

REPORT NUMBER: SINCAP-MGA-2012-049

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Moving Deformable Barrier Side Impact Test**

**CHRYSLER GROUP LLC
2012 Dodge Charger SE 4-Dr Sedan
NHTSA No.: MC0317**

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



Test Date: January 5, 2012

Final Report Date: February 21, 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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Approved by: 
Ben Fischer, Project Engineer

Approval Date: February 21, 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

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7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer		8. Performing Organization Report No. SINCAP-MGA-2012-049																												
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		14. Sponsoring Agency Code NVS-111																												
15. Supplementary Notes																														
16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2012 Dodge Charger SE 4-Dr Sedan in accordance with the specifications of the Office of Crashworthiness Standards NCAP Side Laboratory Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on January 5, 2012. The impact velocity of the Moving Deformable Barrier (MDB) was 61.8 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.1°C. The target vehicle post-test maximum crush was 287 mm at level 2. The test vehicle's performance was as follows:																														
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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.																														
17. Key Words New Car Assessment Program (NCAP) Side Impact MDB ES-2re 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 moving deformable barrier 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 Charger SE 4-Dr Sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Laboratory Test Procedure dated August 2011.

SECTION 2 SUMMARY OF TEST RESULTS

A 2012 Dodge Charger SE 4-Dr Sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.8 km/h (38.4 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on January 5, 2012. Pretest and post test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS NCAP Side Laboratory Test Procedure dated August 2011. The side impact event was documented by eleven (11) cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and Redundant Head CG Triaxial Accelerometers
 Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
 Abdomen Forward, Middle, and Rear Y-Axis Load Cells
 Lower Spine (T12) Triaxial Accelerometers
 Pubic Symphysis Y-Axis Load Cell

PASSENGER ATD (SID-IIs)

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.

Dummy Injury readings were recorded as follows:

DUMMY INJURY VALUES

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	160
Maximum Thorax Rib Deflection	mm	44	34
Total Abdominal Force	N	2500	1313
Pubic Symphysis Force	N	6000	1889

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	116
Resultant Lower Spine Acceleration	Gs	82	45
Total Pelvic Force	N	5525	1370
Maximum Thoracic Rib Deflection	mm	38*	28
Maximum Abdomen Rib Deflection	mm	45*	13

*Proposed IARV

Supplemental restraint information is given below:

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

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

GENERAL COMMENTS

There was no valid data collected for:

- Left Lower A-Post Y
- Left Mid A-Post Y after 3 msec.
- Left Lower B-Post Y after 3 msec.
- Left Mid B-Post Y after 4 msec.

Vehicle CG X is questionable from 19-23 msec.
 Driver Seat Track Y is questionable from 16-21 msec.

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

SECTION 3
OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

**DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
Test Date: 1/05/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MC0317	Traction Control System (TCS)	Yes
Model Year	2012	Auto-Leveling System	No
Make	Dodge	Automatic Door Locks (ADL)	Yes
Model	Charger	Power Window Auto-Reverse	No
Body Style	Sedan	Other Optional Feature	N/A
VIN	2C3CDXBG4CH102183	Driver Front Airbag	Yes
Body Color	Tungsten Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	170 / 106	Driver Head/Torso Airbag	No
Engine Displacement (L)	3.6	Driver Torso Airbag	No
Type/No. Cylinders	6	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Longitudinal	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	5	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	Rear	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	Yes, driver's seat only	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)	2314
Date of Manufacture	7-11	GAWR Front (kg)	1275
Vehicle Type	Passenger Car	GAWR Rear (kg)	1275

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				392	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW)				52	(A-B)

VEHICLE SEAT TYPE

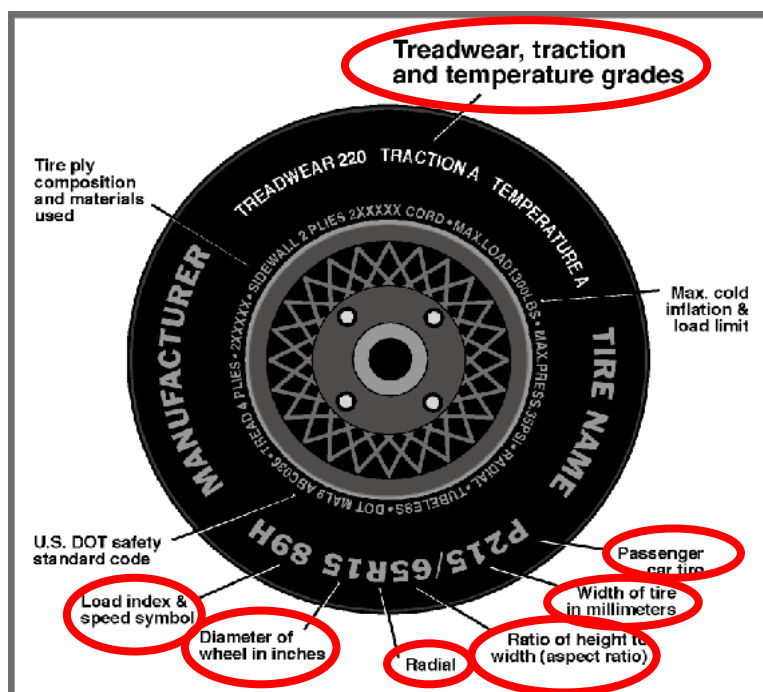
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X						X
Rear or Second Row		X			X		
Third Row Seat							

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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

VEHICLE TIRE INFORMATION



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	240	240
Recommended Tire Size	P215/65R17	P215/65R17

TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Tire Size on Vehicle	P215/65R17	P215/65R17
Tire Manufacturer	Michelin	Michelin
Tire Name	Energy Saver	Energy Saver
Tire Type	Passenger	Passenger
Tire Width	215	215
Aspect Ratio	65	65
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index/Speed Symbol	98T	98T
Treadwear	480	480
Traction Grade	A	A
Temperature Grade	B	B
Tire Material	Rubber	Rubber

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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

TEST PRESSURES

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

MDB TIRE SPECIFICATIONS

	Requirement	Units	LF	RF	LR	RR
Tire Size	P205/75R15	N/A	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire	200 ± 21	kpa	220	220	220	220

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	464.0	428.7		508.9	496.7		504.9	504.8	
Right	kg	468.6	435.9		479.9	486.3		474.4	494.0	
Ratio	%	51.9	48.1		50.1	49.9		49.5	50.5	
Totals	kg	932.6	864.6	1797.2	988.8	983.0	1971.8	979.3	998.8	1978.1

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1797.2	(A)
Sum of Actual Weight of 2 P572 ATDs Used	kg	129.3	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	52	(C)
Calculated Vehicle Target Weight (TVT _W)	kg	1978.5	(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 TVT_W

Component Description	Weight (kg)
Weight of Ballast, if any	31.8
Spare tire & cover, jack & tools, right side mirror, right taillight, right rear speaker, trunk sill trim.	29.0

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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

TEST VEHICLE ATTITUDES AND CG

	Units	Fully Loaded	As Tested	Meets Requirement***
Left Front	mm	750	755	Yes
Right Front	mm	752	752	Yes
Right Rear	mm	752	756	Yes
Left Rear	mm	752	762	Yes
Vehicle CG (Aft of Front Axle)	mm	1542	1522	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	17	16	

*** The "As Tested" vehicle attitude measurements must be equal to or within ± 10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well.

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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

SEAT POSITIONING

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the mid-track, lowest, 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	19.7	12.3	16.0
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 SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rear-most	Mid-Fore/Aft	Forward-Most
Driver Seat	16.0	0	Max	54	54	54
	16.0	0	Mid	27	27	27
	16.0	0	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: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

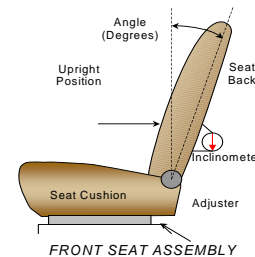
NHTSA No. MC0317
 Test Date: 1/05/2012

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	272		136	
Front Passenger Seat	220	22 (1 st as 0)	110	11 th (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. The front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is fixed. The rear center and non-struck side rear outboard seat backs are also fixed.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents	Degrees	Detent
Driver Seat w/Seated Dummy	63.8		15.1	7 th (1 st as 0)
Front Passenger Seat	66.7		14.6	
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	27.0*	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	27.0*	Fixed
Rear Center Seat	Fixed	Fixed	27.0*	Fixed

*Seat back was fixed, angle measured on seatback.

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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

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)
Rear Seat	Fixed	Not Applicable

HEAD RESTRAINT ADJUSTMENT

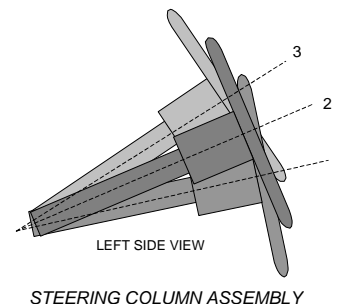
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	4	Highest
Rear Seat	Fixed	Not Applicable

STEERING COLUMN ADJUSTMENT

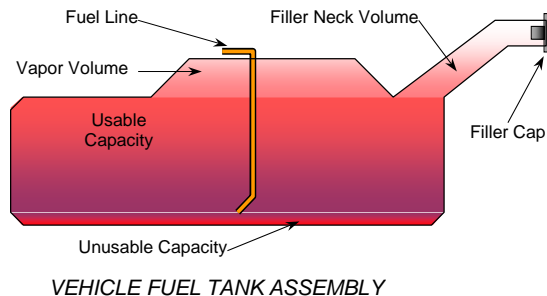
Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	70.4	181
Geometric Center, Position 2	67.9	153
Uppermost, Position 3	65.4	124
Telescoping Steering Wheel Travel		57
Test Position	67.9	153



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 fuel pump starts pumping fuel when the key is in the "ON" position. The fuel pipe is on the left side.



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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

FUEL TANK CAPACITY DATA

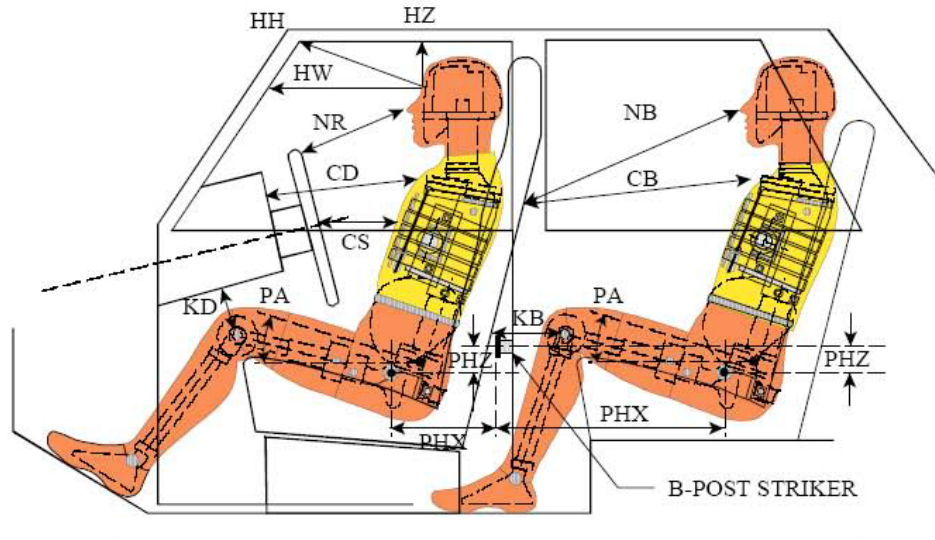
	Liters
Usable Capacity of "Standard" Tank (see Form No. 1)	72.3
Usable Capacity of "Optional" Tank (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	72.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	67.2
Actual Amount of Solvent Used	67.2
1/3 of Usable Capacity	24.1

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 Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
 REAR DUMMY PHX & PHZ
 MEASUREMENTS FOR A 4-DOOR
 VEHICLE WOULD USE THE C-POST
 STRIKER AS A REFERENCE POINT

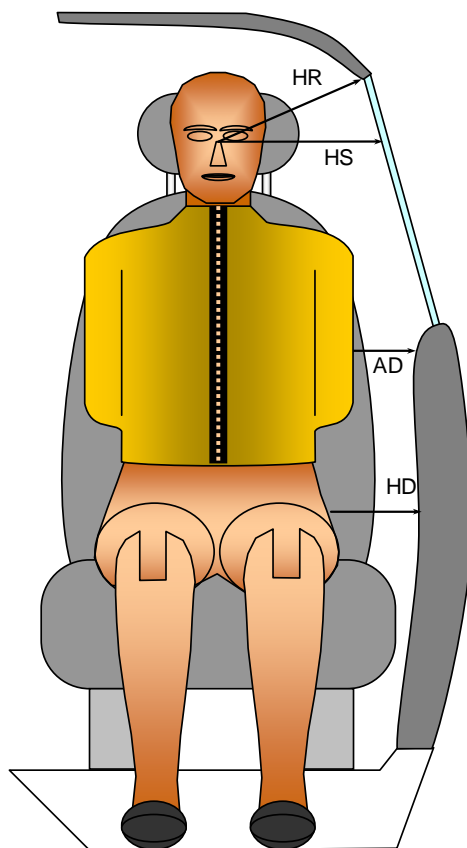
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver S/N 032		Passenger S/N 306	
			Length (mm)	Angle(°)	Length (mm)	Angle(°)
HH		Head to Header	479	12.4		
HW		Head to Windshield	709			
HZ	HZ	Head to Roof Liner	150		225	
NR	NB	Nose to Rim/Seat Back	491	11.4	602	11.5
CD	CB	Chest to Dashboard/Seat Back	575	7.0	563	6.4
CS		Chest to Steering Wheel	375	12.1		
KDL	KBL	Left Knee to Dash/Seat Back	181	42.2	279	13.9
KDR	KBR	Right Knee to Dash/Seat Back	164	42.7	277	17.5
PAX	PAX	Pelvic Tilt Angle X		25.7		24.2
	PAY	Pelvic Tilt Angle Y		-1.4		1.0
PHX	PHX	Hip Point to Striker (X-Axis)	160		224	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	158		279	

**DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012



FRONT VIEW OF DUMMY

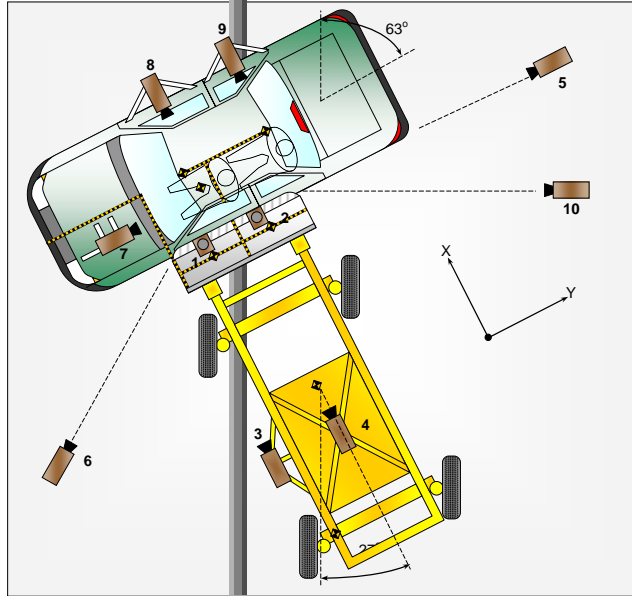
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver S/N 032	Passenger S/N 306
HR	Head to Side Header	mm	143	212
HS	Head to Side Window	mm	306	383
AD	Arm to Door	mm	114	175
HD	Hip Point to Door	mm	161	183

**DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
Test Date: 1/05/2012



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X*	Y*	Z*		
1	Overhead Overall	100	180	-4920	14	1000
2	Overhead Close-Up	100	280	-4860	20	1000
3	Left Impact Point (MDB)				50	1000
4	Side Overall (MDB)				16	1000
5	Rear	60	4720	-1100	24	1000
6	Left Front	4130	-4170	-1080	24	1000
7	Driver Front (OB)				16	1000
8	Driver Side (OB)				8	1000
9	Passenger Side (OB)				8	1000
10	Real Time Left Rear					30
11	Real Time Inrun					30

Reference: Impact Point projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

* All measurements accurate to ± 6 mm

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

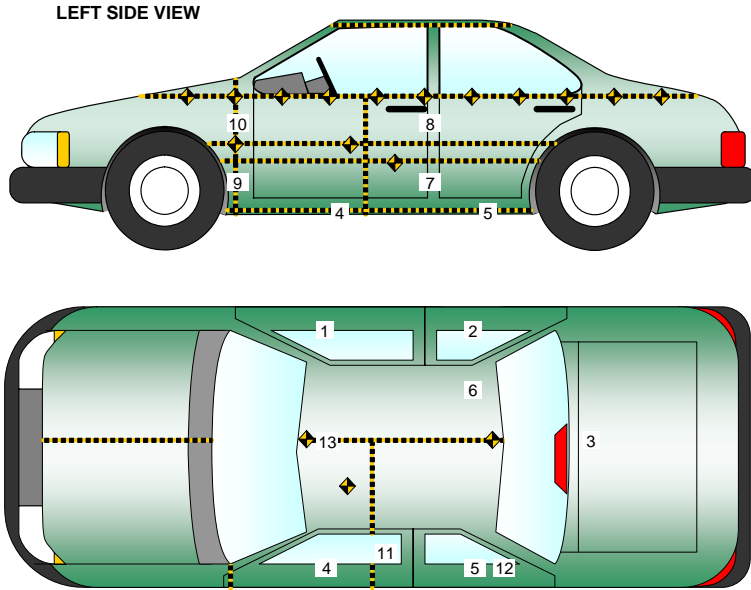
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	5
MDB Contacts	2
Total	62

**DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012



TEST VEHICLE ACCELEROMETER LOCATIONS

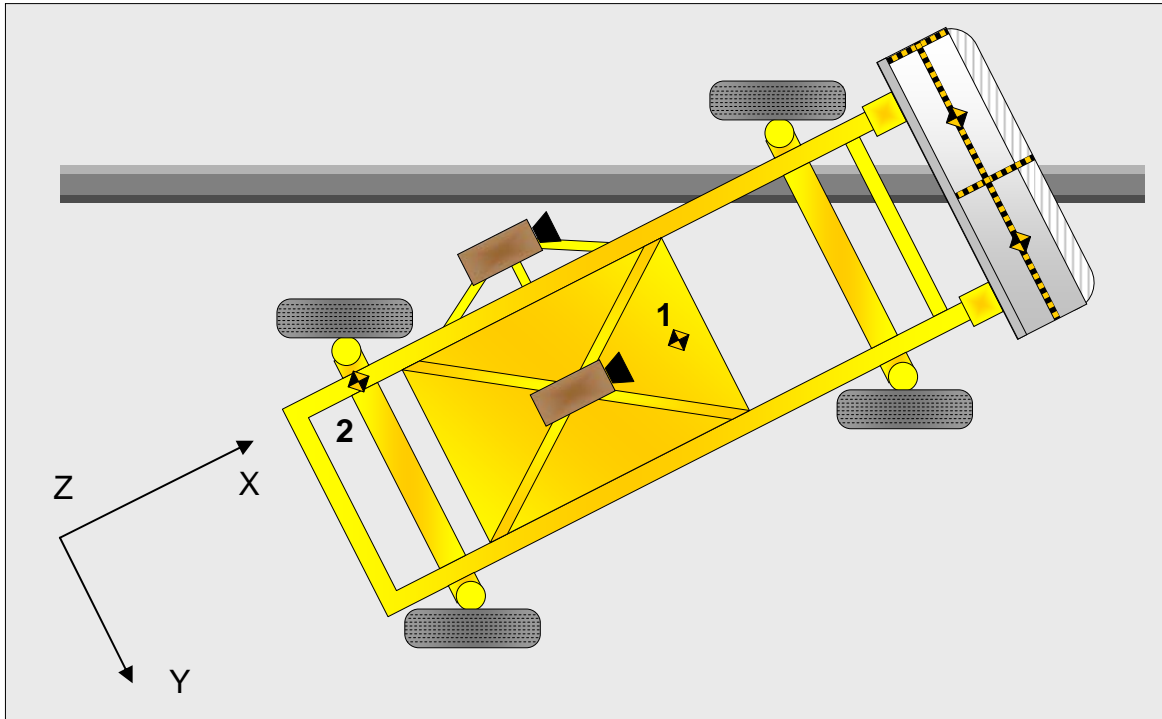
Accelerometer Location				
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2461	-230	-190
2	Right Sill at Front Seat	2807	780	-165
3	Right Sill at Rear Seat	1852	780	-180
4	Left Sill at Front Door	2878	-780	-170
5	Left Sill at Rear Door	1768	-780	-185
6	Left Lower A-Post	3333	-750	-456
7	Left Middle A-Post	3444	-846	-738
8	Left Lower B-Post	2246	-755	-550
9	Left Middle B-Post	2246	-745	-787
10	Front Seat Track	2560	-585	-335
11	Rear Seat Structure	1957	-430	-352
12	Rt. Rear Occ. Compartment	2012	340	-225
13	Engine Block	4155	0	-942
14	Rear Above Axle	905	-30	-535

Reference: X – Rear Surface of Vehicle (+ forward)
 Y - Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

**DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012



MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	MDB CG	-1105	0	-330
2	MDB Rear	-2580	-650	-625

Reference: X - MDB Face (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)

**DATA SHEET NO. 8
POST-TEST OBSERVATIONS**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	Curtain Airbag
Top of Head	Curtain Airbag, Side Header	Curtain Airbag, Side Header
Left Side of Head	Curtain Airbag	Curtain Airbag, Side Header
Back of Head	Side Header, Headrest	Curtain Airbag, Center Headrest & Seat
Left Shoulder	Door Panel	Seatback, Door Panel
Upper Torso	Side Airbag, Seatback	Door Panel
Lower Torso	Side Airbag, Seatback	Door Panel, Seatback
Left Hip	Side Airbag, Seat Cushion	Seat Cushion
Left Knee	Door Panel	Door Panel

POST-TEST DOOR PERFORMANCE

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

POST-TEST SEAT PERFORMANCE

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

POST-TEST STRUCTURAL OBSERVATIONS

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

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

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
Test Date: 1/05/2012

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		3053
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		508
Actual Impact Point (Aft of Front Axle)	mm		511
Horizontal Offset (+forward / -rearward)	mm	+/- 50 of intended impact point	-3
Vertical Offset (+down / -up)	mm	+/- 20 of intended impact point	-2

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheelbase of Framework Carriage	2592
CG Location aft of Front Axle	1129

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	411.8	281.6	
Right	kg	356.8	311.3	
Ratio	%	56.5	43.5	
Totals	kg	768.6	592.9	1361.5

SPEED AND ANGLE AT IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.8
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.1
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.0
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.2
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	26.8

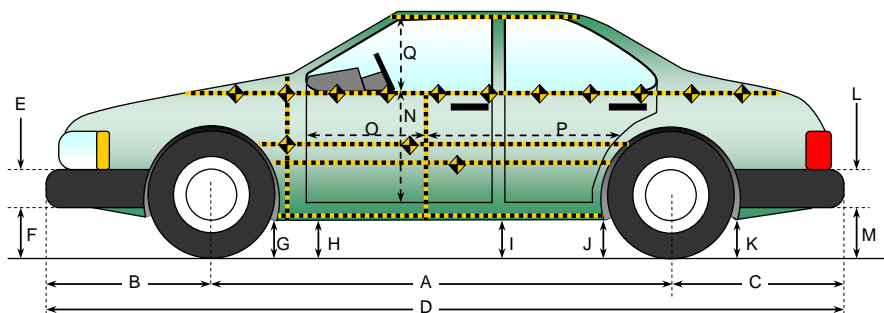
MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Row	Vertical Location		From Centerline		Maximum Crush
	Description	Height	Distance	Direction	
A	Center of Bumper	432	700	Left	211
B	Top of Bumper	533	800	Left	180
C	Mid-Level	686	800	Left	186
D	Top of Stack	813	800	Left	217

**DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
Test Date: 1/05/2012



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

LEFT SIDE VIEW

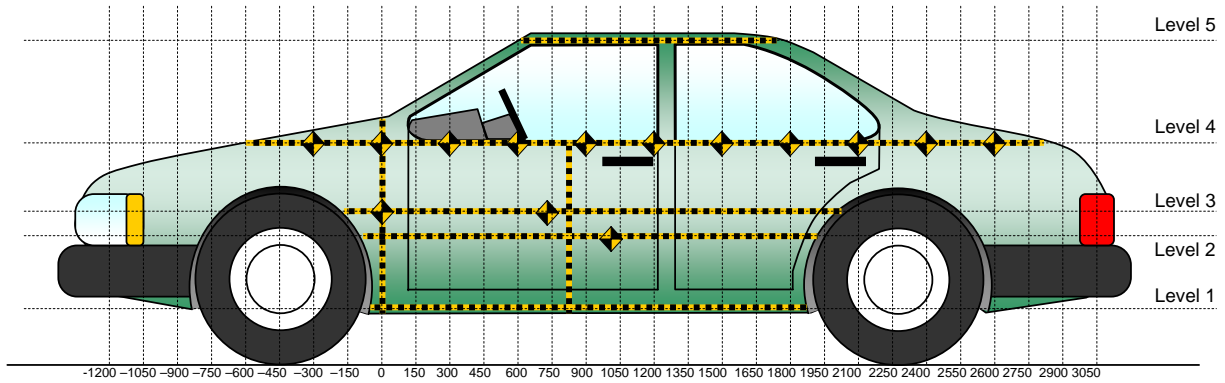
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3053	3032	21
B	Front Axle to FSOV	924	924	0
C	Rear Axle to RSOV	1103	1103	0
D	Total Length at Centerline	5080	5059	21
E	Front Bumper Thickness	130	130	0
F	Front Bumper Bottom to Ground	244	371	-127
G	Sill Height at Front Wheel Well	147	152	-5
H	Sill Height at Front Door Leading Edge	148	157	-9
I	Sill Height at B Pillar	162	165	-3
J1	Sill Height at Rear Wheel Well	161	152	9
J2	Pinch Weld Height at Rear Wheel Well	157	163	-6
K	Sill Height Aft of Rear Wheel Well	215	207	8
L	Rear Bumper Thickness	104	104	0
M	Rear Bumper Bottom to Ground	244	225	19
N	Sill Height to Window Bottom Sill	775	731	44
O	Front Door Leading Edge to Impact CL	690	700	-10
P	Rear Door Trailing Edge to Impact CL	1392	1382	10
Q	Front Window Opening	416	405	11
R	Right Side Length	4500	4501	-1
S	Left Side Length	4500	4468	32
T	Vehicle Width at B Post	1891	1720	171

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012



All Measurements Shown in mm

LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	220	26	900
2	Occupant Hip Point	542	287	1650
3	Mid Door	632	279	1650
4	Window Sill	964	160	1350
5	Window Top	1384	39	1500

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

DATA SHEET NO. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

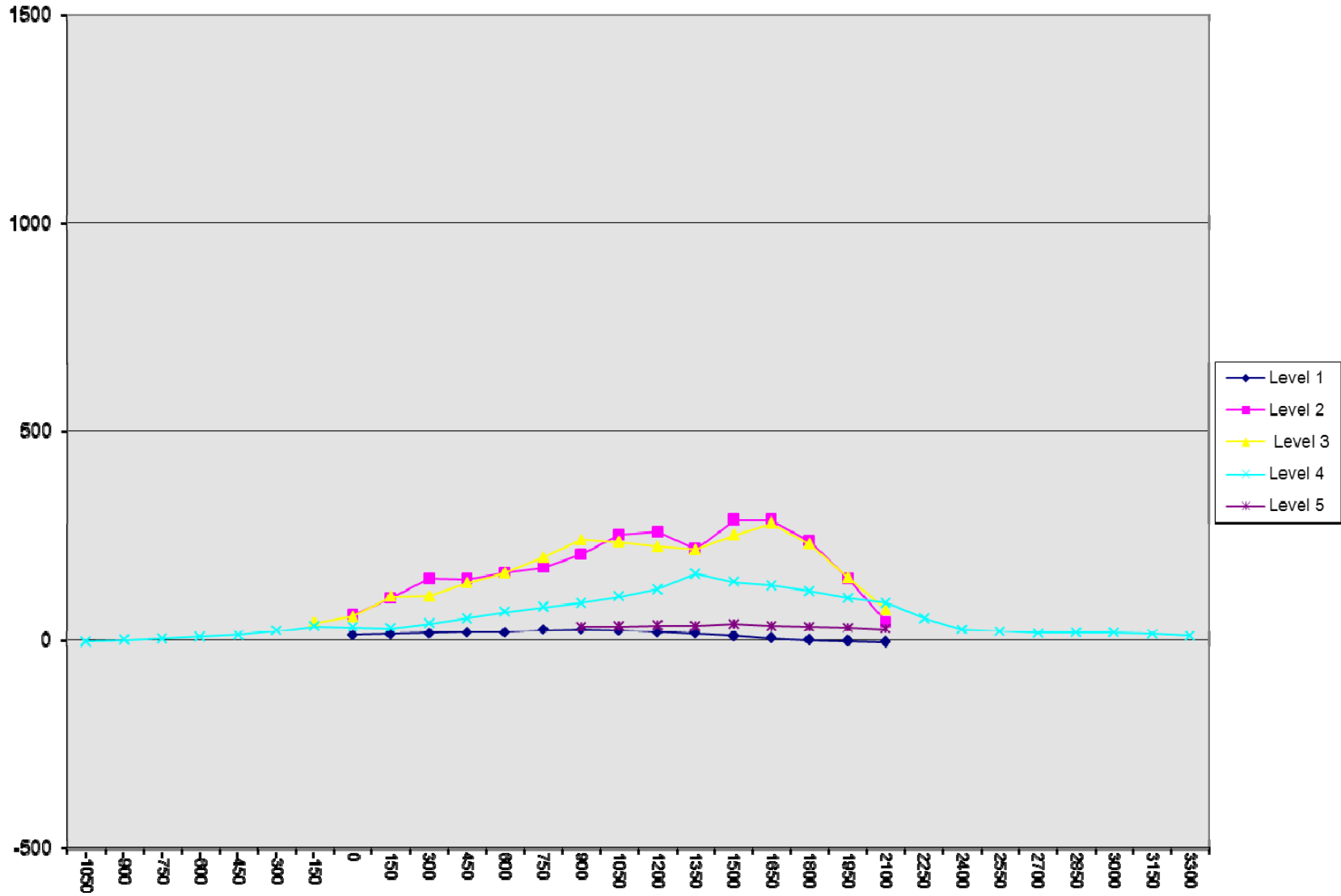
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1050				322					317					-5	
-900				306					305					-1	
-750				293					295					2	
-600				283					290					7	
-450				273					285					12	
-300				260					282					22	
-150			157	255				200	288				43	33	
0	207	168	159	249		218	230	217	280		11	62	58	31	
150	213	163	157	243		227	265	263	272		14	102	106	29	
300	219	162	156	240		235	310	263	280		16	148	107	40	
450	223	178	169	239		242	325	307	292		19	147	138	53	
600	228	175	166	236		246	337	328	304		18	162	162	68	
750	227	172	163	231		251	347	362	311		24	175	199	80	
900	228	170	159	226	478	254	376	400	316	510	26	206	241	90	32
1050	228	167	157	217	473	251	420	393	322	506	23	253	236	105	33
1200	228	166	155	204	468	247	426	380	327	504	19	260	225	123	36
1350	228	166	154	198	465	243	385	372	358	500	15	219	218	160	35
1500	227	164	153	192	463	236	450	405	332	502	9	286	252	140	39
1650	225	161	152	183	462	228	448	431	315	497	3	287	279	132	35
1800	219	160	151	177	463	218	398	382	295	495	-1	238	231	118	32
1950	211	156	149	178	468	208	304	300	280	498	-3	148	151	102	30
2100	202	152	146	179	478	196	196	220	270	505	-6	44	74	91	27
2250				179					232					53	
2400				182					207					25	
2550				187					208					21	
2700				191					207					16	
2850				200					217					17	
3000				210					227					17	
3150				224					238					14	
3300				243					252					9	

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.

DATA SHEET NO. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

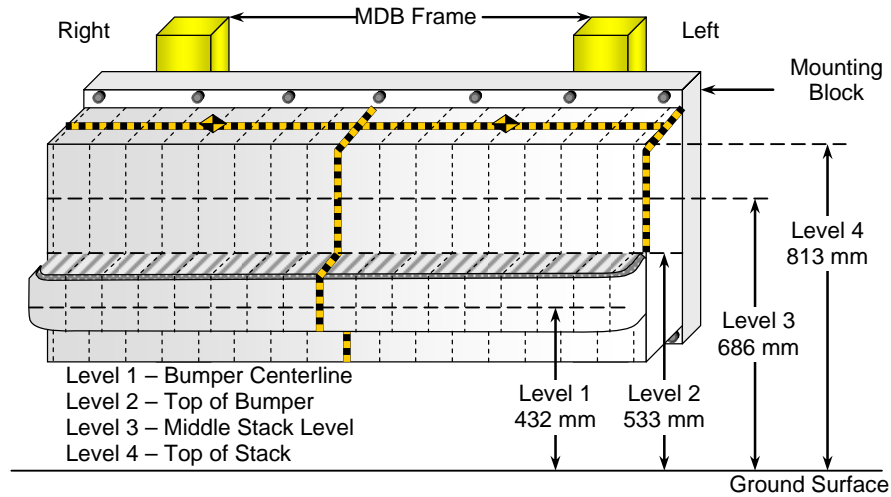
NHTSA No. MC0317
 Test Date: 1/05/2012



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012



FRONT VIEW

DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center (mm)								C _L	Distance Left of Center (mm)							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
4	58	47	51	69	83	75	70	63	63	53	68	78	91	112	143	195	217
3	41	25	32	47	62	54	33	27	23	24	30	43	62	87	126	172	186
2	67	50	47	50	55	47	68	77	72	92	98	109	117	127	139	164	180
1	104	88	74	77	78	85	92	98	99	111	119	126	132	147	167	211	201

DATA SHEET NO. 13
FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

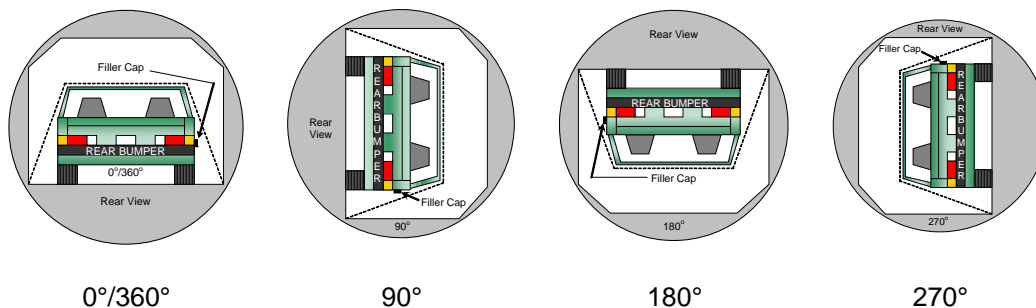
Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
 Test Date: 1/05/2012

Test Time: 10:47 am Temperature: 21.1° 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°	117	300	417
90° to 180°	112	300	412
180° to 270°	109	300	409
270° to 360°	119	300	419

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

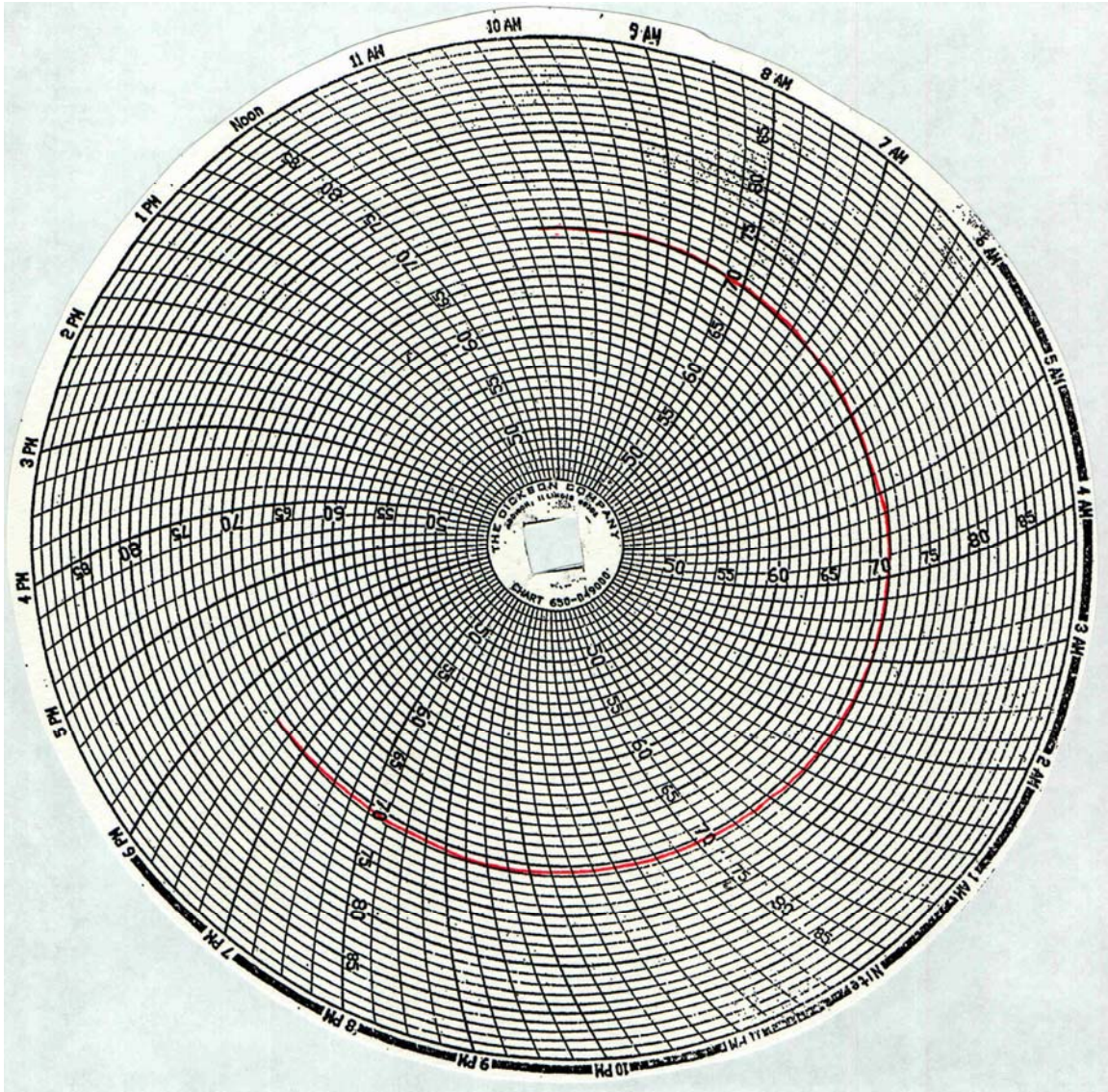
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 14
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2012 Dodge Charger SE 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC0317
Test Date: 1/05/2012



APPENDIX A
PHOTOGRAPHS

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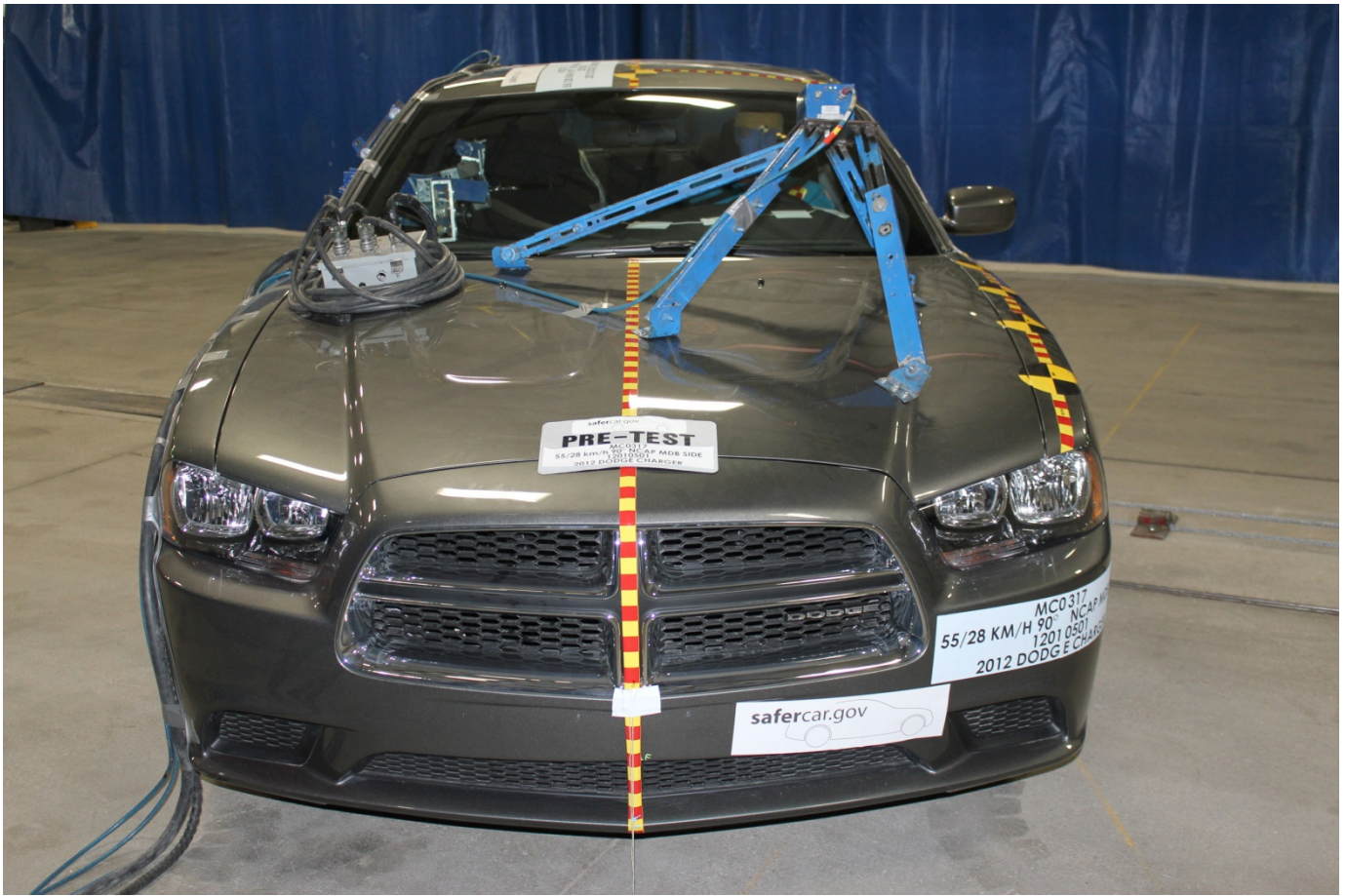
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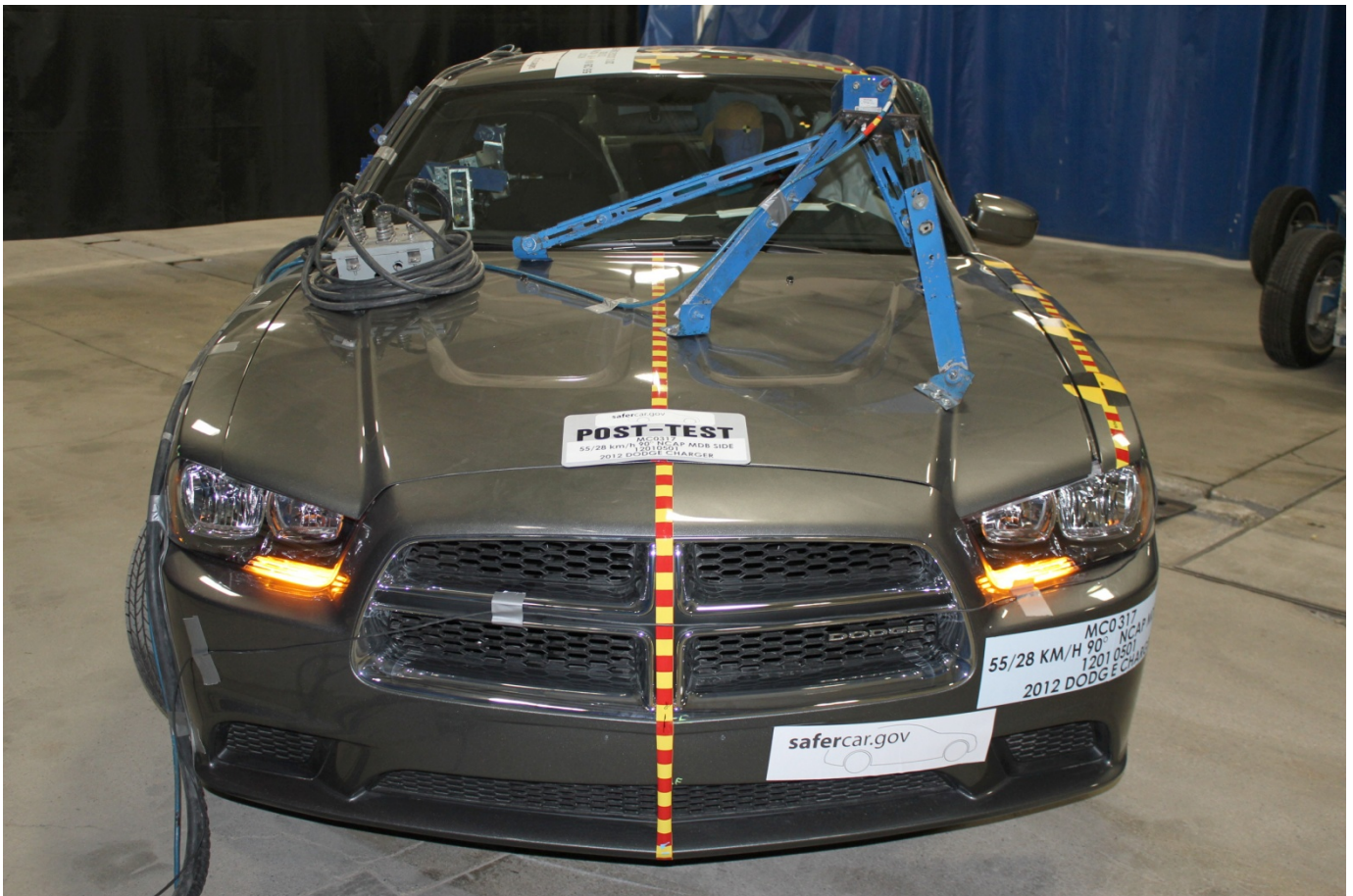
As Delivered Right Front Three-Quarter View of Test Vehicle



As Delivered Left Rear Three-Quarter View of Test Vehicle



Pre-Test Frontal View of Test Vehicle



Post-Test Frontal View of Test Vehicle



Pre-Test Left Front Three-Quarter View of Test Vehicle



Post-Test Left Front Three-Quarter View of Test Vehicle



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



Pre-Test Left Three-Quarter Rear View of Test Vehicle



Post-Test Left Three-Quarter Rear View of Test Vehicle



Pre-Test Rear View of Test Vehicle



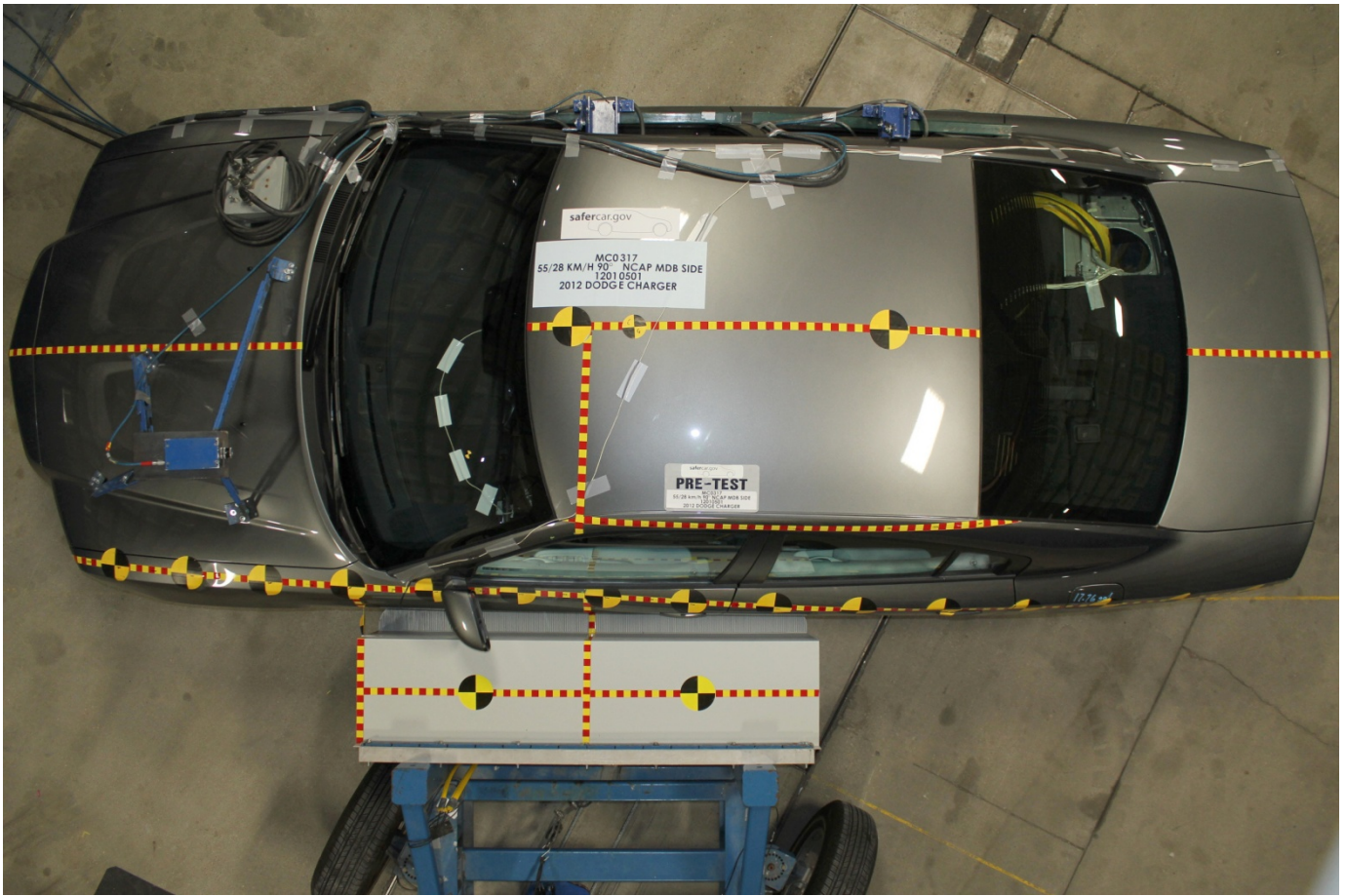
Post-Test Rear View of Test Vehicle



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 MDB Positioned Against Side of Test Vehicle



