

REPORT NUMBER: SPNCAP-MGA-2012-011

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

**CHRYSLER GROUP LLC
2012 Dodge Journey SE FWD SUV
NHTSA No.: MC0321**

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



Test Date: October 6, 2011

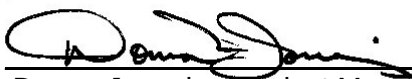
Final Report Date: November 4, 2011

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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Approved by: 
Ben Fischer, Project Engineer

Approval Date: November 4, 2011

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 2012 Dodge Journey SE FWD SUV, NHTSA No.: MC0321				5. Report Date November 4, 2011																												
				6. Performing Organization Code MGA																												
7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer				8. Performing Organization Report No. SPNCAP-MGA-2012-011																												
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				14. Sponsoring Agency Code NVS-111																												
15. Supplementary Notes																																
16. Abstract A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject 2012 Dodge Journey SE FWD SUV 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 6, 2011. The impact velocity was 31.9 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 398 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">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>Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>194</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>Gs</td> <td>82</td> <td>53</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>4718</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>21</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>38</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	194	Resultant Lower Spine Acceleration	Gs	82	53	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4718	Maximum Thoracic Rib Deflection	mm	38*	21	Maximum Abdomen Rib Deflection	mm	45*	38
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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, Room E12-100 Washington, DC 20590 Email: 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 2012 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 2012 Dodge Journey SE FWD SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated August 2011.

SECTION 2 SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2012 Dodge Journey SE FWD SUV. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 31.9 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin, on October 6, 2011. 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 August 2011. 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
Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
Abdomen Upper Rib and Lower Rib Y-Axis Displacement Potentiometers
Lower Spine (T12) Triaxial Accelerometers
Acetabulum and Iliac Wing Y-Axis Load Cells

Appendix B contains the 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	194
Resultant Lower Spine Acceleration	Gs	82	53
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4718
Maximum Thoracic Rib Deflection	mm	38*	21
Maximum Abdomen Rib Deflection	mm	45*	38

*Proposed IARV

Supplemental restraint information is given below:

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	Yes	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	

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 49 msec.

Left Lower A-Post Y after 80 msec.

Driver Seat Track Y after 17 msec.

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: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MC0321	Traction Control System (TCS)	Yes
Model Year	2012	Auto-Leveling System	No
Make	Dodge	Automatic Door Locks (ADL)	Yes
Model	Journey	Power Window Auto-Reverse	No
Body Style	SUV	Other Optional Feature	N/A
VIN	3C4PDCAB1CT141459	Driver Front Airbag	Yes
Body Color	Bright Silver Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	127 / 79	Driver Head/Torso Airbag	No
Engine Displacement (L)	2.4	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	Yes
Transmission Speeds	4	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	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	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
All Wheel Drive (AWD)	No	Other Safety Restraint	N/A
Does owner's manual provide instruction to turn off automatic door locks?			No

DATA FROM CERTIFICATION LABEL

Manufactured By	Chrysler Group LLC	GVWR (kg)	2382
Date of Manufacture	7-11	GAWR Front (kg)	1248
Vehicle Type	MPV	GAWR Rear (kg)	1316

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	2	3	7	
Capacity Weight (VCW) (kg)				528	(A)
DSC x 68.04 kg				476	(B)
Rated Cargo and Luggage Weight (RCLW)				52	(A-B)

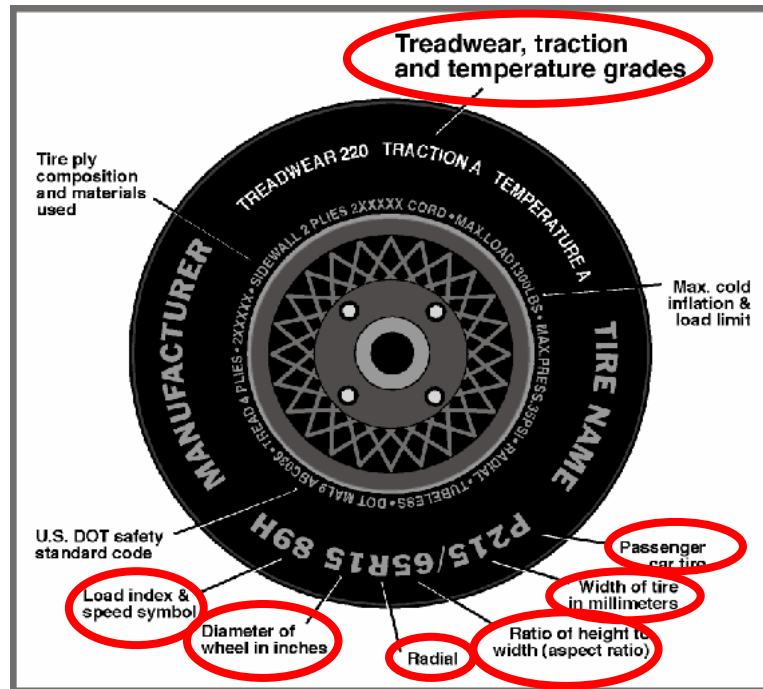
VEHICLE SEAT TYPE

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

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

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	250	250
Recommended Tire Size	P225/70R16	P225/70R16

TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Tire Size on Vehicle	P225/70R16	P225/70R16
Tire Manufacturer	Hankook	Hankook
Tire Name	DynoPro	DynoPro
Tire Type	Passenger	Passenger
Tire Width	225	225
Aspect Ratio	70	70
Radial	Yes	Yes
Wheel Diameter	16	16
Load Index/Speed Symbol	101T	101T
Treadwear	500	500
Traction Grade	A	A
Temperature Grade	A	A
Tire Material	Rubber	Rubber

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

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	250	250	250	250
Tire Placard	kpa	250	250	250	250
Owner's Manual	kpa				
As Tested	kpa	250	250	250	250

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	481.7	424.1		493.1	464.0		502.6	467.2	
Right	kg	505.8	376.5		518.9	408.7		510.3	412.3	
Ratio	%	55.2	44.8		53.7	46.3		53.5	46.5	
Totals	kg	987.5	800.6	1788.1	1012.0	872.7	1884.7	1012.9	879.5	1892.4

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1788.1	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	52	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1892.3	(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**

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Weight of Ballast, if any	24.5
Right tail light, right side mirror, spare tool kit, third row seat, trunk carpet.	40.4

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	deg	-0.9	-0.8	-0.8	Yes
Front Pass. Sill Angle (front-to-rear)*	deg	-1.2	-1.0	-0.9	Yes
Front Bumper Angle (left-to-right)**	deg	-0.1	-0.1	-0.2	Yes
Rear Bumper Angle (left-to-right)**	deg	0.0	0.0	0.0	Yes
Vehicle CG (Aft of Front Axle)	mm	1298	1342	1348	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	10	12	20	

*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.

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

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

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	3.6	0.0	1.8
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			

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	1.8	Fixed	Max	Fixed	Fixed	Fixed
	1.8	Fixed	Mid	Fixed	Fixed	Fixed
	1.8	Fixed	Min	Fixed	Fixed	Fixed
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: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

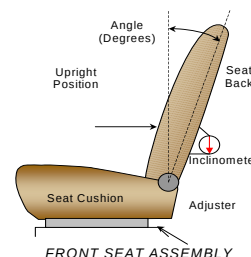
NHTSA No. MC0321
 Test Date: 10/06/2011

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	238	35 (1 st as 1)	0	0
Front Passenger Seat	238	35 (1 st as 1)	0	0
Front Center Seat				
Struck Side Rear Seat	120	13 (1 st as 1)	120	12 th (1 st as 0)
Non-Struck Side	120	13 (1 st as 1)	120	12 th (1 st as 0)
Rear Center Seat				

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	Degrees	Detent
Driver Seat w/Seated Dummy	NA		8.0	5 (1 st as 0)
Front Passenger Seat	NA		8.2	5 (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	21.0		7.8	2 (1 st as 0)
Non-Struck Side Rear Seat	21.0		7.7	2 (1 st as 0)
Rear Center Seat				

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	5	Lowest

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

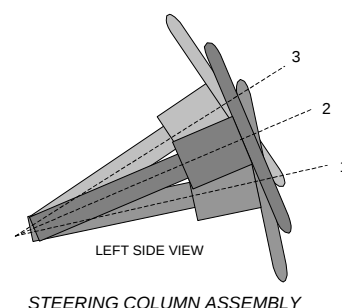
Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

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STEERING COLUMN ADJUSTMENT

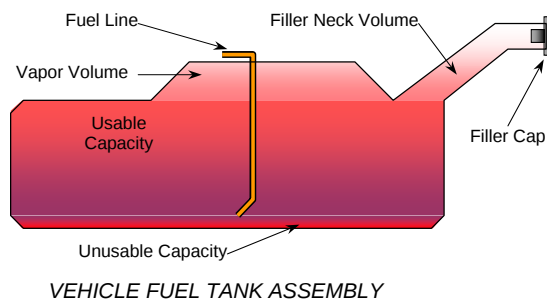
Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	68.6	238
Geometric Center, Position 2	65.8	214
Uppermost, Position 3	63.0	190
Telescoping Steering Wheel Travel		48
Test Position	65.8	214



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 starts pumping fuel when the key is in the 'run' position. (Push the button twice to set the engine in the run position.) The fuel pipe is on the left side.



FUEL TANK CAPACITY DATA

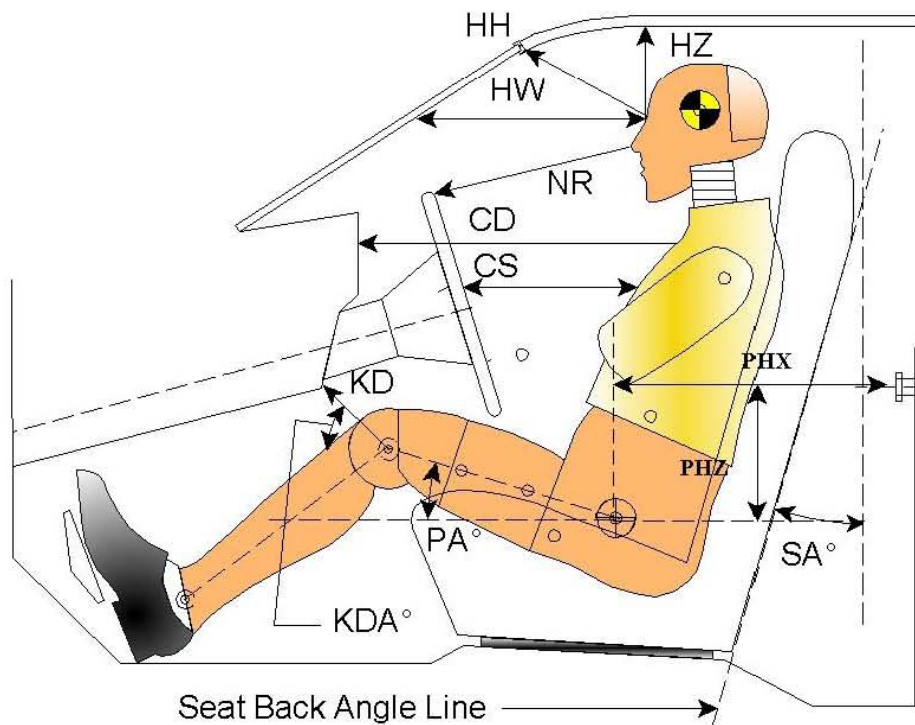
	Liters
Usable Capacity of "Standard" Tank (see Form No. 1)	77.6
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	77.6
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	72.1
Actual Amount of Solvent Used	72.1
1/3 of Usable Capacity	25.9

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: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

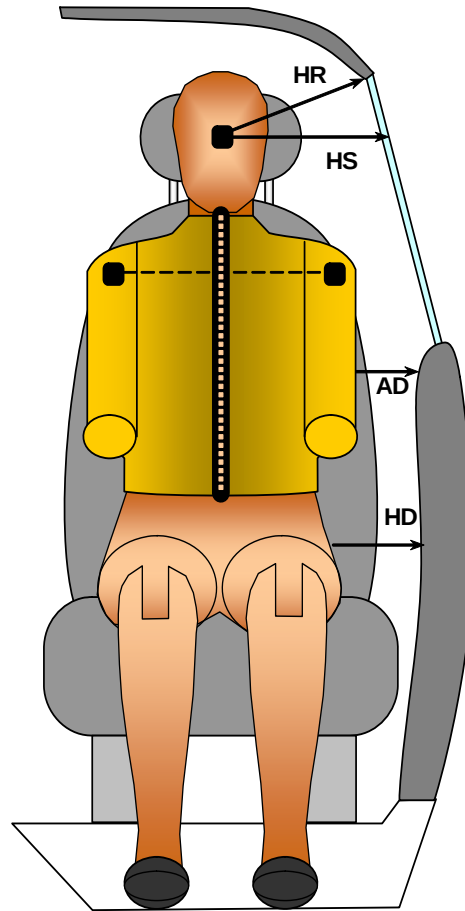


Code	Measurement Description	Driver S/N 296	
		Length (mm)	Angle (°)
HH	Head to Header	321	
HW	Head to Windshield	705	
HZ	Head to Roof Liner	276	
NR	Nose to Rim	248	
CD	Chest to Dashboard	428	
CS	Chest to Steering Wheel	173	
KDL/KDAL°	Left Knee to Dash	133	29.8
KDR/KDAR°	Right Knee to Dash	112	31.5
PAX°	Pelvic Tilt Angle (X-Axis)		19.0
PAY°	Pelvic Tilt Angle (Y-Axis)		NA
PHX	Hip Point to Striker (X-Axis)	320	
PHZ	Hip Point to Striker (Z-Axis)	122	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011



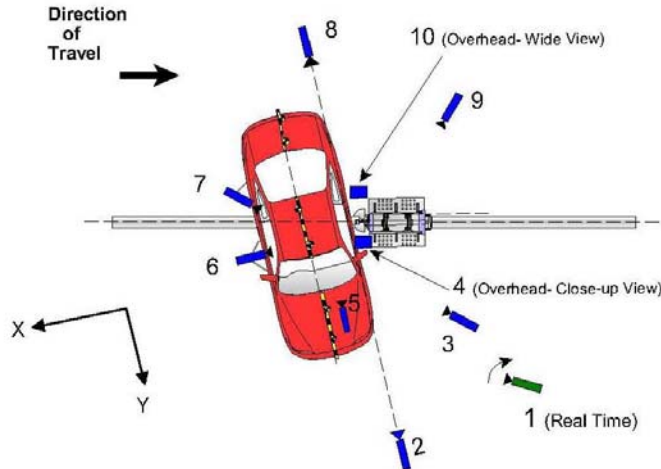
FRONT VIEW OF DUMMY

Code	Measurement Description	Driver S/N 296
		Length (mm)
HR	Head to Side Header	268
HS	Head to Side Window	392
AD	Arm to Door	157
HD	Hip Point to Door	158

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Dodge Journey SE FWD SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
Test Date: 10/06/2011



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	-50	5380	-1660	24	1000
3	Impact Side 45° Forward	-2360	4120	-1750	20	1000
4	Overhead Closeup	90	0	-4520	50	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	-60	-6270	-1680	24	1000
9	Impact Side 45° Rearward	-3370	-3720	-1760	20	1000
10	Overhead Wide View	320	0	-4610	14	1000
11	Real-Time Dummy Front View					30

* All measurements accurate to ± 6 mm

Note: Vehicle was at a 15° angle to the rigid pole.

Explain why camera(s) did not operate as intended:

Camera No. 5 – Onboard Driver Front did not operate. It lost power before impact.

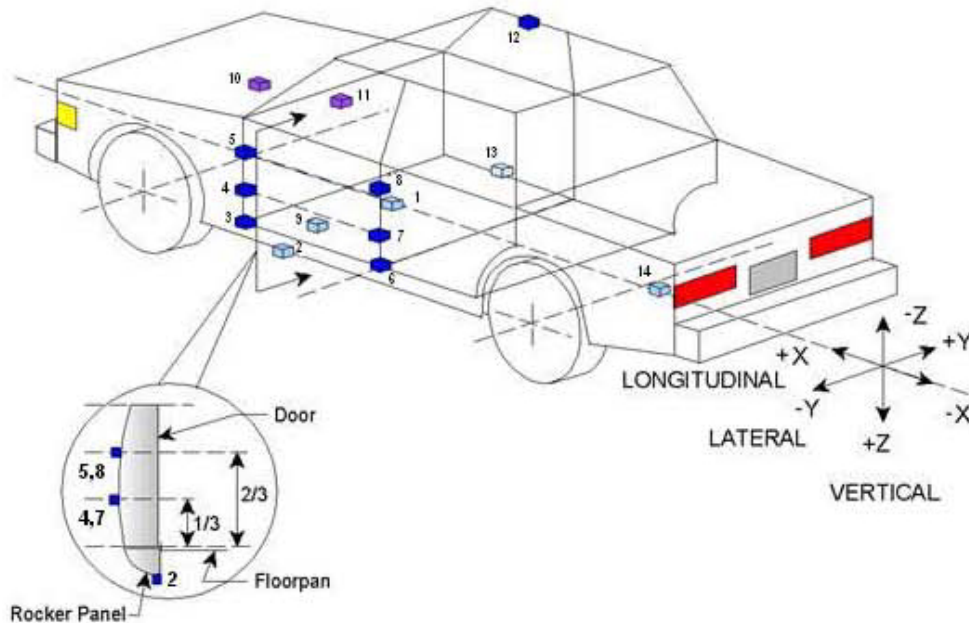
INSTRUMENTATION

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

DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER DATA

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

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	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2934	200	-278
2	Left Floor Sill	2834	-715	-254
3	A Pillar Sill	3185	-715	-249
4	A Pillar Low	3256	-665	-673
5	A Pillar Mid	3312	-816	-873
6	B Pillar Sill	2273	-715	-264
7	B Pillar Low	2207	-730	-645
8	B Pillar Mid	2207	-730	-903
9	Driver Seat Track	2322	-555	-486
10	Engine Top	4085	0	-877
11	Firewall	3913	0	-996
12	Right Roof	2185	575	-1652
13	Right Floor Sill	2826	715	-265
14	Rear Floorpan	751	0	-625

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: 2012 Dodge Journey SE FWD SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
Test Date: 10/06/2011



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: 2012 Dodge Journey SE FWD SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
Test Date: 10/06/2011

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver SID-IIs Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Side Airbag
Upper Torso	Side Airbag, Door Panel
Lower Torso	Door Panel
Left Hip	Door Panel
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	Yes	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	No	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)					

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 Broke
Other Notable Effects	None

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

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

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	No	
Knee Airbag	Yes	No	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	

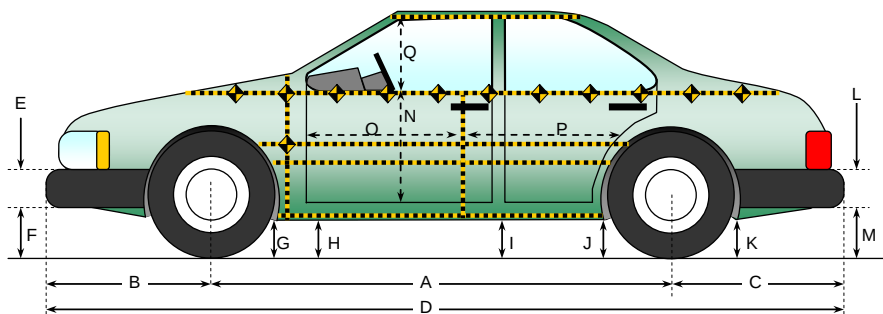
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1152
Actual Impact Point (Aft of Front Axle)	mm		1171
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	-19
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	31.9
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.0

DATA SHEET NO. 9 **VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011



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

LEFT SIDE VIEW

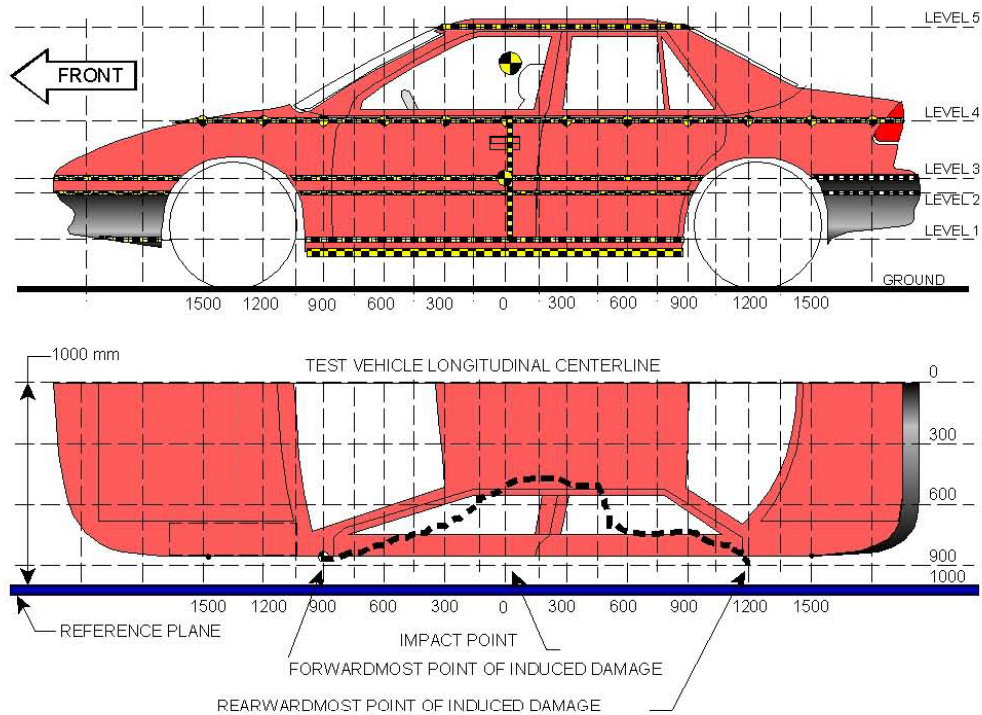
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2900	2805	95
B	Front Axle to FSOV	1000	1005	-5
C	Rear Axle to RSOV	995	995	0
D	Total Vehicle Length at Centerline	4895	4805	90
E	Front Bumper Thickness	103	103	0
F	Front Bumper Bottom to Ground	253	298	-45
G	Sill Height at Front Wheel Well	243	224	19
H	Sill Height at Front Door Leading Edge	245	217	28
I	Sill Height at B Pillar	262	265	-3
J1	Sill Height at Rear Wheel Well	272	275	-3
J2	Pinch Weld Height at Rear Wheel Well	270	266	4
K	Sill Height Aft of Rear Wheel Well	300	297	3
L	Rear Bumper Thickness	113	113	0
M	Rear Bumper Bottom to Ground	388	362	26
N	Sill Height to Bottom of Front Window Sill	765	770	-5
O	Front Door Leading Edge to Impact CL	655	655	0
P	Rear Door Trailing Edge to Impact CL	1458	1485	-27
Q	Front Window Opening	455	425	30
R	Right Side Length	3852	3870	-18
S	Left Side Length	3852	3710	142
T	Vehicle Width at B-Pillars	1830	1695	135

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

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011



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	325
2	Occupant Hip Point	695
3	Mid Door	732
4	Window Sill	1053
5	Window Top	1602

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

Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

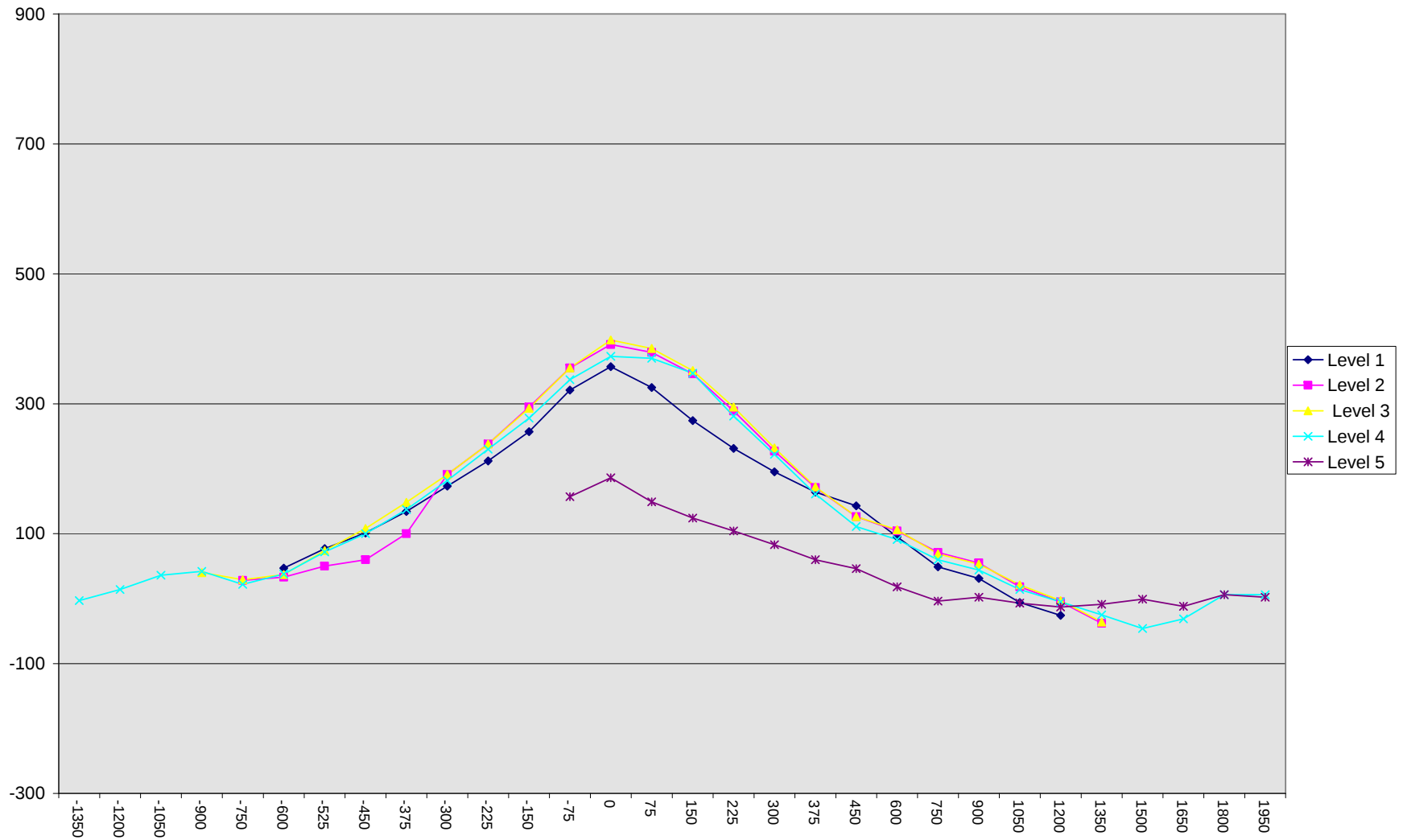
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1350				300					297					-3	
-1200				278					292					14	
-1050				262					298					36	
-900			165	250				205	292				40	42	
-750		172	181	239			200	210	261			28	29	22	
-600	213	189	187	234		260	222	224	272		47	33	37	38	
-525	211	188	186	226		288	238	260	298		77	50	74	72	
-450	210	187	185	225		311	247	293	325		101	60	108	100	
-375	210	186	184	224		344	286	332	361		134	100	148	137	
-300	209	186	184	220		382	377	375	402		173	191	191	182	
-225	209	186	184	216		421	424	422	446		212	238	238	230	
-150	210	186	183	214		467	481	476	492		257	295	293	278	
-75	209	186	183	211	462	530	541	538	548	619	321	355	355	337	157
0	209	186	183	211	458	566	577	581	584	644	357	391	398	373	186
75	210	186	183	209	457	535	565	568	579	606	325	379	385	370	149
150	210	186	183	207	457	484	532	534	554	581	274	346	351	347	124
225	210	187	184	205	455	441	476	479	486	559	231	289	295	281	104
300	212	187	185	204	456	407	414	417	426	539	195	227	232	222	83
375	213	189	186	202	457	377	360	358	363	517	164	171	172	161	60
450	214	189	186	201	458	357	315	312	312	504	143	126	126	111	46
600	217	192	189	202	460	312	296	295	293	478	95	104	106	91	18
750	220	195	192	205	463	269	266	261	265	459	49	71	69	60	-4
900	224	200	196	207	465	255	255	249	251	467	31	55	53	44	2
1050	229	205	200	210	470	223	223	221	224	463	-6	18	21	14	-7
1200	221	210	205	214	475	195	205	202	209	462	-26	-5	-3	-5	-13
1350		166	174	218	480		128	138	193	471		-38	-36	-25	-9
1500				223	487				177	486				-46	-1
1650				230	496				199	484				-31	-12
1800				238	506				244	512				6	6
1950				245	516				251	518				6	2

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: 2012 Dodge Journey SE FWD SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
Test Date: 10/06/2011



DATA SHEET NO. 11
FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

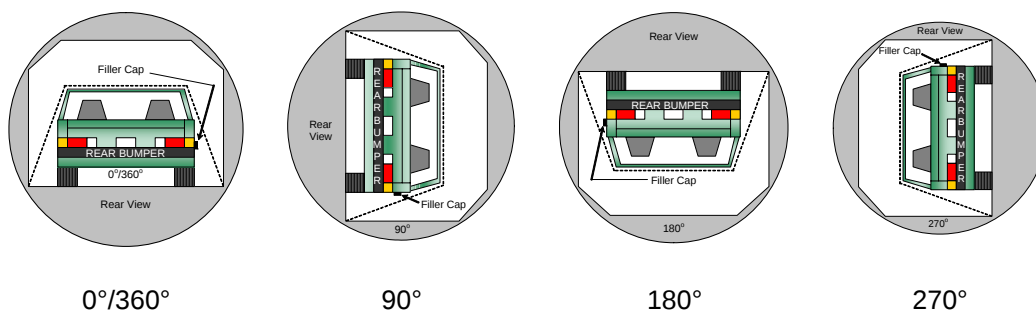
Test Vehicle: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011

Test Time: 9:37 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°	118	300	418
90° to 180°	112	300	412
180° to 270°	110	300	410
270° to 360°	115	300	415

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

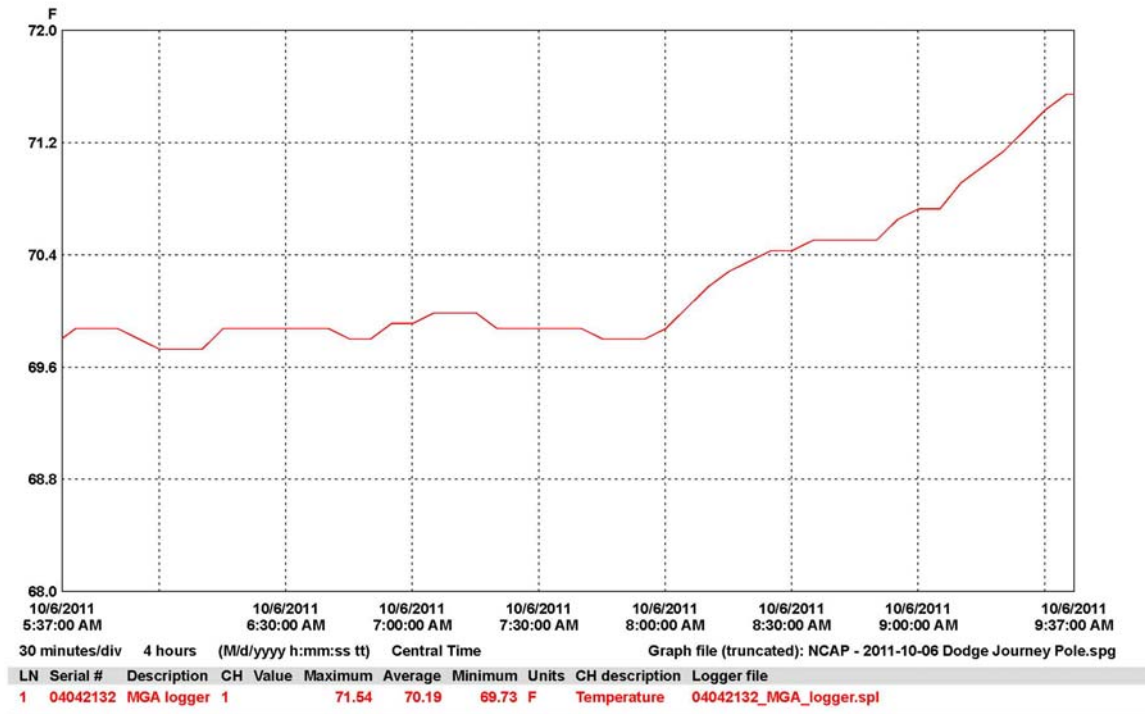
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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: 2012 Dodge Journey SE FWD SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MC0321
 Test Date: 10/06/2011



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 $\frac{3}{4}$ 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



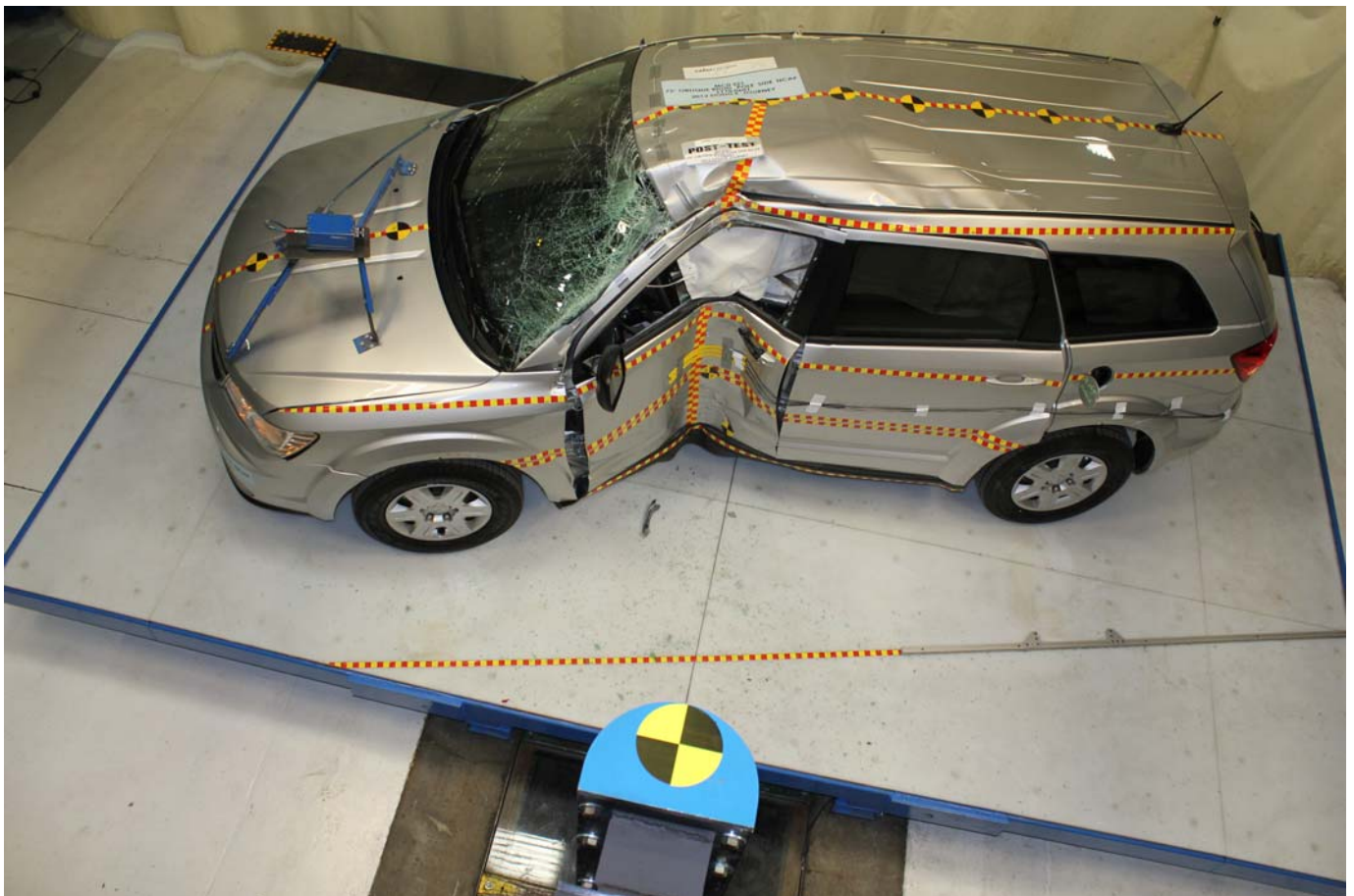
Pre-Test Right Side View of Test Vehicle



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



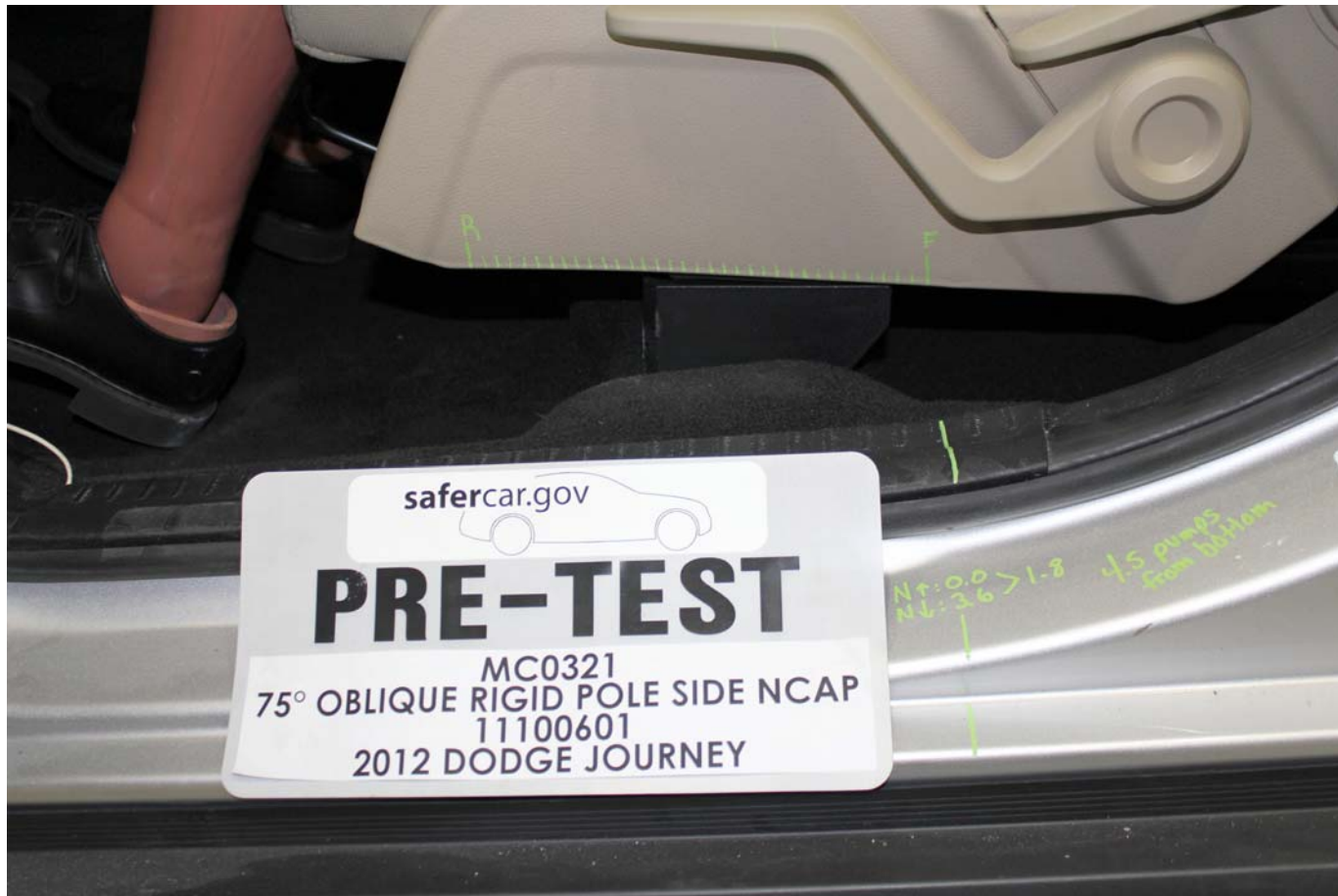
Pre-Test Left Side View of Steering Wheel



