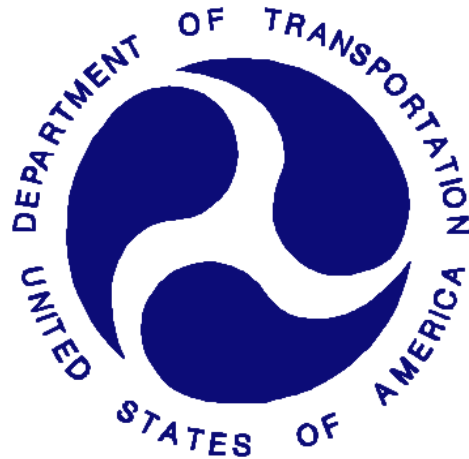


REPORT NUMBER: SPNCAP-MGA-2013-024

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

**HONDA MFG. OF INDIANA, LLC
2013 Acura ILX 4-Dr Sedan
NHTSA No.: HD5301**

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



Test Date: October 18, 2012

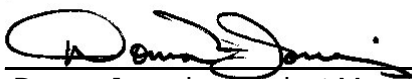
Final Report Date: November 16, 2012

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: November 16, 2012

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

1. Report No. SPNCAP-MGA-2013-024		2. Government Accession No.		3. Recipient's Catalog No.																												
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7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer				8. Performing Organization Report No. SPNCAP-MGA-2013-024																												
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				14. Sponsoring Agency Code NVS-111																												
15. Supplementary Notes																																
16. Abstract A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2013 Acura ILX 4-Dr Sedan 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 October 18, 2012. The impact velocity was 32.2 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.9°C. The test vehicle post-test maximum crush was 379 mm at level 3. The test vehicle's performance was as follows: <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2" style="text-align: left;">Measurement Description</th> <th colspan="3">Driver ATD (SID-IIs)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>200</td> </tr> <tr> <td style="text-align: left;">Resultant Lower Spine Acceleration</td> <td>Gs</td> <td>82</td> <td>53</td> </tr> <tr> <td style="text-align: left;">Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>4750</td> </tr> <tr> <td style="text-align: left;">Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>19</td> </tr> <tr> <td style="text-align: left;">Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>15</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	200	Resultant Lower Spine Acceleration	Gs	82	53	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4750	Maximum Thoracic Rib Deflection	mm	38*	19	Maximum Abdomen Rib Deflection	mm	45*	15
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs			18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave, SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																													
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2013 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 2013 Acura ILX 4-Dr Sedan. 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 2013 Acura ILX 4-Dr Sedan. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.2 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin, on October 18, 2012. 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	200
Resultant Lower Spine Acceleration	Gs	82	53
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4750
Maximum Thoracic Rib Deflection	mm	38*	19
Maximum Abdominal Rib Deflection	mm	45*	15

*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 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 Mid A-Post Y after 50ms
- Left Lower B-Post Y after 11ms
- Left Mid B-Post Y after 13ms

Vehicle CG X is questionable from 65-67ms

Left Mid A-Post Y is questionable from 21-24ms

Driver Seat Track Y is questionable from 107-118ms

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: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	HD5301	Traction Control System (TCS)	Yes
Model Year	2013	Auto-Leveling System	No
Make	Acura	Automatic Door Locks (ADL)	Yes
Model	ILX	Power Window Auto-Reverse	Yes
Body Style	Sedan	Other Optional Feature	N/A
VIN	19VDE1F51DE003992	Driver Front Airbag	Yes
Body Color	Silver Moon	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	93 / 58	Driver Head/Torso Airbag	No
Engine Displacement (L)	2.0	Driver Torso Airbag	Yes
Type/No. Cylinders	4	Driver Torso/Pelvis Airbag	No
Engine Placement	Lateral	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	5	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	Front	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	Yes	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	Yes, 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?	Yes
--	-----

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda Mfg. of Indiana, LLC	GVWR (kg)	1800
Date of Manufacture	06/12	GAWR Front (kg)	970
Vehicle Type	Passenger Car	GAWR Rear (kg)	850

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				385	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				45	(A-B)

VEHICLE SEAT TYPE

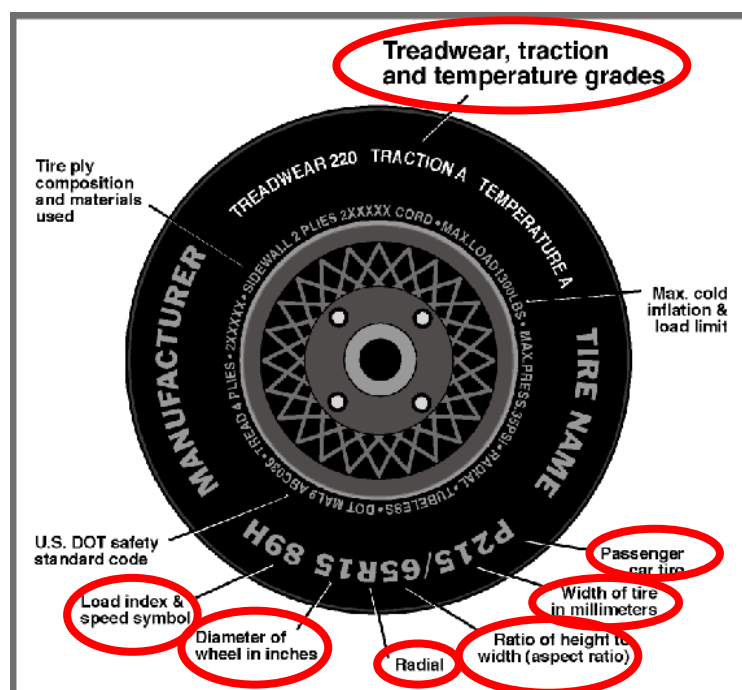
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X						X
Rear or Second Row		X			X		
Third Row Seat							

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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	230	230
Recommended Tire Size	P215/45R17	P215/45R17
Tire Size on Vehicle	P215/45R17	P215/45R17
Tire Manufacturer	Michelin	Michelin
Tire Model	Pilot HX MXMA	Pilot
Treadwear	300	300
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	87V	87V
Tire Material	Rubber	Rubber
DOT Safety Code Left	B9N0 U7LX	B9N0 U7LX
DOT Safety Code Right	B9N0 U7LX	B9N0 U7LX

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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	230	230	230	230
Tire Placard	kpa	230	230	230	230
Owner's Manual	kpa				
As Tested	kpa	230	230	230	230

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	419.6	263.1		445.0	295.3		444.1	307.1	
Right	kg	404.1	257.2		412.3	282.6		403.7	285.7	
Ratio	%	61.3	38.7		59.7	40.3		58.9	41.1	
Totals	kg	823.7	520.3	1344.0	857.3	577.9	1435.2	847.8	592.8	1440.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1344.0	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	45	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1441.2	(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	-0.6	-0.3	-0.1	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-0.8	-0.3	-0.3	Yes
Front Bumper Angle (left-to-right)**	deg	0.0	-0.4	-0.8	Yes
Rear Bumper Angle (left-to-right)**	deg	0.0	0.0	-0.1	Yes
Vehicle CG (Aft of Front Axle)	mm	1035	1077	1100	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	12	24	33	

*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)	0.0
Right taillight, right side mirror, jack & tools, trunk carpet/sill cover/floor cover, spare tire, right rear floor mat.	20.4

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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012

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	26.2	19.2	22.7
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	22.7	25	Max	50	50	50
	22.7	25	Mid	25	25	25
	22.7	25	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: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

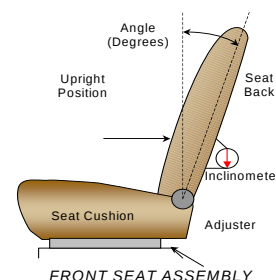
NHTSA No. HD5301
 Test Date: 10/18/2012

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	240		0	
Front Passenger Seat	240	25 (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	78.0		-0.7	
Front Passenger Seat	59.9		2.1	0 (1 st as 0)
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 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	4 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	5	Lowest/Fixed

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

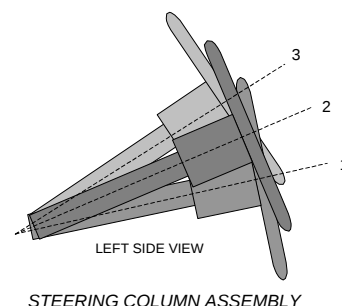
Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012

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.

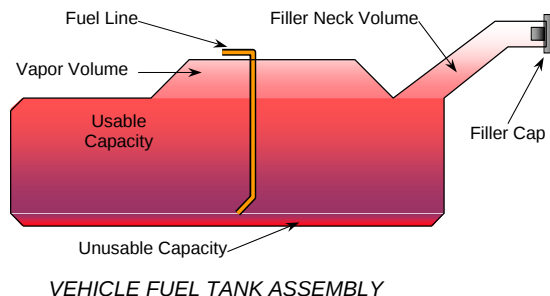
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	68.8	230
Geometric Center, Position 2	66.3	208
Uppermost, Position 3	63.8	185
Telescoping Steering Wheel Travel		45
Test Position	66.3	185



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. After the ignition key is turned from lock (0) to ON (II) position the pump will be filled up for two seconds, and then the pressure is maintained. The fuel pipe is on the left side.



FUEL TANK CAPACITY DATA

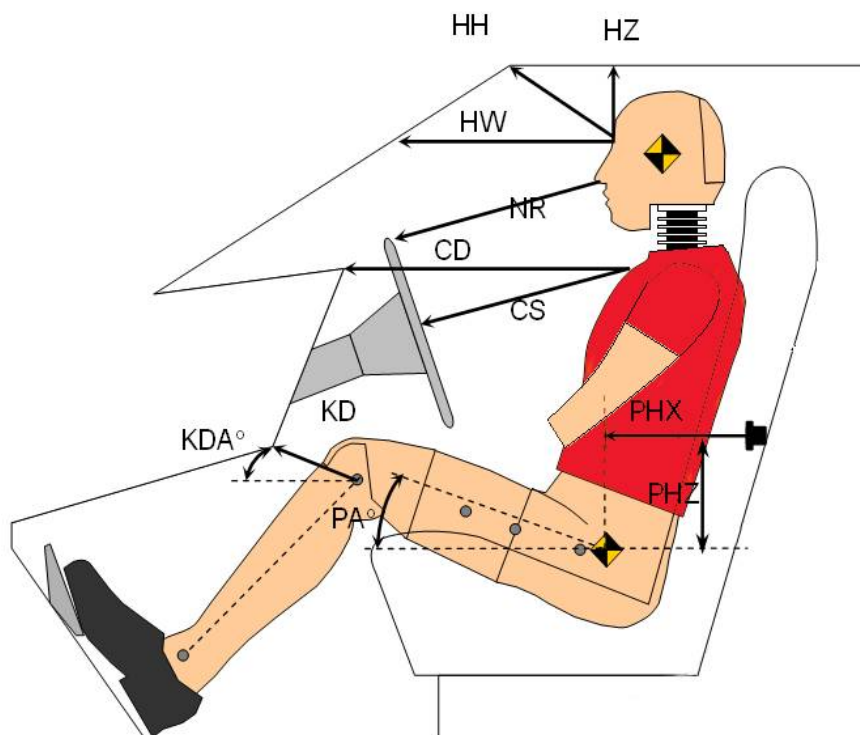
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	50.0
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	50.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	46.5
Actual Amount of Solvent Used	46.5
1/3 of Usable Capacity	16.7

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: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012



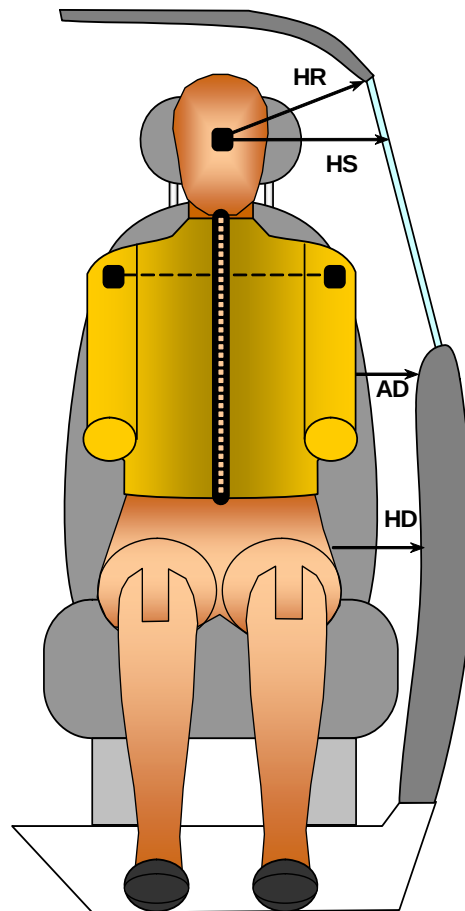
LEFT SIDE VIEW

Code	Measurement Description	Driver S/N 306	
		Length (mm)	Angle (°)
HH	Head to Header	198	
HW	Head to Windshield	537	
HZ	Head to Roof Liner	130	
NR	Nose to Rim	210	
CD	Chest to Dashboard	382	
CS	Chest to Steering Wheel	163	
KDL/KDAL°	Left Knee to Dash	77	30.3
KDR/KDAR°	Right Knee to Dash	81	29.4
PAX°	Pelvic Tilt Angle (X-Axis)		17.6
PAY°	Pelvic Tilt Angle (Y-Axis)		-0.7
PHX	Hip Point to Striker (X-Axis)	358	
PHZ	Hip Point to Striker (Z-Axis)	145	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012



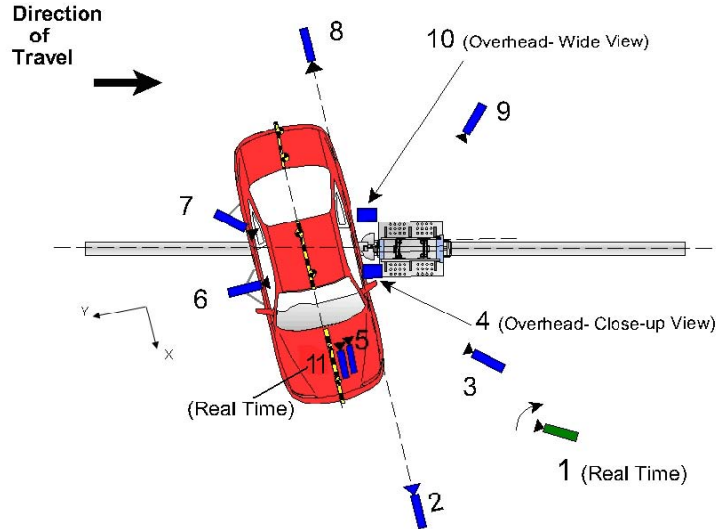
FRONT VIEW OF DUMMY

Code	Measurement Description	Driver S/N 306
		Length (mm)
HR	Head to Side Header	233
HS	Head to Side Window	373
AD	Arm to Door	184
HD	Hip Point to Door	177

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
Test Date: 10/18/2012



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	-130	5800	-1850	24	1000
3	Impact Side 45° Forward	-2580	3680	-1730	20	1000
4	Overhead Closeup	260	0	-4420	50	1000
5	Onboard – Driver Front				16	
6	Onboard – Driver Side				8	
7	Onboard – Driver Rear				8	
8	Rear Ground Level	-100	-5850	-2110	24	1000
9	Impact Side 45° Rearward	-4050	-4420	-2080	20	1000
10	Overhead Wide View	520	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: Not Applicable

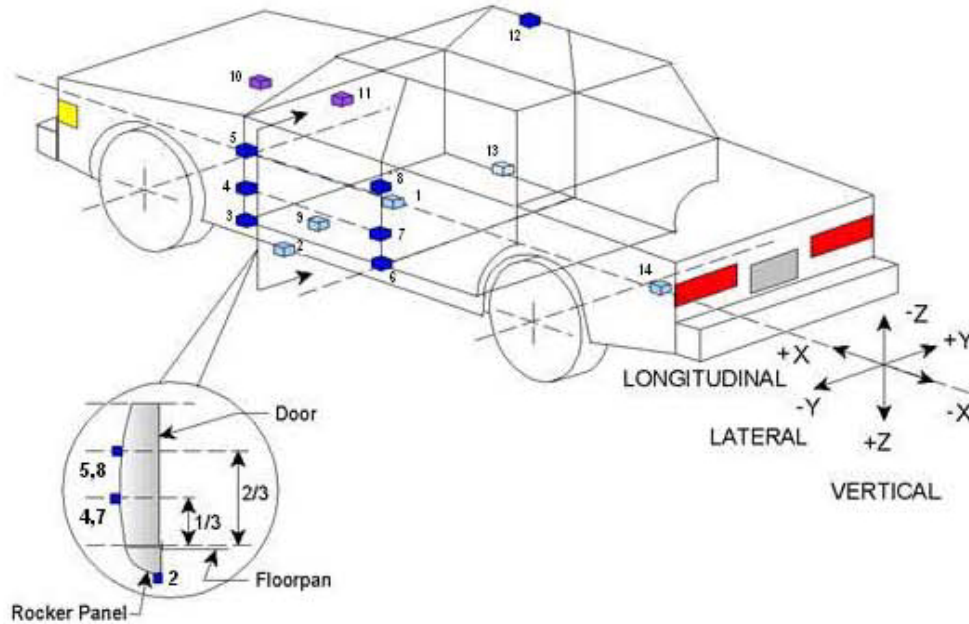
INSTRUMENTATION

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

DATA SHEET NO. 6
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2474	164	-170
2	Left Floor Sill	2688	-727	-180
3	A Pillar Sill	3100	-727	-180
4	A Pillar Low	3070	-791	-475
5	A Pillar Mid	3096	-780	-700
6	B Pillar Sill	1965	-727	-187
7	B Pillar Low	1946	-696	-600
8	B Pillar Mid	1946	-710	-810
9	Driver Seat Track	2209	-527	-350
10	Engine Top	3745	0	-841
11	Firewall	3540	0	-838
12	Right Roof	1873	538	-1415
13	Right Floor Sill	2676	727	-185
14	Rear Floorpan	205	0	-330

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: 2013 Acura ILX 4-Dr Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
Test Date: 10/18/2012



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: 2013 Acura ILX 4-Dr Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
Test Date: 10/18/2012

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver SID-IIs Dummy
Face	Curtain Airbag
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	Door Panel
Left Knee	None

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 and Sunroof Broken
Other Notable Effects	None

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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
Test Date: 10/18/2012

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 Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

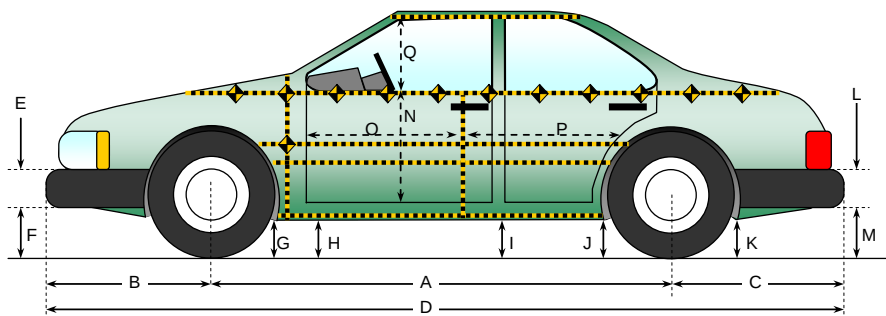
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1075
Actual Impact Point (Aft of Front Axle)	mm		1078
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	-3
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	32.2
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.4

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
Test Date: 10/18/2012



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

LEFT SIDE VIEW

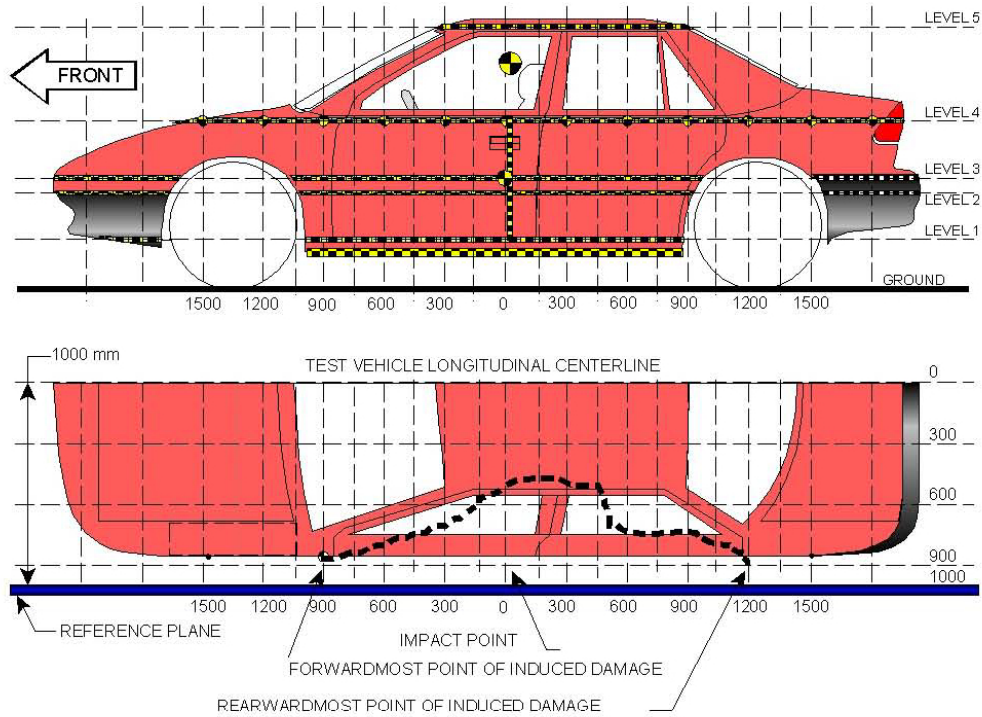
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2674	2599	75
B	Front Axle to FSOV	1109	1109	0
C	Rear Axle to RSOV	775	775	0
D	Total Vehicle Length at Centerline	4558	4483	75
E	Front Bumper Thickness	140	140	0
F	Front Bumper Bottom to Ground	214	226	-12
G	Sill Height at Front Wheel Well	165	163	2
H	Sill Height at Front Door Leading Edge	162	154	8
I	Sill Height at B-Pillar	168	193	-25
J1	Sill Height at Rear Wheel Well	173	204	-31
J2	Pinch Weld Height at Rear Wheel Well	167	192	-25
K	Sill Height Aft of Rear Wheel Well	250	247	3
L	Rear Bumper Thickness	120	120	0
M	Rear Bumper Bottom to Ground	298	287	11
N	Sill Height to Bottom of Front Window Sill	700	715	-15
O	Front Door Leading Edge to Impact CL	610	611	-1
P	Rear Door Trailing Edge to Impact CL	1279	1292	-13
Q	Front Window Opening	352	307	45
R	Right Side Length	3334	3339	-5
S	Left Side Length	3334	3225	109
T	Vehicle Width at B-Pillars	1786	1644	142

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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012



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 MEASUREMENTS

Level	Measurement Description	Height Above Ground (mm)
1	Sill Top	224
2	Occupant Hip Point	526
3	Mid Door	593
4	Window Sill	888
5	Window Top	1312

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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012

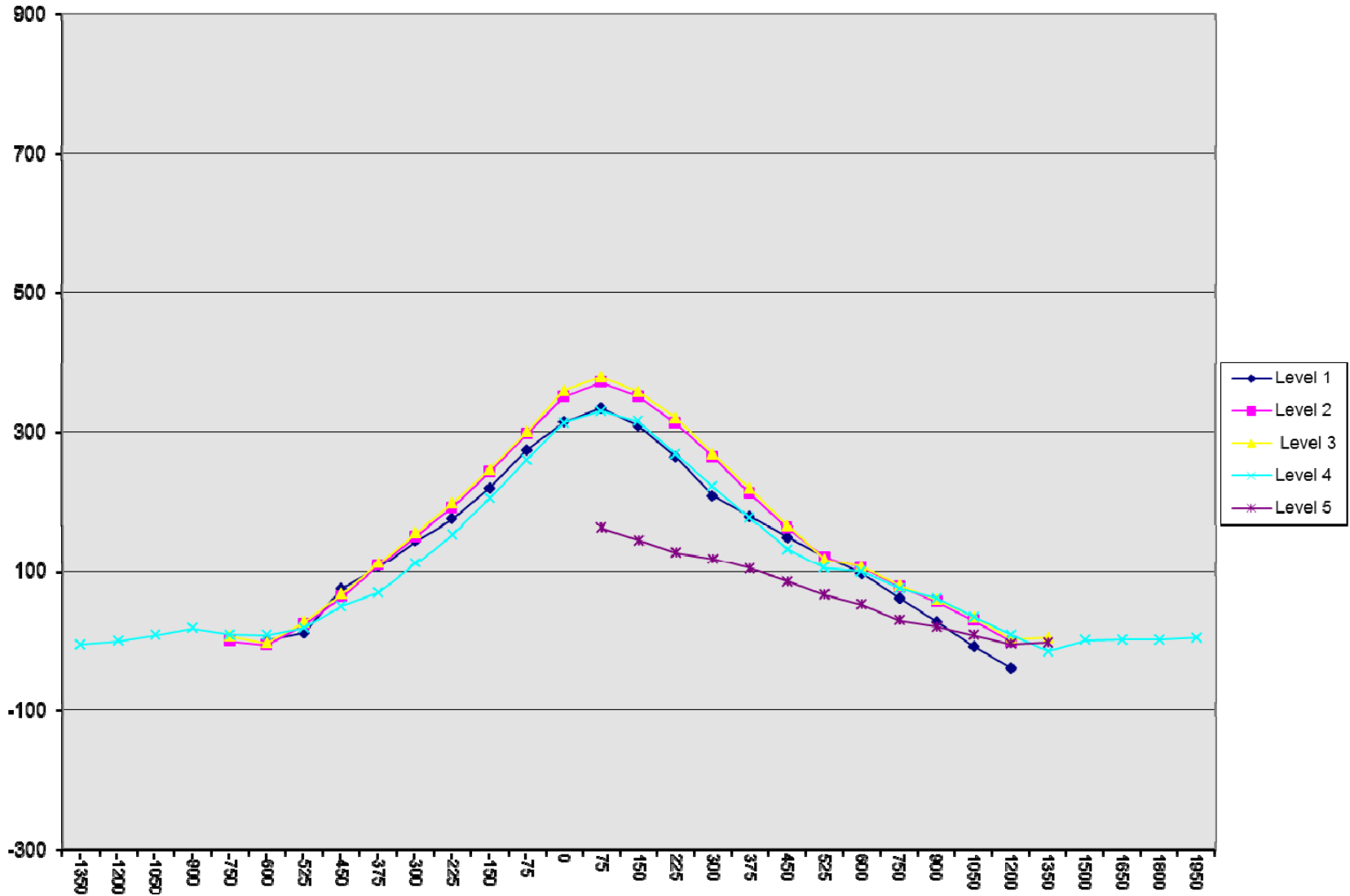
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1350				380					376					-4	
-1200				352					353					1	
-1050				335					344					9	
-900				316					335					19	
-750		220	219	310			221	227	320			1	8	10	
-600	254	220	225	306		256	215	223	315		2	-5	-2	9	
-525	256	229	226	300		269	254	254	320		13	25	28	20	
-450	260	229	226	295		336	293	294	346		76	64	68	51	
-375	260	229	226	290		366	338	338	360		106	109	112	70	
-300	258	229	226	285		402	379	381	397		144	150	155	112	
-225	260	228	225	284		435	419	422	437		175	191	197	153	
-150	260	228	225	280		479	470	471	484		219	242	246	204	
-75	260	228	225	280		534	525	525	540		274	297	300	260	
0	260	227	224	278		574	577	583	591		314	350	359	313	
75	258	226	224	278	491	592	597	603	608	653	334	371	379	330	162
150	259	226	223	277	490	568	577	581	592	635	309	351	358	315	145
225	260	226	223	275	490	524	538	543	543	617	264	312	320	268	127
300	260	226	222	275	485	468	490	490	496	603	208	264	268	221	118
375	260	226	222	275	485	438	437	440	451	589	178	211	218	176	104
450	262	226	222	275	485	411	388	388	407	571	149	162	166	132	86
525	263	229	225	275	485	384	349	342	380	552	121	120	117	105	67
600	265	230	226	271	487	362	336	333	371	540	97	106	107	100	53
750	266	234	229	272	490	328	313	309	348	520	62	79	80	76	30
900	270	235	231	268	497	298	292	291	330	518	28	57	60	62	21
1050	270	232	230	265	507	263	262	265	300	516	-7	30	35	35	9
1200	262	220	223	262	520	224	220	227	272	517	-38	0	4	10	-3
1350			218	264	530			224	250	529			6	-14	-1
1500				265					267					2	
1650				270					273					3	
1800				280					282					3	
1950				296					302					6	

NOTE: 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 profile 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: 2013 Acura ILX 4-Dr Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
Test Date: 10/18/2012



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

Test Vehicle: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

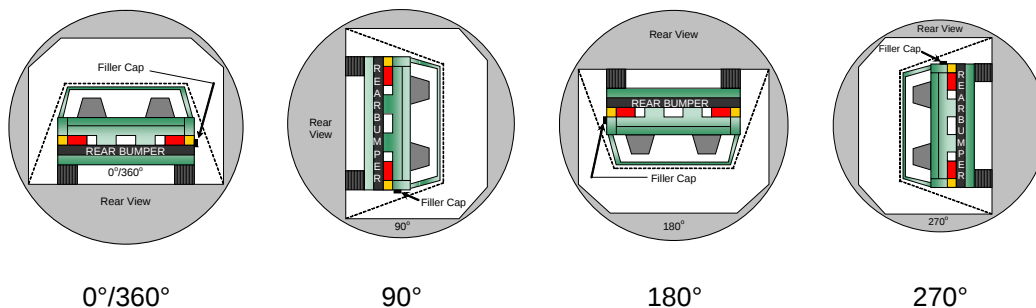
NHTSA No. HD5301
 Test Date: 10/18/2012

Test Time: 10:23 am

Temperature: 21.9° 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°	112	300	412
90° to 180°	110	300	410
180° to 270°	108	300	408
270° to 360°	112	300	412

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

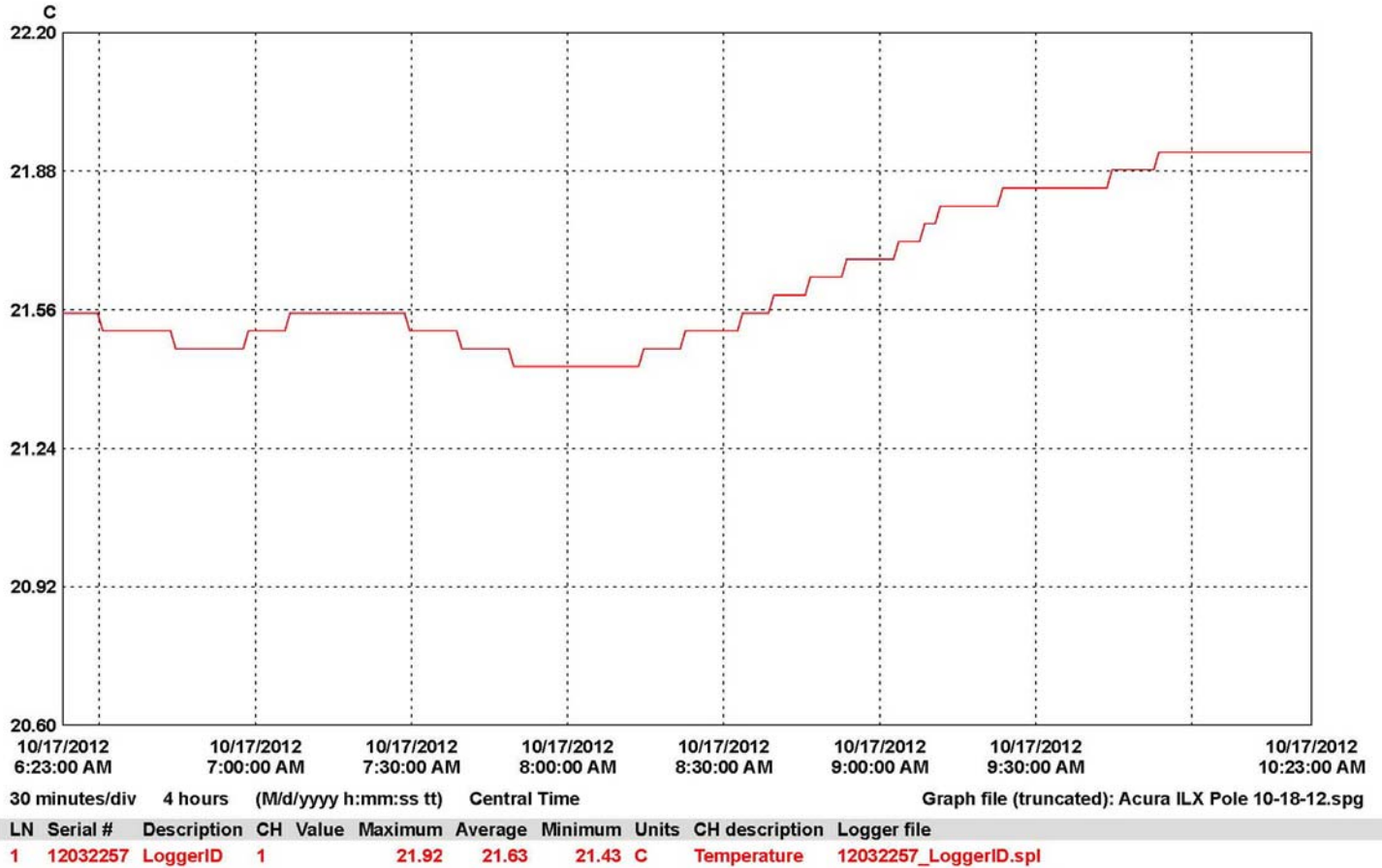
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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: 2013 Acura ILX 4-Dr Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No. HD5301
 Test Date: 10/18/2012



APPENDIX A
PHOTOGRAPHS

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As Delivered Right Front ¾ View of Test Vehicle