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



Pre-Test Close-Up View of Impact Point Target



Post-Test Close-Up View of Impact Point Target



Pre-Test Left Front Door Latch Close-Up



Post-Test Left Front Door Latch Close-Up



Pre-Test Left Rear Door Latch Close-Up



Post-Test Left Rear Door Latch Close-Up



Pre-Test Front Close-Up View of Driver Dummy



Post-Test Front Close-Up View of Driver Dummy



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



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



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



Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning



Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



Pre-Test Placement of Driver Dummy's Feet



Pre-Test View of Belt Anchorage for Driver 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 Driver Dummy and Door Clearance View



Post-Test Driver Dummy and Door Clearance View



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



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



Pre-Test Driver Inner Door Panel View



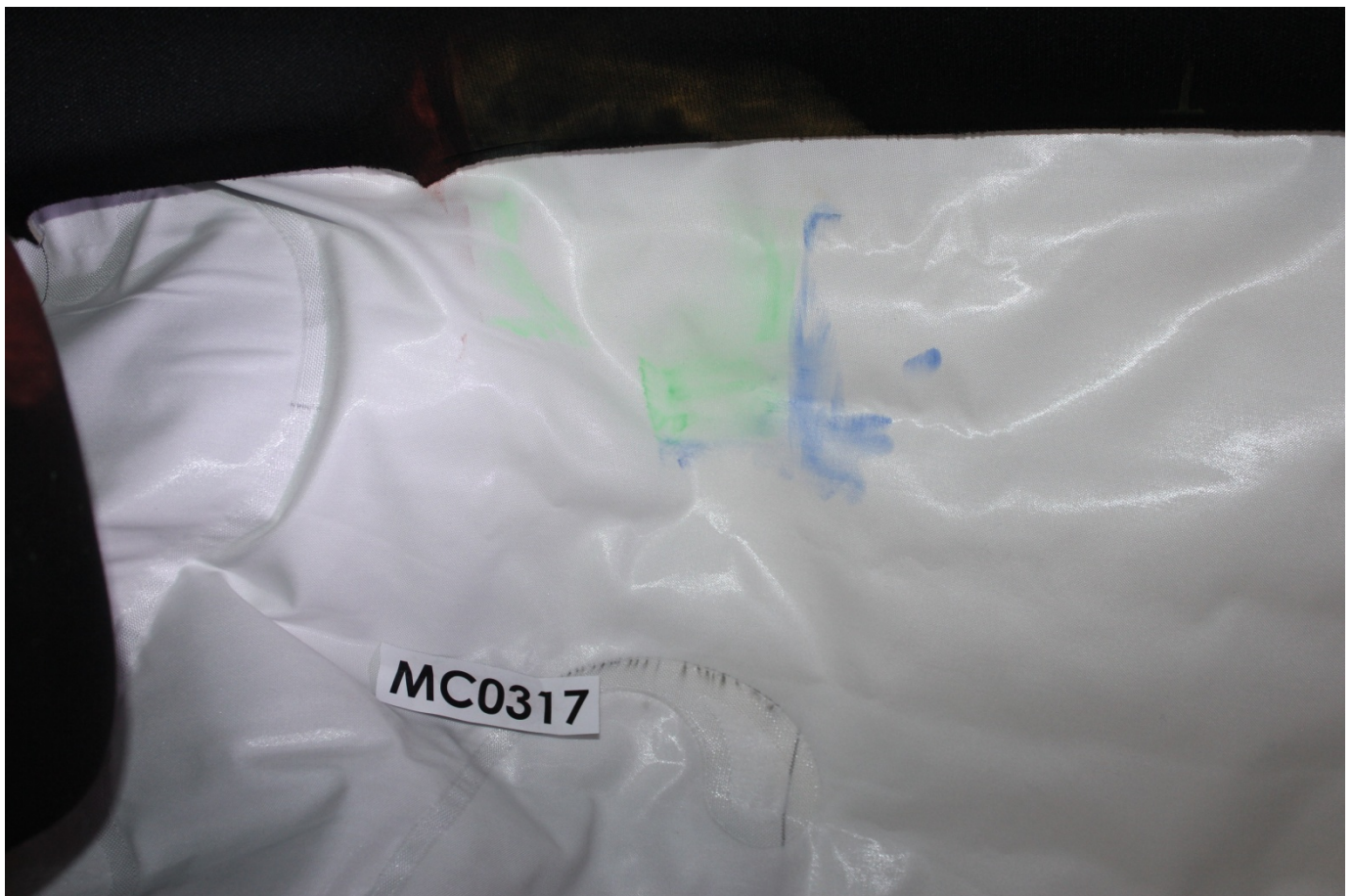
Post-Test Driver Inner Door Panel View



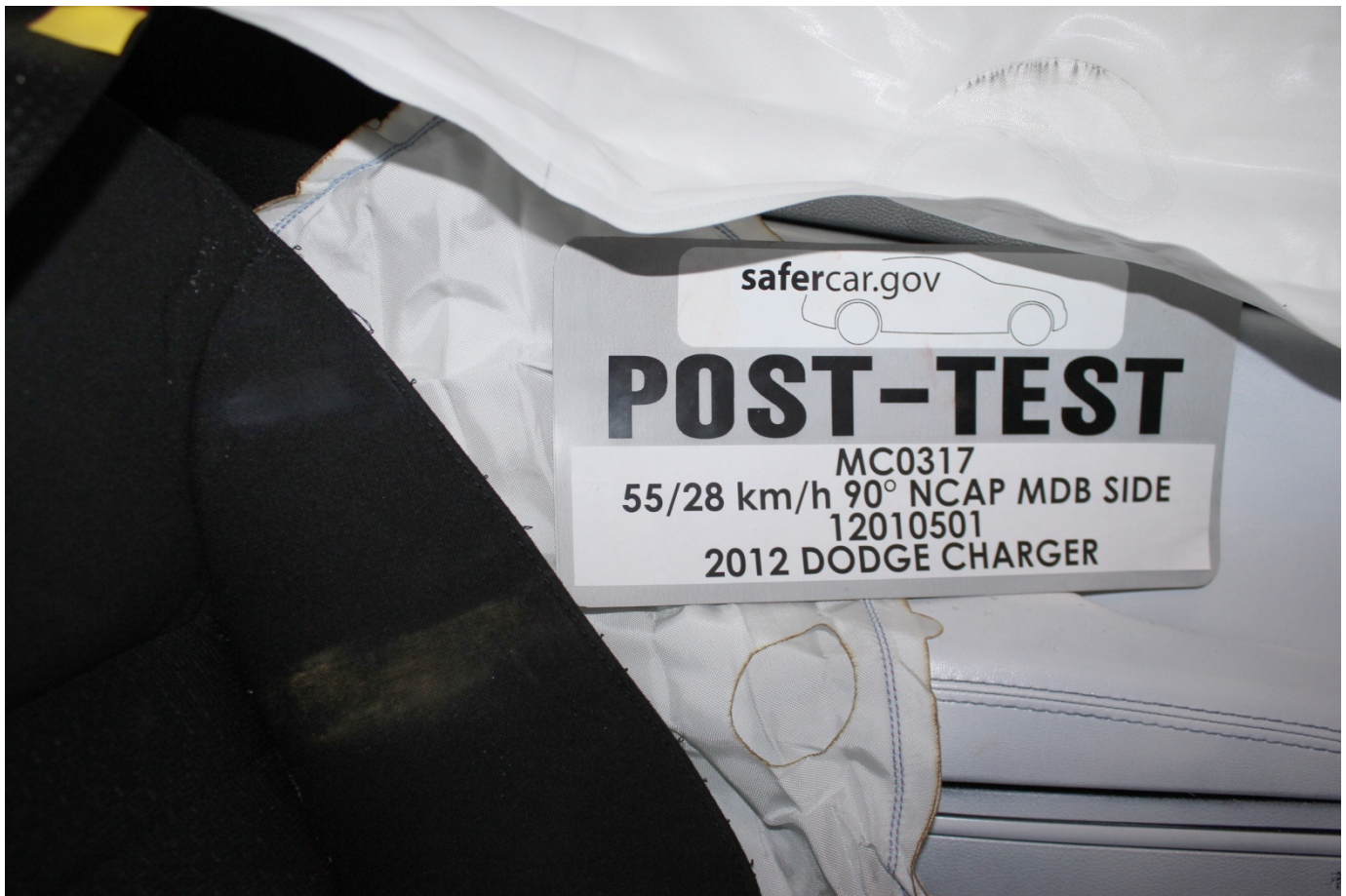
Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View



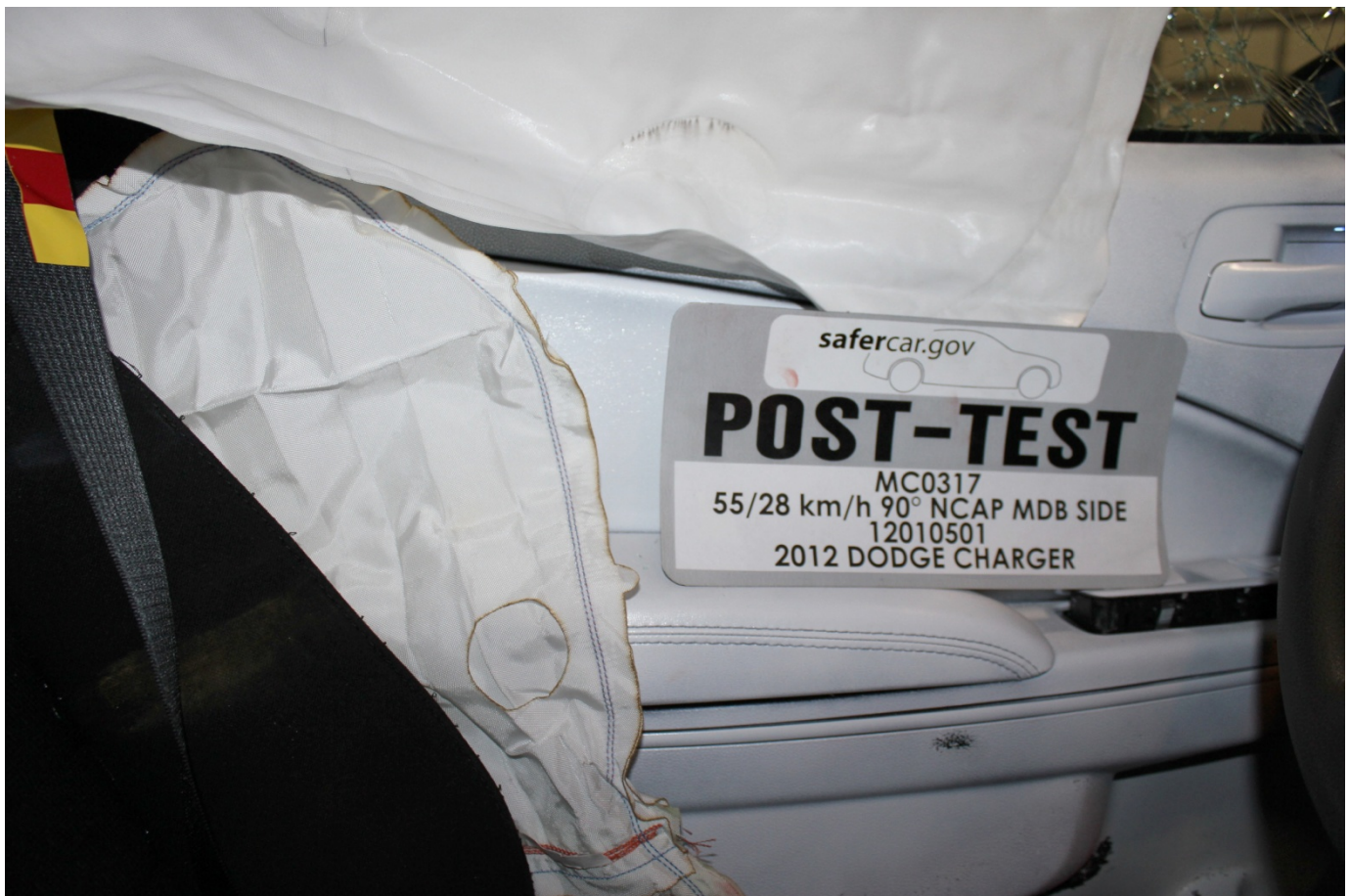
Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View



Post-Test Driver Dummy Close-up Head Contact with Side Airbag View



Post-Test Driver Dummy Close-up Torso Contact with Vehicle Interior View



Post-Test Driver Dummy Close-up Torso Contact with Side Airbag View



Post-Test Driver Dummy Close-up Pelvis Contact with Vehicle Interior View



Post-Test Driver Dummy Close-up Pelvis Contact with Side Airbag View



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



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



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



Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning



Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket



Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level



Pre-Test Placement of Rear Passenger Dummy's Feet



Pre-Test View of Belt Anchorage for Rear Passenger Dummy



Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



Pre-Test Close-up View of Rear Passenger Seat Back or Head Restraint



Pre-Test Rear Passenger Dummy and Door Clearance View



Post-Test Rear Passenger Dummy and Door Clearance View



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



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



Pre-Test Rear Passenger Inner Door Panel View



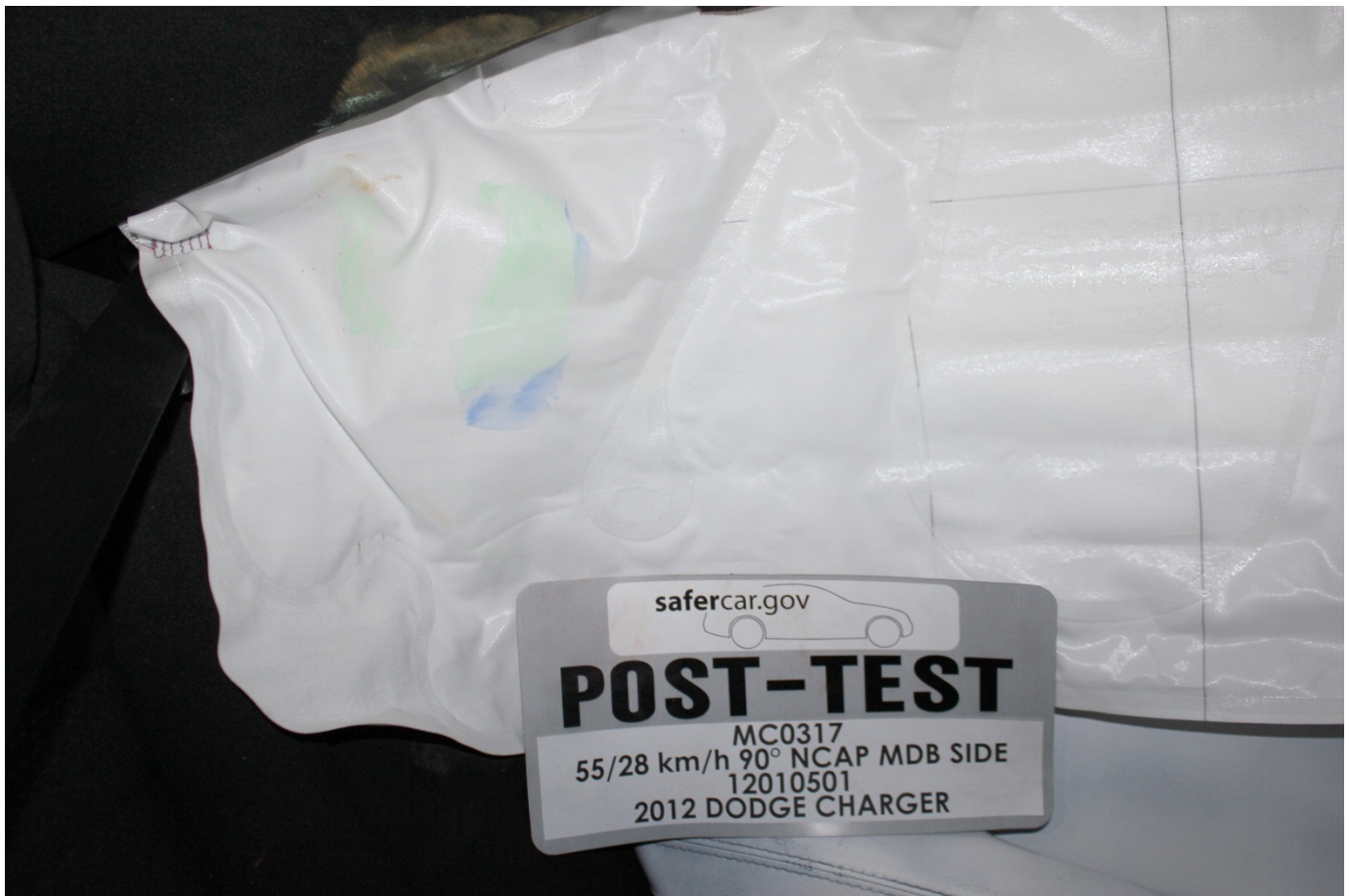
Post-Test Rear Passenger Inner Door Panel View



Post-Test Rear Passenger Dummy Close-up Head Contact with Vehicle Interior View



Post-Test Rear Passenger Dummy Close-up Head Contact with Vehicle Interior View



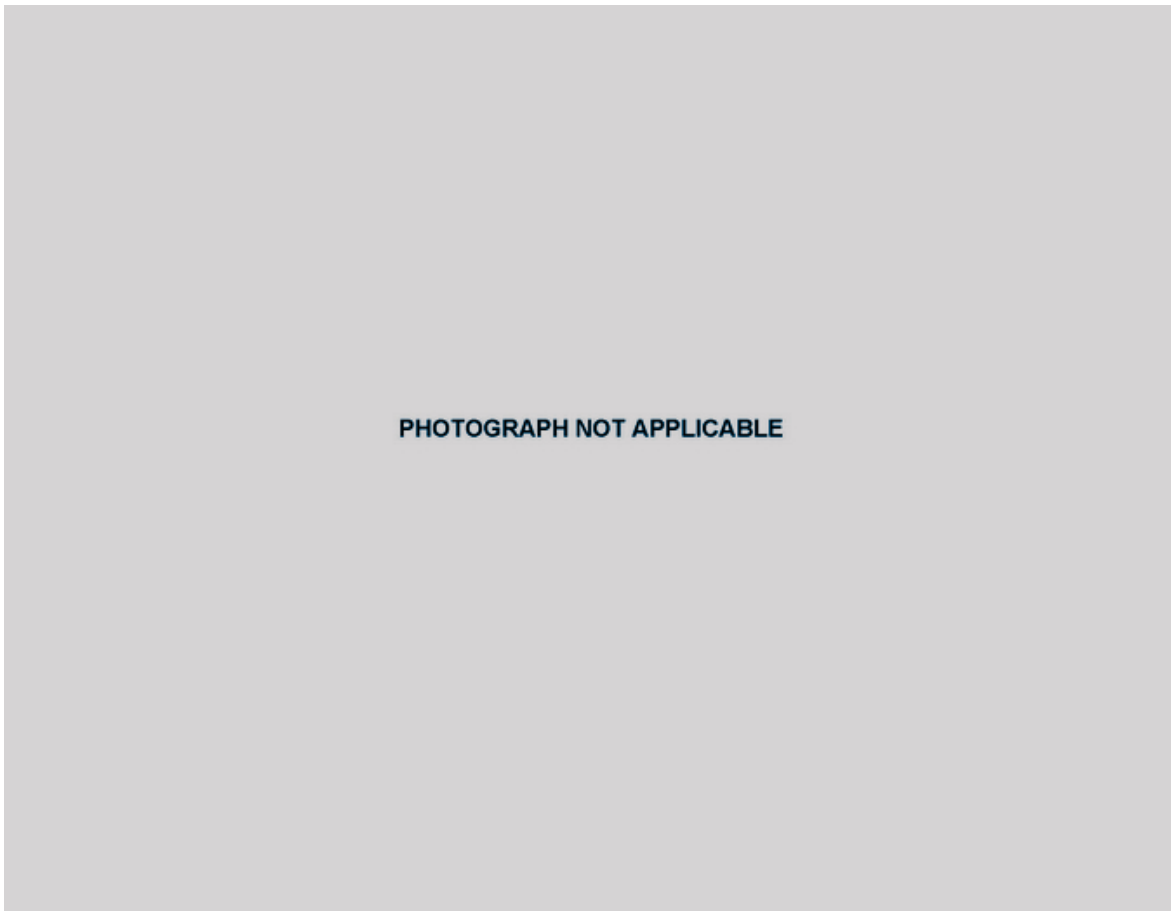
Post-Test Rear Passenger Dummy Close-up Head Contact with Side Airbag View



Post-Test Rear Passenger Dummy Close-up Torso Contact with Vehicle Interior View



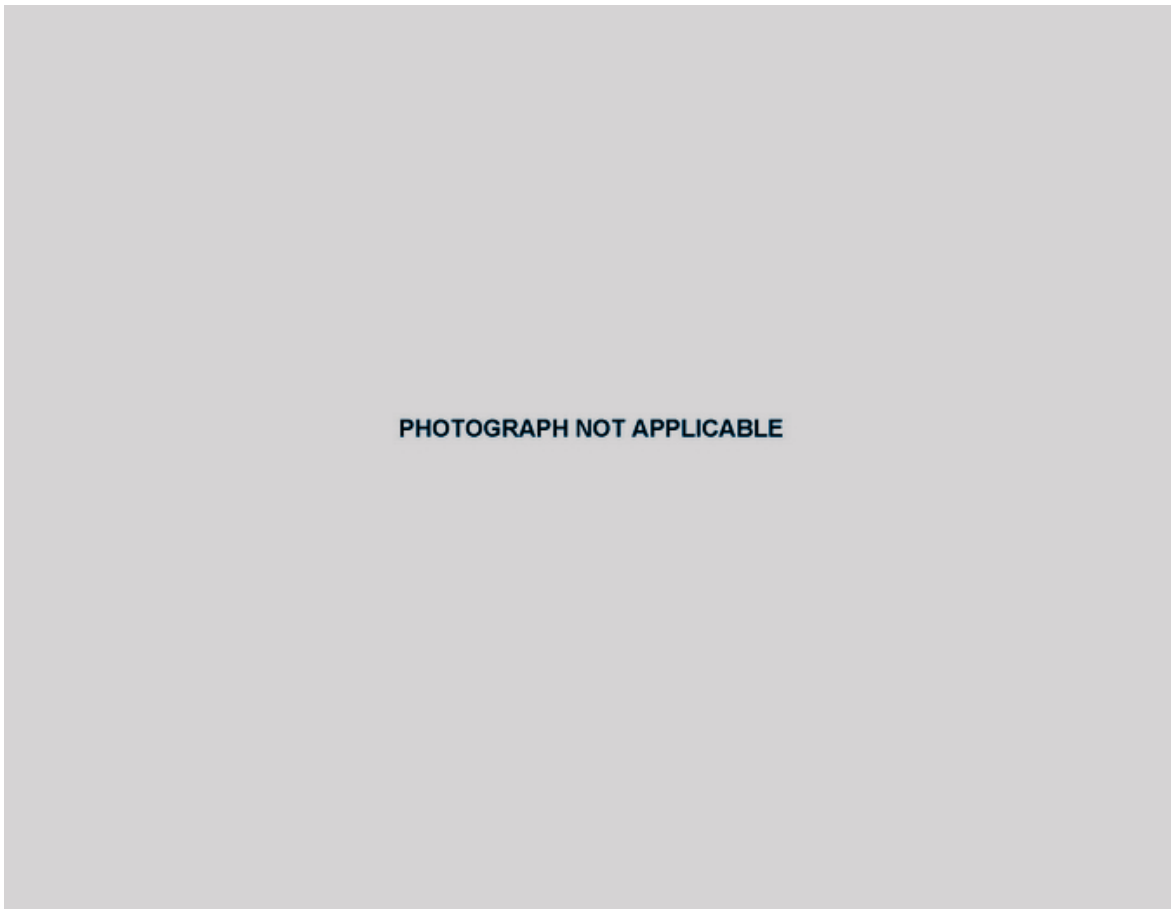
Post-Test Rear Passenger Dummy Close-up Torso Contact with Vehicle Interior View



Post-Test Rear Passenger Dummy Close-up Torso Contact with Side Airbag View



Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Vehicle Interior View



Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Side Airbag View



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



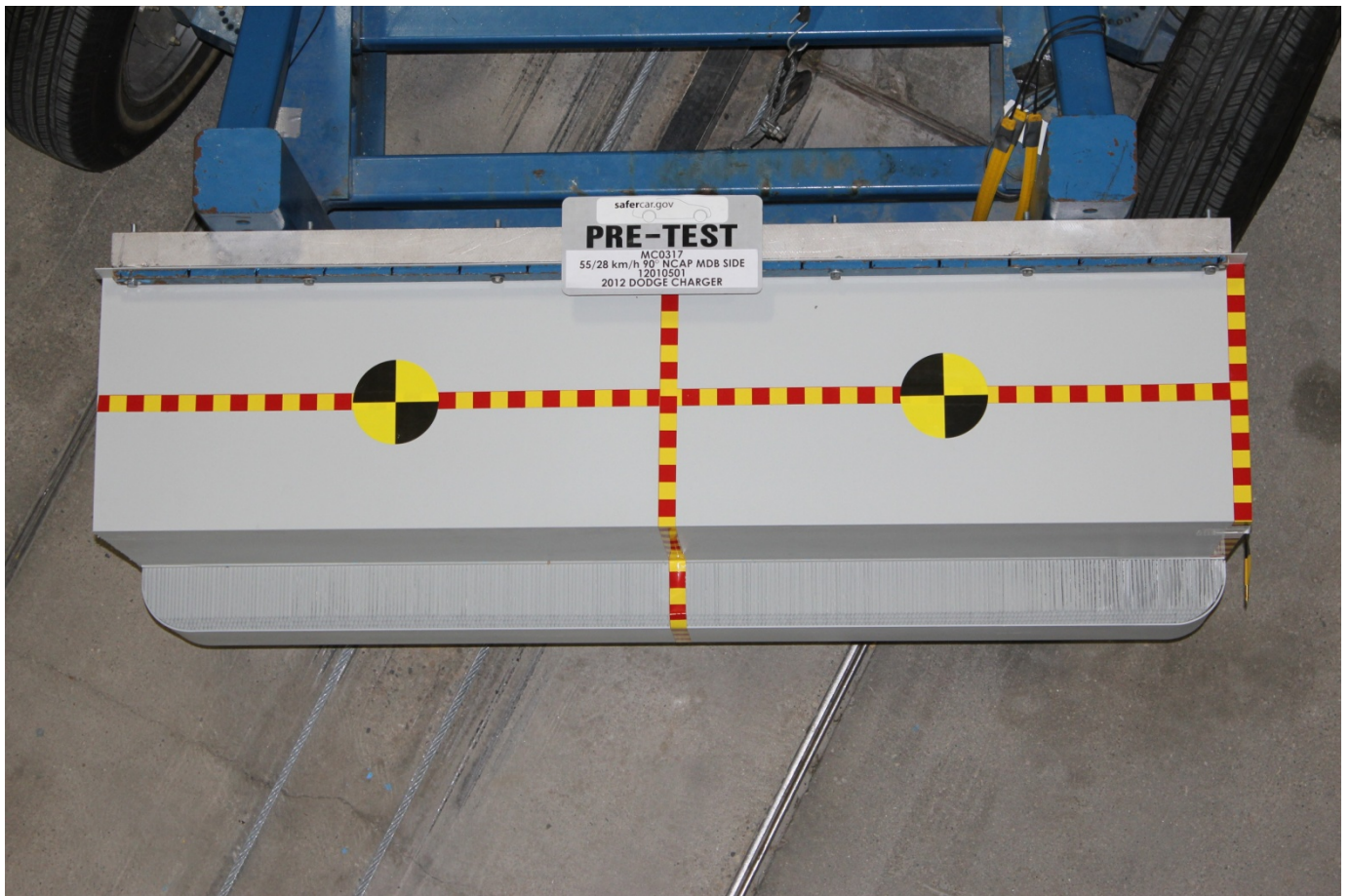
Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Pre-Test Front View of MDB Impactor Face



Post-Test Front View of MDB Impactor Face



Pre-Test Top View of MDB Impactor Face



Post-Test Top View of MDB Impactor Face



Pre-Test Left Side View of MDB Impactor Face



Post-Test Left Side View of MDB Impactor Face



Pre-Test Right Side View of MDB Impactor Face



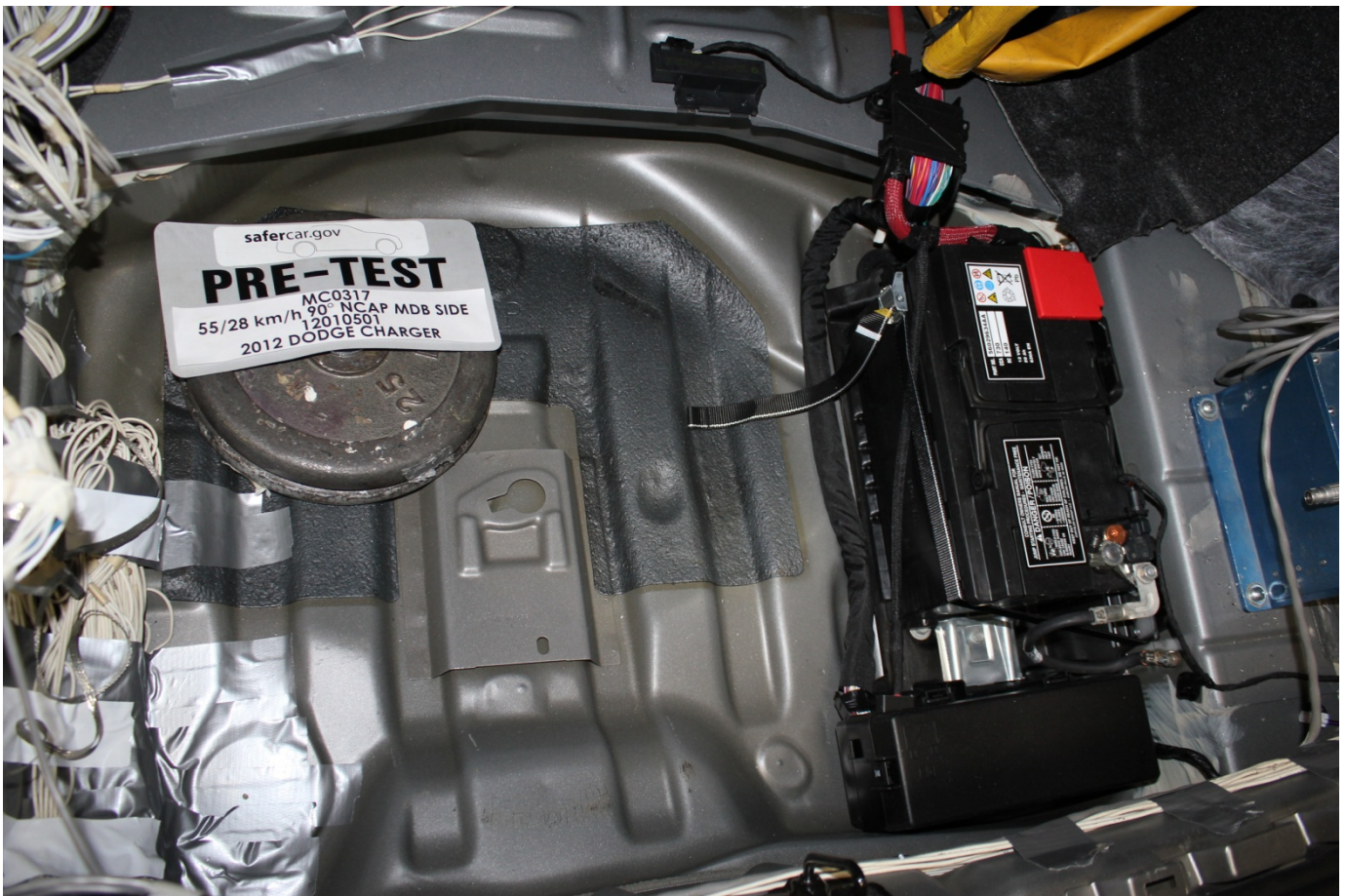
Post-Test Right Side View of MDB Impactor Face



Close-Up View of Vehicle's Certification Label



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



Pre-Test Ballast View



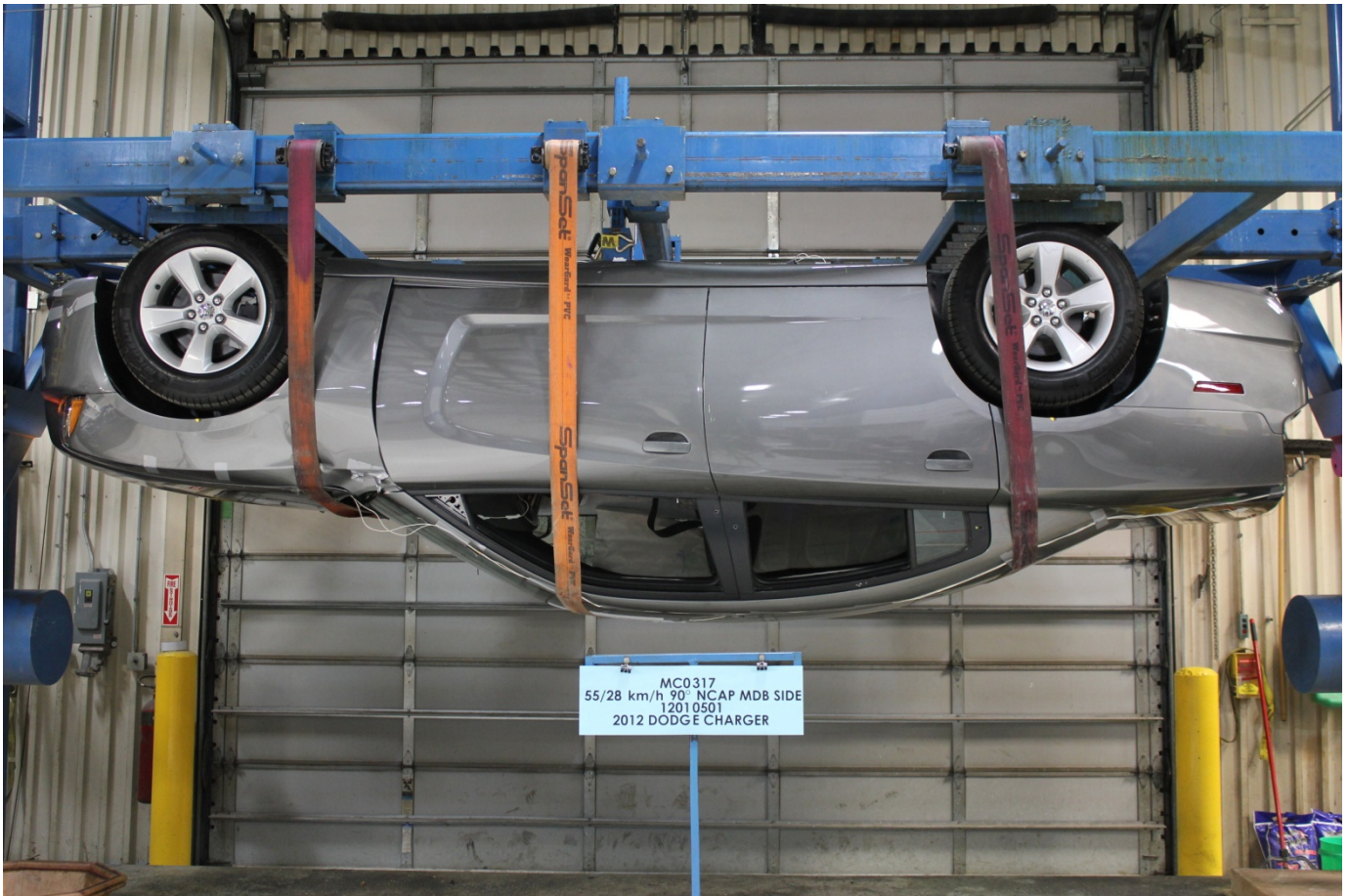
Post-Test Primary and Redundant Speed Trap Read-Out



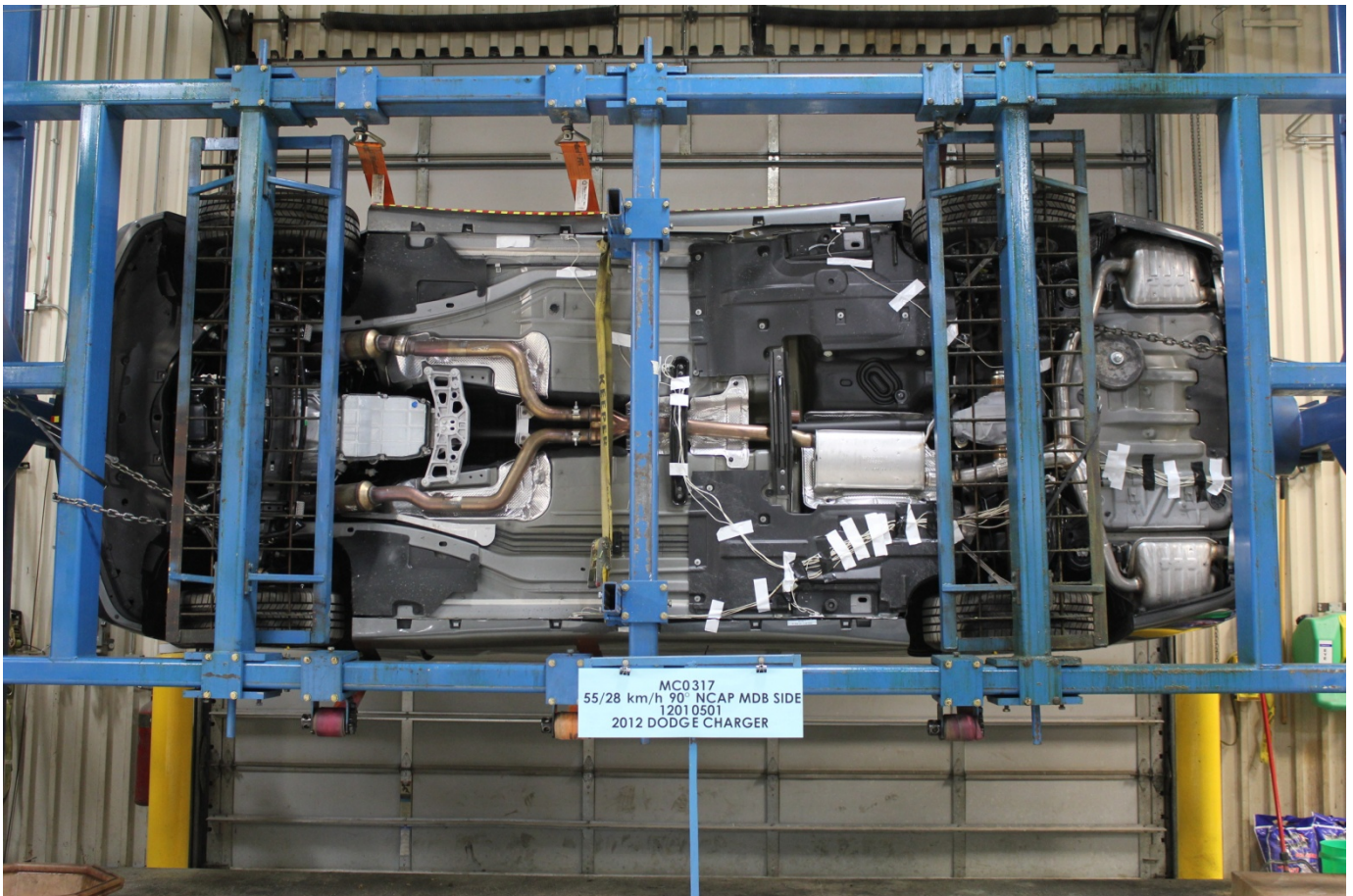
FMVSS No. 301 Static Rollover 0 Degrees



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

2012 DODGE CHARGER SE

THIS VEHICLE IS MANUFACTURED TO MEET SPECIFIC UNITED STATES REQUIREMENTS. THIS VEHICLE IS NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION

Base Price: **\$25,495**

DODGE CHARGER SE RWD
 Exterior Color: Tungsten Metallic Clear Coat Exterior Paint
 Interior Color: Black Interior Color
 Interior: Cloth Low-Back Bucket Seats
 Engine: 3.6-Liter V6 MPI Pentastar Engine
 Transmission: 5-Speed Automatic Transmission

STANDARD EQUIPMENT (UNLESS REPLACED BY OPTIONAL EQUIPMENT)

FUNCTIONAL/SAFETY FEATURES
 Advanced MultiStage Front Airbags
 Supplemental Front Seat-Mounted Side Airbags
 Supplemental Side-Curtain Front and Rear Airbags
 Reactive Head Restraints
 Anti-Lock 4-Wheel Disc Brakes
 Electronic Stability Control
 All-Speed Traction Control
 Hill Start Assist
 Rain Brake Support
 Ready Alert Braking
 AutoStick Automatic Transmission
 Touring Suspension
 Electro-Hydraulic Power Steering
 15.1-Gallon Fuel Tank
 Tire Pressure Monitoring Display
 Outside Temperature Display
 Color Electronic Veh Info Cr w/Reconfigure Display
 Keyless Enter-N-Go
 Remote Windows Down
 Power Windows w/ Front One-Touch Up & Down Feature
 Speed Control

INTERIOR FEATURES
 Power 6-Way Driver Seat
 Rear 60 / 40 Folding Seat
 Rear-Seat Armrest with Cup Holder
 Illuminated Rear Assist Handles
 Illuminated Front Cup Holders
 Sun Visors with Illuminated Vanity Mirrors
 Glove Box Lamp
 Air Conditioning with Dual Zone Temperature Control

Uconnect Touch 4.3 CD/MP3
 Audio Jack Input for Mobile Devices
 Remote USB Port
 6 Speakers
 Steering Wheel-Mounted Audio Controls
 Tilt / Telescoping Steering Column
 Woven Micro Aluminum Lithographic Interior Accents
 EXTERIOR FEATURES
 17-Inch x 7.9-Inch Painted Aluminum Wheel
 P215/65 R17 BSW All-Season Tires
 Compact Spare Tire
 Automatic Headlamps
 Acoustic Windshield
 Acoustic Front Door Glass
 Power Mirrors with Manual Fold-Away
 Remote Fuel Door Release
 Capless Fuel Filler
 Dual Bright Exhaust Tips

OPTIONAL EQUIPMENT
236 Charger SE
 Flex Fuel Vehicle

DESTINATION CHARGE **\$825**

TOTAL PRICE: * \$26,320

WARRANTY COVERAGE
 5-year or 100,000-mile Powertrain Limited Warranty,
 3-year or 36,000-mile Basic Limited Warranty,
 24-hour towing assistance; certain restrictions apply.
 Ask Dealer for a copy of the limited warranties or
 see your owner's manual for details.

**5 YEAR/100,000 MILE
 POWERTRAIN WARRANTY**

Assembly Point/Part of Entry: BRAMPTON, ONTARIO, CANADA

VIN: 2C3-CDXG4CH-102183



SHIP TO: 44320 14
 SHERMAN DODGE CHRYSLER JEEP
 7818 S. GARDNER BLVD
 SAGINAW, MI 48607

SHIP TO: 51 4429
 SHERMAN DODGE CHRYSLER JEEP
 7818 S. GARDNER BLVD
 SAGINAW, MI 48607

THE LABEL IS ADDED TO THIS VEHICLE TO COMPLY WITH FEDERAL LAW. THE LABEL CANNOT BE REMOVED OR ALTERED PRIOR TO DELIVERY TO THE ULTIMATE PURCHASER.
 * STATE AND/OR LOCAL TAXES, IF ANY, LICENSE AND TITLE FEES AND REGISTRATION FEES AND
 INSTALLMENT FINANCE CHARGES ARE NOT INCLUDED IN THIS PRICE. SELECTION, IF ANY,
 IS LISTED IN PRICE OF OPTIONS PURCHASED SEPARATELY.



For more information visit: www.dodge.com
 or call 1-800-4ADODGE

Chrysler Group LLC

EPA Fuel Economy Estimates

These estimates reflect new EPA methods beginning with 2008 models.

GASOLINE
 CITY MPG

18

Expected range
 for most drivers
 14 to 22 MPG

*Fuel economy when
 operating on E85 will
 yield different values
 than gasoline. See Fuel
 Economy Guide for
 more information.



GASOLINE
 HIGHWAY MPG

27

Expected range
 for most drivers
 22 to 32 MPG

Your actual
 mileage will vary
 depending on how you
 drive and maintain
 your vehicle.

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

GOVERNMENT SAFETY RATINGS

This vehicle has not been rated by the government
 for frontal crash, side crash or rollover risk.
 Source: National Highway Traffic Safety
 Administration (NHTSA).

www.safercar.gov or 1-888-327-4236

Bumper Performance

This vehicle is equipped with bumper systems that can withstand a frontal barrier impact
 speed of 2.5 miles per hour and a rear barrier impact speed of 2.5 miles per hour with no
 more damage than allowed by the federal bumper standard. The federal bumper standard
 allows damage to the bumpers and attaching hardware and specifies barrier tests to be
 conducted at 2.5 miles per hour.

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:
 U.S./CANADIAN PARTS CONTENT: 63 %
 MAJOR SOURCES OF FOREIGN PARTS
 CONTENT:

MEXICO: 15 %
 NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL
 ASSEMBLY, DISTRIBUTION, OR OTHER
 NON-PARTS COSTS.

FOR THIS VEHICLE:
 FINAL ASSEMBLY POINT:
 BRAMPTON, ONTARIO, CANADA
 COUNTRY OF ORIGIN:
 ENGINE: MEXICO
 TRANSMISSION: GERMANY

Monroney Label

10

Head Restraints

Head restraints are designed to reduce the risk of injury by restricting head movement in the event of a rear impact. Head restraints should be adjusted so that the top of the head restraint is located above the top of your ear.

WARNING!

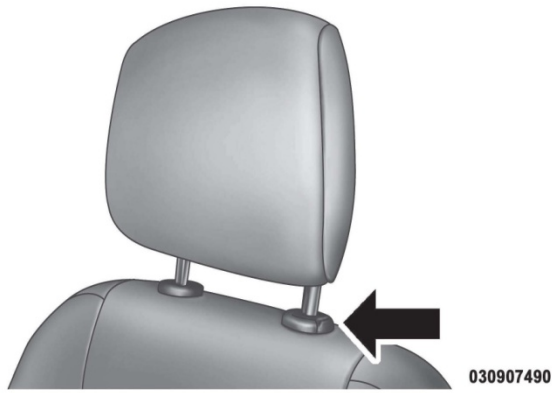
The head restraints for all occupant's must be properly adjusted prior to operating the vehicle or occupying a seat. Head restraints should never be adjusted while the vehicle is in motion. Driving a vehicle with the head restraints improperly adjusted or removed could cause serious injury or death in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

Active Head Restraints — Front Seats

The front driver and passenger seats are equipped with Active Head Restraints (AHR). In the event of a rear impact the AHRs will automatically extend forward minimizing the gap between the back of the occupants head and the AHR.

The AHRs will automatically return to their normal position following a rear impact. If the AHRs do not return to their normal position see your authorized dealer immediately.

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.



Push Button

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.

WARNING!

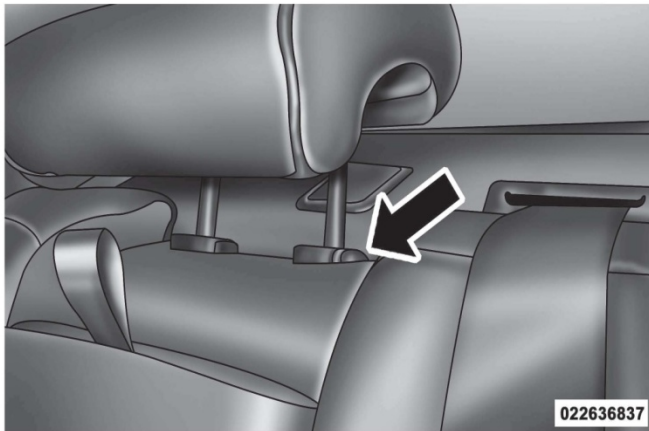
Do not place items over the top of the Active Head Restraint, such as coats, seat covers or portable DVD players. These items may interfere with the operation of the Active Head Restraint in the event of a collision and could result in serious injury or death.

Rear Head Restraints

The center rear head restraint has two positions, up or down. When the seat is being occupied the head restraint should be raised. When there are no occupants in the center seat position the head restraint can be lowered for maximum visibility for the driver.

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.

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



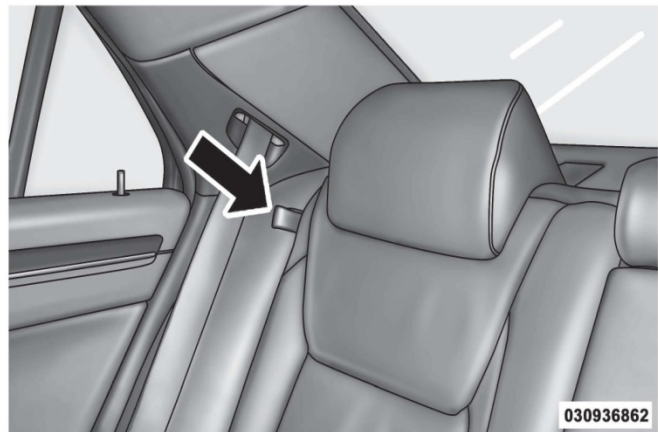
Push Button

NOTE: The outboard head restraints are not adjustable. Refer to "Occupant Restraints" in "Things To Know Before Starting Your Vehicle" for tether routing.

