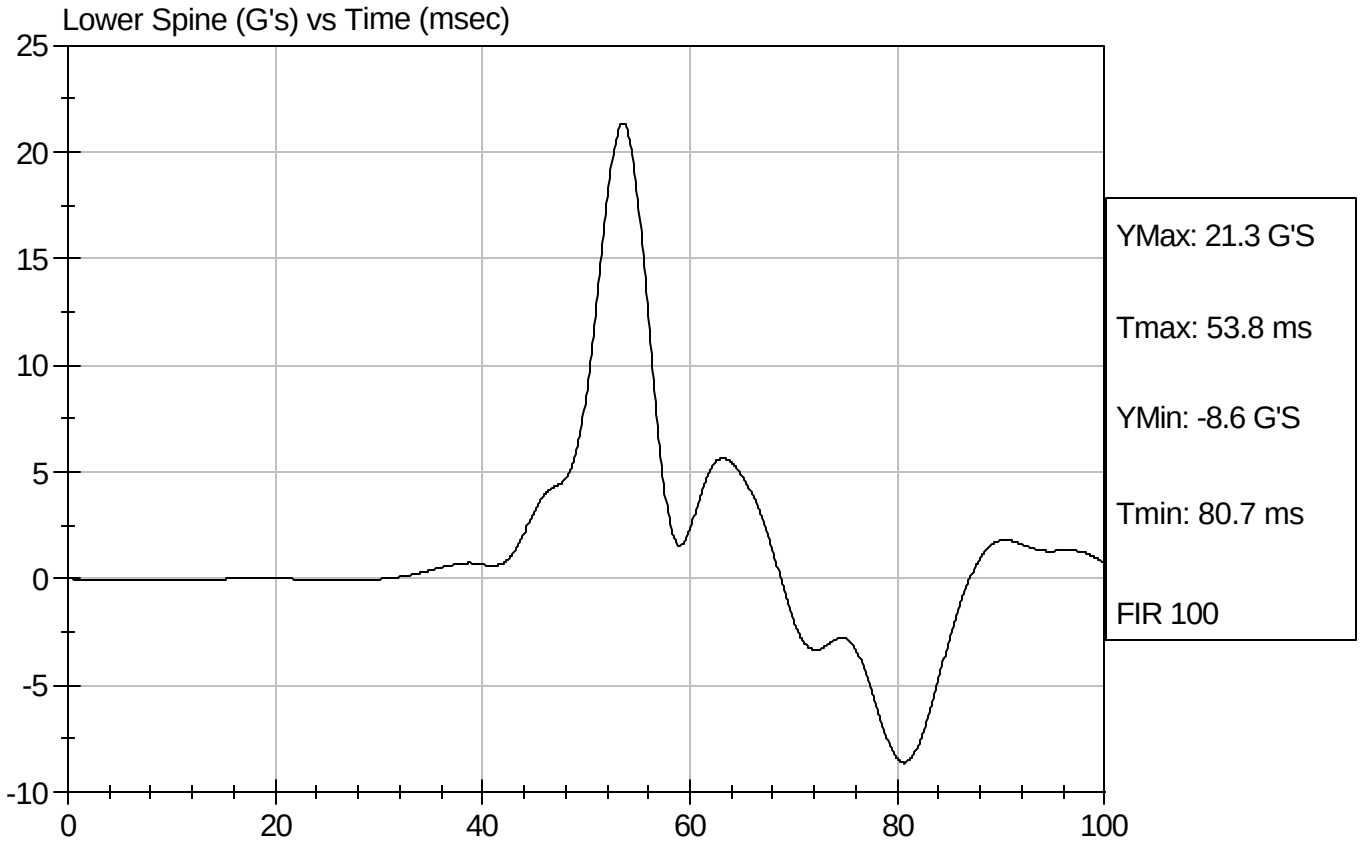
Test Date: 02/09/2005
Speed: 14.09 ft/sec, 4.29 m/sec





Test Desc: Thorax Impact
Component ID: D05322

Test Date: 02/09/2005
Speed: 14.09 ft/sec, 4.29 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 904 **Test I.D:** D05323

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Pelvis Acceleration	G's	40 - 60	52	Pass
		Overall Test Results		Pass

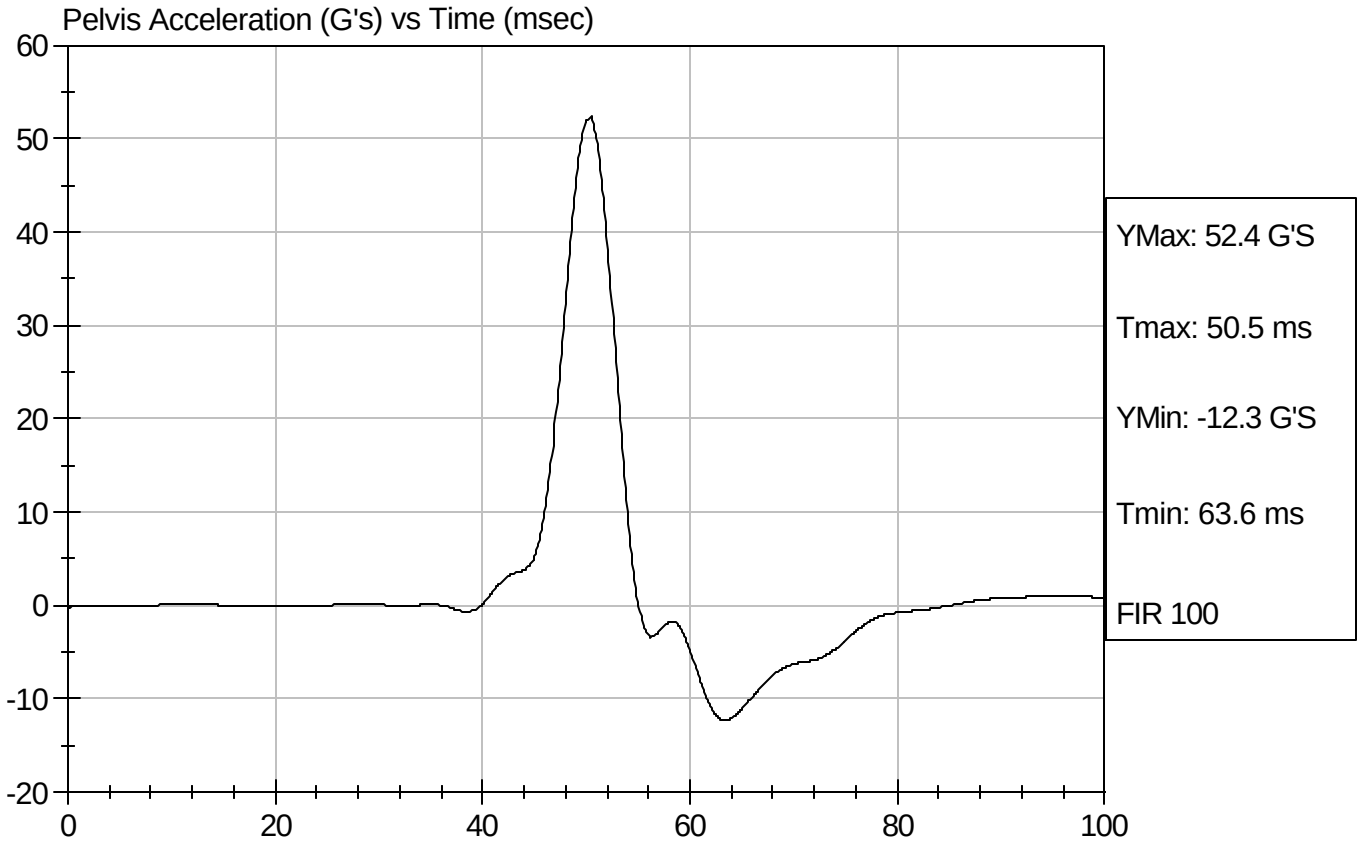
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Desc: Pelvis Impact
Component ID: D05323

Test Date: 02/09/2005
Speed: 14.08 ft/sec, 4.29 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 904 **Test I.D:** D05324

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	18	Pass
Force At 12.7 mm	N	104 -162	142	Pass
Force At 19 mm	N	163 - 222	194	Pass
Force At 25.4 mm	N	222 - 280	255	Pass
Force At 33 mm	N	325 - 391	348	Pass
		Overall Test Results		Pass

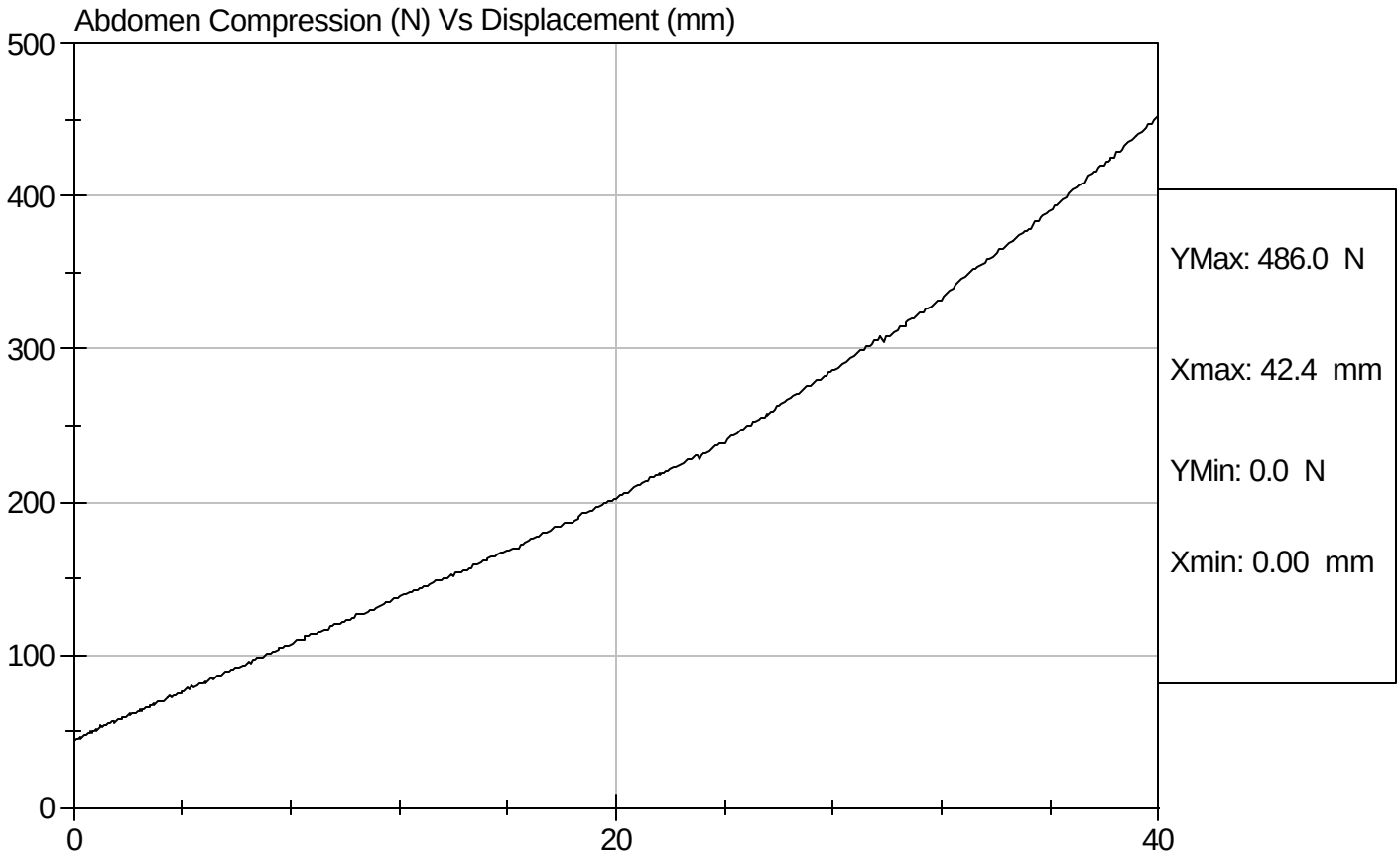
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Description: Abdomen Compression Test Date: 02/09/2005

Component: D05324 Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Lumbar Flexion Calibration

ATD Serial No: 904 **Test I.D:** D05325

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	98.3	Pass
Force At 30 deg	N	151.2 - 204.6	174.6	Pass
Force At 40 deg	N	204.6 - 258.0	240.7	Pass
Return Angle	Deg	12 Maximum	6	Pass
		Overall Test Results		Pass

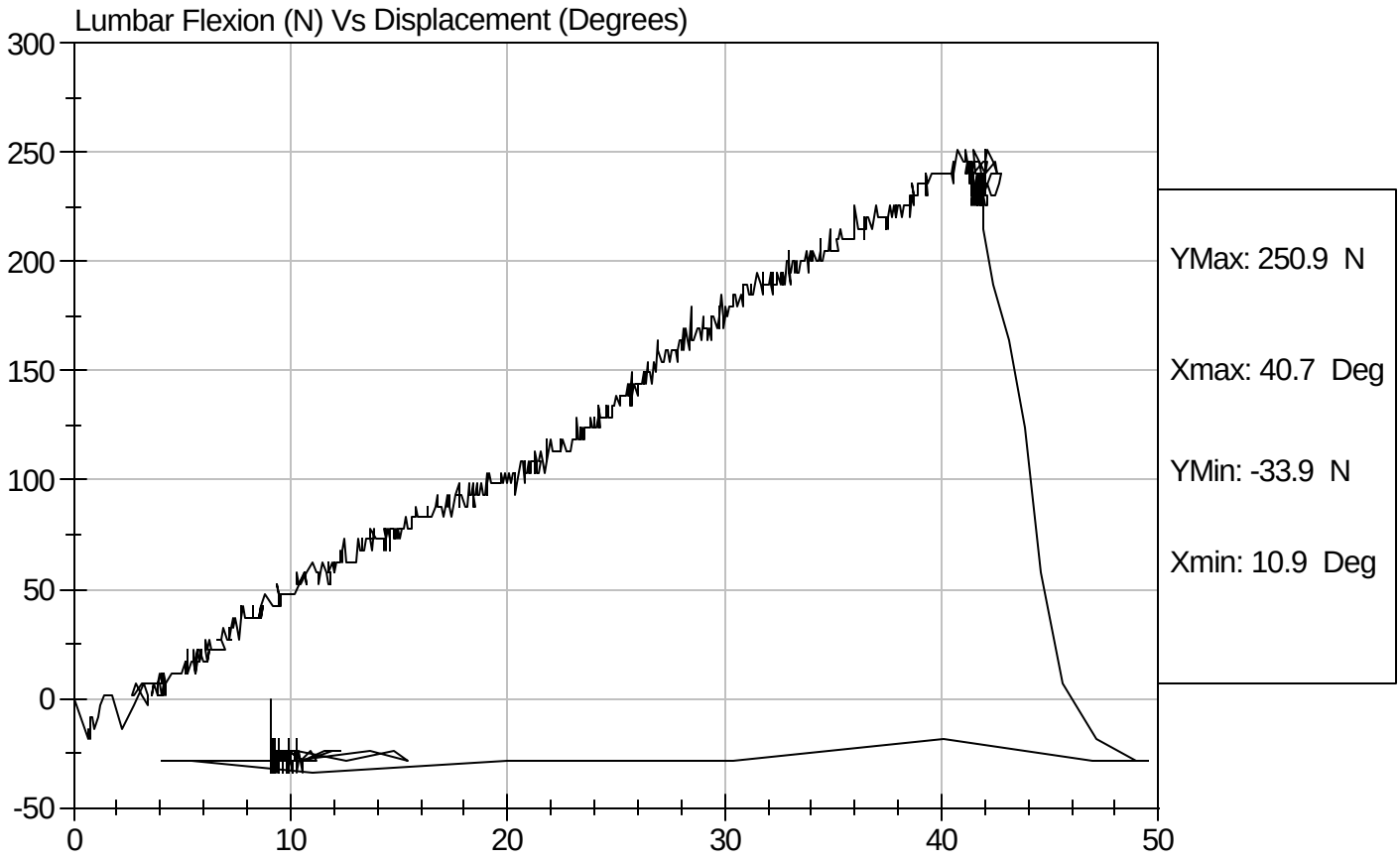
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Description: Lumbar Flexion | Test Date: 02/09/2005