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



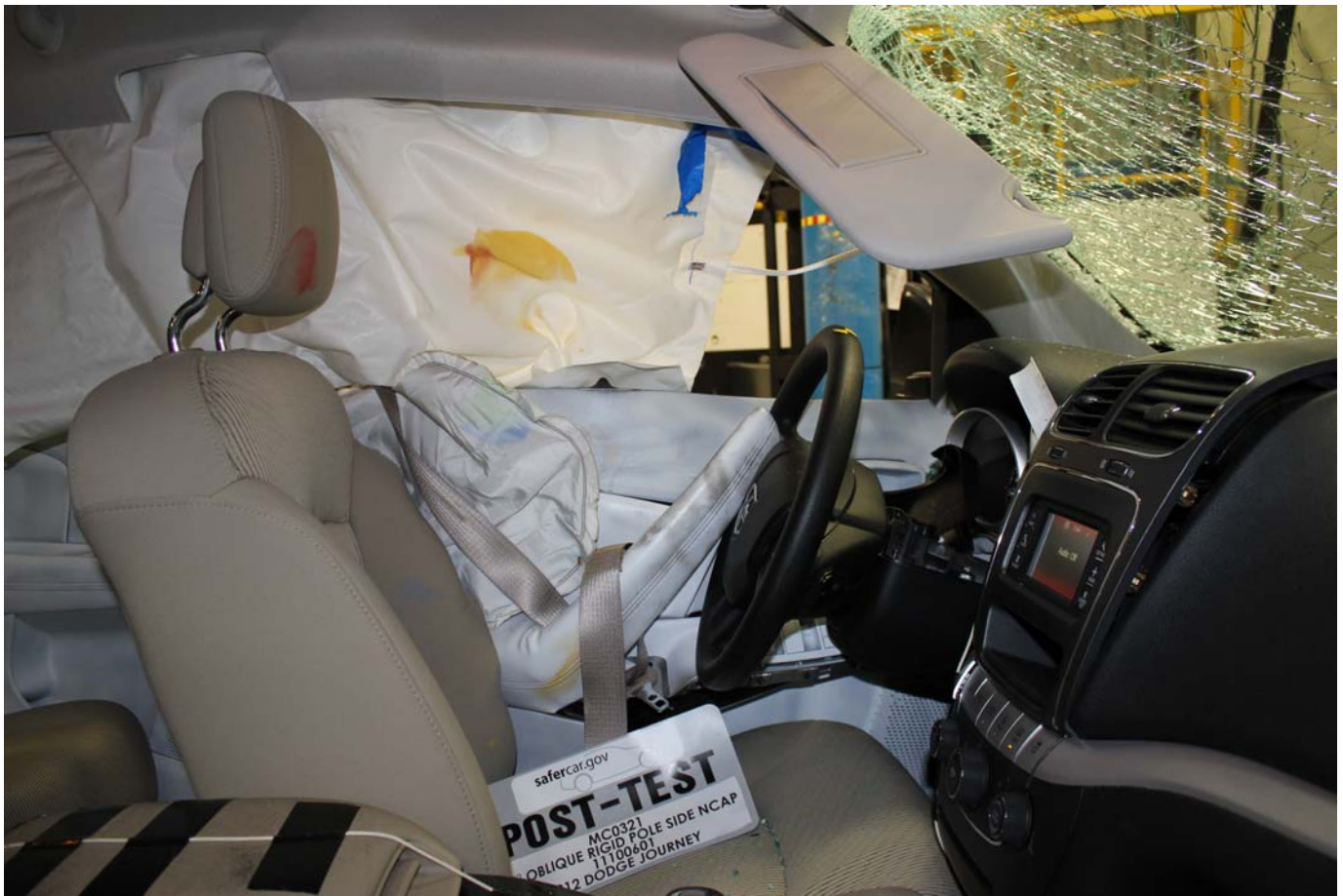
Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



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



Pre-Test Inner Door Panel View



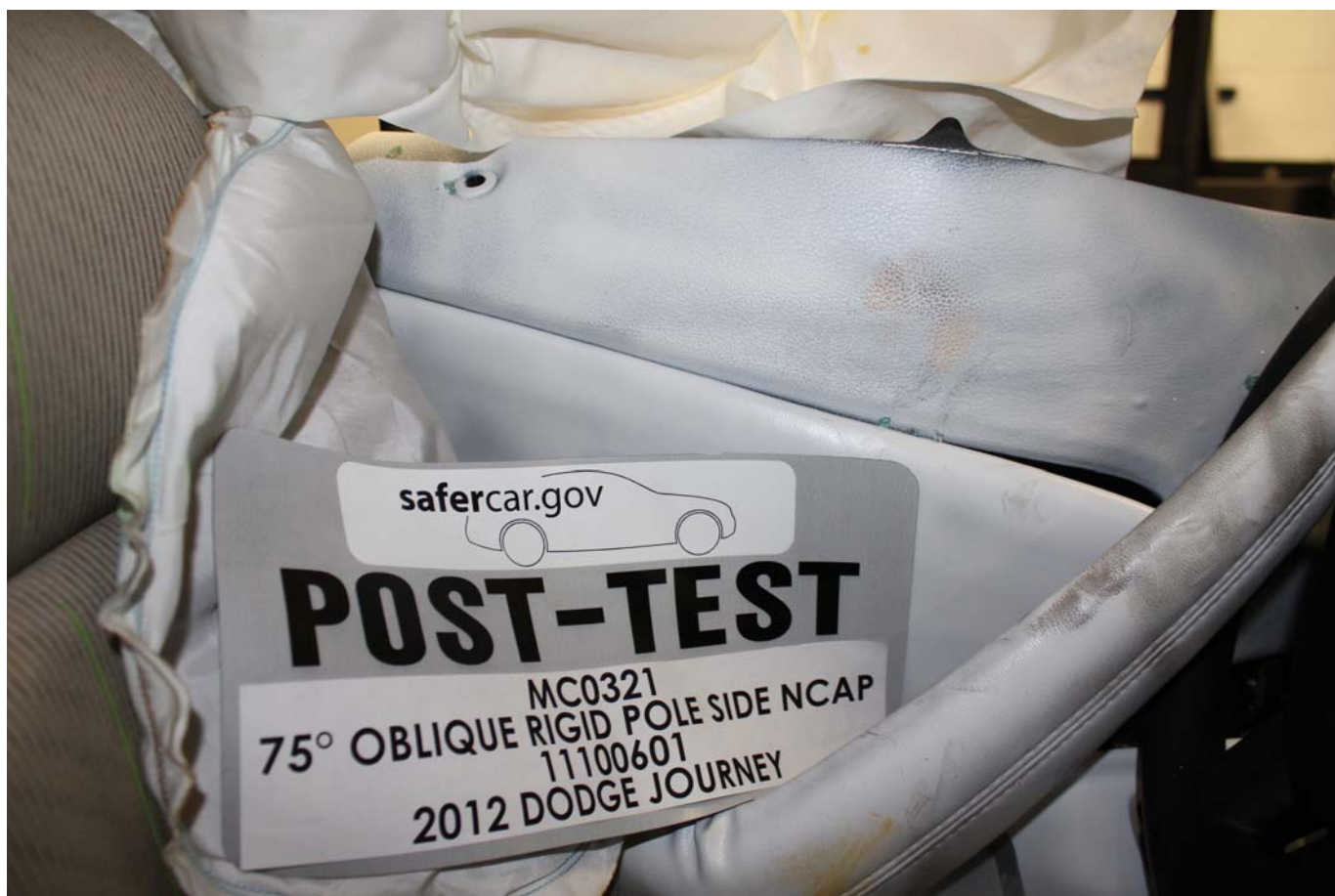
Post-Test Inner Door Panel View Showing Dummy Contact Location



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



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



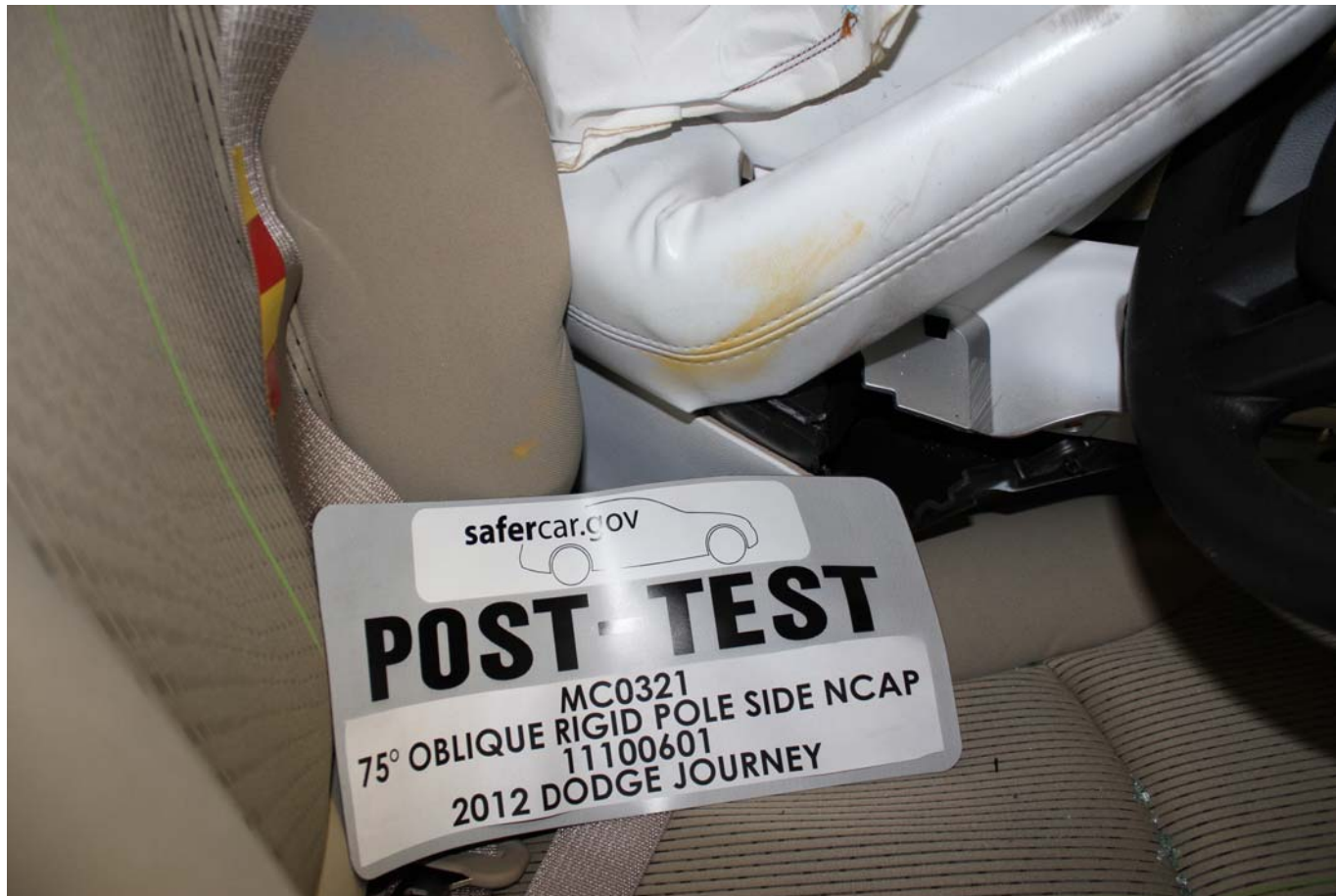
Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



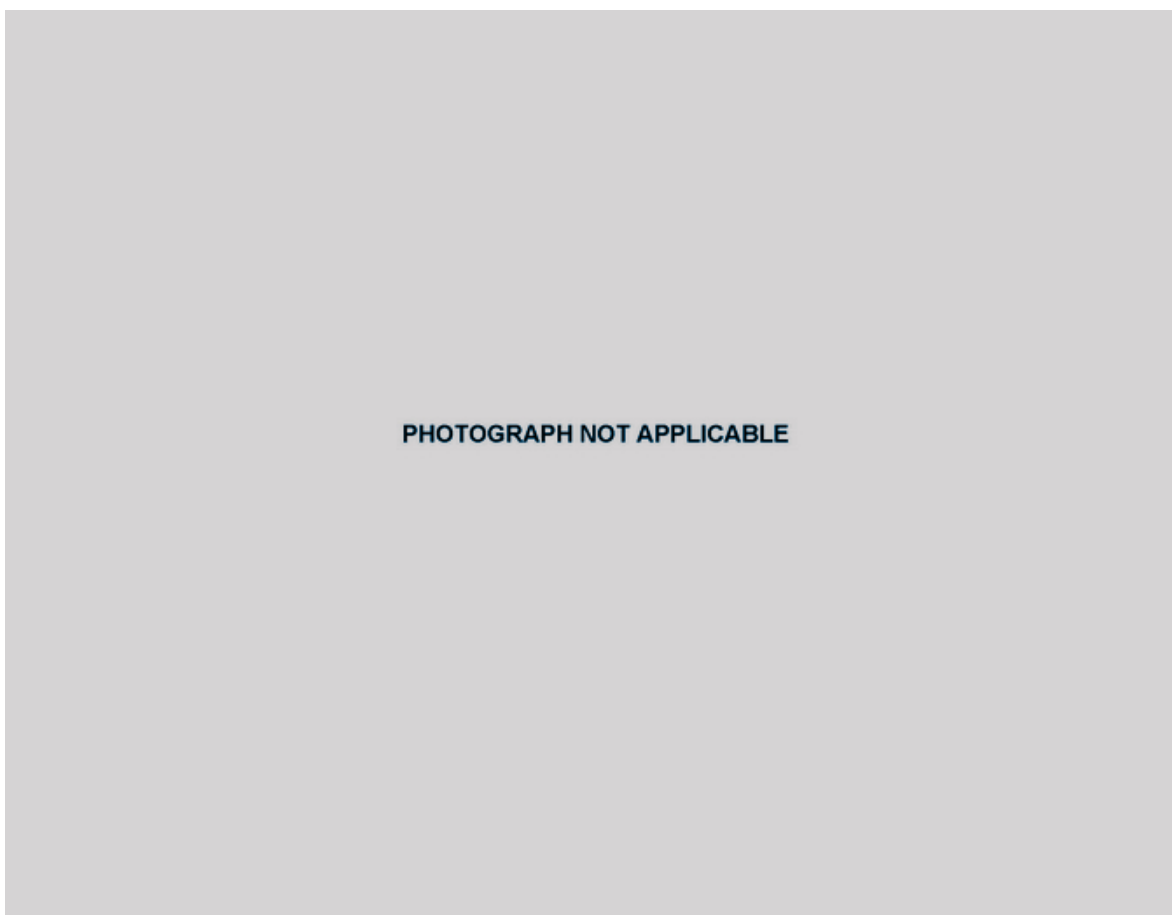
Post-Test Dummy Close-Up Torso Contact with Side Air Bag View



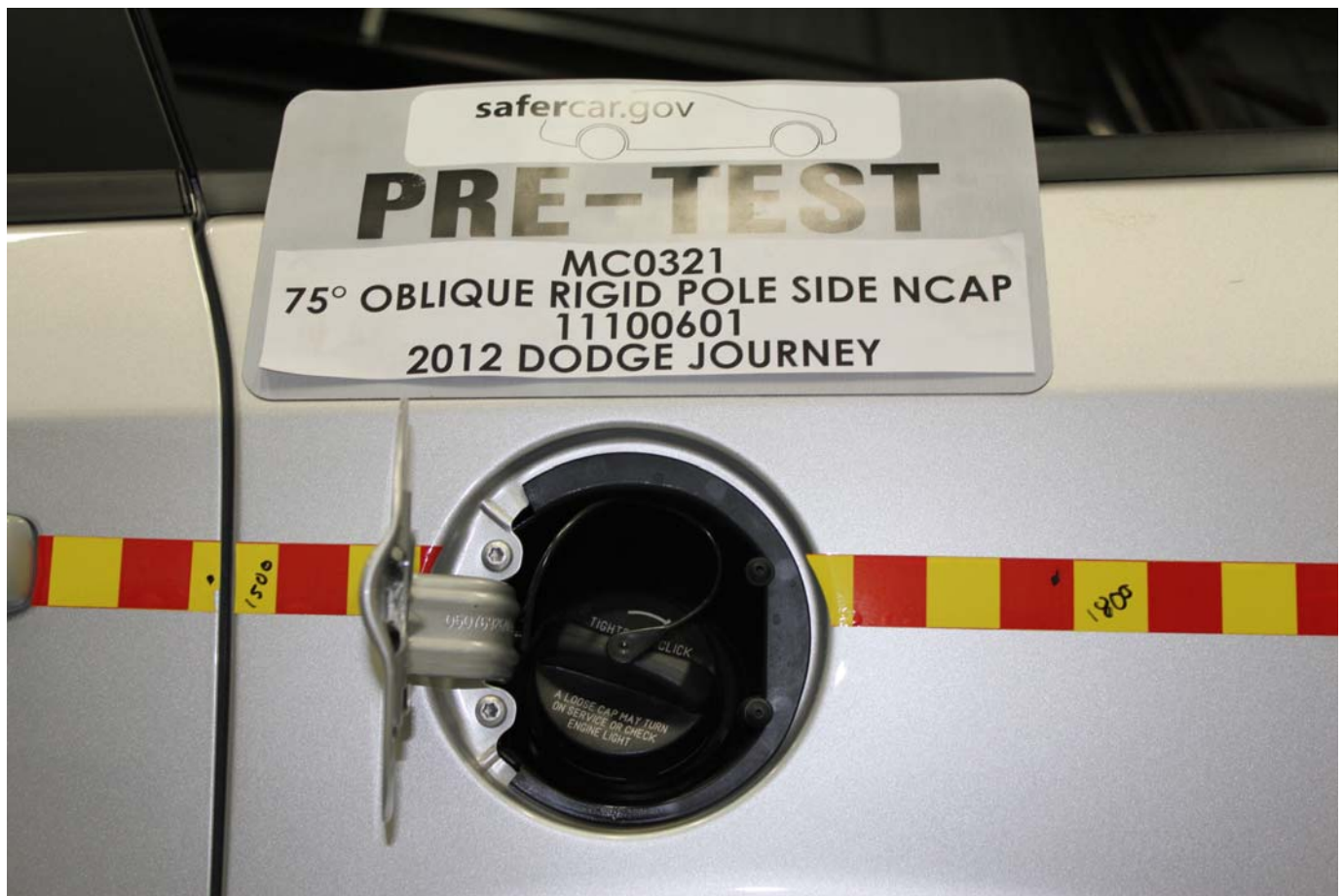
Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



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



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



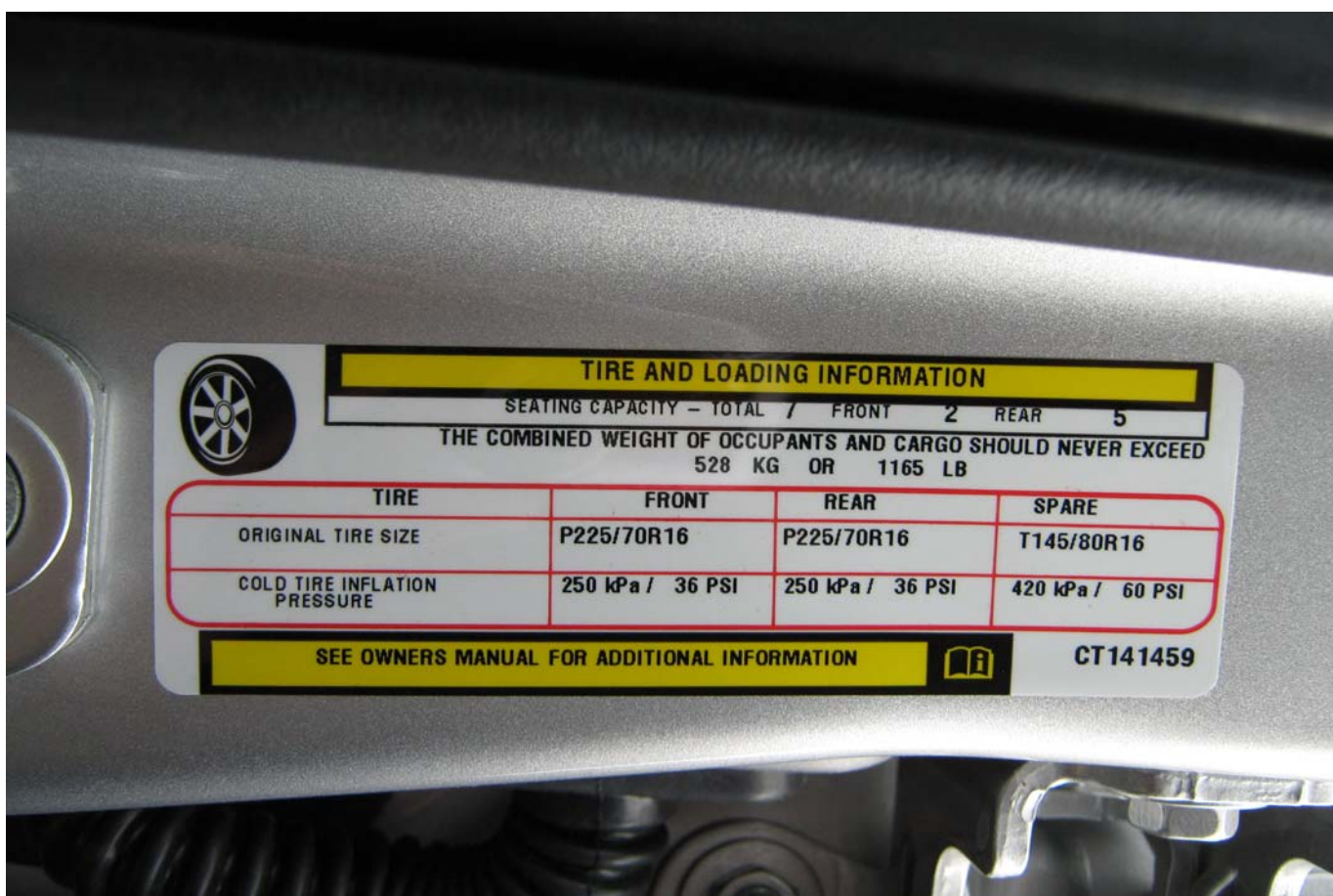
Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



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



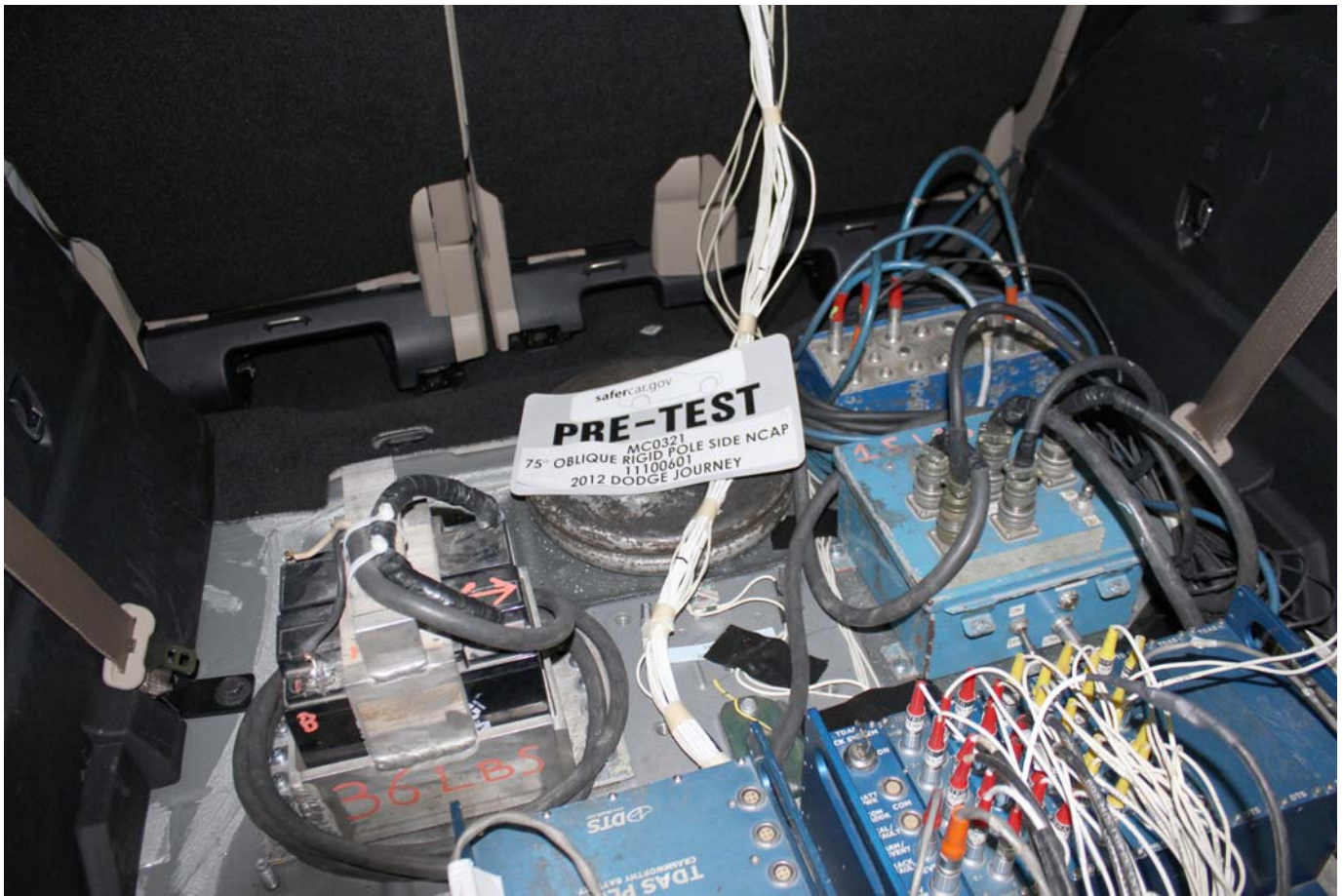
Post-Test Pole Barrier Front View



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



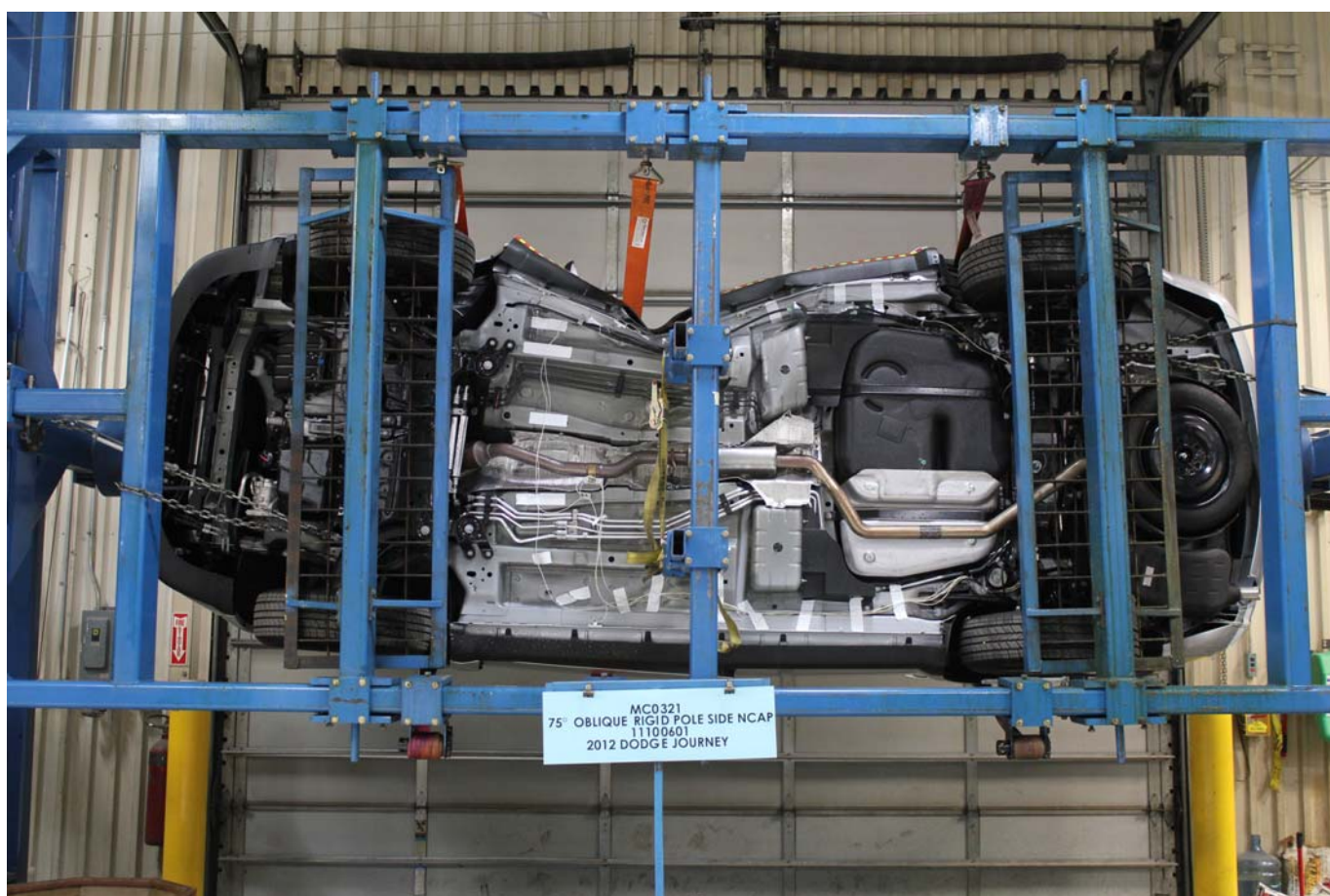
FMVSS No. 301 Static Rollover 0 Degrees



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

A-35

WARNING!

The head restraints for all occupants must be properly adjusted prior to operating the vehicle or occupying a seat. Head restraints should never be adjusted while the vehicle is in motion. Driving a vehicle with the head restraints improperly adjusted or removed could cause serious injury or death in the event of a collision.

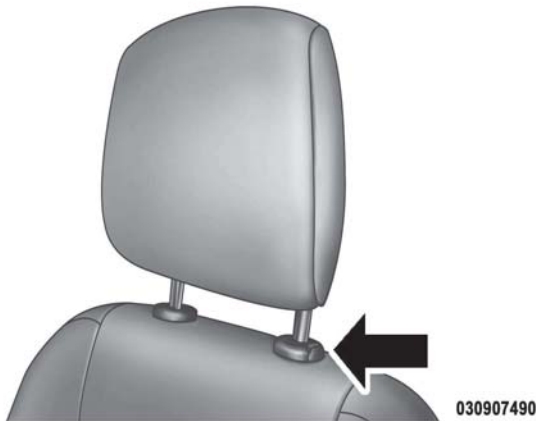
Active Head Restraints (AHR) — Front Seats

Active Head Restraints are passive, deployable components, and vehicles with this equipment can not be readily identified by any markings, only through visual inspection of the head restraint. The head restraint will be split in two halves, with the front half being soft foam and trim, the back half being decorative plastic.

When AHRs deploy during a rear impact, the front half of the head restraint extends forward to minimize the gap between the back of the occupant's head and the AHR. This system is designed to help prevent or reduce the extent of injuries to the driver and front passenger in certain types of rear impacts. Refer to "Occupant Restraints" in "Things To Know Before Starting Your Vehicle" for further information.

To raise the head restraint, pull upward on the head restraint. To lower the head restraint, press the push button, located at the base of the head restraint, and push downward on the head restraint.

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



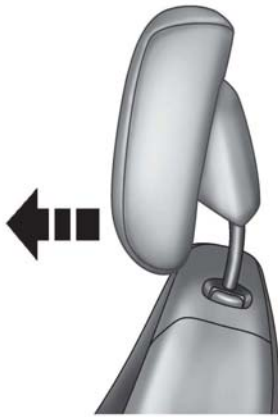
Push Button

For comfort, the Active Head Restraints can be tilted forward and backward. To tilt the head restraint closer to the back of your head, pull forward on the bottom of the head restraint. Push rearward on the bottom of the head restraint to move the head restraint away from your head.



Active Head Restraint (Normal Position)

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



030907533

Active Head Restraint (Tilted)

NOTE:

- The head restraints should only be removed by qualified technicians, for service purposes only. If either of the head restraints require removal, see your authorized dealer.

- In the event of deployment of an Active Head Restraint, refer to "Occupant Restraints/Supplemental Active Head Restraints (AHR)/Resetting Active Head Restraints (AHR)" in "Things To Know Before Starting Your Vehicle" for further information.

WARNING!

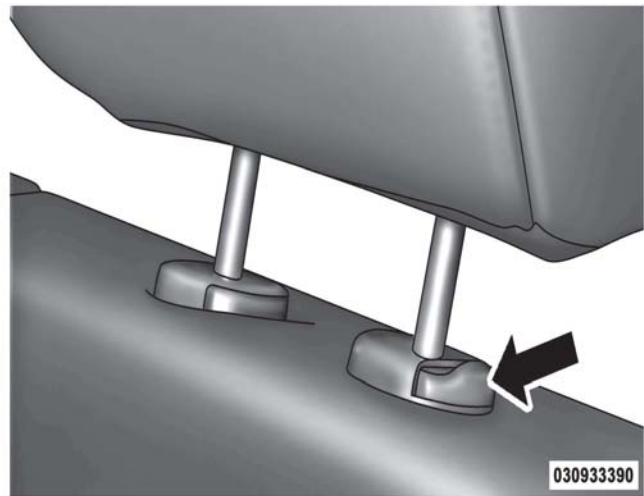
- Do not place items over the top of the Active Head Restraint, such as coats, seat covers or portable DVD players. These items may interfere with the operation of the Active Head Restraint in the event of a collision and could result in serious injury or death.

(Continued)

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

WARNING! (Continued)

- Active Head Restraints may be deployed if they are struck by an object such as a hand, foot or loose cargo. To avoid accidental deployment of the Active Head Restraint ensure that all cargo is secured, as loose cargo could contact the Active Head Restraint during sudden stops. Failure to follow this warning could cause personal injury if the Active Head Restraint is deployed.



030933390

Adjustment Button

Head Restraints — Second Row Seats

The rear seats are equipped with adjustable head restraints. To raise the head restraint, pull upward on the head restraint. To lower the head restraint, press the adjustment button, located on the base of the head restraint, and push downward on the head restraint.

NOTE:

- The head restraints should only be removed by qualified technicians, for service purposes only. If any of the head restraints require removal, see your authorized dealer.

