REPORT NUMBER: 201-MGA-2007-003

SAFETY COMPLIANCE TESTING FOR FMVSS 201
RIGID POLE SIDE IMPACT TEST

FORD MOTOR COMPANY
2007 FORD EDGE-SE
NHTSA NUMBER: C70205

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

TEST DATE: AUGUST 23, 2007

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE
1200 NEW JERSEY AVENUE, SE
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 DTNH22-06-C-00030.

Prepared by:  Date: October 17, 2007

Ben Fischer, Project Engineer

Reviewed by:  Date: October 17, 2007

David Winkelbauer, Director of Operations

FINAL REPORT ACCEPTED BY:

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COTR, Side Impact

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Date of Acceptance

Technical Report Documentation Page

1. Report No. 201-MGA-2007-003	*2. Government Accession No.*	*3. Recipient's Catalog No.*	
4. Title and Subtitle Final Report of FMVSS 201 Safety Compliance Rigid Pole Side Impact Test of a 2007 Ford Edge-SE NHTSA No.: C70205		*5. Report Date* October 17, 2007 *6. Performing Organization Code* MGA	
7. Author(s) Ben Fischer, Project Engineer		*8. Performing Organization Report No.* 201-MGA-2007-003	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-06-C-00030	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance 1200 New Jersey Avenue, SE, Washington, D.C. 20590		*13. Type of Report and Period Covered* Final Report – 8/23/07 to 10/17/07 *14. Sponsoring Agency Code* NVS-200	
15. Supplementary Notes			
16. Abstract A rigid pole side impact test was conducted on a 2007 Ford Edge-SE in accordance with FMVSS 201, "Occupant Protection in Interior Impact", S6.2(b)(3) and the Office of Vehicle Safety Compliance Test Procedure No. TP-201P-02 "Rigid Pole Side Impact Test". The test was conducted at MGA Research Corporation in Burlington, Wisconsin on August 23, 2007. The impact velocity of the vehicle was 28.5 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21°C. The post-test maximum crush was 404 mm at level 3. The test vehicle's occupant performance is as follows: HIC — REQUIREMENT: ≤ 1000 — DRIVER: 382 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 Compliance Testing Rigid Pole Side Impact Test FMVSS 201		*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, (NPO-230) 1200 New Jersey Avenue, SE Washington, D.C. 20590	
19. Security Classif. (of this report) Unclassified	*20. Security Classif. (of this page)* Unclassified	*21. No. of Pages* 140	22. Price

Form DOT F17007.7 (8-72)

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SECTION 1
PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This rigid pole side impact test is conducted as part of the FY' 2007 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-06-C-00030. The purpose of this test was to evaluate occupant protection in interior impact in a 2007 Ford Edge-SE manufactured by Ford Motor Company.

1.2 TEST PROCEDURE

The rigid pole side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC), laboratory test procedure TP-201P-02, dated October 21, 2001 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA8. 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 RIGID POLE SIDE IMPACT TEST

2.1 SUMMARY OF RIGID POLE SIDE IMPACT TEST

A rigid pole side impact test was performed on a 2007 Ford Edge-SE. The subject vehicle was towed into a rigid pole at a velocity of 28.5 km/h. The specified impact velocity range is from 27.2 to 28.8 km/h. The test vehicle was positioned 90° to the line of forward motion. The weight of the vehicle as tested was 2009.0 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on August 23, 2007.

One (1) real-time motion picture camera and eleven (11) high-speed motion picture cameras were used to document the impact event. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIII can be found in Appendix A. One SID/HIII was placed in the left front outboard designated seating position according to instructions specified in the TP-201P-02 dated October 21, 2001. The SID/HIII was instrumented in the following locations:

- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axis)
- Upper Neck 6 channel load cell (X, Y, Z force and moment)
- 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)

The test vehicle was instrumented with twenty (20) structural accelerometers. All data channels were recorded with a fully self contained on-board DTS TDAS Pro. The data was digitally sampled at 10,000 samples per second and processed per Section 12.2 of the OVSC Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 404 mm at level 3, at the vertical impact line. The driver SID/HIII, Serial No. 037, was calibrated just prior to this test. The SID/HIII's injury criteria are summarized as follows:

Measurements	Units	Driver
HIC		382
TTI*	G's	48.0
Pelvis*	G's	54.6
Neck Force X*	N	-254
Neck Force Y*	N	508
Neck Force Z*	N	804
Neck Moment X*	Nm	-54.6
Neck Moment Y*	Nm	15.1
Neck Moment Z*	Nm	-34.5

* For Information Purposes Only

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 SID/HIII and vehicle data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the calibration information data.

TEST NOTES

The following channels were not used in this test:

Right Roof Y

SECTION 3
SIDE IMPACT DUMMY (SID/HIII) AND VEHICLE TEST DATA

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

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	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: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

TEST VEHICLE INFORMATION

Make	Ford
Model	Edge
Body Style	MPV
NHTSA No.	C70205
VIN	2FMDK36C87BA91747
Color	Black Clearcoat
Delivery Date	6/20/07
Odometer Reading (mile)	31
Dealer	Ricart Automotive
Transmission	6 Speed Automatic
Final Drive	Front
Number of Cylinders	6
Engine Displacement (L)	3.5
Engine Placement	Lateral

TEST VEHICLE OPTIONS

Front Airbag	Yes
Side Airbags	Yes
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	Ford Motor Company
Date of Manufacture	03/07

GVWR (kg)	2404
GAWR Front (kg)	1275
GAWR Rear (kg)	1129

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	240	240
Recommended Tire Size	P235/65R17	P235/65R17
Tire Size on Vehicle	P235/65R17	P235/65R17
Tire Manufacturer	Hankook	Hankook

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				412
Cargo Wt. (RCLW) (kg)				72

DATA SHEET NO. 1... (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	555.2	381.9		611.0	416.4	
Right	kg	546.6	380.1		582.4	399.2	
Ratio	%	59.1	40.9		59.4	40.6	
Totals	kg	1101.8	762.0	1863.8	1193.4	815.6	2009.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1863.8
Weight of SID/HIII Side Impact Dummy	kg	80.7
Rated Cargo/Luggage Weight (RCLW)	kg	72
Calculated Vehicle Target Weight (TVTW)	kg	2016.5

TEST VEHICLE ATTITUDES

	Units	As Delivered	Fully Loaded	Ready For Test
Right Front	mm	864	860	906
Left Front	mm	863	854	904
Right Rear	mm	857	843	912
Left Rear	mm	852	833	910
Right Door Sill Angle	deg	0.5 ND	0.2 ND	0.3 ND
Left Door Sill Angle	deg	0.2 ND	0.0	0.2 ND
Front Bumper Angle	deg	0.1 RD	0.2 LD	0.1 LD
Rear Bumper Angle	deg	0.0	0.2 LD	0.0

ND = NOSE DOWN, BD = BACK DOWN, LD = LEFT DOWN, RD = RIGHT DOWN, RU = RIGHT UP

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2822
Total Vehicle Length at Left Side	mm	3734
Total Vehicle Length at Centerline	mm	4698
Total Vehicle Length at Right Side	mm	3734
Total Vehicle Width at B-Post	mm	1889
Weight of Ballast in Cargo Area	kg	0
Amount of Stoddard Solvent in Fuel Tank	liters	66.2

DATA SHEET NO. 1… (Continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

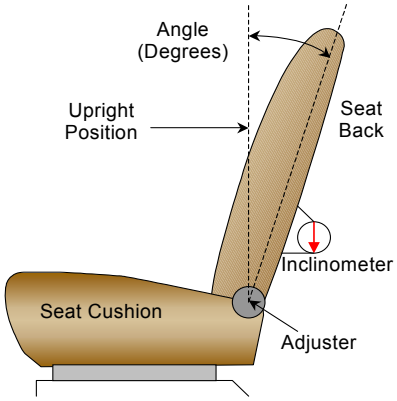
Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Target Impact Point Aft of Front Axle	mm	1386
Actual Impact Point Aft of Front Axle	mm	1386

NORMAL DESIGN RIDING POSITION

The driver's seat back is positioned to the manufacturer's designated angle. The procedure for the seat is as follows: Seat back angle is measured relative to the rocker sill. Remove back panel and position inclinometer as shown in drawing 13 inches above back pivot point on rear outboard seat frame. Test Position = 21 degrees



FRONT SEAT ASSEMBLY

Initial driver seat back angle: 7.1 degrees on head rest post
Final driver seat back angle: 2.3 degrees on head rest post

SEAT FORE/AFT POSITIONS

Initial Seat position: The fore/aft was set 145 mm from full forward.
Final Seat position: The fore/aft was set 130 mm from full forward.

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable "D" ring anchorage for the driver's seat position. The driver's "D" ring anchorage was placed in the 3rd notch from bottom (1 down from full up).

DATA SHEET NO. 1… (continued)

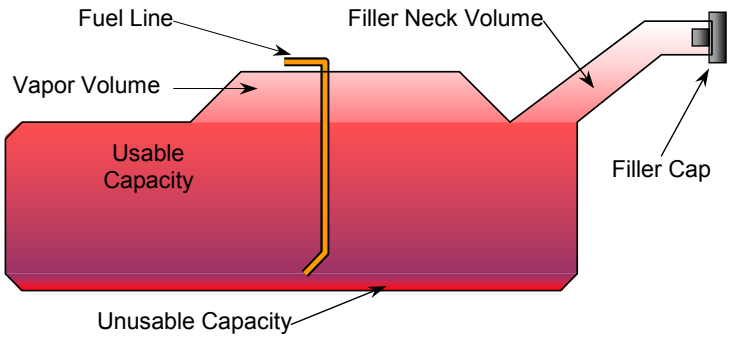
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

FUEL TANK CAPACITY DATA

The "Usable Capacity" of the standard equipment fuel tank is: 71.9 liters
The "Usable Capacity" of any optional equipment fuel tank is: N/A liters
92-94% of "Usable Capacity" for certification to FMVSS 301 requirements: 66.1 – 67.6 liters
Actual amount of Stoddard solvent added to vehicle for certification test 66.2 liters

The vehicle is equipped with electric fuel pump. The electric fuel pump operates for 2 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 2 seconds following ignition operation, the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls, the fuel pump is inactivated. Also, a fuel pump shut-off switch is provided, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.

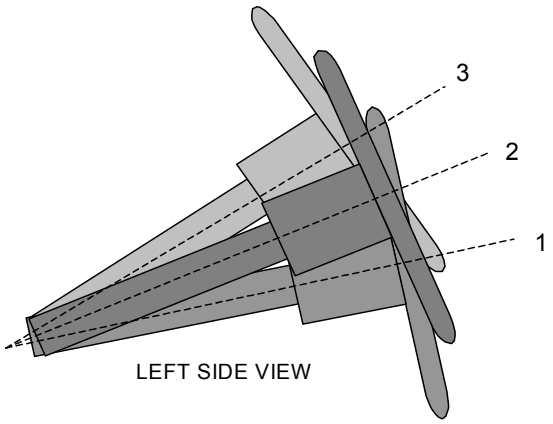


VEHICLE FUEL TANK ASSEMBLY

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 motion.

The steering column was placed in the mid position at 60.8 degrees.



STEERING COLUMN ASSEMBLY

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	555.2	381.9		611.0	416.4	
Right	kg	546.6	380.1		582.4	399.2	
Weight Ratio	%	59.1	40.9		59.4	40.6	
Totals	kg	1101.8	762.0	1863.8	1193.4	815.6	2009.0

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	379	478
Level 2	Occupant H-Point	mm	401	723
Level 3	Mid Door	mm	404	755
Level 4	Window Sill	mm	356	1154
Level 5	Window Top	mm	148	1643
N/A	Maximum Penetration	mm	404	755

INSTRUMENTATION

SID/HIII Instrumentation	17
Vehicle Structure Accelerometers	20
Total	37

HIGH SPEED CAMERAS

Onboard Vehicle	3
Offboard Vehicle	8
Total	11

IMPACT POINT DATA

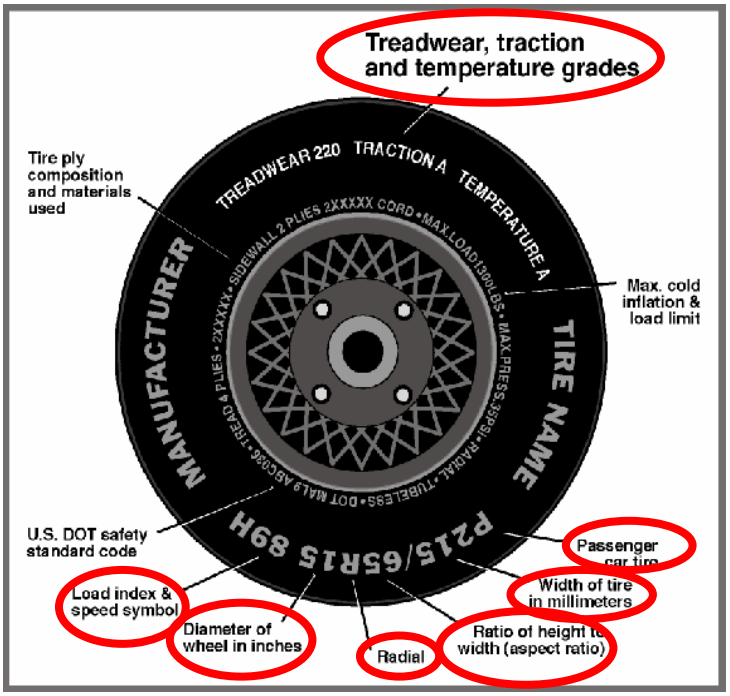
Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 38	0

DATA SHEET NO. 3

TEST VEHICLE TIRE INFORMATION

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

Vehicle Year	2007	Vehicle Make	Ford
VIN	2FMDK36C87BA91747	Vehicle Model	Edge-SE



	Front	Rear
Tire Manufacturer	Hankook	Hankook
Tire Name	DynaPro As	DynaPro As
Tire Type	P	P
Tire Width (mm)	235	235
Ratio of Height to Width (aspect ratio)	65	65
Radial	R	R
Wheel Diameter	17	17
Load Index & Speed Symbol	103T	103T
Treadwear	440	440
Traction Grade	B	B
Temperature Grade	A	A

DATA SHEET NO. 4

POST TEST OBSERVATIONS

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Left Front Seating Position
Dummy Type / Serial No.	SID/HIII / 037
Head Contact	Curtain Airbag, Headrest
Upper Torso Contact	Side Airbag
Lower Torso Contact	Side Airbag
Left Knee Contact	Door Panel
Right Knee Contact	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched	Door remained closed and latched
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No failures
Sill Separation	None
Windshield Damage	Cracked
Window Damage	Left side windows down for test
Other Notable Effects	None

AIRBAG DEPLOYMENT

	Driver
Front	No
Side	Yes
Curtain	Yes

ARMREST LOCATION AND SEAT CRUSH

	Driver
Front Armrest (from bottom of window)	227
Front Seat Back Crush	100
Front Seat Cushion Crush	56

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

SID/HIII INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	39.5	50	-8.5	85
Upper Rib (LUR) (R)	Y	G's	39.8	50	-8.1	85
Lower Rib (LLR)	Y	G's	45.2	48	-13.2	85
Lower Rib (LLR) (R)	Y	G's	45.5	48	-13.1	85
Lower Spine (T_{12})	Y	G's	50.8	52	-10.1	80
Lower Spine (T_{12}) (R)	Y	G's	50.1	52	-10.1	81
Pelvis (PEV)	Y	G's	54.6	50	-11.6	89
Pelvis (PEV) (R)	Y	G's	55.0	50	-12.0	89

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

Location	Driver			
	LLR	T_{12}	TTI(g)	PEV(g)
Rib, Spine, and Pelvis	45.2	50.8	48.0	54.6
Rib, Spine, and Pelvis (R)	45.5	50.1	47.8	55.0

UPPER NECK FORCES AND MOMENTS (SAE CLASS 1000/600 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Neck Force	X	N	23	211	-254	65
Neck Force	Y	N	508	64	-310	177
Neck Force	Z	N	804	61	-61	19
Neck Moment	X	Nm	18.0	120	-54.6	72
Neck Moment	Y	Nm	15.1	97	-9.6	64
Neck Moment	Z	Nm	24.3	247	-34.5	124

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Head CG	X	G's	12.4	87	-16.1	70
Head CG	Y	G's	64.3	68	-7.1	89
Head CG	Z	G's	14.1	80	-1.3	70
Head CG Resultant		G's	66.1	68		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver		
	HIC	T1	T2
Head CG Resultant	382	58.1	77.9

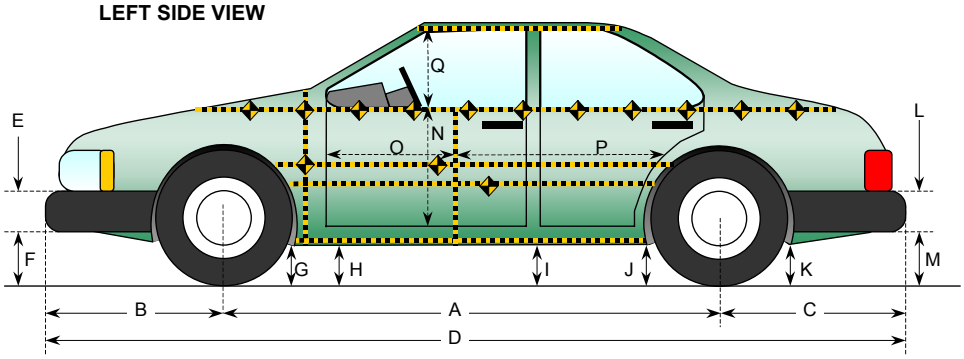
Positive Acceleration Polarities: Longitudinal (X) = + Forward
(Conforms to SAE J211) Lateral (Y) = + Right
Vertical (Z) = + Down

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

LEFT SIDE VIEW



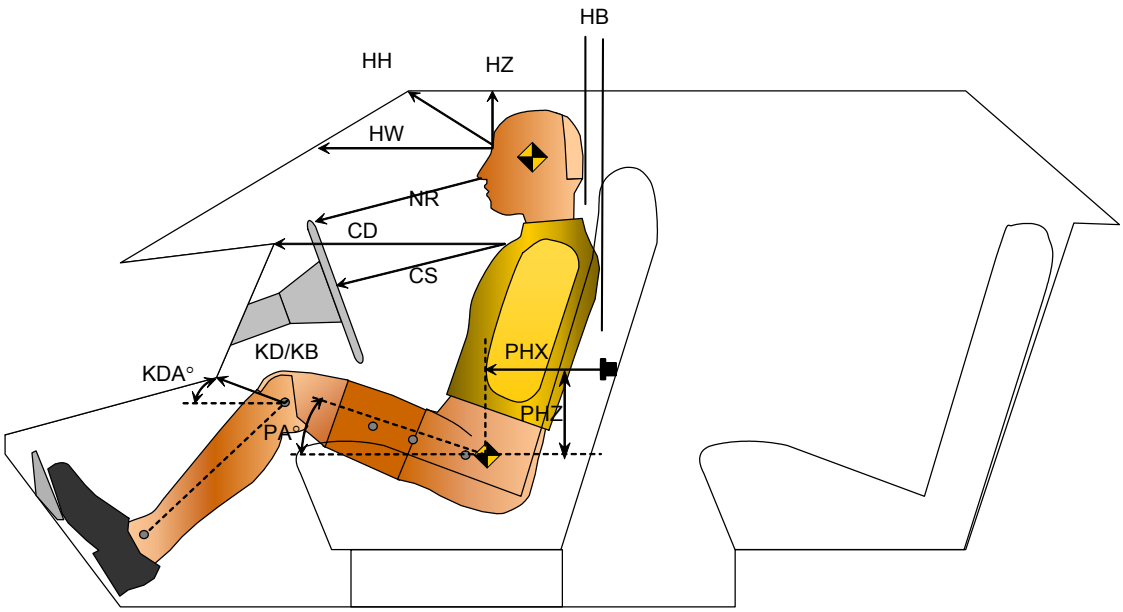
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2822	2730	92
B	Front Axle to FSOV	944	874	70
C	Rear Axle to RSOV	932	989	-57
D	Total Length at Centerline	4698	4593	105
E	Front Bumper Thickness	134	134	0
F	Front Bumper Bottom to Ground	324	325	-1
G	Sill Height at Front Wheel Well	318	297	21
H	Sill Height at Front Door Leading Edge	316	287	29
I	Sill Height at "B" Pillar	318	306	12
J1	Sill Height at Rear Wheel Well	320	335	-15
J2	Pinch Weld Height at Rear Wheel Well	318	330	-12
K	Sill Height Aft of Rear Wheel Well	340	340	0
L	Rear Bumper Thickness	250	250	0
M	Rear Bumper Bottom to Ground	527	522	5
N	Sill Height to Window Bottom Sill	895	853	42
O	Front Door Leading Edge to Impact CL	995	966	29
P	Rear Door Trailing Edge to Impact CL	1045	1090	-45
Q	Front Window Opening	447	404	43
R	Right Side Length	3734	3740	-6
S	Left Side Length	3734	3610	124
T	Vehicle Width at "B" Post	1889	1653	236

DATA SHEET NO. 7

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

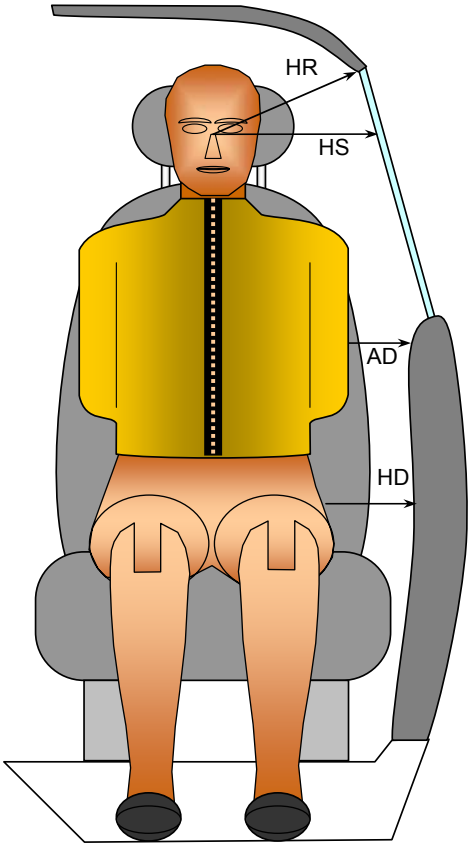


Driver Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	328	
HW	Head to Windshield	627	
HZ	Head to Roof	195	
NR	Nose to Rim	407	
CD	Chest to Dash	484	
CS	Chest to Steering Wheel	307	
KDL	Left Knee to Dash	146	26.3
KDR	Right Knee to Dash	144	26.2
PA	Pelvic Angle		24.0
PHX	H-Point to Striker (X-Axis)	212	
PHZ	H-Point to Striker (Z-Axis)	165	
HB	Head to Seatback Clearance	50	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007



FRONT VIEW OF DUMMY

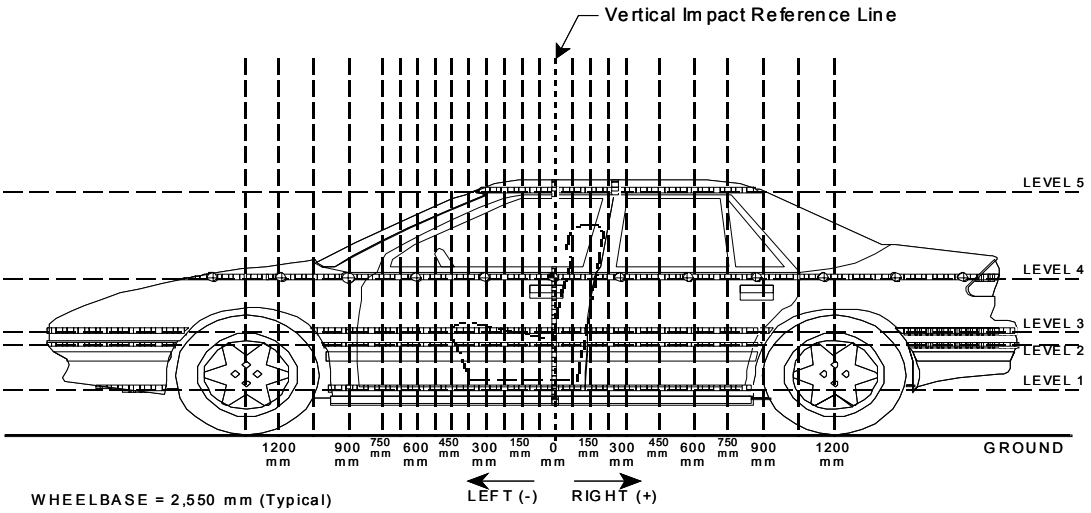
Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	246
HS	Head to Side Window	mm	389
AD	Arm to Door	mm	138
HD	H-Point to Door	mm	151

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

PRETEST AND POST TEST EXTERIOR PROFILE MEASUREMENTS



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 0 mm.

Level	Measurement Description	Units	Height Above Ground
5	Window	mm	1643
4	Window Sill	mm	1154
3	Mid Door	mm	755
2	Occupant H-Point	mm	723
1	Sill Top	mm	478

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900	163	154	156	214		183	155	163	218		20	1	7	4	
-825	176	166	166	214		209	160	196	230		33	-6	30	16	
-750	181	169	167	215		238	196	224	246		57	27	57	31	
-675	180	168	166	210		258	224	247	269		78	56	81	59	
-600	179	168	165	209		280	274	176	303		101	106	111	94	
-525	179	167	165	210		303	304	307	337		124	137	142	127	
-450	178	167	164	210		329	334	339	373		151	167	175	163	
-375	176	166	164	210		365	366	370	408		189	200	206	198	
-300	176	166	164	211		410	417	419	443		234	251	255	232	
-225	175	165	163	212	459	458	455	460	476	552	283	290	297	264	93
-150	175	165	163	211	459	511	505	503	514	568	336	340	340	303	109
-75	175	165	162	211	456	545	549	550	554	592	370	384	388	343	136
0	175	164	162	211	459	554	565	566	567	607	379	401	404	356	148
75	175	164	162	211	461	522	528	525	531	583	347	364	363	320	122
150	176	164	162	212	461	461	462	466	474	570	285	298	304	262	109
300	175	165	163	211	463	375	363	358	451	557	200	198	195	240	94
450	179	167	165	215	466	329	338	326	360	537	150	171	161	145	71
600	181	169	168	219	465	306	326	314	341	523	125	157	146	122	58
750	185	172	170	222	466	270	303	294	313	504	85	131	124	91	38
900	189	175	174	228	469	231	274	271	279	483	42	99	97	51	14
1050		164	168	231	470		223	237	251	473		59	69	20	3
1200		154	154	236	469		193	199	235	479		39	45	-1	10

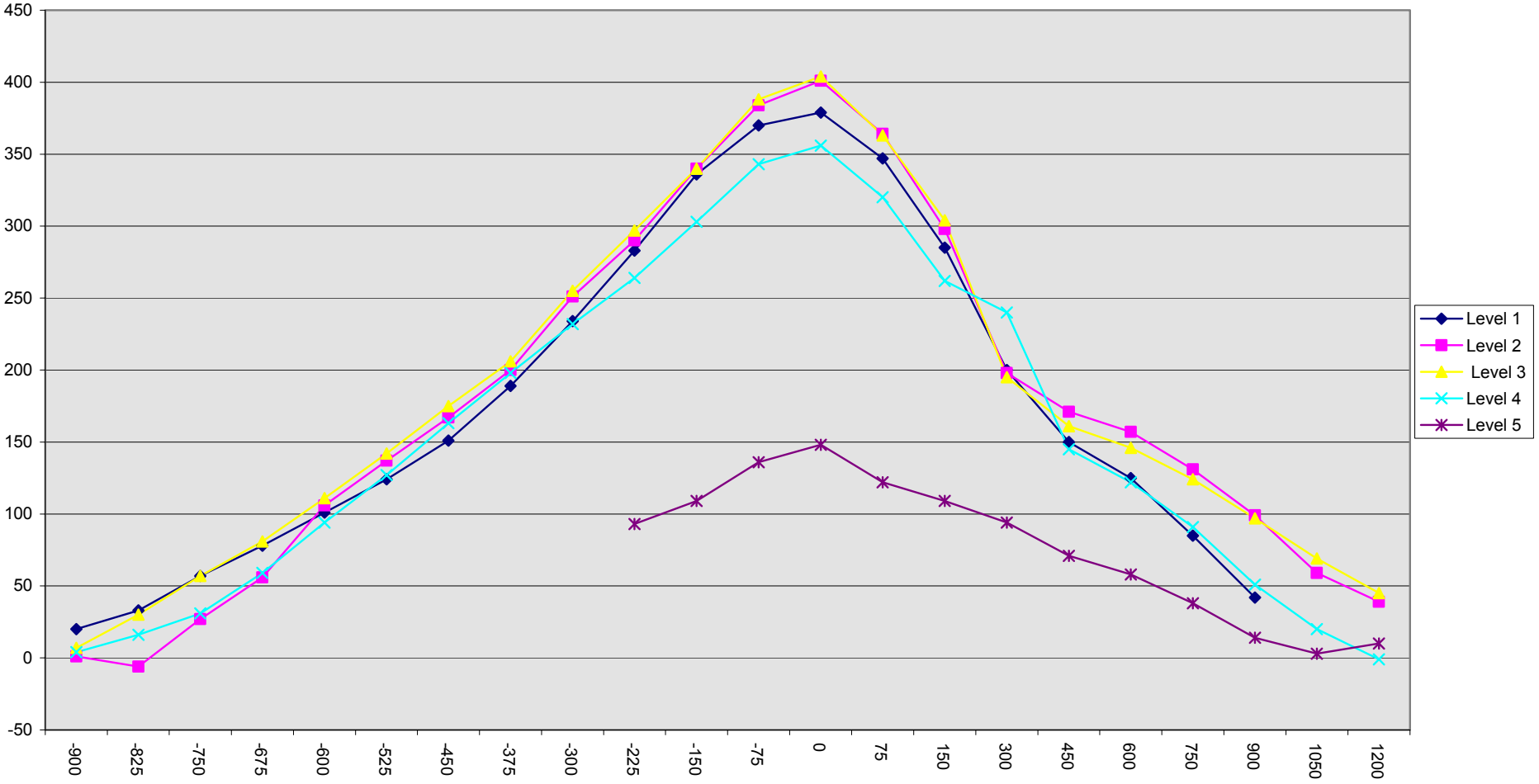
Reference plane is parallel to test vehicle longitudinal centerline Units = mm

Given dimensions = Reference plane to car body

DATA SHEET NO. 10... (continued)

VEHICLE EXTERIOR CRUSH PROFILES

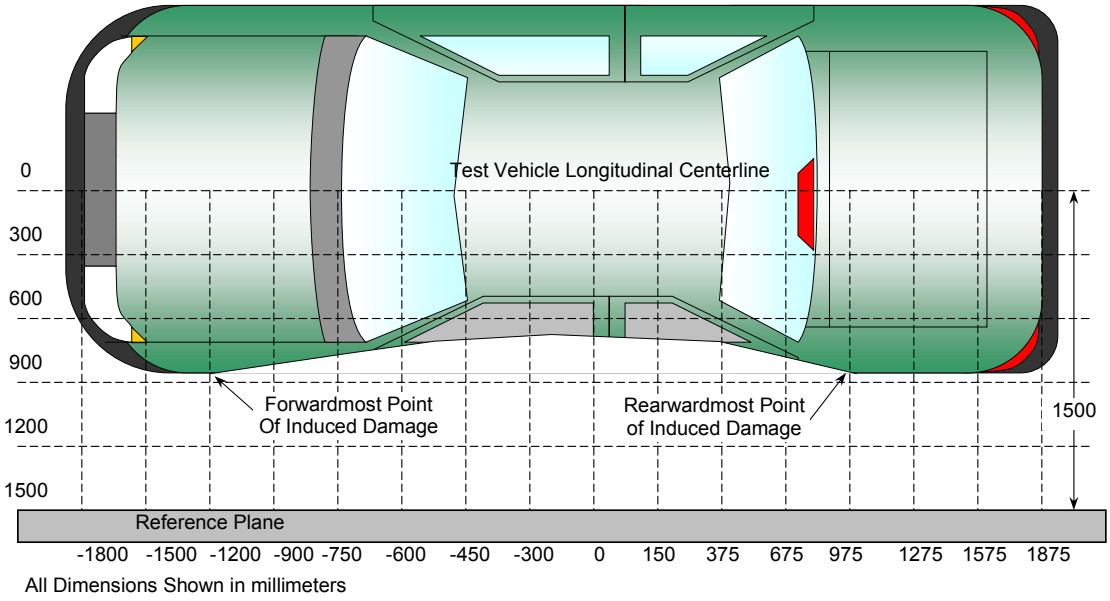
Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007



DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007



TOP VIEW

Damage Profile Distances

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	1200 mm	3	154	199	45
2	765 mm	2	173	300	127
3	340 mm	4	212	421	209
4	-80 mm	3	162	542	380
5	-475 mm	3	164	328	164
6	-900 mm	1	163	183	20

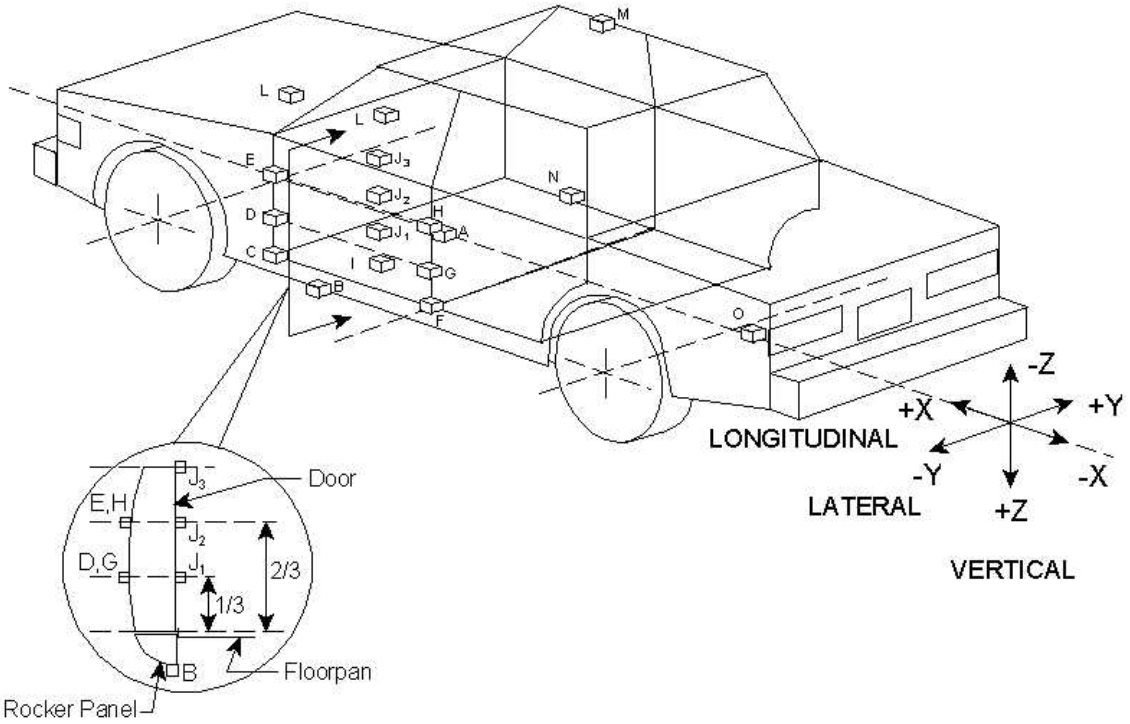
Reference plane is parallel to test vehicle longitudinal centerline

Given dimensions = Reference plane to car body

DATA SHEET NO. 12

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007



No.	Location
A	Vehicle CG
B	Left Floor Sill
C	A Pillar Sill
D	A Pillar Low
E	A Pillar Mid
F	B Pillar Sill
G	B Pillar Low
H	B Pillar Mid
I	Driver Seat

No.	Location
J1	Driver Door Lower / Knee
J2	Driver Door Mid / Pelvis
J3	Driver Door Upper / Rib
K	Engine
L	Firewall
M	Right Roof
N	Right Floor Sill
O	Rear Deck

DATA SHEET NO. 12... (continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Peak Values (G's)				
		Axis	Max	Time	Min	Time
A	Vehicle CG	X	3.5	64	-5.0	76
		Y	15.6	64	-0.8	194
		Z	6.9	95	-5.6	55
		RES	16.4	65		
B	Left Floor	Y	15.5	52	-0.9	0.0
C	A Pillar Sill	Y	15.0	53	-0.8	3
D	A Pillar Low	Y	17.8	11	-3.9	15
E	A Pillar Mid	Y	115.5	12	-4.4	5
F	B Pillar Sill	Y	51.4	18	-10.0	37
G	B Pillar Low	Y	58.1	21	-25.8	30
H	B Pillar Mid	Y	59.0	20	-20.2	37
I	Driver Seat	Y	35.6	48	-21.8	51
J1	Driver Door Lower / Knee	Y	39.4	8	-50.1	21
J2	Driver Door Mid / Pelvis	Y	30.4	6	-25.6	14
J3	Driver Door Upper / Rib	Y	47.2	55	-24.8	25
K	Engine	X	4.5	101	-6.5	53
		Y	10.6	58	-1.4	193
L	Firewall	Y	10.1	46	-1.4	7
M	Right Roof	Y				
N	Right Floor Sill	Y	10.9	37	-0.7	244
O	Rear Deck	X	3.4	54	-1.5	15
		Y	13.7	60	-1.5	188

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

DATA SHEET NO. 12... (continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

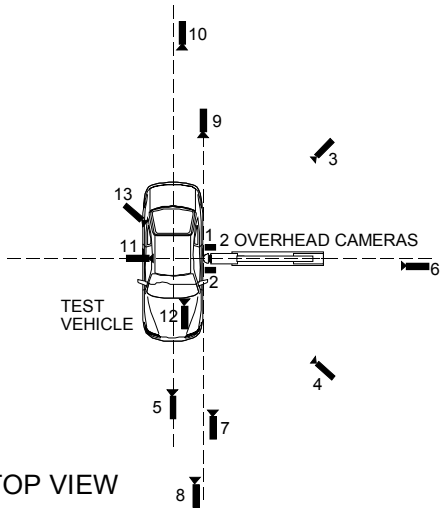
Loc. No.	Accelerometer Location	Measurements (mm)			
		Axis	Pre-Test	Post-Test	Difference
A	Vehicle CG	X	2542	2504	-38
		Y	0	61	61
		Z	476	504	-28
B	Left Floor Sill	X	2914	2814	-100
		Y	-724	-610	114
		Z	281	263	18
C	A Pillar Sill	X	3263	3172	-91
		Y	-725	-664	61
		Z	274	274	0
D	A Pillar Low	X	3139	3040	-99
		Y	-828	-796	32
		Z	665	671	-6
E	A Pillar Mid	X	3144	3049	-95
		Y	-788	-724	64
		Z	950	958	-8
F	B Pillar Sill	X	2243	2223	-20
		Y	-758	-526	232
		Z	487	515	-28
G	B Pillar Low	X	2131	2161	30
		Y	-763	-541	222
		Z	692	727	-35
H	B Pillar Mid	X	2127	2180	53
		Y	-747	-523	224
		Z	985	1015	-30
I	Driver Seat	X	2523	2320	-203
		Y	-535	-354	181
		Z	432	509	-77
J1	Driver Door Lower / Knee	X	2892	2795	-97
		Y	-834	-680	154
		Z	675	690	-15
J2	Driver Door Mid / Pelvis	X	2973	2871	-102
		Y	-804	-698	106
		Z	864	878	-14
J3	Driver Door Upper / Rib	X	2866	2789	-77
		Y	-828	-649	179
		Z	983	1000	-17
K	Engine	X	4114	4005	-109
		Y	-38	-33	5
		Z	842	865	-23
L	Firewall	X	3816	3708	-108
		Y	55	98	43
		Z	1012	1020	-8
N	Right Floor Sill	X	2471	2451	-20
		Y	733	790	57
		Z	278	291	-13
O	Rear Deck	X	748	756	8
		Y	0	0	0
		Z	549	580	-31

Ref. Points: X-Rear of Vehicle (+ forward); Y-Vehicle Centerline (+ to right); Z-Ground Plane (+ down)

DATA SHEET NO. 13

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007



TOP VIEW

No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	0	0	5050	16	1000
2	Overhead Close-Up	500	0	5050	50	1000
3	Left Side 45° Rearward Pole View	-2680	3980	1235	24	1000
4	Right Side 45° Forward Pole View	-2850	-3900	1200	24	1000
5	Real Time				13	24
6*	Left Side Rear Pole View					
7	Front Ground Level Vehicle/Pole Impact	-75	-1190	1520	35	1000
8	Front Ground Level Vehicle Roof Targets and Vehicle/Pole Impact	900	-1600	1260	24	1000
9	Rear Ground Level Vehicle/Pole Impact	-50	1230	1610	35	1000
10	Rear Ground Level	860	1710	1335	24	1000
11	Test Vehicle Onboard Driver Side View				8	1000
12	Test Vehicle Onboard Driver Front View				12.5	1000
13	Test Vehicle Onboard Driver ¾ Rear View				8	1000

Reference Points X - + Forward of Impact
Y - + Right of Impact
Z - + Ground Plane Down

* Camera 6 was not used for this test.

