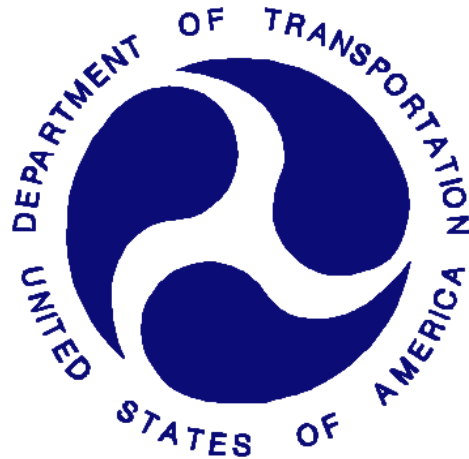


REPORT NUMBER: SPNCAP-MGA-2014-009

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Side Impact Pole Test**

**GENERAL MOTORS DE MEXICO, S. DE R.L. DE C.V.
2014 Chevrolet Silverado 1500 LT Crew Cab
NHTSA No.: M20140104**

**MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105**



Test Date: July 31, 2013

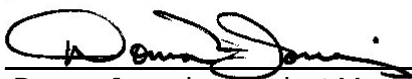
Final Report Date: August 22, 2013

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NVS-111
1200 New Jersey Ave, SE
Room W43-410
Washington, DC 20590**

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Prepared by: 
Donna Janovicz, Project Manager

Approved by: 
Ben Fischer, Project Engineer

Approval Date: August 22, 2013

FINAL REPORT ACCEPTANCE BY OCWS:

Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

COTR, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

Technical Report Documentation Page

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4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of a 2014 Chevrolet Silverado 1500 LT Crew Cab, NHTSA No.: M20140104		5. Report Date August 22, 2013		6. Performing Organization Code MGA																										
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15. Supplementary Notes		14. Sponsoring Agency Code NVS-111																												
		16. Abstract A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2014 Chevrolet Silverado 1500 LT Crew Cab in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on July 31, 2013. The impact velocity was 32.1 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 22.1°C. The test vehicle post-test maximum crush was 424 mm at level 2. The test vehicle's performance was as follows: <table border="1" style="margin: 10px auto; width: 80%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: left;">Measurement Description</th> <th colspan="3" style="text-align: center;">Driver ATD (SID-IIs)</th> </tr> <tr> <th style="text-align: center;">Units</th> <th style="text-align: center;">Threshold</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">216</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td style="text-align: center;">Gs</td> <td style="text-align: center;">82</td> <td style="text-align: center;">51</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">5525</td> <td style="text-align: center;">4320</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">38*</td> <td style="text-align: center;">19</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">45*</td> <td style="text-align: center;">18</td> </tr> </tbody> </table> *Proposed IARV The two 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.				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	216	Resultant Lower Spine Acceleration	Gs	82	51	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4320	Maximum Thoracic Rib Deflection	mm	38*	19	Maximum Abdomen Rib Deflection	mm
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2014 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00124. The purpose of this test is to generate comparative side impact performance in a 2014 Chevrolet Silverado 1500 LT Crew Cab. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated September 2012.

SECTION 2 SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2014 Chevrolet Silverado 1500 LT Crew Cab. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.1 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin, on July 31, 2013. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure dated September 2012. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) dummy was instrumented accordingly:

Primary and Redundant Head CG Triaxial Accelerometers
 Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
 Abdomen Upper Rib and Lower Rib Displacement Potentiometers
 Lower Spine (T12) Triaxial Accelerometers
 Iliac Load Cell
 Acetabulum Load Cell

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D contains the test equipment and instrumentation calibration data.

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Driver ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	216
Resultant Lower Spine Acceleration	Gs	82	51
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4320
Maximum Thoracic Rib Deflection	mm	38*	19
Maximum Abdominal Rib Deflection	mm	45*	18

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

The test data can be found on the NHTSA website at www.nhtsa.dot.gov

GENERAL COMMENTS

There was no valid data collected for:
Left Floor Sill Y after 58ms
Left B-Post @ Sill Y after 79ms
Left Mid B-Post Y

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

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
Test Date: 7/31/2013

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20140104	Traction Control System (TCS)	Yes
Model Year	2014	Auto-Leveling System	No
Make	Chevrolet	Automatic Door Locks (ADL)	Yes
Model	Silverado 1500 Crew Cab	Power Window Auto-Reverse	Yes
Body Style	Truck	Other Optional Feature	N/A
VIN	3GCPCREC5EG109862	Driver Front Airbag	Yes
Body Color	Silver Ice Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	248 / 154	Driver Head/Torso Airbag	No
Engine Displacement (L)	5.3	Driver Torso Airbag	No
Type/No. Cylinders	8	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Longitudinal	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	6	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	Rear	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	Driver Only	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
		Other Safety Restraint	N/A

Does owner's manual provide instructions to turn off automatic door locks?	No
--	----

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors de Mexico, S. de R.L. de C.V.	GVWR (kg)	3175
Date of Manufacture	05/13	GAWR Front (kg)	1656
Vehicle Type	Truck	GAWR Rear (kg)	1792

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	3	3		6	(A)
Capacity Weight (VCW) (kg)				777	(B)
DSC x 68.04 kg				408	(A-B)
Rated Cargo and Luggage Weight (RCLW) (kg)				369	

VEHICLE SEAT TYPE

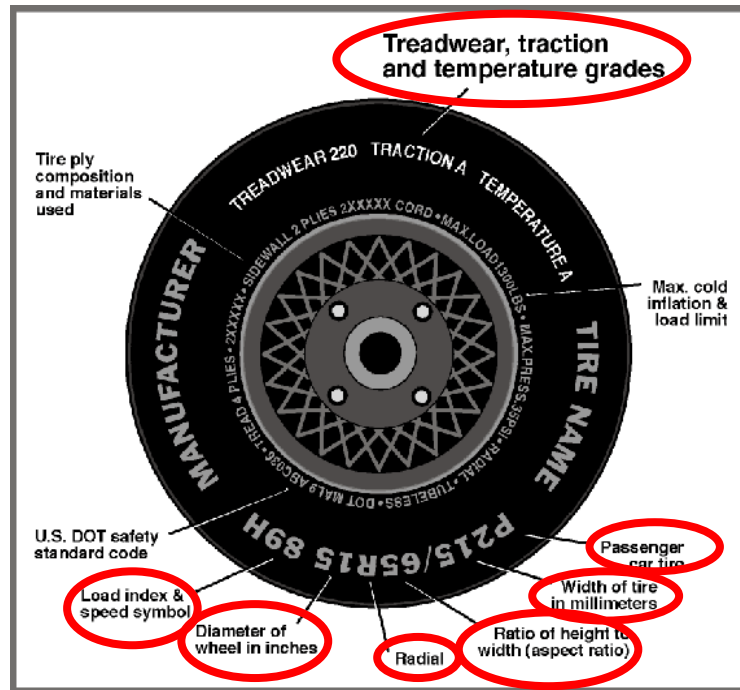
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X						X
Rear or Second Row			X		X		
Third Row Seat							

DATA SHEET NO. 1 (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	240	240
Recommended Tire Size	P265/65R18	P265/65R18
Tire Size on Vehicle	P265/65R18	P265/65R18
Tire Manufacturer	Goodyear	Goodyear
Tire Model	Assurance	Assurance
Treadwear	600	600
Traction	A	A
Temperature Grade	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Polyamide	2 Polyester, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	112T	112T
Tire Material	Rubber	Rubber
DOT Safety Code Left	PJXP JK1R 1213	PJXP JK1R 1213
DOT Safety Code Right	PJXP JK1R 1213	PJXP JK1R 1213

DATA SHEET NO. 1 (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	240	240	240	240
Tire Placard	kpa	240	240	240	240
Owner's Manual	kpa				
As Tested	kpa	240	240	240	240

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	701.7	505.8		711.7	590.6		721.7	598.3	
Right	kg	670.9	506.2		686.8	576.9		660.0	592.4	
Ratio	%	57.6	42.4		54.5	45.5		53.7	46.3	
Totals	kg	1372.6	1012.0	2384.6	1398.5	1167.5	2566.0	1381.7	1190.7	2572.4

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2384.6	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	136	(C)
Calculated Vehicle Target Weight (TVTW)	kg	2572.8	(A+B+C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)? **YES**

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	deg	-1.4	-0.9	-0.9	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-1.2	-1.0	-0.7	Yes
Front Bumper Angle (left-to-right)**	deg	-0.6	-0.6	-0.7	Yes
Rear Bumper Angle (left-to-right)**	deg	-0.4	-0.4	-0.4	Yes
Vehicle CG (Aft of Front Axle)	mm	1555	1667	1696	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	11	13	23	

*ND=Nose Down (-), NU=Nose Up (+) ** LD=Left Down (-), LU=Left Up (+)

*** The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements.

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Ballast (if any)	73.5
Right side mirror	1.8

DATA SHEET NO. 2
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013

SEAT POSITIONING

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	22.0	12.2	17.1
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCR Height (mm)	SCR Height Position	SCR Height (mm)		
				Rear- most	Mid- Fore/Aft	Forward- Most
Driver Seat	17.1	29	Max	58	58	58
	17.1	29	Mid	29	29	29
	17.1	29	Min	0	0	0
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed

DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

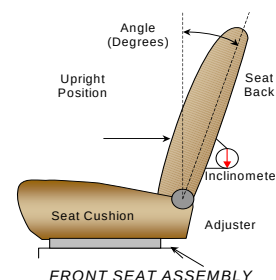
NHTSA No. M20140104
 Test Date: 7/31/2013

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	262		0	
Front Passenger Seat	210	43 (1 st as 1)	0	0 (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1 for the 5th percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents	Degree	Detent
Driver Seat w/Seated Dummy	52.0		-1.3	
Front Passenger Seat	47.3	25 (1 st as 1)	-0.4	8 th detent (forward-most as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

	Total # of Positions	Placed in Position #
Driver Seat	5 detents (1 st as 1)	0 (uppermost as 0)

HEAD RESTRAINT ADJUSTMENT

Head restraints are adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	7	Lowest/Foremost

DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

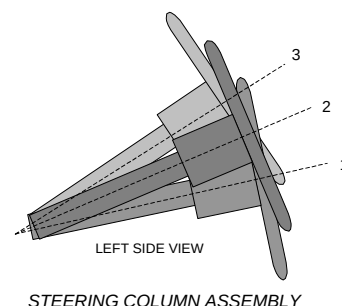
Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

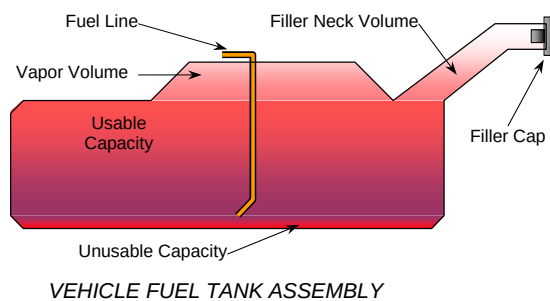
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	80.0	280
Geometric Center, Position 2	70.0	260
Uppermost, Position 3	60.0	240
Telescoping Steering Wheel Travel		40
Test Position	70.0	260



FUEL PUMP

Describe the fuel pump type, details about how it operates and the location of the fuel filler pipe.

The vehicle is equipped with an electric fuel pump. The pump will run when engine is running. Also, it will run briefly when ignition key is turned to the "on" position without starting the engine. The fuel pipe is on the left side.



FUEL TANK CAPACITY DATA

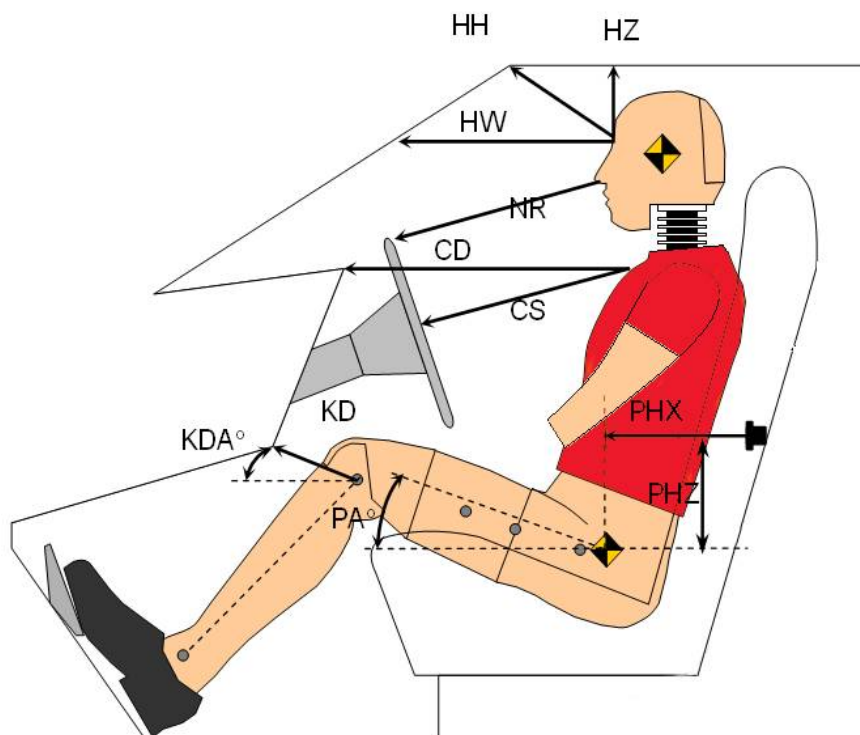
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	97.5
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	98.4
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	90.7
Actual Amount of Solvent Used	90.5
1/3 of Usable Capacity	32.5

Is the actual amount of solvent used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in Form No. 1? **YES**

.DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013



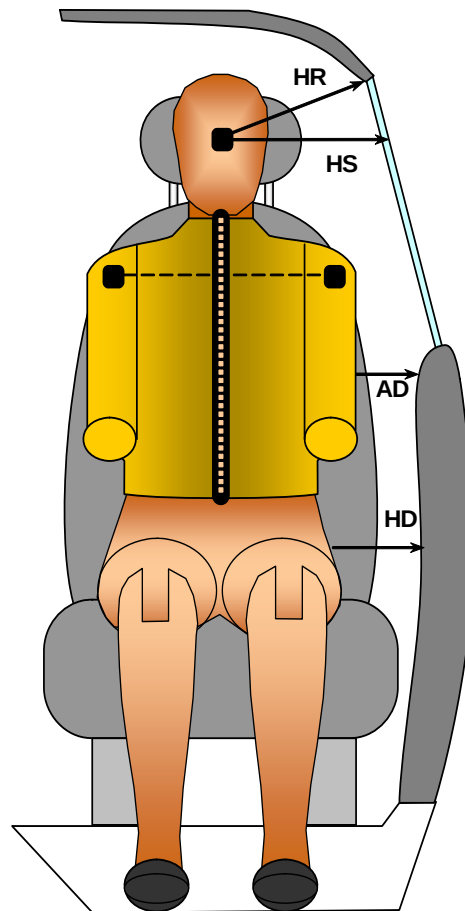
LEFT SIDE VIEW

Code	Measurement Description	Driver S/N 296	
		Length (mm)	Angle (°)
HH	Head to Header	367	
HW	Head to Windshield	715	
HZ	Head to Roof Liner	300	
NR	Nose to Rim	227	
CD	Chest to Dashboard	452	
CS	Chest to Steering Wheel	185	
KDL/KDAL°	Left Knee to Dash	115	30.8
KDR/KDAR°	Right Knee to Dash	110	29.7
PAX°	Pelvic Tilt Angle (X-Axis)		21.6
PAY°	Pelvic Tilt Angle (Y-Axis)		-0.7
PHX	Hip Point to Striker (X-Axis)	354	
PHZ	Hip Point to Striker (Z-Axis)	22	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013



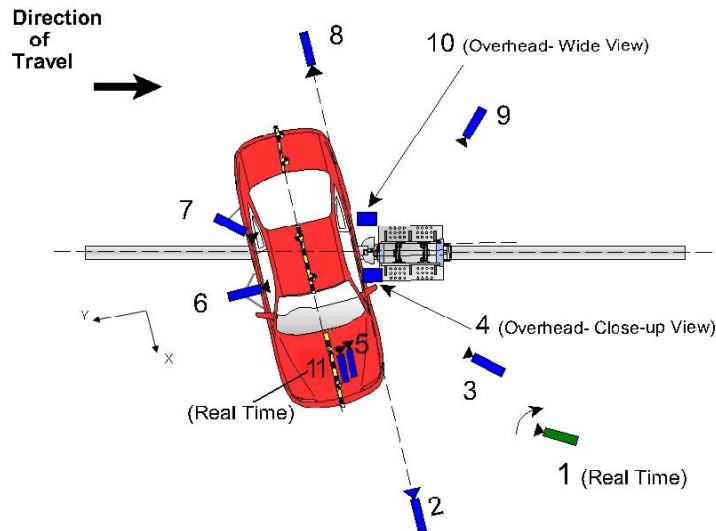
FRONT VIEW OF DUMMY

Code	Measurement Description	Driver S/N 296
		Length (mm)
HR	Head to Side Header	295
HS	Head to Side Window	380
AD	Arm to Door	192
HD	Hip Point to Door	159

DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
Test Date: 7/31/2013



Reference: (from Point of Impact for X and Y; from Ground for Z):
+X = Forward of Impact, +Y = Right of Impact, +Z = Down

Camera No.	View	Coordinates (mm)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real-Time Pan View					30
2	Front Ground Level	-80	6350	-1810	24	1000
3	Impact Side 45° Forward	-2340	5370	-1940	20	1000
4	Overhead Closeup	100	0	-4420	50	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	-70	-7100	-1830	24	1000
9	Impact Side 45° Rearward	-4100	-4570	-1900	20	1000
10	Overhead Wide View	390	0	-4610	14	1000
11	Real-Time Dummy Front View					30

* All measurements accurate to ± 6 mm

Note: Vehicle was at a 75° angle to the rigid pole.

Explain why camera(s) did not operate as intended: None

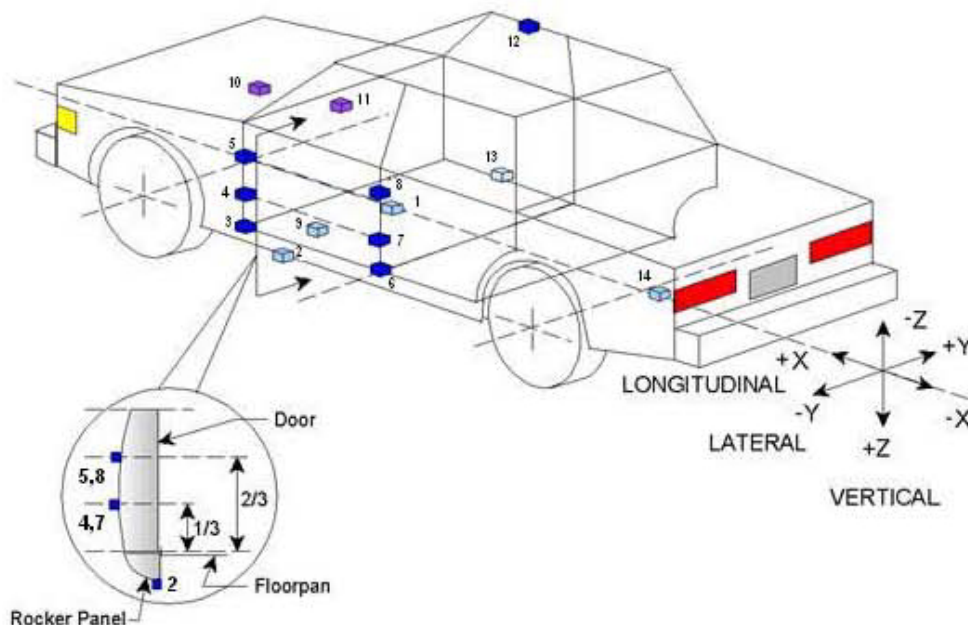
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	18
Pole Load Cells	8
TOTAL	42

DATA SHEET NO. 6
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	3167	0	-313
2	Left Floor Sill	3871	-810	-372
3	A Pillar Sill	4304	-830	-408
4	A Pillar Low	4272	-901	-810
5	A Pillar Mid	4240	-889	-1054
6	B Pillar Sill	3265	-810	-374
7	B Pillar Low	3068	-794	-820
8	B Pillar Mid	3073	-795	-1068
9	Driver Seat Track	3293	466	-614
10	Engine Top	4908	37	-1141
11	Firewall	4690	40	-1267
12	Right Roof	3108	590	-1854
13	Right Floor Sill	3871	810	-372
14	Rear Floorpan	266	0	-831

Reference:

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

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
Test Date: 7/31/2013



254 mm Diameter Rigid Pole

Load Cell Locations	
ID	Height From Impact Surface (mm)
1	182
2	470
3	698
4	986
5	1212
6	1641
7	1854
8	2053

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
Test Date: 7/31/2013

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver SID-IIs Dummy
Face	Curtain Airbag, Headrest
Top of Head	Curtain Airbag, Headrest
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Side Airbag, Seatback
Upper Torso	Side Airbag, Seatback
Lower Torso	Side Airbag, Seatback
Left Hip	Side Airbag, Seatpan
Left Knee	Door Panel

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/ Other Door
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	Cracked
Side Window Damage	Left Front Window Broken
Other Notable Effects	None

DATA SHEET NO. 8 (CONTINUED)
POST-TEST OBSERVATIONS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
Test Date: 7/31/2013

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

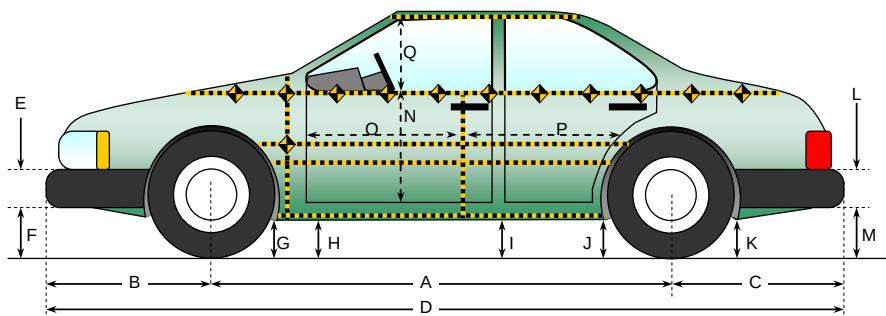
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1220
Actual Impact Point (Aft of Front Axle)	mm		1218
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	+2
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	deg	75 +/- 3	75
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.1
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.1

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
Test Date: 7/31/2013



All measurements in (mm) with tolerance of ± 3 mm

LEFT SIDE VIEW

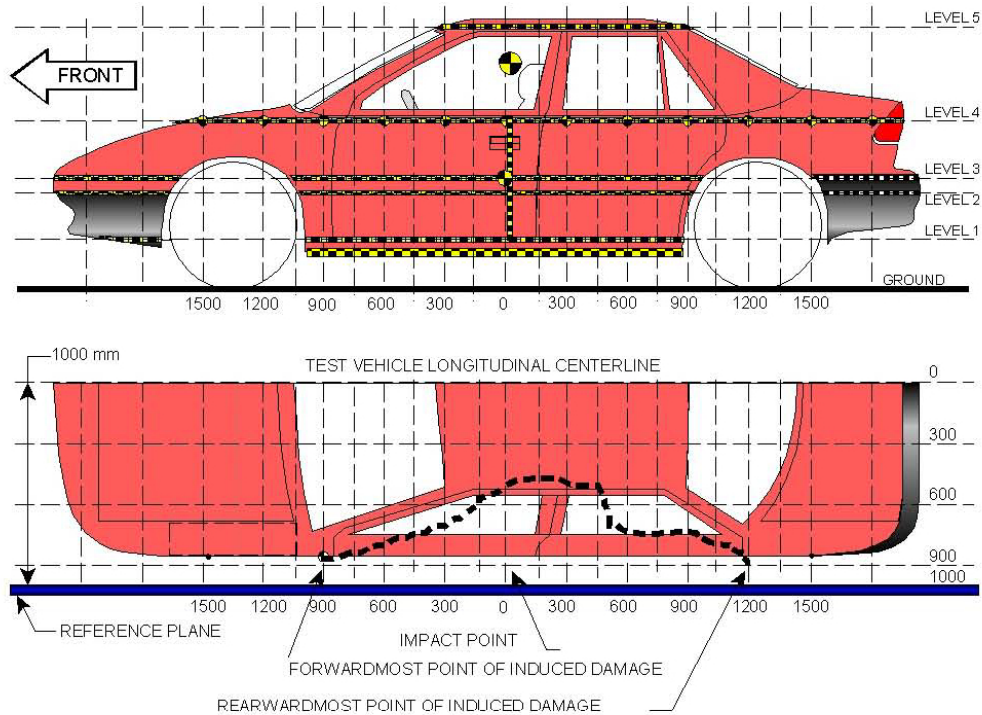
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3664	3560	104
B	Front Axle to FSOV	996	996	0
C	Rear Axle to RSOV	1192	1192	0
D	Total Vehicle Length at Centerline	5852	5748	104
E	Front Bumper Thickness	120	120	0
F	Front Bumper Bottom to Ground	254	275	-21
G	Sill Height at Front Wheel Well	361	340	21
H	Sill Height at Front Door Leading Edge	362	340	22
I	Sill Height at B-Pillar	363	345	18
J1	Sill Height at Rear Wheel Well	381	372	9
J2	Pinch Weld Height at Rear Wheel Well	373	370	3
K	Sill Height Aft of Rear Wheel Well	415	470	-55
L	Rear Bumper Thickness	250	250	0
M	Rear Bumper Bottom to Ground	403	421	-18
N	Sill Height to Bottom of Front Window Sill	842	842	0
O	Front Door Leading Edge to Impact CL	600	601	-1
P	Rear Door Trailing Edge to Impact CL	1558	1635	-77
Q	Front Window Opening	460	427	33
R	Right Side Length	5078	5097	-19
S	Left Side Length	5078	4890	188
T	Vehicle Width at B-Pillars	2000	1885	115

DATA SHEET NO. 10 **VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013



NOTE: The measurements are taken along the vertical impact reference line.
 Vehicle measurements forward of the vertical impact reference line are negative.

MAXIMUM EXTERIOR CRUSH MEAUREMENTS

Level	Measurement Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	430	347	75
2	Mid Door	840	424	75
3	Occupant Hip Point	865	423	75
4	Window Sill	1205	382	75
5	Window Top	1755	217	0

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

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013

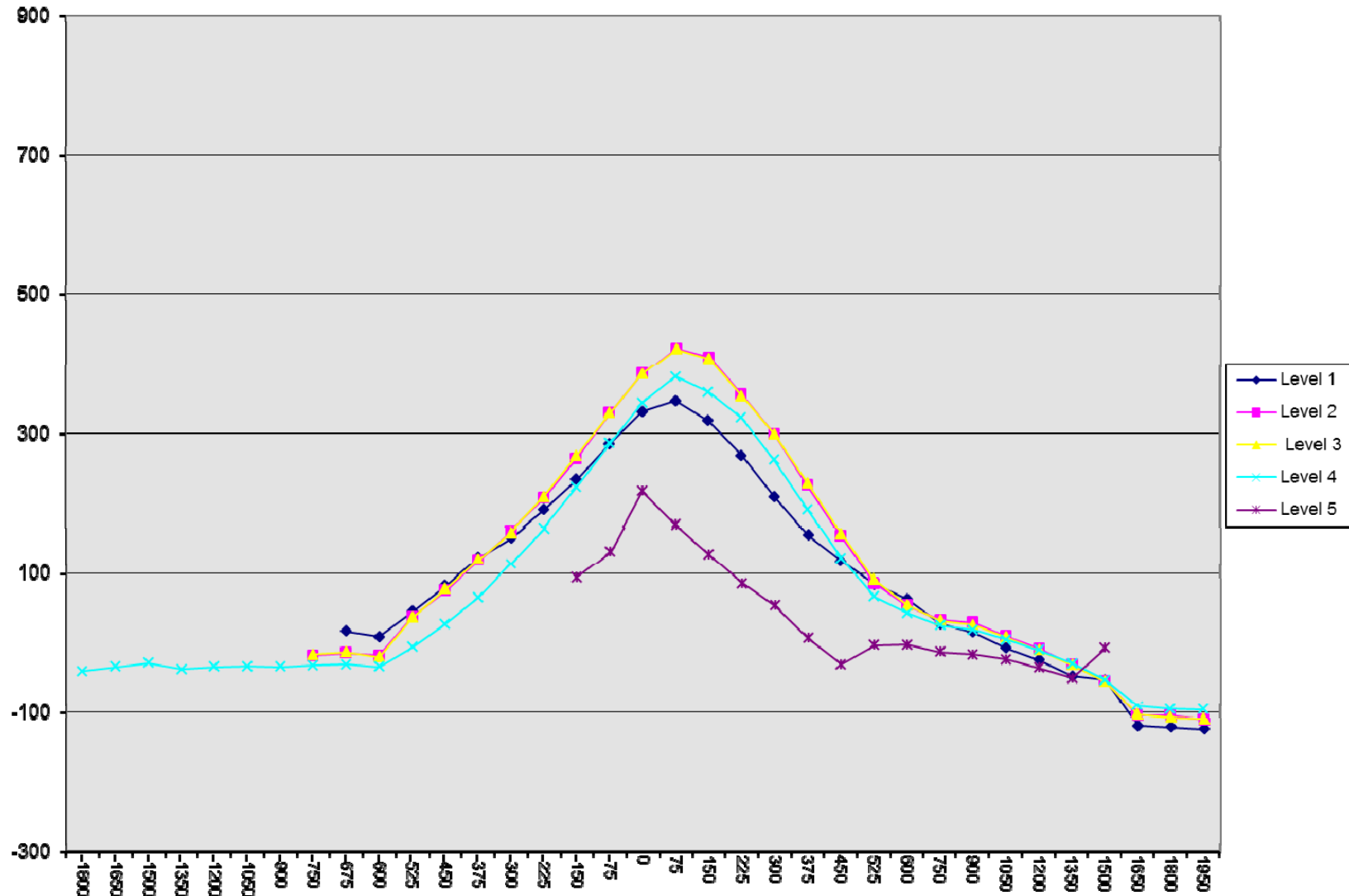
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1800				244					205					-39	
-1650				223					190					-33	
-1500				211					184					-27	
-1350				202					166					-36	
-1200				193					160					-33	
-1050				187					155					-32	
-900				183					150					-33	
-750		87	87	178			70	72	147			-17	-15	-31	
-675	144	89	90	176		162	76	78	147		18	-13	-12	-29	
-600	160	104	107	174		170	87	88	141		10	-17	-19	-33	
-525	175	110	110	172		221	148	147	167		46	38	37	-5	
-450	177	110	110	170		259	185	188	198		82	75	78	28	
-375	179	110	110	169		302	229	230	235		123	119	120	66	
-300	181	110	109	166		332	270	268	280		151	160	159	114	
-225	181	109	109	165		371	316	318	329		190	207	209	164	
-150	181	109	109	164	411	415	373	377	387	505	234	264	268	223	94
-75	181	109	109	162	399	466	438	438	448	530	285	329	329	286	131
0	181	109	109	160	391	512	496	495	504	608	331	387	386	344	217
75	182	109	109	159	386	529	533	532	536	555	347	424	423	382	169
150	182	109	109	158	384	500	520	518	517	511	318	411	409	359	127
225	182	109	109	156	382	450	465	463	478	468	268	356	354	322	86
300	182	109	109	154	379	391	408	408	416	433	209	299	299	262	54
375	183	110	109	153	377	338	335	338	344	385	155	225	229	191	8
450	183	110	109	153	376	301	264	266	275	347	118	154	157	122	-29
525	184	110	109	153	376	268	196	200	220	374	84	86	91	67	-2
600	188	110	109	152	376	251	164	164	196	375	63	54	55	44	-1
750	185	111	110	149	374	213	145	143	175	362	28	34	33	26	-12
900	186	112	111	149	374	202	142	138	169	359	16	30	27	20	-15
1050	189	114	113	148	372	183	125	122	154	350	-6	11	9	6	-22
1200	191	116	115	148	373	168	109	106	139	339	-23	-7	-9	-9	-34
1350	193	118	117	148	372	147	88	87	120	323	-46	-30	-30	-28	-49
1500	198	120	119	148	391	146	67	65	96	385	-52	-53	-54	-52	-6
1650	201	122	121	148		82	18	18	58		-119	-104	-103	-90	
1800	194	112	113	148		73	8	6	53		-121	-104	-107	-95	
1950	182	87	87	146		58	-24	-22	50		-124	-111	-109	-96	

Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush pile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

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

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
Test Program: NCAP Side Pole Impact Test

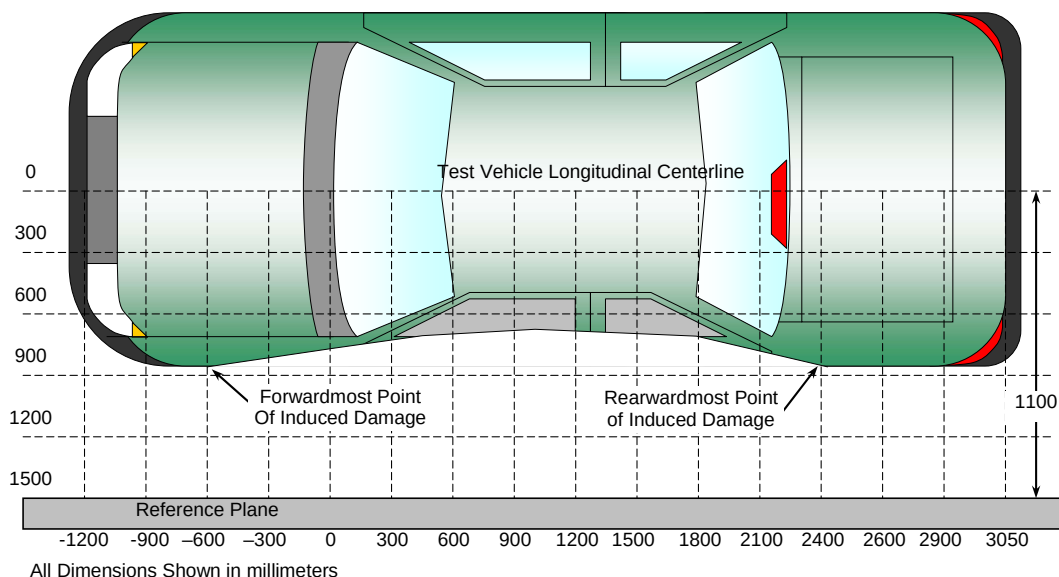
NHTSA No. M20140104
Test Date: 7/31/2013



DATA SHEET NO. 10 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	3900	223	190	-33
2	2930	190	327	137
3	1910	186	394	208
4	880	156	687	531
5	-75	110	525	415
6	-1050	178	147	-31

DATA SHEET NO. 11
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

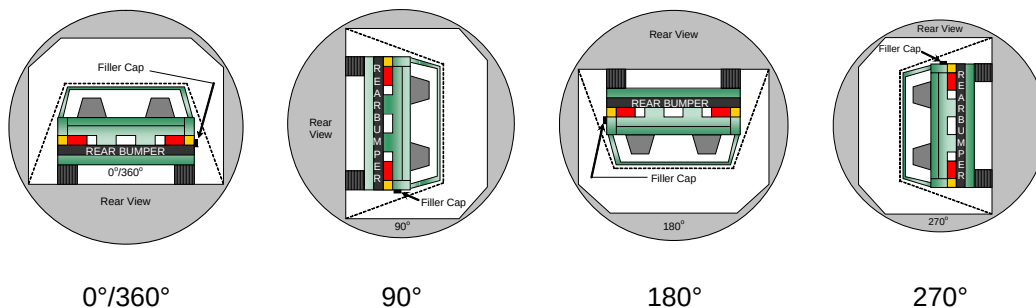
NHTSA No. M20140104
 Test Date: 7/31/2013

Test Time: 11:12 am

Temperature: 22.1°C

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum Allowable = 1 ounce)
 B. For the 5 minute period after motion ceases: None
 (Maximum allowable = 5 ounces)
 C. For the following 25 minutes: None
 (Maximum allowable = 1 oz./minute)
 D. Spillage Details: None

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	165	300	465
90° to 180°	150	300	450
180° to 270°	136	300	436
270° to 360°	167	300	467

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

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

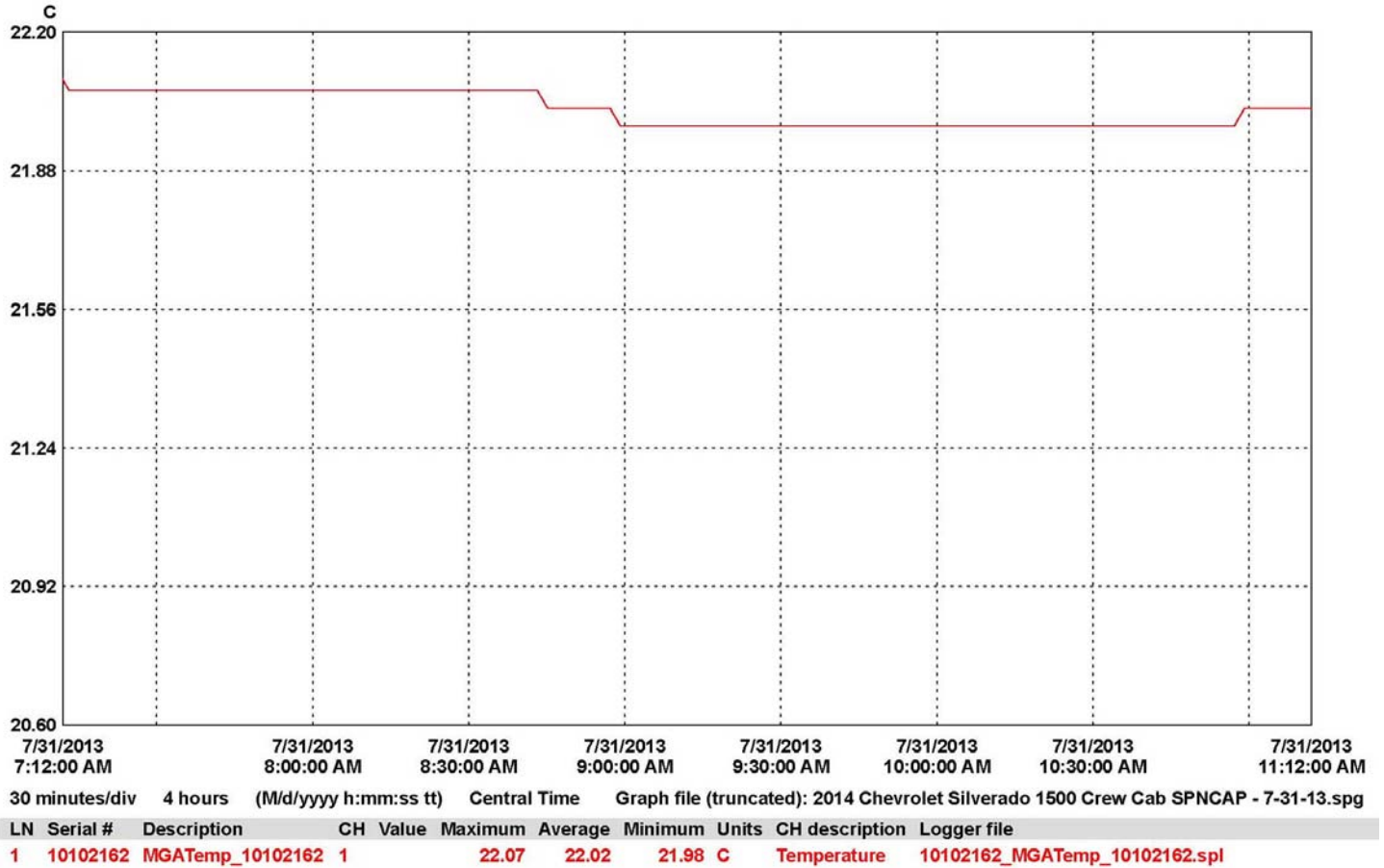
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	
90° to 180°	
180° to 270°	
270° to 360°	

DATA SHEET NO. 12
DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA

Test Vehicle: 2014 Chevrolet Silverado 1500 LT Crew Cab
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20140104
 Test Date: 7/31/2013



APPENDIX A
PHOTOGRAPHS

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As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle



Pre-Test Frontal View of Test Vehicle



Post-Test Frontal View of Test Vehicle



Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



Pre-Test Rear View of Test Vehicle



Post-Test Rear View of Test Vehicle



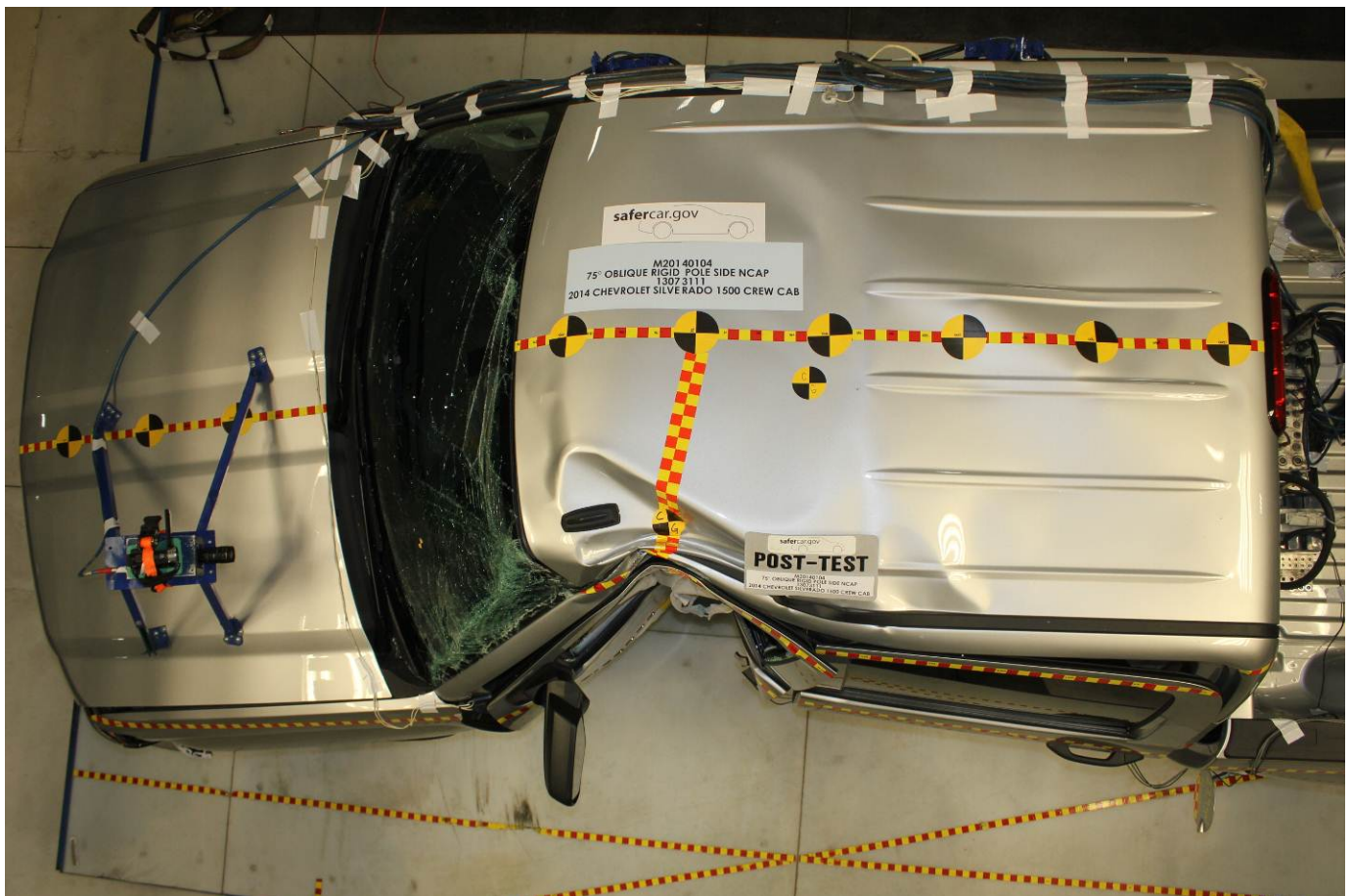
Pre-Test Right Side View of Test Vehicle