Component: D05325 | Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet

Side Impact Dummy (SID)

Neck Pendulum Test

ATD Serial No: 904 **Test I.D:** D05329

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	19	Pass
Impact Velocity		m/s	6.89 to 7.13	6.96	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.27	Pass
	20 msec	m/s	4.12 to 5.10	4.54	Pass
	30 msec	m/s	5.73 to 7.01	6.38	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.13	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	73	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	79	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	59	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	9	Pass

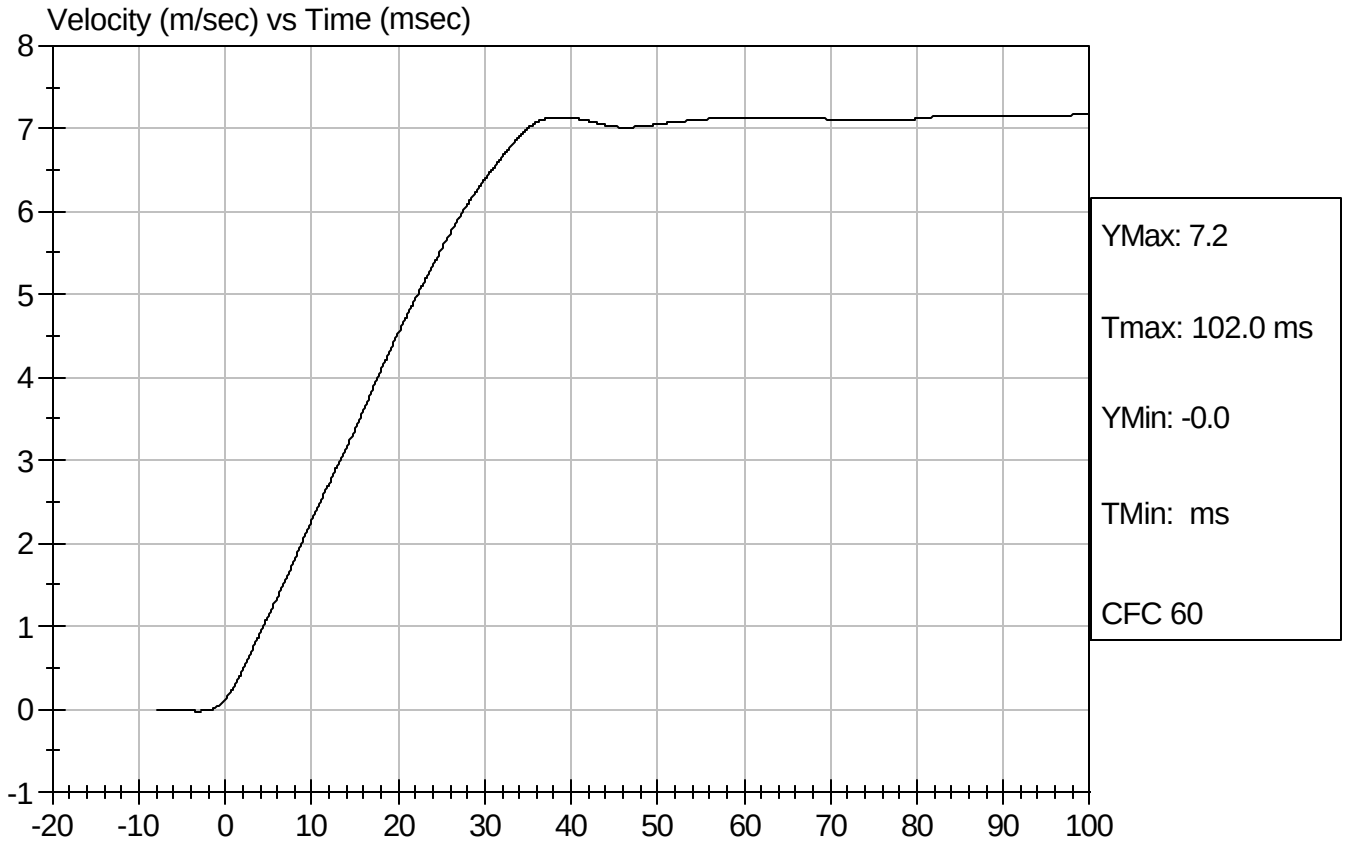
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

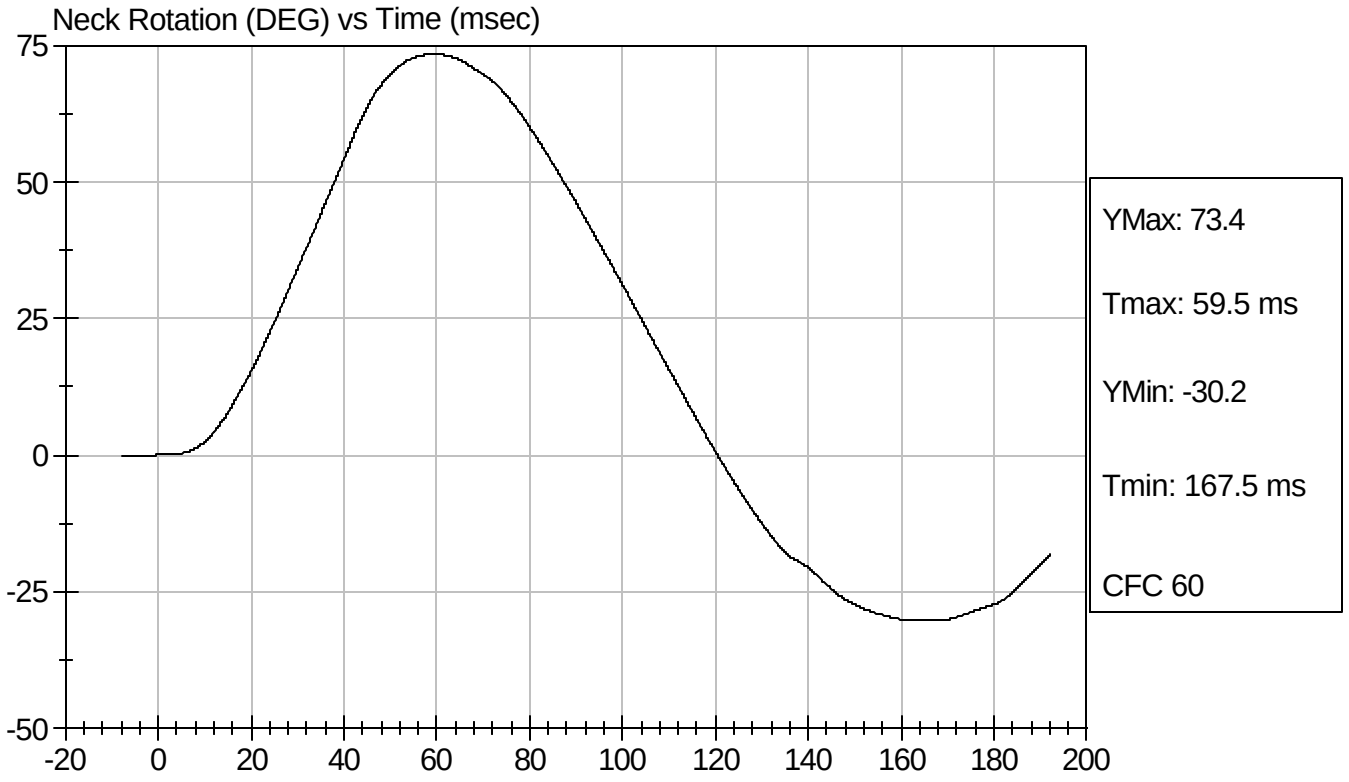
Test Desc: Neck Bending
Component ID: D05329

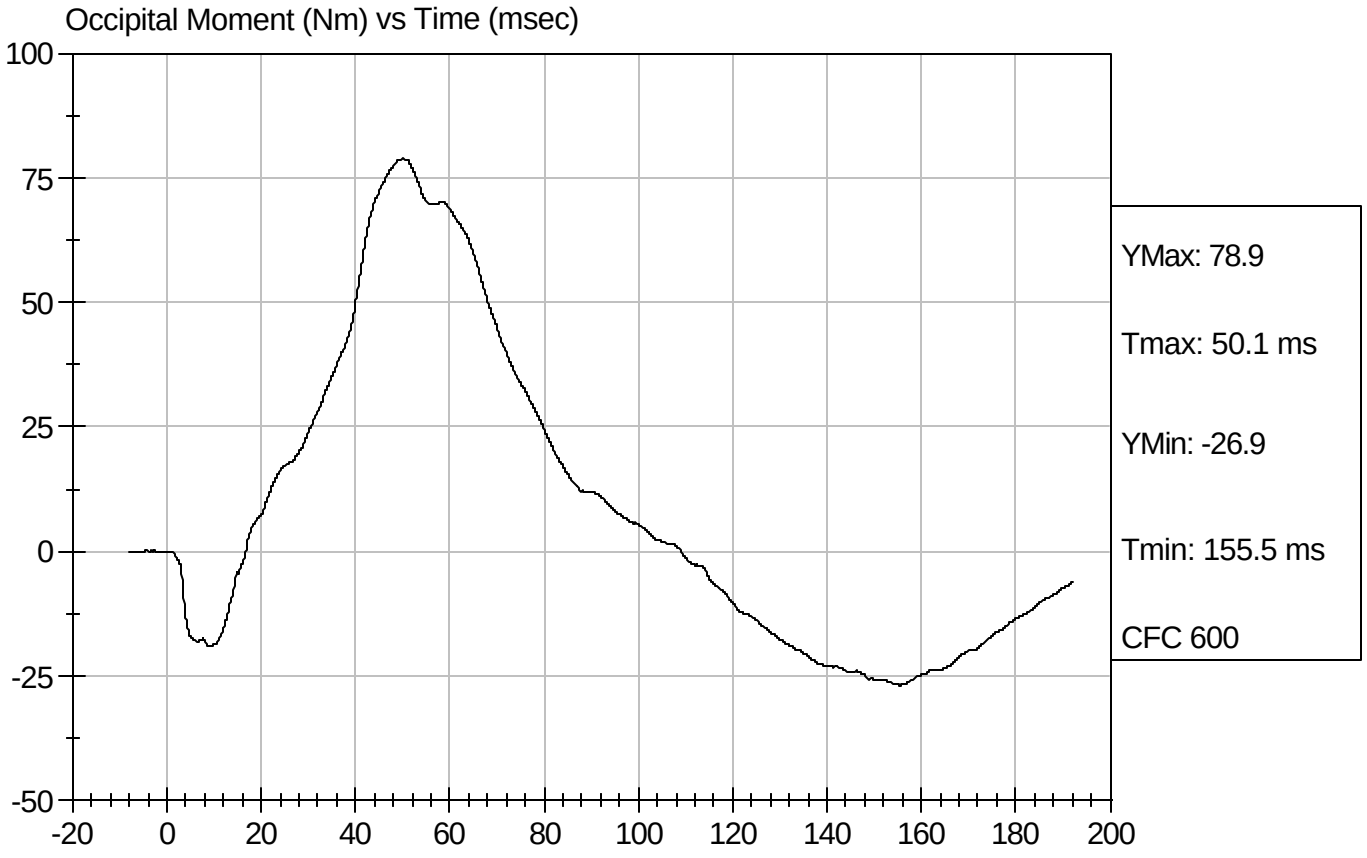
Test Date: 02/09/2005
Speed: 22.83 ft/sec, 6.96 m/sec



Test Desc: Neck Bending
Component ID: D05329

Test Date: 02/09/2005
Speed: 22.83 ft/sec, 6.96 m/sec





SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 904

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass

James Carney
Laboratory Technician

02/10/2005
Test Date

Jessica Hall
Approved By

CERTIFICATION DATA

Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet

Side Impact Dummy

External Measurements

ATD Serial No: 271 **Test I.D:** D0507

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	905	Pass
RH - Rib Height	mm	501 - 521	502	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	239	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	526	Pass
SW - Knee Pivot to Floor	mm	490 - 505	497	Pass
HW - Hip Width	mm	356 - 391	371	Pass
		Overall Test Results		Pass

James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

SID Calibration Data Sheet

Side Impact Dummy

Head Drop Calibration (Lateral)