DATA SHEET NO. 14

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

Test Time: 10:05 AM Temperature at Time of Impact: 21°C

Stoddard Solvent Spillage Measurements

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

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

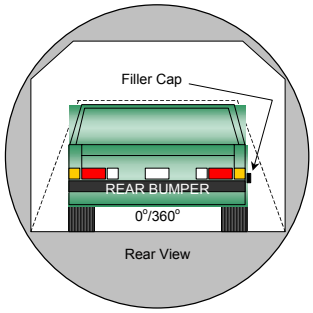
C. For the following 25 minutes: 0
(Maximum allowable = 1 oz./minute)

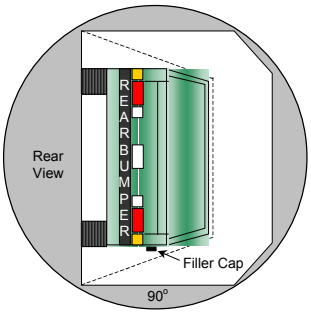
D. Spillage Details: None

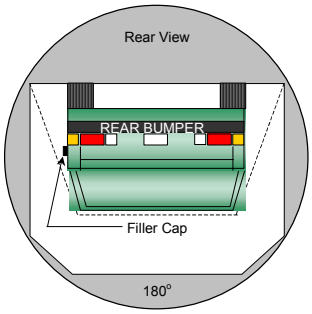
DATA SHEET NO. 15

FMVSS 301 STATIC ROLLOVER DATA SHEET

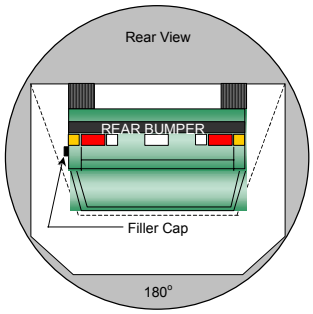
Test Vehicle: 2007 Ford Edge-SE NHTSA No. C70205
Test Program: FMVSS 201P Test Date: August 23, 2007

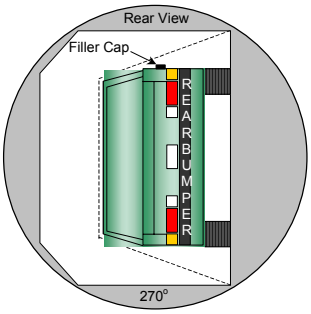


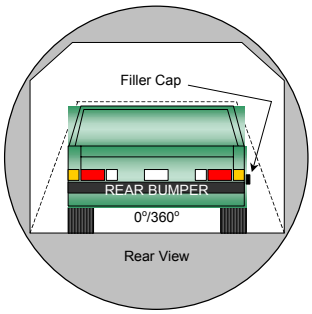




0° to 90° 90° to 180°







180° to 270° 270° to 360°

1. The specified fixture rollover rate for each 90° of rotation is 60 to 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°	120	300	0
90° to 180°	112	300	0
180° to 270°	110	300	0
270° to 360°	110	300	0

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Pre-Test Front View of Test Vehicle

Post-Test Front View of Test Vehicle

Pre-Test Rear View of Test Vehicle

Post-Test Rear View of Test Vehicle

Pre-Test Left Side View of Test Vehicle

Post-Test Left Side View of Test Vehicle

Pre-Test Right Side View of Test Vehicle

Post-Test Right Side View of Test Vehicle

Pre-Test Left Rear Three-Quarter View

Post-Test Left Rear Three-Quarter View

Pre-Test Left Front Three-Quarter View

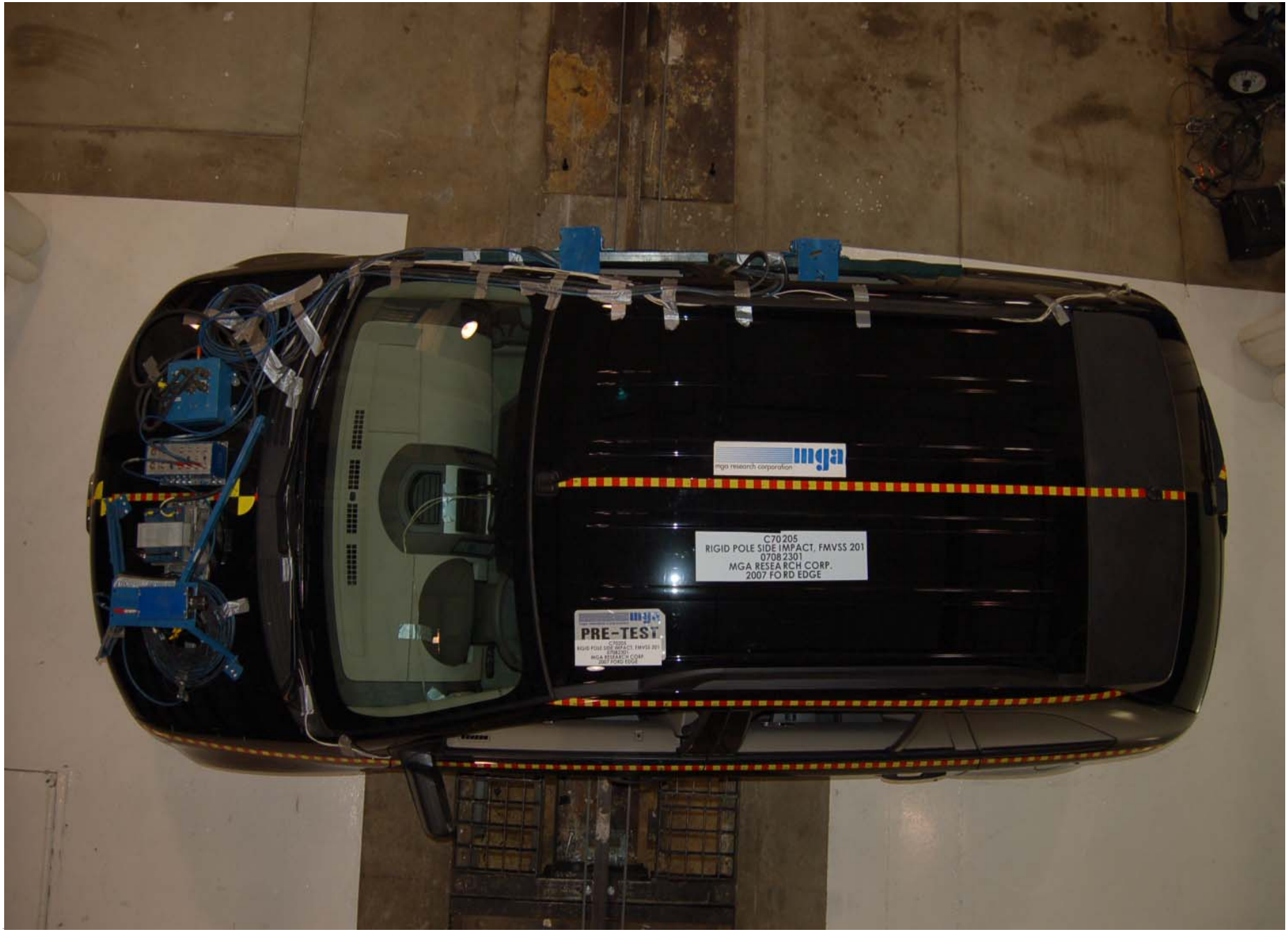
Post-Test Left Front Three-Quarter View

Pre-Test Right Rear Three-Quarter View

Post-Test Right Rear Three-Quarter View

Pre-Test Right Front Three-Quarter View

Post-Test Right Front Three-Quarter View



Pre-Test Overhead View of Test Vehicle

Post-Test Overhead View of Test Vehicle

Pre-Test Overhead View of Test Vehicle (Closeup)

Post-Test Overhead View of Test Vehicle (Closeup)

Pre-Test Driver Dummy Right Side View

Post-Test Driver Dummy Right Side View

Pre-Test Driver Dummy Left Side View

Post-Test Driver Dummy Left Side View

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

Pre-Test Driver Dummy Shoulder and Door Top View

Post-Test Driver Dummy Head Contact (Curtain Airbag)

Post-Test Driver Dummy Head Contact (headrest)

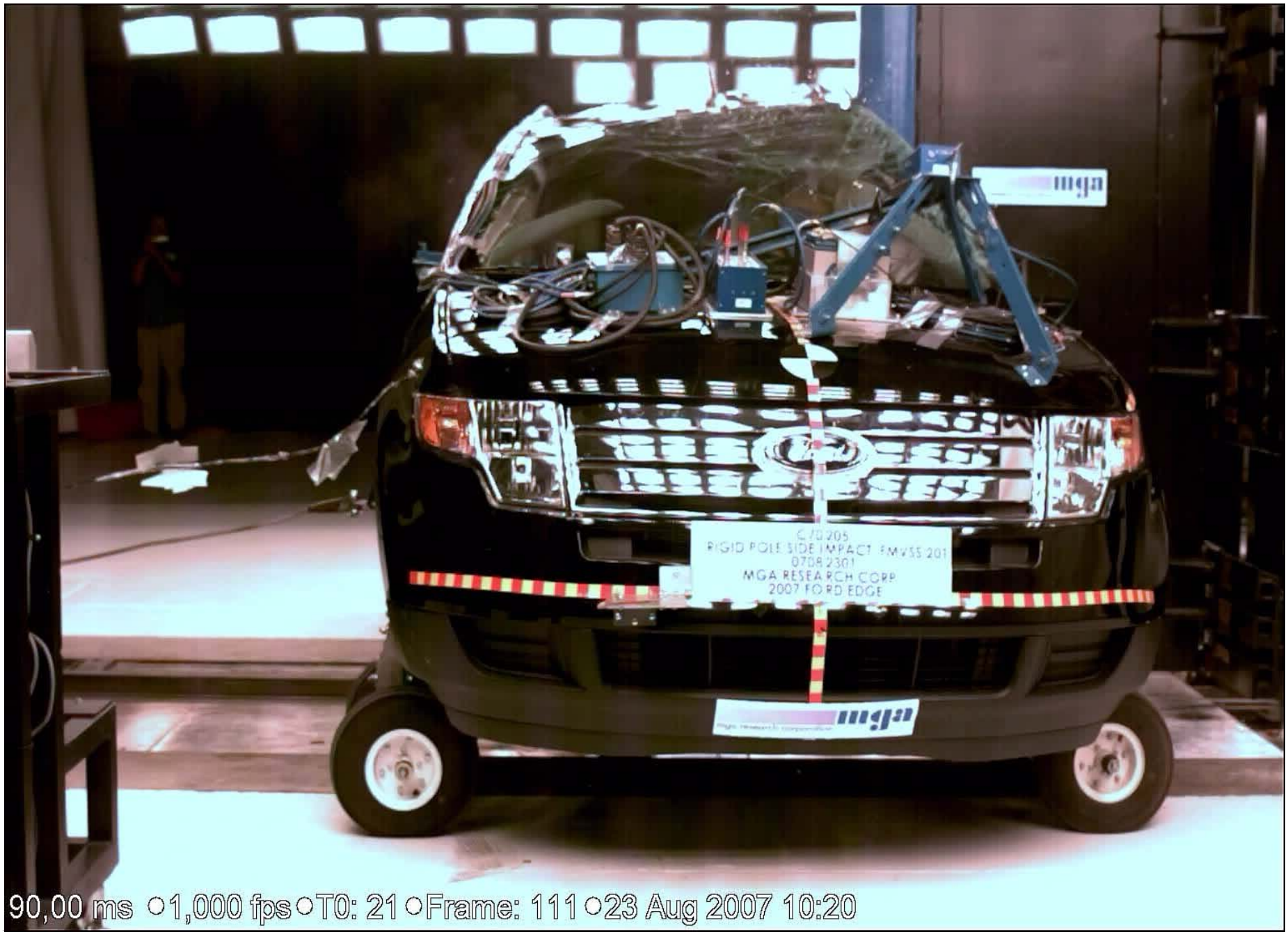
Post-Test Driver Dummy Upper Thorax Contact

Post-Test Driver Dummy Lower Thorax Contact

Post-Test Driver Dummy Contact

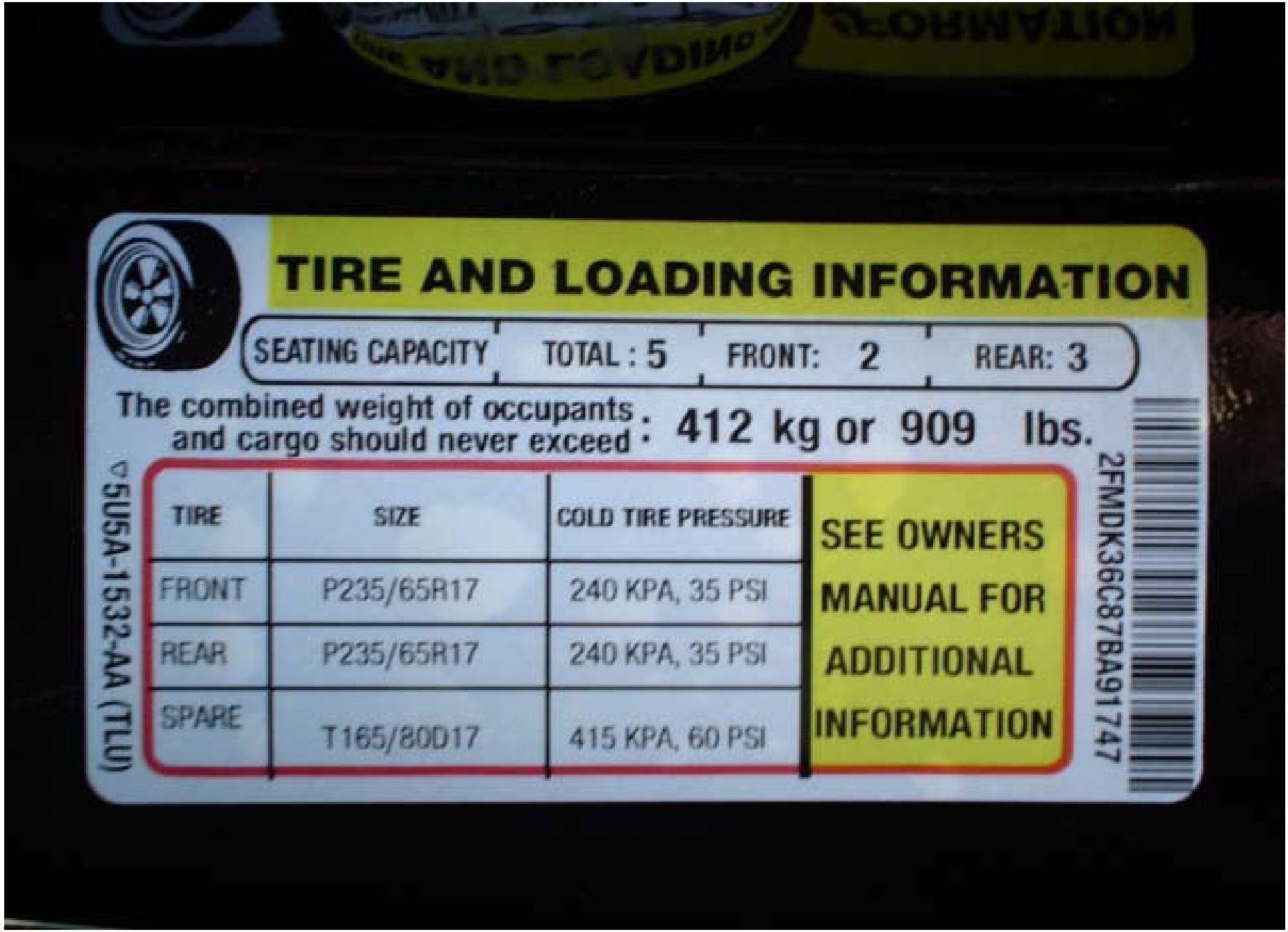
Post-Test Impact Point on Vehicle

Pre-Test Impact Zone Close-up View



Vehicle Impact

Vehicle Certification Label



Tire Placard

Pre-Test Fuel Filler Cap

Post-Test Fuel Filler Cap

Pre-Test Left Front Wheel Dolly

Pre-Test Right Front Wheel Dolly

Pre-Test Left Rear Wheel Dolly

Pre-Test Right Rear Wheel Dolly

Rollover 90 Degrees

Rollover 180 Degrees

Rollover 270 Degrees

Rollover 360 Degrees

APPENDIX B

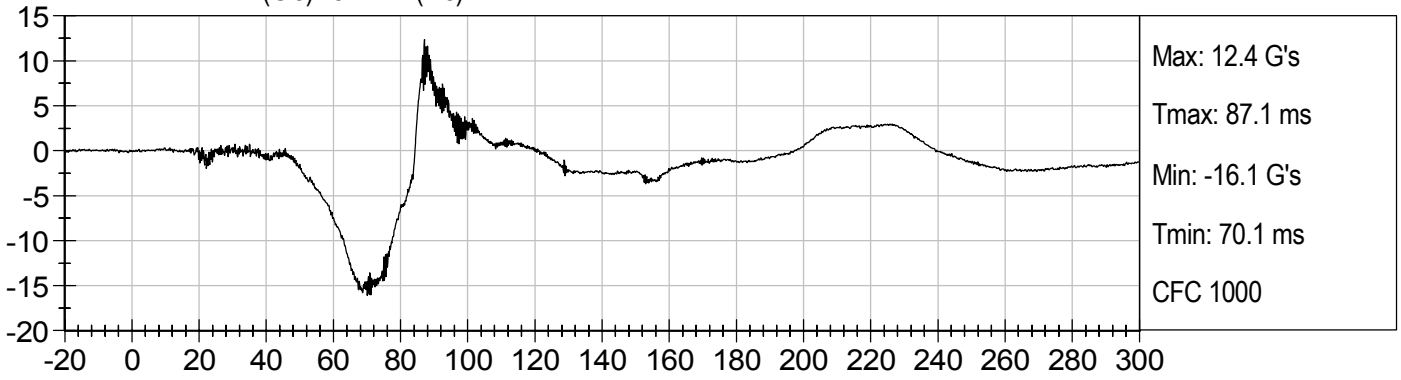
SID/HIII AND VEHICLE RESPONSE DATA

TABLE OF DATA PLOTS

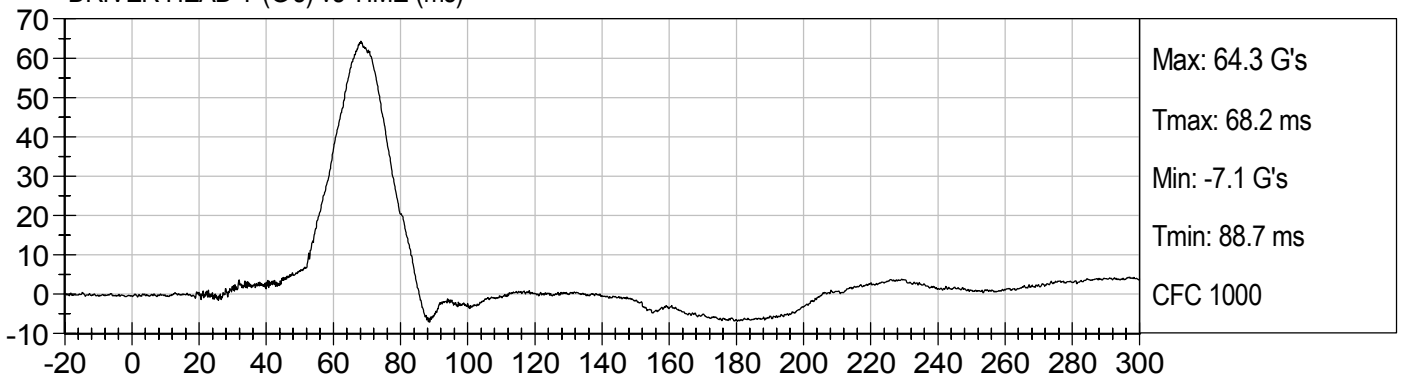
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

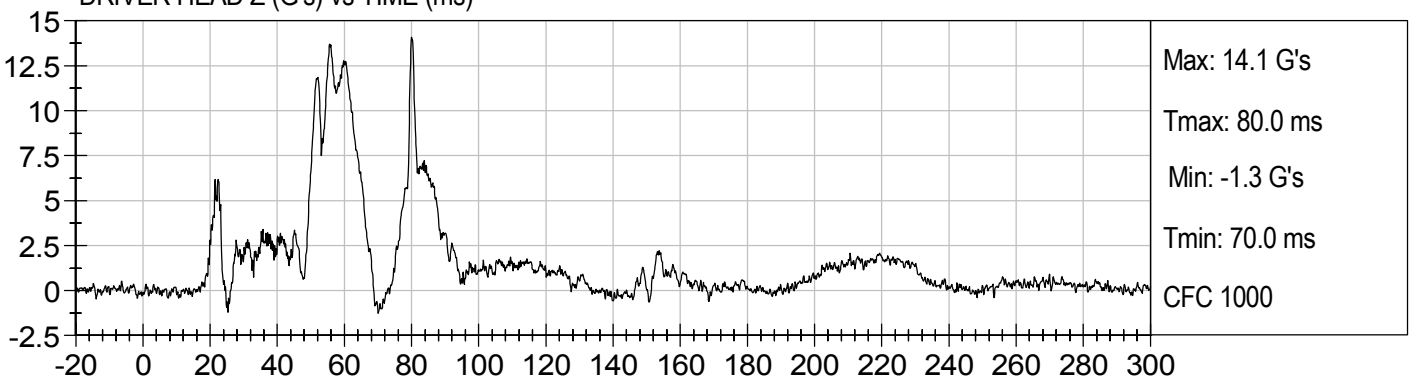
DRIVER HEAD X (G's) vs TIME (ms)



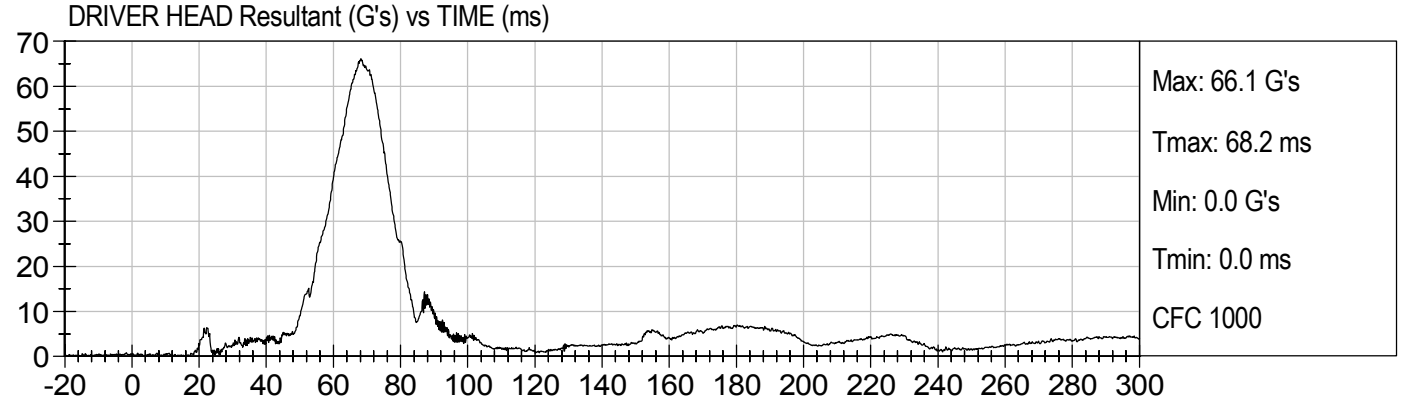
DRIVER HEAD Y (G's) vs TIME (ms)



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



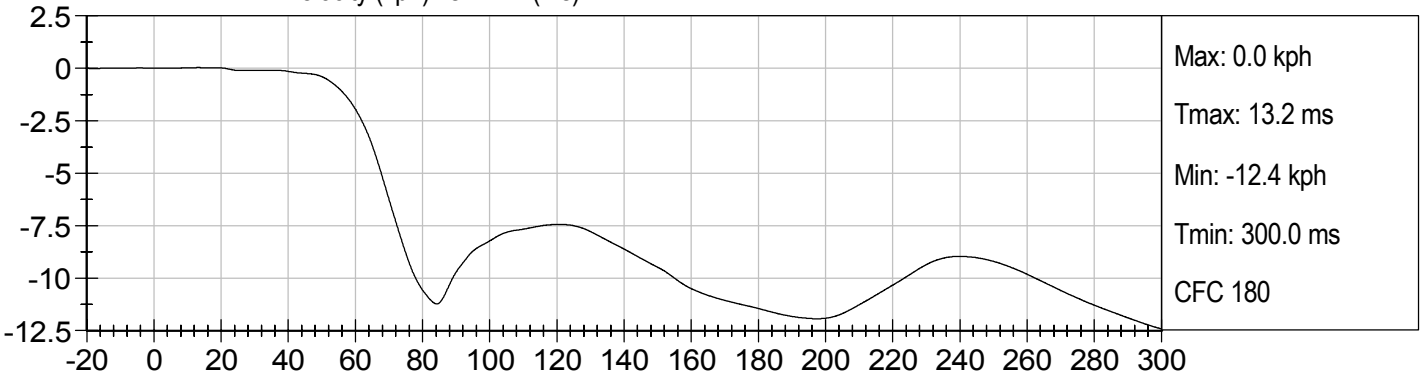
DRIVER HEAD Resultant (G's) vs TIME (ms)



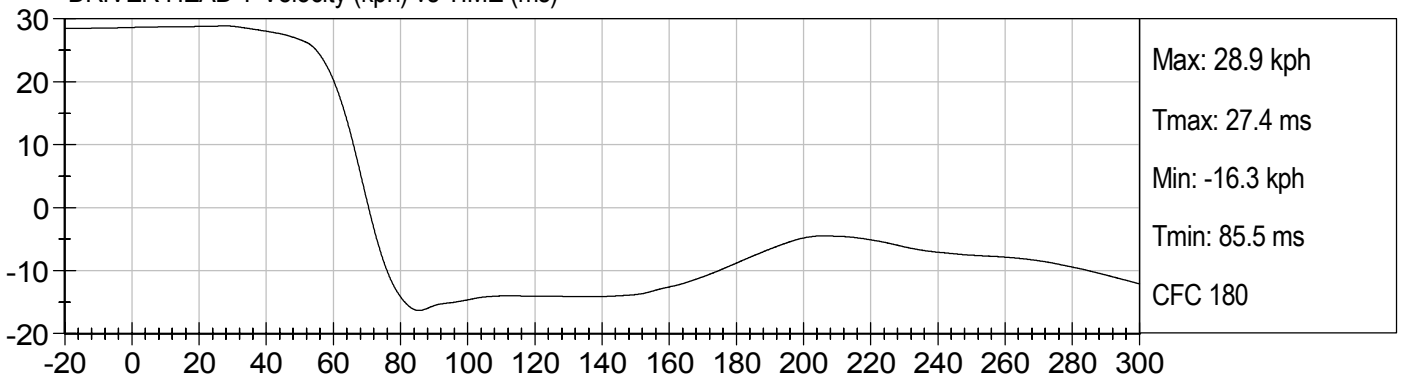
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

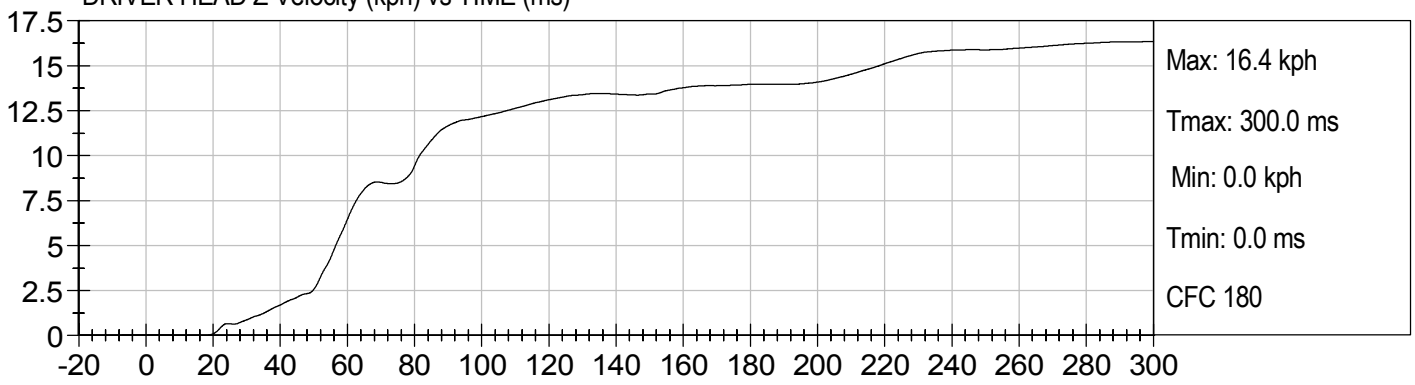
DRIVER HEAD X Velocity (kph) vs TIME (ms)



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



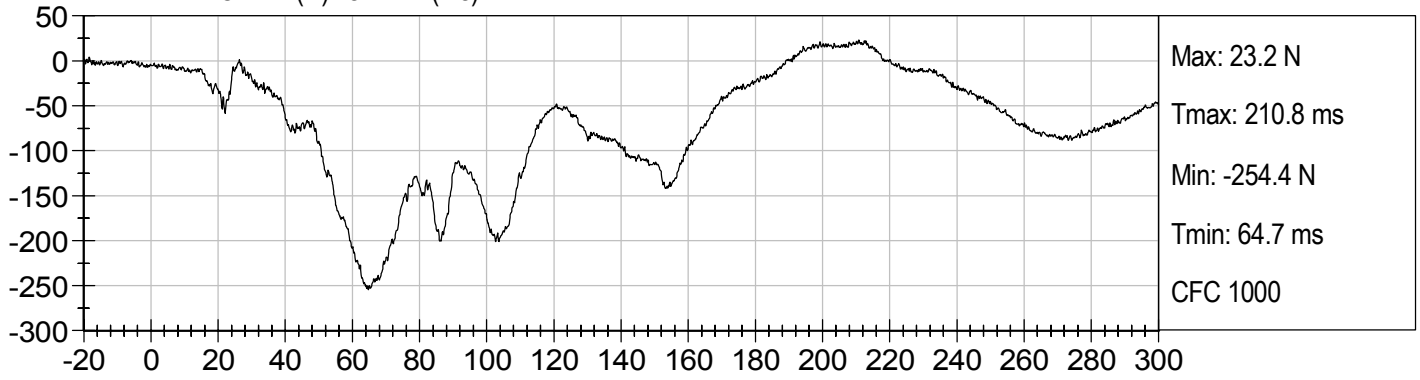
DRIVER HEAD Z Velocity (kph) vs TIME (ms)



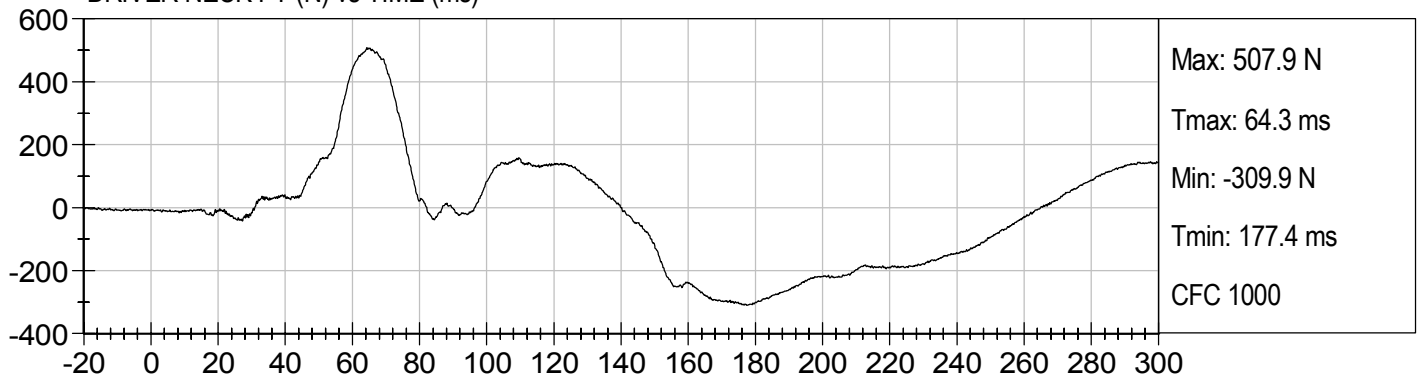
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

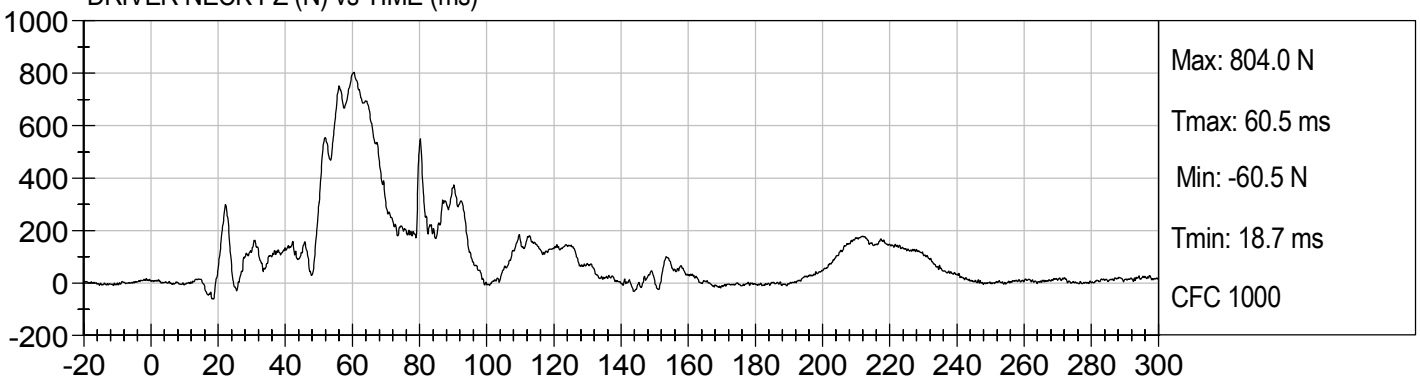
DRIVER NECK FX (N) vs TIME (ms)



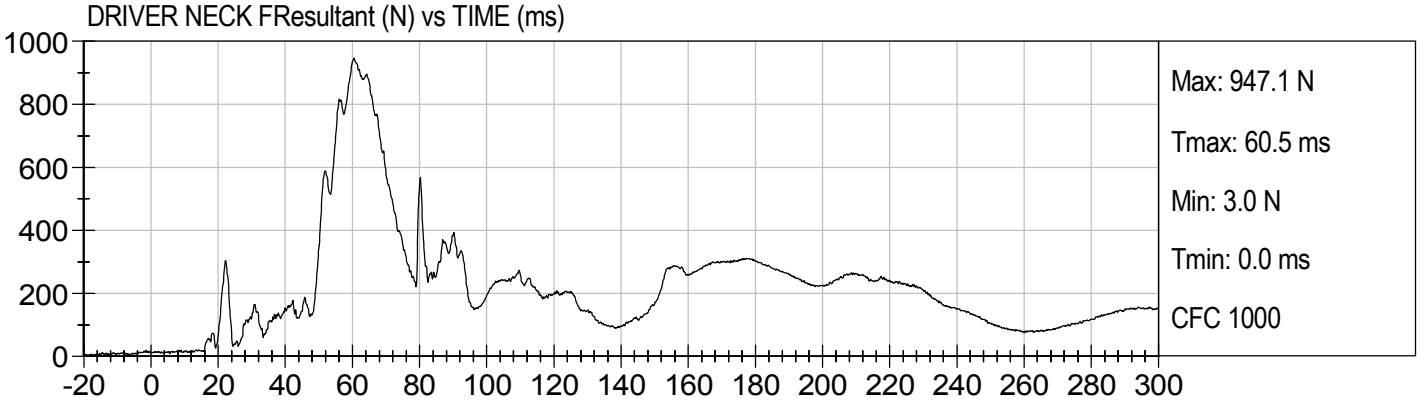
DRIVER NECK FY (N) vs TIME (ms)