Post-Test Right Side View of Test Vehicle



Pre-Test Overhead View of Test Area



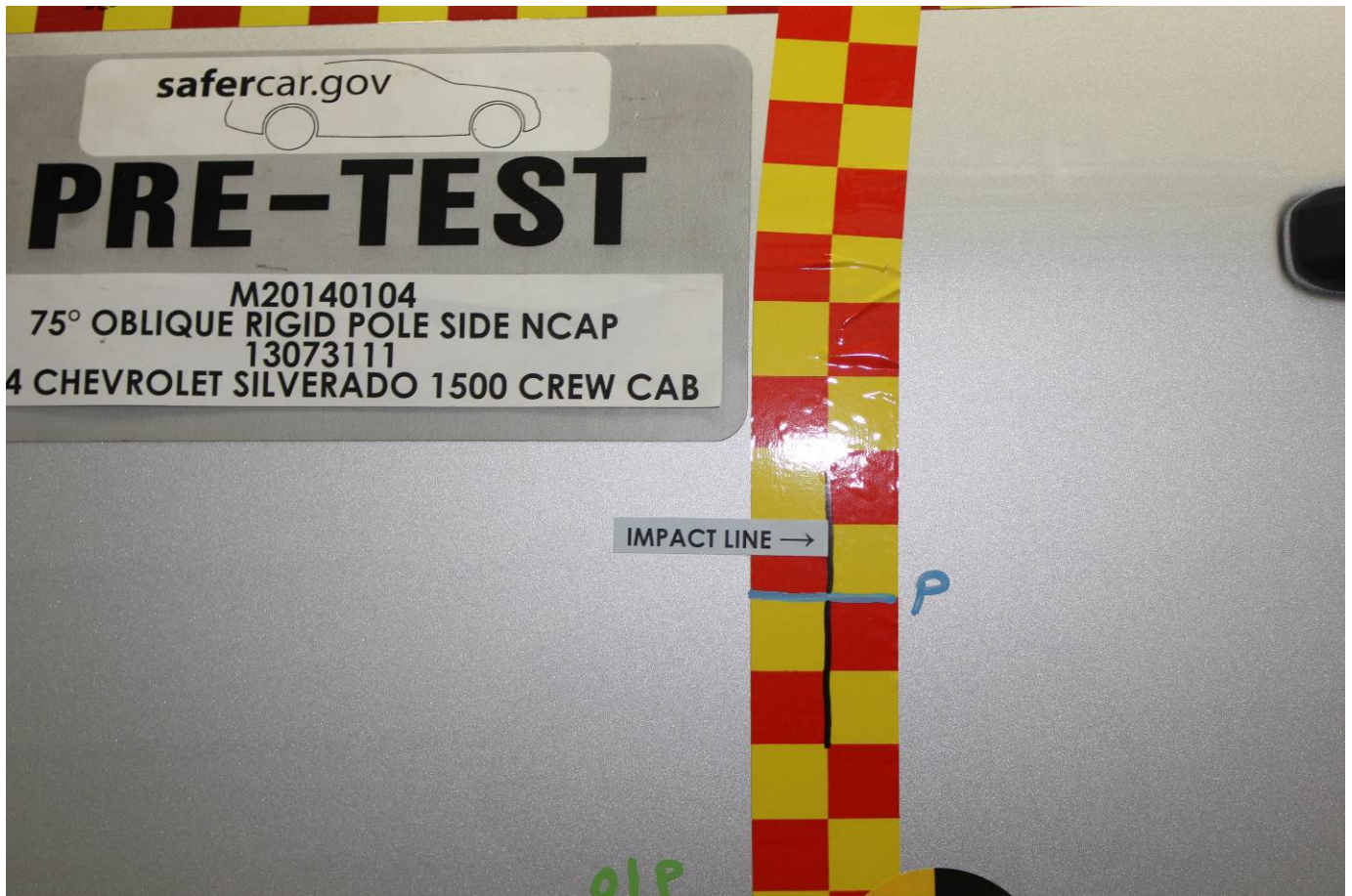
Post-Test Overhead View of Test Area



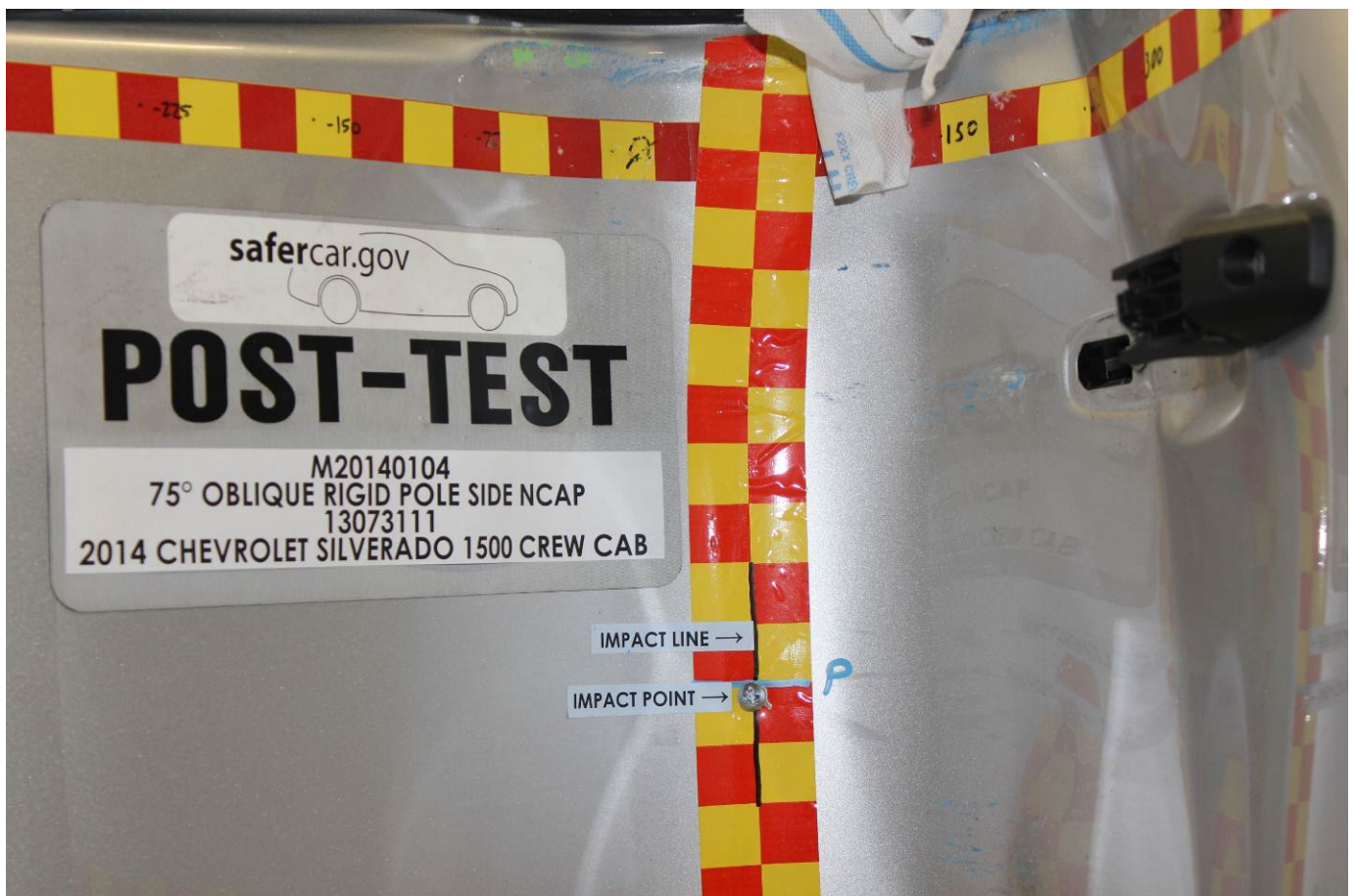
Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



Pre-Test Close-Up View of Impact Point Target



Post-Test Close-Up View of Impact Point Target Showing Impact Location



Pre-Test Front Close-Up View of Dummy Head and Chest



Post-Test Front Close-Up View of Dummy



Pre-Test Left Side View of Dummy Showing Belt and Chalking



Pre-Test Left Side View of Dummy Shoulder and Door Top View



Post-Test Left Side View of Dummy Shoulder and Door Top View



Pre-Test Front View of Seat Back Prior to Dummy Positioning



Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



Pre-Test Front View of Seat Pan Prior to Dummy Positioning



Pre-Test Overhead View of Dummy Thighs on Seat Pan



Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket



Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level



Pre-Test Placement of Dummy's Feet



Pre-Test View of Belt Anchorage for Dummy



Pre-Test Left Side View of Steering Wheel



Pre-Test View of Disengaged Parking Brake



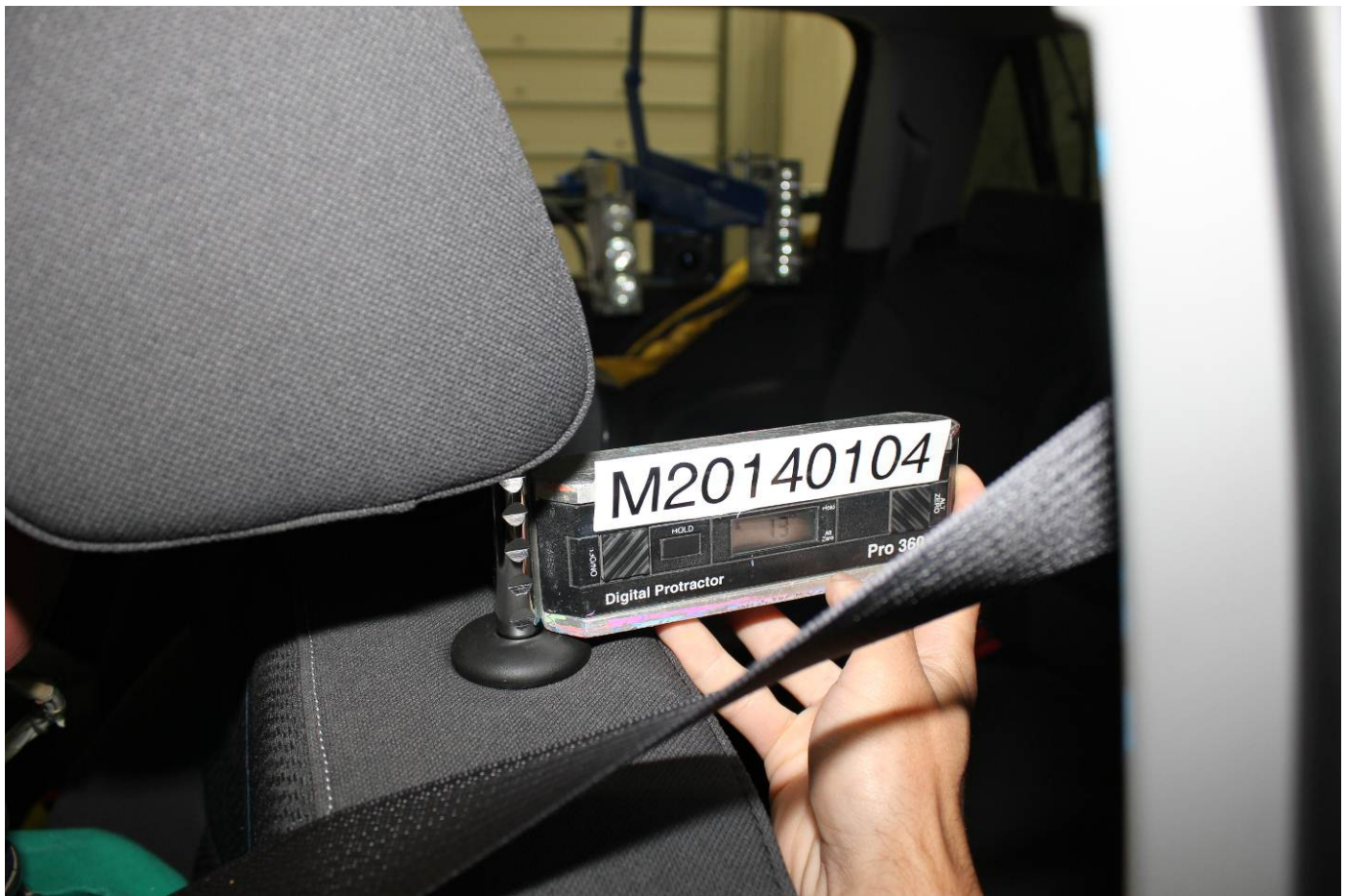
Pre-Test View of Parking Brake



Pre-Test Close-Up Left Side View of Driver Seat Track



Pre-Test Close-Up Left Side View of Driver Seat Back



Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Pre-Test Dummy and Door Clearance View



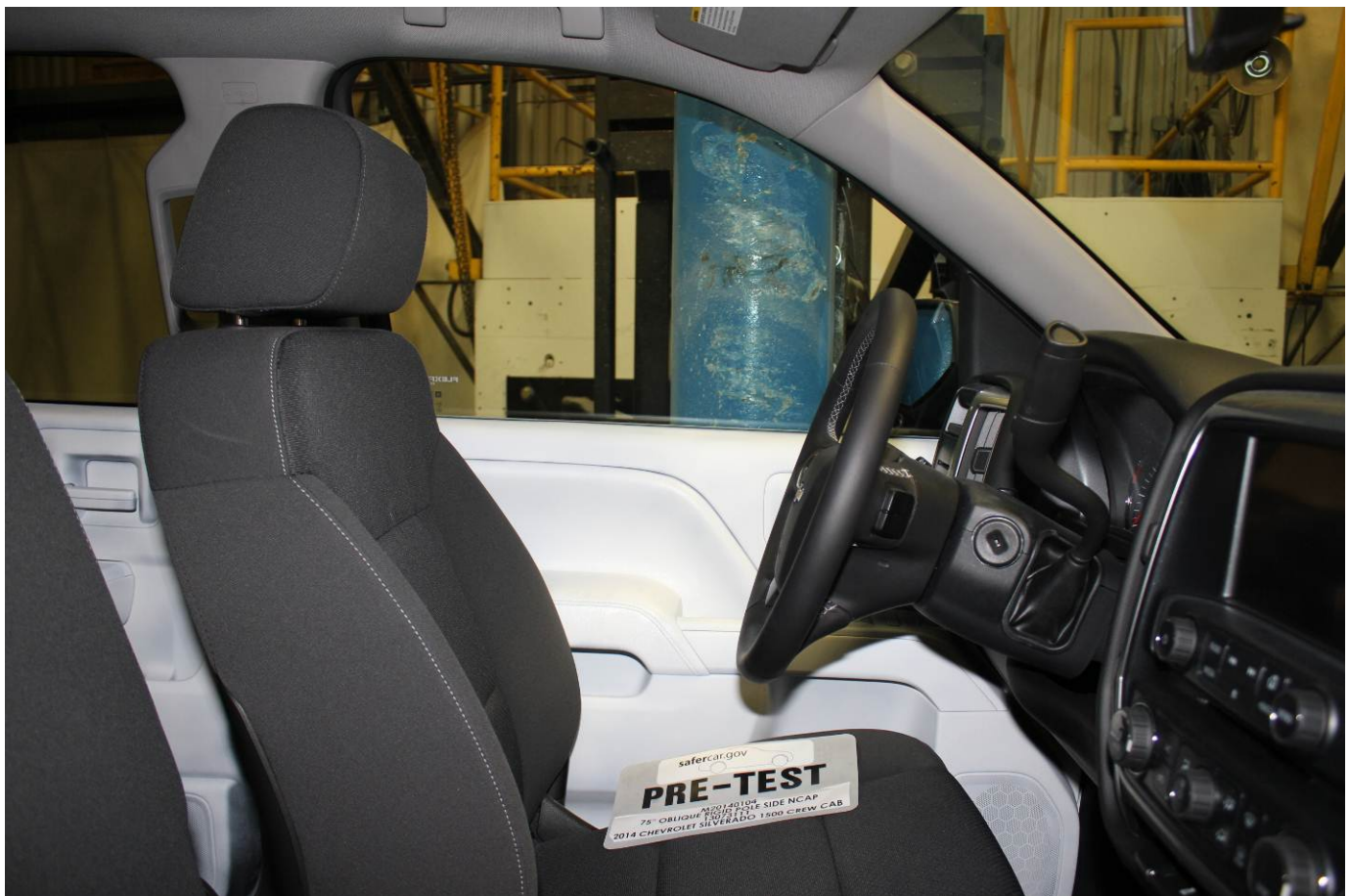
Post-Test Dummy and Door Clearance View



Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Pre-Test Inner Door Panel View



Post-Test Inner Door Panel View Showing Dummy Contact Location



Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



Post-Test Dummy Close-Up Head Contact with Side Air Bag View



Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



Post-Test Dummy Close-Up Torso Contact with Side Air Bag View



Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View



Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Close-Up View of Vehicle's Certification Label



Close-Up View of Vehicle's Tire Information Placard or Label



Pre-Test Pole Barrier Front View



Post-Test Pole Barrier Front View



Pre-Test Pole Barrier Side View



Post-Test Pole Barrier Side View



Pre-Test Ballast View



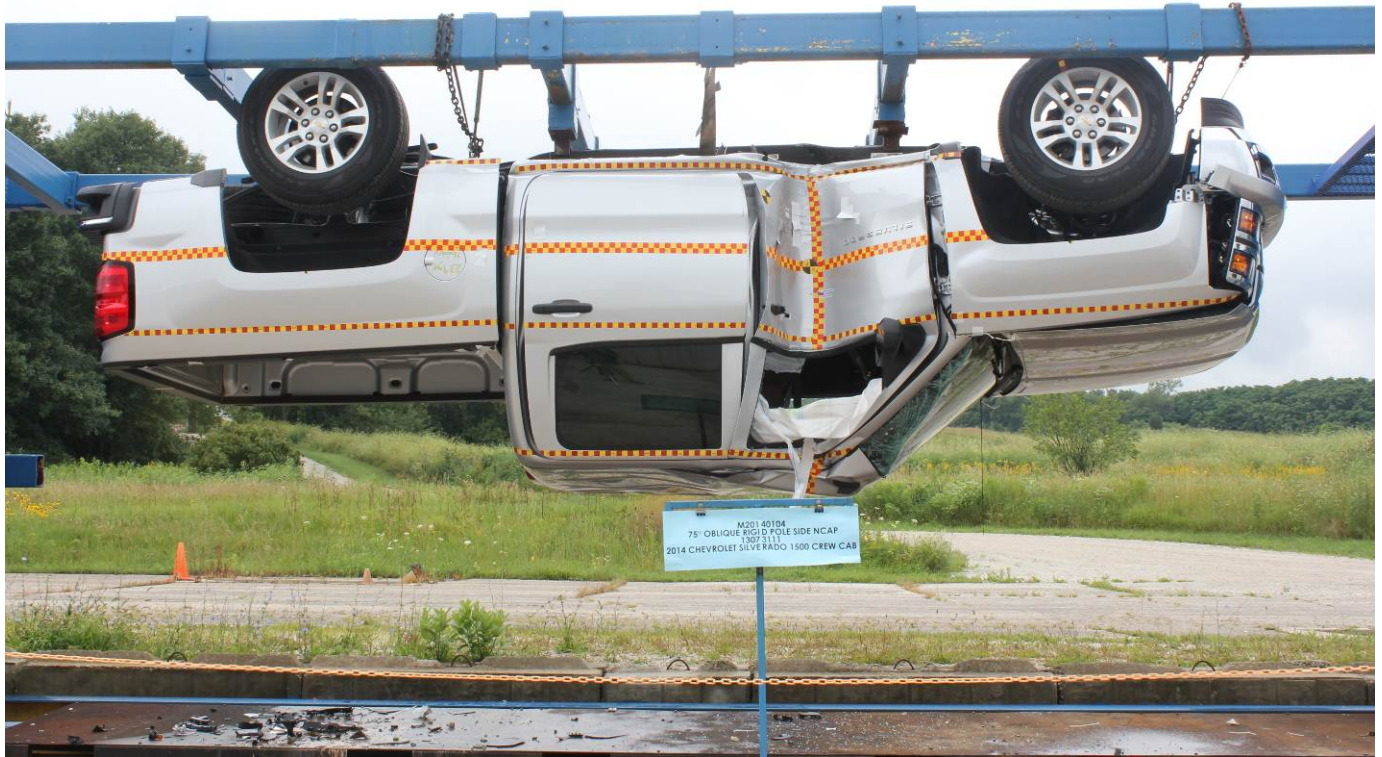
Post-Test Primary and Redundant Speed Trap Read-Out



FMVSS No. 301 Static Rollover 0 Degrees



FMVSS No. 301 Static Rollover 90 Degrees



FMVSS No. 301 Static Rollover 180 Degrees



FMVSS No. 301 Static Rollover 270 Degrees



FMVSS No. 301 Static Rollover 360 Degrees



Impact Event



CHEVROLET

**2014 SILVERADO 1500 2WD
LT CREW**



**EXTERIOR: SILVER ICE METALLIC
INTERIOR: JET BLACK**

**ENGINE, 5.3L V8 ECOTEC3
TRANSMISSION, 6 SPD AUTOMATIC**

Visit us at www.chevy.com

STANDARD EQUIPMENT

ITEMS FEATURED BELOW ARE INCLUDED AT NO EXTRA CHARGE IN THE STANDARD VEHICLE PRICE SHOWN.

- 5 YEAR / 100,000 MILE POWERTRAIN LIMITED WARRANTY SEE DEALER FOR DETAILS
- 24 HOUR ROADSIDE ASSISTANCE

MECHANICAL

- ENGINE, 5.3L V8 ECOTEC3
- TRANSMISSION, 6 SPD AUTOMATIC
- ELECTRIC POWER STEERING
- REAR AXLE, 3.23 RATIO

SAFETY & SECURITY

- AIRBAGS: DRIVER & RT. FRONT PASS - FRONT/SIDE-IMPACT, OUTBOARD FRNT & REAR SEAT -SIDE HEAD CURTAIN
- AIRBAG SENSING SYSTEM, PASSENGER
- STABILITRAK-STABILITY CONTROL W/ TRAILER SWAY CONTROL & HILL START ASSIST

- ANTILOCK BRAKES, 4 WHEEL DISC WITH DURALIFE ROTORS (TM)
- TIRE PRESSURE MONITOR SYSTEM (EXCL. SPARE TIRE)
- DAYTIME RUNNING LAMPS
- 6 MTHS ONSTAR DIRECTIONS AND CONNECTIONS WITH AUTOMATIC CRASH RESPONSE & TURN-BY-TURN NAVIGATION (ASK DEALER ABOUT GEOGRAPHIC COVERAGE)

EXTERIOR

- EZ LIFT AND LOWER TAILGATE
- LOCKING TAILGATE
- GLASS, DEEP-TINTED
- WHEELHOUSE LINERS, REAR
- POWER HEATED OUTSIDE MIRRORS
- WHEELS, 17" BRIGHT - MACHINED ALUMINUM
- TIRES, ALL SEASON
- SPARE TIRE LOCK
- BED RAIL PROTECTORS
- FRONT BUMPER, CHROME

- REAR BUMPER, CHROME
- CORNERSTEP, REAR BUMPER

INTERIOR

- SEATS, FRONT 40/20/40 BENCH
- SEAT 60/40 REAR FOLDING BENCH
- REMOTE KEYLESS ENTRY
- POWER WINDOWS, DRIVER EXPRESS
- POWER DOOR LOCKS
- COLOR KEYS CARPET
- FLOOR MATS, FRONT
- AIR CONDITIONING
- VISORS, DRIVER AND FRONT PASSENGER, LIGHTED
- CRUISE CONTROL
- DRIVER INFO - COLOR DISPLAY
- STEERING COLUMN, TILT
- LEATHER WRAP STEERING WHEEL
- STEERING WHEEL AUDIO CONTROLS
- CHEVROLET MYLINK AUDIO SYSTEM 4.2" DIAGONAL COLOR DISPLAY
- SIRIUSXM + SERVICE

- SUBSCRIPTION SOLD SEPARATELY BY SIRIUSXM AFTER 3 MONTHS
- HD RADIO
- SINGLE-SLOT CD/MP3 PLAYER
- USB PORTS
- BLUETOOTH FOR PHONE

OPTIONS & PRICING

MANUFACTURER'S SUGGESTED RETAIL PRICE

STANDARD VEHICLE PRICE \$34,265.00

OPTIONS INSTALLED BY THE MANUFACTURER (MAY REPLACE STANDARD EQUIPMENT SHOWN)

ALL STAR EDITION 2,740.00

- WHEELS, 18" BRIGHT-MACHINED ALUMINUM
- TRAILERING EQUIPMENT PKG INCL AUTO LOCKING REAR DIFFERENTIAL
- PWR SEAT ADJUSTER, DRIVER
- FRONT FOG LAMPS
- AIR CONDITIONING,

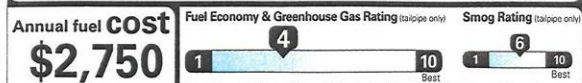
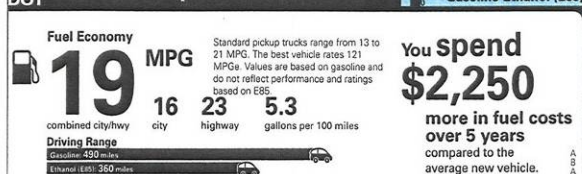
- DUAL ZONE CLIMATE CONTROL
- STEERING COLUMN, TILT & TELESCOPING
- REMOTE VEHICLE START
- CHEVROLET MYLINK AUDIO SYSTEM W/ 8" DIAGONAL COLOR TOUCH
- REAR VISION CAMERA
- REAR WINDOW DEFROSTER
- POWER OUTLET, 110-VOLT AC

ENGINE, 5.3L V8 ECOTEC3 895.00
GVW RATING - 7,000 LBS INC.
REAR AXLE 3.09 RATIO INC.

TOTAL OPTIONS \$3,635.00
TOTAL VEHICLE & OPTIONS \$37,900.00
DESTINATION CHARGE 995.00
TOTAL BEFORE SAVINGS \$38,895.00
ALL STAR EDITION PACKAGE DISCOUNT -750.00

TOTAL VEHICLE PRICE* \$38,145.00

EPA DOT Fuel Economy and Environment



Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 23 MPG and costs \$11,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. This is a dual fueled automobile. MPG is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuelconomy.gov

Calculate personalized estimates and compare vehicles

Flexible-Fuel Vehicle Gasoline-Ethanol (E85)

GOVERNMENT 5-STAR SAFETY RATINGS

This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.

Source: National Highway Traffic Safety Administration (NHTSA)
www.safercar.gov or 1-888-327-4236



Equipped with the safety and connectivity of OnStar.

Push your blue button or visit onstar.com for details.

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:
U.S./CANADIAN PARTS CONTENT: 40%
MAJOR SOURCES OF FOREIGN PARTS CONTENT: MEXICO 51%

NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:
FINAL ASSEMBLY POINT: SILAO, GJ MEXICO
COUNTRY OF ORIGIN: ENGINE: UNITED STATES
TRANSMISSION: UNITED STATES

This label has been applied pursuant to Federal law - Do not remove prior to delivery to the ultimate purchaser. *Includes Manufacturer's Recommended Pre-Delivery Service. Does not include dealer-installed options and accessories not listed above. Local taxes or license fees.

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GMLBL_P100_0029-02/11/0913

ORDER NO 000000
SALES MODEL CODE CC1544
DEALER NO 11451
FINAL ASSEMBLY: SILAO, GJ MEXICO

VIN 3GCP0CPC5EG108862

DEALER TO WHOM DELIVERED
JACK PHELAN CHEVROLET, INC.
4000 S HARLEM AVE
LYONS, IL 60534-1439



CE
2GA3696084

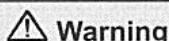
Monroney Label

3-2 Seats and Restraints

Head Restraints

Front Seats

The vehicle's front seats have adjustable head restraints in the outboard seating positions.

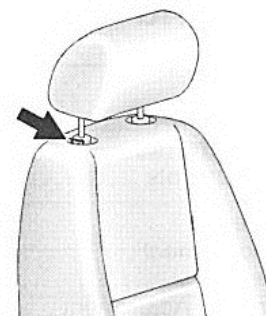


Warning

With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.



Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.



The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure that it is locked in place.

To lower the head restraint, press the button, located on the top of the seatback, and push the restraint down. Try to move the head restraint after the button is released to make sure that it is locked in place.

On some models, the head restraints adjust forward and rearward. To adjust the head

Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

restraint forward, grasp the head restraint and pull forward to the desired locking position. To adjust the head restraint rearward, grasp the head restraint and pull forward fully until the mechanism releases and allows the head restraint to return to the full rear position.

The front seat outboard head restraints are not designed to be removed.

Rear Seats

The rear seat has adjustable headrests in the outboard seating positions.

The height of the headrest can be adjusted. Pull the headrest up to raise it. To lower the headrest, push the headrest down.

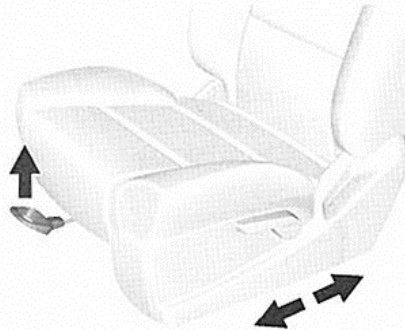
If you are installing a child restraint in the rear seat, see "Securing a Child Restraint Designed for the LATCH System" under *Lower Anchors and Tethers for Children (LATCH System)* on page 3-45.

Front Seats

Seat Adjustment

⚠ Warning

You can lose control of the vehicle if you try to adjust a driver seat while the vehicle is moving. Adjust the driver seat only when the vehicle is not moving.



To adjust a manual seat:

1. Pull the handle at the front of the seat.
2. Slide the seat to the desired position and release the handle.
3. Try to move the seat back and forth to be sure it is locked in place.

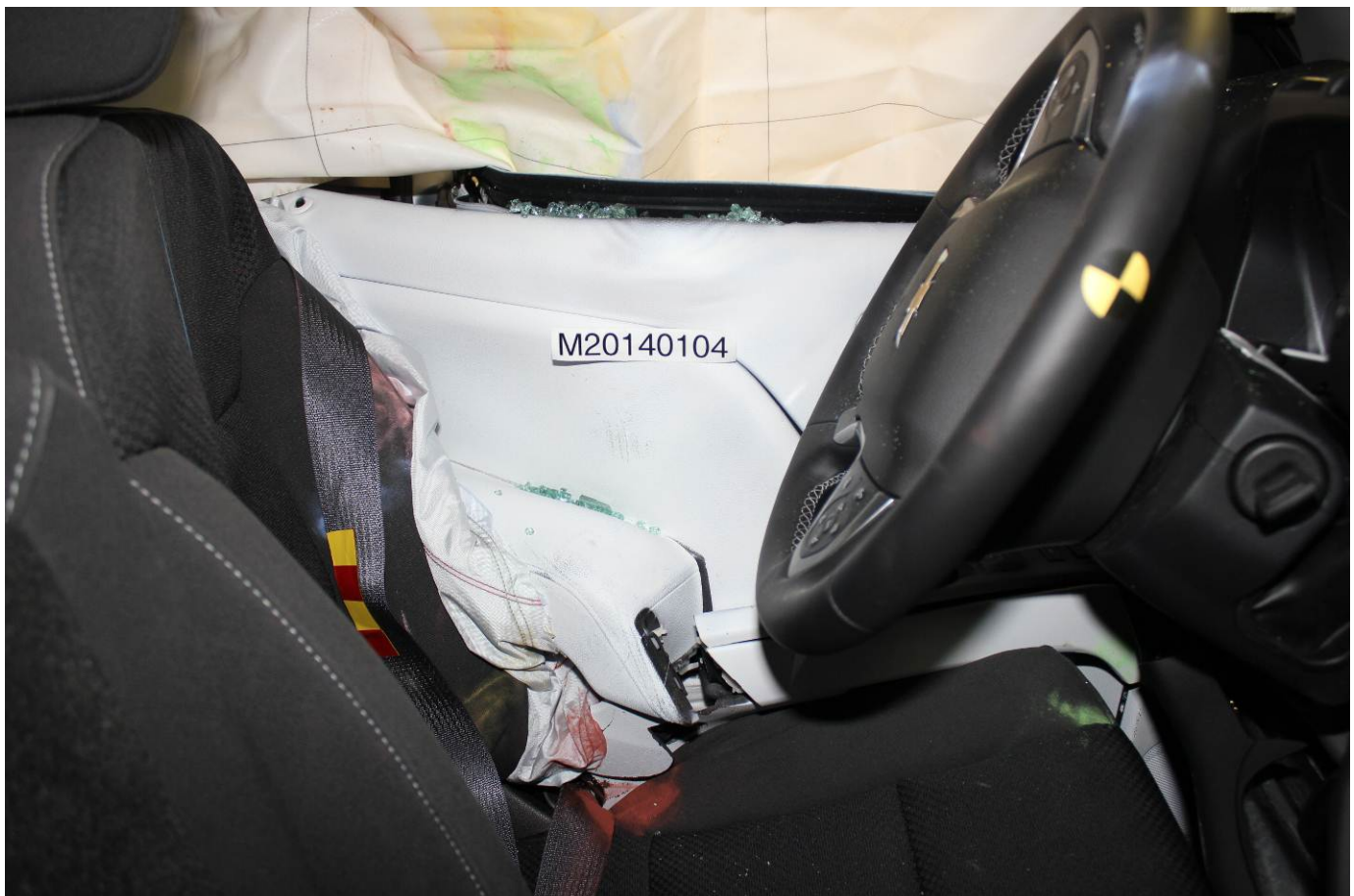
To adjust the seatback, see *Reclining Seatbacks* on page 3-5.

To adjust the lumbar support, see *Lumbar Adjustment* on page 3-4.

Center Seat

If equipped, the center front seatback doubles as an armrest and cupholder/storage area for the driver and passenger when the center front seat is not used. Do not use it as a seating position when the seatback is folded down.

Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

		<u>Page No.</u>
Figure No. 1.	Driver Head CG Acceleration (X) vs. Time	B-1
Figure No. 2.	Driver Head CG Acceleration (Y) vs. Time	B-1
Figure No. 3.	Driver Head CG Acceleration (Z) vs. Time	B-1
Figure No. 4.	Driver Head CG Resultant Acceleration (X) vs. Time	B-1
Figure No. 5.	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
Figure No. 6.	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
Figure No. 7.	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
Figure No. 8.	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
Figure No. 9.	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
Figure No. 10.	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
Figure No. 11.	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at
www.NHTSA.dot.gov

Additional Driver Dummy Instrumentation Data

Driver Head CG Redundant Acceleration (X) vs. Time

Driver Head CG Redundant Acceleration (Y) vs. Time

Driver Head CG Redundant Acceleration (Z) vs. Time

Driver Upper Thorax Rib Deflection (Y)

Driver Middle Thorax Rib Deflection (Y)

Driver Lower Thorax Rib Deflection (Y)

Driver Upper Abdomen Rib Deflection (Y)

Driver Lower Abdomen Rib Deflection (Y)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)

Vehicle Center of Gravity Acceleration (Y)

Vehicle Center of Gravity Acceleration (Z)

Left Floor Sill Acceleration (Y)

Left A-Pillar Sill Acceleration (Y)

Left Lower A-Pillar Acceleration (Y)

Left Mid A-Pillar Acceleration (Y)

Left B-Pillar Sill Acceleration (Y)

Left Lower B-Pillar Acceleration (Y)

Left Mid B-Pillar Acceleration (Y)

Driver Seat Track at Dummy Hip Point Acceleration (Y)

Engine Top Acceleration (X)

Engine Top Acceleration (Y)

Firewall Center Acceleration (Y)

Right Roof at Vertical Impact Reference Line Acceleration (Y)

Right Sill at Vertical Impact Reference Line Acceleration (Y)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

Pole Instrumentation Data

Load Cell Pole Barrier #1 Force (Y)

Load Cell Pole Barrier #2 Force (Y)

Load Cell Pole Barrier #3 Force (Y)

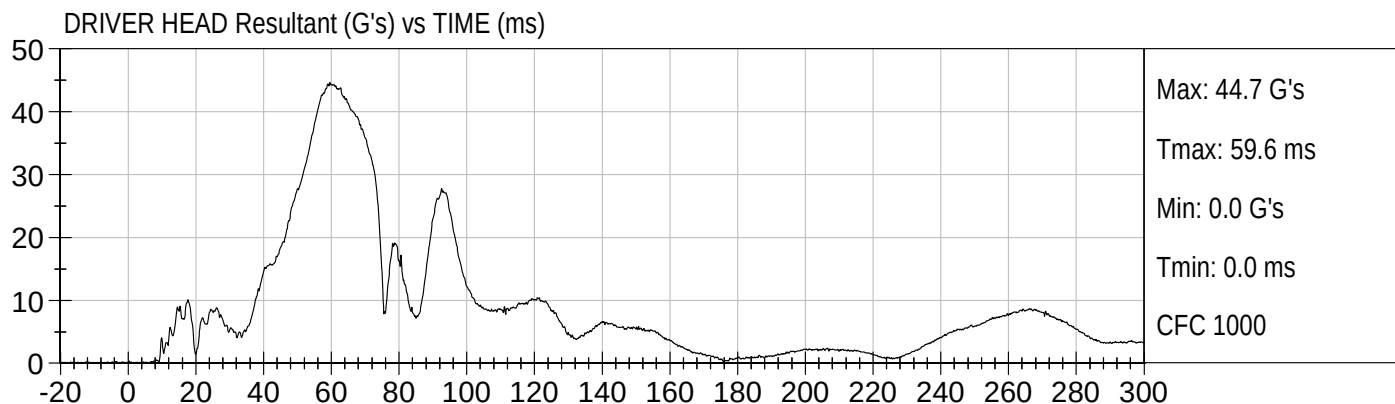
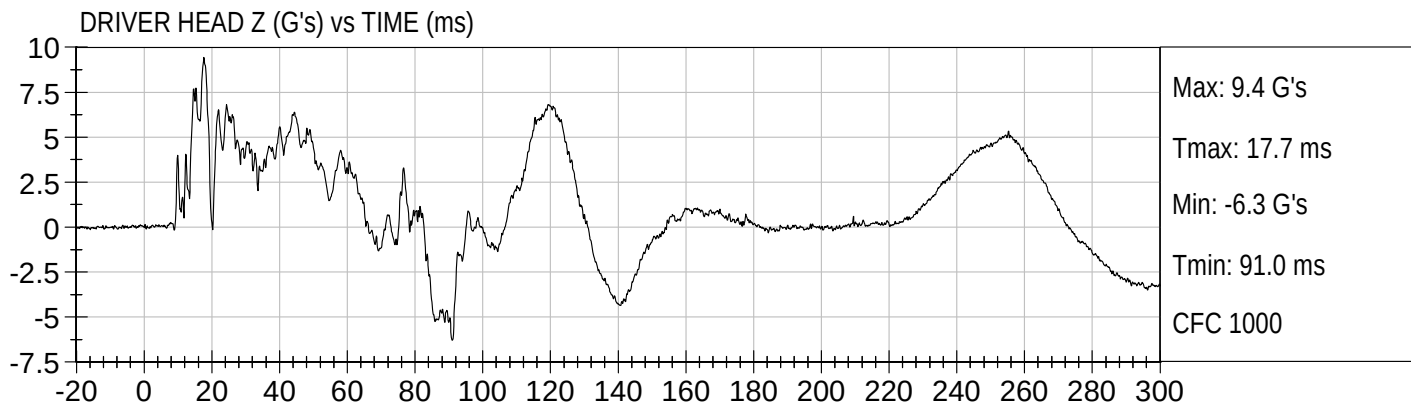
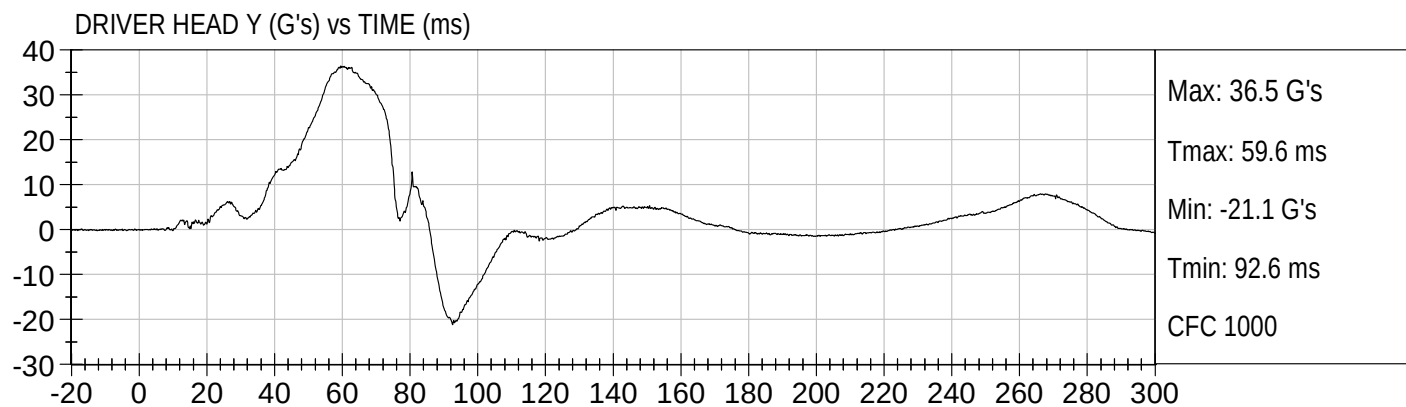
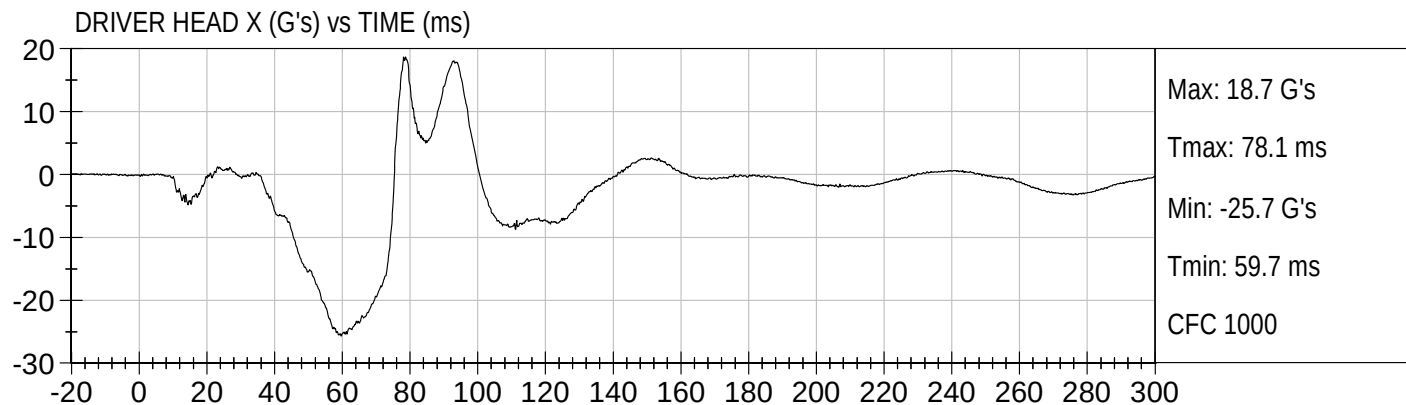
Load Cell Pole Barrier #4 Force (Y)