ATD Serial No: 271 **Test I.D:** D05071

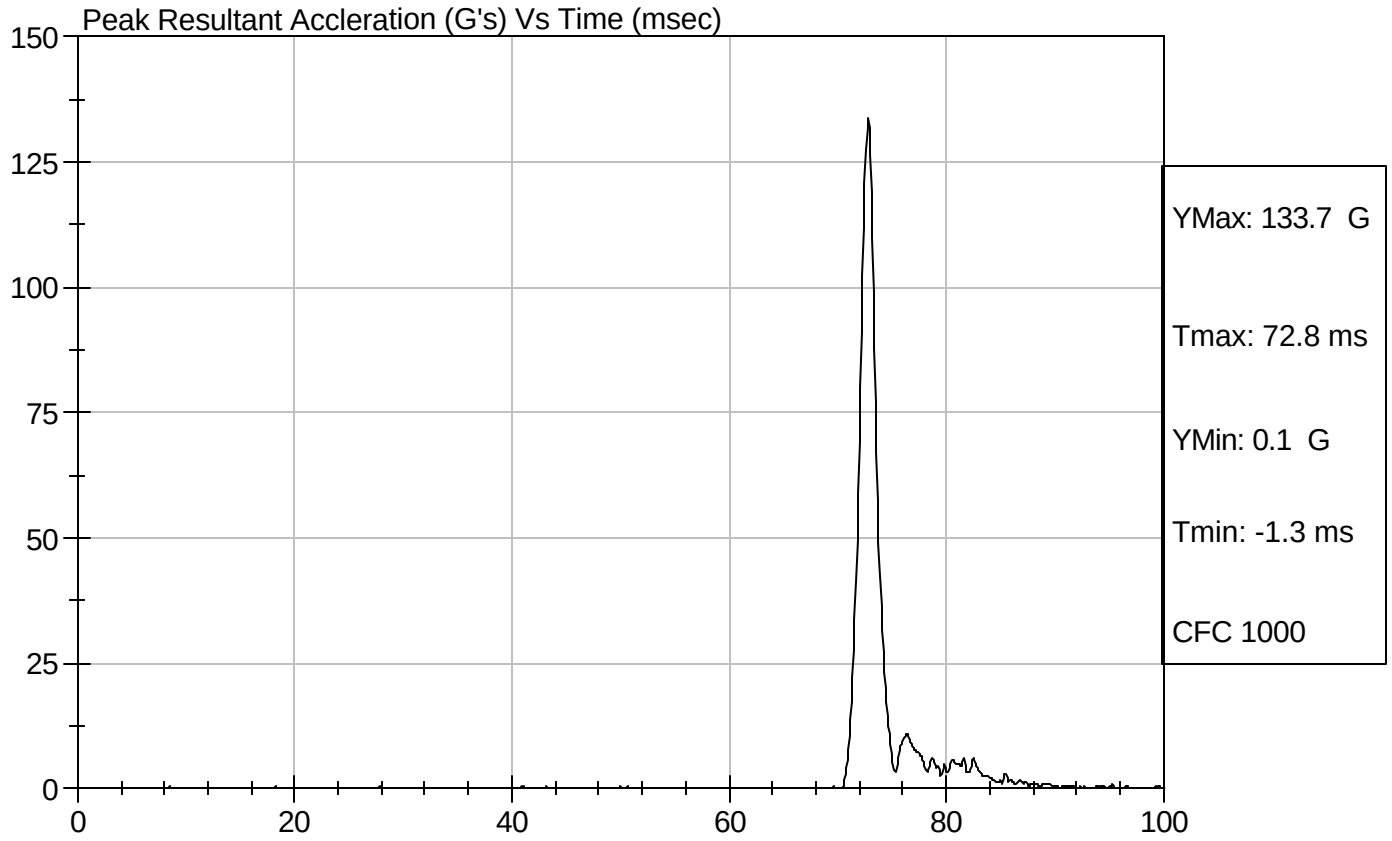
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Peak Resultant Acceleration	G's	120 to 150	134	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	12	Pass
		Overall Test Results		Pass

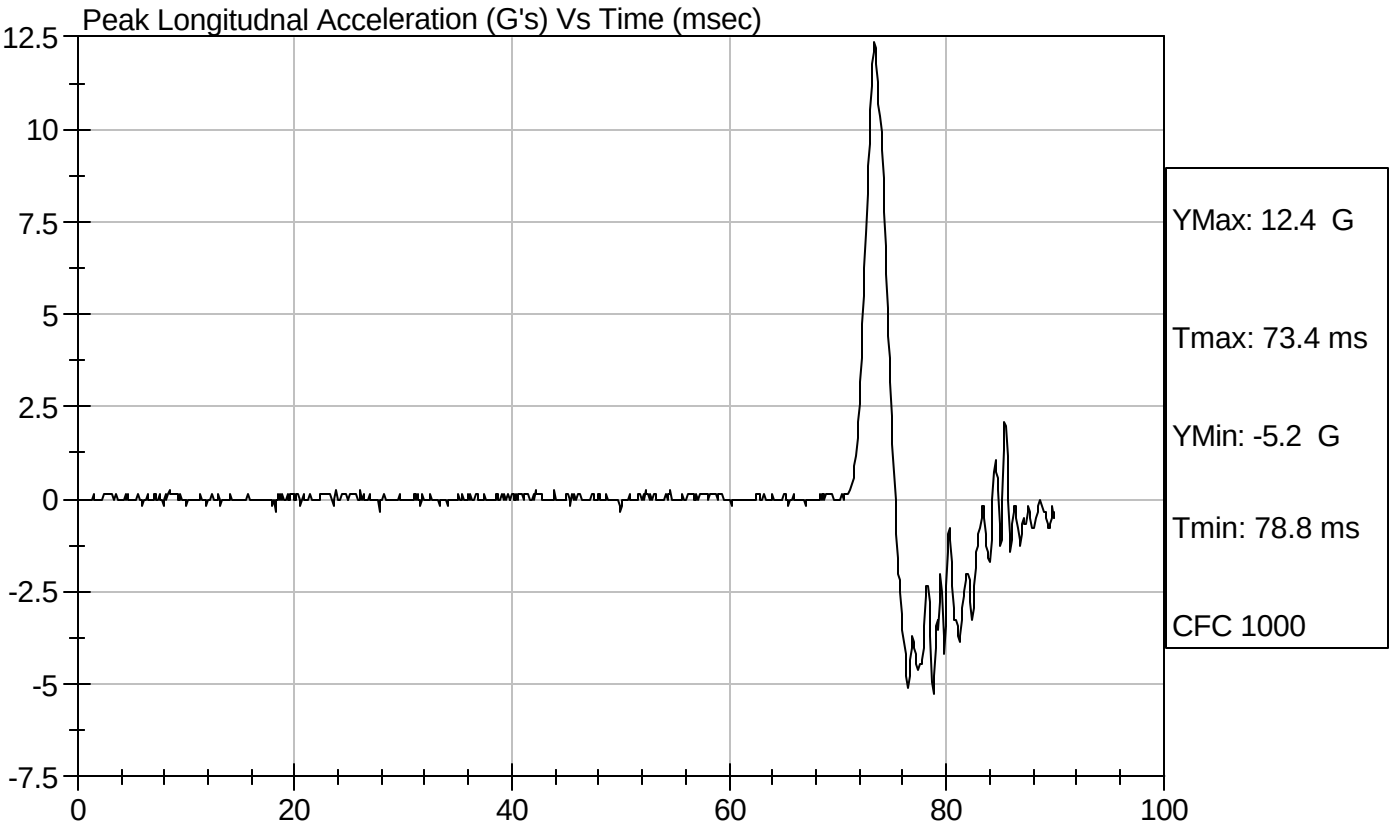
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

	Test Description: Head Drop	Test Date: 01/10/2005
	Component: D05071	Speed: 0 ft/s, 0.00 m/s





SID Calibration Data Sheet

Side Impact Dummy

Thorax Impact Test

ATD Serial No: 271 **Test I.D:** D05072

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.28	Pass
Upper Rib	G's	37 - 46	41	Pass
Lower Rib	G's	37 - 46	42	Pass
Lower Spine	G's	15 - 22	21	Pass
		Overall Test Results		Pass

James Carney
Laboratory Technician

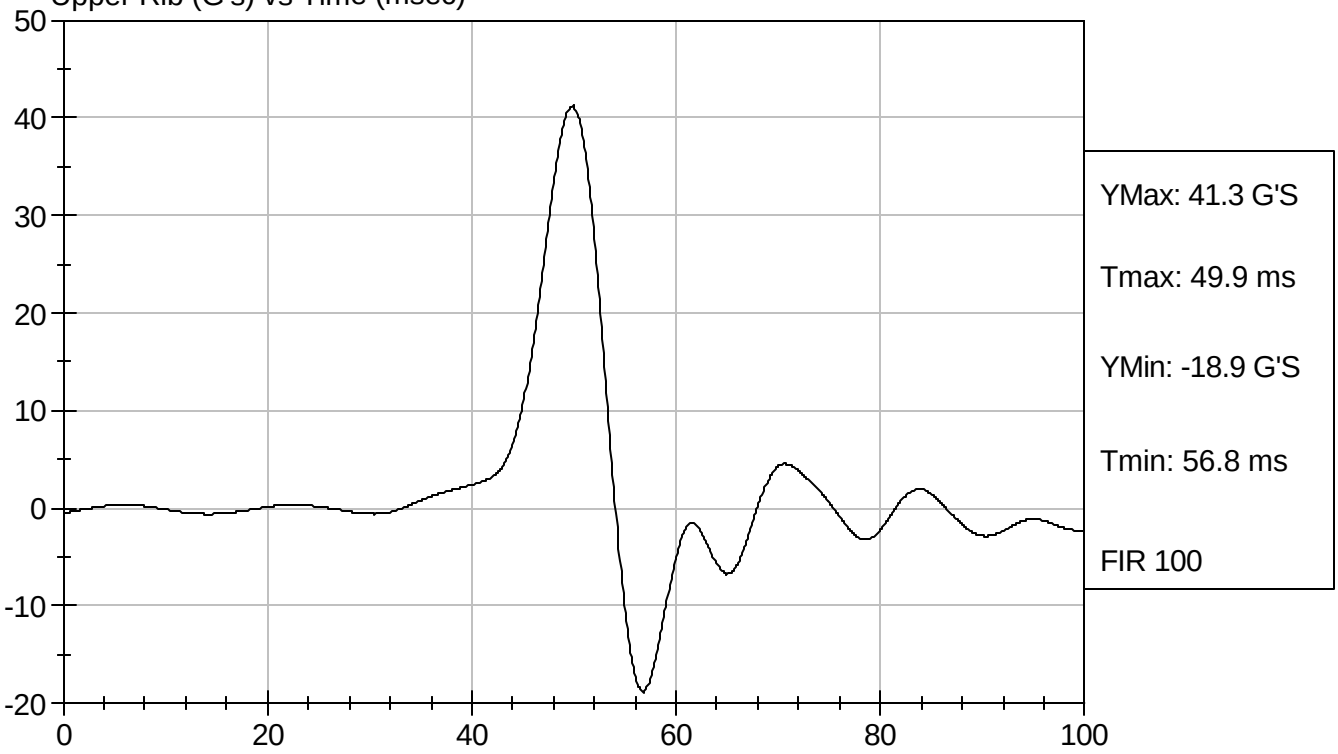
01/10/2005
Test Date

Jessica Hall
Approved By

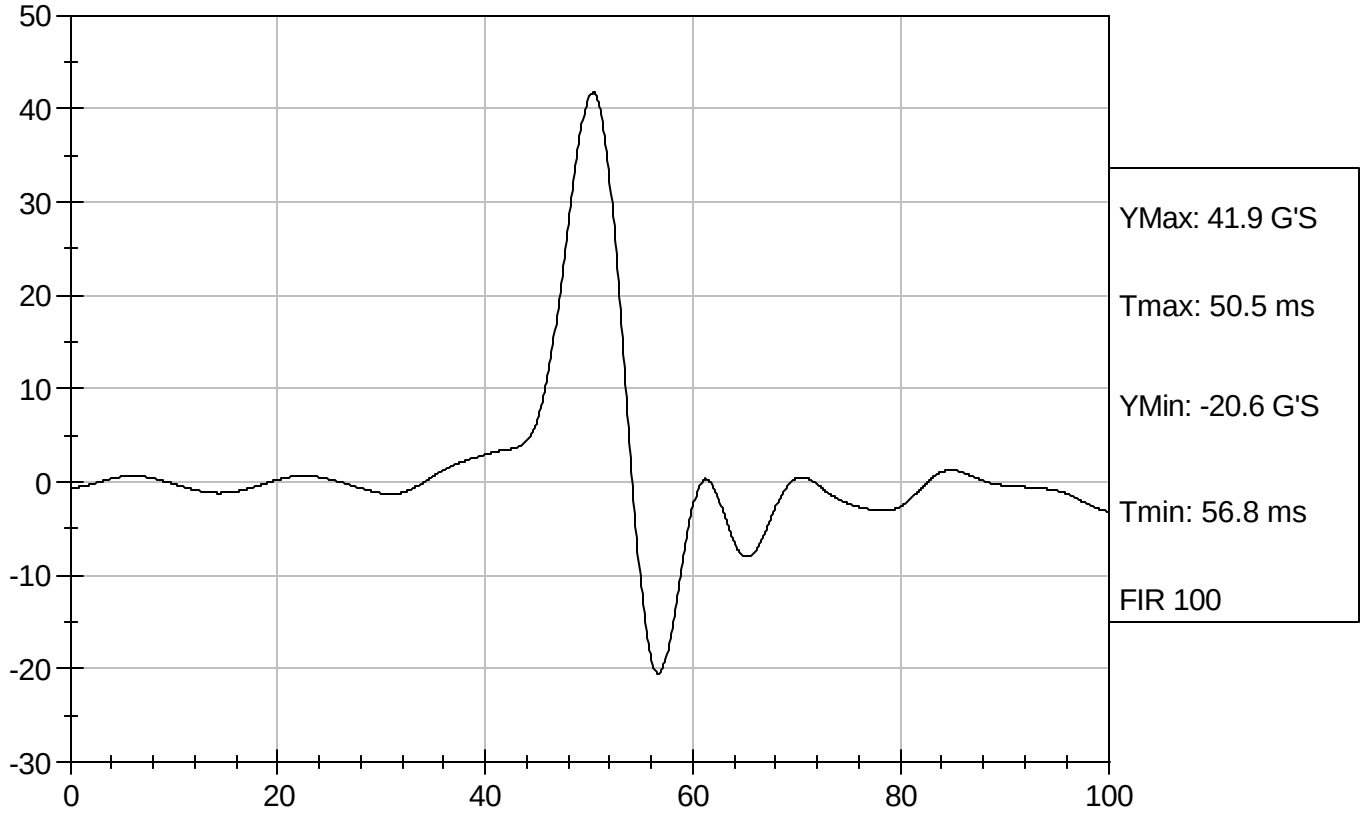
Test Desc: Thorax Impact
Component ID: D05072

Test Date: 01/10/2005
Speed: 14.04 ft/sec, 4.28 m/sec

Upper Rib (G's) vs Time (msec)