Folding Rear Seat

The rear seatbacks can be folded forward to provide an additional storage area. To fold the rear seatback, pull on the loops located on the upper seatback.

NOTE: These loops can be tucked away when not in use.



Rear Seatback Loop

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



Post-Test Driver Dummy Knee Contact with Vehicle Interior View



Post-Test Rear Passenger Dummy Knee Contact with Vehicle Interior View

APPENDIX B
DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

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Figure No. 3.	Driver Head Acceleration (Z) Primary vs. Time	B-1
Figure No. 4.	Driver Head Resultant Acceleration Primary vs. Time	B-1
Figure No. 5.	Driver Upper Thorax Rib Deflection (Y) vs. Time	B-2
Figure No. 6.	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-2
Figure No. 7.	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-2
Figure No. 8.	Driver Thorax Rib Deflection Maximum vs. Time	B-2
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Figure No. 20.	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
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Figure No. 24.	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

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 & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)
Driver Lower Spine T12 Acceleration (Y)
Driver Lower Spine T12 Acceleration (Z)
Passenger Upper Thorax Rib Deflection (Y)
Passenger Middle Thorax Rib Deflection (Y)
Passenger Lower Thorax Rib Deflection (Y)
Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)

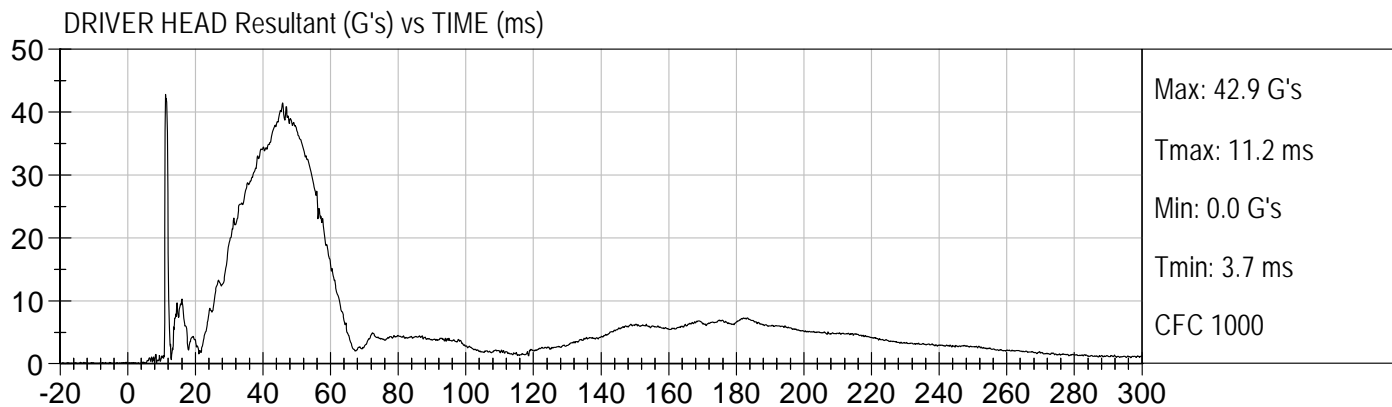
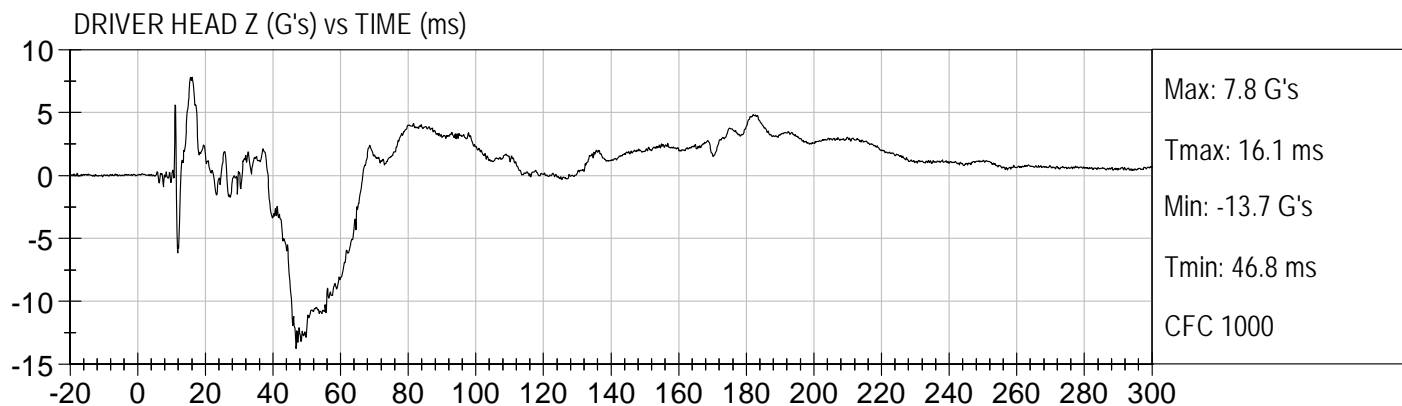
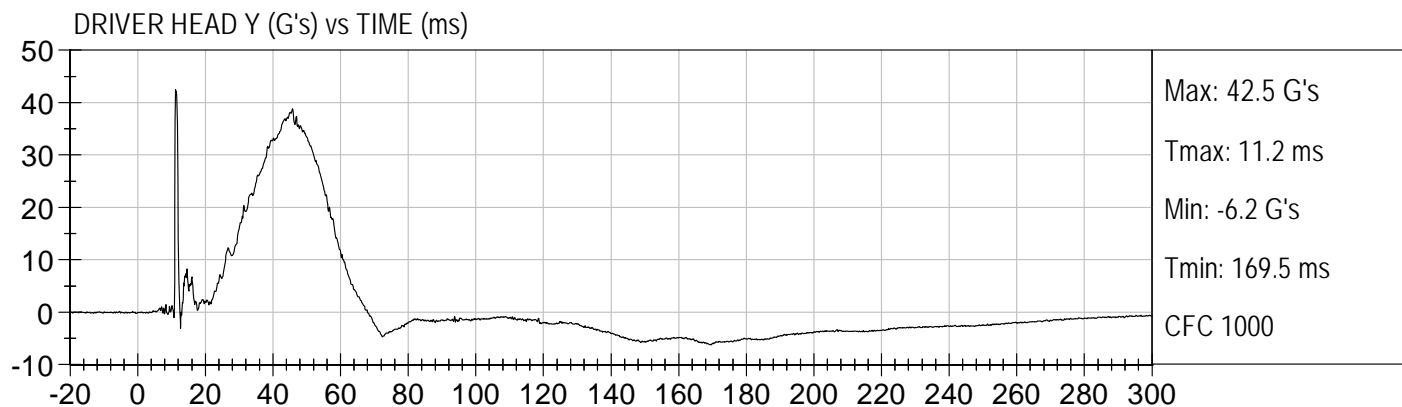
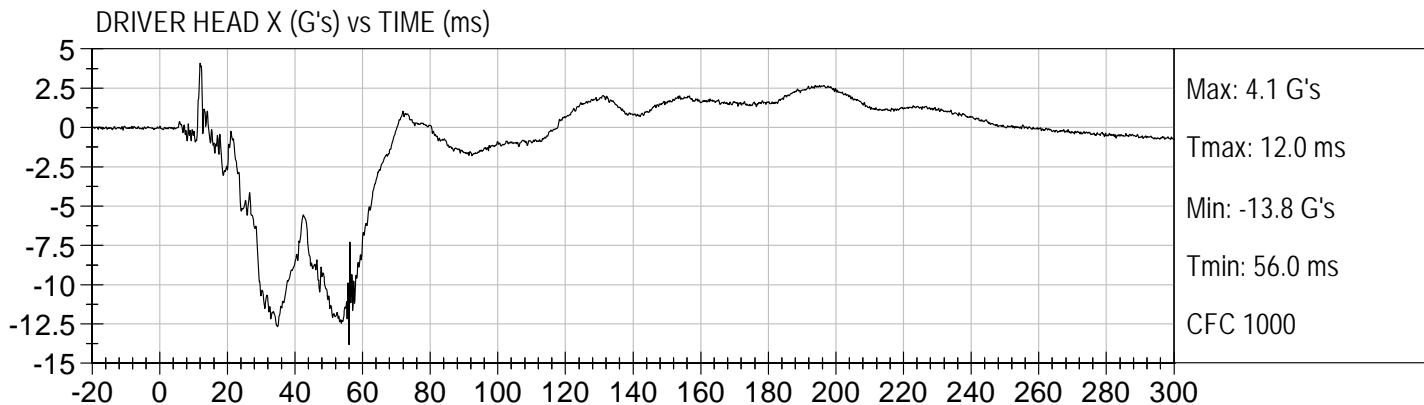
Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Right Side Sill at Front Seat Acceleration (X)
Right Side Sill at Front Seat Acceleration (Y)
Right Side Sill at Front Seat Acceleration (Z)
Right Side Sill at Rear Seat Acceleration (X)
Right Side Sill at Rear Seat Acceleration (Y)
Right Side Sill at Rear Seat Acceleration (Z)

Left Side Sill at Front Seat Acceleration (Y)
Left Side Sill at Rear Seat Acceleration (Y)
Lower A-Post Acceleration (Y)
Middle A-Post Acceleration (Y)
Lower B-Post Acceleration (Y)
Middle B-Post Acceleration (Y)
Front Seat Track Acceleration (Y)
Rear Seat Track Acceleration (Y)
Right Rear Occupant Compartment Acceleration (Y)
Engine Block (X)
Engine Block (Y)
Rear Floorpan Above Axle Acceleration (X)
Rear Floorpan Above Axle Acceleration (Y)
Rear Floorpan Above Axle Acceleration (Z)

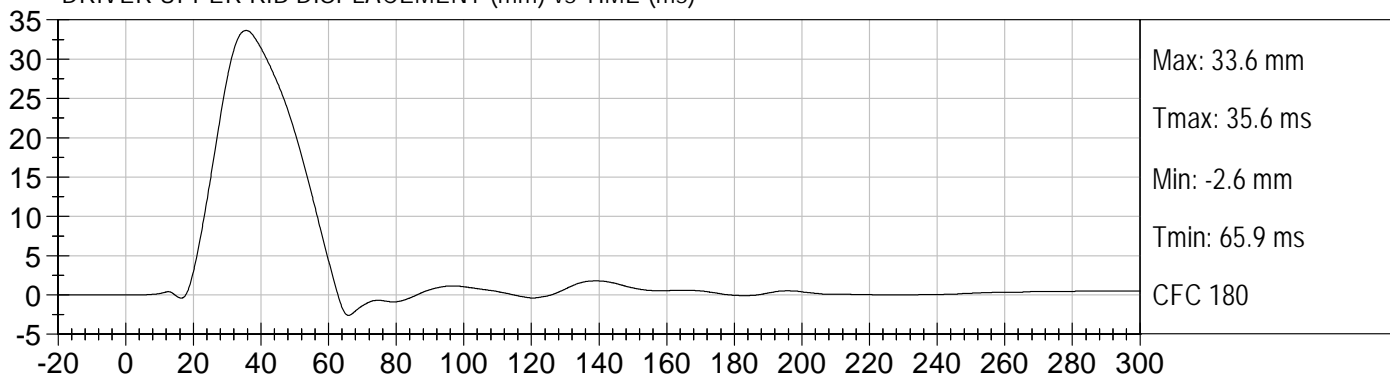
MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)
MDB Center of Gravity Acceleration (Y)
MDB Center of Gravity Acceleration (Z)
MDB Rear Acceleration (X)
MDB Rear Acceleration (Y)
Left MDB Contact Switch
Right MDB Contact Switch

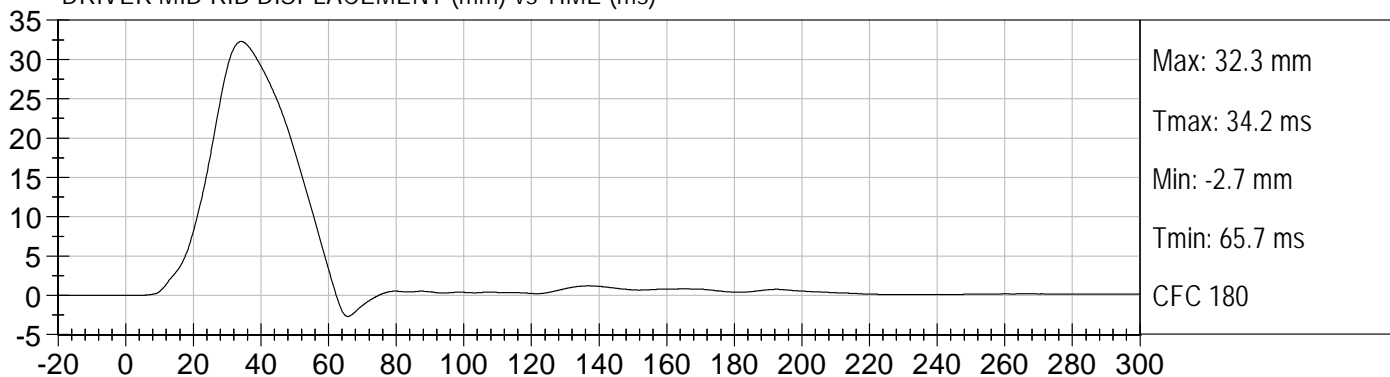




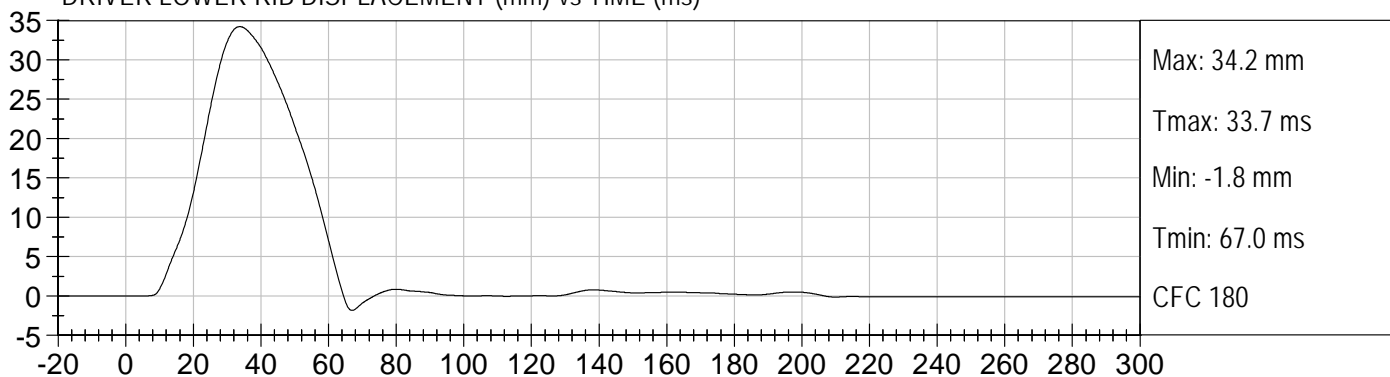
DRIVER UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



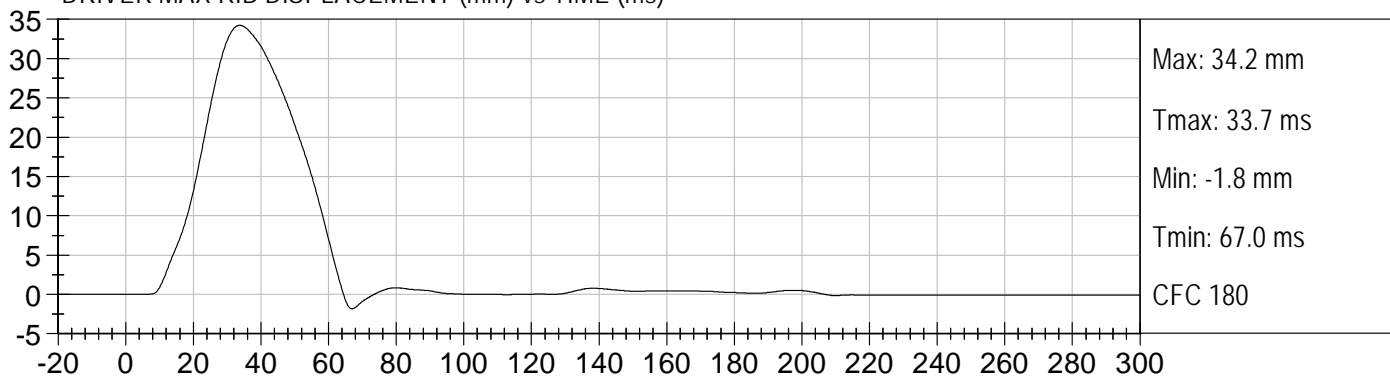
DRIVER MID RIB DISPLACEMENT (mm) vs TIME (ms)

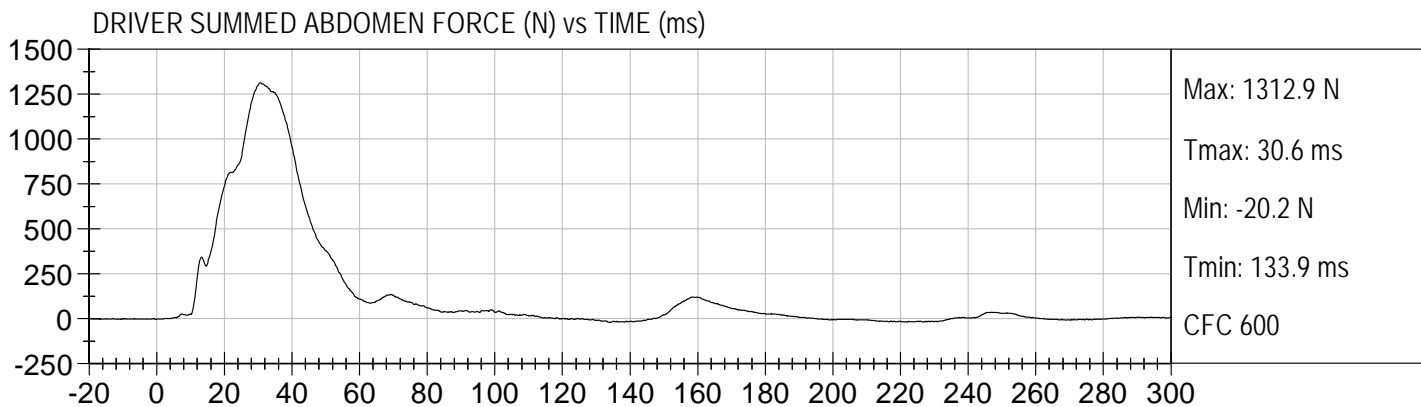
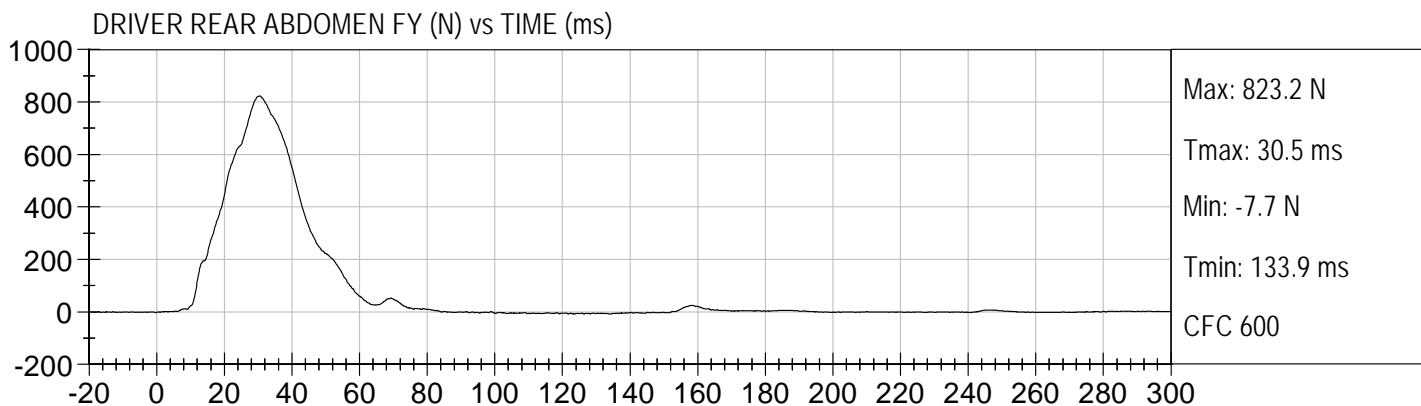
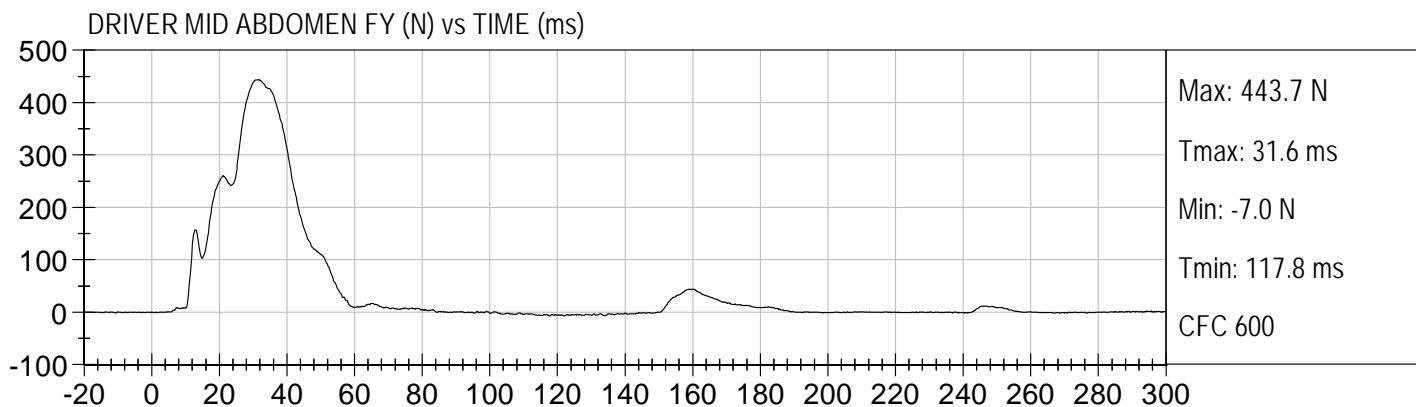
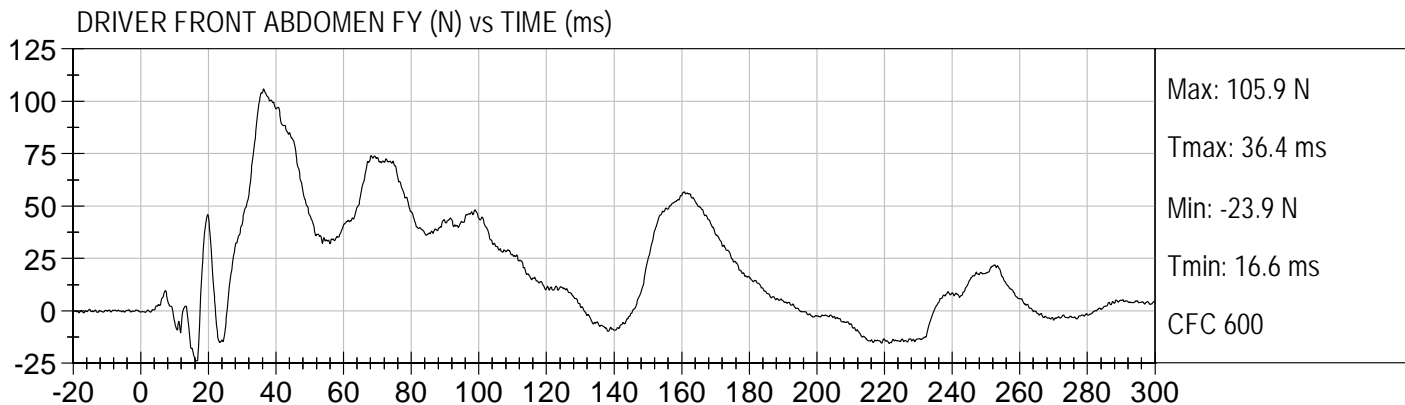


DRIVER LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



DRIVER MAX RIB DISPLACEMENT (mm) vs TIME (ms)

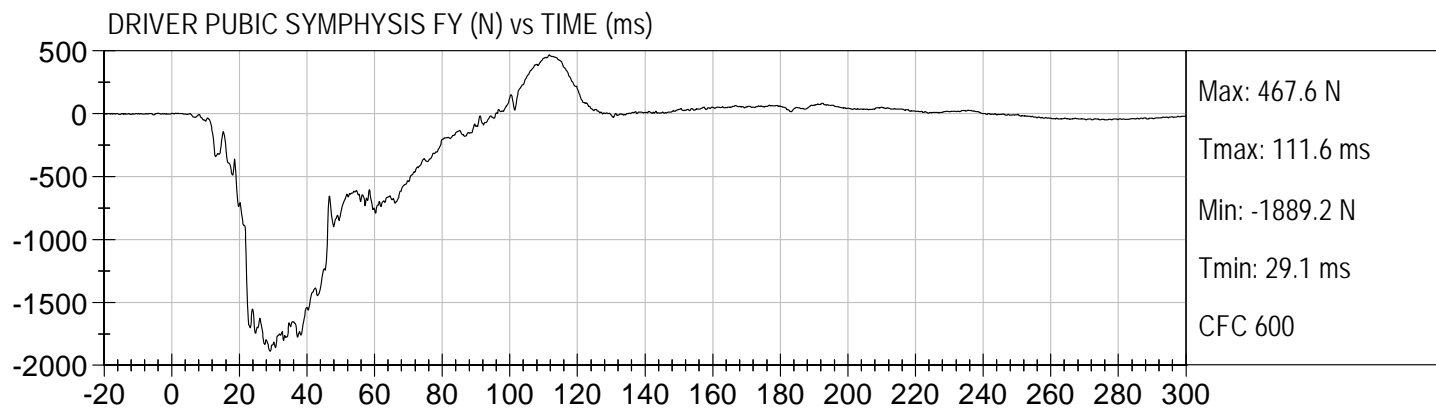


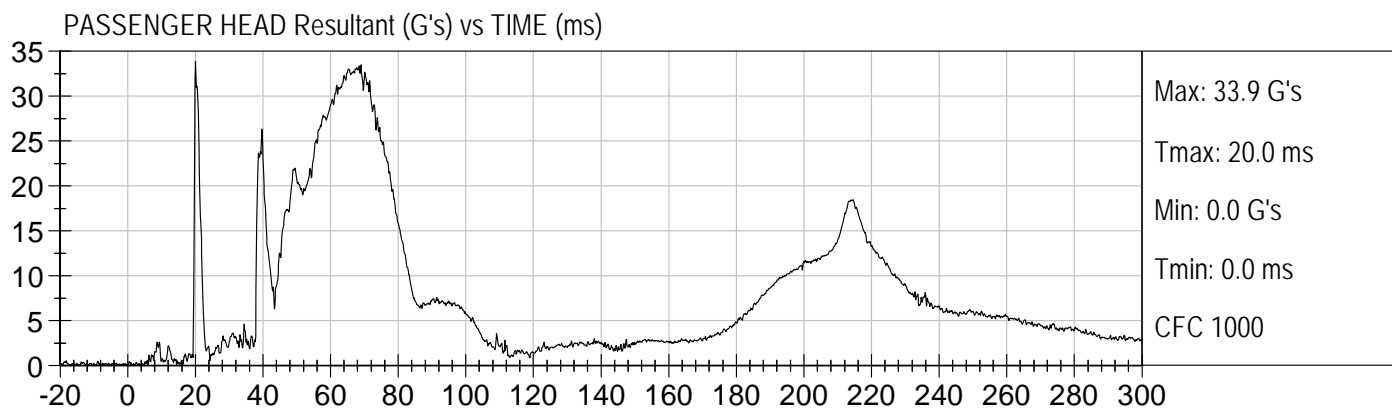
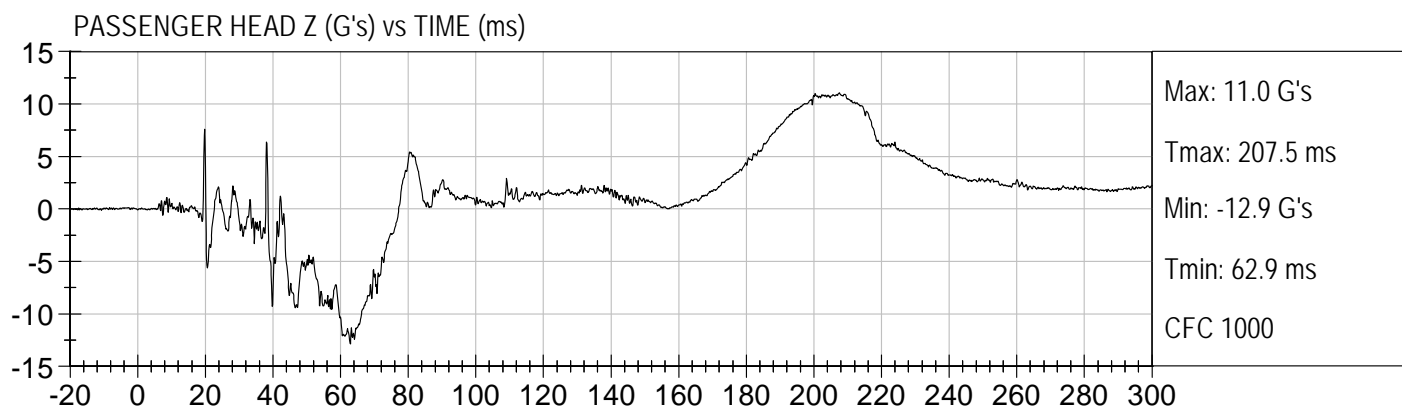
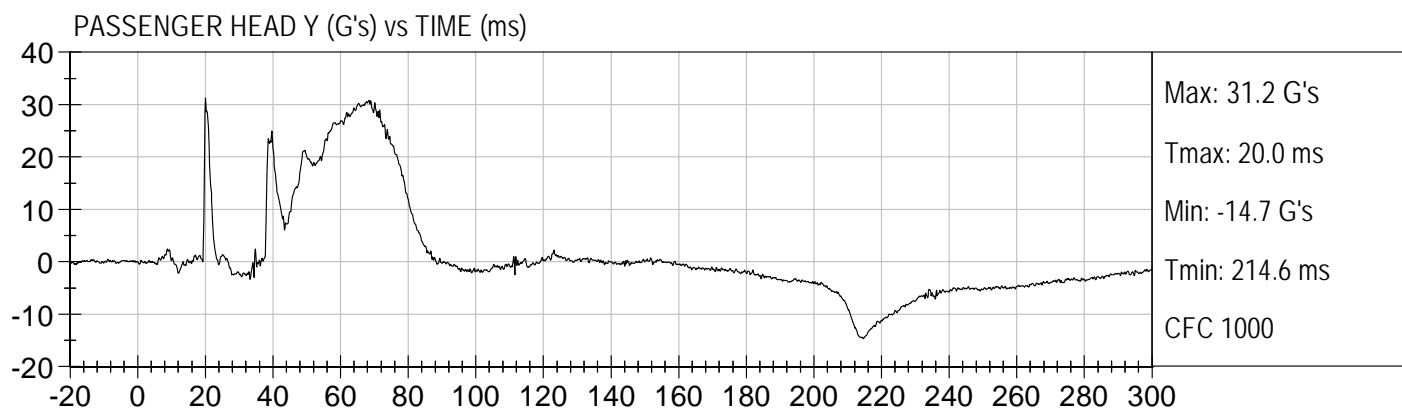
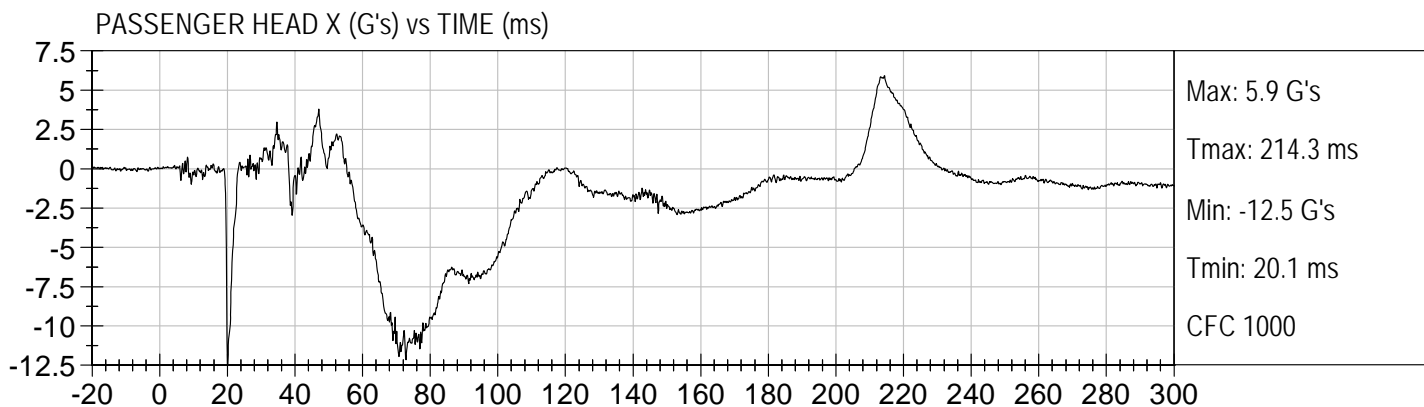


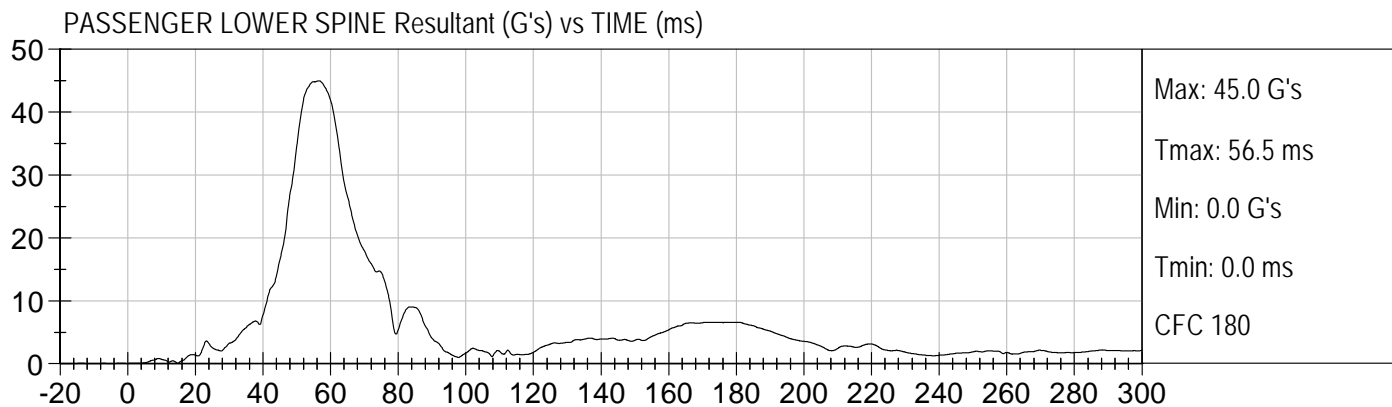
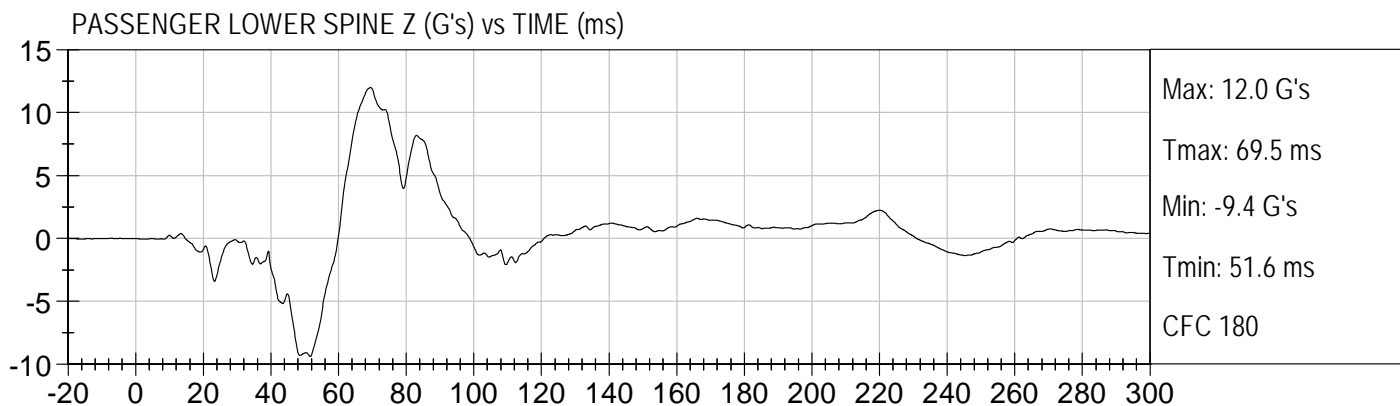
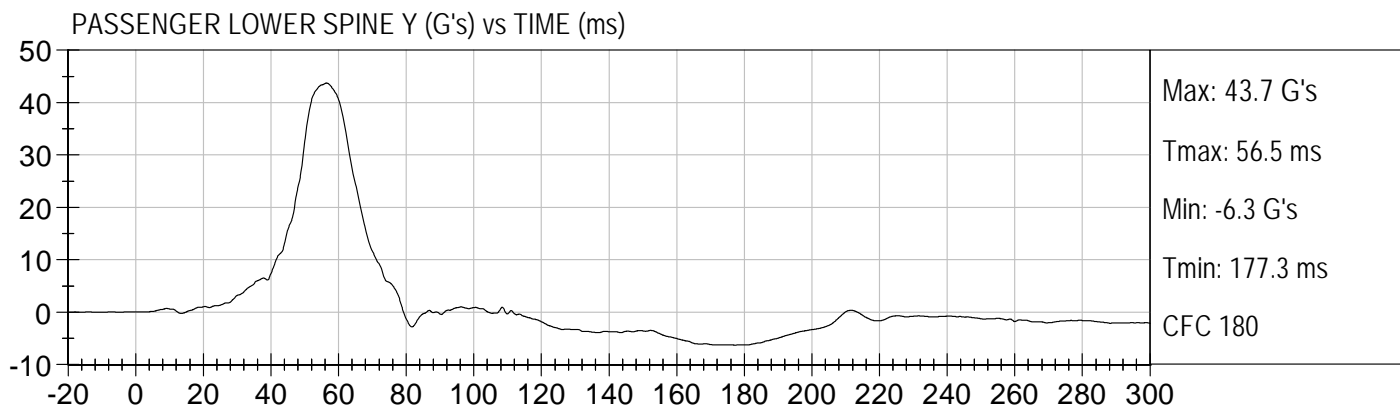
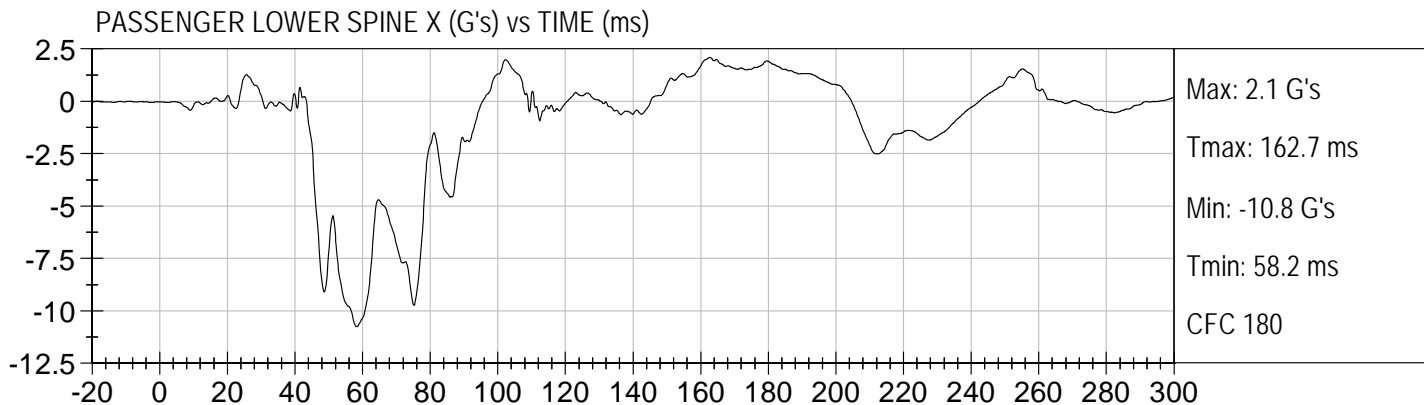


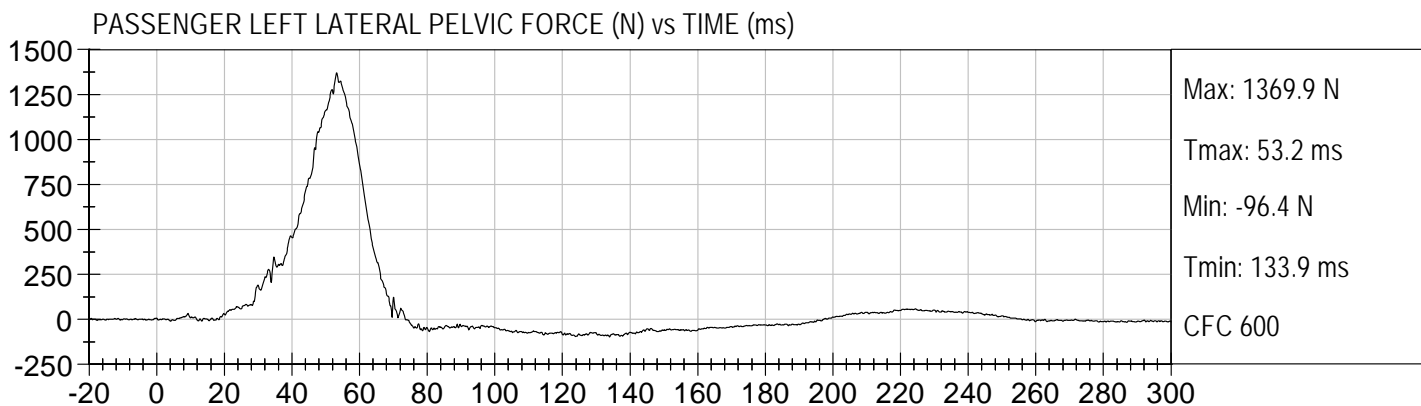
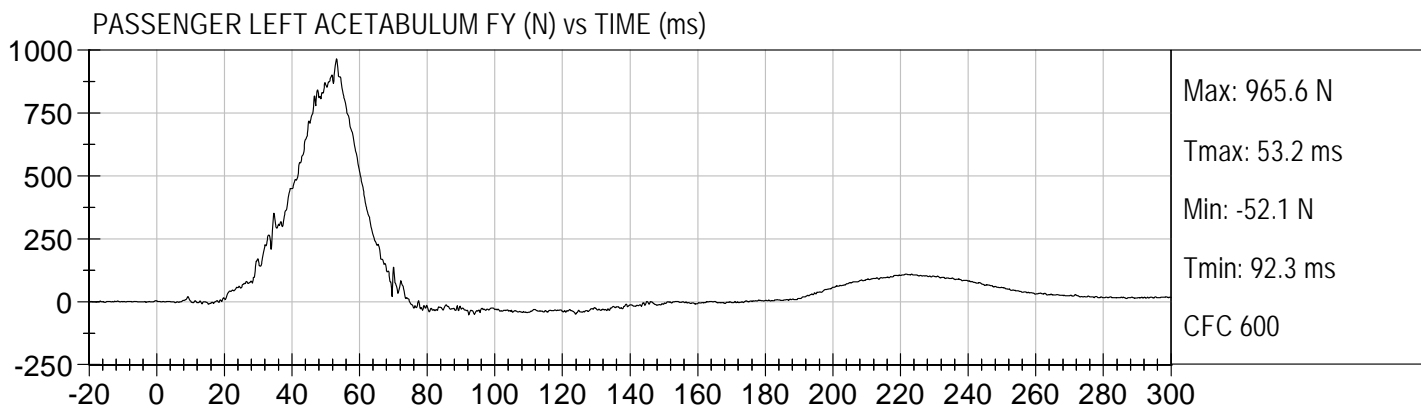
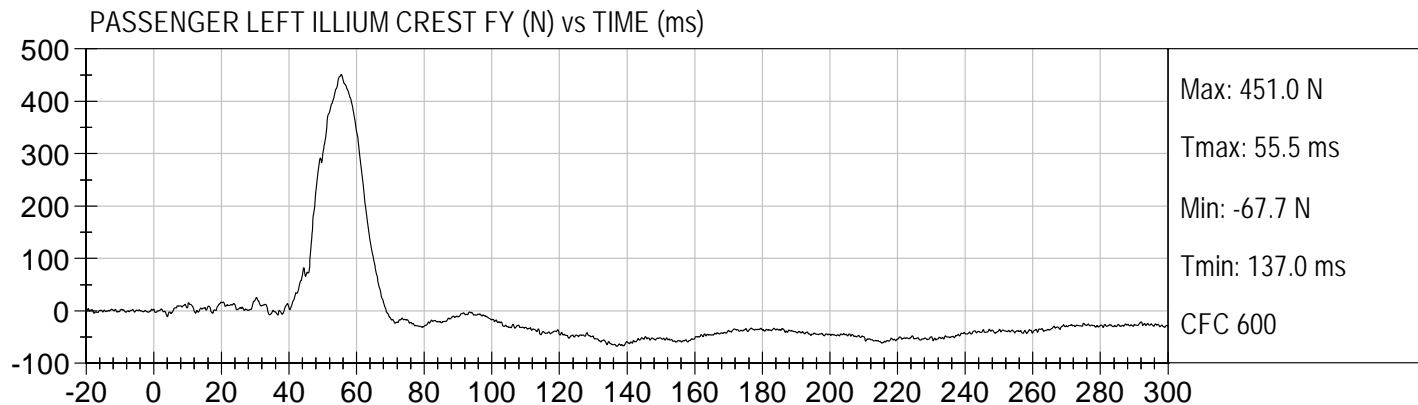
55/28 km/h 90° MDB Side Impact
2012 Dodge Charger - MC0317

Test Date: 01/05/2012
Speed: 38.4 mph (61.8 km/h)









APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

ES-2re External Measurements
SN: 032

No.	Name	Spec. (mm)	Result	Pass/Fail
1	Sitting Height	900 - 918	915	Pass
2	Seat to Shoulder Joint	558 - 572	568	Pass
3	Seat to Lower Face of Thoracic Spine Box	346 - 356	355	Pass
4	Seat to Hip Joint (center of bolt)	97 - 103	98	Pass
5	Sole to Seat, Sitting	333 - 451	440	Pass
6	Head Width	152 - 158	157	Pass
7	Shoulder/Arm Width	461 - 479	464	Pass
8	Thorax Width	322 - 332	323	Pass
9	Abdomen Width	273 - 287	281	Pass
10	Pelvis Lap Width	359 - 373	370	Pass
11	Head Depth	196 - 206	203	Pass
12	Thorax Depth	262 - 272	264	Pass
13	Abdomen Depth	194 - 204	196	Pass
14	Pelvis Depth	235 - 245	236	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150 - 160	151	Pass
16	Back of Buttocks to Front Knee	597 - 615	607	Pass

MGA RESEARCH CORPORATION
HEAD DROP TEST
ES-2re DUMMY

ATD Serial No: 032

Test ID: D114391

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Peak Resultant Acceleration	G's	125 to 155	149	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-10.6	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