As Delivered Left Rear ¾ View of Test Vehicle



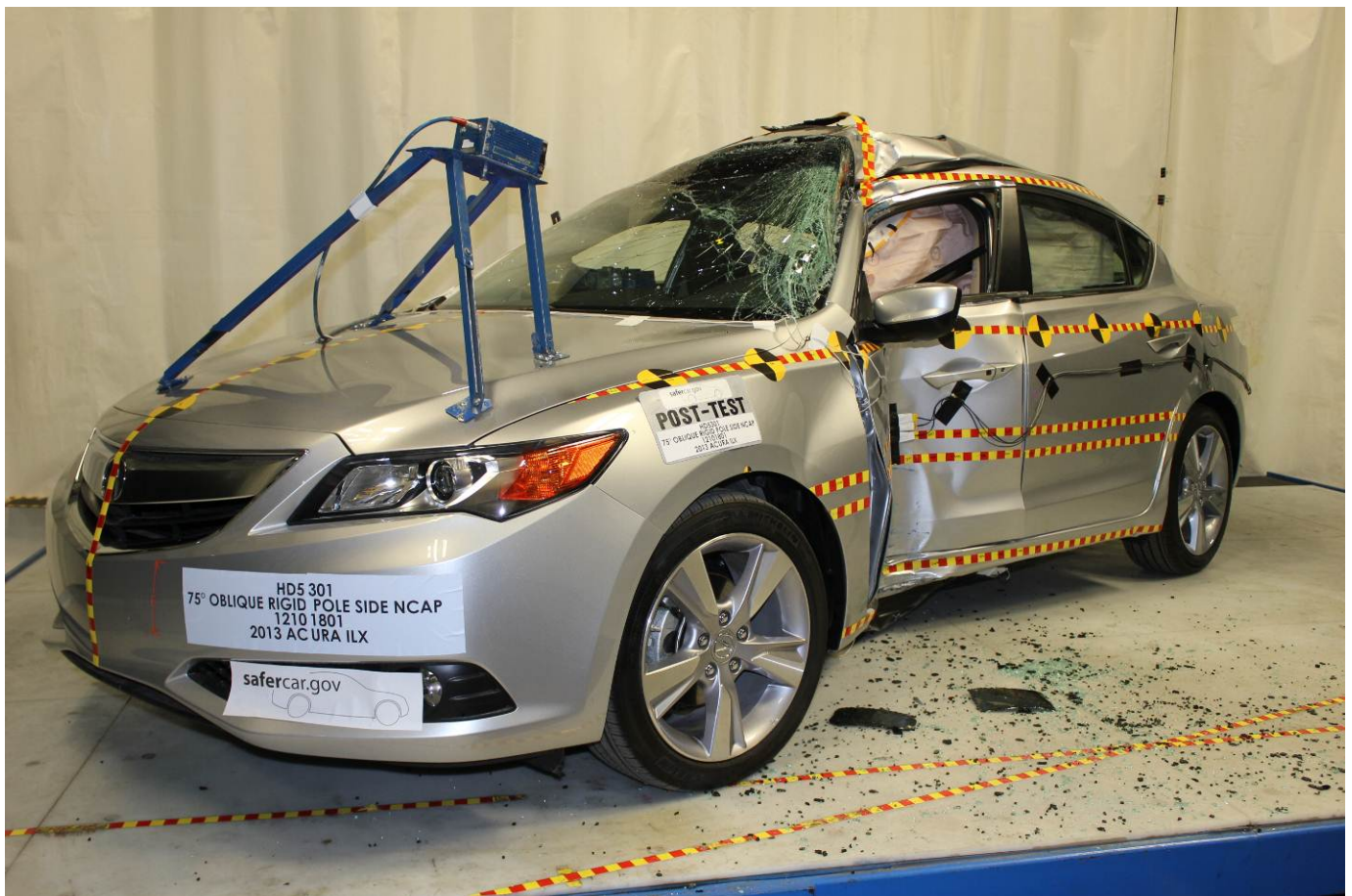
Pre-Test Frontal View of Test Vehicle



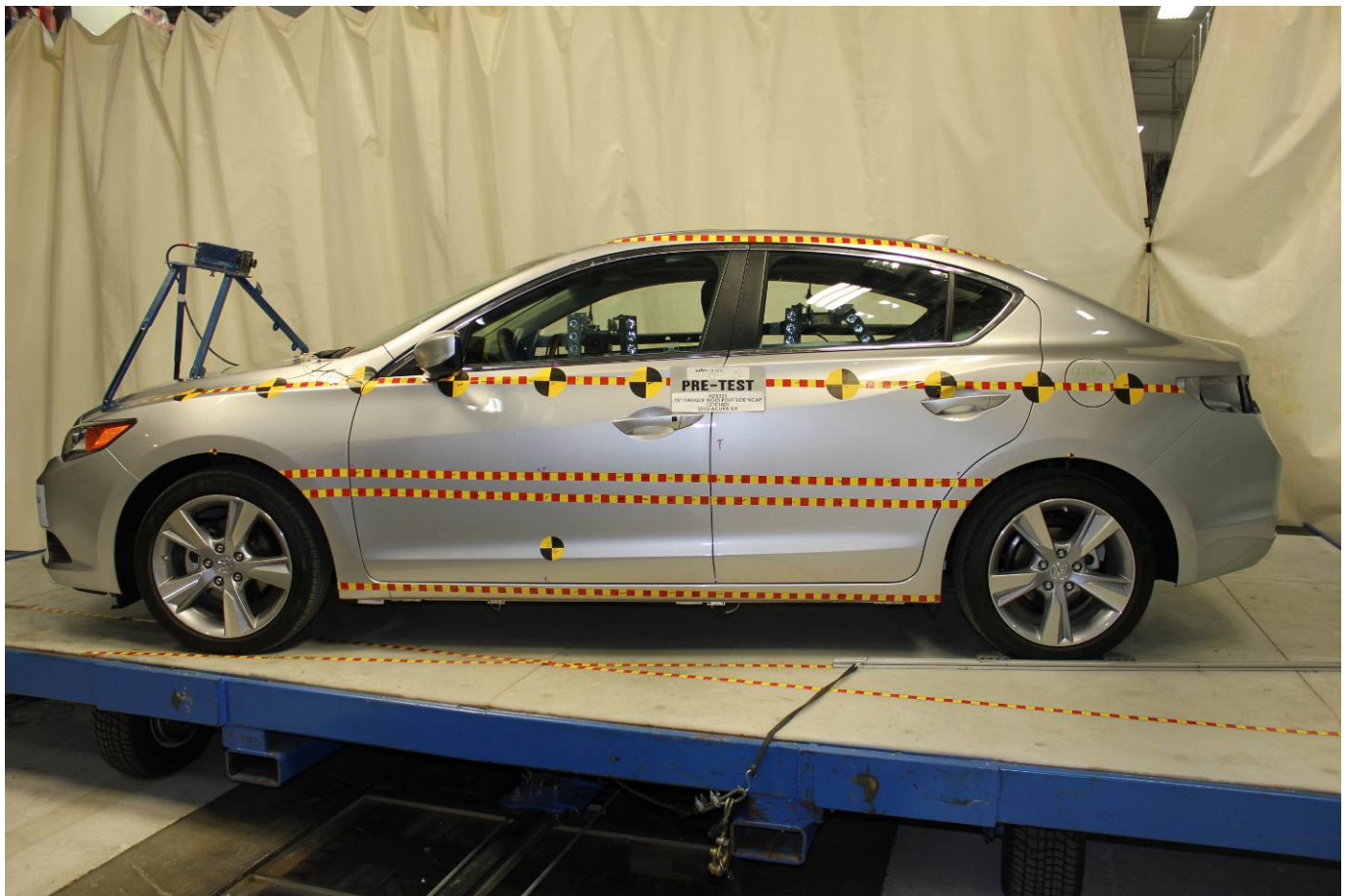
Post-Test Frontal View of Test Vehicle



Pre-Test Left Front ¾ View of Test Vehicle



Post-Test Left Front ¾ View of Test Vehicle



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



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



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



Pre-Test Rear View of Test Vehicle



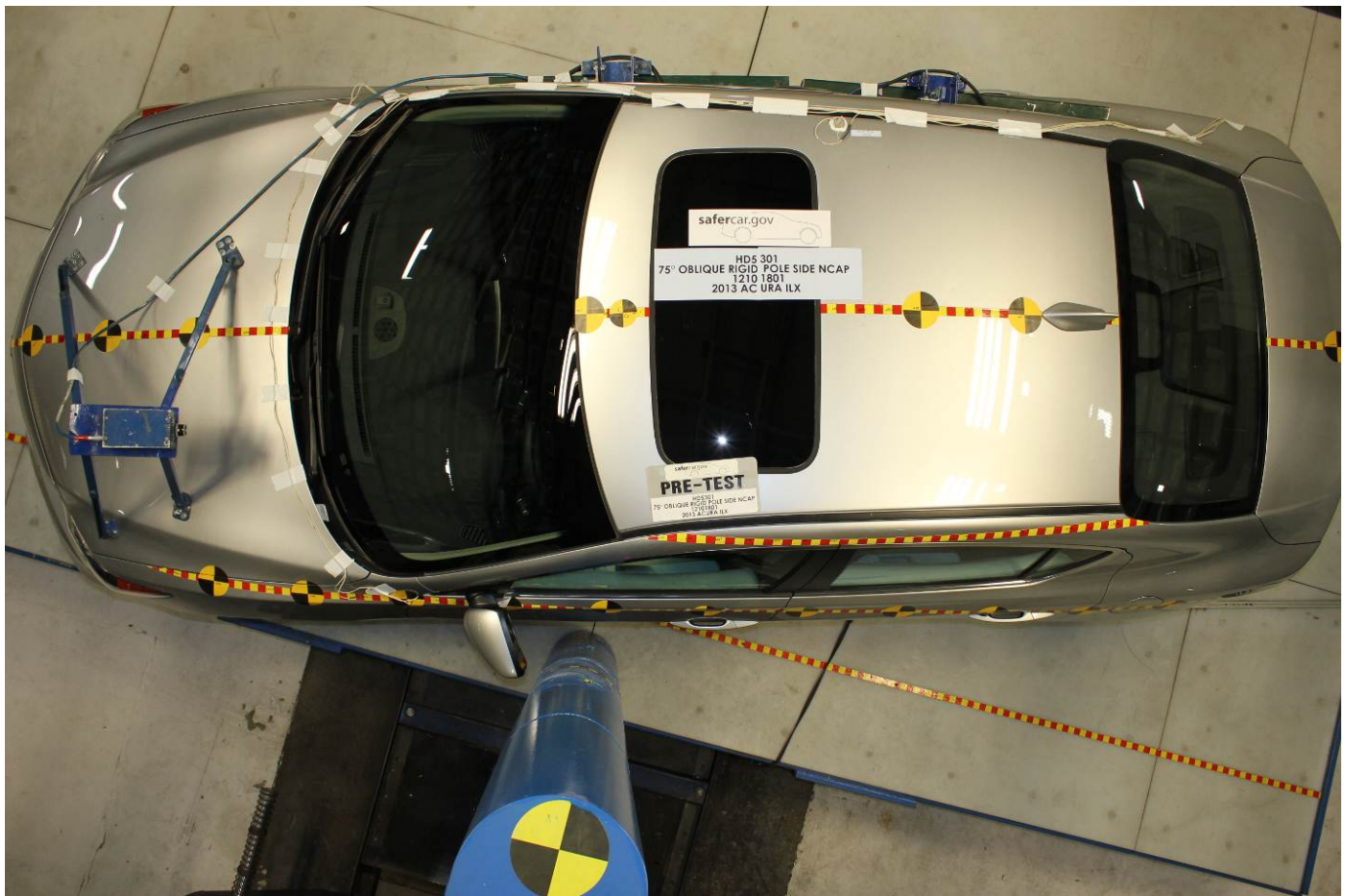
Post-Test Rear View of Test Vehicle



Pre-Test Right Side View of Test Vehicle



Post-Test Right Side View of Test Vehicle



Pre-Test Overhead View of Test Area



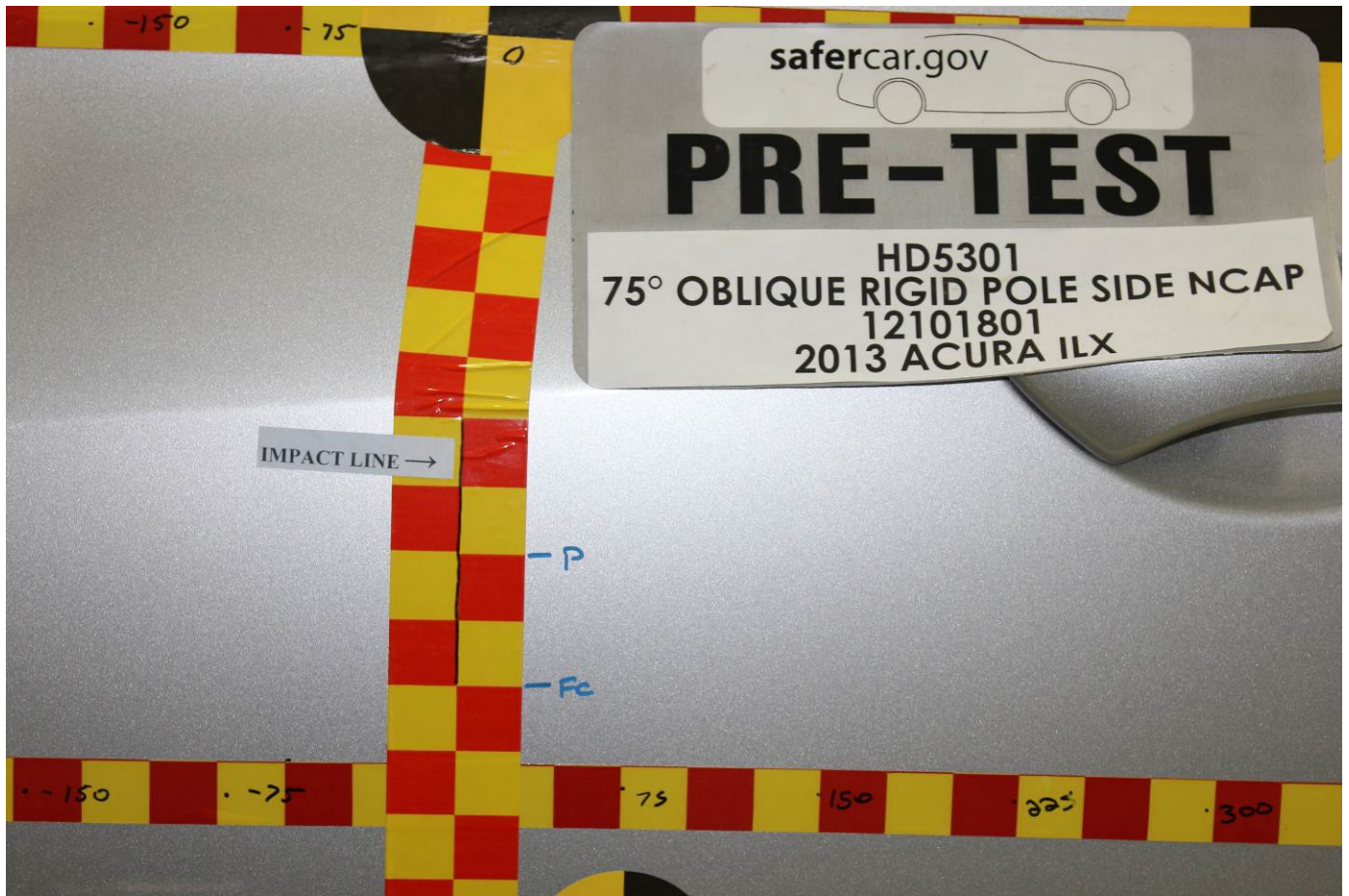
Post-Test Overhead View of Test Area



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



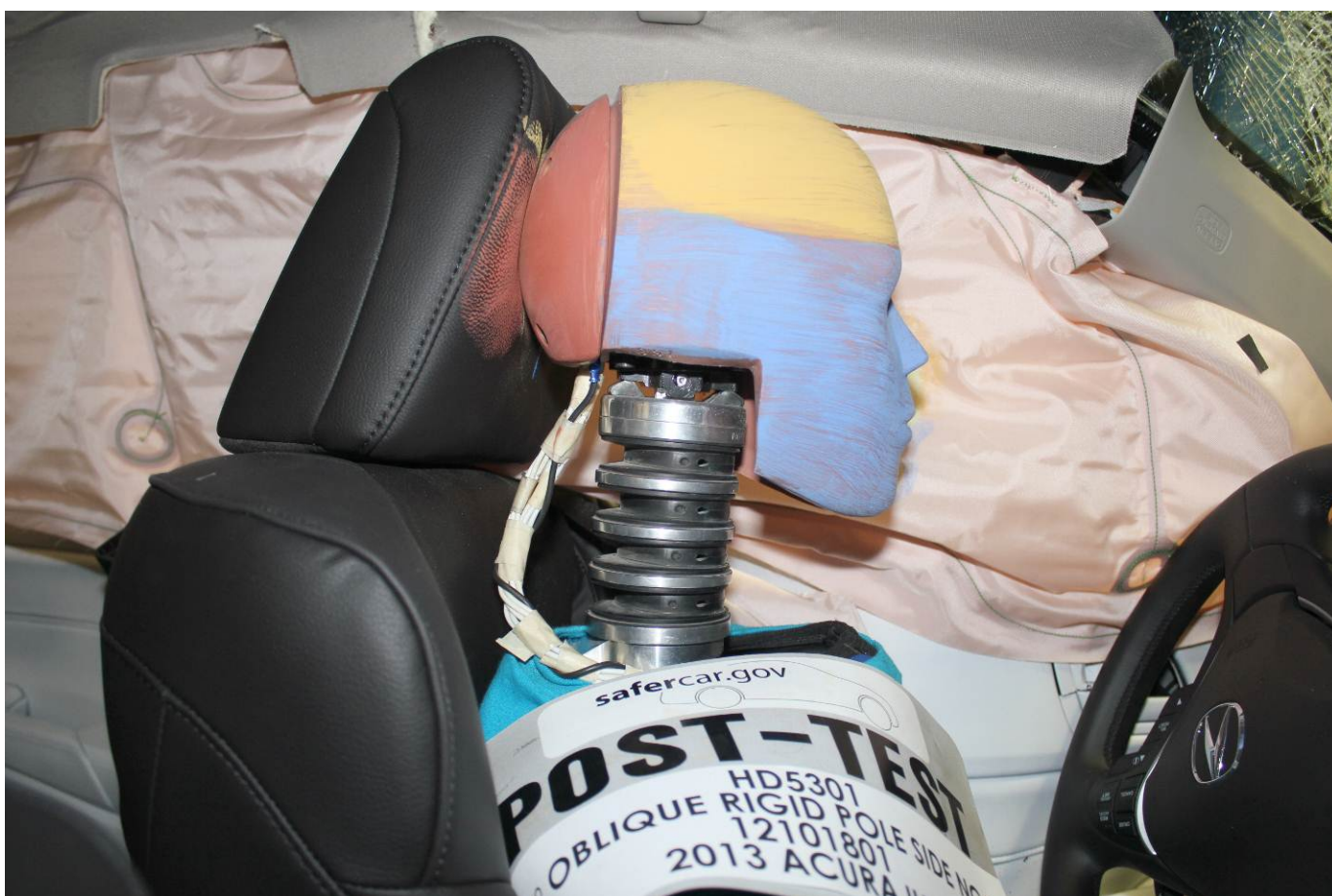
Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



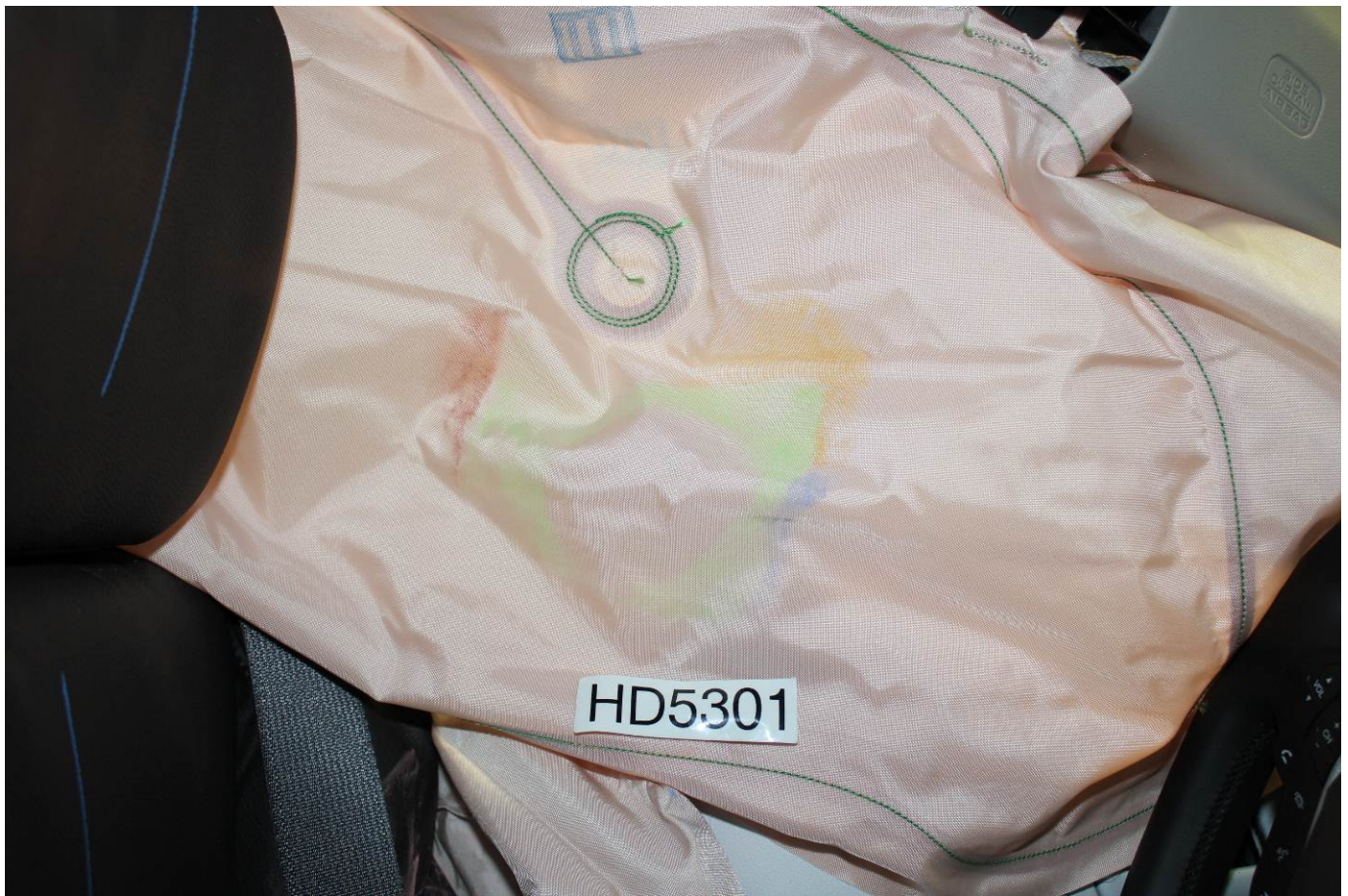
Pre-Test Inner Door Panel View



Post-Test Inner Door Panel View Showing Dummy Contact Location



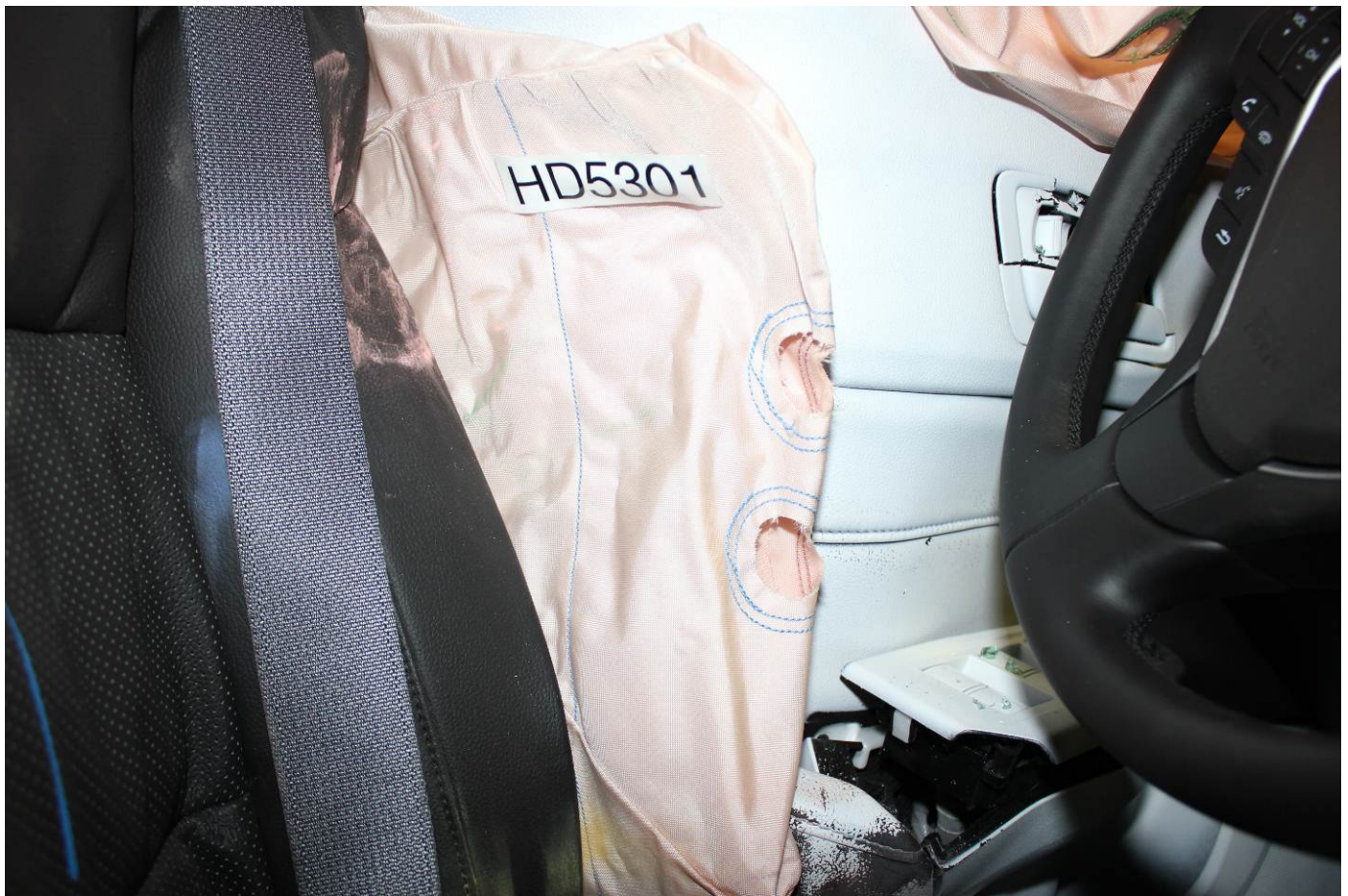
Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



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

PHOTOGRAPH NOT APPLICABLE

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

PHOTOGRAPH NOT APPLICABLE

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

MFD. BY HONDA MFG. OF INDIANA, LLC 06/'12
GVWR 3968LBS GAWR F 2138LBS R 1874LBS
GVWR 1800KG GAWR F 970KG R 850KG
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY, BUMPER,
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE.
V.I.N.:19VDE1F51DE003992 TYPE: PASSENGER CAR



TX6 D AJ8 -NH700M -A -E

HD5301

Close-Up View of Vehicle's Certification Label



TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 5 : FRONT 2 : REAR 3

The combined weight of occupants and cargo should never exceed 385kg or 850lbs.

TIRE	SIZE	COLD TIRE PRESSURE	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
FRONT	P215/45R17 87V	230KPA, 33PSI	
REAR		230KPA, 33PSI	
SPARE	T135/80D15 99M	420KPA, 60PSI	

HD5301

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



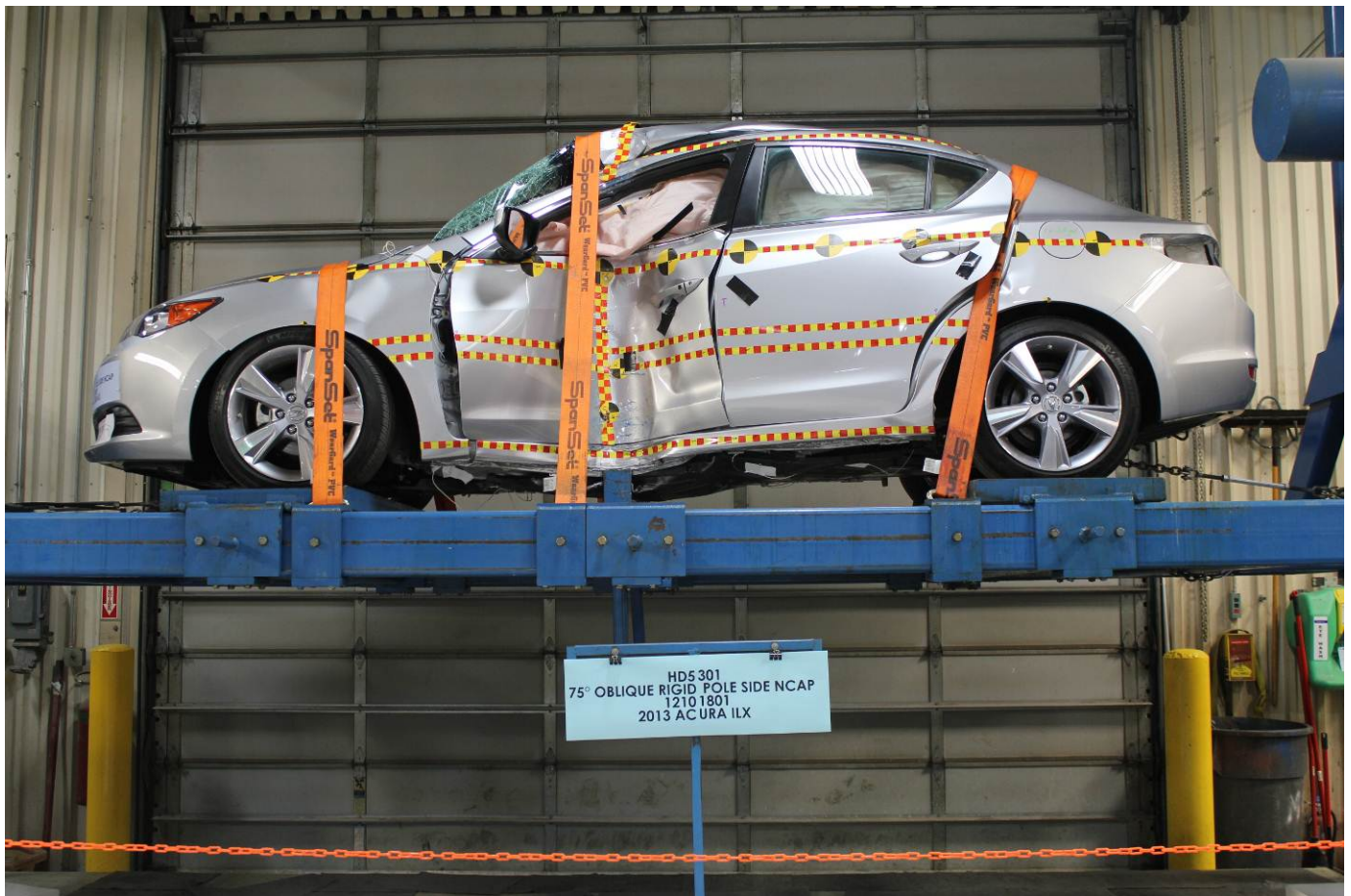
Post-Test Pole Barrier Side View

PHOTOGRAPH NOT APPLICABLE

Pre-Test Ballast View



Post-Test Primary and Redundant Speed Trap Read-Out



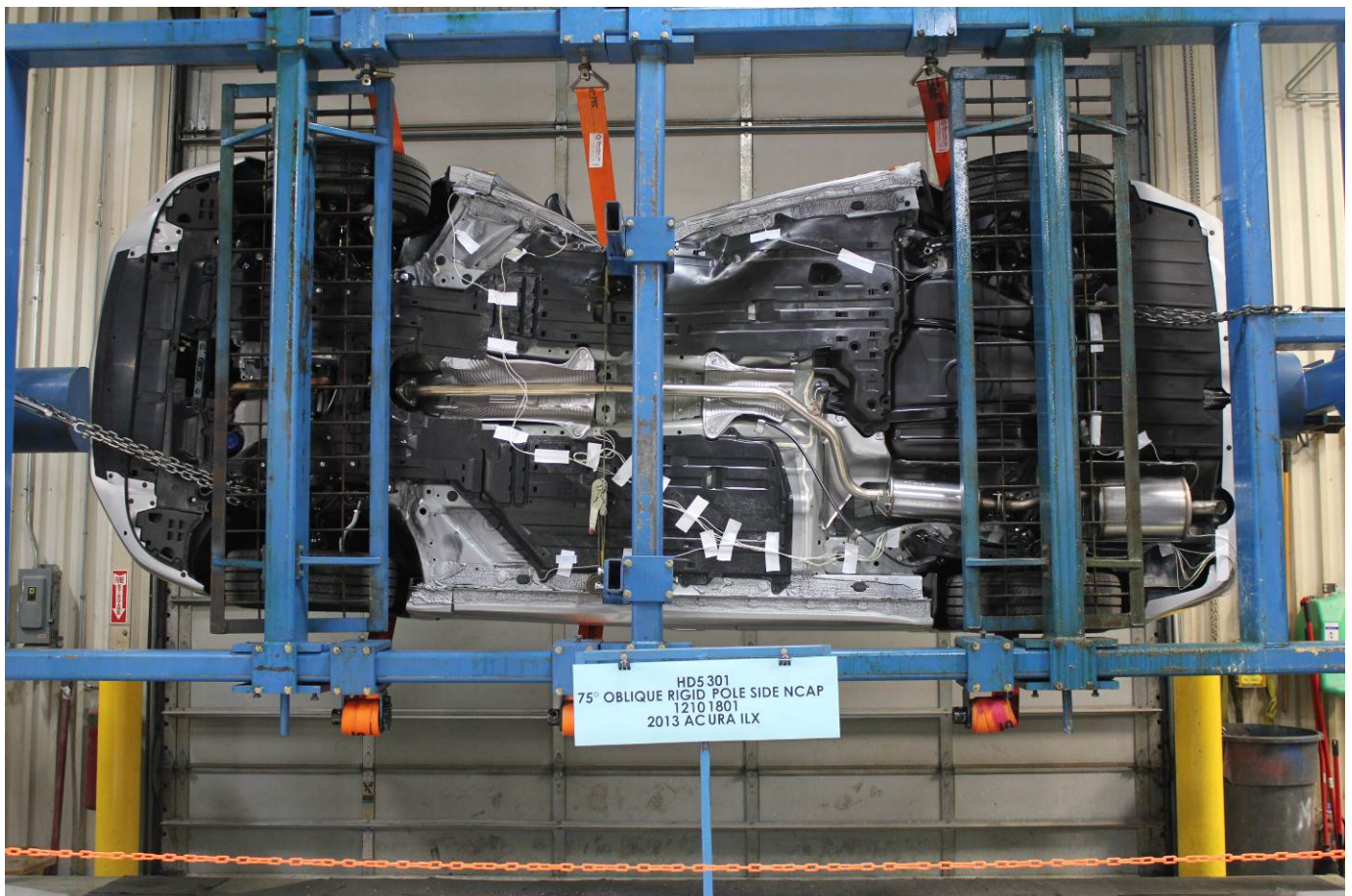
FMVSS No. 301 Static Rollover 0 Degrees



FMVSS No. 301 Static Rollover 90 Degrees



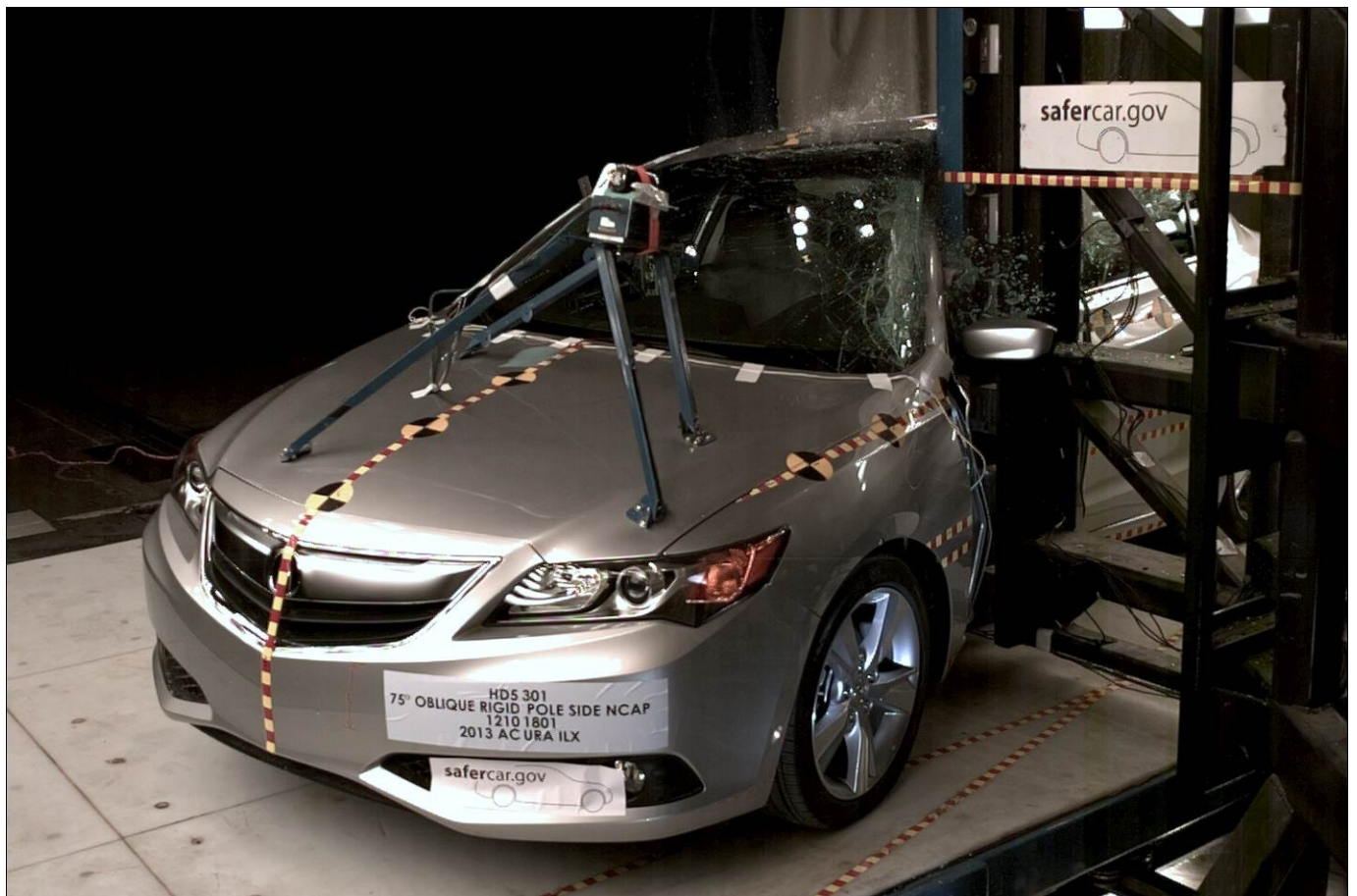
FMVSS No. 301 Static Rollover 180 Degrees



FMVSS No. 301 Static Rollover 270 Degrees



FMVSS No. 301 Static Rollover 360 Degrees



Impact Event

2013 ILX PREMIUM
EXT: SILVER MOON
INT: EBONY

ENGINE NUMBER: R20A5-1604720

STANDARD EQUIPMENT AT NO EXTRA COST

*** TECHNICAL FEATURES ***

- 150hp 2.0 Liter SOHC 16-Valve
- 1-TEC 4-Cylinder Engine
- 5-Speed Automatic Transmission with Sequential SportShift
- 4-Wheel Disc Brakes
- MacPherson Strut Front Suspension
- Rear Multi-Link Suspension
- Electric Power-Assisted Rack-and-Pinion Steering
- Drive-by-Wire Throttle System
- Immobilizer Theft-Deterrent System

*** SAFETY FEATURES ***

- Driver's and Front Passenger's Dual-Stage Airbags (SRS)
- Driver's and Front Passenger's Side Airbags
- Side Curtain Airbags
- Vehicle Stability Assist (VSA)
- Anti-Lock Braking System (ABS)
- Electronic Brake Distribution (EBD)
- Brake Assist
- Hill Start Assist
- 3-Point Seat Belts
- Tire Pressure Monitoring System
- ACE Body Structure
- Side-Impact Door Beams
- Day Time Running Lights (DRL)
- LATCH System for Child Seats

*** INTERIOR FEATURES ***

- MP3/Auxiliary Input Jack
- USB Audio Interface
- Radio Data System (RDS)
- Push-Button Ignition
- Bluetooth HandsFreeLink
- Steering Wheel-Mounted Controls
- Dual-Zone Auto Climate Control with Air Filtration System
- Power Windows and Door Locks
- Front Auto Up-Down Windows
- Maintenance Minder System

*** EXTERIOR FEATURES ***

- Power Moonroof with Til Feature
- Heated Power Door Mirrors
- Remote Entry with Security System

*** PREMIUM PACKAGE ***

- Leather-Trimmed Sport Seats
- Acura Premium Sound system with 7 Speakers and AM/FM/CD
- XM Satellite Radio
- Driver's 8-Way Power Seat
- Heated Front Seats
- Auto Dimming Rearview Mirror
- Multi-View Rear Camera Display
- 17" x 7" Alloy Wheels
- P215/45 R17 All-Season Tires
- Xenon HID Headlights
- Fog Lights

Manufacturer's Suggested Retail Price
\$29,200.00

MSRP Includes:
-6YR/70K Mile Powertrain Warranty
-4YR/50K Mile Limited Vehicle Warranty
-Full Tank of Fuel
-3 Months Free XM Radio Service
- XM Radio is available in the 48 contiguous states

Destination and Handling
895.00

TOTAL VEHICLE PRICE
(includes Pre-Delivery Service)
\$30,095.00

License and title fees, state and local taxes and dealer options and accessories are not included in the manufacturer's suggested retail price.

ACURA OF BROOKFIELD
19180 BLUEMOUND RD
WAUKESHA, WI 53186
PORT OF ENTRY: INDIANA
DELIVERY POINT: CHICAGO
SHIP:
ROW/SPACE: 512-006
TRANSMETHOD: TRUCK
VIN: 19UDE1F51DE003992

ORIG. DLR: 251015
REF. NO: 40440
HN CODE: AL-0750
EMISSION: 50 STATE
CONTROL NO: 355666
DEALER: 251015

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy
28 MPG
combined city/hwy
3.6 gallons per 100 miles

MPG
24 city
35 highway

Compact cars range from 14 to 60 MPG.
The best vehicle rates 112 MPG.

You Save
\$1,350
in fuel costs
over 5 years
compared to the
average new vehicle.

Annual fuel cost
\$2,050

Fuel Economy & Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only)

This vehicle emits 318 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions; learn more at fuelconomy.gov.

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 \$11,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPGe 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

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE
U.S./Canadian Parts Content: **45 %**
Major Sources of Foreign Parts Content:
JAPAN 35 %

NOTE: Parts content does not include final assembly, distribution or other non-parts costs.

FOR THIS VEHICLE
Final Assembly Point:
GREENSBURG, INDIANA USA
Country of Origin: Engine:
JAPAN
Transmission:
JAPAN

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score
Based on the combine ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight. **Not Rated**

Frontal Crash	Driver Passenger	Not Rated
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.		

Side Crash	Front seat Rear seat	Not Rated
Based on the risk of injury in a side impact.		

Rollover	Not Rated
Based on the risk of rollover in a single vehicle crash.	

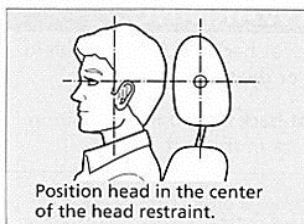
Star Ratings range from 1 to 5 stars (★ ★ ★ ★ ★) with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA)
www.safercar.gov or 1-888-327-4236

This vehicle is equipped with a front bumper of a type that has been tested at an impact speed of 5 miles per hour, and a rear bumper of a type that has been tested at an impact speed of 2.5 miles per hour, resulting in no damage to the vehicle's body and safety systems and minimal damage to the bumper and attachment hardware. "Minimal damage to the bumper" means minor cosmetic damage that can be repaired with the use of common repair materials and without replacing any parts. The stronger the bumper, the less likely the vehicle will require repair after a low-speed collision. This vehicle exceeds the current federal bumper standard of 2.5 miles per hour.

Monroney Label

►► Adjusting the Seats ► Adjusting the Seat Positions

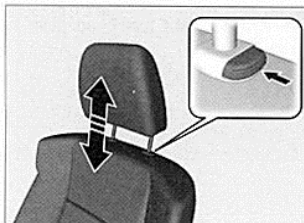
■ Adjusting the Head Restraints



Your vehicle is equipped with head restraints in all seating positions.

Head restraints are most effective for protection against whiplash and other rear-impact crash injuries when the center of the back of the occupant's head rests against the center of the restraint. The tops of the occupant's ears should be level with the center height of the restraint.

■ Adjusting the front and rear outer head restraint positions



To raise the head restraint: Pull it upward.
To lower the head restraint: Push it down while pressing the release button.

►► Adjusting the Head Restraints

⚠ WARNING

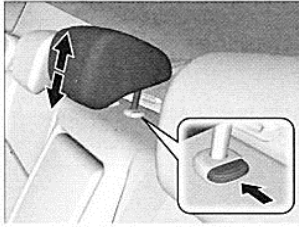
Improperly positioning head restraints reduces their effectiveness and increases the likelihood of serious injury in a crash.

Make sure head restraints are in place and positioned properly before driving.

For the head restraint system to work properly:

- Do not hang any items on the head restraints, or from the restraint legs.
- Do not place any object between an occupant and the seat-back.
- Install each restraint in its proper location.

■ Changing the Rear Center Seat Head Restraint Positions



A passenger sitting in the center back seating position should adjust the height of their head restraint to an appropriate position before the vehicle begins moving.

To raise the head restraint:

Pull it upward.

To lower the head restraint:

Push it down while pressing the release button.

■ Removing and Reinstalling the Head Restraints

Head restraints can be removed for cleaning or repair.

To remove a head restraint:

Pull the restraint up as far as it will go. Then push the release button, and pull the restraint up and out.

To reinstall a head restraint:

Insert the legs back in place, then adjust the head restraint to an appropriate height while pressing the release button. Pull up on the restraint to make sure it is locked in position.

■ Removing and Reinstalling the Head Restraints

⚠ WARNING

Failure to reinstall, or correctly reinstall, the head restraints can result in severe injury during a crash.

Always replace the head restraints before driving.