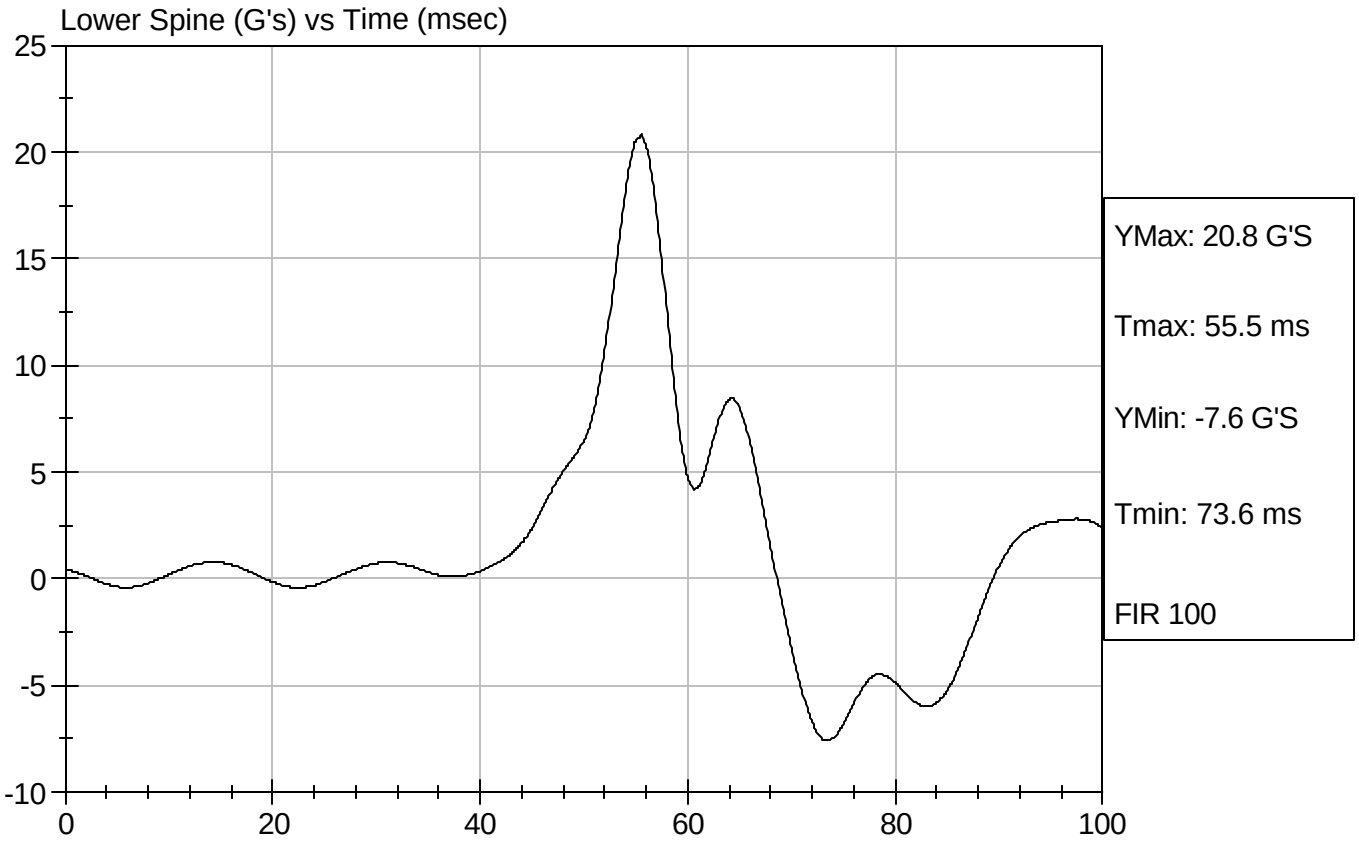


Lower Rib (G's) vs Time (msec)



Test Desc: Thorax Impact
Component ID: D05072

Test Date: 01/10/2005
Speed: 14.04 ft/sec, 4.28 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 271 **Test I.D:** D05073

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	48	Pass
		Overall Test Results		Pass

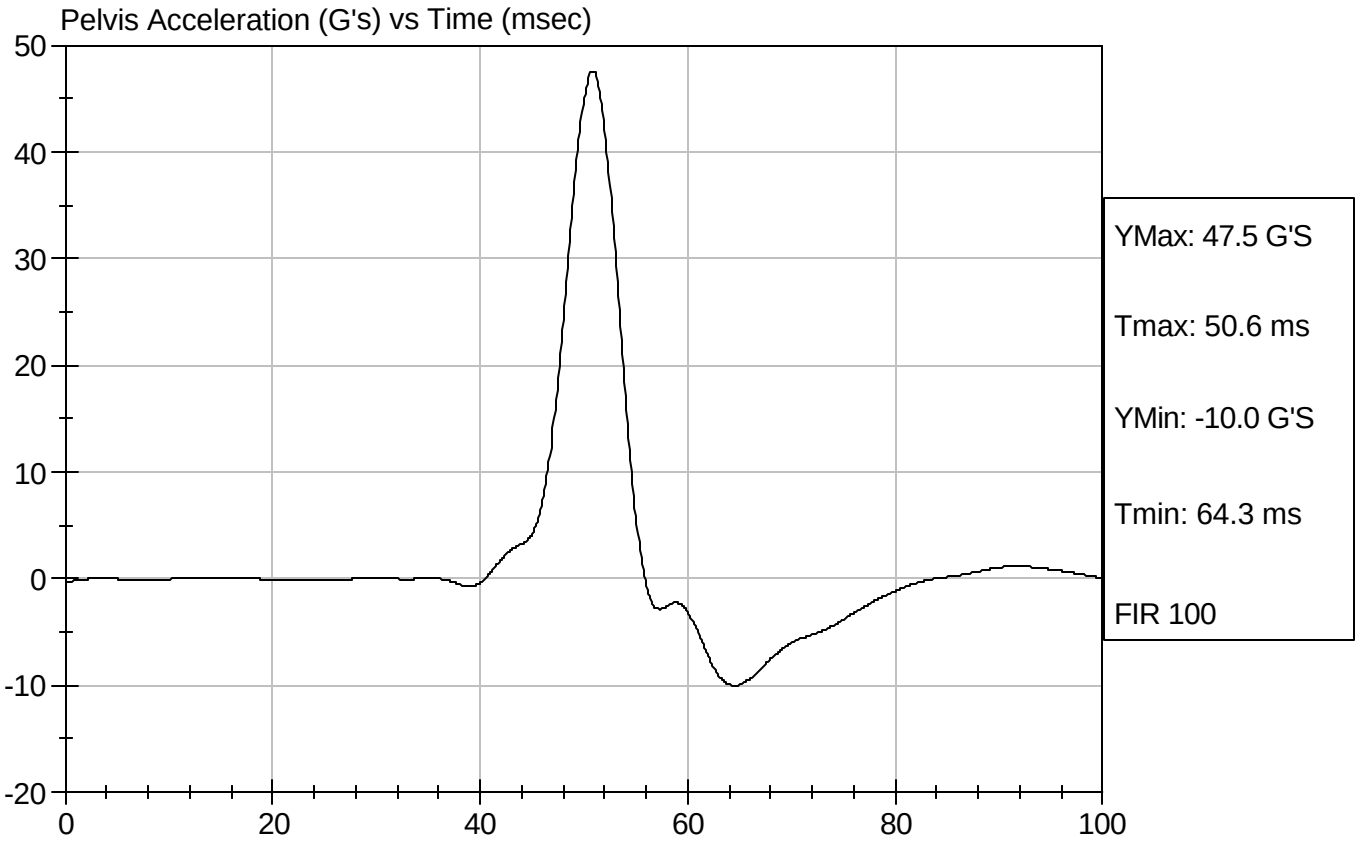
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

Test Desc: Pelvis Impact
Component ID: D05073

Test Date: 01/10/2005
Speed: 14.11 ft/sec, 4.30 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 271 **Test I.D:** D05074

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 12.7 mm	N	104 -162	151	Pass
Force At 19 mm	N	163 - 222	209	Pass
Force At 25.4 mm	N	222 - 280	276	Pass
Force At 33 mm	N	325 - 391	384	Pass
		Overall Test Results		Pass

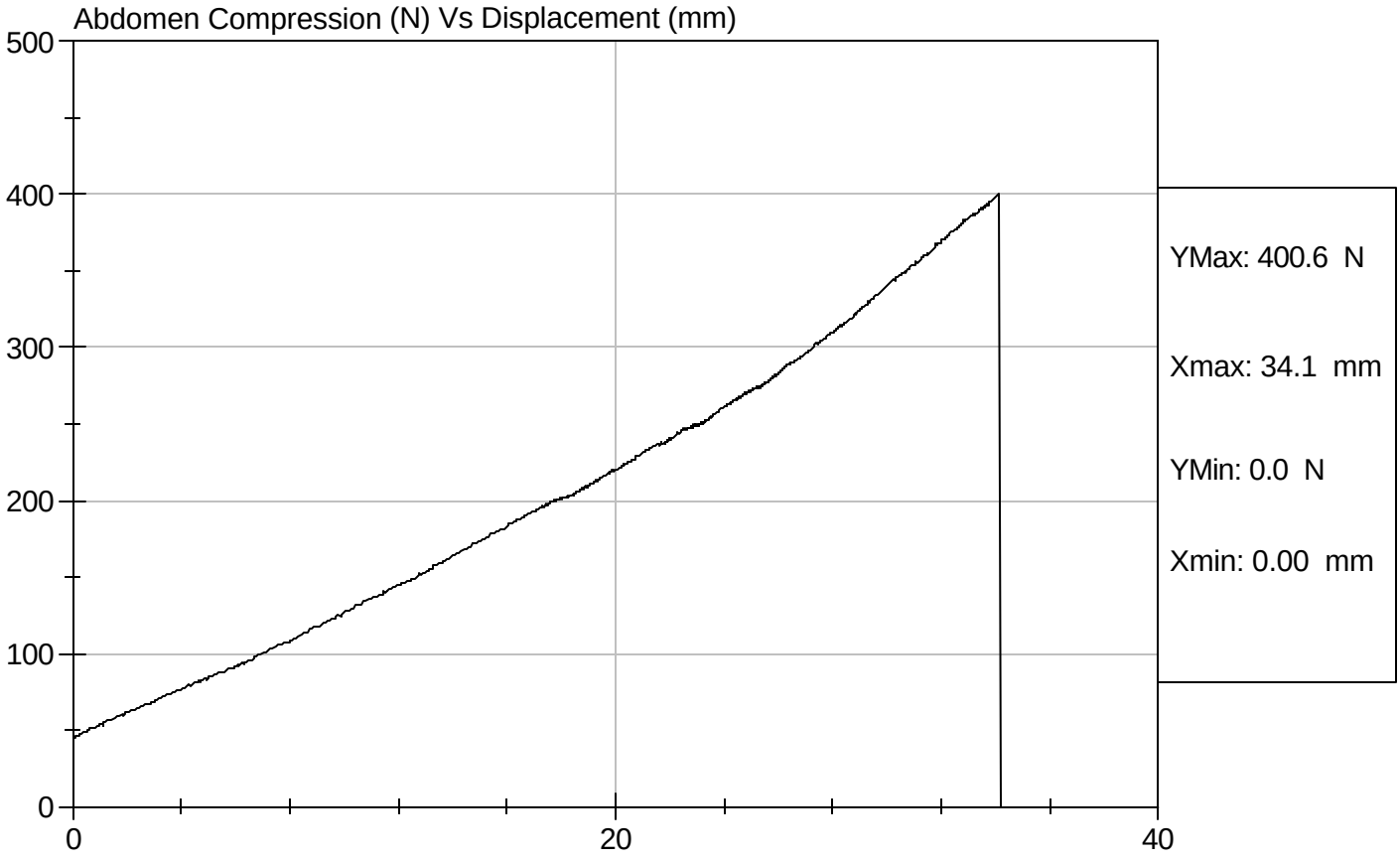
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

Test Description: Abdomen Compression Test Date: 01/10/2005

Component: D05074 Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Lumbar Flexion Calibration

ATD Serial No: 271 **Test I.D:** D05075

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	108.6	Pass
Force At 30 deg	N	151.2 - 204.6	164.6	Pass
Force At 40 deg	N	204.6 - 258.0	256.1	Pass
Return Angle	Deg	12 Maximum	3	Pass
		Overall Test Results		Pass

James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Hall
Approved By

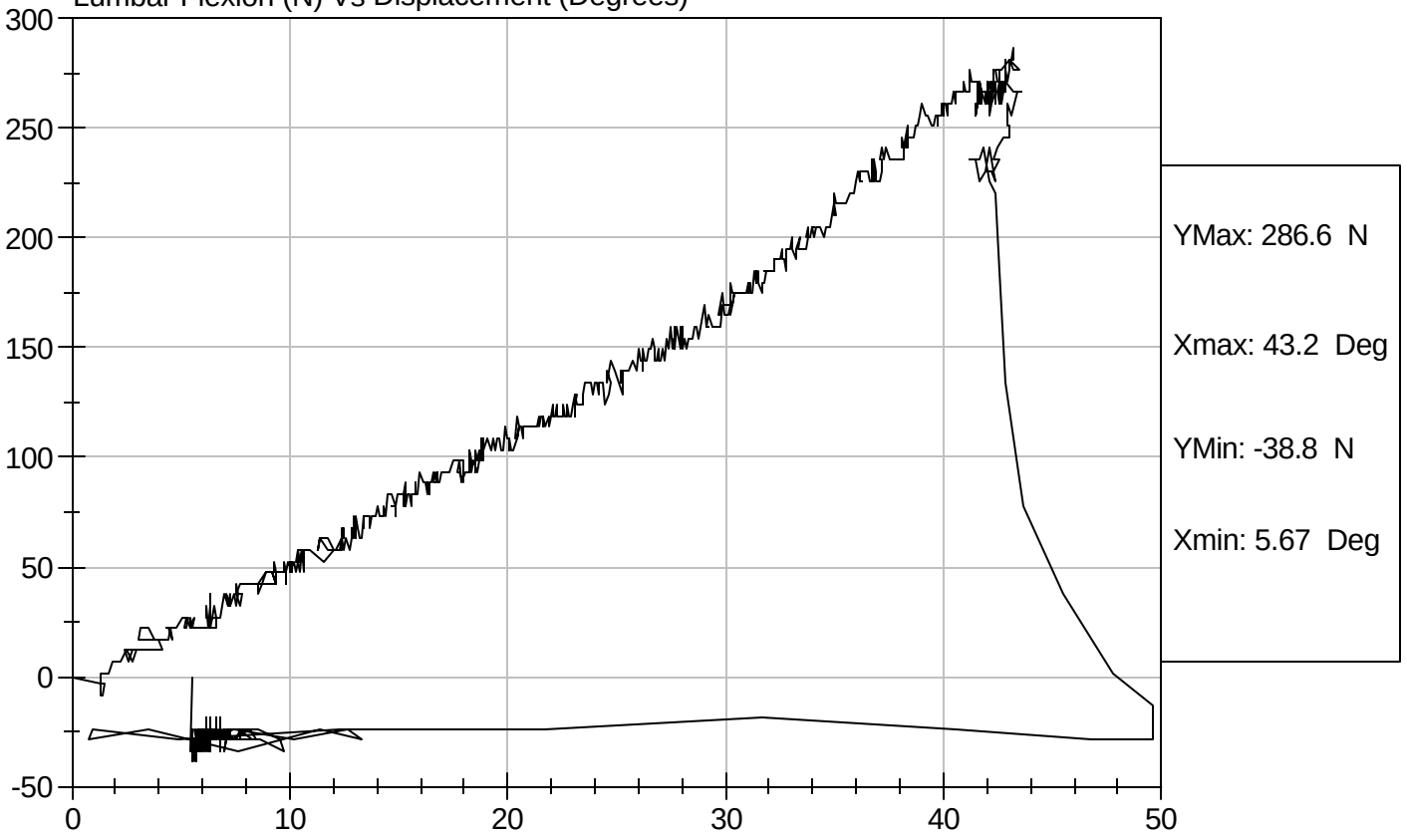
Test Description: Lumbar Flexion

Test Date: 01/10/2005

Component: D05075

Speed: 0 ft/sec, 0 m/sec

Lumbar Flexion (N) Vs Displacement (Degrees)