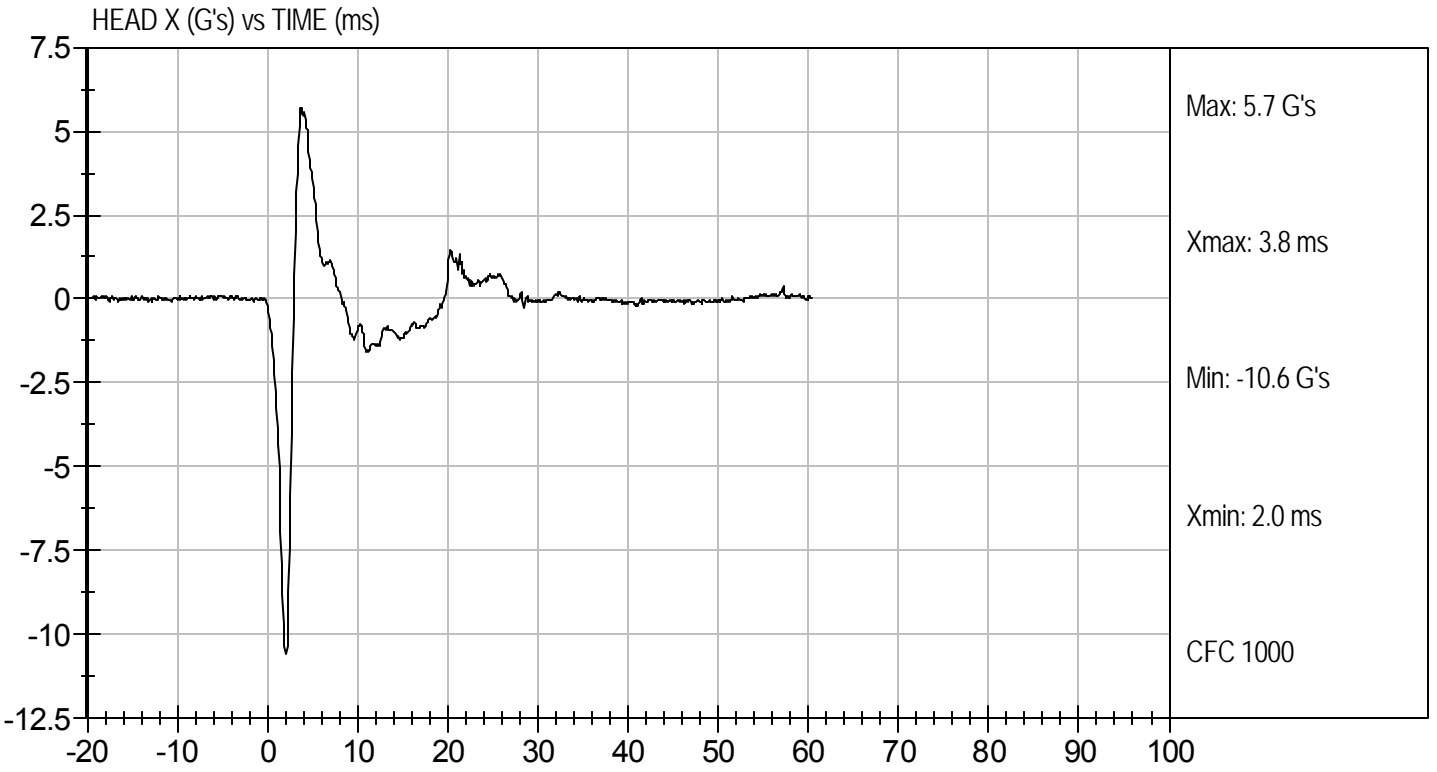
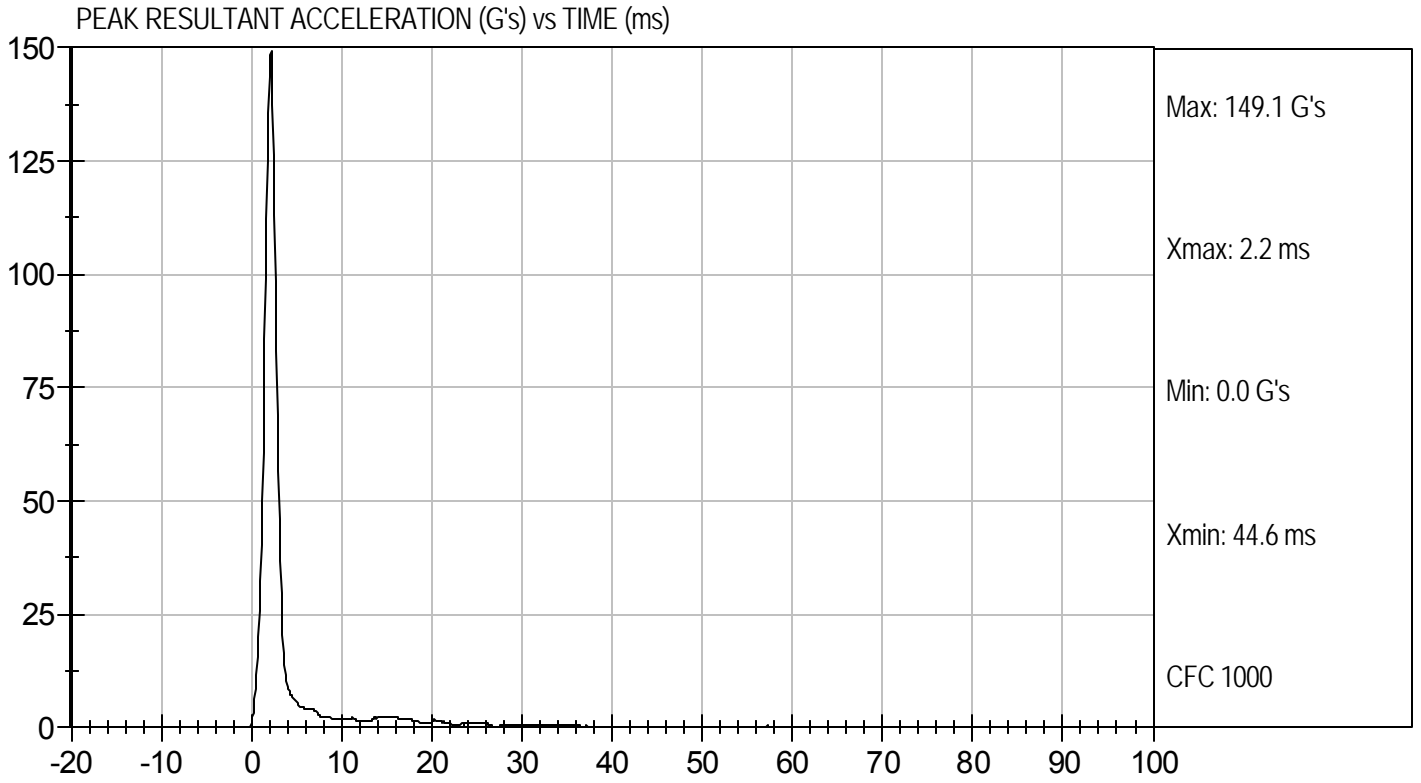
12/27/11
 Test Date

David Winkelbauer
 Approved By



Test Desc: Head Drop
Component ID: D114391

Test Date: 12/27/11
Velocity: 0 ft/s, 0 m/s



**MGA RESEARCH CORPORATION
NECK PENDULUM TEST
ES-2re DUMMY**

ATD Serial No: 032

Test I.D.: D114392

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.0 to 22.0	22.0	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Pendulum Speed		m/s	3.3 to 3.5	3.5	Pass
Pendulum Deceleration	1 ms	m/s	0.00 to -0.05	-0.03	Pass
	3 ms	m/s	-0.25 to -0.375	-0.32	Pass
	14 ms	m/s	-3.20 to -3.70	-3.22	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	52.1	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	57.2	Pass
Head Rotation Decay Time to 0 degree		ms	53.0 to 88.0	55.2	Pass
Overall Test Results					Pass

Jessica Hall

Laboratory Technician

12/23/11

Test Date

David Winkelbauer

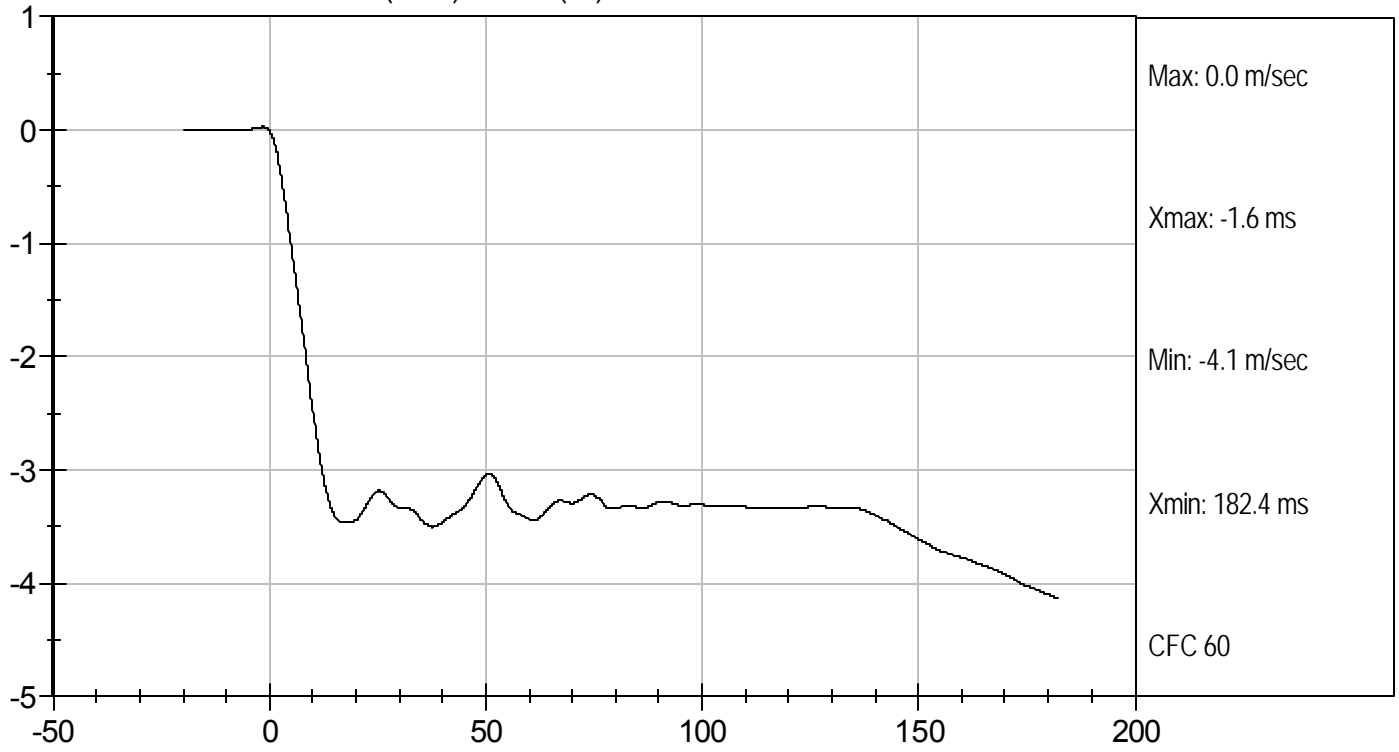
Approved By



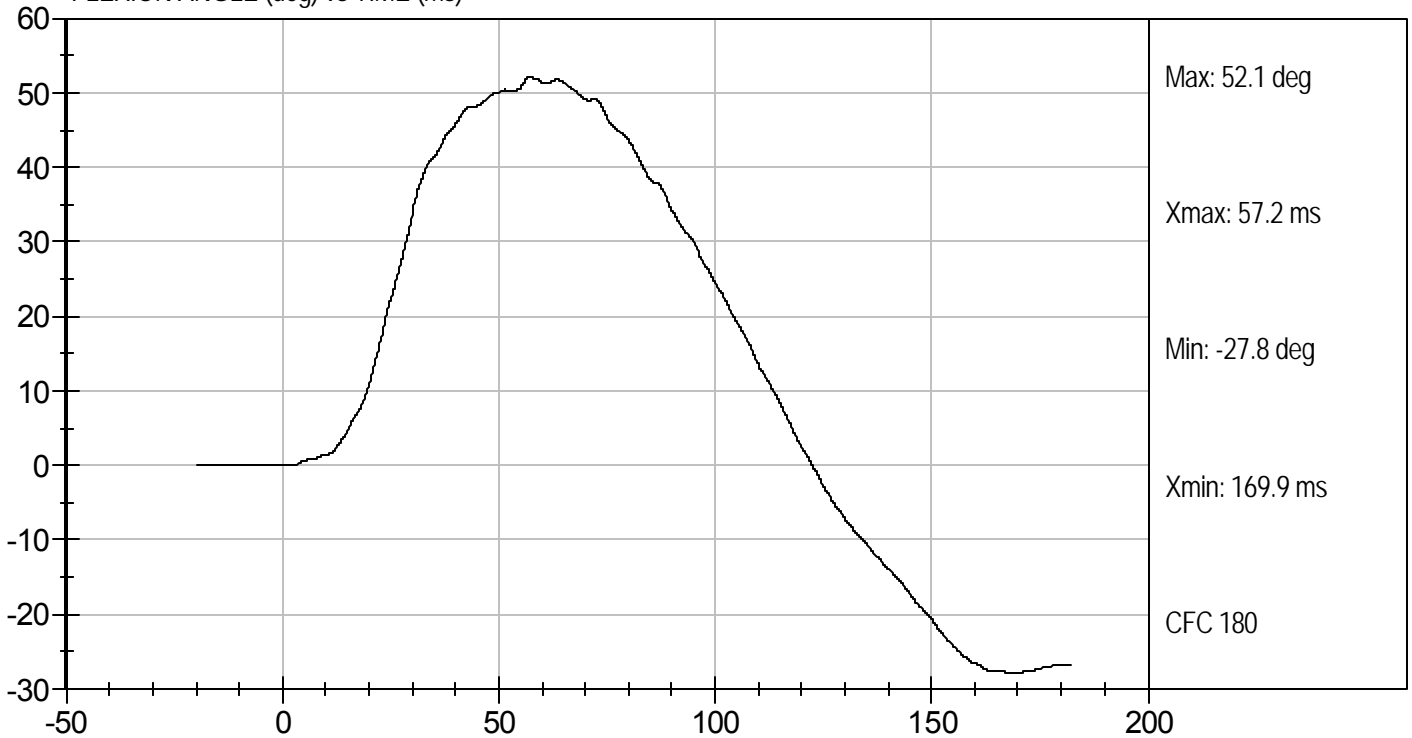
Test Desc: Neck Bending
Component ID: D114392

Test Date: 12/23/11
Velocity: 11.42 ft/s, 3.48 m/s

PENDULUM DECELERATION (m/sec) vs TIME (ms)



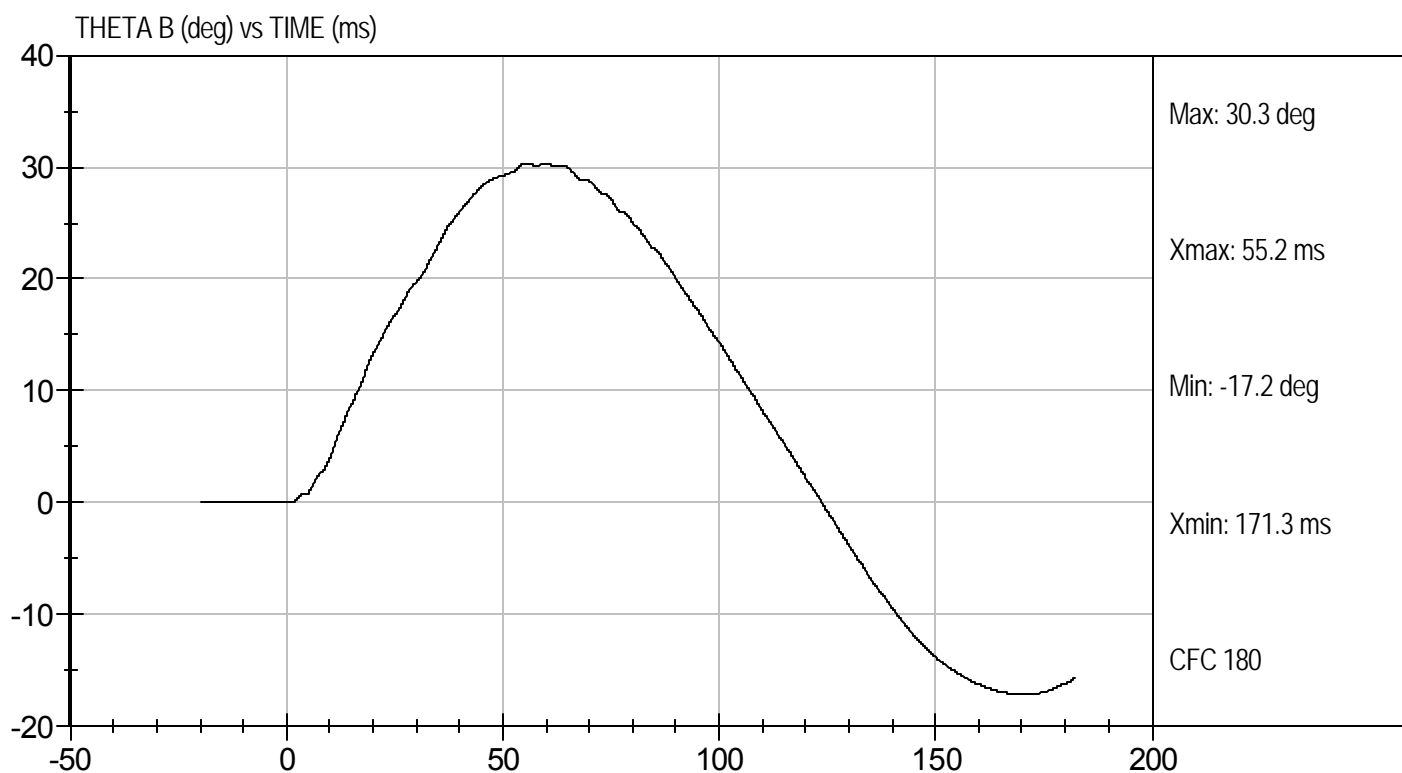
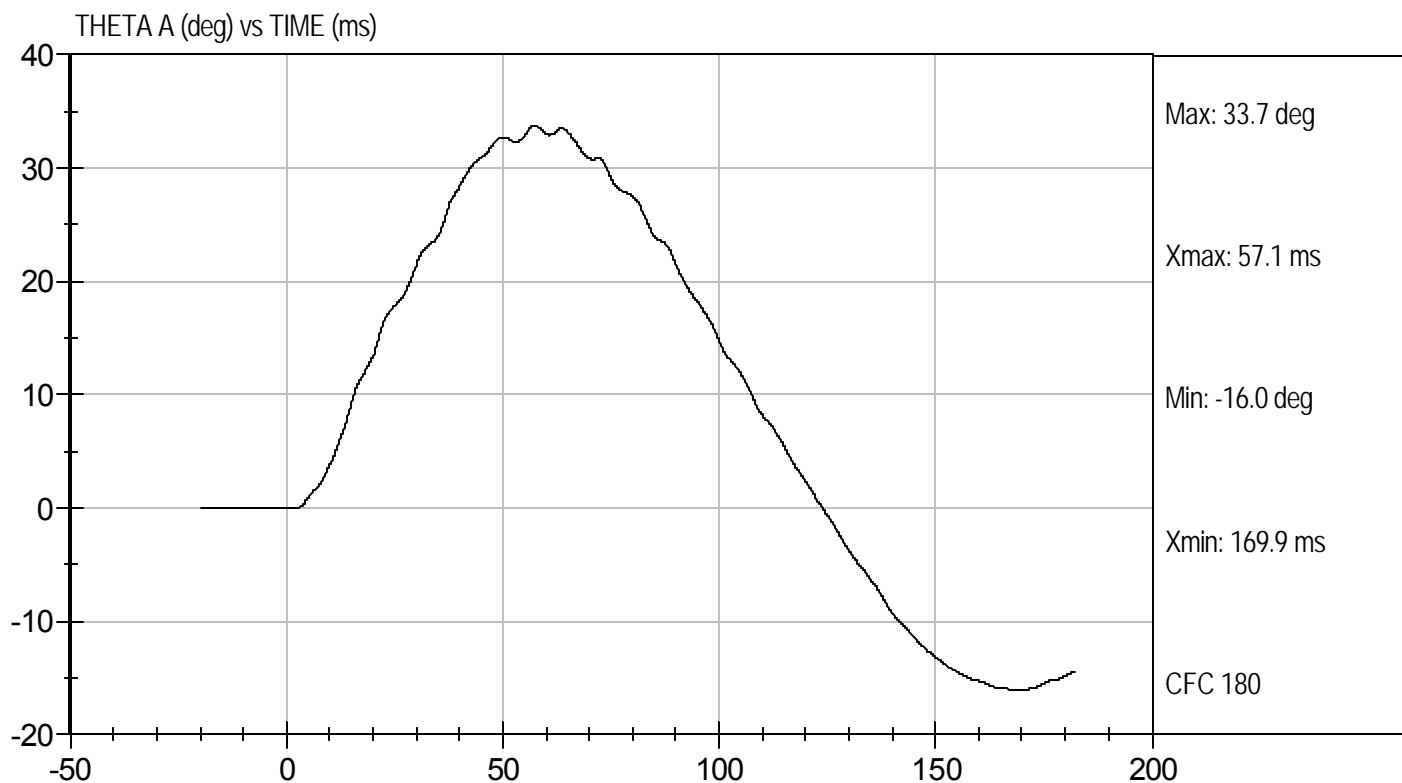
FLEXION ANGLE (deg) vs TIME (ms)





Test Desc: Neck Bending
Component ID: D114392

Test Date: 12/23/11
Velocity: 11.42 ft/s, 3.48 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D114393

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	19	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.3	Pass
Peak Shoulder Acceleration	G's	7.5 to 10.5	9.4	Pass
Time of Peak Shoulder Acceleration	ms	NA	13.3	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

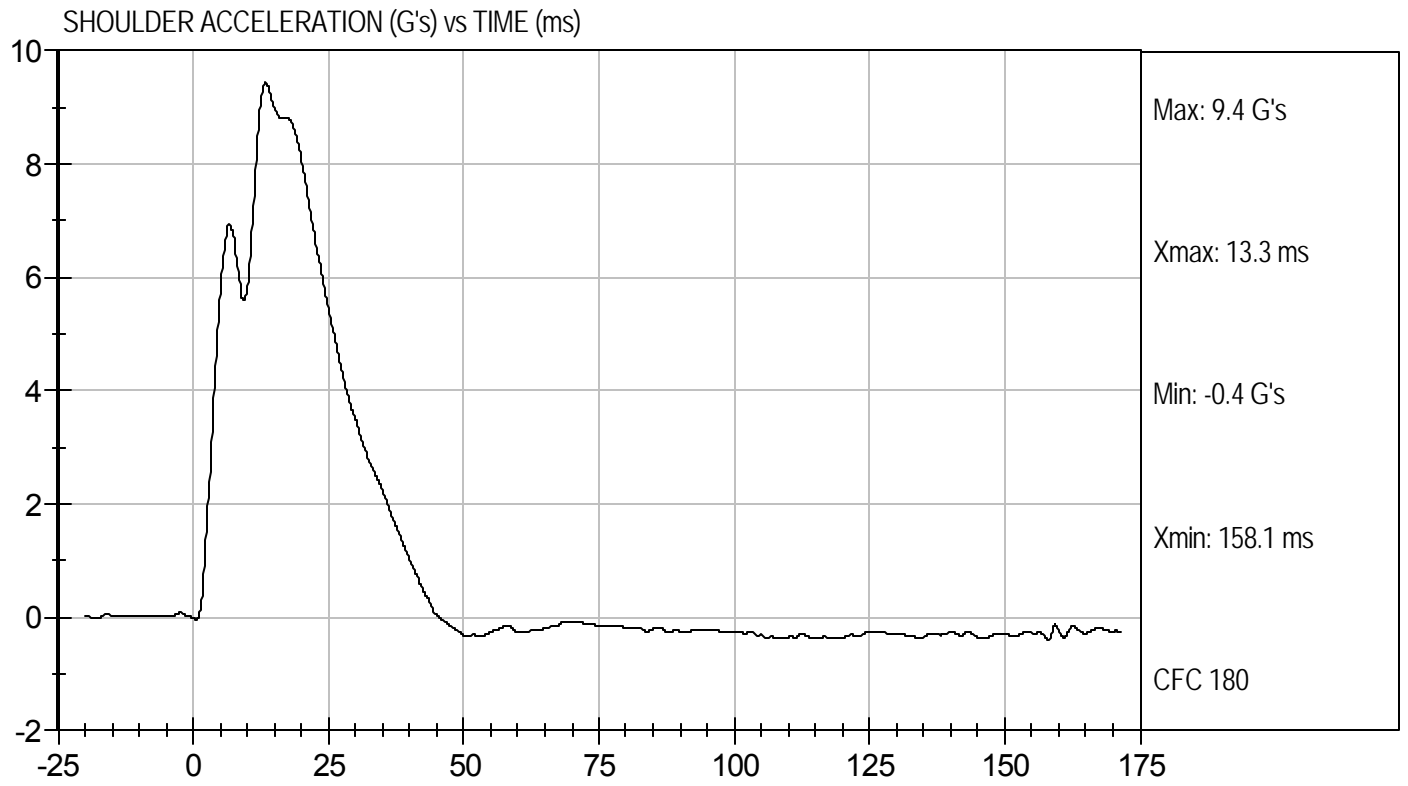
12/23/11
 Test Date

David Winkelbauer
 Approved By



Test Desc: Shoulder Impact
Component ID: D114393

Test Date: 12/23/11
Velocity: 14.01 ft/s, 4.3 m/s



MGA RESEARCH CORPORATION

UPPER RIB TEST

EUROSID 2 DUMMY

ATD Serial No: 032

Test I.D: D114394

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	19	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.0	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.1	Pass
Overall Test Results				Pass

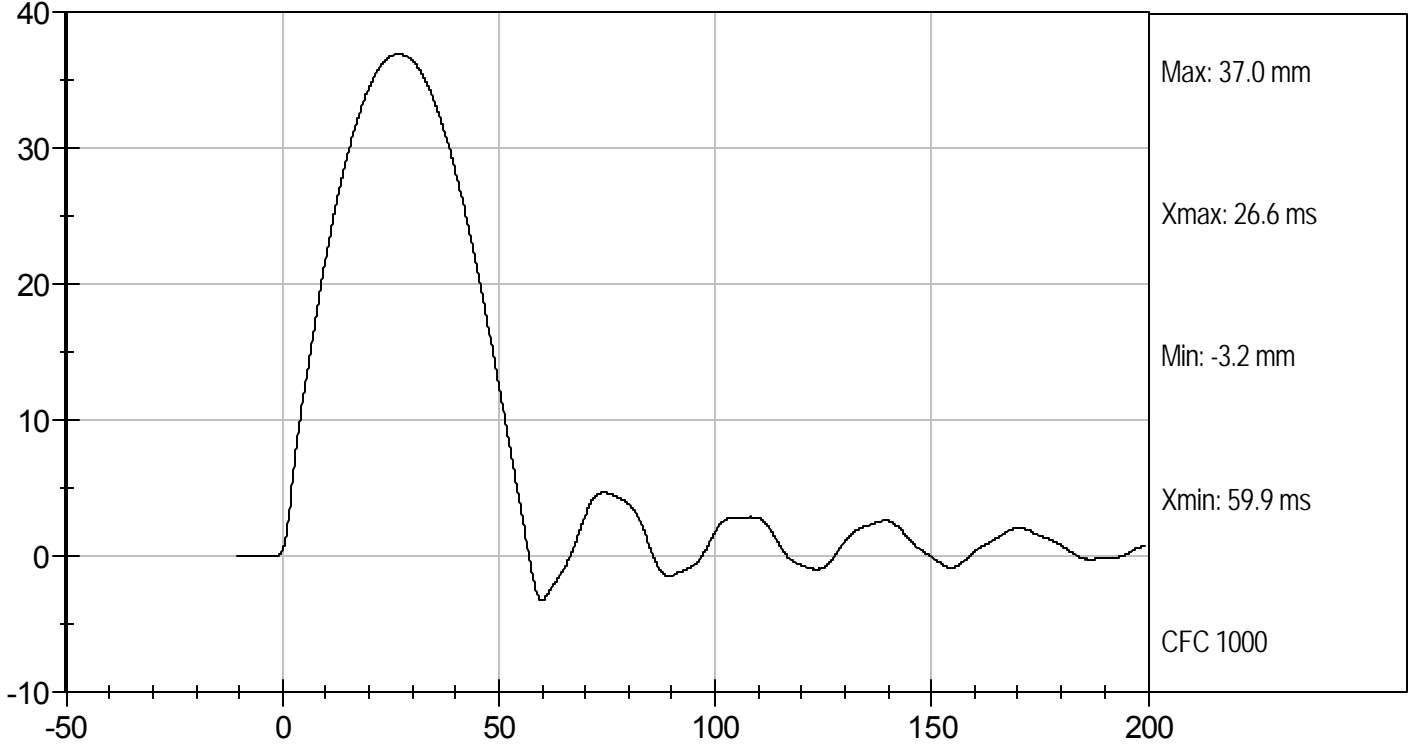
Jessica Hall
Laboratory Technician

12/23/11
Test Date

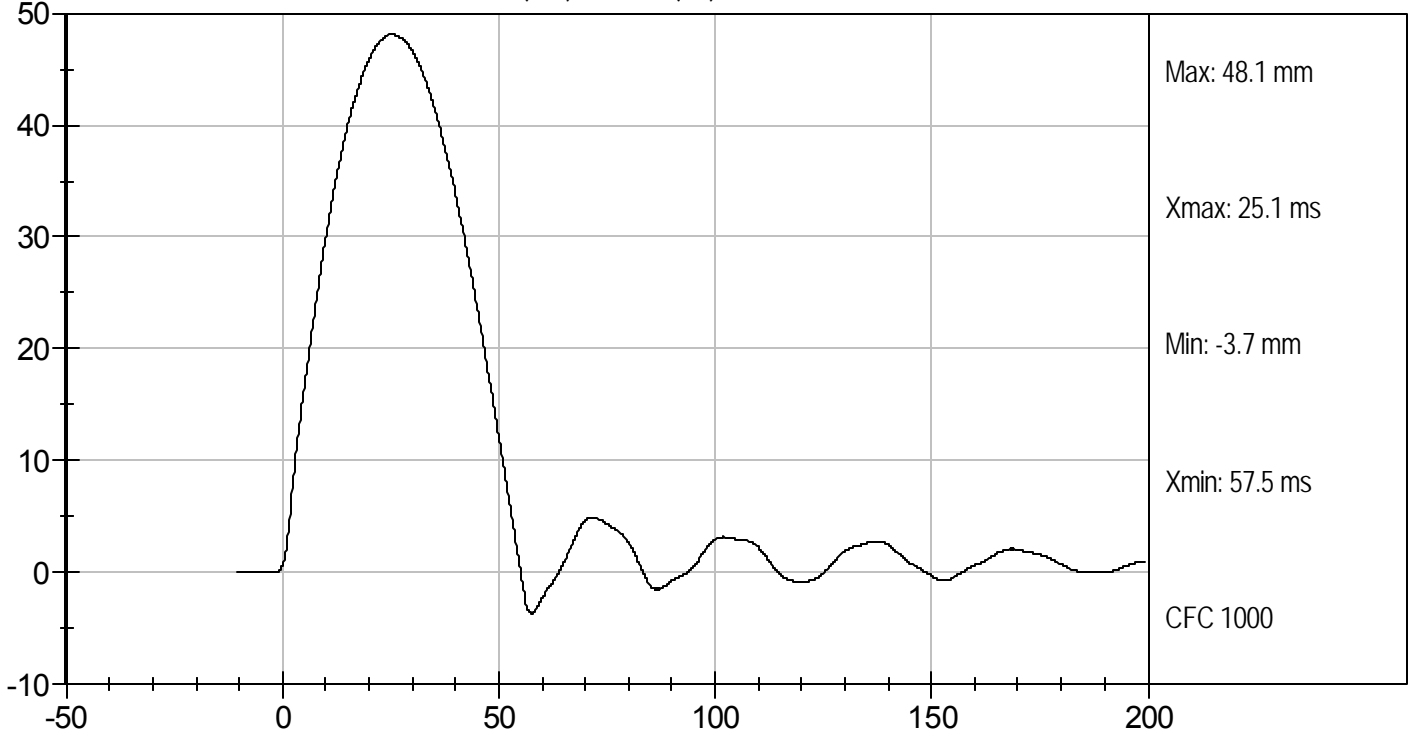
David Winkelbauer
Approved By



UPPER RIB DISPLACEMENT @ 3 M/SEC (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT @ 4 M/SEC (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

MID RIB TEST

EUROSID 2 DUMMY

ATD Serial No: 032

Test I.D: D114395

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	19	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	36.7	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	47.6	Pass
Overall Test Results				Pass

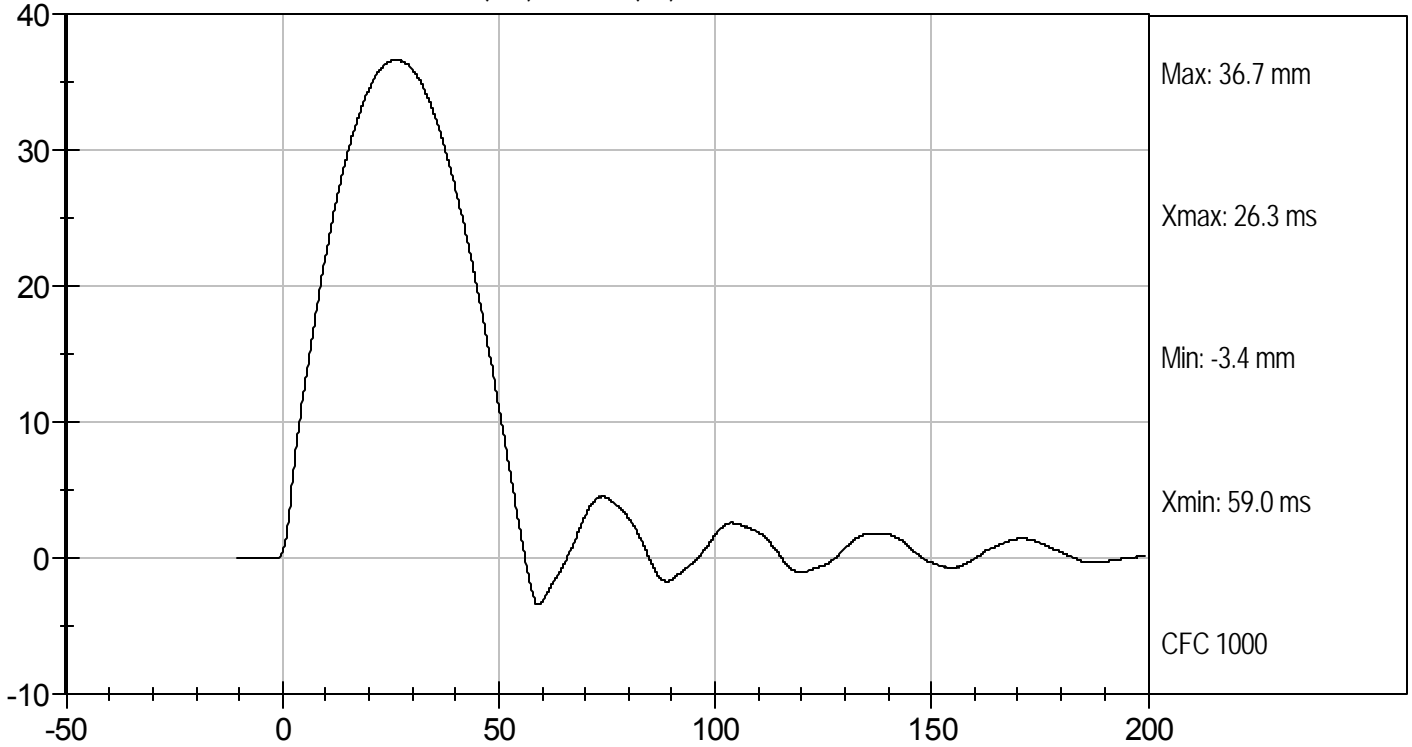
Jessica Gall
Laboratory Technician

12/23/11
Test Date

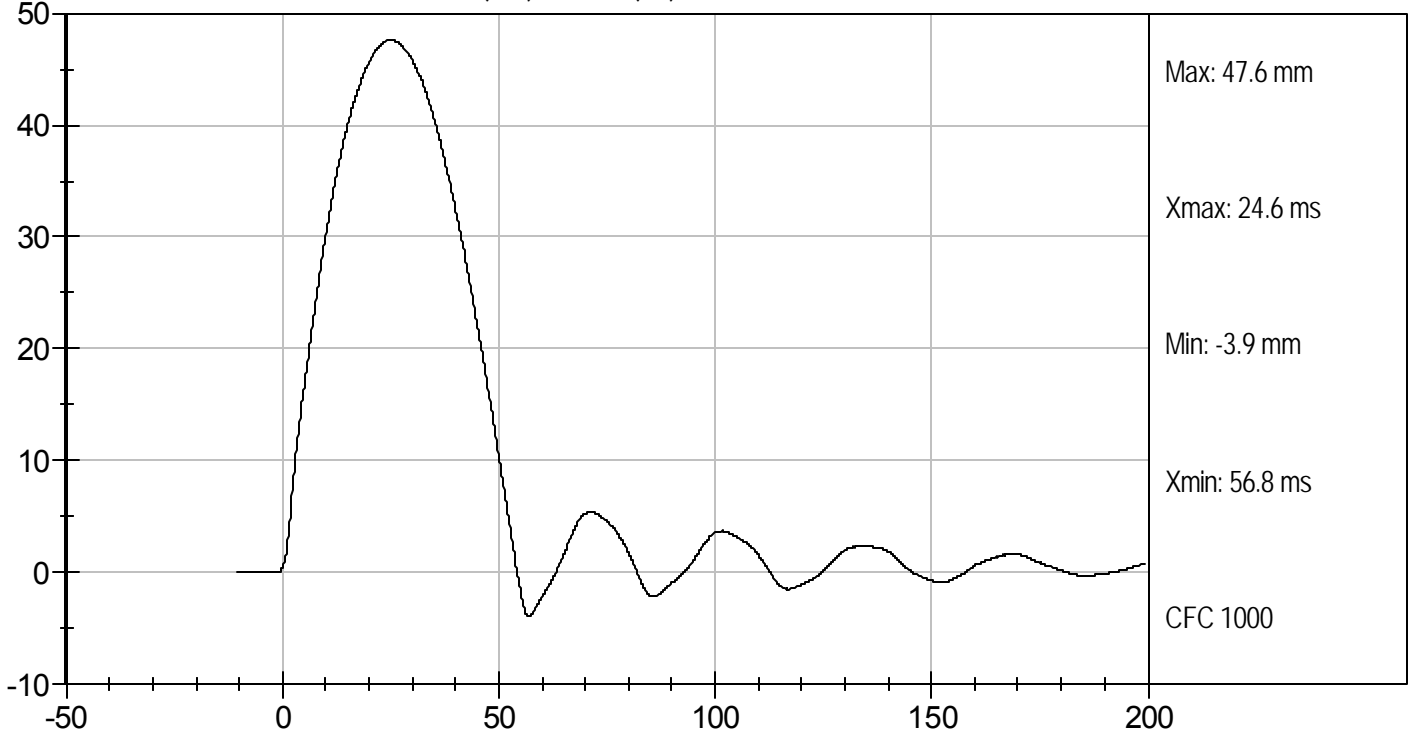
David Winkelbauer
Approved By



MID RIB DISPLACEMENT @ 3 M/SEC (mm) vs TIME (ms)



MID RIB DISPLACEMENT @ 4 M/SEC (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

LOWER RIB TEST
EUROSID 2 DUMMY


ATD Serial No: 032

Test I.D: D114396

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	19	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.8	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.2	Pass
Overall Test Results				Pass

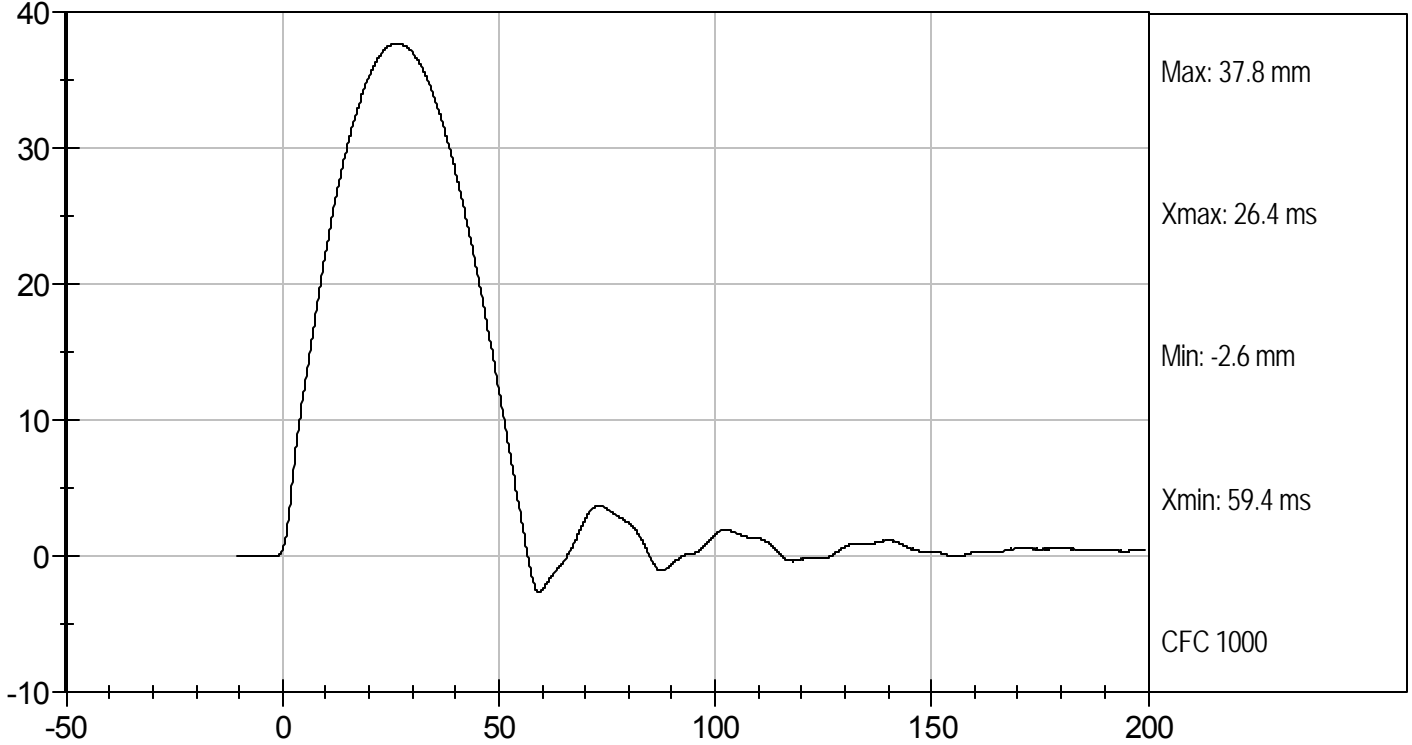

Laboratory Technician

12/23/11
Test Date

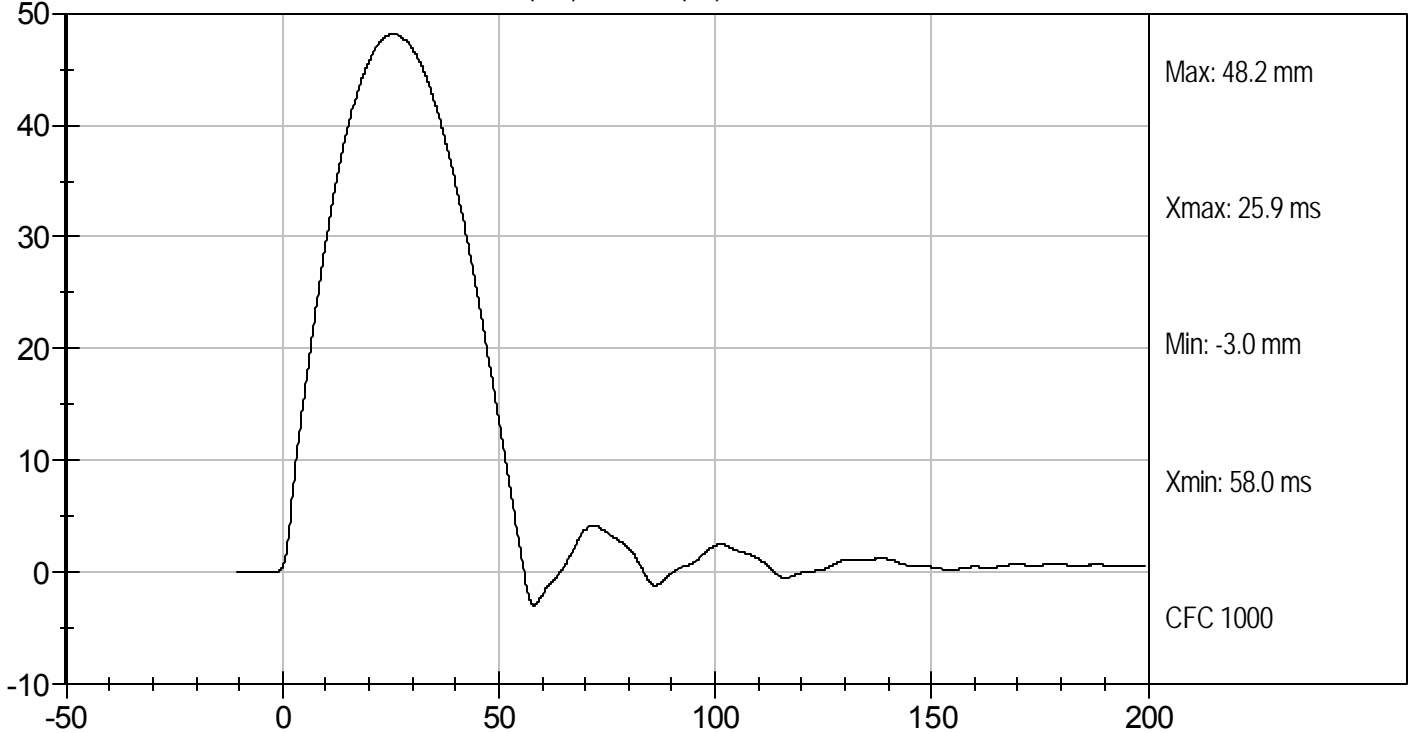

Approved By



LOWER RIB DISPLACEMENT @ 3 M/SEC (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT @ 4 M/SEC (mm) vs TIME (ms)



MGA RESEARCH CORPORATION
FULL BODY THORAX IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D114390

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	18	Pass
Probe Speed	m/s	5.40 to 5.60	5.58	Pass
Maximum Impactor Force (after 6 ms)	kN	5.10 to 6.20	5.22	Pass
Upper Rib Displacement	mm	34.0 to 41.0	36.3	Pass
Middle Rib Displacement	mm	37.0 to 45.0	39.2	Pass
Lower Rib Displacement	mm	37.0 to 44.0	38.5	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

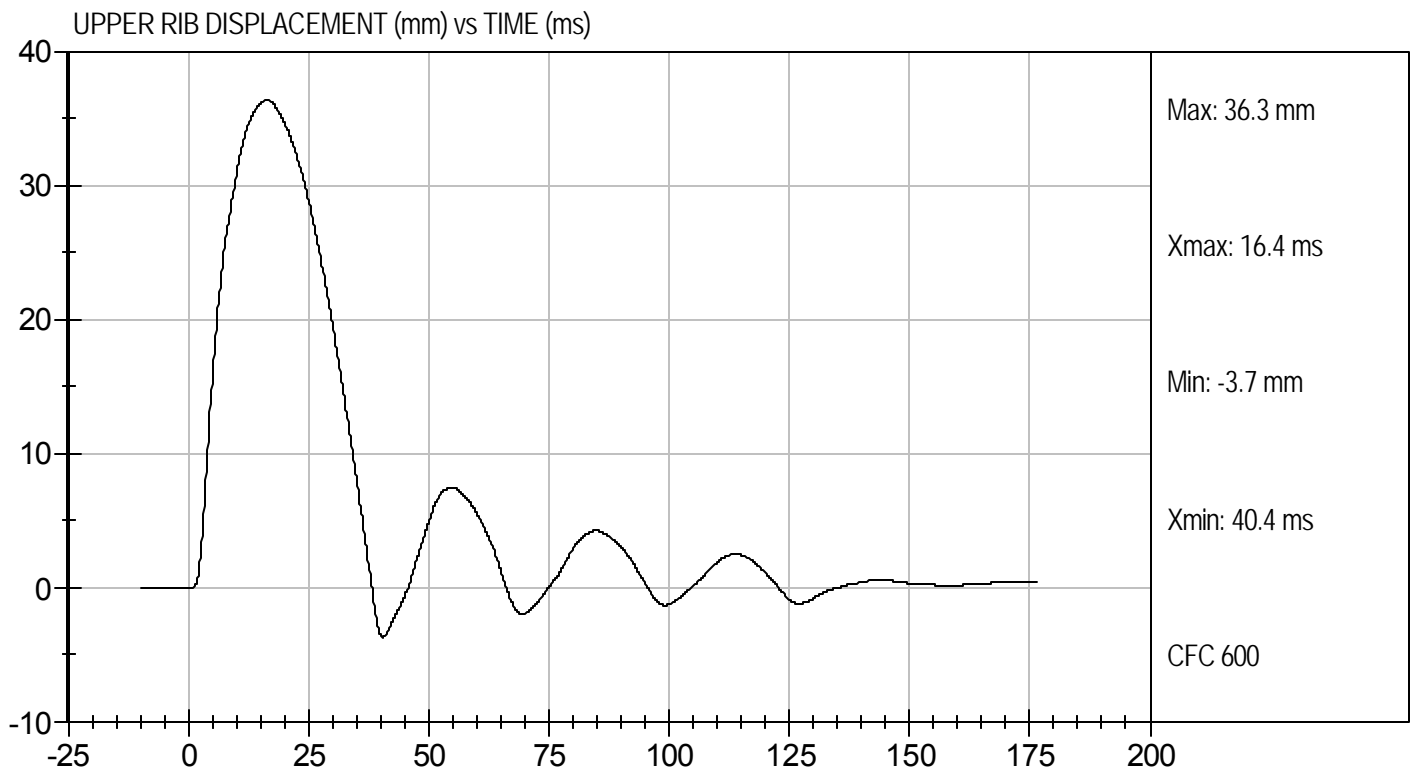
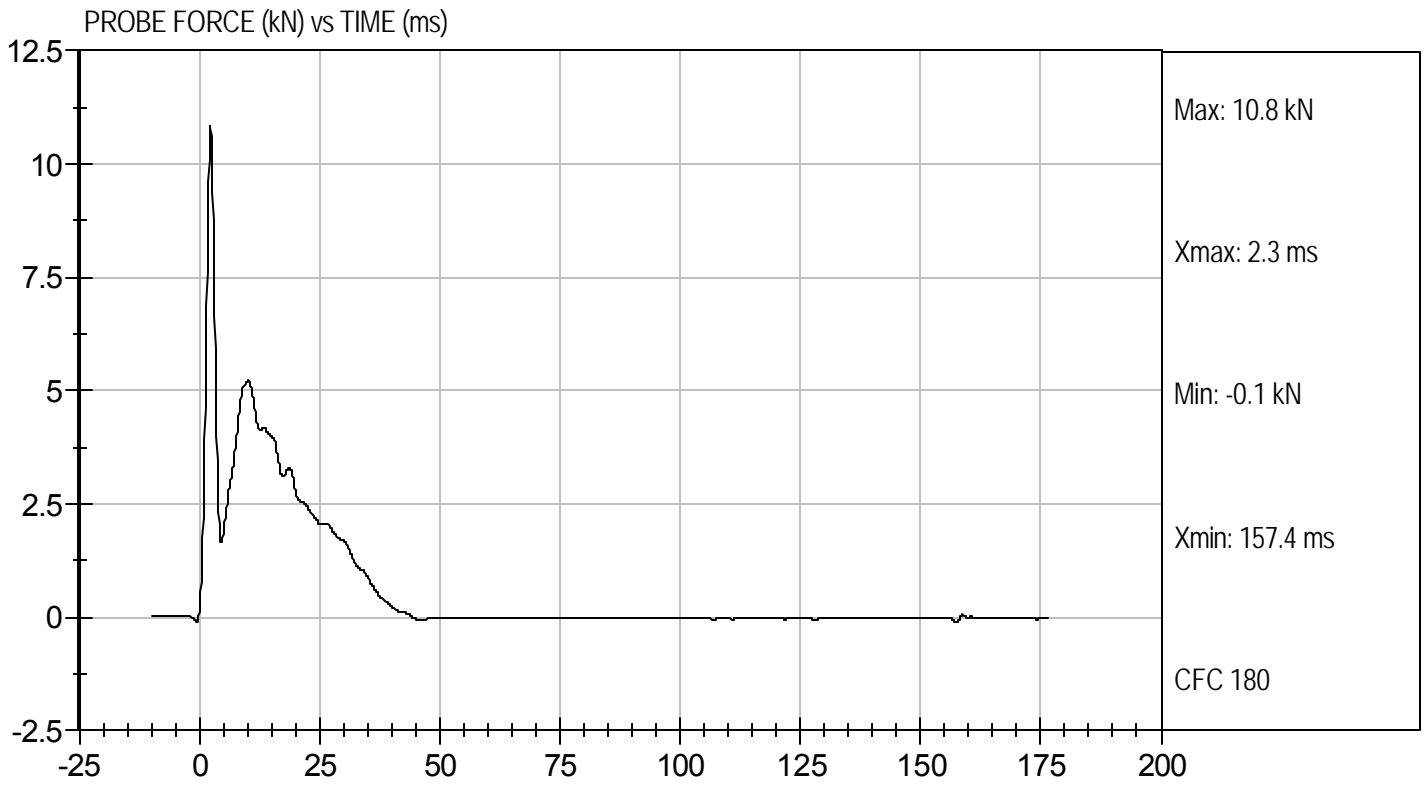
12/23/11
 Test Date