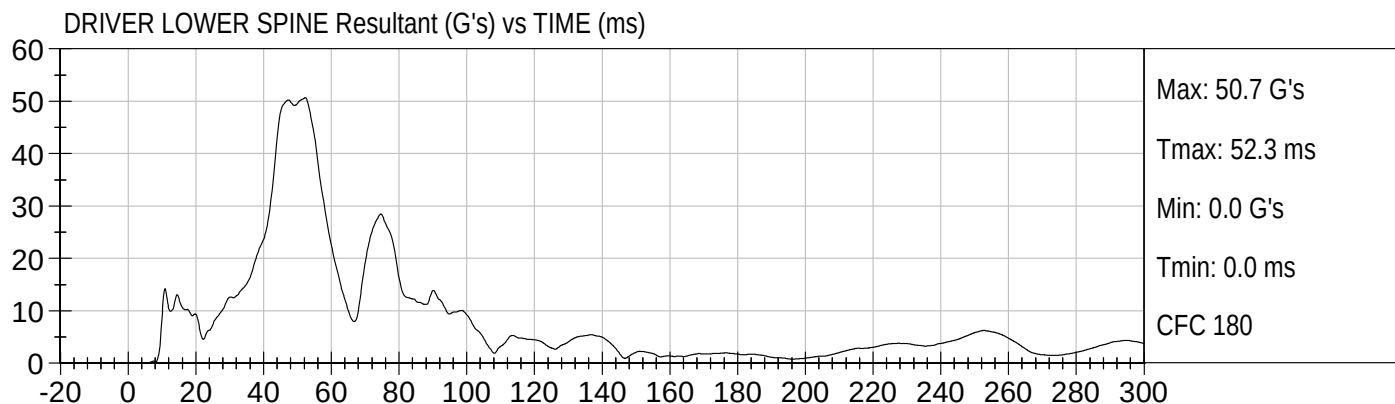
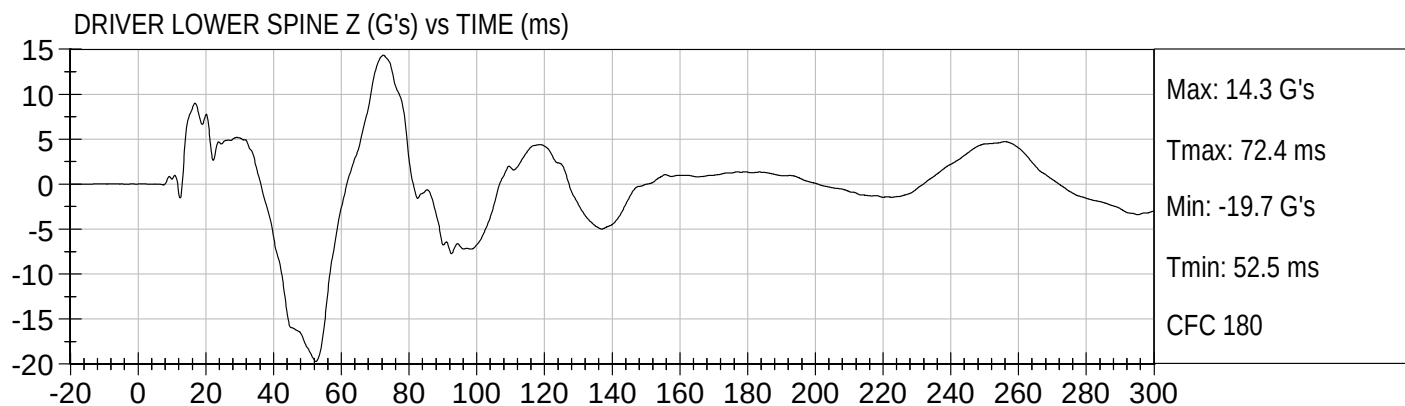
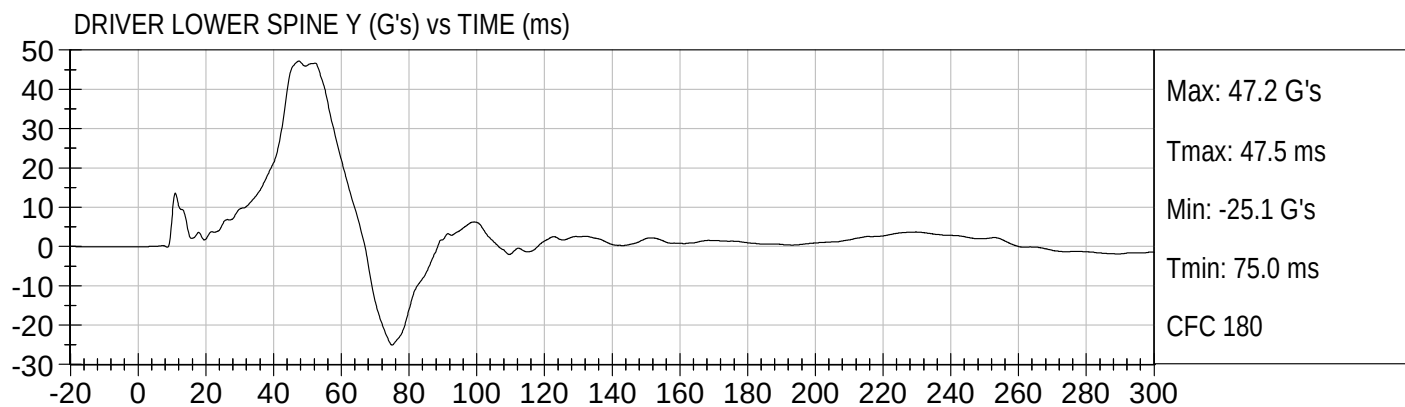
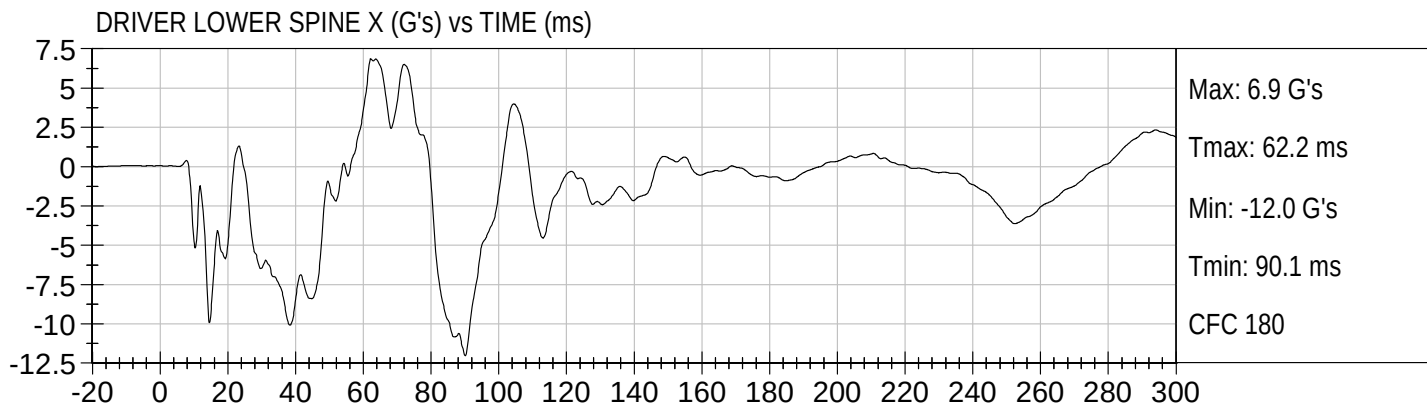
Load Cell Pole Barrier #5 Force (Y)

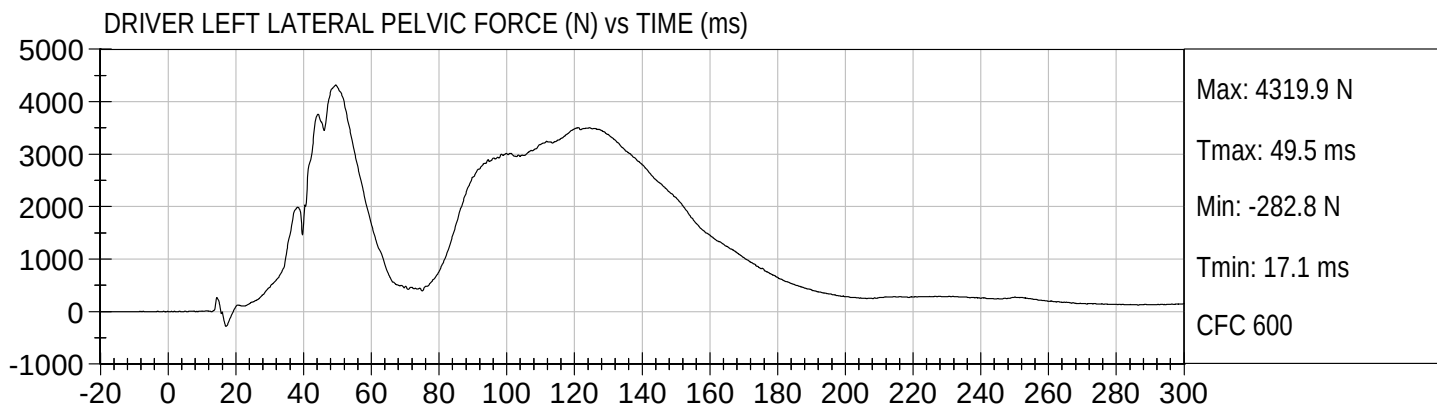
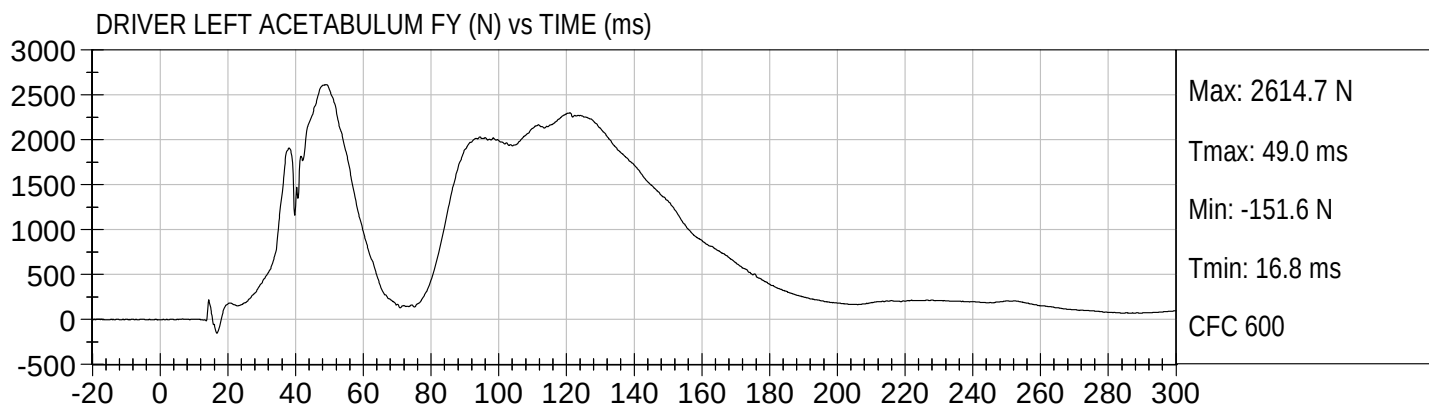
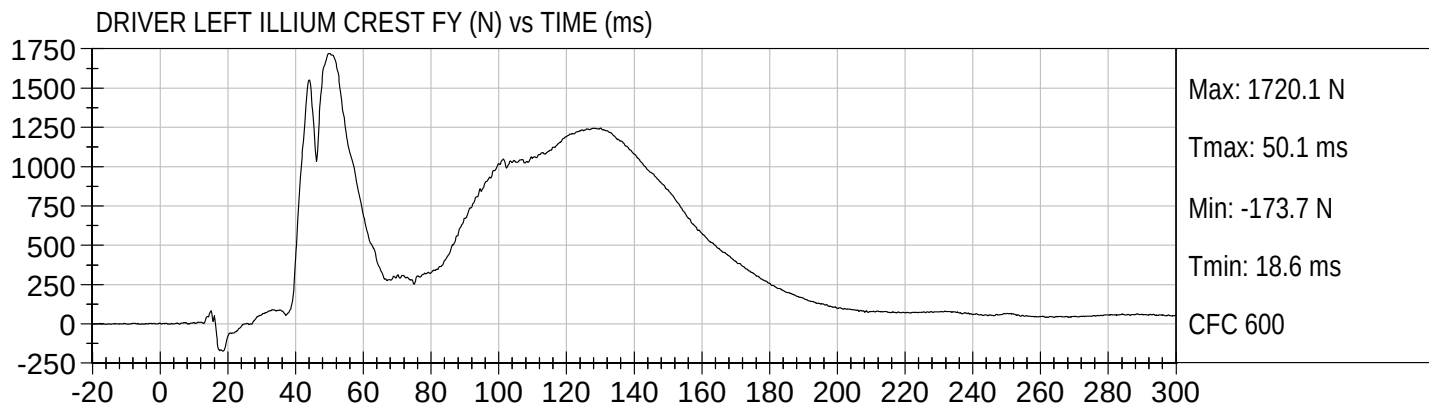
Load Cell Pole Barrier #6 Force (Y)

Load Cell Pole Barrier #7 Force (Y)

Load Cell Pole Barrier #8 Force (Y)







APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SID-IIsD External Measurements
SN: 296

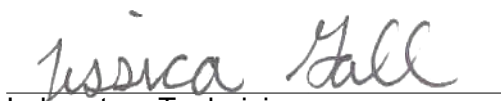
No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	784	Pass
B	Shoulder Pivot Height	437 - 453	442	Pass
C	H-point Height	79 - 89	83	Pass
D	H-point from Seatback	141 - 151	145	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	121	Pass
G	Head Breadth	140 - 148	142	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	180	Pass
J	Head Circumference	541 - 551	548	Pass
K	Buttock to Knee Length	514 - 540	535	Pass
L	Popliteal Height	343 - 369	358	Pass
M	Knee Pivot to Floor Height	392 - 409	404	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	206	Pass
P	Foot Length	216 - 232	219	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	316	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	481	Pass
V	Shoulder Width	341 - 357	346	Pass
W	Foot Width	78 - 94	85	Pass
Y	Chest Circumference w/ jacket	851 - 881	870	Pass
Z	Waist Circumference	761 - 791	772	Pass

MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

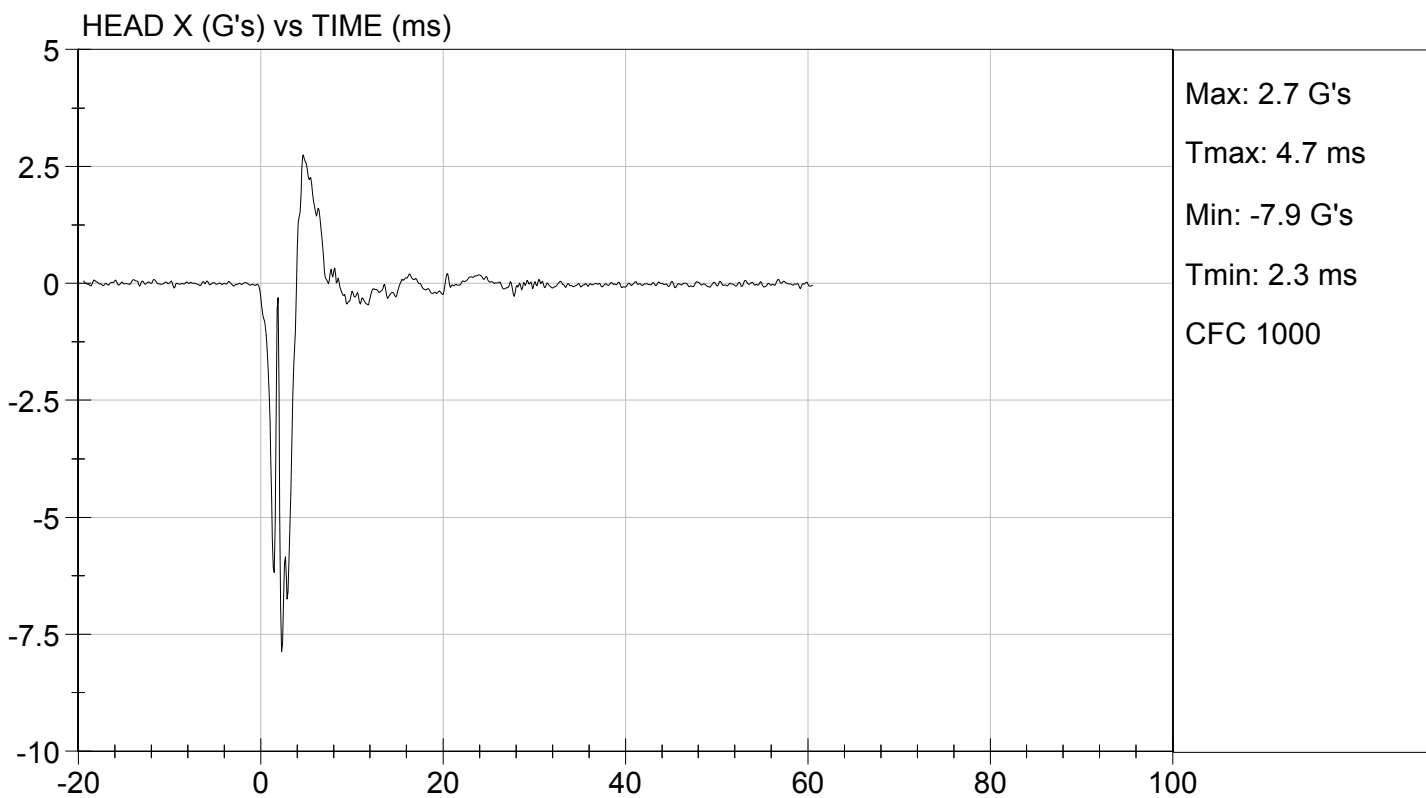
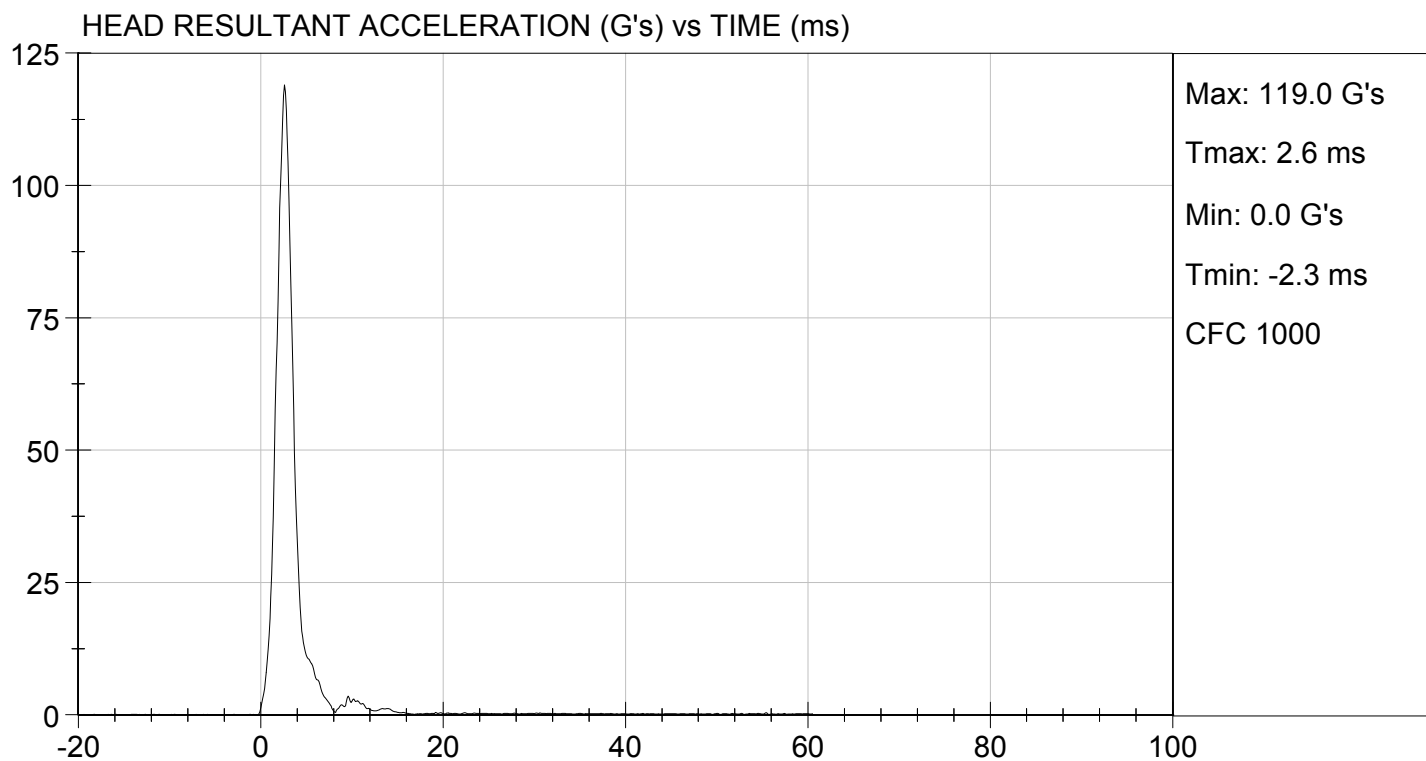
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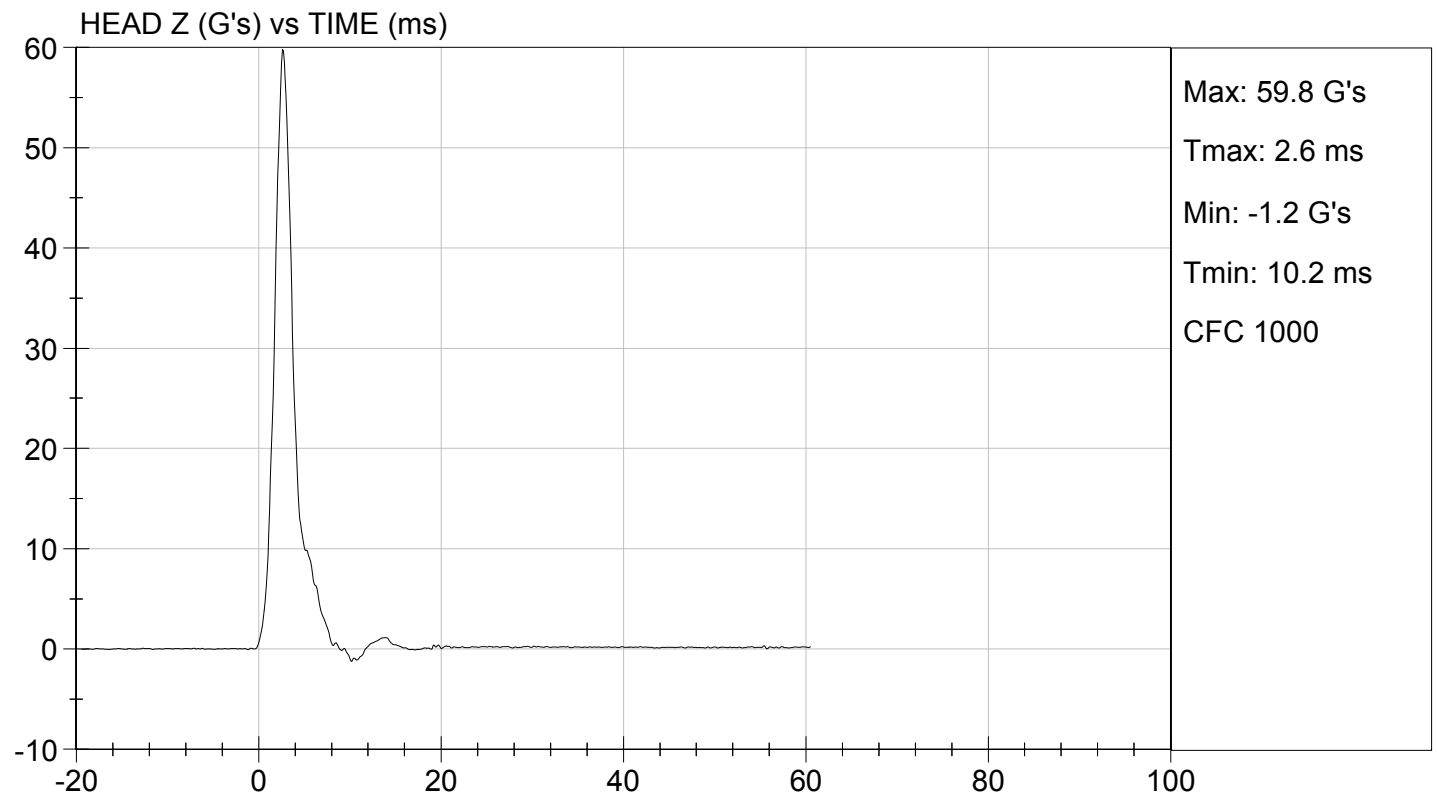
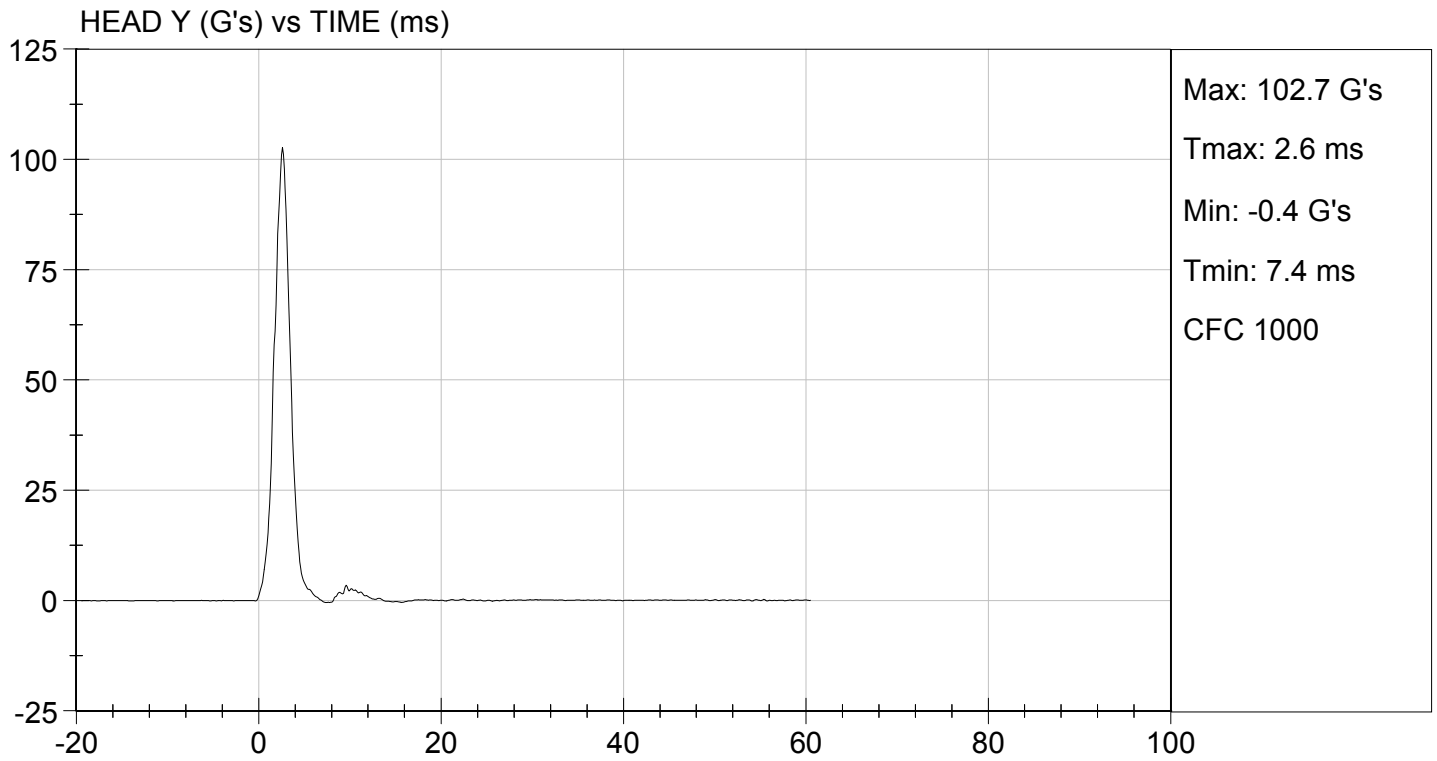
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Peak Resultant Acceleration	G's	115 to 137	119	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-7.9	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
			Overall Test Results	Pass


Laboratory Technician

07/11/2013
Test Date


Approved By





MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132242

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.0	Pass
Humidity		%	10 to 70	43	Pass
Impact Velocity		m/s	5.51 to 5.63	5.52	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.41	Pass
	15 ms	m/s	3.30 to 4.10	3.46	Pass
	20 ms	m/s	4.40 to 5.40	4.63	Pass
	25 ms	m/s	5.40 to 6.10	5.49	Pass
	25-100 ms	m/s	5.50 to 6.20	5.52	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	61	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-41	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
Overall Test Results				Pass	

Jessica Hall
Laboratory Technician

07/11/2013

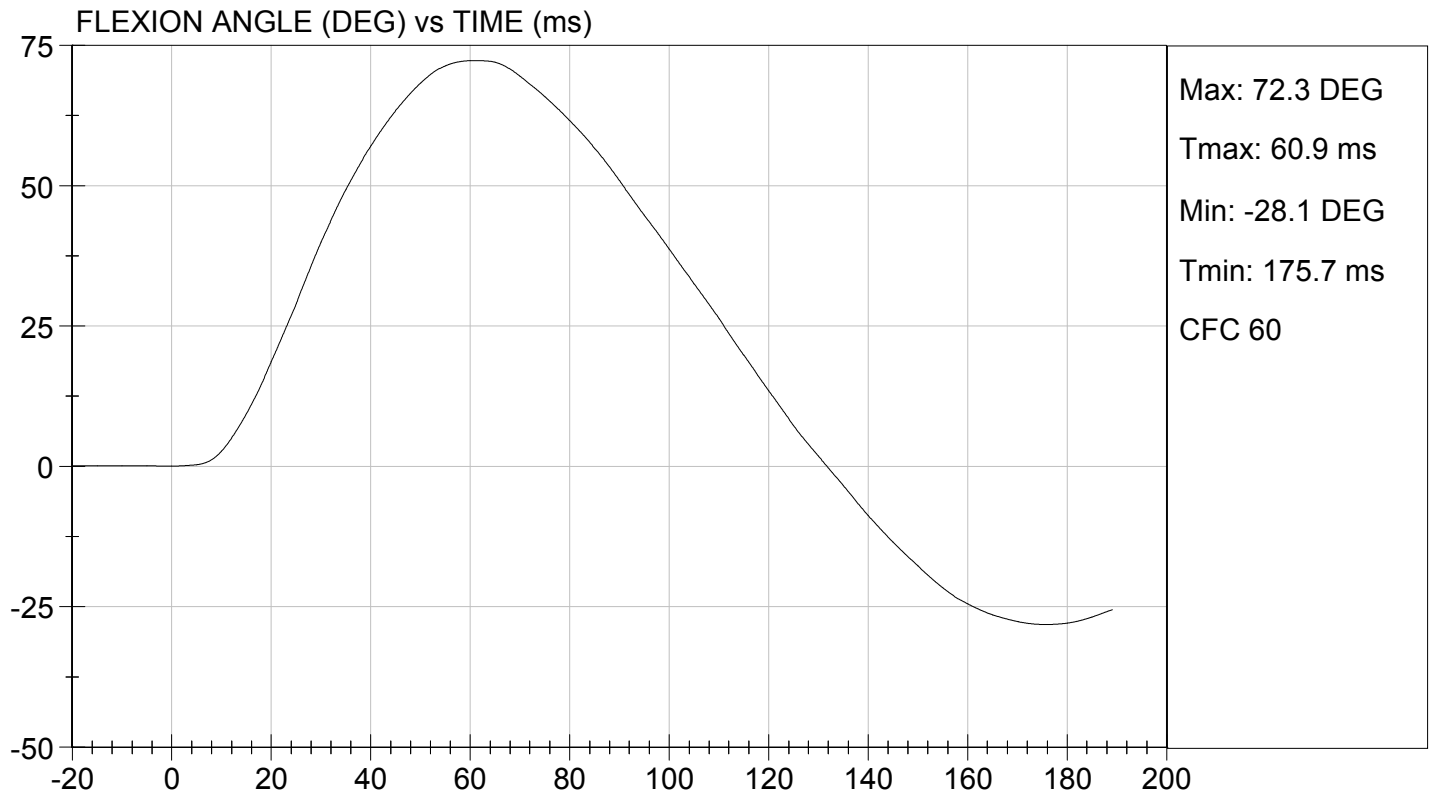
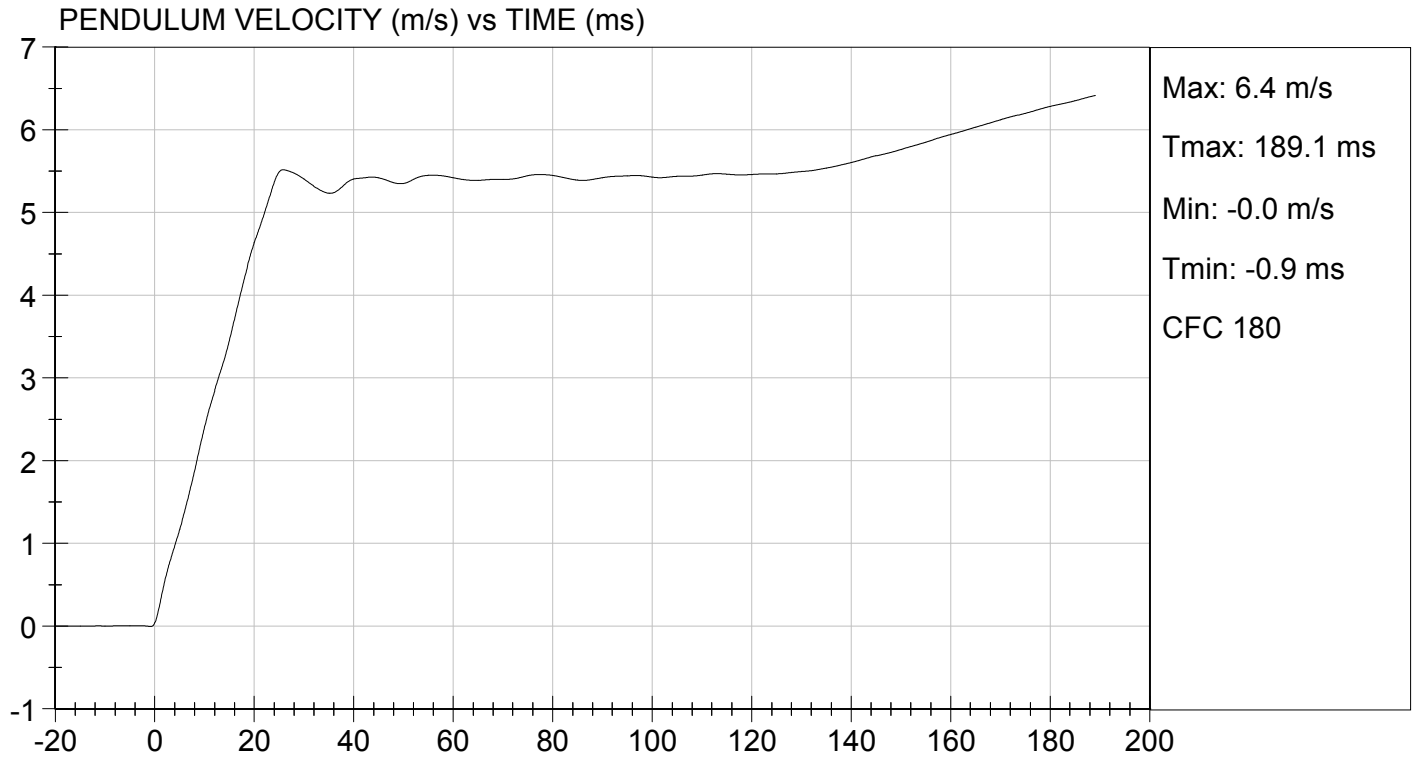
Test Date

David Winkelbauer
Approved By



TEST DESC: NECK BENDING
VELOCITY: 18.12 ft/s, 5.52 m/s

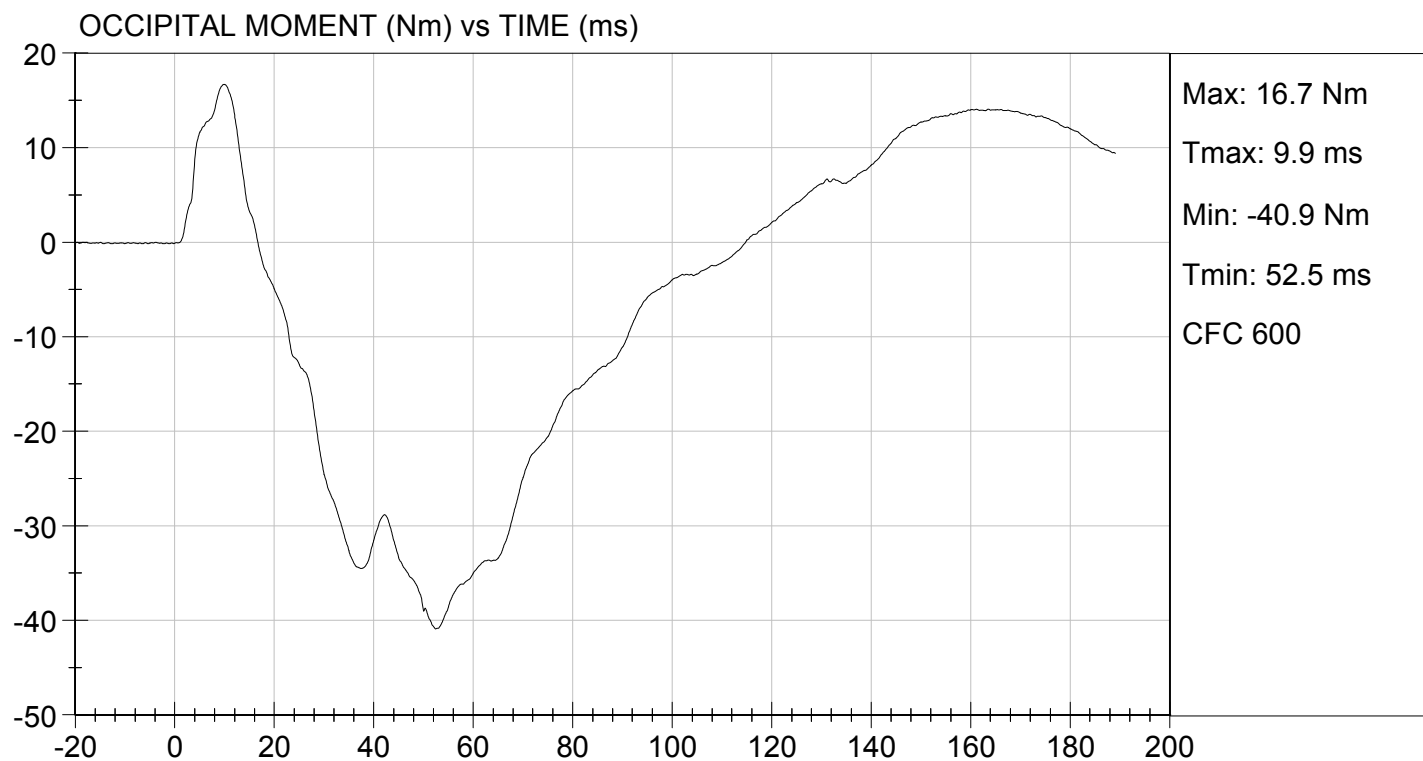
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TEST #: D132242





TEST DESC: NECK BENDING
VELOCITY: 18.12 ft/s, 5.52 m/s

TEST DATE: 07/11/2013
TEST #: D132242

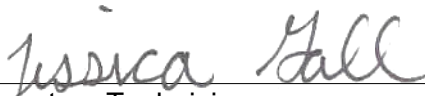


MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

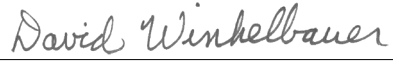
Test ID: D132243

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	32	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
Overall Test Results				Pass


Laboratory Technician

07/11/2013

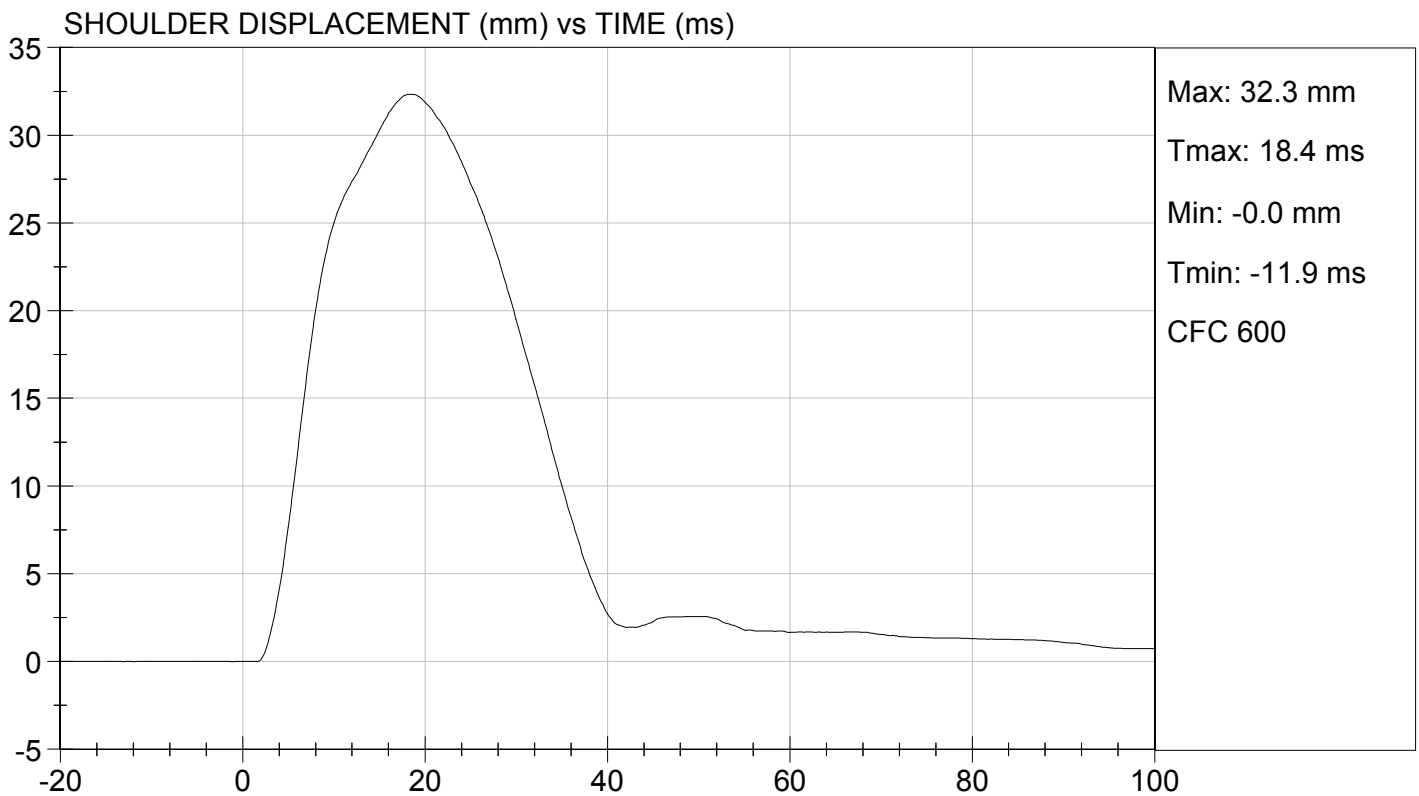
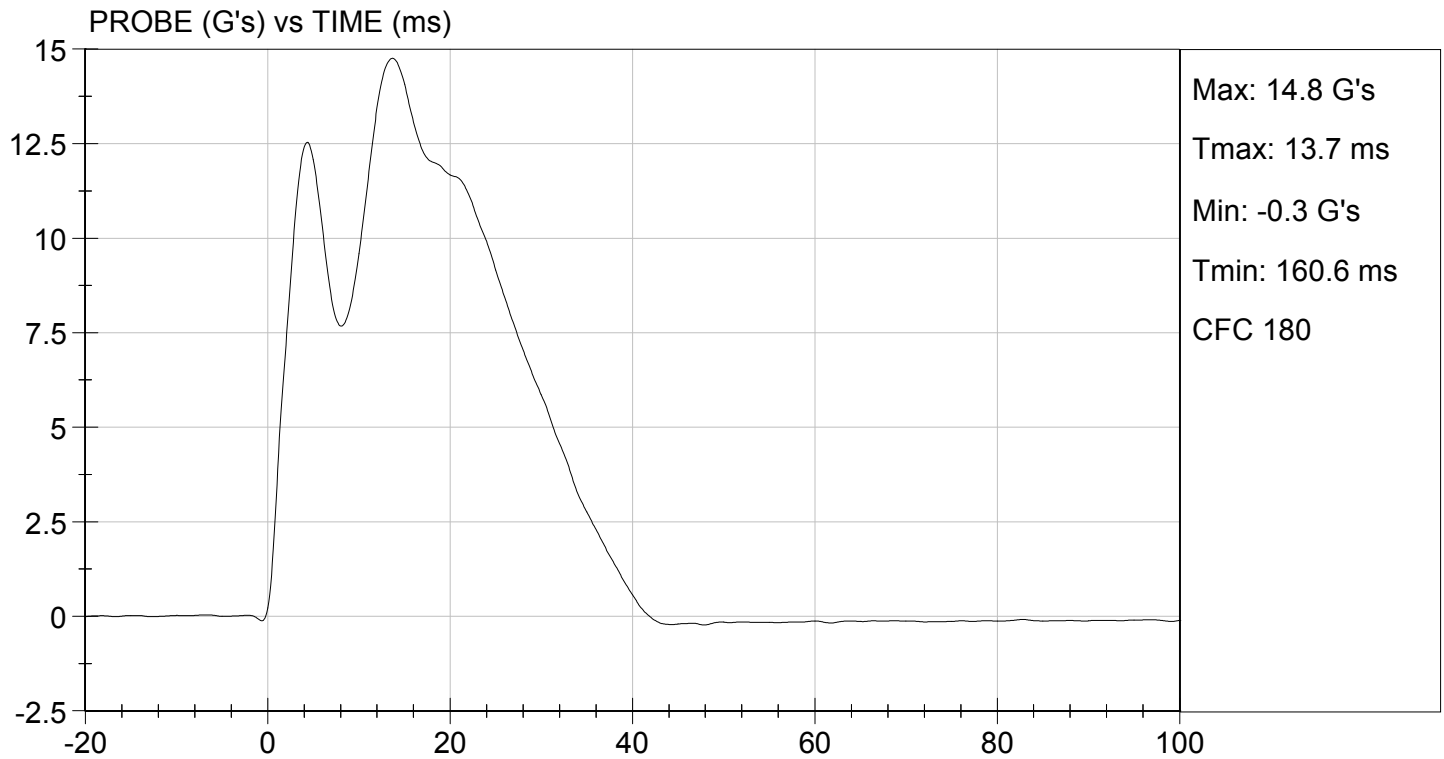
Test Date