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



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

APPENDIX B

VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

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Figure No. 1.	Driver Head Acceleration (X) Primary vs. Time	B-1
Figure No. 2.	Driver Head Acceleration (Y) Primary vs. Time	B-1
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Figure No. 4.	Driver Head Resultant Primary Acceleration vs. Time	B-1
Figure No. 5.	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
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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 Acceleration (X) Redundant
Driver Head Acceleration (Y) Redundant
Driver Head Acceleration (Z) Redundant
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)

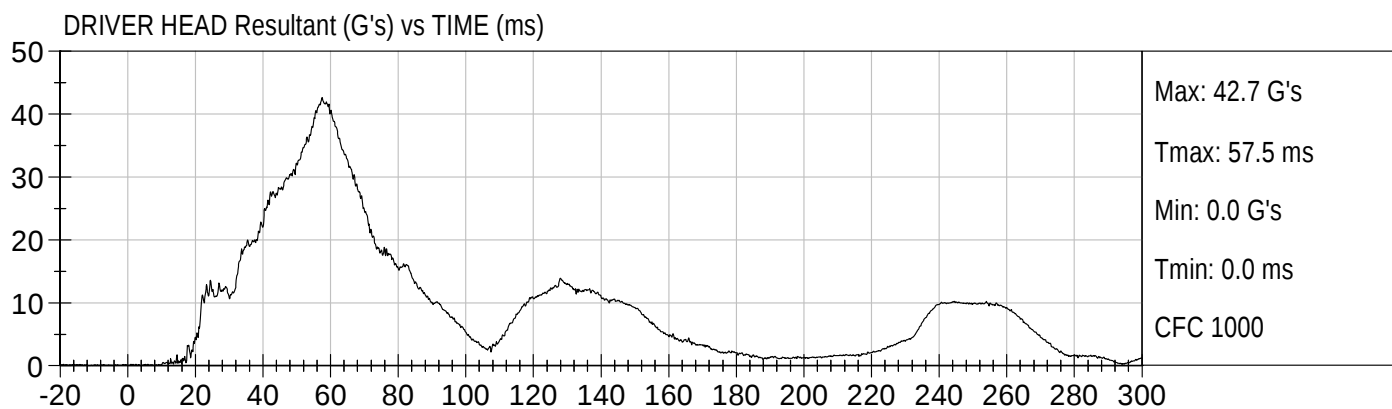
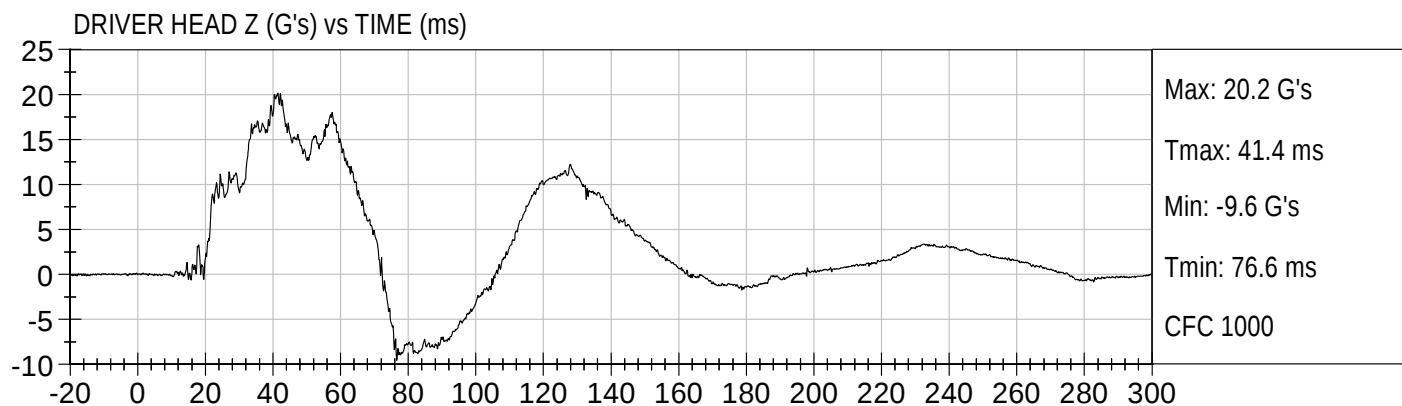
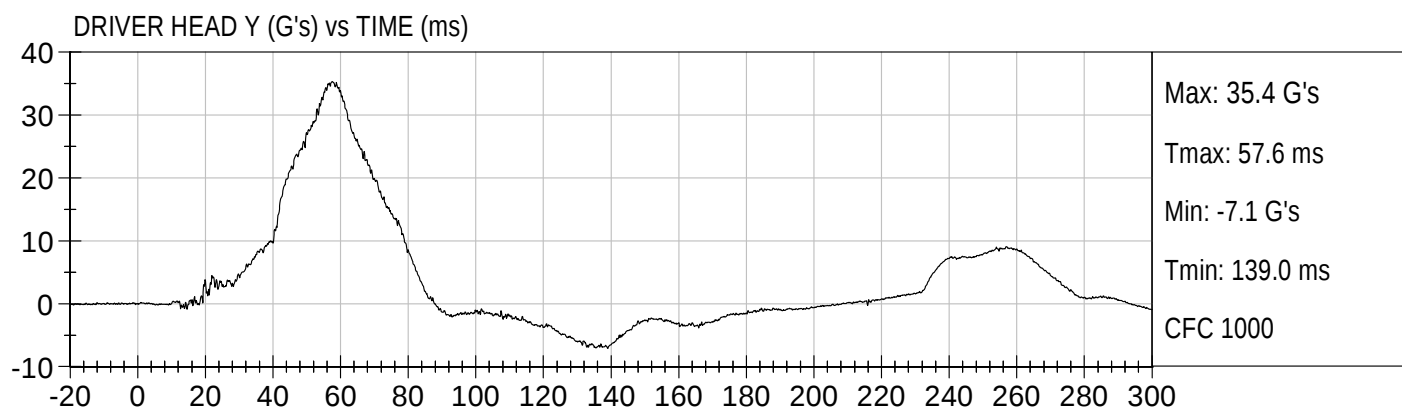
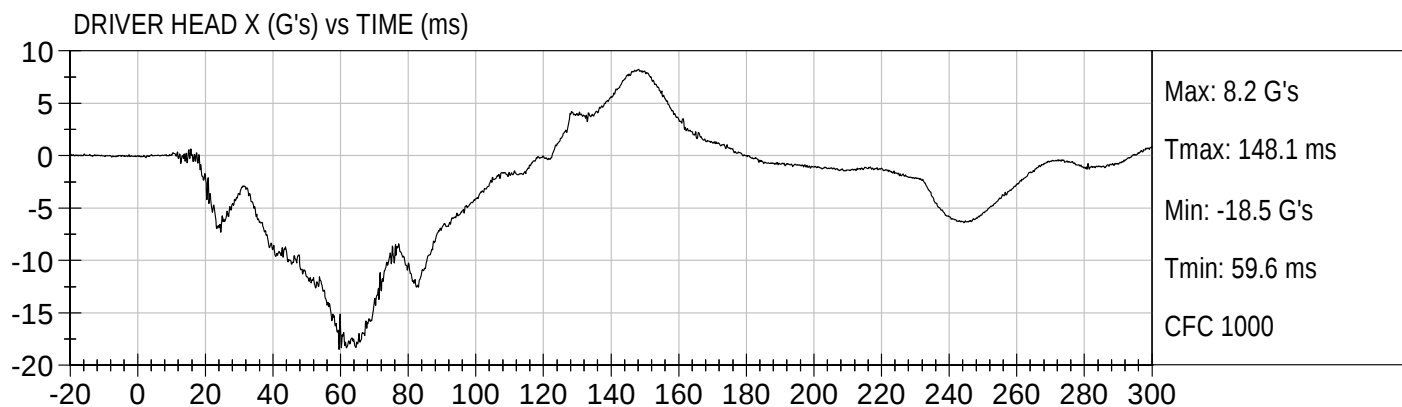
Load Cell Pole Barrier #4 Force (Y)

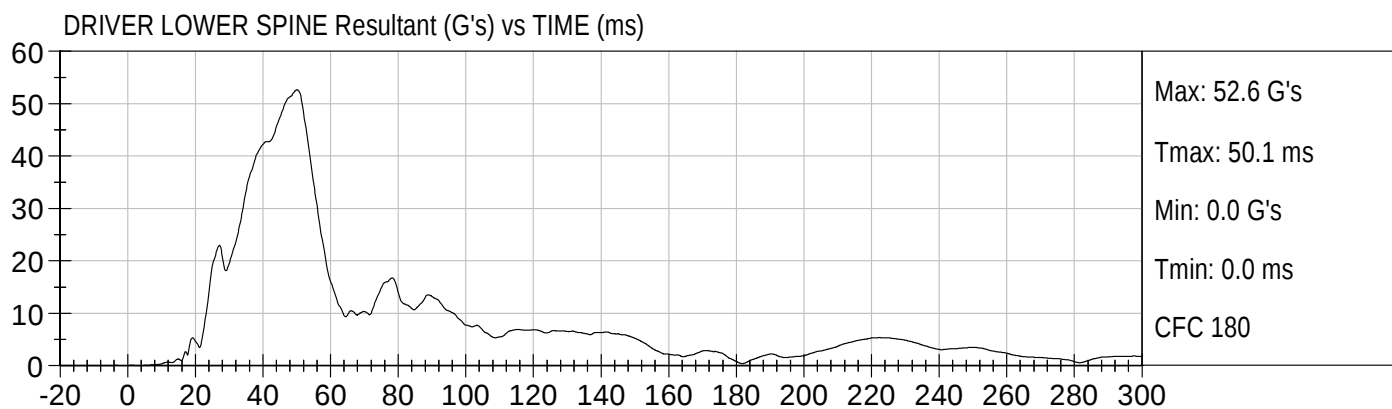
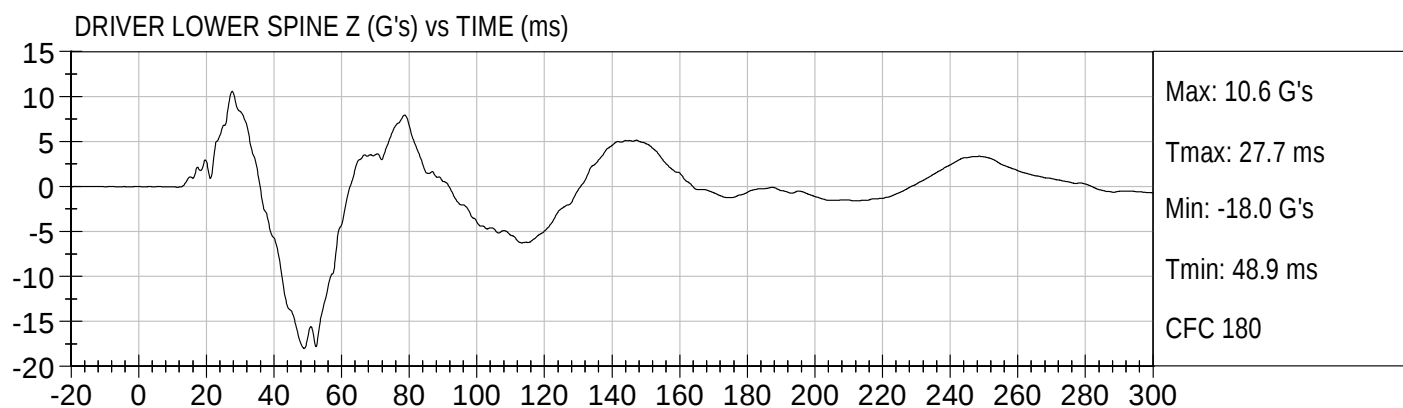
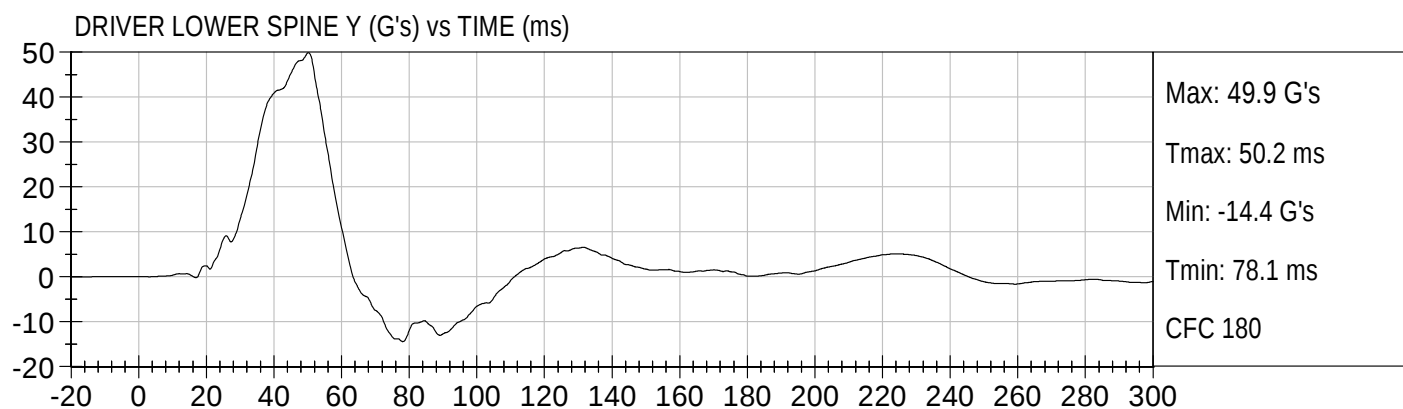
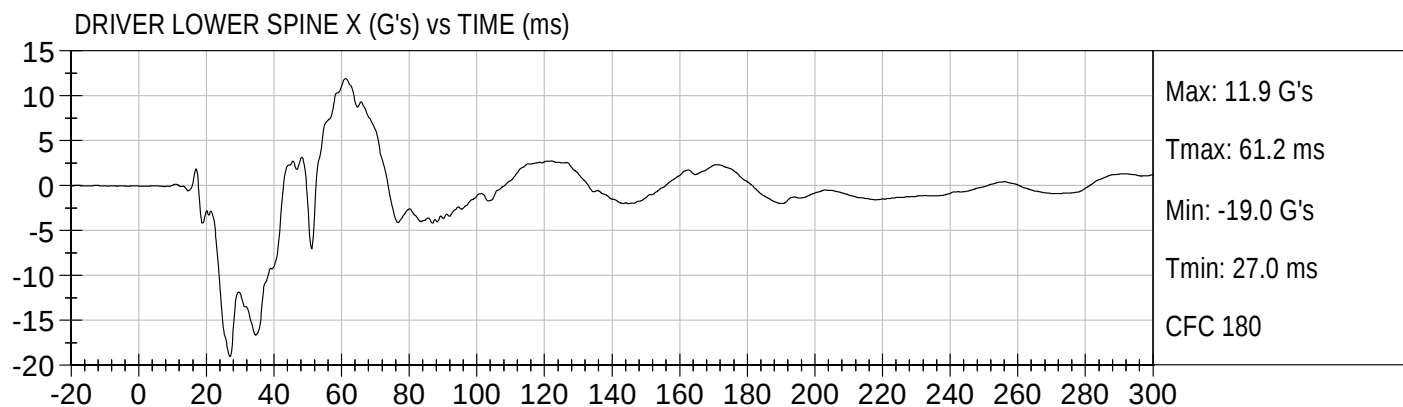
Load Cell Pole Barrier #5 Force (Y)

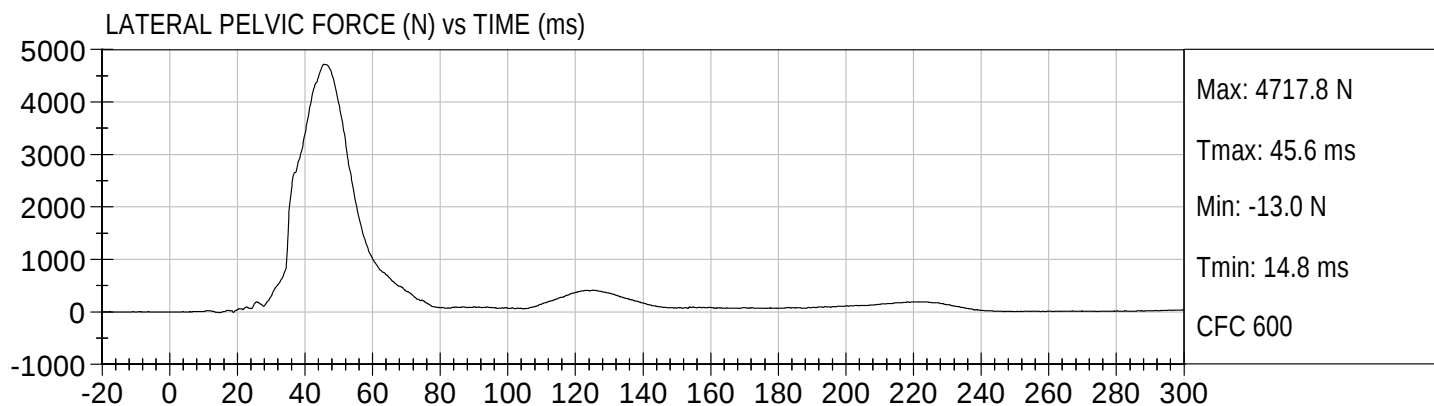
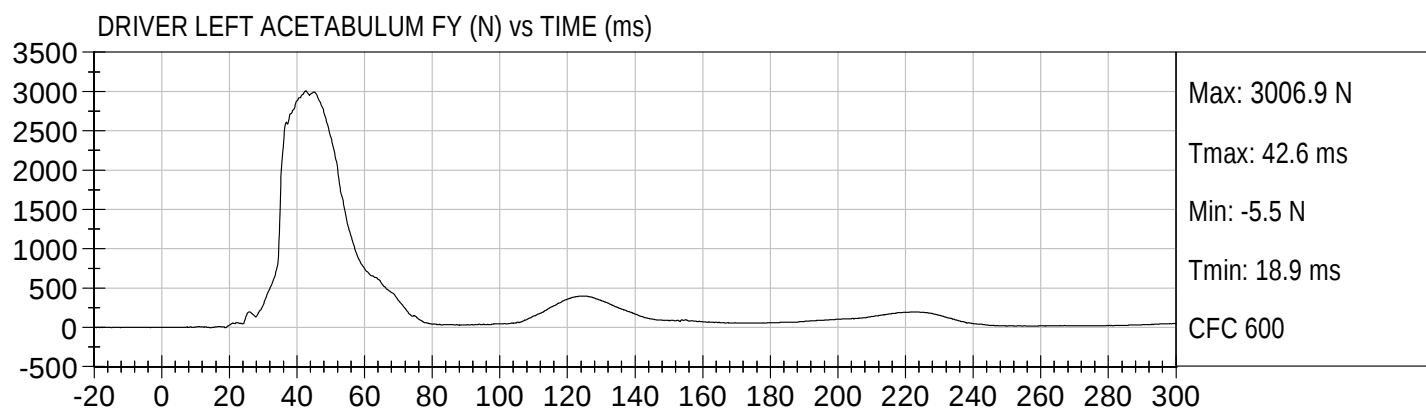
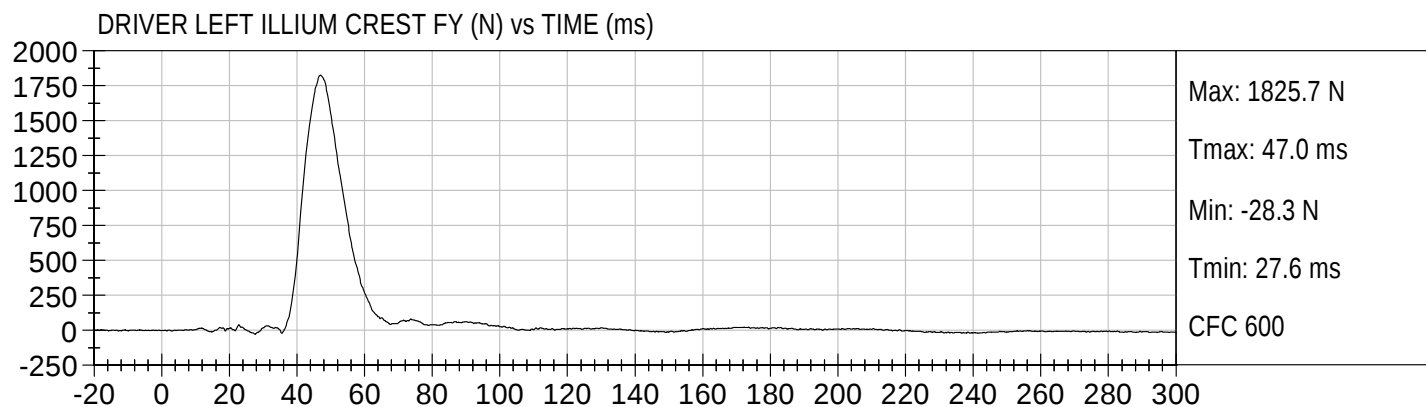
Load Cell Pole Barrier #6 Force (Y)

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

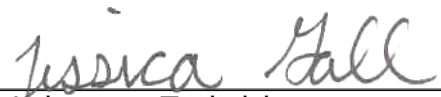
No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	784	Pass
B	Shoulder Pivot Height	437 - 453	442	Pass
C	H-point Height	79 - 89	83	Pass
D	H-point from Seatback	141 - 151	145	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	121	Pass
G	Head Breadth	140 - 148	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

Test ID: D113301

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Peak Resultant Acceleration	G's	115 to 137	121	Pass
Peak Lateral Acceleration	G's	+/- 15	-2.9	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

10/4/11
Test Date

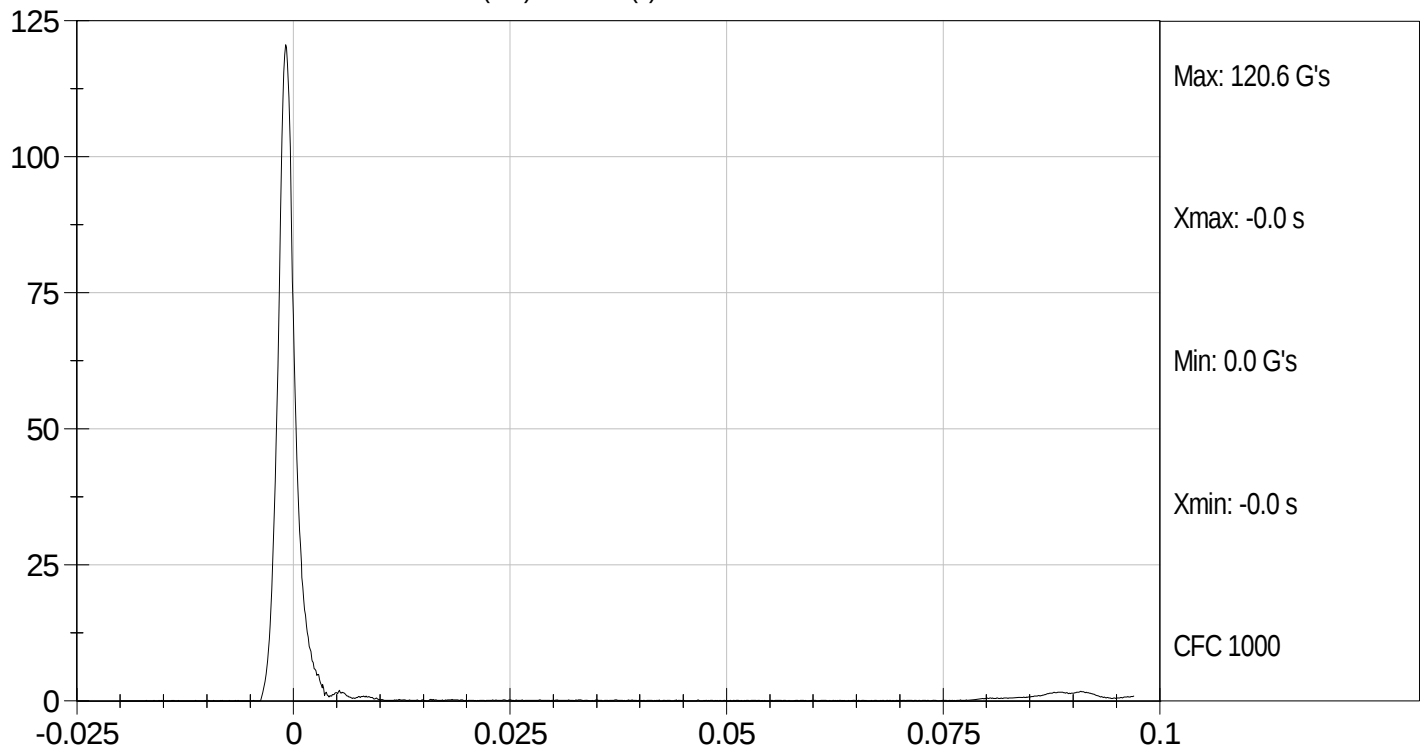

Approved By



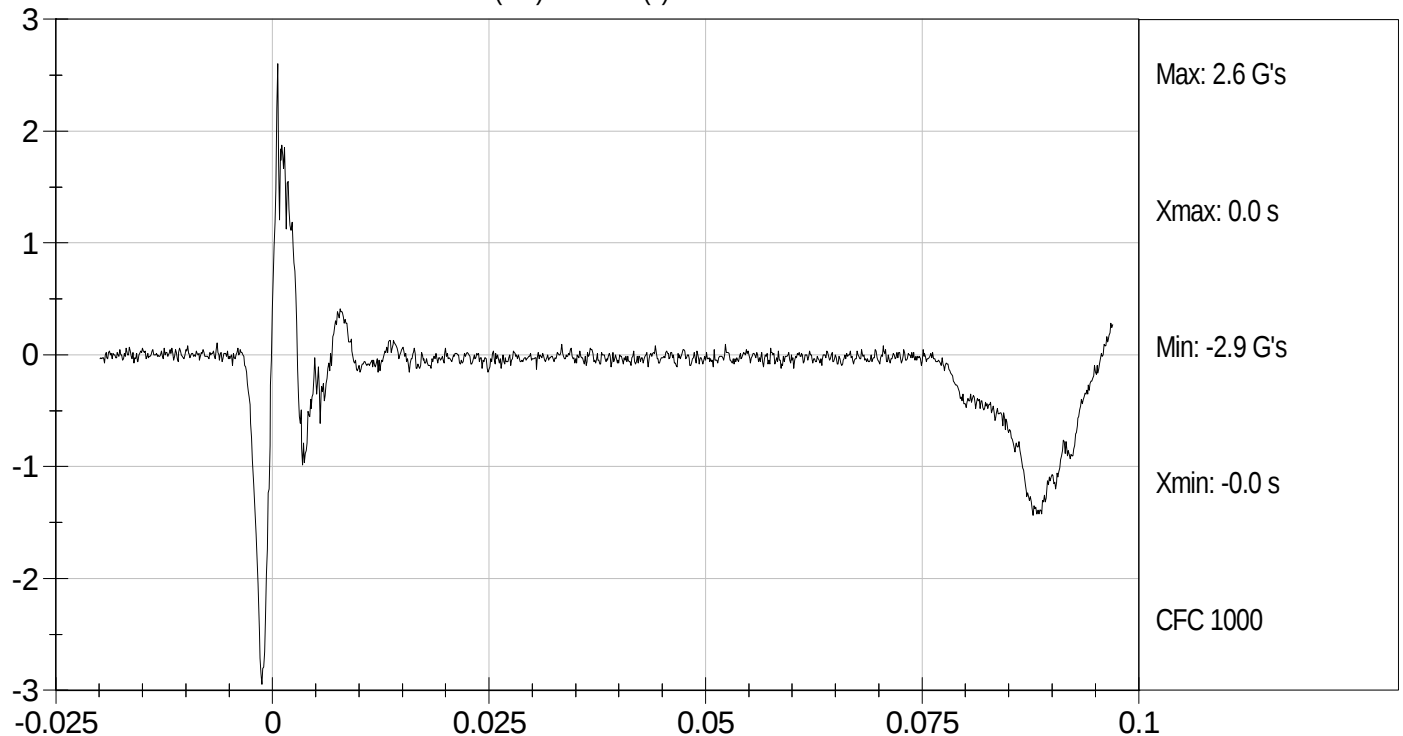
Test Desc: Head Drop
Component ID: D113301

Test Date: 10/4/11
Velocity: 0 ft/s, 0 m/s

PEAK RESULTANT ACCELERATION (G's) vs TIME (s)



PEAK LONGITUDINAL ACCELERATION (G's) vs TIME (s)

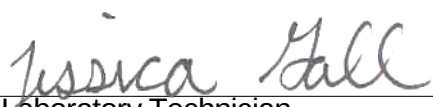


MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113302

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.6	Pass
Humidity		%	10 to 70	42	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.65	Pass
	15 ms	m/s	3.30 to 4.10	3.74	Pass
	20 ms	m/s	4.40 to 5.40	4.85	Pass
	25 ms	m/s	5.40 to 6.10	5.54	Pass
	25-100 ms	m/s	5.50 to 6.20	5.56	Pass
Maximum D-Plane Rotation		deg	71 to 81	73	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	58	Pass
Maximum Occipital Condyle Moment during Rotation Interval Nm			-44 to -36	-40	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
Overall Test Results				Pass	


 Laboratory Technician

10/4/11
 Test Date

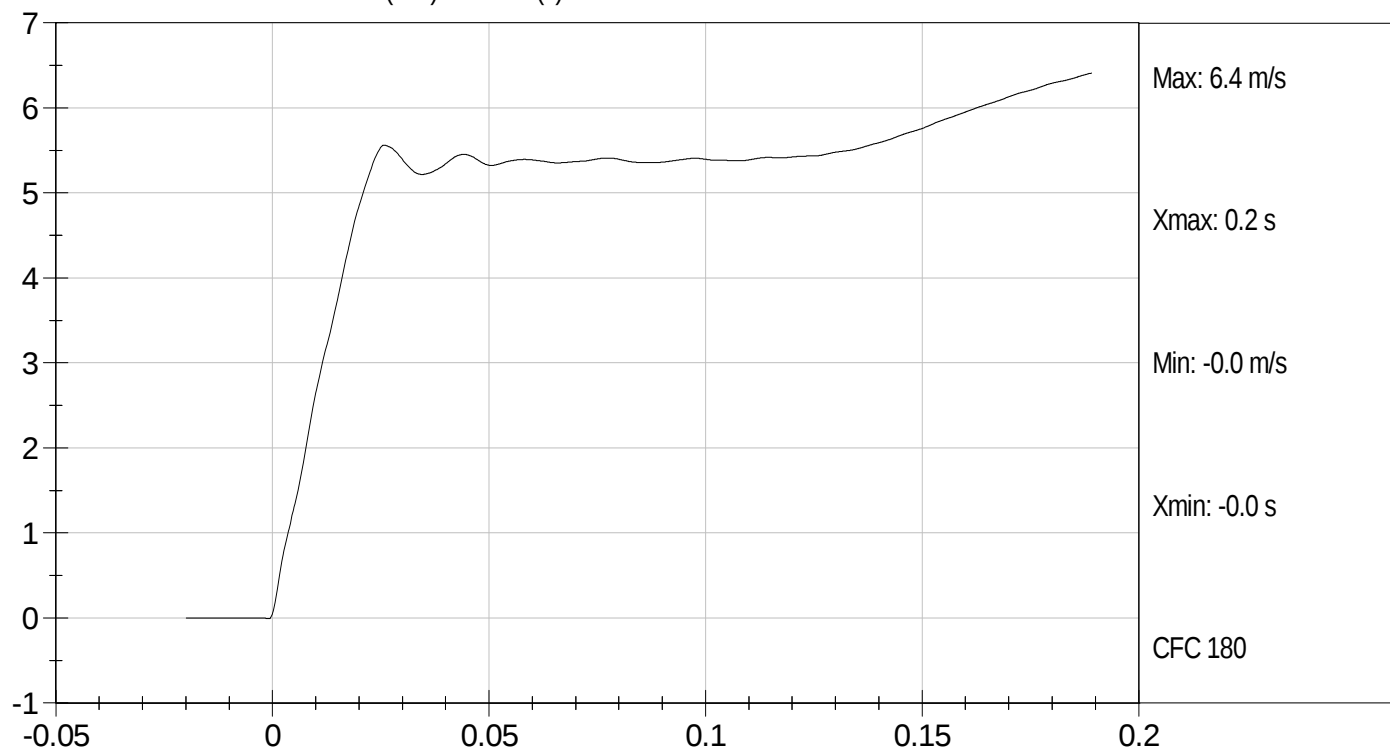

 Approved By



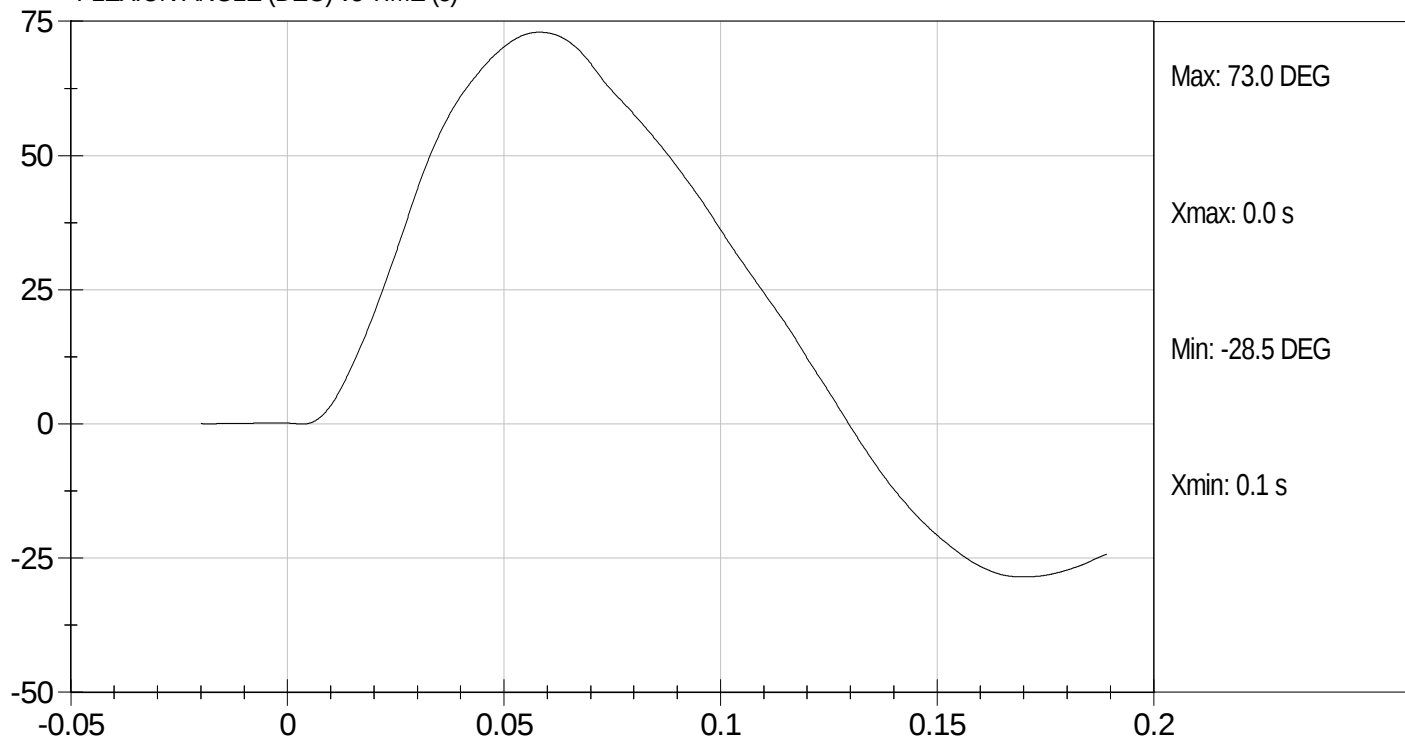
Test Desc: Neck Bending
Component ID: D113302

Test Date: 10/4/11
Velocity: 18.32 ft/s, 5.58 m/s

PENDULUM DECELERATION (m/s) vs TIME (s)



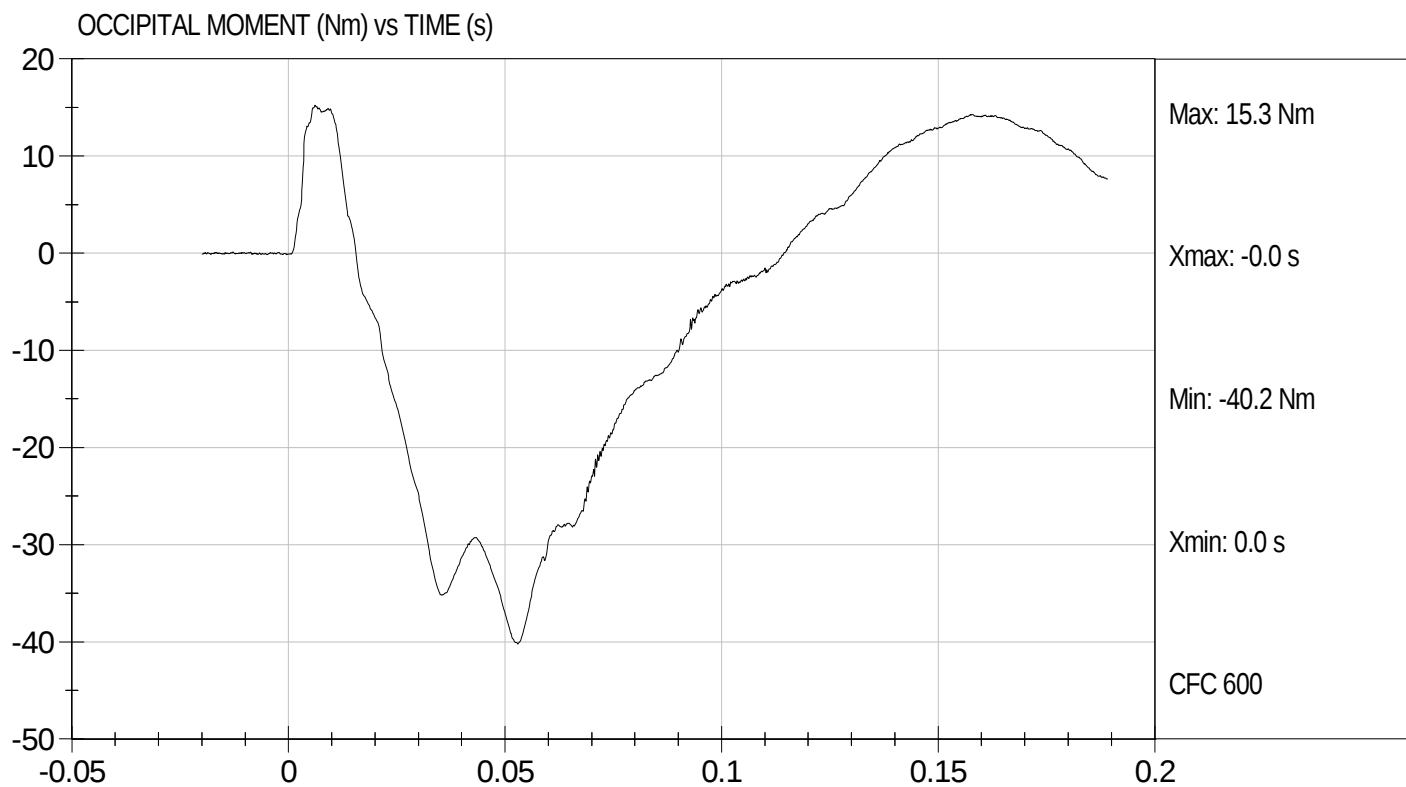
FLEXION ANGLE (DEG) vs TIME (s)





Test Desc: Neck Bending
Component ID: D113302

Test Date: 10/4/11
Velocity: 18.32 ft/s, 5.58 m/s

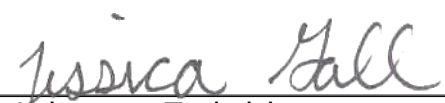


MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-ILs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D113303

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	40	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

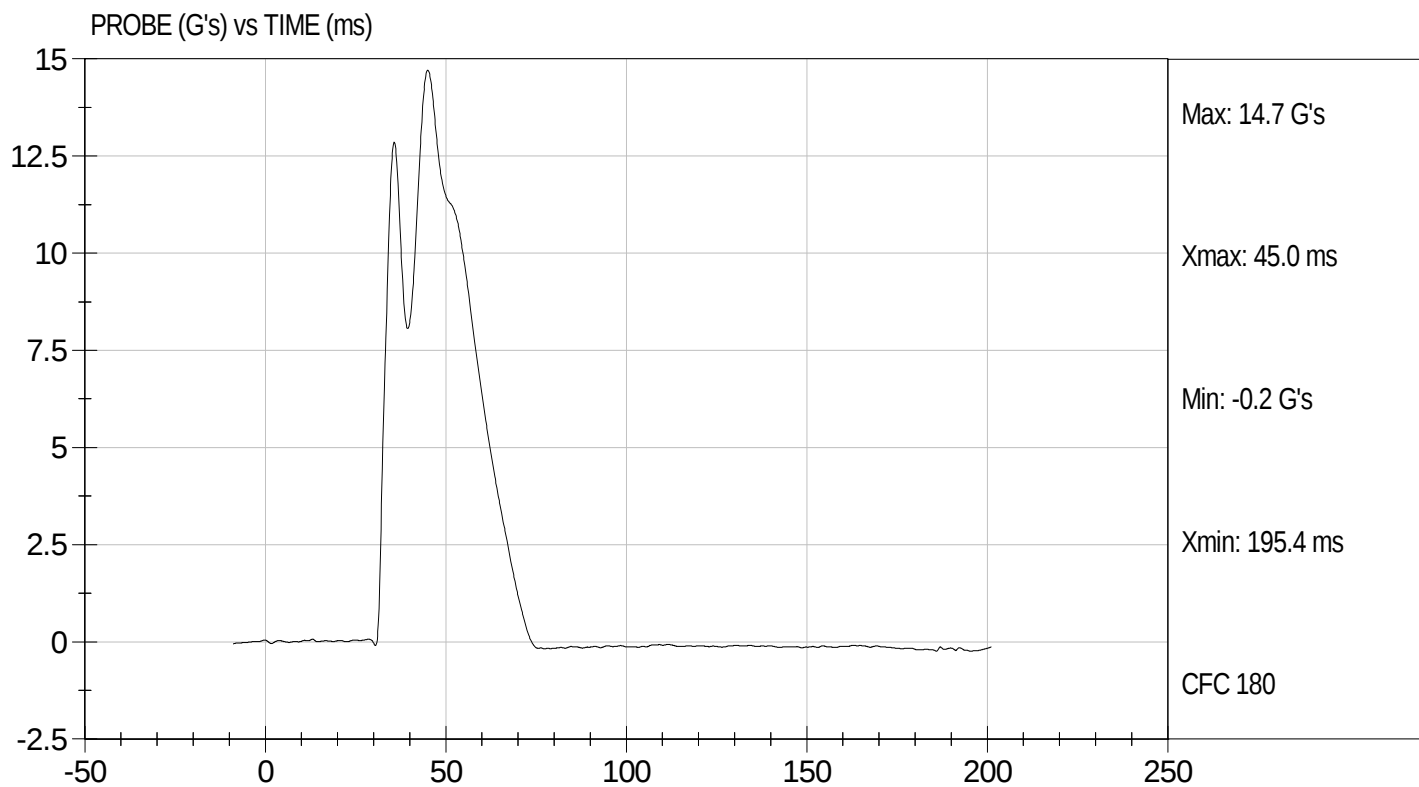
10/5/11
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D113303