David Winkelbauer
 Approved By



Test Desc: Thorax Impact
Component ID: D114390

Test Date: 12/23/11
Velocity: 18.32 ft/s, 5.58 m/s

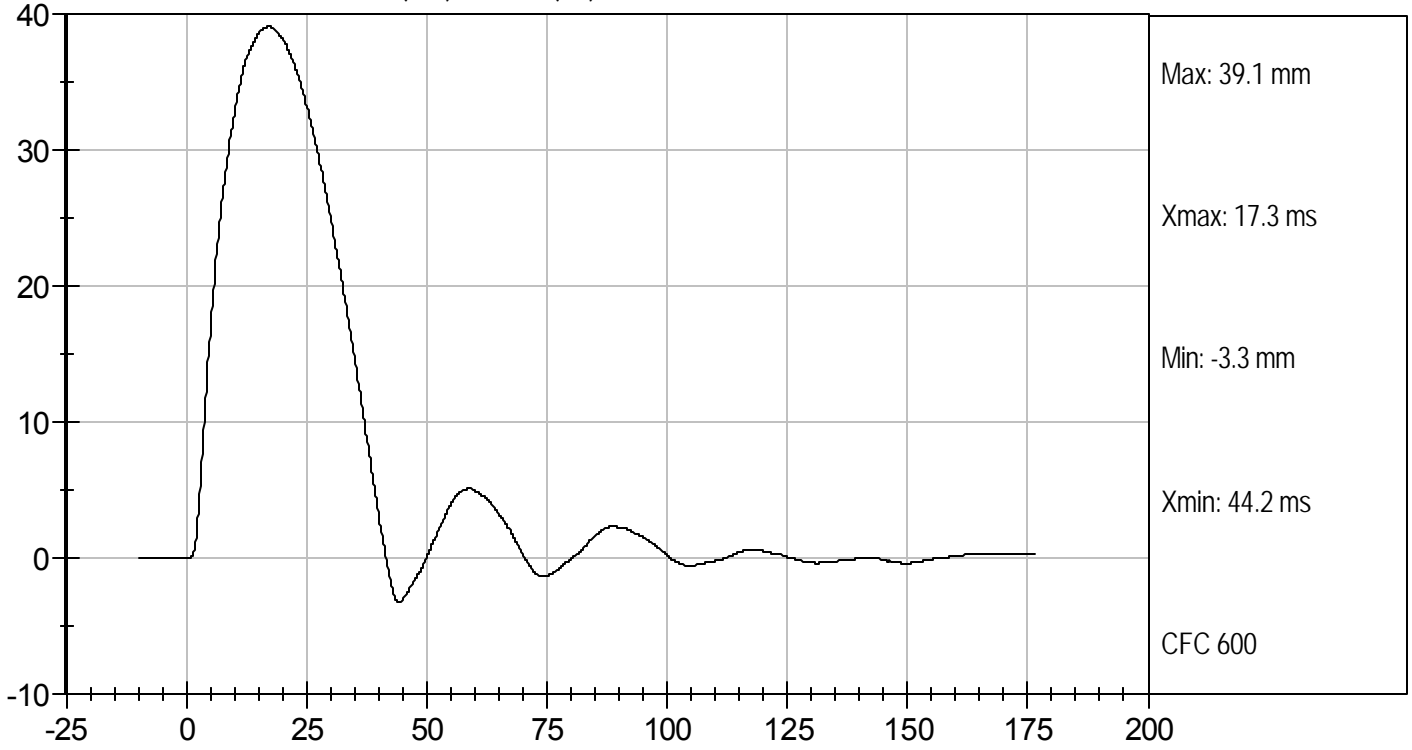




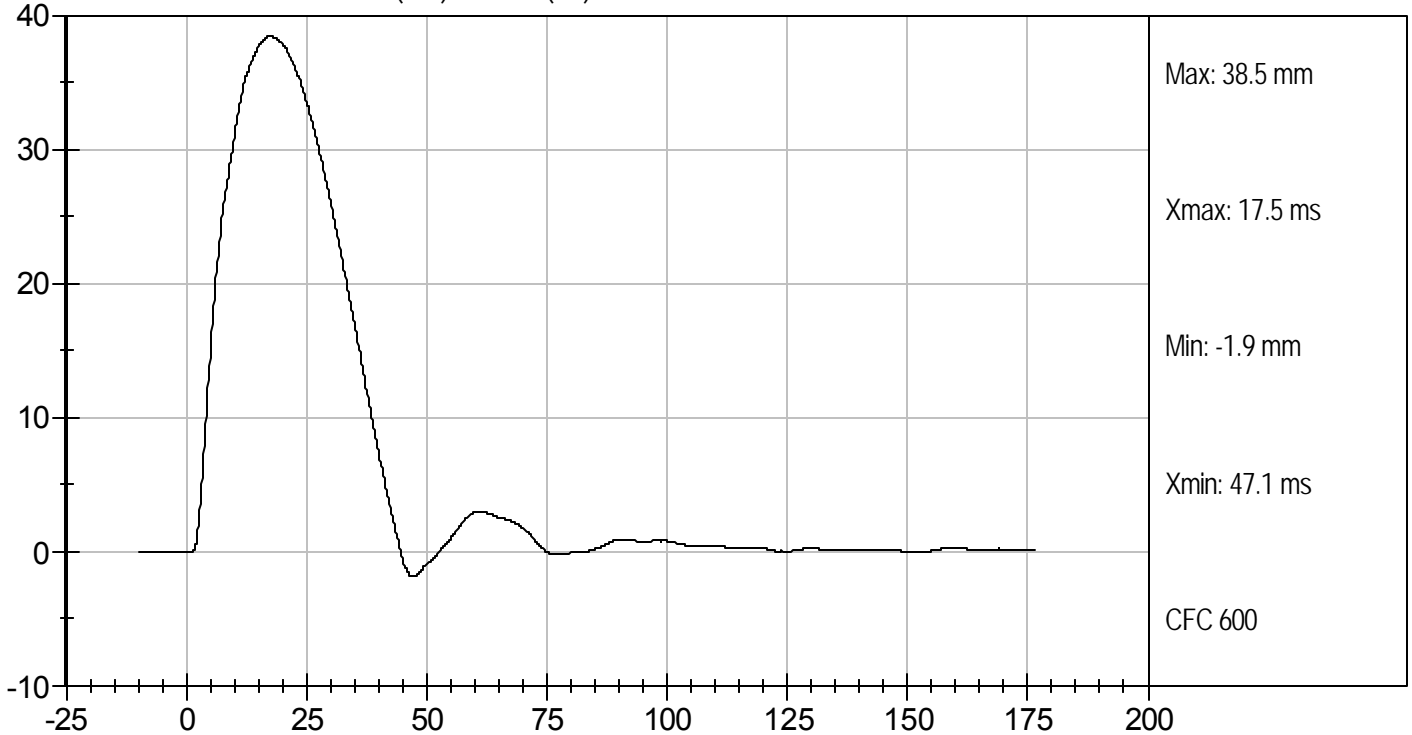
Test Desc: Thorax Impact
Component ID: D114390

Test Date: 12/23/11
Velocity: 18.32 ft/s, 5.58 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

ABDOMEN TEST

ES-2re DUMMY

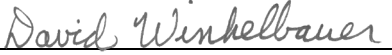
ATD Serial No: 032

Test I.D: D114397

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	19	Pass
Probe Speed	m/s	3.90 to 4.10	4.10	Pass
Maximum Impact Force	kN	4.00 to 4.80	4.30	Pass
Time of Maximum Impact Force	ms	10.60 to 13.00	10.60	Pass
Maximum Total Abdomen Force	kN	2.20 to 2.70	2.54	Pass
Time of Maximum Abdomen Force	ms	10.00 to 12.30	10.20	Pass
Overall Test Results				Pass


Laboratory Technician

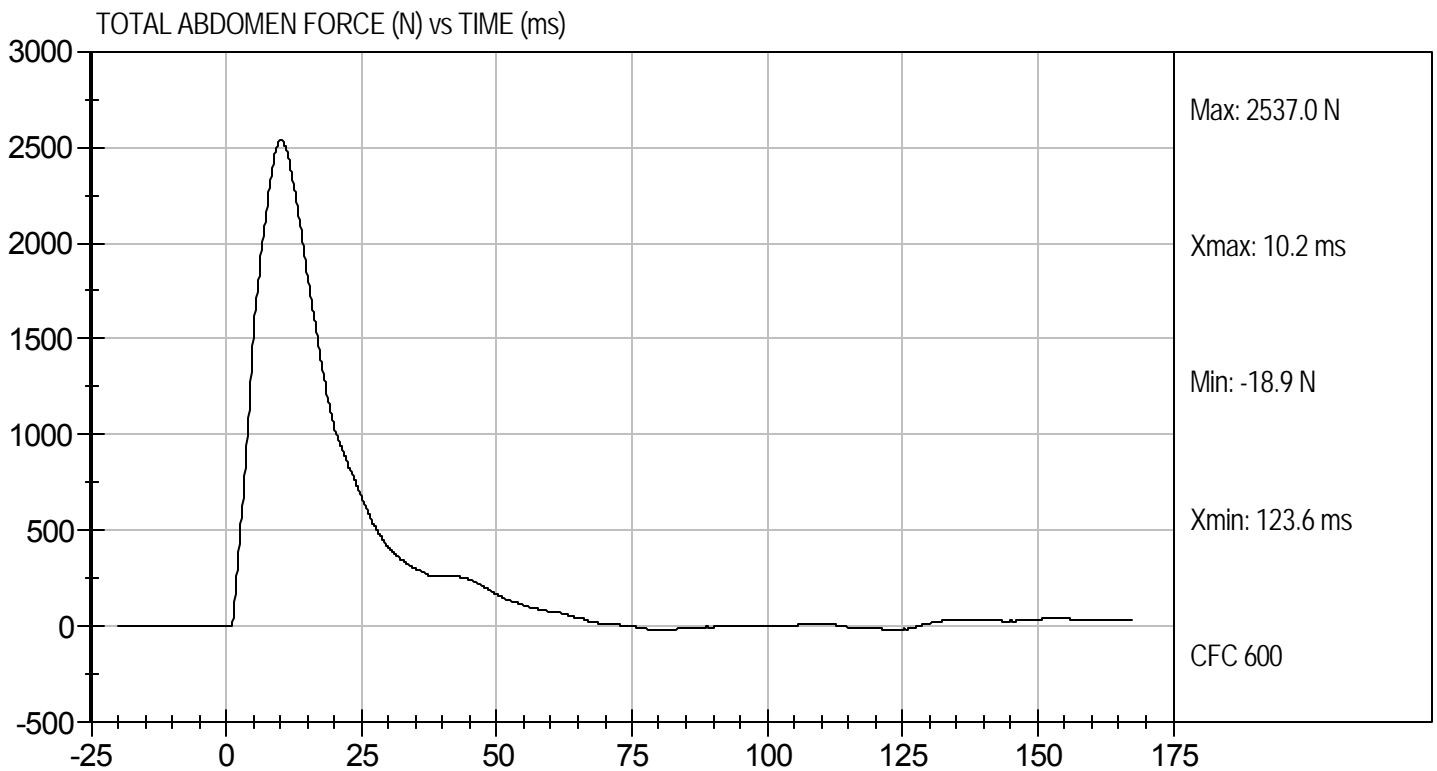
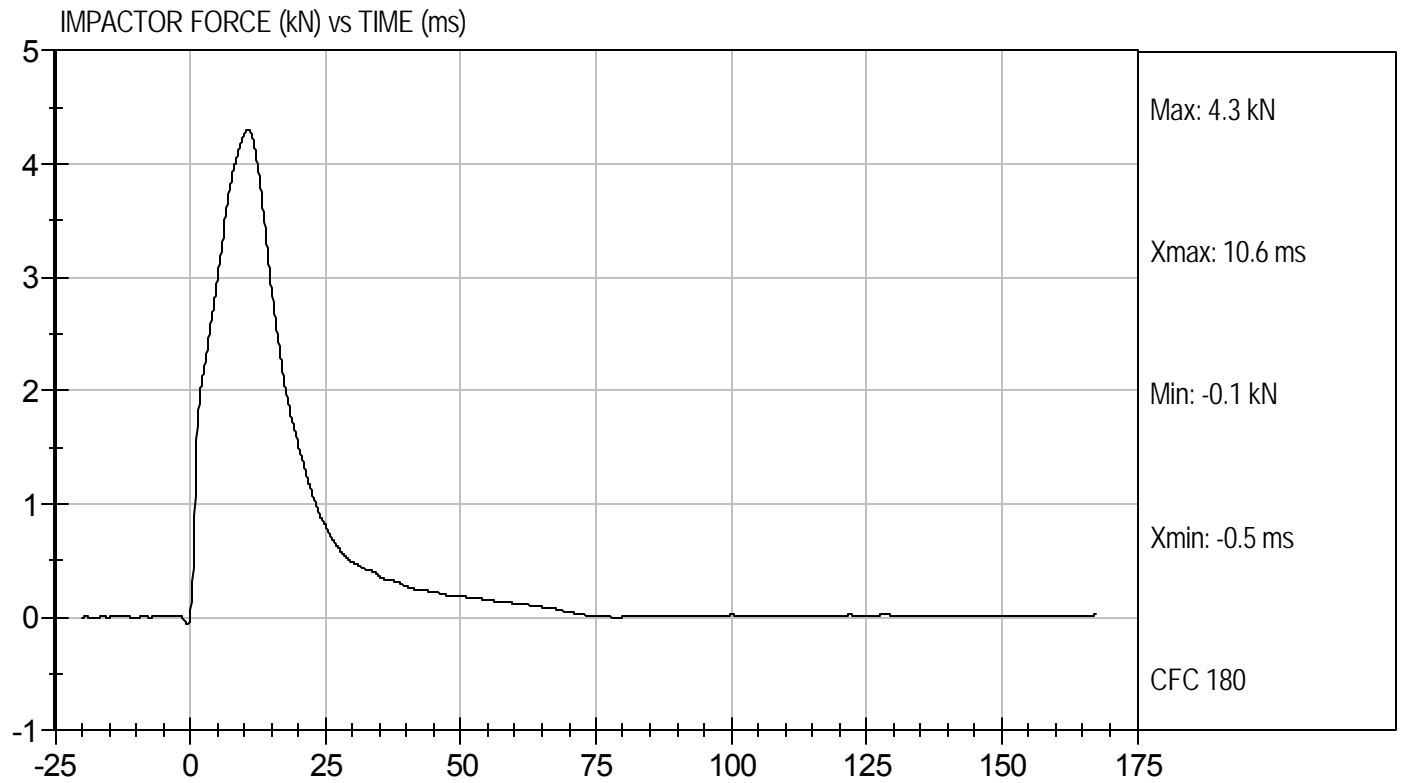
12/23/11
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D114397

Test Date: 12/23/11
Velocity: 13.44 ft/s, 4.1 m/s



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D.: D114398

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Pendulum Speed		m/s	5.95 to 6.15	6.12	Pass
Pendulum Deceleration	1 ms	m/s	-0.05 to 0.00	-0.01	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.41	Pass
	27 ms	m/s	-6.50 to -5.80	-5.90	Pass
	30 ms	m/s	>= -6.5	-6.43	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	45.1	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	46.4	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	45	Pass
Overall Results					Pass

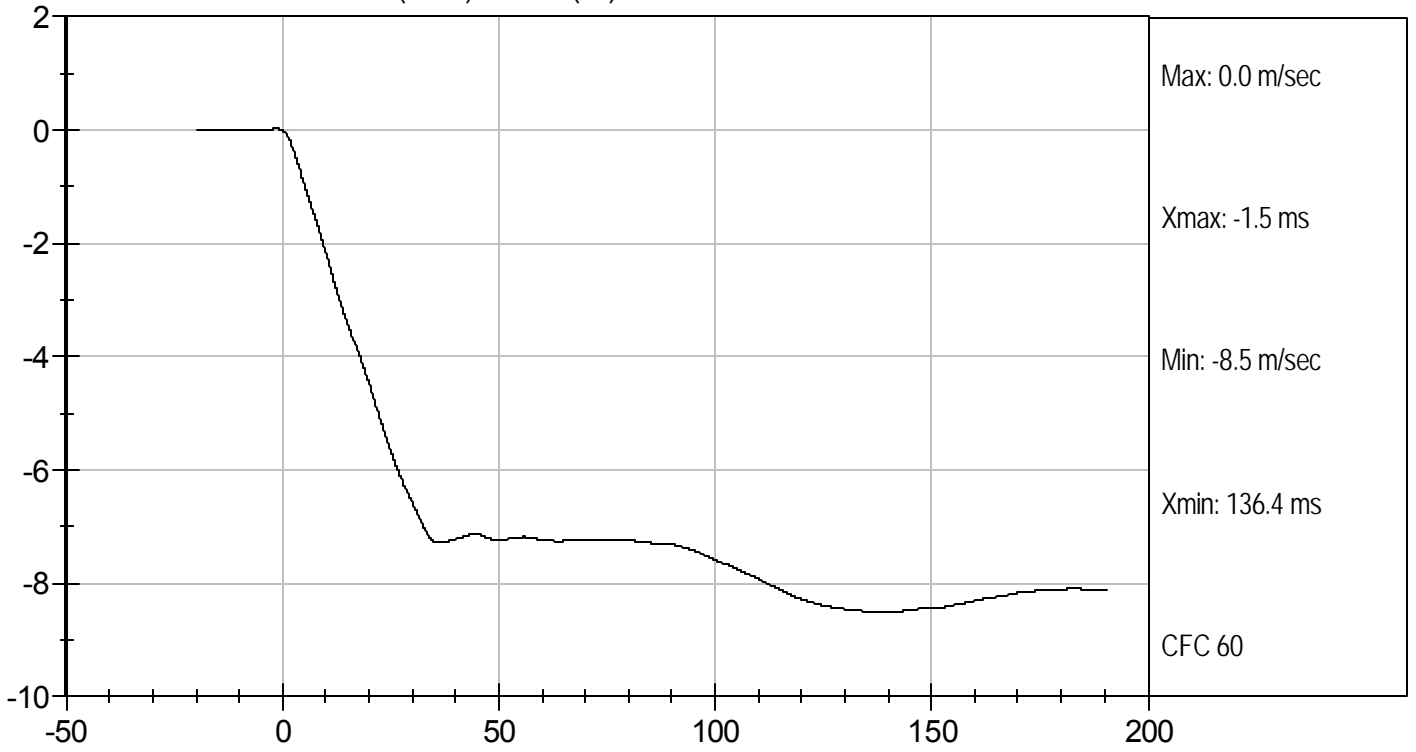
Jessica Hall
Laboratory Technician

12/23/11
Test Date

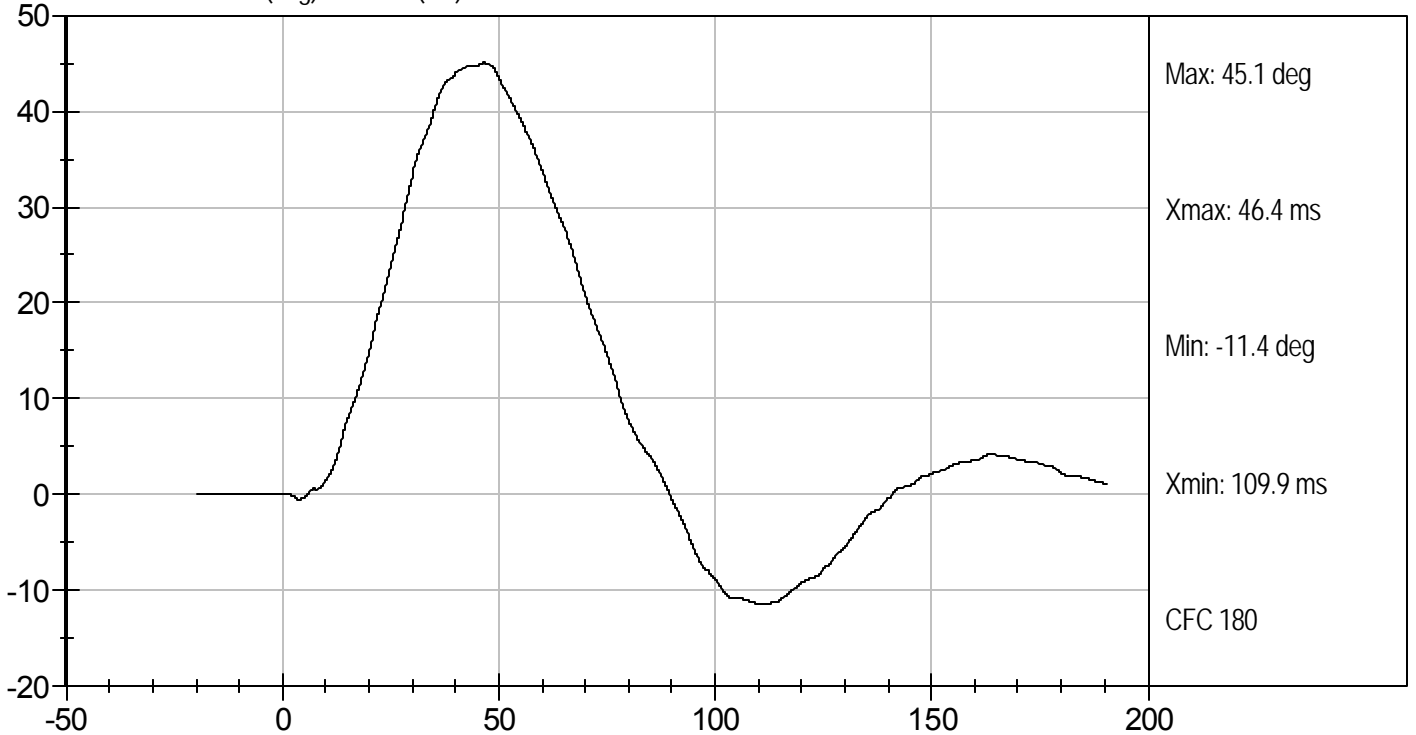
David Winkelbauer
Approved By



PENDULUM DECELERATION (m/sec) vs TIME (ms)



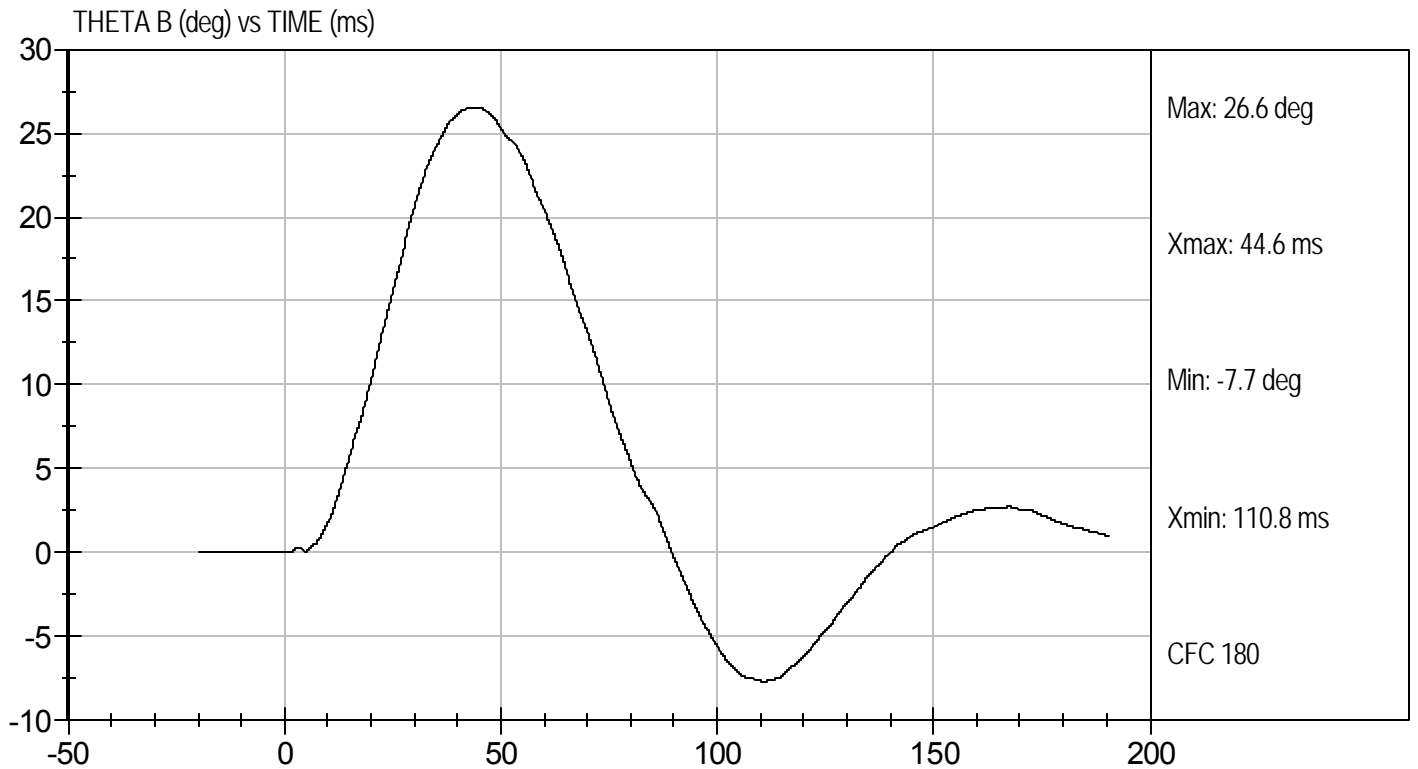
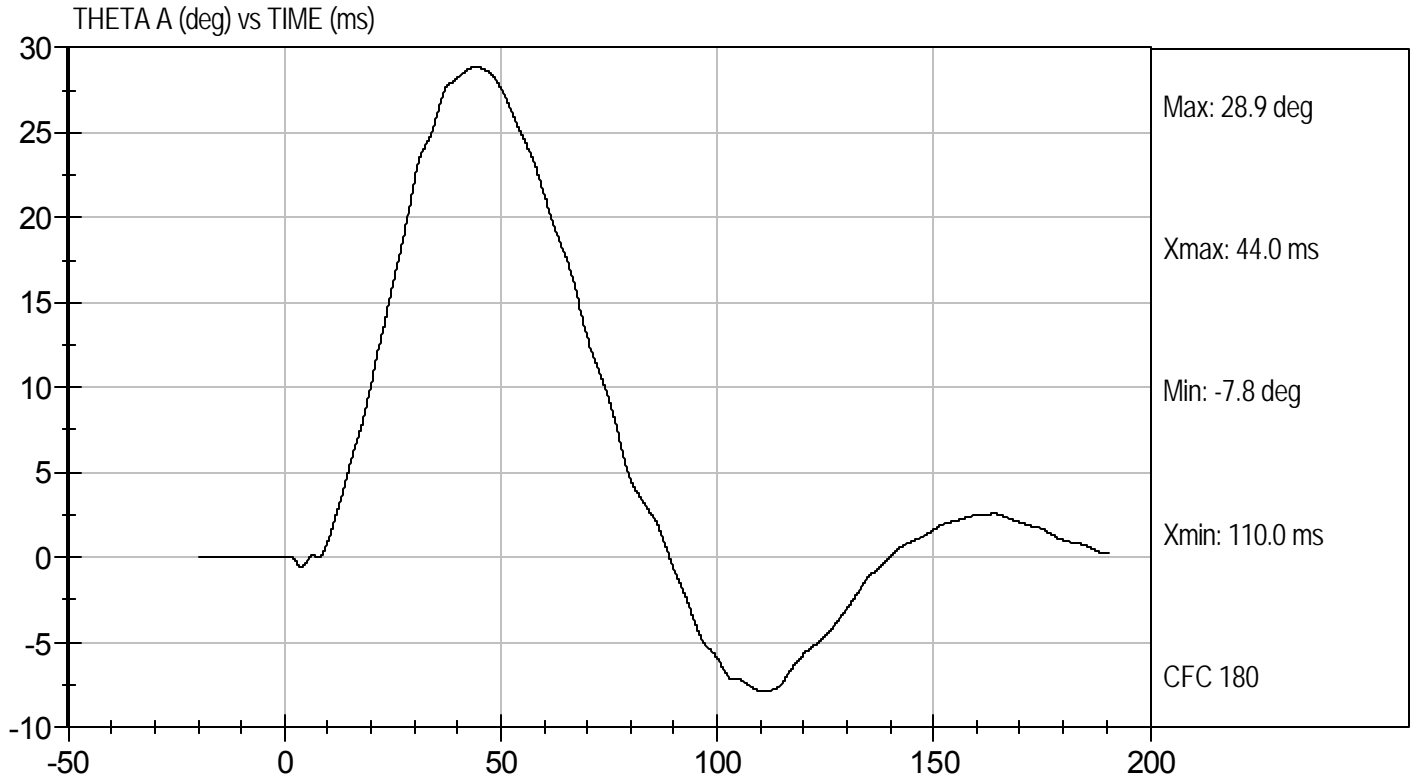
FLEXION ANGLE (deg) vs TIME (ms)





Test Desc: Lumbar Bending
Component ID: D114398

Test Date: 12/23/11
Velocity: 20.08 ft/s, 6.12 m/s



MGA RESEARCH CORPORATION

**PELVIS TEST
ES-2re DUMMY**

ATD Serial No: 032

Test I.D: D114399

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Speed	m/s	4.20 to 4.40	4.34	Pass
Maximum Impactor Force	kN	4.70 to 5.40	4.87	Pass
Time of Maximum Impactor Force	ms	11.80 to 16.10	12.90	Pass
Maximum Pubic Force	kN	1.23 to 1.59	1.44	Pass
Time of Maximum Pubic Force	ms	12.20 to 17.00	13.90	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

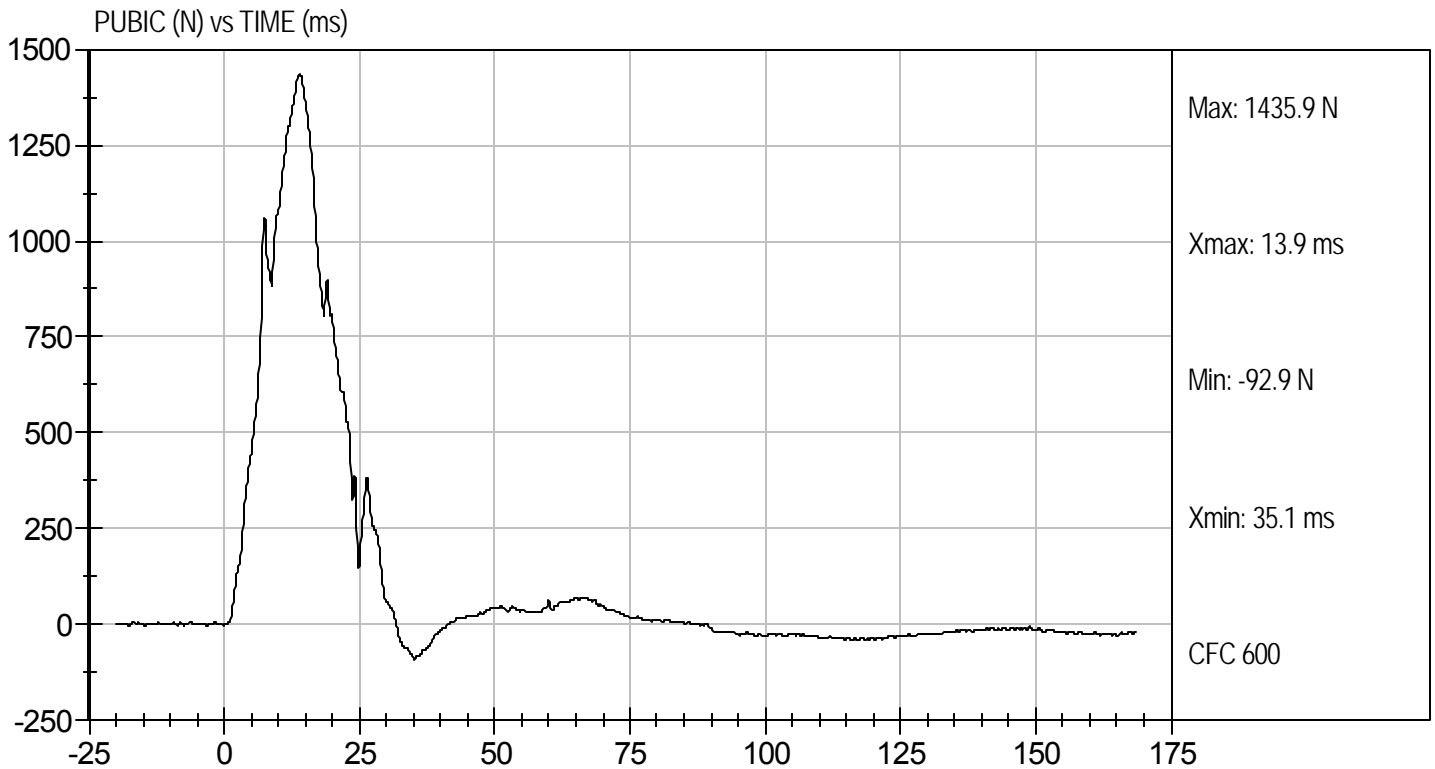
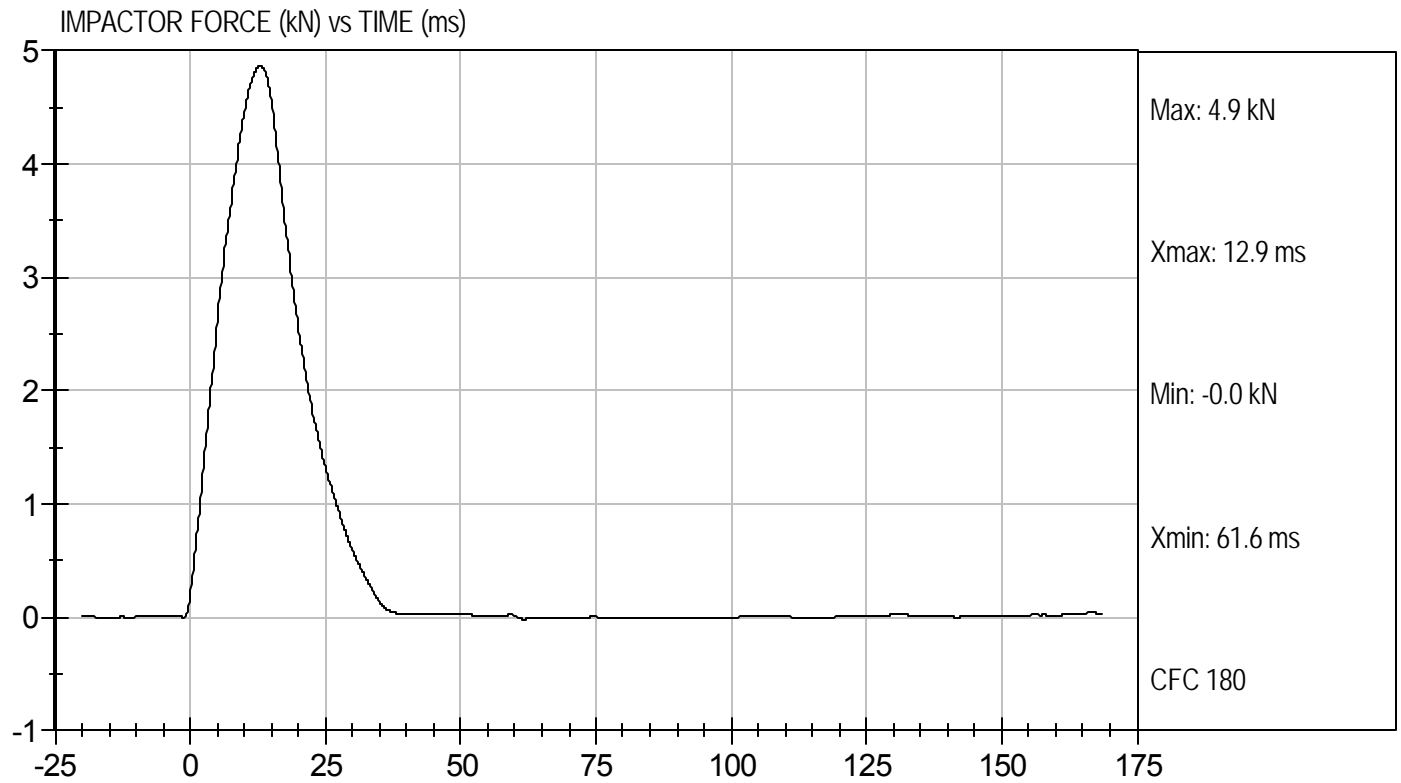
12/23/11
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D114399

Test Date: 12/23/11
Velocity: 14.25 ft/s, 4.34 m/s



MGA RESEARCH CORPORATION
HEAD DROP TEST
ES-2re DUMMY

ATD Serial No: 032

Test ID: D12041

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Peak Resultant Acceleration	G's	125 to 155	150	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-12.4	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

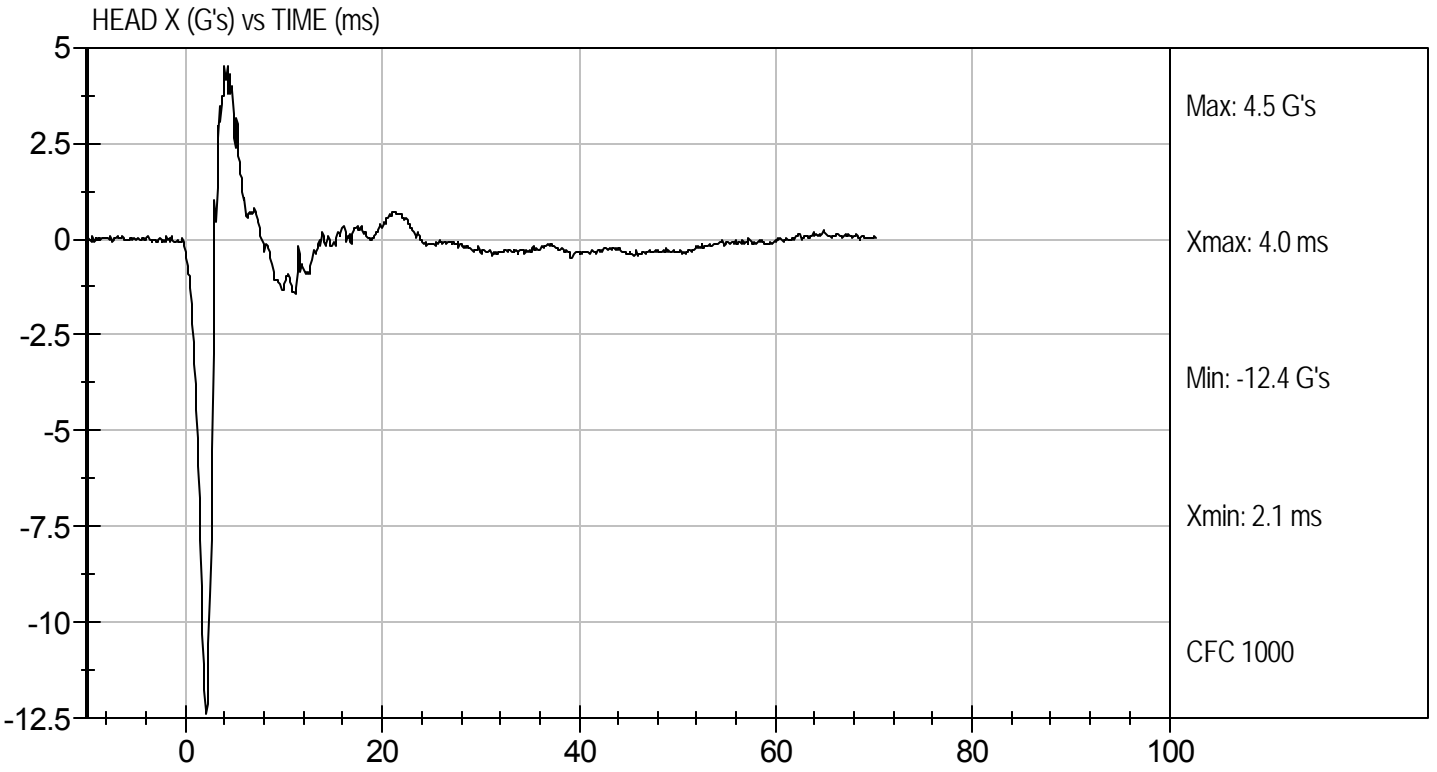
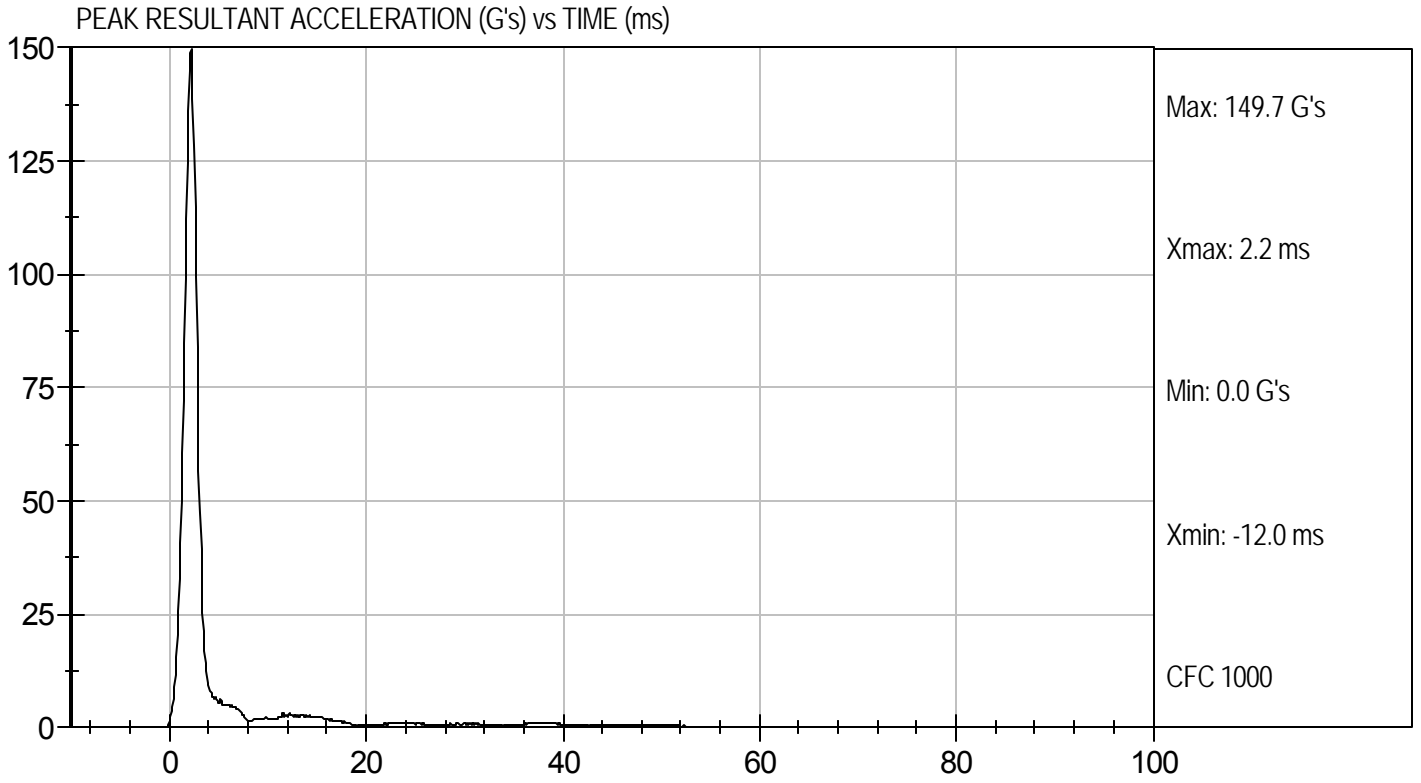
1/6/12
 Test Date

David Winkelbauer
 Approved By



Test Desc: Head Drop
Component ID: D12041

Test Date: 1/6/12
Velocity: 0 ft/s, 0 m/s



**MGA RESEARCH CORPORATION
NECK PENDULUM TEST
ES-2re DUMMY**

ATD Serial No: 032

Test I.D.: D12042

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.0 to 22.0	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	24	Pass
Pendulum Speed		m/s	3.3 to 3.5	3.4	Pass
Pendulum Deceleration	1 ms	m/s	0.00 to -0.05	-0.02	Pass
	3 ms	m/s	-0.25 to -0.375	-0.34	Pass
	14 ms	m/s	-3.20 to -3.70	-3.32	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	52.5	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	60.8	Pass
Head Rotation Decay Time to 0 degree		ms	53.0 to 88.0	57.8	Pass
Overall Test Results					Pass