DRIVER NECK FZ (N) vs TIME (ms)



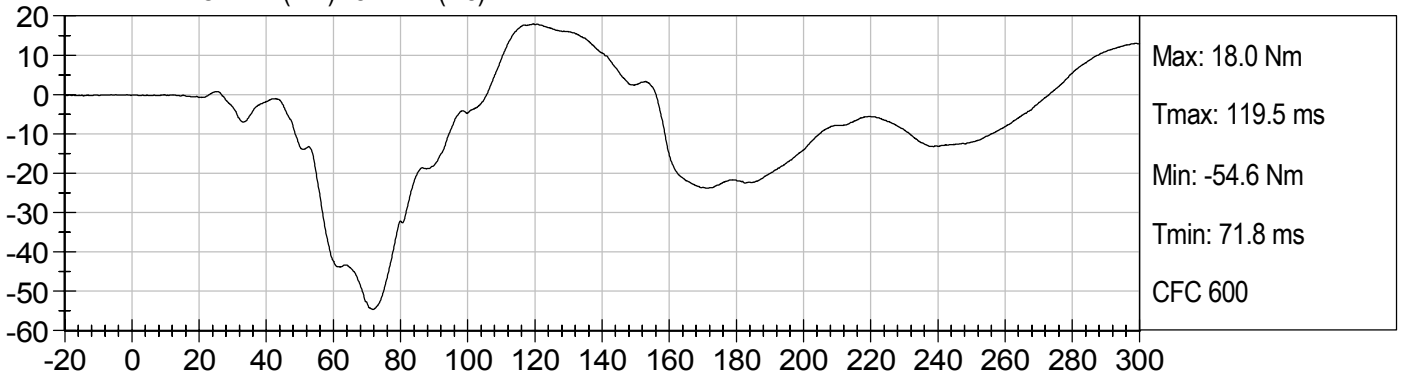
DRIVER NECK FResultant (N) vs TIME (ms)



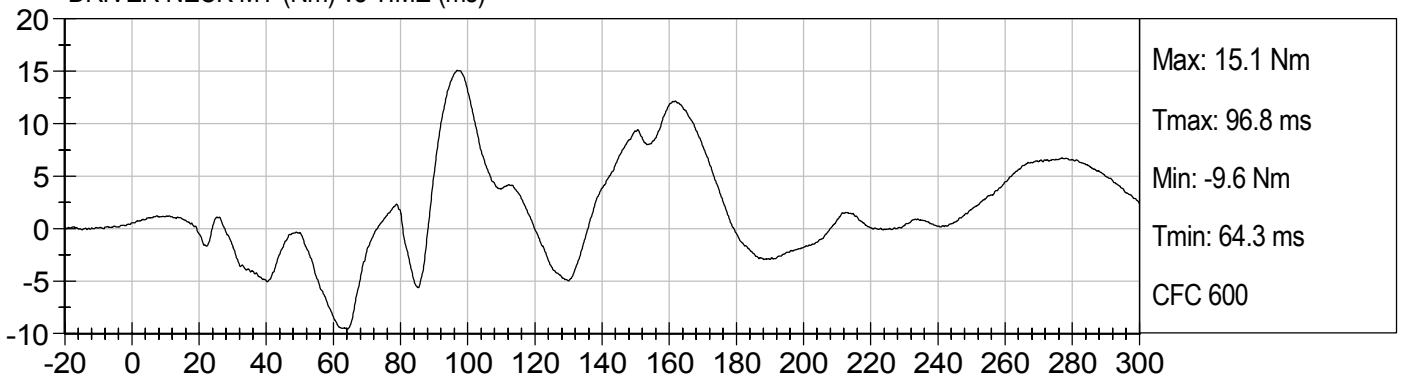
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

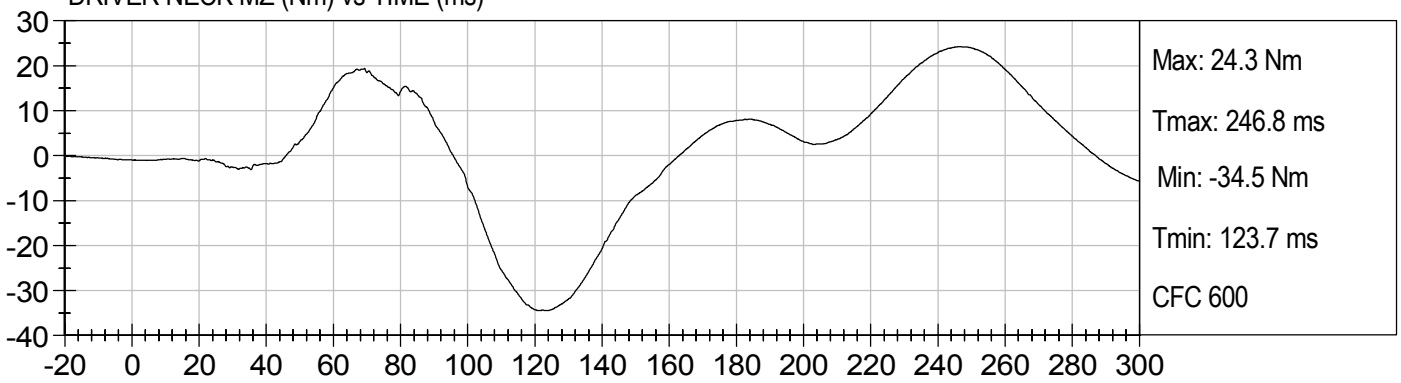
DRIVER NECK MX (Nm) vs TIME (ms)



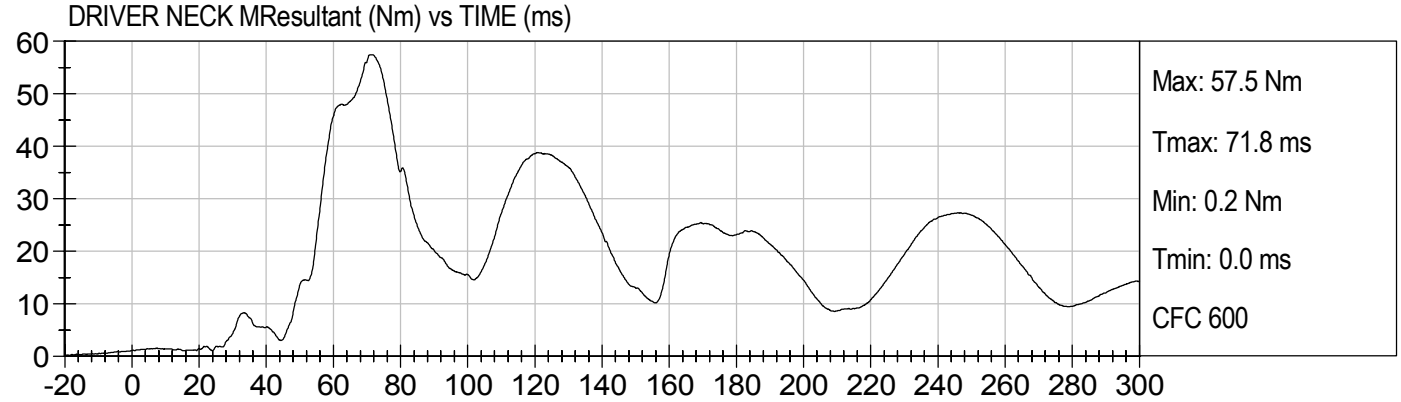
DRIVER NECK MY (Nm) vs TIME (ms)



DRIVER NECK MZ (Nm) vs TIME (ms)



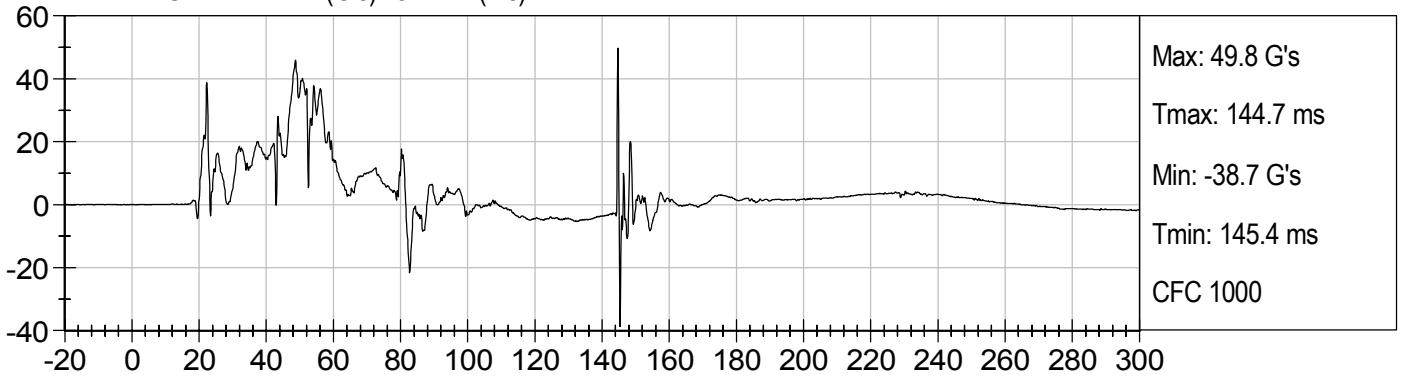
DRIVER NECK MResultant (Nm) vs TIME (ms)



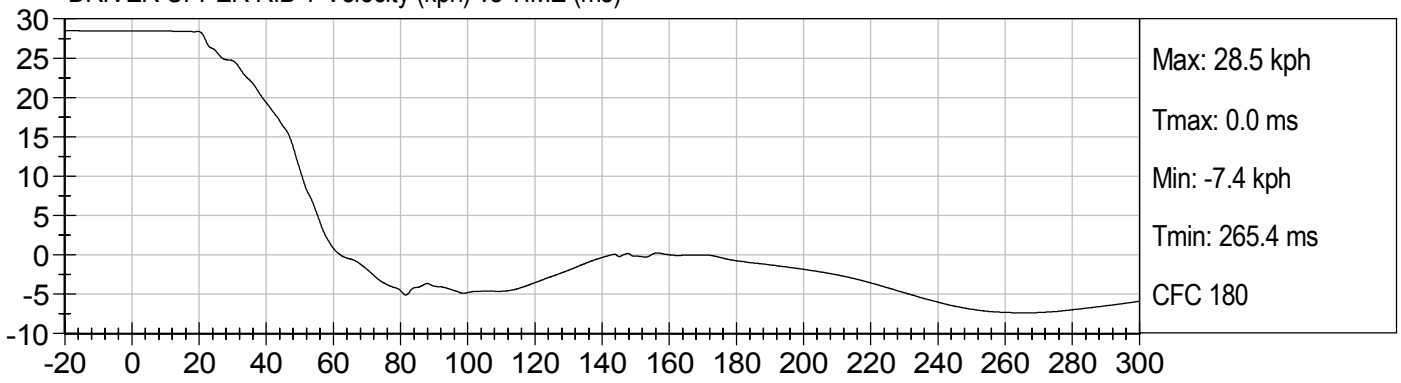
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

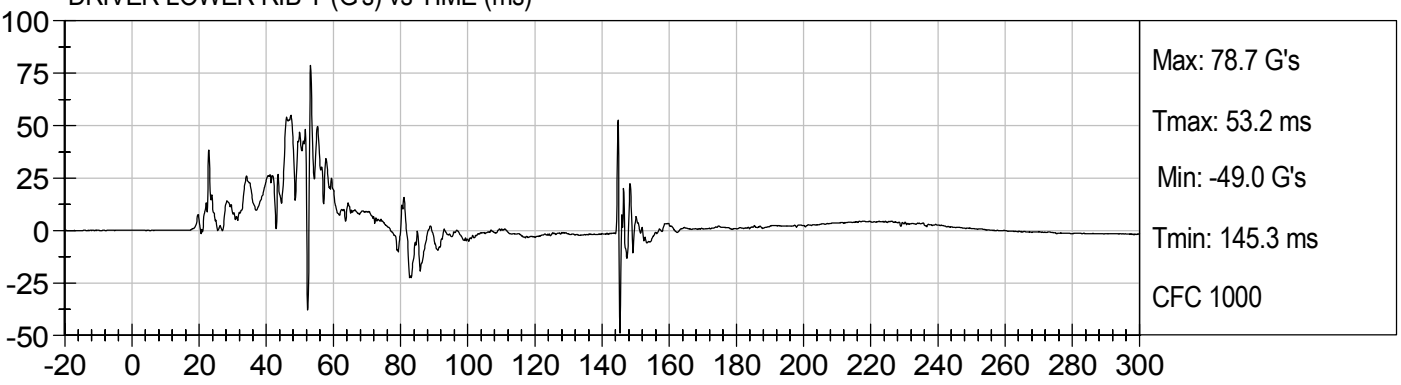
DRIVER UPPER RIB Y (G's) vs TIME (ms)



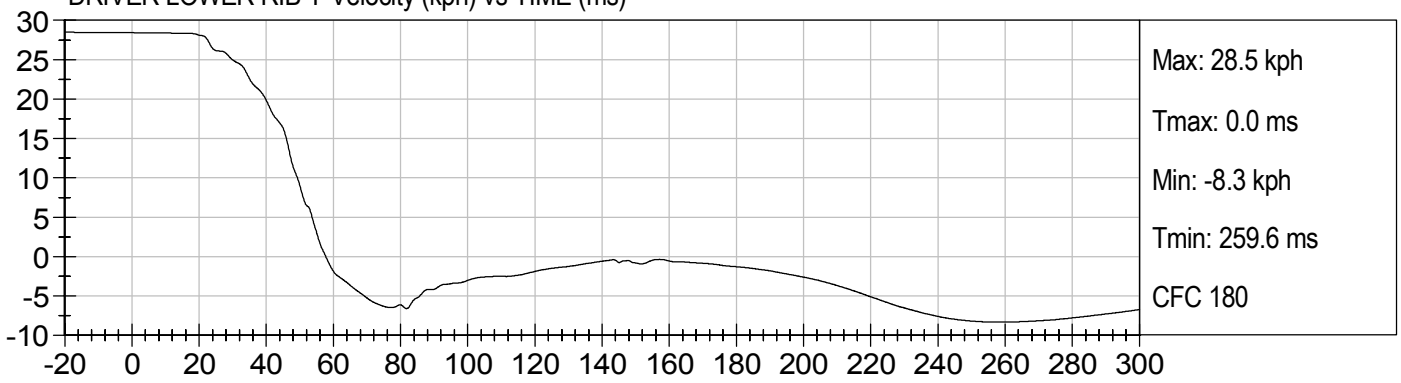
DRIVER UPPER RIB Y Velocity (kph) vs TIME (ms)



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



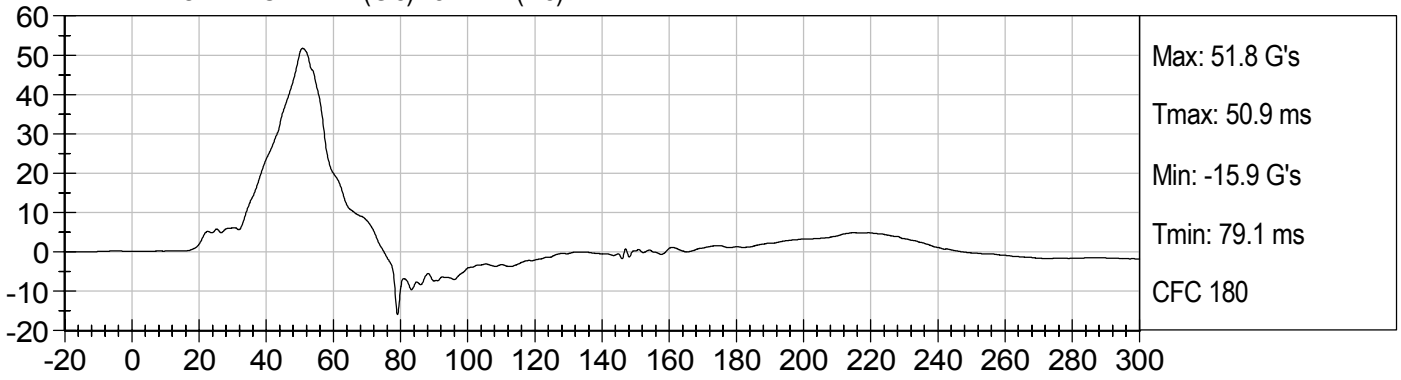
DRIVER LOWER RIB Y Velocity (kph) vs TIME (ms)



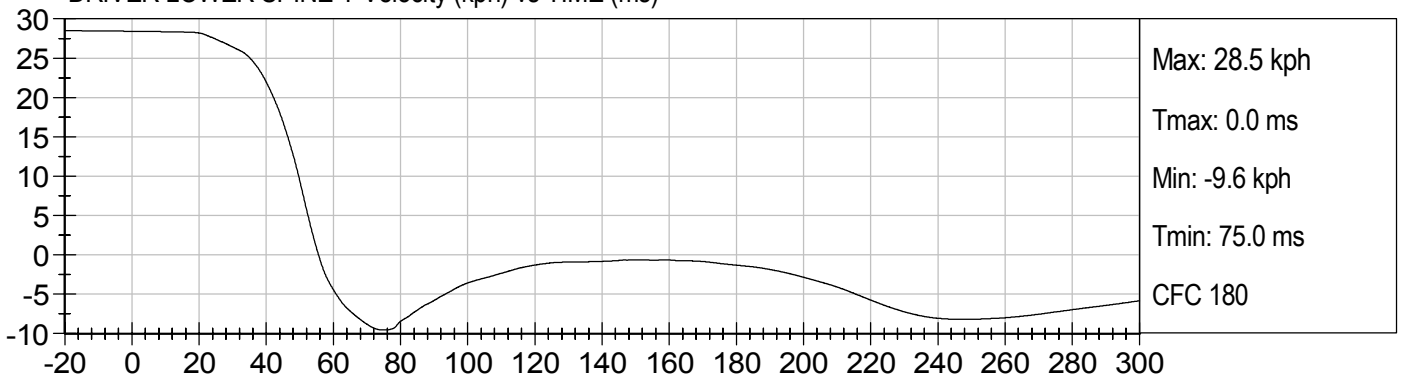
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

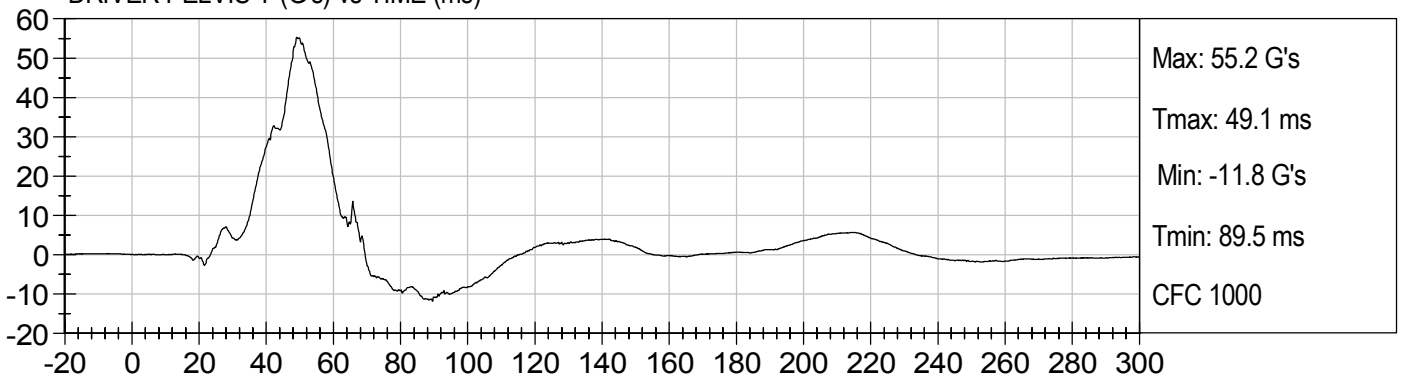
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



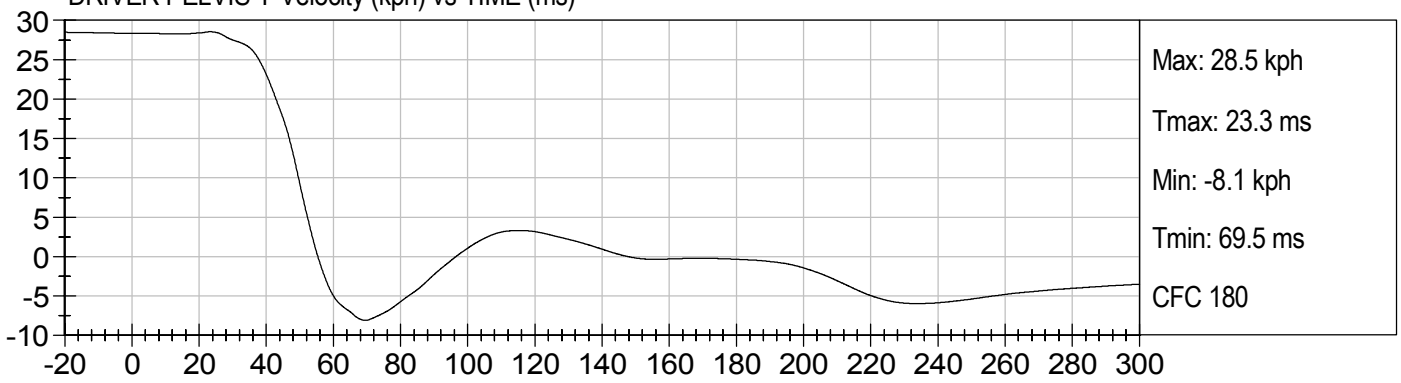
DRIVER LOWER SPINE Y Velocity (kph) vs TIME (ms)



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



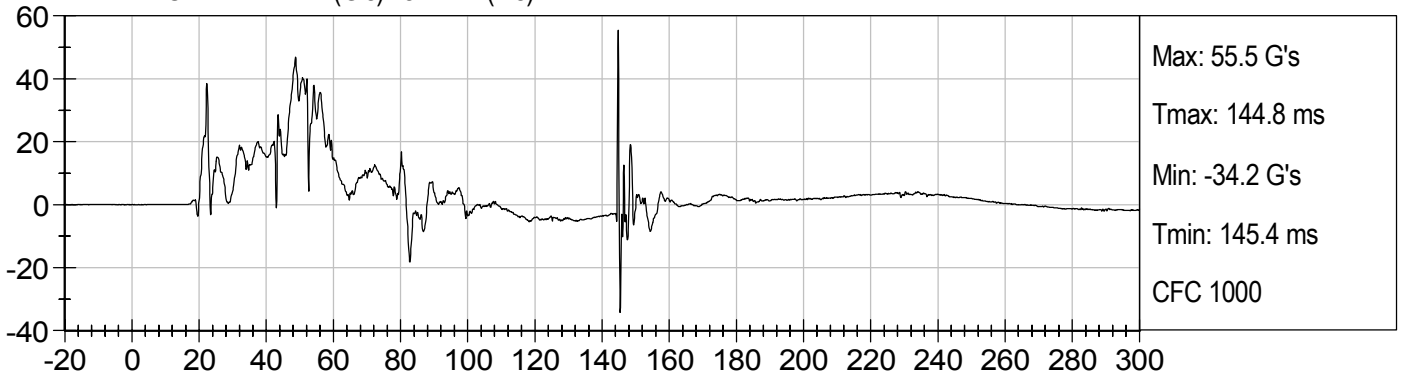
DRIVER PELVIS Y Velocity (kph) vs TIME (ms)



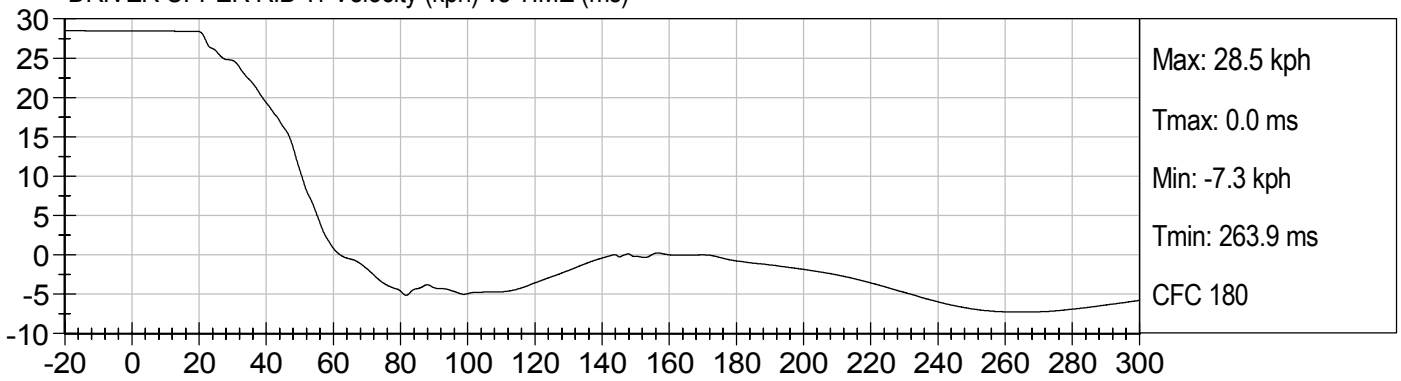
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

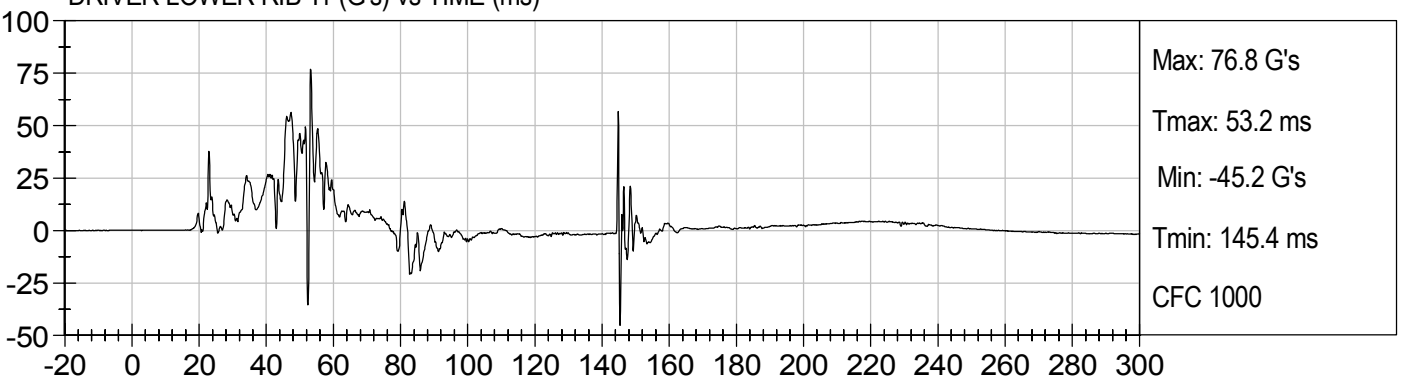
DRIVER UPPER RIB Yr (G's) vs TIME (ms)



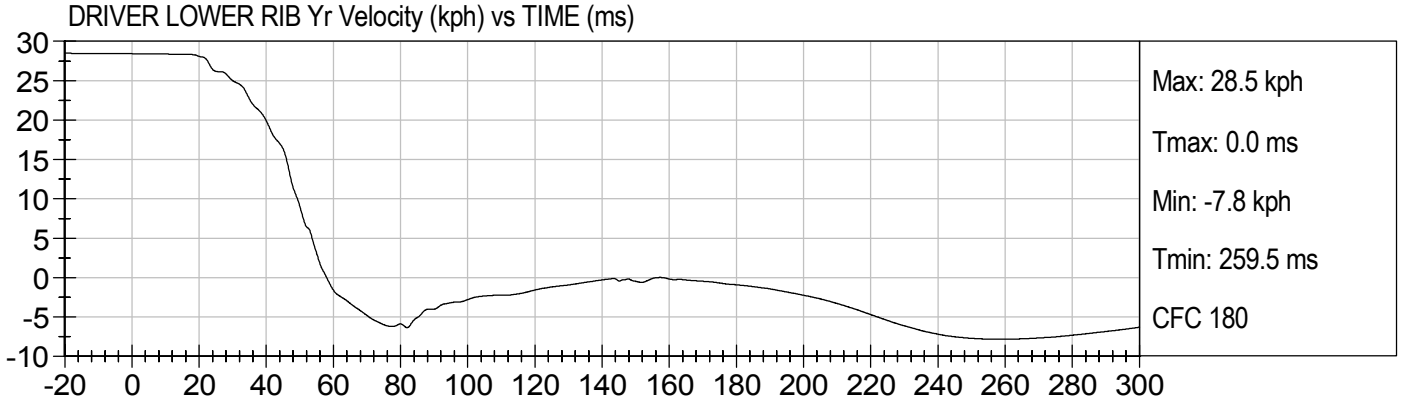
DRIVER UPPER RIB Yr Velocity (kph) vs TIME (ms)



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



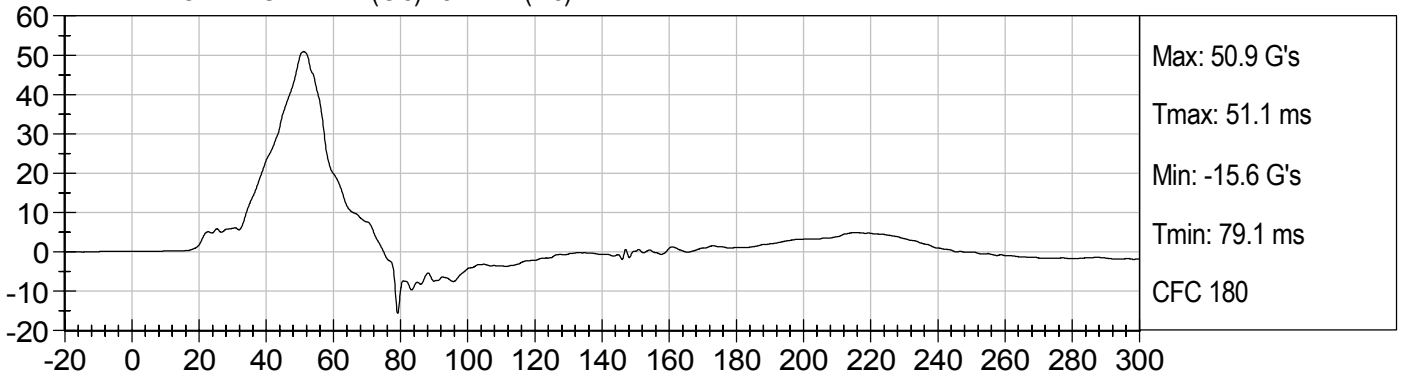
DRIVER LOWER RIB Yr Velocity (kph) vs TIME (ms)



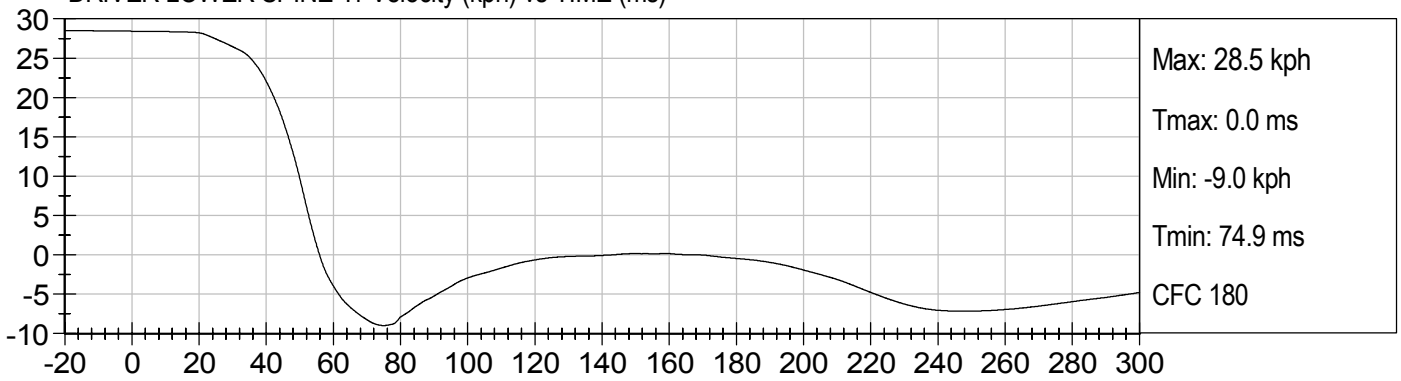
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

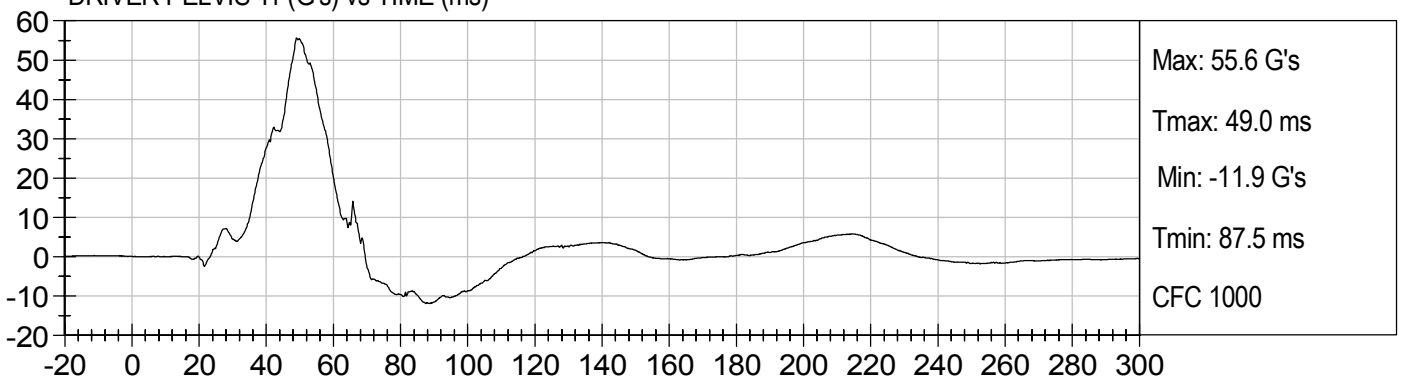
DRIVER LOWER SPINE Yr (G's) vs TIME (ms)



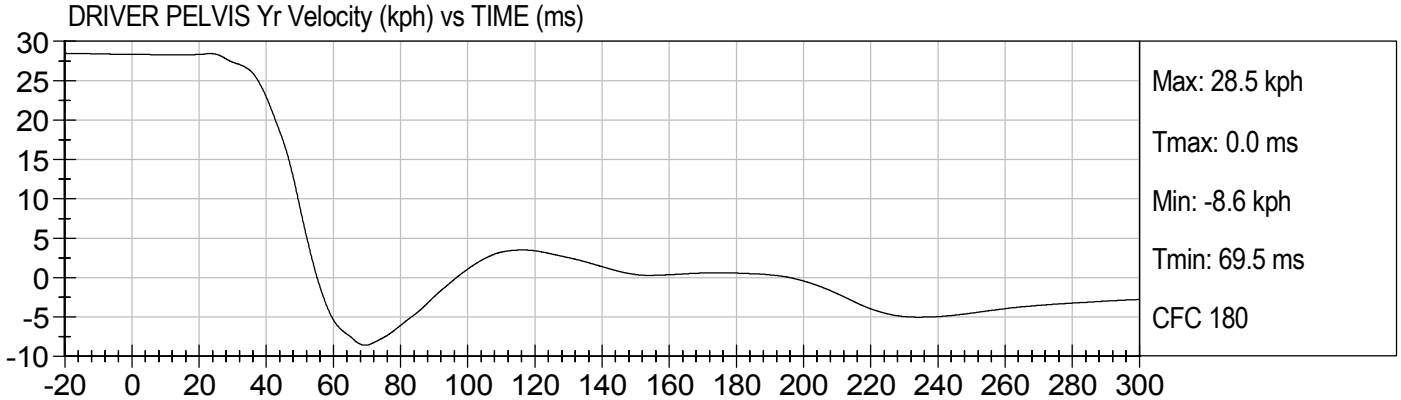
DRIVER LOWER SPINE Yr Velocity (kph) vs TIME (ms)



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



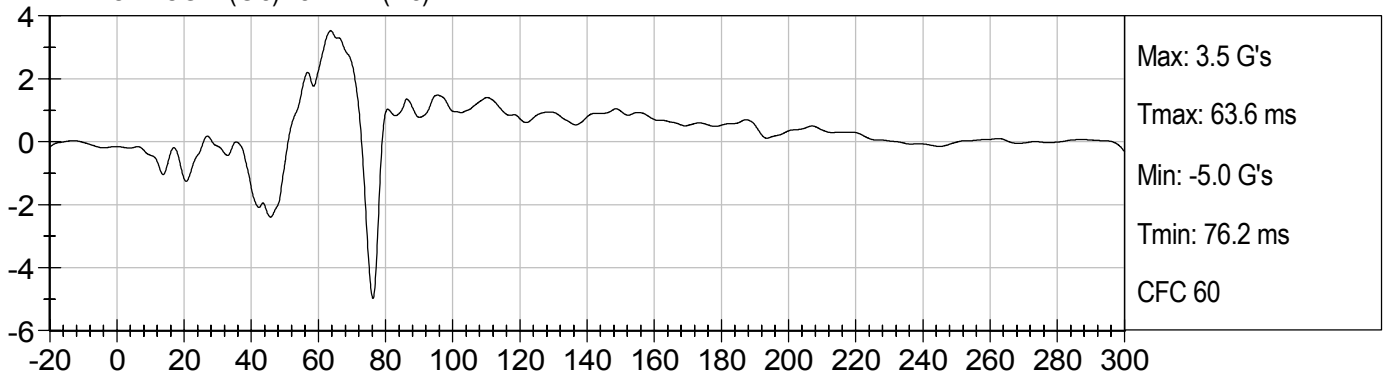
DRIVER PELVIS Yr Velocity (kph) vs TIME (ms)