Test Date: 10/5/11
Velocity: 14.25 ft/s, 4.34 m/s

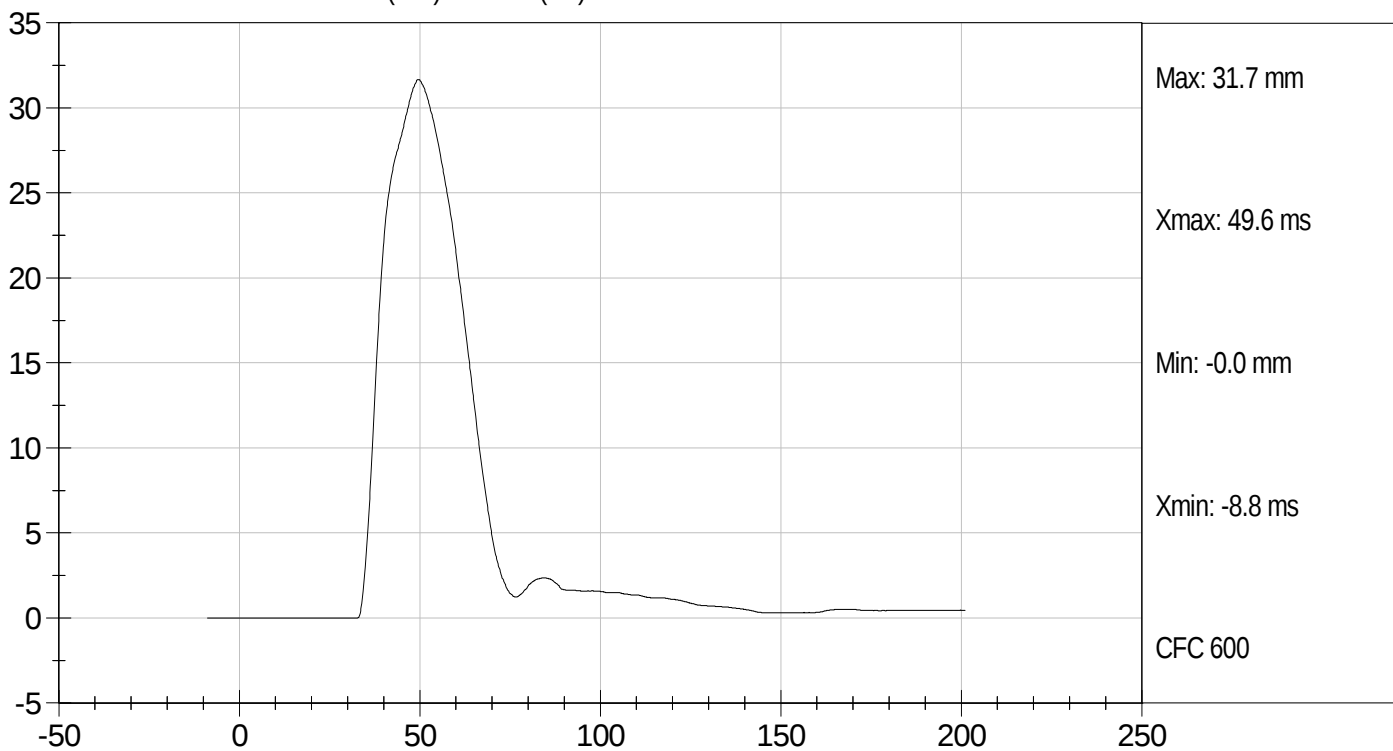




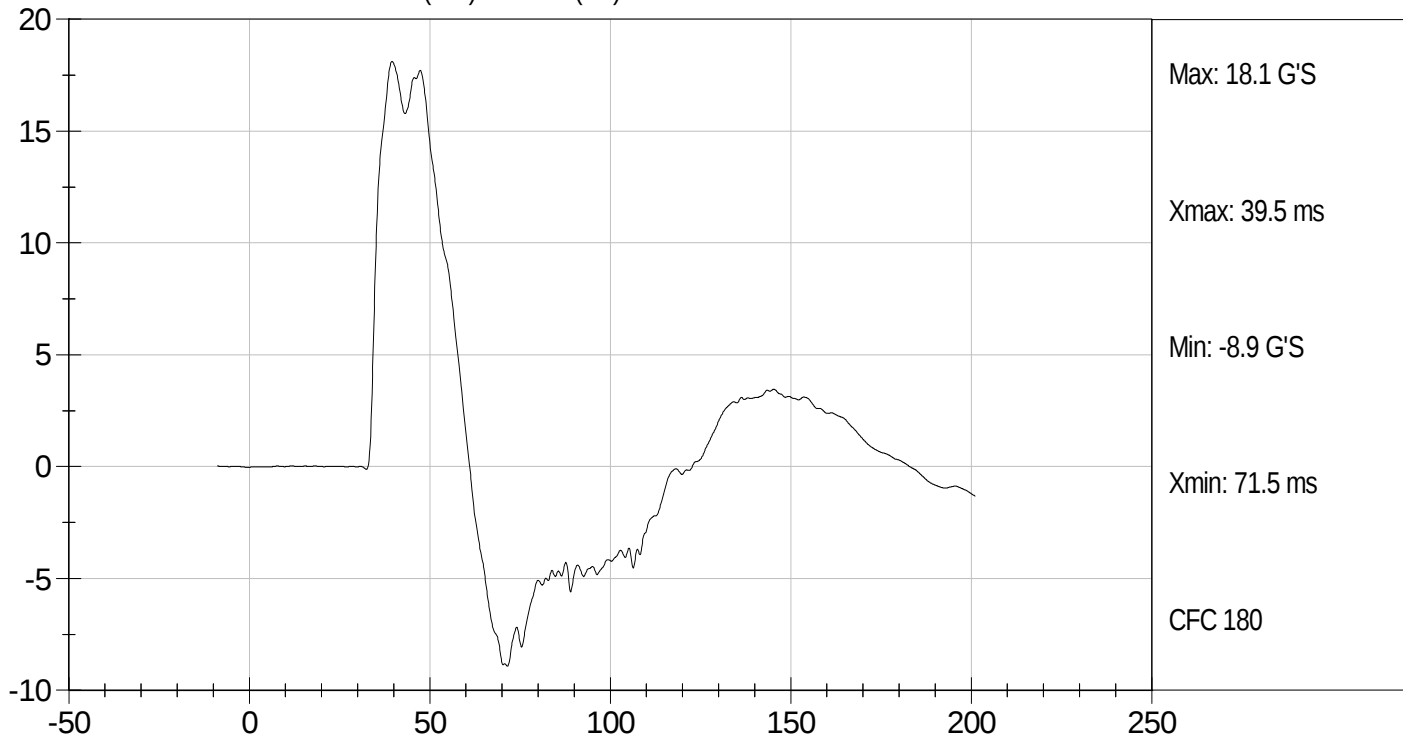
Test Desc: Shoulder Impact
Component ID: D113303

Test Date: 10/5/11
Velocity: 14.25 ft/s, 4.34 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



UPPER SPINE ACCELERATION (G'S) vs TIME (ms)

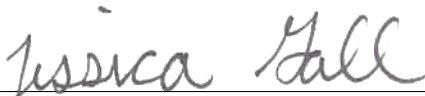


MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113304

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	40	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	32	Pass
Shoulder Displacement	mm	31 to 40	36	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	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
Overall Test Results				Pass


 Laboratory Technician

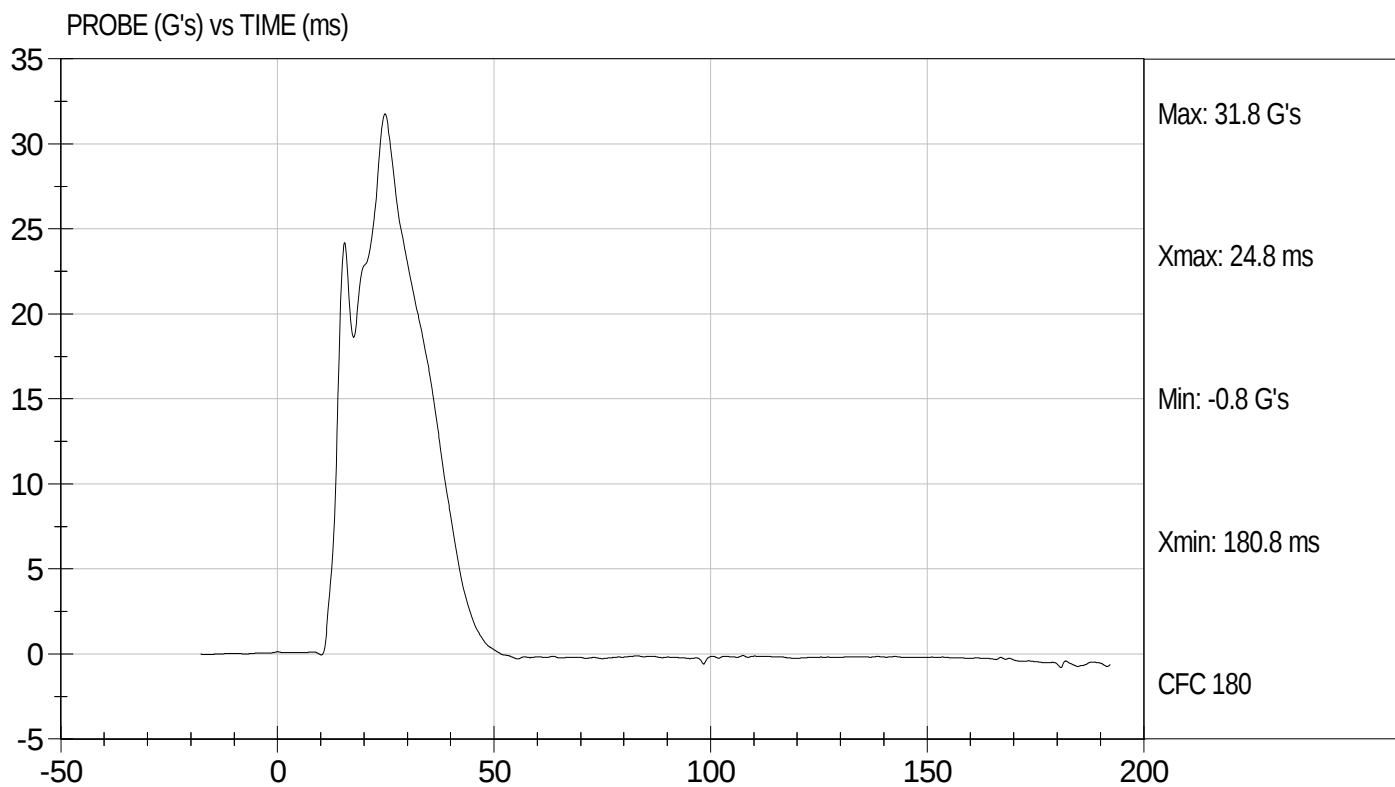
10/5/11
 Test Date


 Approved By



Test Desc: Thorax With Arm
Component ID: D113304

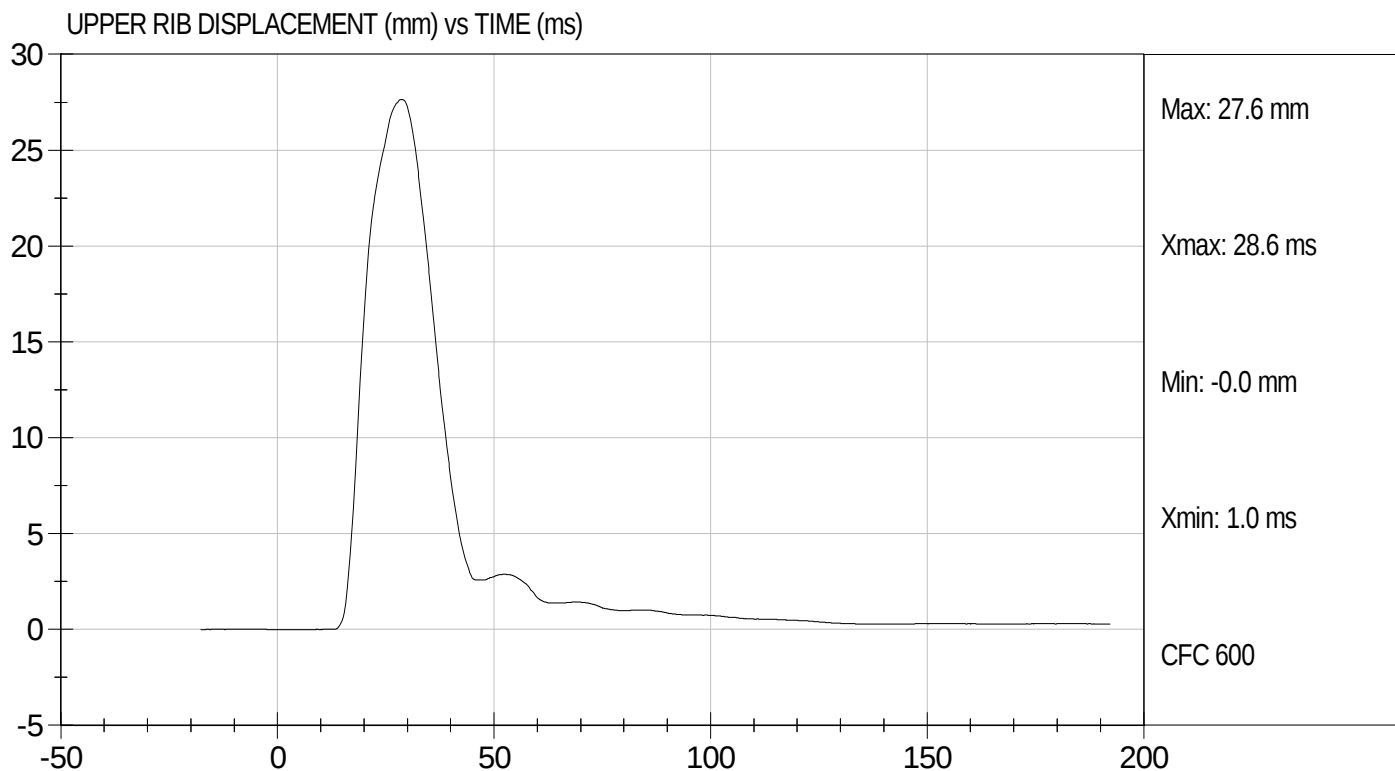
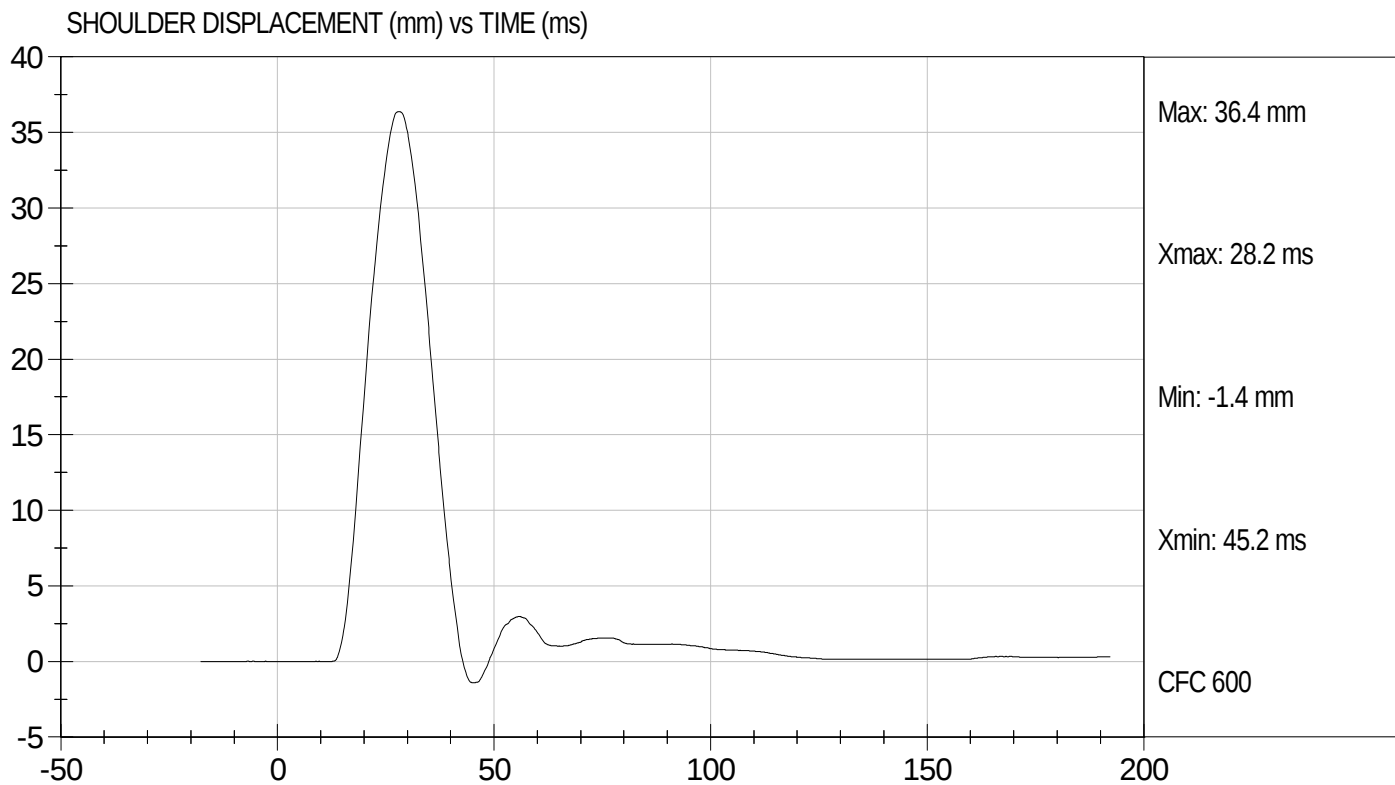
Test Date: 10/5/11
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D113304

Test Date: 10/5/11
Velocity: 22.22 ft/s, 6.77 m/s

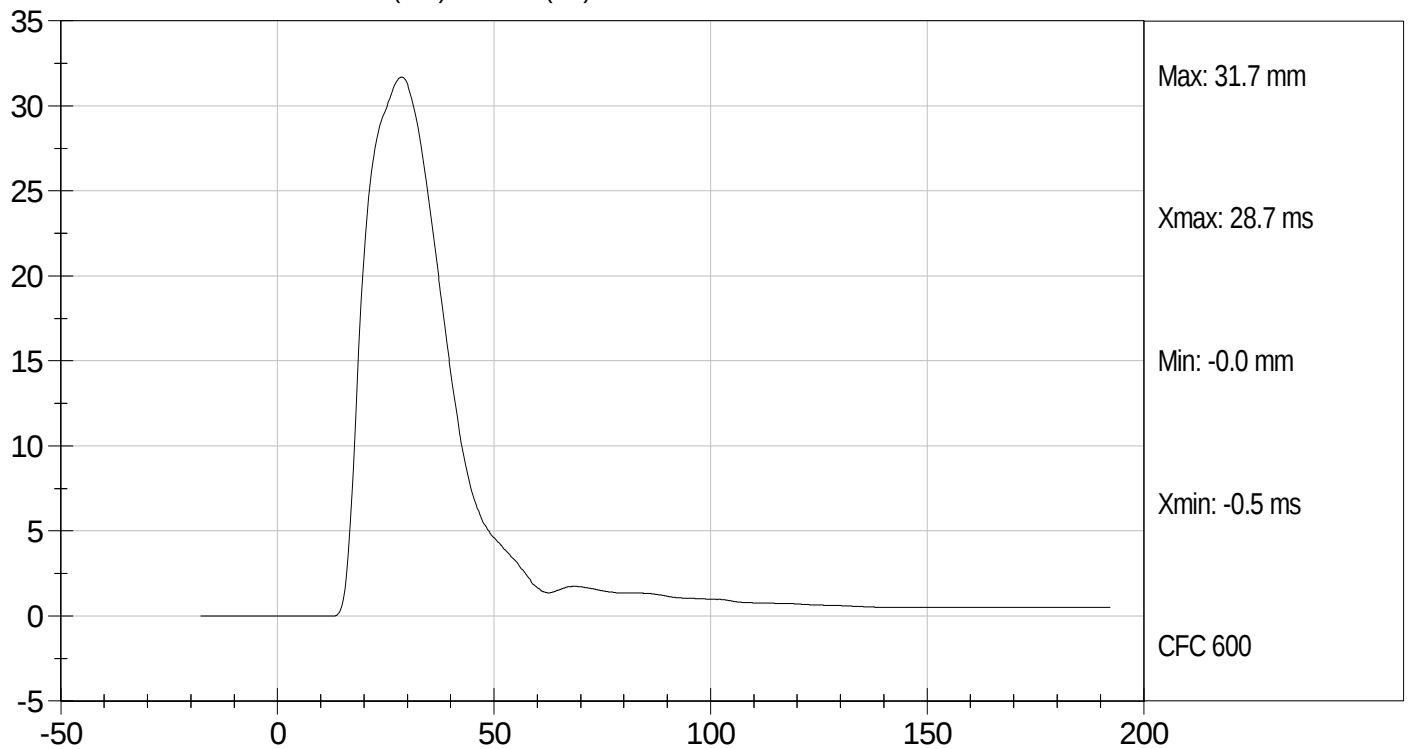




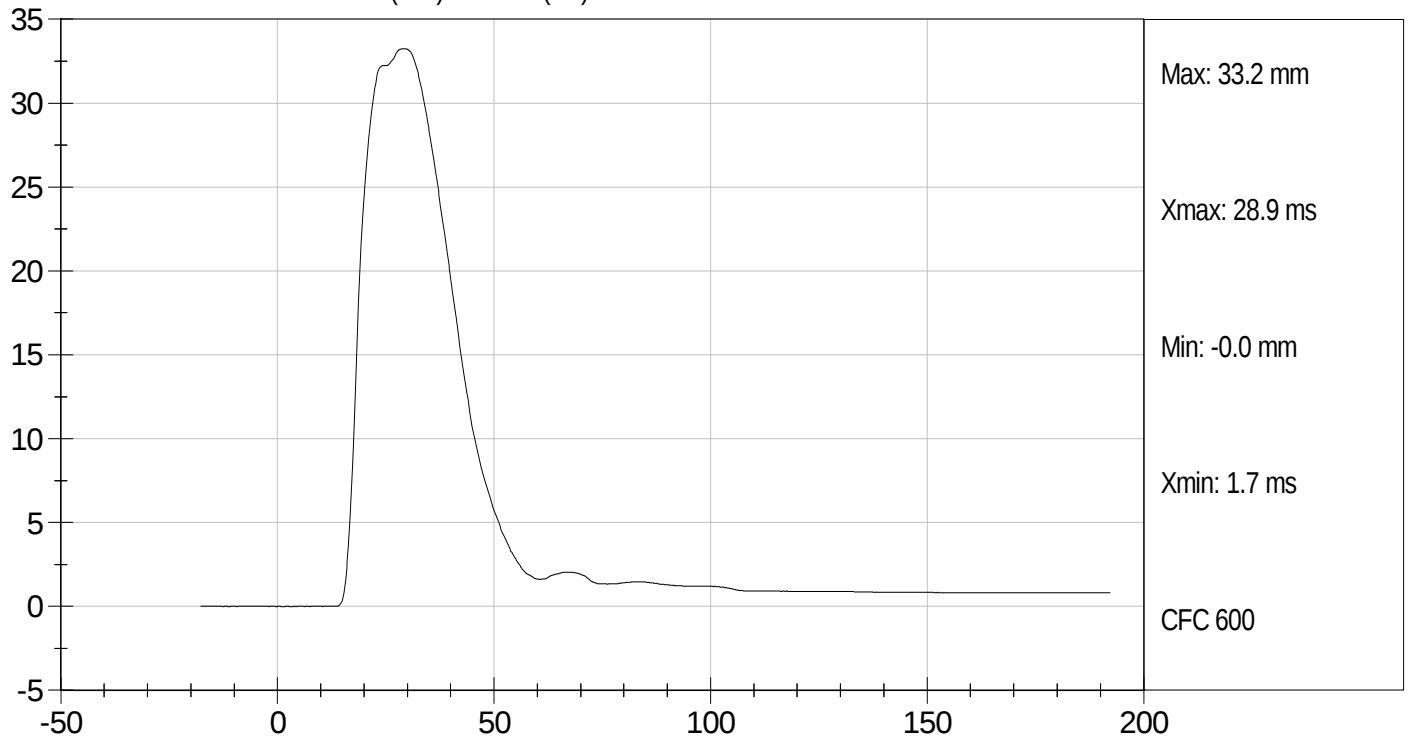
Test Desc: Thorax With Arm
Component ID: D113304

Test Date: 10/5/11
Velocity: 22.22 ft/s, 6.77 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



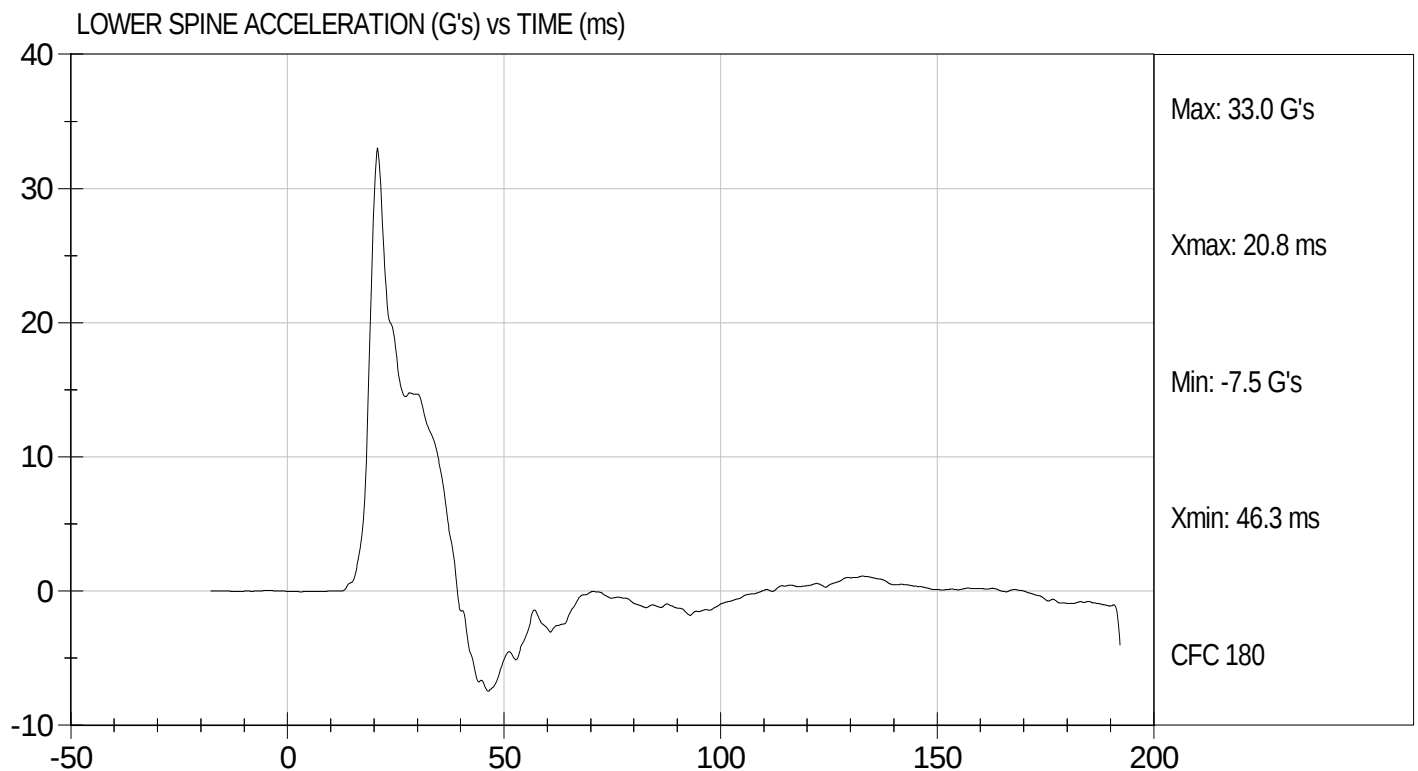
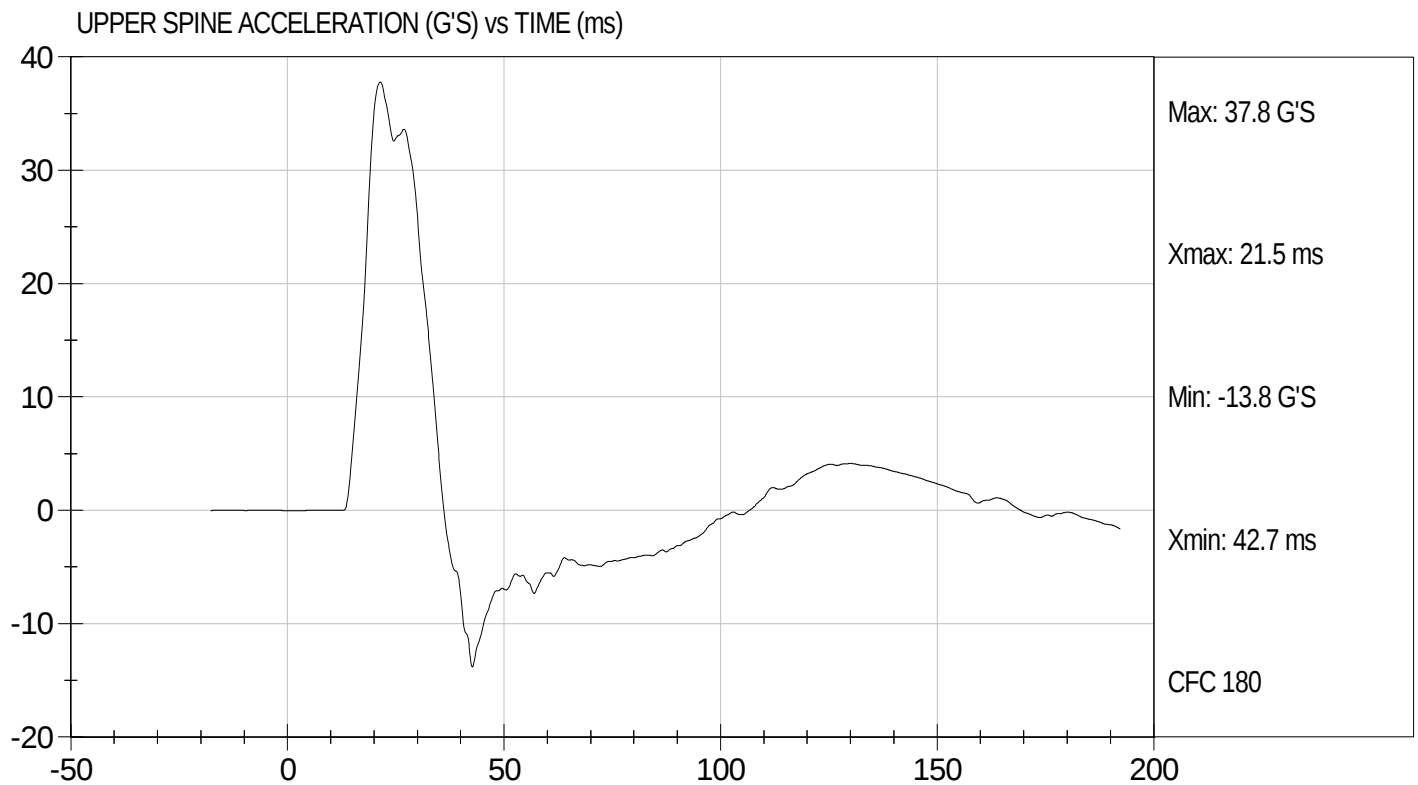
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)





Test Desc: Thorax With Arm
Component ID: D113304

Test Date: 10/5/11
Velocity: 22.22 ft/s, 6.77 m/s



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

ATD Serial No: 296

Test I.D: D113305

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Force	G's	14 to 18	14	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	37	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

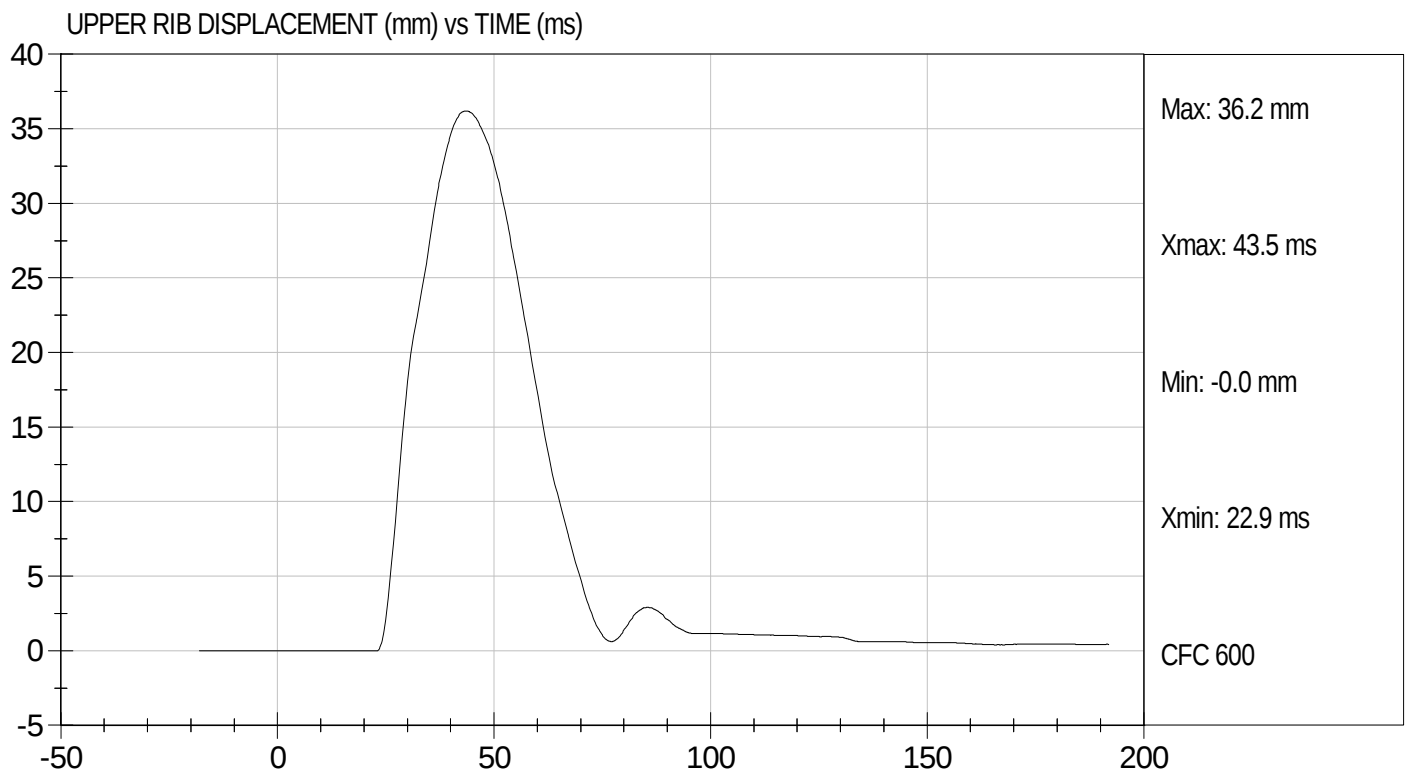
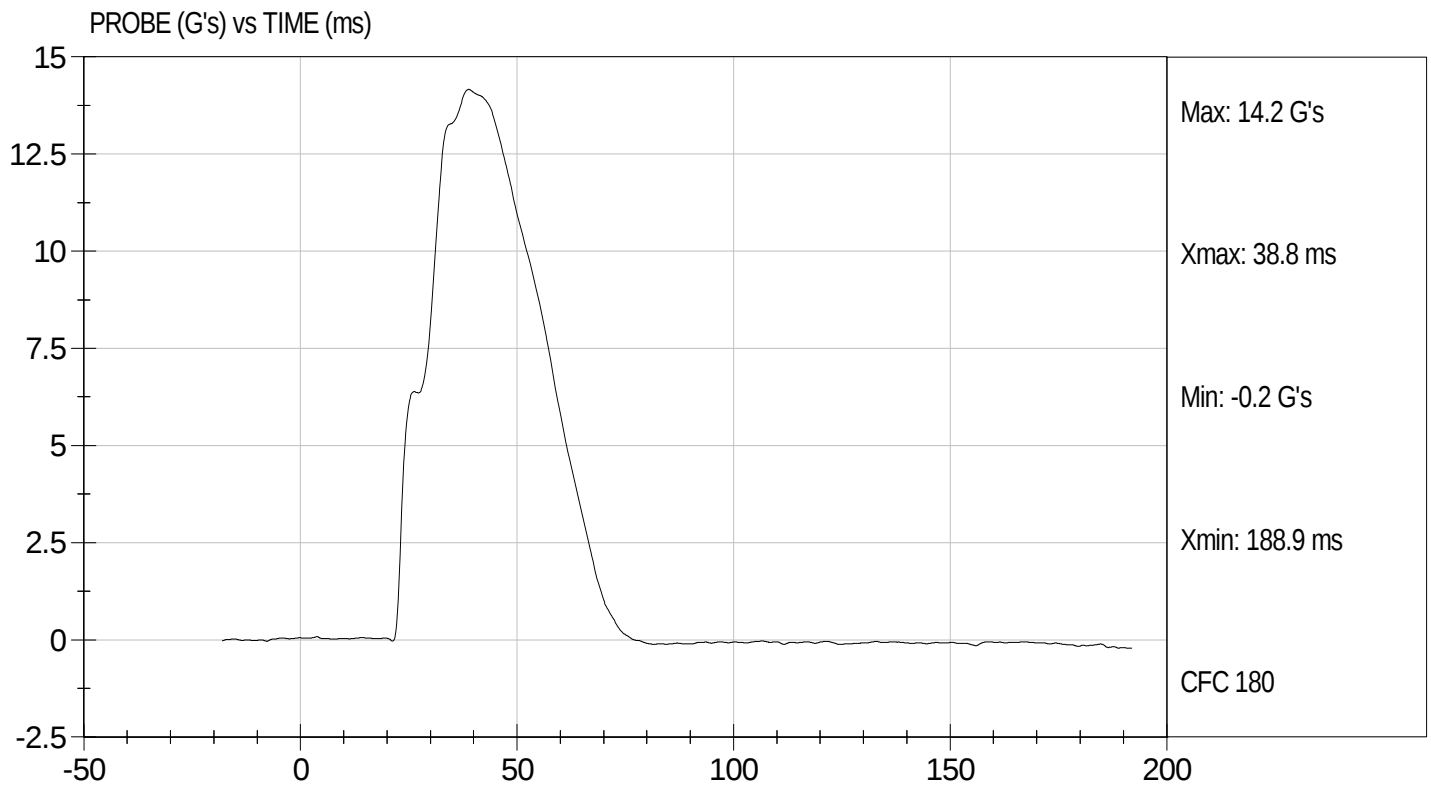
10/5/11
 Test Date


 Approved By



Test Desc: Thorax Without Arm
Component ID: D113305

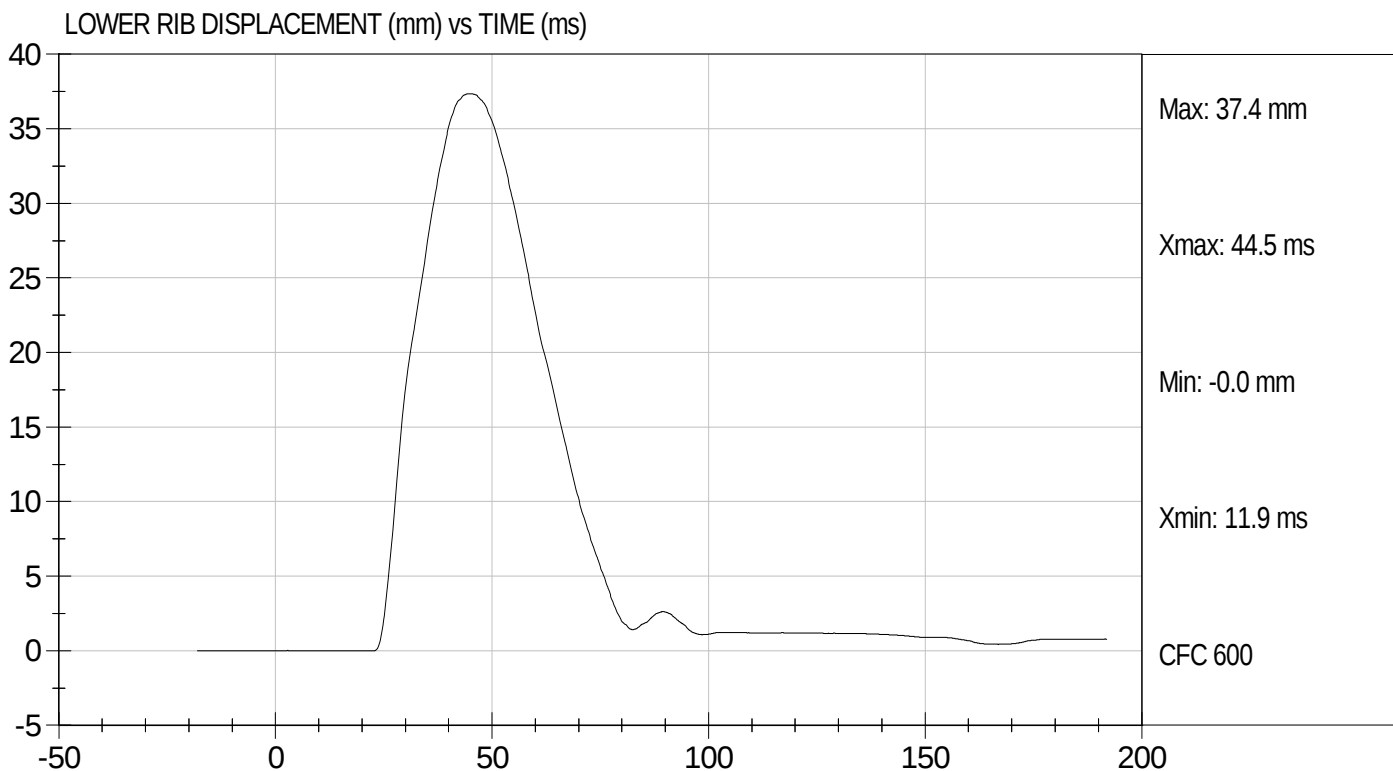
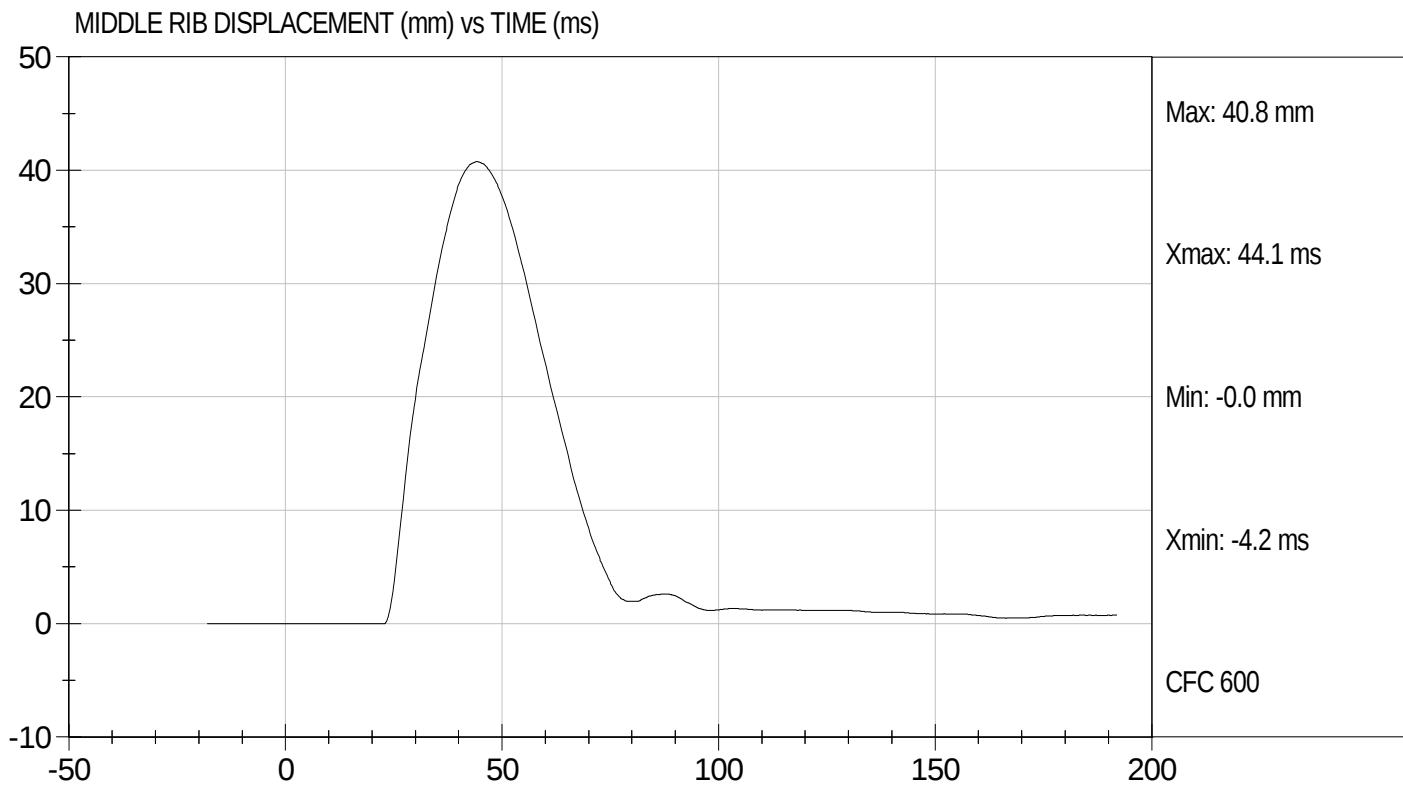
Test Date: 10/5/11
Velocity: 14.36 ft/s, 4.38 m/s