Jessica Hall

Laboratory Technician

1/6/12

Test Date

David Winkelbauer

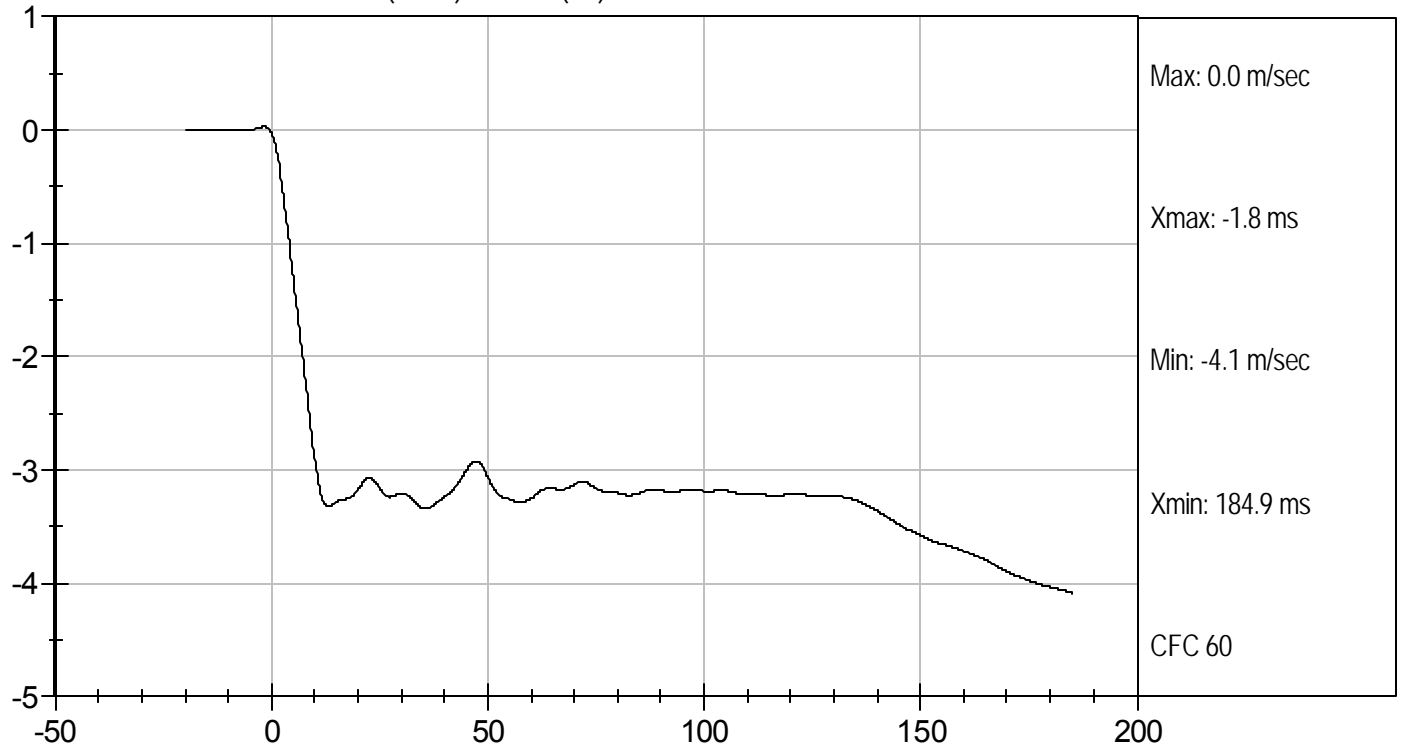
Approved By



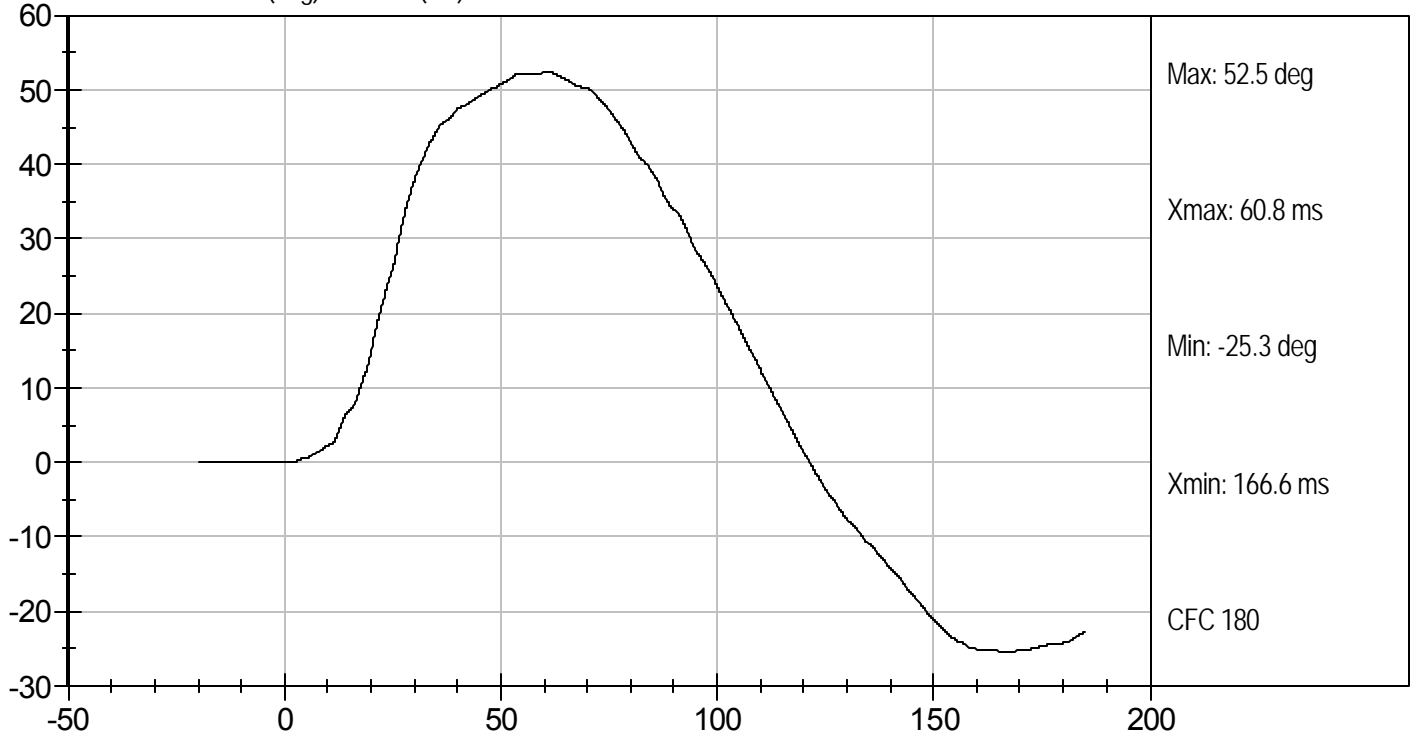
Test Desc: Neck Bending
Component ID: D12042

Test Date: 1/6/12
Velocity: 11.11 ft/s, 3.39 m/s

PENDULUM DECELERATION (m/sec) vs TIME (ms)



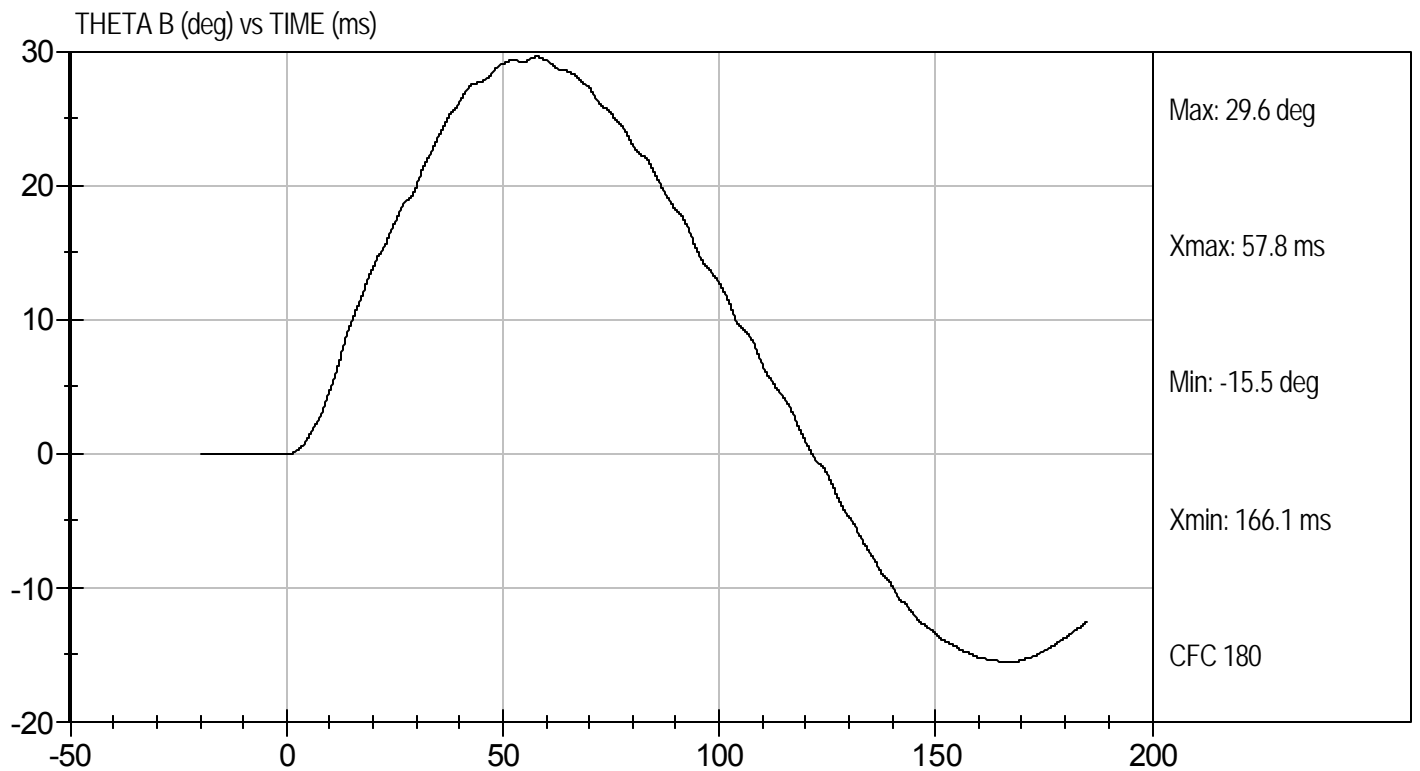
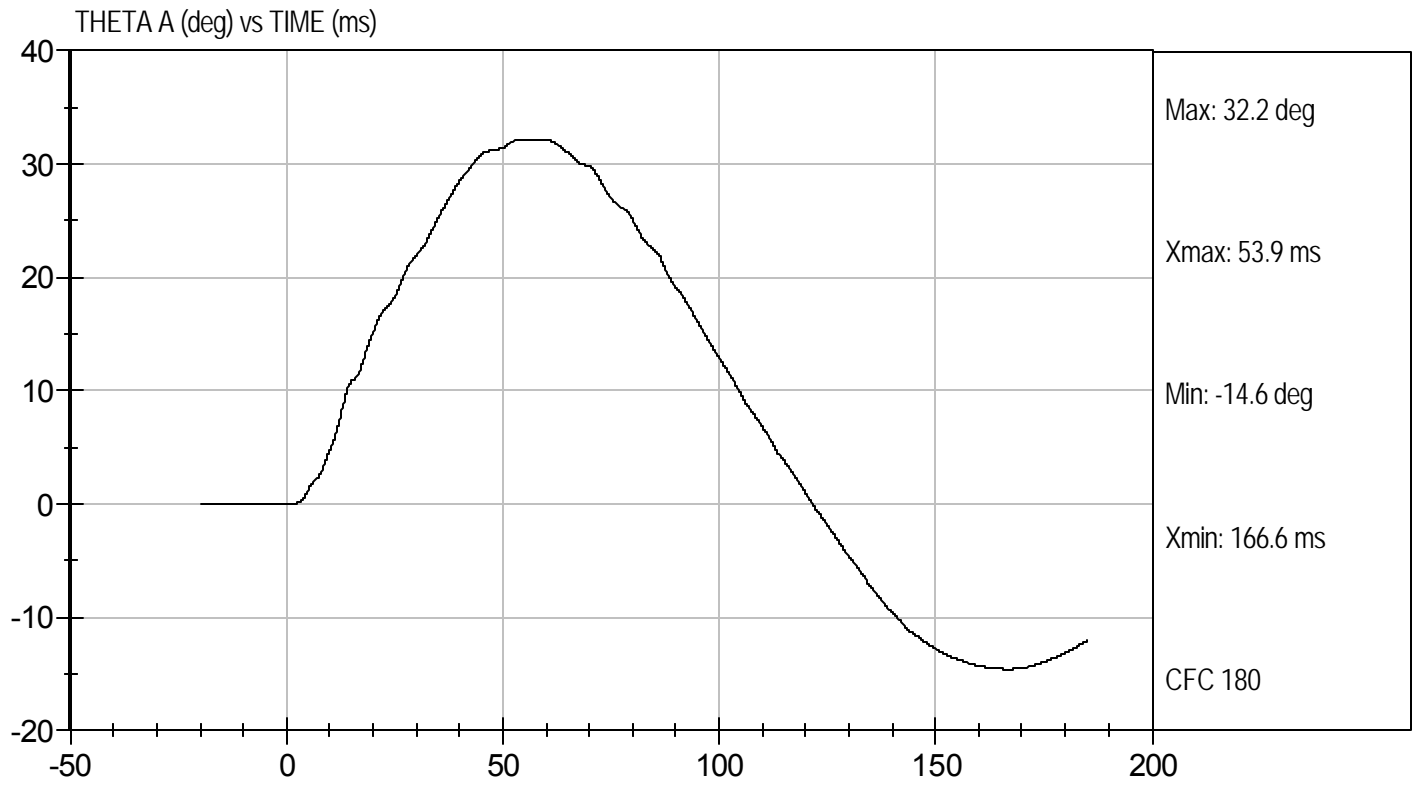
FLEXION ANGLE (deg) vs TIME (ms)





Test Desc: Neck Bending
Component ID: D12042

Test Date: 1/6/12
Velocity: 11.11 ft/s, 3.39 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12043

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	25	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.3	Pass
Peak Shoulder Acceleration	G's	7.5 to 10.5	9.0	Pass
Time of Peak Shoulder Acceleration	ms	NA	13.3	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

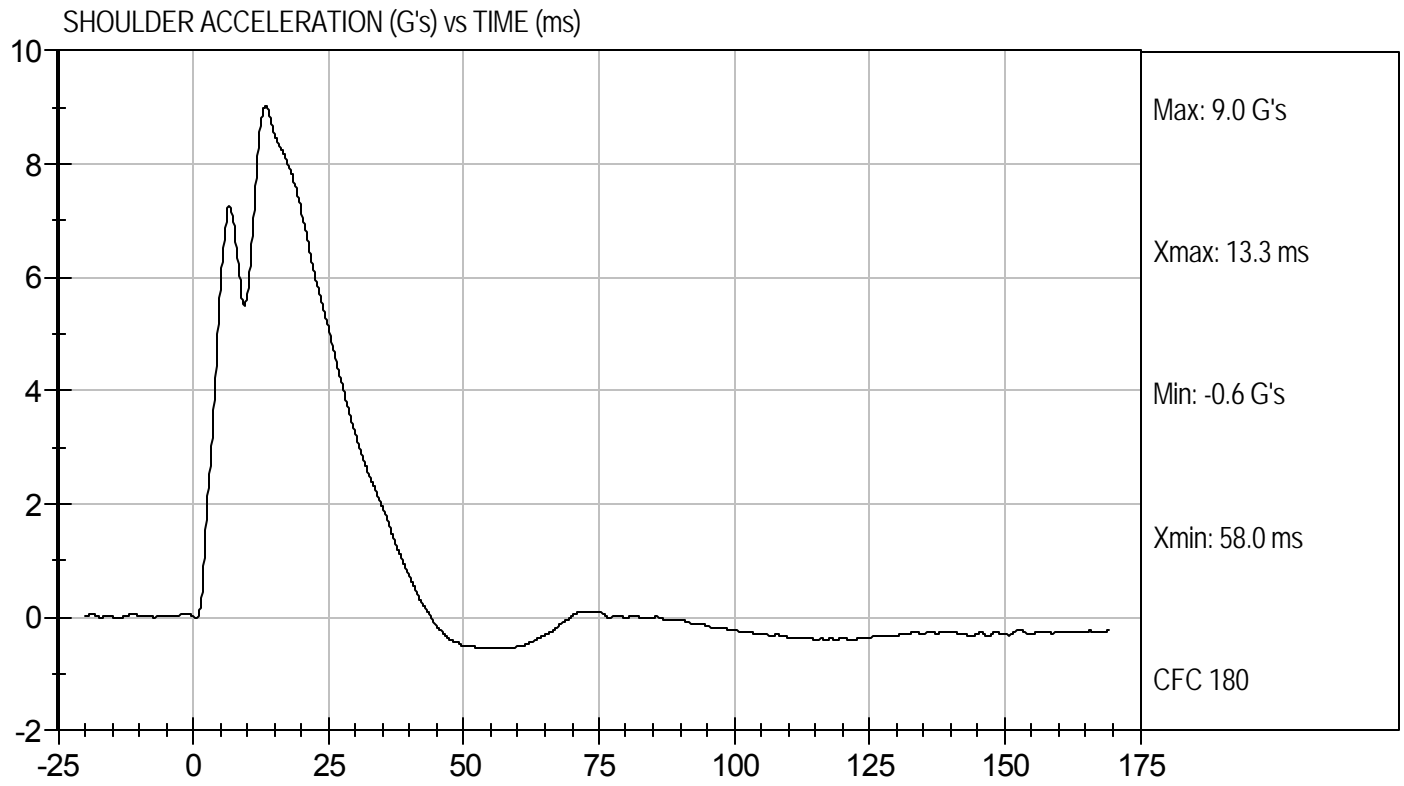
1/6/12
 Test Date

David Winkelbauer
 Approved By



Test Desc: Shoulder Impact
Component ID: D12043

Test Date: 1/6/12
Velocity: 14.12 ft/s, 4.3 m/s



MGA RESEARCH CORPORATION

UPPER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12044

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.6	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.2	Pass
Overall Test Results				Pass

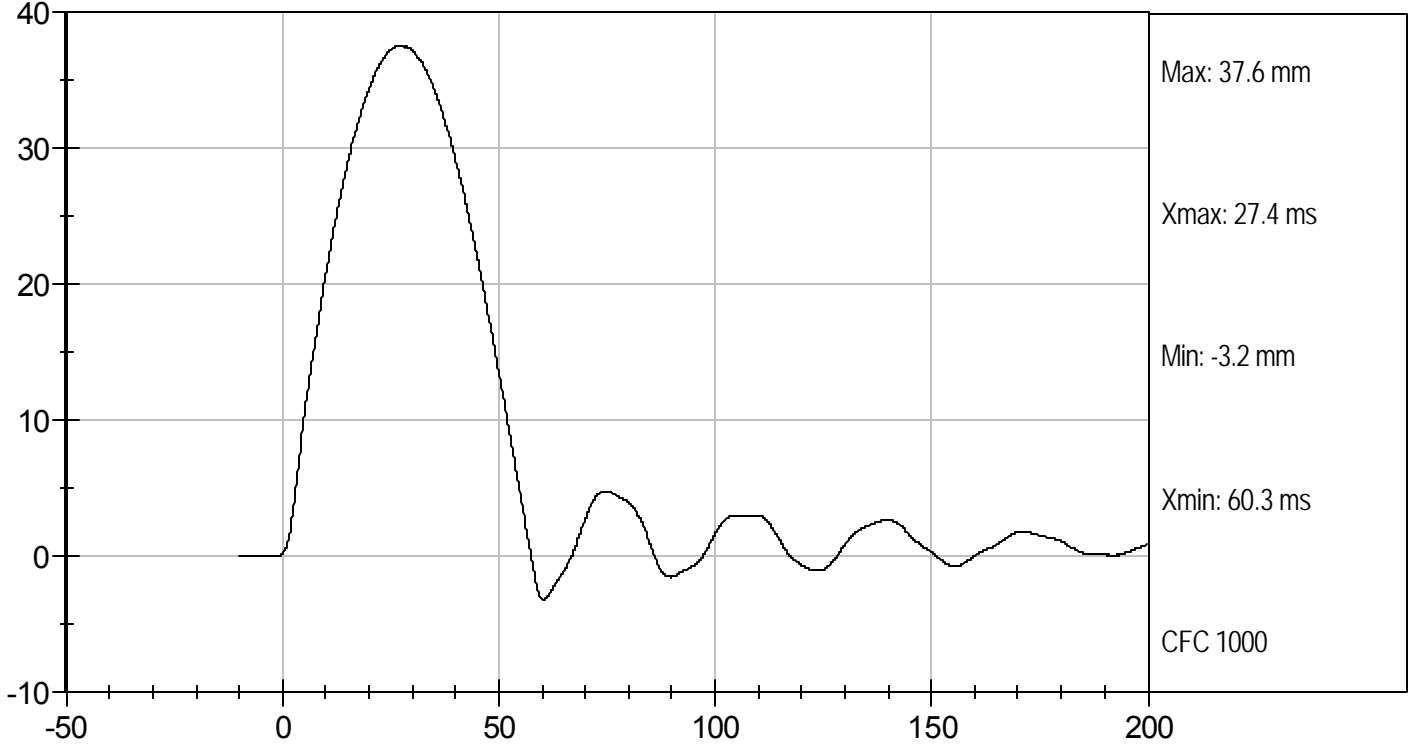
Jessica Hall
Laboratory Technician

1/6/12
Test Date

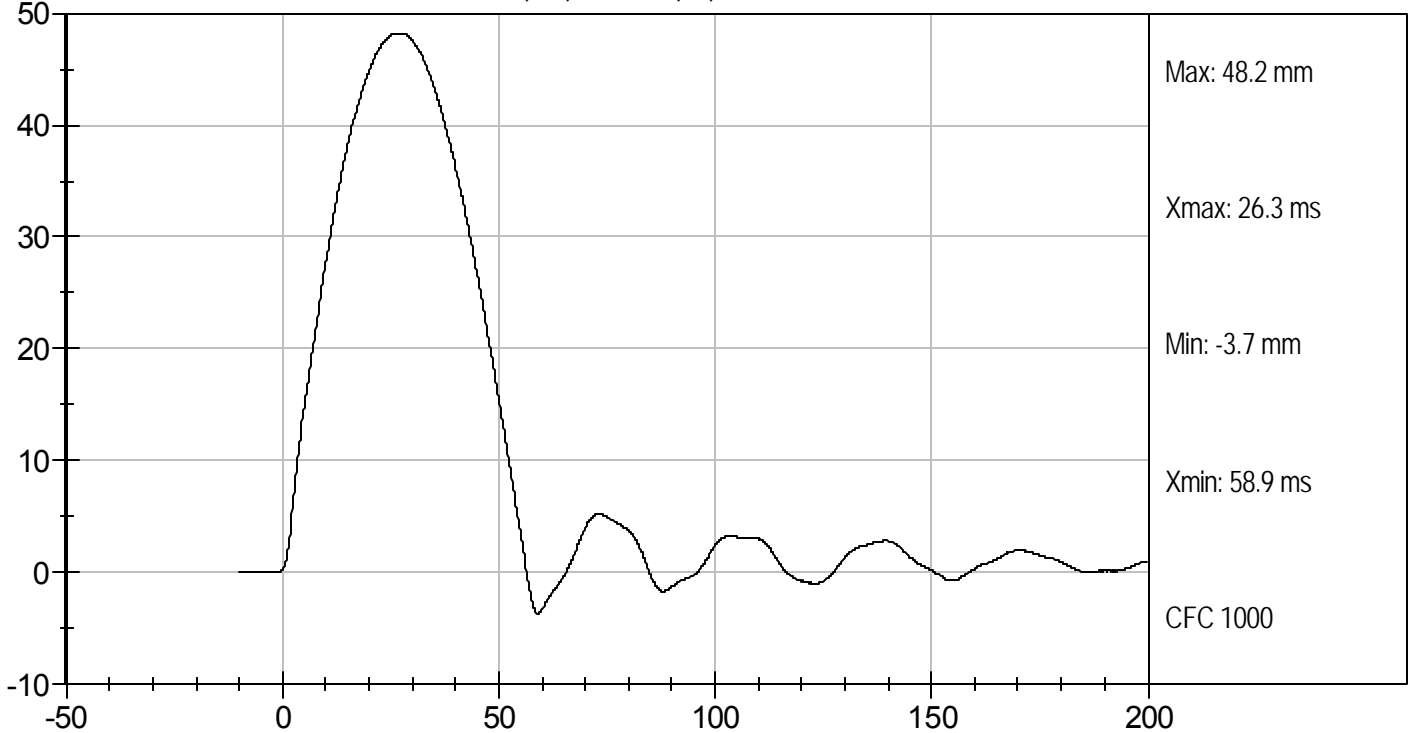
David Winkelbauer
Approved By



UPPER RIB DISPLACEMENT @ 3 M/SEC (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT @ 4 M/SEC (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

MID RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12045

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.3	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	47.6	Pass
Overall Test Results				Pass

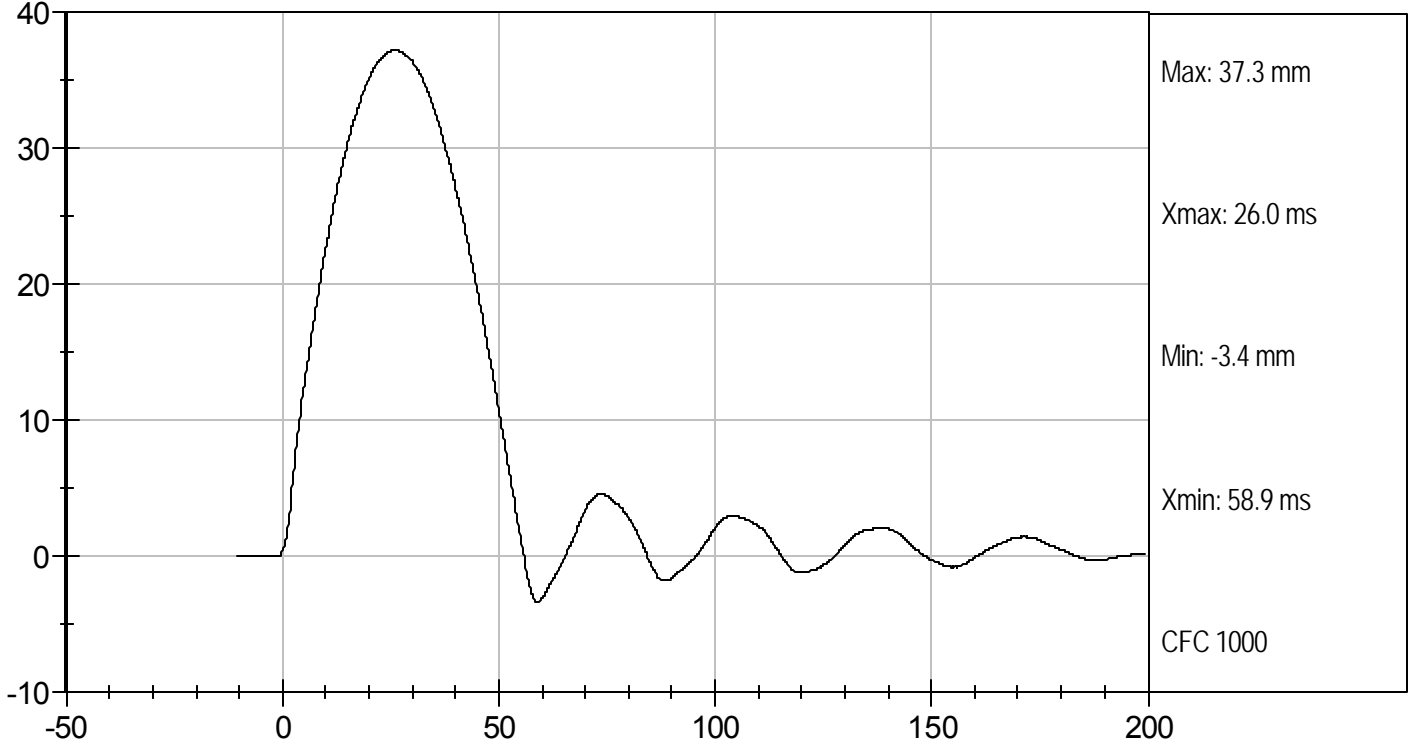
Jessica Hall
Laboratory Technician

1/6/12
Test Date

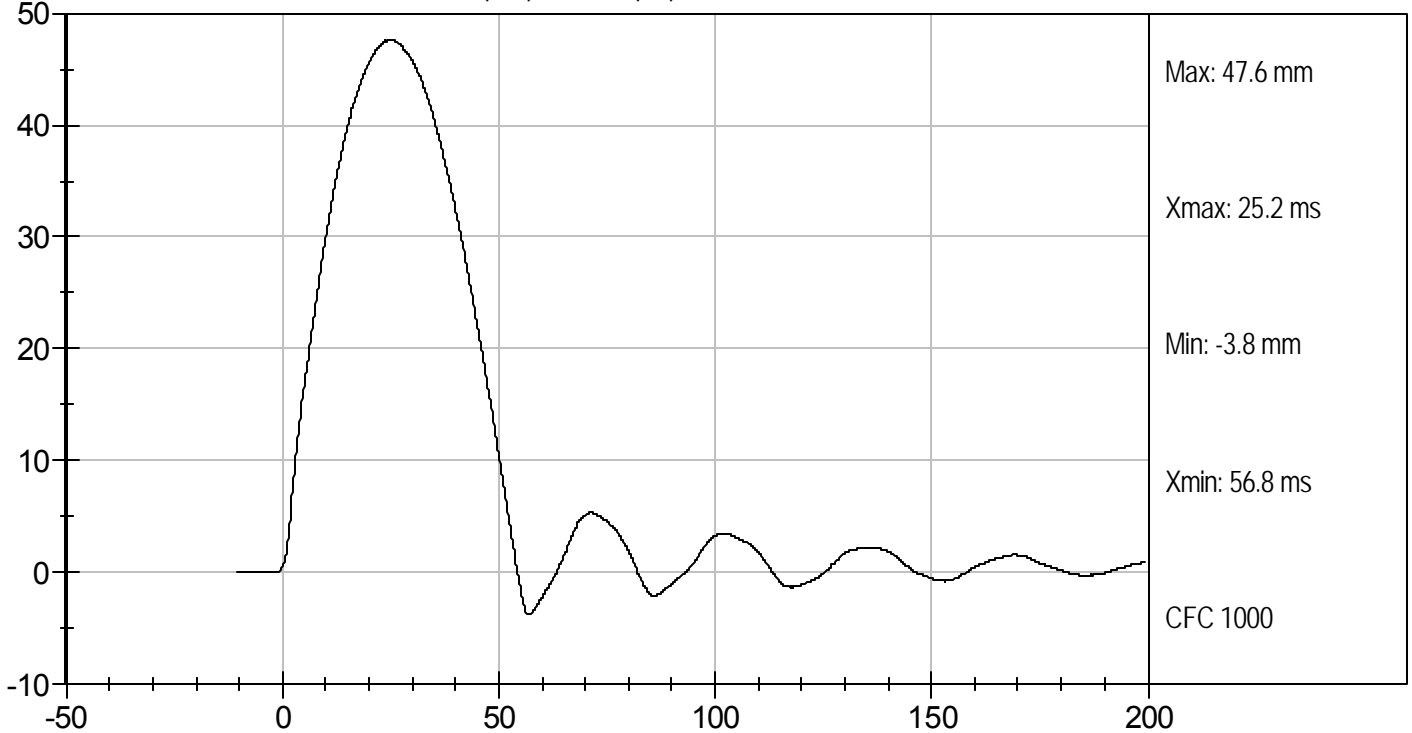
David Winkelbauer
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MID RIB DISPLACEMENT @ 3 M/SEC (mm) vs TIME (ms)



MID RIB DISPLACEMENT @ 4 M/SEC (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

LOWER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12046

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.8	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.6	Pass
Overall Test Results				Pass

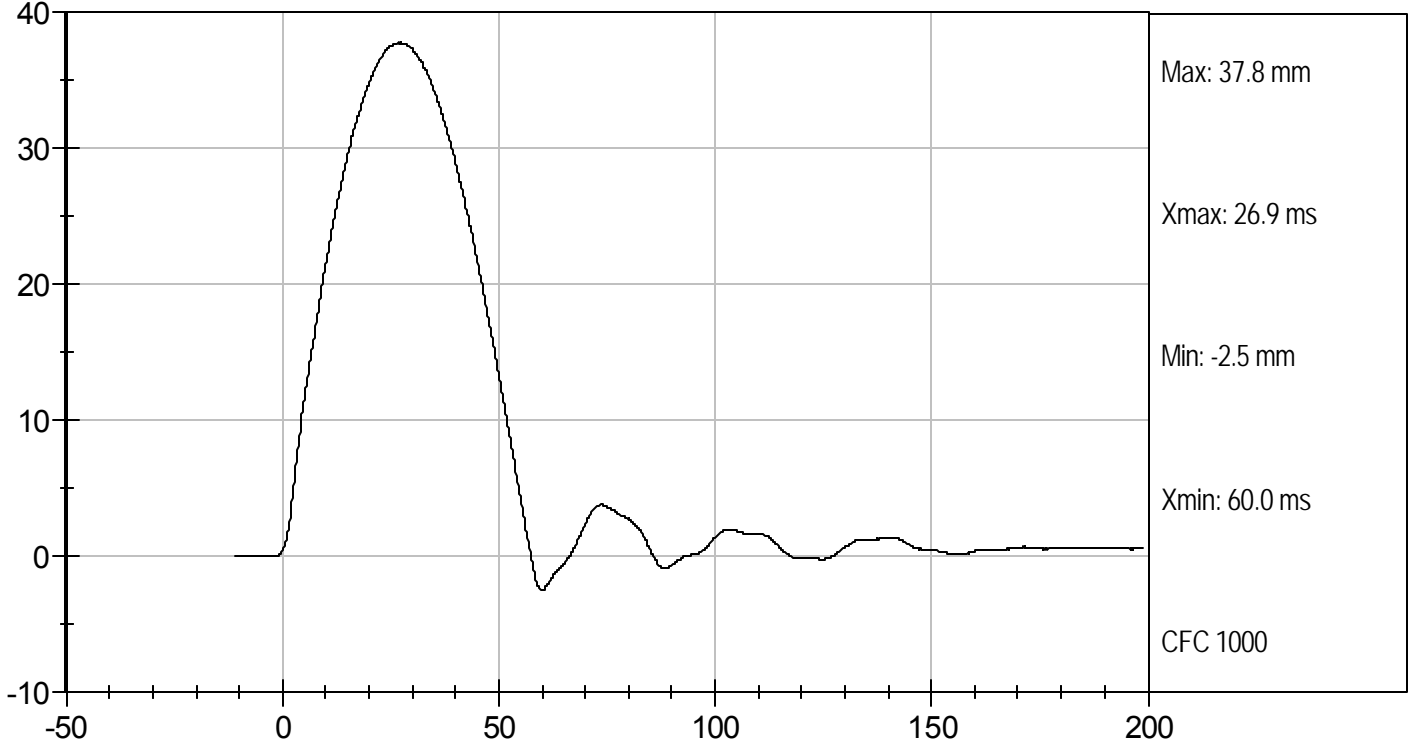
Jessica Hall
Laboratory Technician

1/6/12
Test Date

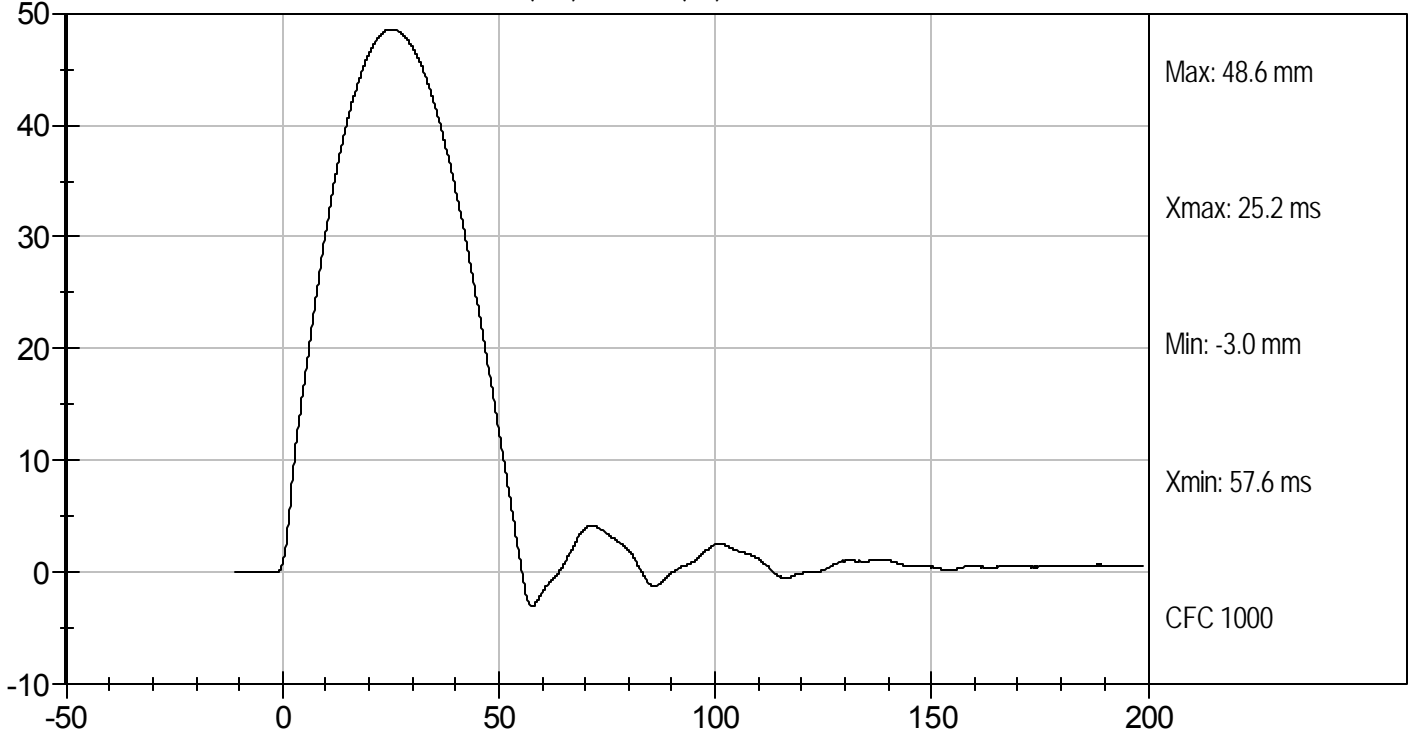
David Winkelbauer
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LOWER RIB DISPLACEMENT @ 3 M/SEC (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT @ 4 M/SEC (mm) vs TIME (ms)



MGA RESEARCH CORPORATION
FULL BODY THORAX IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12040

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	25	Pass
Probe Speed	m/s	5.40 to 5.60	5.58	Pass
Maximum Impactor Force (after 6 ms)	kN	5.10 to 6.20	5.14	Pass
Upper Rib Displacement	mm	34.0 to 41.0	37.1	Pass
Middle Rib Displacement	mm	37.0 to 45.0	39.6	Pass
Lower Rib Displacement	mm	37.0 to 44.0	38.7	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

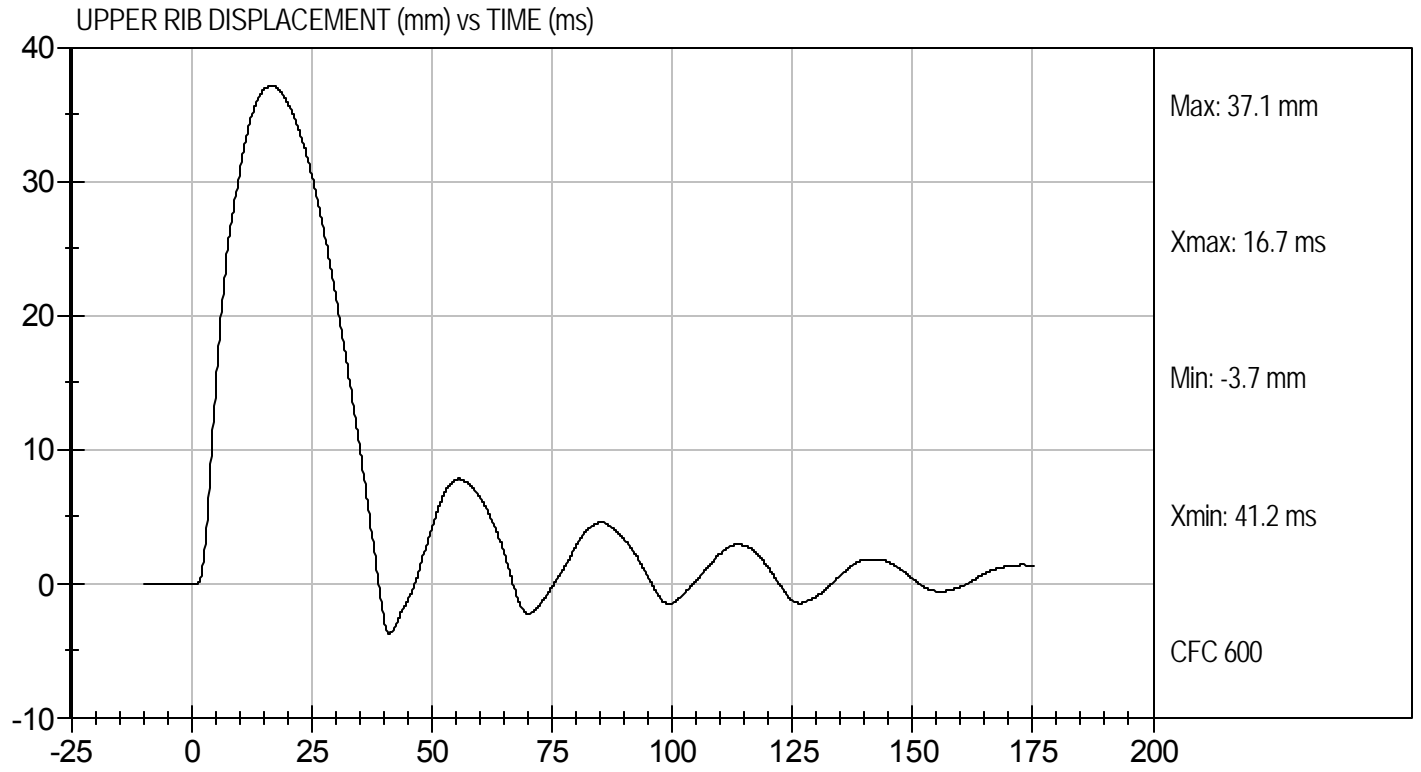
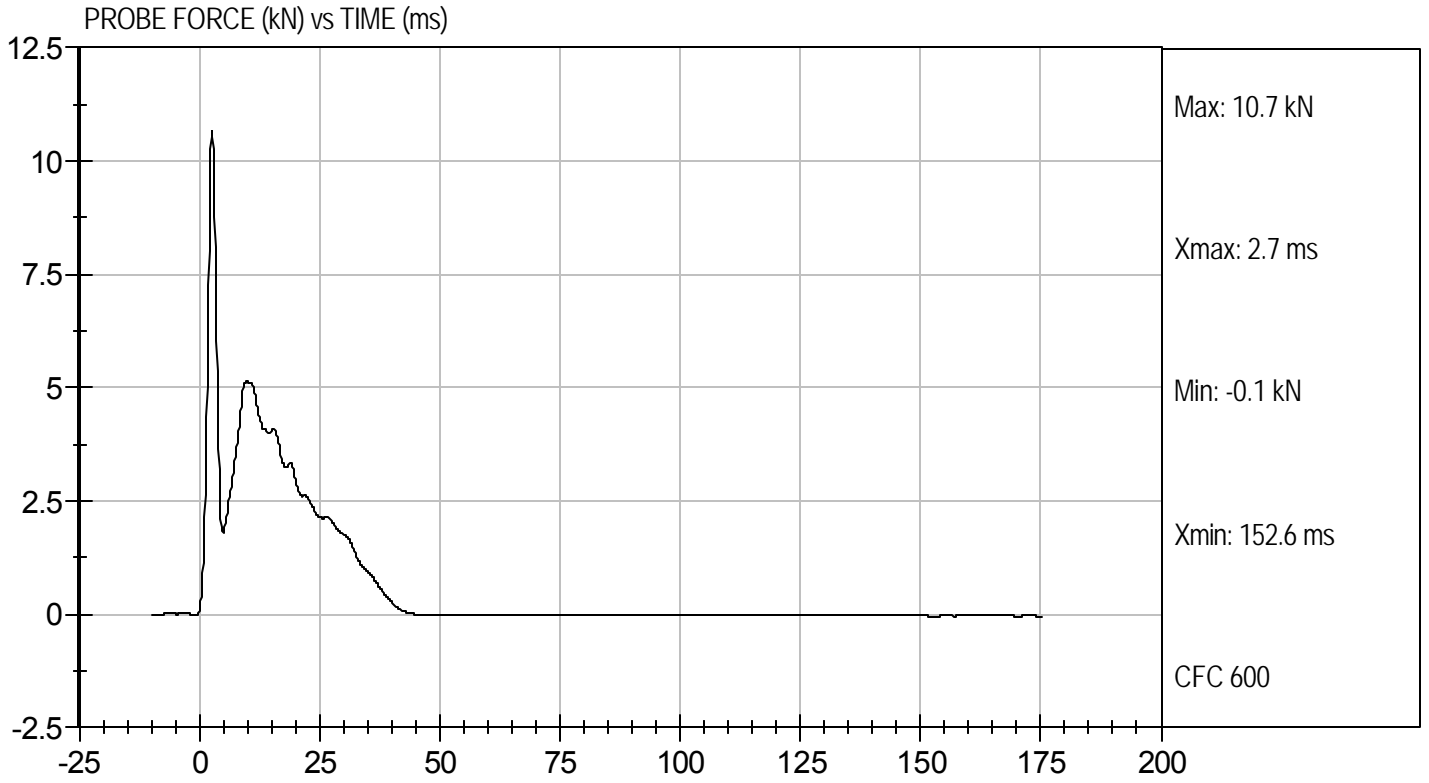
1/6/12
 Test Date

David Winkelbauer
 Approved By



Test Desc: Thorax Impact
Component ID: D12040

Test Date: 1/6/12
Velocity: 18.31 ft/s, 5.58 m/s

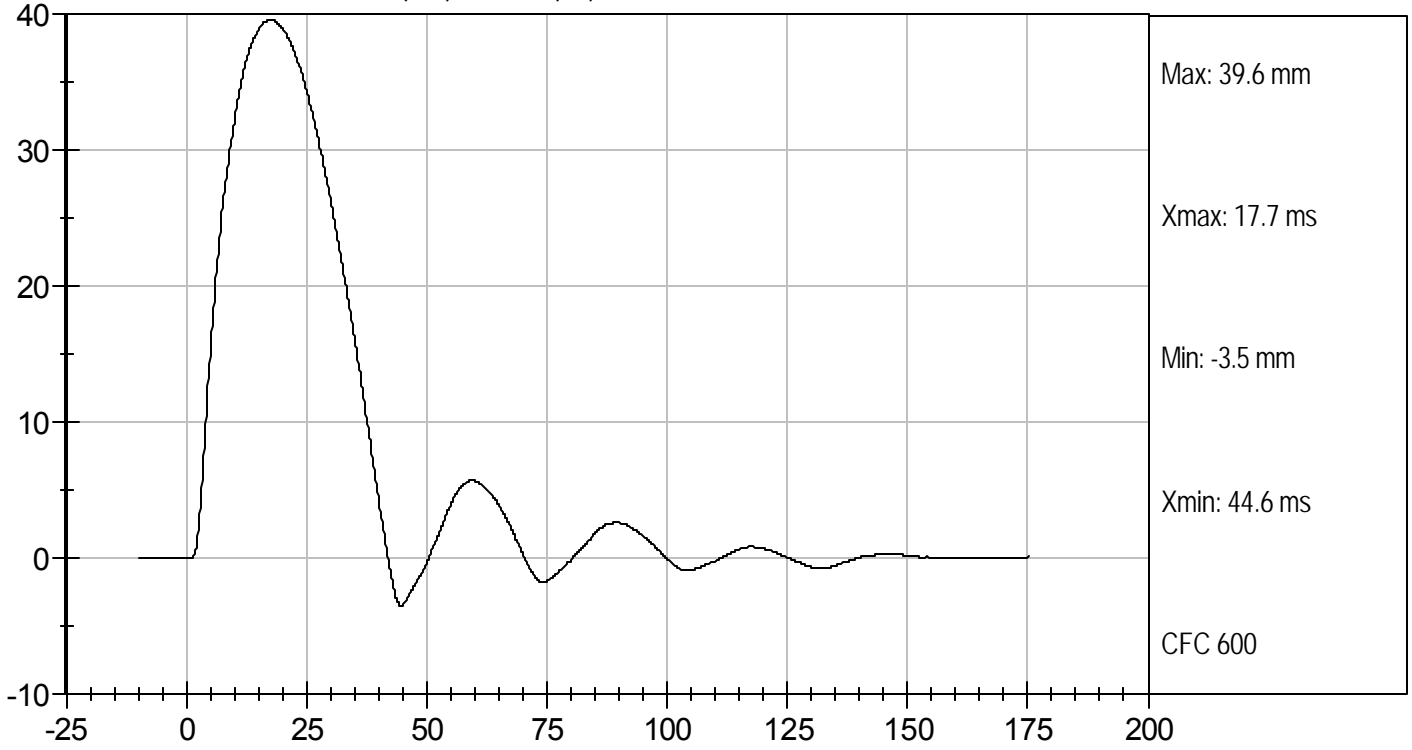




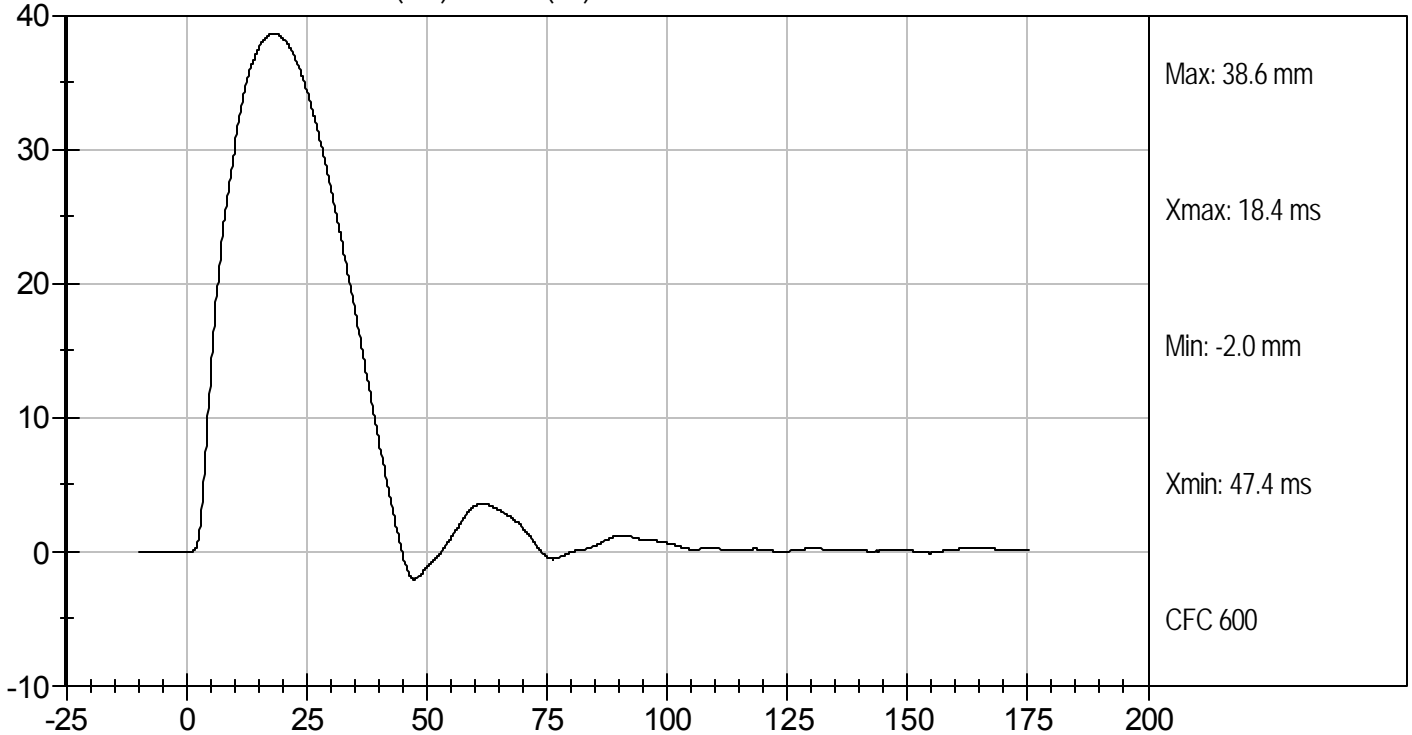
Test Desc: Thorax Impact
Component ID: D12040

Test Date: 1/6/12
Velocity: 18.31 ft/s, 5.58 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