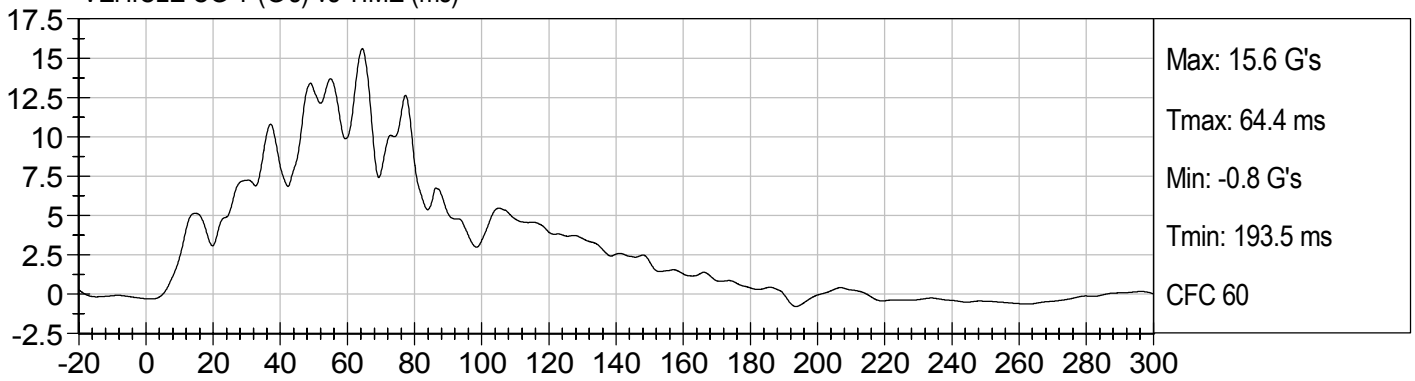
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

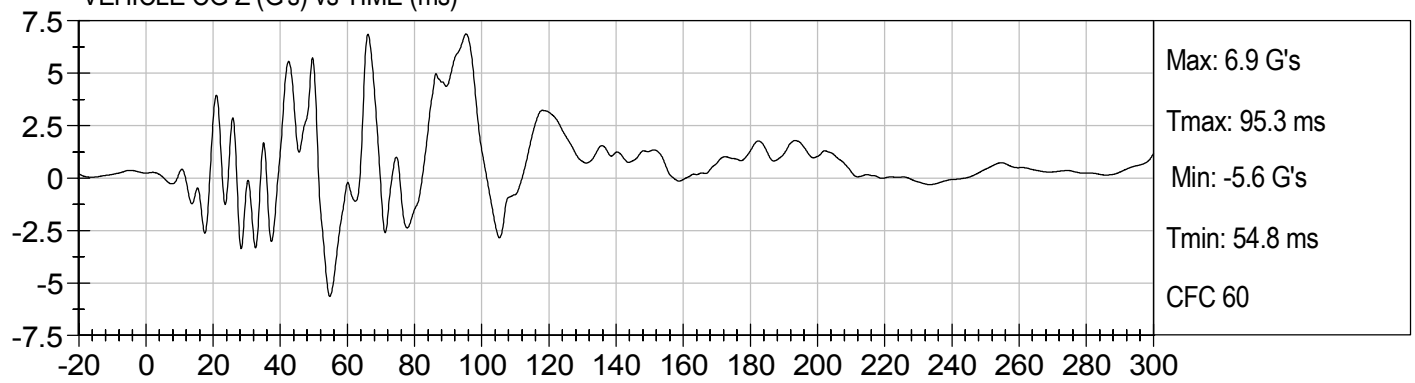
VEHICLE CG X (G's) vs TIME (ms)



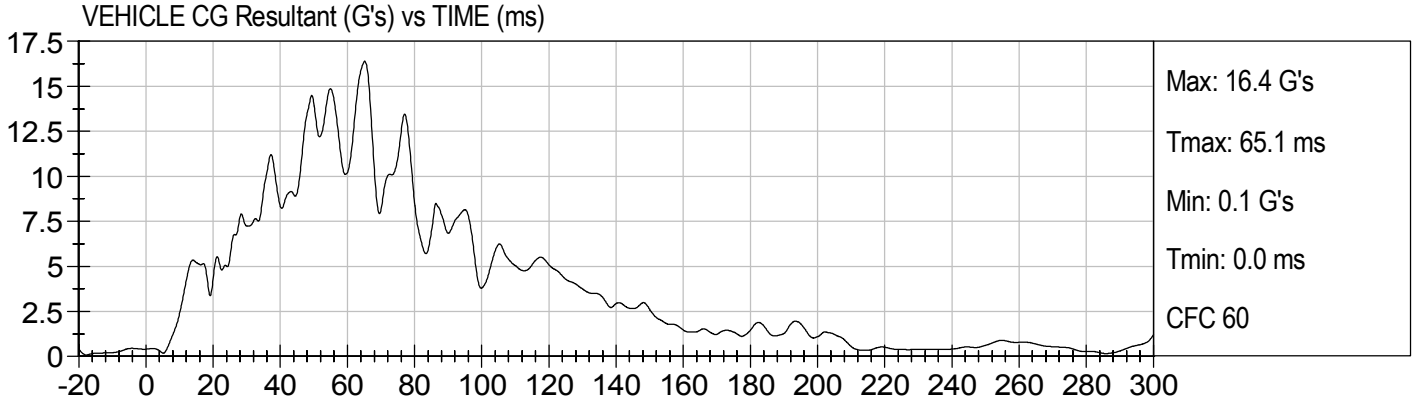
VEHICLE CG Y (G's) vs TIME (ms)

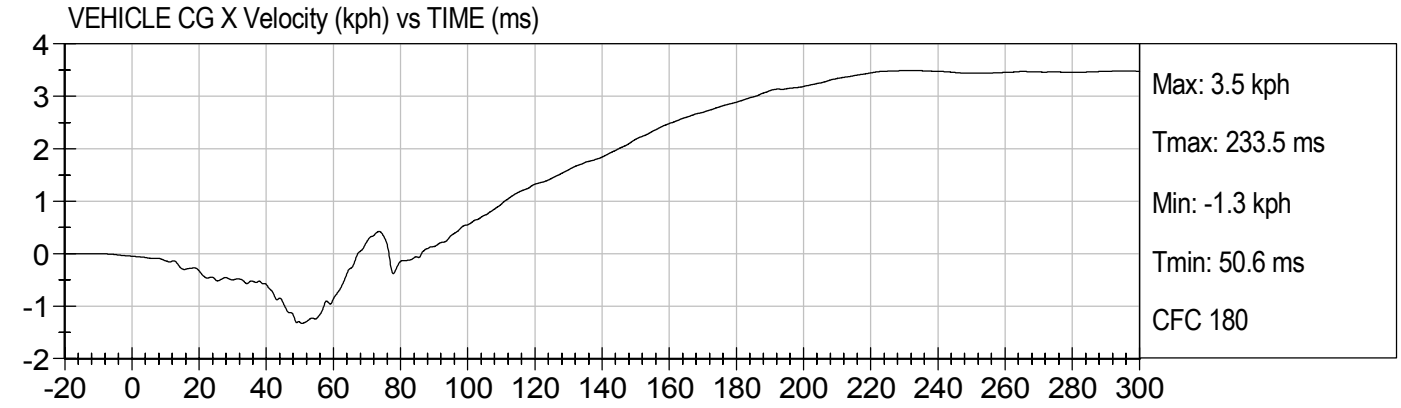


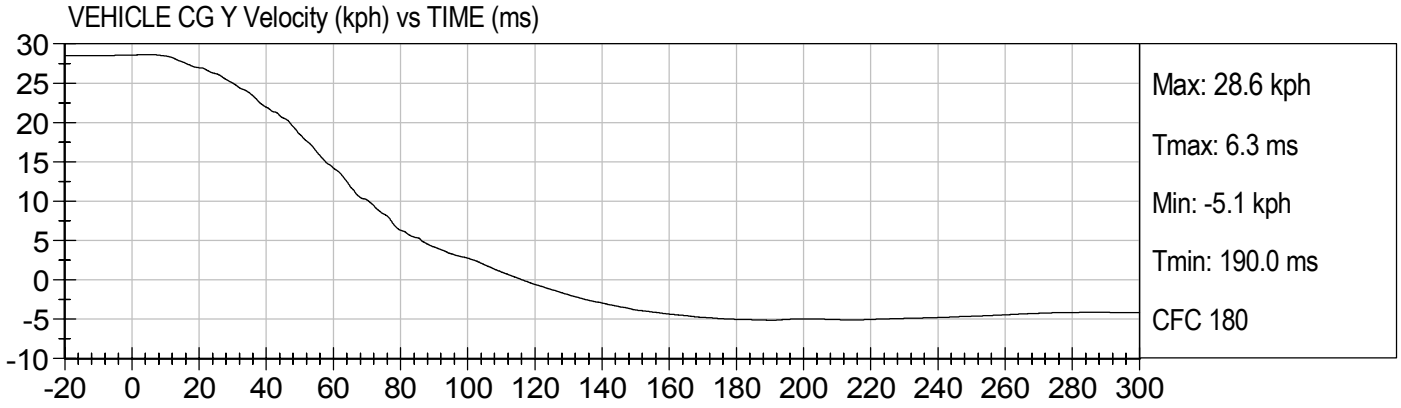
VEHICLE CG Z (G's) vs TIME (ms)

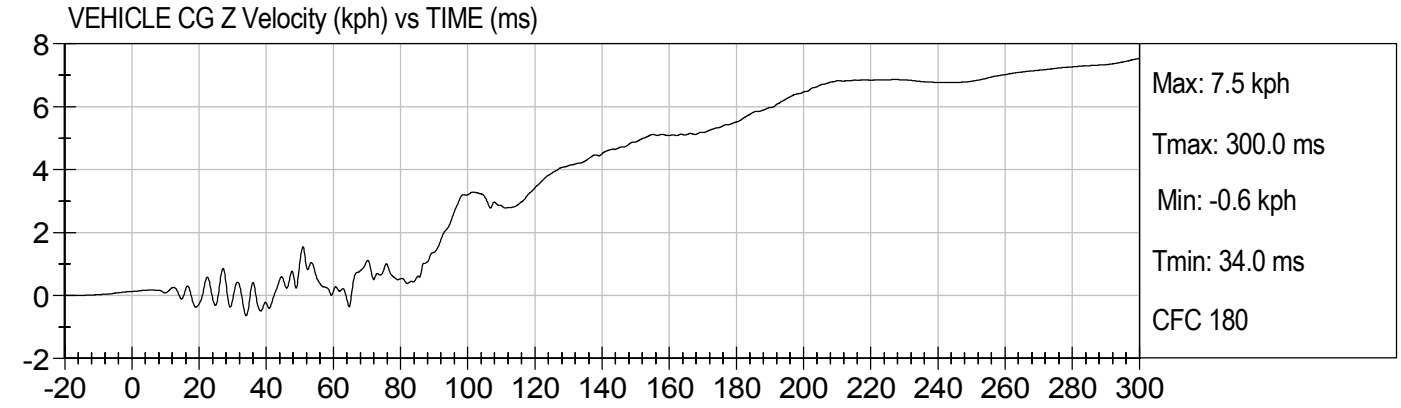


VEHICLE CG Resultant (G's) vs TIME (ms)




VEHICLE CG X Velocity (kph) vs TIME (ms)
4
3
2
1
0
-1
-2
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 3.5 kph
Tmax: 233.5 ms
Min: -1.3 kph
Tmin: 50.6 ms
CFC 180

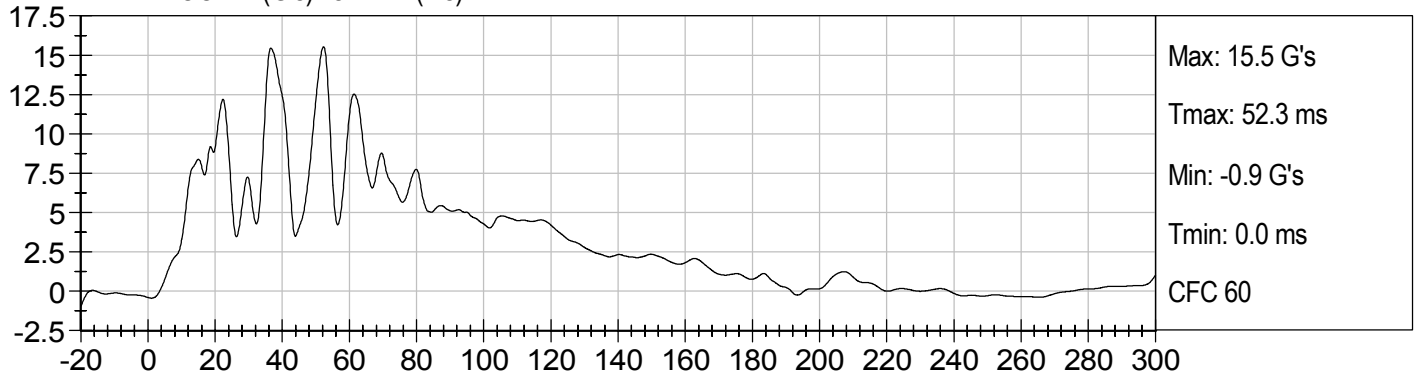

VEHICLE CG Y Velocity (kph) vs TIME (ms)
30
25
20
15
10
5
0
-5
-10
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 28.6 kph
Tmax: 6.3 ms
Min: -5.1 kph
Tmin: 190.0 ms
CFC 180


VEHICLE CG Z Velocity (kph) vs TIME (ms)
8
6
4
2
0
-2
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 7.5 kph
Tmax: 300.0 ms
Min: -0.6 kph
Tmin: 34.0 ms
CFC 180

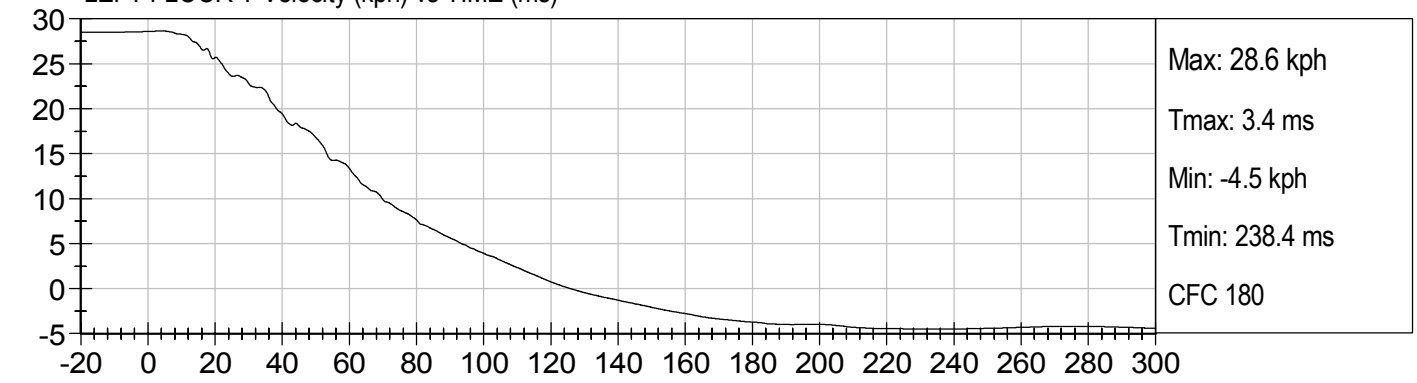
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

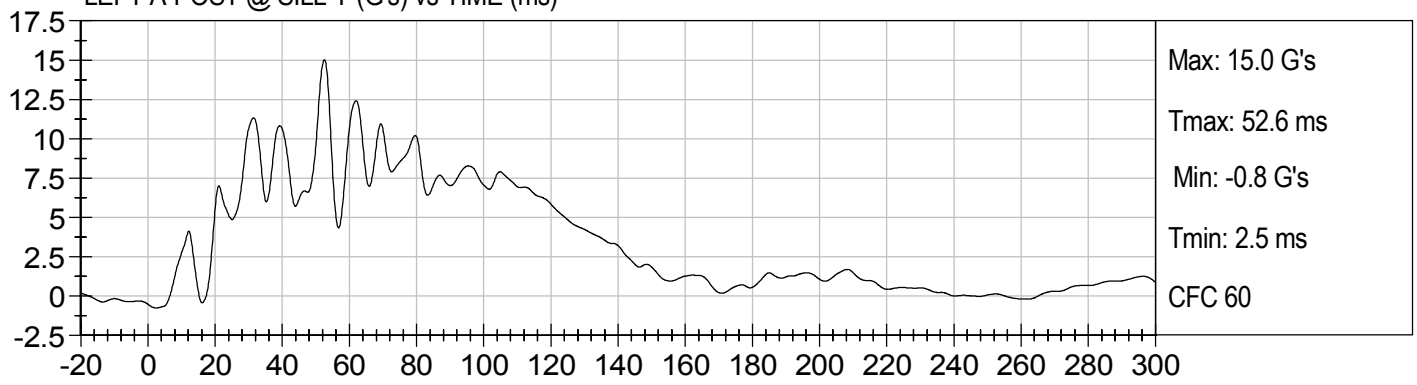
LEFT FLOOR Y (G's) vs TIME (ms)



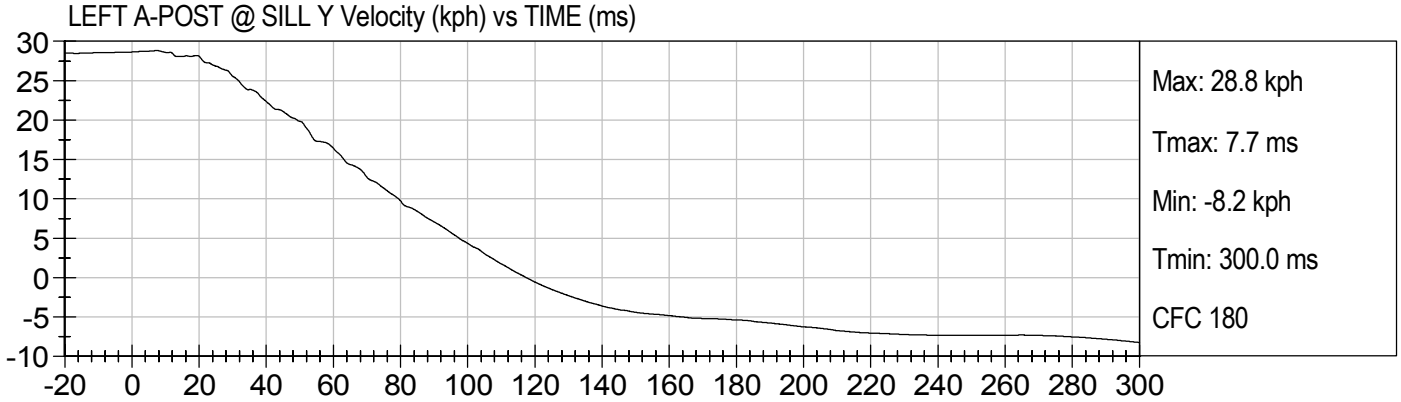
LEFT FLOOR Y Velocity (kph) vs TIME (ms)



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



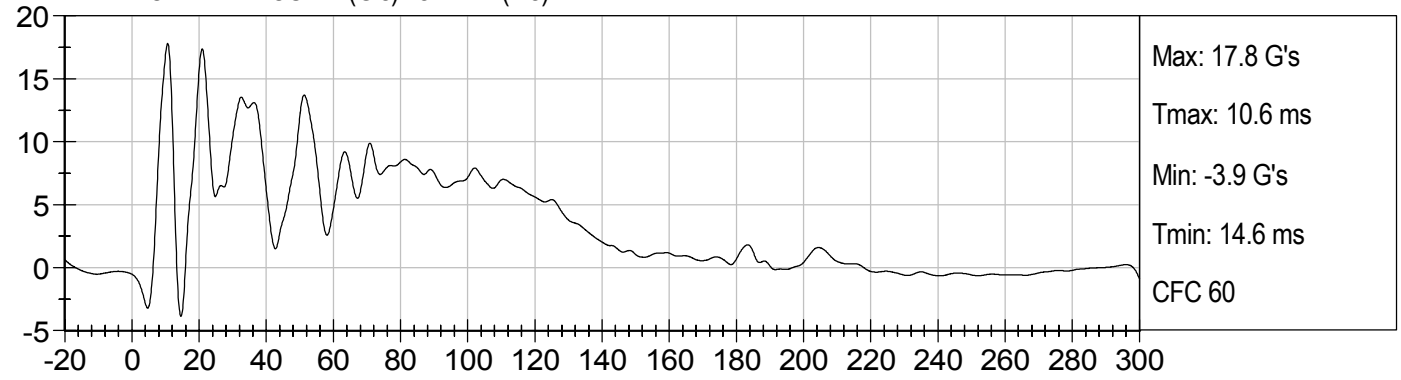
LEFT A-POST @ SILL Y Velocity (kph) vs TIME (ms)



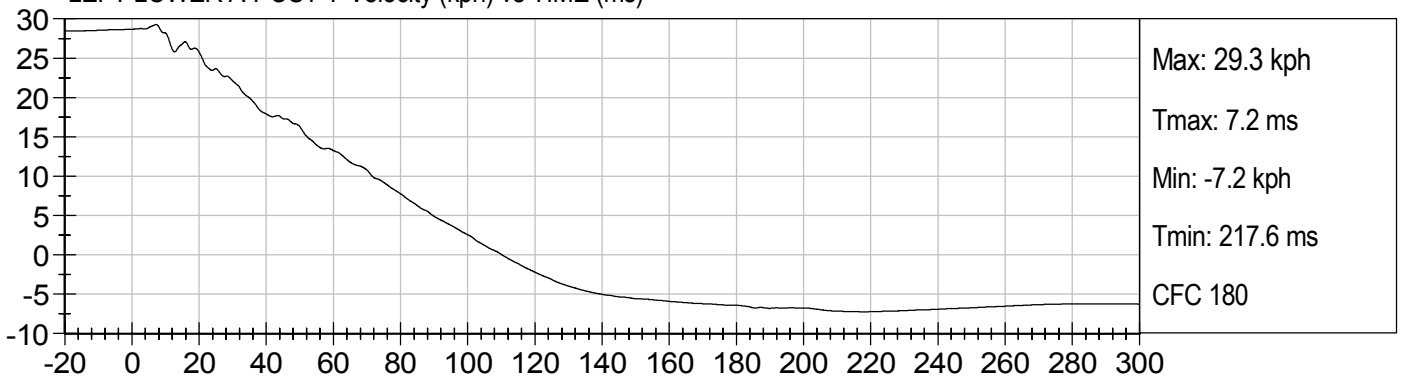
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

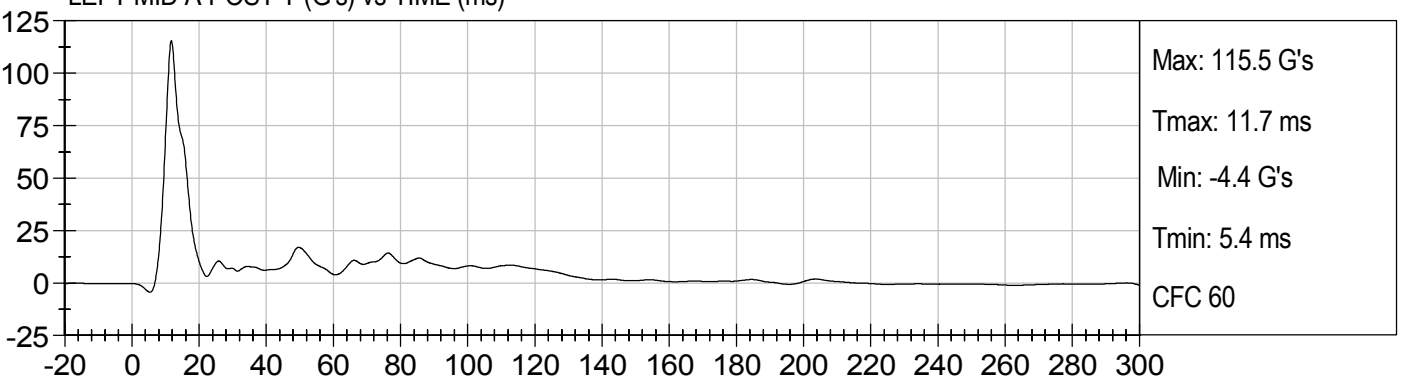
LEFT LOWER A-POST Y (G's) vs TIME (ms)



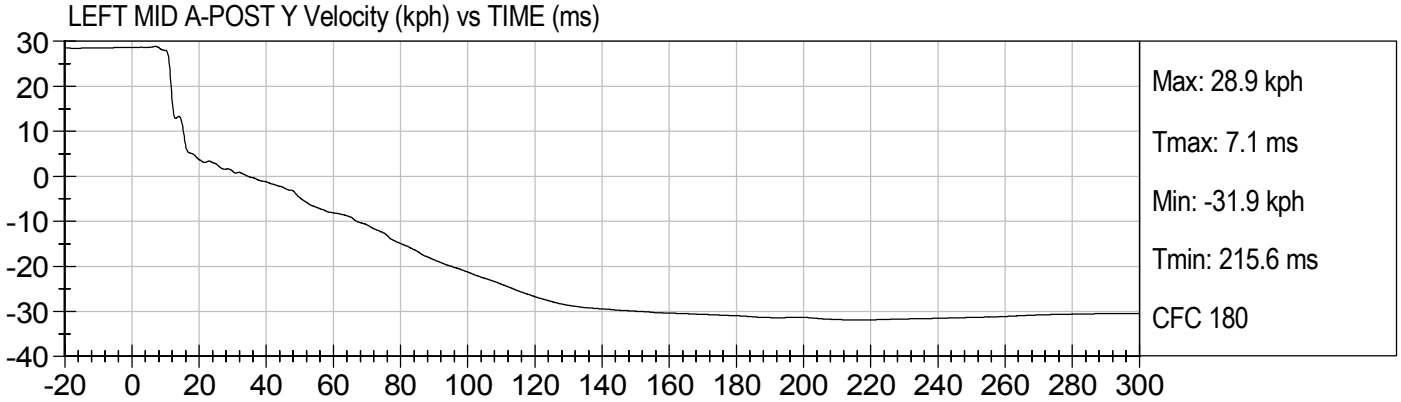
LEFT LOWER A-POST Y Velocity (kph) vs TIME (ms)



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



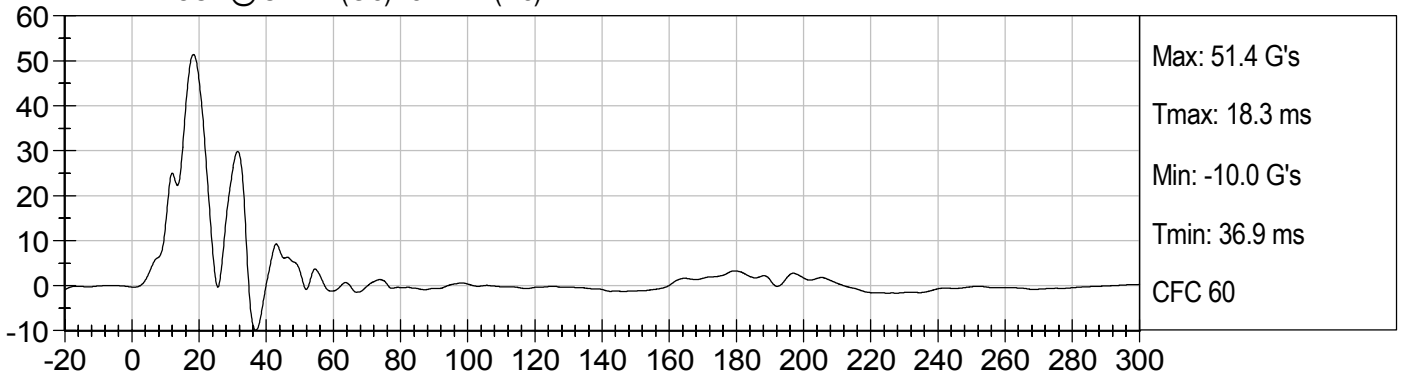
LEFT MID A-POST Y Velocity (kph) vs TIME (ms)



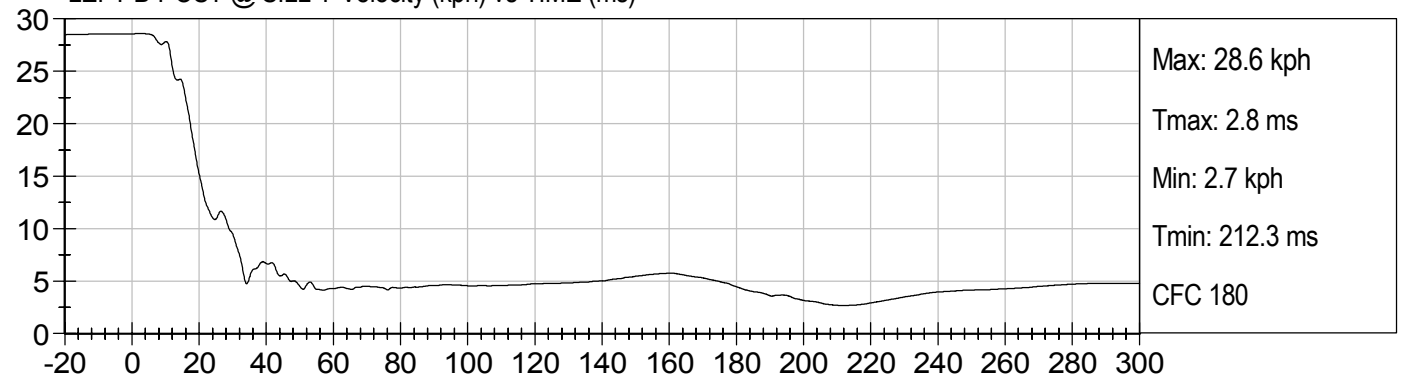
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

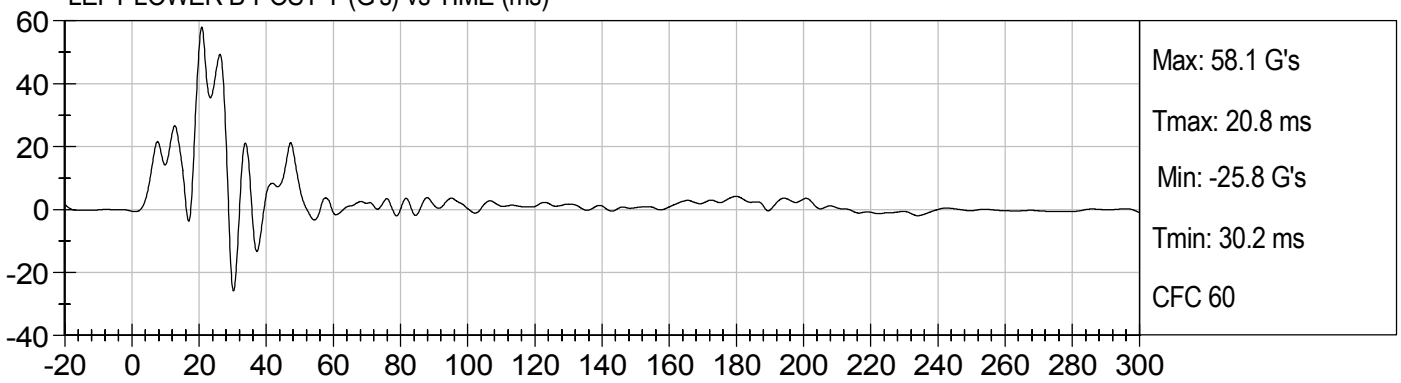
LEFT B-POST @ SILL Y (G's) vs TIME (ms)



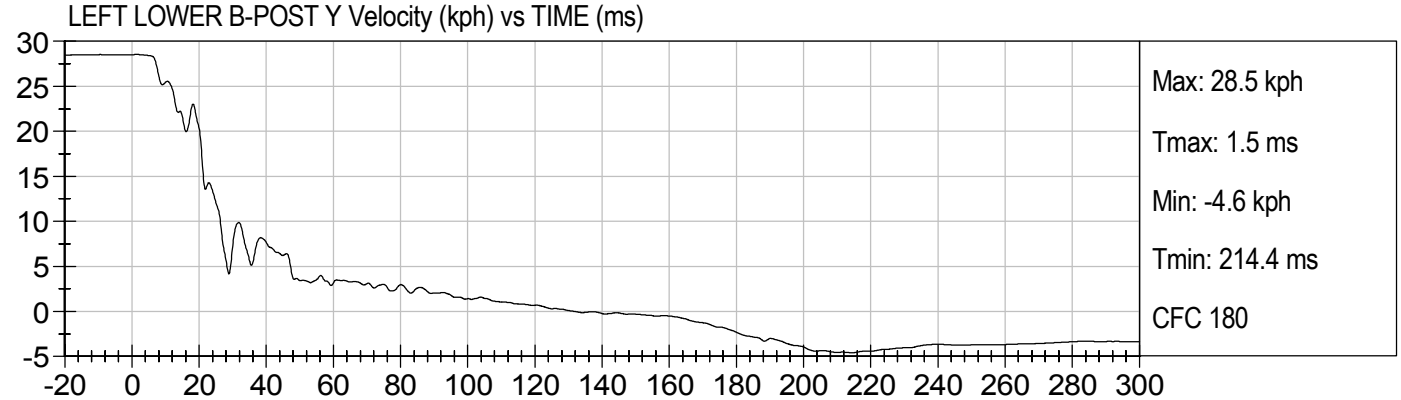
LEFT B-POST @ SILL Y Velocity (kph) vs TIME (ms)



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



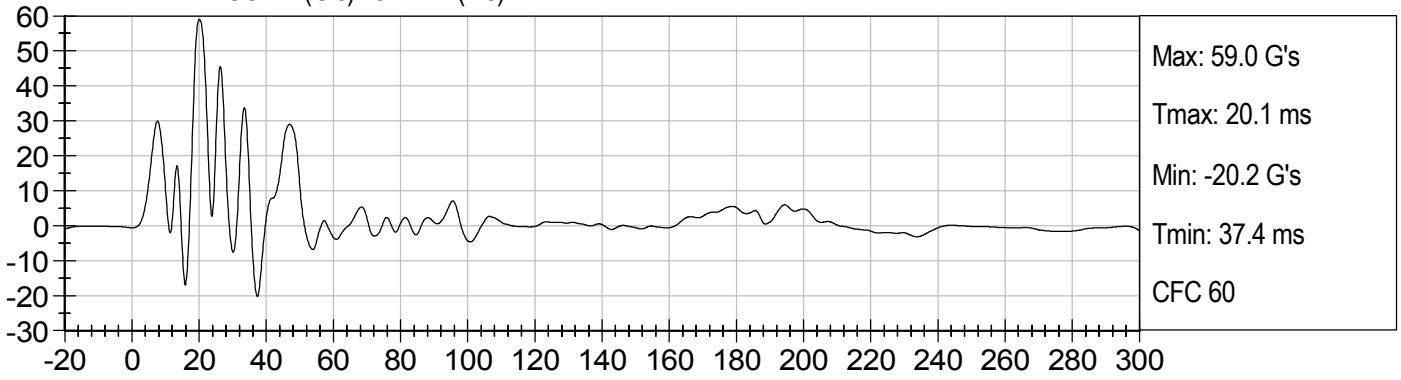
LEFT LOWER B-POST Y Velocity (kph) vs TIME (ms)



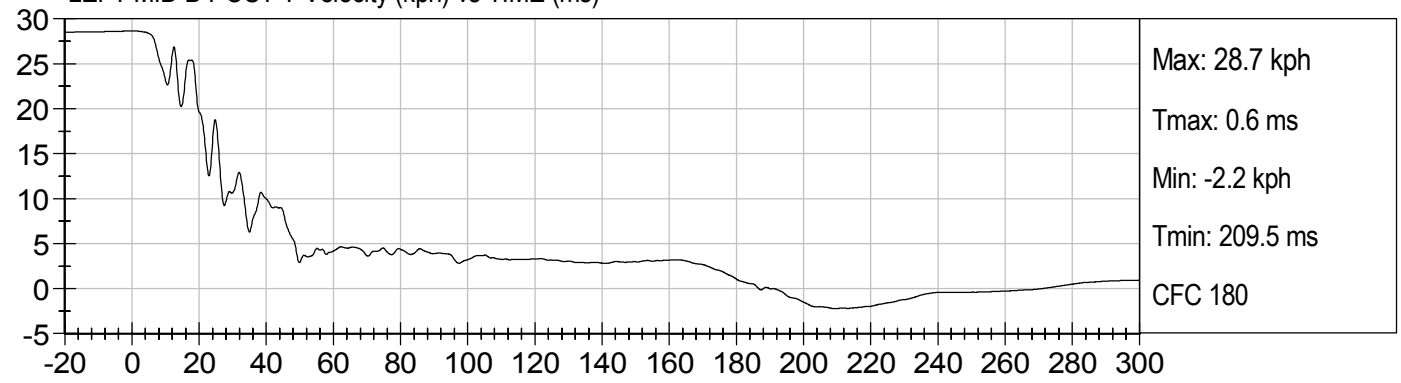
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

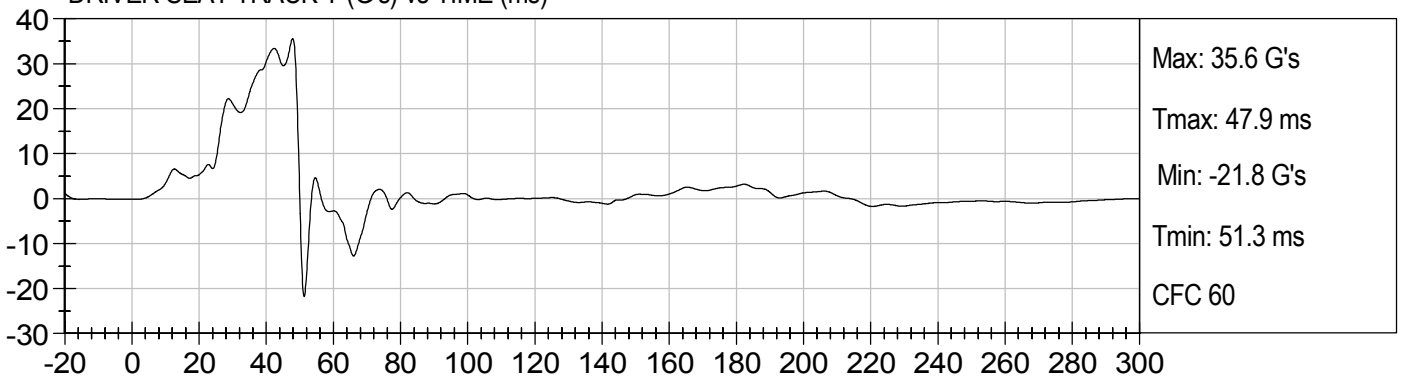
LEFT MID B-POST Y (G's) vs TIME (ms)