Test Desc: Thorax Without Arm
Component ID: D113305

Test Date: 10/5/11
Velocity: 14.36 ft/s, 4.38 m/s

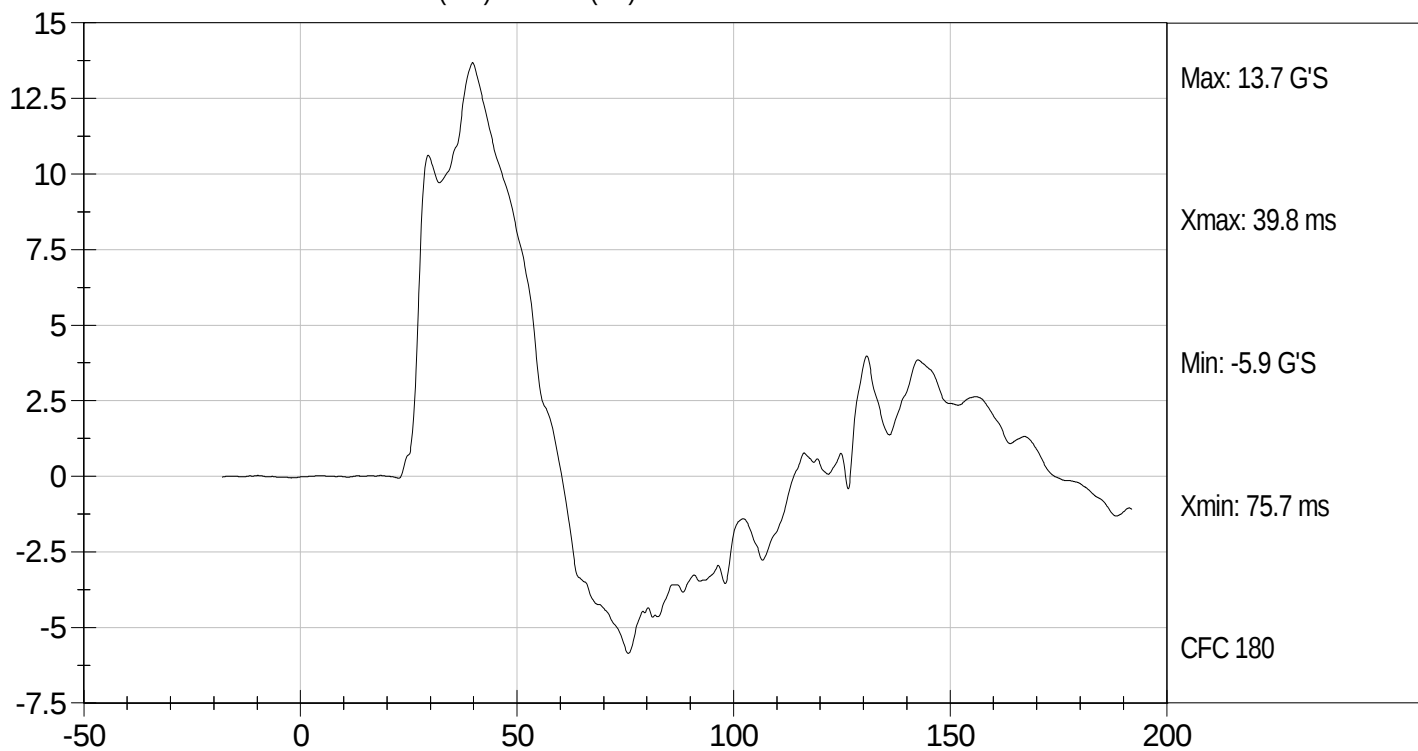




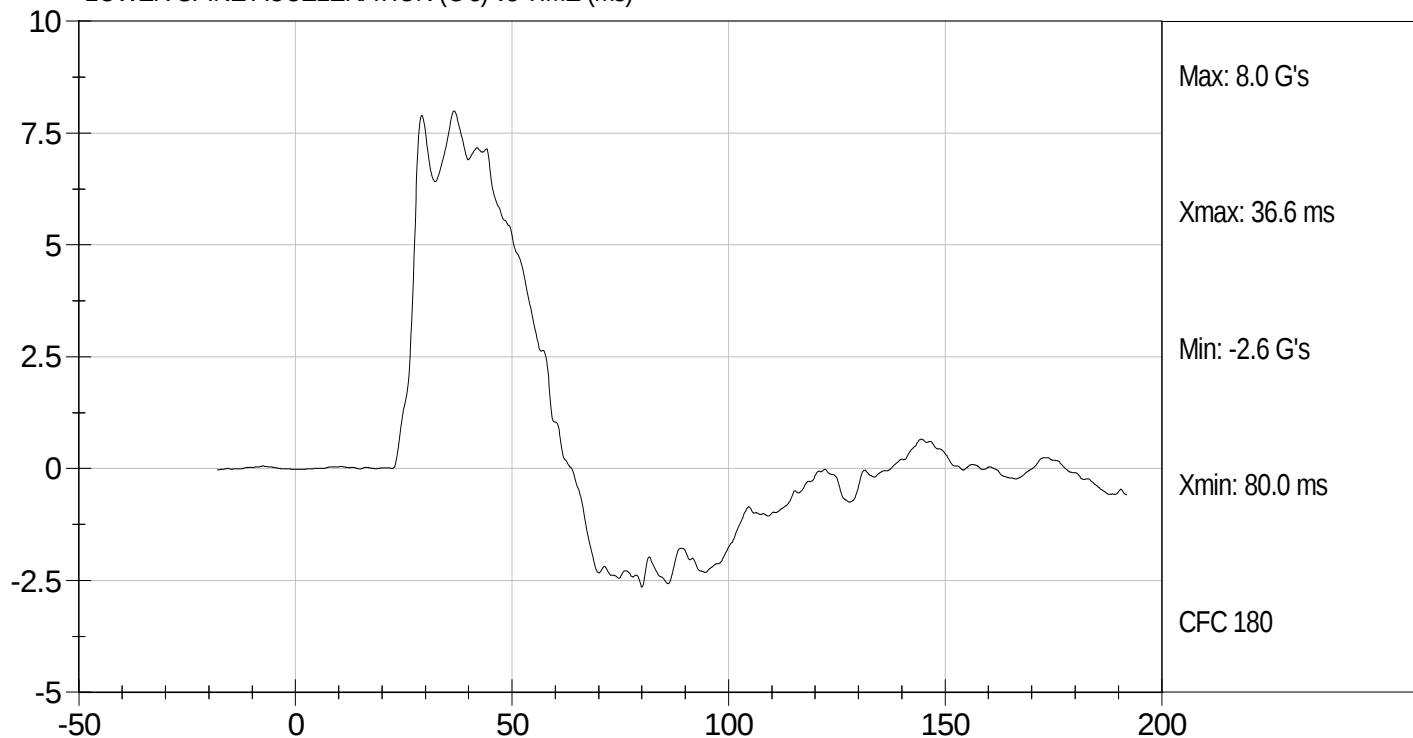
Test Desc: Thorax Without Arm
Component ID: D113305

Test Date: 10/5/11
Velocity: 14.36 ft/s, 4.38 m/s

UPPER SPINE ACCELERATION (G'S) vs TIME (ms)



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

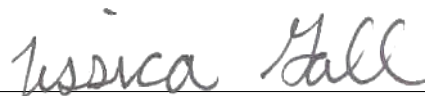


MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113306

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.1	Pass
Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	12 to 16	13	Pass
Upper Rib Displacement	mm	36 to 47	38	Pass
Lower Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results				Pass


Laboratory Technician

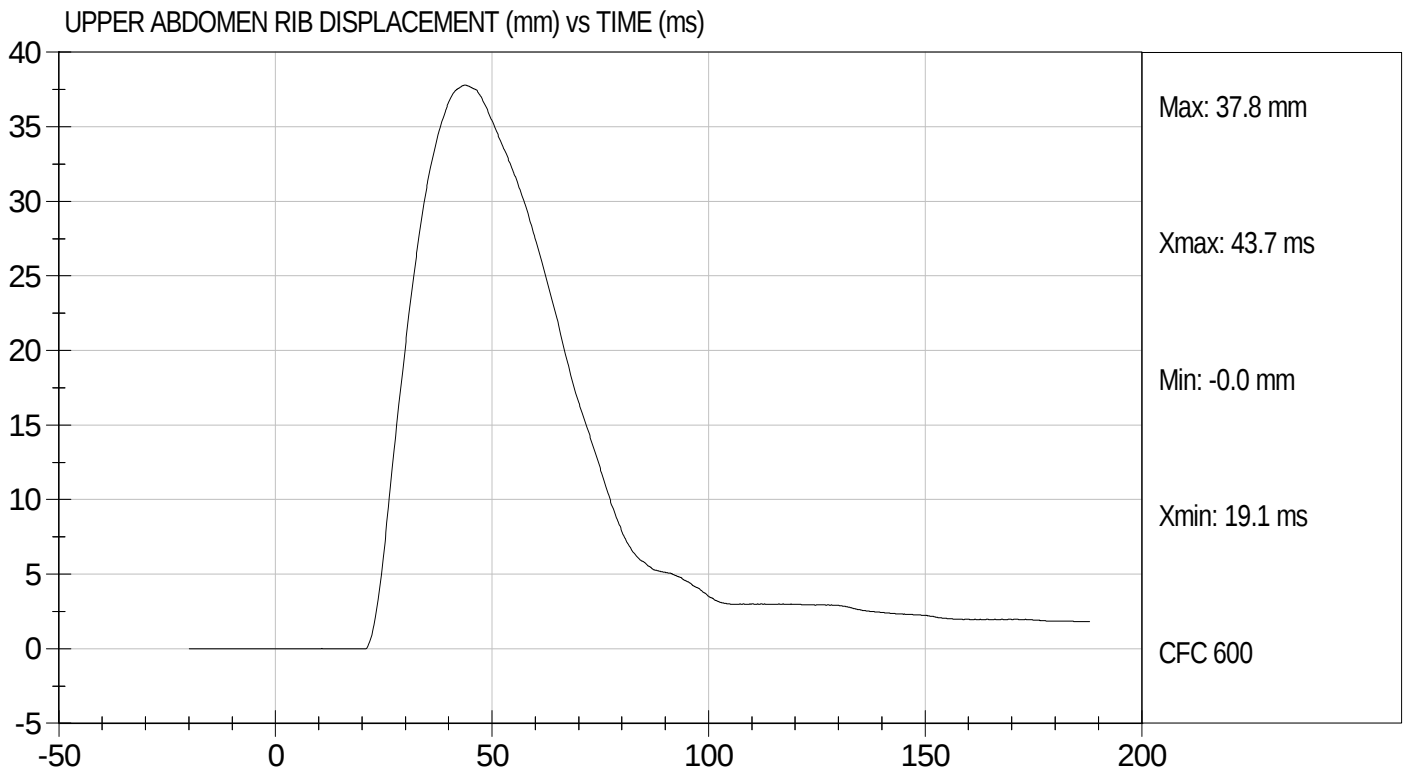
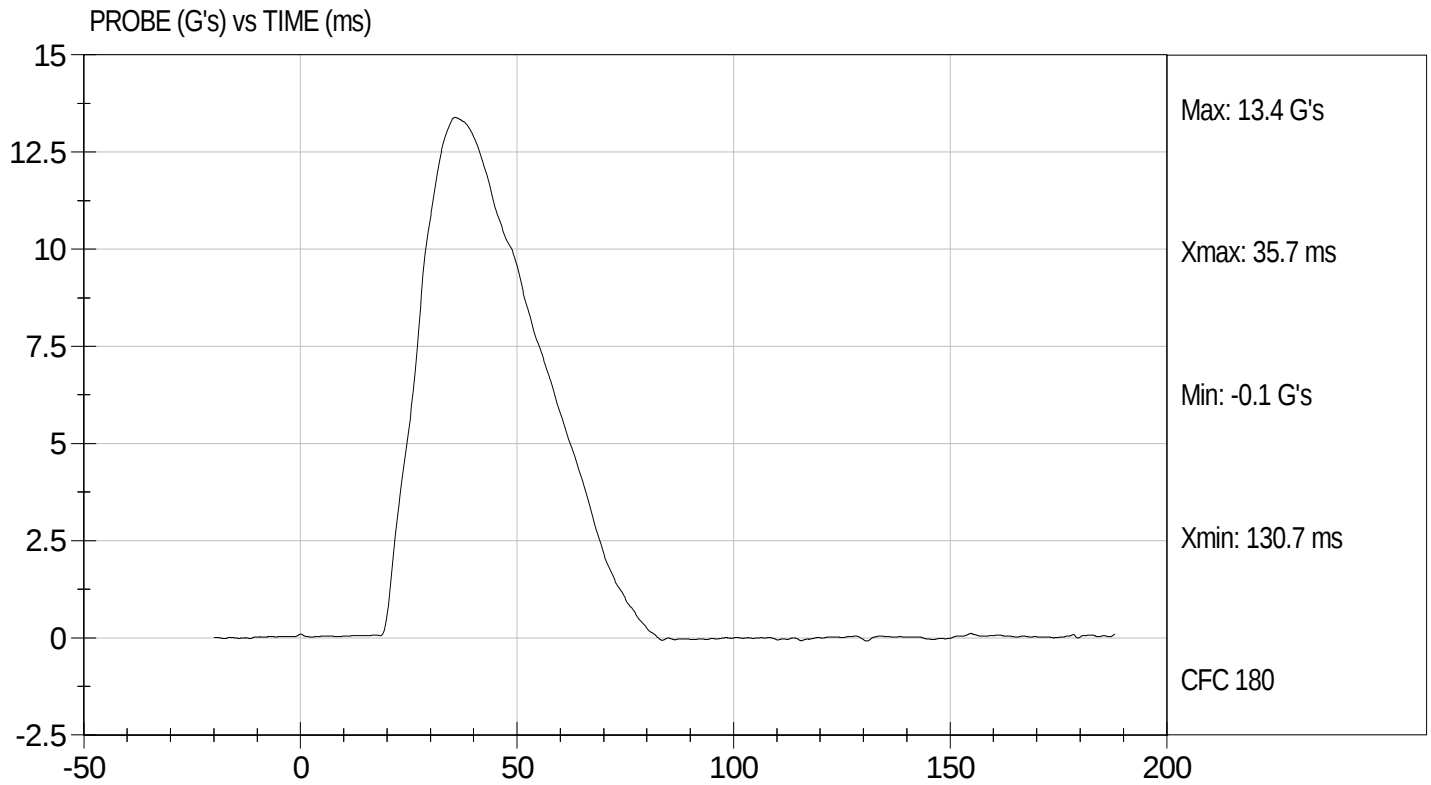
10/5/11
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D113306

Test Date: 10/5/11
Velocity: 14.25 ft/s, 4.34 m/s

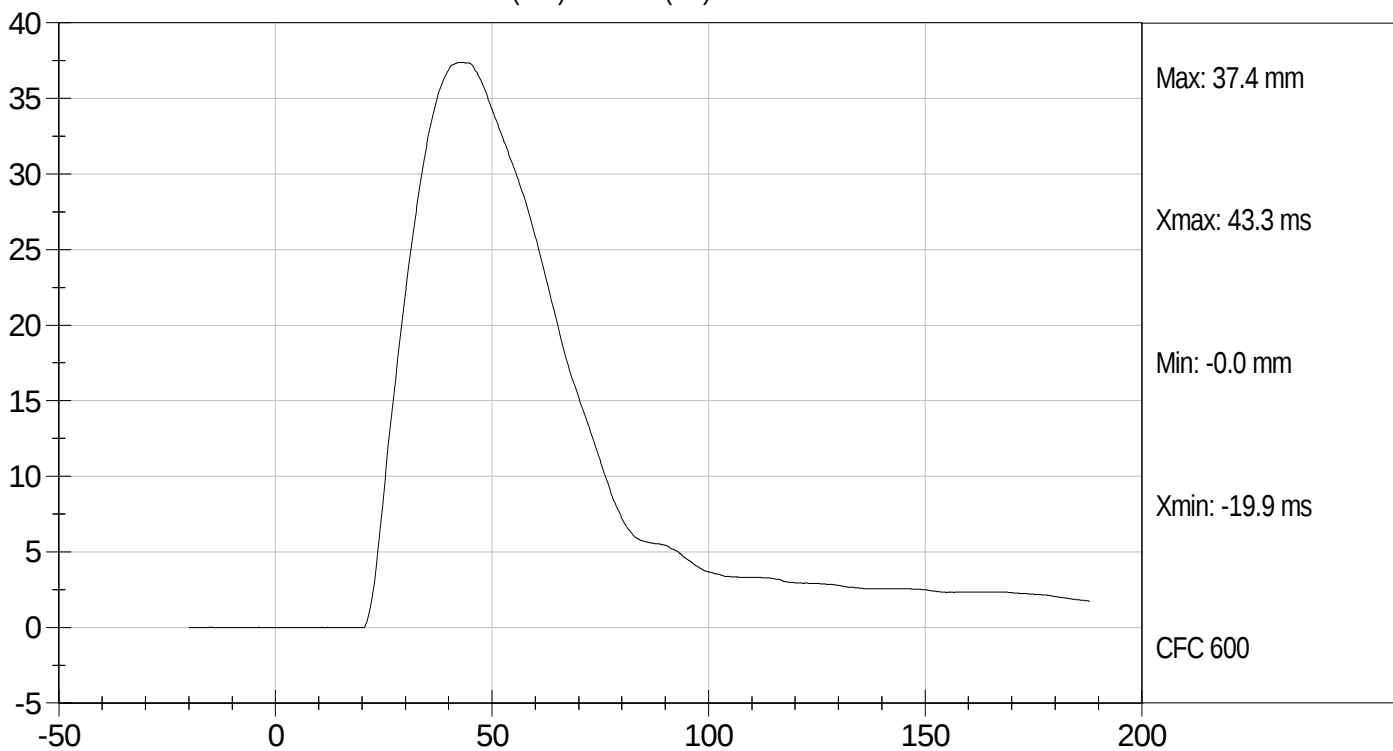




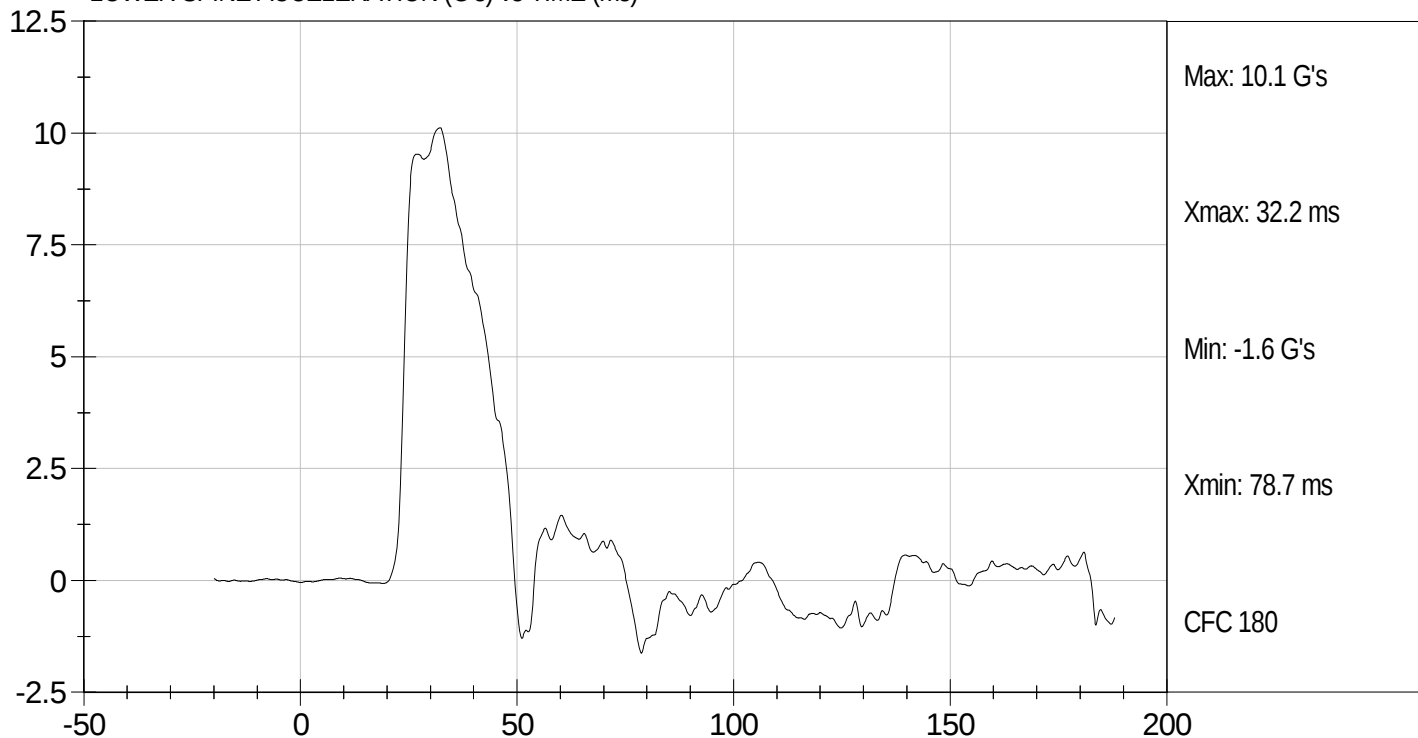
Test Desc: Abdomen Impact
Component ID: D113306

Test Date: 10/5/11
Velocity: 14.25 ft/s, 4.34 m/s

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



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

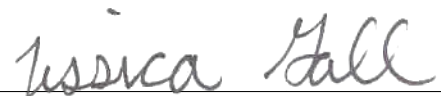


MGA RESEARCH CORPORATION
PELVIS IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113307

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.1	Pass
Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor 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	3867	Pass
Overall Test Results				Pass


Laboratory Technician

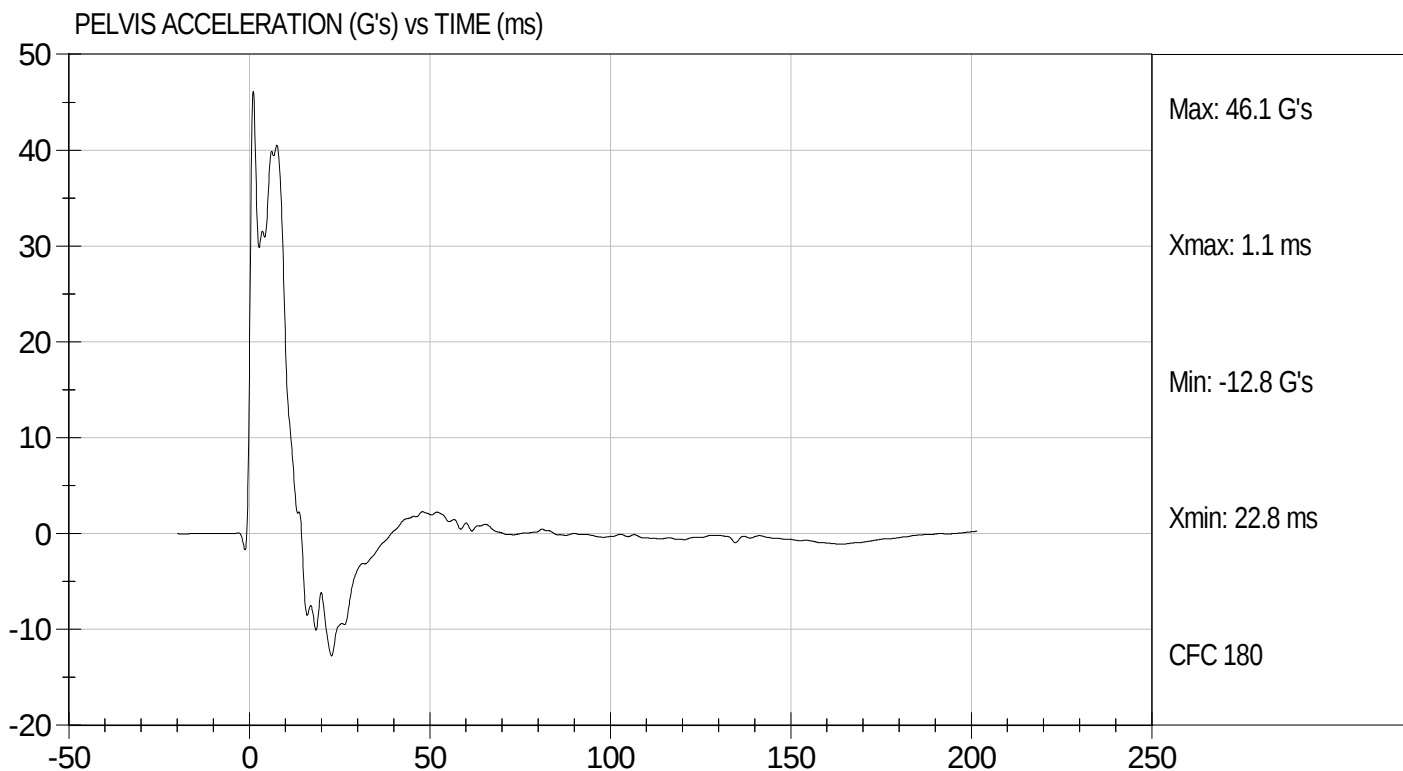
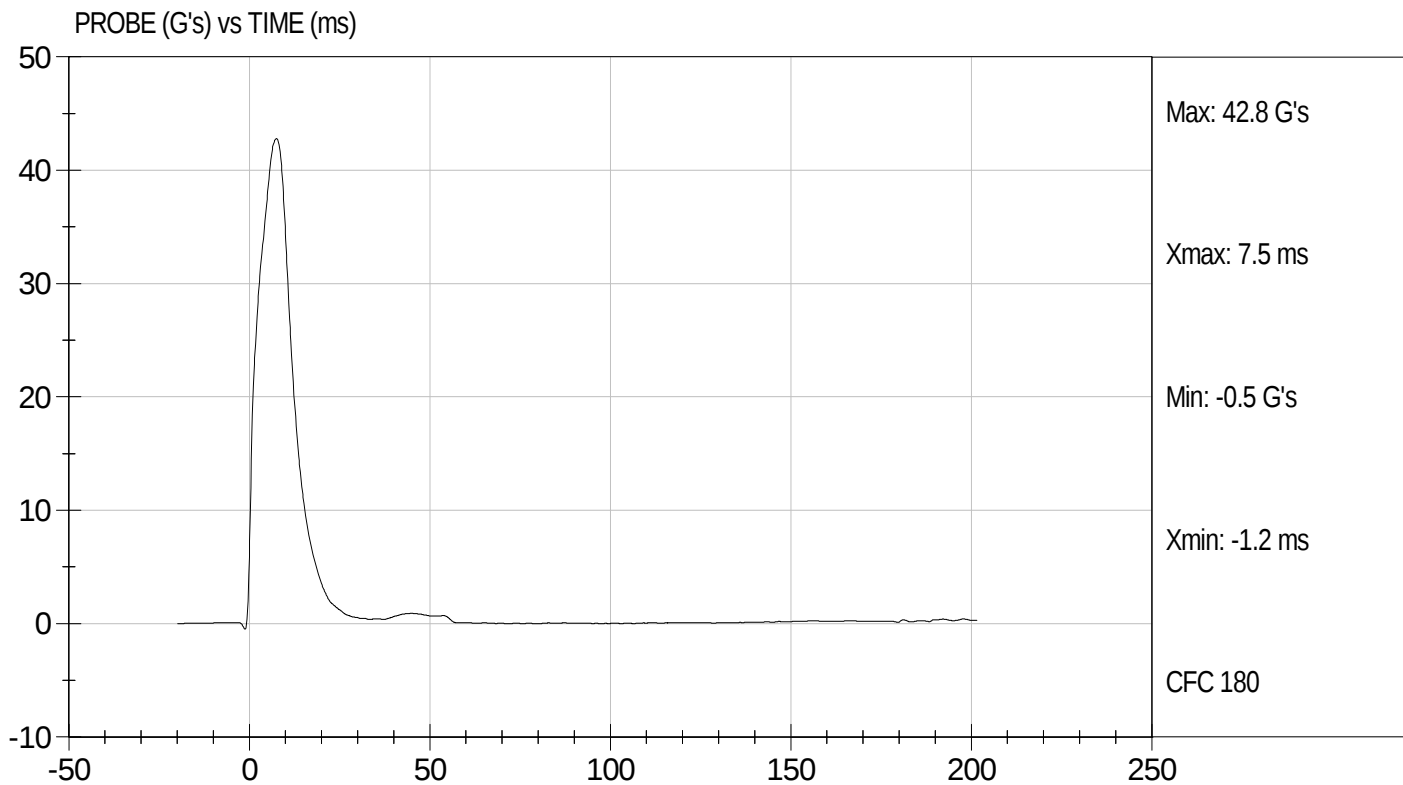
10/5/11
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D113307

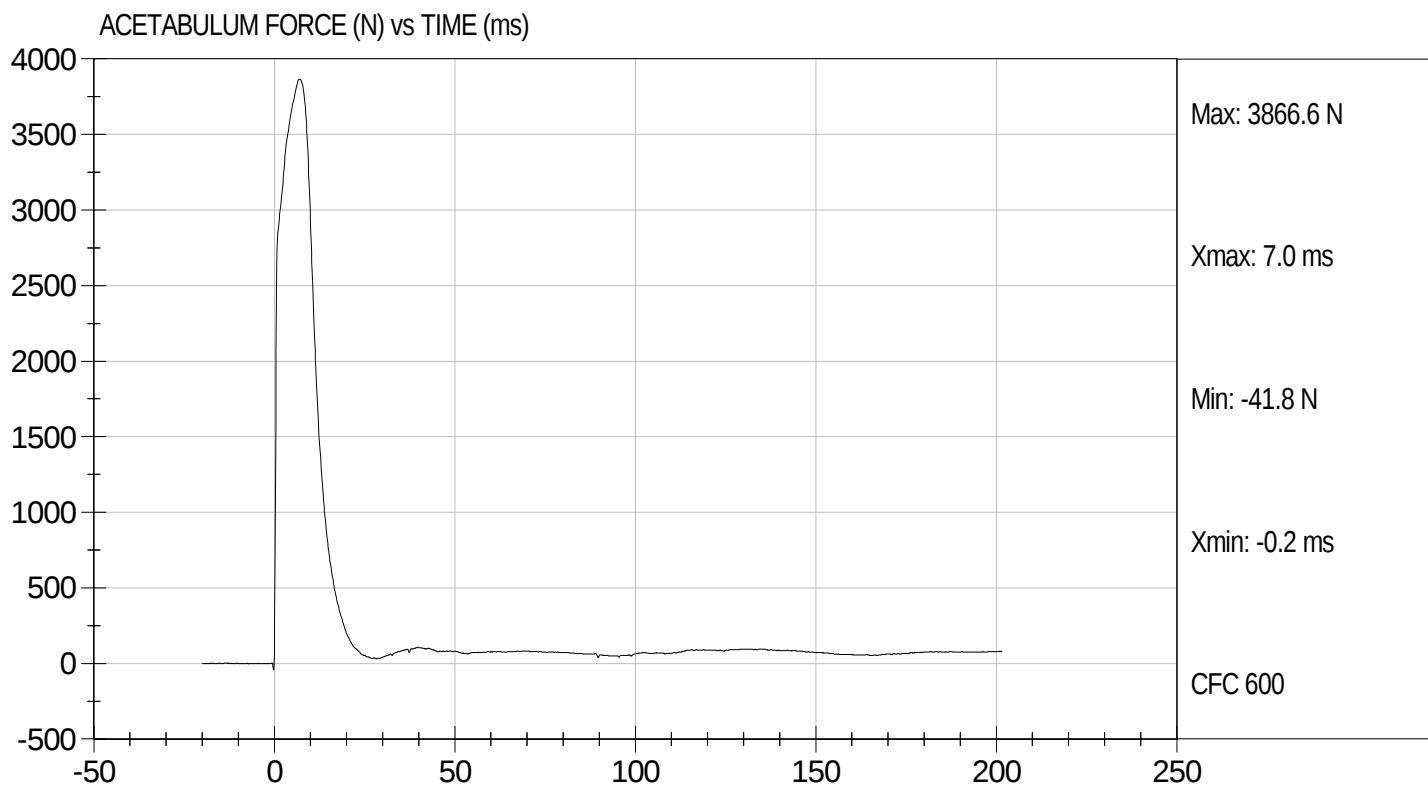
Test Date: 10/5/11
Velocity: 22.2 ft/s, 6.77 m/s





Test Desc: Pelvis Impact
Component ID: D113307

Test Date: 10/5/11
Velocity: 22.2 ft/s, 6.77 m/s

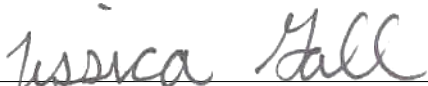


MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113308

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.1	Pass
Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	36 to 45	38	Pass
Pelvis Y Acceleration	G's	28 to 39	31	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4713	Pass
Overall Test Results				Pass


Laboratory Technician

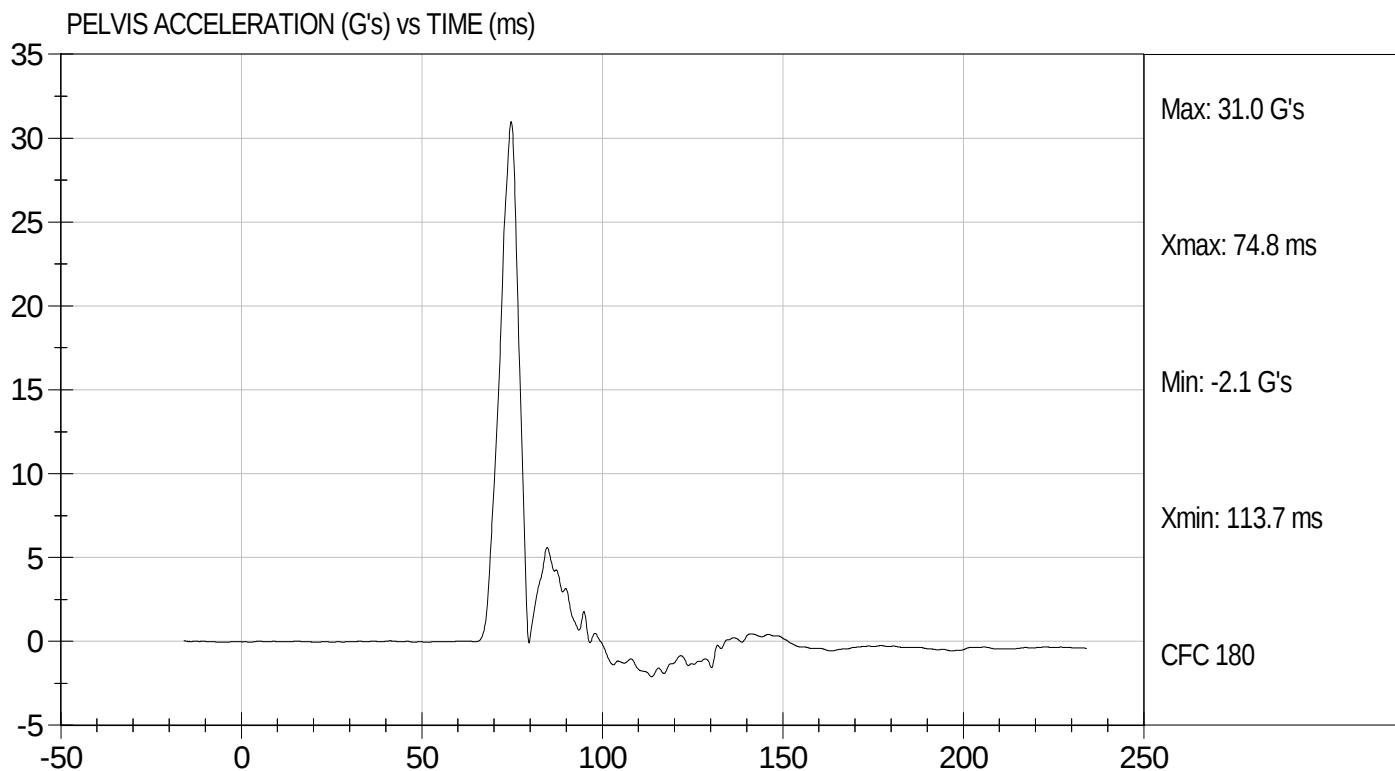
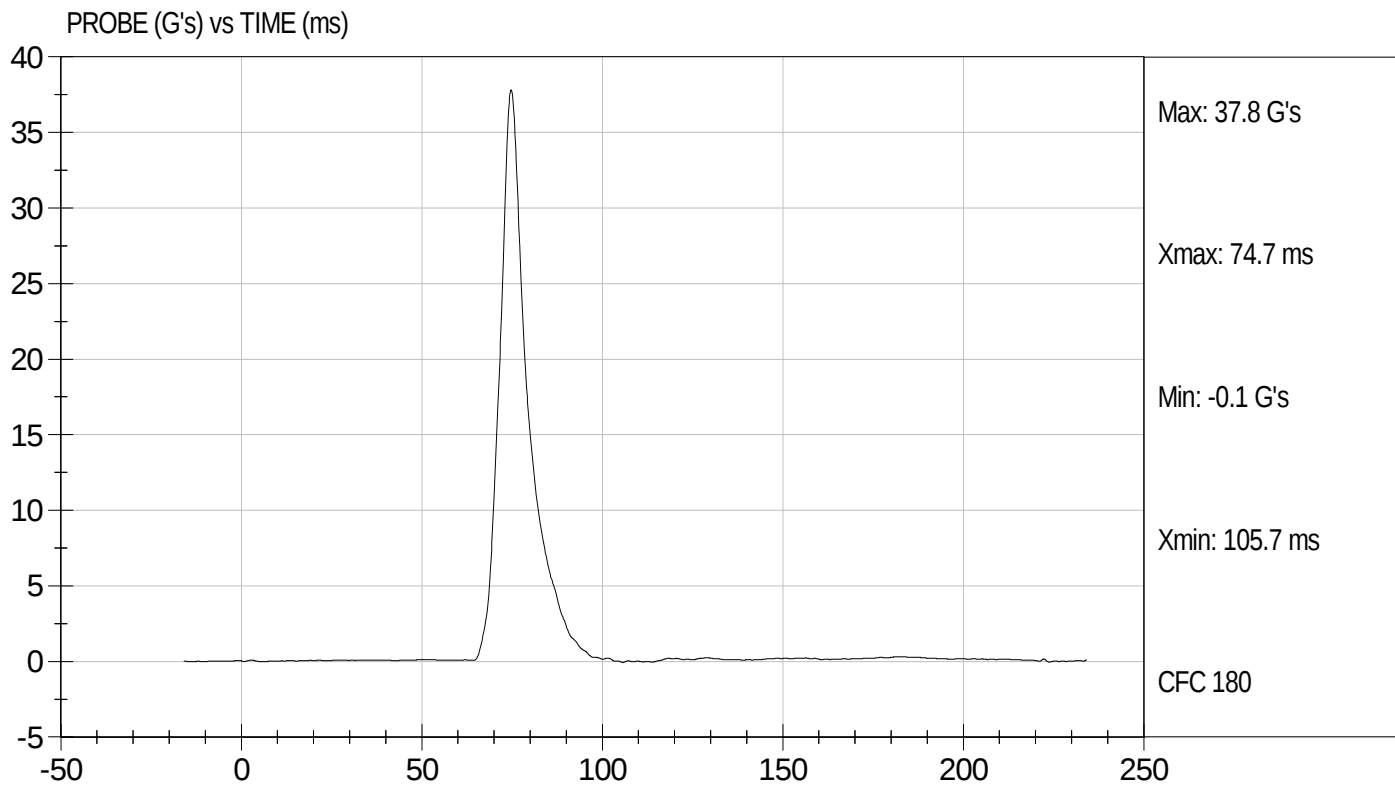
10/5/11
Test Date