ABDOMEN TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12047

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	25	Pass
Probe Speed	m/s	3.90 to 4.10	4.03	Pass
Maximum Impact Force	kN	4.00 to 4.80	4.35	Pass
Time of Maximum Impact Force	ms	10.60 to 13.00	10.90	Pass
Maximum Total Abdomen Force	kN	2.20 to 2.70	2.42	Pass
Time of Maximum Abdomen Force	ms	10.00 to 12.30	10.10	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

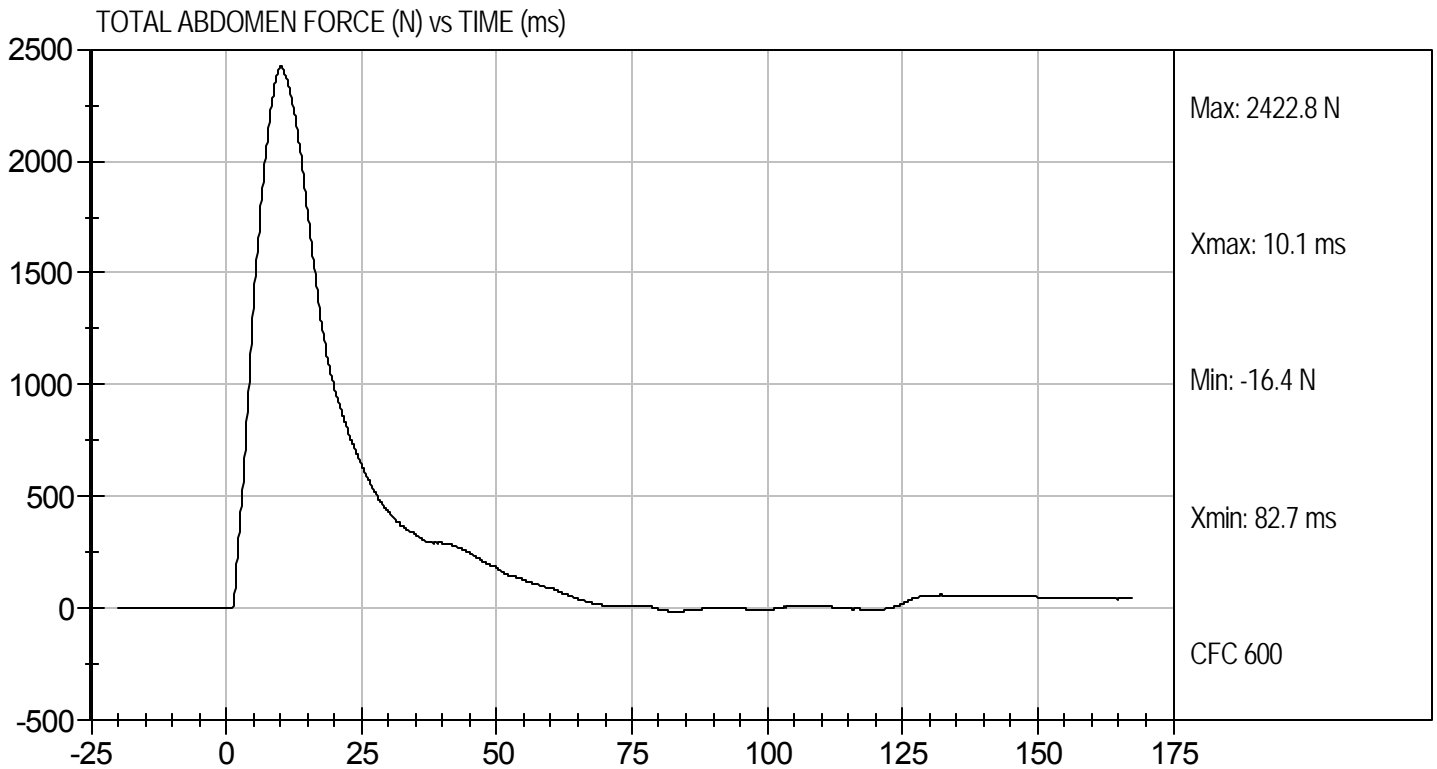
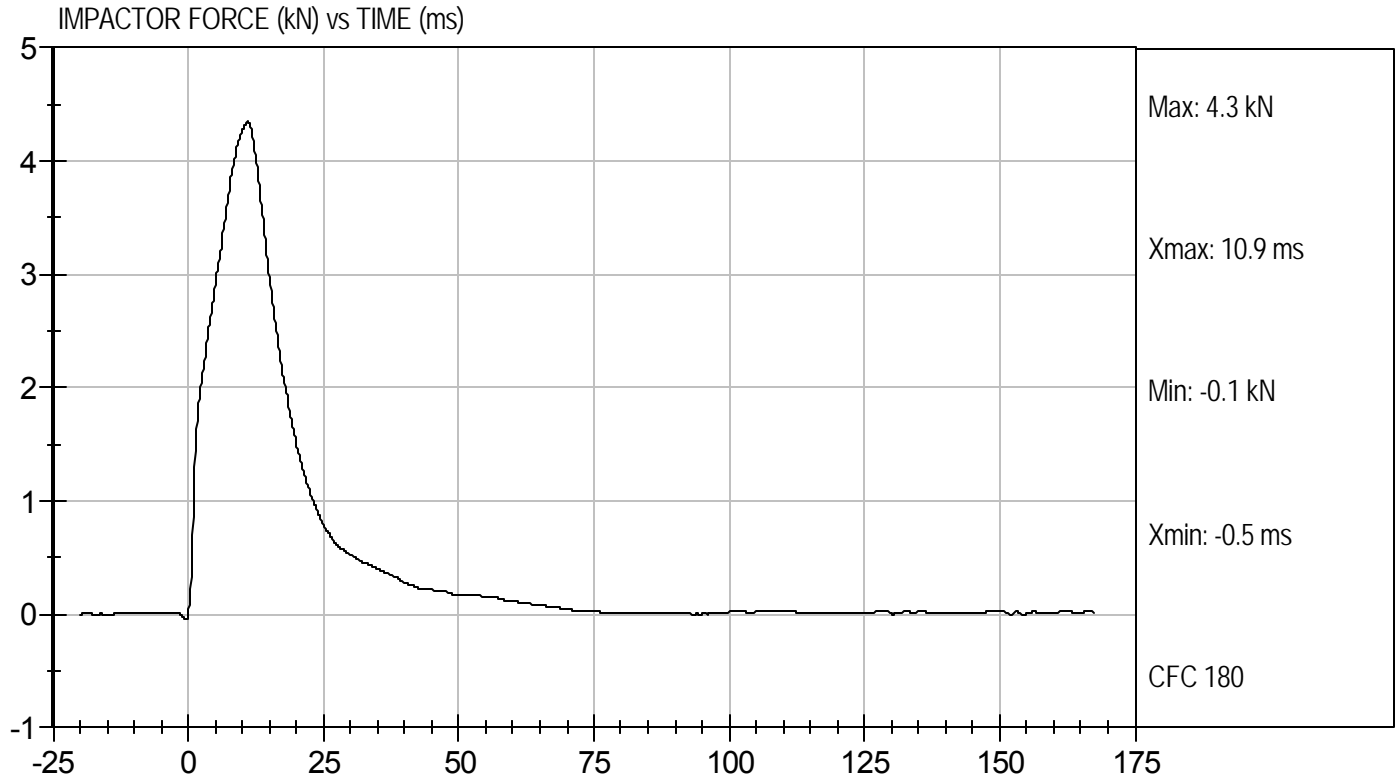
1/6/12
Test Date

David Winkelbauer
Approved By



Test Desc: Abdomen Impact
Component ID: D12047

Test Date: 1/6/12
Velocity: 13.22 ft/s, 4.03 m/s



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D.: D12048

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity		%	10 to 70	24	Pass
Pendulum Speed		m/s	5.95 to 6.15	6.12	Pass
Pendulum Deceleration	1 ms	m/s	-0.05 to 0.00	-0.00	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.40	Pass
	27 ms	m/s	-6.50 to -5.80	-5.93	Pass
	30 ms	m/s	>= -6.5	-5.82	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	46.3	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	43.4	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	43	Pass
Overall Results					Pass

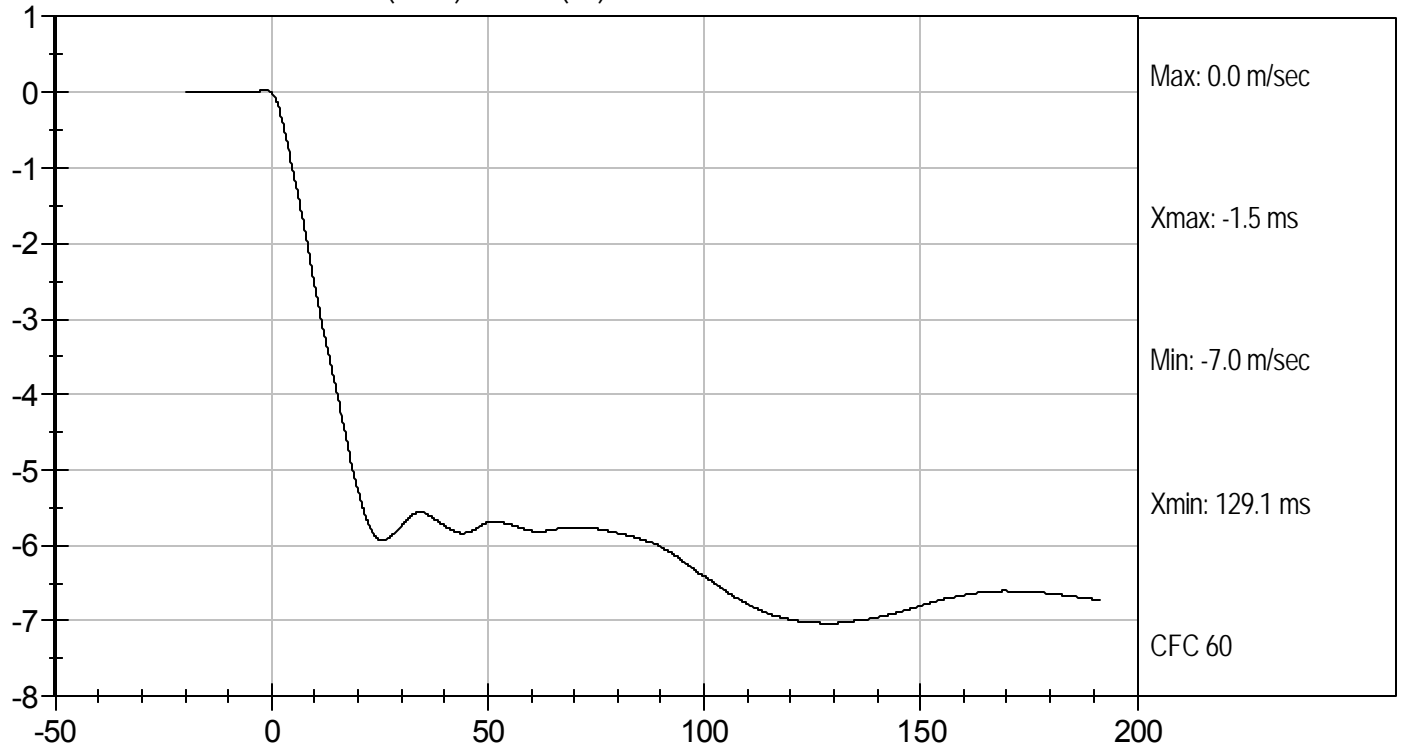
Jessica Hall
 Laboratory Technician

1/6/12
 Test Date

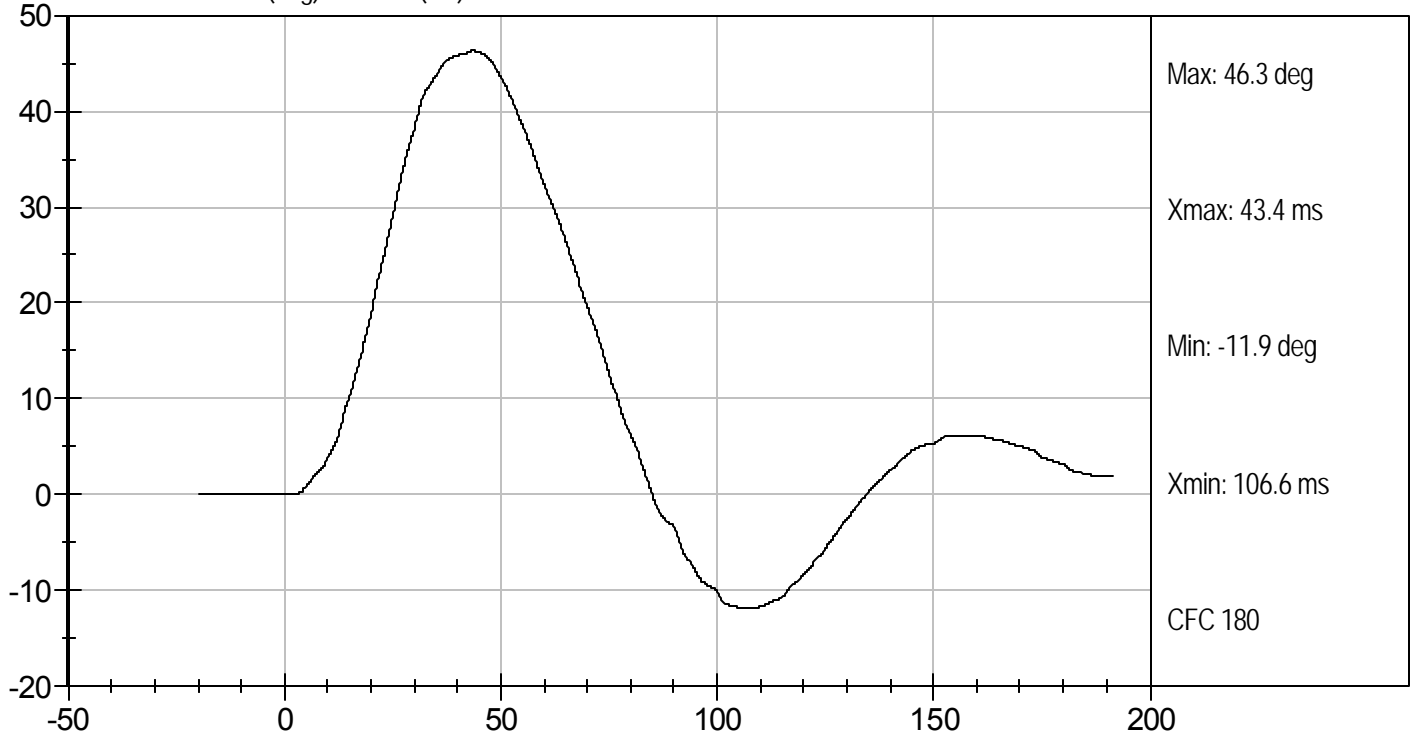
David Winkelbauer
 Approved By



PENDULUM DECELERATION (m/sec) vs TIME (ms)



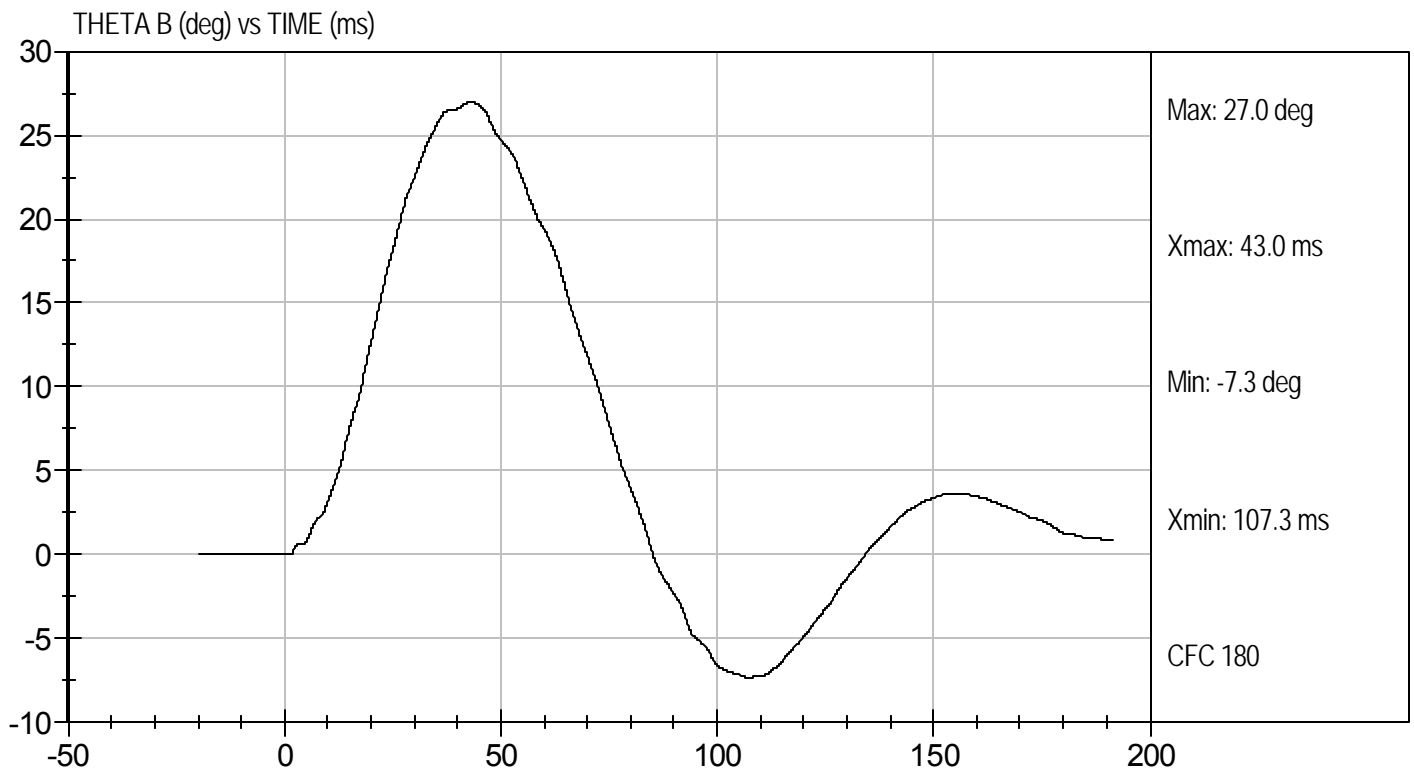
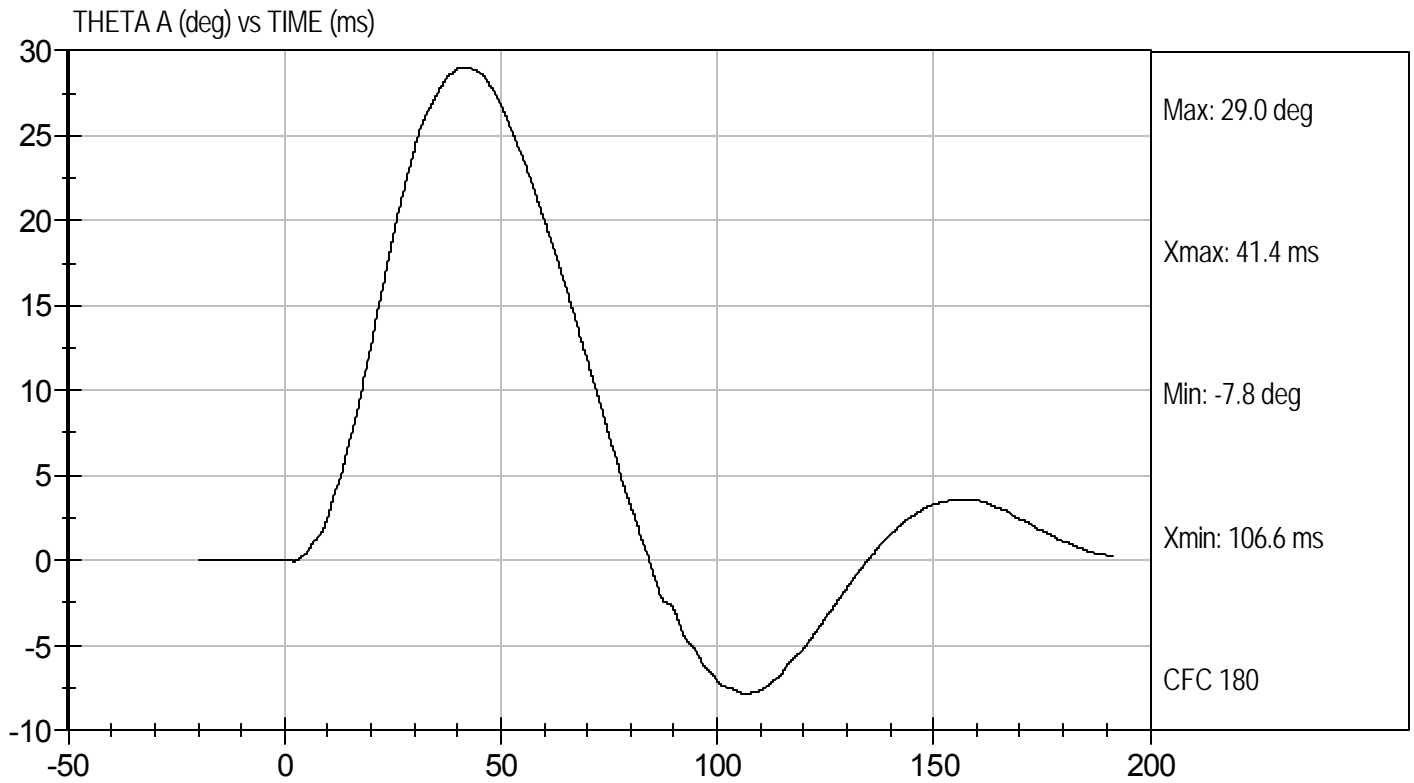
FLEXION ANGLE (deg) vs TIME (ms)





Test Desc: Lumbar Bending
Component ID: D12048

Test Date: 1/6/12
Velocity: 20.08 ft/s, 6.12 m/s




MGA RESEARCH CORPORATION

PELVIS TEST
ES-2re DUMMY


ATD Serial No: 032

Test I.D: D12049

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	25	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	kN	4.70 to 5.40	4.87	Pass
Time of Maximum Impactor Force	ms	11.80 to 16.10	13.20	Pass
Maximum Pubic Force	kN	1.23 to 1.59	1.28	Pass
Time of Maximum Pubic Force	ms	12.20 to 17.00	14.60	Pass
Overall Test Results				Pass


Laboratory Technician

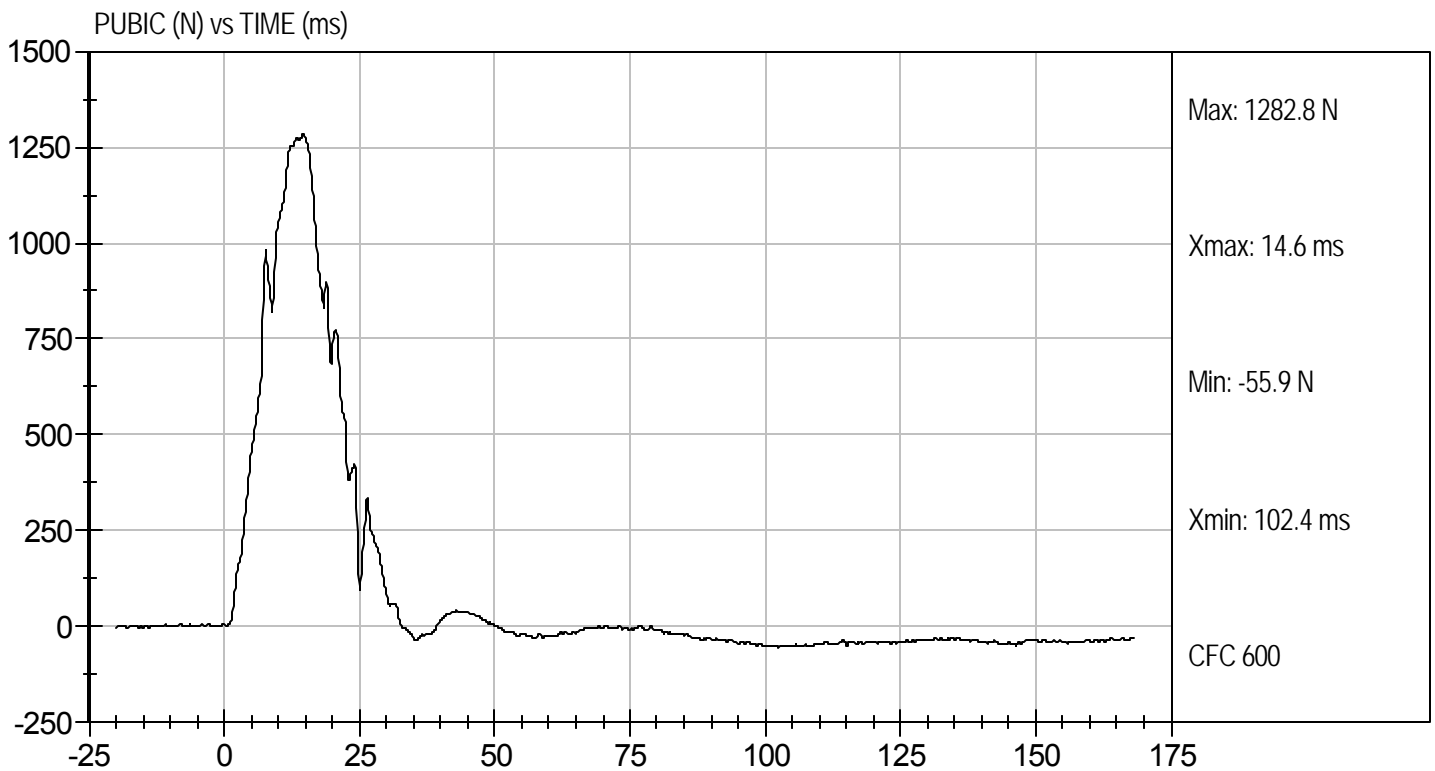
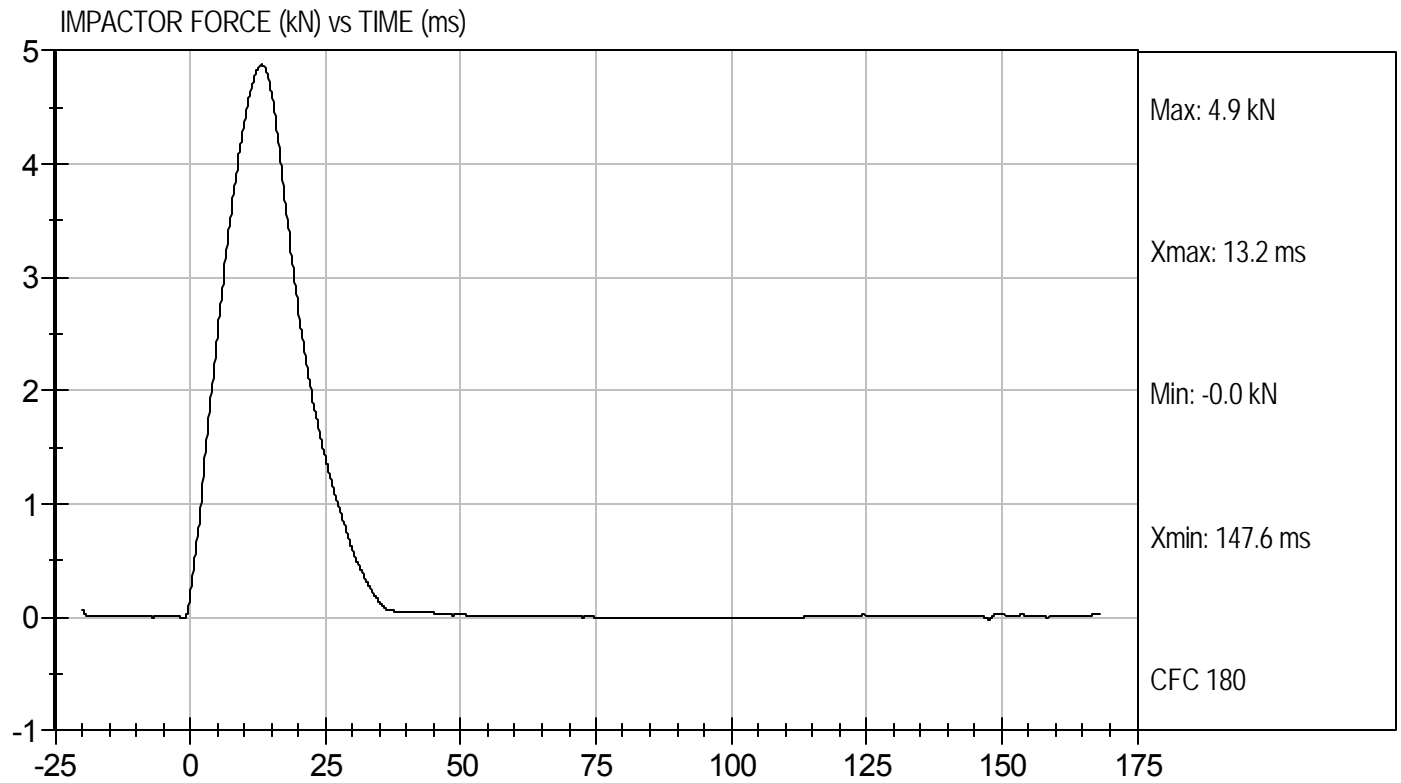
1/6/12
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D12049

Test Date: 1/6/12
Velocity: 14.12 ft/s, 4.3 m/s



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-Its BUILD LEVEL D DUMMY

ATD Serial No: 306

Test ID: D114401

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Peak Resultant Acceleration	G's	115 to 137	122	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-3.2	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

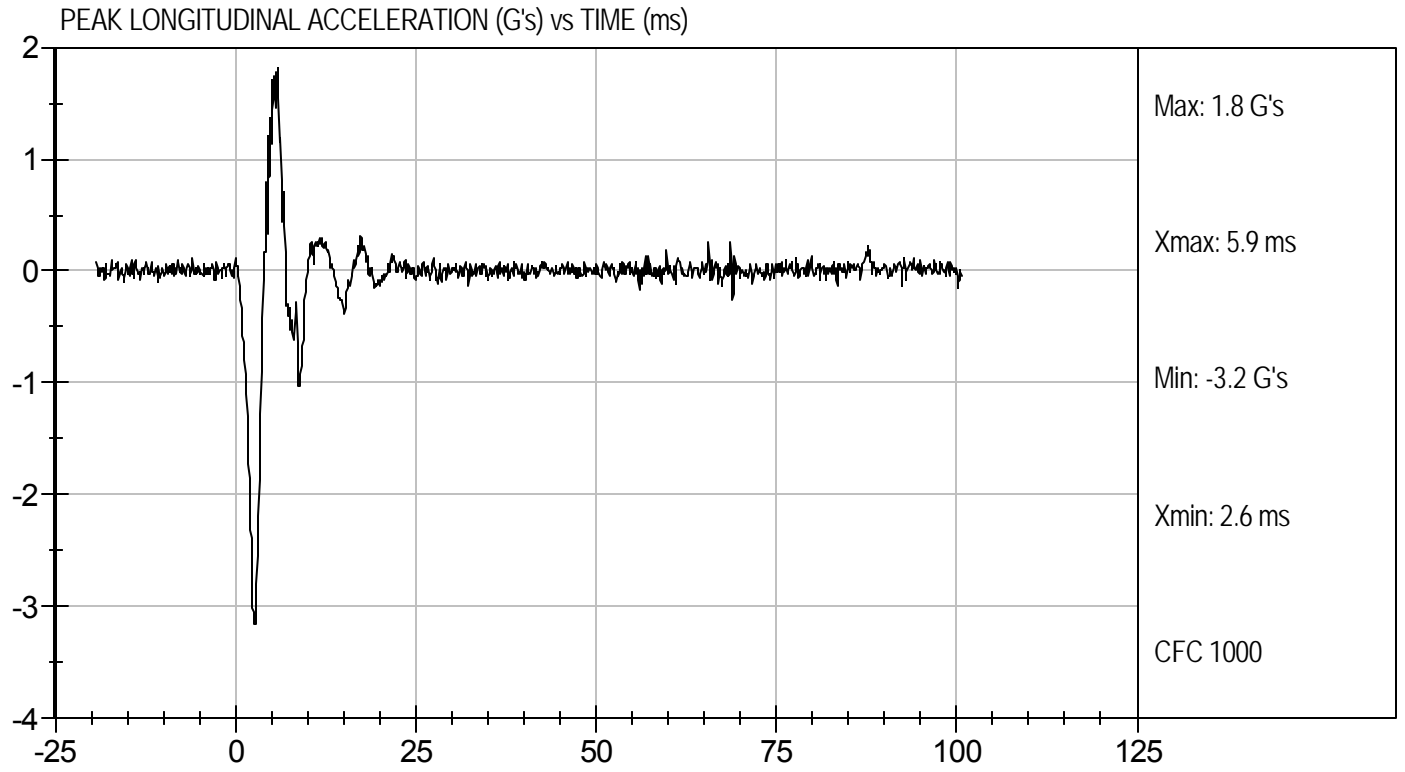
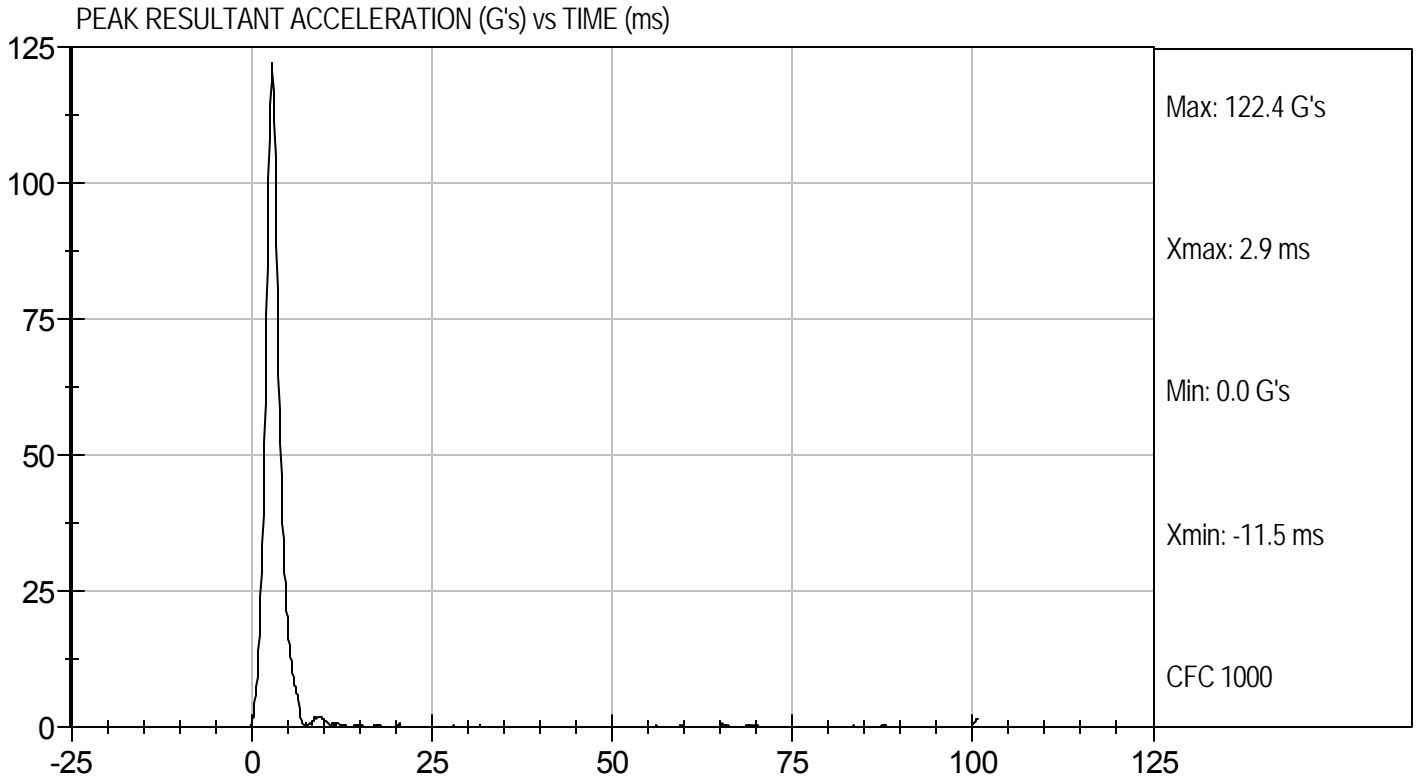
12/23/11
Test Date

David Winkelbauer
Approved By



Test Desc: Head Drop
Component ID: D114401

Test Date: 12/23/11
Velocity: 0 ft/s, 0 m/s



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

ATD Serial No: 306

Test I.D.: D114402

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	22.0	Pass
Humidity		%	10 to 70	17	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.41	Pass
	15 ms	m/s	3.30 to 4.10	3.41	Pass
	20 ms	m/s	4.40 to 5.40	4.60	Pass
	25 ms	m/s	5.40 to 6.10	5.47	Pass
	25-100 ms	m/s	5.50 to 6.20	5.61	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 during Rotation Interval Nm			-44 to -36	-40	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	119	Pass
				Overall Test Results	Pass

Jessica Hall
Laboratory Technician

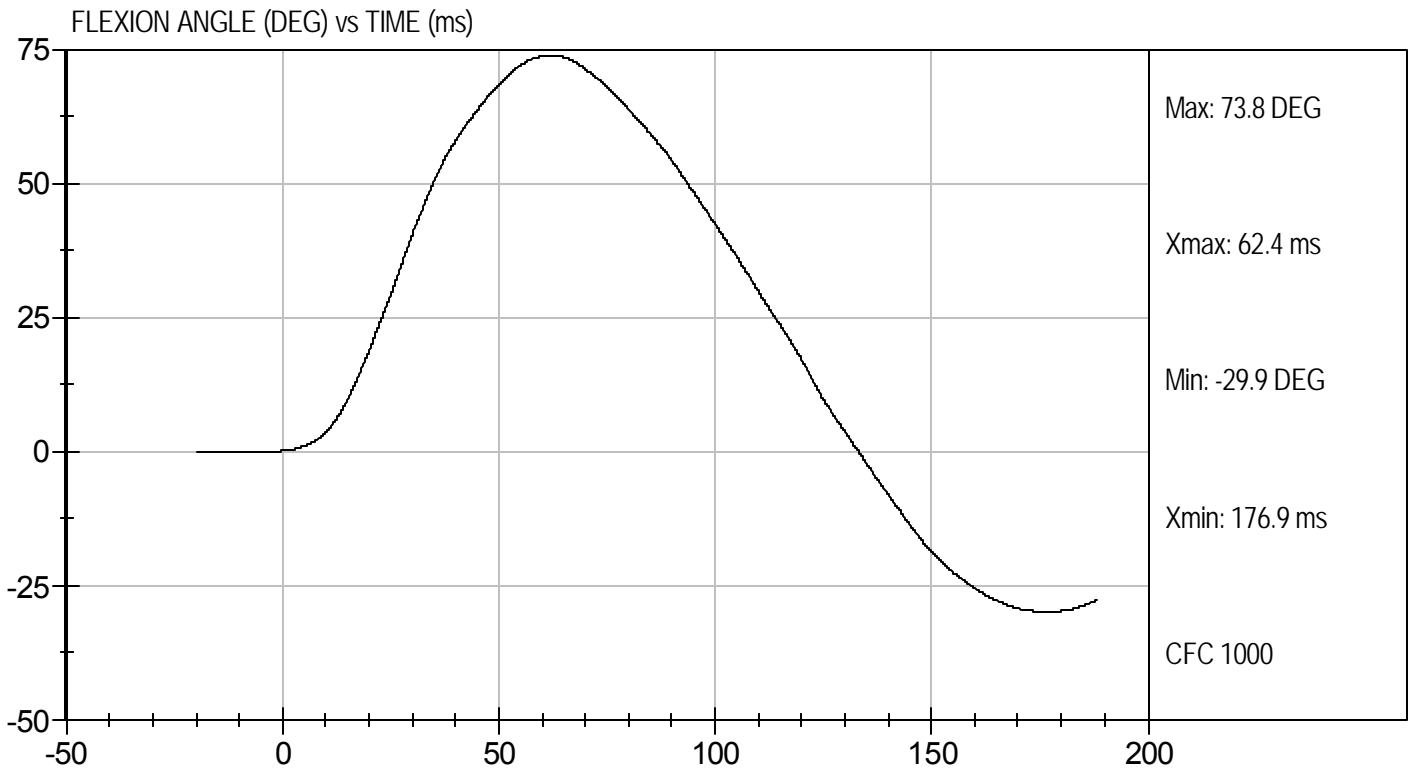
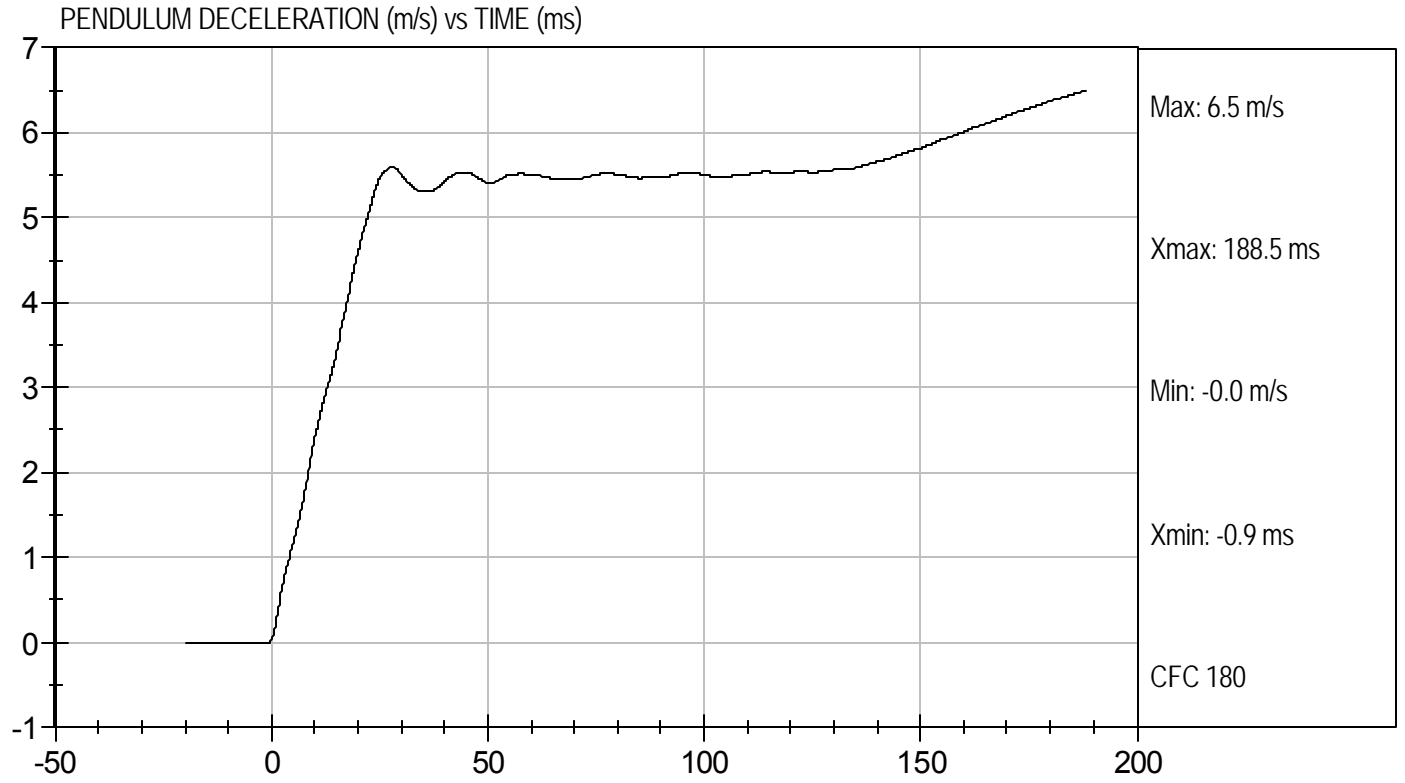
12/23/11
Test Date

David Winkelbauer
Approved By



Test Desc: Neck Bending
Component ID: D114402

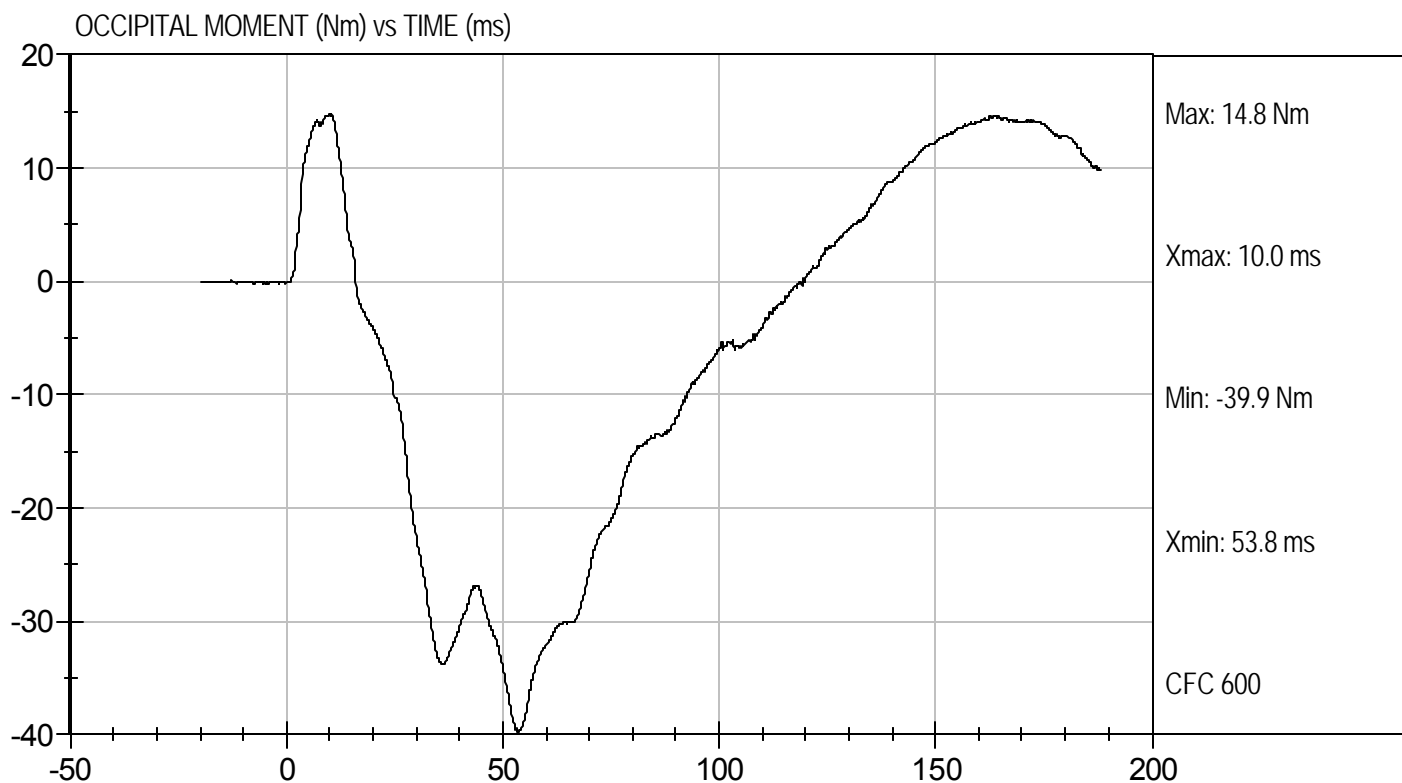
Test Date: 12/23/11
Velocity: 18.31 ft/s, 5.58 m/s





Test Desc: Neck Bending
Component ID: D114402

Test Date: 12/23/11
Velocity: 18.31 ft/s, 5.58 m/s



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

ATD Serial No: 306

Test ID: D114403

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	17	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	29	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