Approved By



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

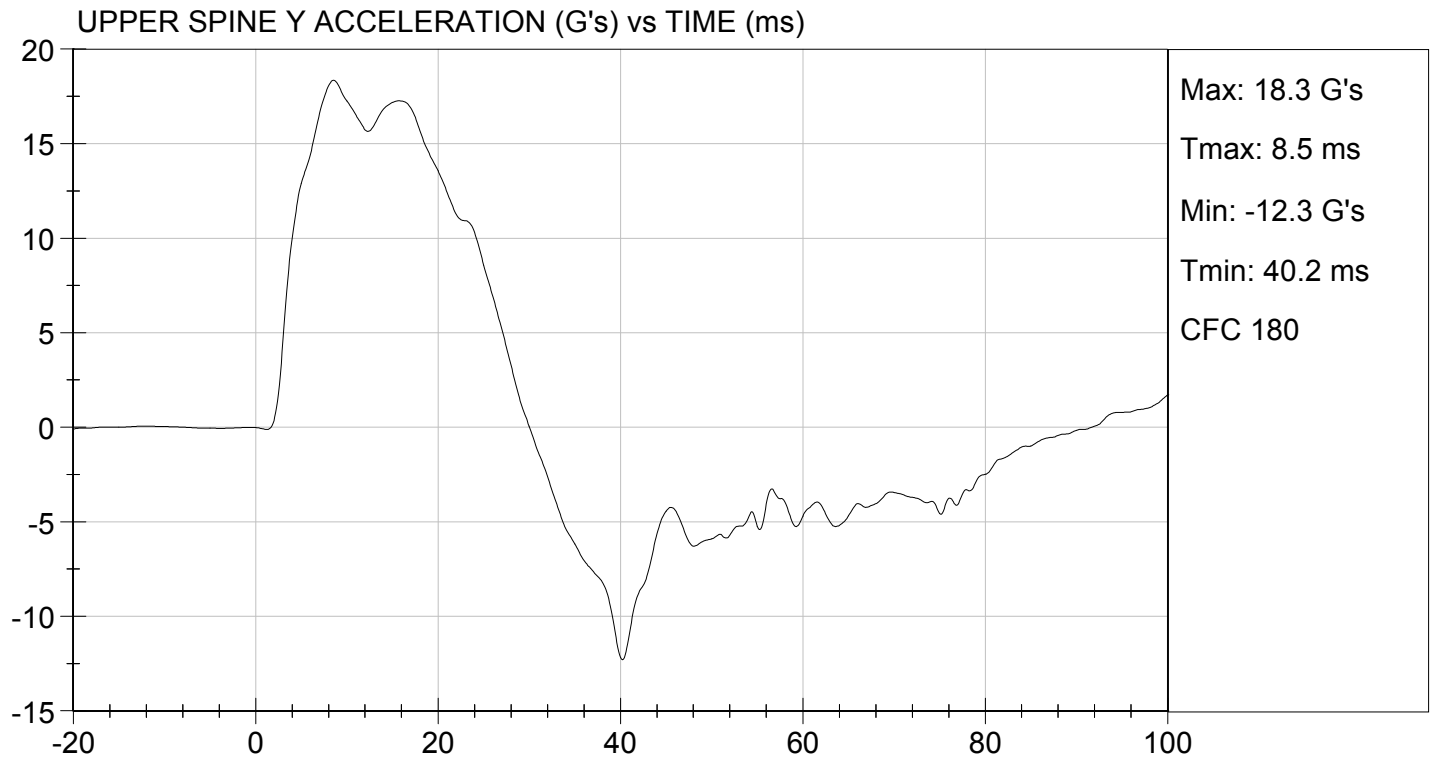
TEST DATE: 07/11/2013
TEST #: D132243





TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/11/2013
TEST #: D132243

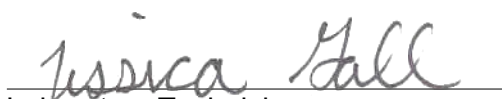


MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132244

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	31	Pass
Shoulder Displacement	mm	31 to 40	33	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	33	Pass
Lower Rib Displacement	mm	32 to 38	37	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	37	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	31	Pass
Overall Test Results				Pass


 Laboratory Technician

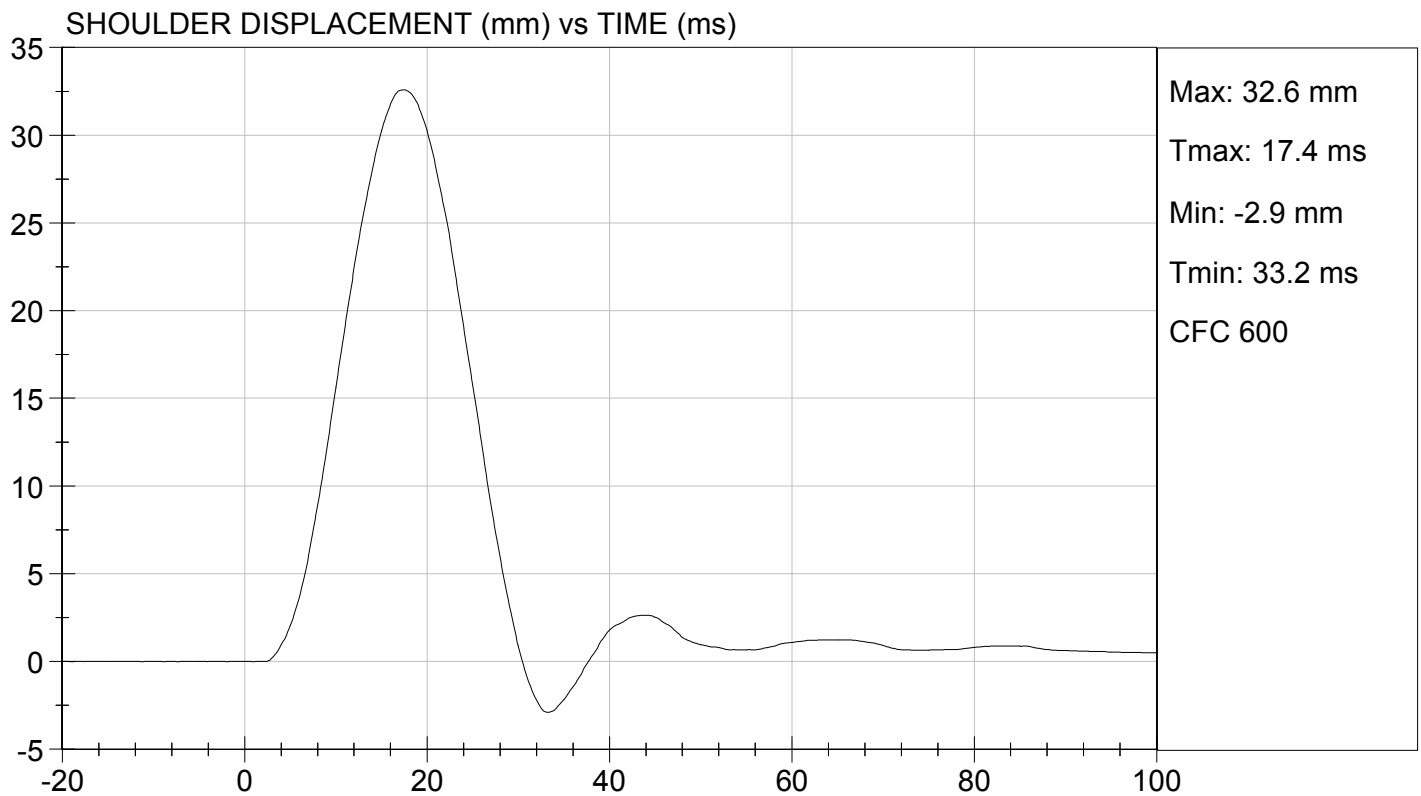
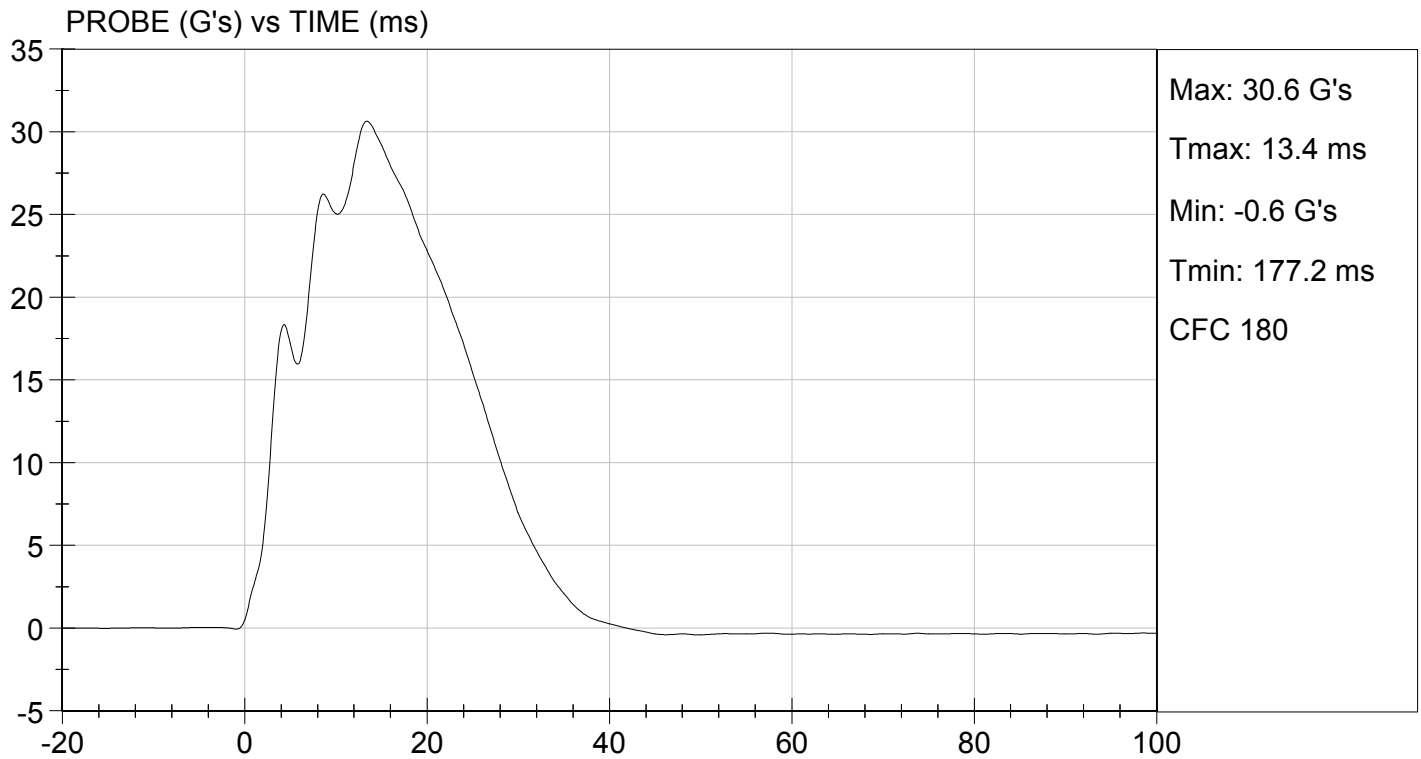
07/11/2013
 Test Date


 Approved By



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

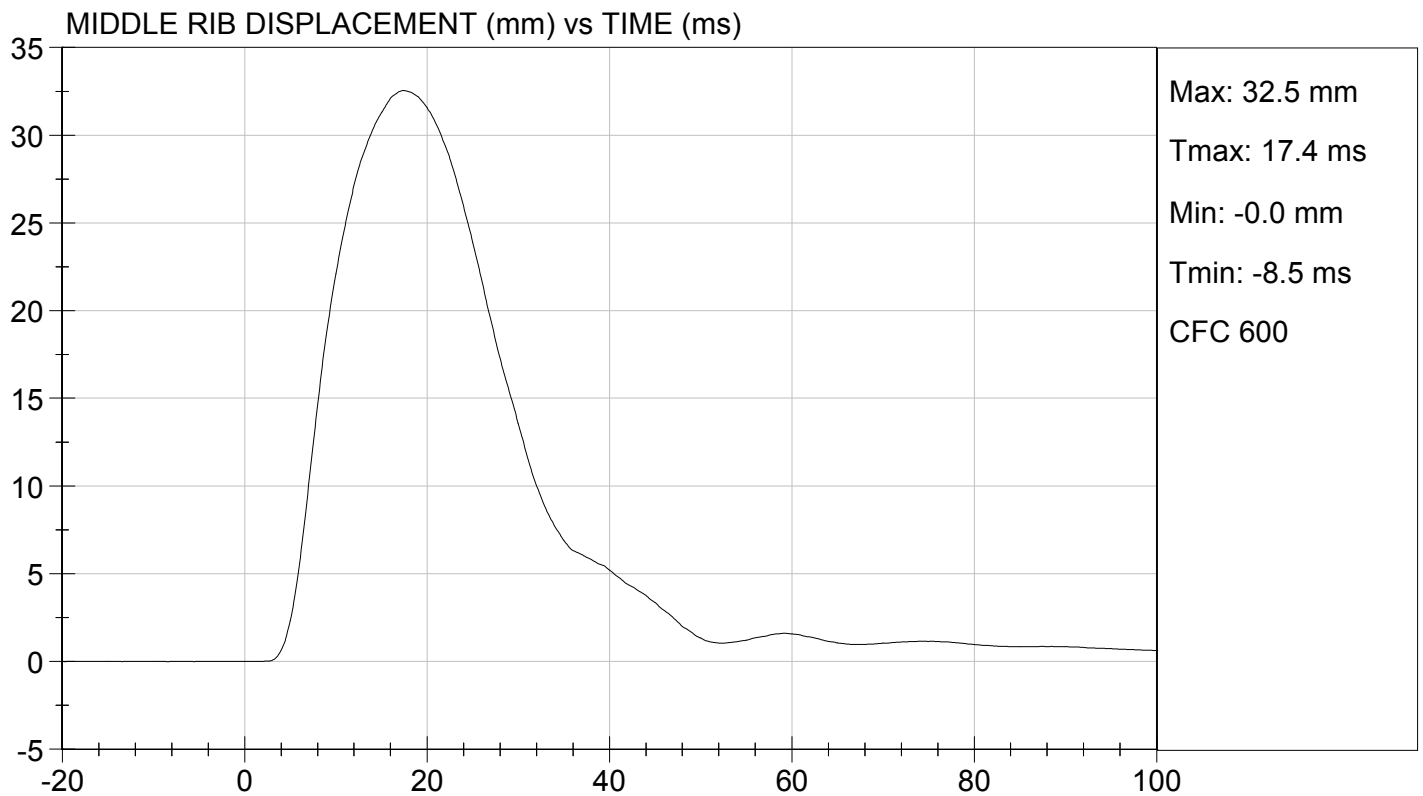
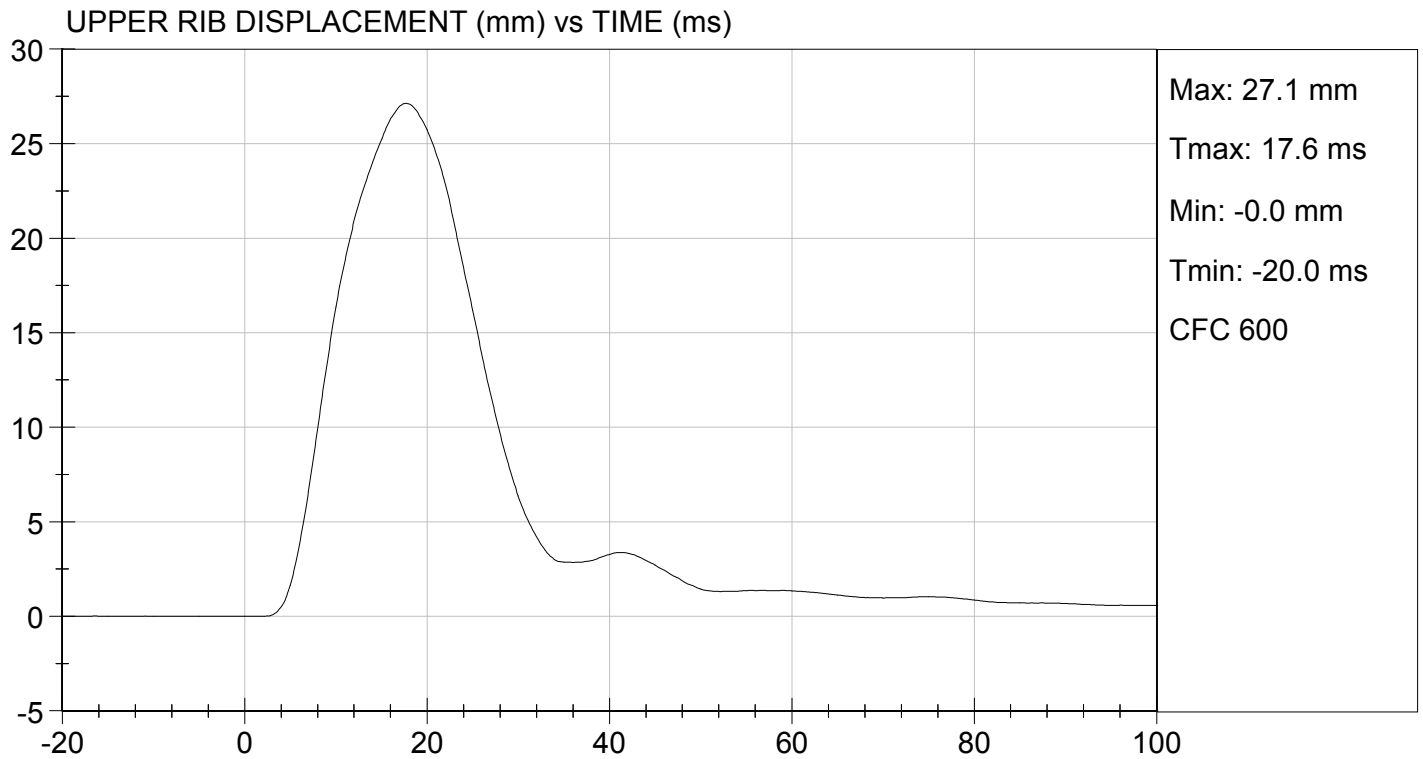
TEST DATE: 07/11/2013
TEST #: D132244





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

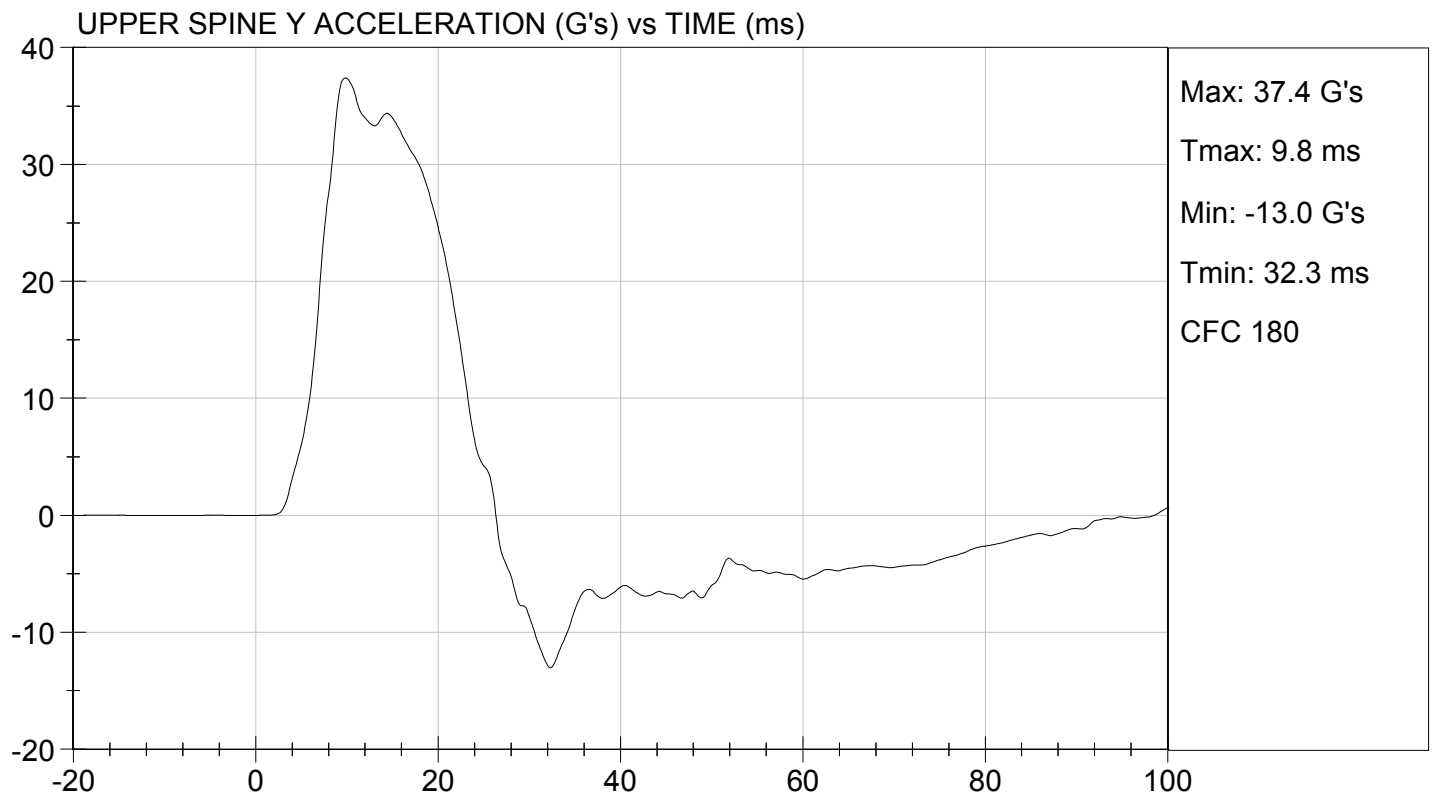
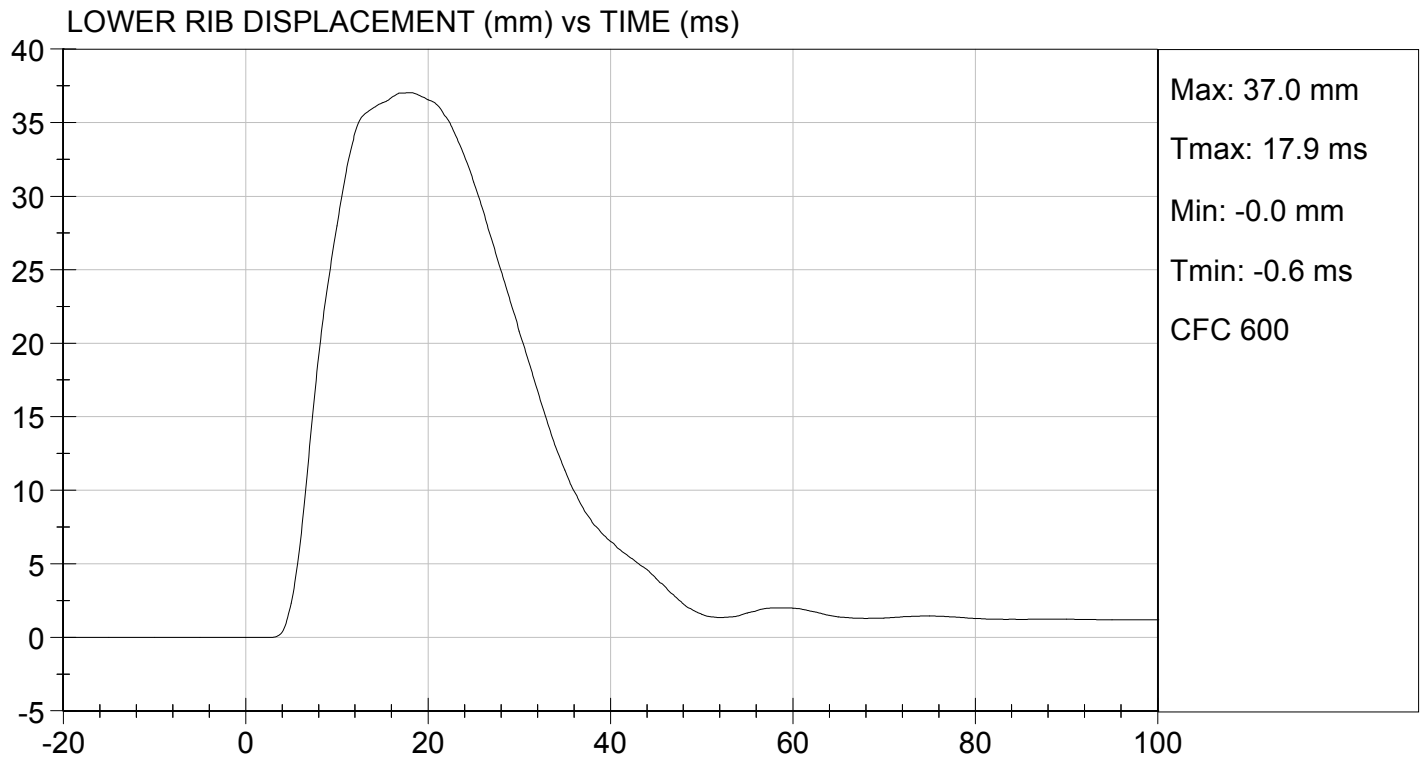
TEST DATE: 07/11/2013
TEST #: D132244





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

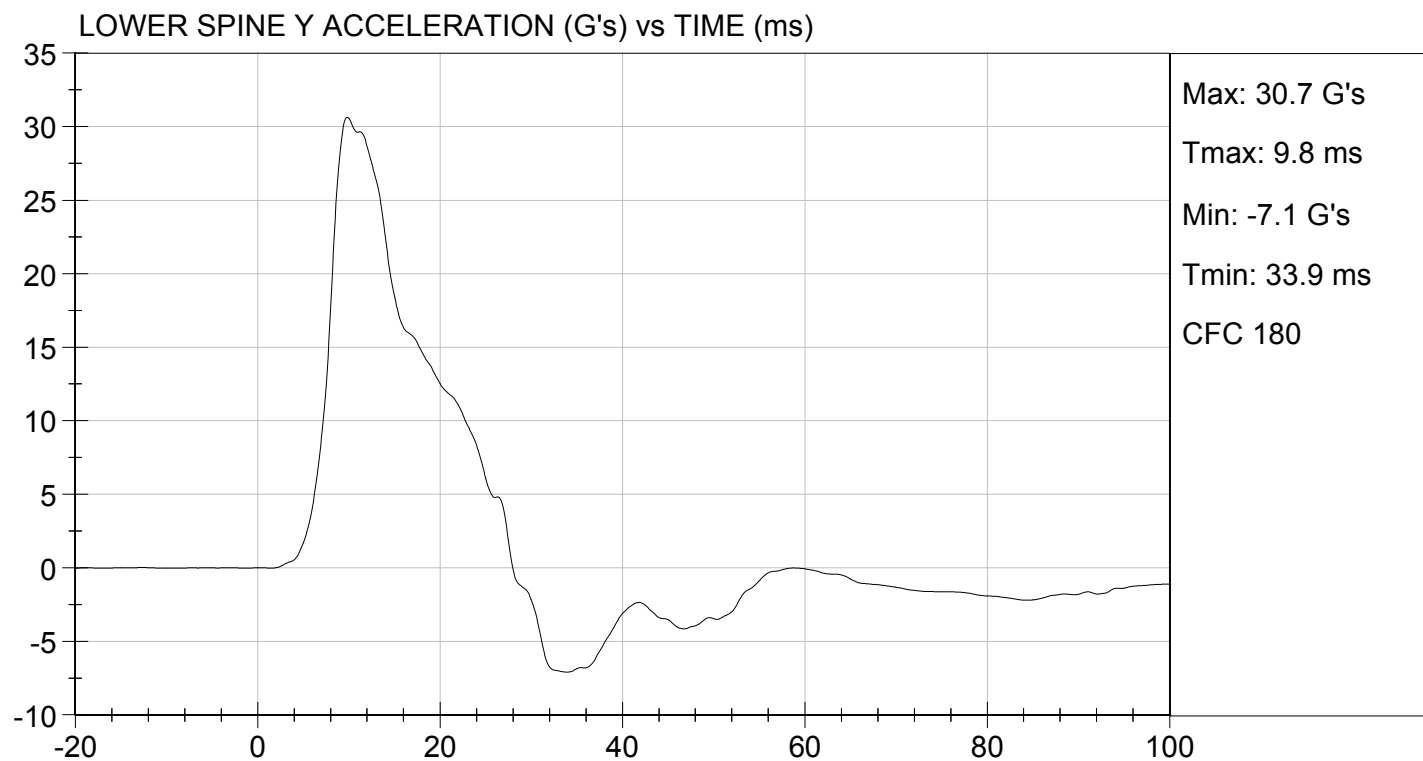
TEST DATE: 07/11/2013
TEST #: D132244





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/11/2013
TEST #: D132244

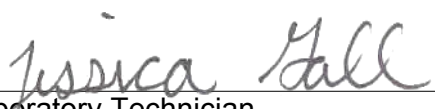


MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132245

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	32	Pass
Middle Rib Displacement	mm	39 to 45	40	Pass
Lower Rib Displacement	mm	35 to 43	40	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
Overall Test Results				Pass


 Laboratory Technician

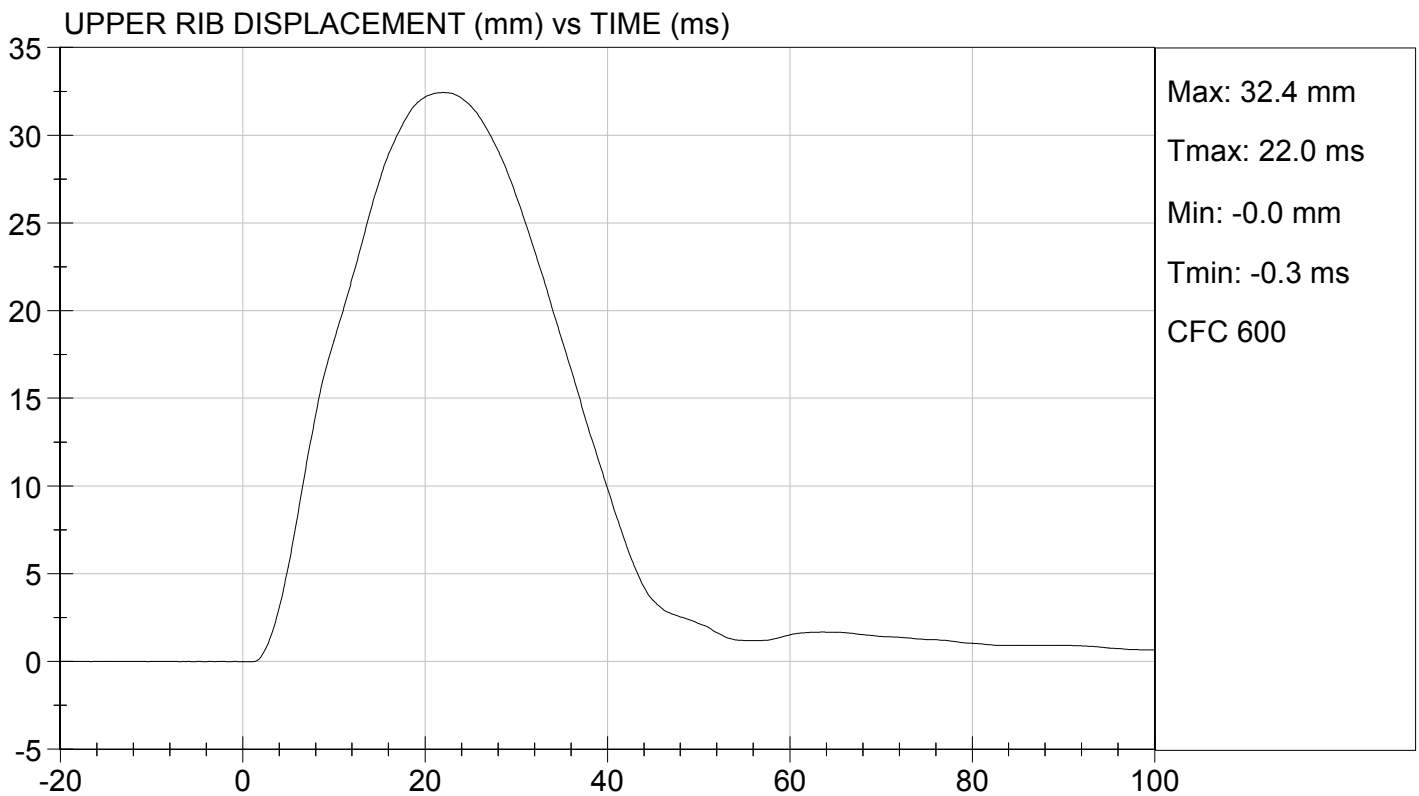
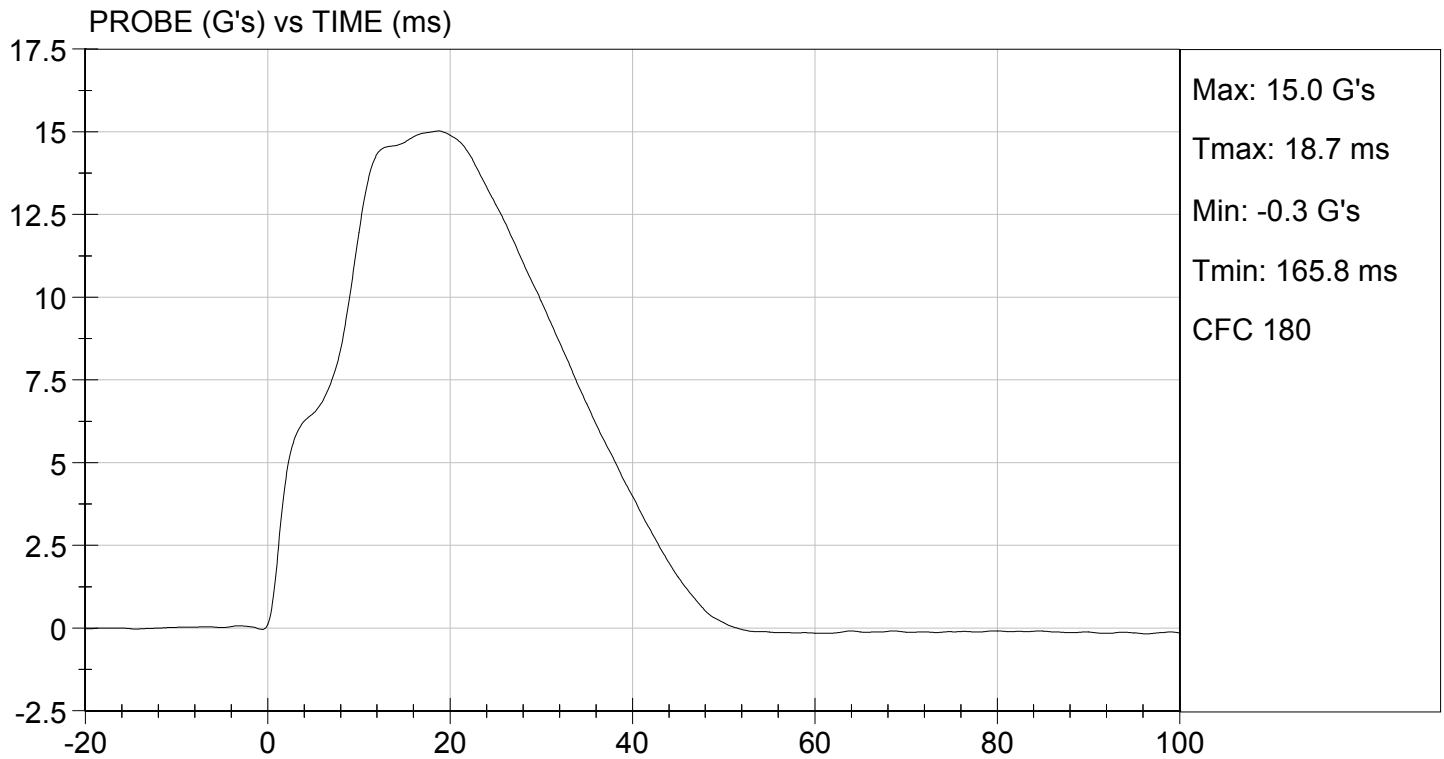
07/11/2013
 Test Date


 Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.37 ft/s, 4.38 m/s

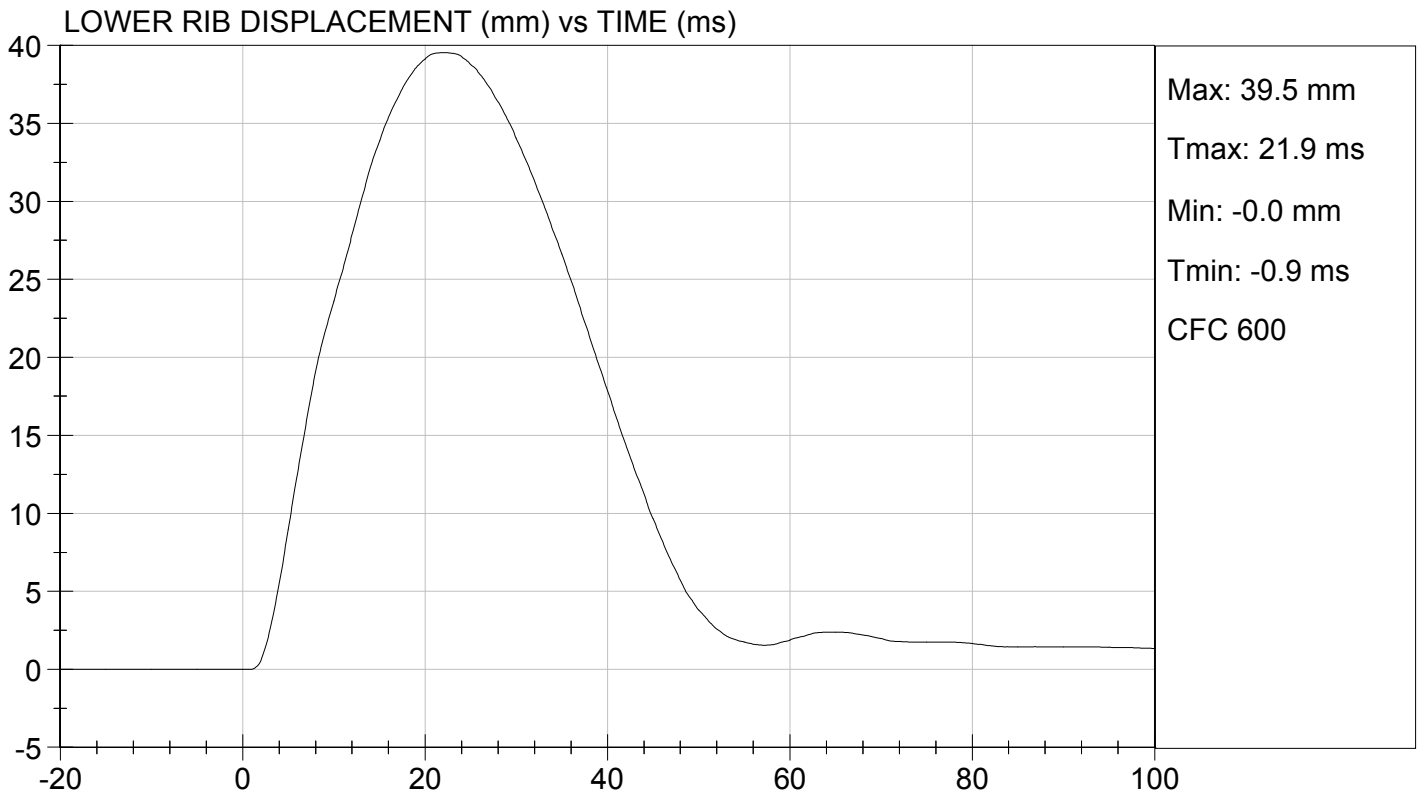
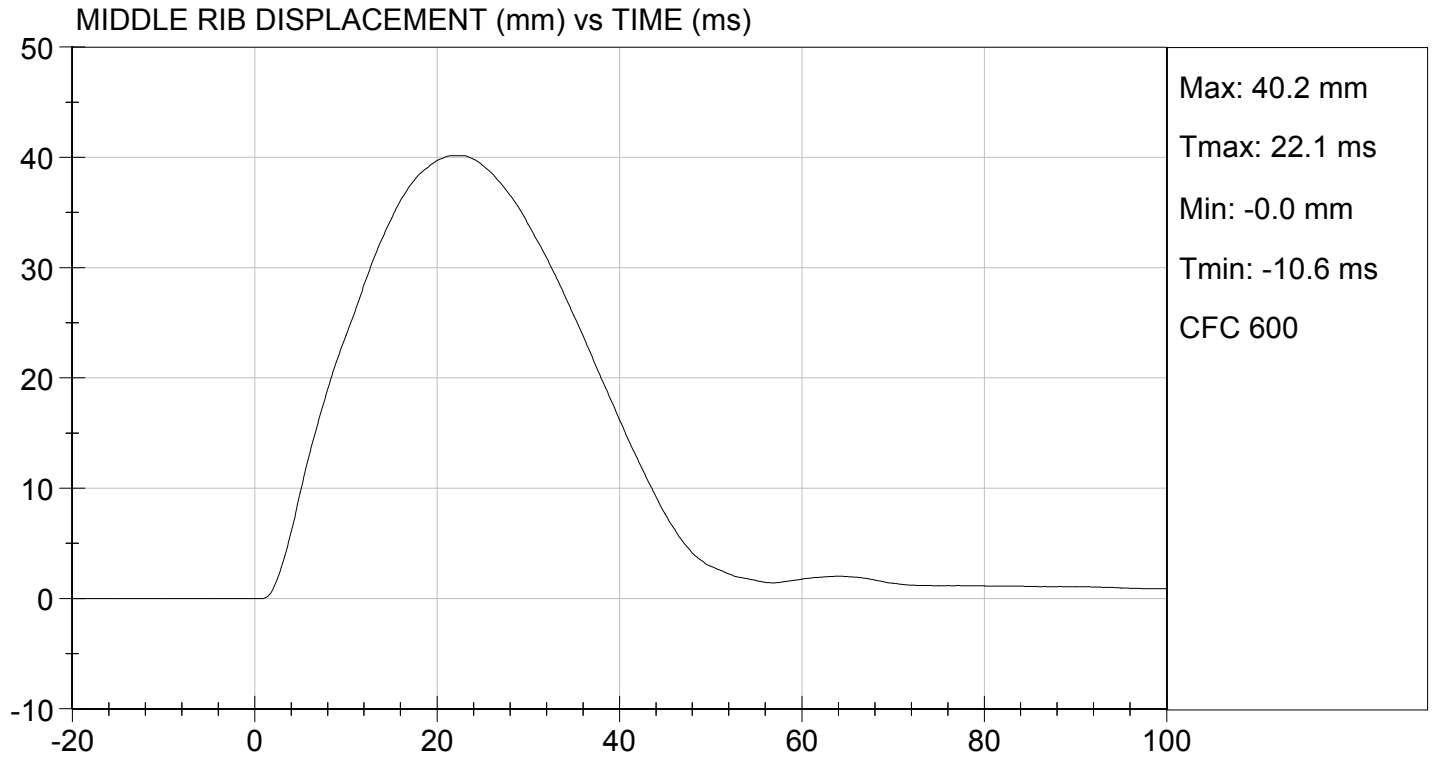
TEST DATE: 07/11/2013
TEST #: D132245