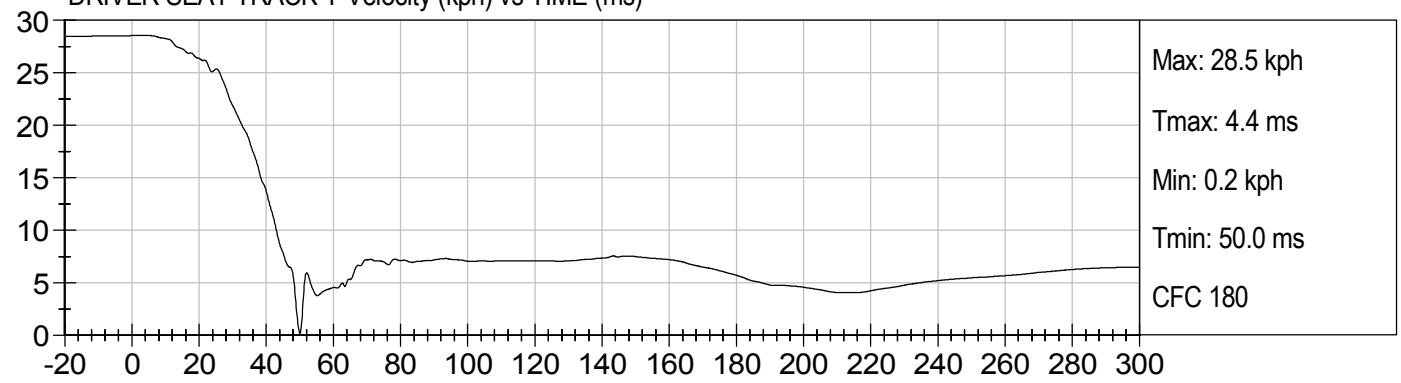
LEFT MID B-POST Y Velocity (kph) vs TIME (ms)



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

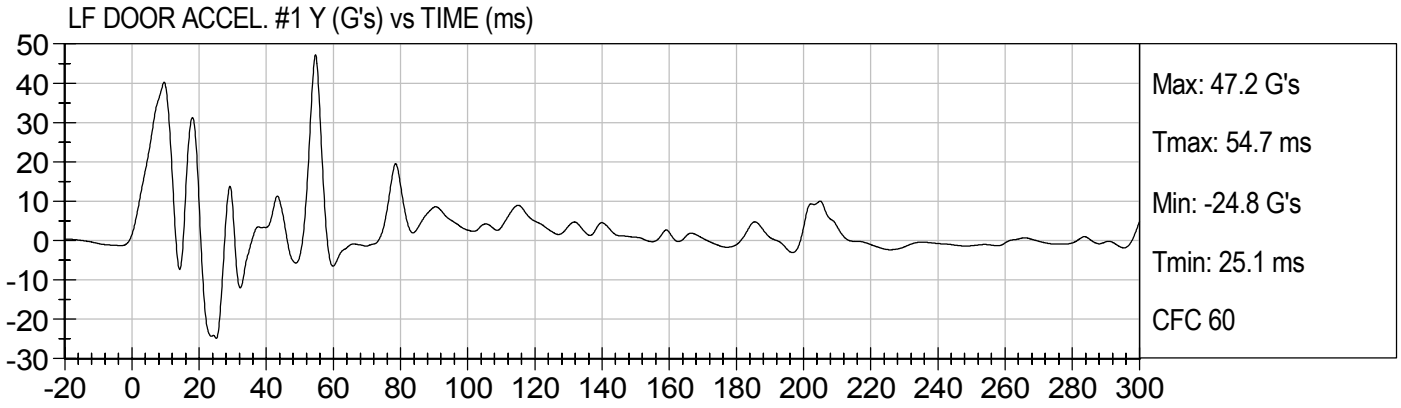


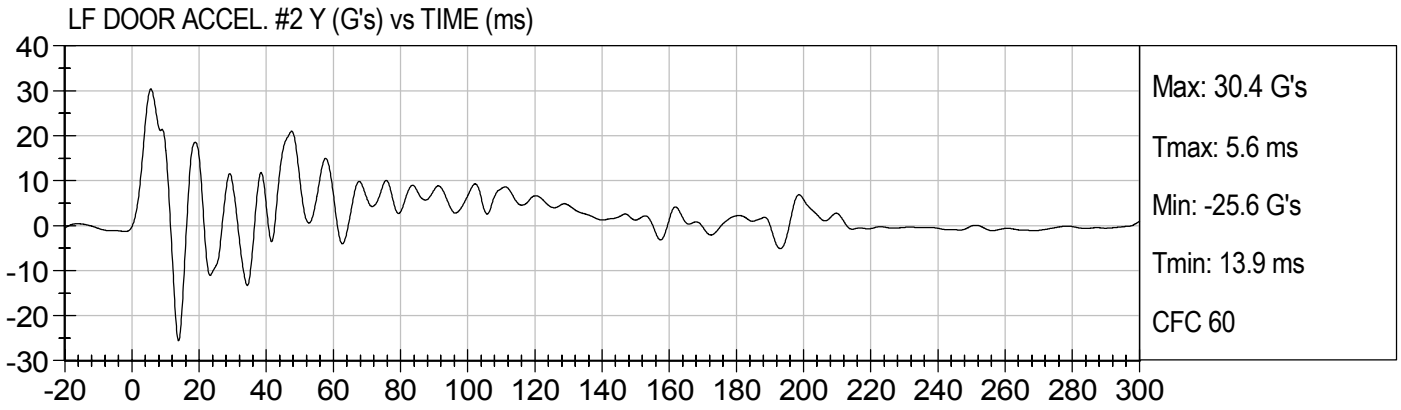
DRIVER SEAT TRACK Y Velocity (kph) vs TIME (ms)

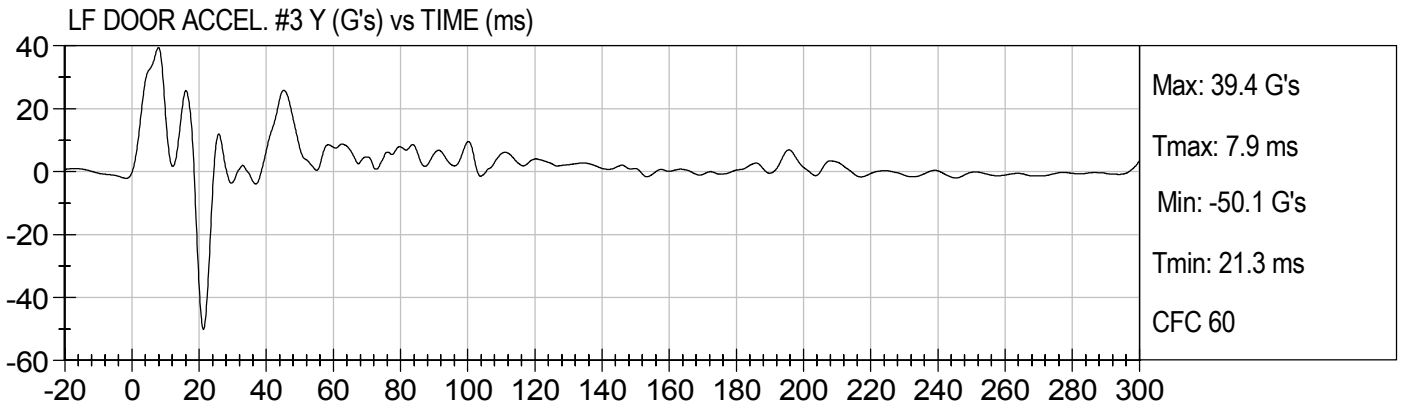


RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

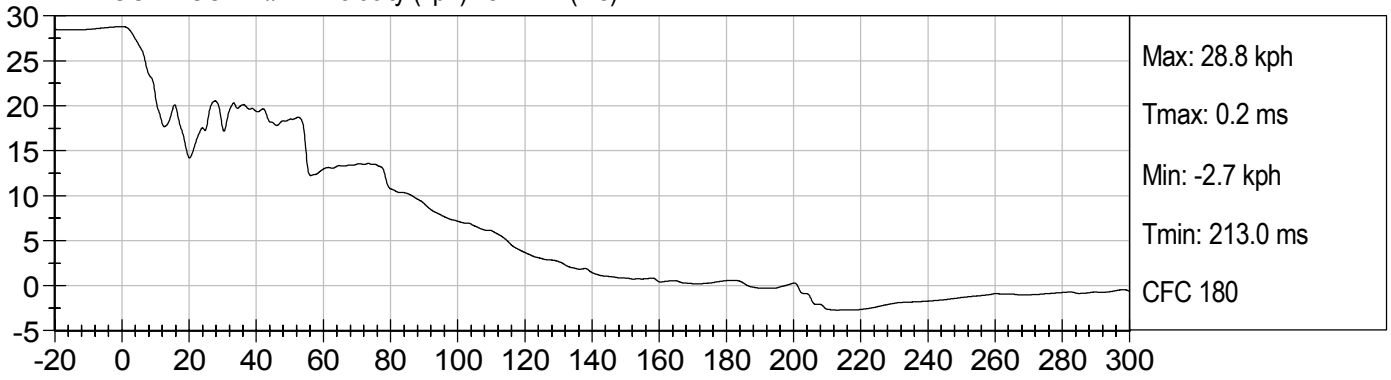
Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)



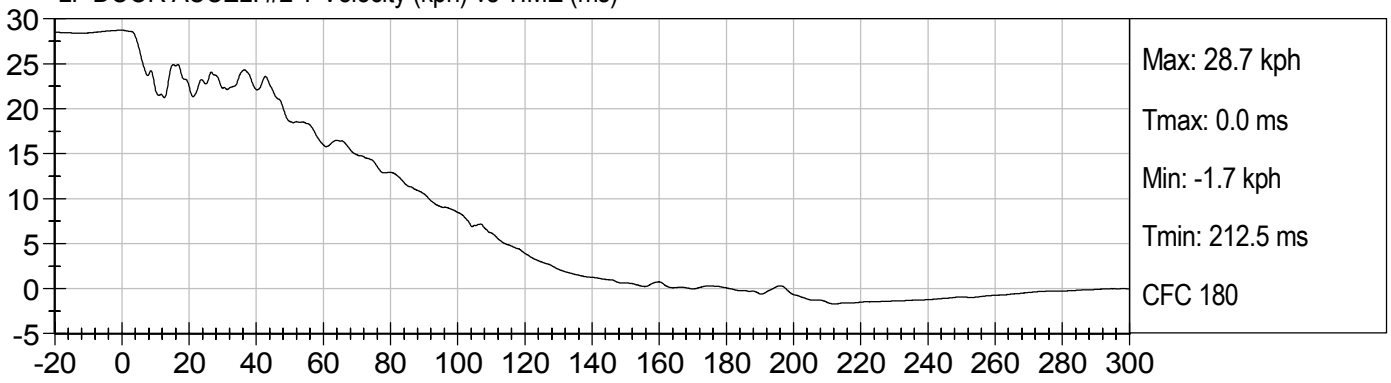




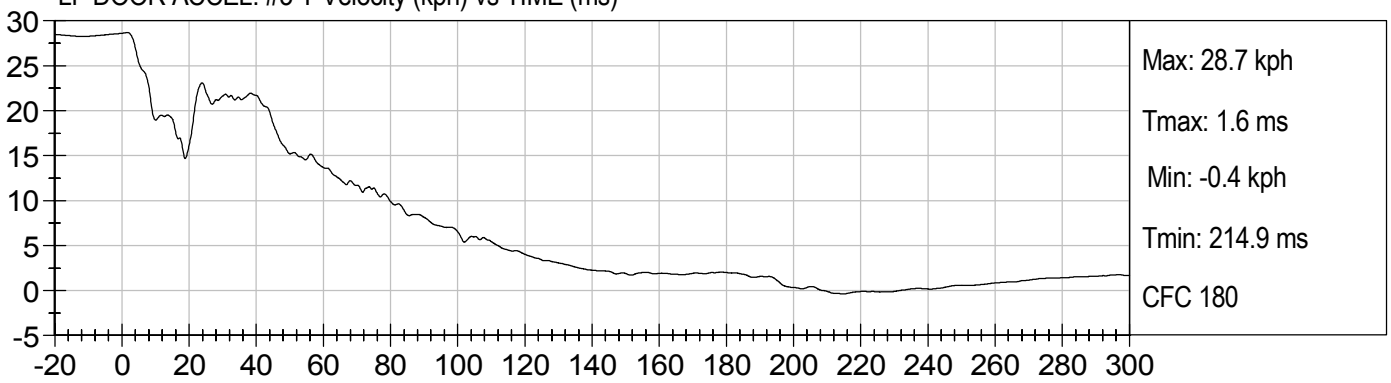
LF DOOR ACCEL. #1 Y Velocity (kph) vs TIME (ms)



LF DOOR ACCEL. #2 Y Velocity (kph) vs TIME (ms)



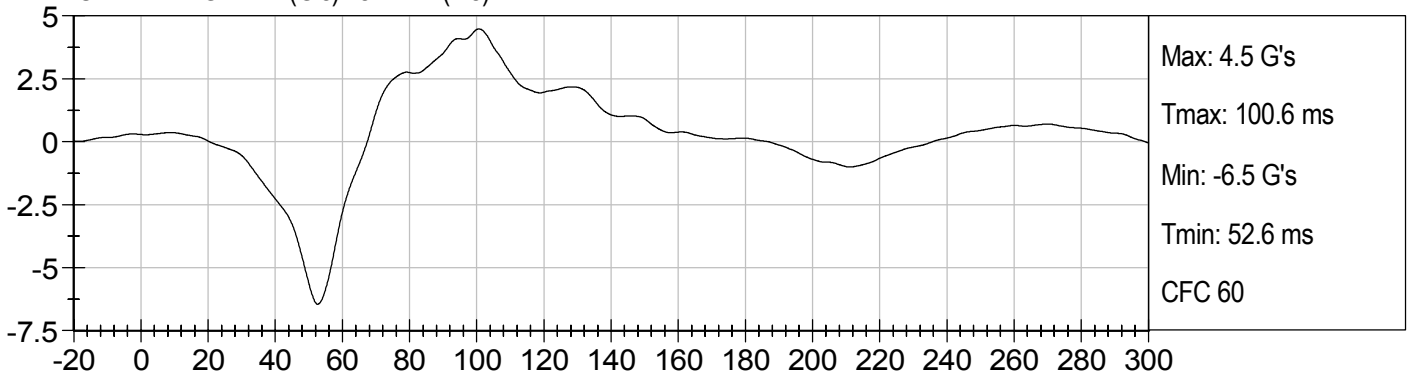
LF DOOR ACCEL. #3 Y Velocity (kph) vs TIME (ms)



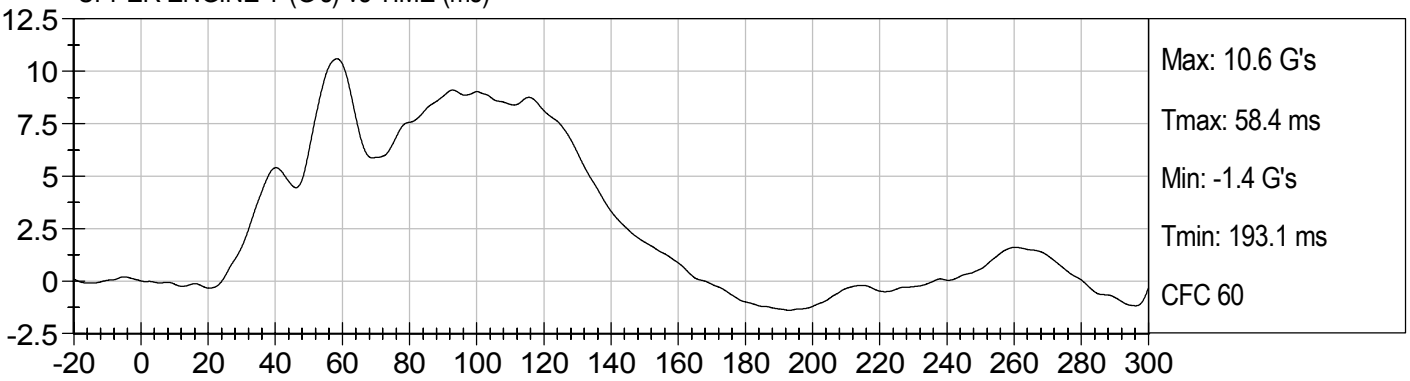
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

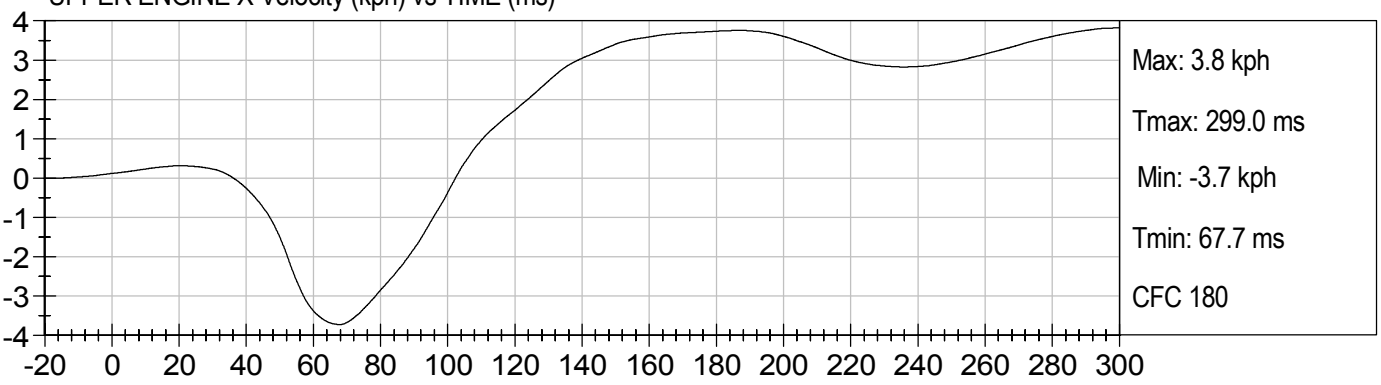
UPPER ENGINE X (G's) vs TIME (ms)



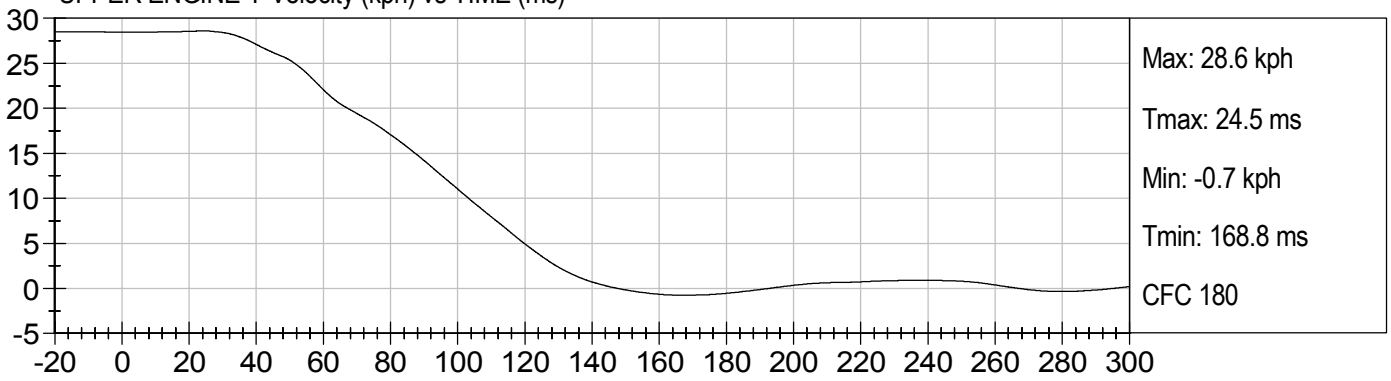
UPPER ENGINE Y (G's) vs TIME (ms)



UPPER ENGINE X Velocity (kph) vs TIME (ms)



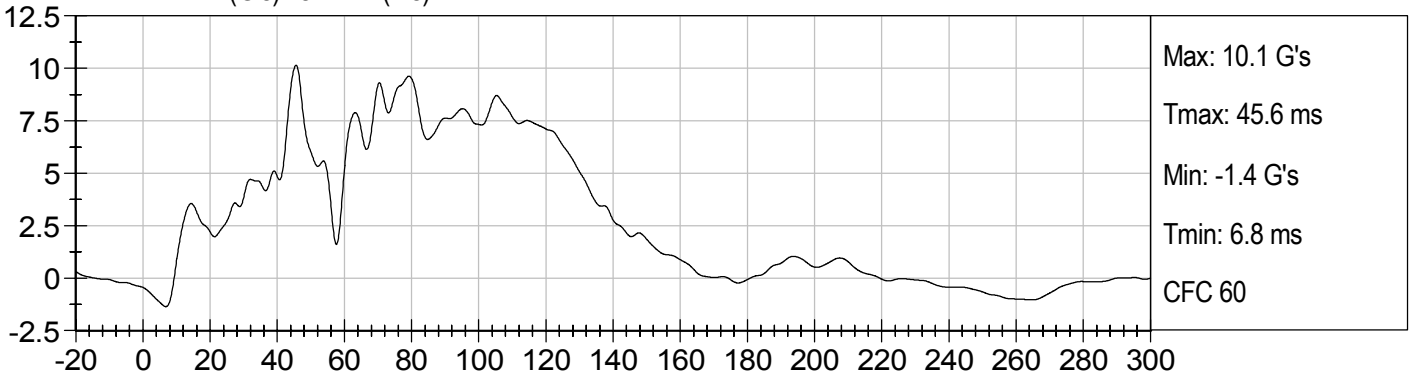
UPPER ENGINE Y Velocity (kph) vs TIME (ms)



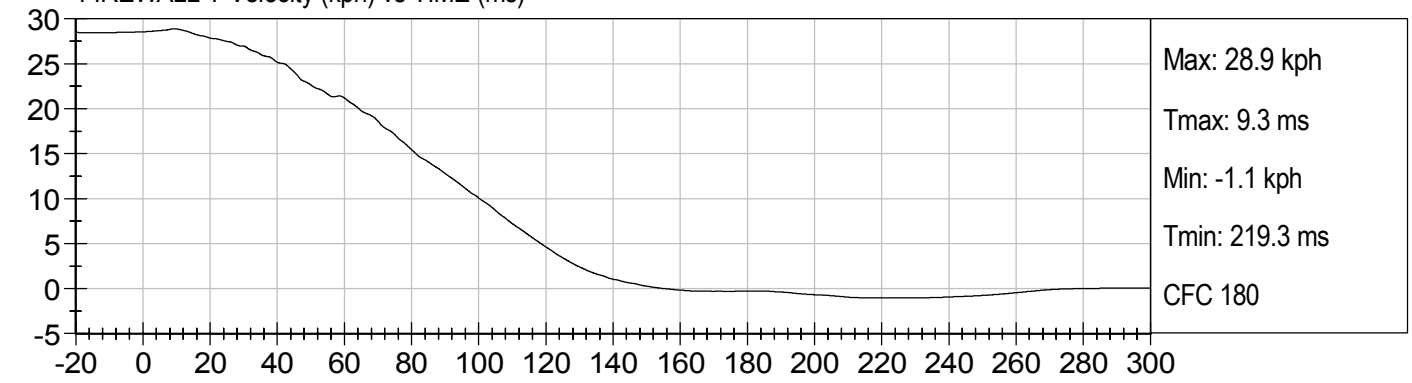
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

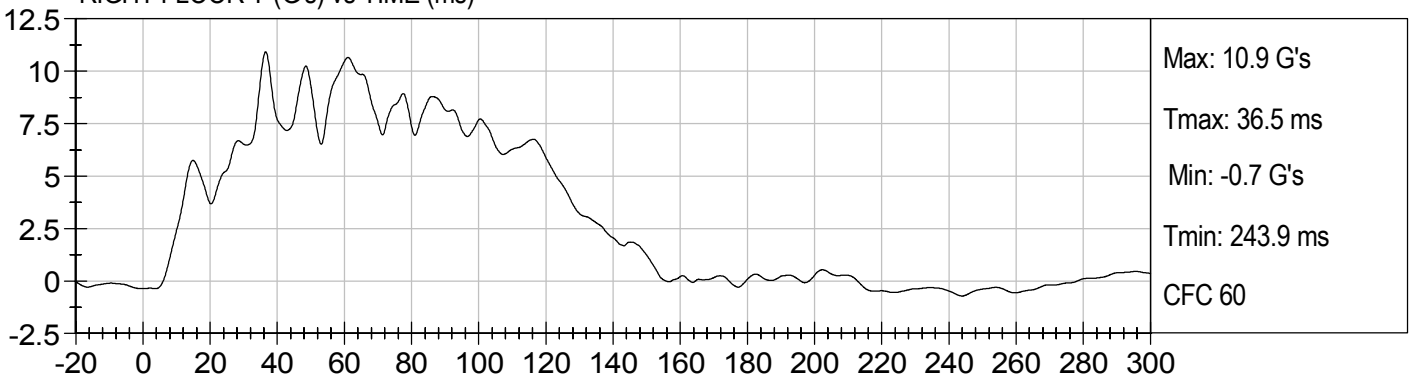
FIREWALL Y (G's) vs TIME (ms)



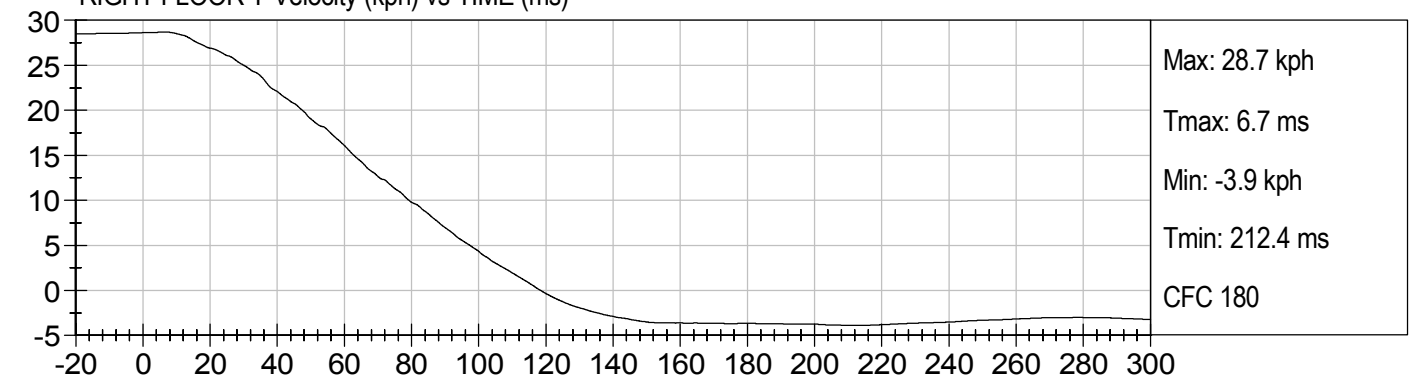
FIREWALL Y Velocity (kph) vs TIME (ms)



RIGHT FLOOR Y (G's) vs TIME (ms)



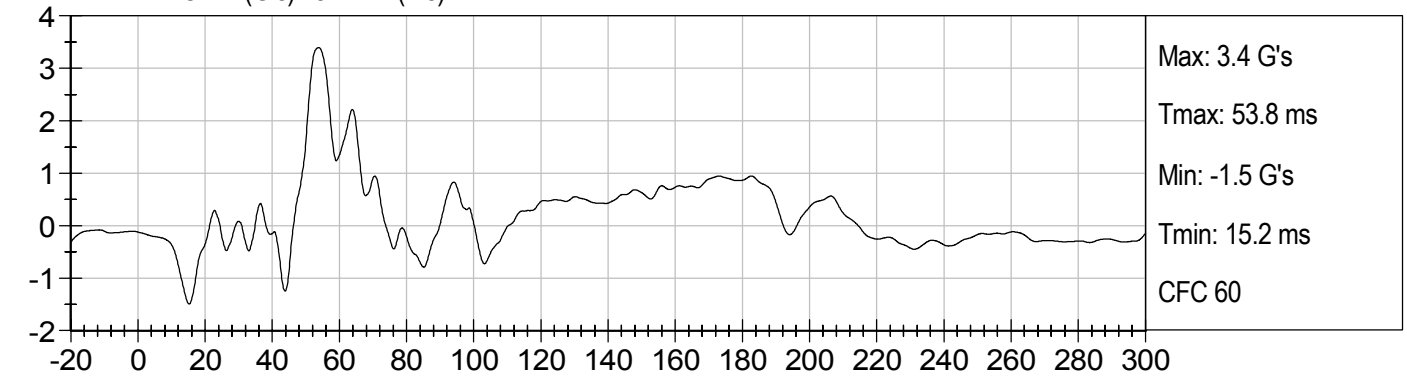
RIGHT FLOOR Y Velocity (kph) vs TIME (ms)



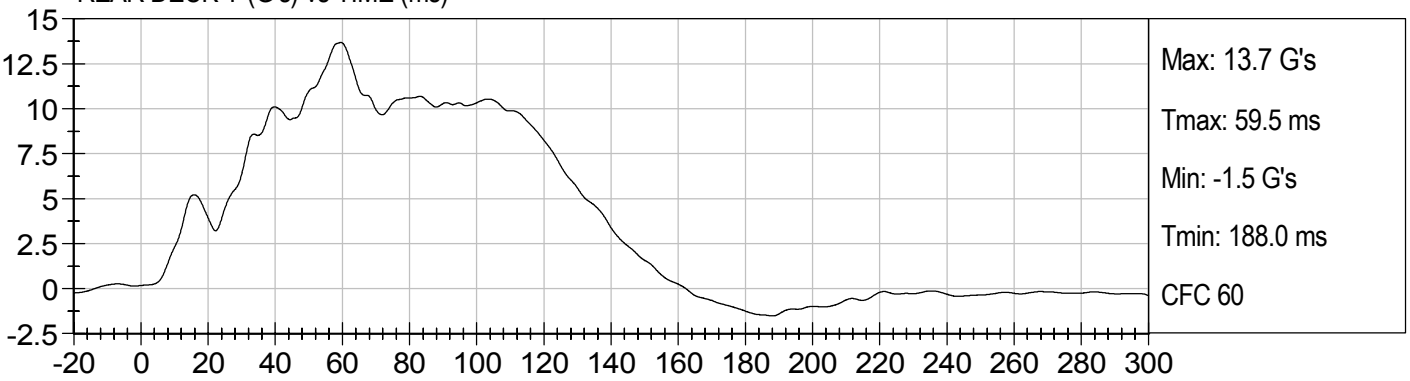
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

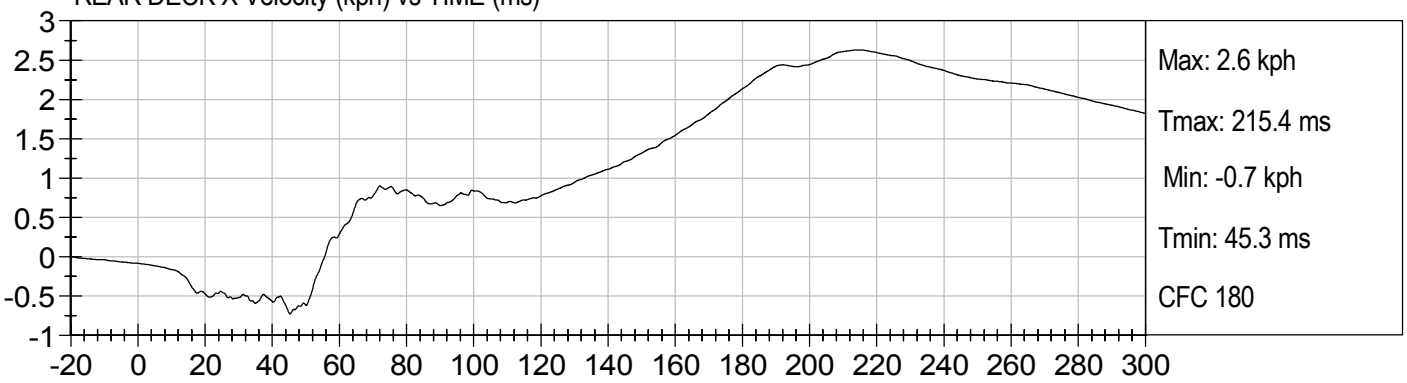
REAR DECK X (G's) vs TIME (ms)



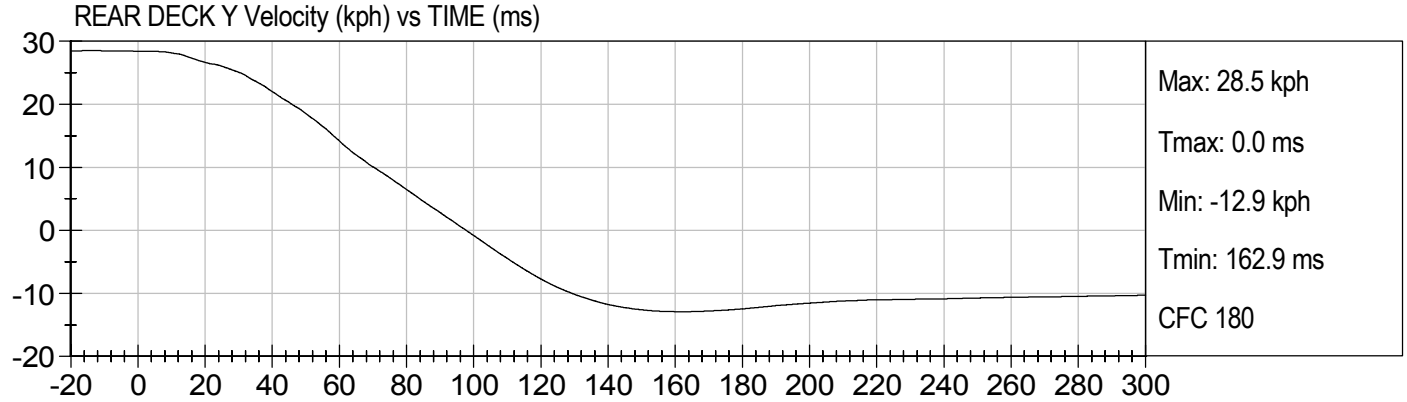
REAR DECK Y (G's) vs TIME (ms)



REAR DECK X Velocity (kph) vs TIME (ms)



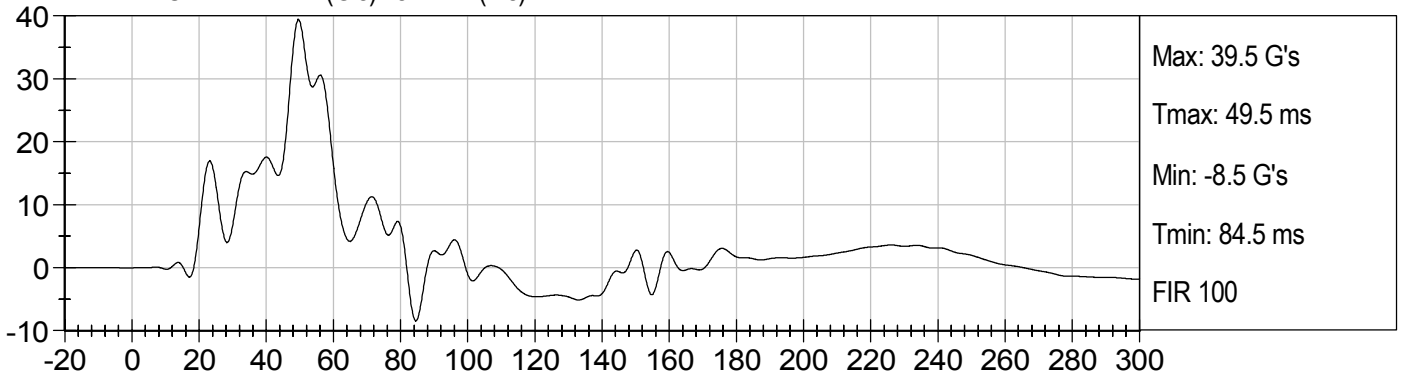
REAR DECK Y Velocity (kph) vs TIME (ms)



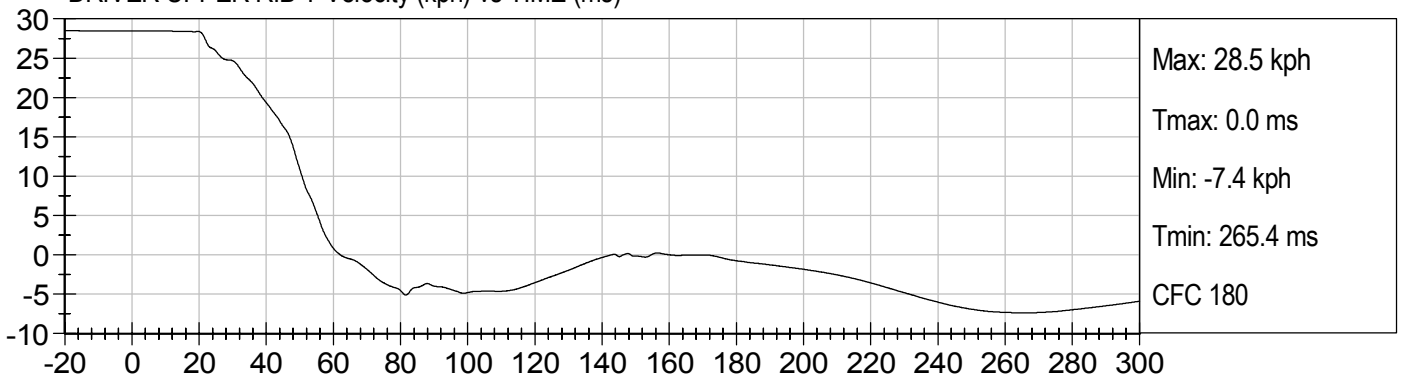
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

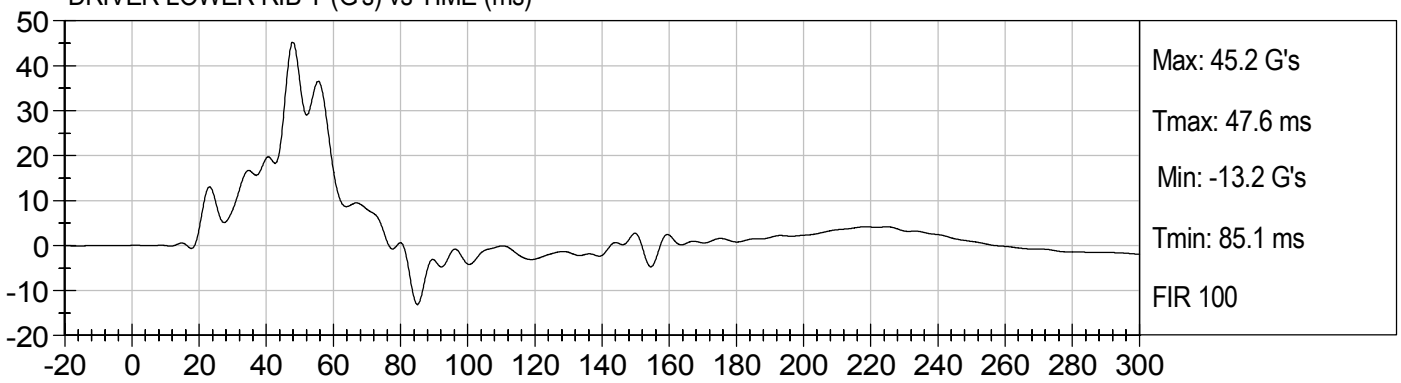
DRIVER UPPER RIB Y (G's) vs TIME (ms)