SID Calibration Data Sheet

Side Impact Dummy (SID)

Neck Pendulum Test

ATD Serial No: 271 **Test I.D:** D05079

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Impact Velocity		m/s	6.89 to 7.13	6.99	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.28	Pass
	20 msec	m/s	4.12 to 5.10	4.59	Pass
	30 msec	m/s	5.73 to 7.01	6.51	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.16	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	79	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	60	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass

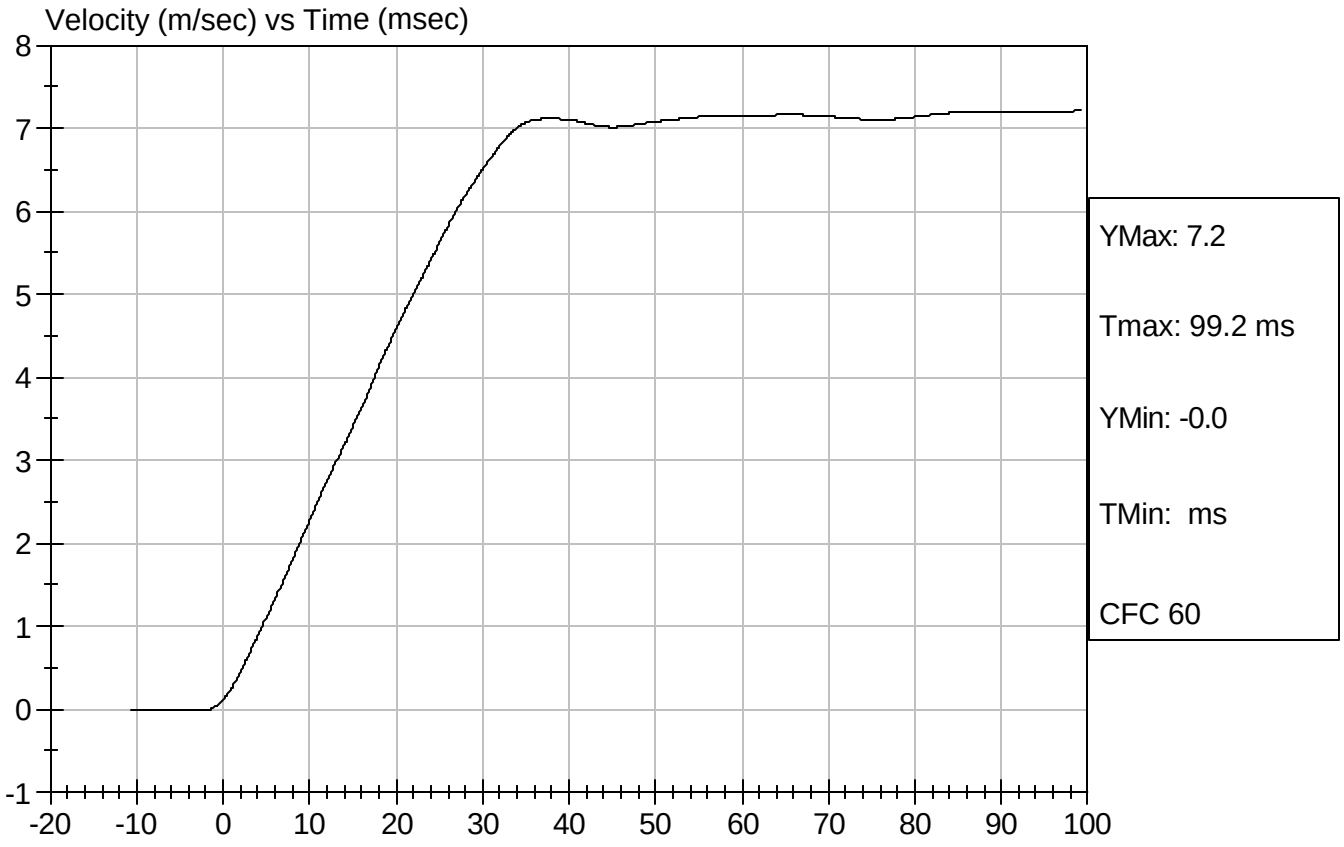
James Carney
Laboratory Technician

01/10/2005
Test Date

Jessica Gall
Approved By

Test Desc: Neck Bending
Component ID: D05079

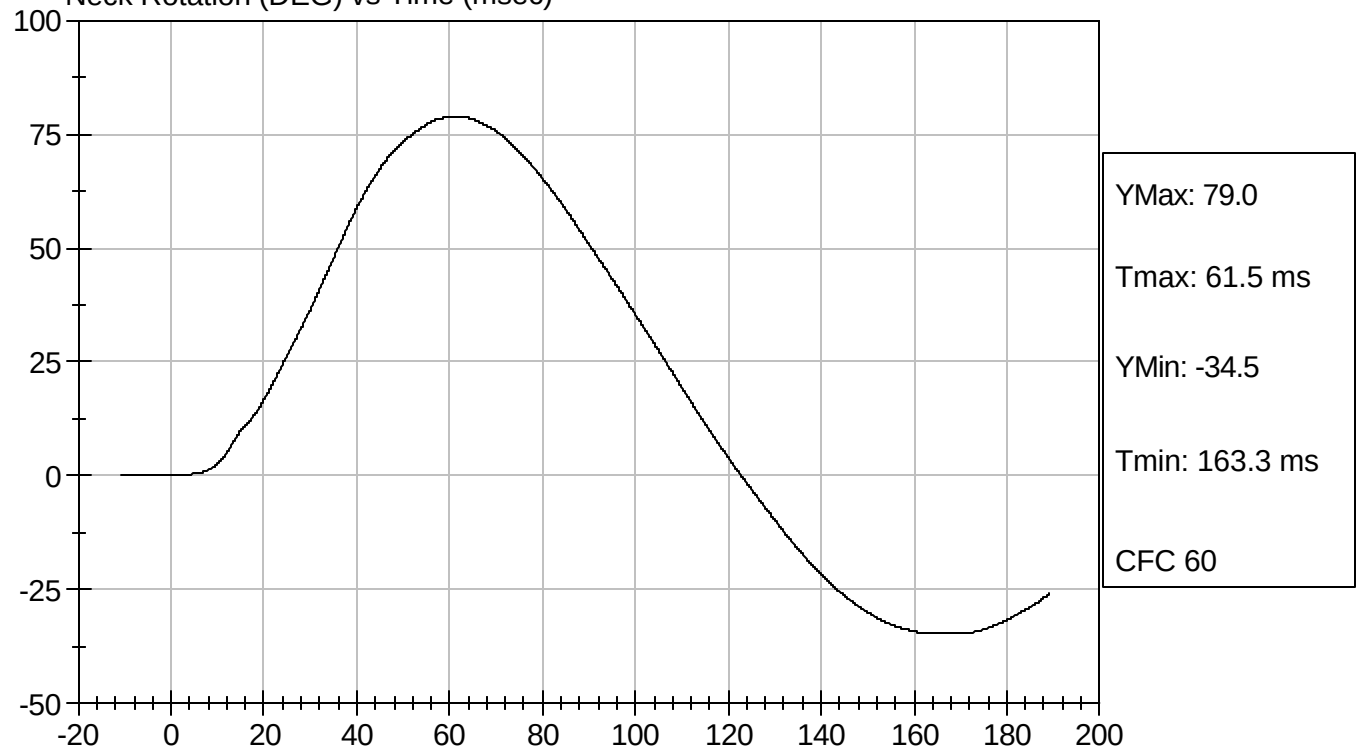
Test Date: 01/10/2005
Speed: 22.93 ft/sec, 6.99 m/sec



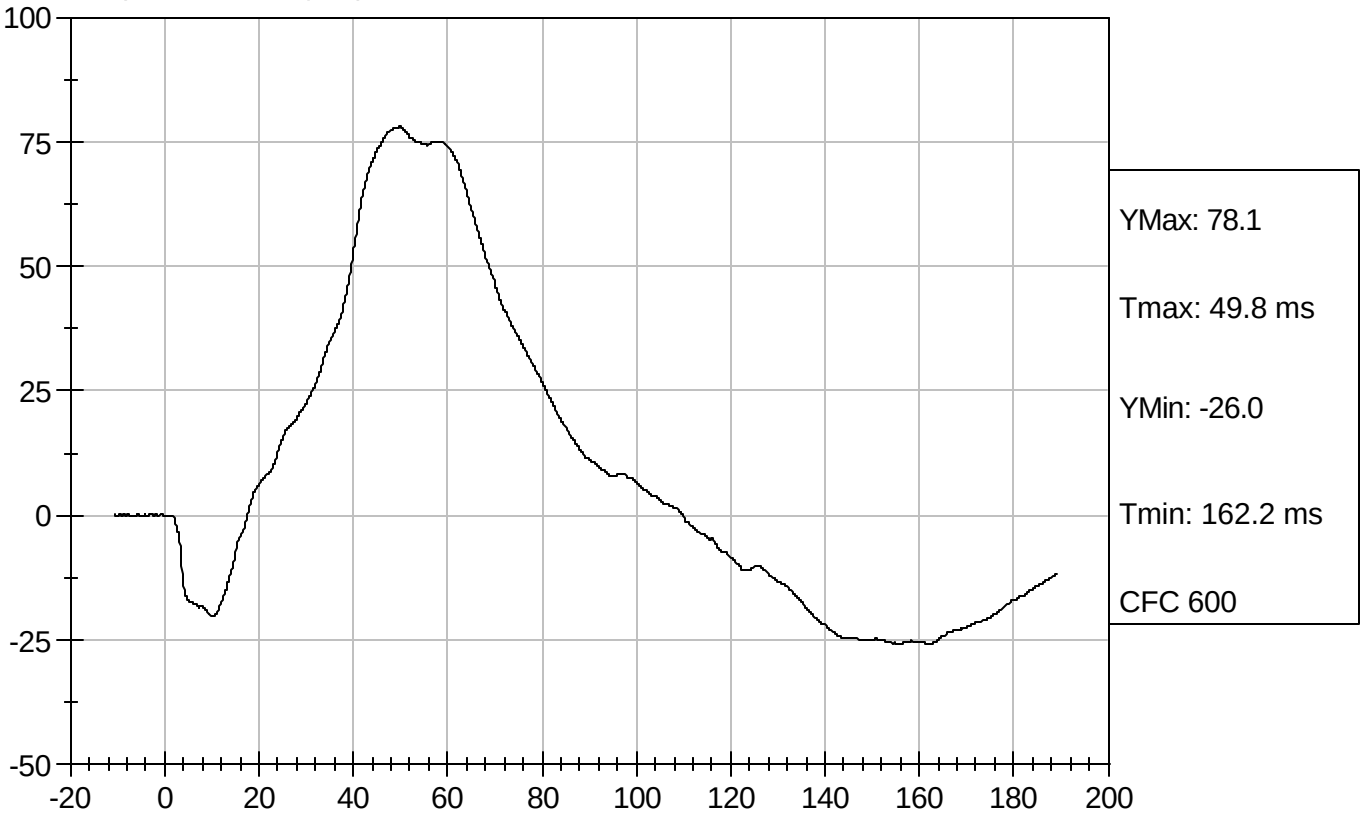
Test Desc: Neck Bending
Component ID: D05079

Test Date: 01/10/2005
Speed: 22.93 ft/sec, 6.99 m/sec

Neck Rotation (DEG) vs Time (msec)



Occipital Moment (Nm) vs Time (msec)



Calibration Test Results Summary

Dummy Serial Number: 271

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet

Side Impact Dummy

Head Drop Calibration (Lateral)

ATD Serial No: 271 **Test I.D:** D05311

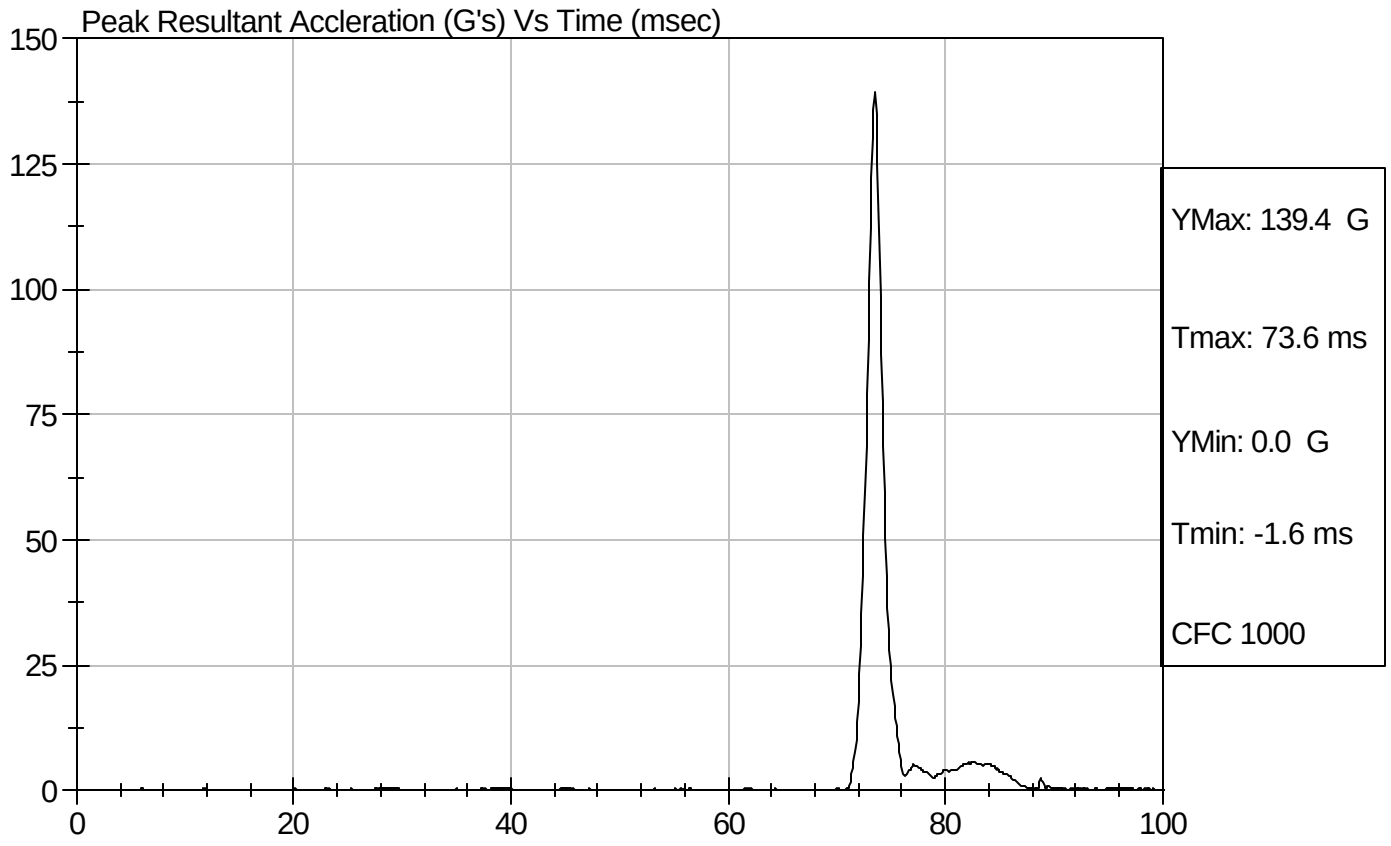
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Peak Resultant Acceleration	G's	120 to 150	139	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-10	Pass
		Overall Test Results		Pass