Controls

Continued

127

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)

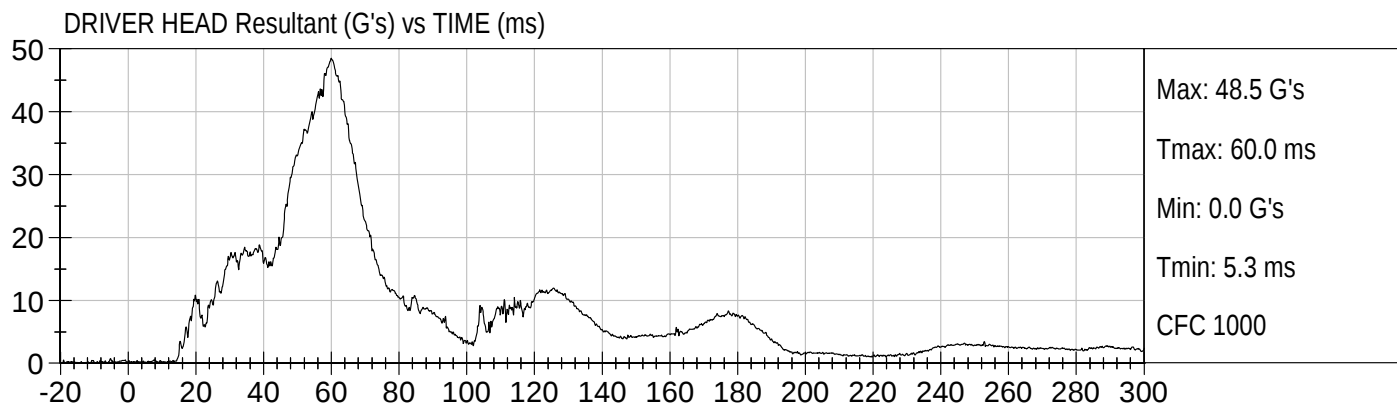
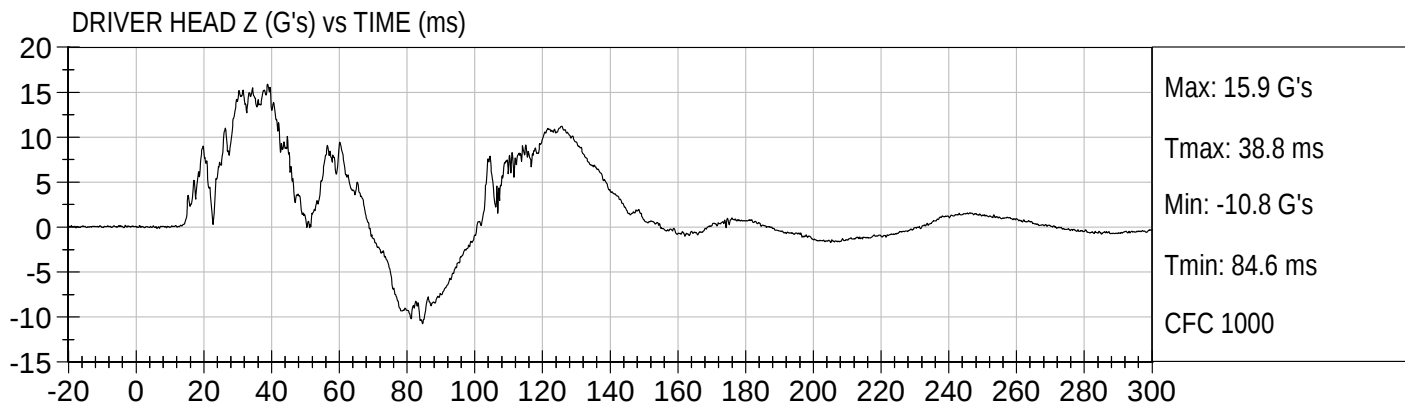
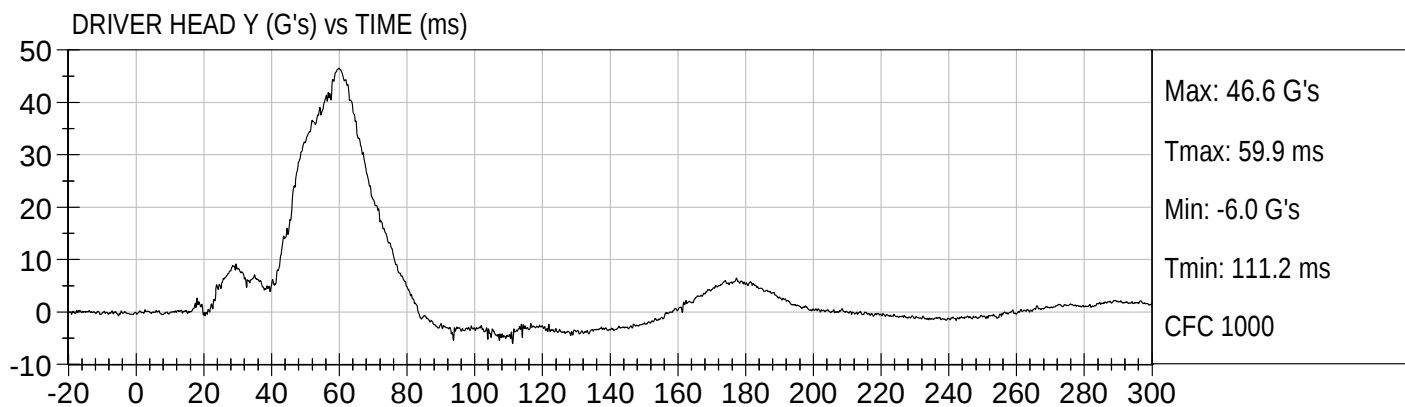
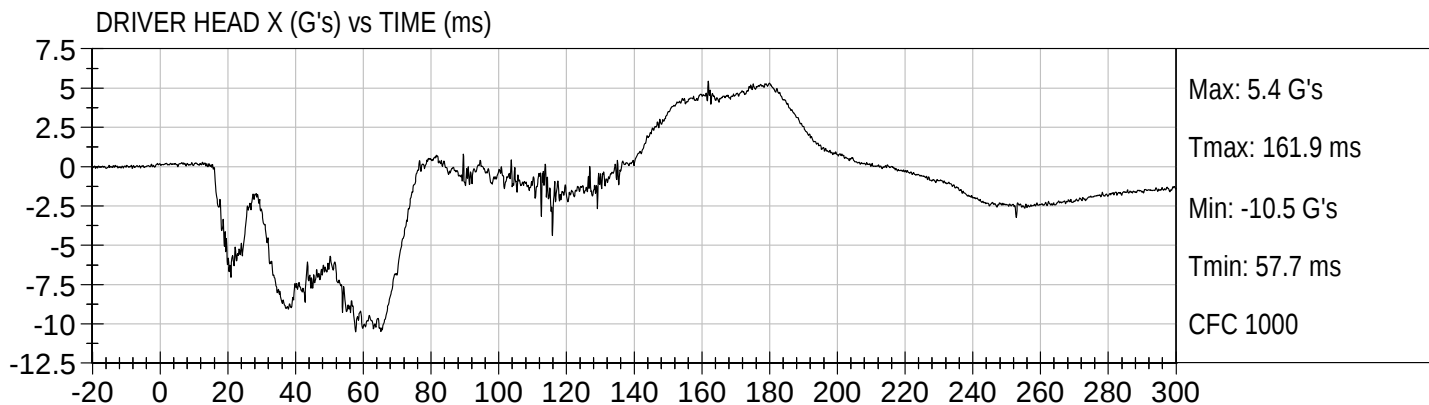
Load Cell Pole Barrier #4 Force (Y)

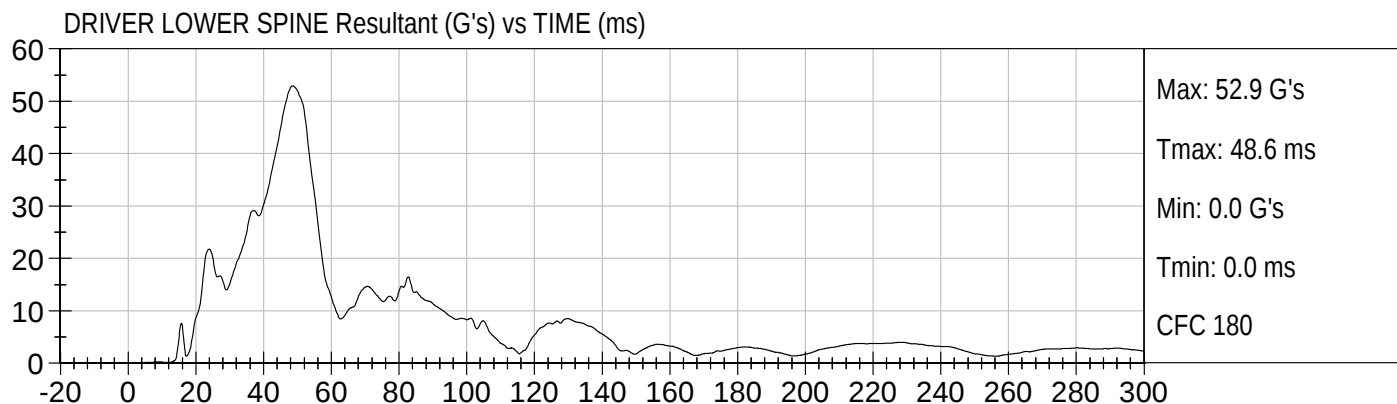
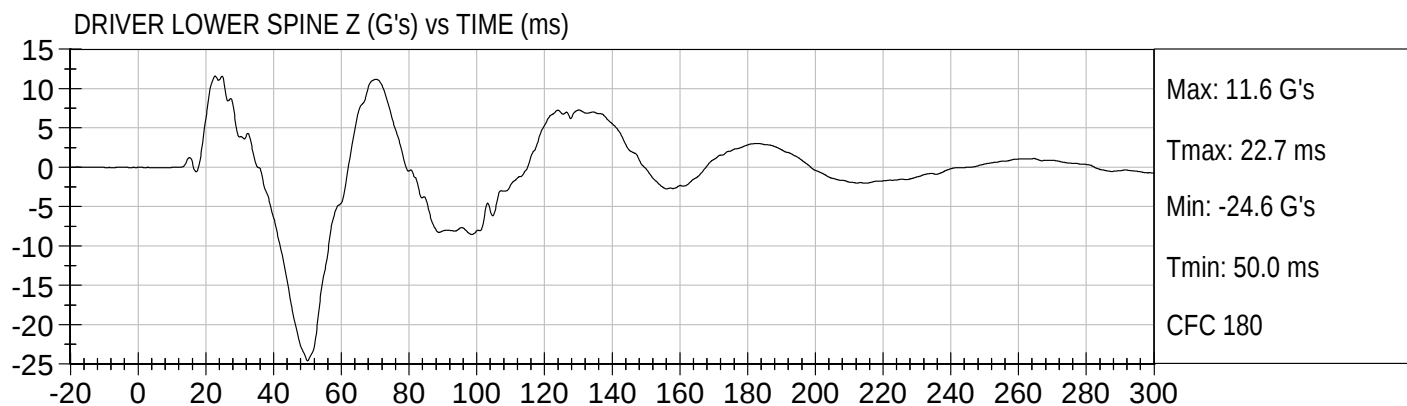
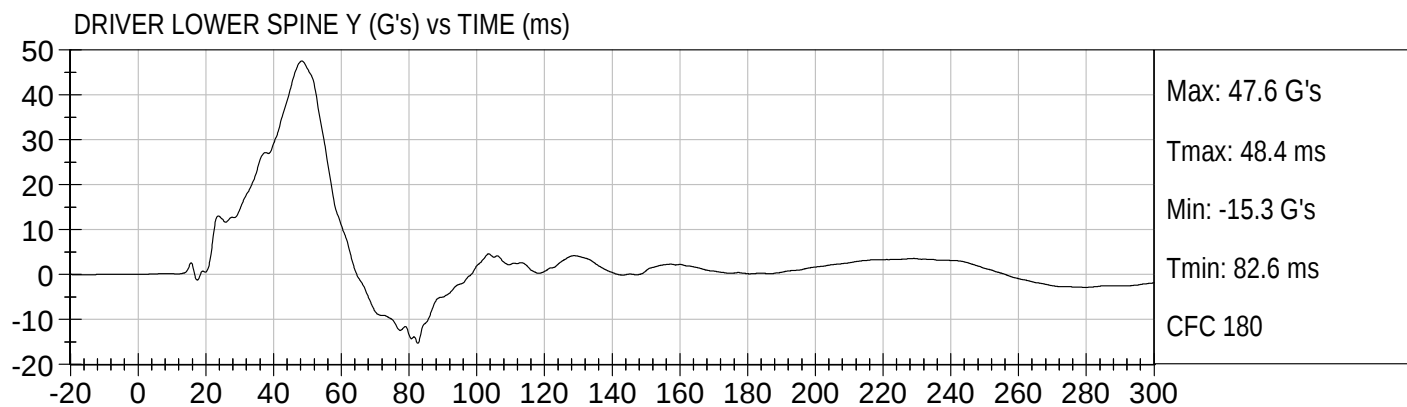
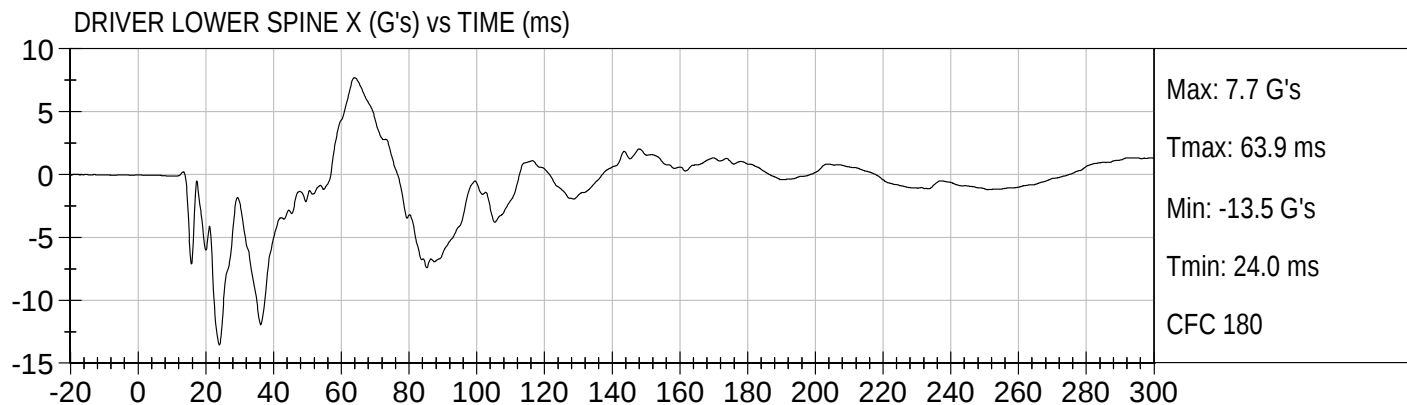
Load Cell Pole Barrier #5 Force (Y)

Load Cell Pole Barrier #6 Force (Y)

Load Cell Pole Barrier #7 Force (Y)

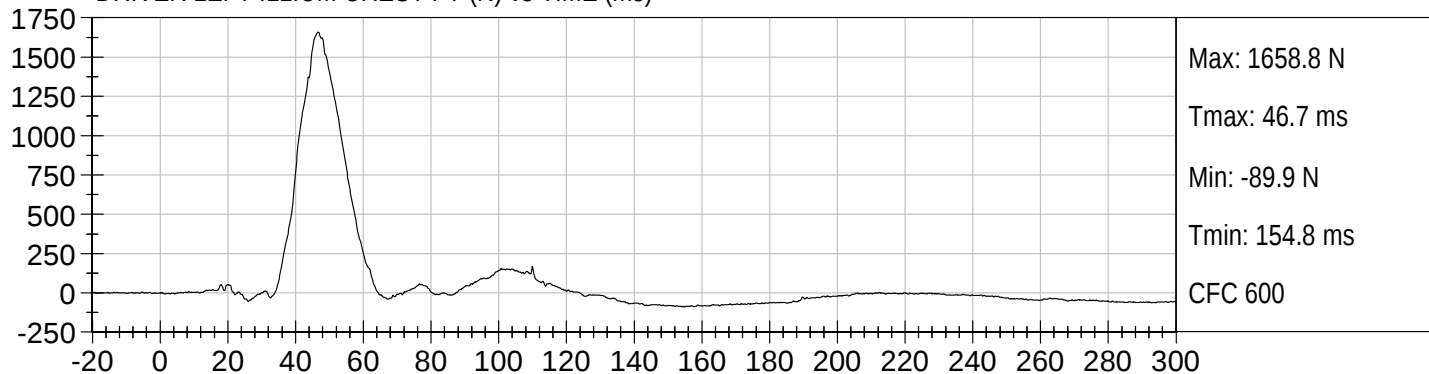
Load Cell Pole Barrier #8 Force (Y)



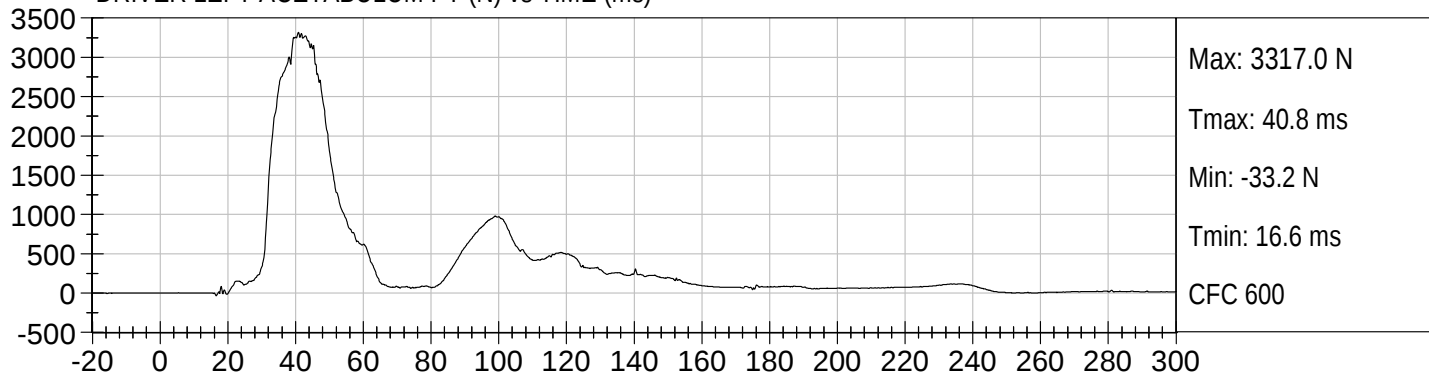




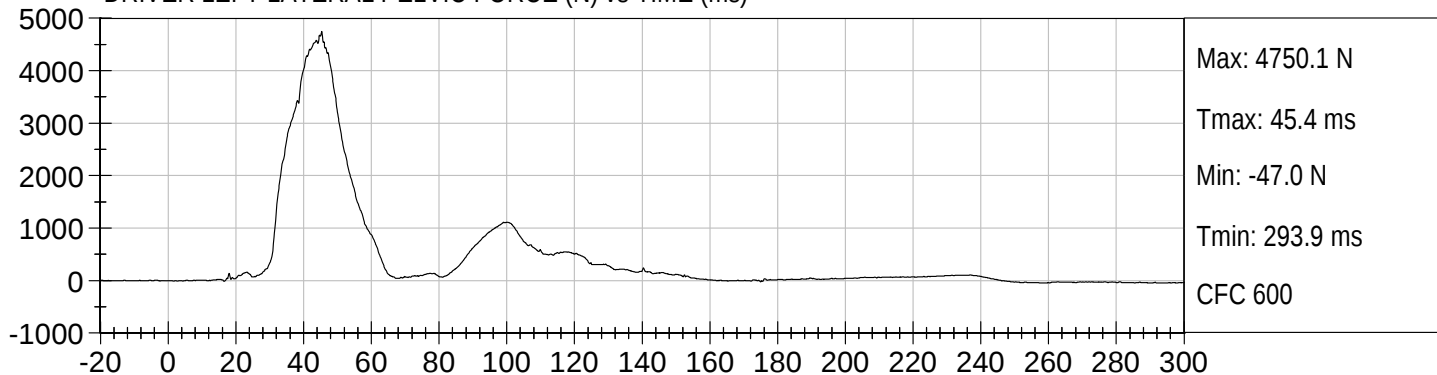
DRIVER LEFT ILLIUM CREST FY (N) vs TIME (ms)



DRIVER LEFT ACETABULUM FY (N) vs TIME (ms)



DRIVER LEFT LATERAL PELVIC FORCE (N) vs TIME (ms)



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SID-IIsD External Measurements
SN: 306

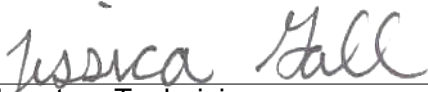
No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	785	Pass
B	Shoulder Pivot Height	437 - 453	449	Pass
C	H-point Height	79 - 89	86	Pass
D	H-point from Seatback	141 - 151	147	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	120	Pass
G	Head Breadth	140 - 148	141	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	182	Pass
J	Head Circumference	541 - 551	550	Pass
K	Buttock to Knee Length	514 - 540	538	Pass
L	Popliteal Height	343 - 369	349	Pass
M	Knee Pivot to Floor Height	392 - 409	394	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	198	Pass
P	Foot Length	216 - 232	222	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	317	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	483	Pass
V	Shoulder Width	341 - 357	351	Pass
W	Foot Width	78 - 94	82	Pass
Y	Chest Circumference w/ jacket	851 - 881	863	Pass
Z	Waist Circumference	761 - 791	782	Pass

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

ATD Serial No: 306

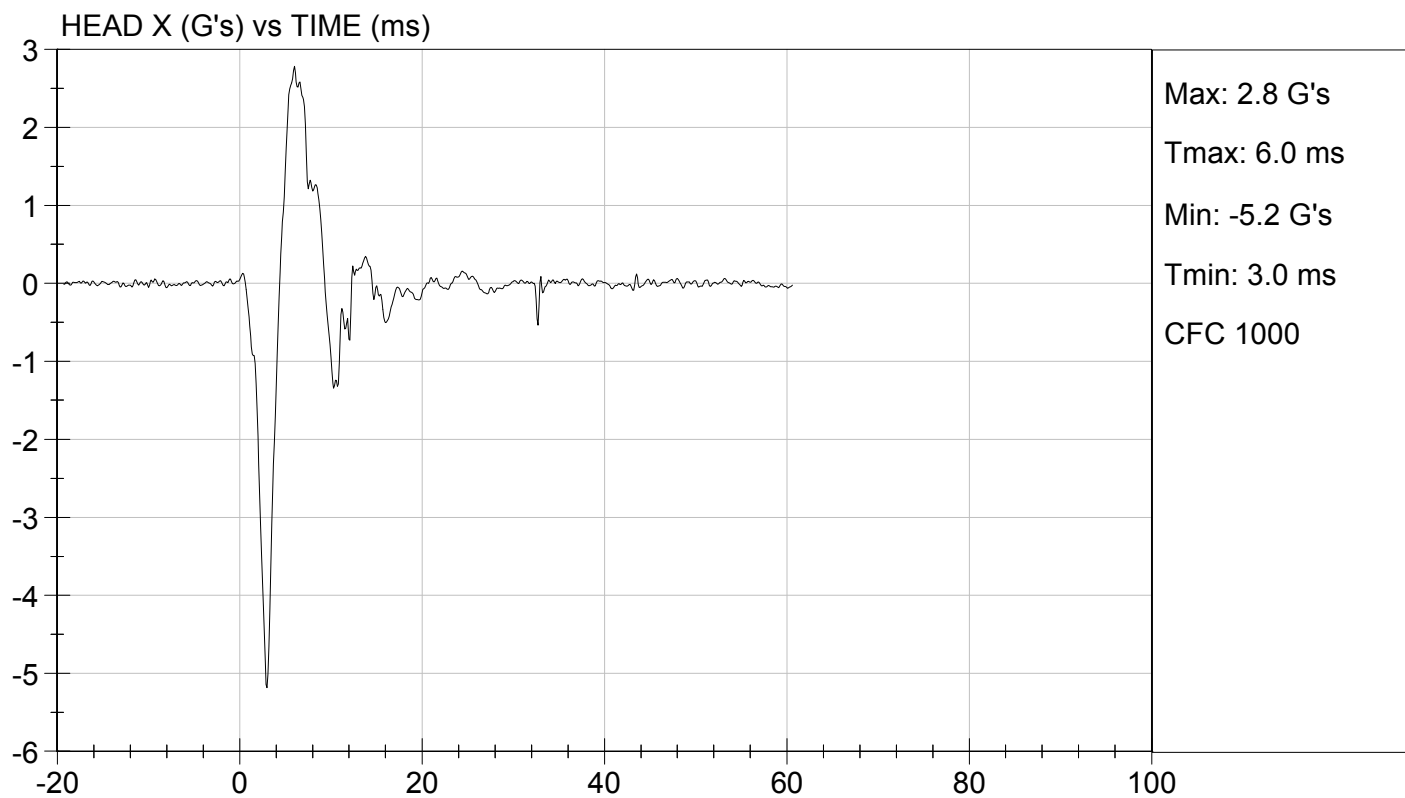
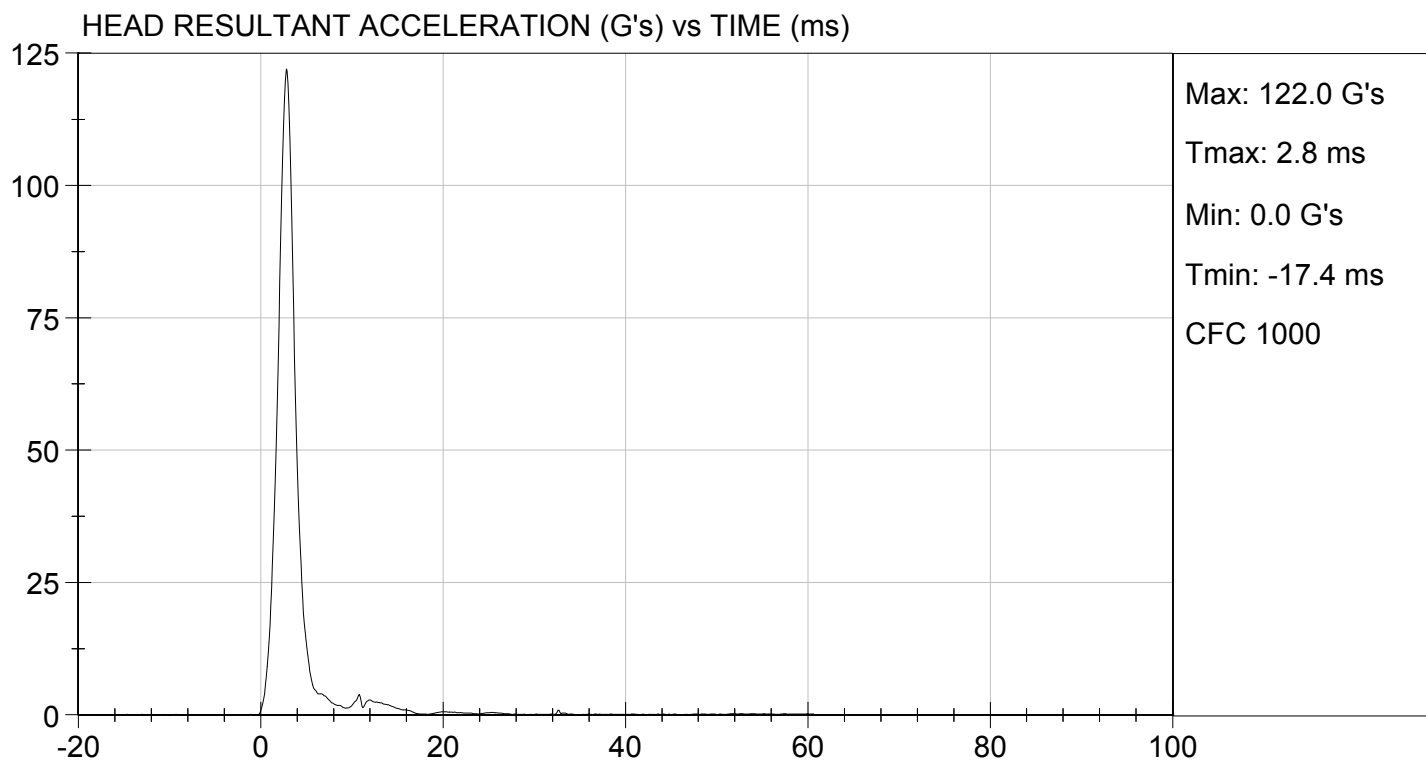
Test ID: D123831

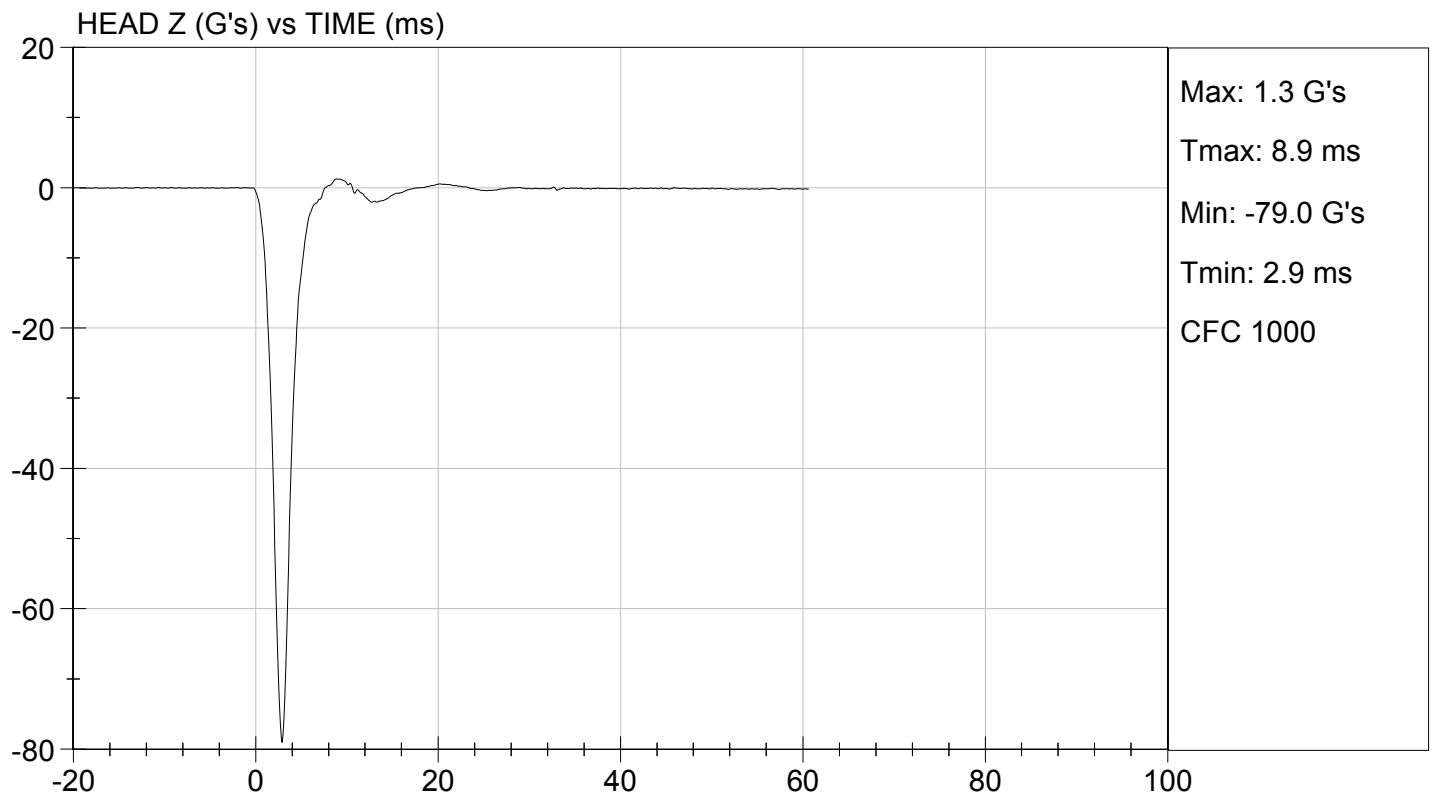
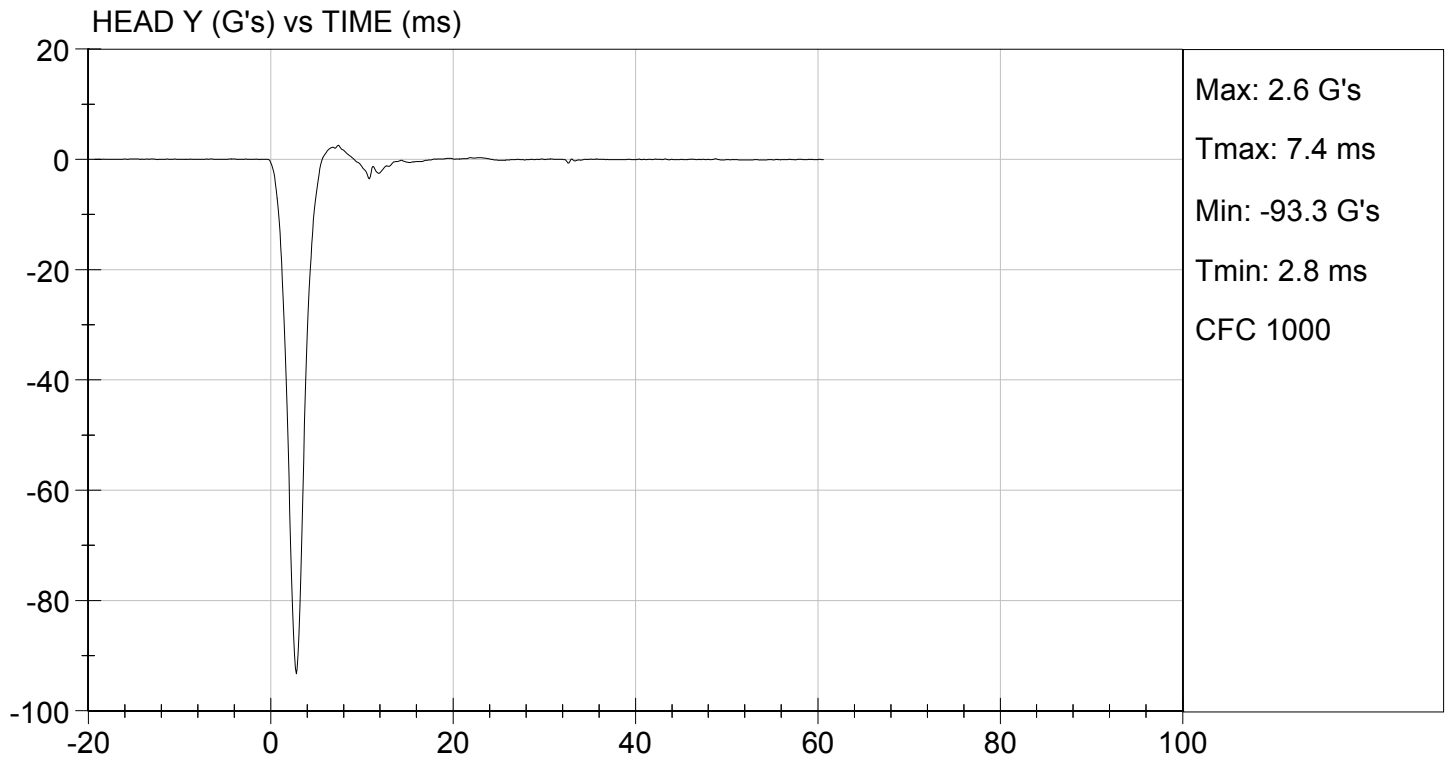
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	32	Pass
Peak Resultant Acceleration	G's	115 to 137	122	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-5.2	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
			Overall Test Results	Pass


Laboratory Technician

10/10/2012
Test Date


Approved By





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

ATD Serial No: 306

Test I.D: D123832

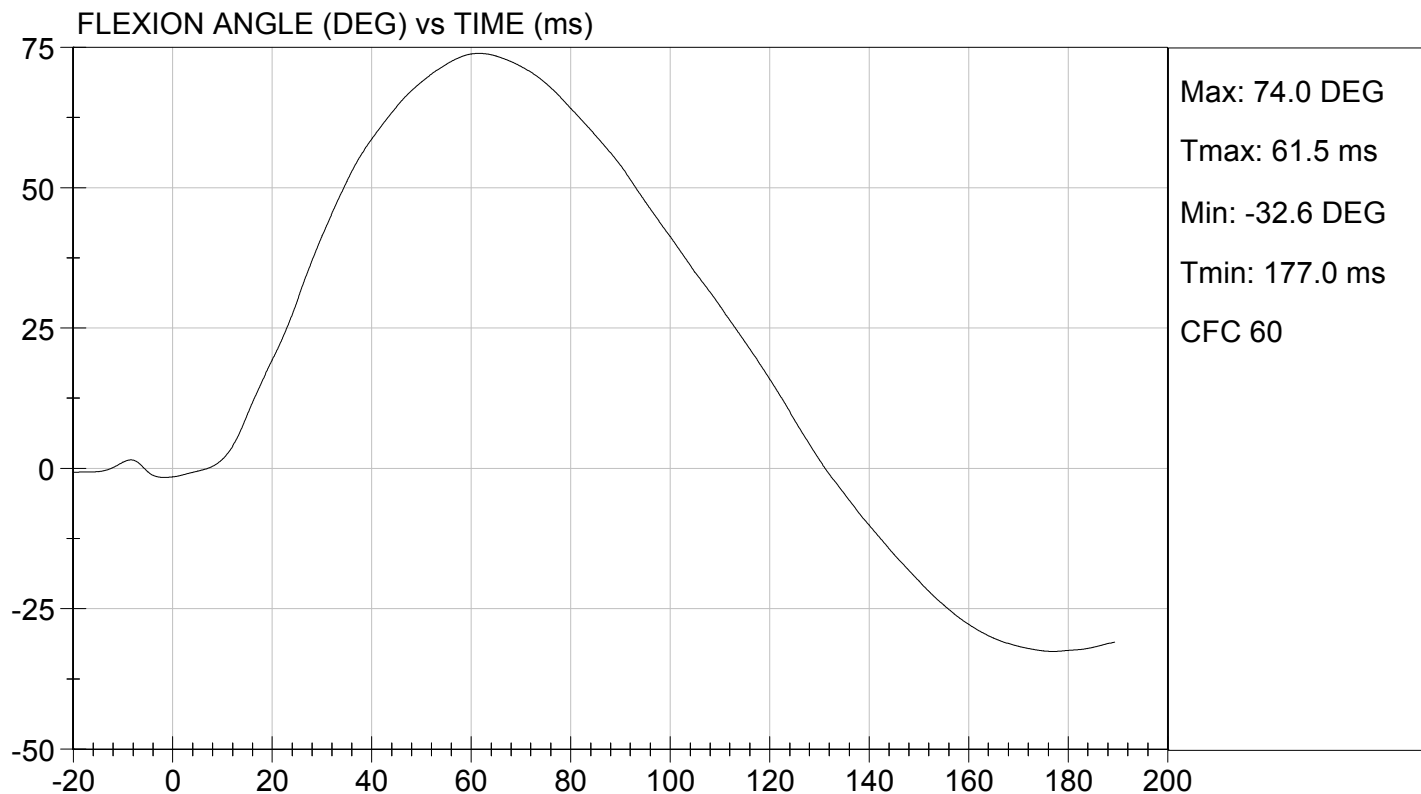
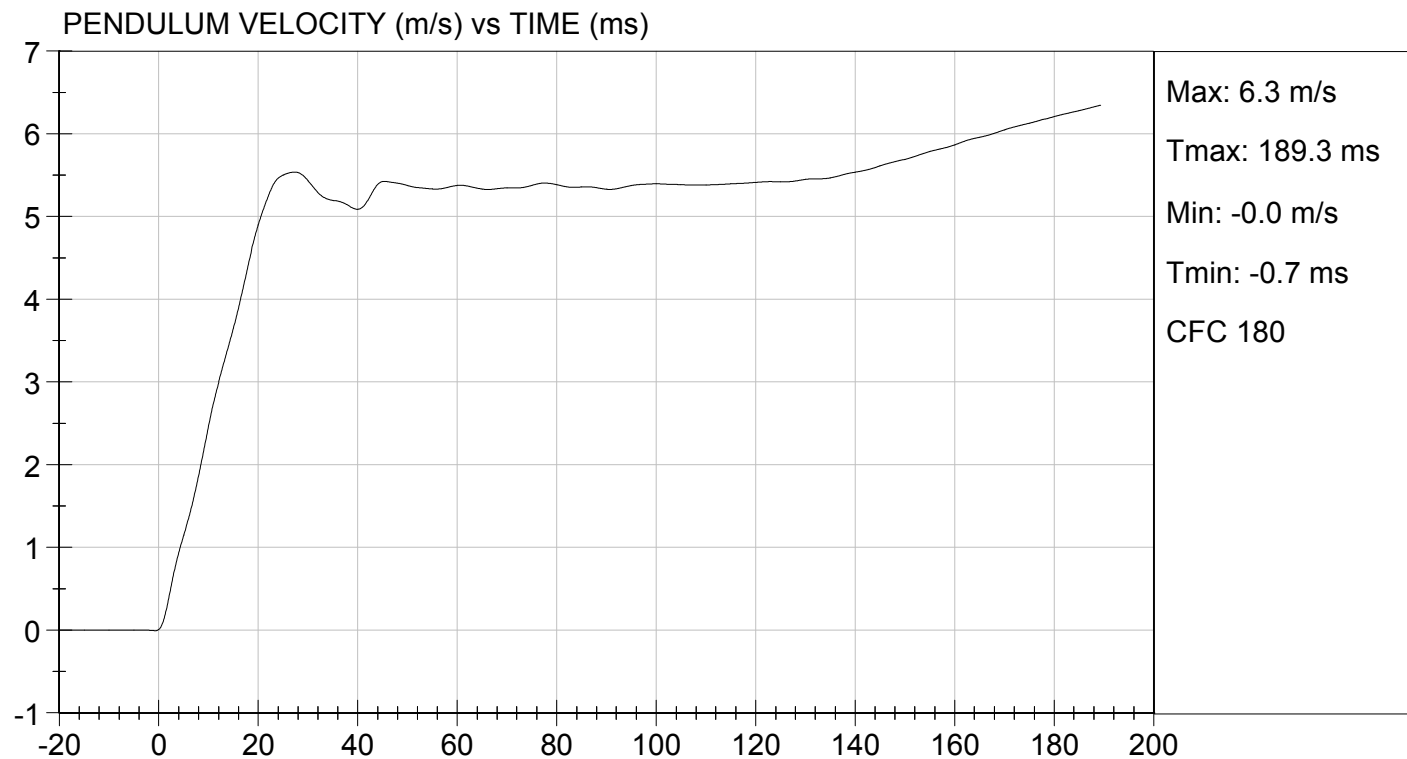
Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.7	Pass
Humidity		%	10 to 70	33	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.47	Pass
	15 ms	m/s	3.30 to 4.10	3.65	Pass
	20 ms	m/s	4.40 to 5.40	4.90	Pass
	25 ms	m/s	5.40 to 6.10	5.50	Pass
	25-100 ms	m/s	5.50 to 6.20	5.54	Pass
Maximum D-Plane Rotation		deg	71 to 81	74	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	62	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-42	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	119	Pass
Overall Test Results				Pass	

Jessica Hall
Laboratory Technician

10/10/2012

Test Date

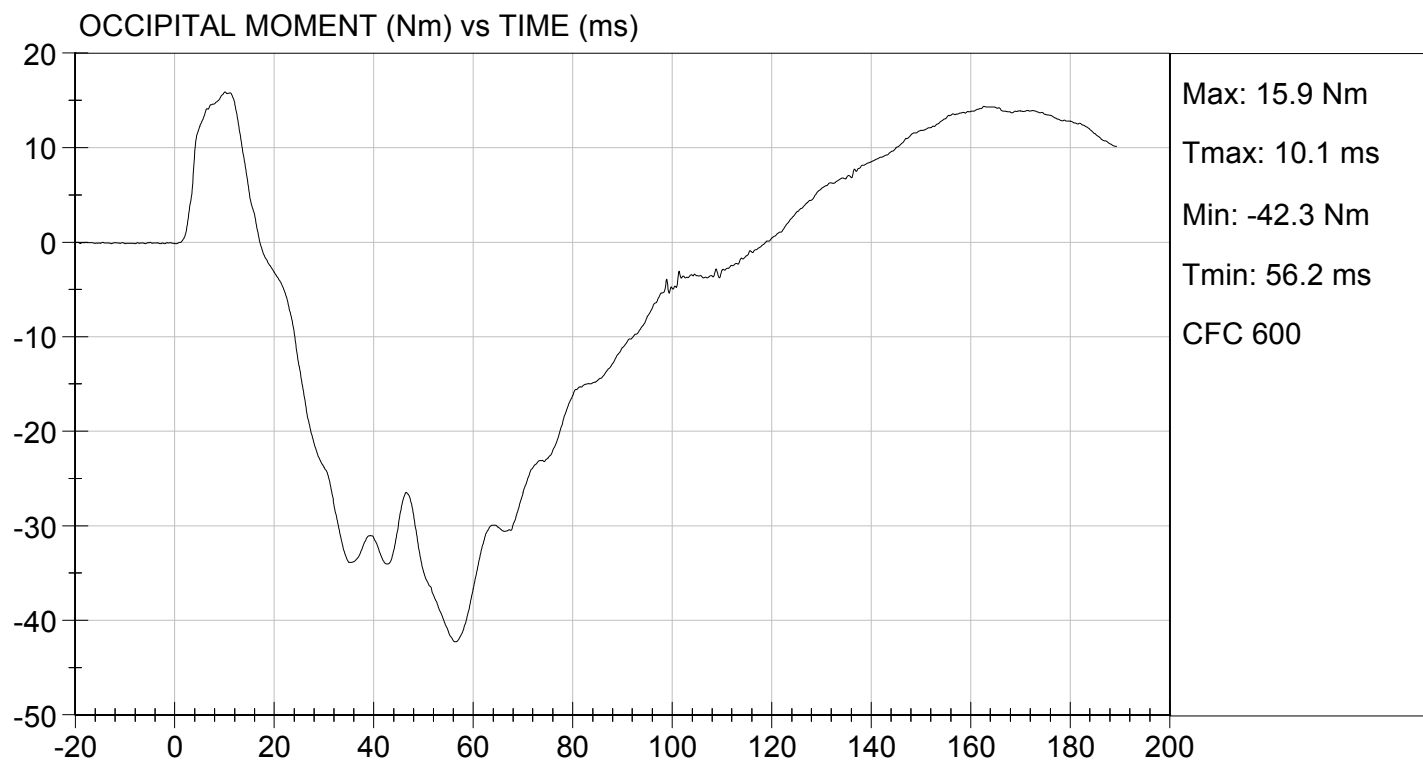
David Winkelbauer
Approved By





TEST DESC: NECK BENDING
VELOCITY: 18.32 ft/s, 5.58 m/s

TEST DATE: 10/10/2012
TEST #: D123832



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

ATD Serial No: 306

Test ID: D123833

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	29	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