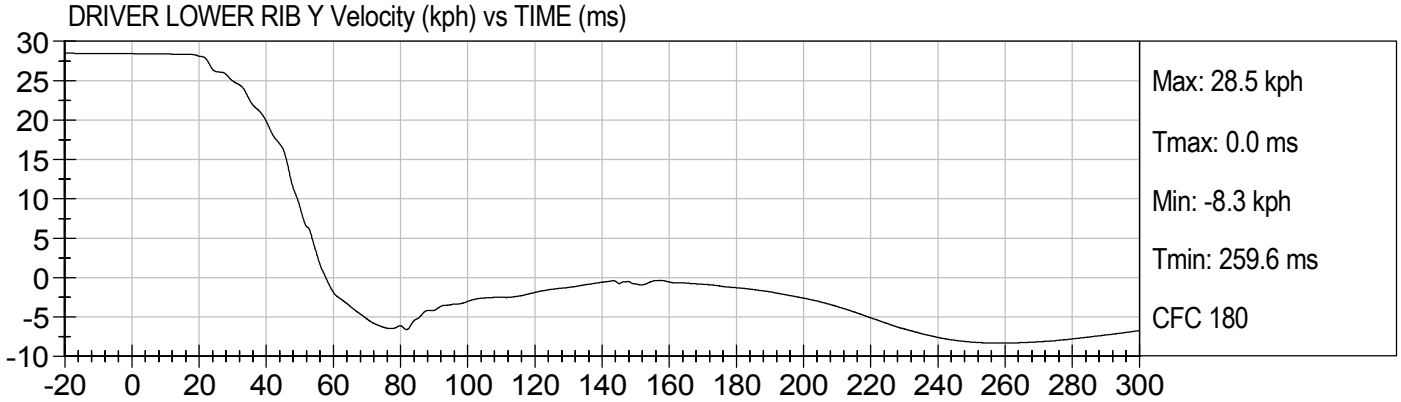
DRIVER UPPER RIB Y Velocity (kph) vs TIME (ms)



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



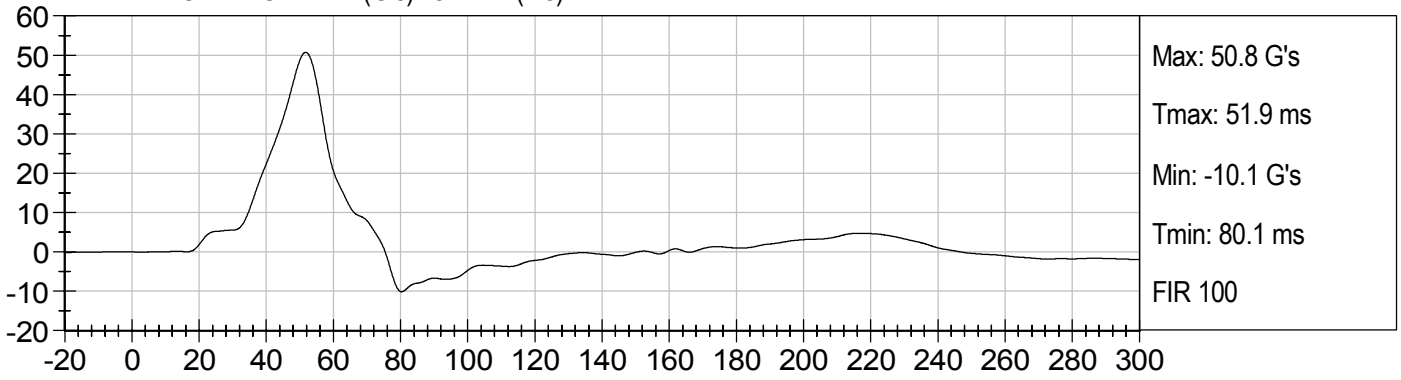
DRIVER LOWER RIB Y Velocity (kph) vs TIME (ms)



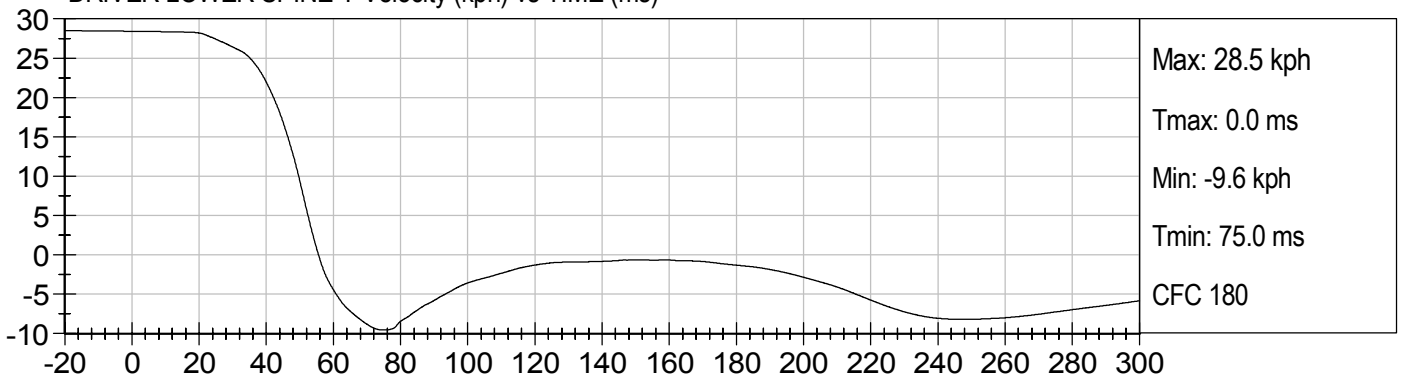
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

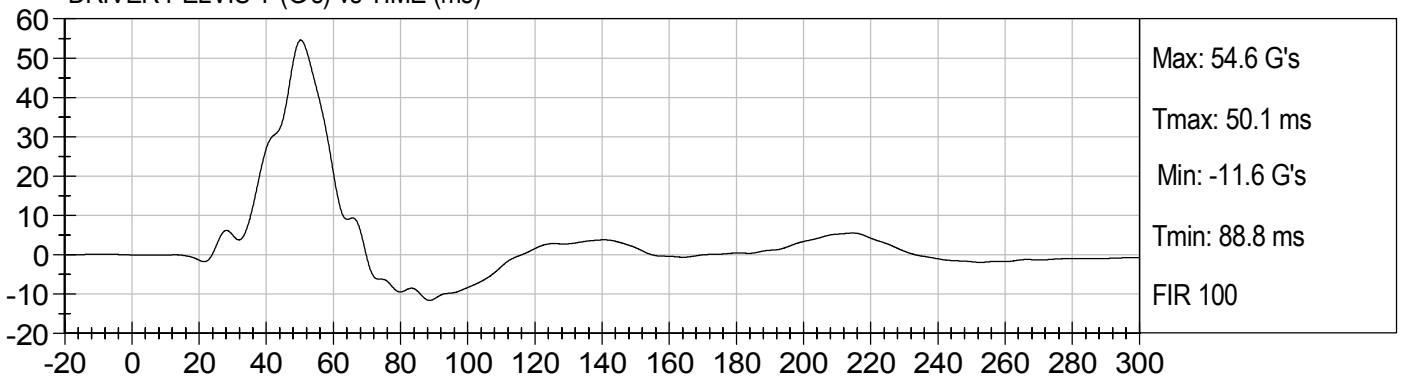
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



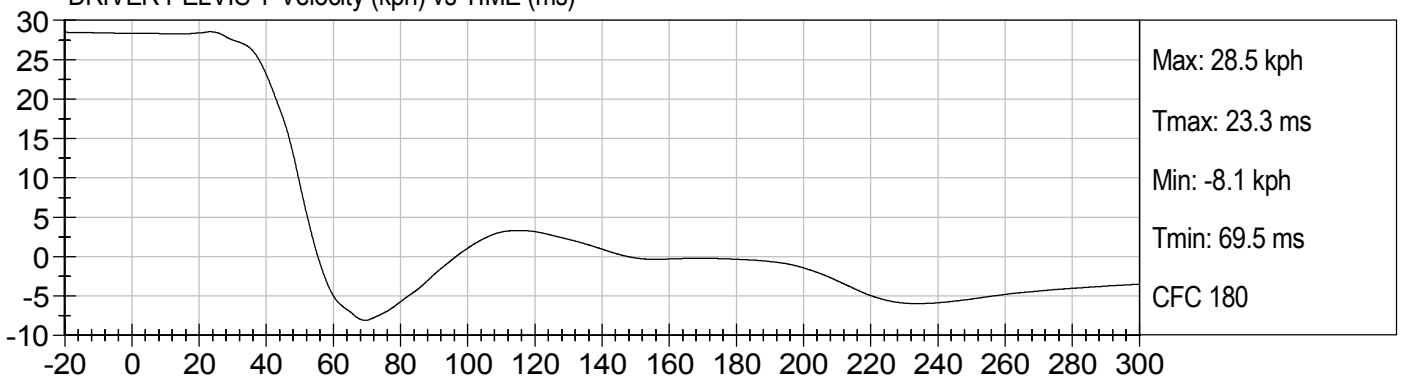
DRIVER LOWER SPINE Y Velocity (kph) vs TIME (ms)



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



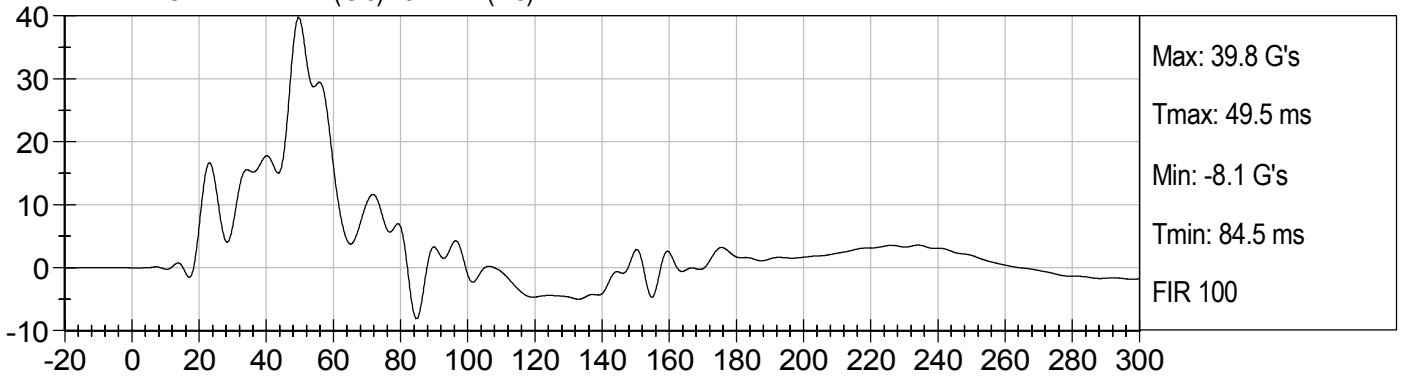
DRIVER PELVIS Y Velocity (kph) vs TIME (ms)



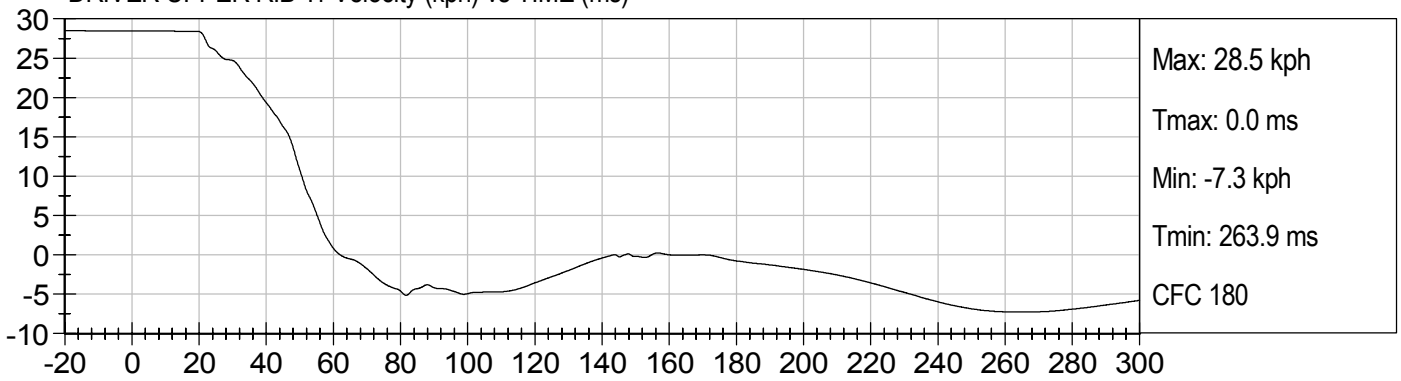
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

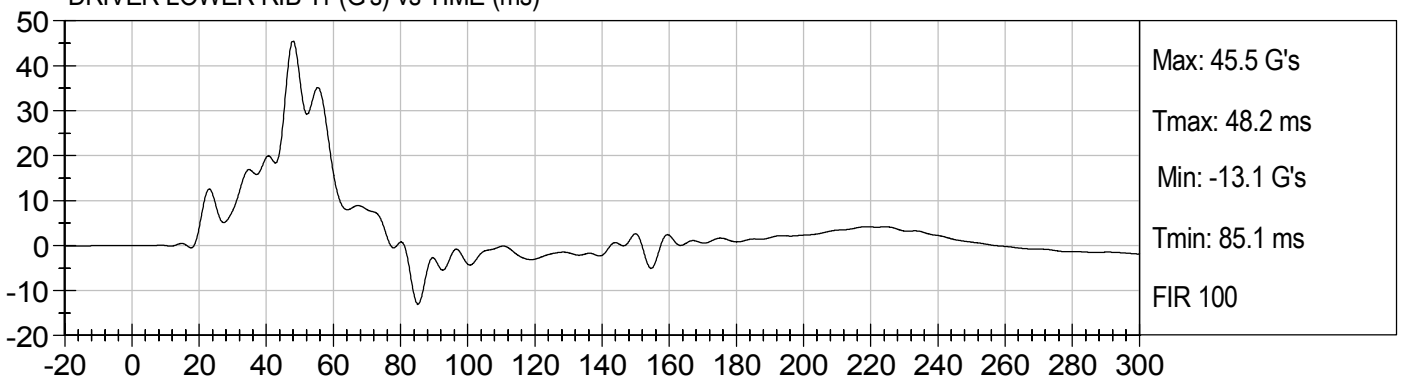
DRIVER UPPER RIB Yr (G's) vs TIME (ms)



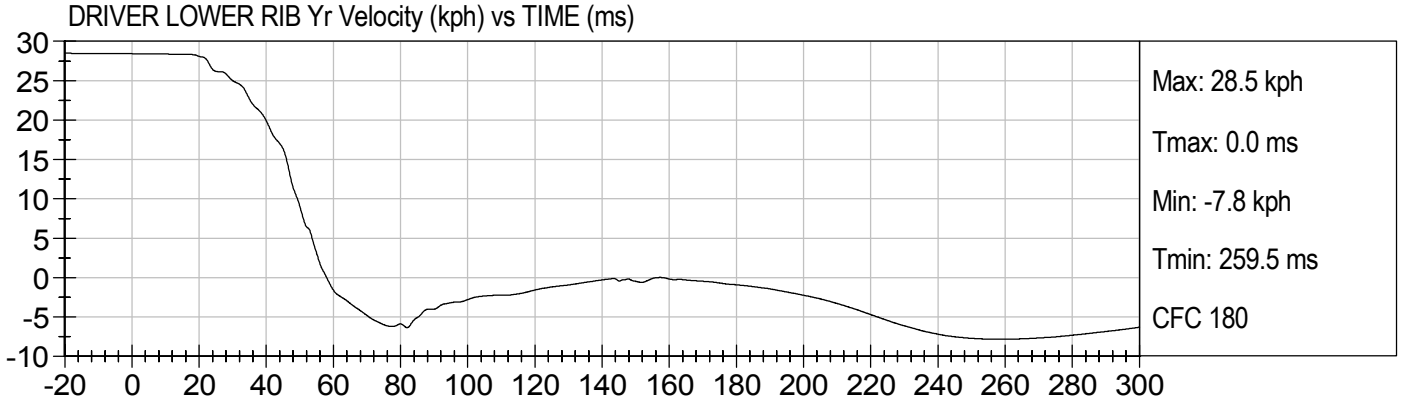
DRIVER UPPER RIB Yr Velocity (kph) vs TIME (ms)



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



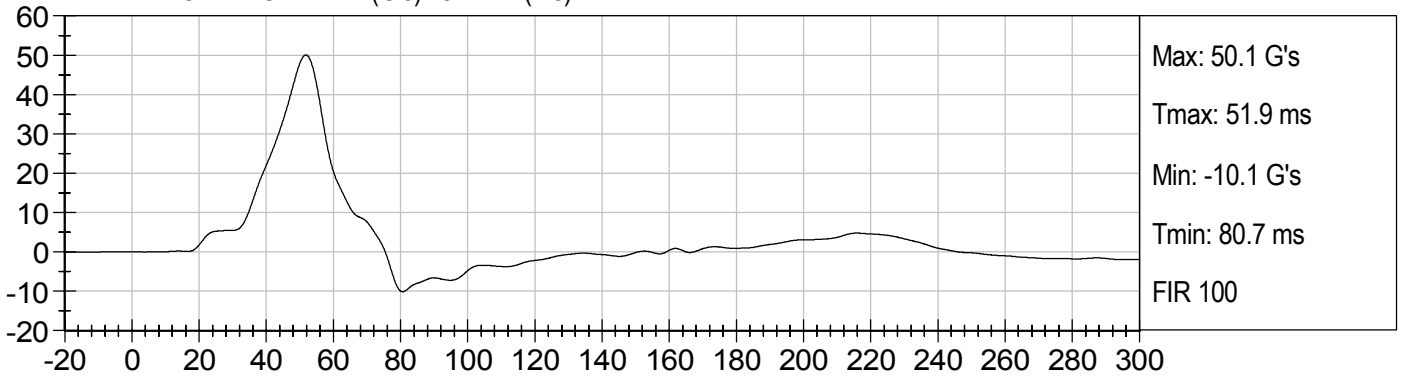
DRIVER LOWER RIB Yr Velocity (kph) vs TIME (ms)



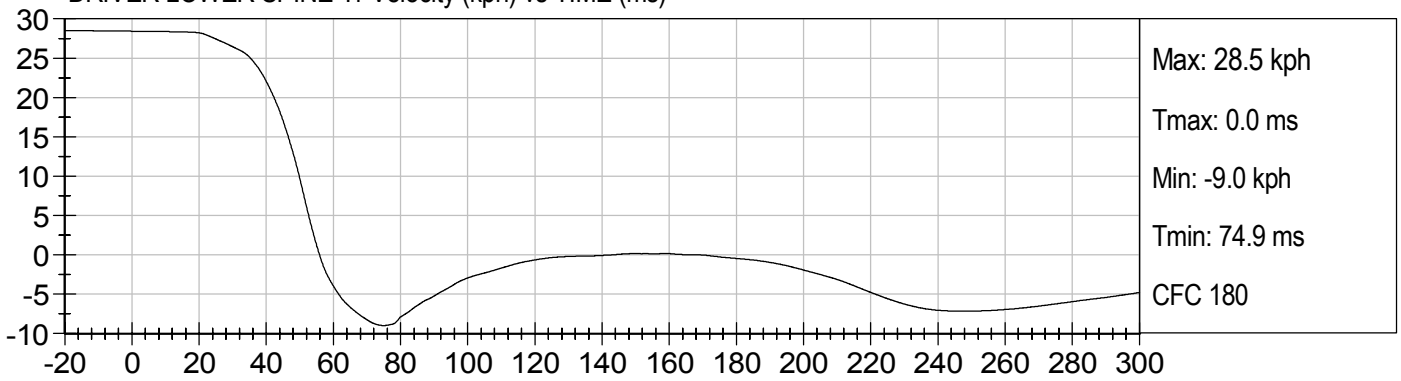
RIGID POLE SIDE IMPACT
2007 FORD EDGE C70205

Test Date: 08/23/2007
Speed: 17.7 mph (28.5 km/h)

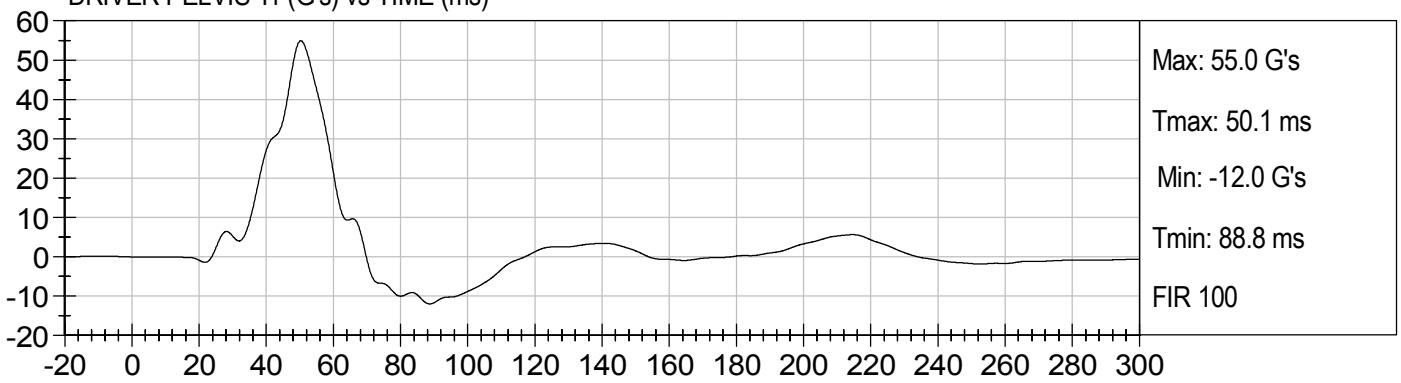
DRIVER LOWER SPINE Yr (G's) vs TIME (ms)



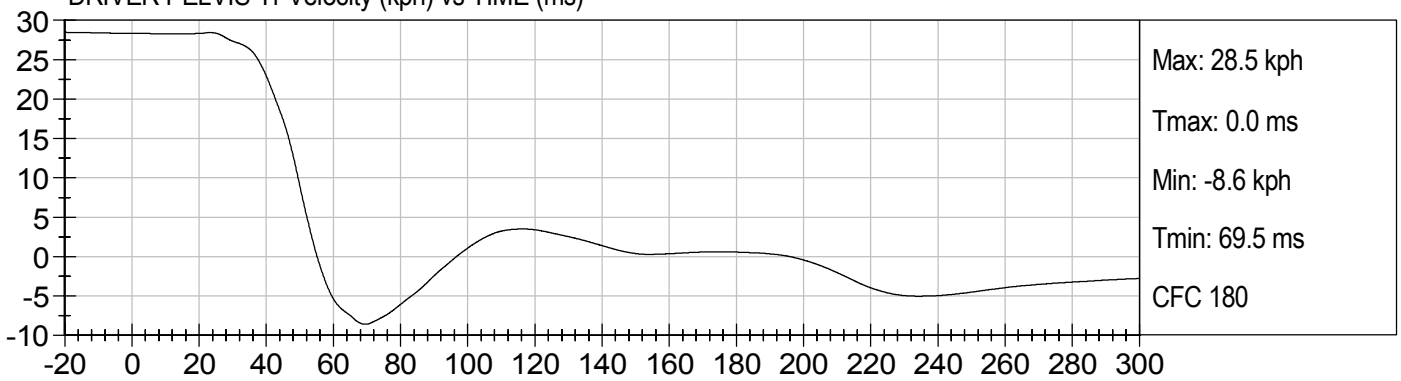
DRIVER LOWER SPINE Yr Velocity (kph) vs TIME (ms)



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



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

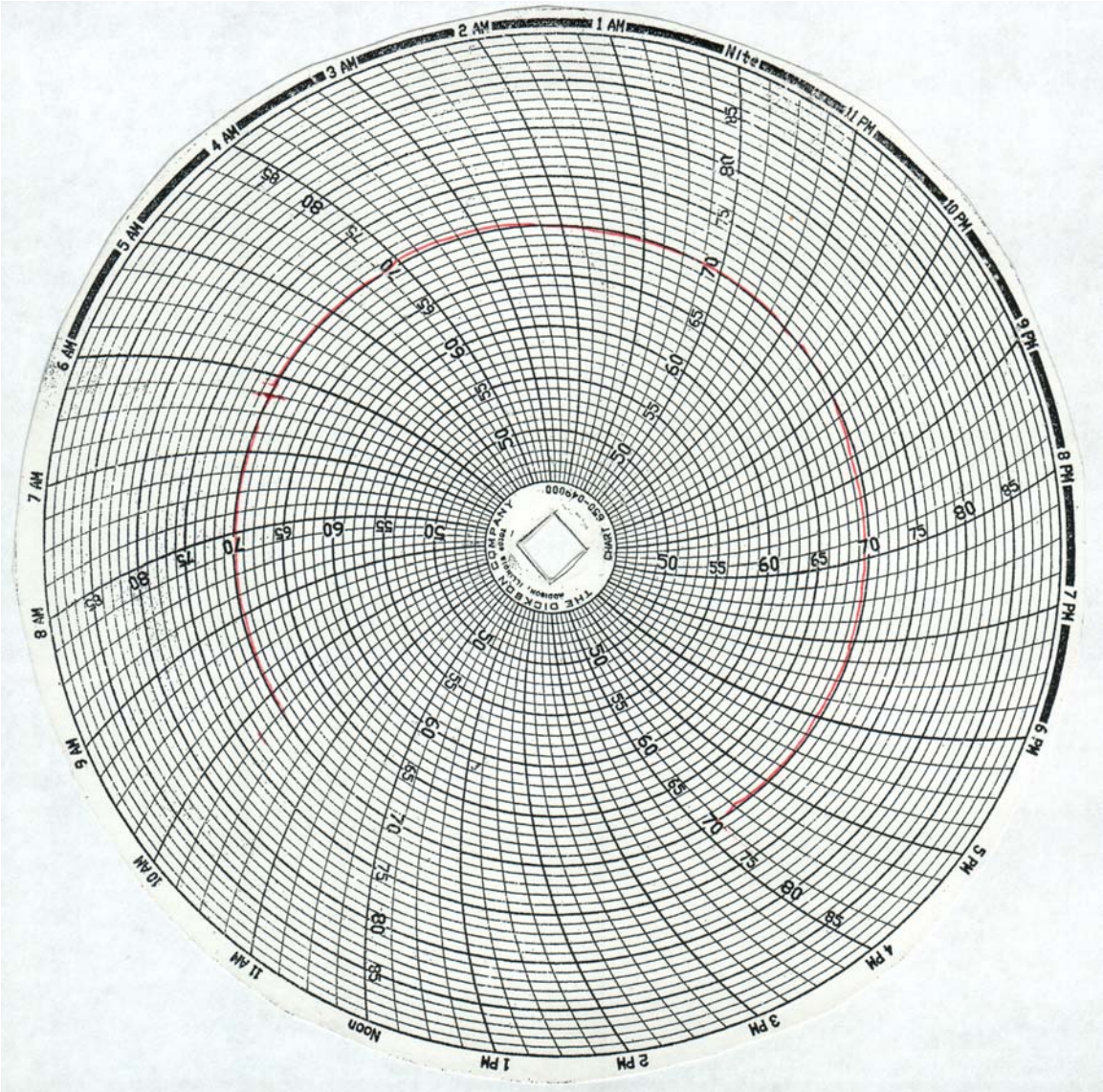


APPENDIX C

SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Vehicle and Dummy Temperature

Test Vehicle:	2007 Ford Edge-SE	NHTSA No.	C70205
Test Program:	FMVSS 201P	Test Date:	August 23, 2007



SID/HIII Calibration Data Sheet

Side Impact Dummy

Head Drop Calibration (Lateral)

ATD Serial No: 037 **Test I.D:** D072401

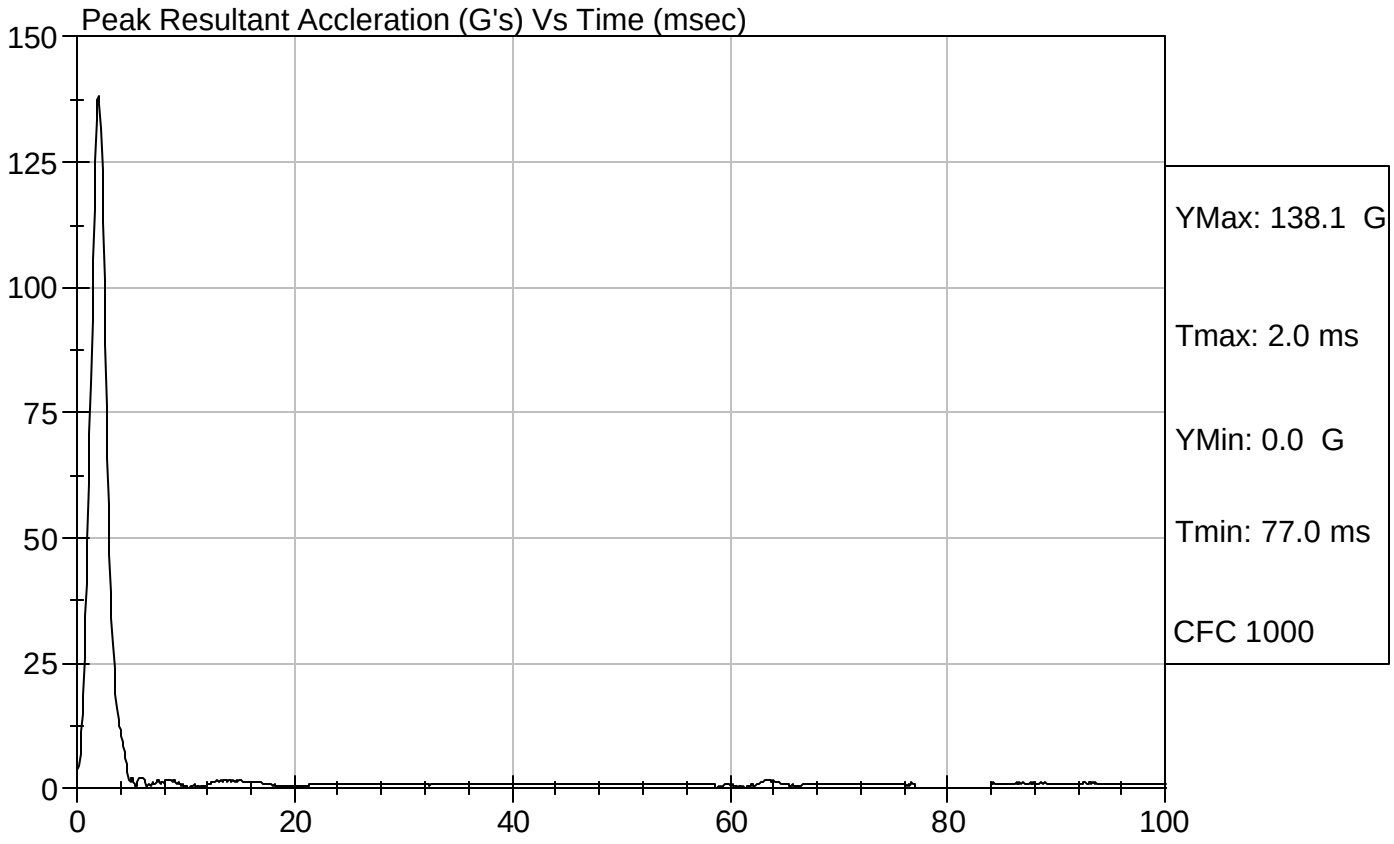
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Peak Resultant Acceleration	G's	120 to 150	138	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-7.4	Pass
		Overall Test Results		Pass

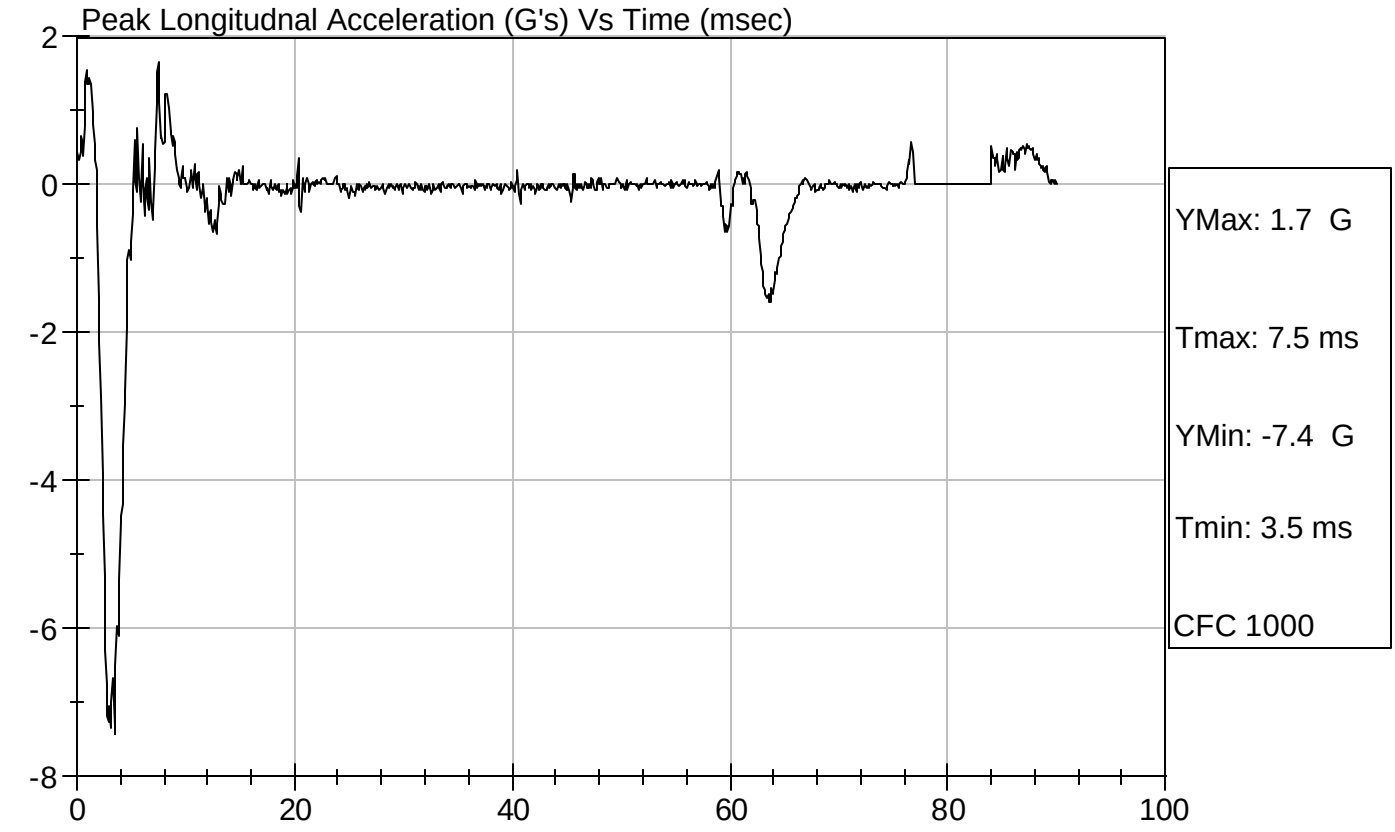
Jessica Hall
Laboratory Technician

8/17/07
Test Date

David Winkelbauer
Approved By

	Test Description: Head Drop	Test Date: 8/17/07
	Component: D072401	Speed: 0 ft/s, 0 m/s





SID/HIII Calibration Data Sheet

Side Impact Dummy

Thorax Impact Test

ATD Serial No: 037 **Test I.D:** D072402

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Velocity	m/s	4.22 - 4.31	4.23	Pass
Upper Rib	G's	37 - 46	39	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	22	Pass
		Overall Test Results		Pass