Approved By



Test Desc: Iliac Impact
Component ID: D113308

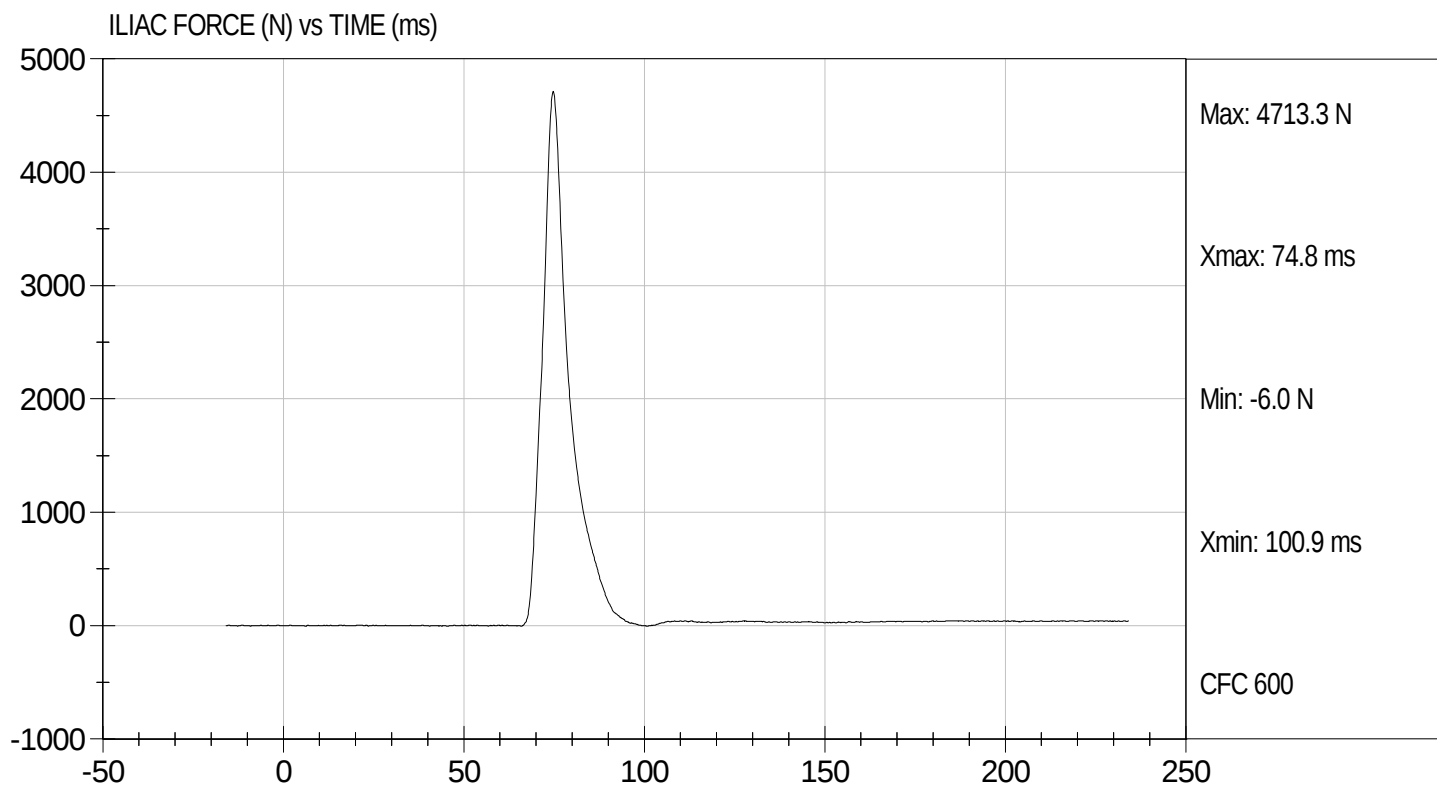
Test Date: 10/5/11
Velocity: 14.24 ft/s, 4.34 m/s





Test Desc: Iliac Impact
Component ID: D113308

Test Date: 10/5/11
Velocity: 14.24 ft/s, 4.34 m/s



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

ATD Serial No: 296

Test ID: D113361

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	42	Pass
Peak Resultant Acceleration	G's	115 to 137	128	Pass
Peak Lateral Acceleration	G's	+/- 15	-3.3	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

10/6/11
Test Date

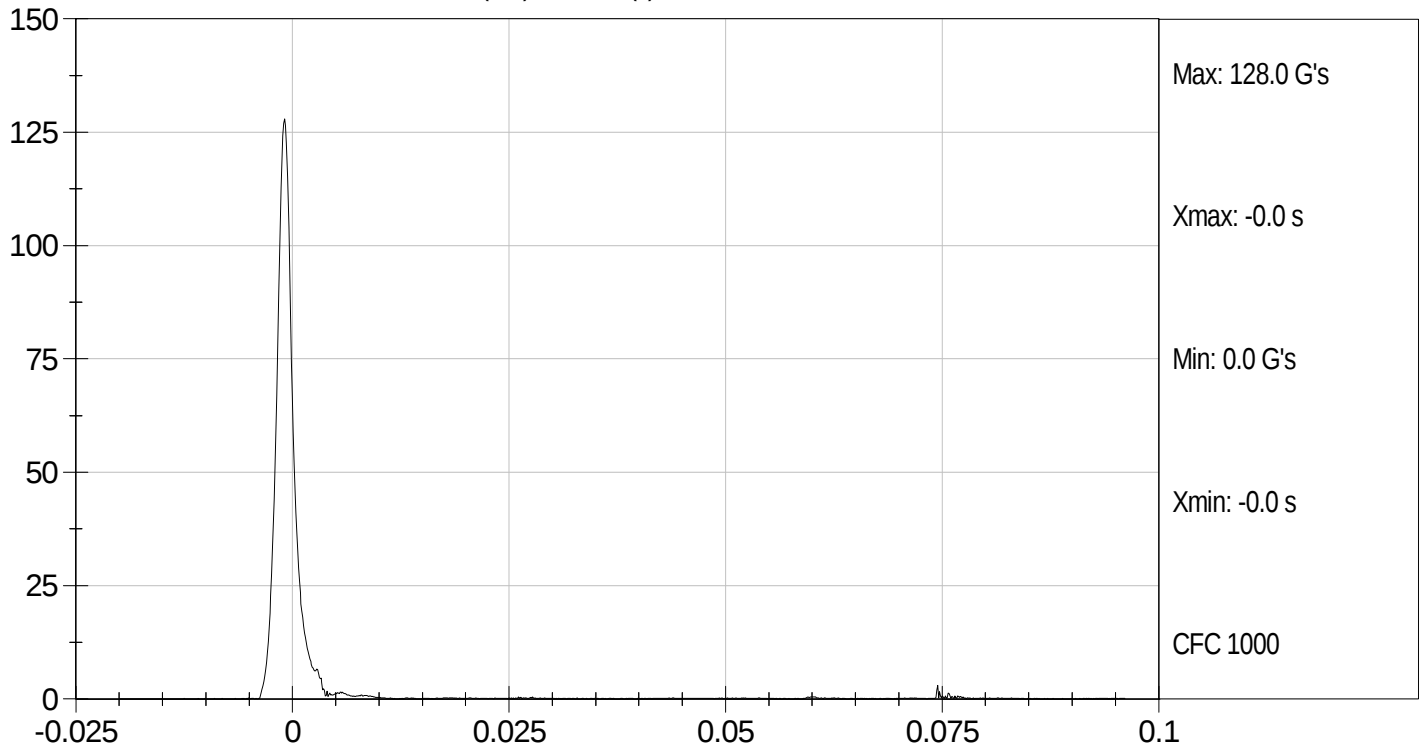

Approved By



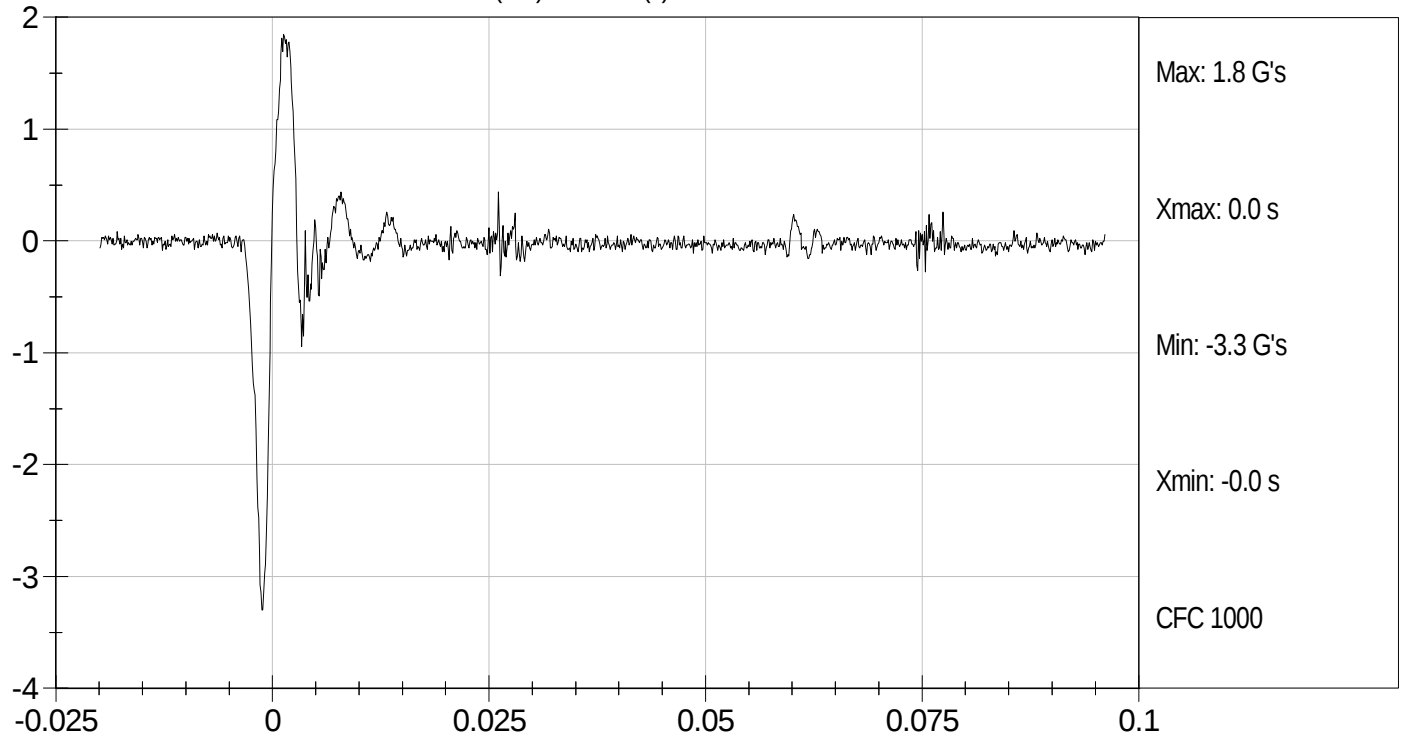
Test Desc: Head Drop
Component ID: D113361

Test Date: 10/6/11
Velocity: 0 ft/s, 0 m/s

PEAK RESULTANT ACCELERATION (G's) vs TIME (s)



PEAK LONGITUDINAL ACCELERATION (G's) vs TIME (s)



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

ATD Serial No: 296

Test I.D: D113362

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.9	Pass
Humidity		%	10 to 70	44	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.57	Pass
	15 ms	m/s	3.30 to 4.10	3.72	Pass
	20 ms	m/s	4.40 to 5.40	4.91	Pass
	25 ms	m/s	5.40 to 6.10	5.44	Pass
	25-100 ms	m/s	5.50 to 6.20	5.51	Pass
Maximum D-Plane Rotation		deg	71 to 81	73	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	58	Pass
Maximum Occipital Condyle Moment during Rotation Interval Nm			-44 to -36	-43	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
Overall Test Results				Pass	


 Laboratory Technician

10/6/11
 Test Date

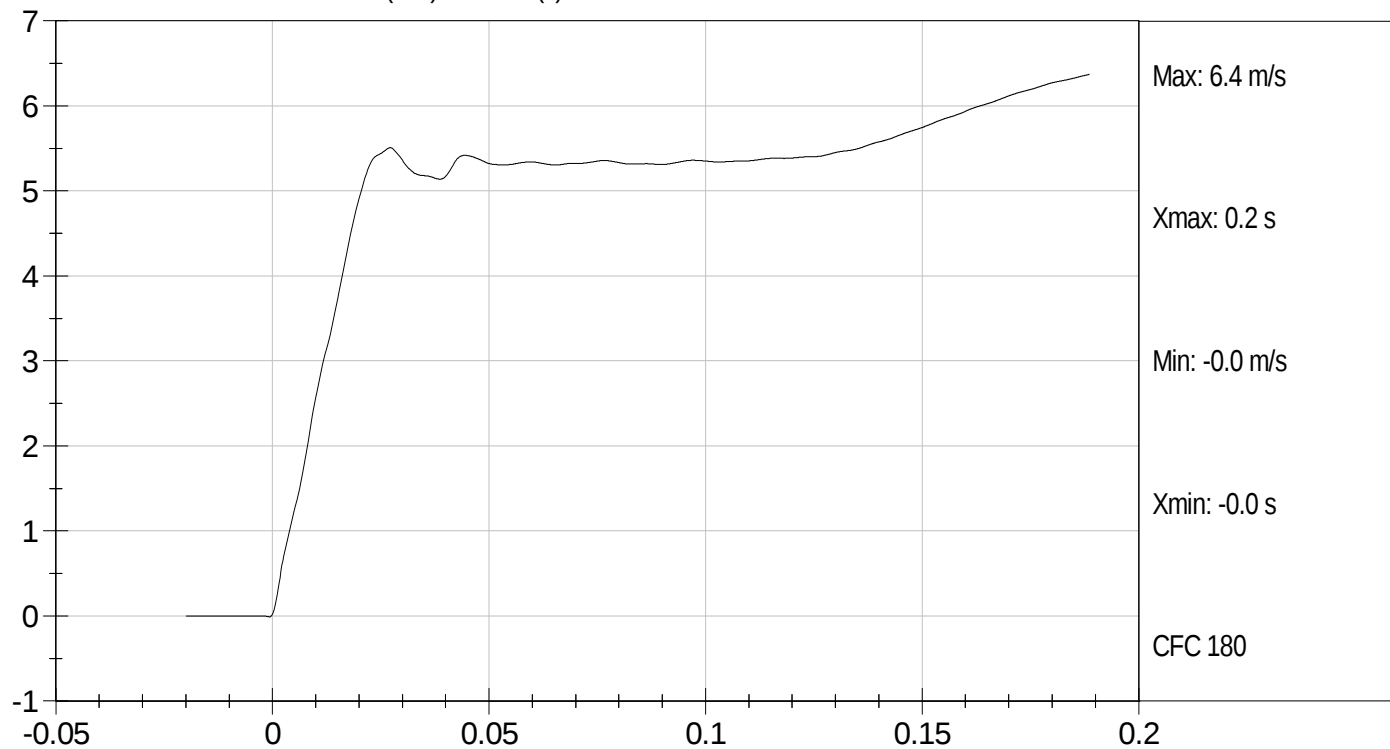

 Approved By



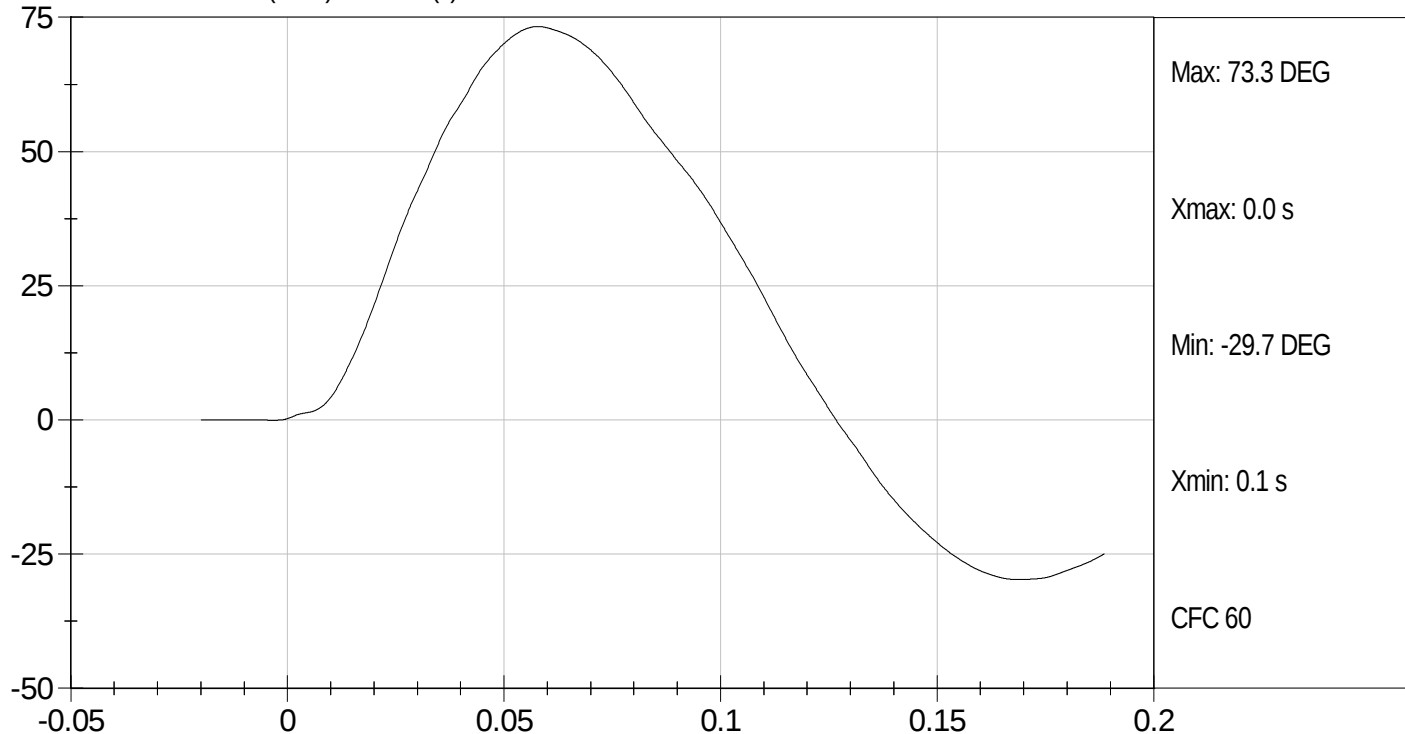
Test Desc: Neck Bending
Component ID: D113362

Test Date: 10/6/11
Velocity: 18.32 ft/s, 5.58 m/s

PENDULUM DECELERATION (m/s) vs TIME (s)



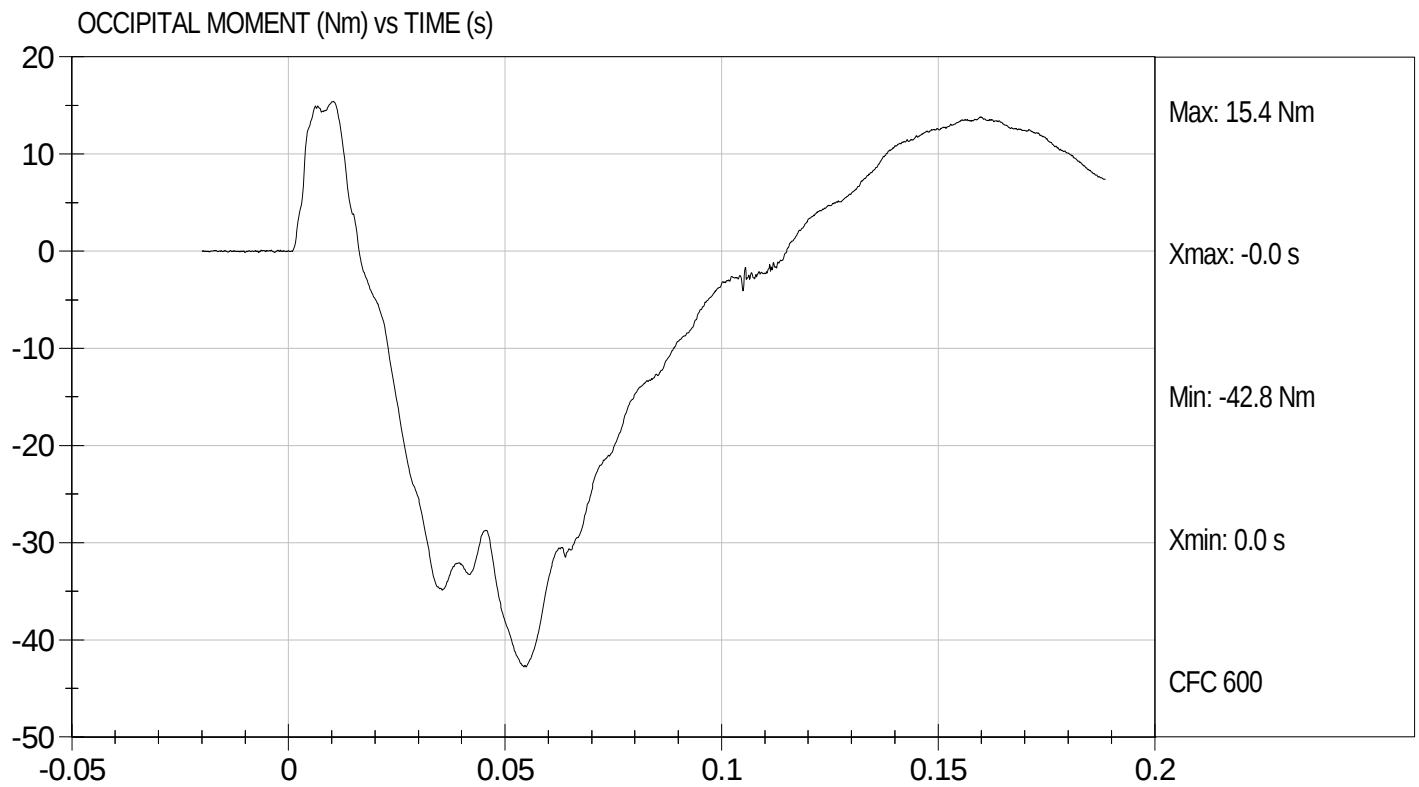
FLEXION ANGLE (DEG) vs TIME (s)





Test Desc: Neck Bending
Component ID: D113362

Test Date: 10/6/11
Velocity: 18.32 ft/s, 5.58 m/s

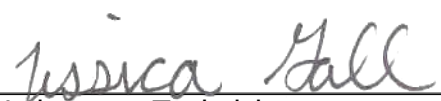


MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-ILs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D113363

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	41	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	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

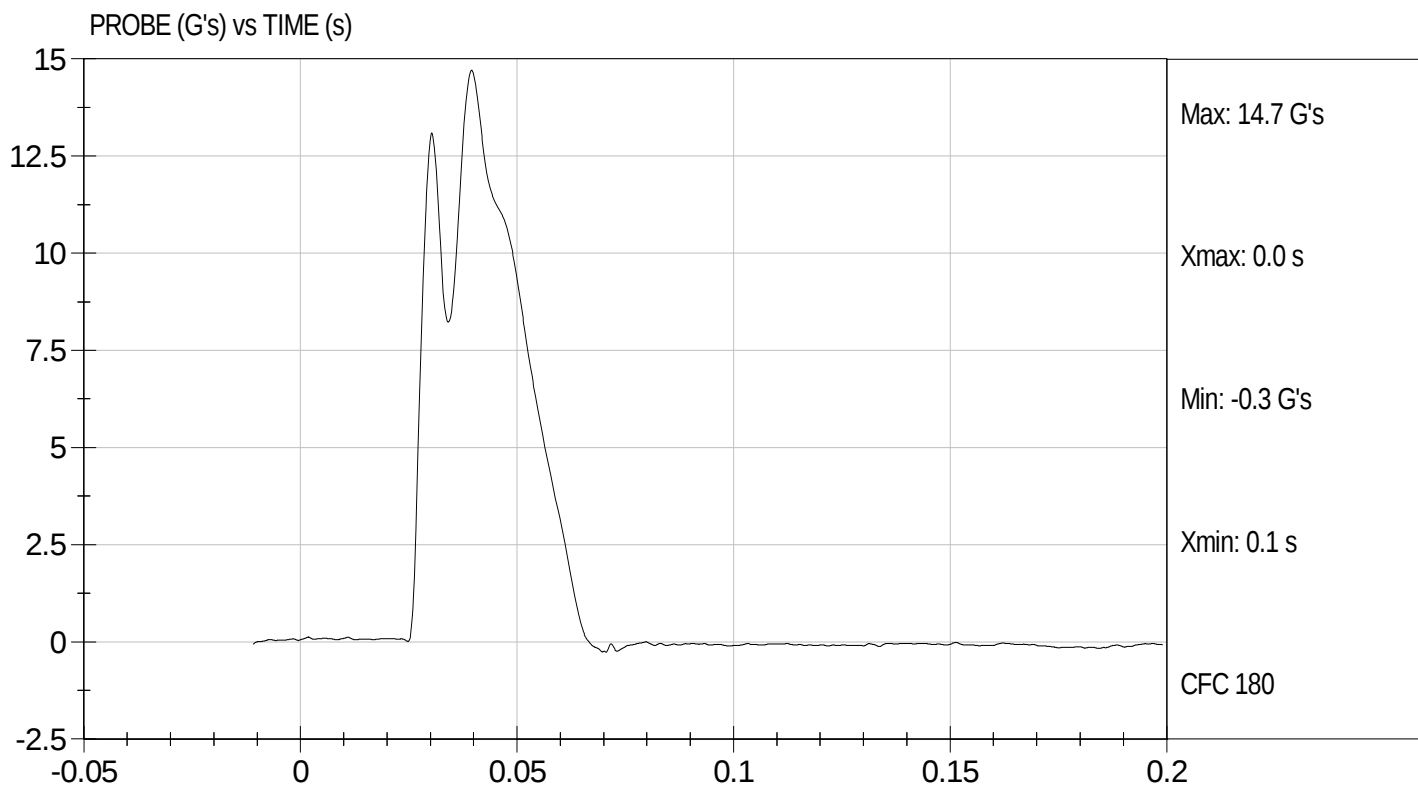
10/6/11
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D113363

Test Date: 10/6/11
Velocity: 14.37 ft/s, 4.38 m/s

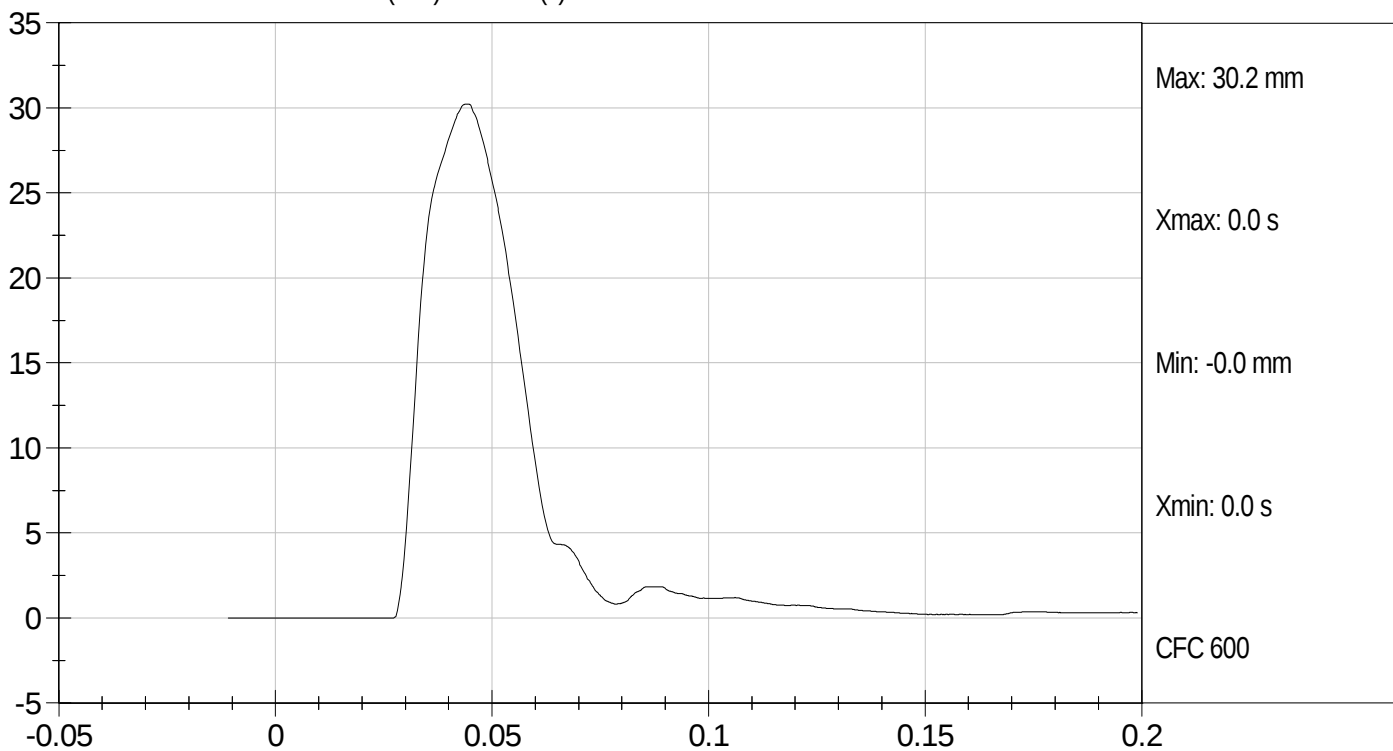




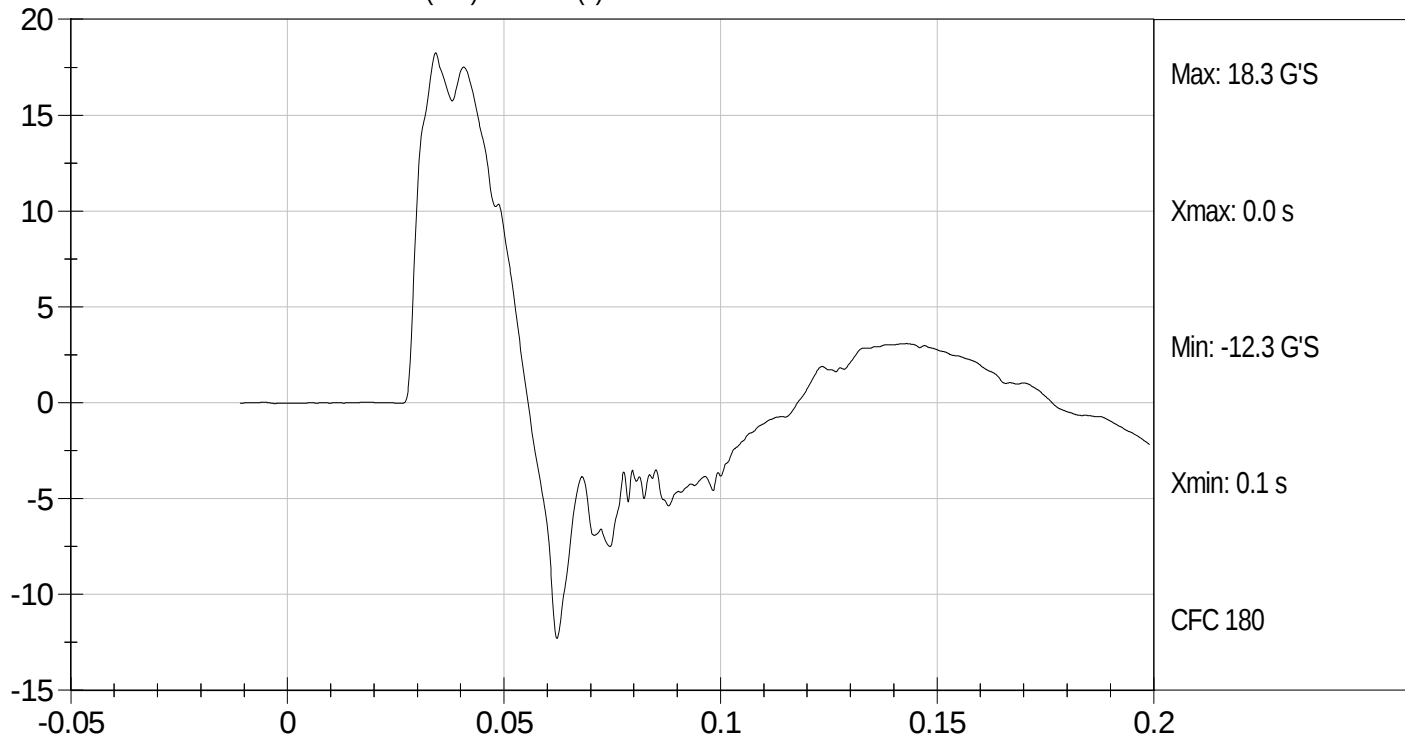
Test Desc: Shoulder Impact
Component ID: D113363

Test Date: 10/6/11
Velocity: 14.37 ft/s, 4.38 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (s)



UPPER SPINE ACCELERATION (G'S) vs TIME (s)

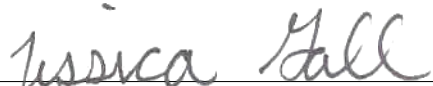


MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113364

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	32	Pass
Shoulder Displacement	mm	31 to 40	35	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	33	Pass
			Overall Test Results	Pass