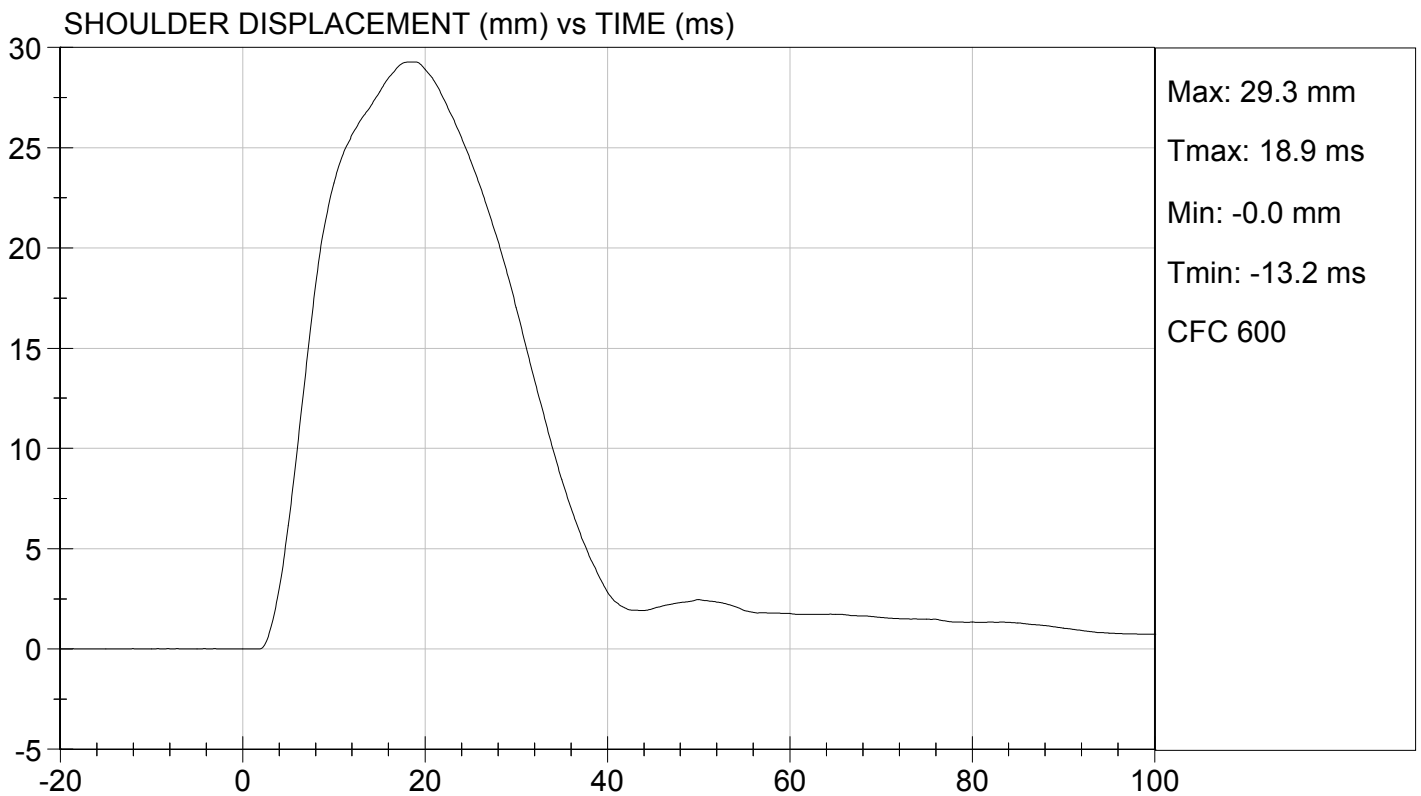
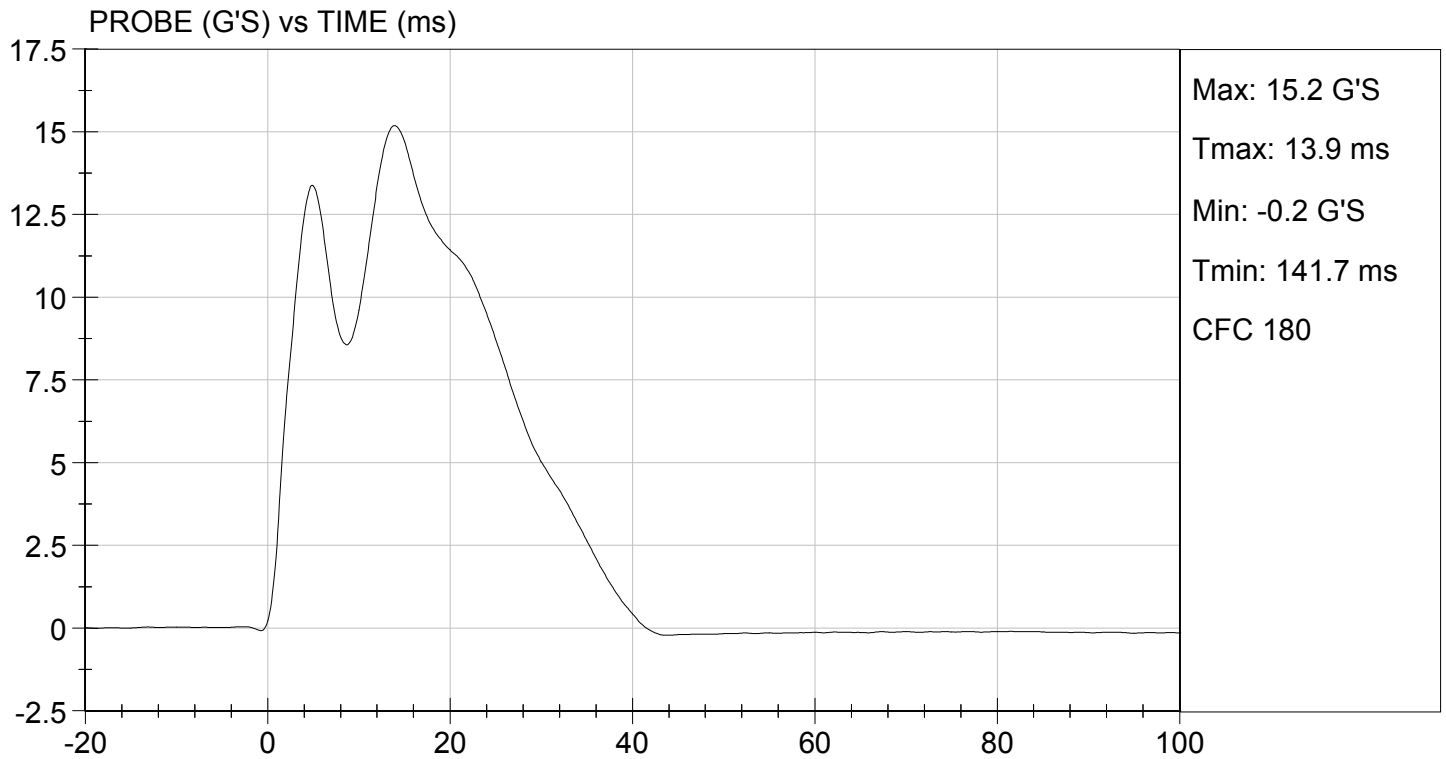
10/10/2012
Test Date

David Winkelbauer
Approved By



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.12 ft/s, 4.30 m/s

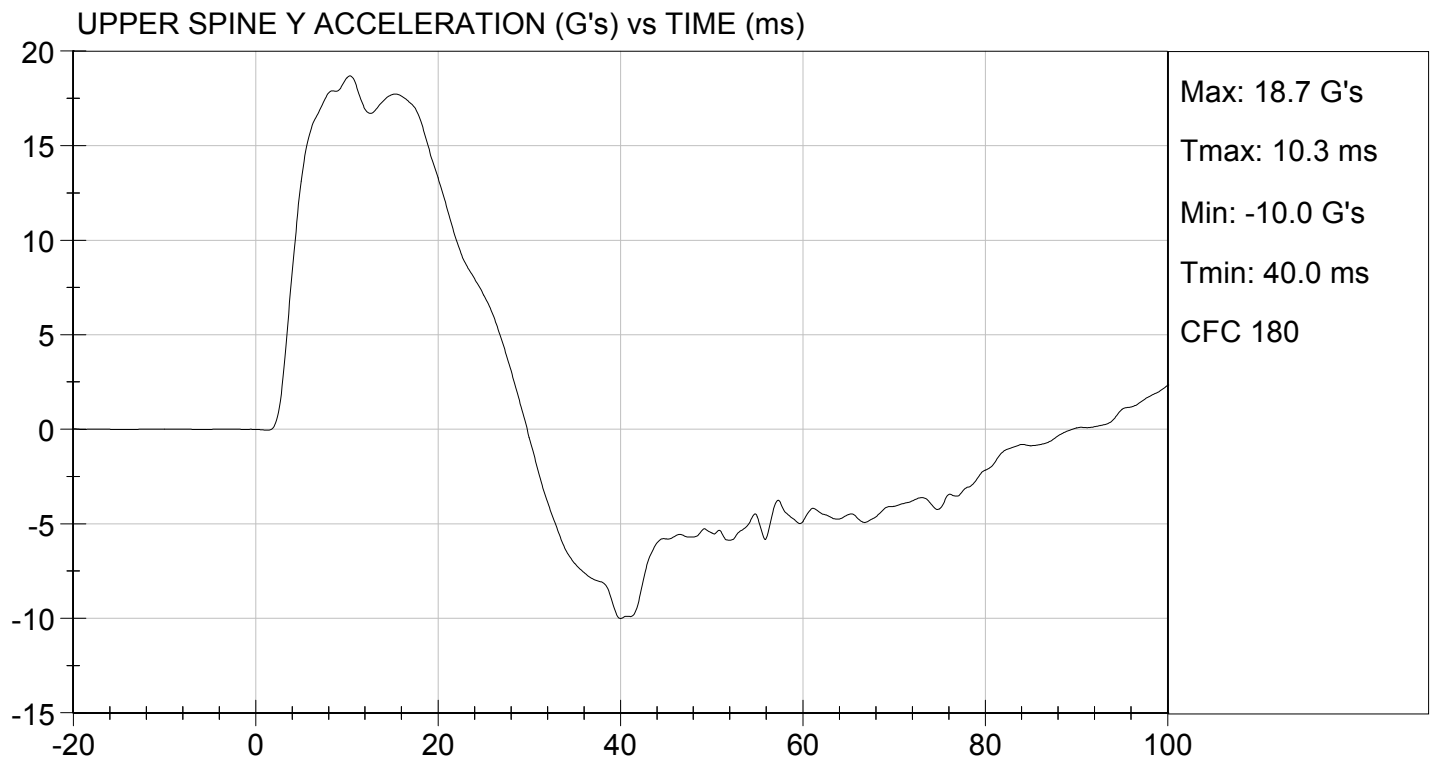
TEST DATE: 10/10/2012
TEST #: D123833





TEST DESC: SHOULDER IMPACT
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 10/10/2012
TEST #: D123833



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

ATD Serial No: 306

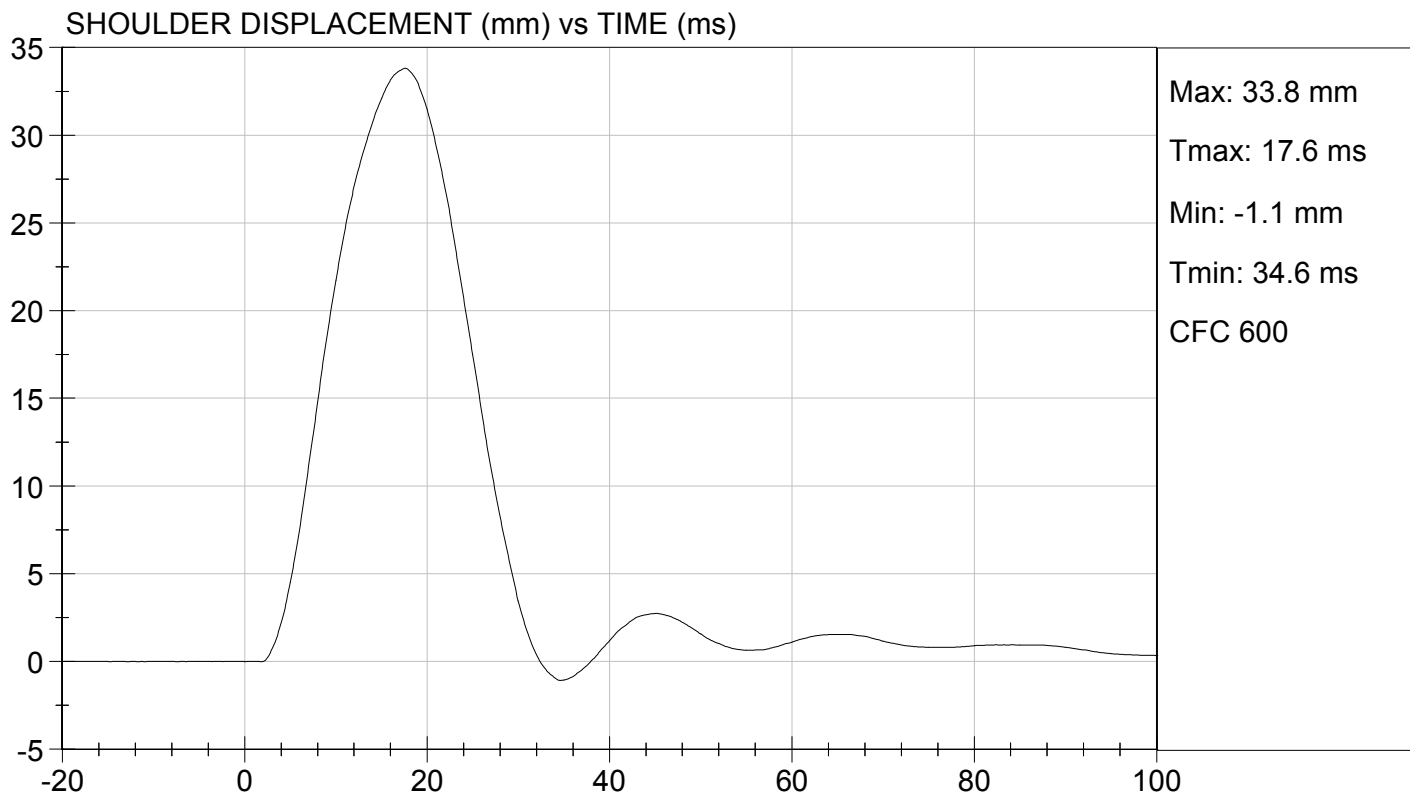
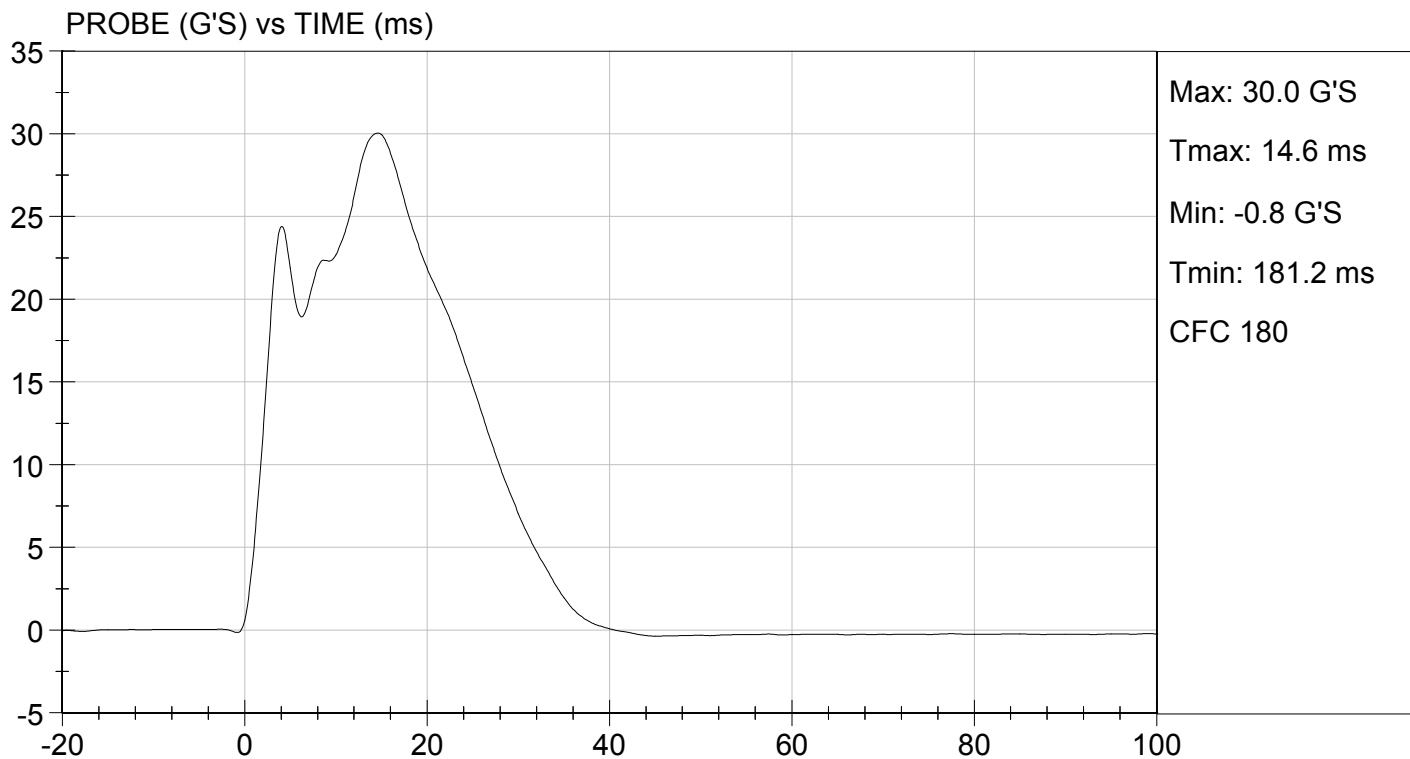
Test I.D: D123834

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	30	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	34	Pass
Upper Rib Displacement	mm	25 to 32	28	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	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	29	Pass
Overall Test Results				Pass


 Laboratory Technician

10/10/2012
 Test Date

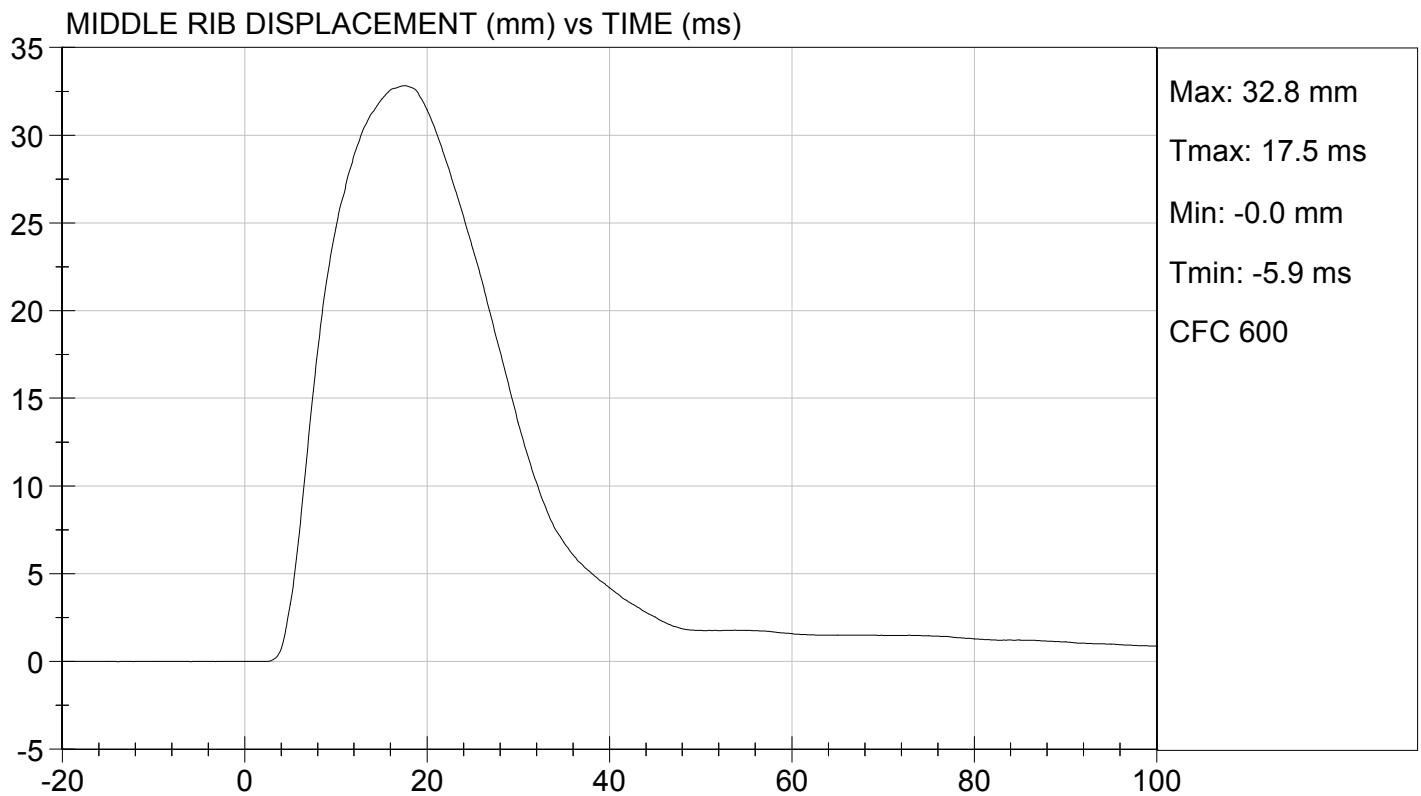
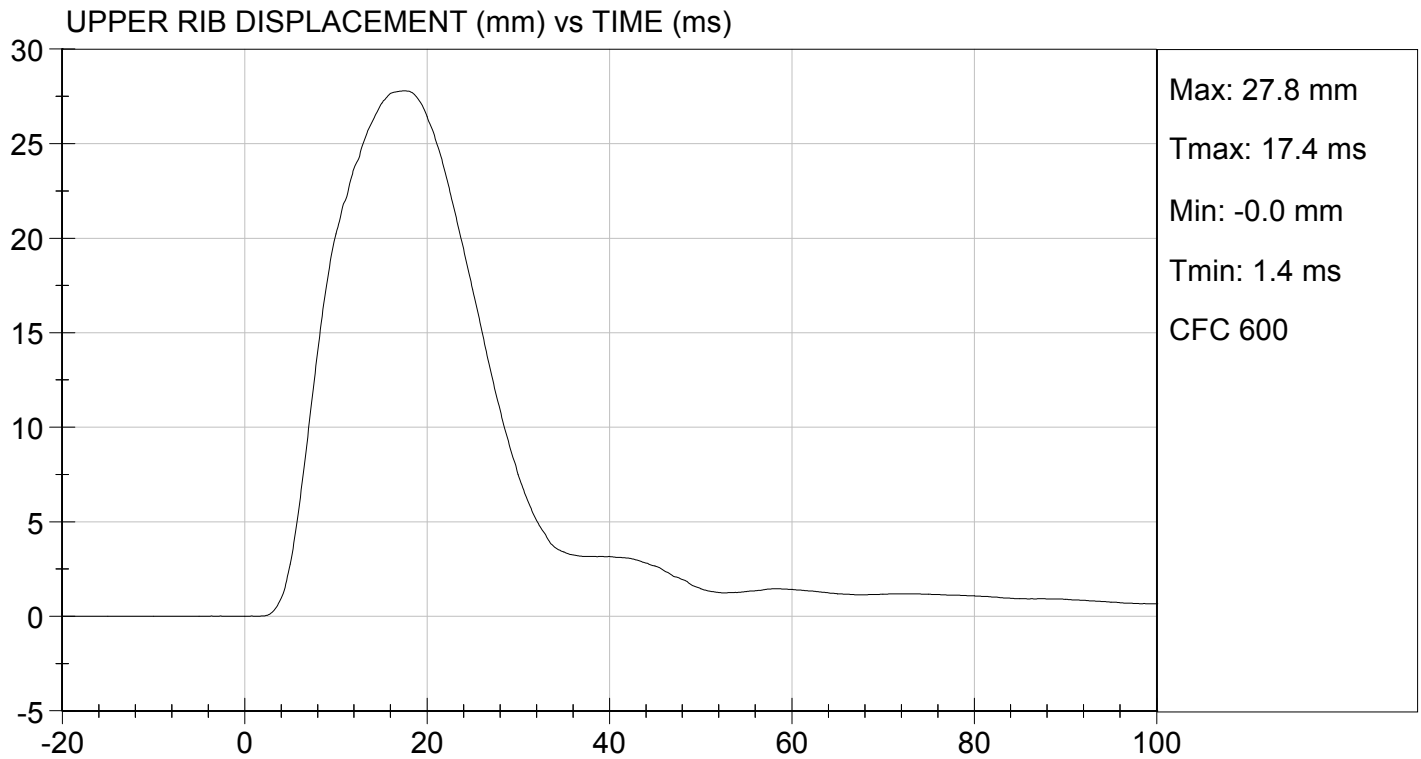

 Approved By





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

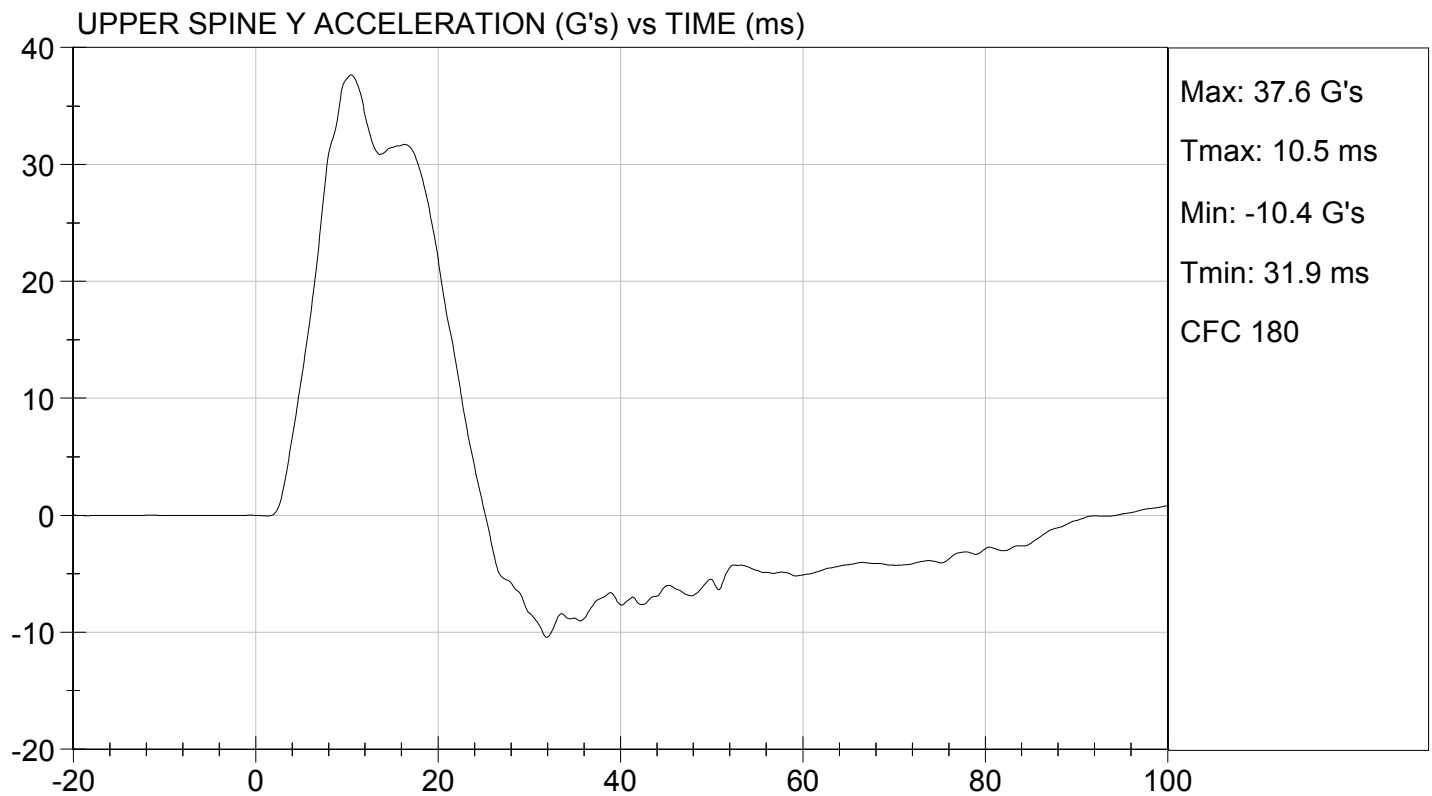
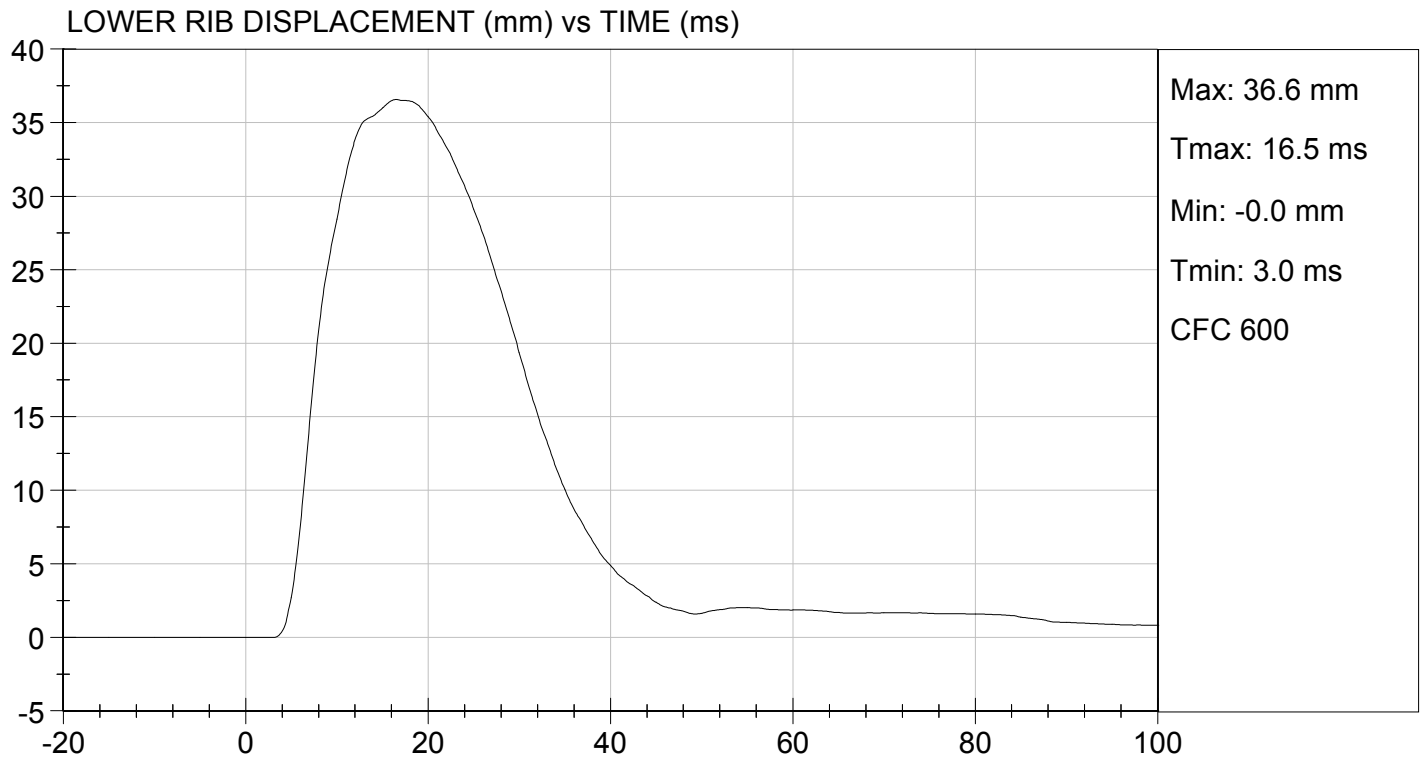
TEST DATE: 10/10/2012
TEST #: D123834





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

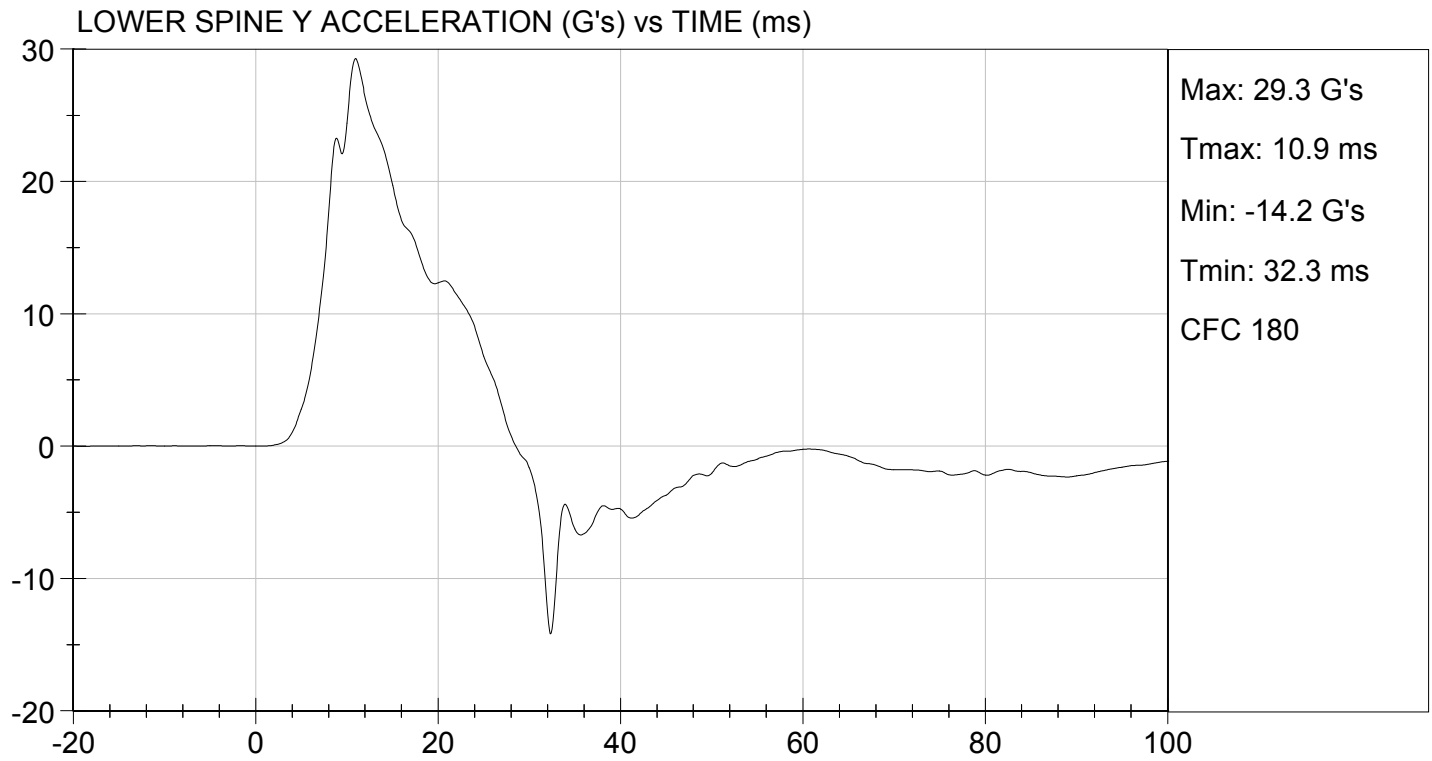
TEST DATE: 10/10/2012
TEST #: D123834





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

TEST DATE: 10/10/2012
TEST #: D123834

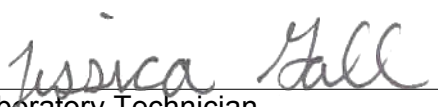


MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123835

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	30	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	39	Pass
Middle Rib Displacement	mm	39 to 45	43	Pass
Lower Rib Displacement	mm	35 to 43	40	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
Overall Test Results				Pass


 Laboratory Technician

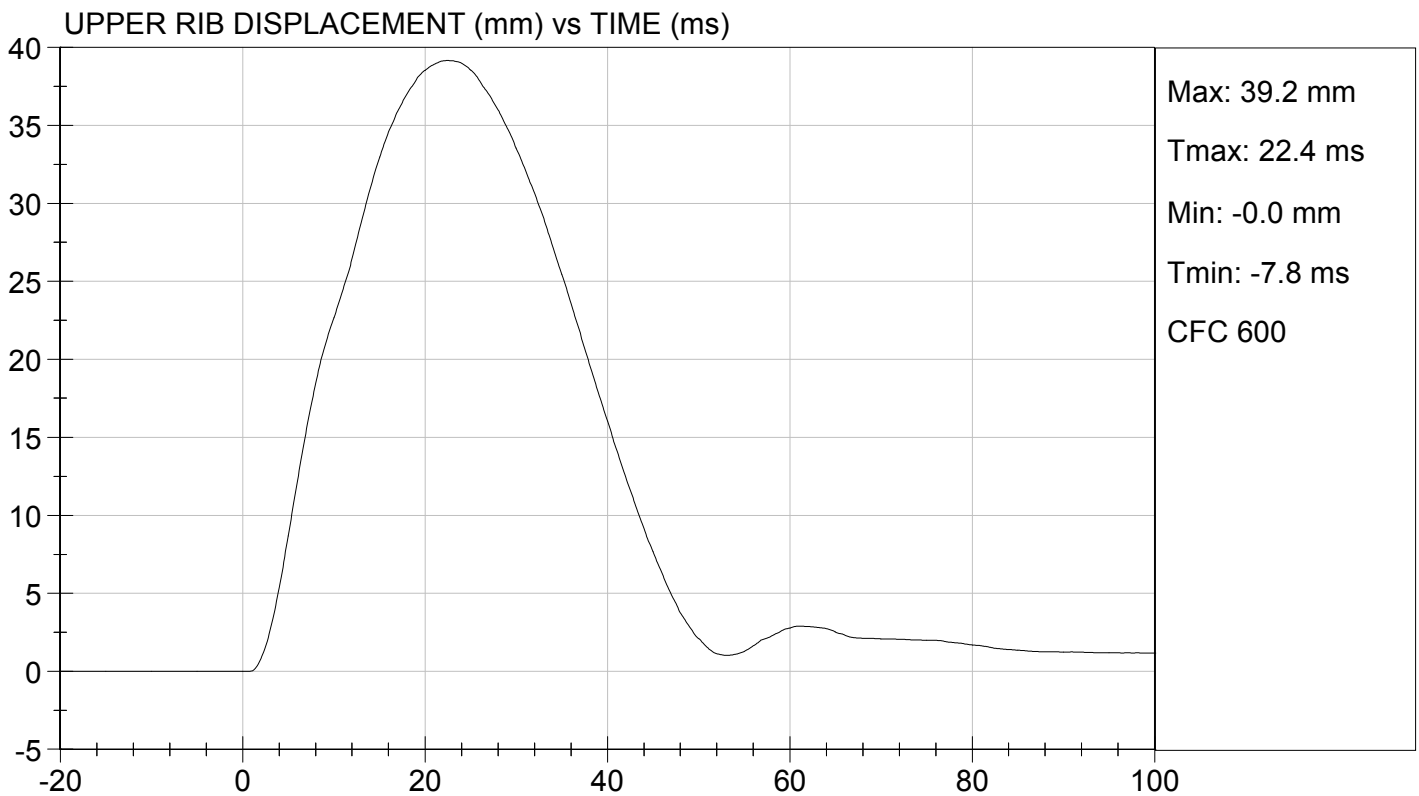
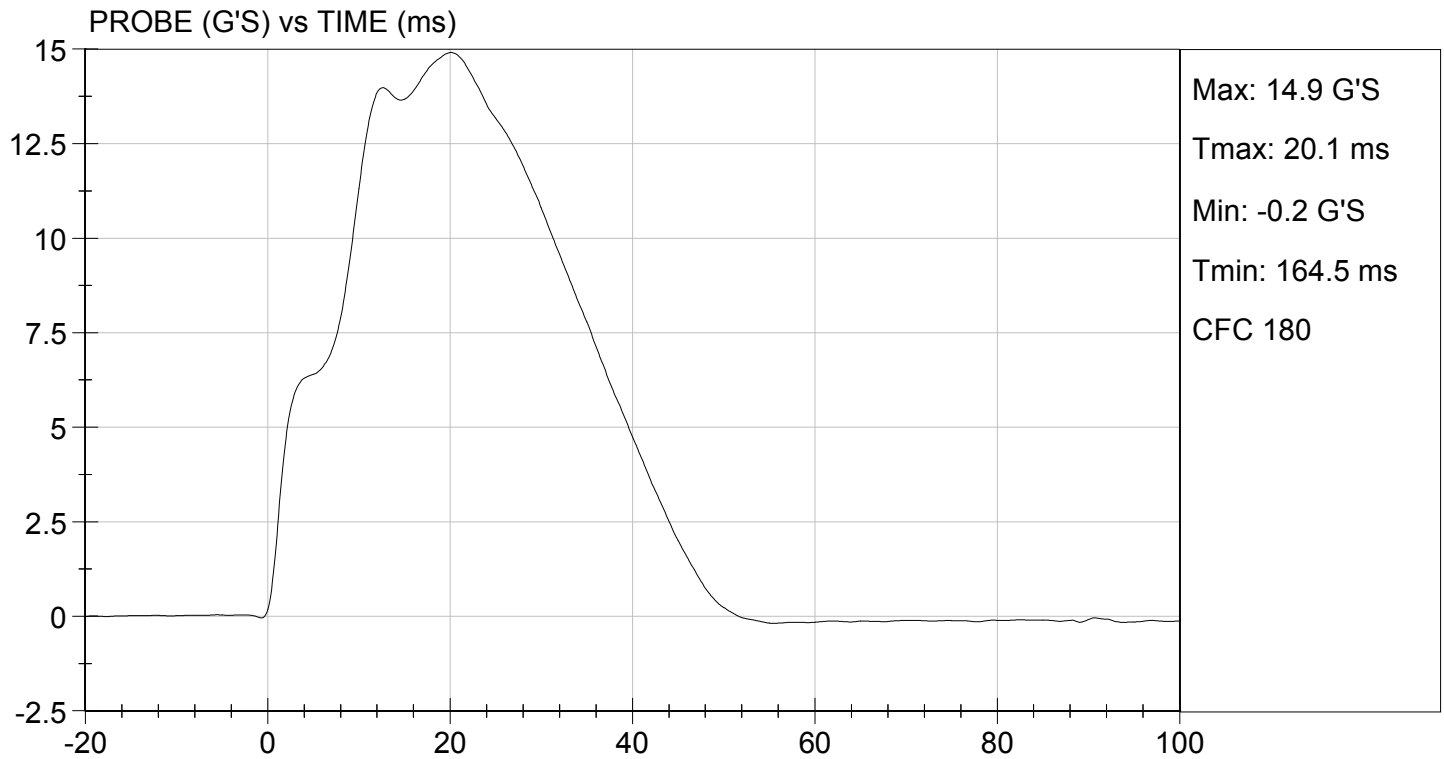
10/10/2012
 Test Date


 Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.01 ft/s, 4.27 m/s

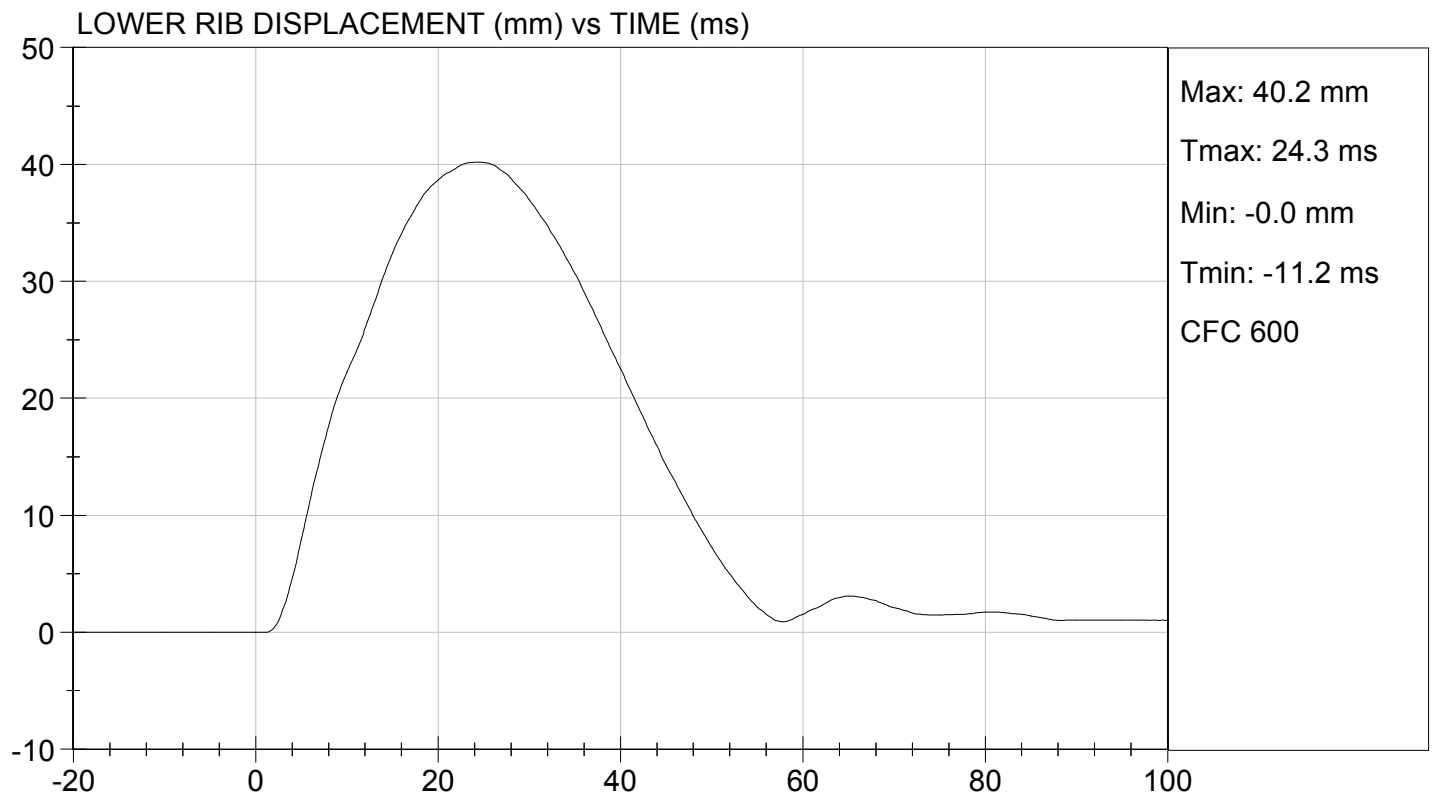
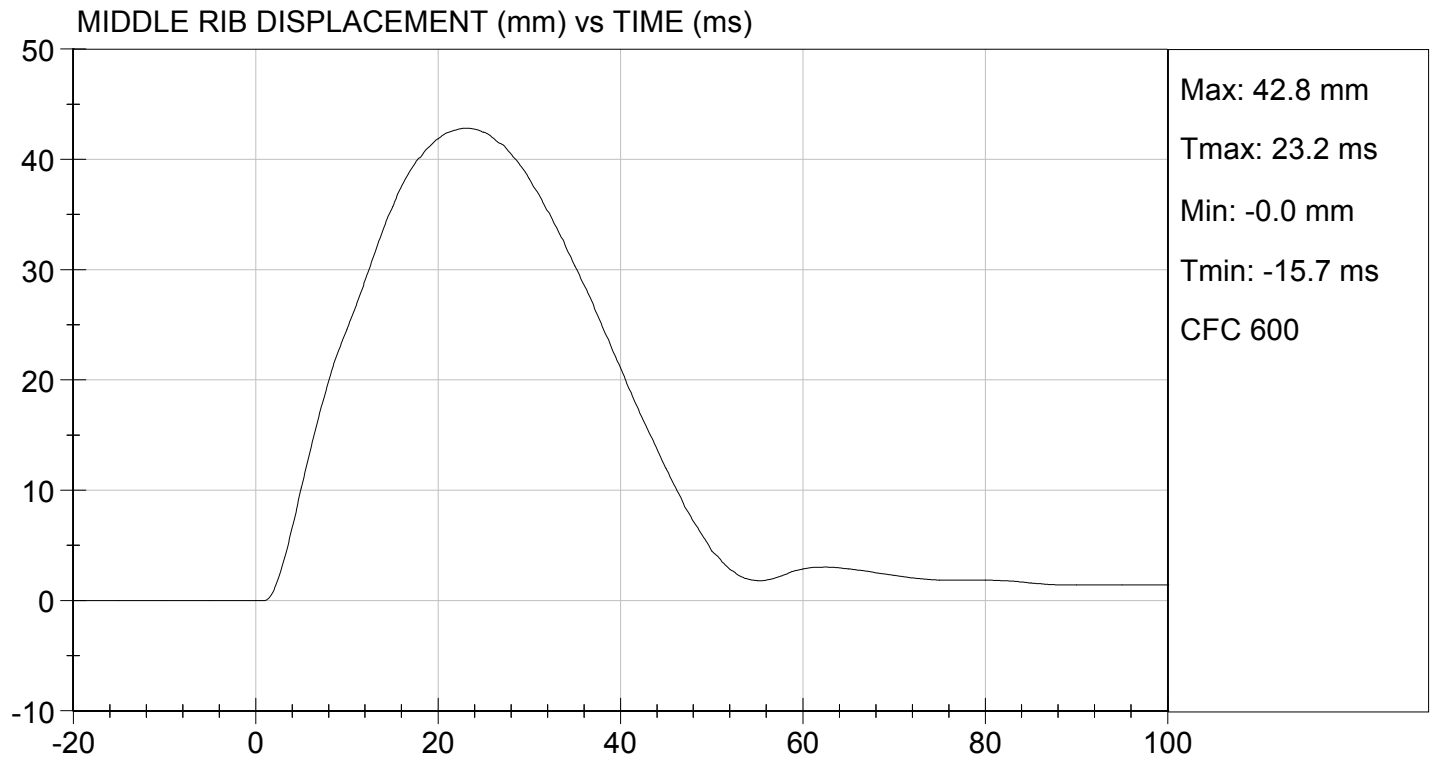
TEST DATE: 10/10/2012
TEST #: D123835





TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 10/10/2012
TEST #: D123835

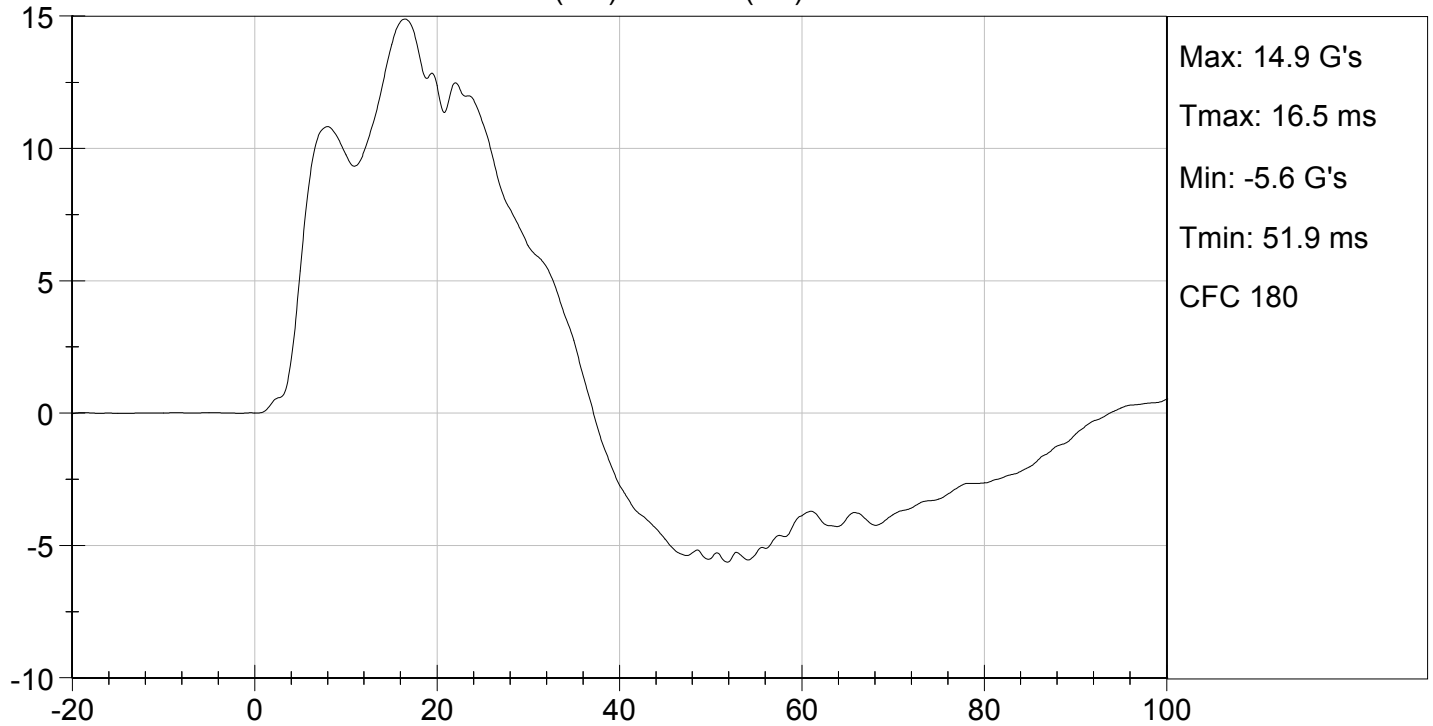




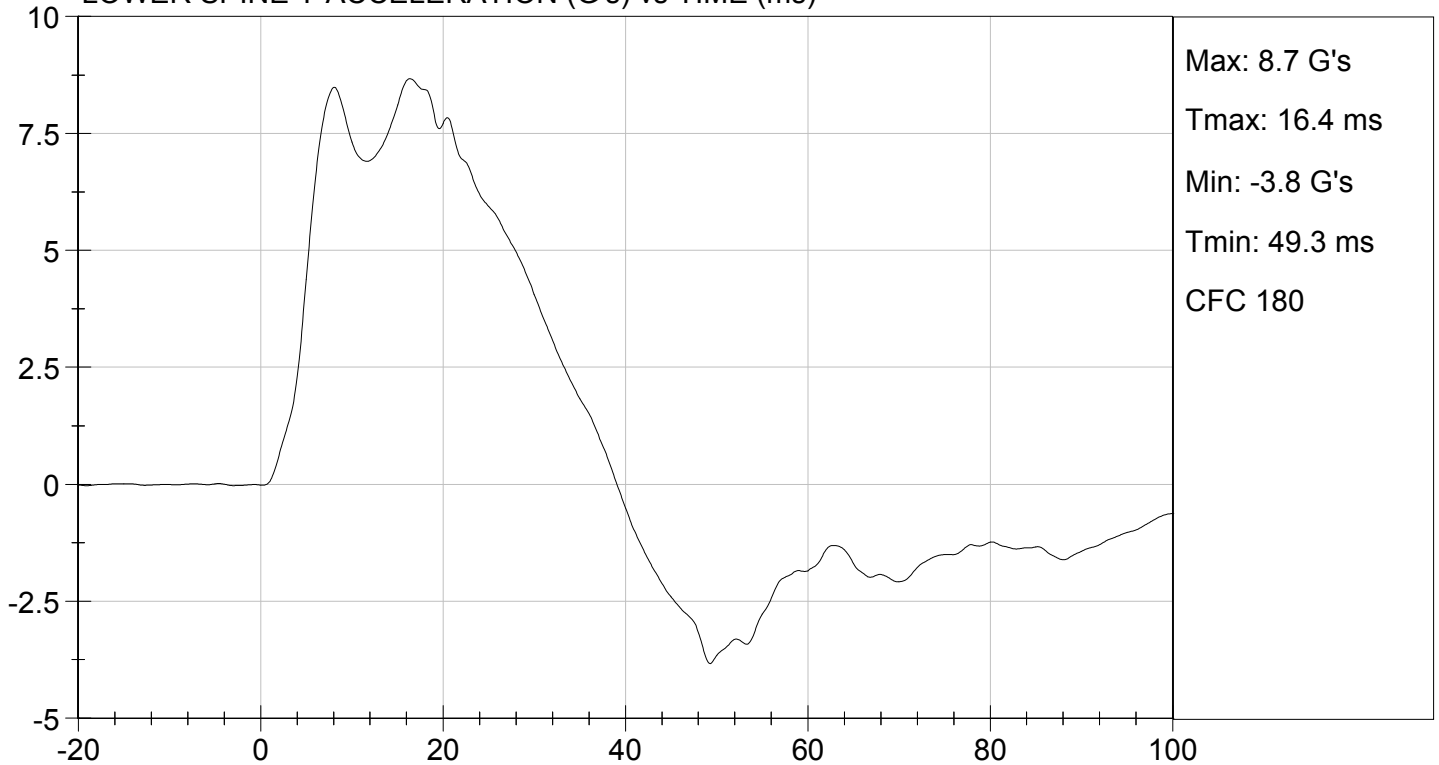
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 10/10/2012
TEST #: D123835

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



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



MGA RESEARCH CORPORATION

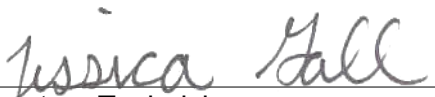
ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123836

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	30	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	12 to 16	12	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	47	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	42	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	9	Pass
Overall Test Results				Pass


Laboratory Technician

10/10/2012

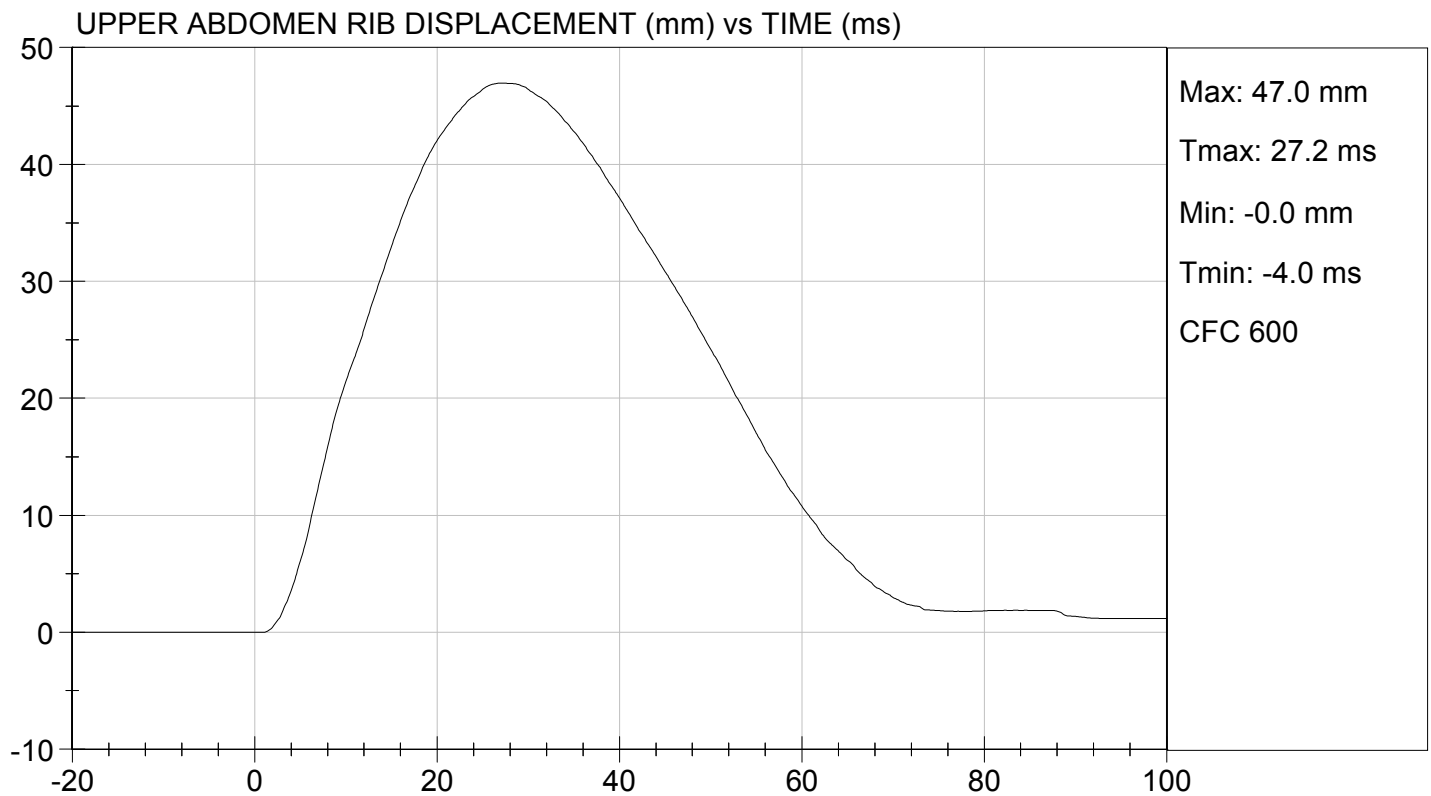
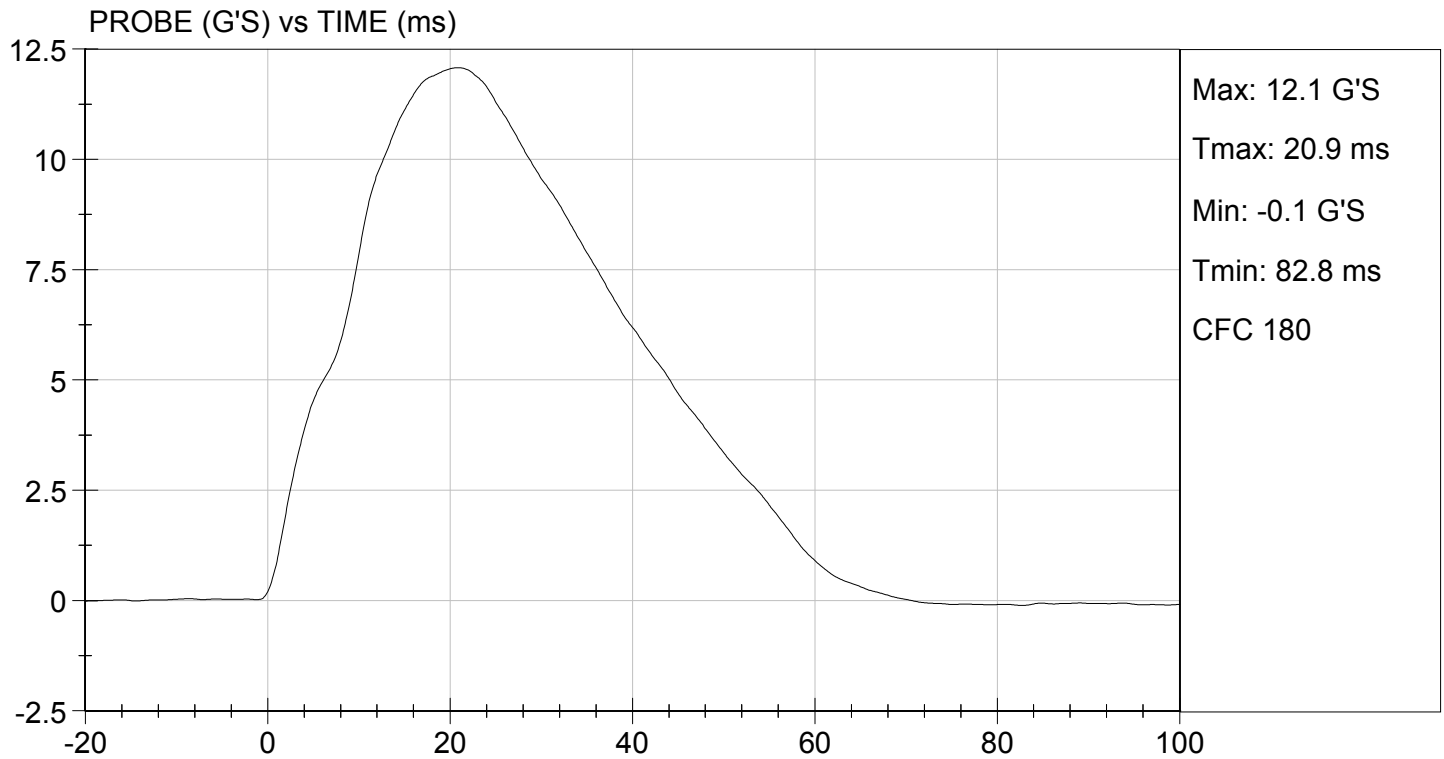
Test Date


Approved By



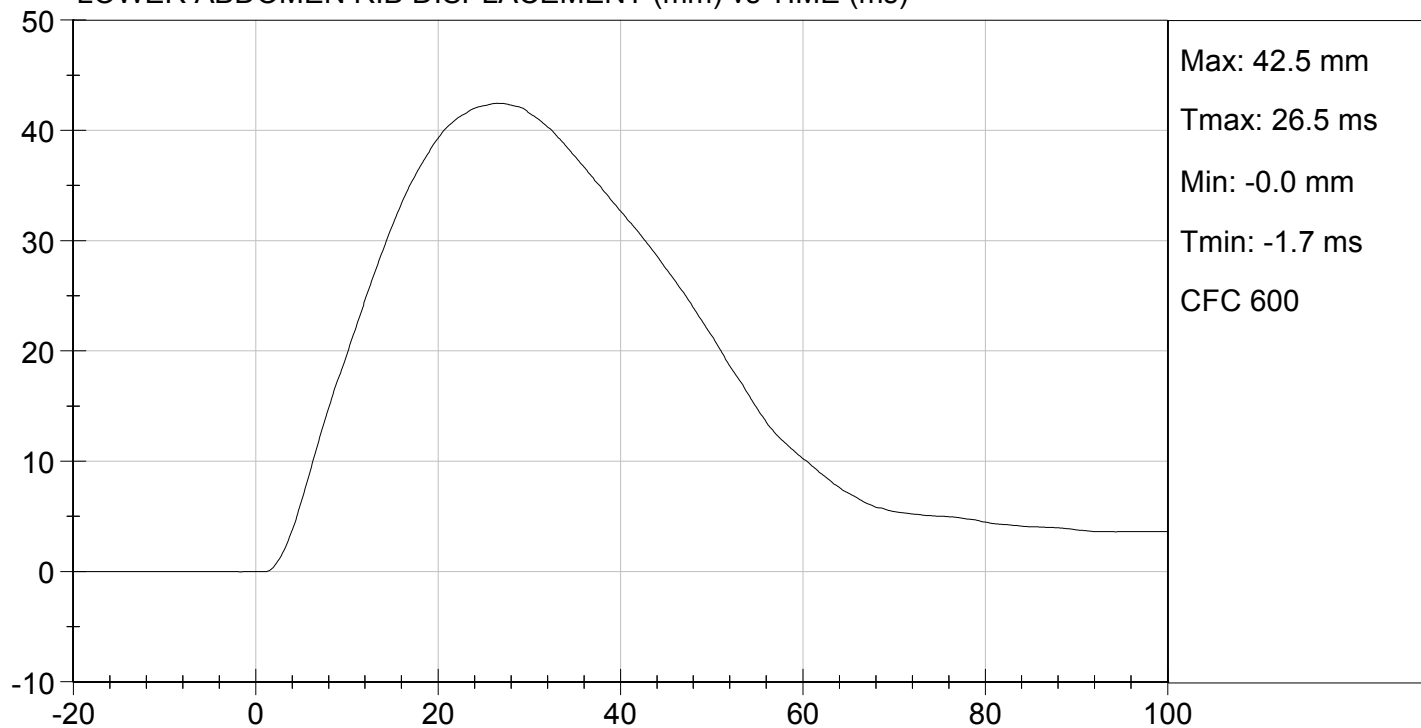
TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 10/10/2012
TEST #: D123836

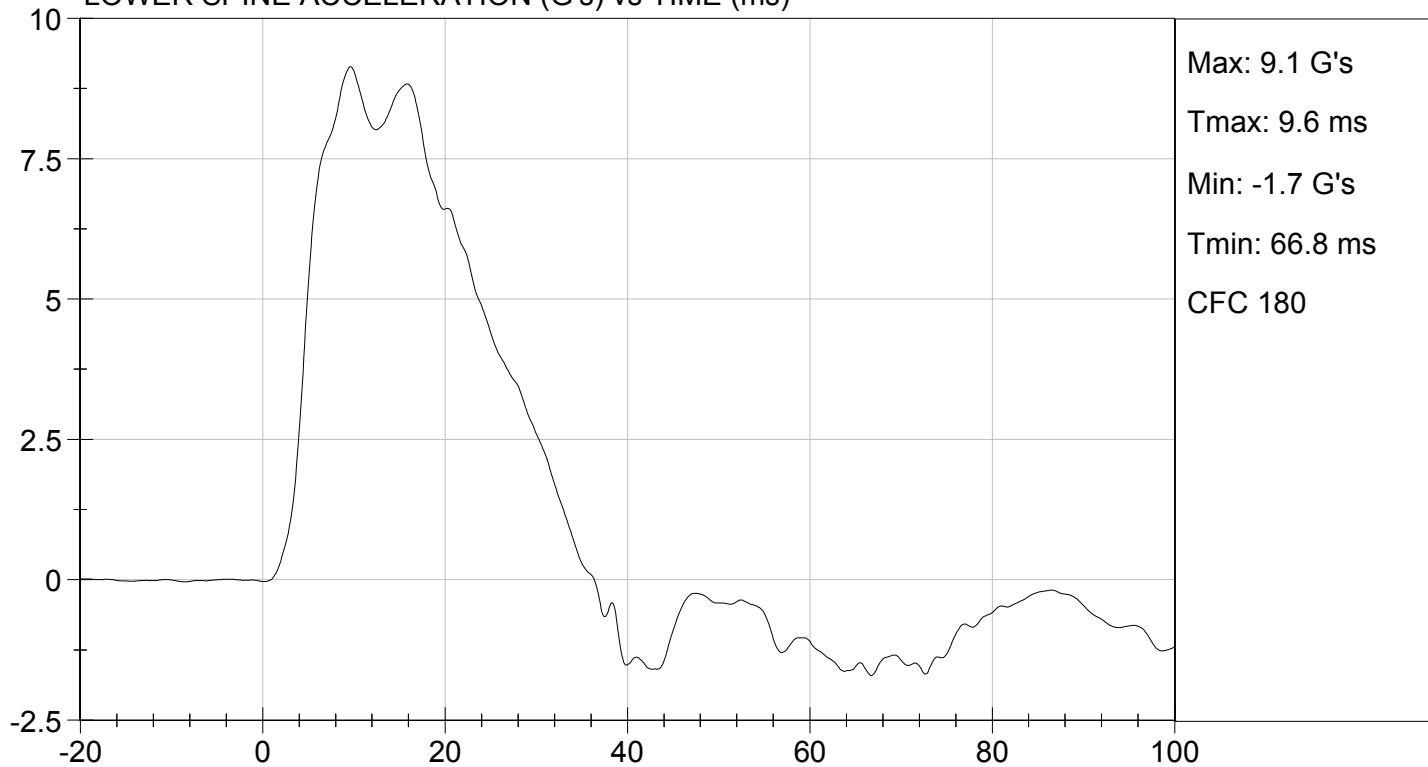




LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123837

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	30	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	38 to 47	45	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	42	Pass
Peak Acetabulum Force	N	3600 to 4300	4,072	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

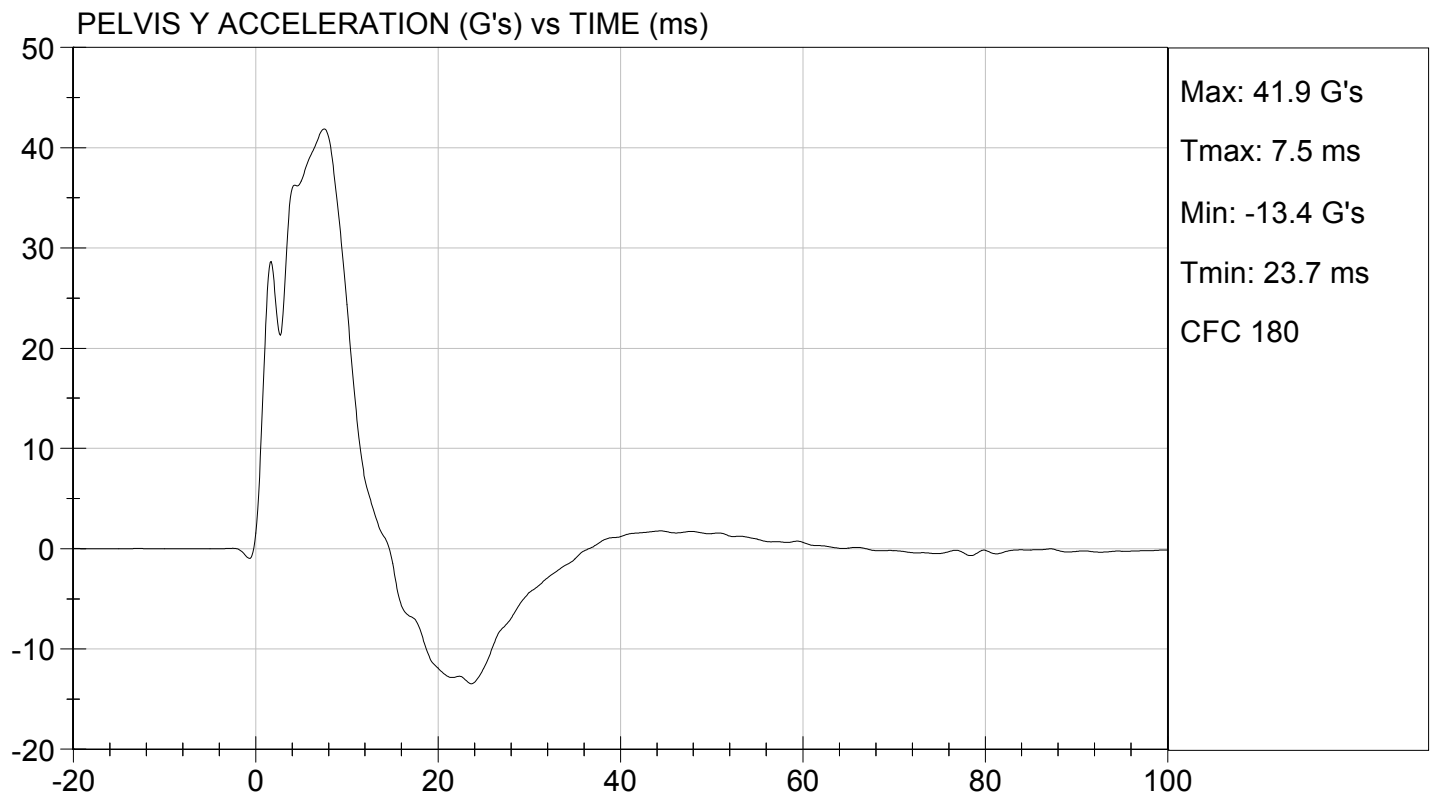
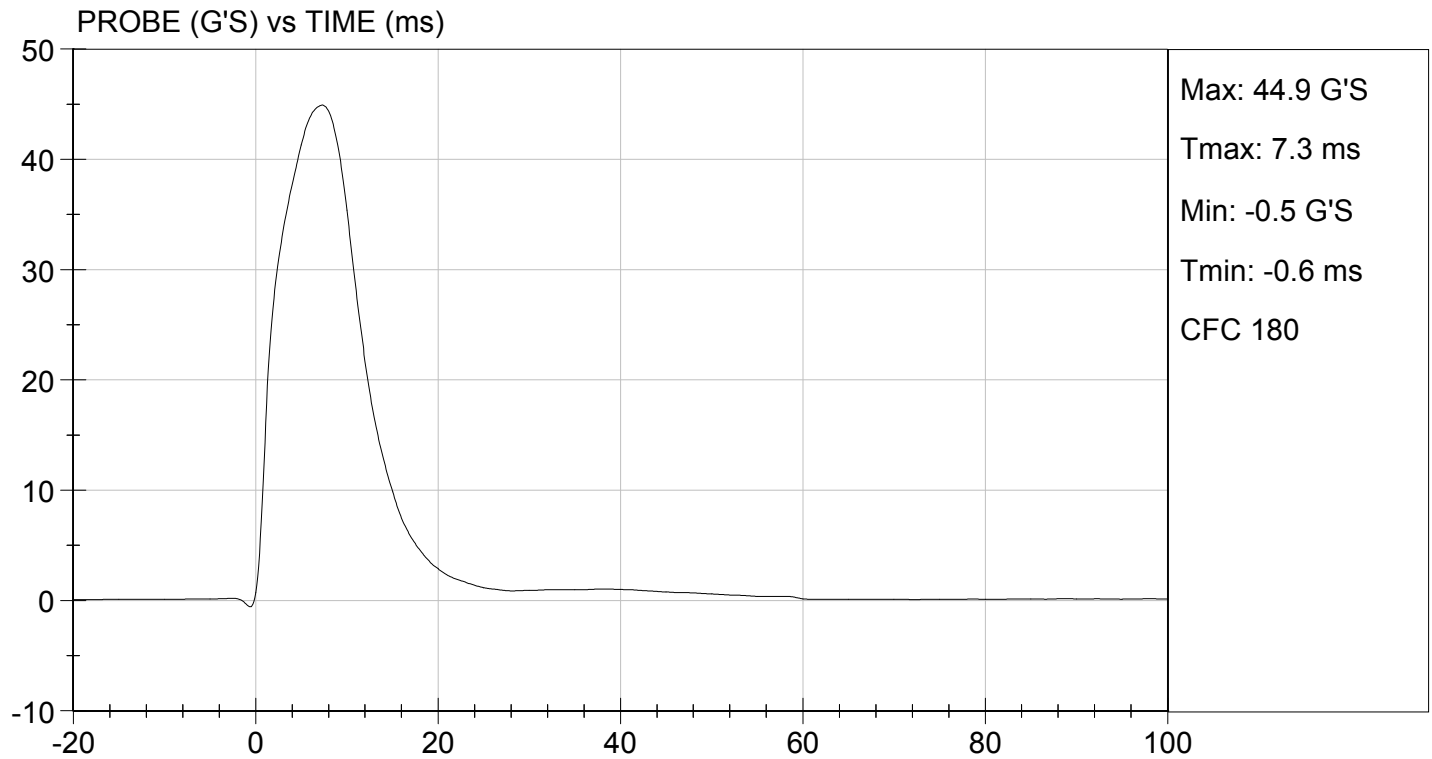
10/10/2012
Test Date

David Winkelbauer
Approved By



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

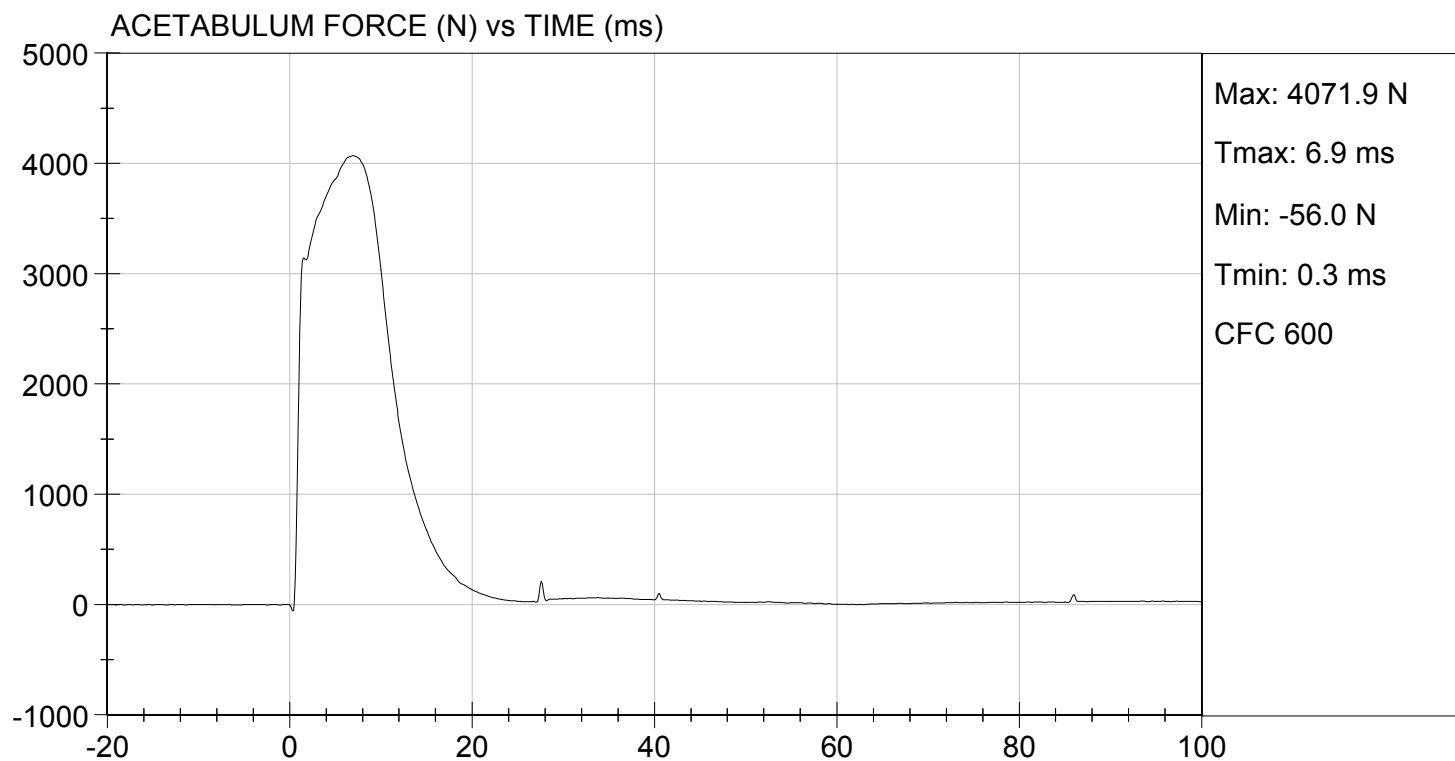
TEST DATE: 10/10/2012
TEST #: D123837





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

TEST DATE: 10/10/2012
TEST #: D123837



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123838

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	30	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	36 to 45	39	Pass
Pelvis Y Acceleration	G's	28 to 39	33	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,739	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

10/10/2012

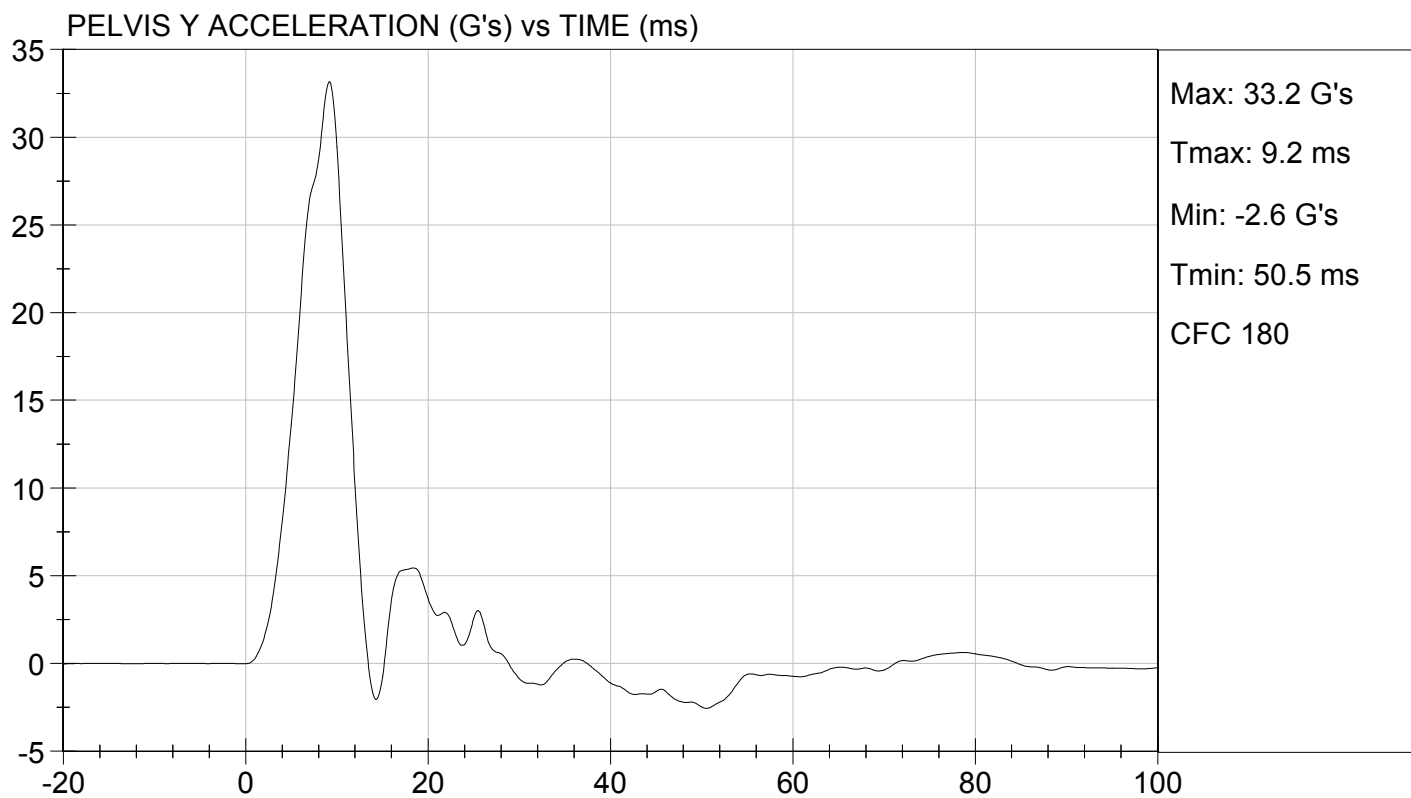
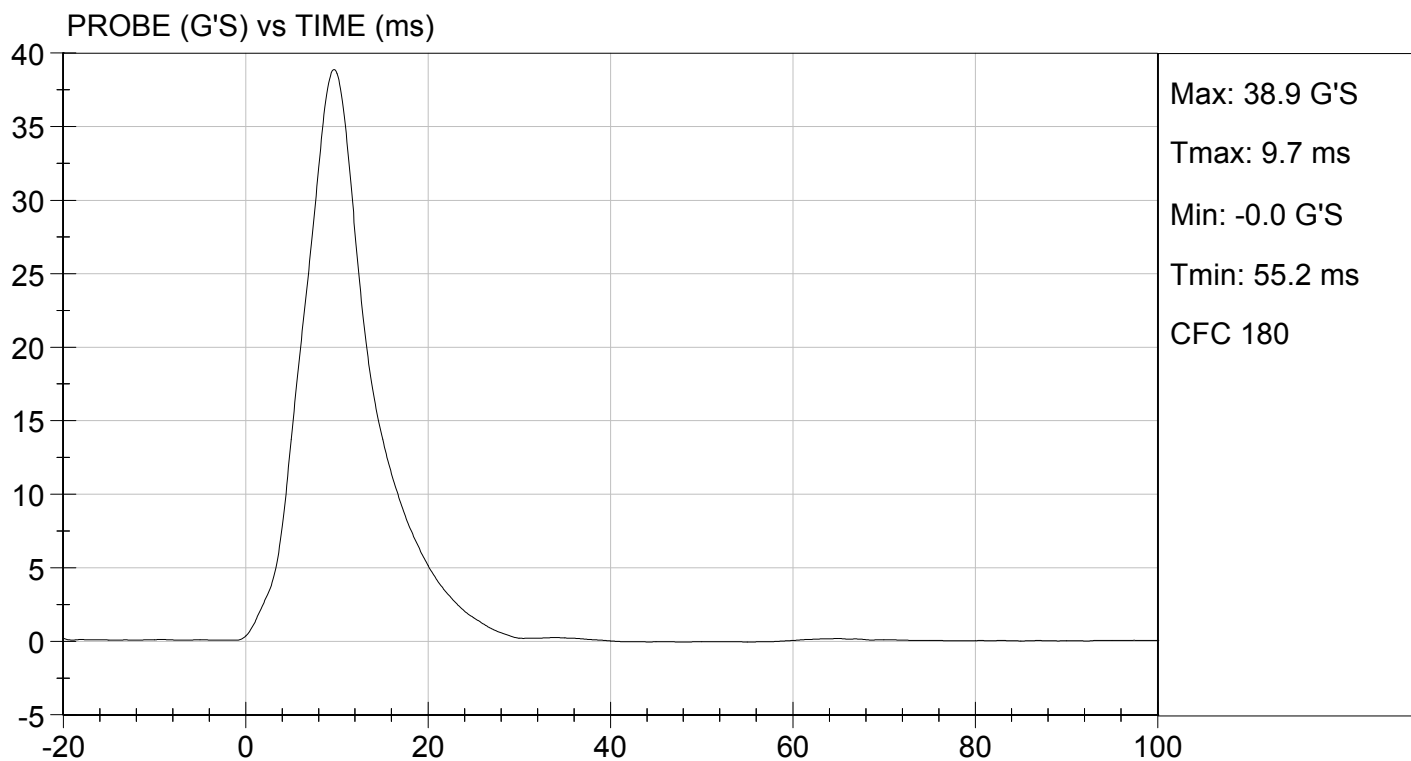
Test Date