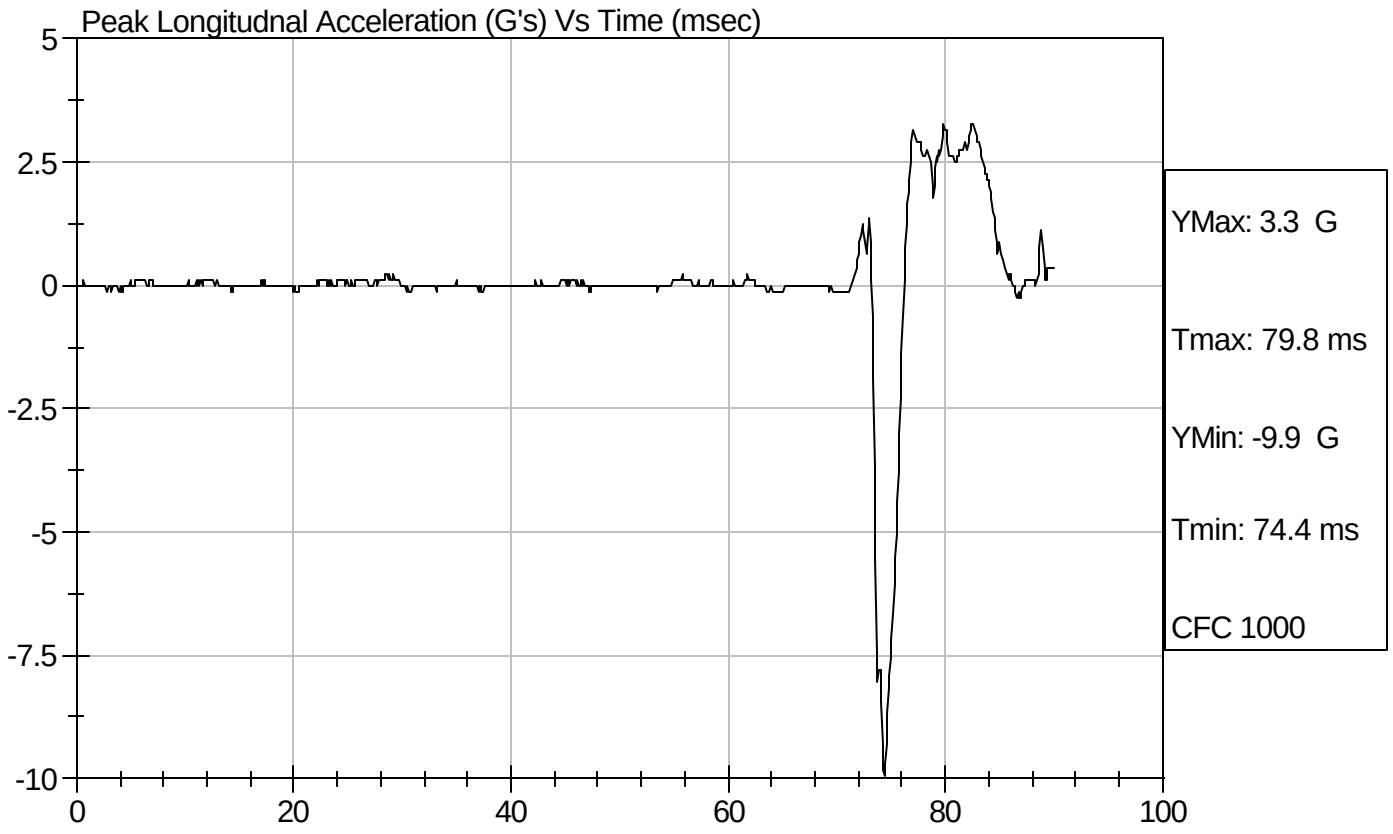
James Carney
Laboratory Technician

02/08/2005
Test Date

Jessica Hall
Approved By

	Test Description: Head Drop	Test Date: 02/08/2005
	Component: D05311	Speed: 0 ft/s, 0.00 m/s





SID Calibration Data Sheet

Side Impact Dummy

Thorax Impact Test

ATD Serial No: 271 **Test I.D:** D05312

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Upper Rib	G's	37 - 46	44	Pass
Lower Rib	G's	37 - 46	43	Pass
Lower Spine	G's	15 - 22	22	Pass
		Overall Test Results		Pass

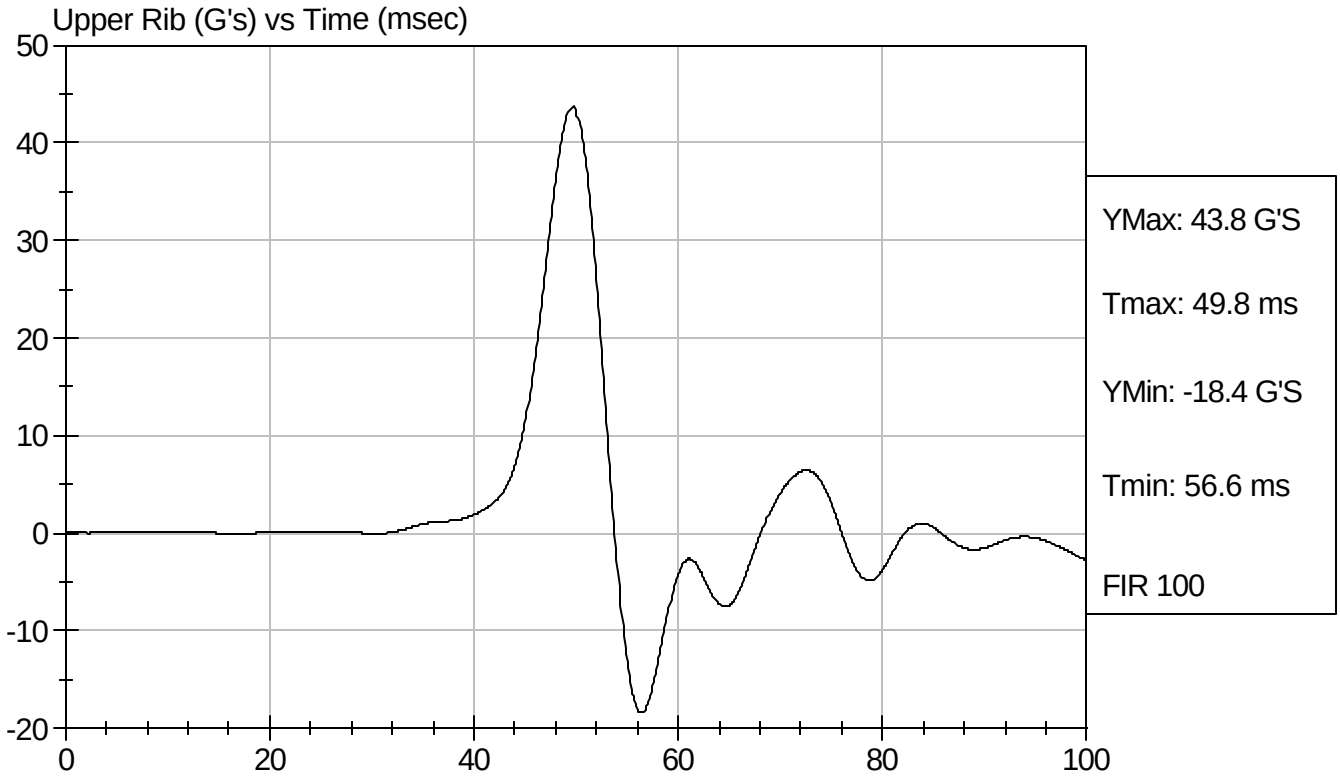
James Carney
Laboratory Technician

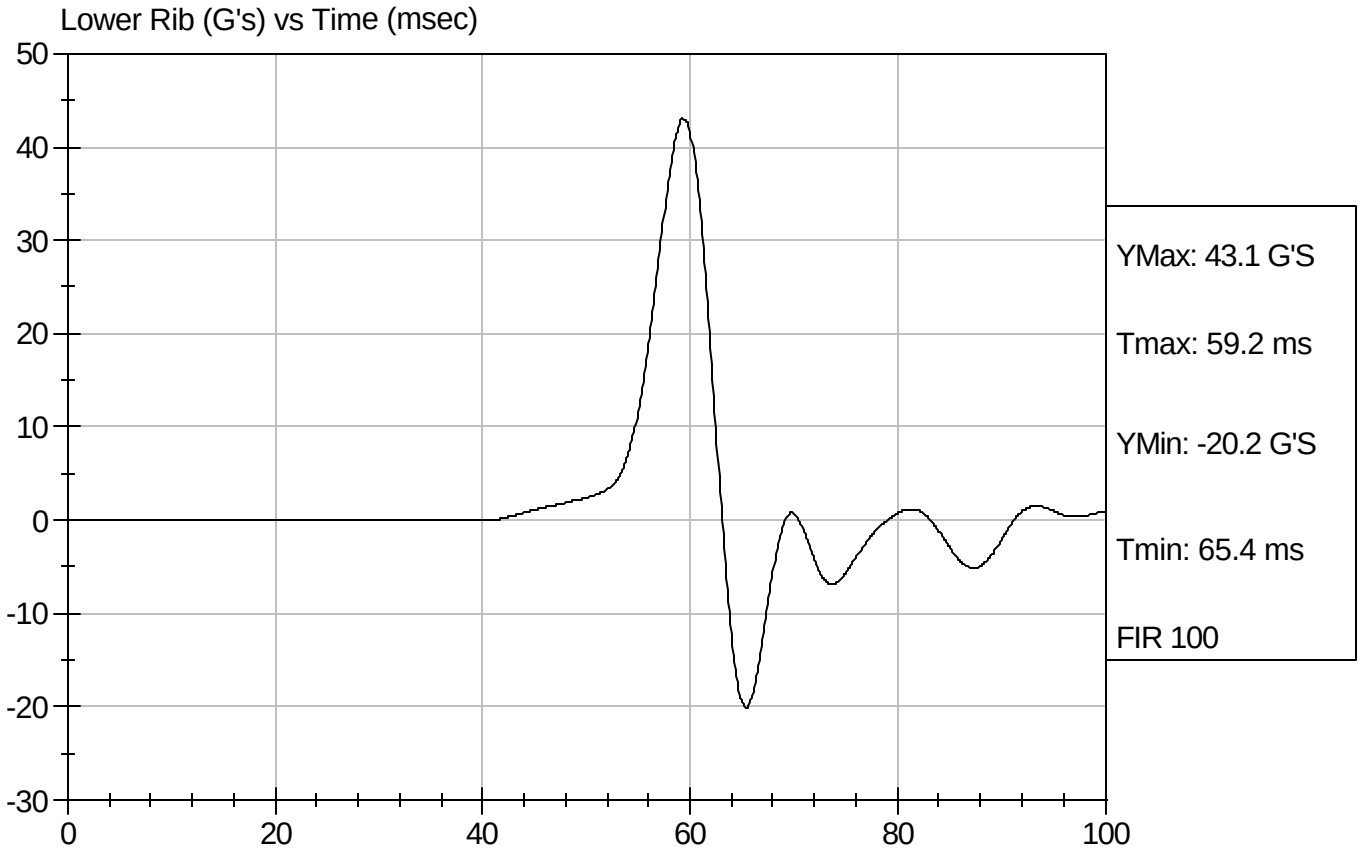
02/09/2005
Test Date

Jessica Hall
Approved By

Test Desc: Thorax Impact
Component ID: D05312

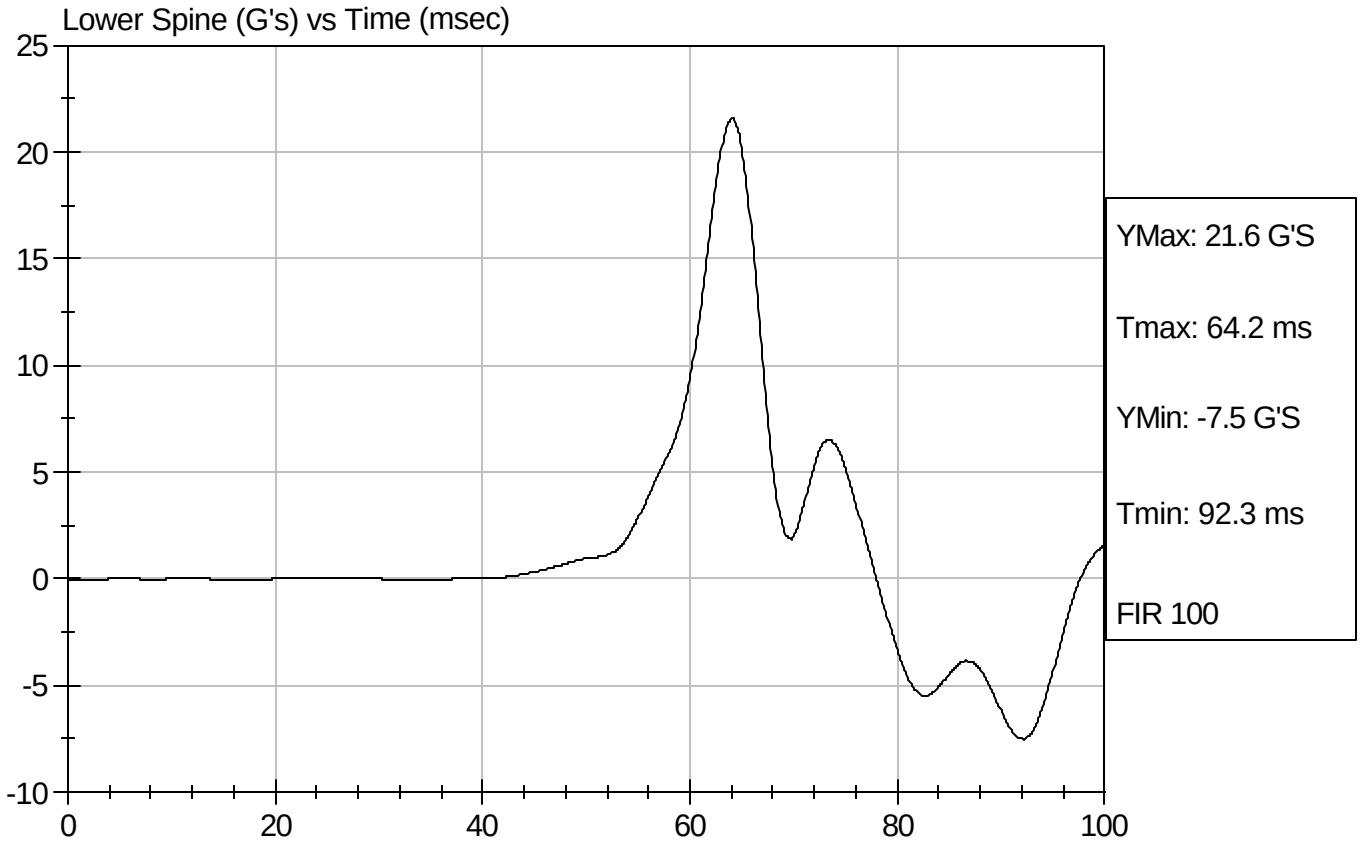
Test Date: 02/09/2005
Speed: 14.07 ft/sec, 4.29 m/sec