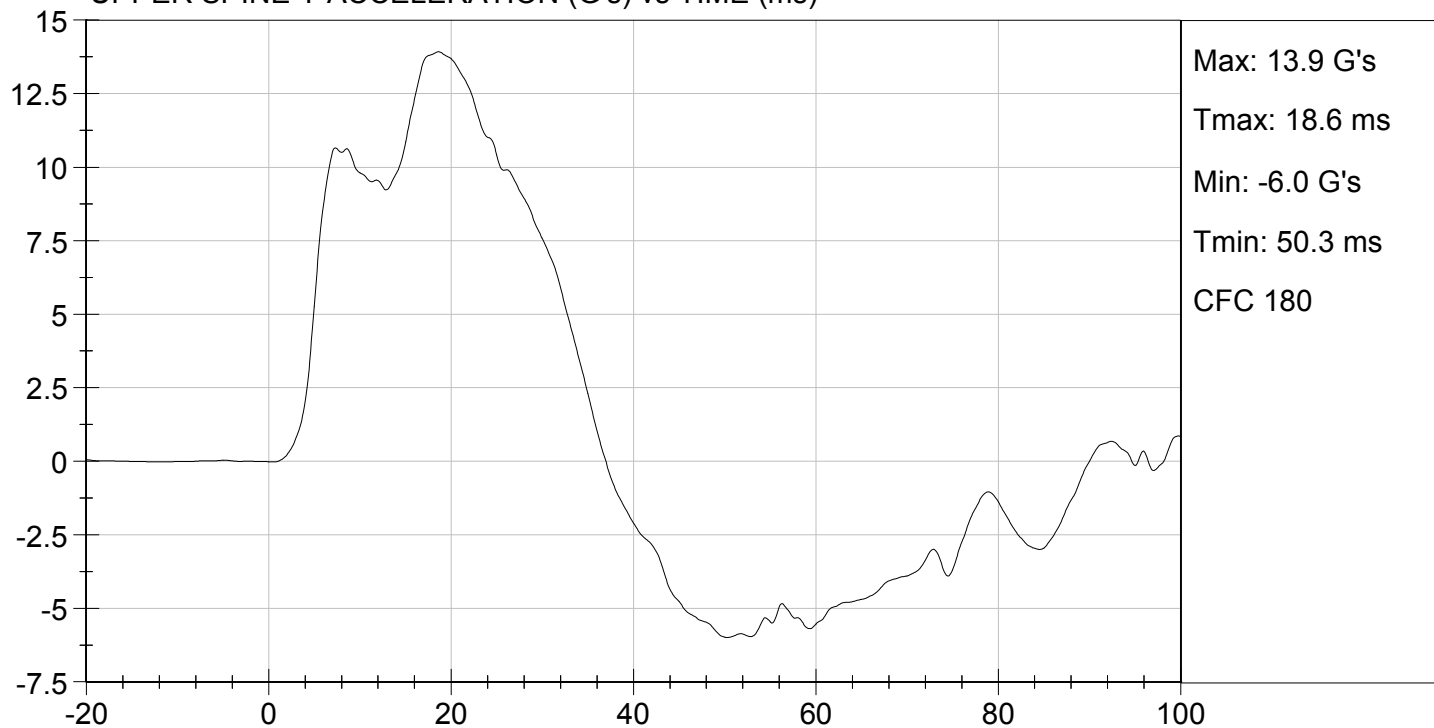
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/11/2013
TEST #: D132245

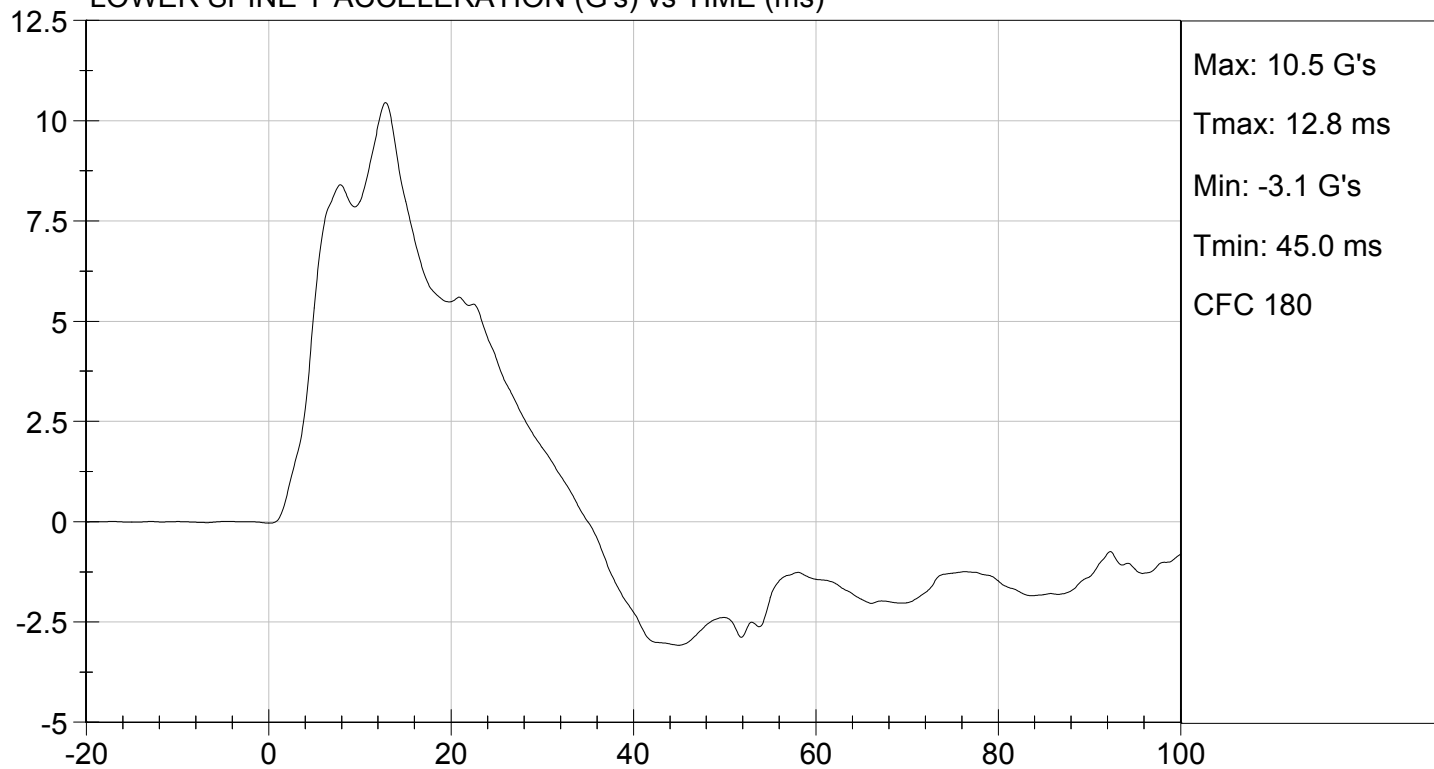




UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



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



MGA RESEARCH CORPORATION

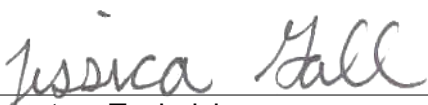
ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132246

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	12 to 16	12	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	42	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	43	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results				Pass


Laboratory Technician

07/11/2013

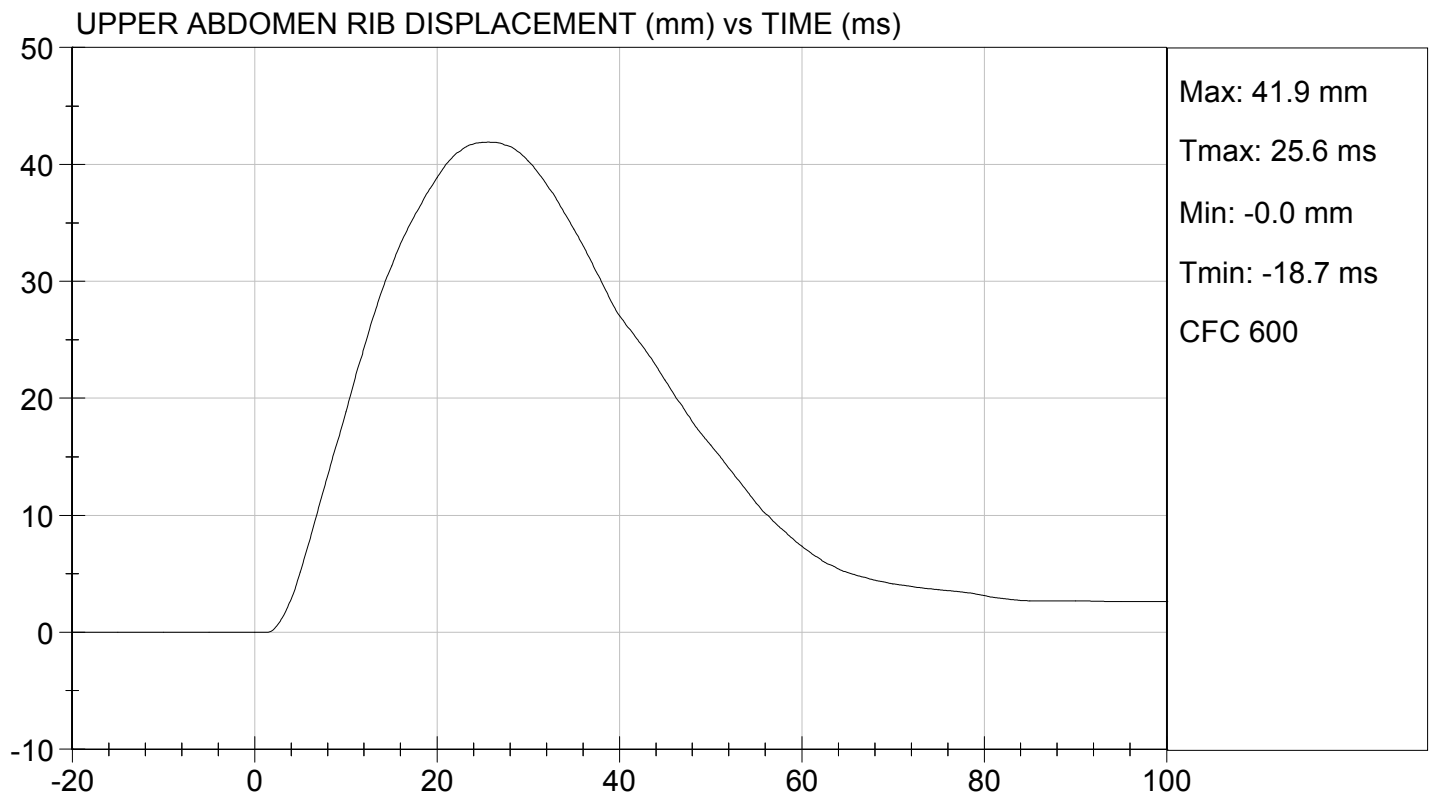
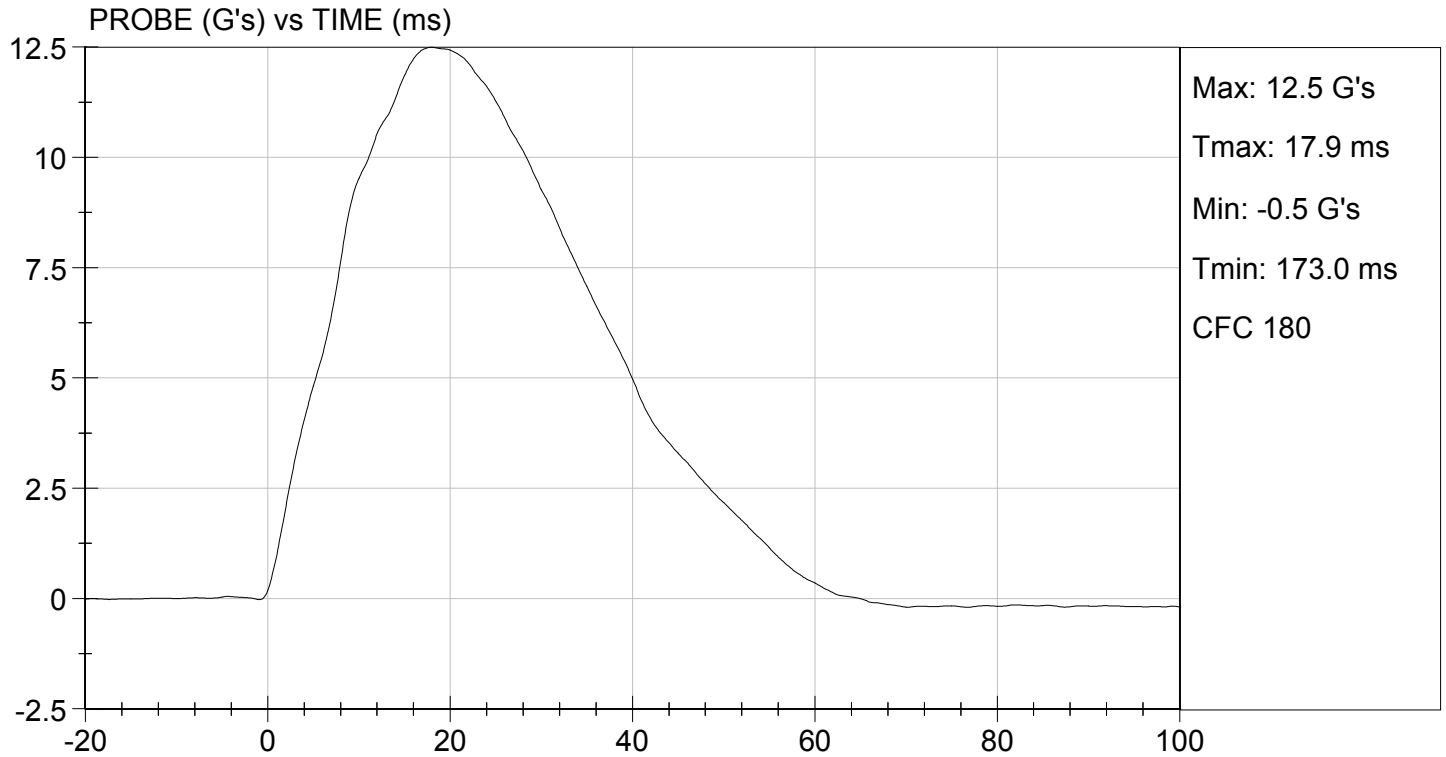
Test Date


Approved By



TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/11/2013
TEST #: D132246

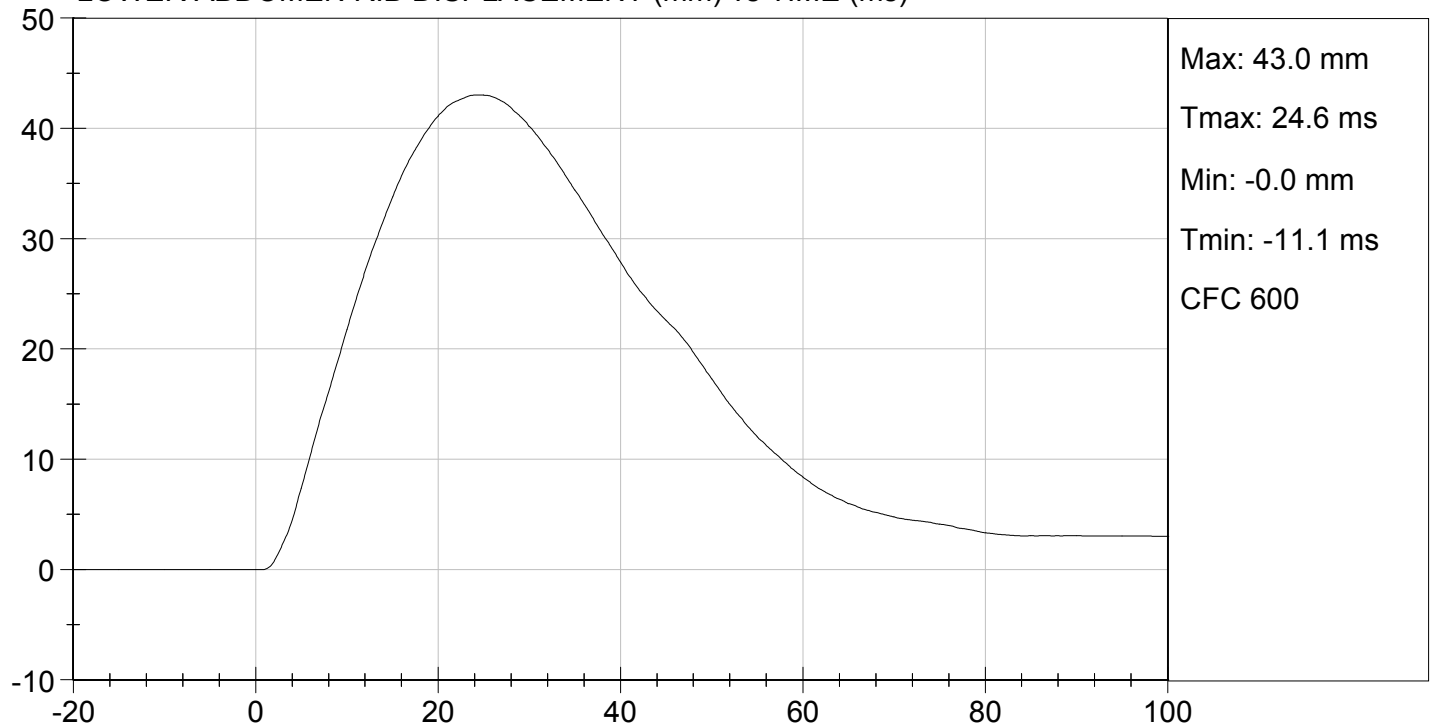




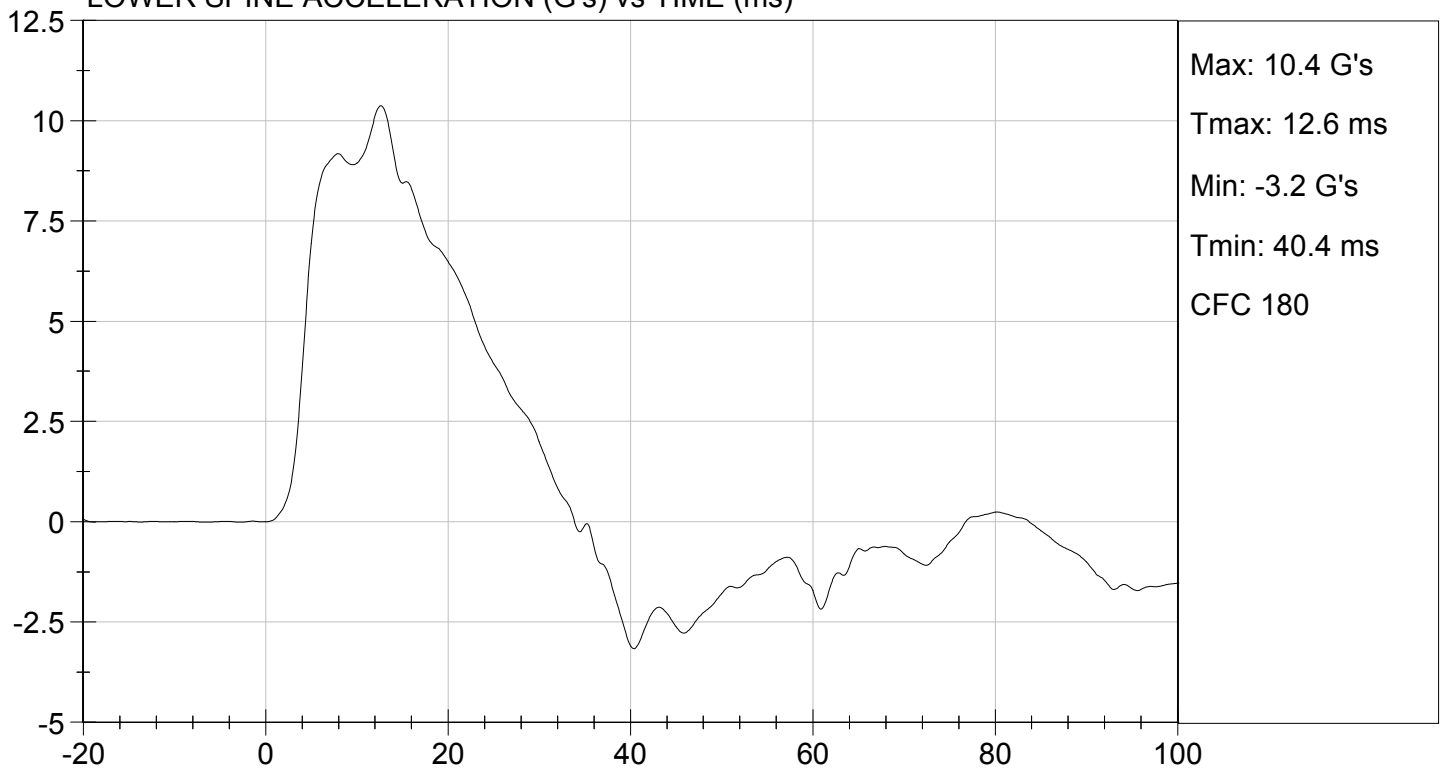
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/11/2013
TEST #: D132246

LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)



MGA RESEARCH CORPORATION

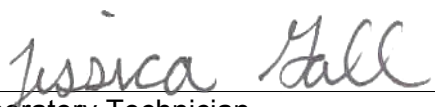
PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132247

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	38 to 47	41	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	39	Pass
Peak Acetabulum Force	N	3600 to 4300	3,917	Pass
Overall Test Results				Pass


Laboratory Technician

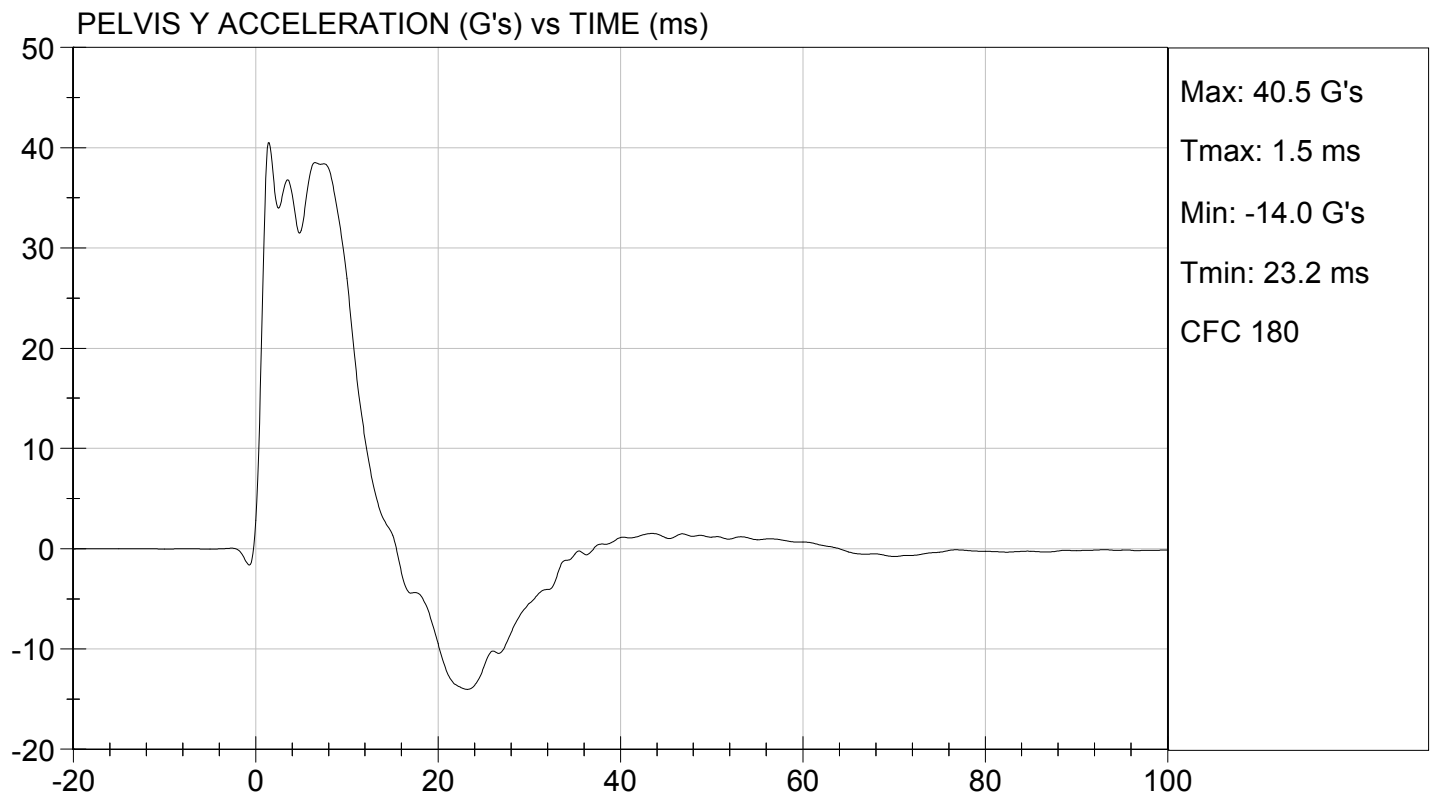
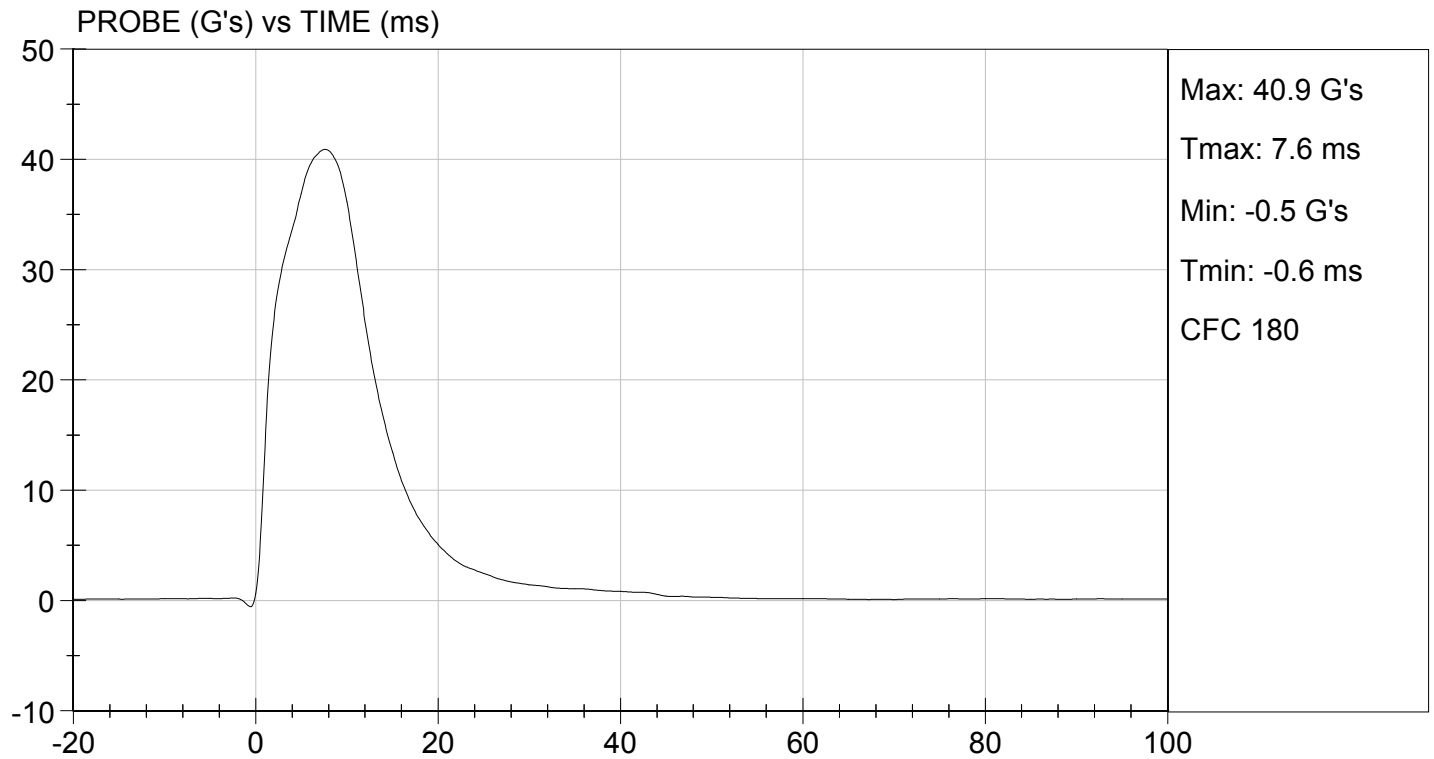
07/11/2013
Test Date


Approved By



TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

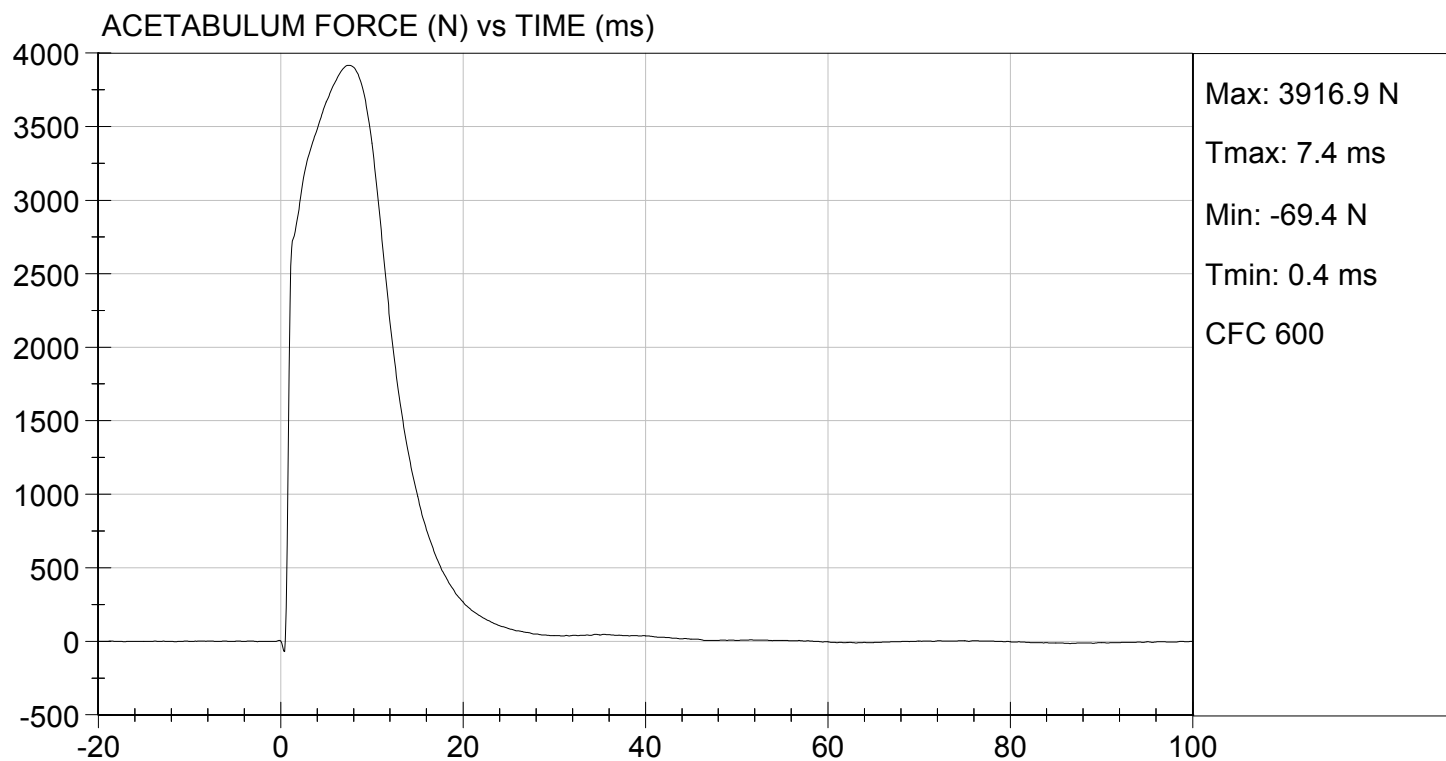
TEST DATE: 07/11/2013
TEST #: D132247





TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/11/2013
TEST #: D132247



MGA RESEARCH CORPORATION

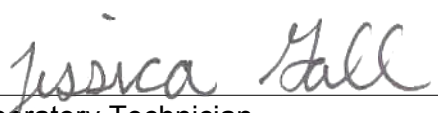
ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

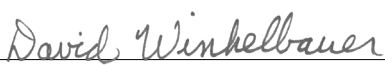
Test I.D: D132248

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	40	Pass
Pelvis Y Acceleration	G's	28 to 39	36	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,785	Pass
Overall Test Results				Pass


Laboratory Technician

07/11/2013

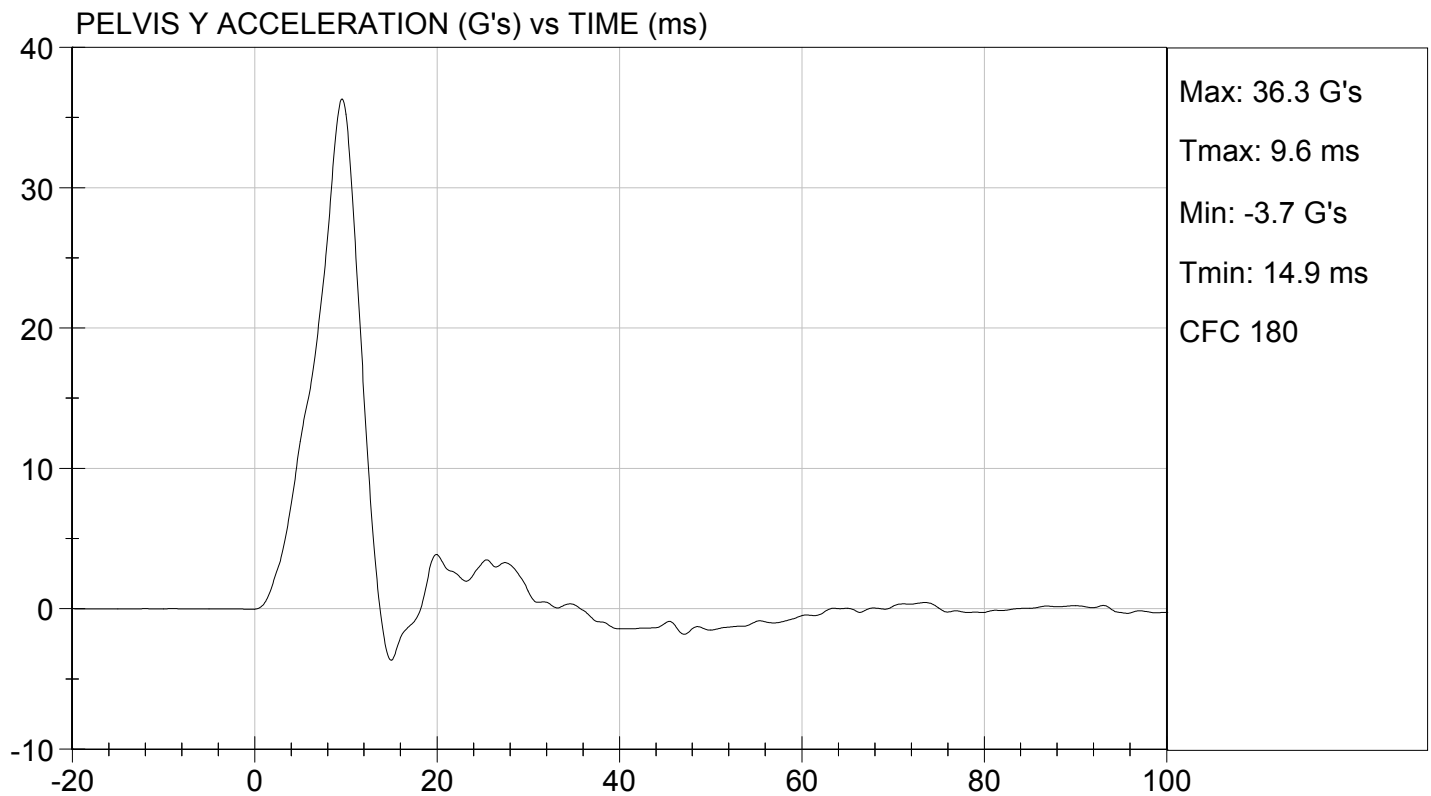
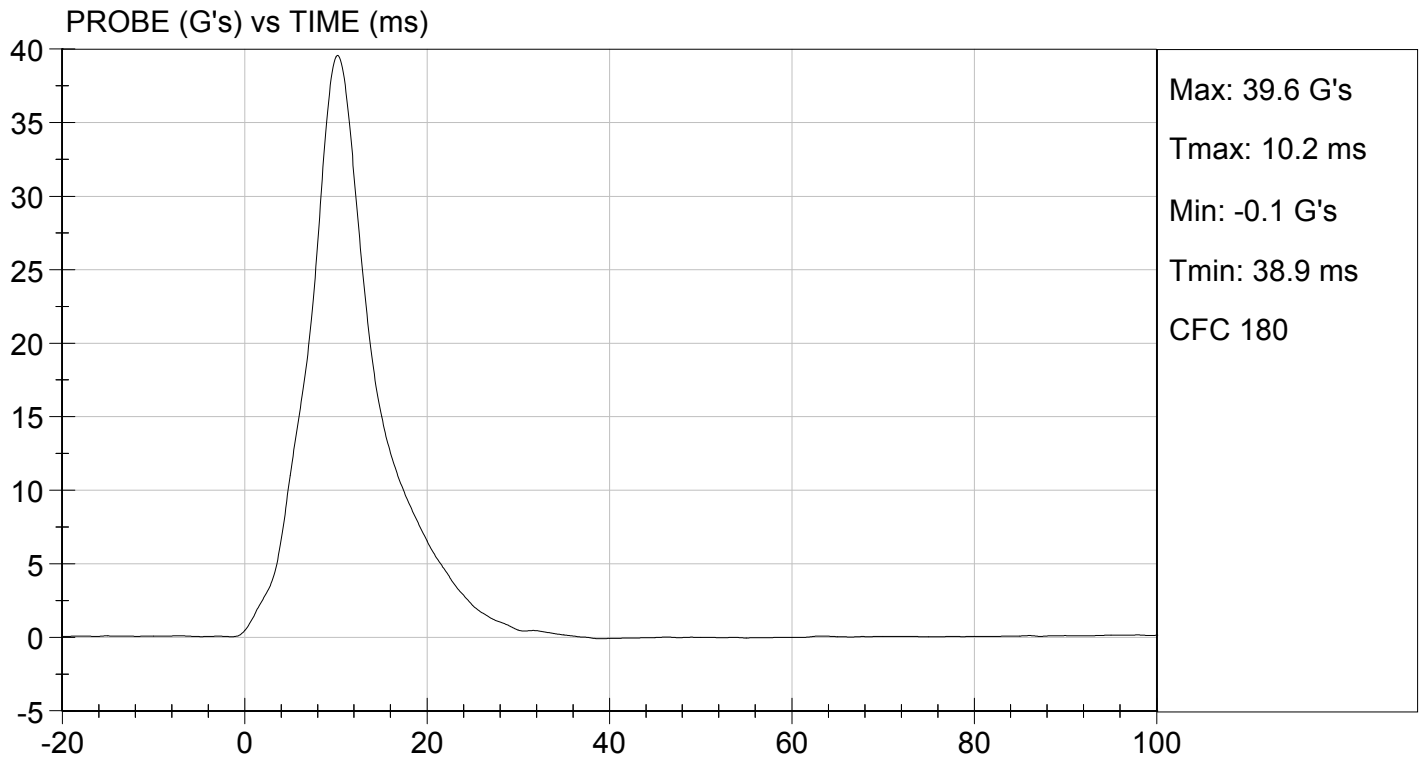
Test Date