David Winkelbauer
Approved By



TEST DESC: ILLIAC
VELOCITY: 14.01 ft/s, 4.27 m/s

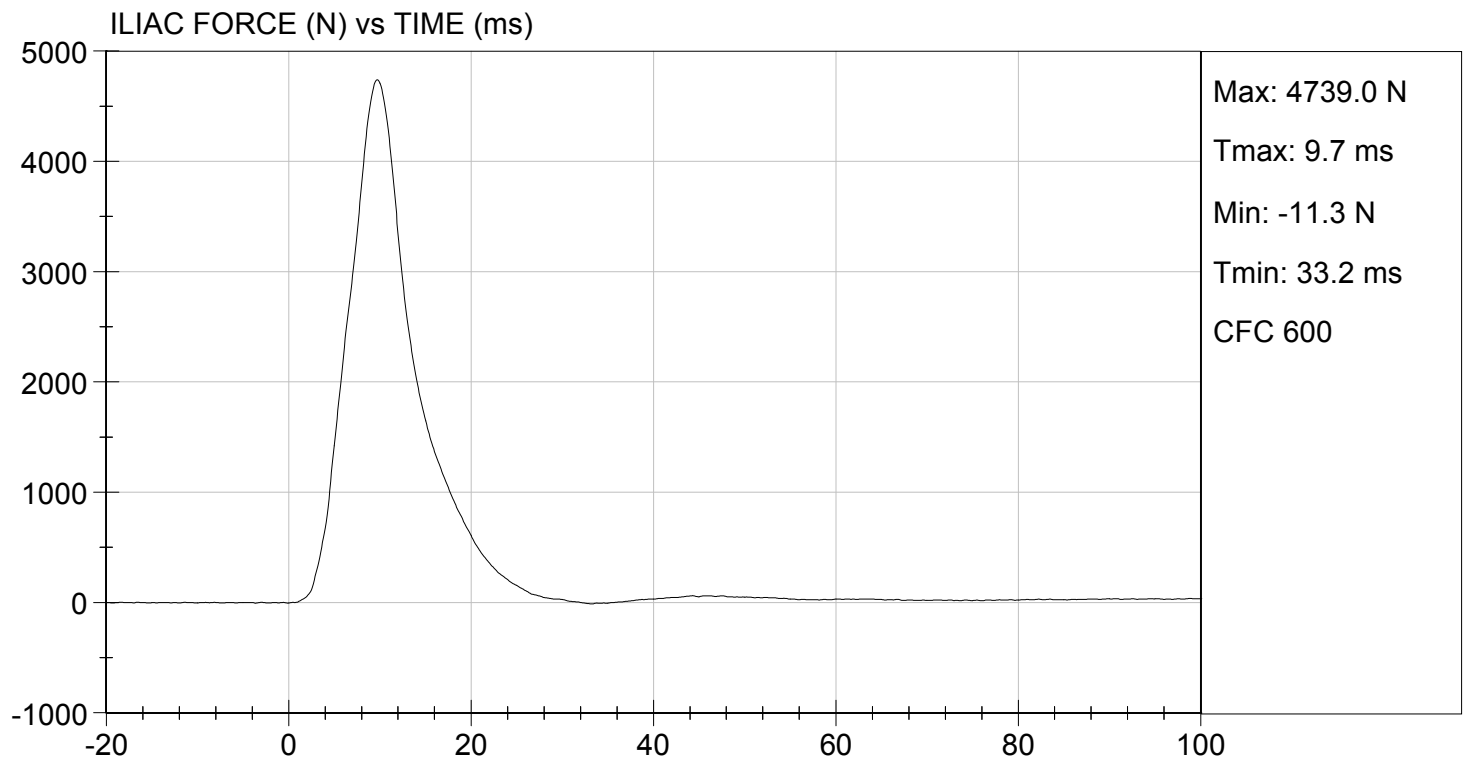
TEST DATE: 10/10/2012
TEST #: D123838





TEST DESC: ILLIAC
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 10/10/2012
TEST #: D123838

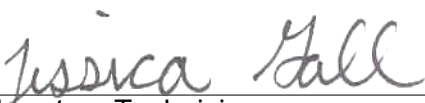


MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

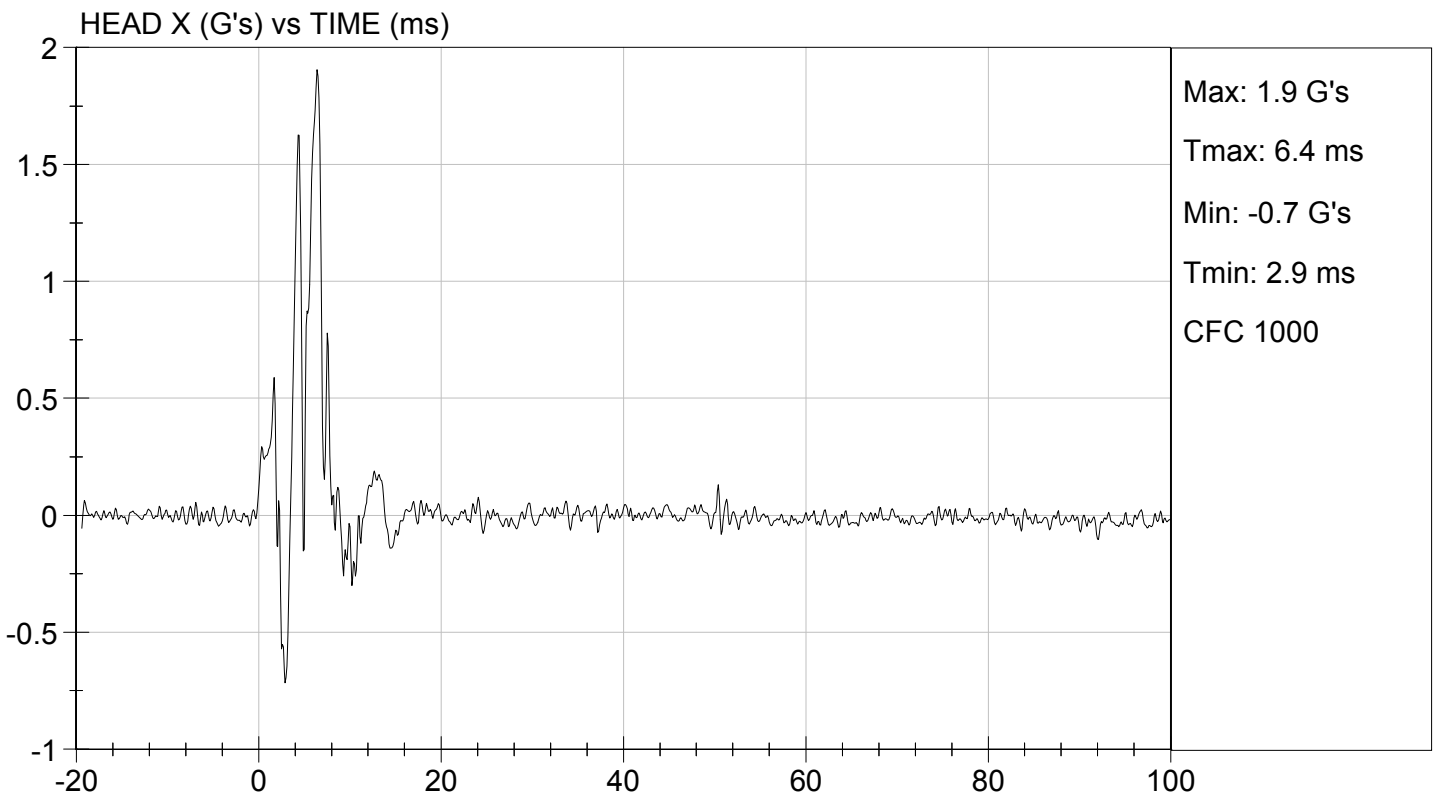
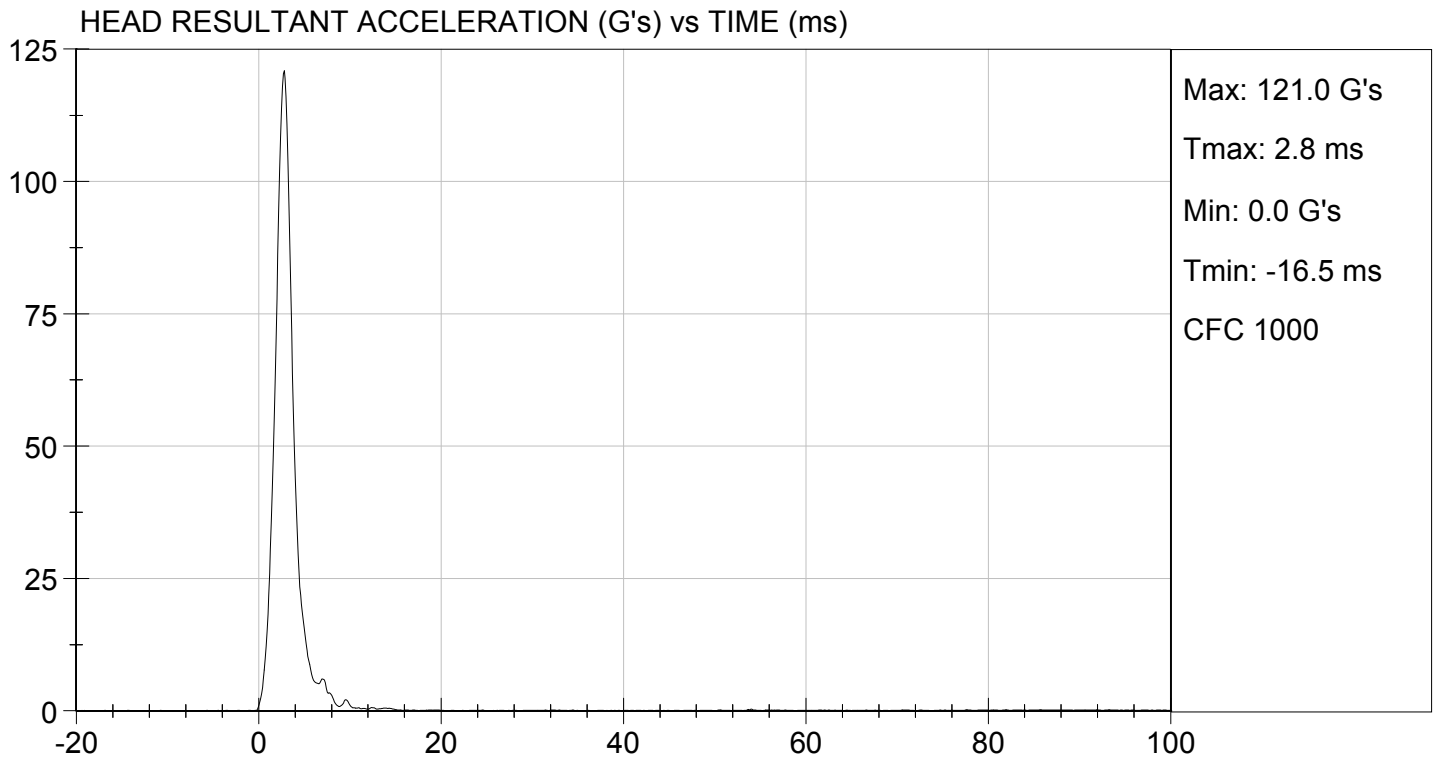
Test ID: D123981

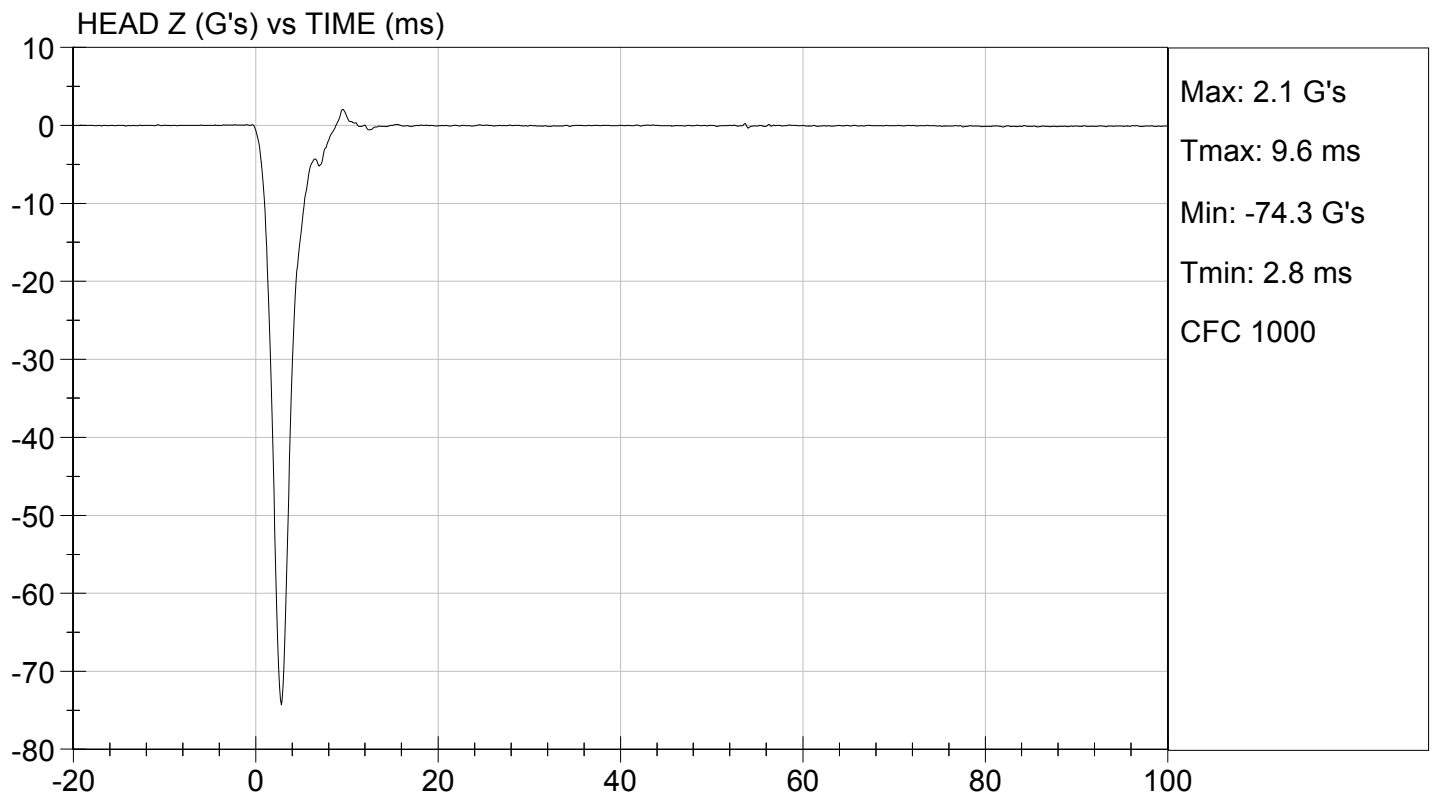
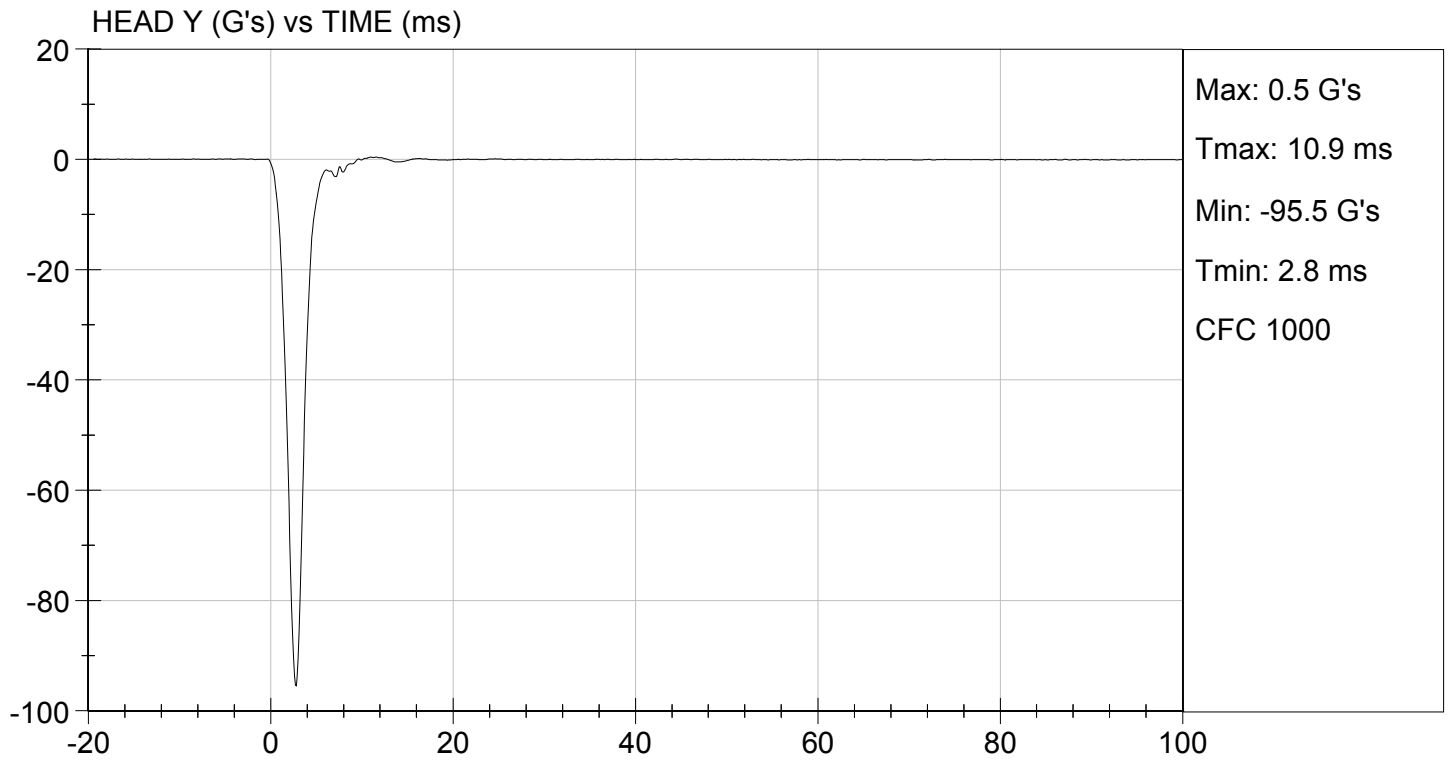
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Peak Resultant Acceleration	G's	115 to 137	121	Pass
Peak Longitudinal Acceleration	G's	+/- 15	1.9	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
			Overall Test Results	Pass


Laboratory Technician

10/18/2012
Test Date


Approved By





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

ATD Serial No: 306

Test I.D: D123982

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.8	Pass
Humidity		%	10 to 70	40	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.72	Pass
	15 ms	m/s	3.30 to 4.10	3.94	Pass
	20 ms	m/s	4.40 to 5.40	5.22	Pass
	25 ms	m/s	5.40 to 6.10	5.50	Pass
	25-100 ms	m/s	5.50 to 6.20	5.51	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	59	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-42	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	113	Pass
Overall Test Results					Pass


 Laboratory Technician

10/18/2012

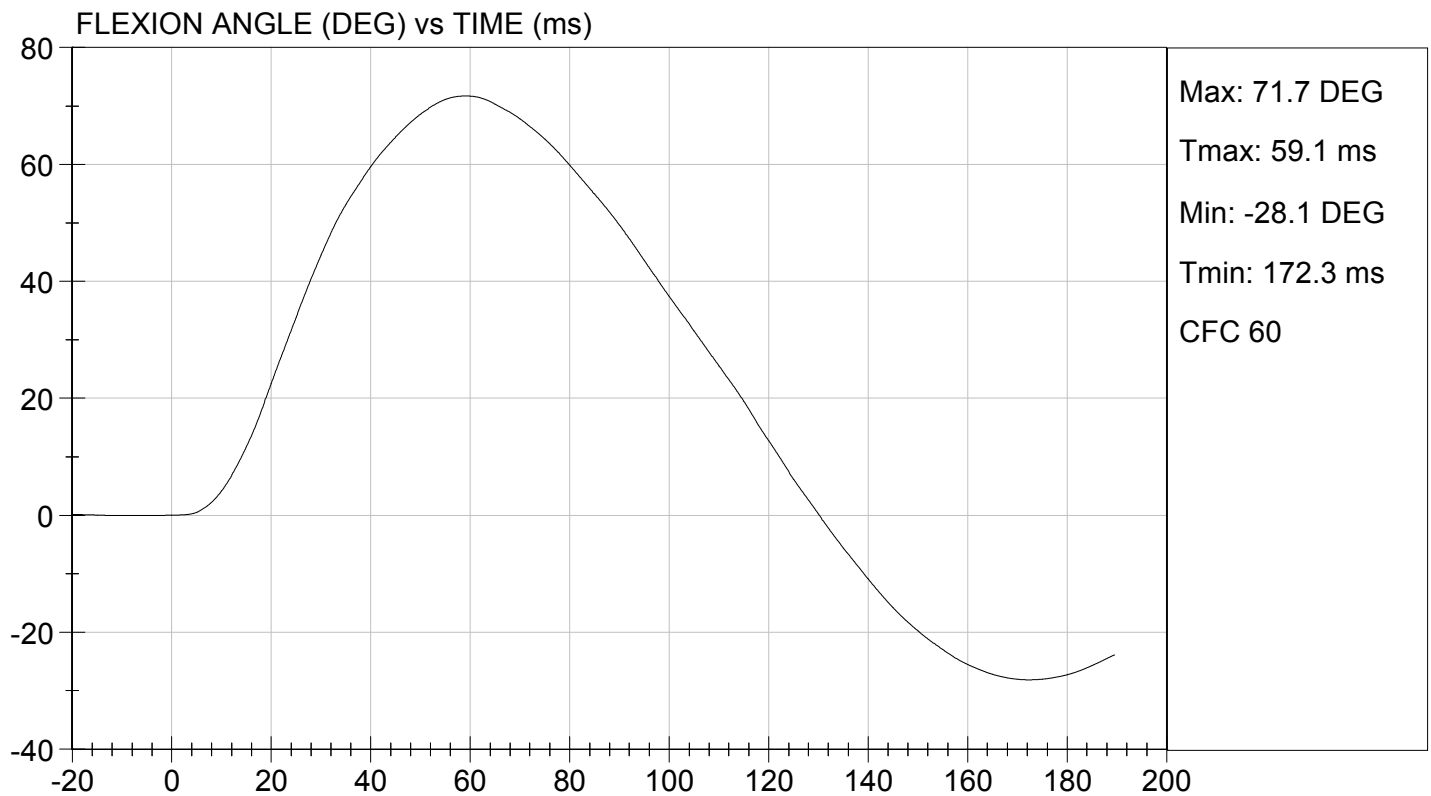
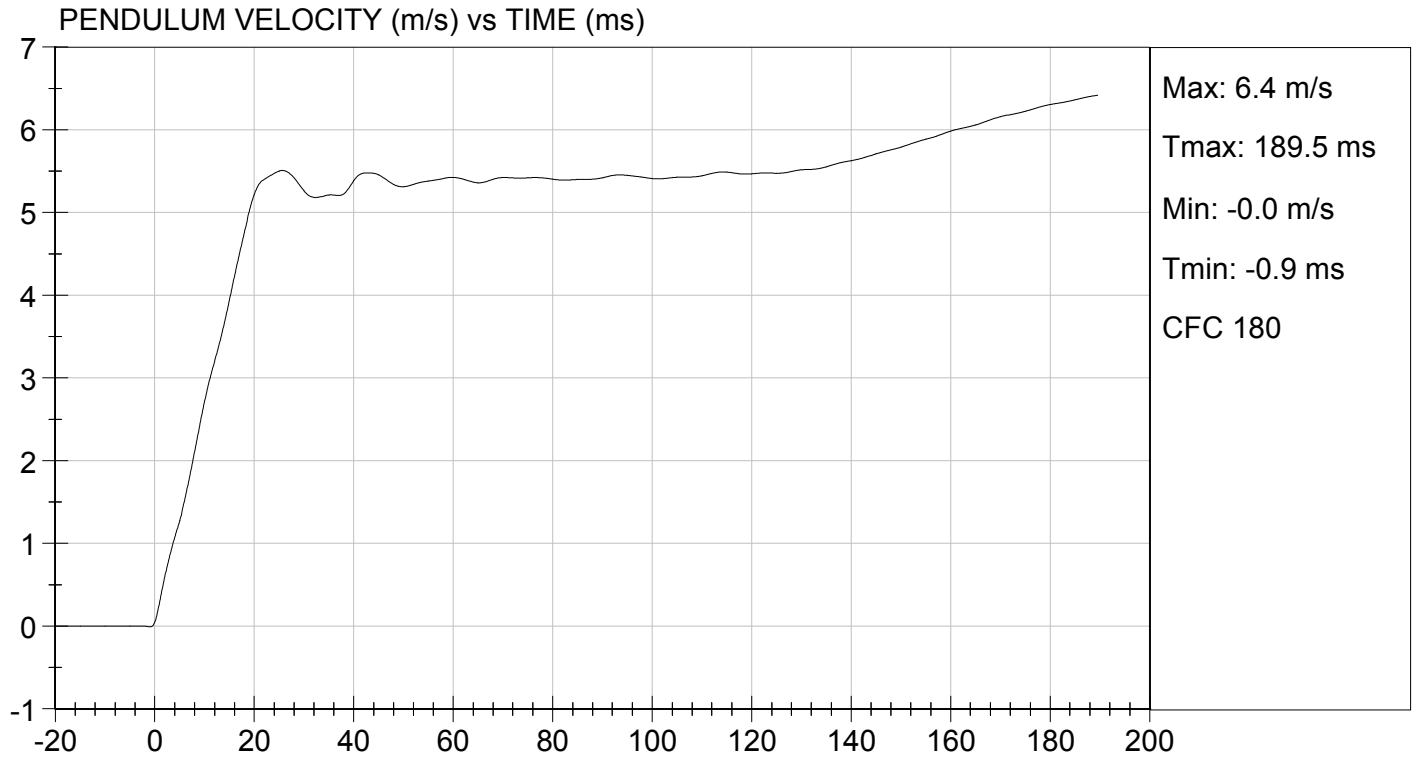
Test Date


 Approved By



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

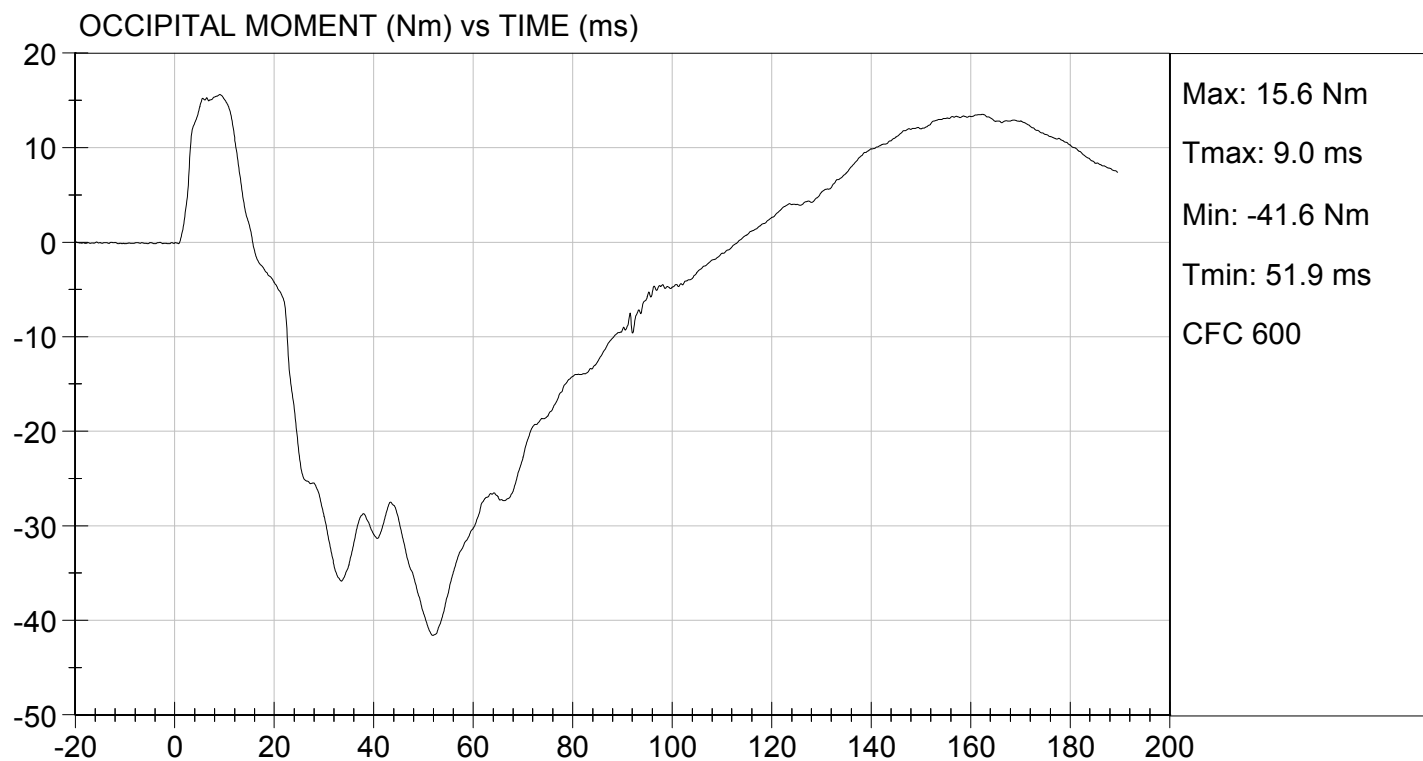
TEST DATE: 10/18/2012
TEST #: D123982





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

TEST DATE: 10/18/2012
TEST #: D123982

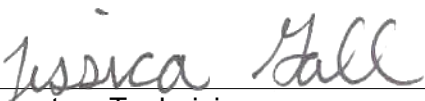


MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test ID: D123983

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	39	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	30	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
			Overall Test Results	Pass


Laboratory Technician

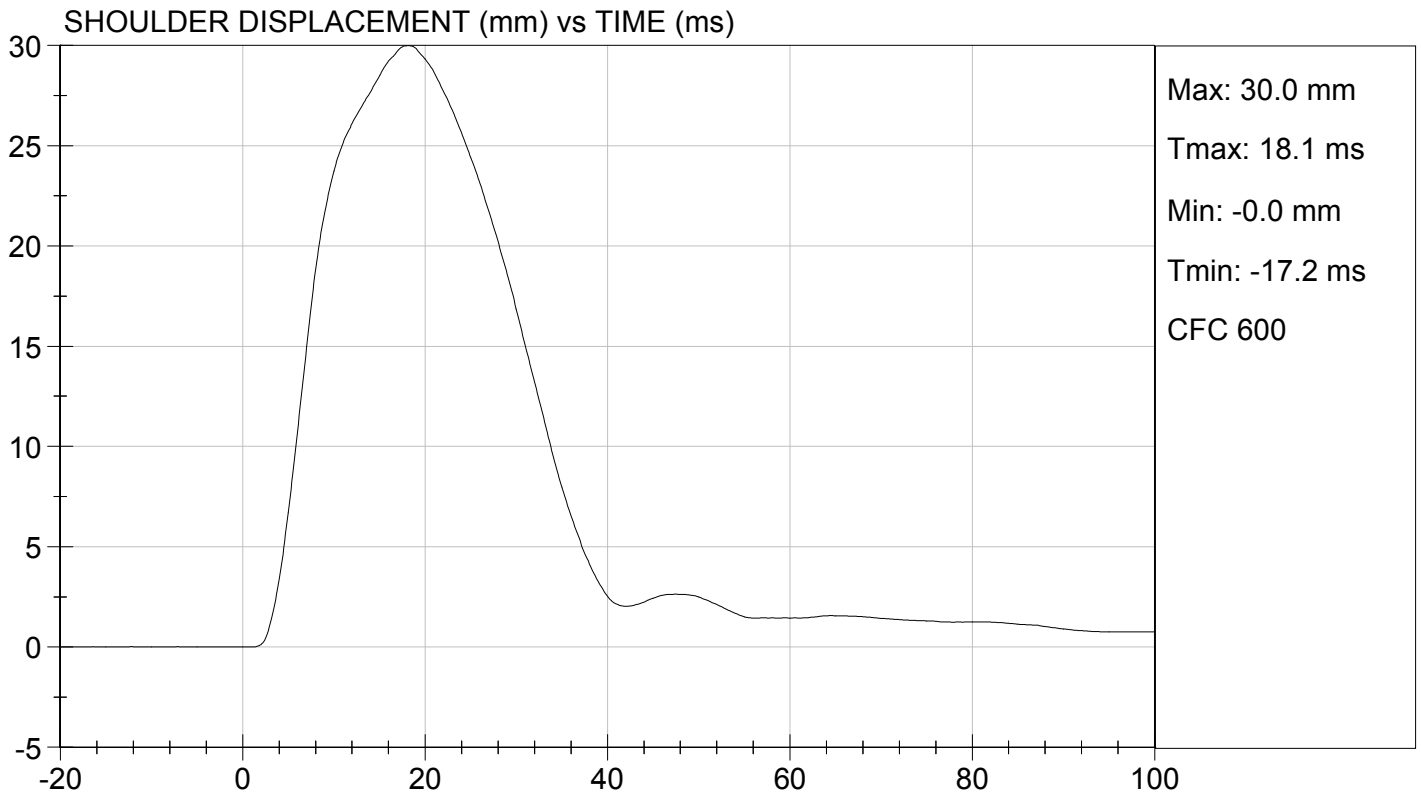
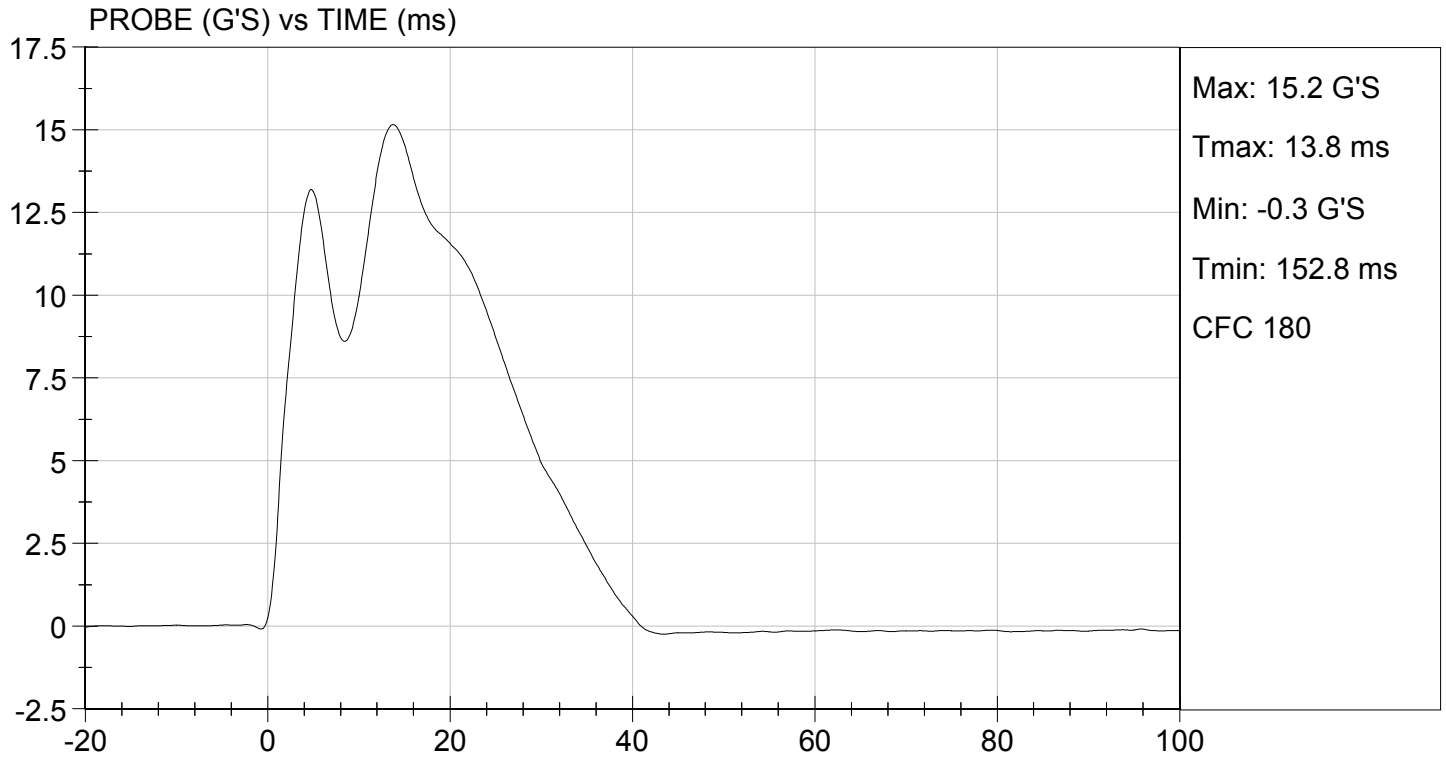
10/18/2012
Test Date


Approved By



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

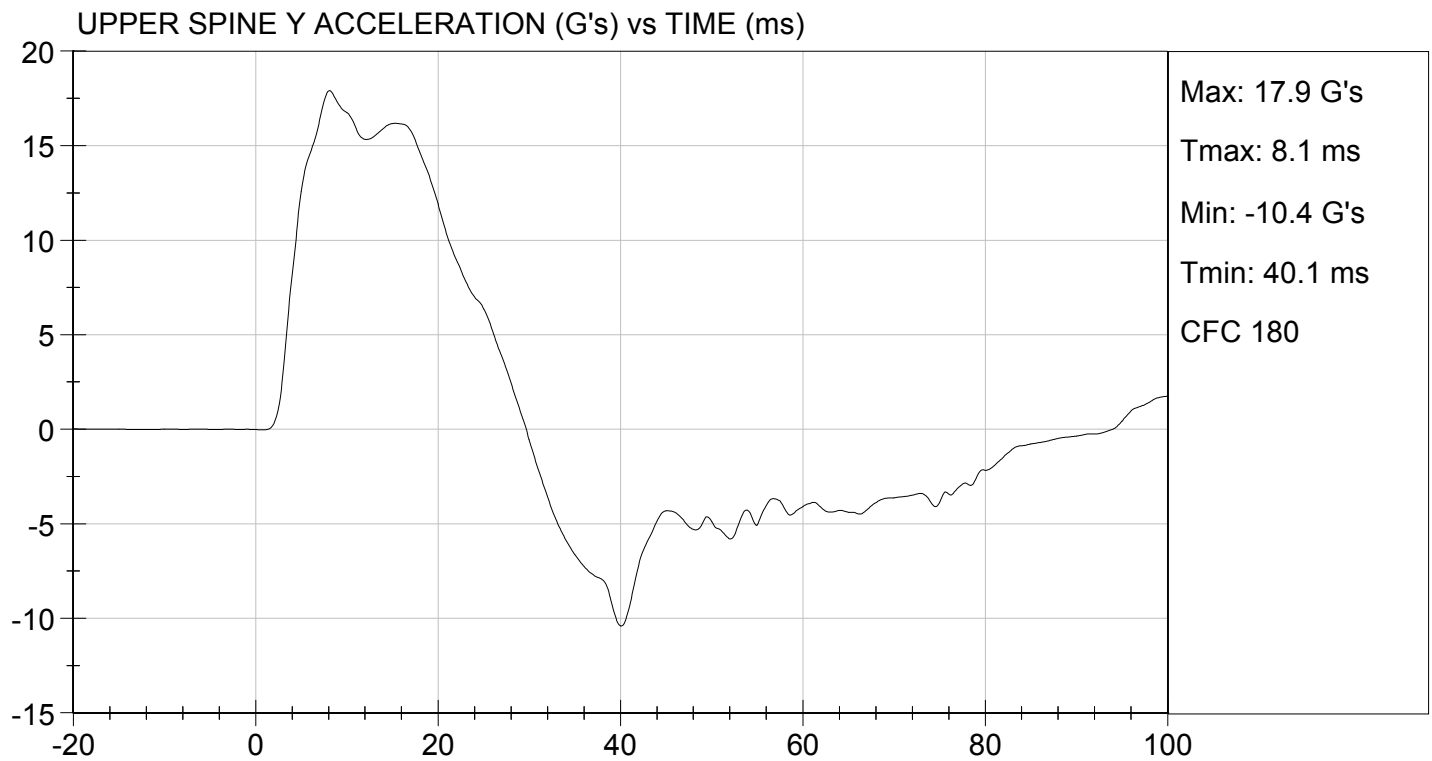
TEST DATE: 10/18/2012
TEST #: D123983





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

TEST DATE: 10/18/2012
TEST #: D123983

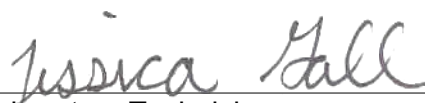


MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123984

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	39	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	33	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	30	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	39	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	30	Pass
Overall Test Results				Pass