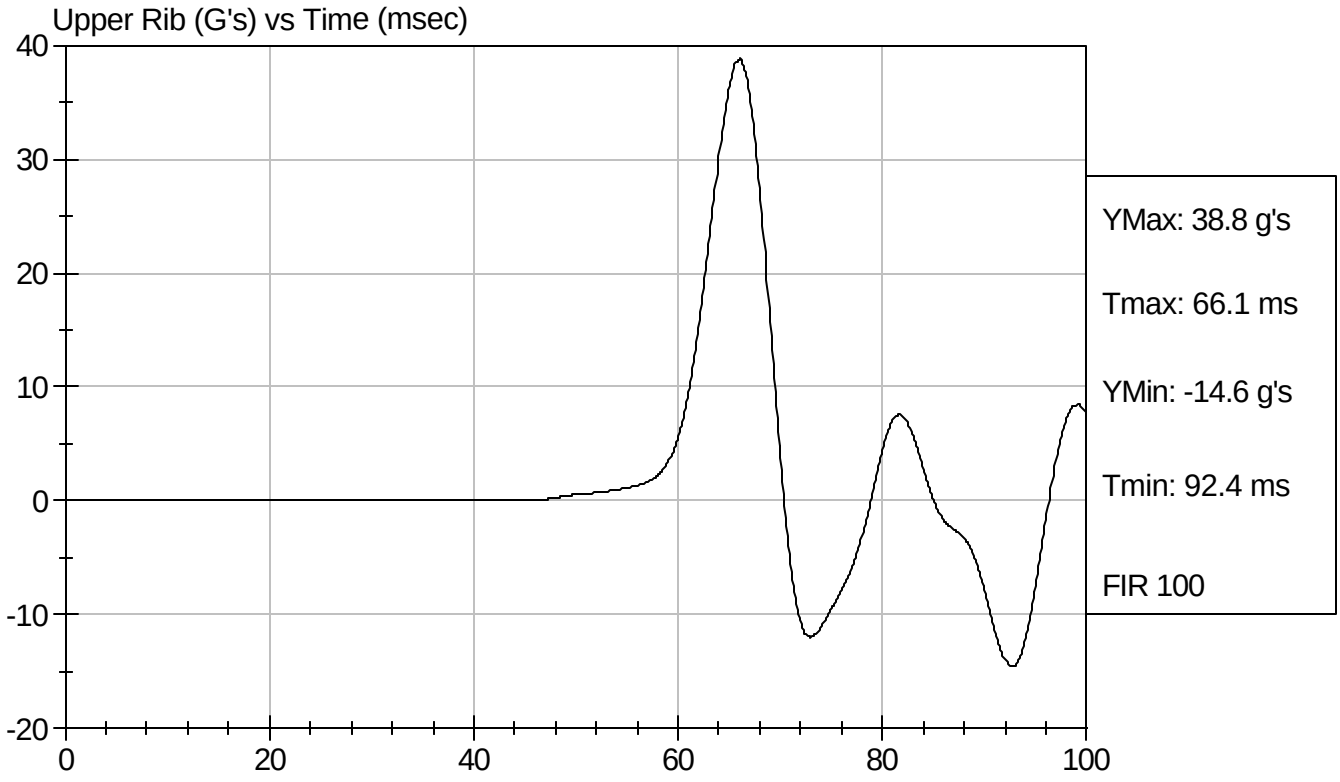
Jessica Hall
Laboratory Technician

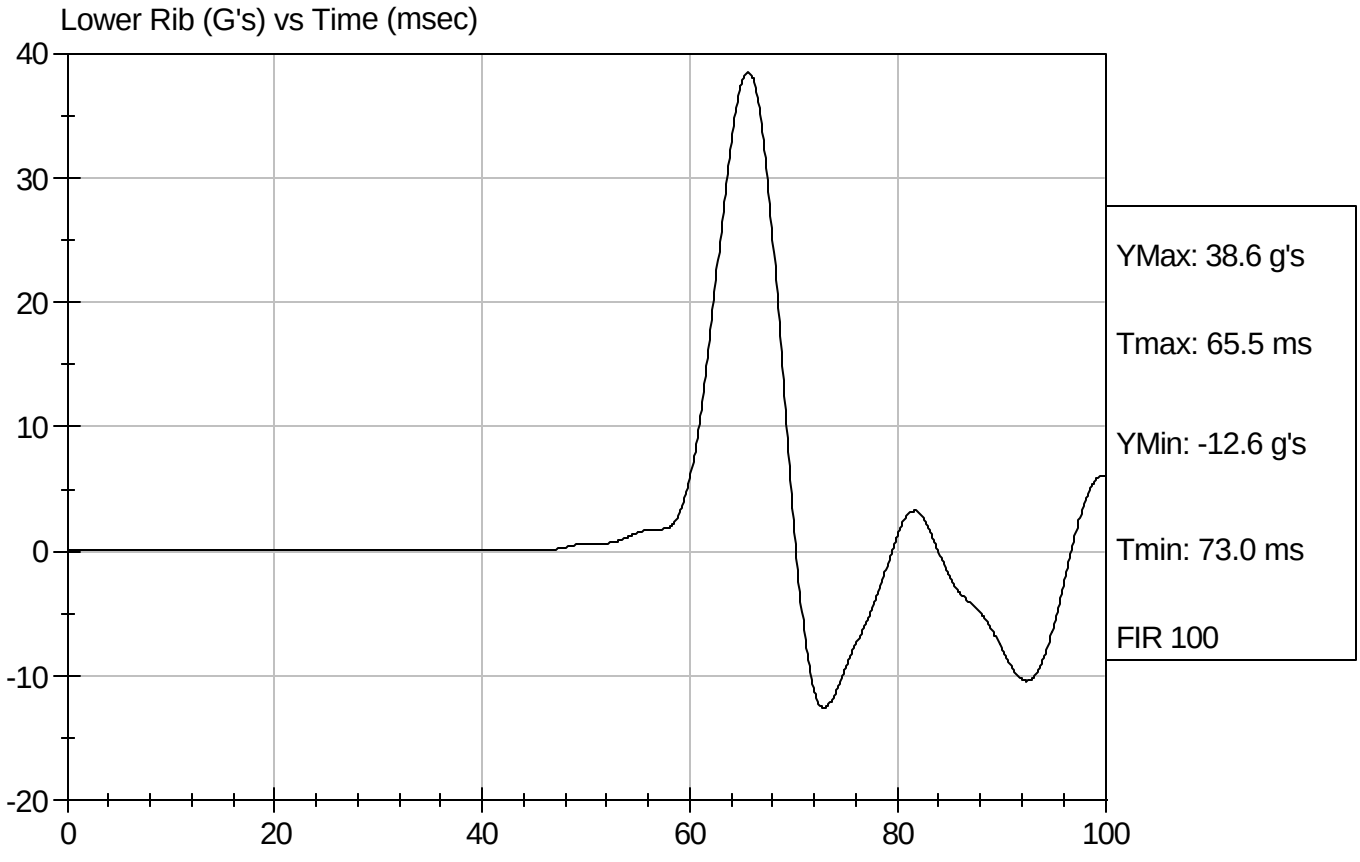
8/17/07
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax Impact
Component ID: D072402

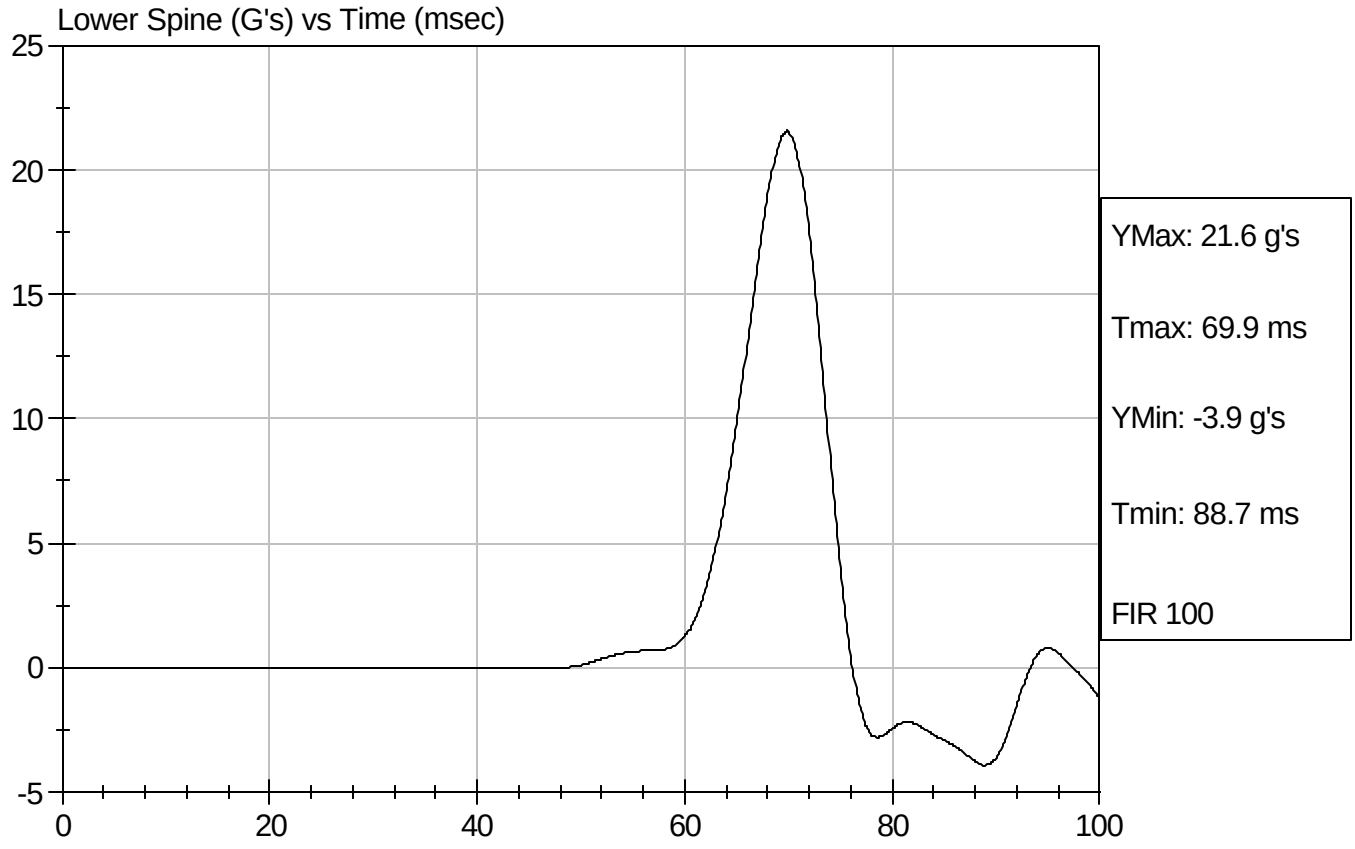
Test Date: 8/17/07
Speed: 13.89 ft/sec, 4.23 m/sec





Test Desc: Thorax Impact
Component ID: D072402

Test Date: 8/17/07
Speed: 13.89 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 037 **Test I.D:** D072403

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	43	Pass
		Overall Test Results		Pass

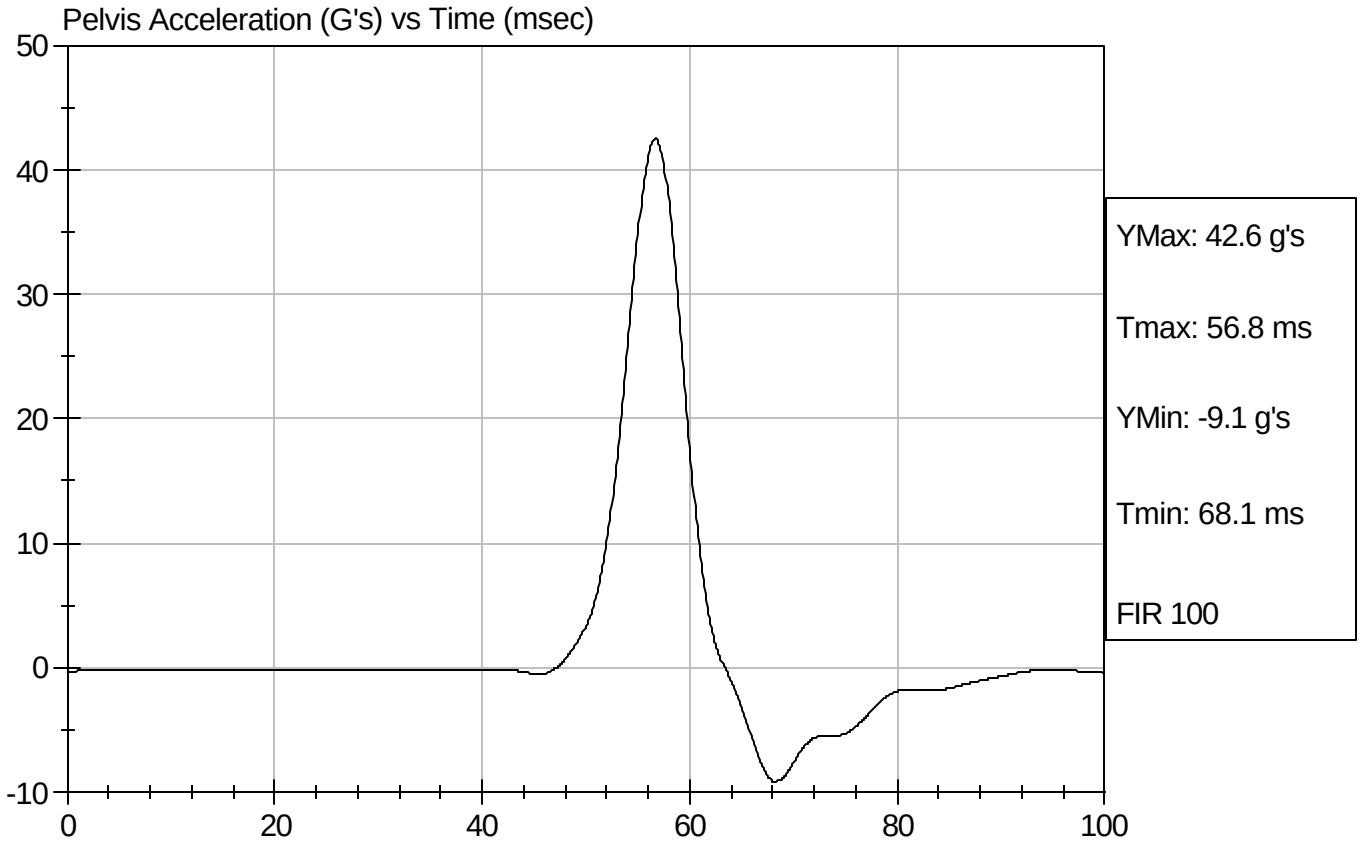
Jessica Hall
Laboratory Technician

8/17/07
Test Date

David Winkelbauer
Approved By

Test Desc: Pelvis Impact
Component ID: D072403

Test Date: 8/17/07
Speed: 14.12 ft/sec, 4.30 m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 037 **Test I.D:** D072404

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Force At 12.7 mm	N	104 -162	132	Pass
Force At 19 mm	N	163 - 222	185	Pass
Force At 25.4 mm	N	222 - 280	254	Pass
Force At 33 mm	N	325 - 391	350	Pass
		Overall Test Results		Pass

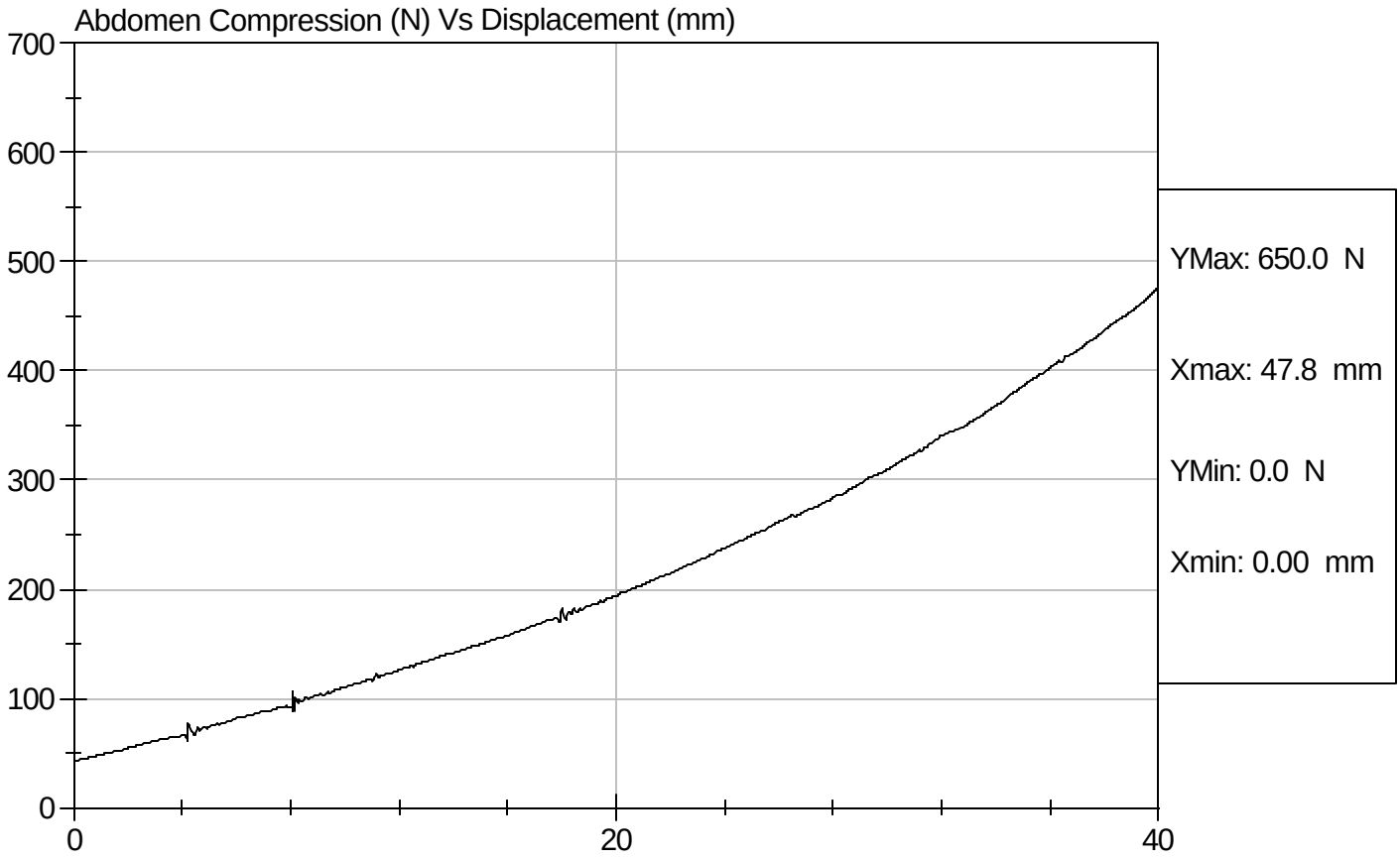
Jessica Hall
Laboratory Technician

8/17/07
Test Date

David Winkelbauer
Approved By

Test Description: Abdomen Compression Test Date: 8/17/07

Component: D072404 Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Lumbar Flexion Calibration

ATD Serial No: 037 **Test I.D:** D072405

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	119.9	Pass
Force At 30 deg	N	151.2 - 204.6	175.2	Pass
Force At 40 deg	N	204.6 - 258.0	238.1	Pass
Return Angle	Deg	12 Maximum	4	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

8/16/07
Test Date

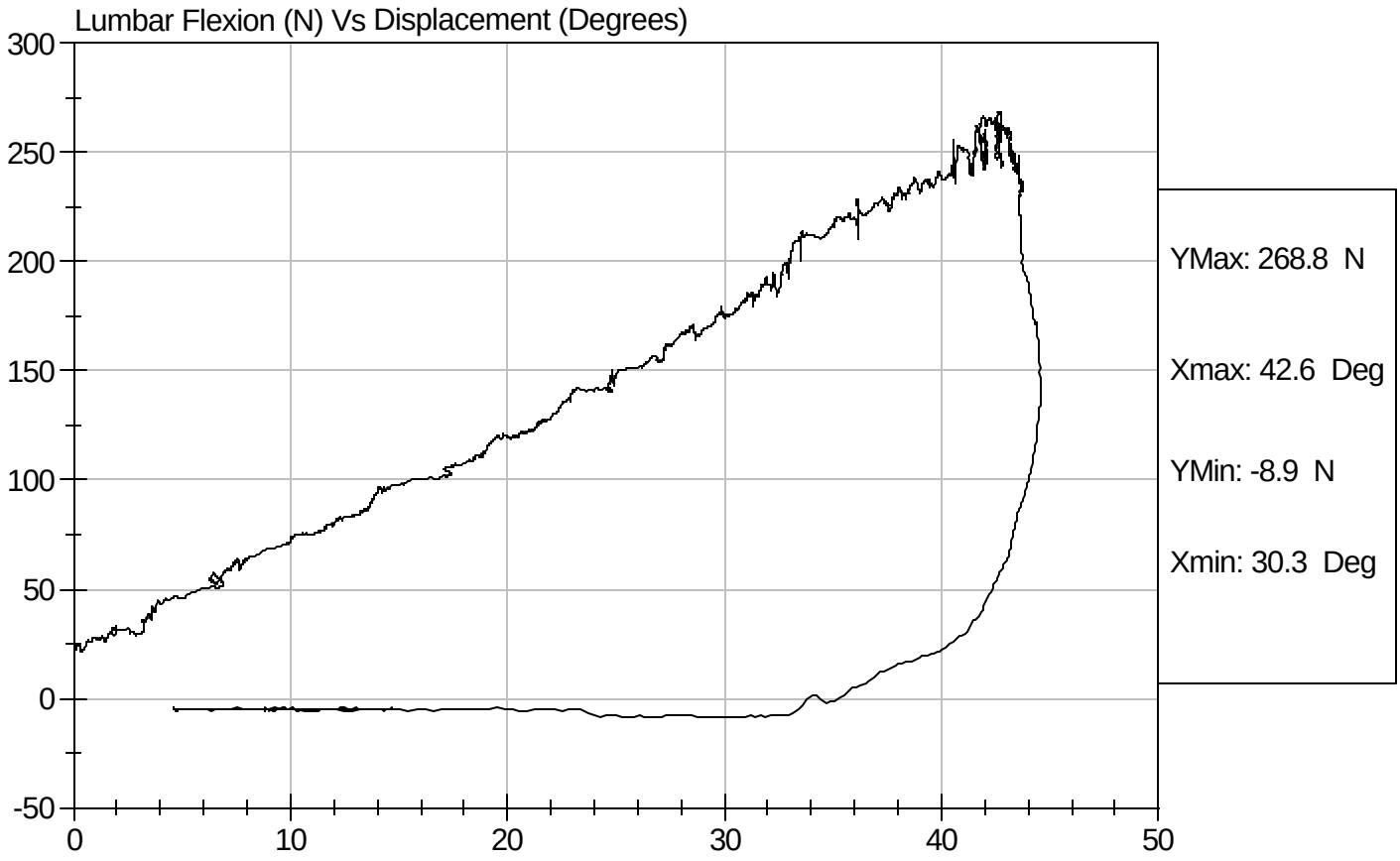
David Winkelbauer
Approved By

Test Description: Lumbar Flexion

Test Date: 8/16/07

Component: D072405

Speed: 0 ft/sec, m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Neck Pendulum Test

ATD Serial No: 037 **Test I.D:** D072409

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	20.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.35	Pass
	20 msec	m/s	4.12 to 5.10	4.63	Pass
	30 msec	m/s	5.73 to 7.01	6.39	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.33	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	72	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	62	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	75	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	57	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	16	Pass

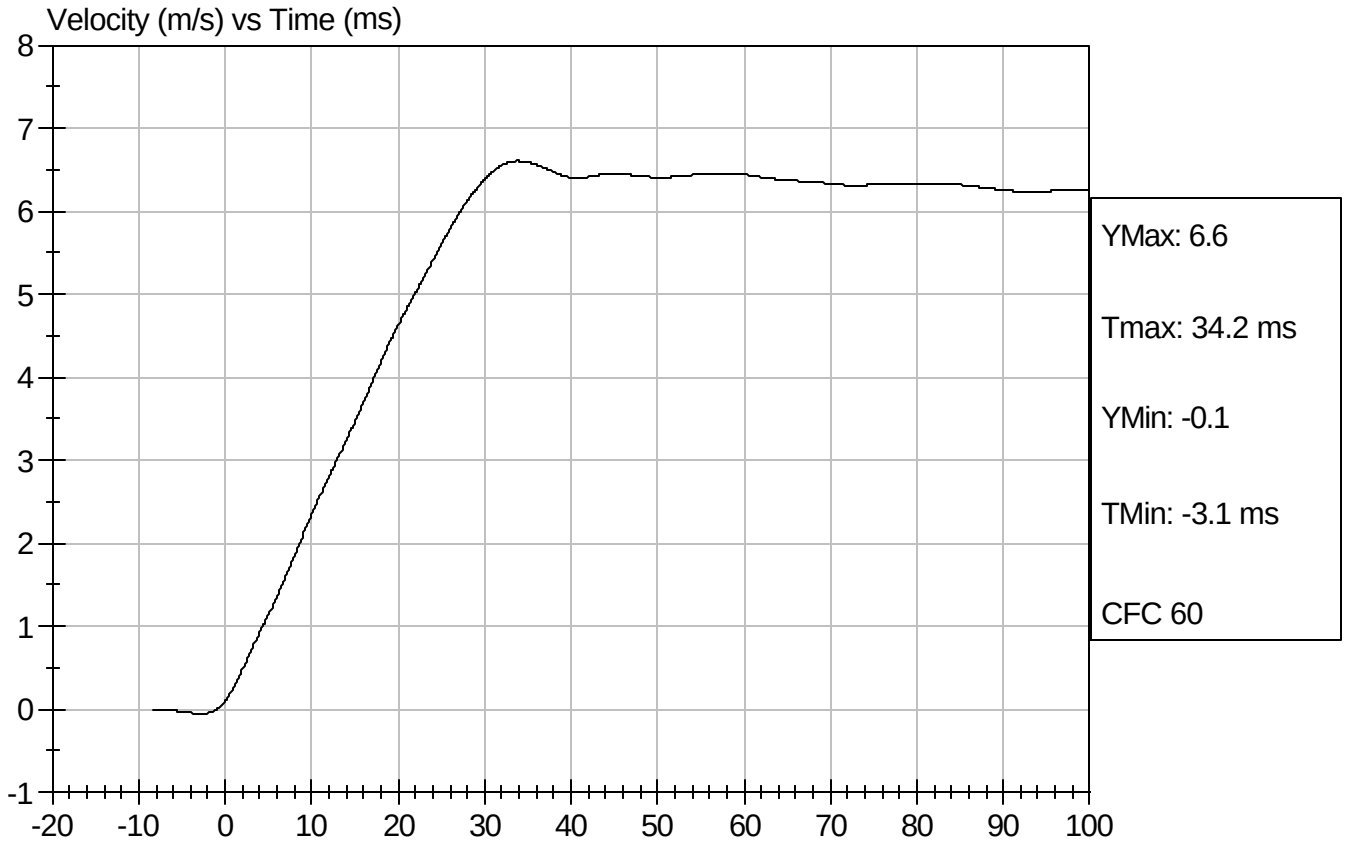
Jessica Hall
Laboratory Technician

8/16/07
Test Date

David Winkelbauer
Approved By

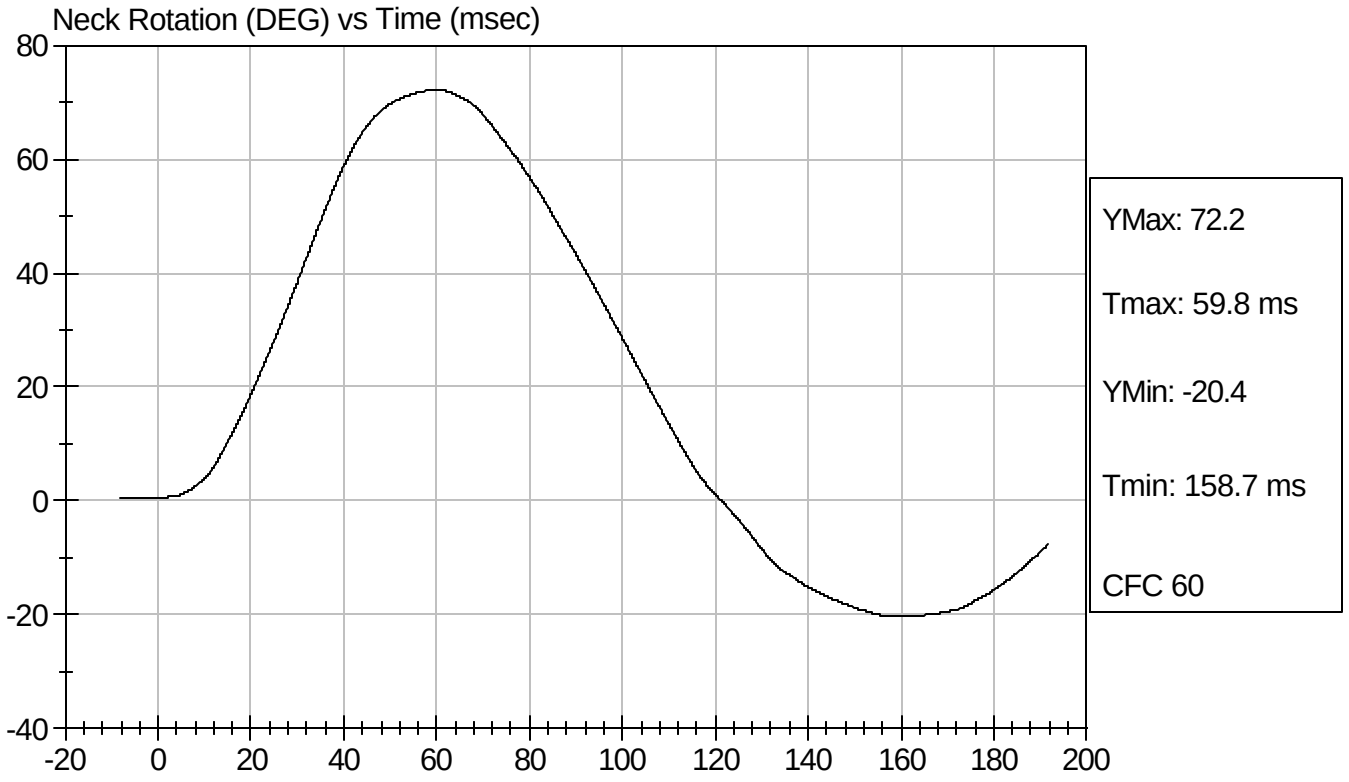
Test Desc: Neck Bending
Component ID: D072409

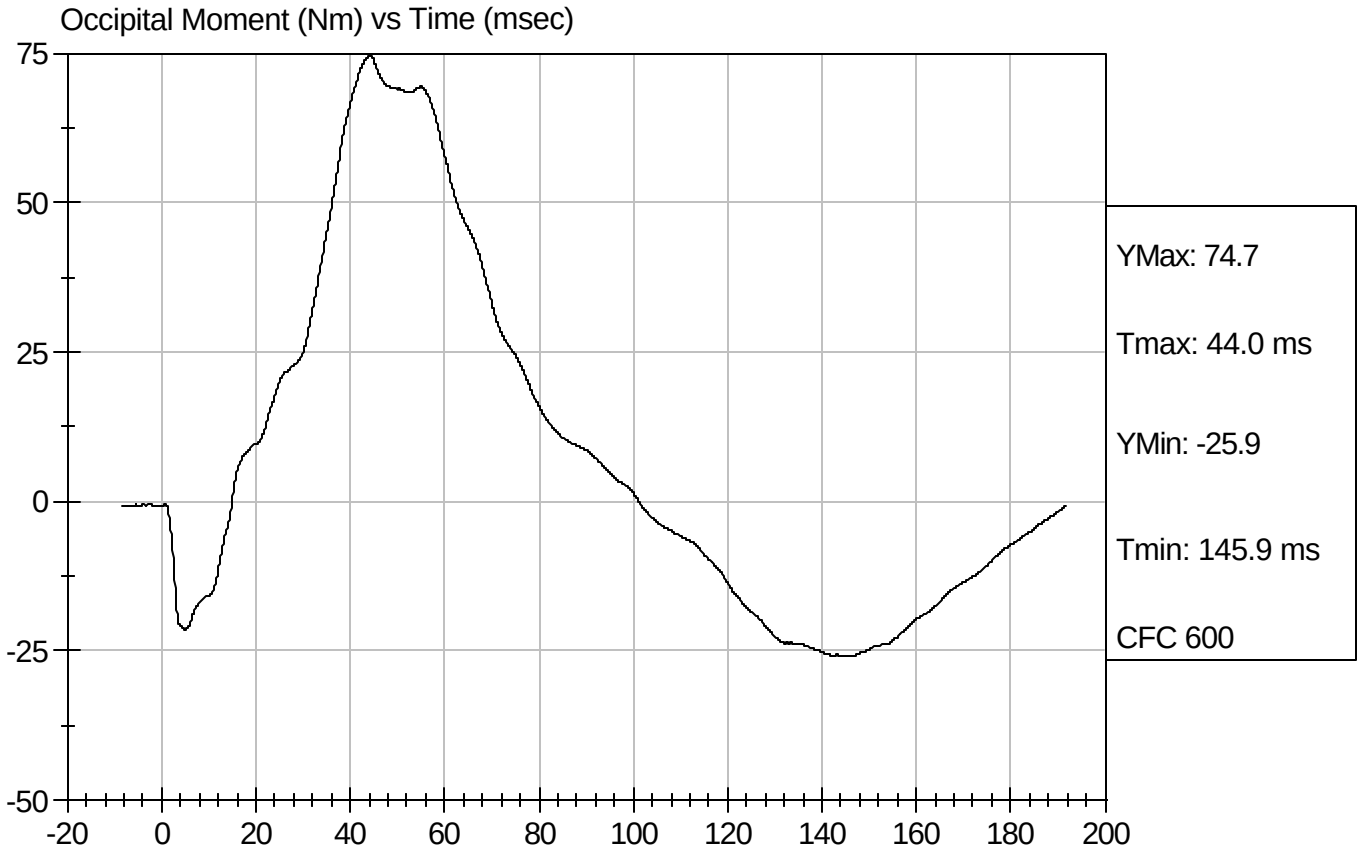
Test Date: 8/16/07
Speed: 23.148 ft/sec, 7.06 m/sec



Test Desc: Neck Bending
Component ID: D072409

Test Date: 8/16/07
Speed: 23.148 ft/sec, 7.06 m/sec





SID/HIII Calibration Data Sheet

Side Impact Dummy

Head Drop Calibration (Lateral)

ATD Serial No: 037 **Test I.D:** D072571

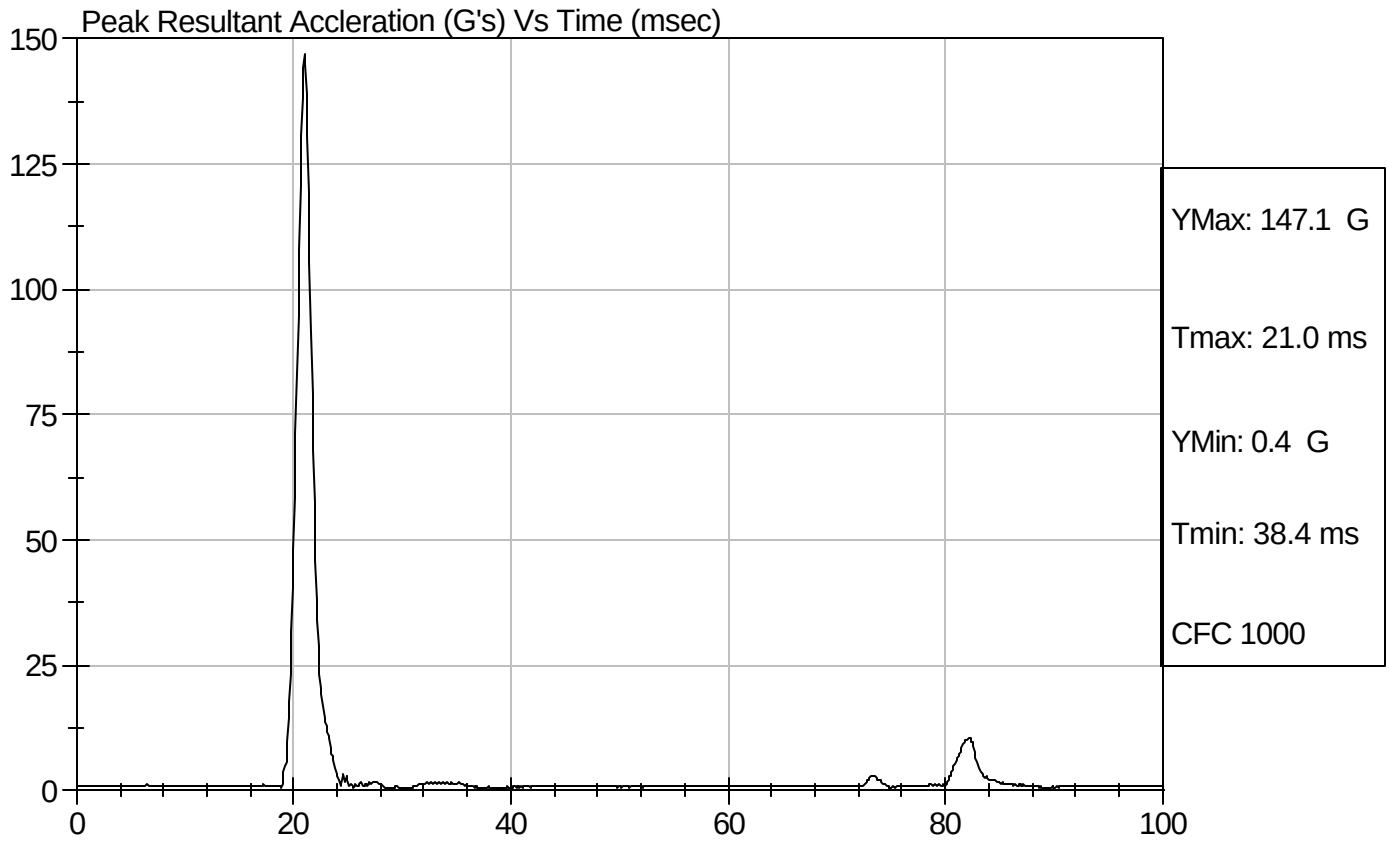
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	52	Pass
Peak Resultant Acceleration	G's	120 to 150	147	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-8.8	Pass
		Overall Test Results		Pass

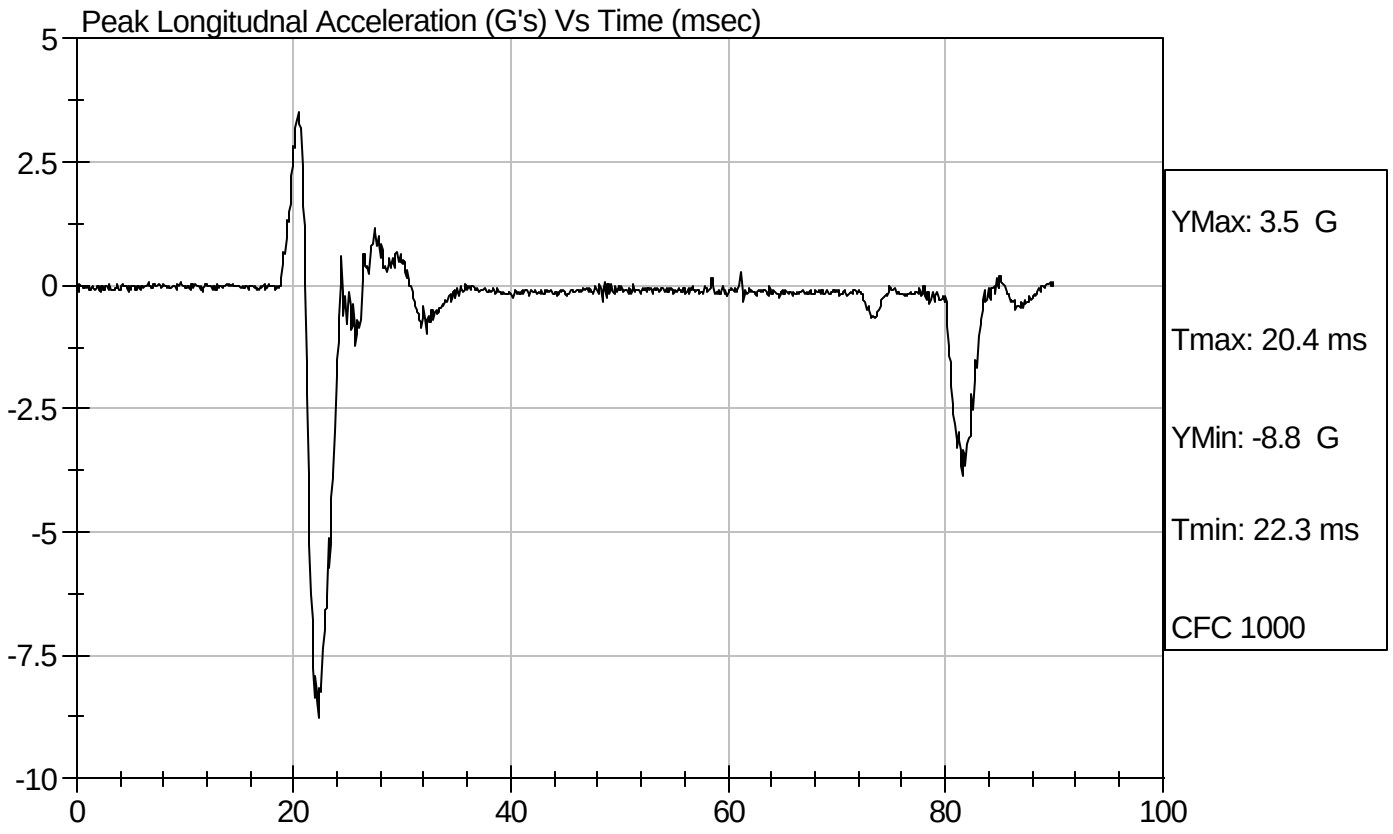
Jessica Hall
Laboratory Technician

8/27/07
Test Date

David Winkelbauer
Approved By

mga	Test Description: Head Drop	Test Date: 8/27/07
	Component: D072571	Speed: 0 ft/s, 0 m/s