Laboratory Technician

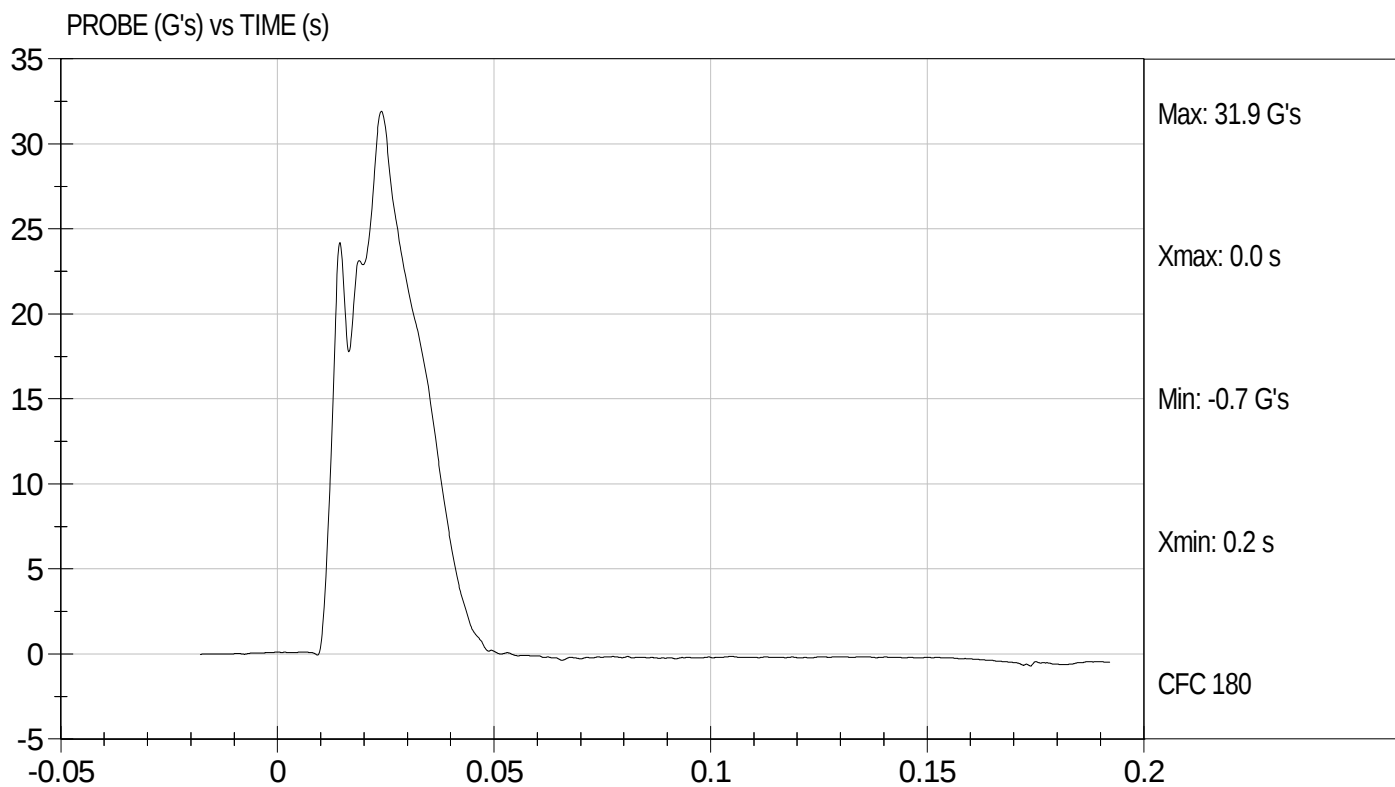
10/6/11
Test Date


Approved By



Test Desc: Thorax With Arm
Component ID: D113364

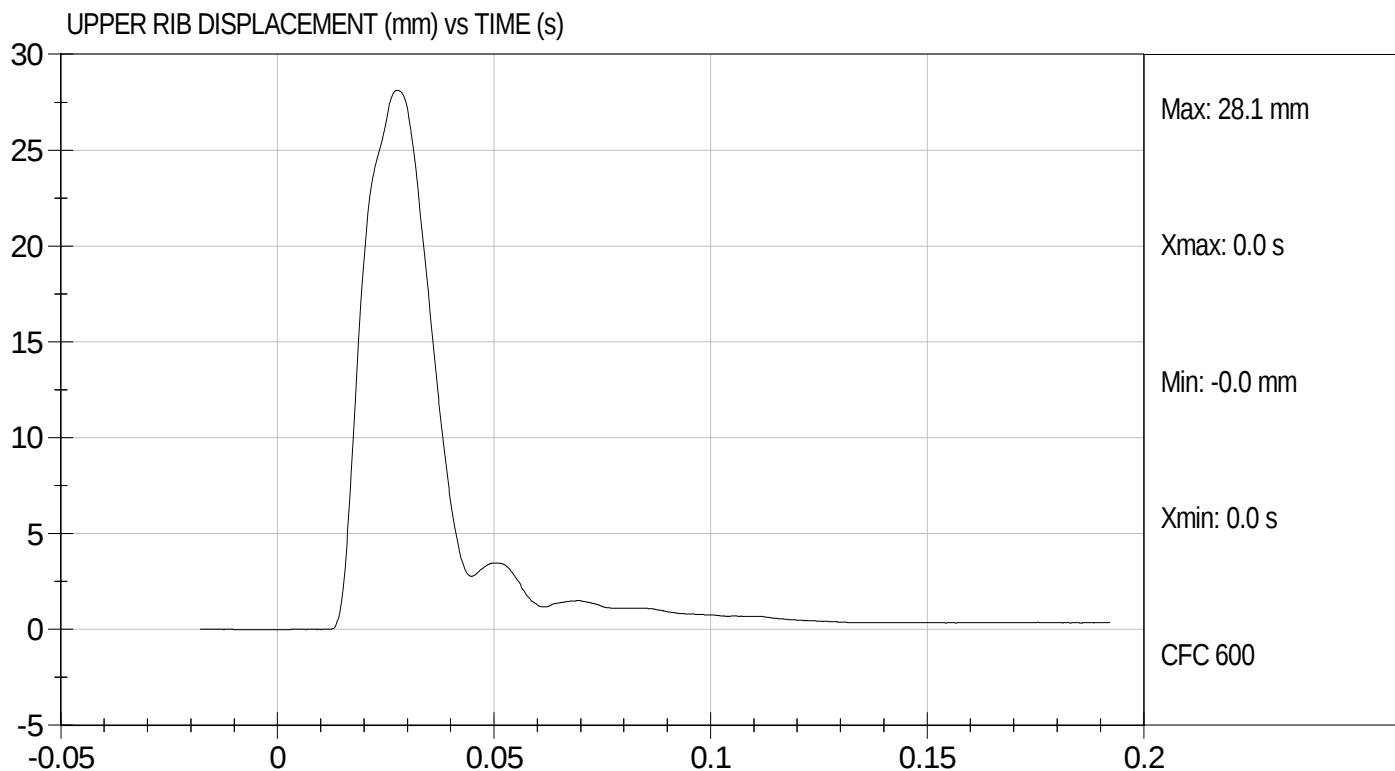
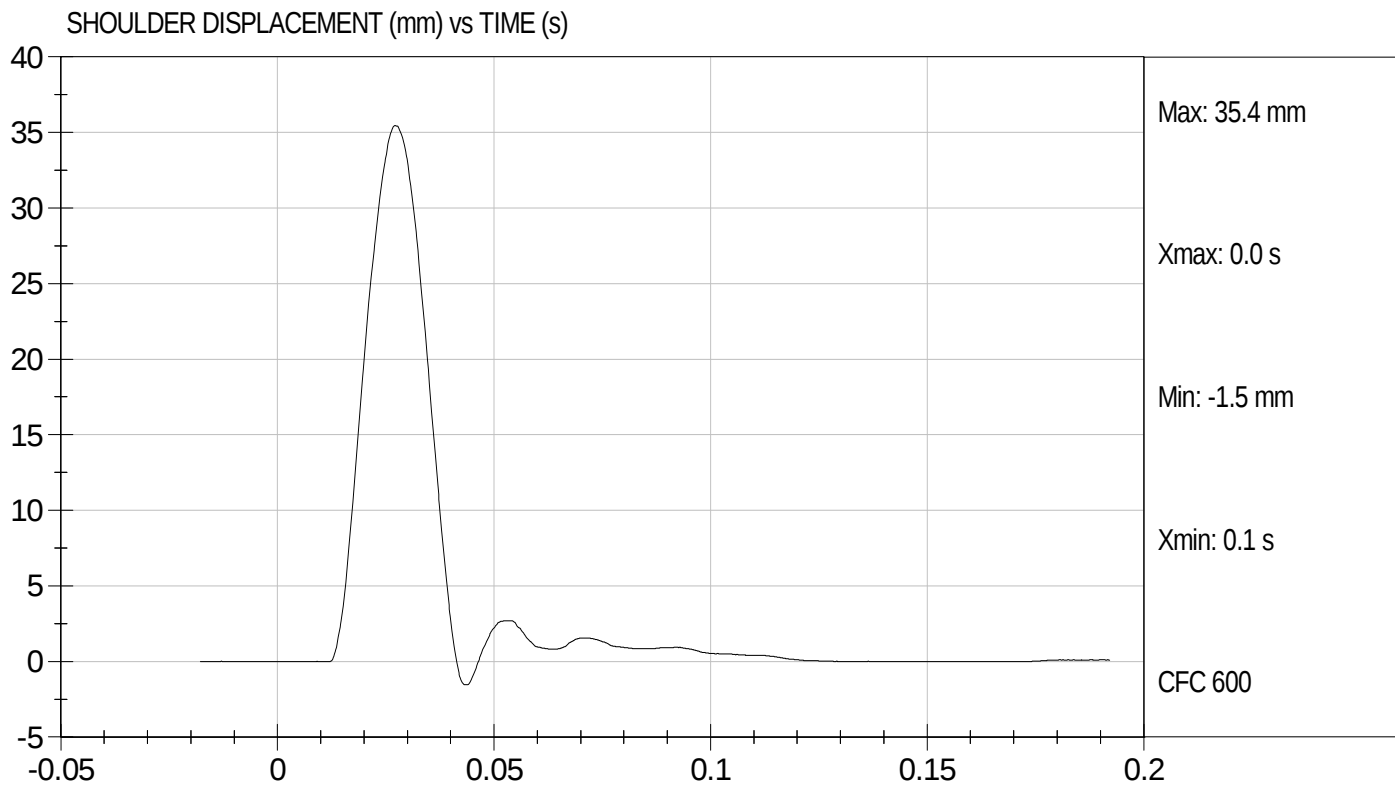
Test Date: 10/6/11
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D113364

Test Date: 10/6/11
Velocity: 22.22 ft/s, 6.77 m/s

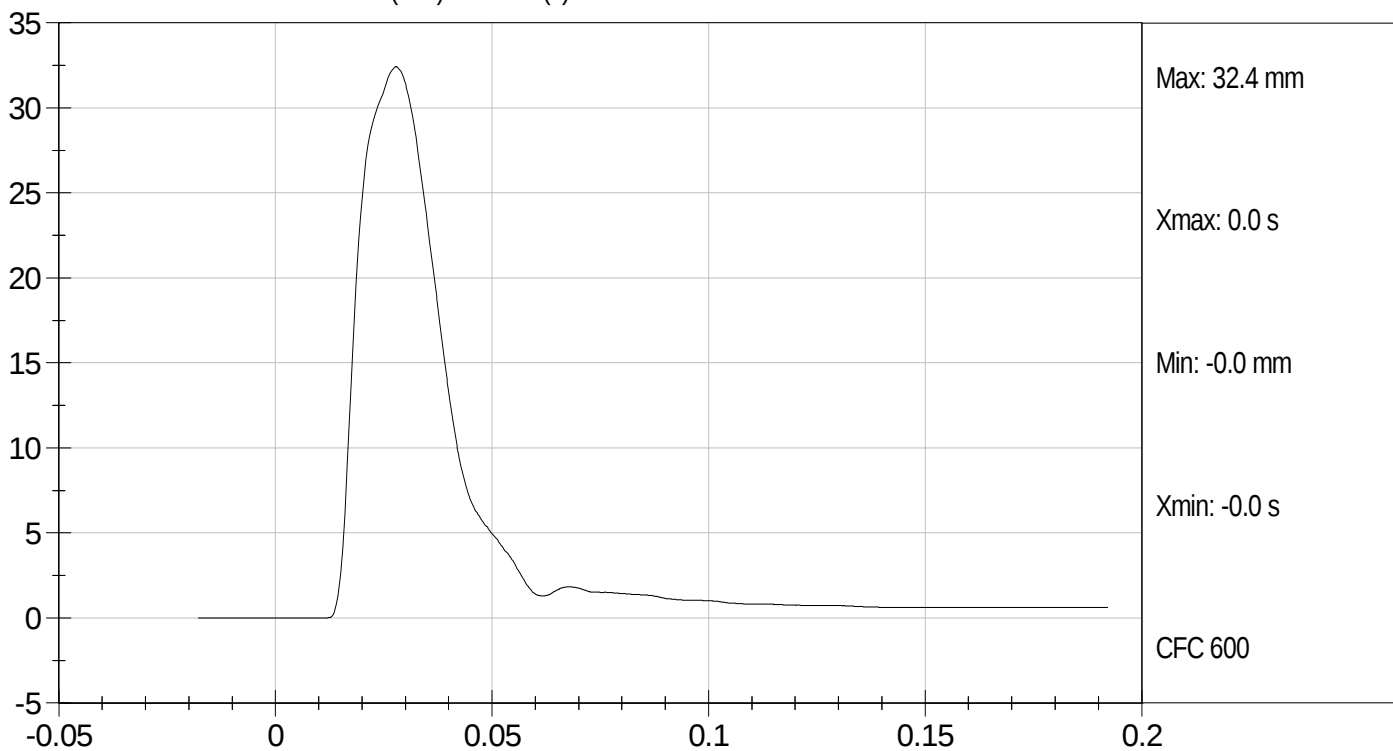




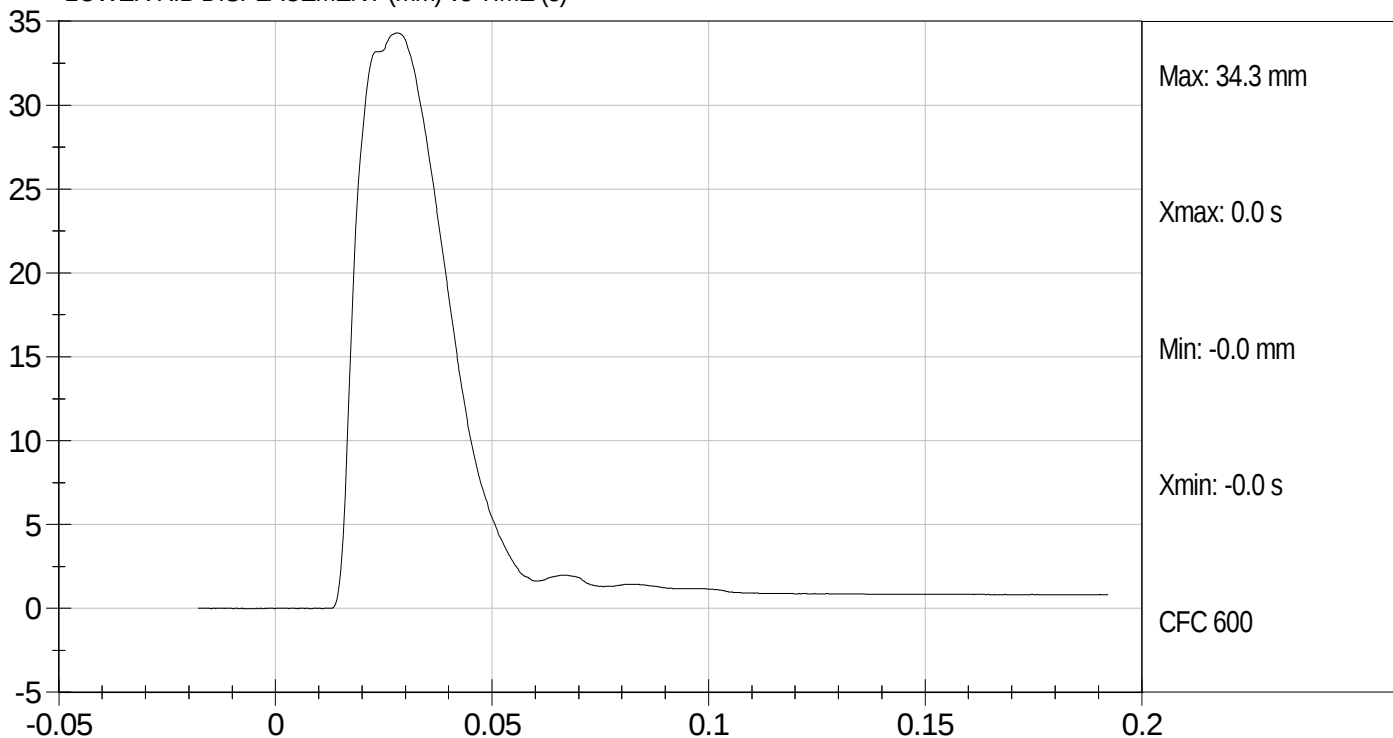
Test Desc: Thorax With Arm
Component ID: D113364

Test Date: 10/6/11
Velocity: 22.22 ft/s, 6.77 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (s)



LOWER RIB DISPLACEMENT (mm) vs TIME (s)

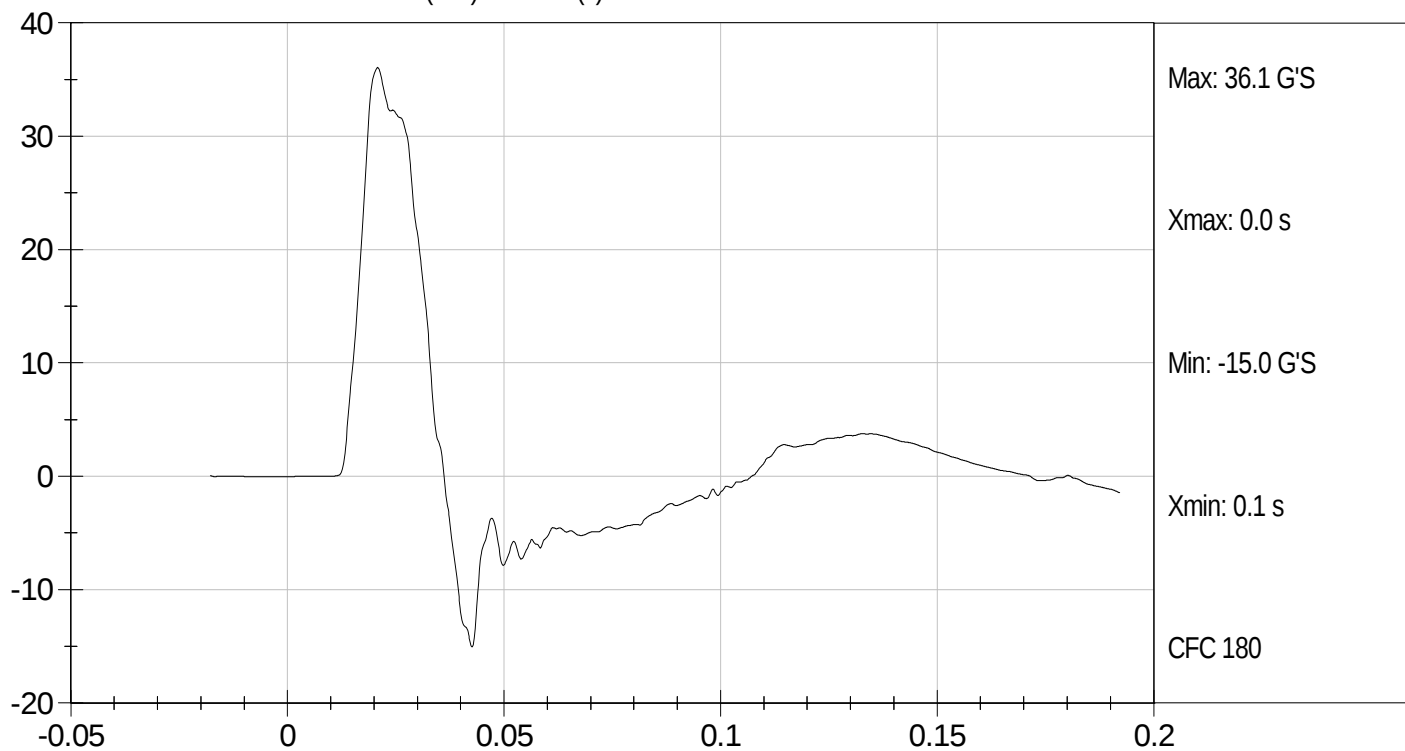




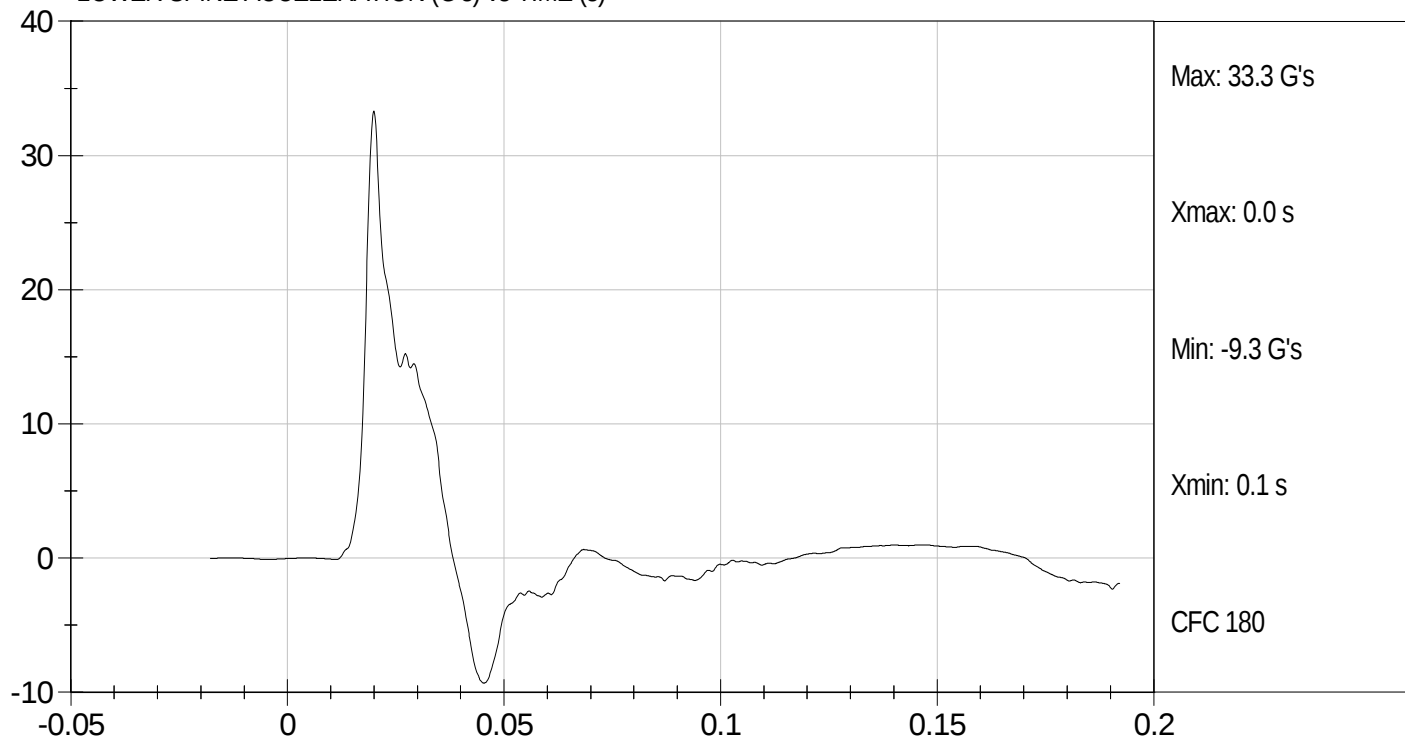
Test Desc: Thorax With Arm
Component ID: D113364

Test Date: 10/6/11
Velocity: 22.22 ft/s, 6.77 m/s

UPPER SPINE ACCELERATION (G'S) vs TIME (s)



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

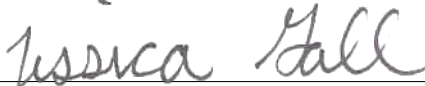


MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113365

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	38	Pass
Middle Rib Displacement	mm	39 to 45	43	Pass
Lower Rib Displacement	mm	35 to 43	41	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	13	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
Overall Test Results				Pass


Laboratory Technician

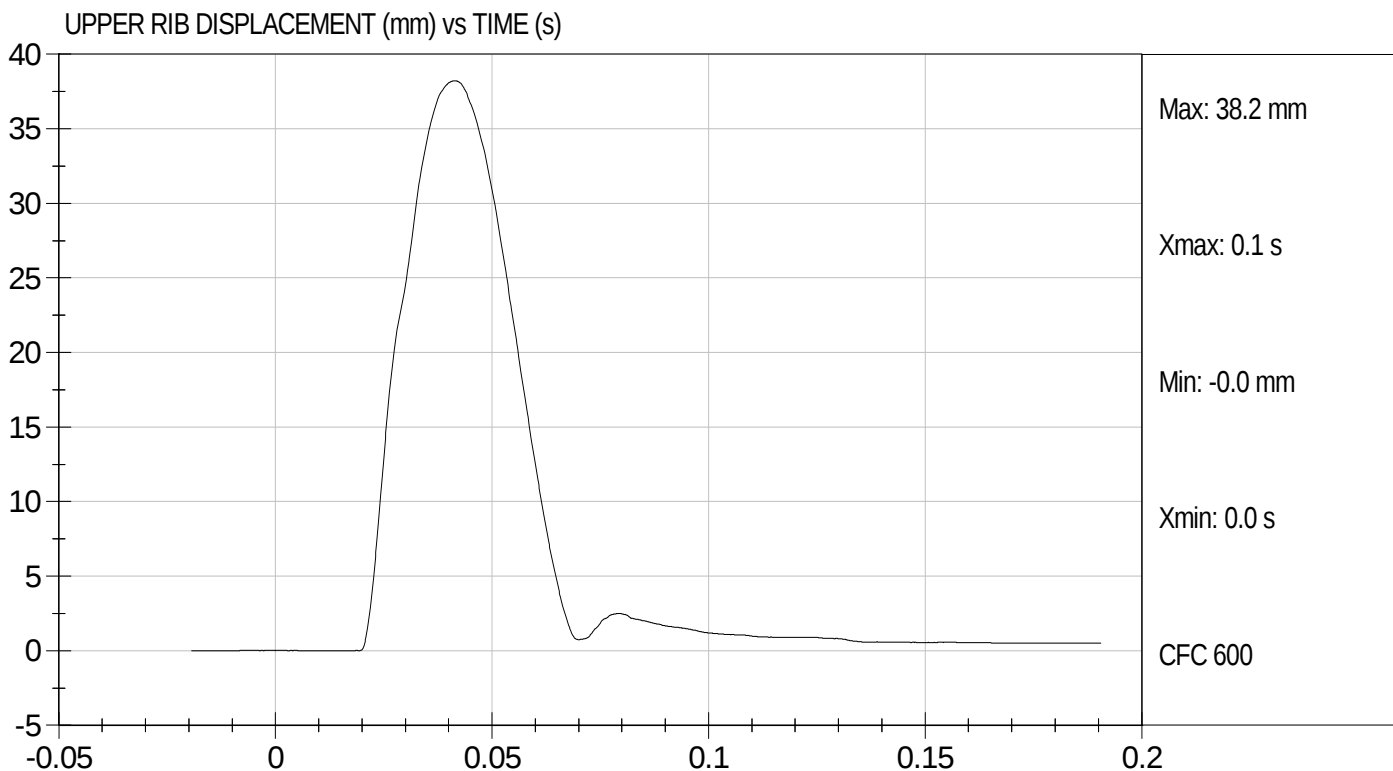
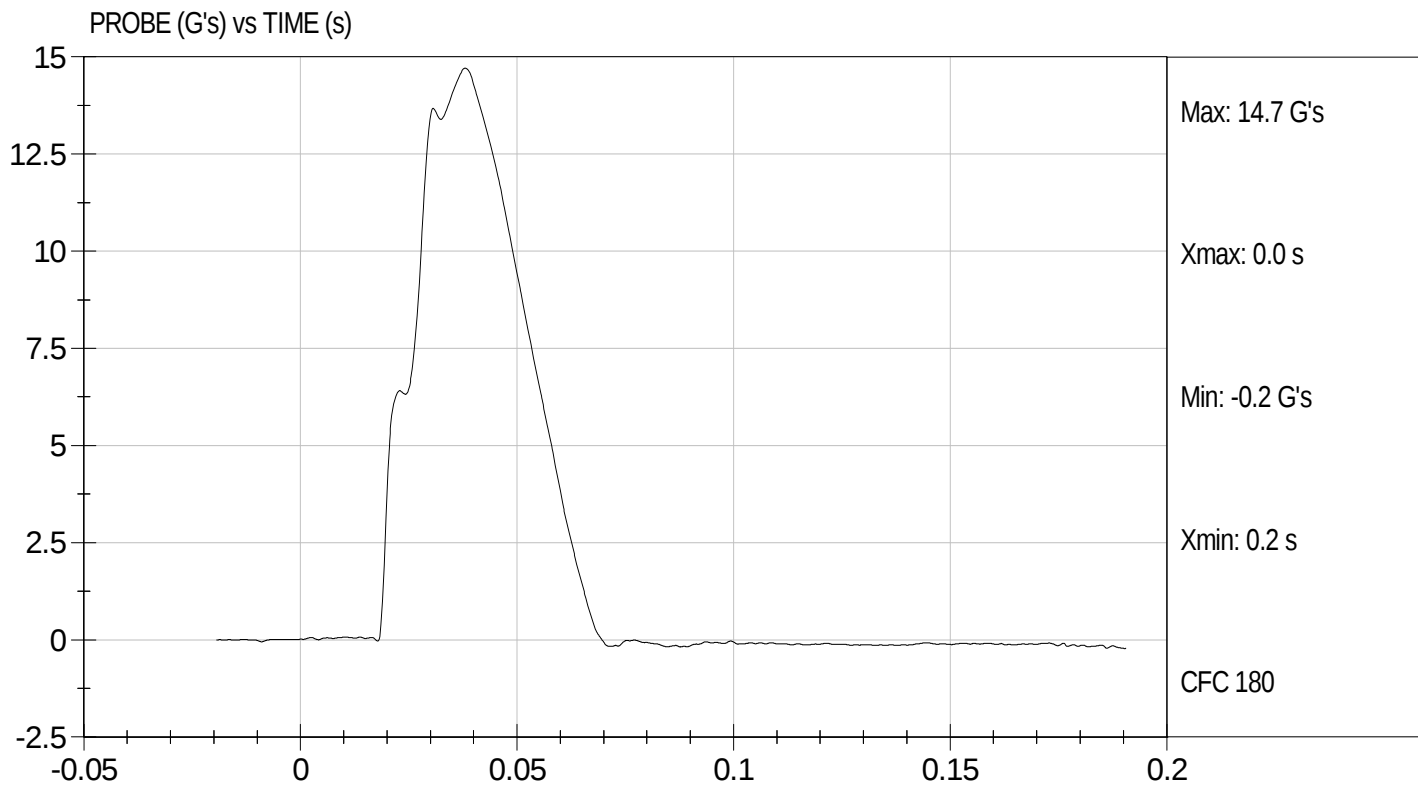
10/6/11
Test Date


Approved By



Test Desc: Thorax Without Arm
Component ID: D113365

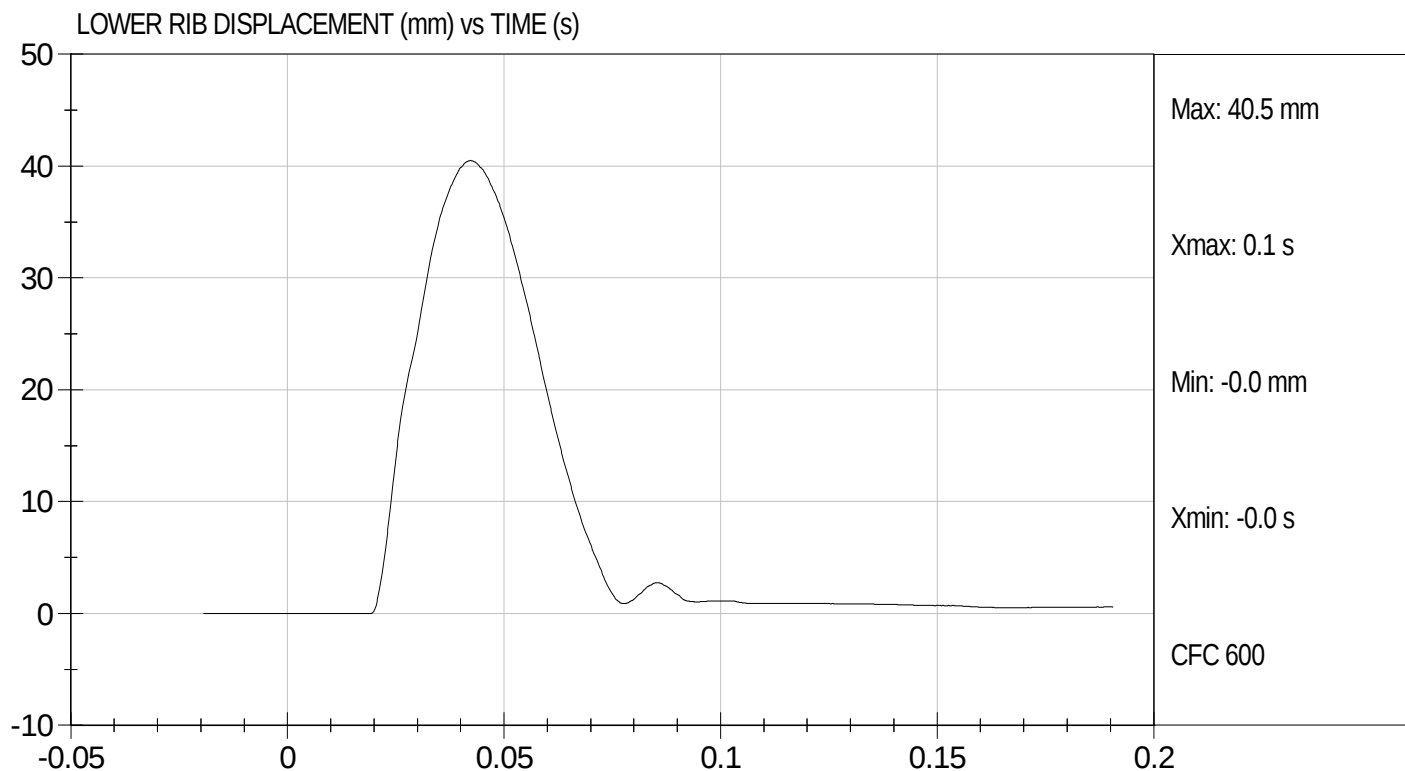
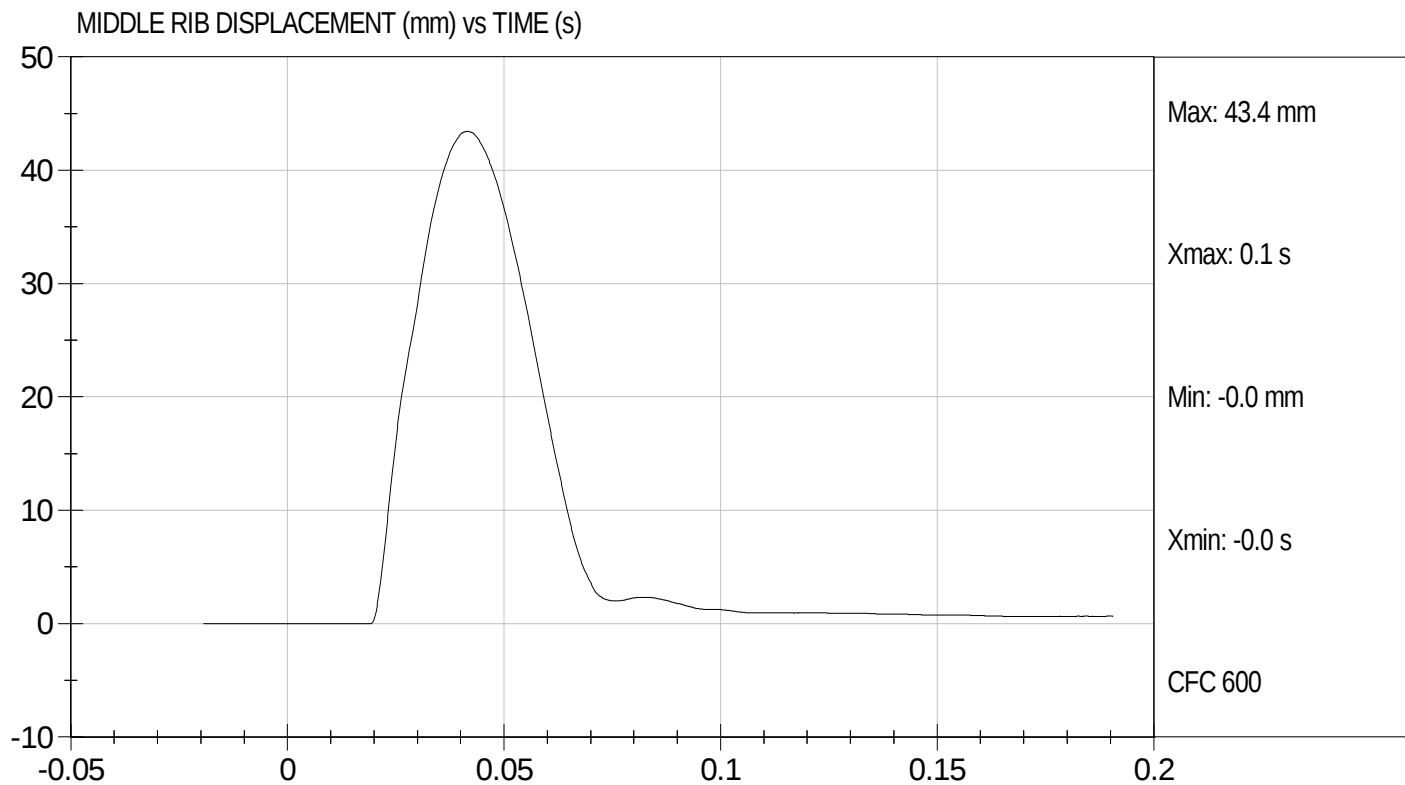
Test Date: 10/6/11
Velocity: 14.37 ft/s, 4.38 m/s





Test Desc: Thorax Without Arm
Component ID: D113365

Test Date: 10/6/11
Velocity: 14.37 ft/s, 4.38 m/s

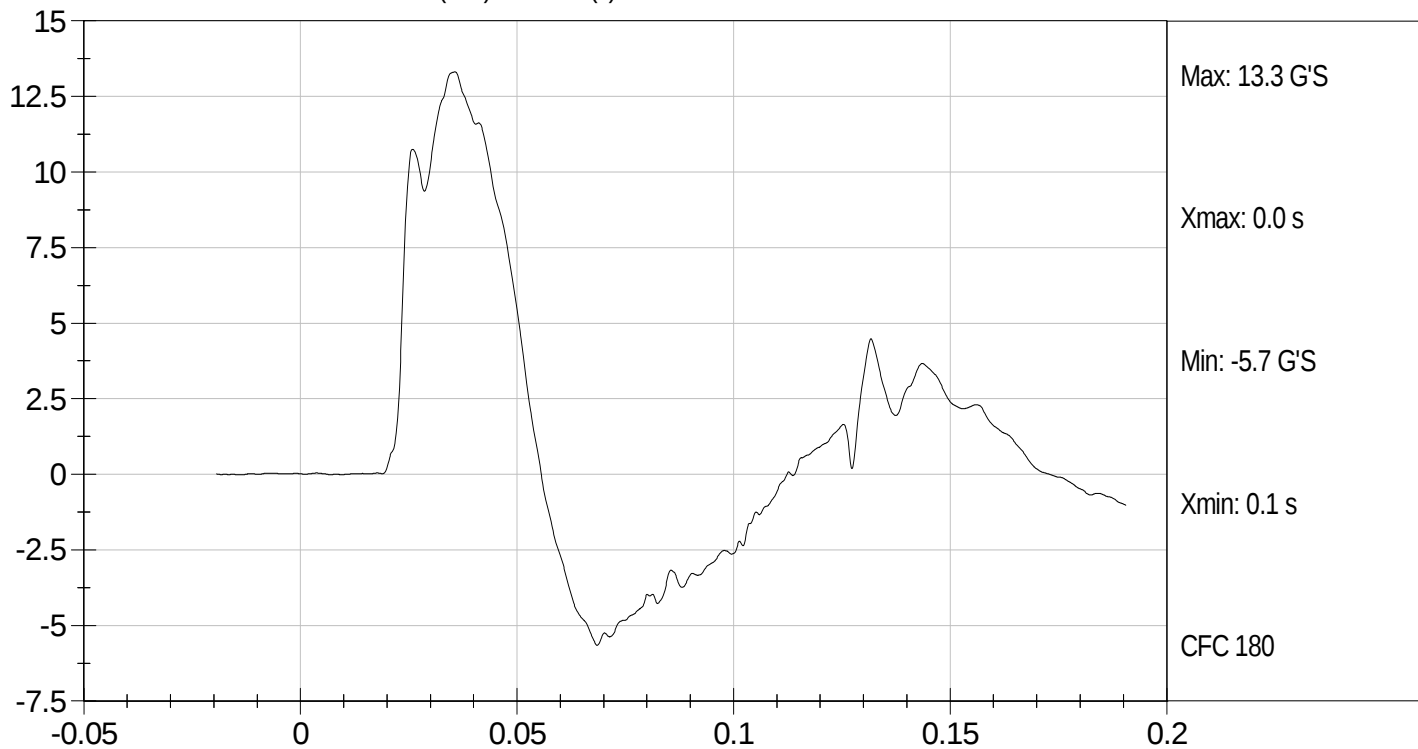




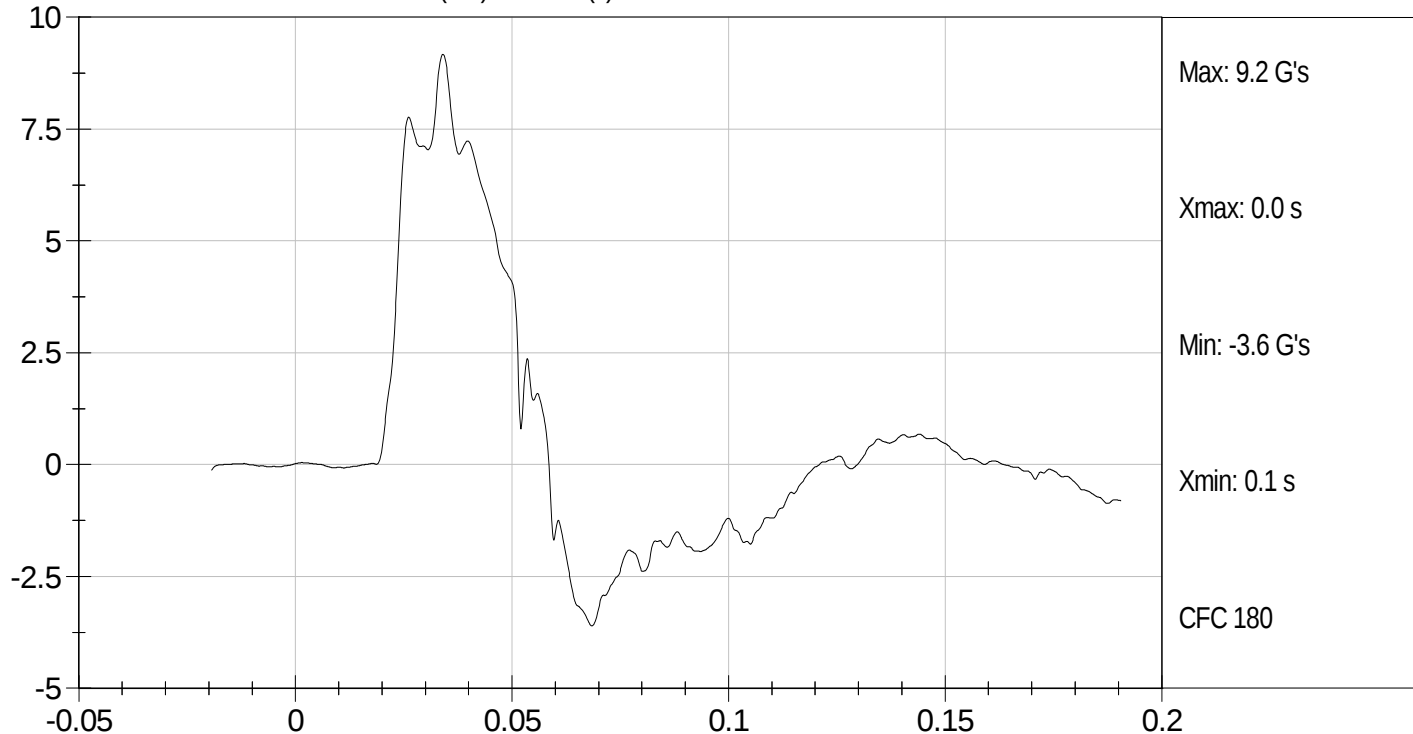
Test Desc: Thorax Without Arm
Component ID: D113365