 Laboratory Technician

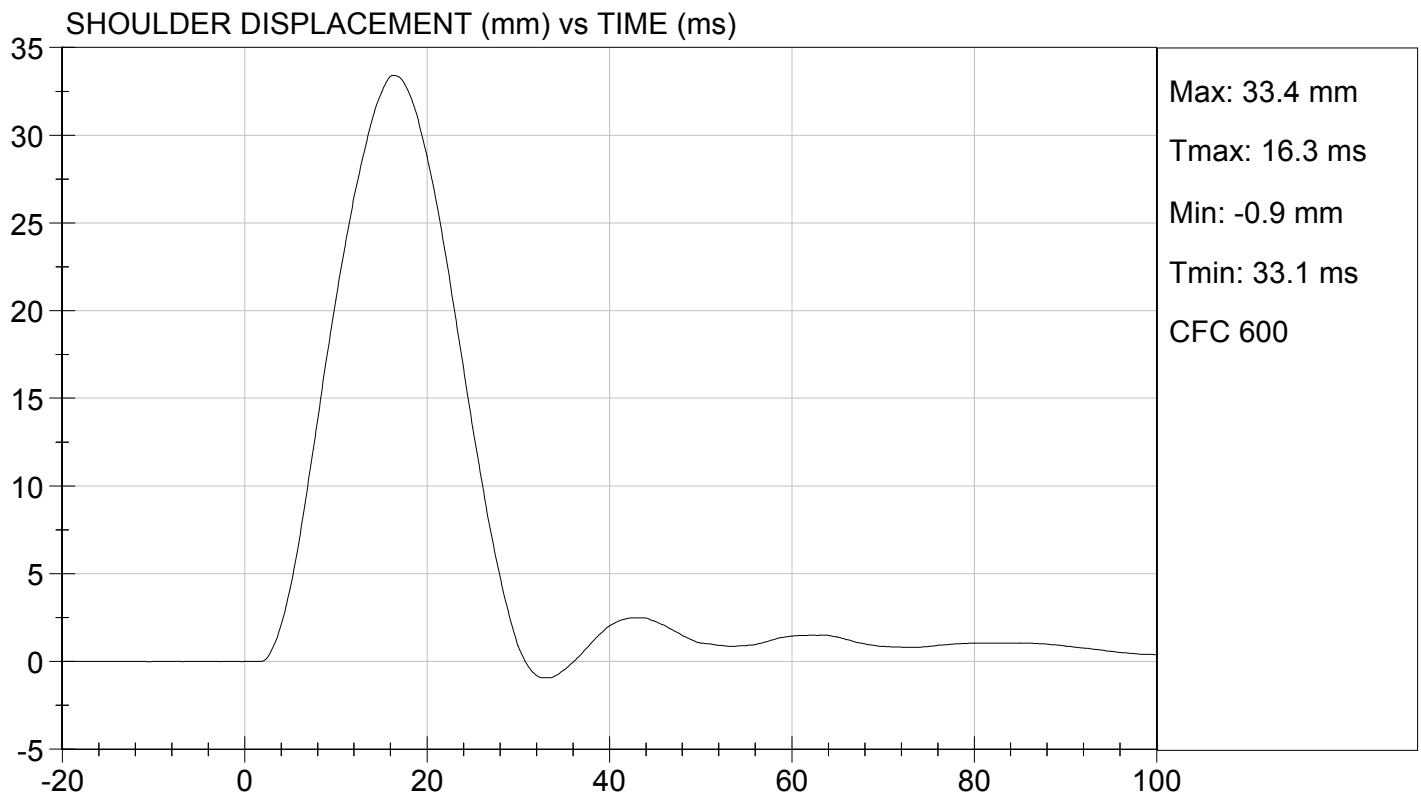
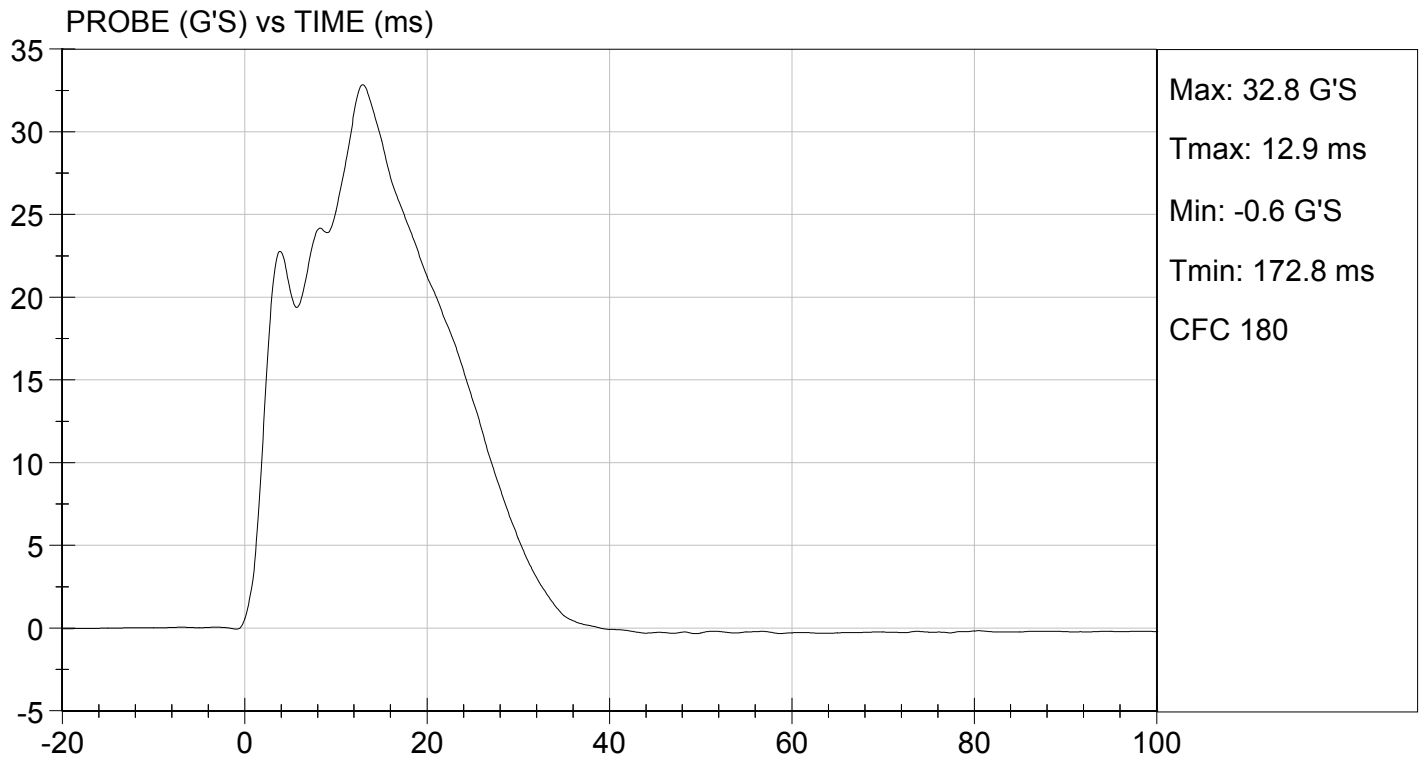
10/18/2012
 Test Date


 Approved By



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

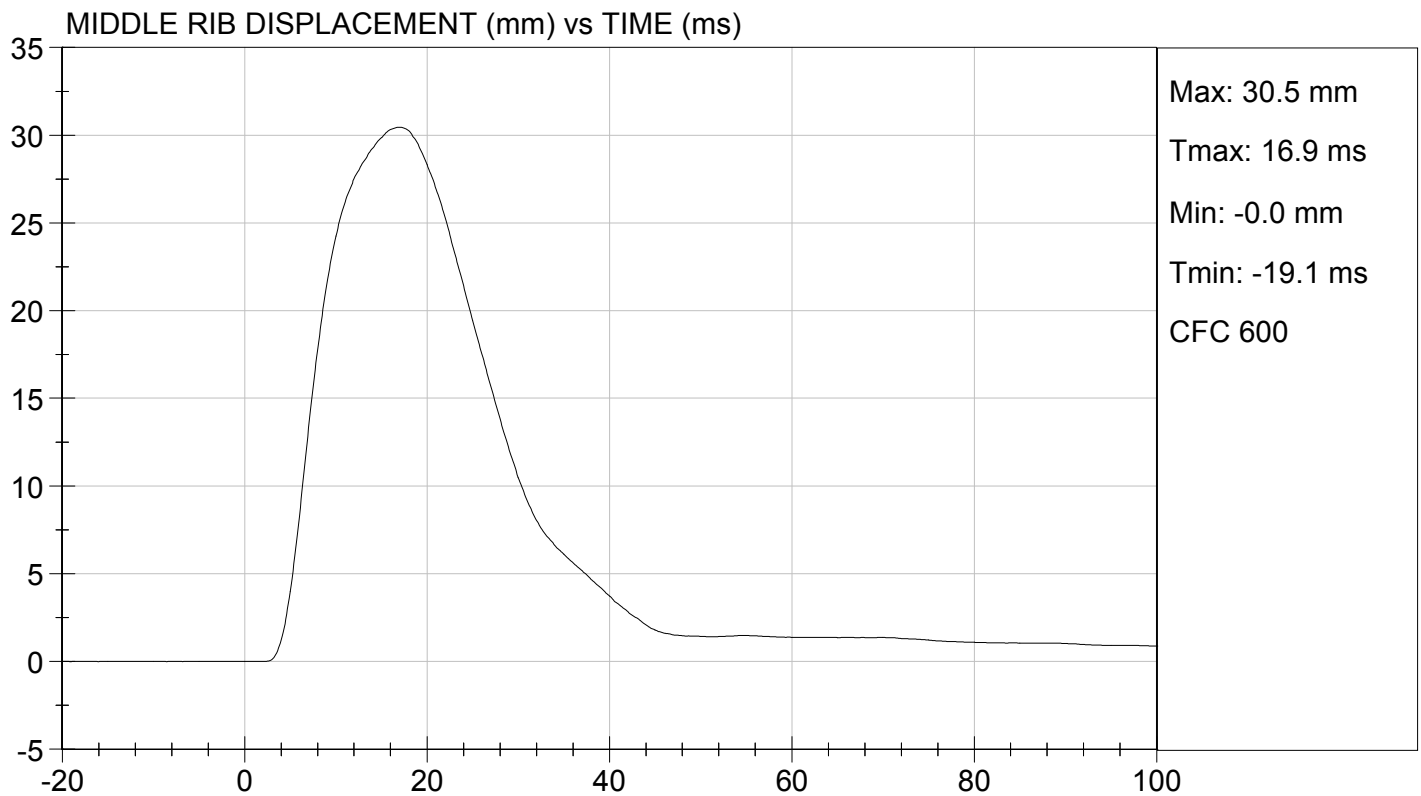
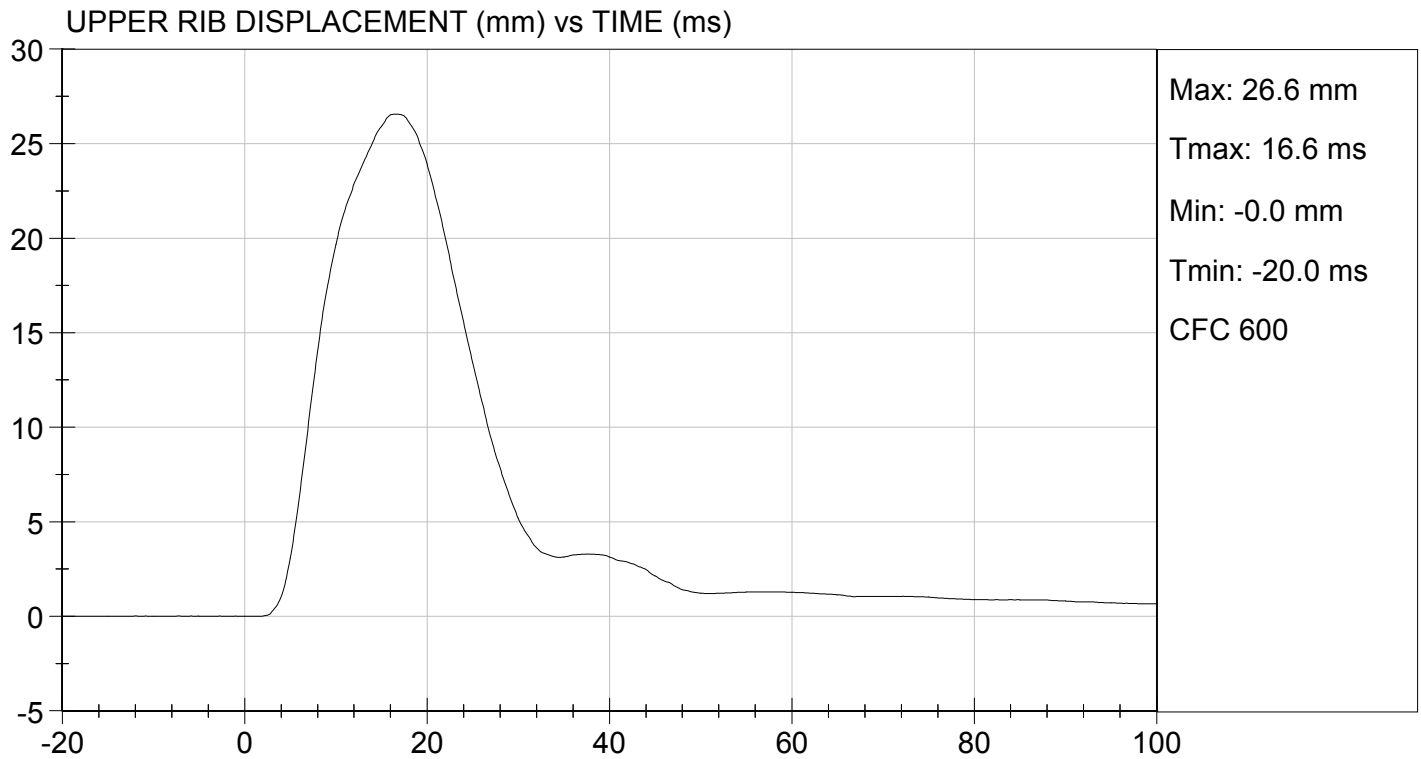
TEST DATE: 10/18/2012
TEST #: D123984





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

TEST DATE: 10/18/2012
TEST #: D123984

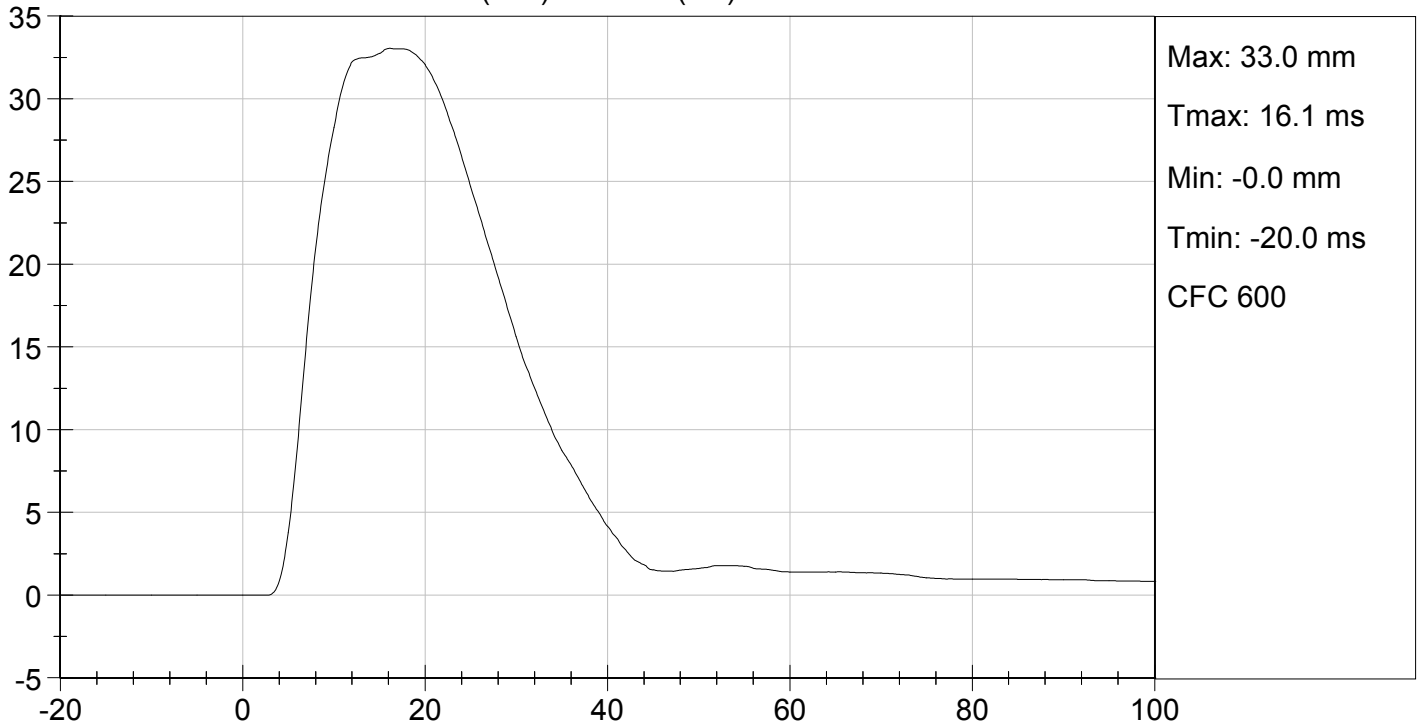




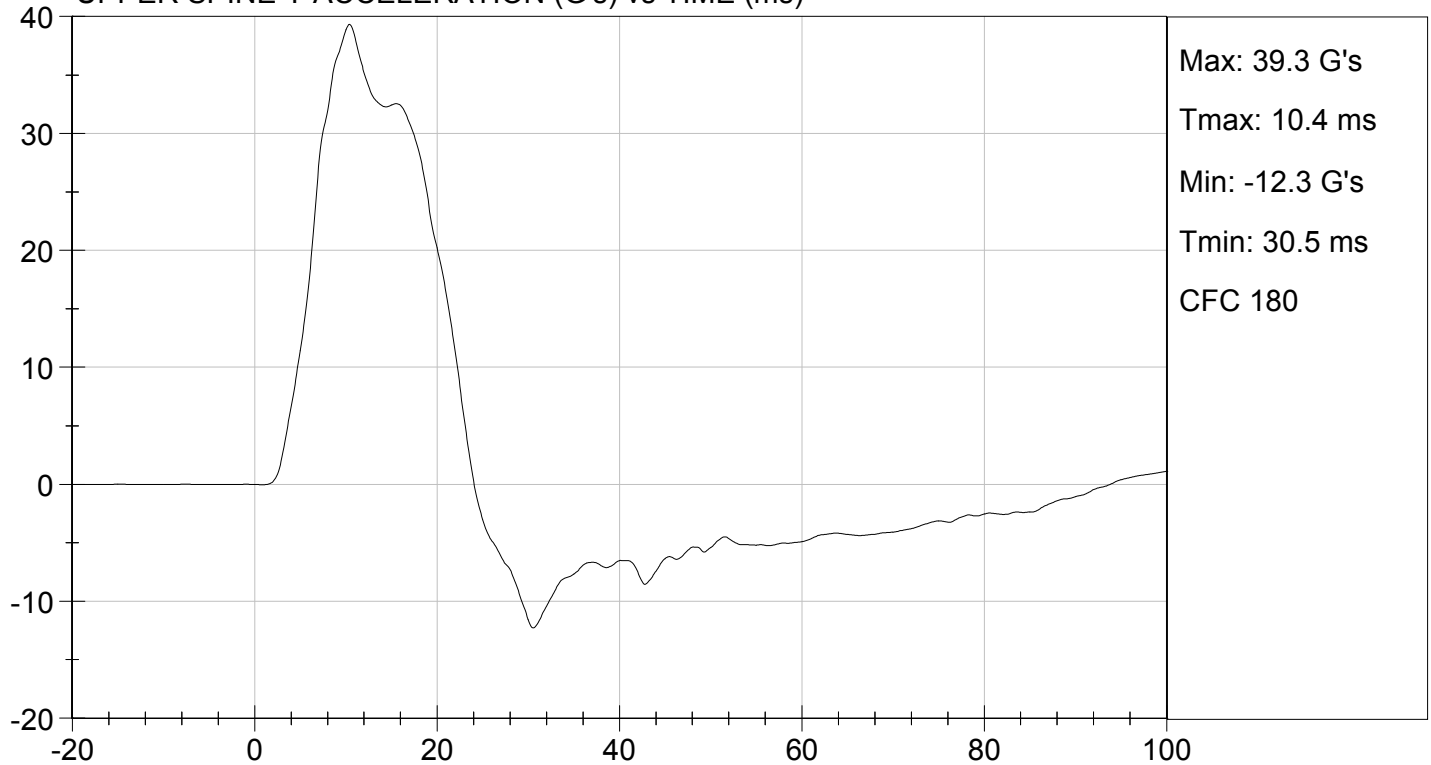
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 10/18/2012
TEST #: D123984

LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



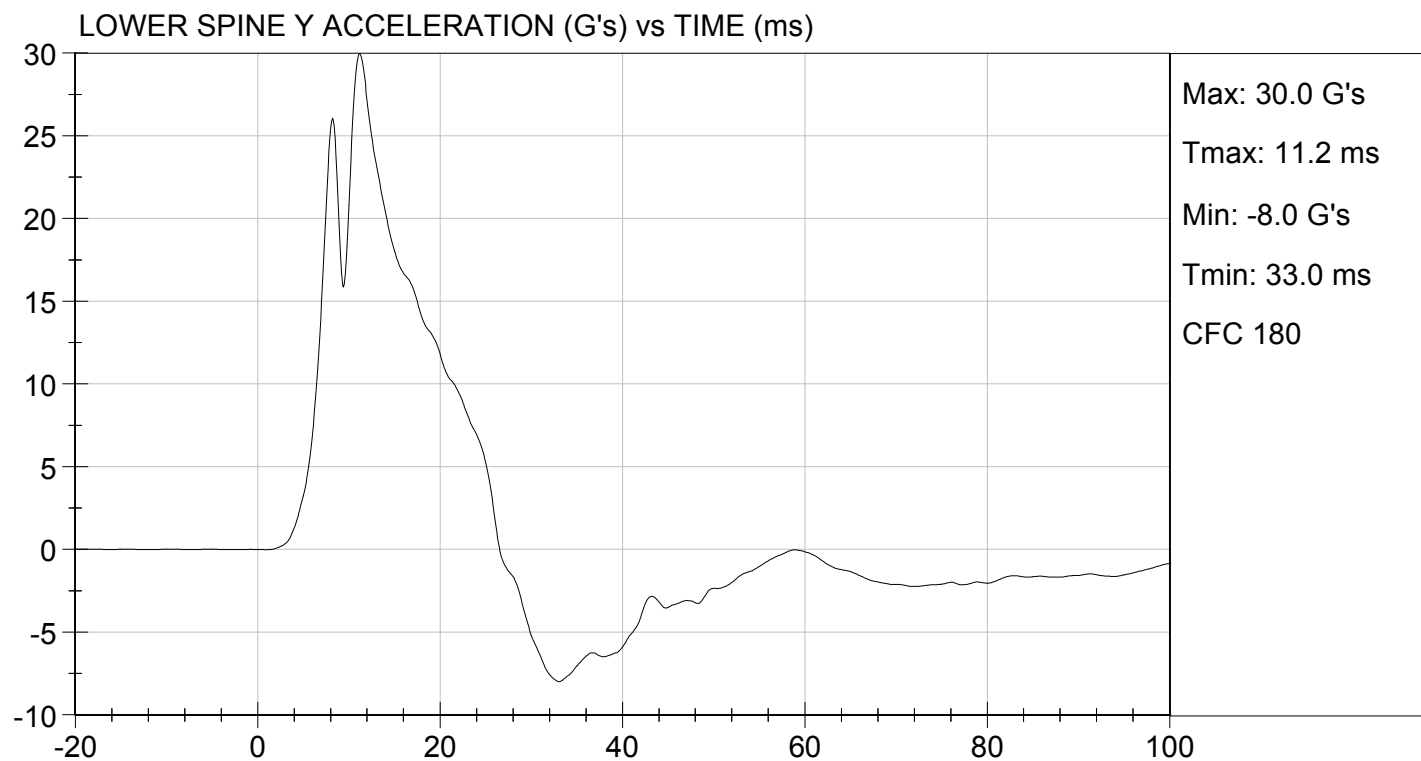
UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)





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

TEST DATE: 10/18/2012
TEST #: D123984

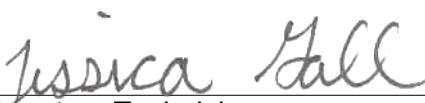


MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123985

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	39	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	36	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	39	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	8	Pass
Overall Test Results				Pass


Laboratory Technician

10/18/2012

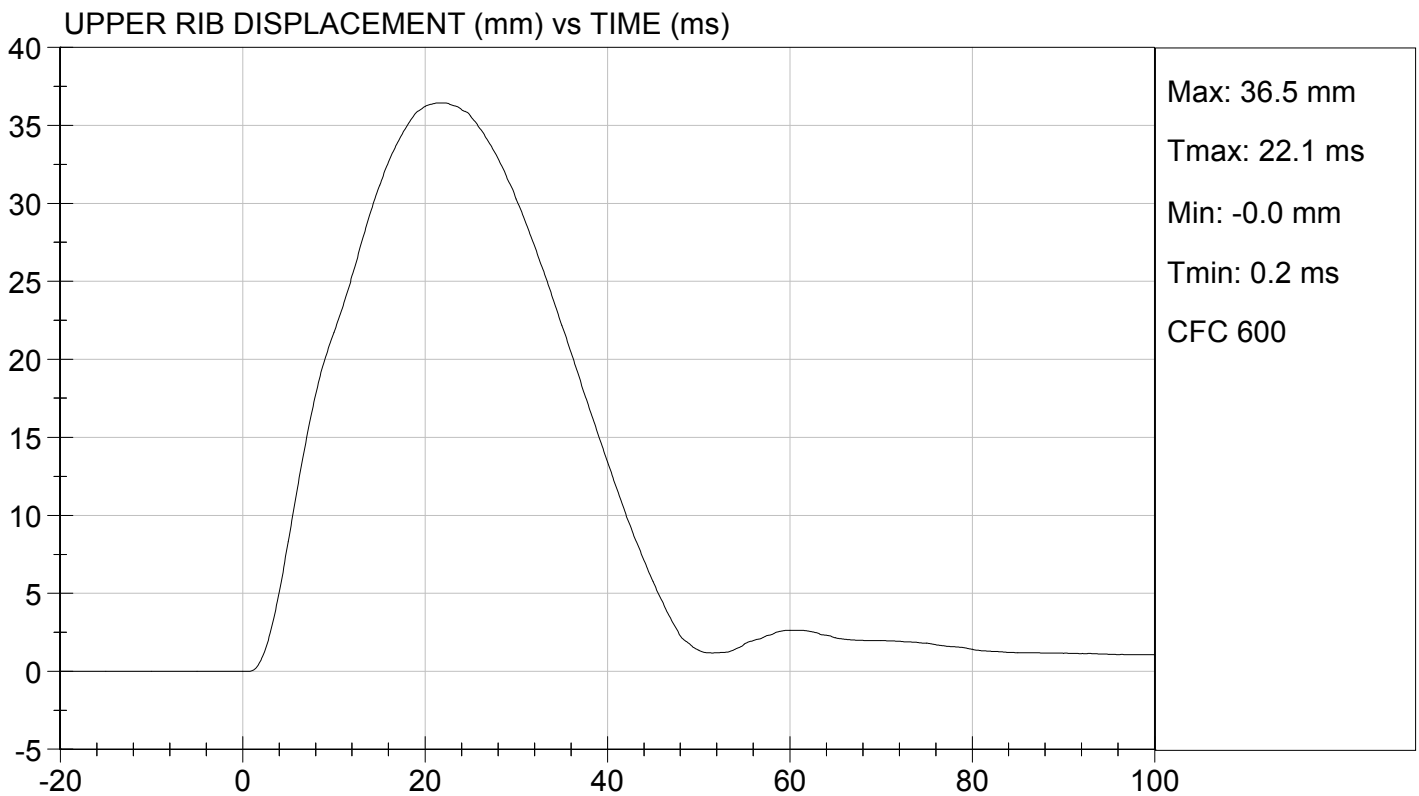
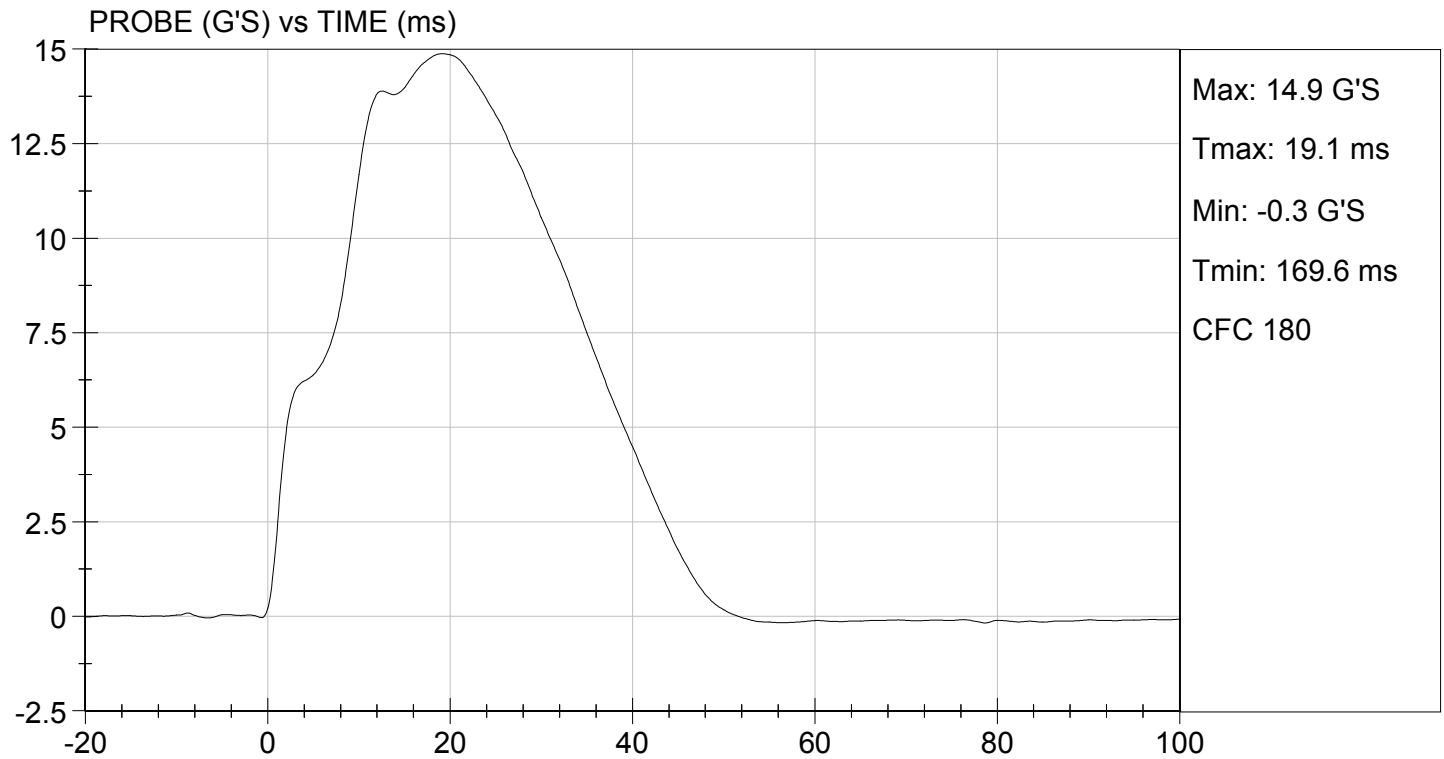
Test Date


Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

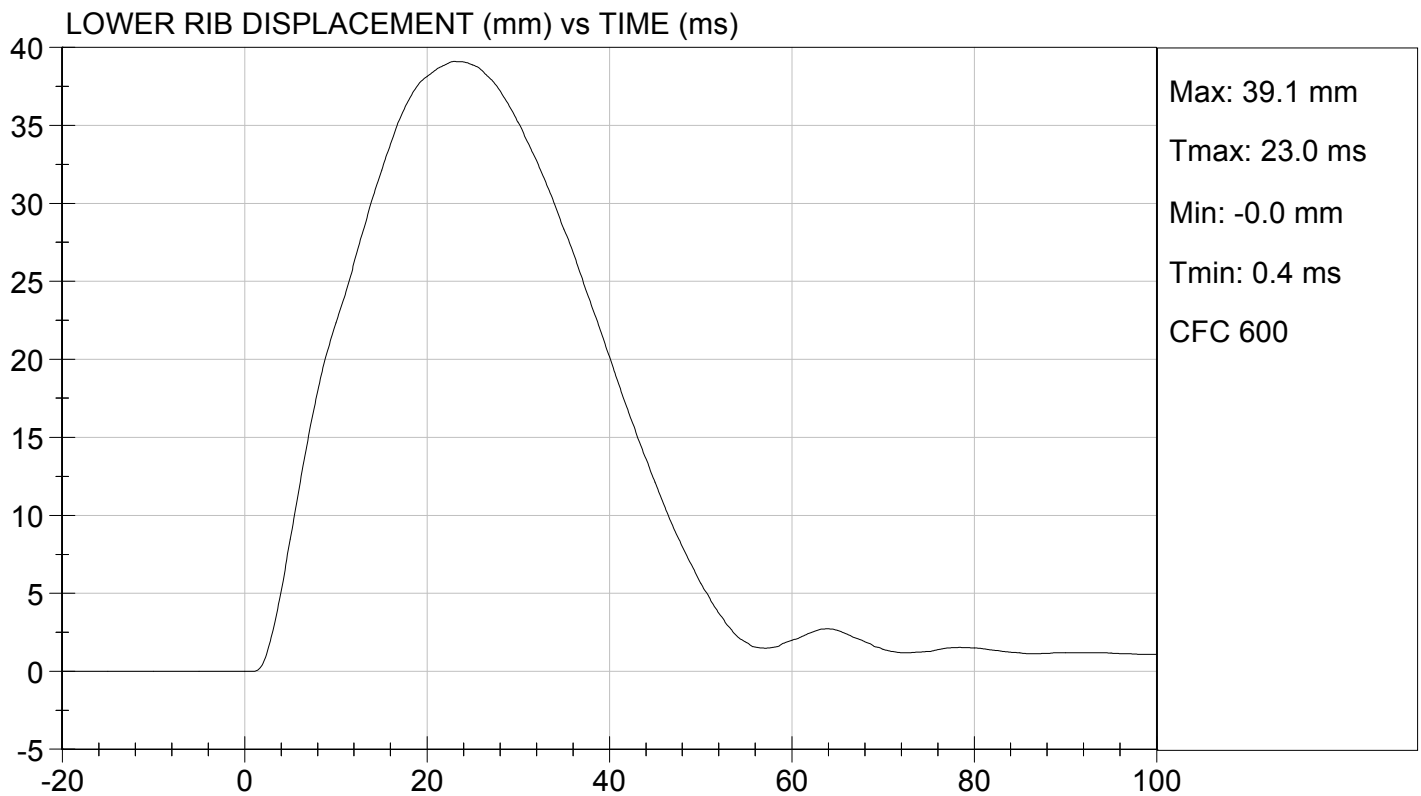
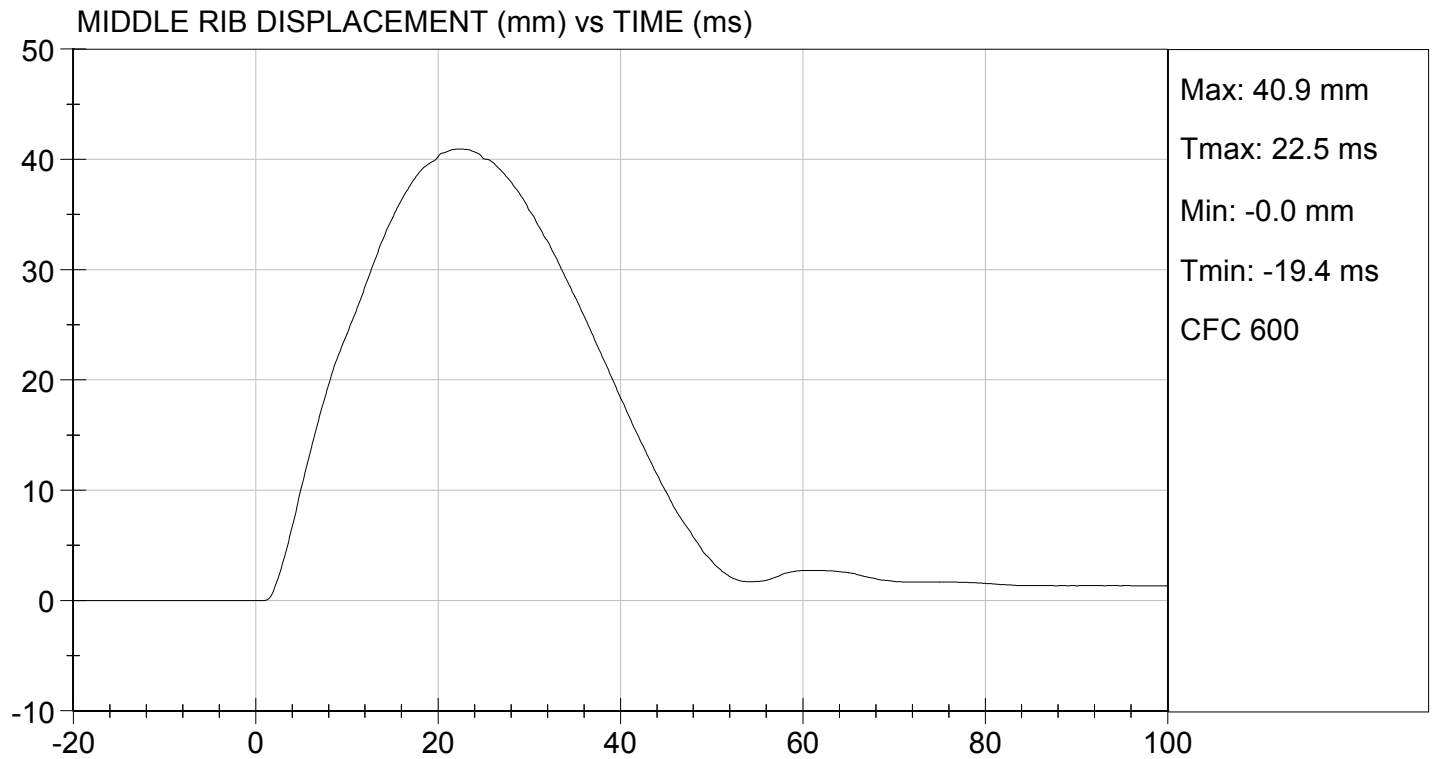
TEST DATE: 10/18/2012
TEST #: D123985





TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 10/18/2012
TEST #: D123985

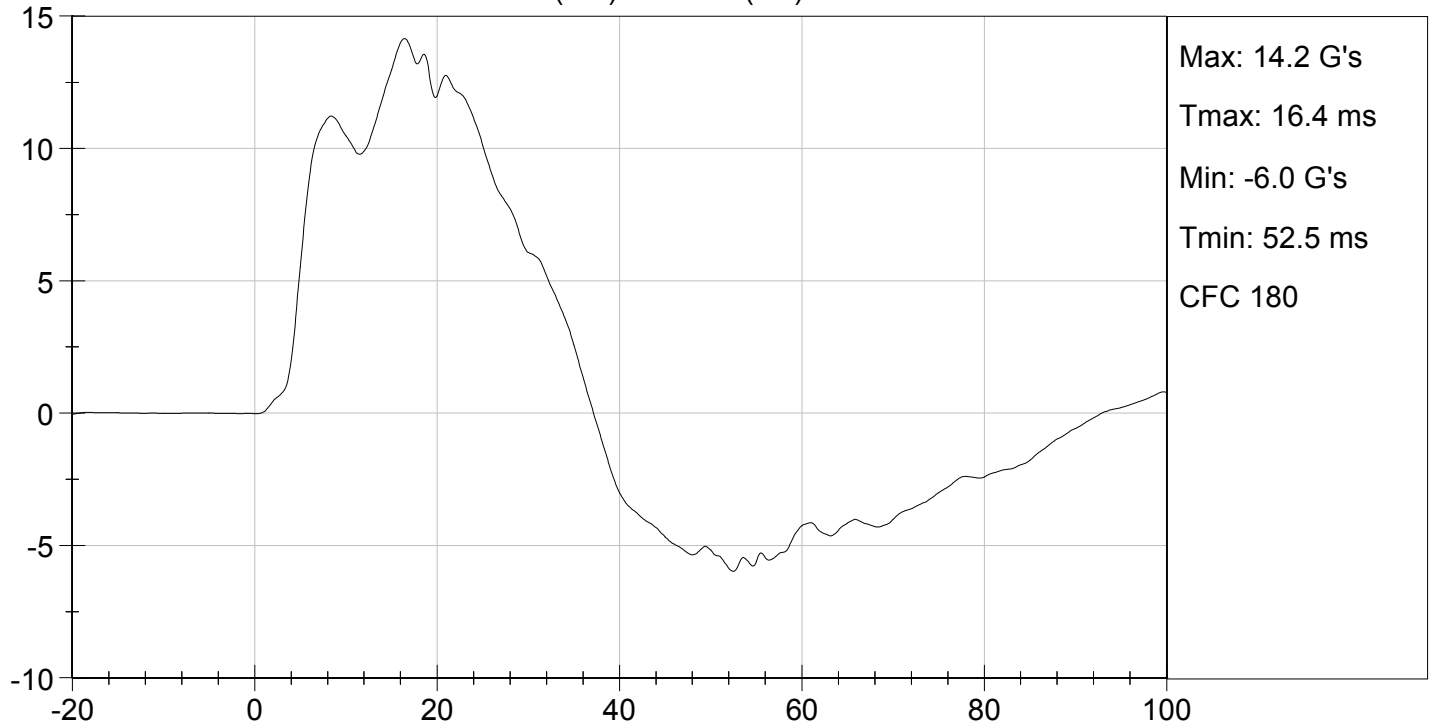




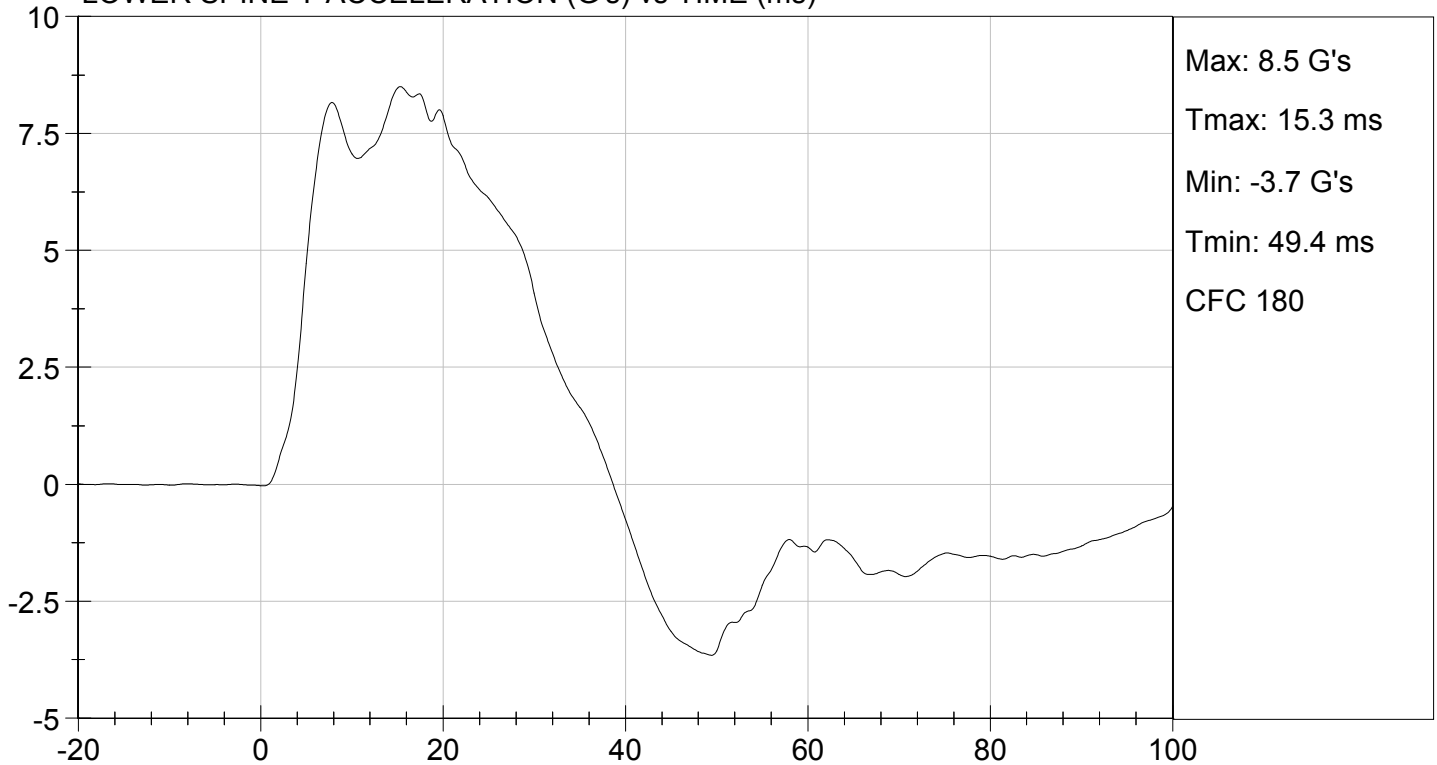
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 10/18/2012
TEST #: D123985