Approved By



TEST DESC: ILLIAC
VELOCITY: 13.88 ft/s, 4.23 m/s

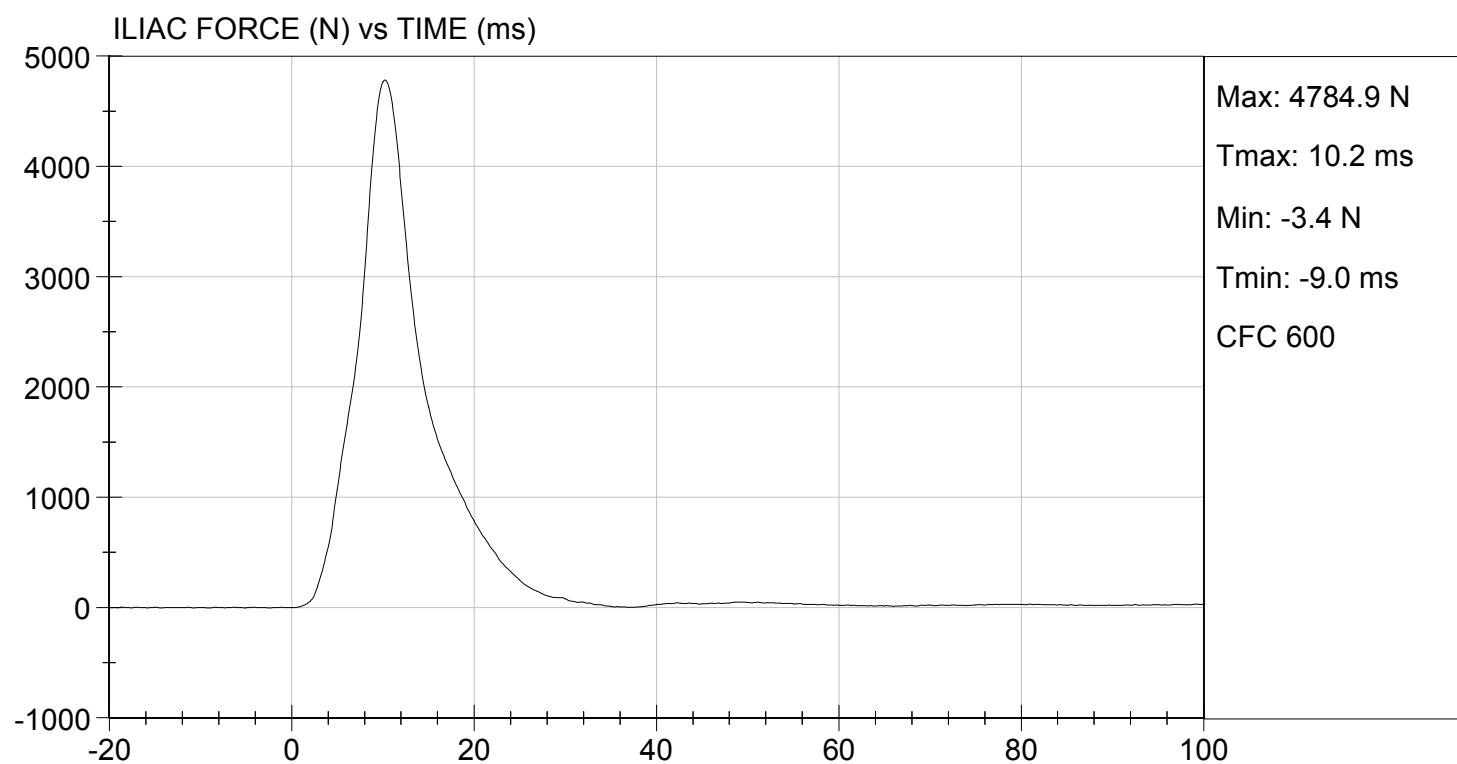
TEST DATE: 07/11/2013
TEST #: D132248





TEST DESC: ILLIAC
VELOCITY: 13.88 ft/s, 4.23 m/s

TEST DATE: 07/11/2013
TEST #: D132248

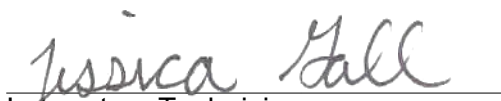


MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

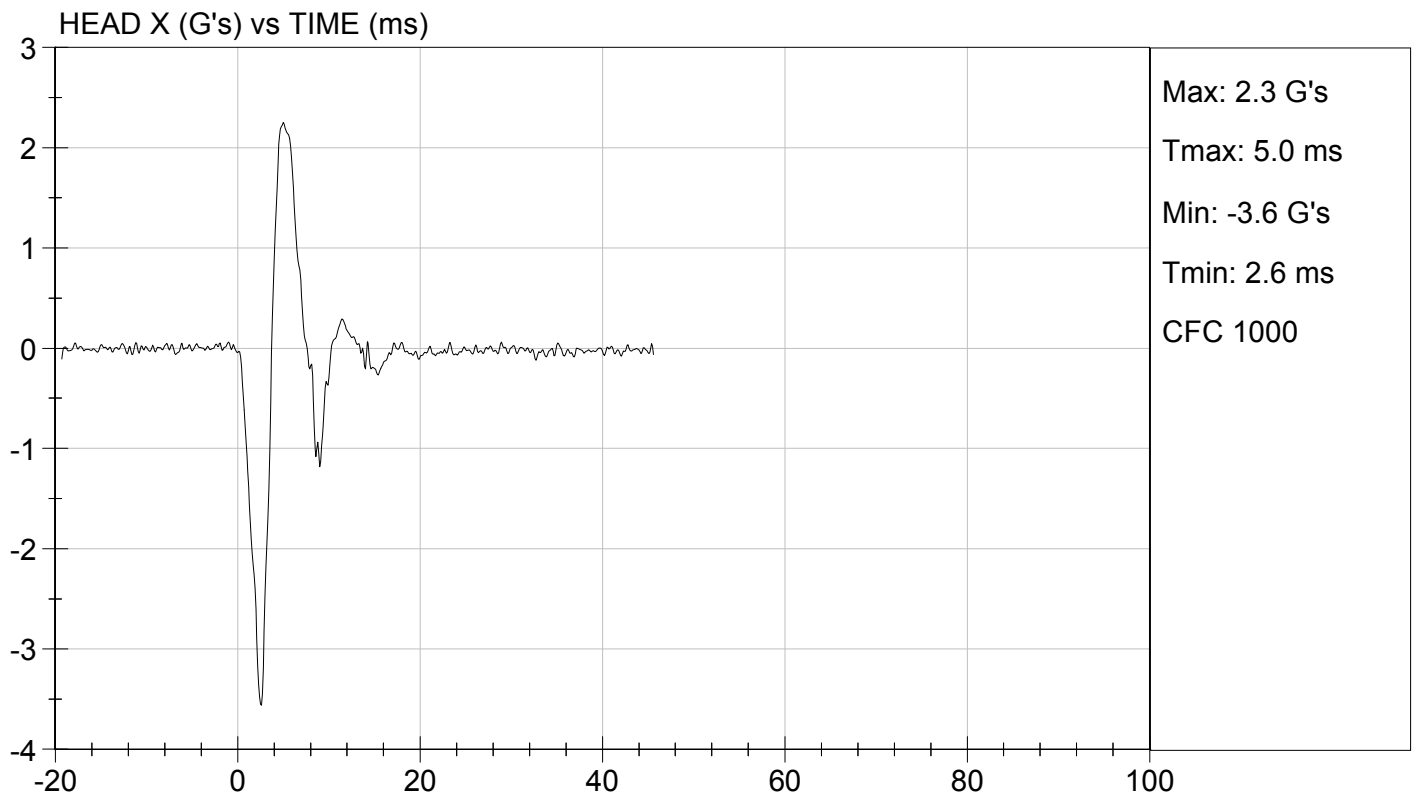
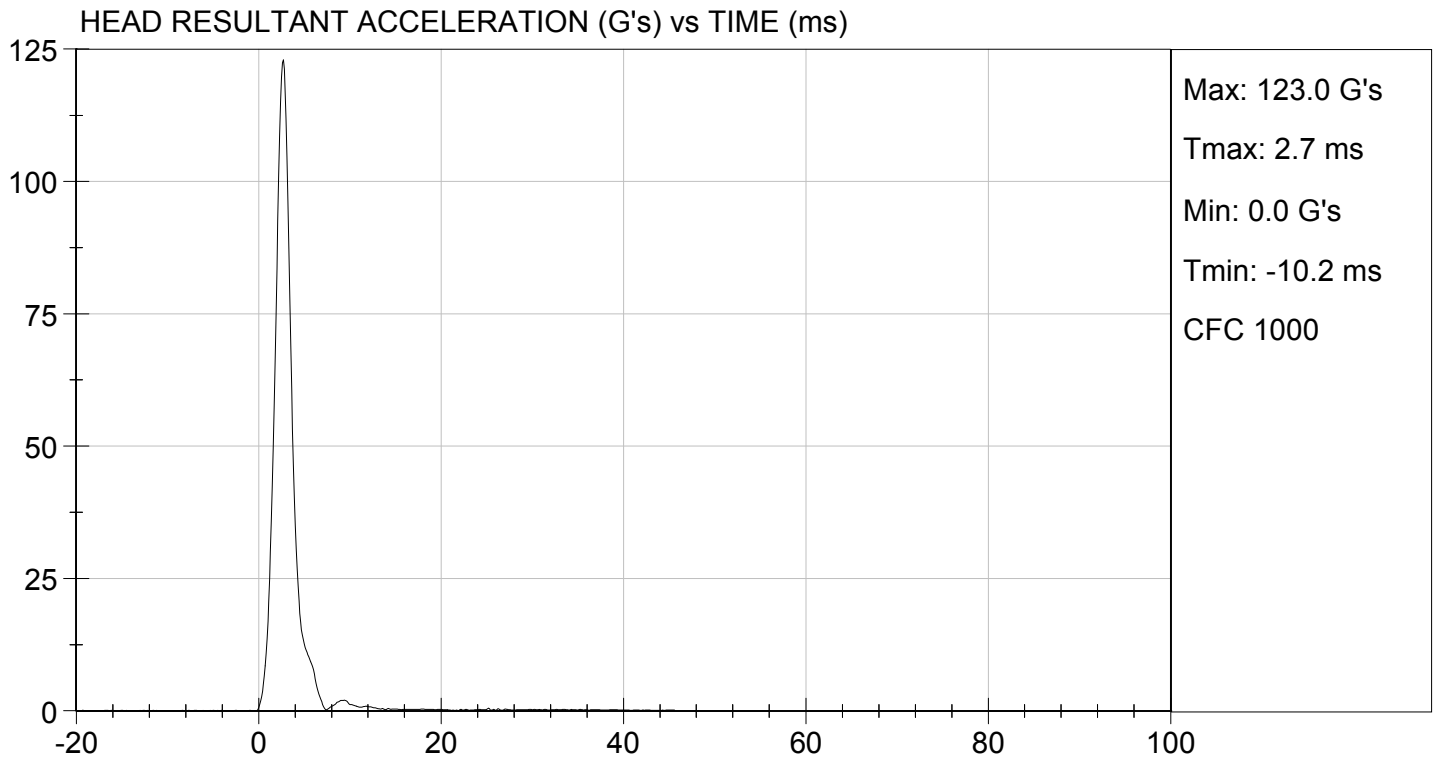
Test ID: D132521

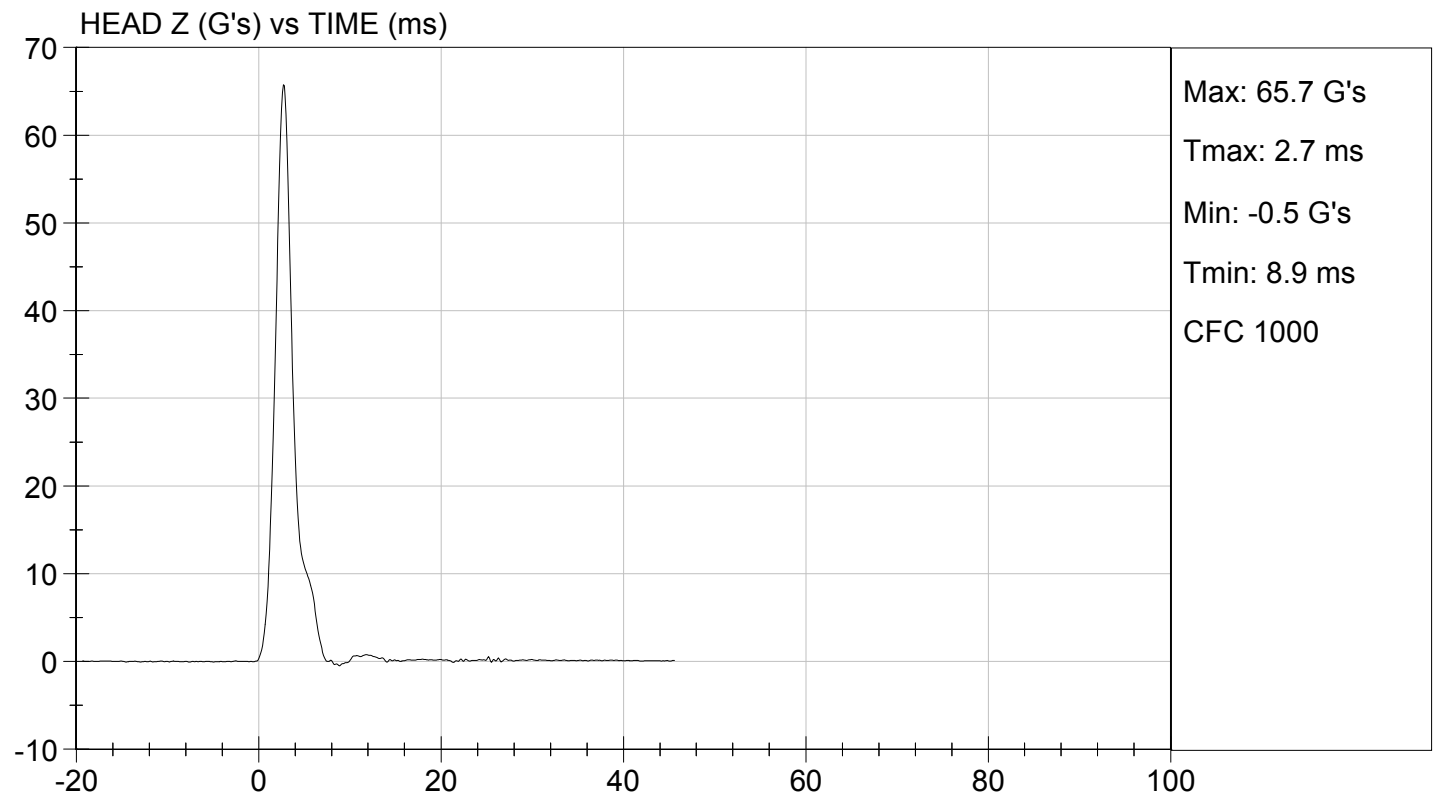
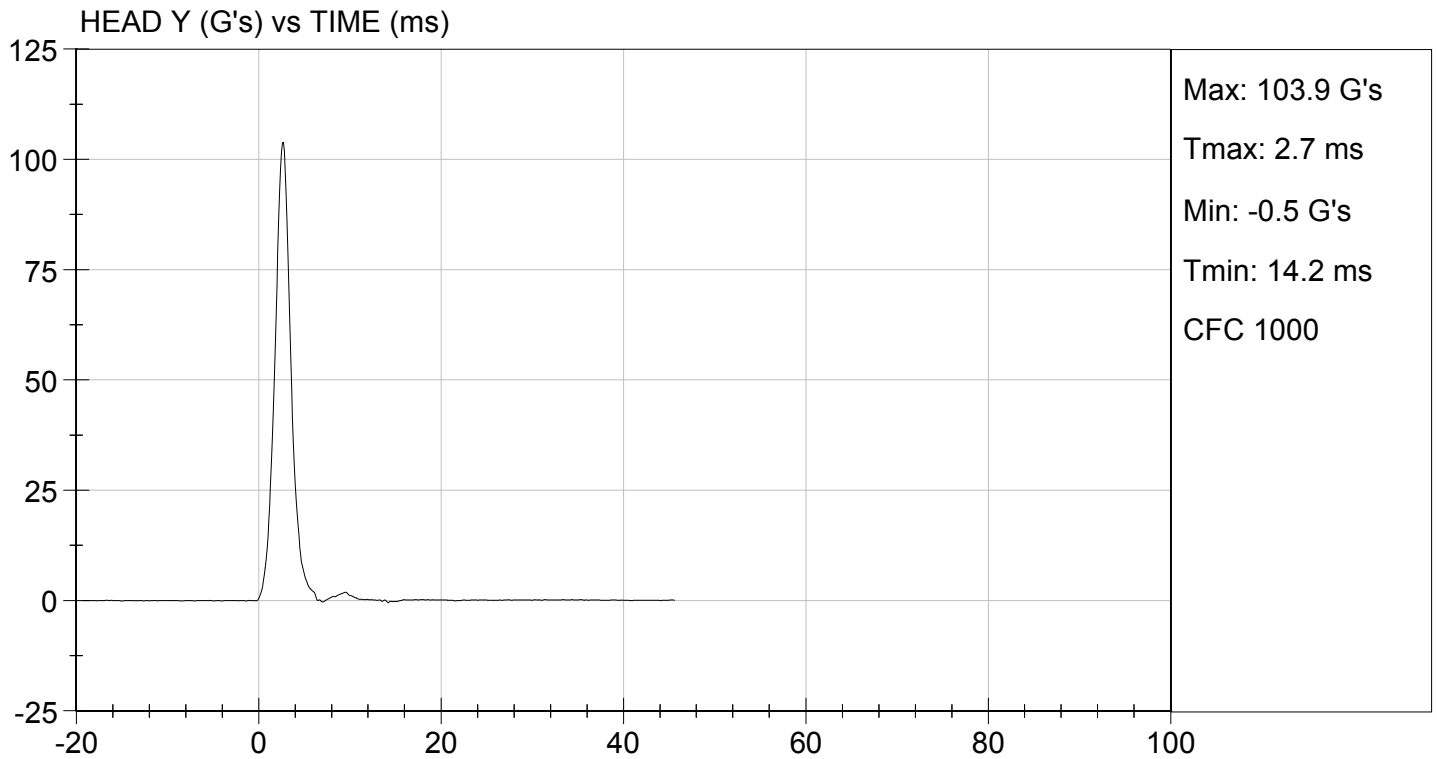
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Peak Resultant Acceleration	G's	115 to 137	123	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-3.6	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results			Pass	


Laboratory Technician

07/31/2013
Test Date


Approved By





MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132522

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.3	Pass
Humidity		%	10 to 70	47	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.48	Pass
	15 ms	m/s	3.30 to 4.10	3.51	Pass
	20 ms	m/s	4.40 to 5.40	4.64	Pass
	25 ms	m/s	5.40 to 6.10	5.52	Pass
	25-100 ms	m/s	5.50 to 6.20	5.54	Pass
Maximum D-Plane Rotation		deg	71 to 81	73	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	62	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-39	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
Overall Test Results					Pass

Jessica Gall
Laboratory Technician

07/31/2013

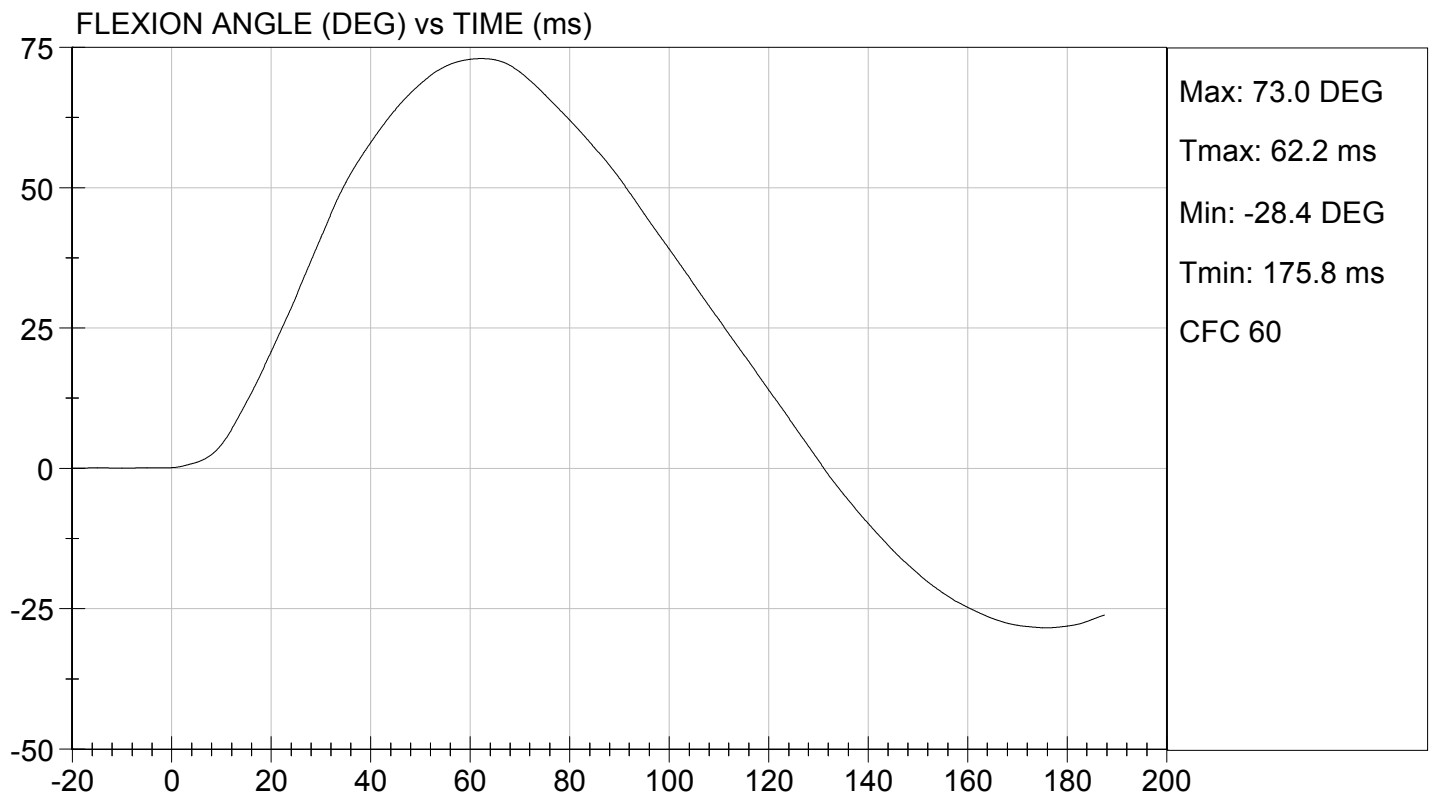
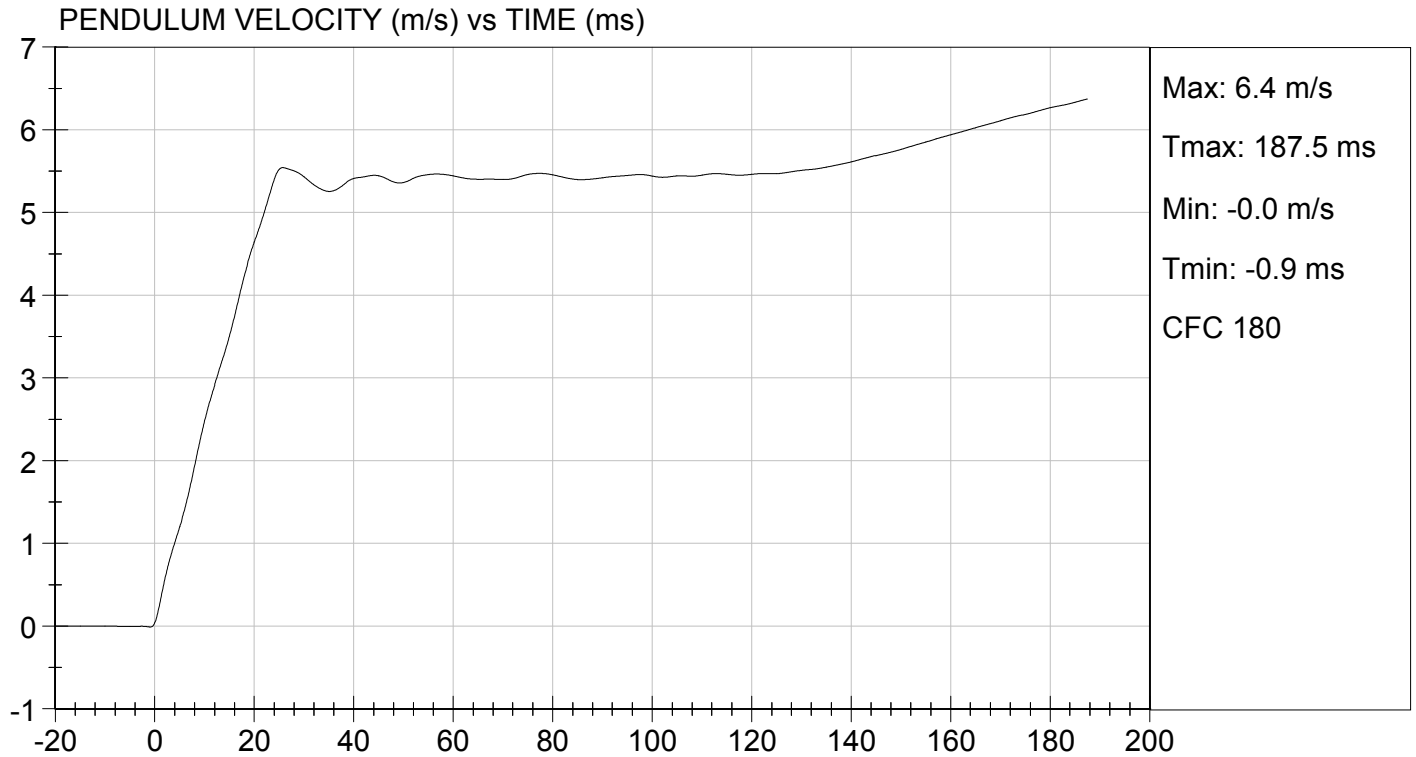
Test Date

David Winkelbauer
Approved By



TEST DESC: NECK BENDING
VELOCITY: 18.31 ft/s, 5.58 m/s

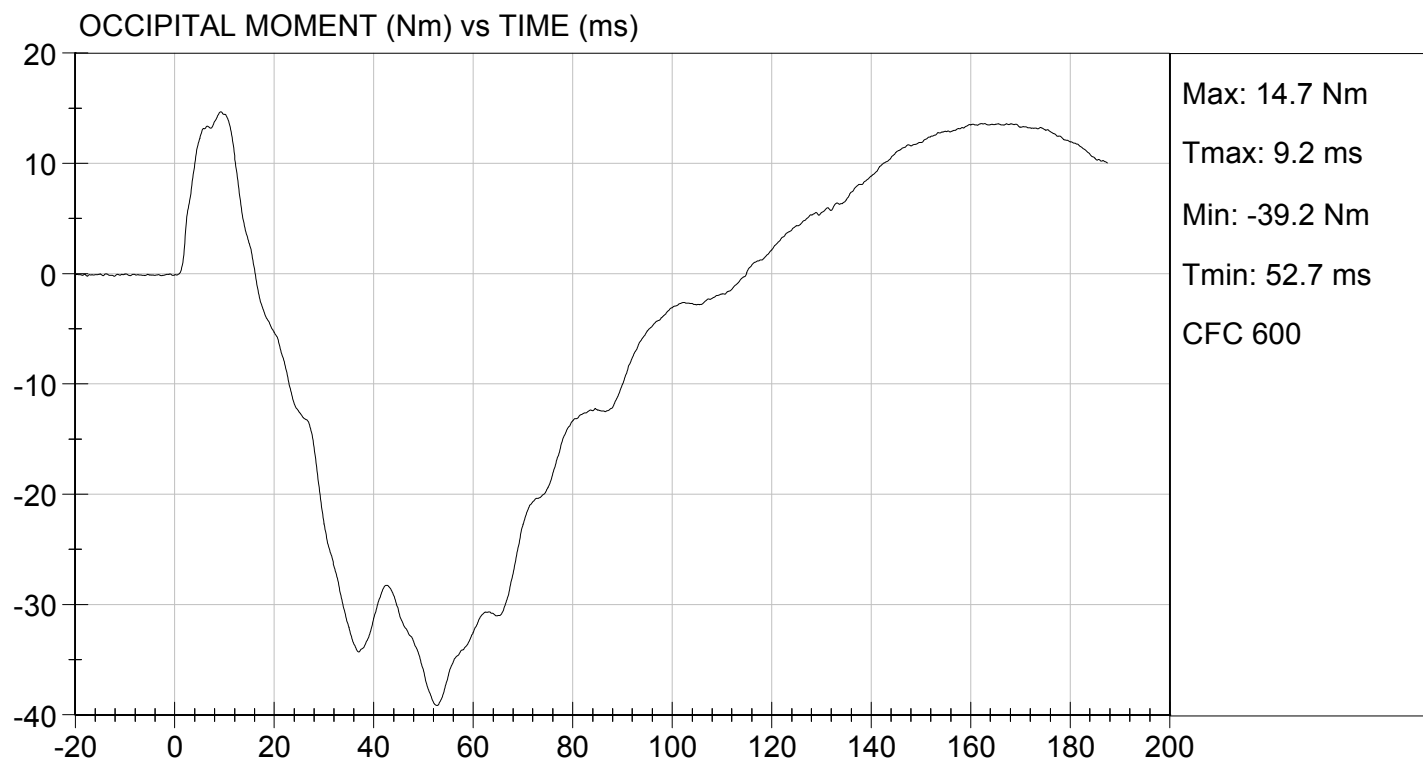
TEST DATE: 07/31/2013
TEST #: D132522





TEST DESC: NECK BENDING
VELOCITY: 18.31 ft/s, 5.58 m/s

TEST DATE: 07/31/2013
TEST #: D132522

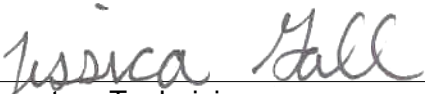


MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D132523

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	32	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
			Overall Test Results	Pass


Laboratory Technician

07/31/2013

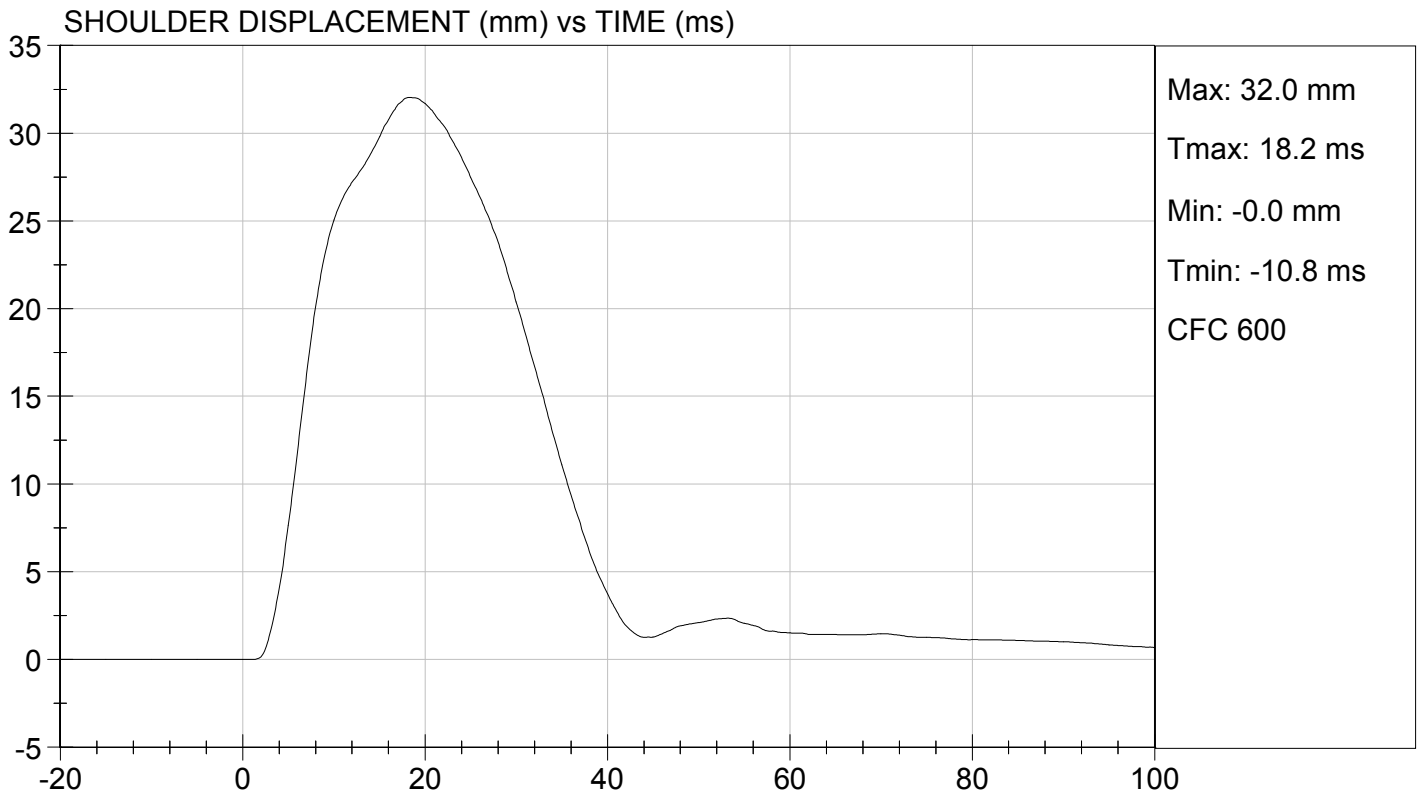
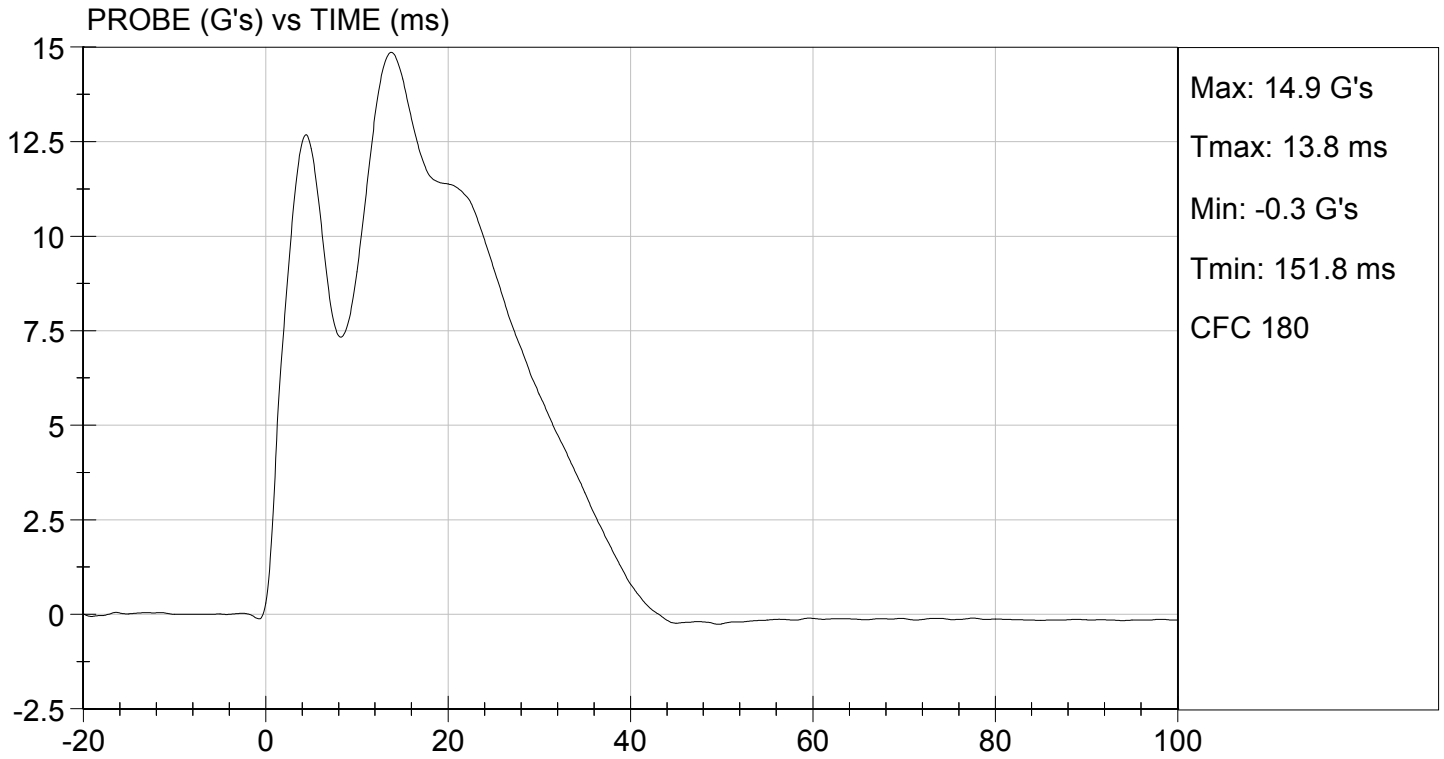
Test Date


Approved By



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

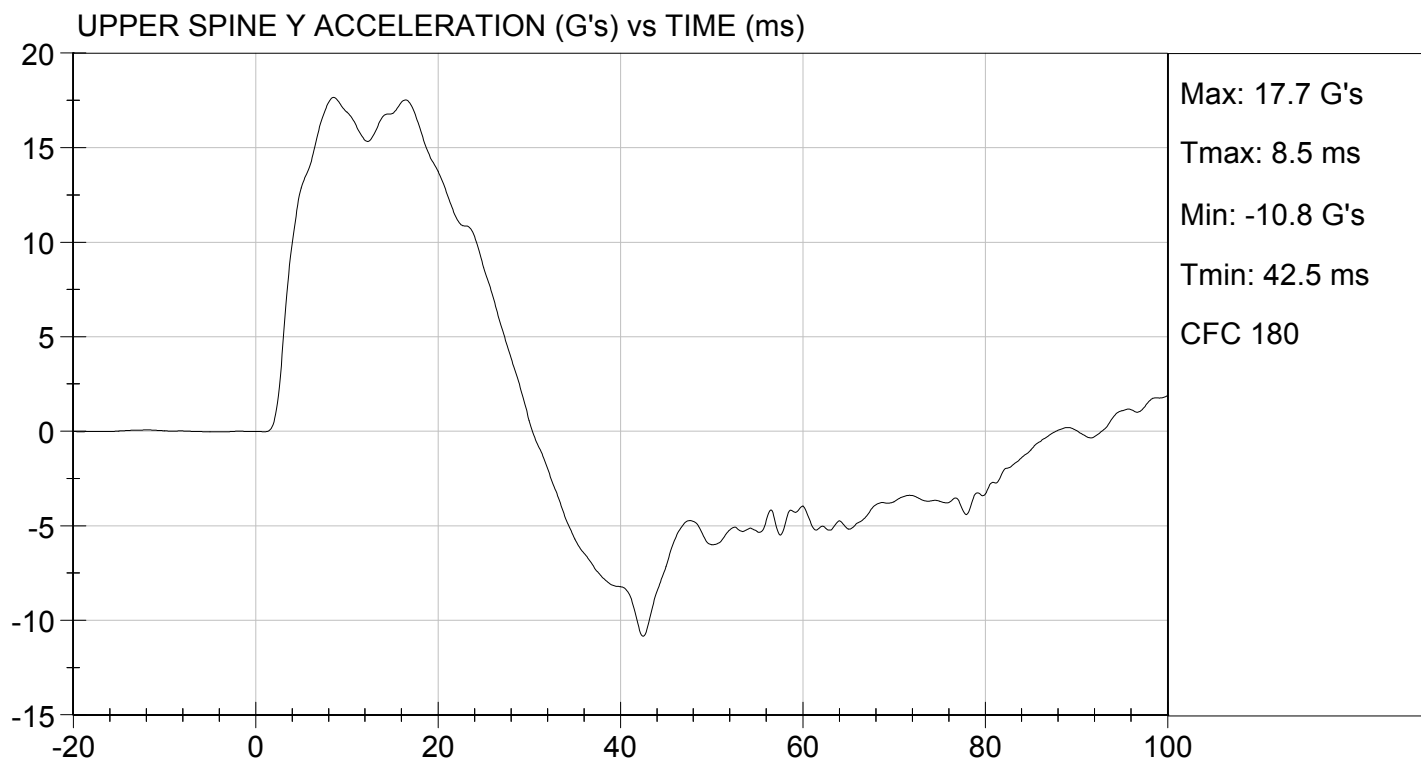
TEST DATE: 07/31/2013
TEST #: D132523





TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/31/2013
TEST #: D132523

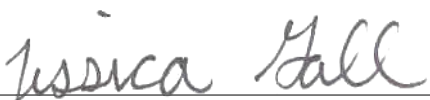


MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132524

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	30	Pass
Shoulder Displacement	mm	31 to 40	37	Pass
Upper Rib Displacement	mm	25 to 32	28	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	34	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	36	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	31	Pass
Overall Test Results				Pass


 Laboratory Technician

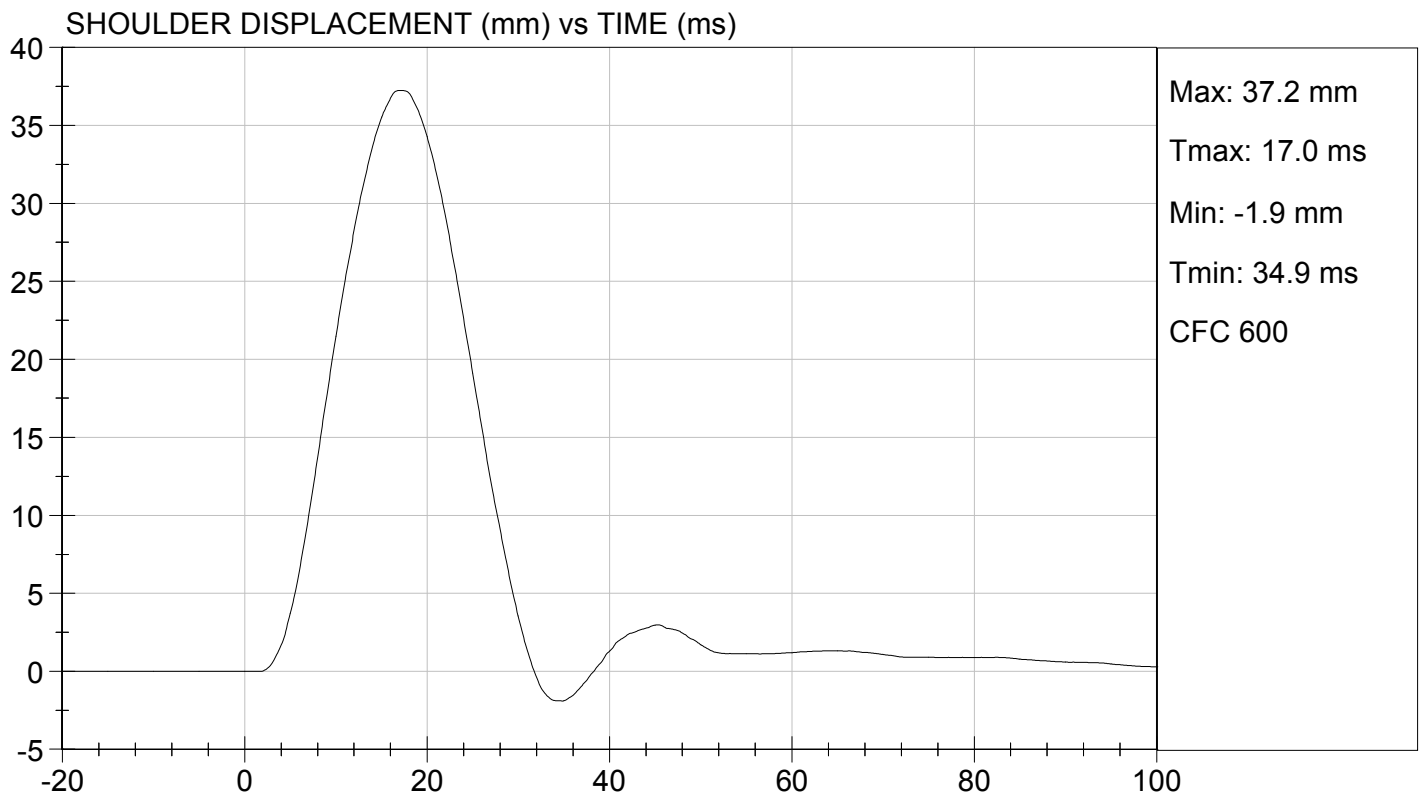
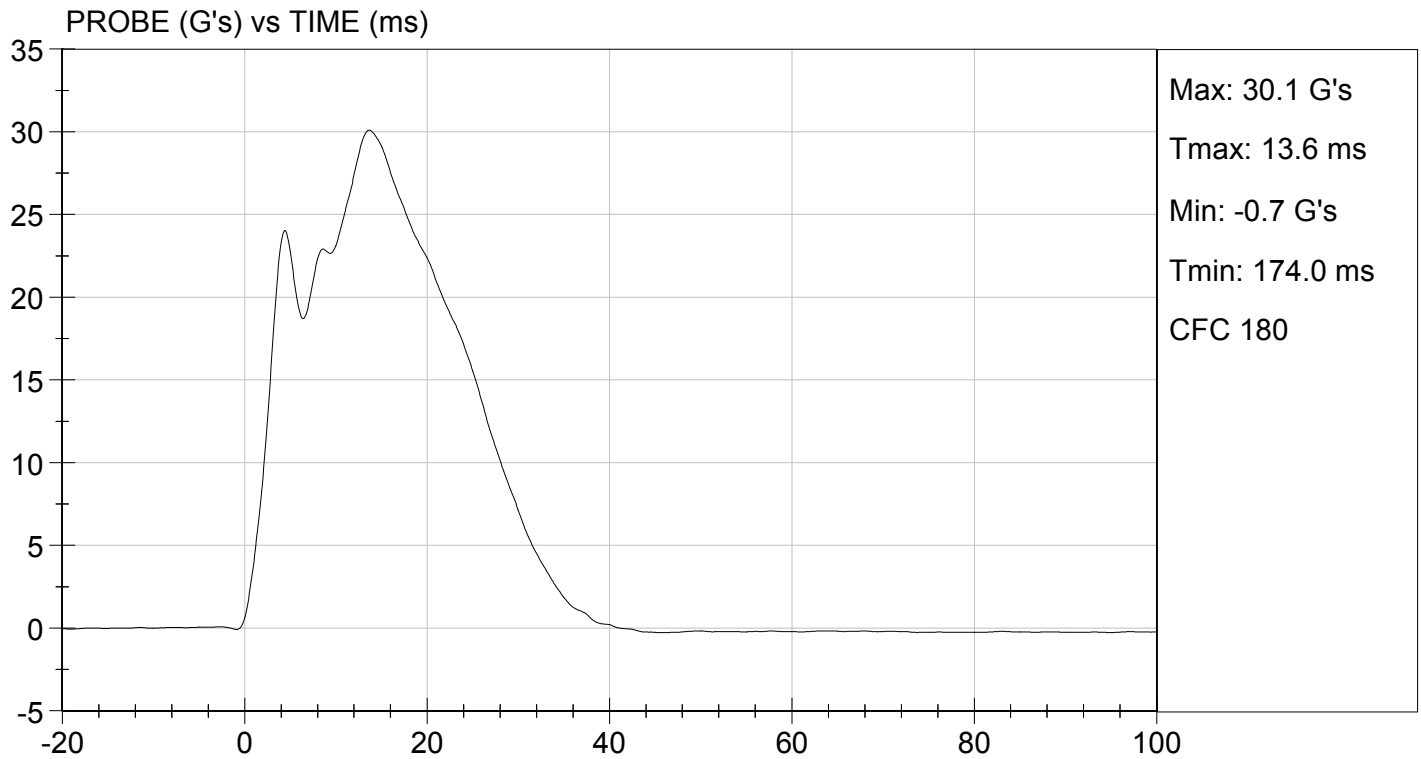
07/31/2013
 Test Date