SID/HIII Calibration Data Sheet

Side Impact Dummy

Thorax Impact Test

ATD Serial No: 037 **Test I.D:** D072572

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Probe Velocity	m/s	4.22 - 4.31	4.23	Pass
Upper Rib	G's	37 - 46	38	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	21	Pass
		Overall Test Results		Pass

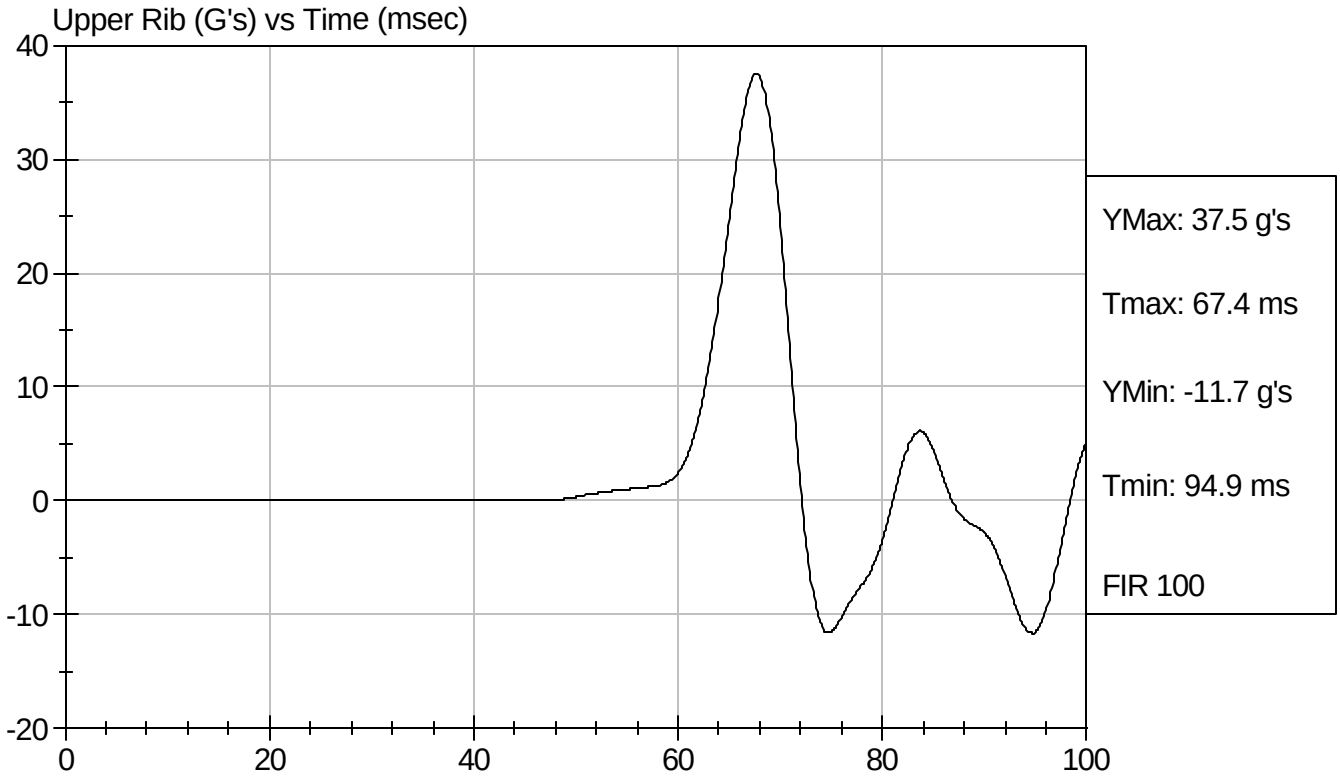
Jessica Hall
Laboratory Technician

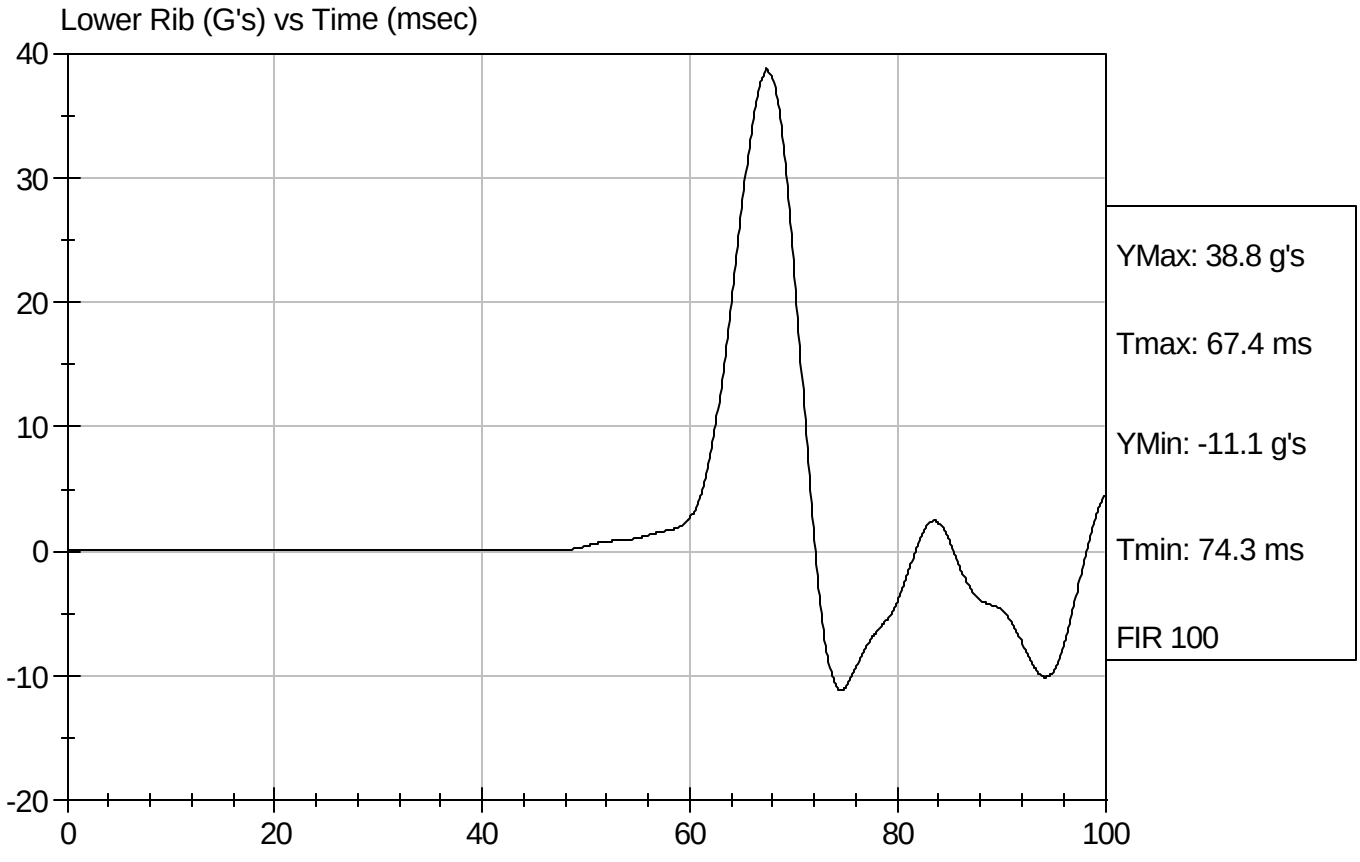
8/27/07
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax Impact
Component ID: D072572

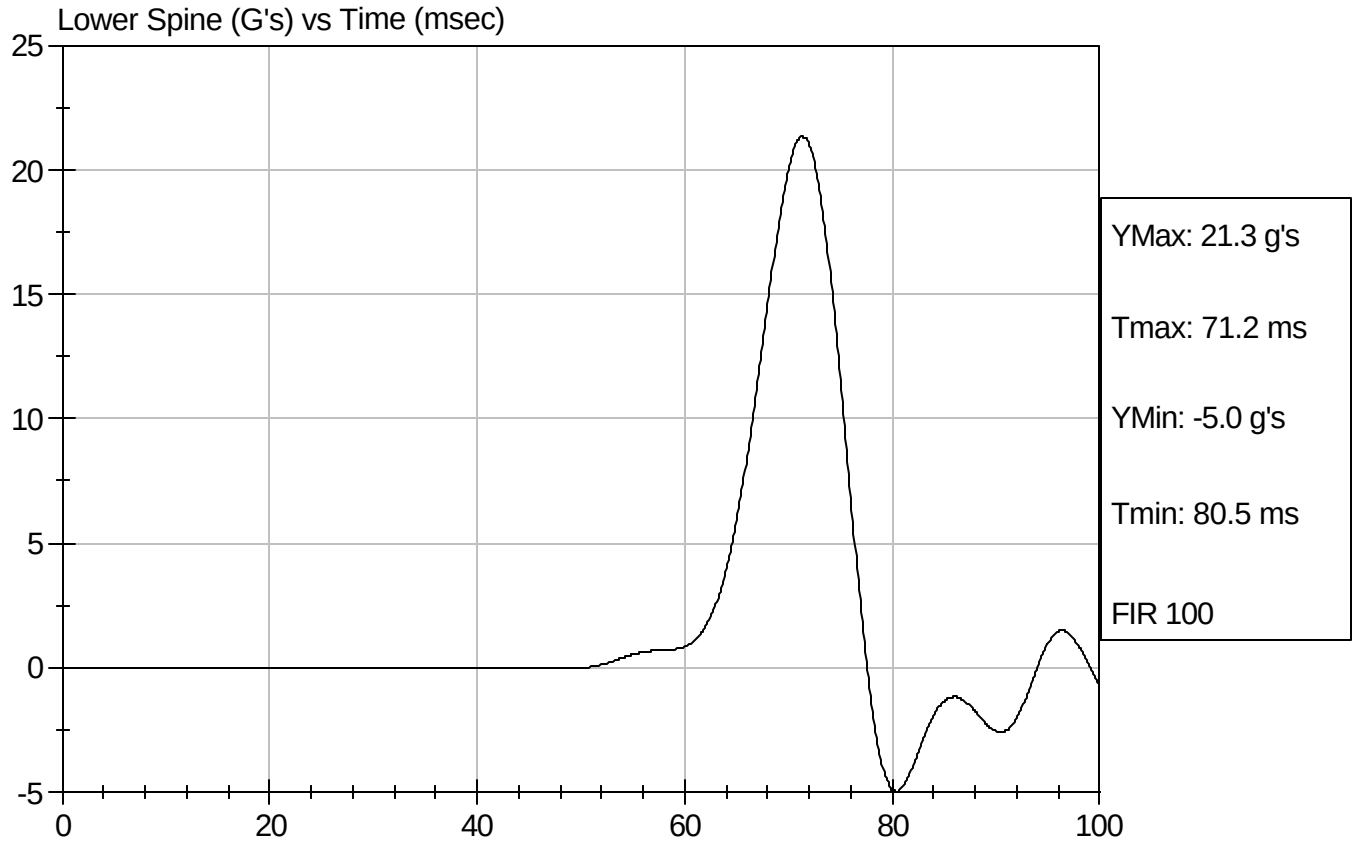
Test Date: 8/27/07
Speed: 13.88 ft/sec, 4.23 m/sec





Test Desc: Thorax Impact
Component ID: D072572

Test Date: 8/27/07
Speed: 13.88 ft/sec, 4.23 m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 037 **Test I.D:** D072573

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	45	Pass
		Overall Test Results		Pass

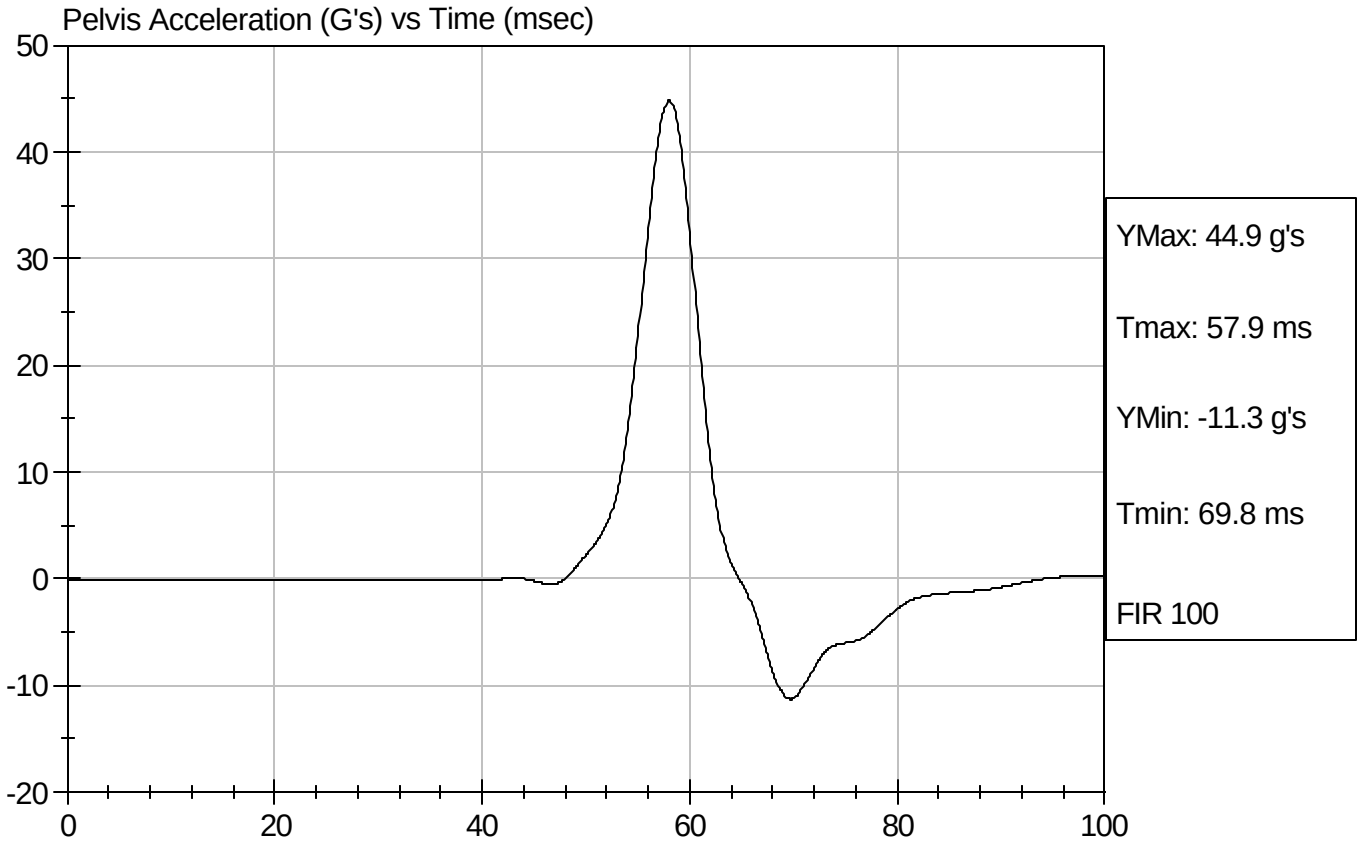
Jessica Hall
Laboratory Technician

8/27/07
Test Date

David Winkelbauer
Approved By

Test Desc: Pelvis Impact
Component ID: D072573

Test Date: 8/27/07
Speed: 14.1 ft/sec, 4.30 m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 037 **Test I.D:** D072574

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.7	Pass
Laboratory Relative Humidity	%	10 to 70	51	Pass
Force At 12.7 mm	N	104 -162	130	Pass
Force At 19 mm	N	163 - 222	185	Pass
Force At 25.4 mm	N	222 - 280	253	Pass
Force At 33 mm	N	325 - 391	348	Pass
		Overall Test Results		Pass

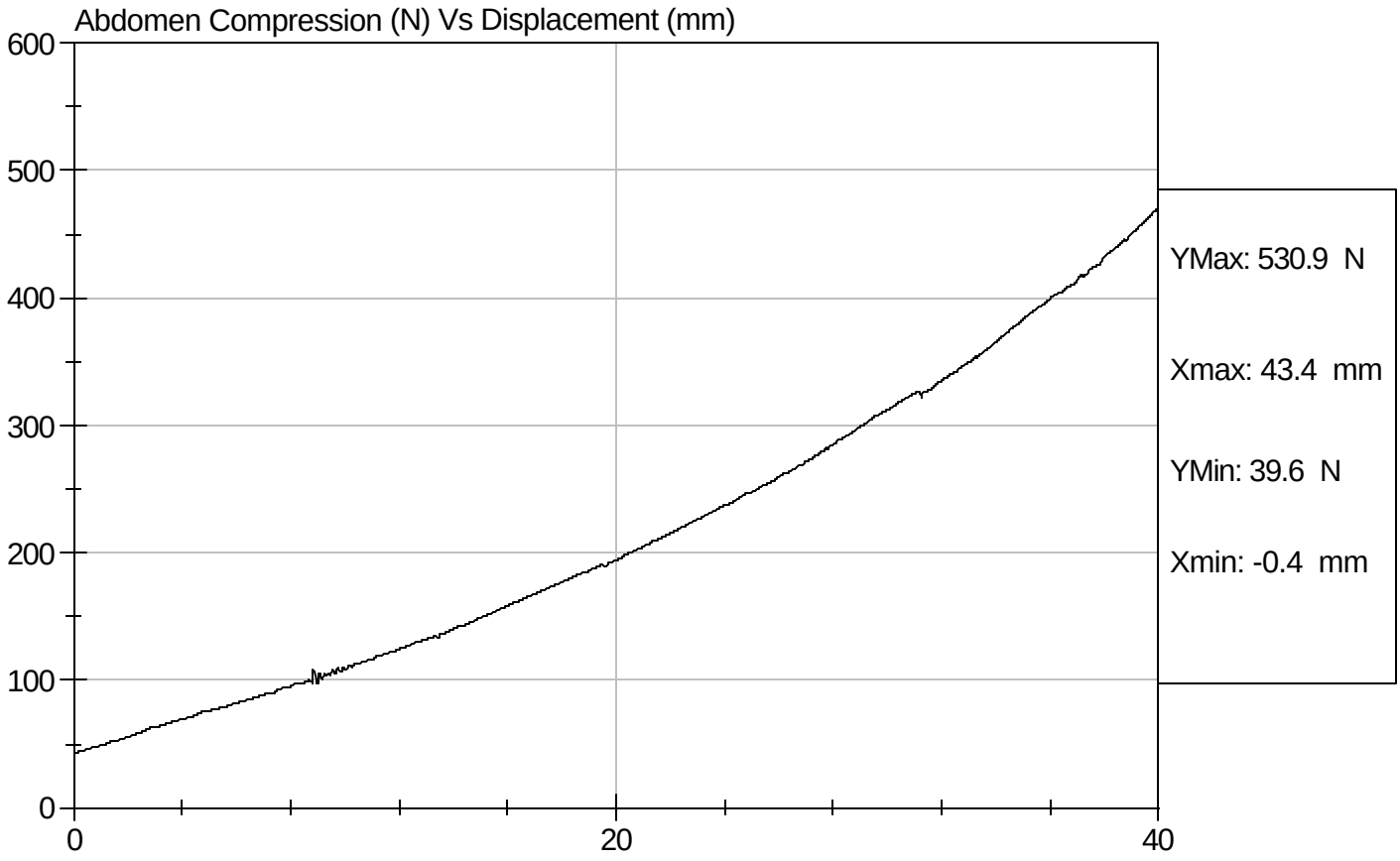
Jessica Hall
Laboratory Technician

8/27/07
Test Date

David Winkelbauer
Approved By

Test Description: Abdomen Compression Test Date: 8/27/07

Component: D072574 Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Lumbar Flexion Calibration

ATD Serial No: 037 **Test I.D:** D072575

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	120.3	Pass
Force At 30 deg	N	151.2 - 204.6	163.9	Pass
Force At 40 deg	N	204.6 - 258.0	230.4	Pass
Return Angle	Deg	12 Maximum	5	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

8/27/07
Test Date

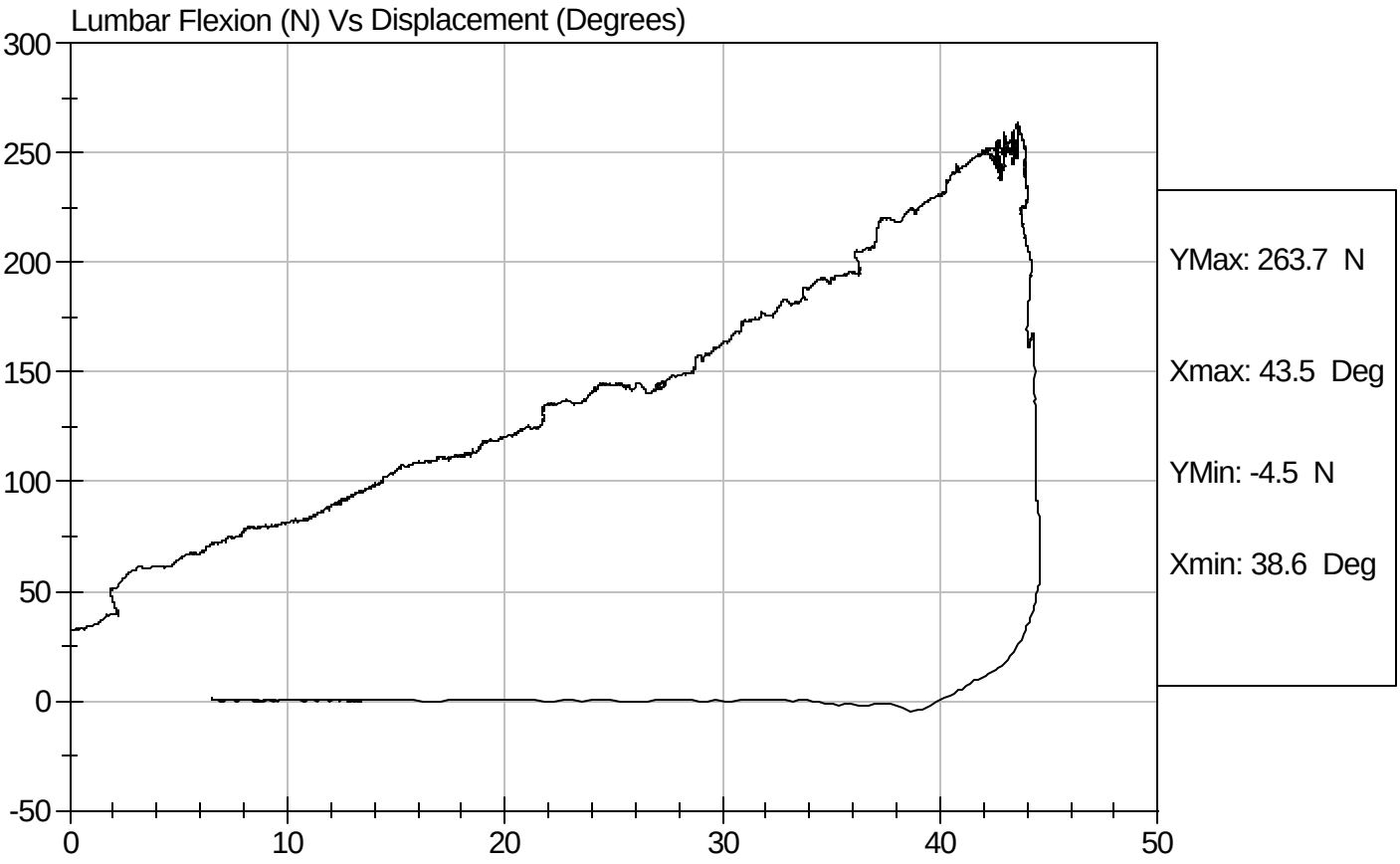
David Winkelbauer
Approved By

Test Description: Lumbar Flexion

Test Date: 8/27/07

Component: D072575

Speed: 0 ft/sec, m/sec



SID/HIII Calibration Data Sheet

Side Impact Dummy

Neck Pendulum Test

ATD Serial No: 037 **Test I.D:** D072579

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	20.6	Pass
Laboratory Relative Humidity		%	10 to 70	50	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.41	Pass
	20 msec	m/s	4.12 to 5.10	4.59	Pass
	30 msec	m/s	5.73 to 7.01	6.25	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.84	Pass
Midsaggital Plane Max Rotation		deg	66 to 82	68	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	80	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	58	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	10	Pass

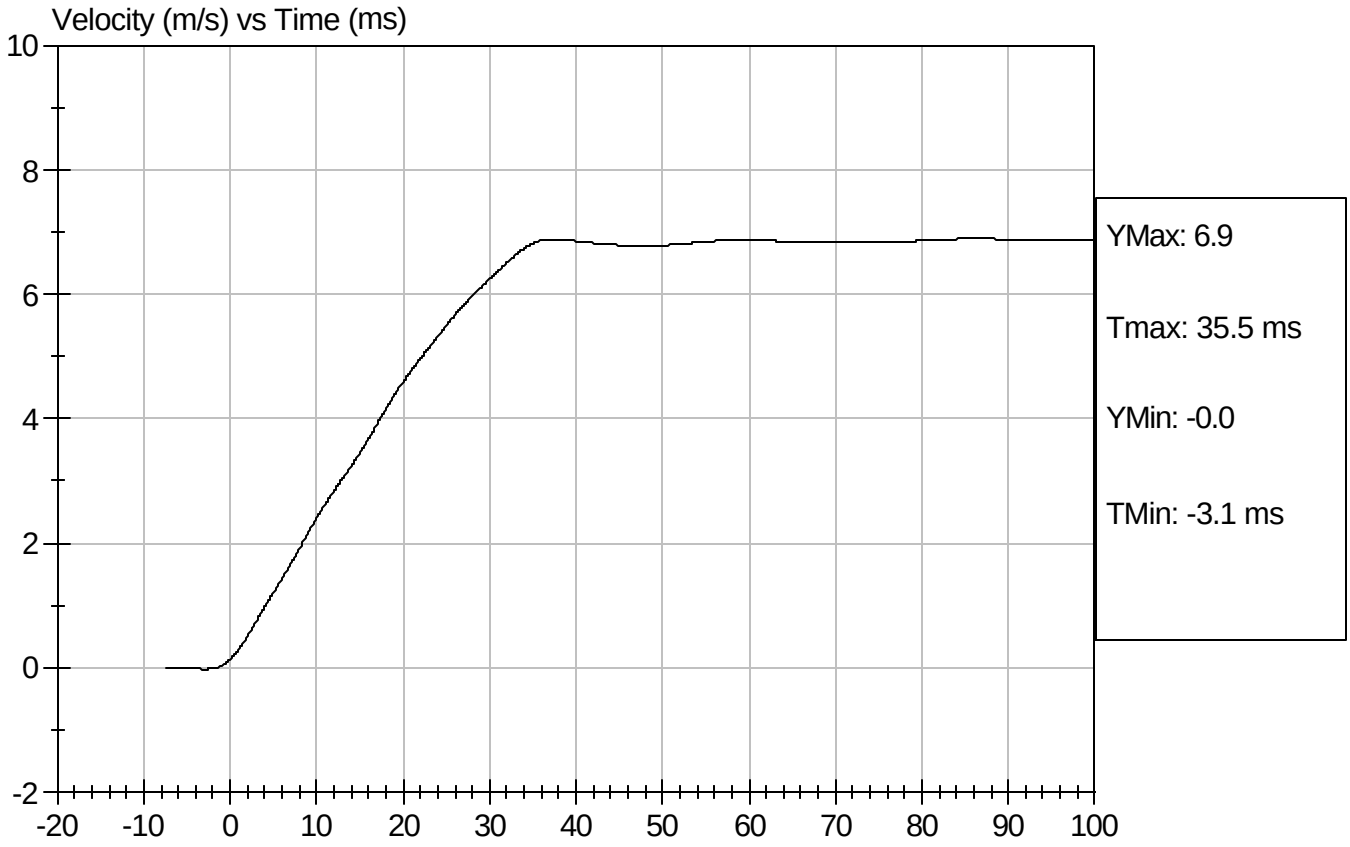
Jessica Hall
Laboratory Technician

8/27/07
Test Date

David Winkelbauer
Approved By

Test Desc: Neck Bending
Component ID: D072579

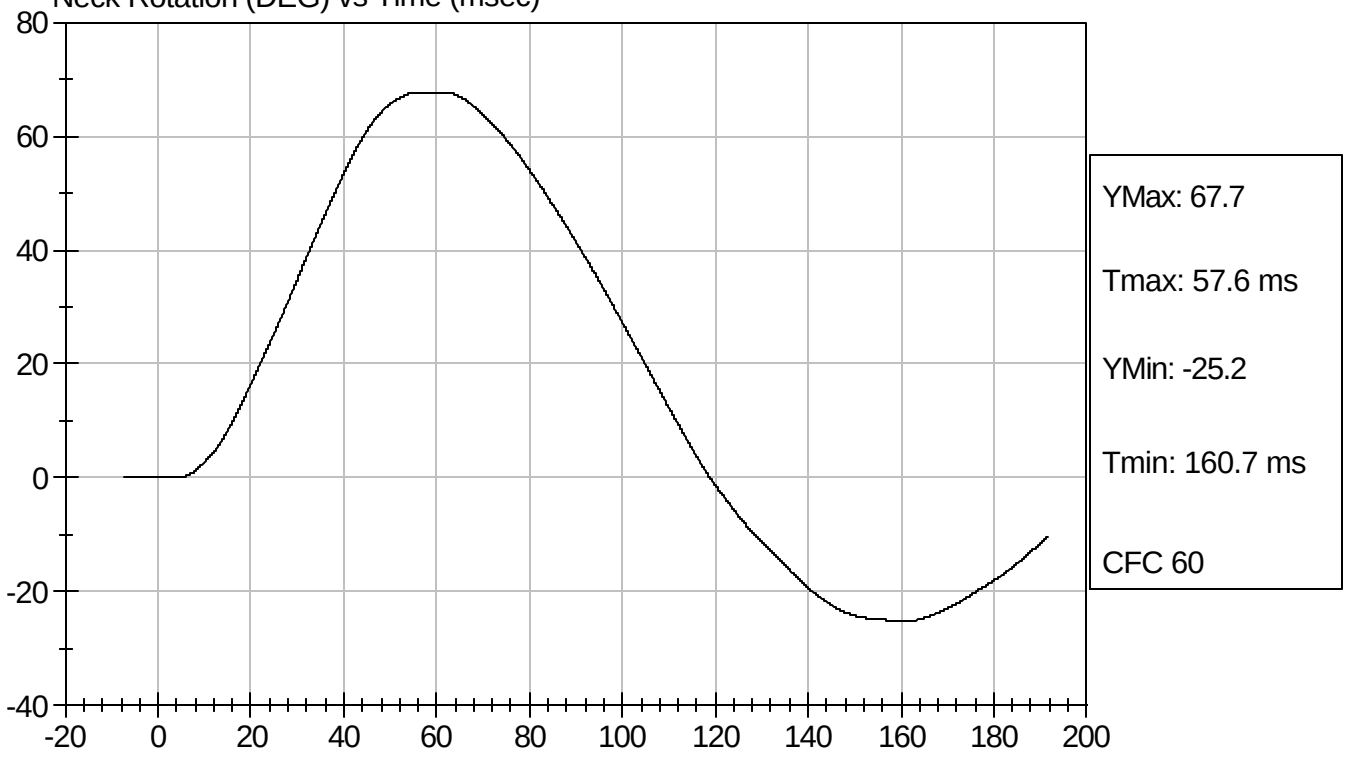
Test Date: 8/27/07
Speed: 23.15 ft/sec, 7.06 m/sec



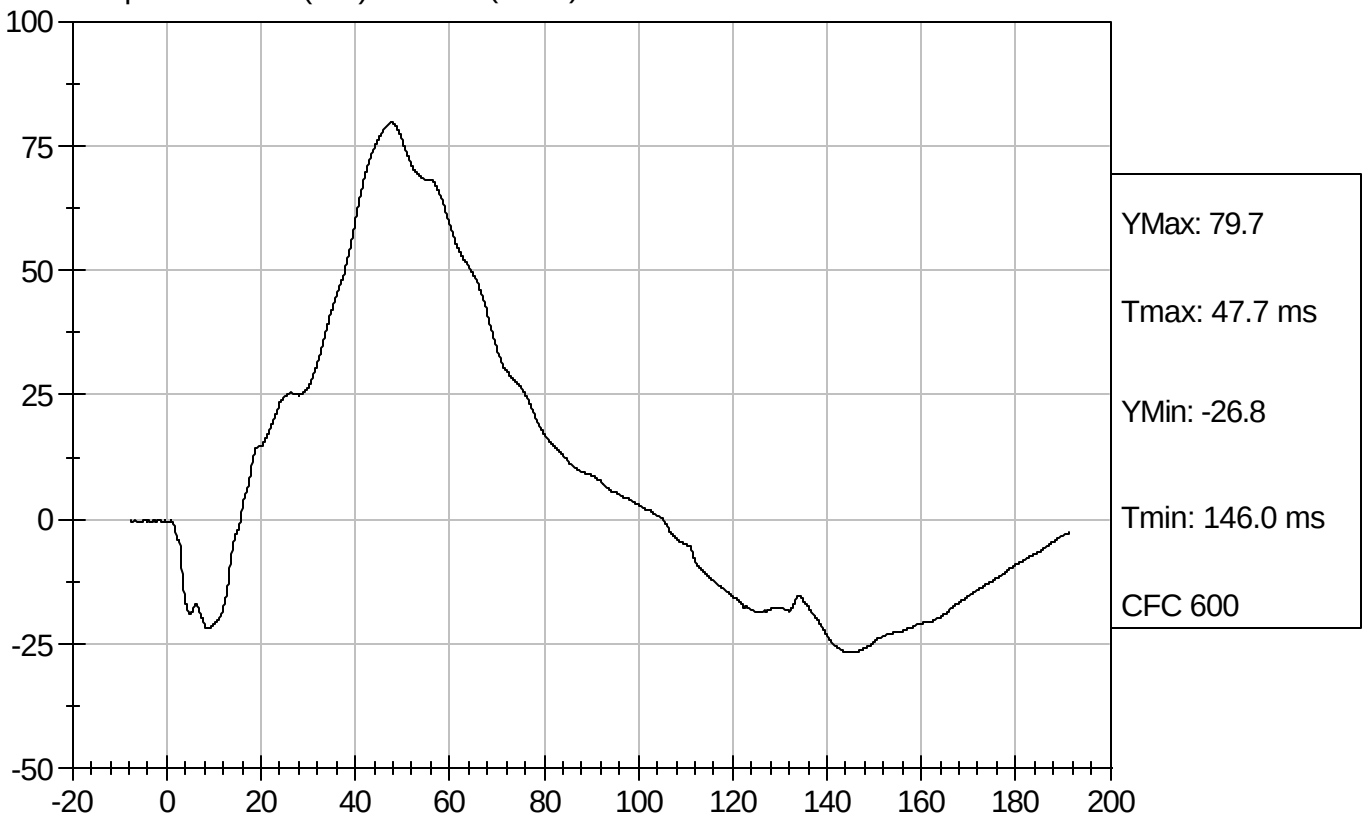
Test Desc: Neck Bending
Component ID: D072579

Test Date: 8/27/07
Speed: 23.15 ft/sec, 7.06 m/sec

Neck Rotation (DEG) vs Time (msec)



Occipital Moment (Nm) vs Time (msec)



APPENDIX D

CALIBRATION INFORMATION DATA

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR DRIVER S/N 037		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head CG X	C12863	Endevco	5/02/2007
Head CG Y	C10770	Endevco	5/02/2007
Head CG Z	AH5E5	Endevco	5/02/2007
Neck Load Cell	1673	Denton	8/14/2007
Upper Rib Y	P49530	Endevco	7/25/2007
Lower Rib Y	P49509	Endevco	7/25/2007
Lower Spine Y	P49497	Endevco	7/25/2007
Pelvis Y	F14-B10	Entran	6/28/2007
Upper Rib Redundant Y	P49531	Endevco	7/25/2007
Lower Rib Redundant Y	P50055	Endevco	7/25/2007
Lower Spine Redundant Y	P49457	Endevco	7/25/2007
Pelvis Redundant Y	D12-X26	Entran	2/06/2007

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Vehicle CG X	H06-L23	Entran	6/27/2007
Vehicle CG Y	H06-L11	Entran	6/27/2007
Vehicle CG Z	H06-L18	Entran	6/27/2007
Left Floor Y	ANAM1	Endevco	5/14/2007
Left A-Post @ Sill Y	J33415	Endevco	4/12/2007
Left Lower A-Post Y	P26989	Endevco	4/12/2007
Left Mid A-Post Y	P22107	Endevco	4/12/2007
Left B-Post @ Sill Y	AP2C4	Endevco	4/12/2007
Left Lower B-Post Y	J20965	Endevco	4/12/2007
Left Mid B-Post Y	AJ9P7	Endevco	4/12/2007
Driver Seat Track Y	J19173	Endevco	5/14/2007
LF Door Accel. #1 Y	AM751	Endevco	4/12/2007
LF Door Accel. #2 Y	AP2A4	Endevco	5/14/2007
LF Door Accel. #3 Y	AJ9D6	Endevco	5/14/2007
Upper Engine X	J11784	Endevco	5/14/2007
Upper Engine Y	AMP82	Endevco	5/14/2007
Firewall Y	J17709	Endevco	5/14/2007
Right Floor Sill Y	AP1T8	Endevco	5/14/2007
Rear Deck X	P27020	Endevco	5/17/2007
Rear Deck Y	P27022	Endevco	5/17/2007