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



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



MGA RESEARCH CORPORATION

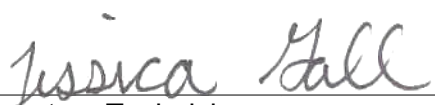
ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123986

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	39	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	34	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass


Laboratory Technician

10/18/2012

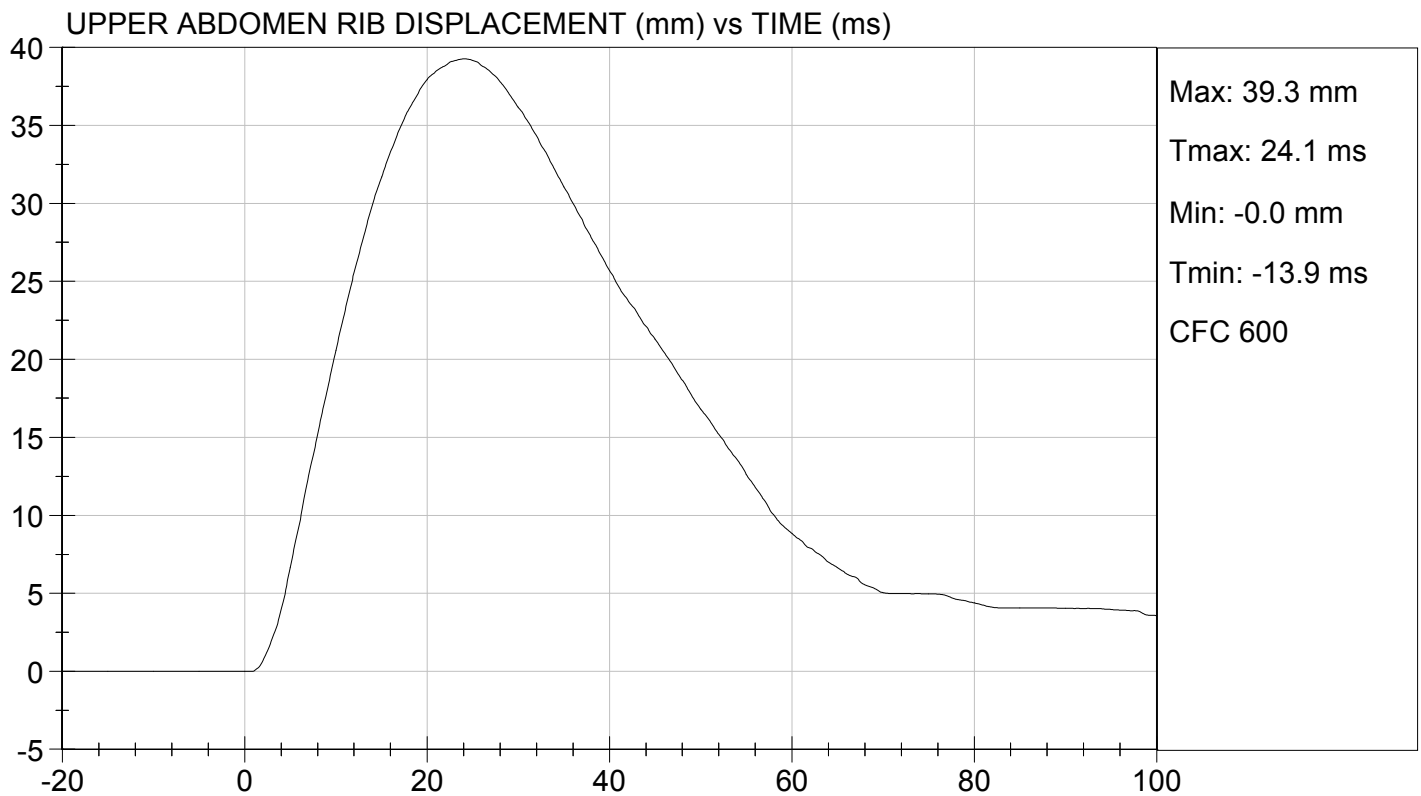
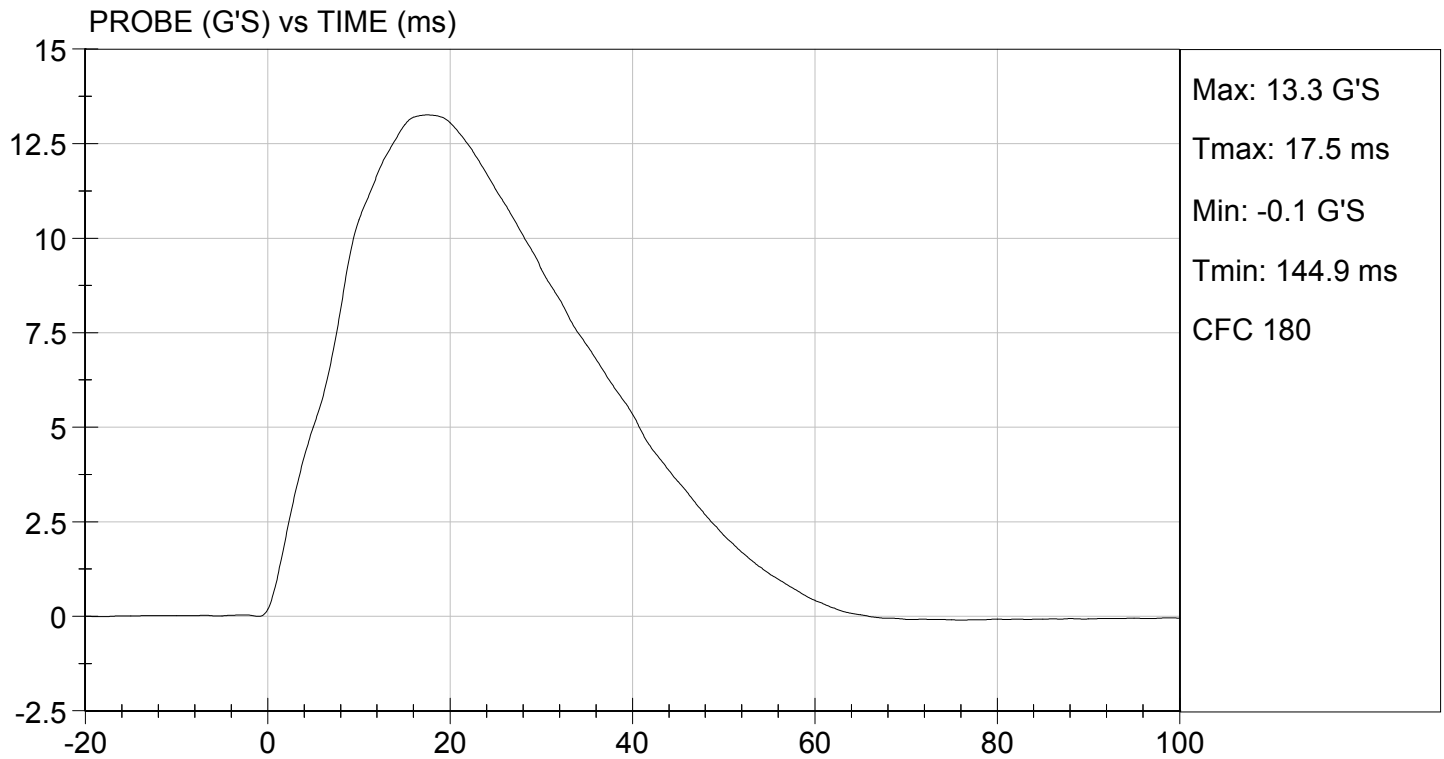
Test Date


Approved By



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

TEST DATE: 10/18/2012
TEST #: D123986

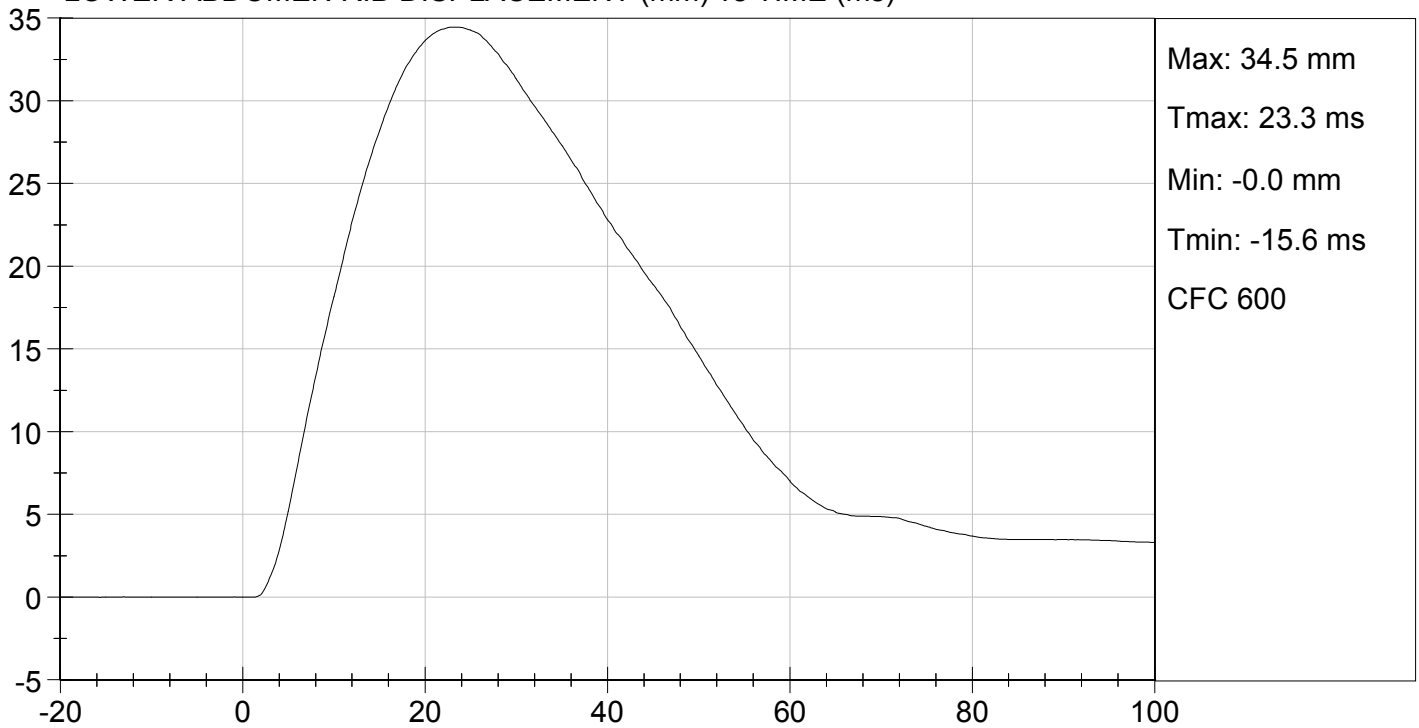




TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 10/18/2012
TEST #: D123986

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: 306

Test I.D: D123987

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	39	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	43	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	3,730	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

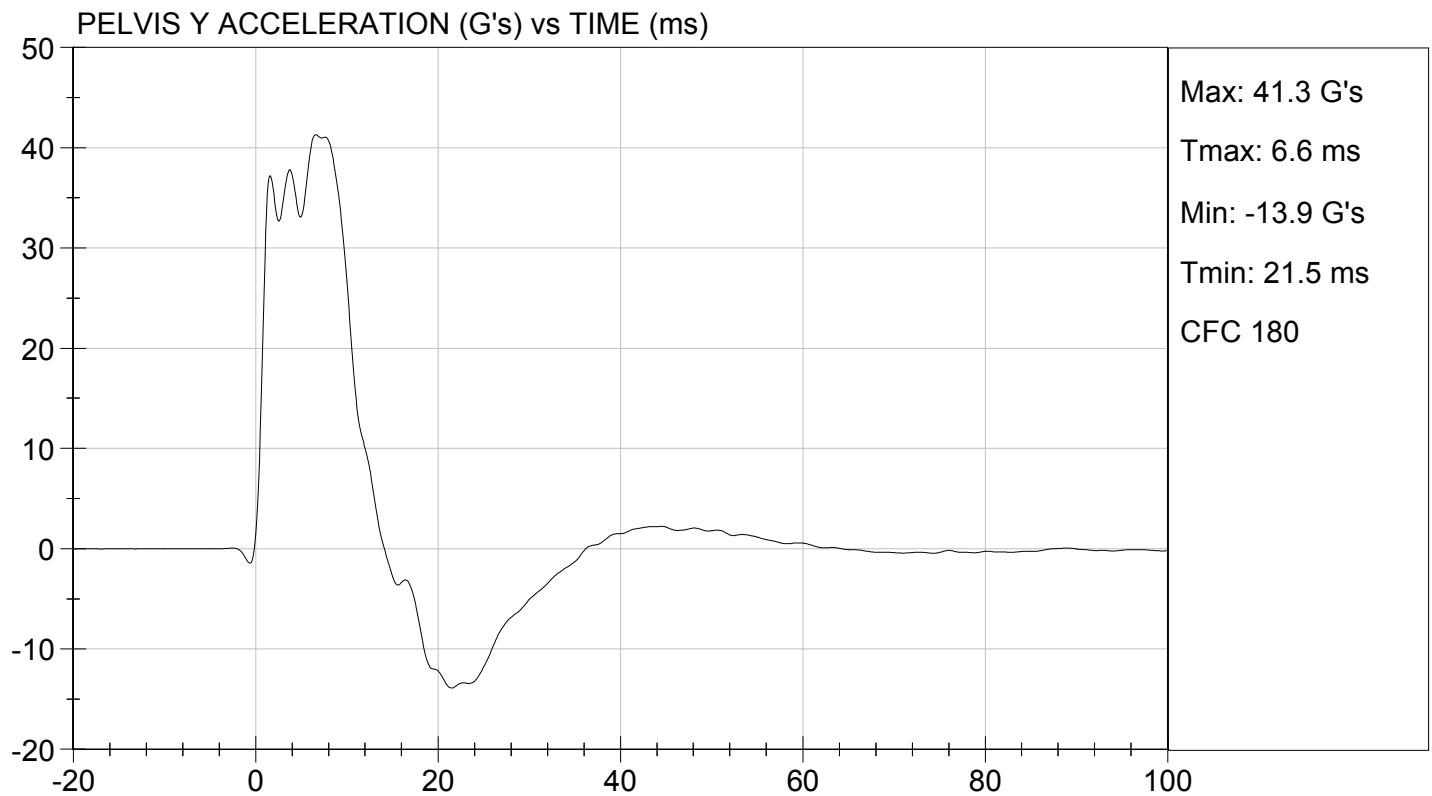
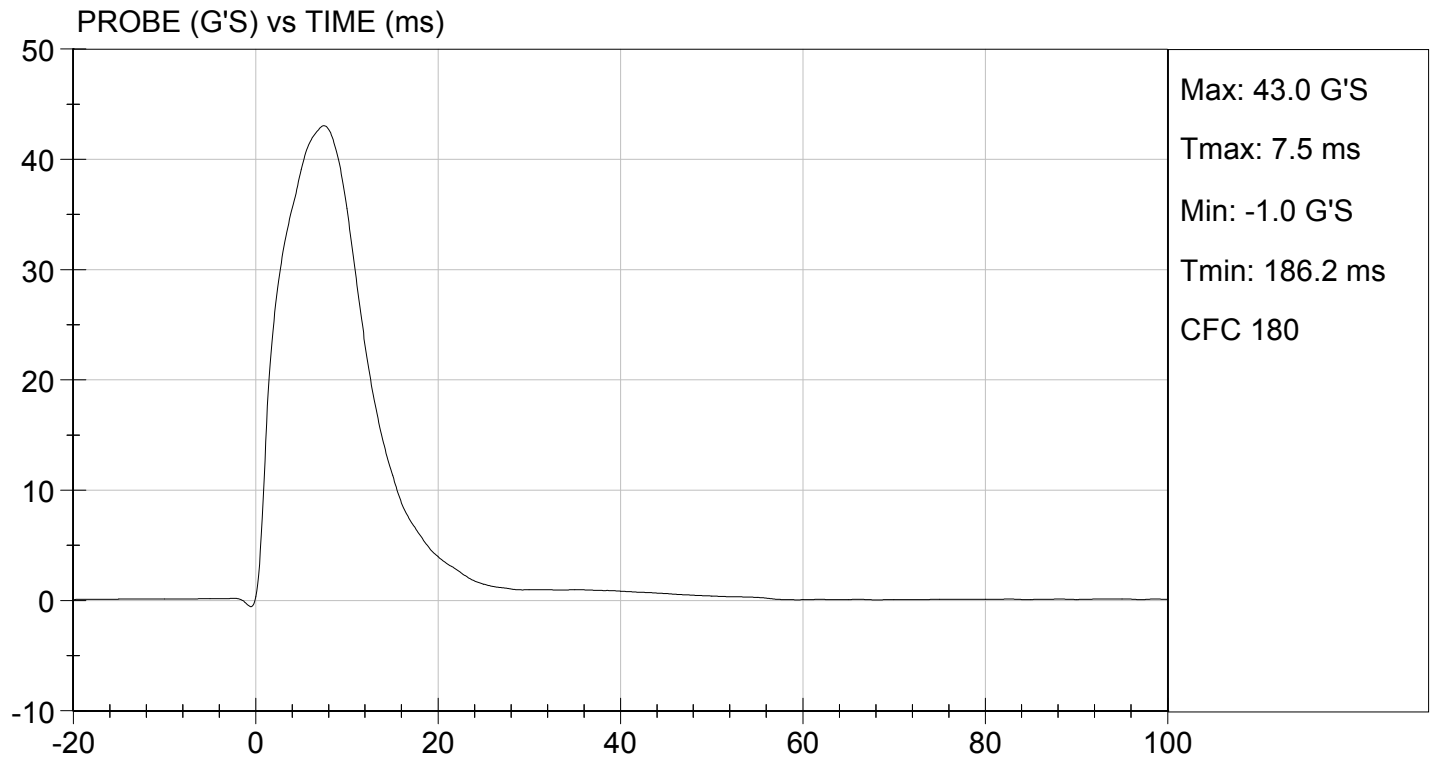
10/18/2012
Test Date

David Winkelbauer
Approved By



TEST DESC: PELVIS IMPACT
VELOCITY: 21.9 ft/s, 6.68 m/s

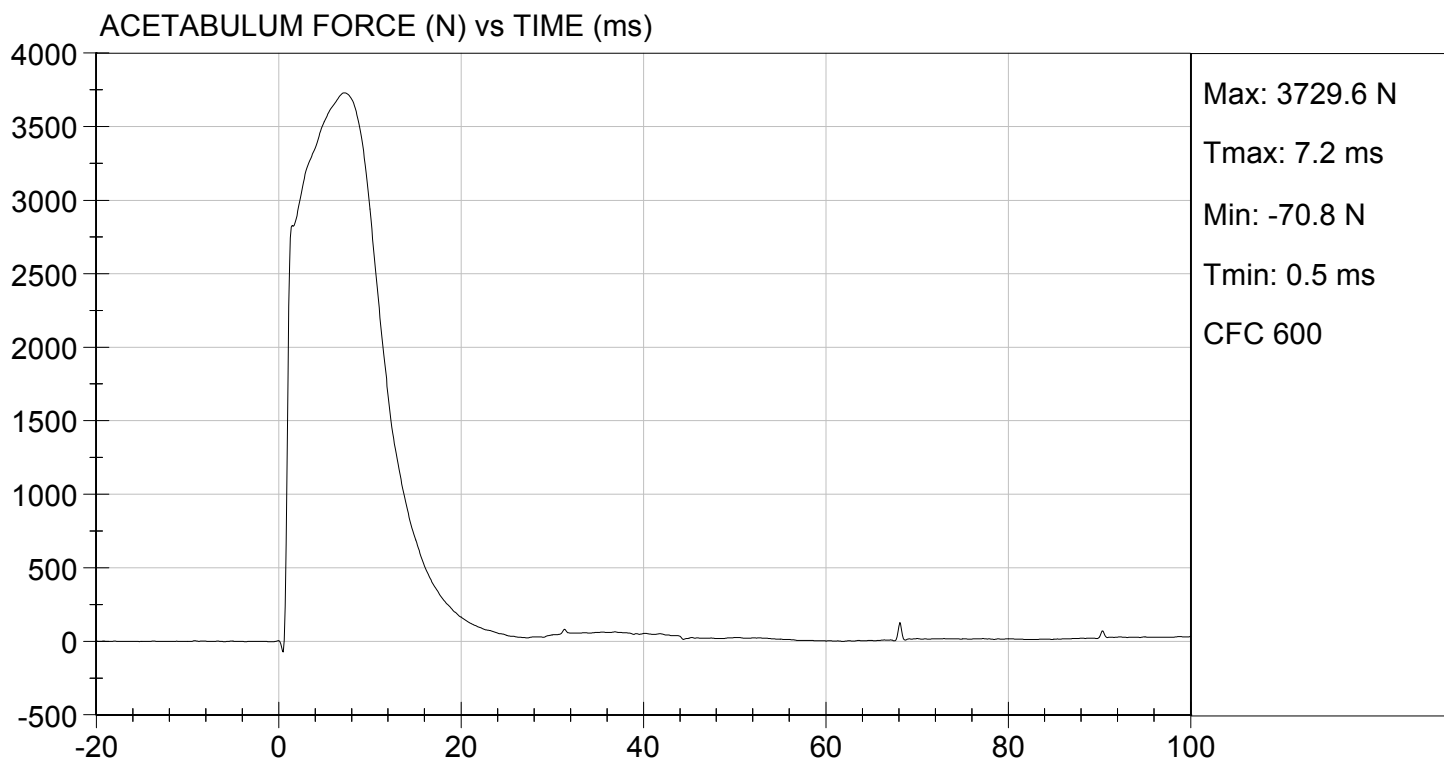
TEST DATE: 10/18/2012
TEST #: D123987





TEST DESC: PELVIS IMPACT
VELOCITY: 21.9 ft/s, 6.68 m/s

TEST DATE: 10/18/2012
TEST #: D123987



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306

Test I.D: D123988

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	39	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	39	Pass
Pelvis Y Acceleration	G's	28 to 39	34	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,728	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

10/18/2012

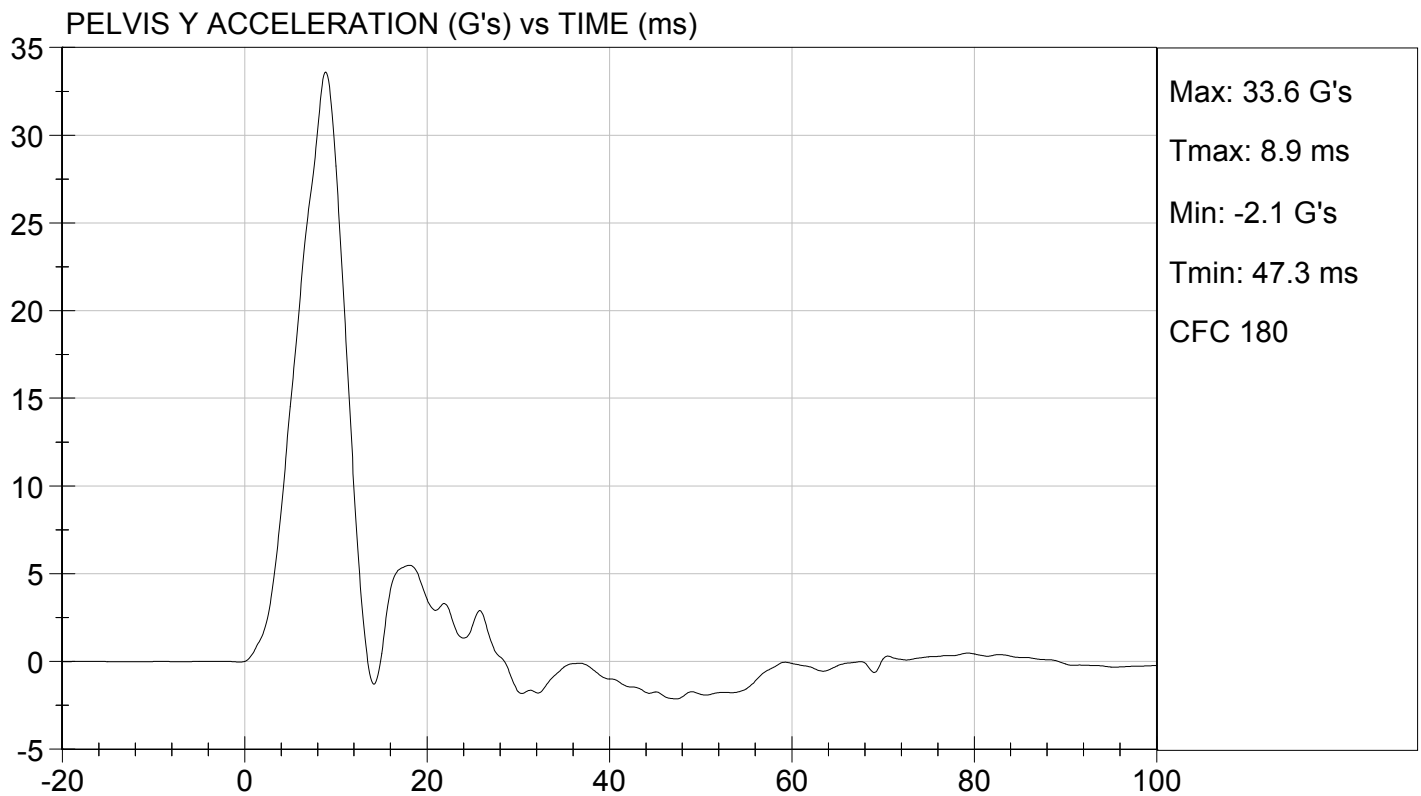
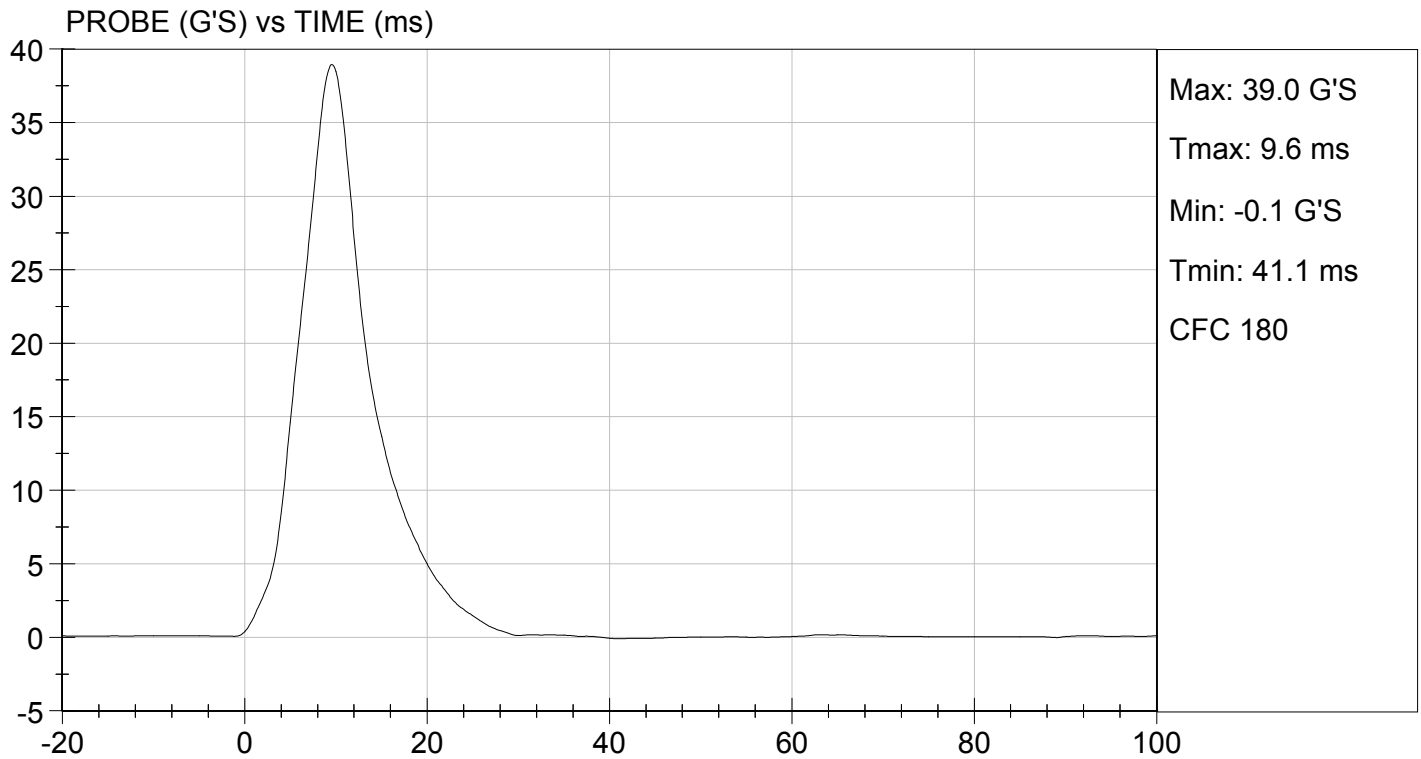
Test Date

David Winkelbauer
Approved By



TEST DESC: ILLIAC
VELOCITY: 13.89 ft/s, 4.23 m/s

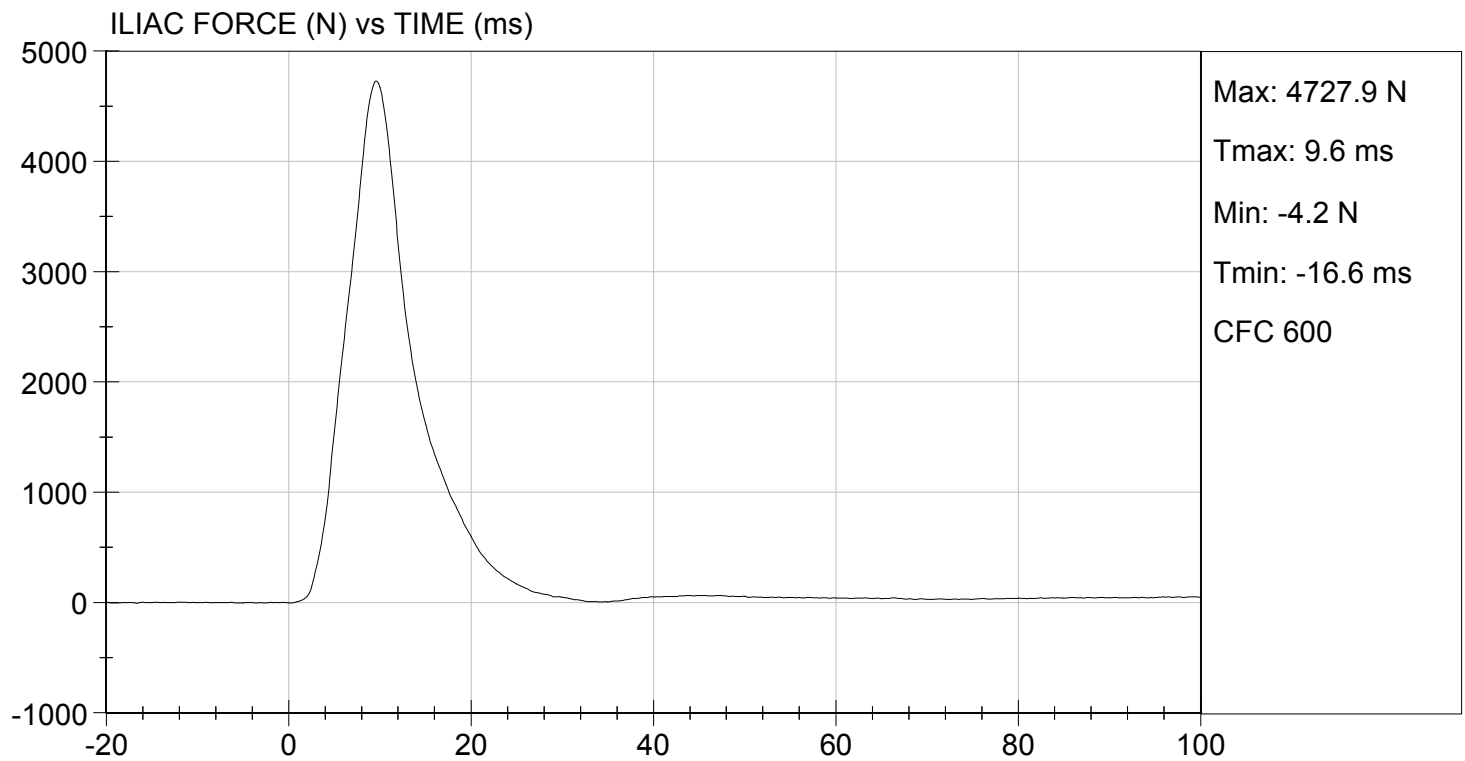
TEST DATE: 10/18/2012
TEST #: D123988



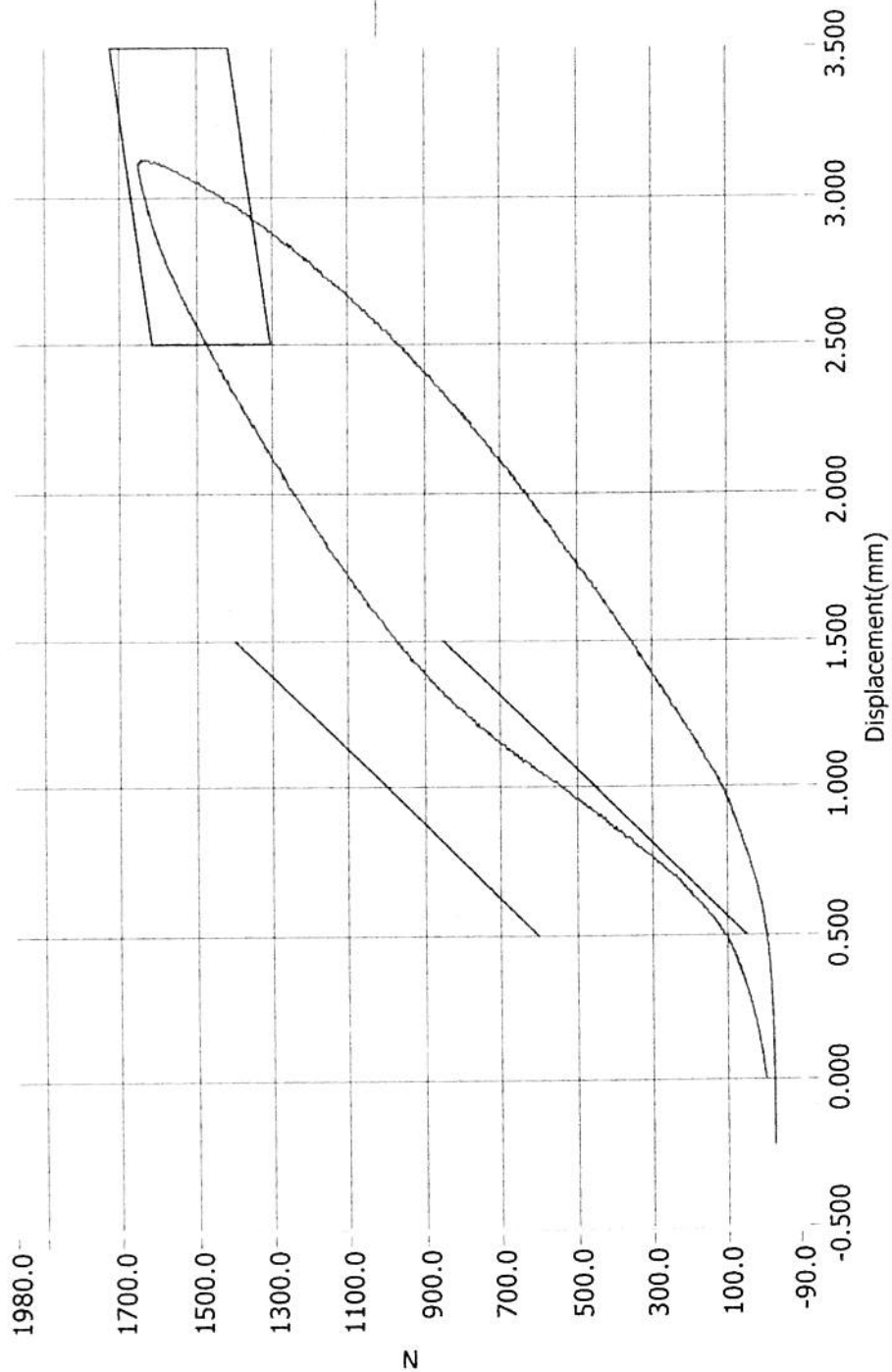


TEST DESC: ILLIAC
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 10/18/2012
TEST #: D123988



Resultant Data - SIDIIs Plug Compression

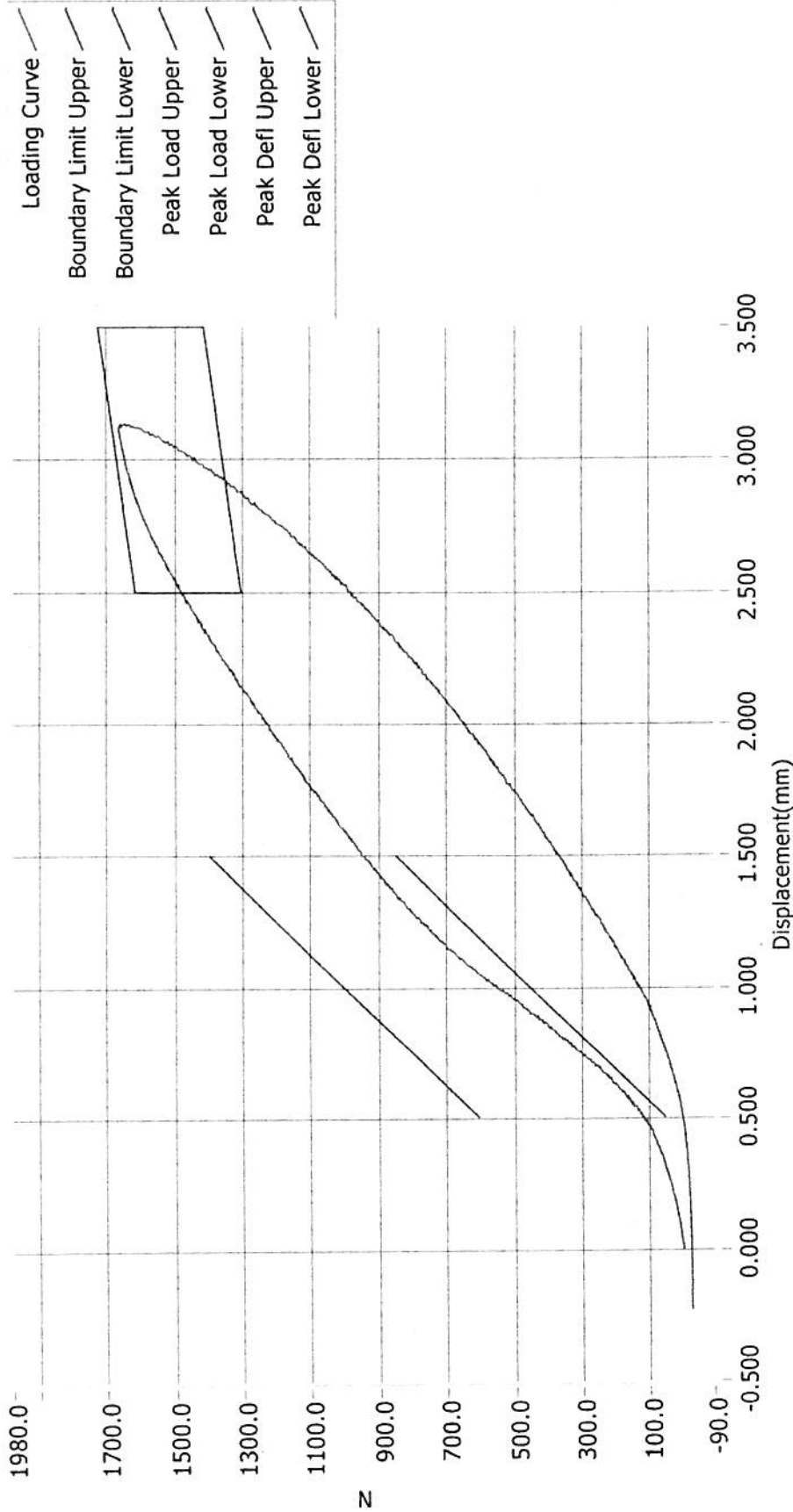


ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	49135	12/7/2011	11:45 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/7/2011 Current Time : 23:46:51

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
	49181	12/8/2011	1:46 AM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	N/A	SIDIIs	

Current Date : 12/8/2011

Current Time : 01:47:35

APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation

				SID-IIs S/N 306			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers				X	P67884	Endevco	05/23/12
				Y	P67886	Endevco	05/23/12
				Z	P67887	Endevco	05/23/12
Head Accelerometers				Xr	P67888	Endevco	05/23/12
				Yr	P67889	Endevco	05/23/12
				Zr	P67890	Endevco	05/23/12
Displacement Potentiometers	Thoracic Rib	Upper	Y	G1187	FTSS	05/23/12	
		Middle	Y	G1261	FTSS	05/23/12	
		Lower	Y	G1270	FTSS	05/23/12	
	Abdominal Rib	Upper	Y	G1287	FTSS	05/23/12	
		Lower	Y	G1304	FTSS	05/23/12	
Lower Spine Accelerometers (T12)				X	P67508	Endevco	05/23/12
				Y	P67510	Endevco	05/23/12
				Z	P67511	Endevco	05/23/12
Acetabulum Load Cell				Y	ACG111	FTSS	05/09/12
Iliac Wing Load Cell				Y	IWG226	FTSS	05/14/12
Pelvis Plug (struck side)					49135	FTSS	12/07/11
Pelvis Plug (non-struck side)					49181	FTSS	12/08/11

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P73867	Endevco	10/08/12
Vehicle Center of Gravity	Y	P73868	Endevco	10/08/12
Vehicle Center of Gravity	Z	P73869	Endevco	10/08/12
Left Floor Sill	Y	P63210	Endevco	07/12/12
A-Pillar Sill	Y	P63534	Endevco	06/14/12
A-Pillar Low	Y	P63262	Endevco	07/21/12
A-Pillar Mid	Y	P53288	Endevco	10/06/12
B-Pillar Sill	Y	P77713	Endevco	07/23/12
B-Pillar Low	Y	P63348	Endevco	05/01/12
B-Pillar Mid	V	P63550	Endevco	10/06/12
Driver Seat	Y	P66755	Endevco	06/14/12
Engine Top	X	P63332	Endevco	08/15/12
Engine Top	Y	P63331	Endevco	08/15/12
Firewall	Y	P63206	Endevco	10/06/12
Right Roof	Y	P67376	Endevco	05/07/12
Right Floor Sill	Y	P63927	Endevco	05/02/12
Rear Floorpan	X	P63914	Endevco	05/02/12
Rear Floorpan	Y	P63915	Endevco	05/02/12

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	DG6282	FTSS	09/05/12