 Approved By



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

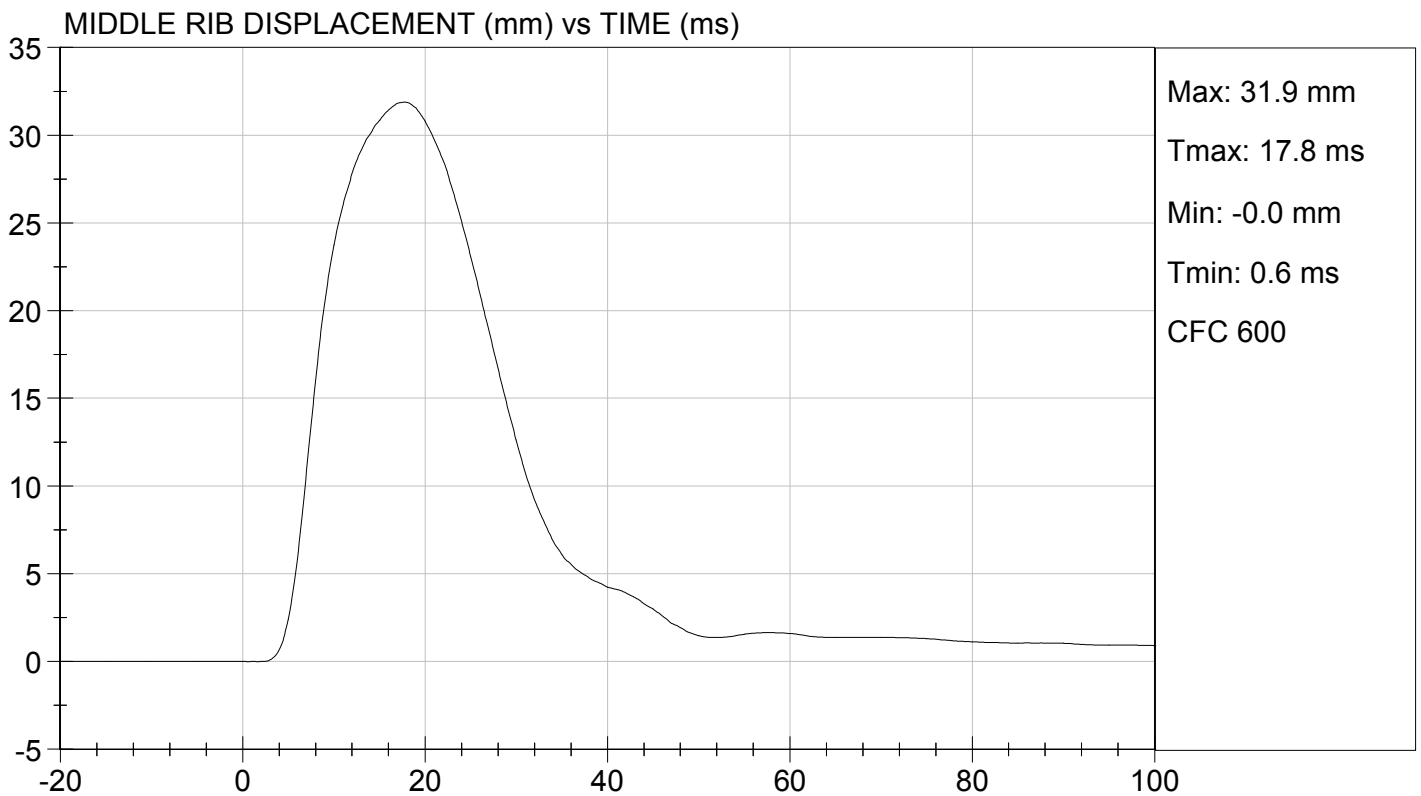
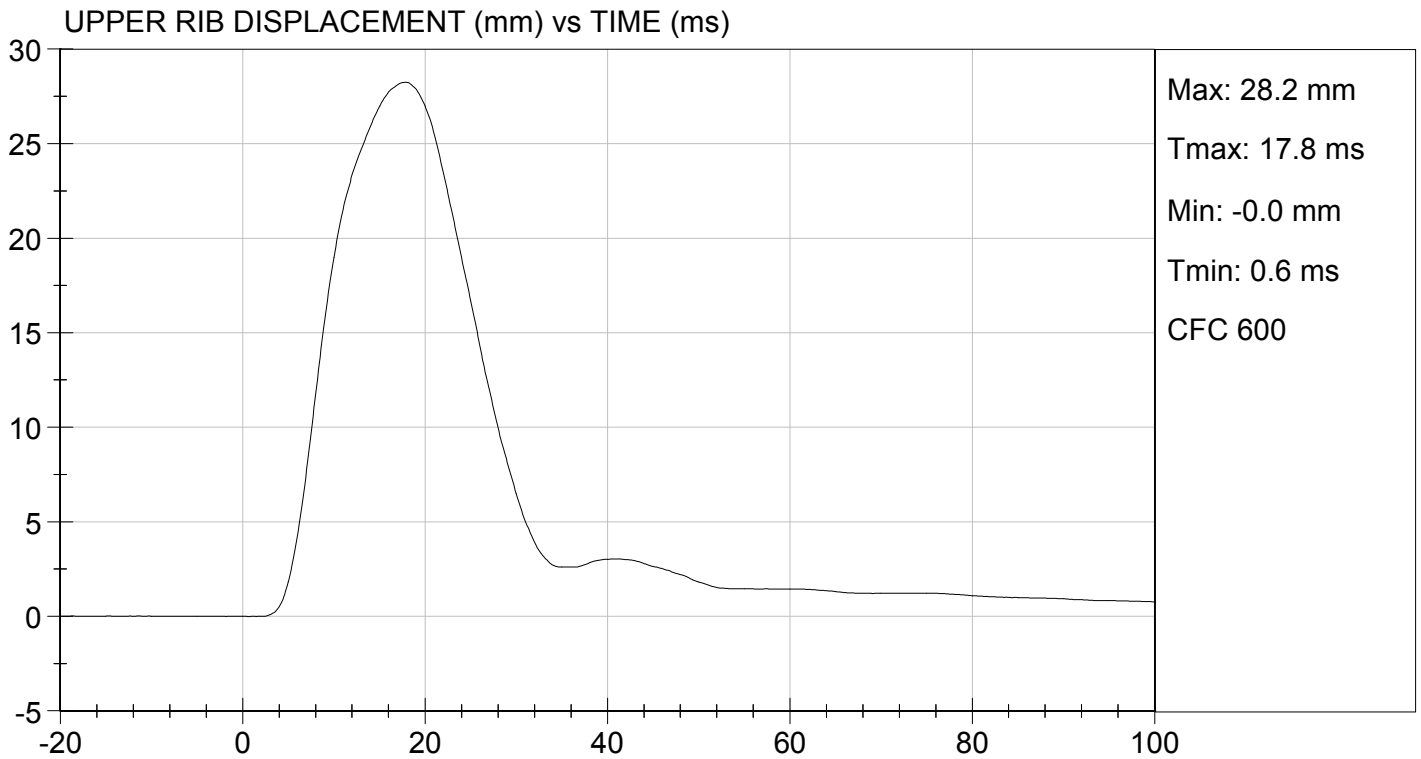
TEST DATE: 07/31/2013
TEST #: D132524





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

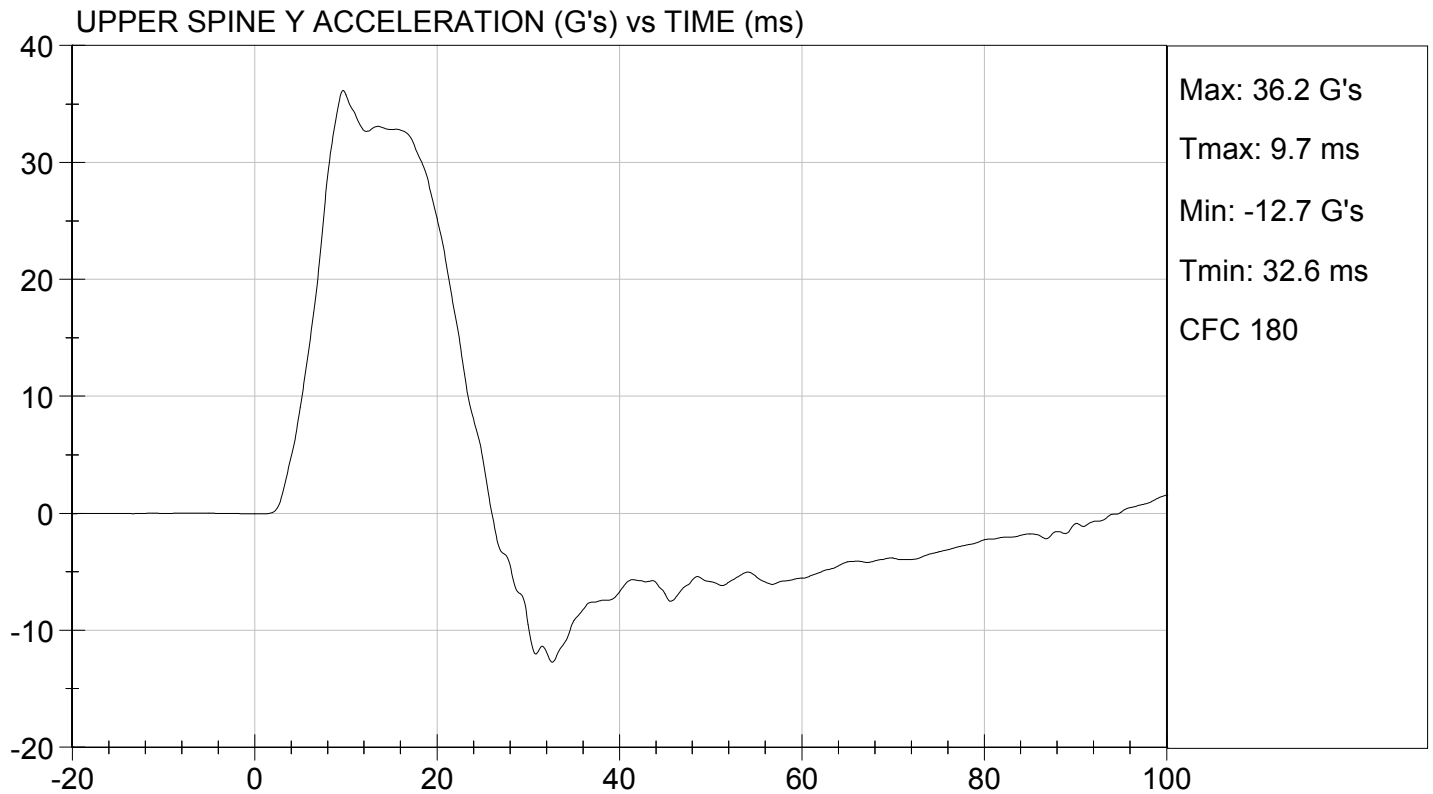
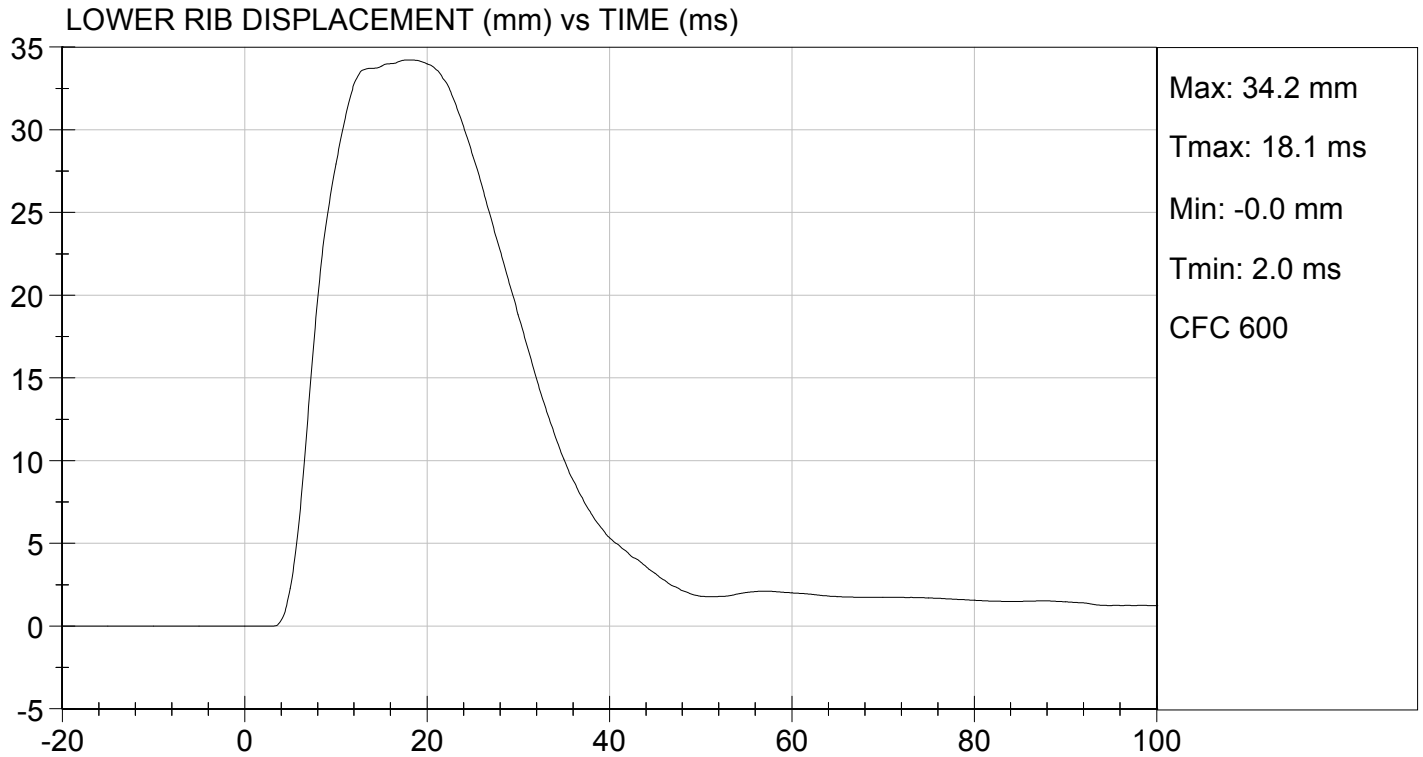
TEST DATE: 07/31/2013
TEST #: D132524





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

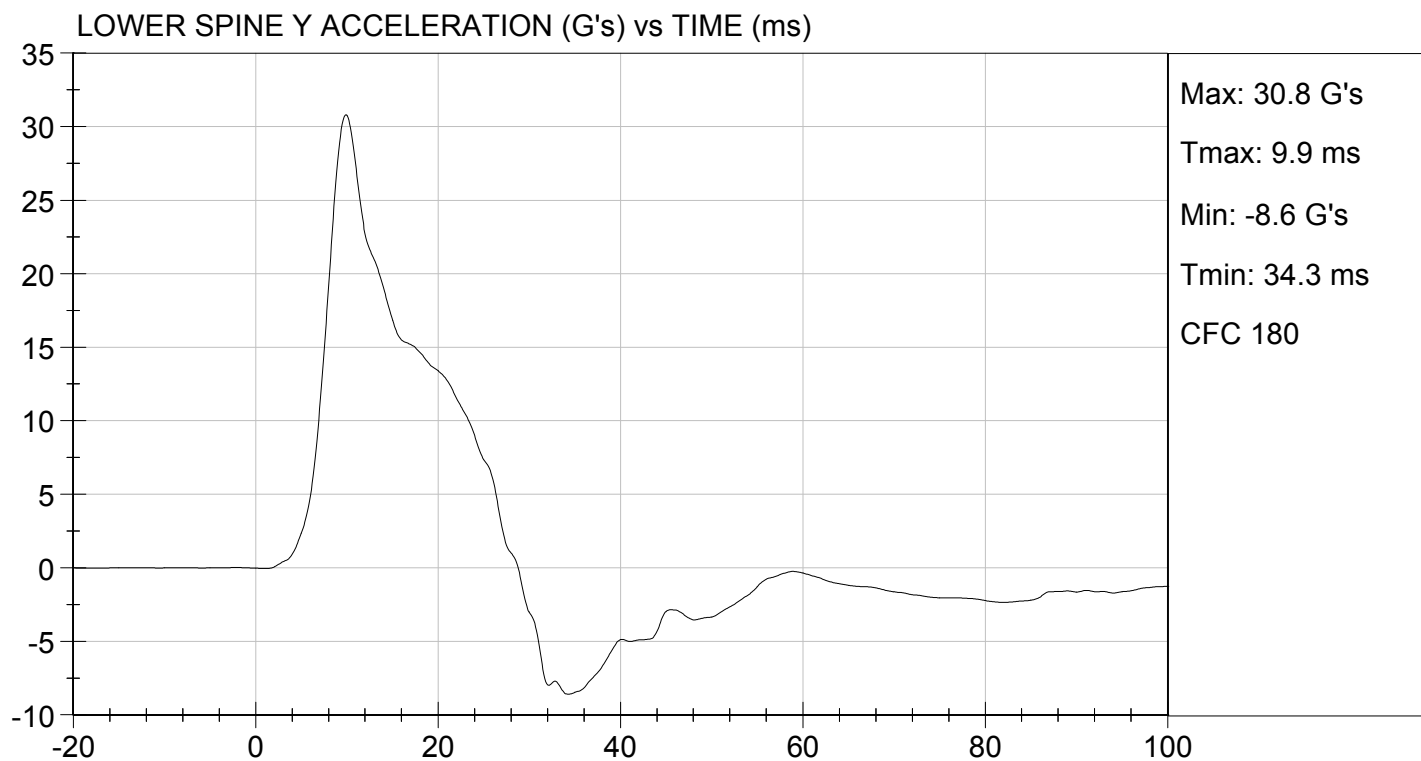
TEST DATE: 07/31/2013
TEST #: D132524





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/31/2013
TEST #: D132524

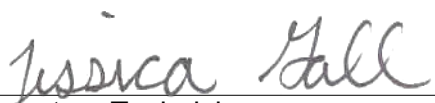


MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132525

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	14 to 18	14	Pass
Upper Rib Displacement	mm	32 to 40	37	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	38	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
Overall Test Results				Pass


 Laboratory Technician

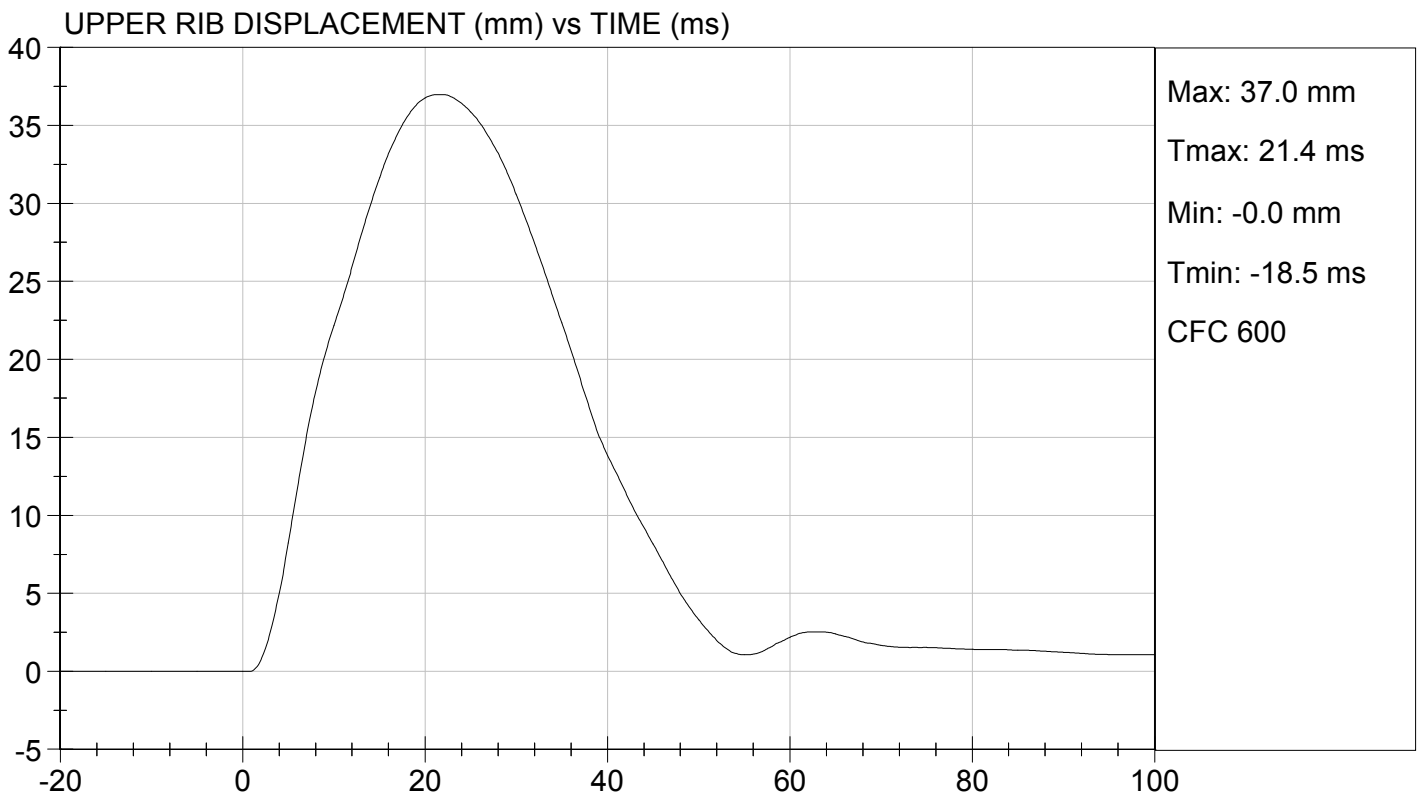
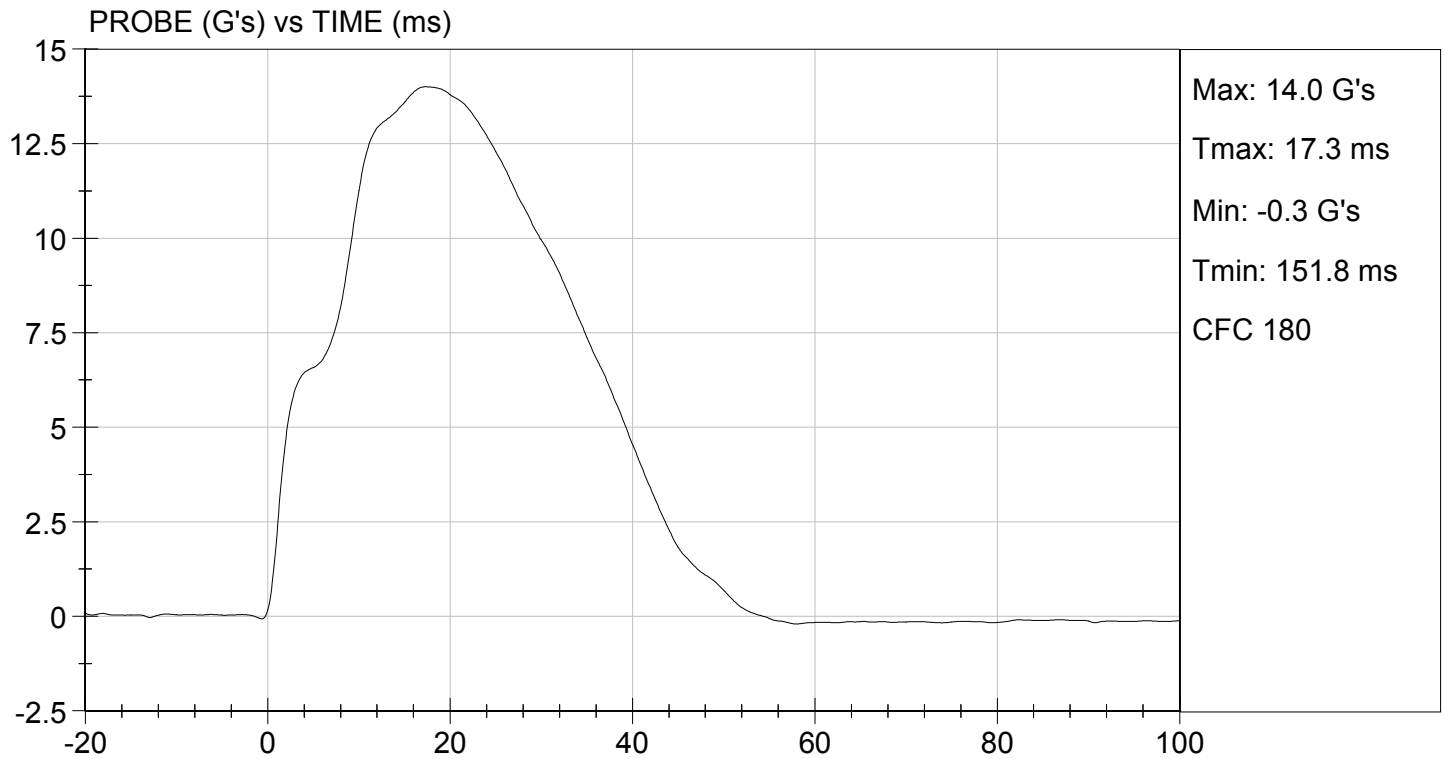
07/31/2013
 Test Date


 Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/31/2013
TEST #: D132525

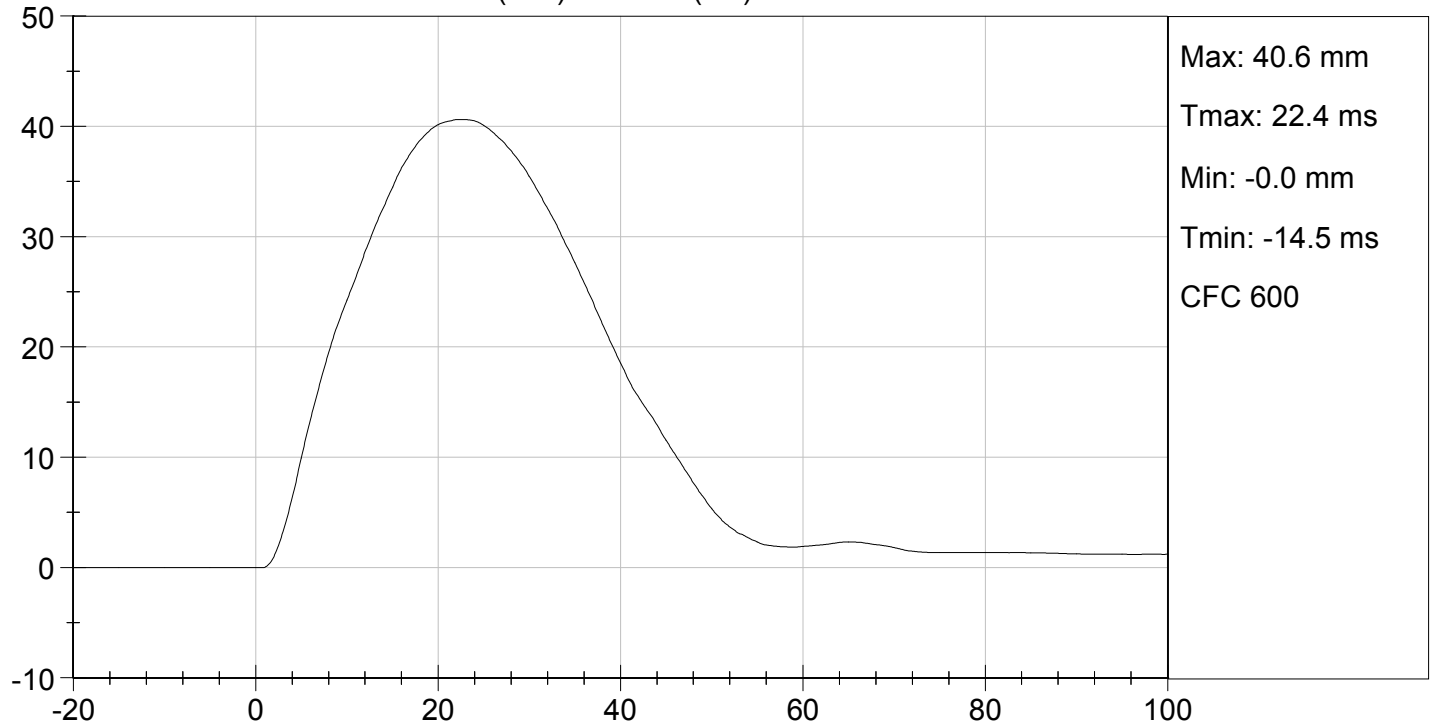




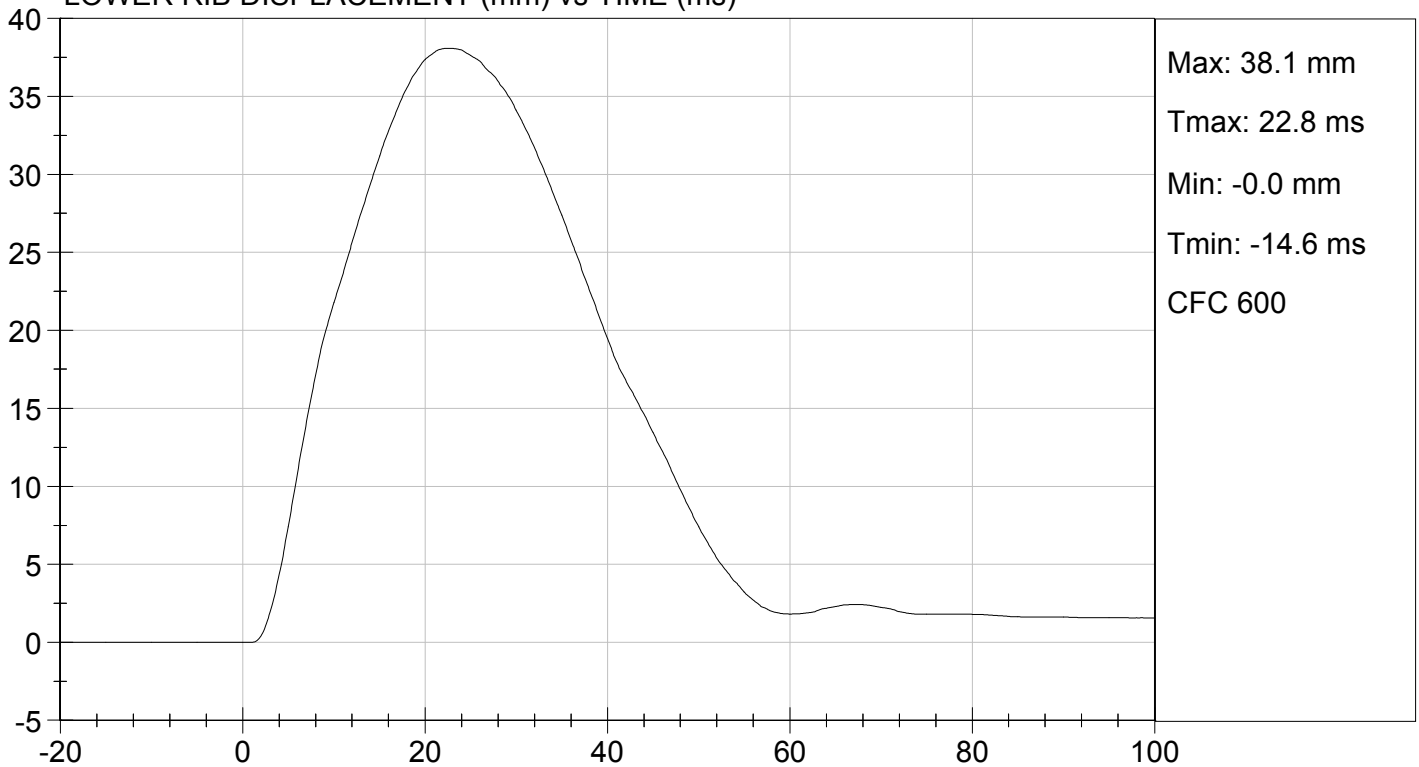
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/31/2013
TEST #: D132525

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)

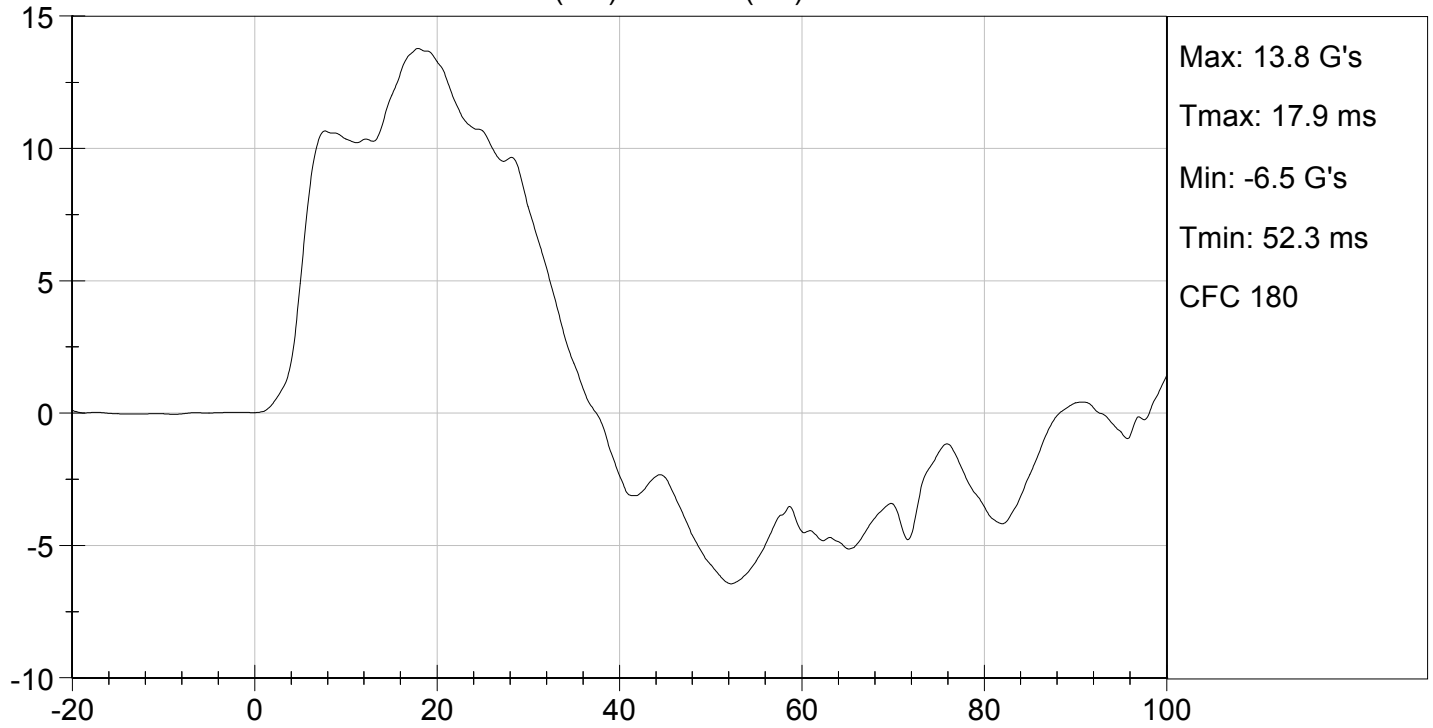




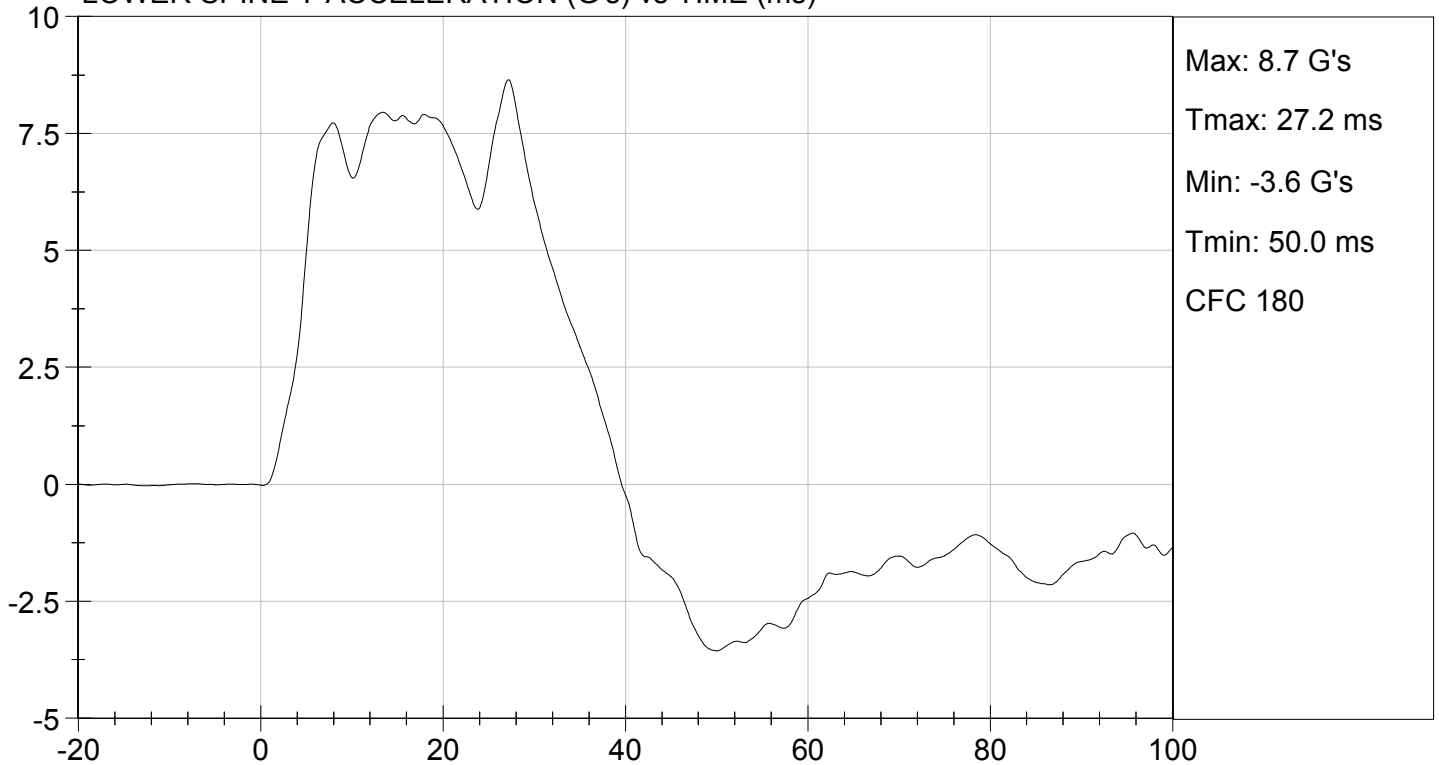
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/31/2013
TEST #: D132525

UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



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



MGA RESEARCH CORPORATION

ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132526

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	12 to 16	13	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	39	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	39	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