Test Desc: Thorax Impact
Component ID: D05312

Test Date: 02/09/2005
Speed: 14.07 ft/sec, 4.29 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 271 **Test I.D:** D05313

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.28	Pass
Pelvis Acceleration	G's	40 - 60	46	Pass
		Overall Test Results		Pass

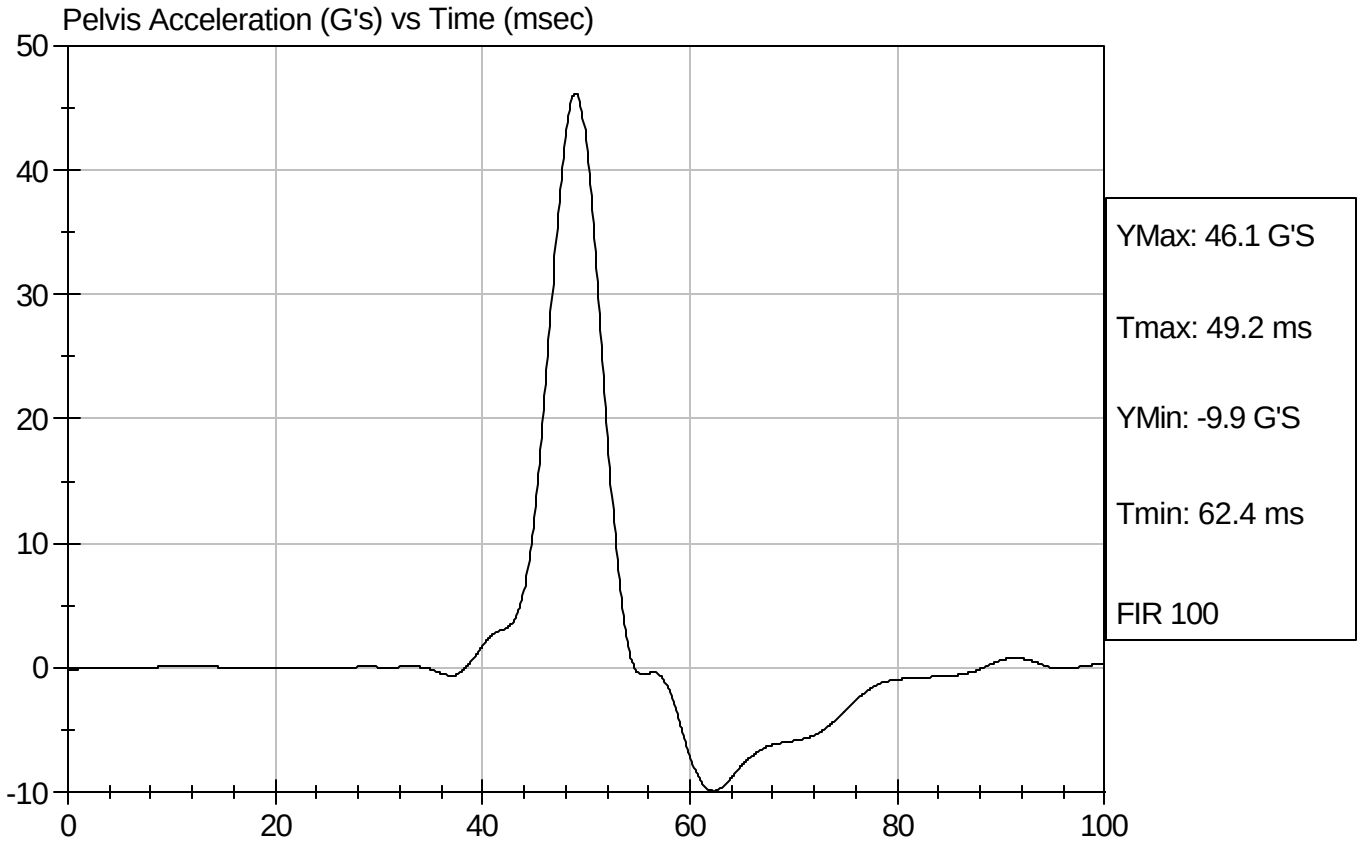
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Desc: Pelvis Impact
Component ID: D05313

Test Date: 02/09/2005
Speed: 14.05 ft/sec, 4.28 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 271 **Test I.D:** D05314

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	18	Pass
Force At 12.7 mm	N	104 -162	146	Pass
Force At 19 mm	N	163 - 222	200	Pass
Force At 25.4 mm	N	222 - 280	262	Pass
Force At 33 mm	N	325 - 391	364	Pass
		Overall Test Results		Pass

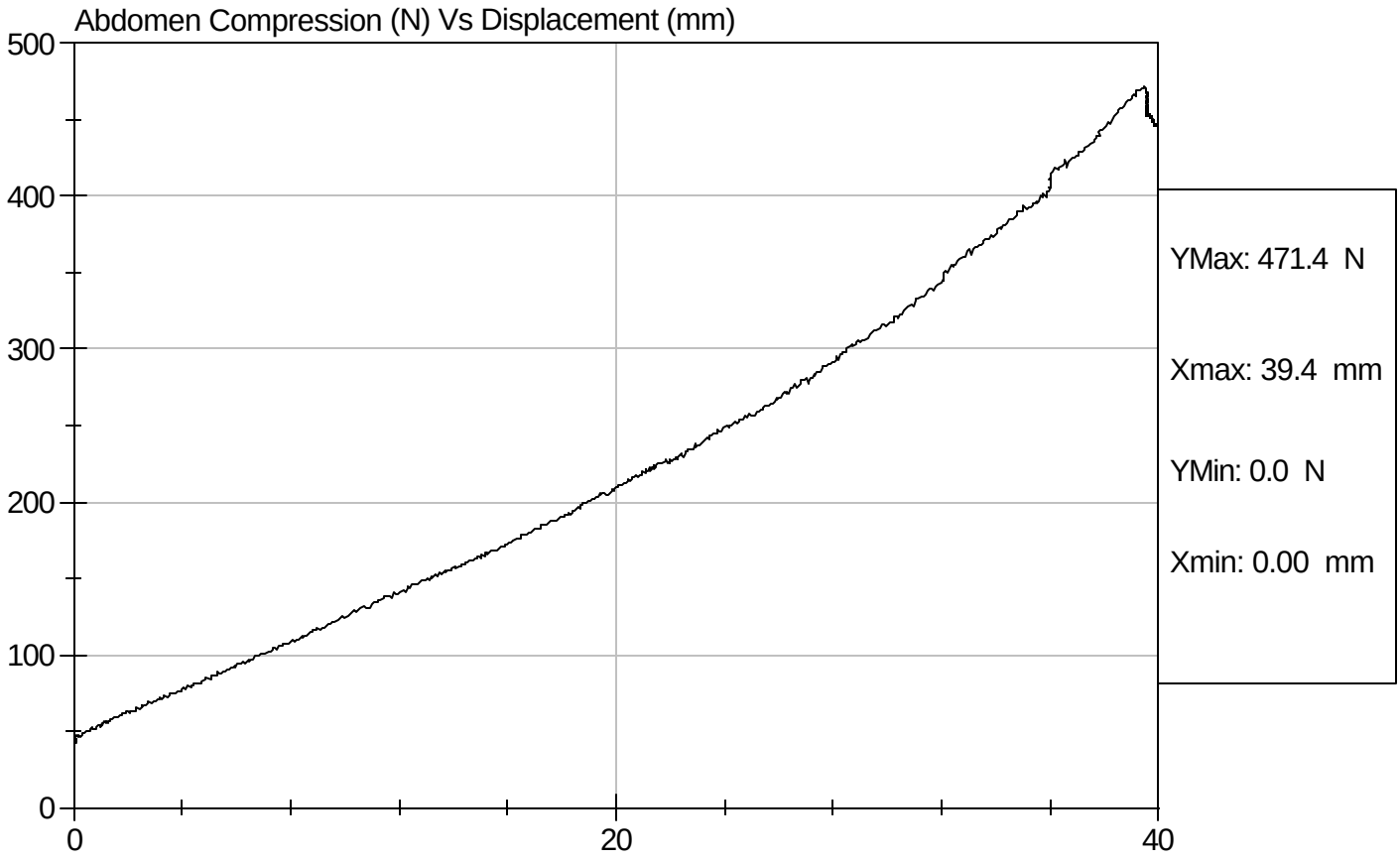
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Description: Abdomen Compression Test Date: 02/09/2005

Component: D05314 Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet

Side Impact Dummy

Lumbar Flexion Calibration

ATD Serial No: 271 **Test I.D:** D05315

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	107.1	Pass
Force At 30 deg	N	151.2 - 204.6	168.1	Pass
Force At 40 deg	N	204.6 - 258.0	244.4	Pass
Return Angle	Deg	12 Maximum	5	Pass
		Overall Test Results		Pass

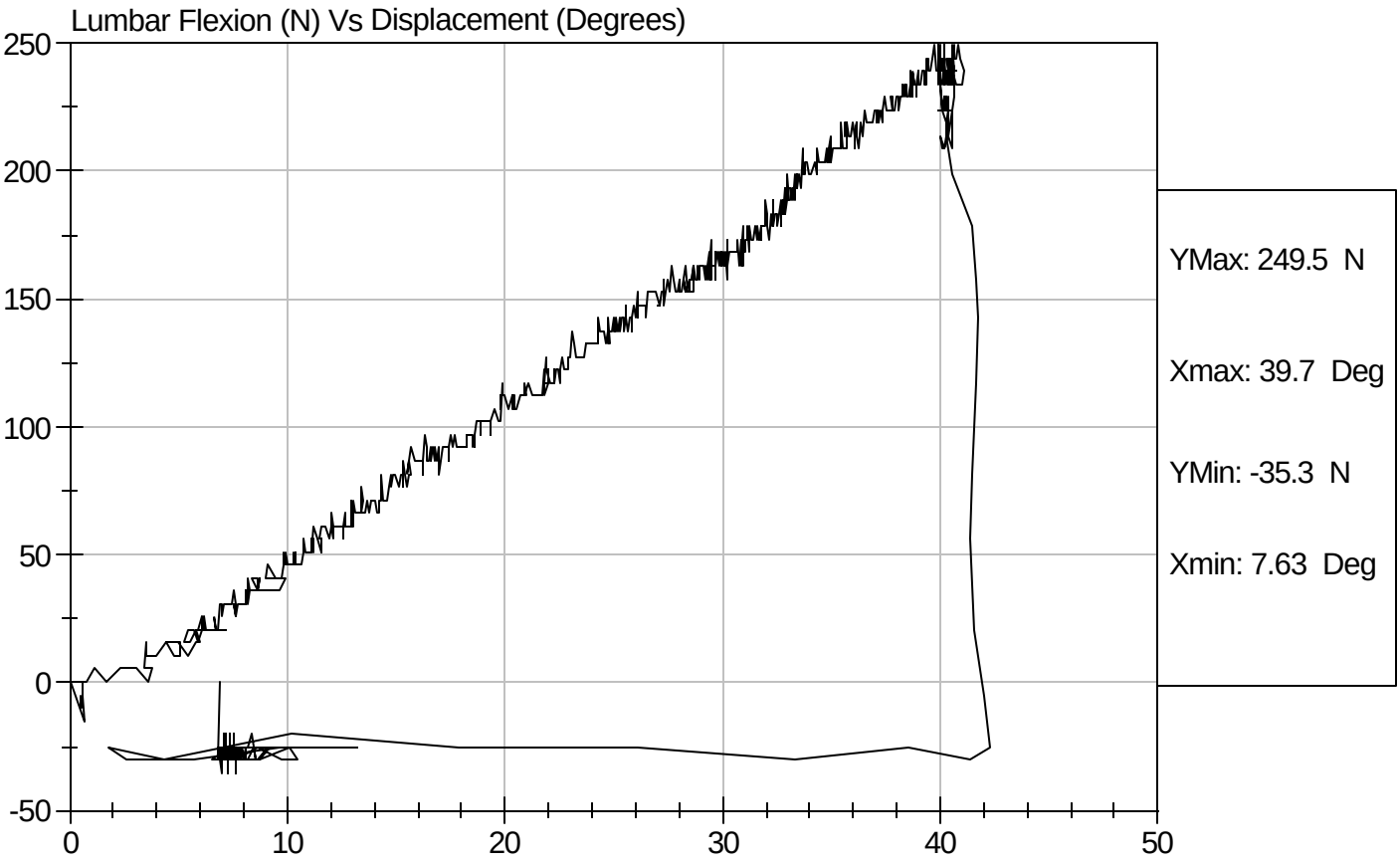
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Description: Lumbar Flexion | Test Date: 02/09/2005

Component: D05315 | Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet

Side Impact Dummy (SID)

Neck Pendulum Test

ATD Serial No: 271 **Test I.D:** D05319

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	19	Pass
Impact Velocity		m/s	6.89 to 7.13	6.89	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.30	Pass
	20 msec	m/s	4.12 to 5.10	4.52	Pass
	30 msec	m/s	5.73 to 7.01	6.19	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.17	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	75	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	63	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	77	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	61	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	11	Pass