Test Date: 10/6/11
Velocity: 14.37 ft/s, 4.38 m/s

UPPER SPINE ACCELERATION (G'S) vs TIME (s)



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

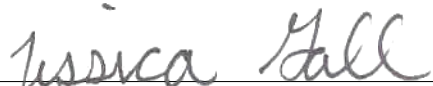


MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113366

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	40	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	12 to 16	13	Pass
Upper Rib Displacement	mm	36 to 47	43	Pass
Lower Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
			Overall Test Results	Pass


Laboratory Technician

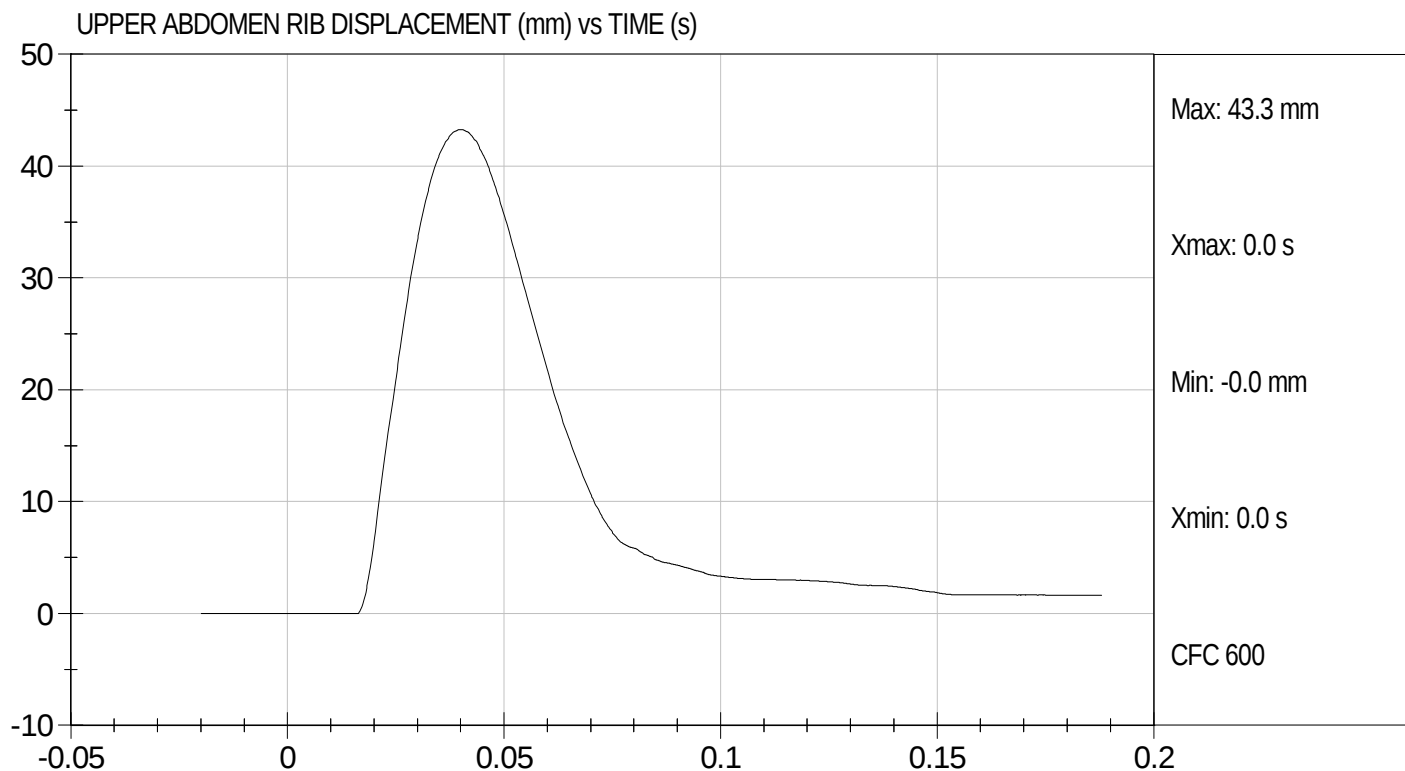
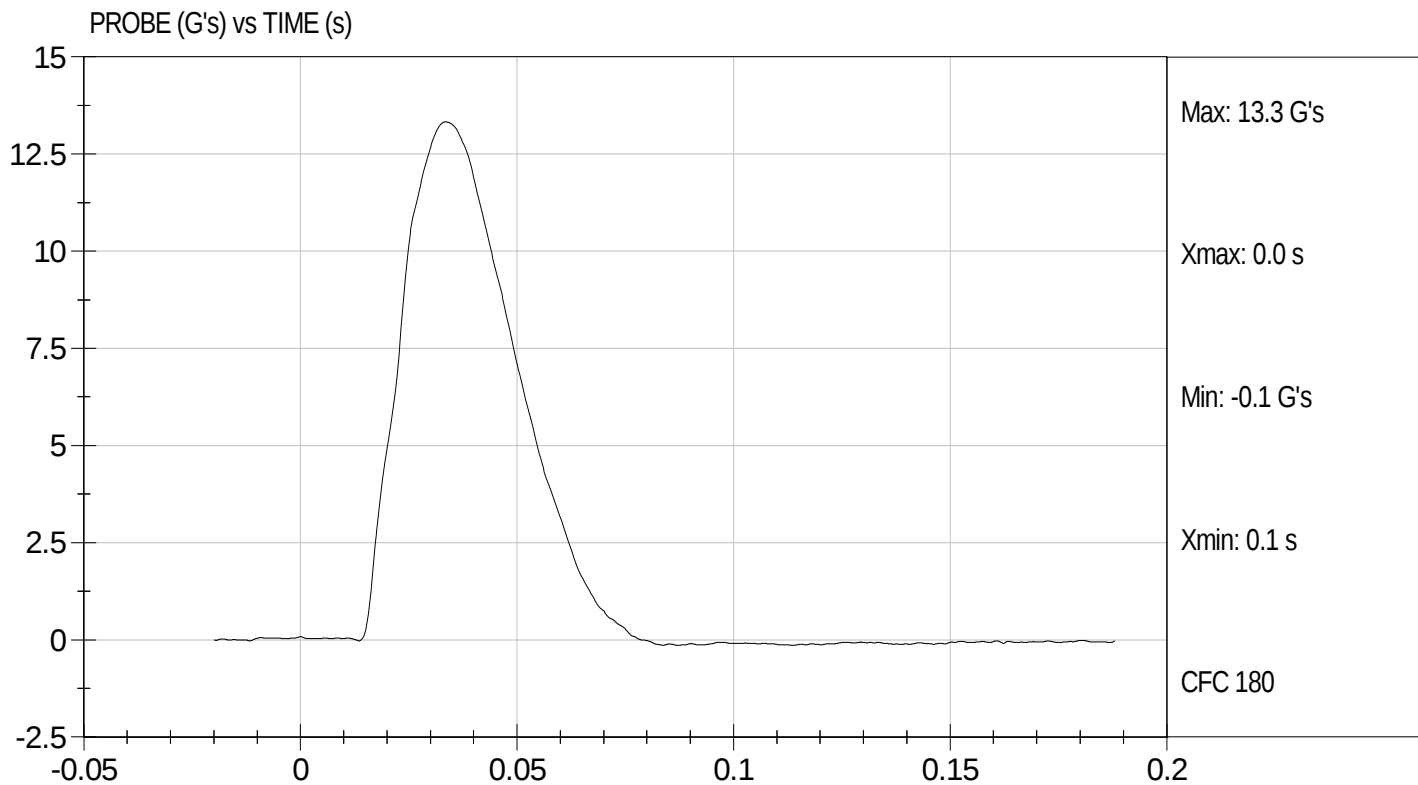
10/6/11
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D113366

Test Date: 10/6/11
Velocity: 14.25 ft/s, 4.34 m/s

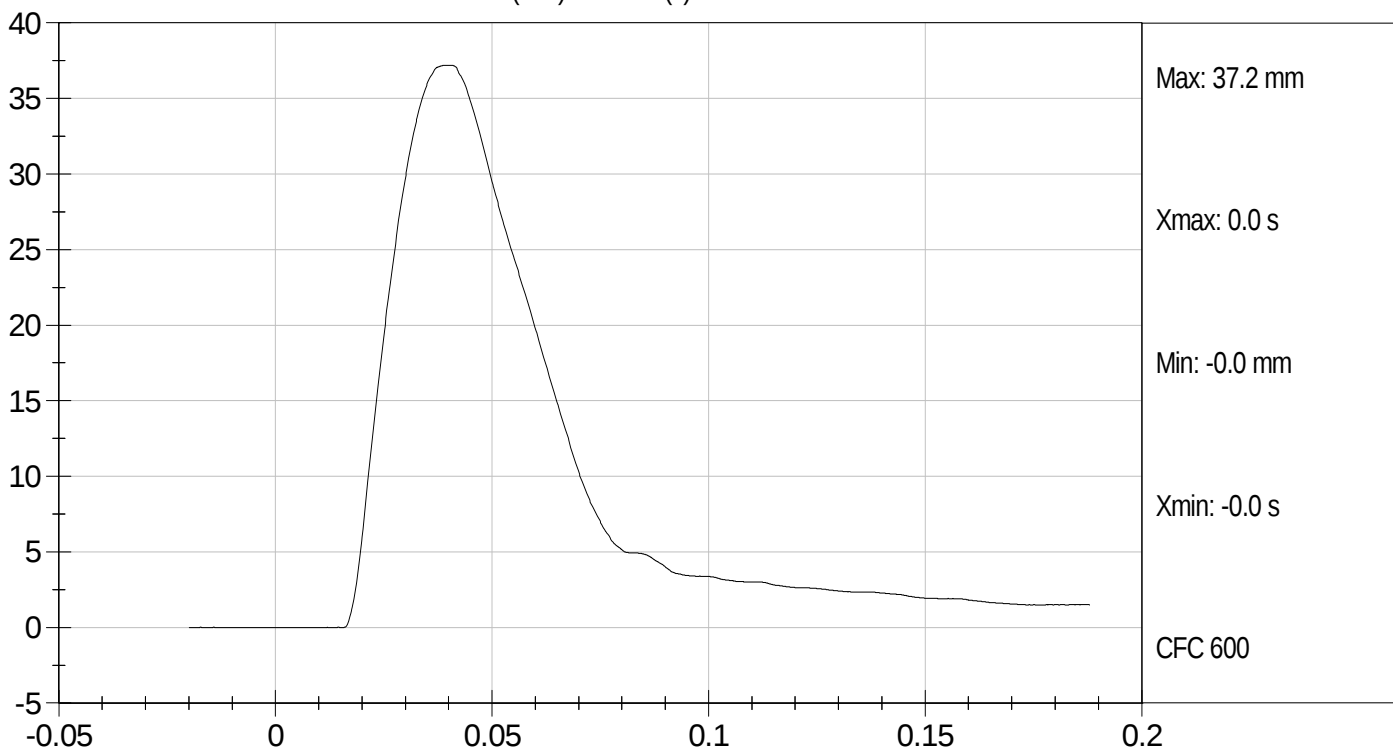




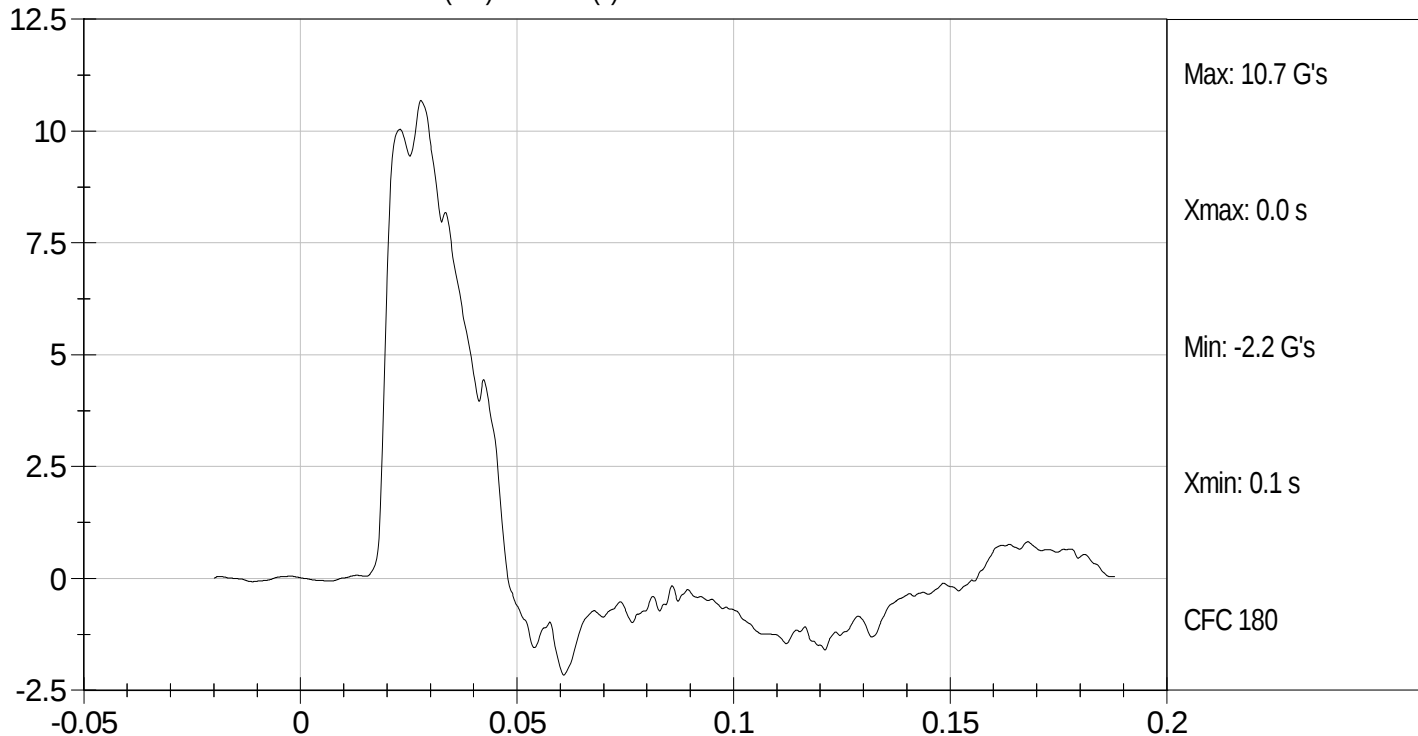
Test Desc: Abdomen Impact
Component ID: D113366

Test Date: 10/6/11
Velocity: 14.25 ft/s, 4.34 m/s

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



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

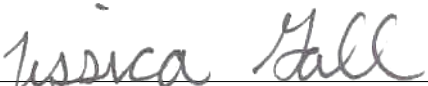


MGA RESEARCH CORPORATION
PELVIS IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D113367

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	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	38 to 47	43	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	40	Pass
Peak Acetabulum Force	N	3600 to 4300	3888	Pass
Overall Test Results				Pass


Laboratory Technician

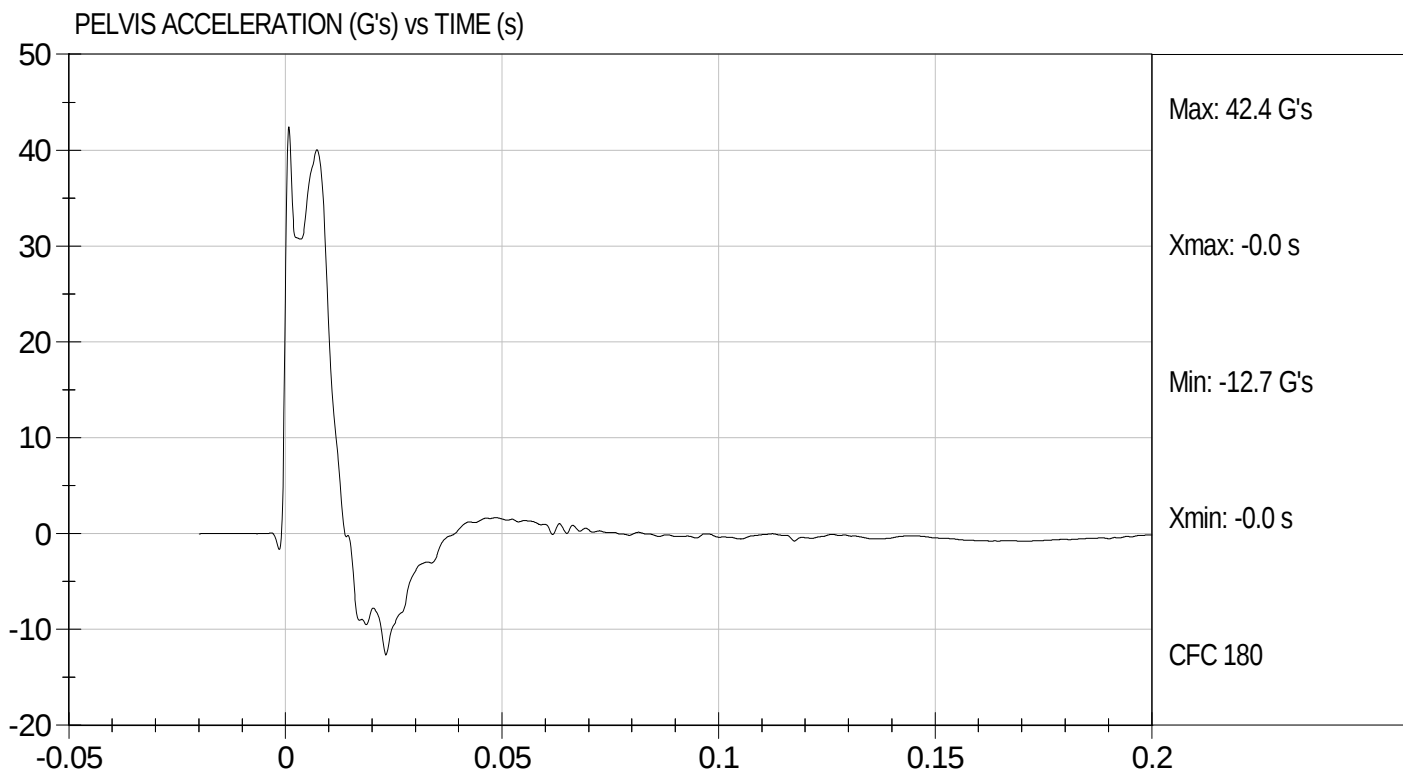
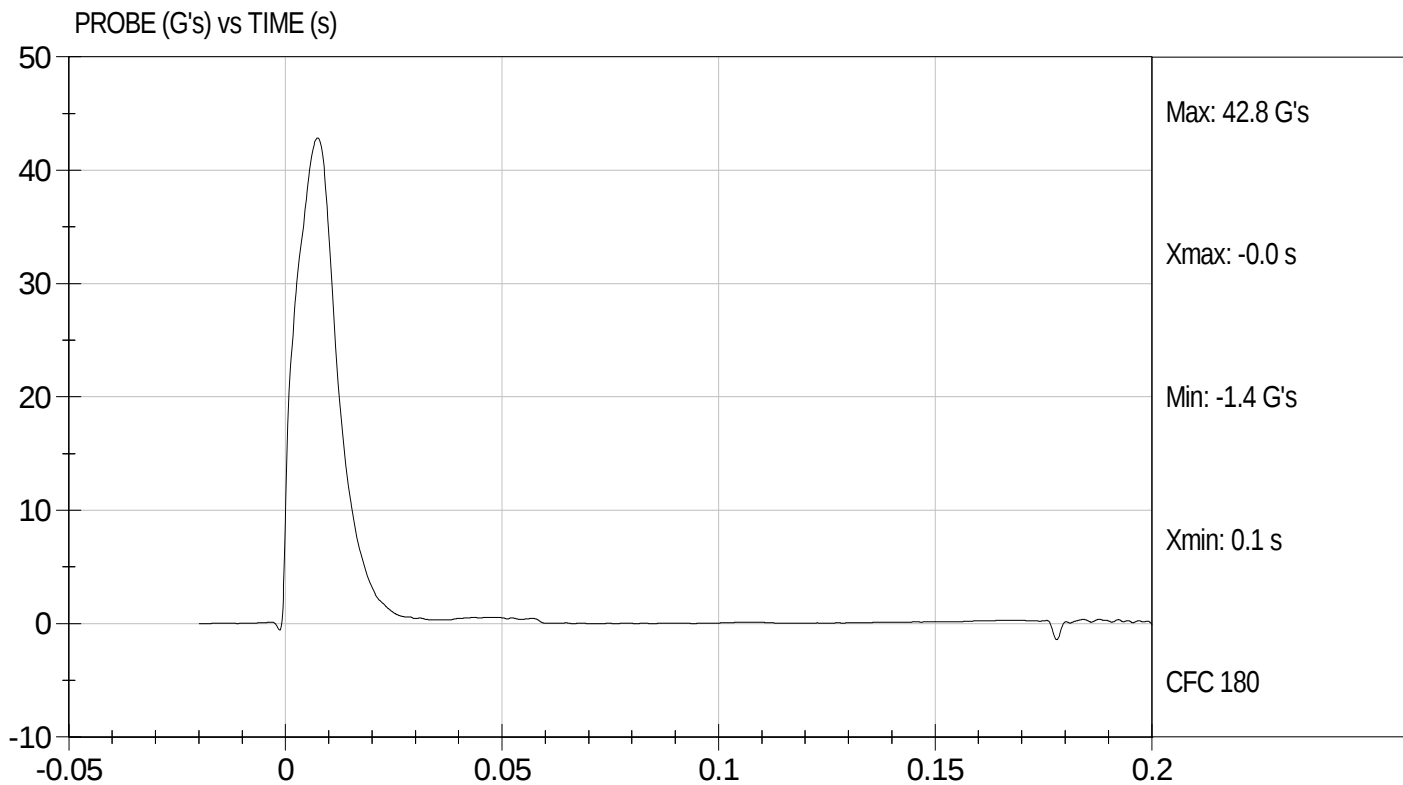
10/6/11
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D113367

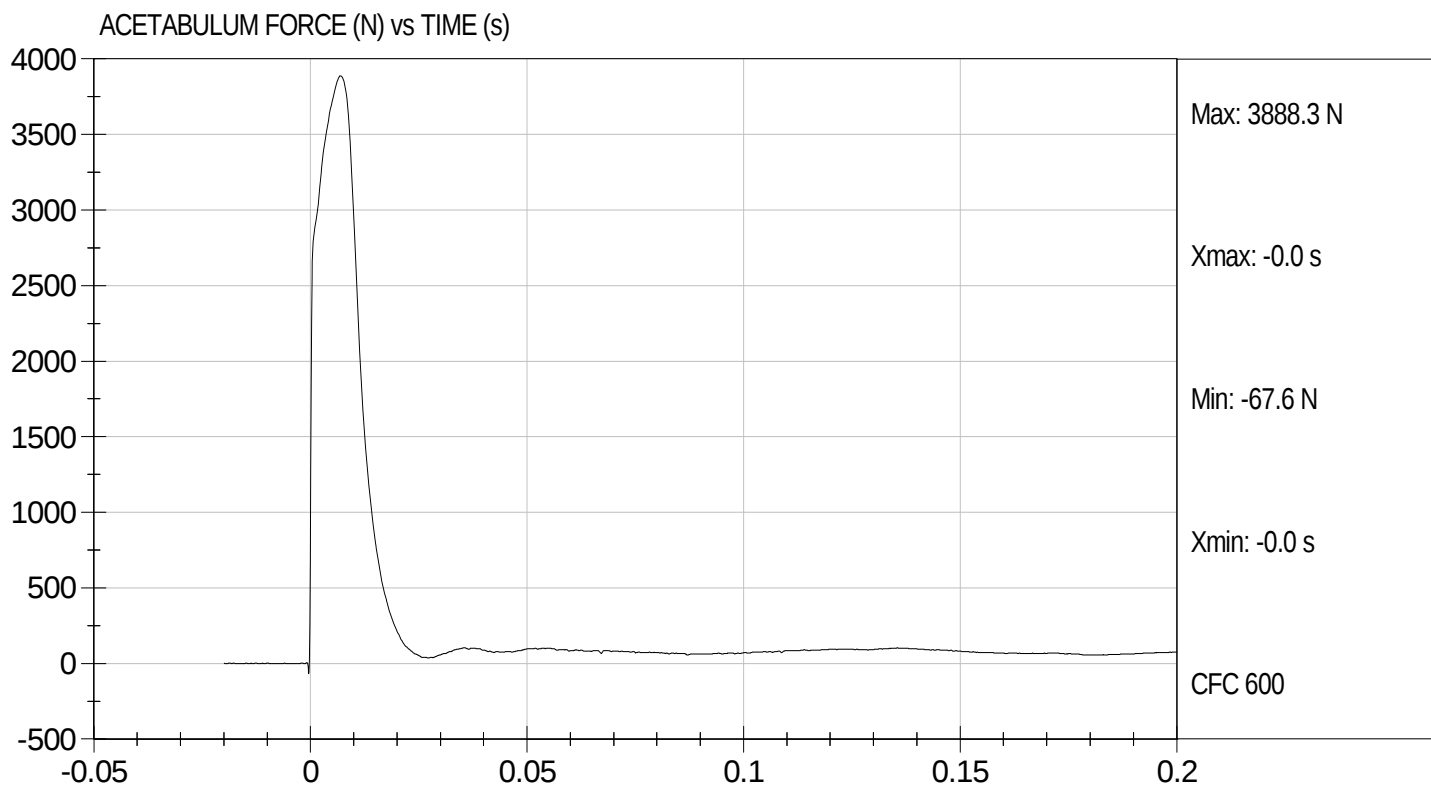
Test Date: 10/6/11
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Pelvis Impact
Component ID: D113367

Test Date: 10/6/11
Velocity: 22.22 ft/s, 6.77 m/s



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

ATD Serial No: 296

Test I.D: D113368

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	40	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Peak Impactor Acceleration	G's	36 to 45	37	Pass
Pelvis Y Acceleration	G's	28 to 39	30	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4610	Pass
Overall Test Results				Pass


Laboratory Technician

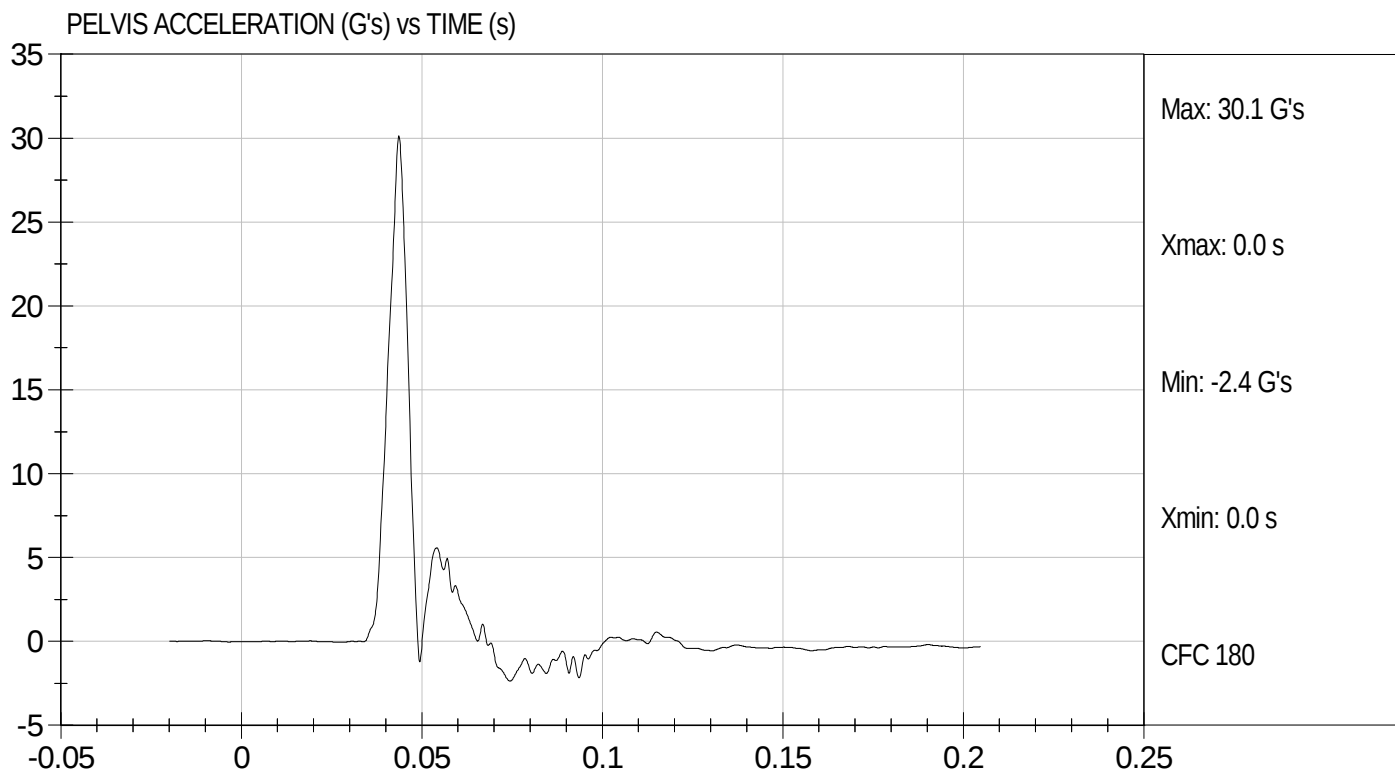
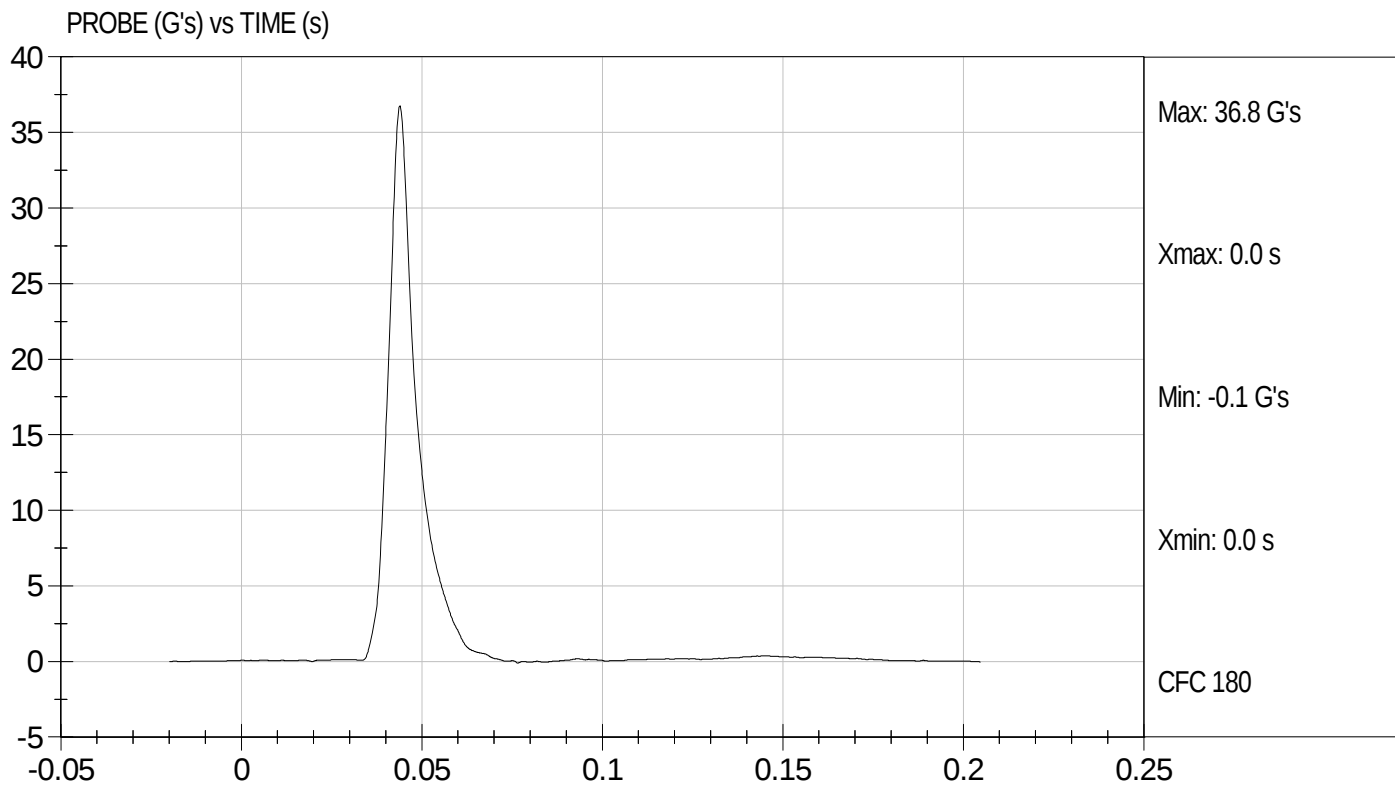
10/6/11
Test Date


Approved By



Test Desc: Iliac Impact
Component ID: D113368

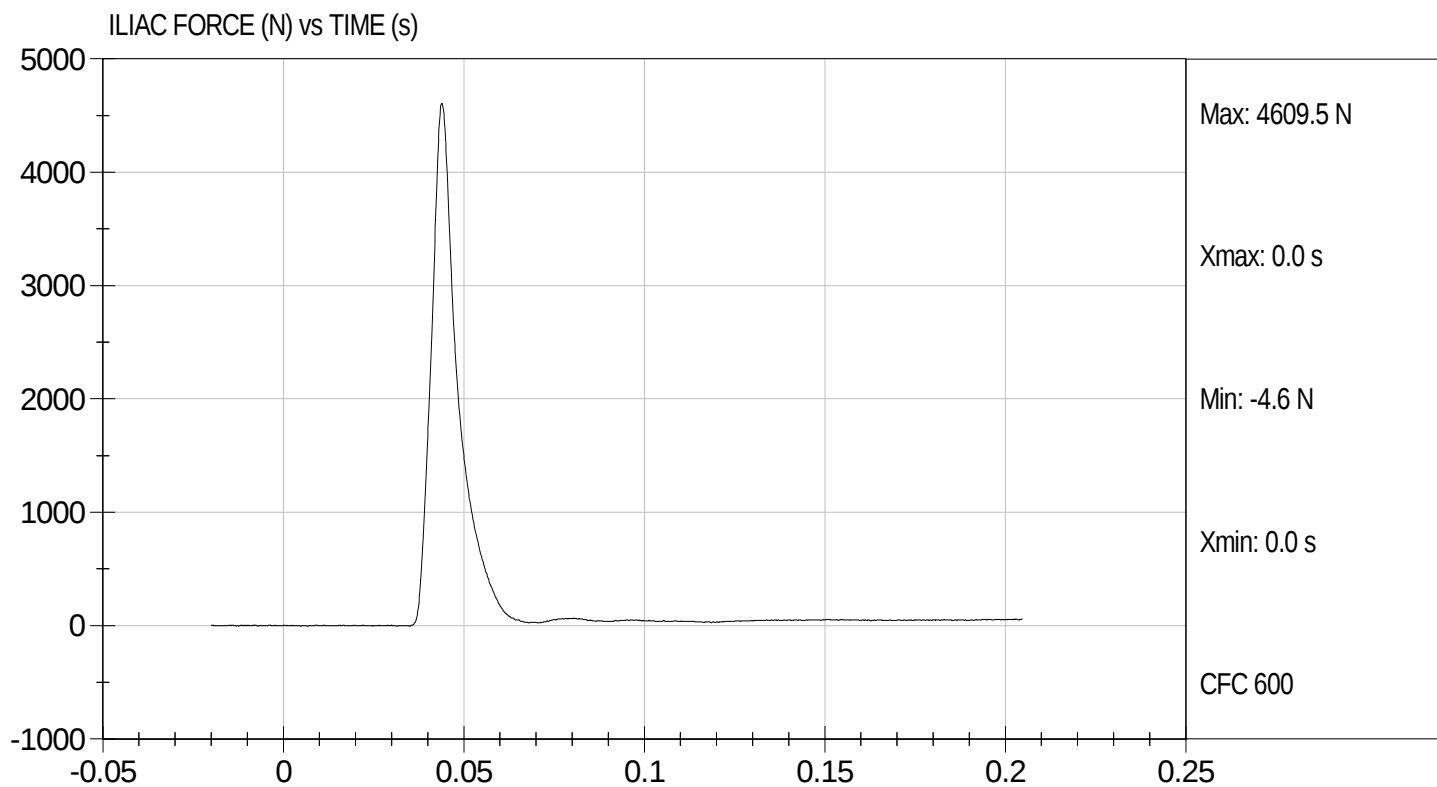
Test Date: 10/6/11
Velocity: 14.12 ft/s, 4.30 m/s





Test Desc: Iliac Impact
Component ID: D113368

Test Date: 10/6/11
Velocity: 14.12 ft/s, 4.30 m/s



APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation

				SID-IIs S/N 296			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers				X	P66632	Endevco	04/25/11
				Y	P66633	Endevco	04/25/11
				Z	P66634	Endevco	04/25/11
Head Accelerometers				Xr	P66678	Endevco	04/25/11
				Yr	P66679	Endevco	04/25/11
				Zr	P66680	Endevco	04/25/11
Displacement Potentiometers	Thoracic Rib	Upper	Y	G1214	FTSS	06/14/11	
		Middle	Y	G1163	FTSS	06/14/11	
		Lower	Y	G1158	FTSS	06/14/11	
	Abdominal Rib	Upper	Y	G1146	FTSS	06/14/11	
		Lower	Y	G1126	FTSS	06/14/11	
Lower Spine Accelerometers (T12)				X	P66675	Endevco	04/25/11
				Y	P66676	Endevco	04/25/11
				Z	P66677	Endevco	04/25/11
Acetabulum Load Cell				Y	ACG269	Denton	01/06/11
Iliac Wing Load Cell				Y	IWG282	Denton	01/06/11
Pelvis Plug (struck side)					37115	FTSS	10/8/10
Pelvis Plug (non-struck side)					37201	FTSS	10/12/10

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P59298	Endevco	05/20/11
Vehicle Center of Gravity	Y	P59300	Endevco	05/20/11
Vehicle Center of Gravity	Z	P59299	Endevco	05/20/11
Left Floor Sill	Y	P59230	Endevco	04/27/11
A-Pillar Sill	Y	P63538	Endevco	05/19/11
A-Pillar Low	Y	P47310	Endevco	09/12/11
A-Pillar Mid	Y	P63512	Endevco	04/08/11
B-Pillar Sill	Y	P59634	Endevco	05/20/11
B-Pillar Low	Y	P55682	Endevco	04/27/11
B-Pillar Mid	V	P59350	Endevco	07/07/11
Driver Seat	Y	P48388	Endevco	04/27/11
Engine Top	X	P47895	Endevco	09/12/11
Engine Top	Y	P47896	Endevco	09/12/11
Firewall	Y	P59626	Endevco	08/22/11
Right Roof	Y	P59362	Endevco	07/07/11
Right Floor Sill	Y	P63274	Endevco	08/22/11
Rear Floorpan	X	P59279	Endevco	05/20/11
Rear Floorpan	Y	P59280	Endevco	05/20/11

Table 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	09/15/11
Load Cell 2	DG6278	FTSS	09/15/11
Load Cell 3	DG6279	FTSS	09/15/11
Load Cell 4	DG6280	FTSS	09/15/11
Load Cell 5	DG6281	FTSS	09/15/11
Load Cell 6	DG6283	FTSS	09/15/11
Load Cell 7	DG6284	FTSS	09/15/11
Load Cell 8	DG6282	FTSS	09/15/11