07/31/2013

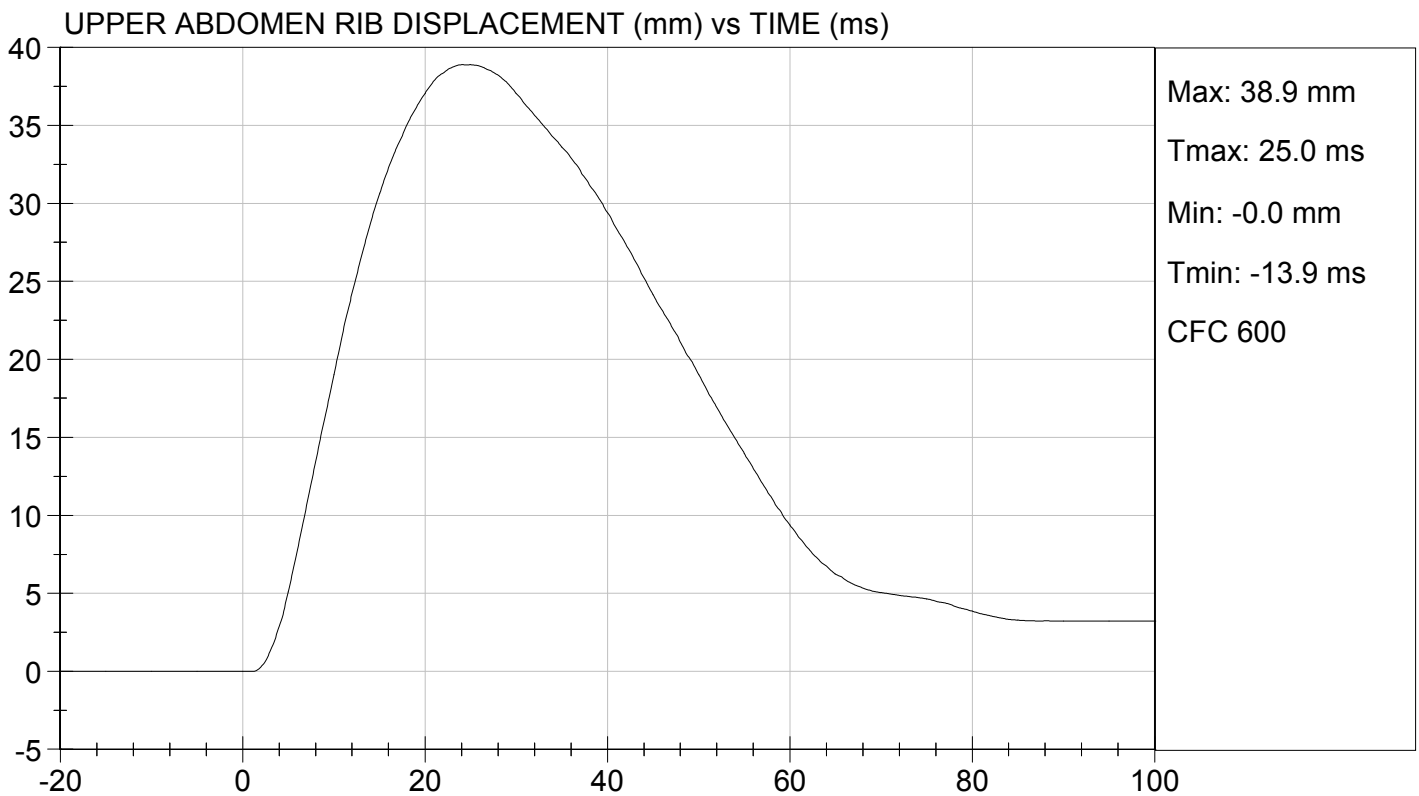
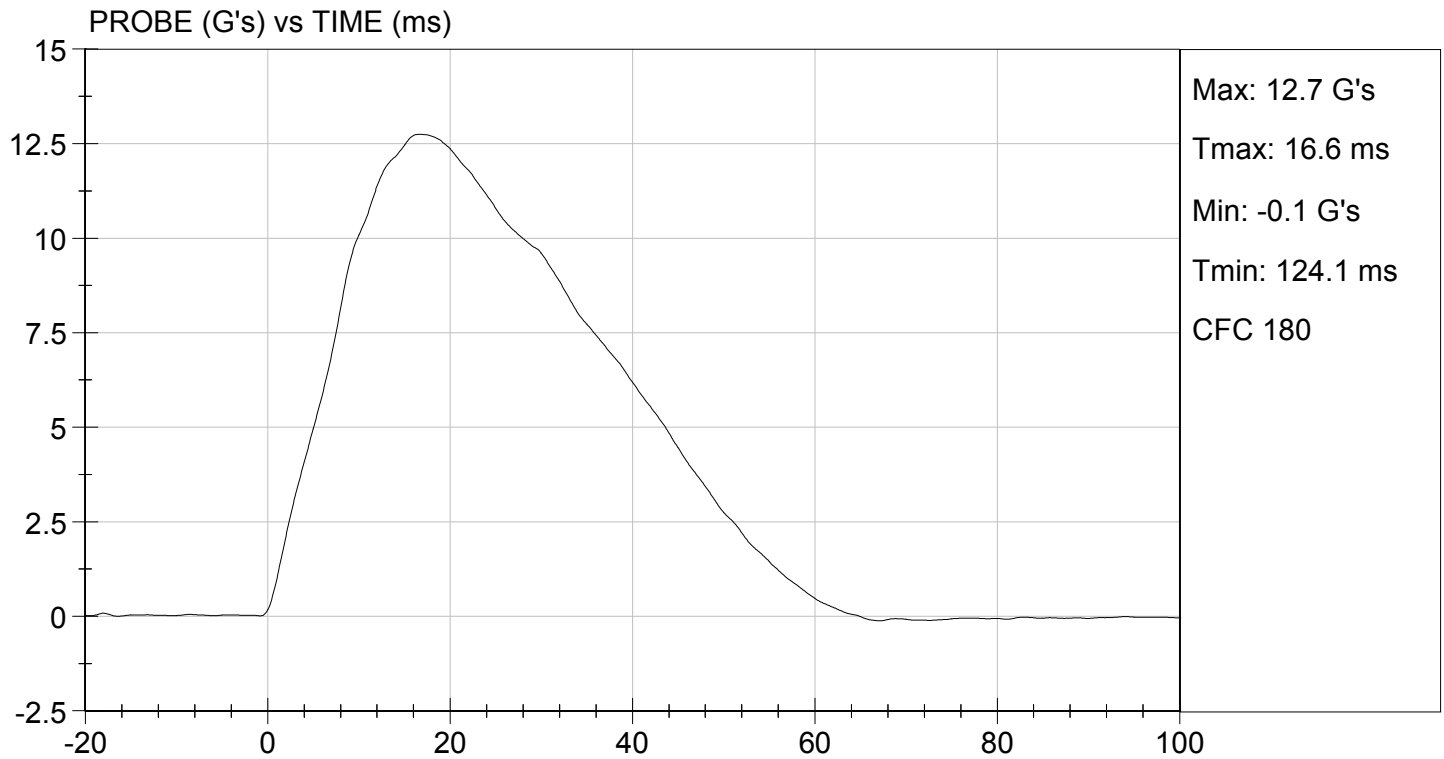
Test Date

David Winkelbauer
Approved By



TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/31/2013
TEST #: D132526

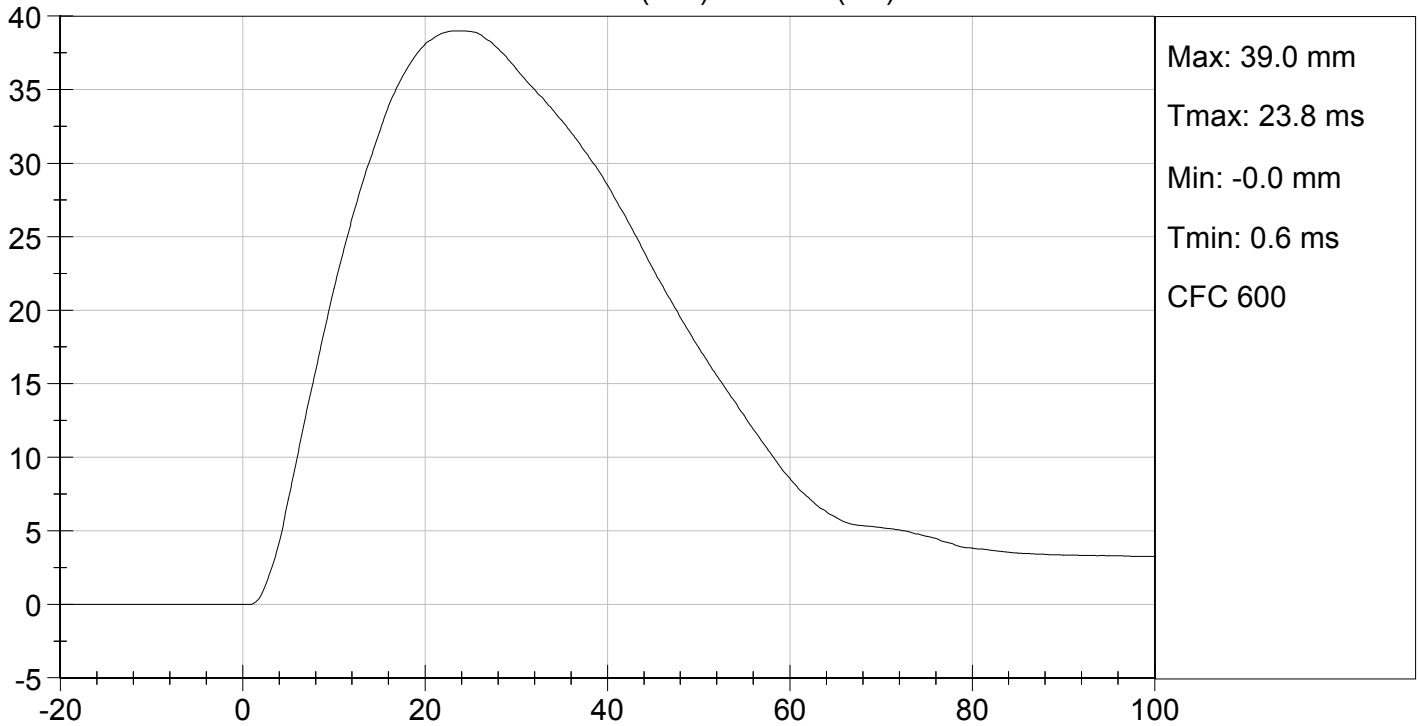




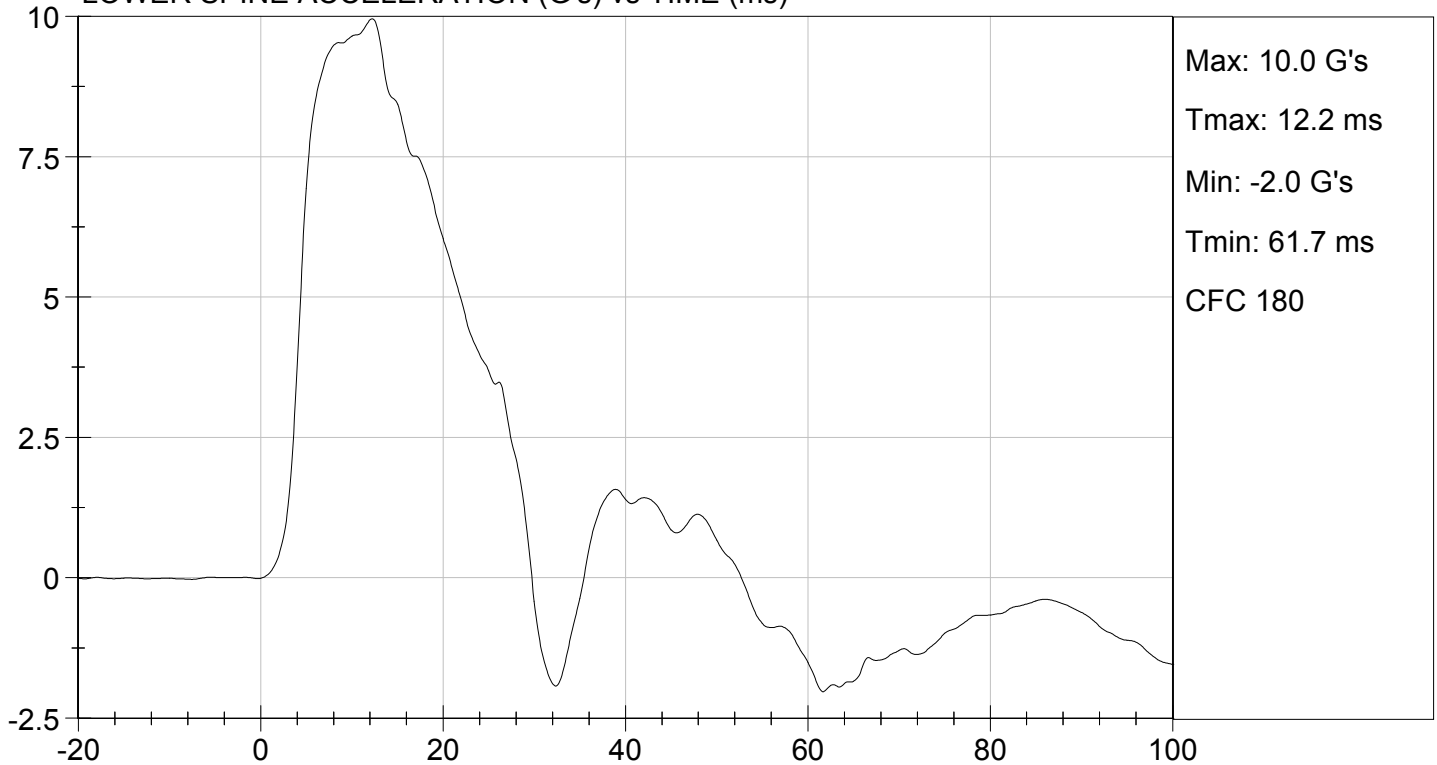
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/31/2013
TEST #: D132526

LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)



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PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132527

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	42	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	4,137	Pass
Overall Test Results				Pass


Laboratory Technician

07/31/2013

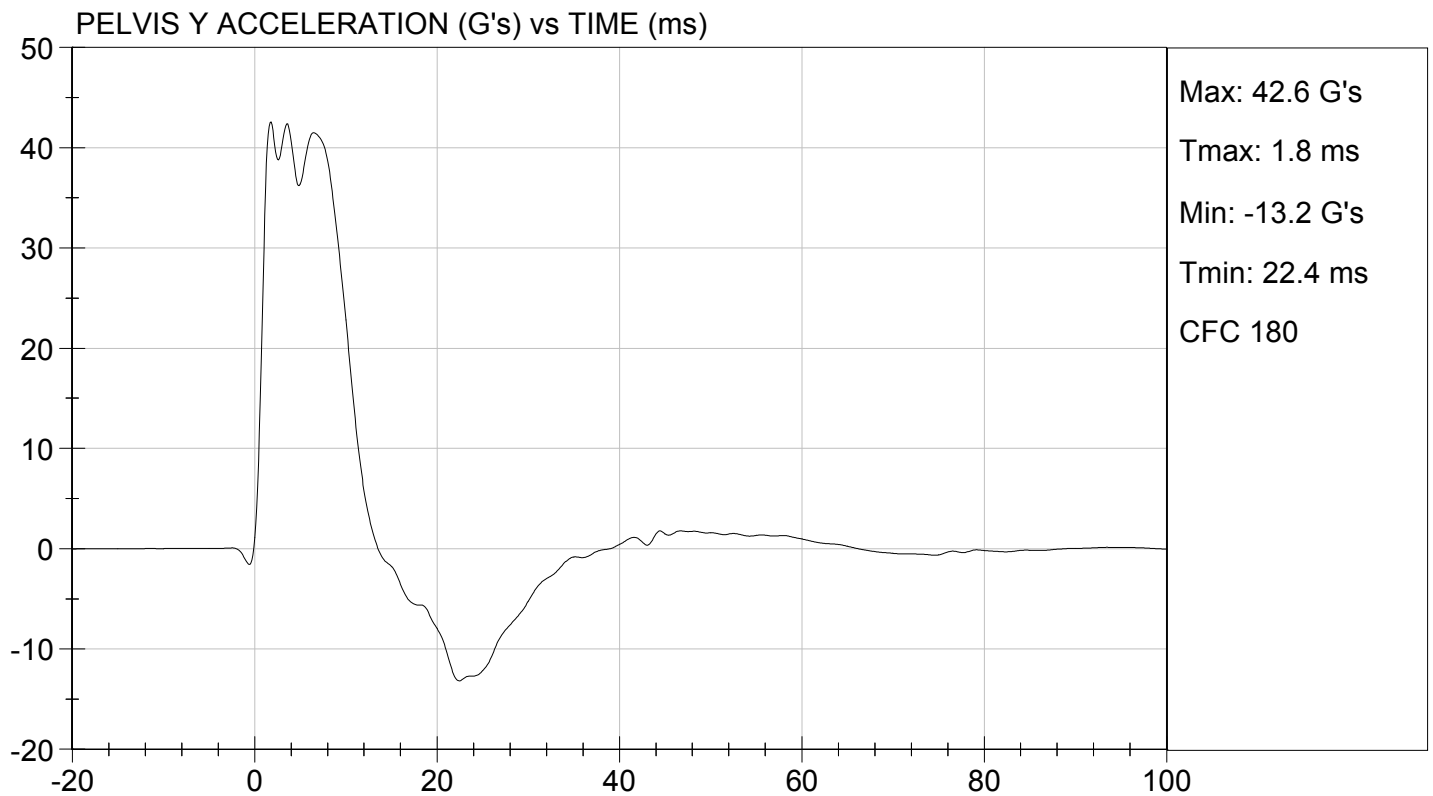
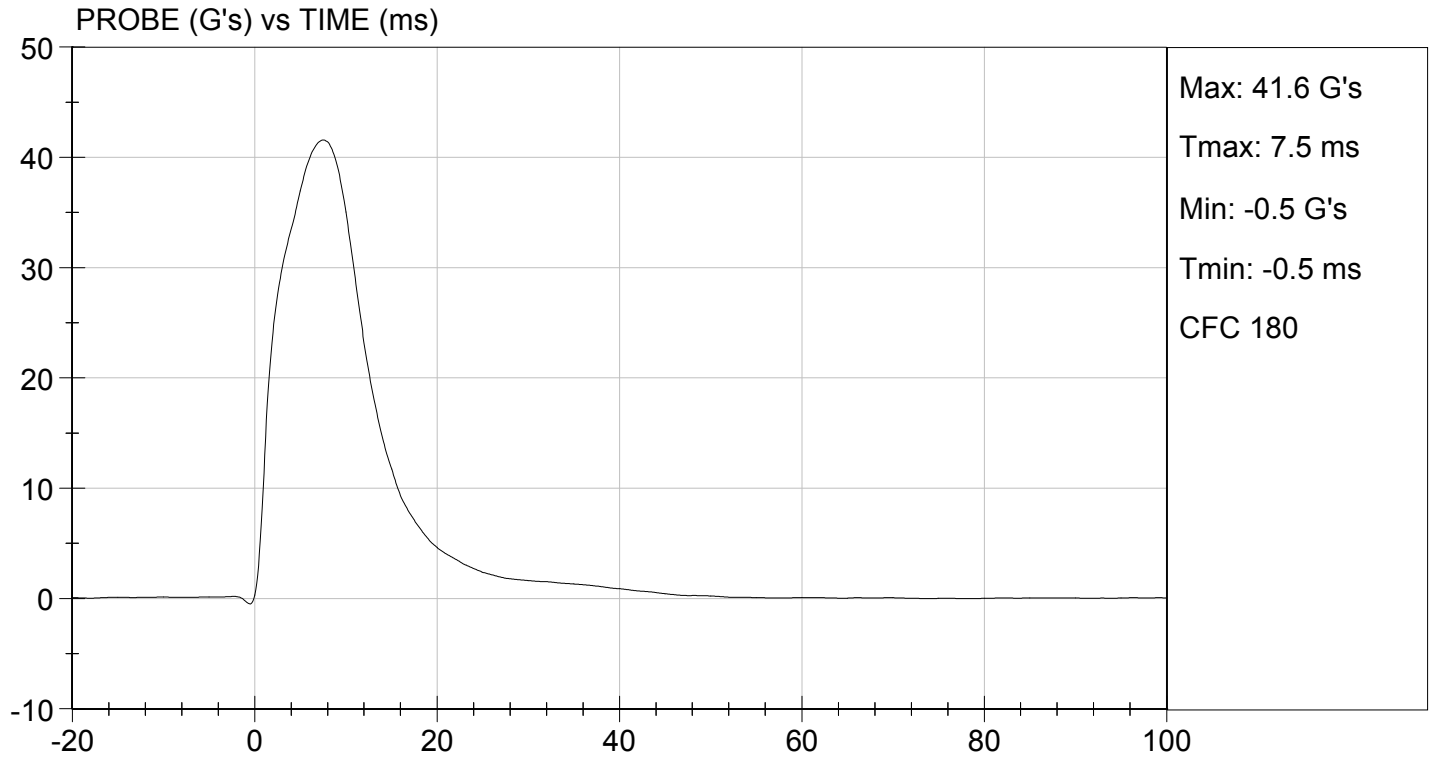
Test Date


Approved By



TEST DESC: PELVIS IMPACT
VELOCITY: 21.93 ft/s, 6.68 m/s

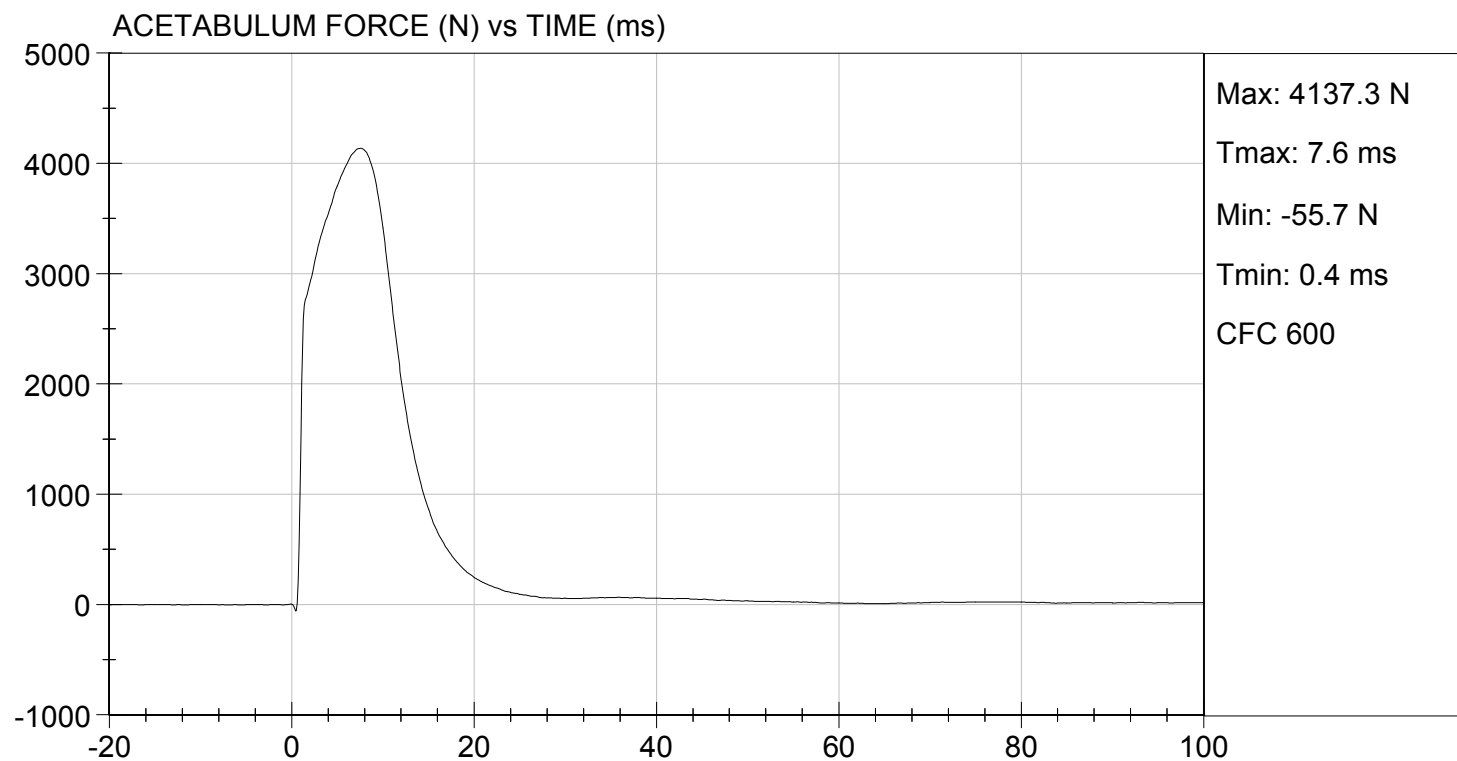
TEST DATE: 07/31/2013
TEST #: D132527





TEST DESC: PELVIS IMPACT
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 07/31/2013
TEST #: D132527



MGA RESEARCH CORPORATION

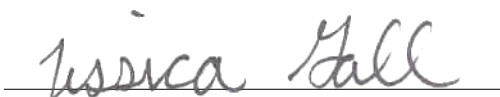
ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D132528

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	36 to 45	41	Pass
Pelvis Y Acceleration	G's	28 to 39	37	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	5,073	Pass
Overall Test Results				Pass


Laboratory Technician

07/31/2013

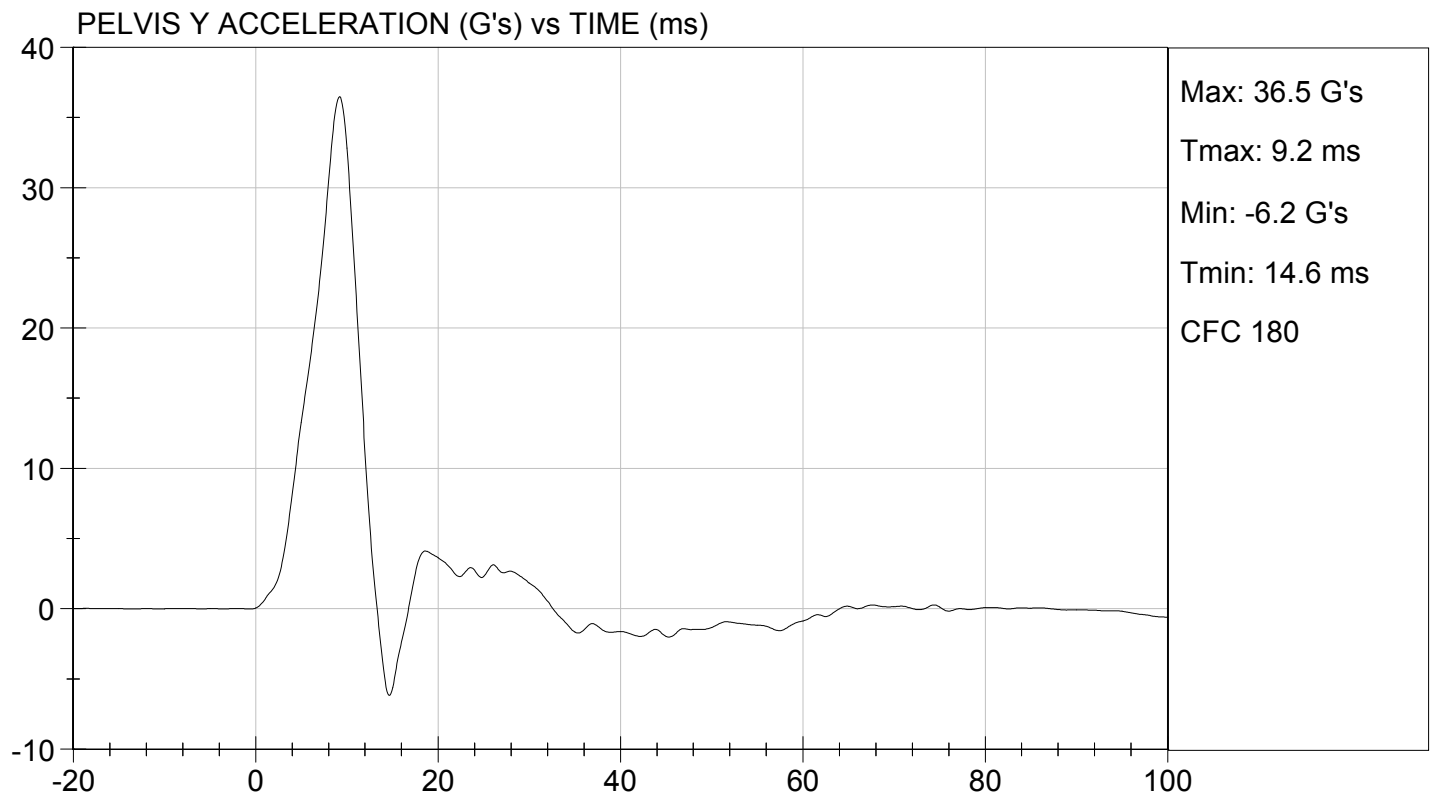
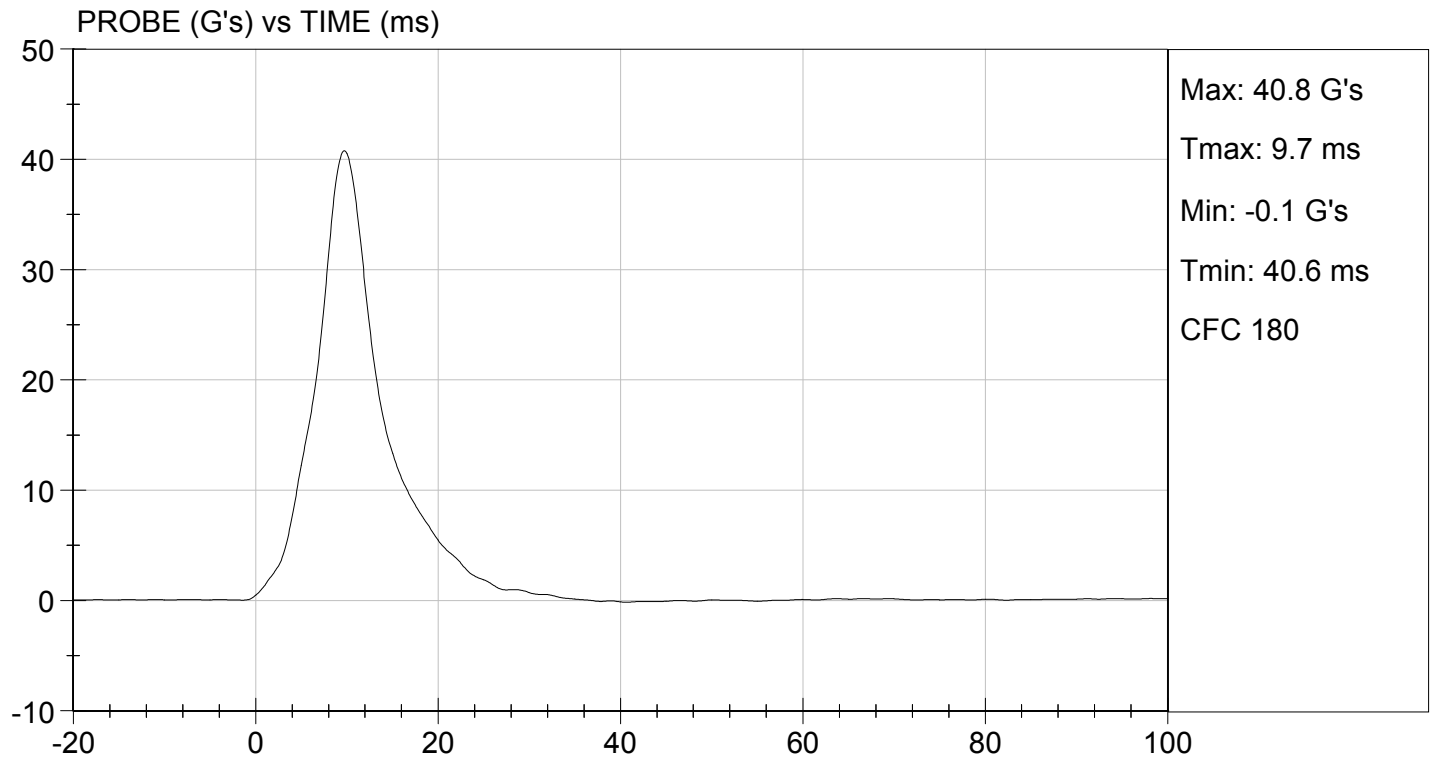
Test Date


Approved By



TEST DESC: ILLIAC
VELOCITY: 14.12 ft/s, 4.30 m/s

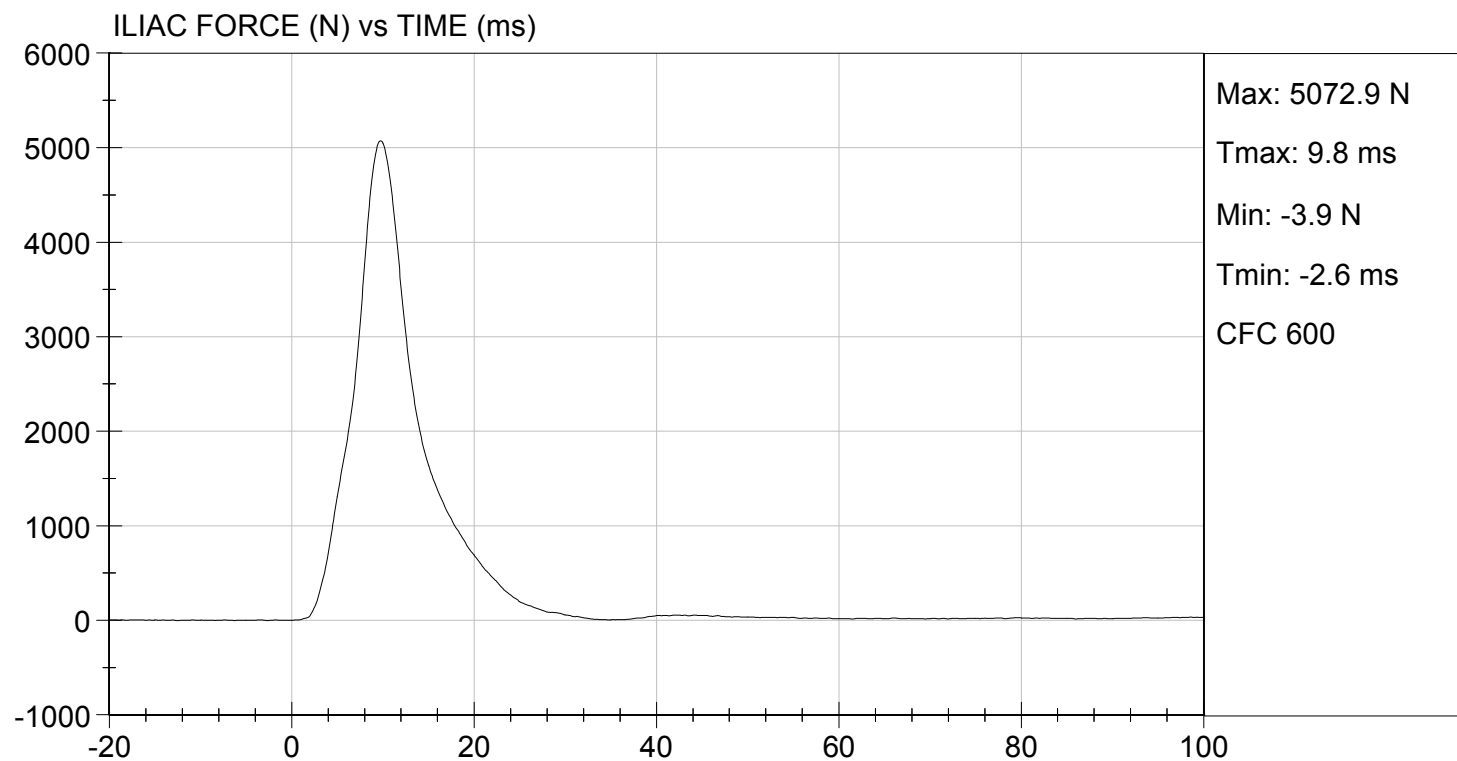
TEST DATE: 07/31/2013
TEST #: D132528



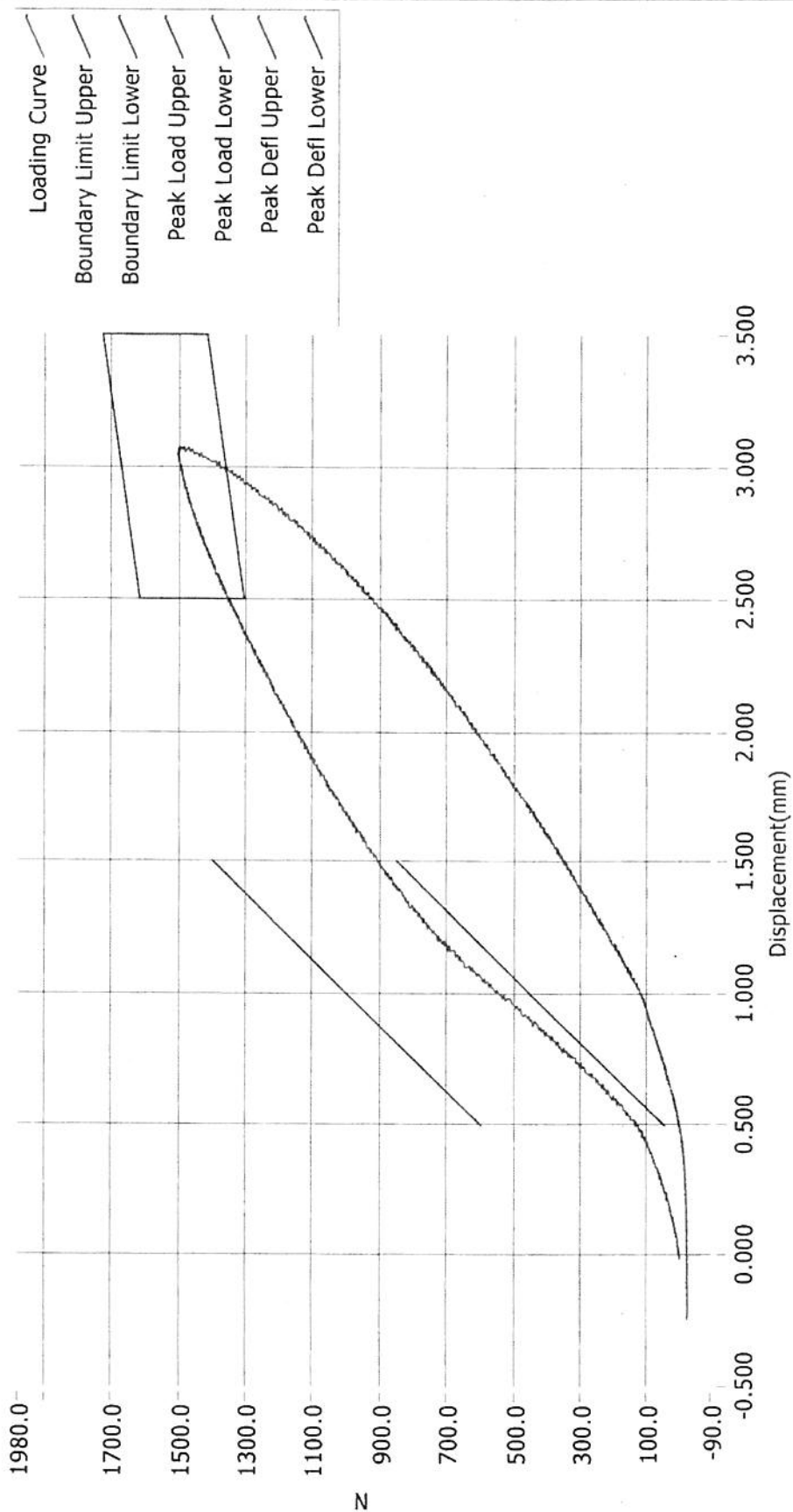


TEST DESC: ILLIAC
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 07/31/2013
TEST #: D132528



Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	48908	12/5/2011	8:09 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/5/2011

Current Time : 20:09:55

Resultant Data - SIDIIs Plug Compression

1980.0

1700.0

1500.0

1300.0

1100.0

900.0

700.0

500.0

300.0

100.0

-90.0

Displacement(mm)

Loading Curve

Boundary Limit Upper

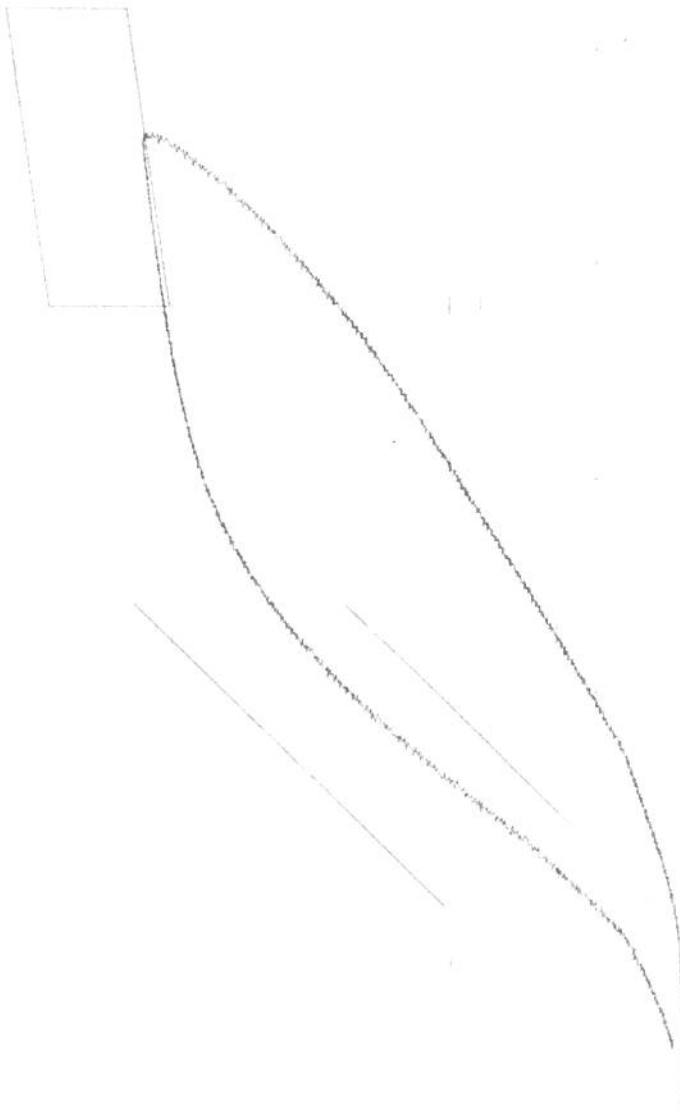
Boundary Limit Lower

Peak Load Upper

Peak Load Lower

Peak Defl Upper

Peak Defl Lower



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	47117	10/15/2011	1:31 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 10/15/2011

Current Time : 13:32:03

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation

				SID-IIs S/N 296			
				Serial Number	Manufacturer	Calibration Date	
Head CG Accelerometers				X	P79623	Endevco	04/05/13
				Y	P79624	Endevco	04/05/13
				Z	P79625	Endevco	04/05/13
				Xr	P79627	Endevco	04/05/13
				Yr	P79637	Endevco	06/17/13
				Zr	P79629	Endevco	04/05/13
Displacement Potentiometers	Thoracic Rib	Upper	Y	G012	Servo	04/09/13	
		Middle	Y	G1163	FTSS	04/09/13	
		Lower	Y	G1158	FTSS	04/09/13	
	Abdominal Rib	Upper	Y	G1146	FTSS	04/09/13	
		Lower	Y	G1126	FTSS	04/09/13	
Lower Spine Accelerometers (T12)				X	P80109	Endevco	04/05/13
				Y	P80110	Endevco	04/05/13
				Z	P80111	Endevco	04/05/13
Acetabulum Load Cell				Y	ACG268	Denton	01/03/13
Iliac Wing Load Cell				Y	IWG282	Denton	01/03/13
Pelvis Plug (struck side)					48908	FTSS	12/05/11
Pelvis Plug (non-struck side)					47117	FTSS	10/15/11

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P66750	Endevco	06/06/13
Vehicle Center of Gravity	Y	P66751	Endevco	06/06/13
Vehicle Center of Gravity	Z	P66752	Endevco	06/06/13
Left Floor Sill	Y	P78766	Endevco	04/30/13
A-Pillar Sill	Y	P67515	Endevco	06/10/13
A-Pillar Low	Y	P63337	Endevco	04/15/13
A-Pillar Mid	Y	P63336	Endevco	04/15/13
B-Pillar Sill	Y	P63891	Endevco	04/15/13
B-Pillar Low	Y	P66593	Endevco	04/29/13
B-Pillar Mid	V	P66594	Endevco	04/29/13
Driver Seat	Y	P63889	Endevco	06/06/13
Engine Top	X	P59657	Endevco	06/06/13
Engine Top	Y	P59658	Endevco	06/06/13
Firewall	Y	P67590	Endevco	06/10/13
Right Roof	Y	P77719	Endevco	03/04/13
Right Floor Sill	Y	P63867	Endevco	06/06/13
Rear Floorpan	X	P67870	Endevco	03/15/13
Rear Floorpan	Y	P67869	Endevco	03/15/13

Table 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	09/05/12
Load Cell 2	DG6278	FTSS	09/05/12
Load Cell 3	DG6279	FTSS	09/05/12
Load Cell 4	DG6280	FTSS	09/05/12
Load Cell 5	DG6281	FTSS	09/05/12
Load Cell 6	DG6283	FTSS	09/05/12
Load Cell 7	DG6284	FTSS	09/05/12
Load Cell 8	DG6582	FTSS	09/05/12