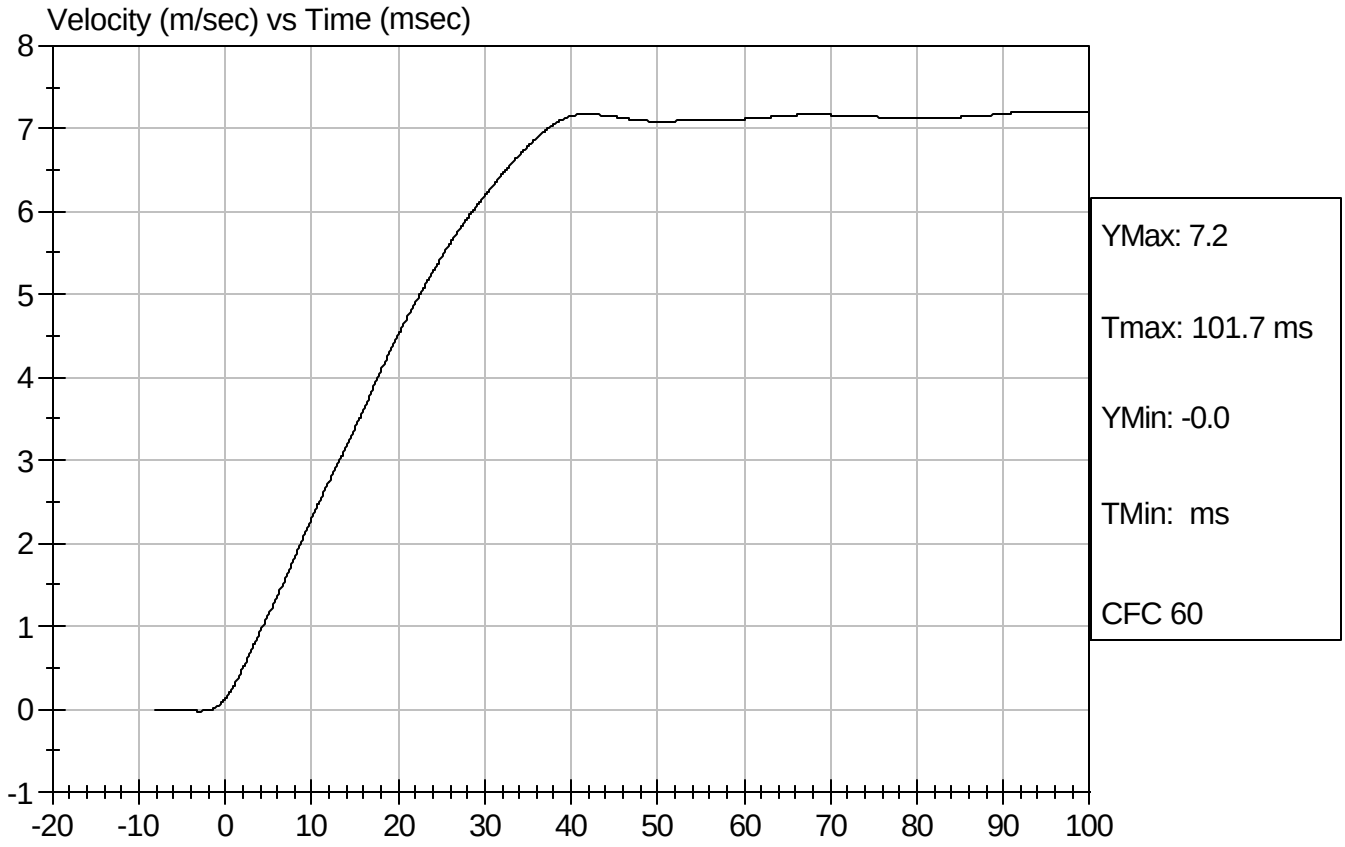
James Carney
Laboratory Technician

02/09/2005
Test Date

Jessica Hall
Approved By

Test Desc: Neck Bending
Component ID: D05319

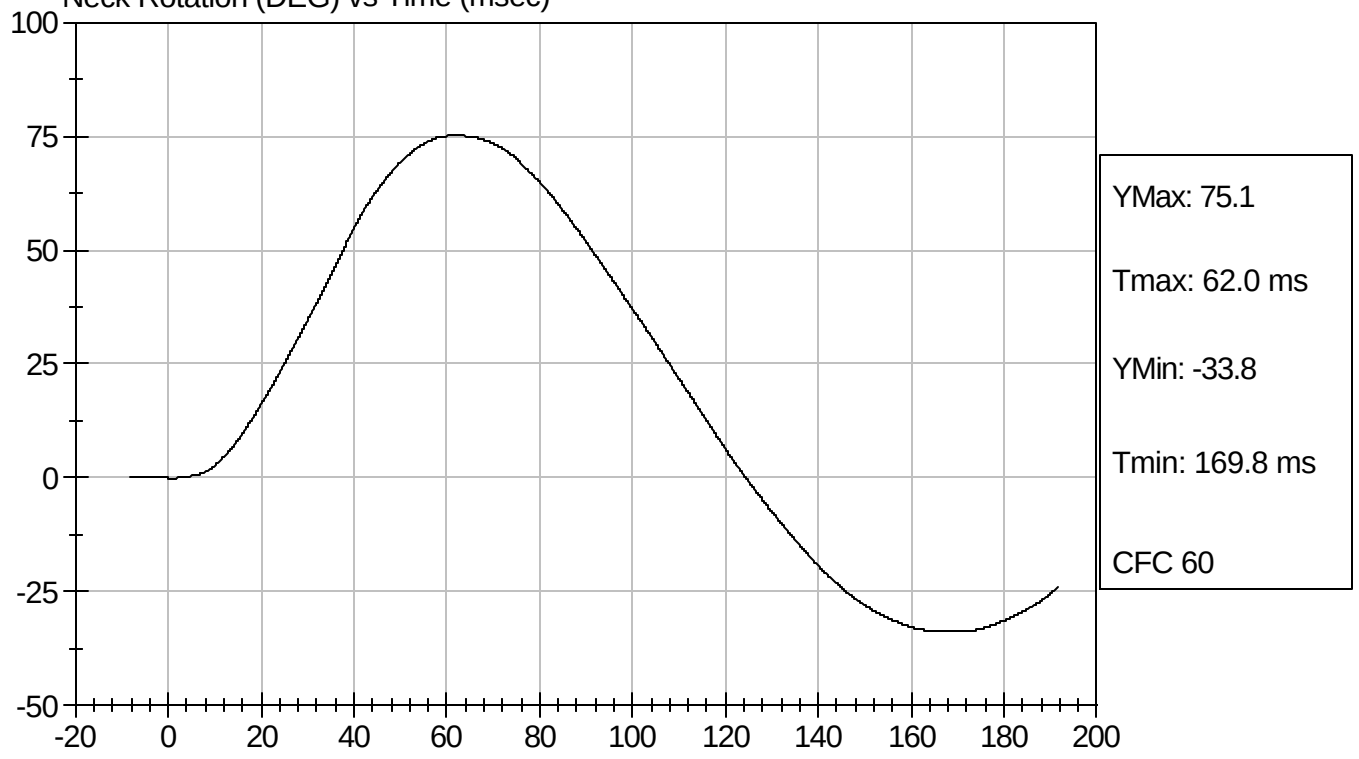
Test Date: 02/09/2005
Speed: 22.60 ft/sec, 6.89 m/sec



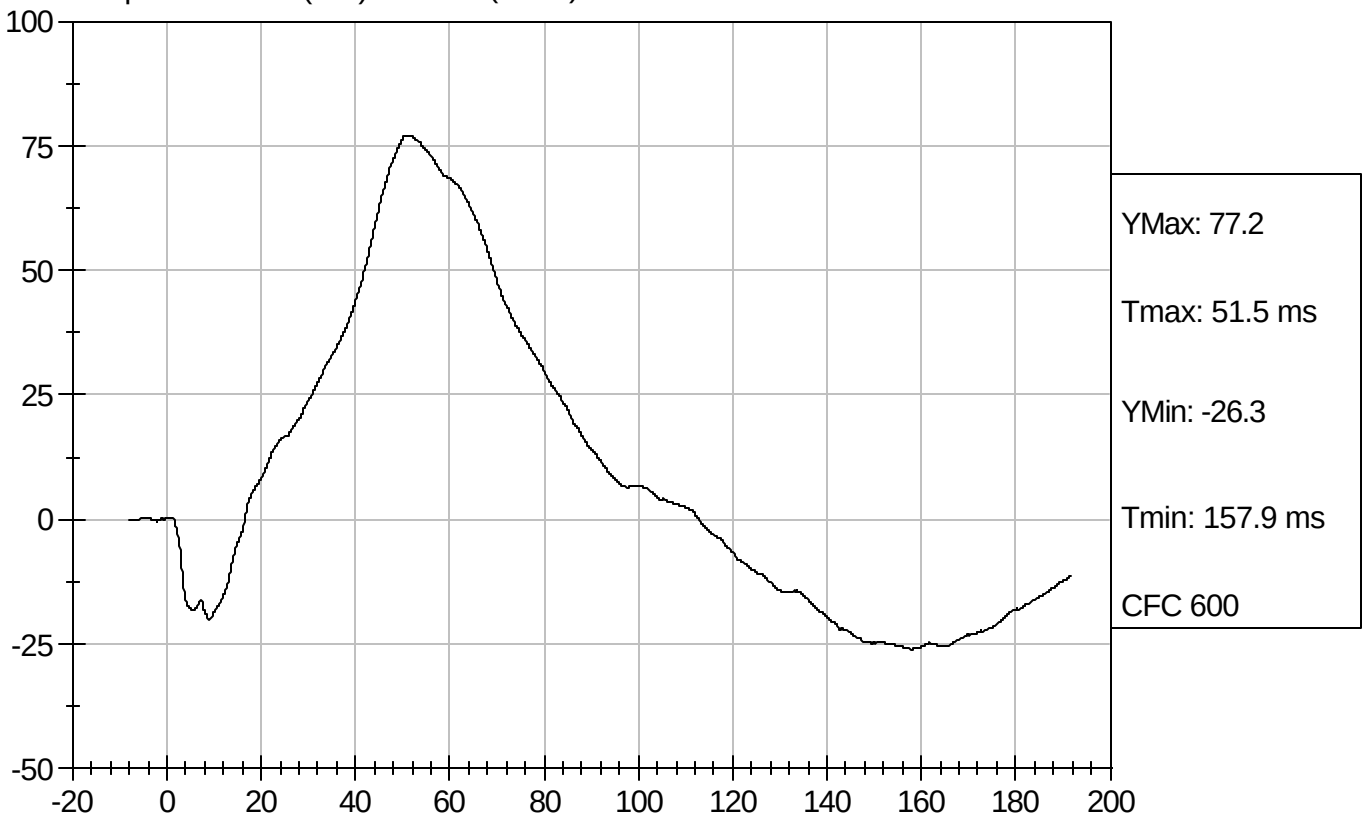
Test Desc: Neck Bending
Component ID: D05319

Test Date: 02/09/2005
Speed: 22.60 ft/sec, 6.89 m/sec

Neck Rotation (DEG) vs Time (msec)



Occipital Moment (Nm) vs Time (msec)



SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 271

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass

James Carney
Laboratory Technician

02/10/2005
Test Date

Jessica Hall
Approved By

APPENDIX D

INSTRUMENTATION CALIBRATION DATA

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR DRIVER DUMMY NO. 904		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	J03-J09	Entran	8/23/04
Lower Rib Y	J23-J04	Entran	8/23/04
Lower Spine Y	J14-J17	Entran	8/19/04
Pelvis Y	AH0A2	Endevco	8/24/04
Upper Rib Redundant Y	J14-J14	Entran	8/23/04
Lower Rib Redundant Y	J23-J04	Entran	8/23/04
Lower Spine Redundant Y	ANBP7	Endevco	2/2/05
Pelvis Redundant Y	AJ462	Endevco	8/24/04
Head X	AGTY6	Endevco	8/23/04
Head Y	AALH1	Endevco	8/23/04
Head Z	J13943	Endevco	8/23/04
Head Redundant X	AN8D2	Endevco	8/23/04
Head Redundant Y	J10195	Endevco	8/23/04
Head Redundant Z	J11166	Endevco	8/23/04
Neck Load Cell	1673	Entran	12/21/04

	INSTRUMENTS FOR PASSENGER DUMMY NO. 271		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AHR15	Endevco	8/19/04
Lower Rib Y	J21612	Endevco	8/19/04
Lower Spine Y	ALCR0	Endevco	8/23/04
Pelvis Y	AGTM8	Endevco	8/24/04
Upper Rib Redundant Y	AP2D6	Endevco	8/19/04
Lower Rib Redundant Y	AHW95	Endevco	8/19/04
Lower Spine Redundant Y	AH0N9	Endevco	8/23/04
Pelvis Redundant Y	AMRR4	Endevco	8/23/04
Head X	F14-B19	Entran	9/10/04
Head Y	F09-N09	Entran	9/10/04
Head Z	F14-A12	Entran	9/10/04
Head Redundant X	F11-H07	Entran	9/10/04
Head Redundant Y	F11-H19	Entran	9/10/04
Head Redundant Z	F28-N04	Entran	9/10/04
Neck Load Cell	1748	Denton	8/30/04

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Midrear of Left Front Door Y	A29-F09	Entran	9/13/04
Left Front Door Upper Centerline Y	H20-R08	Entran	9/24/04
Left Front Door Centerline Y	L17-D25	Entran	9/24/04
Midrear of Left Rear Door Y	K11-Z01	Entran	10/22/04
Left Rear Door Upper Centerline Y	K18-D23	Entran	12/02/04
Left Mid A-Post Y	H07-F07	Entran	10/22/04
Left Lower A-Post Y	K11-Z14	Entran	12/02/04
Left Mid B-Post Y	A29-B06	Entran	9/13/04
Left Lower B-Post Y	A29-F14	Entran	11/02/04
Floorpan @ Rear Axle X	K18-D25	Entran	12/02/04
Floorpan @ Rear Axle Y	K18-D14	Entran	12/02/04
Floorpan @ Rear Axle Z	K18-J03	Entran	12/02/04
Right Front Sill X	L17-D09	Entran	8/24/04
Right Front Sill Y	K07-R18	Entran	8/25/04
Right Front Sill Z	H20-R06	Entran	8/25/04
Right Rear Sill X	K03-J01	Entran	1/21/05
Right Rear Sill Y	J26-H05	Entran	1/21/05
Right Rear Sill Z	J26-H03	Entran	1/21/05
Left Front Sill Y	H20-R10	Entran	9/24/04
Left Rear Sill Y	F03-F12	Entran	12/02/04
Right Rear Occupant Compartment Y	C12-M13	Entran	12/02/04
Vehicle CG X	J25-R14	Entran	12/01/04
Vehicle CG Y	J23-M14	Entran	12/01/04
Vehicle CG Z	J25-R16	Entran	12/01/04
Driver Seat Track Y	I16-B04	Entran	8/25/04