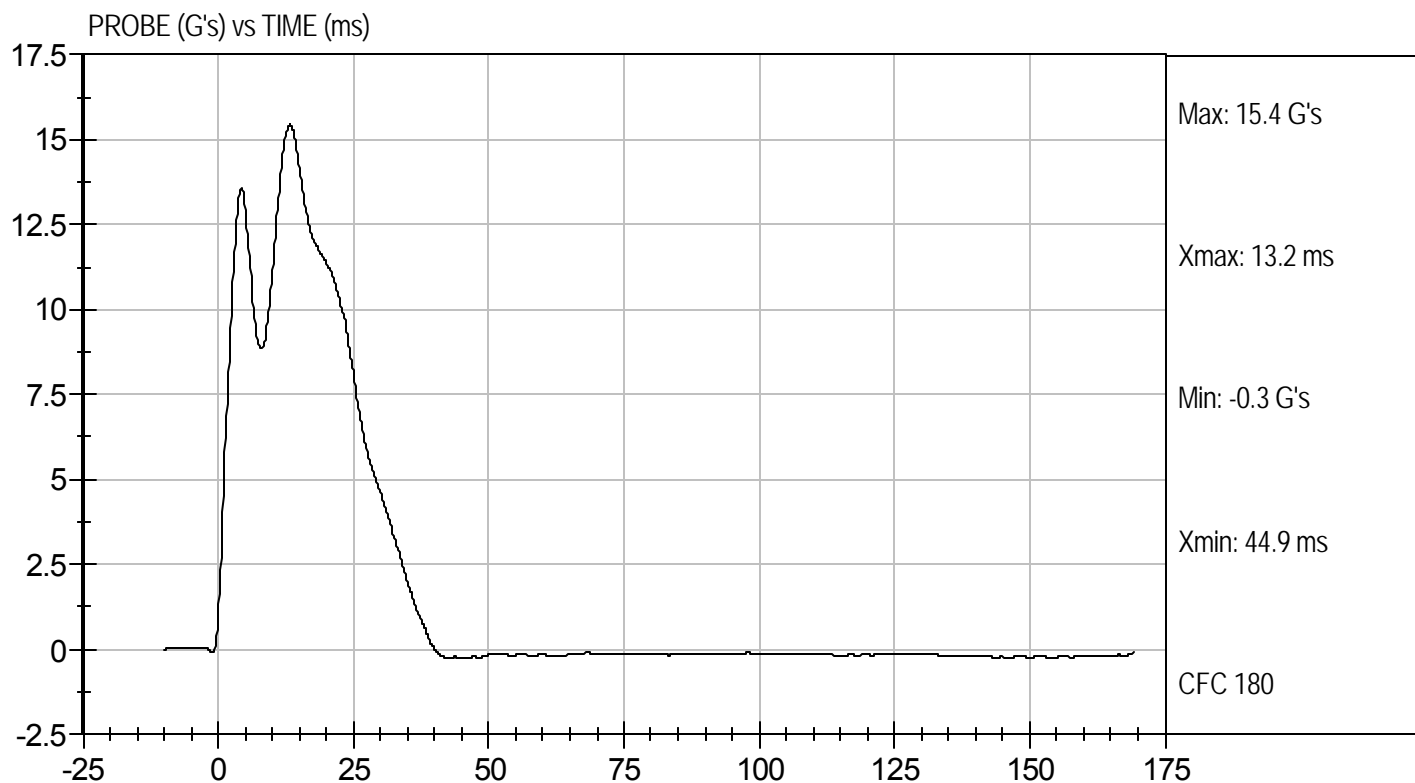
12/23/11
 Test Date

David Winkelbauer
 Approved By



Test Desc: Shoulder Impact
Component ID: D114403

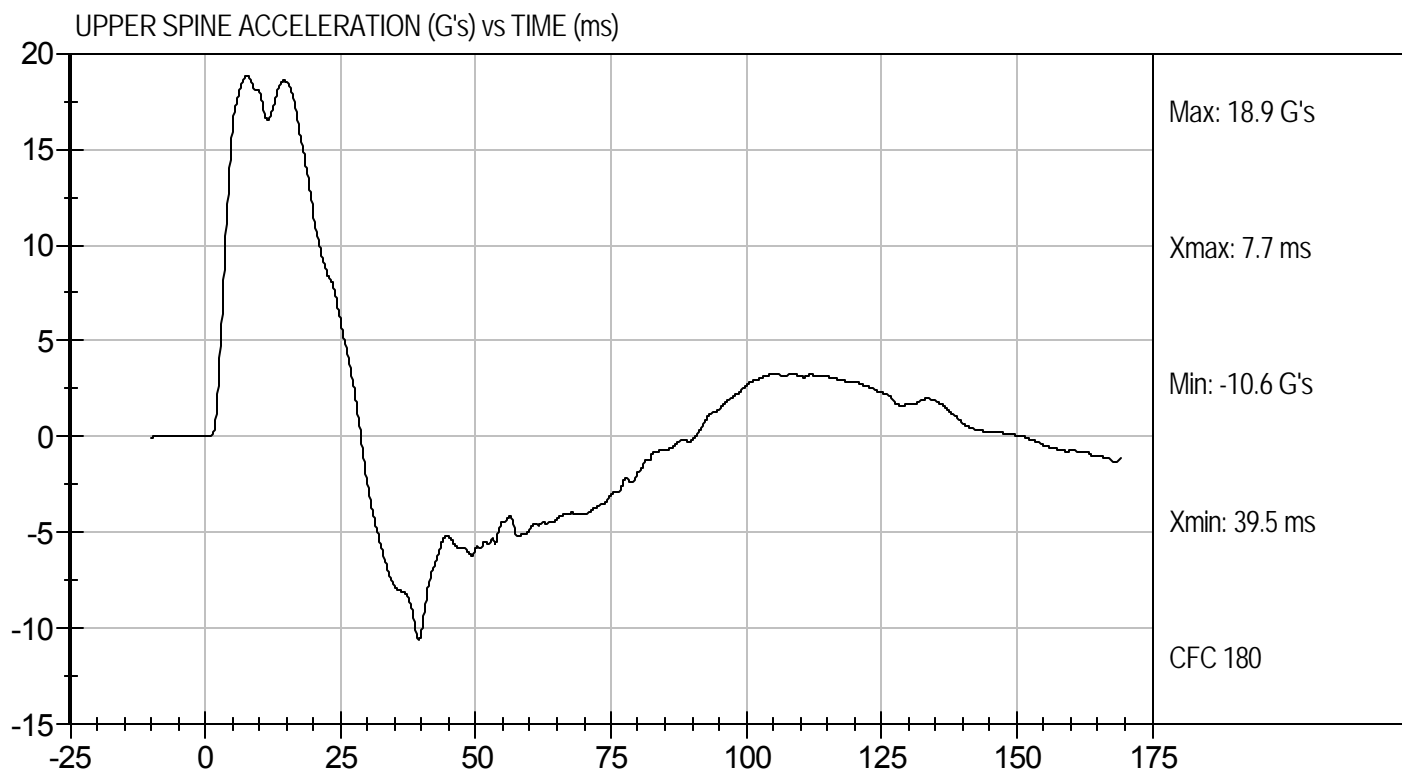
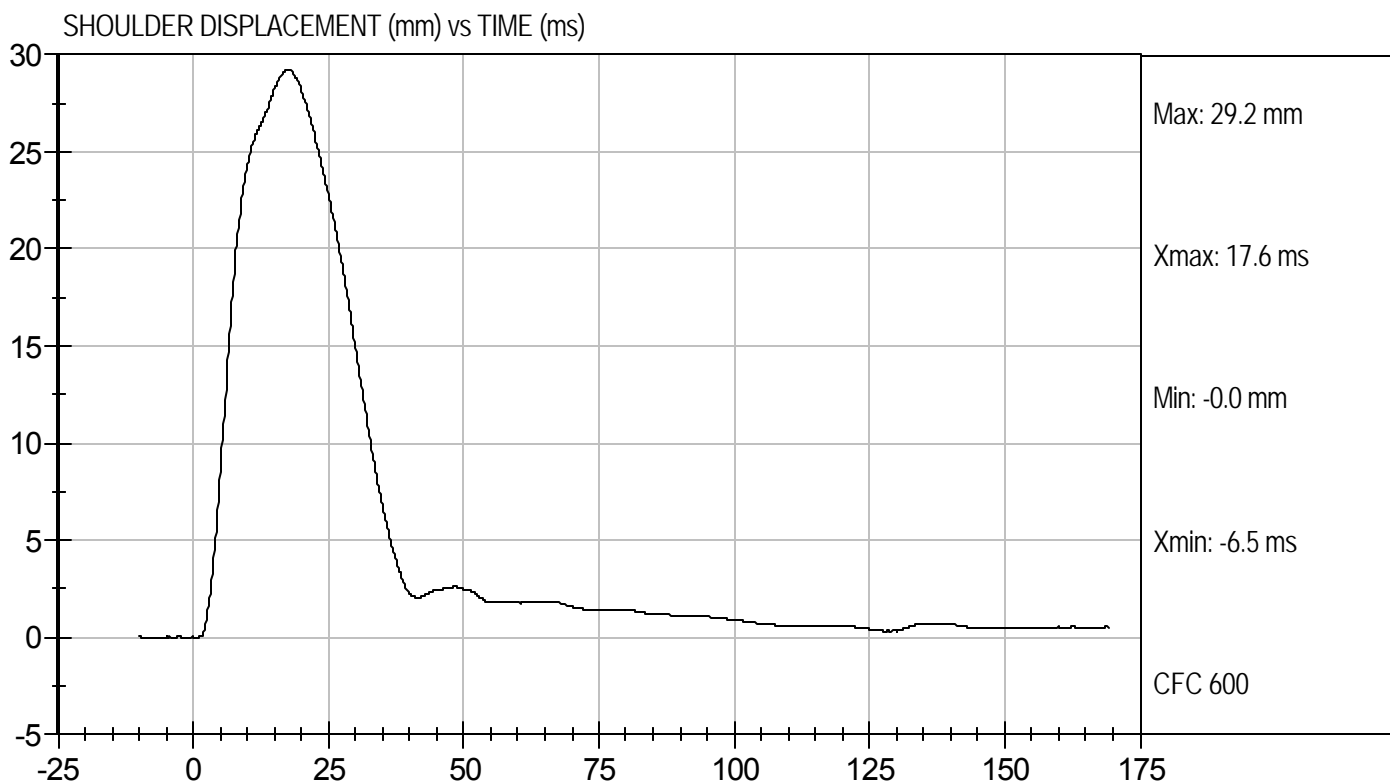
Test Date: 12/23/11
Velocity: 14.24 ft/s, 4.34 m/s





Test Desc: Shoulder Impact
Component ID: D114403

Test Date: 12/23/11
Velocity: 14.24 ft/s, 4.34 m/s



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

ATD Serial No: 306

Test I.D: D114404

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	34	Pass
Shoulder Displacement	mm	31 to 40	33	Pass
Upper Rib Displacement	mm	25 to 32	26	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	41	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

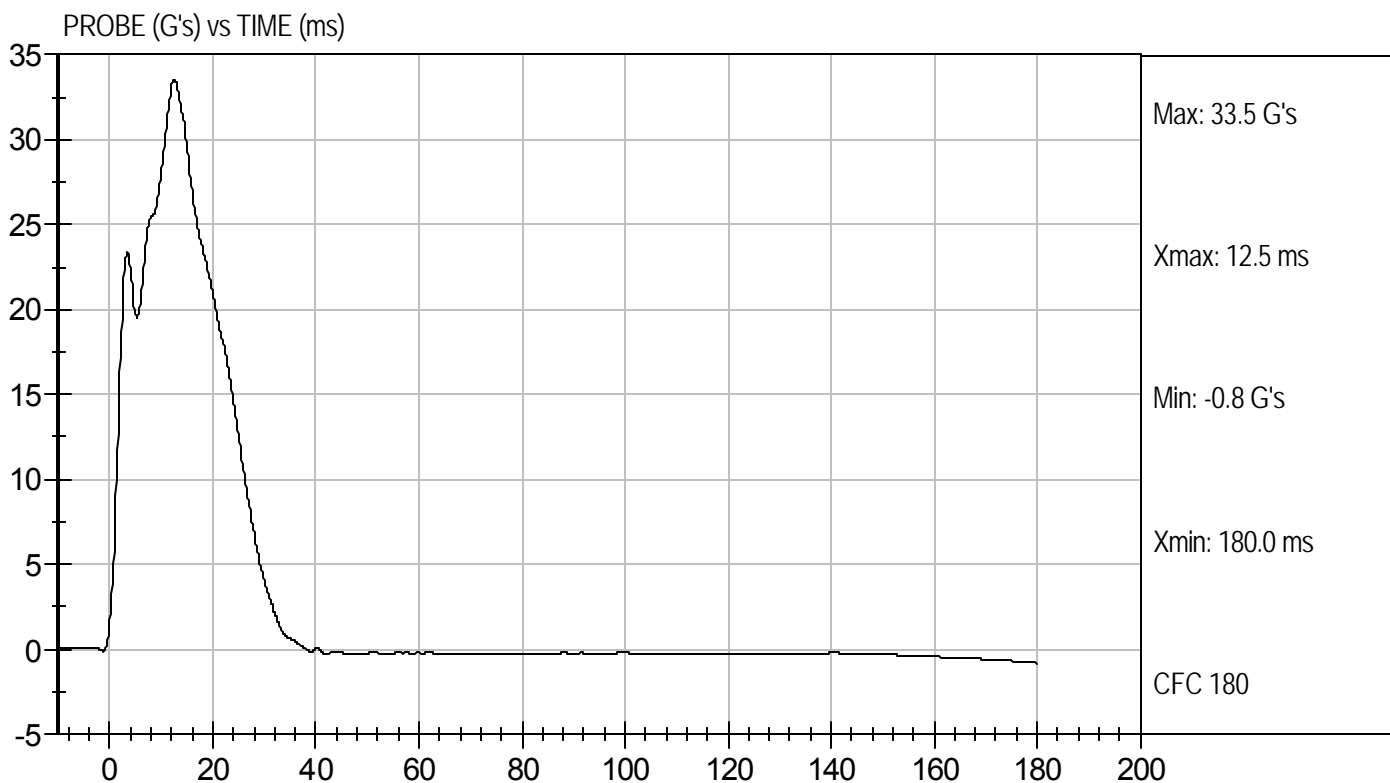
12/23/11
Test Date

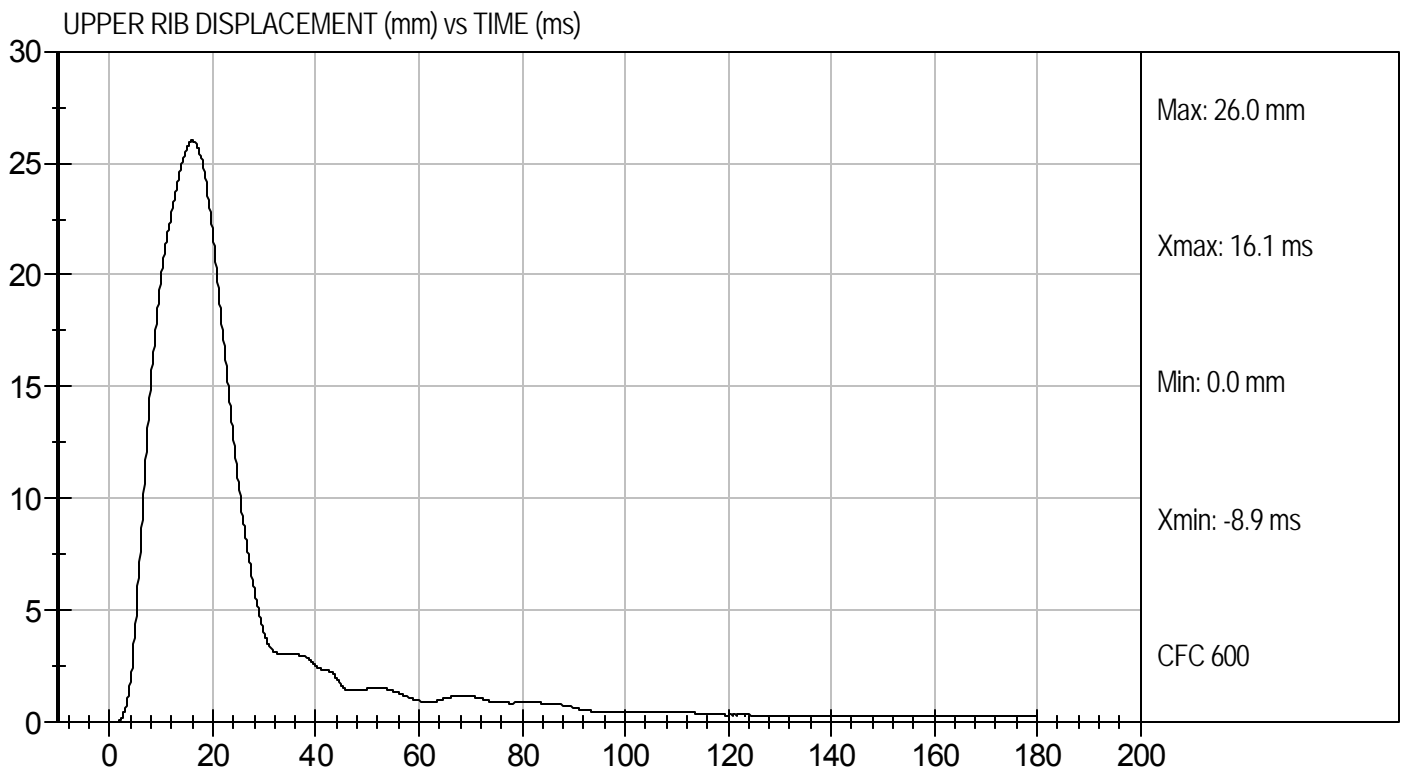
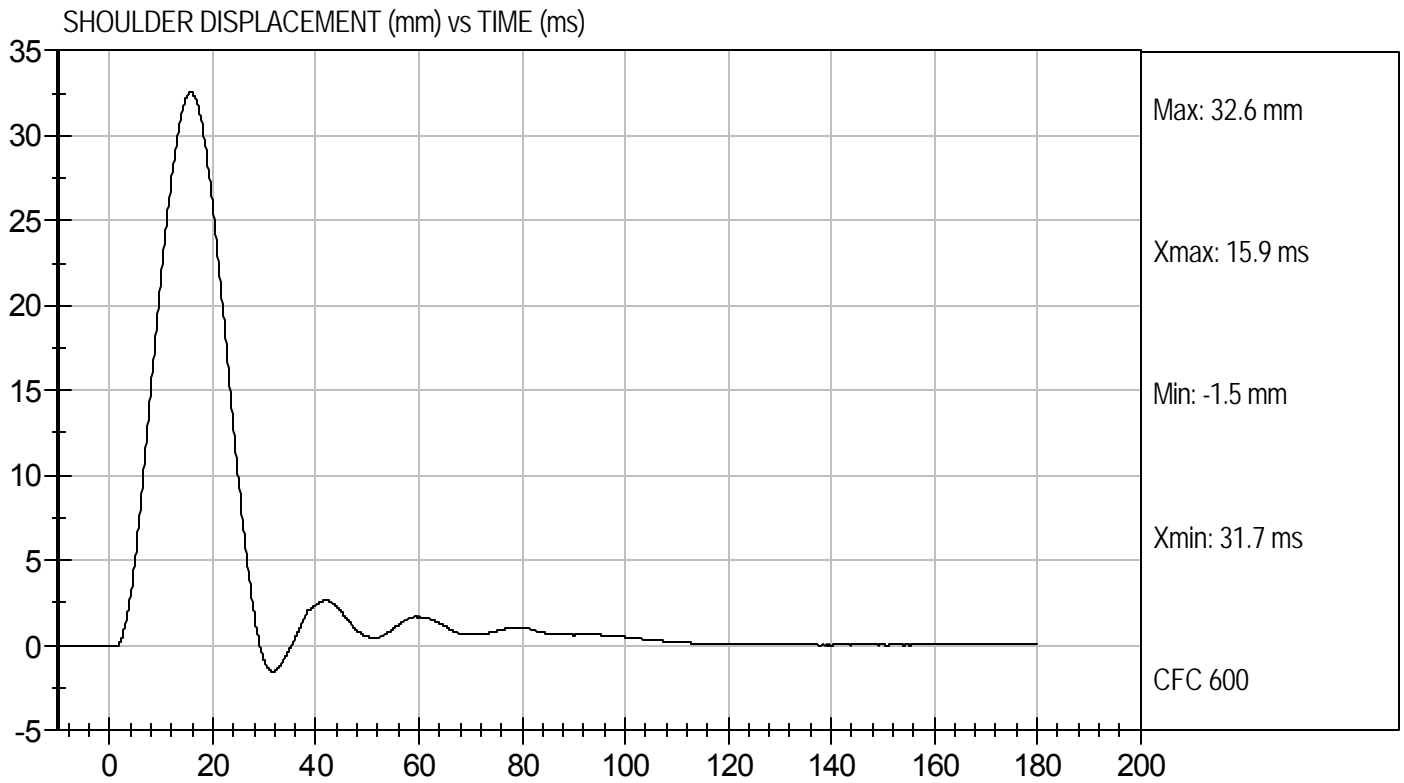
David Winkelbauer
Approved By

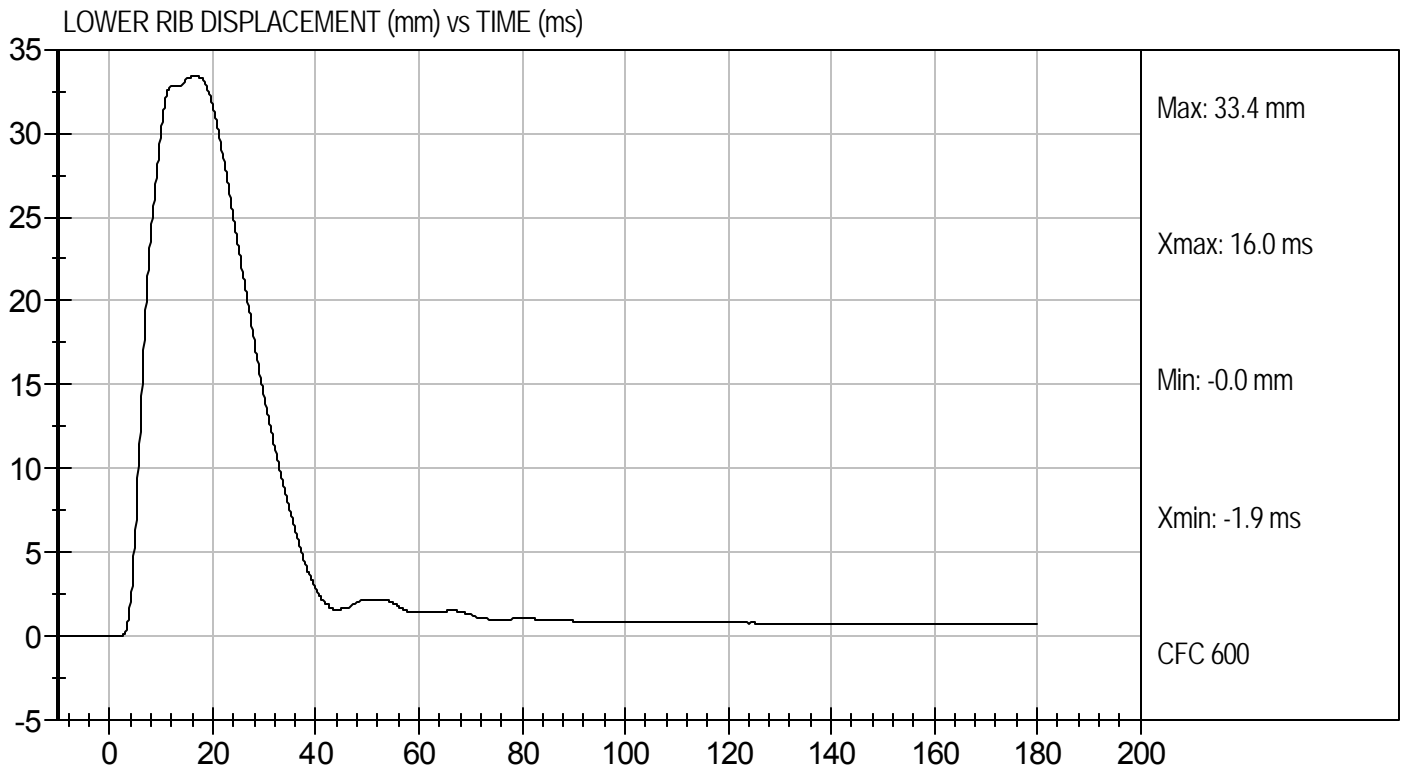
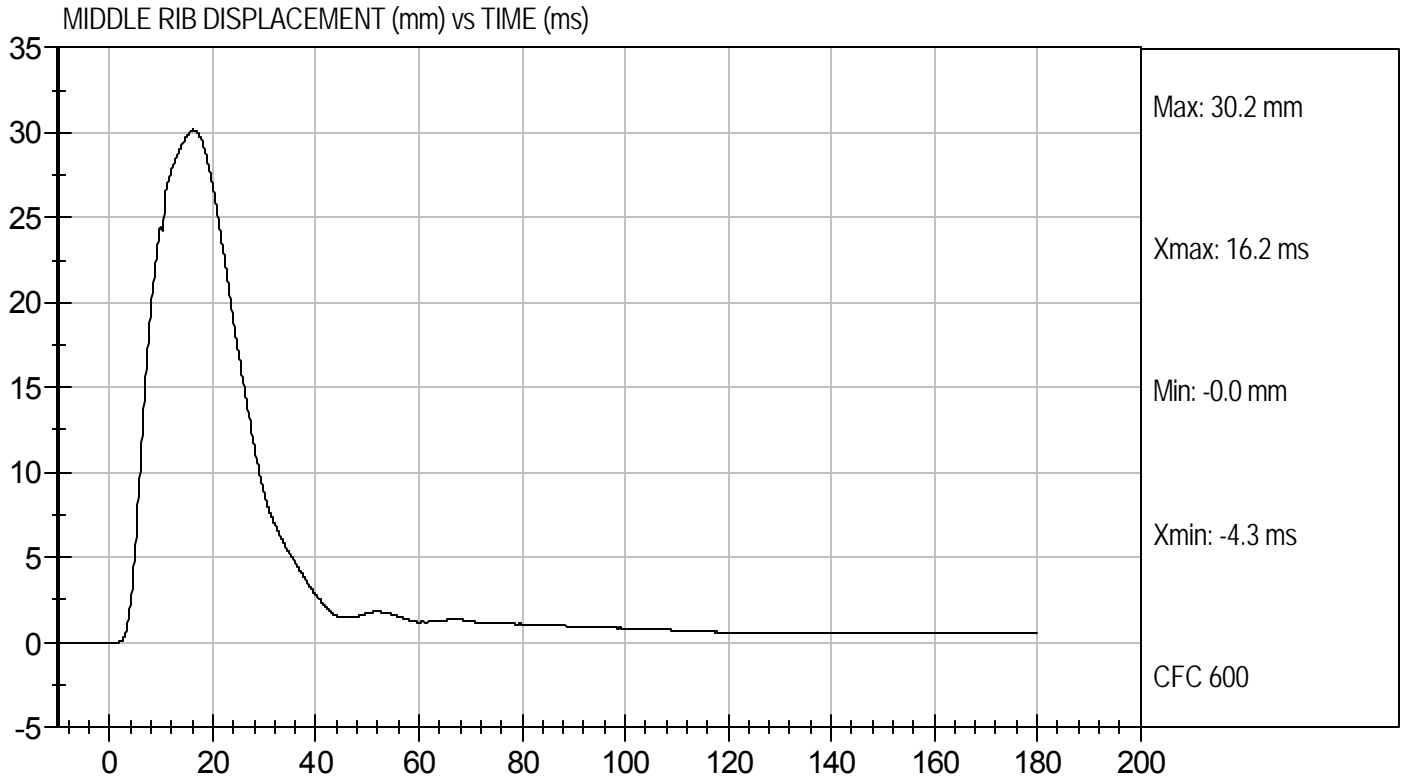


Test Desc: Thorax With Arm
Component ID: D114404

Test Date: 12/23/11
Velocity: 22.22 ft/s, 6.77 m/s





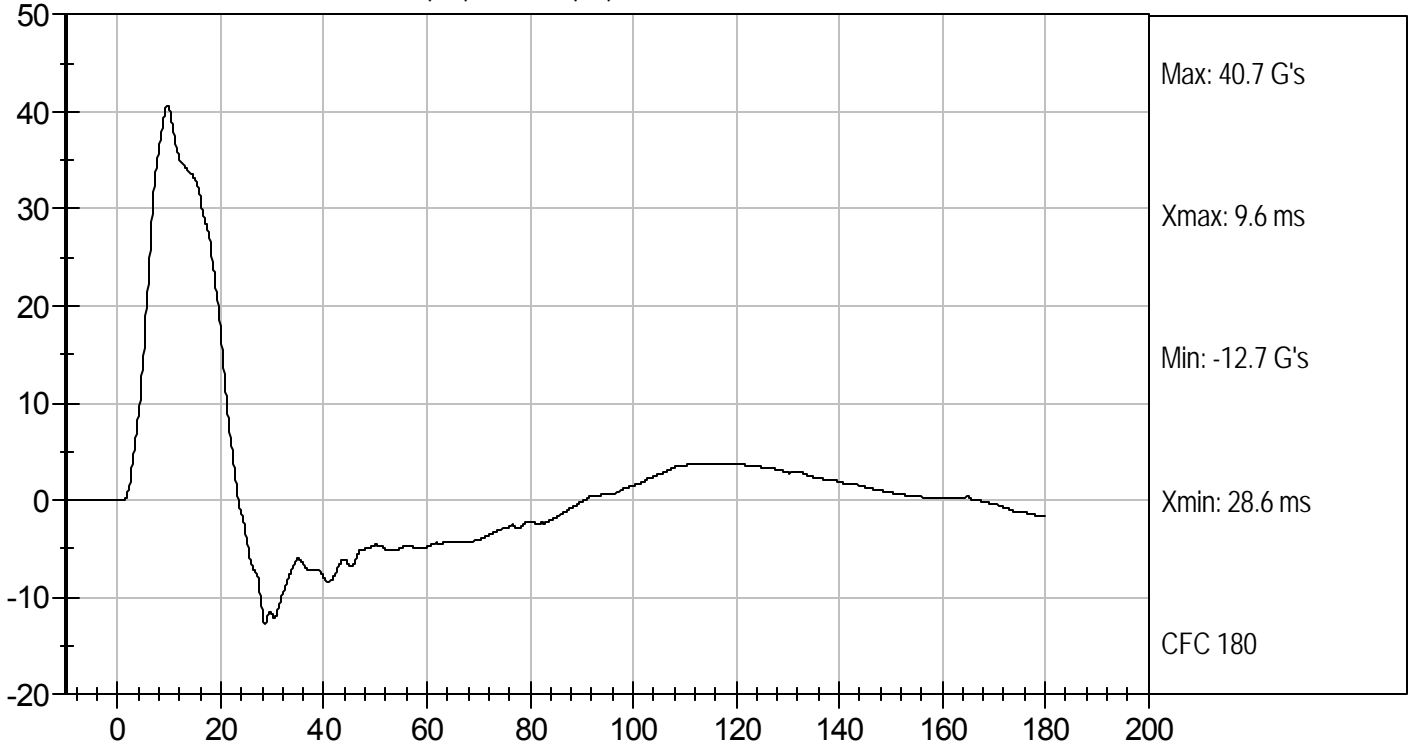




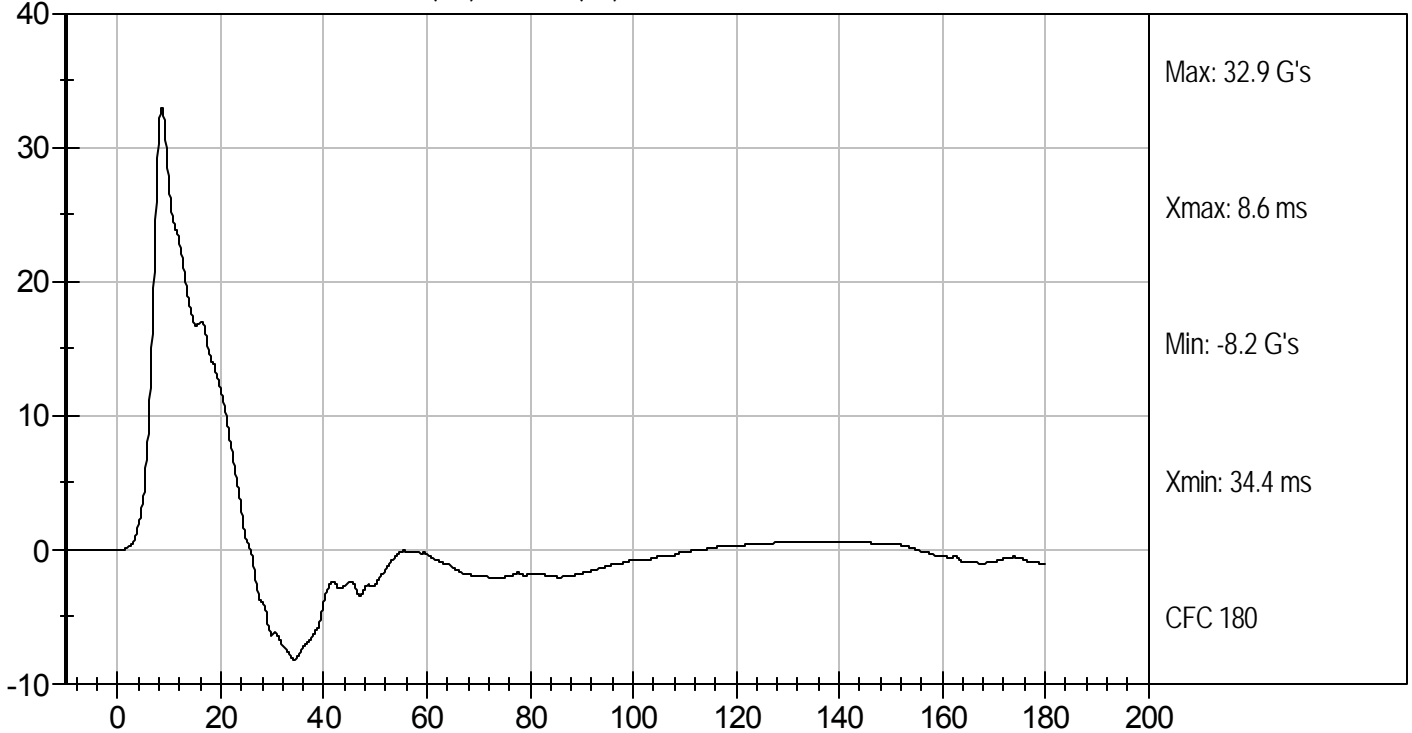
Test Desc: Thorax With Arm
Component ID: D114404

Test Date: 12/23/11
Velocity: 22.22 ft/s, 6.77 m/s

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



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



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


ATD Serial No: 306

Test I.D: D114405

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Force	G's	14 to 18	16	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	40	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
Overall Test Results				Pass


 Laboratory Technician

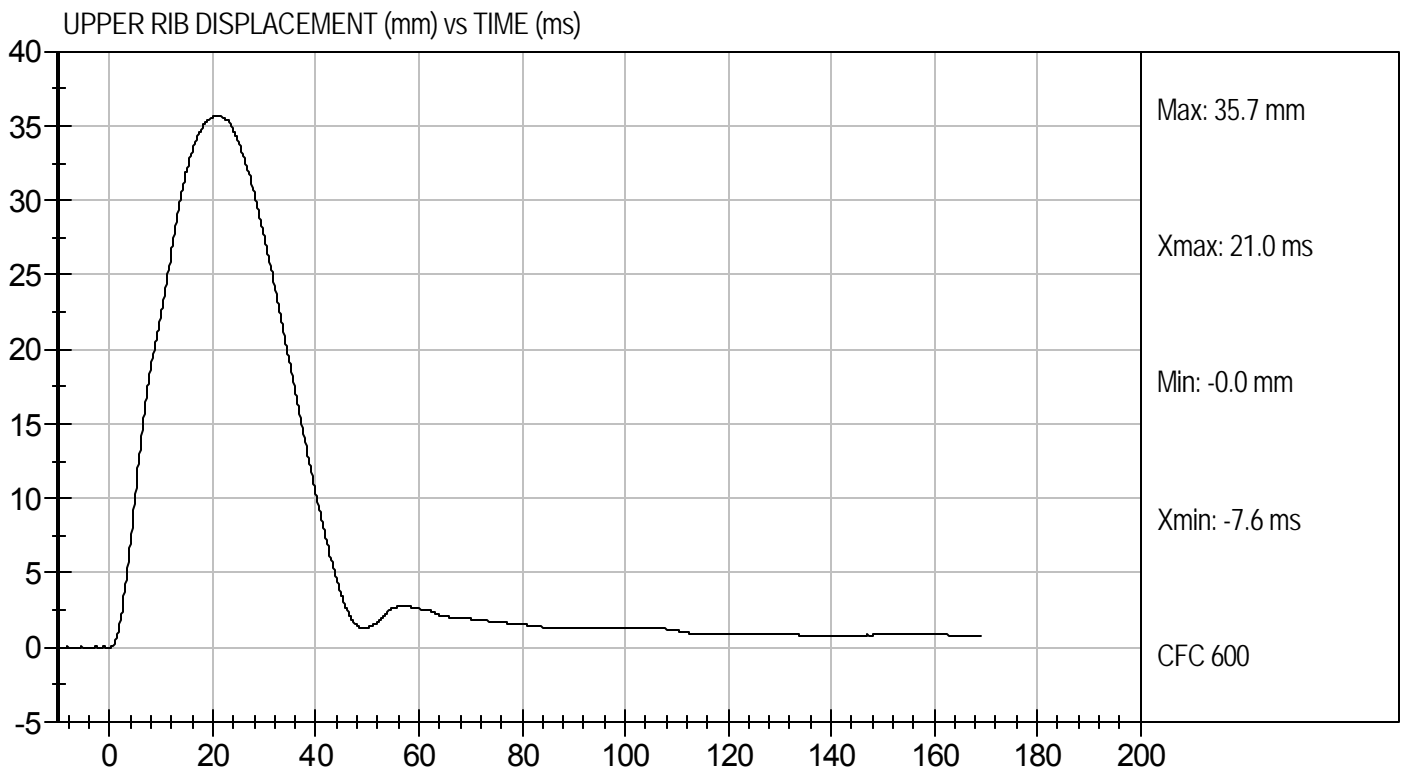
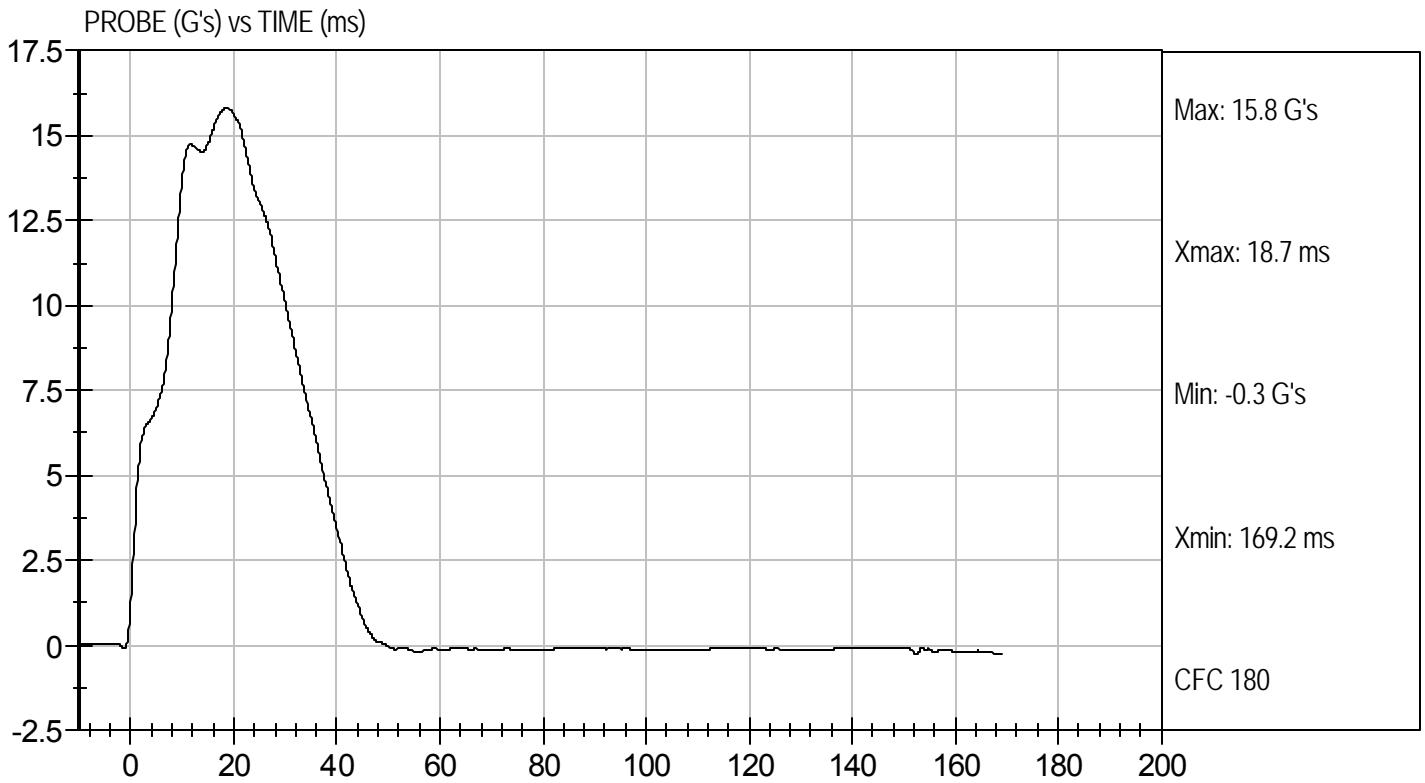
12/23/11
 Test Date


 Approved By



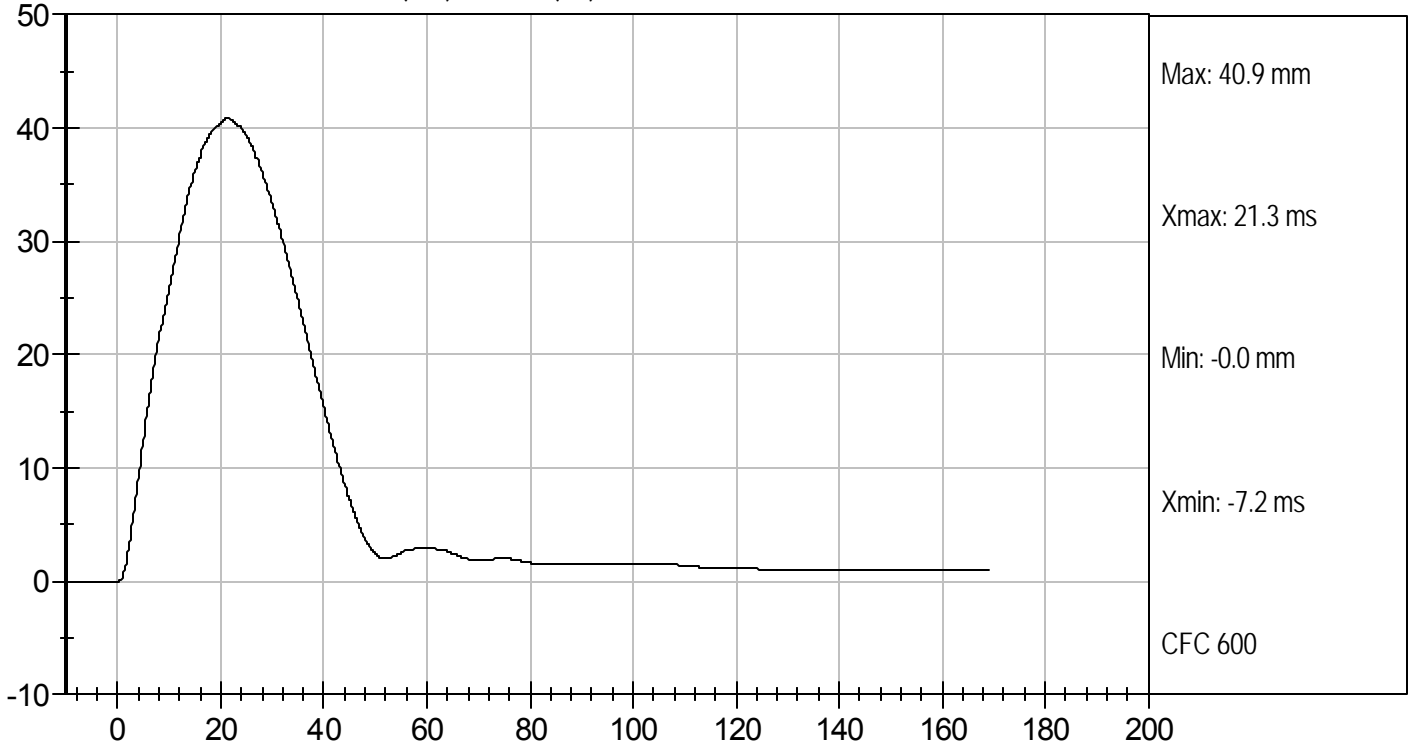
Test Desc: Thorax Without Arm
Component ID: D114405

Test Date: 12/23/11
Velocity: 14.36 ft/s, 4.38 m/s

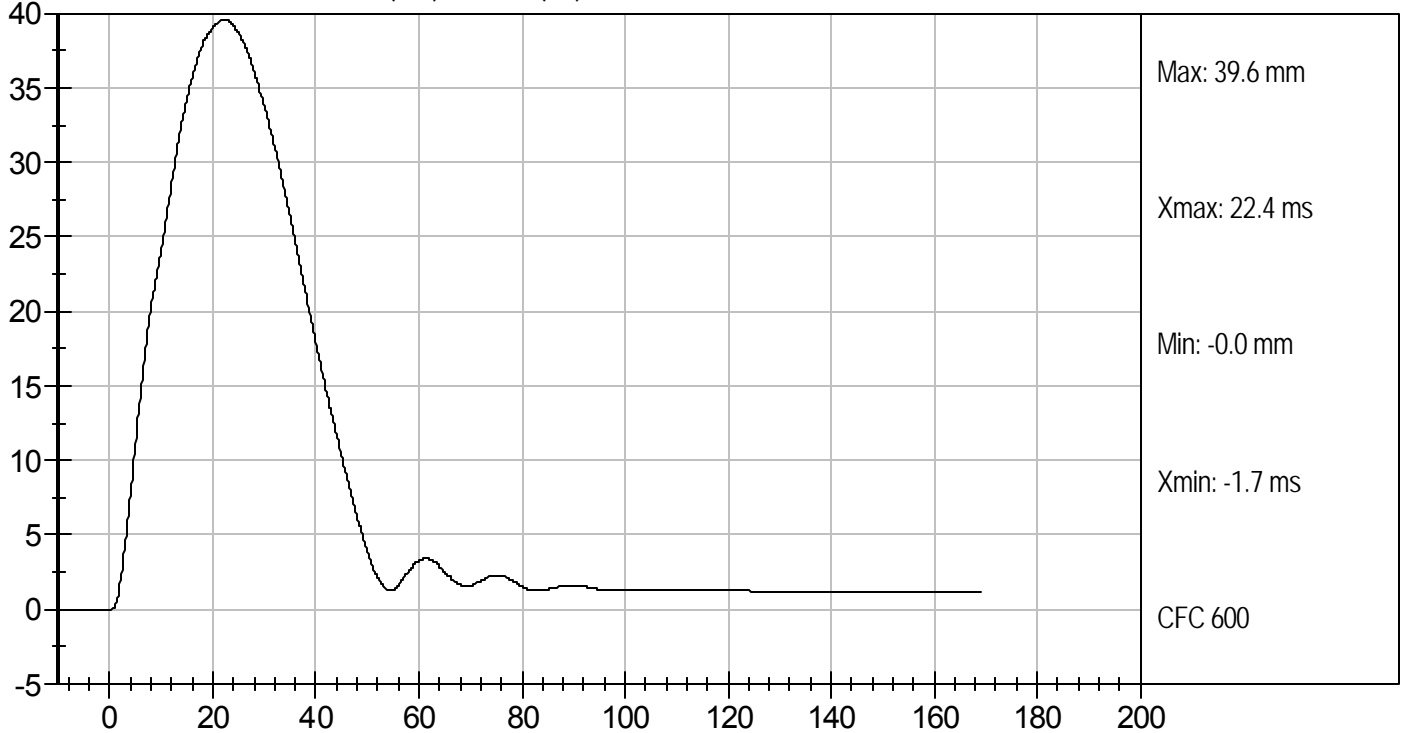




MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)

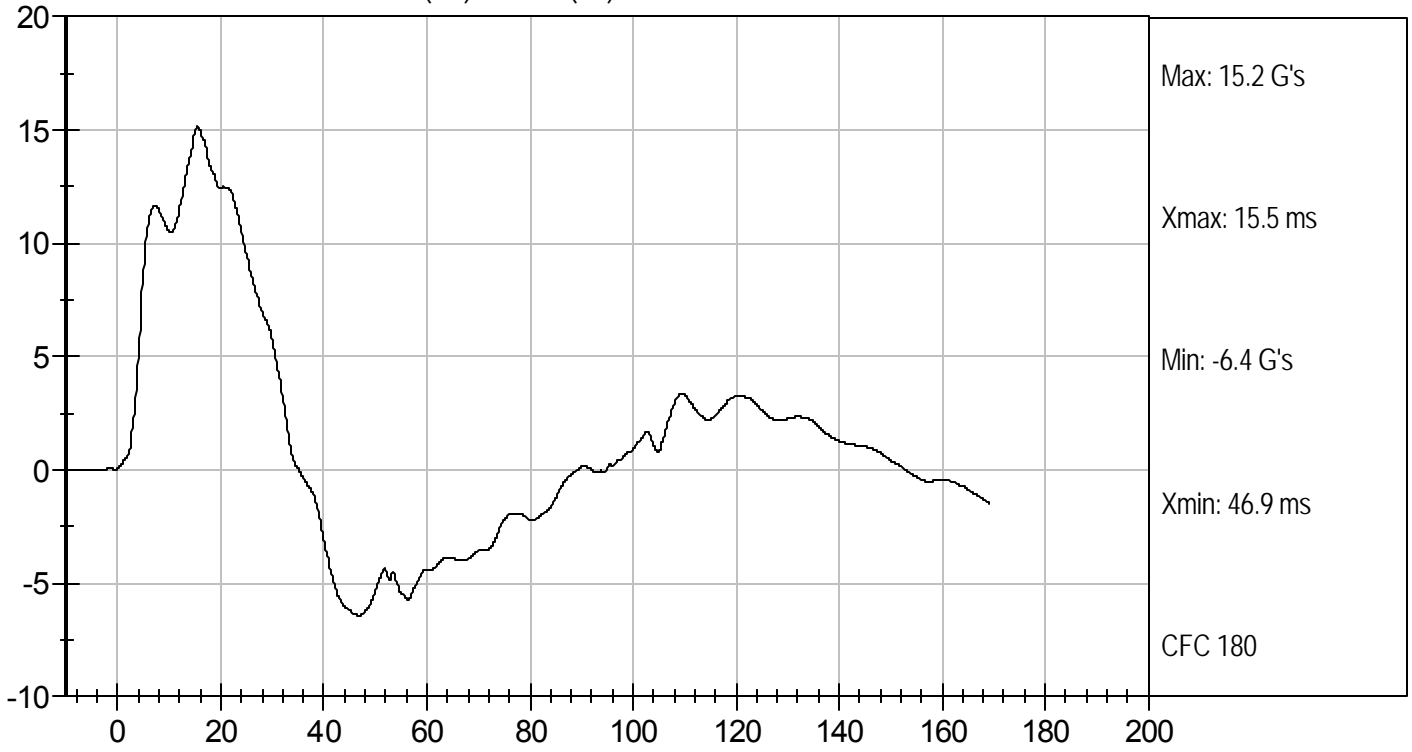




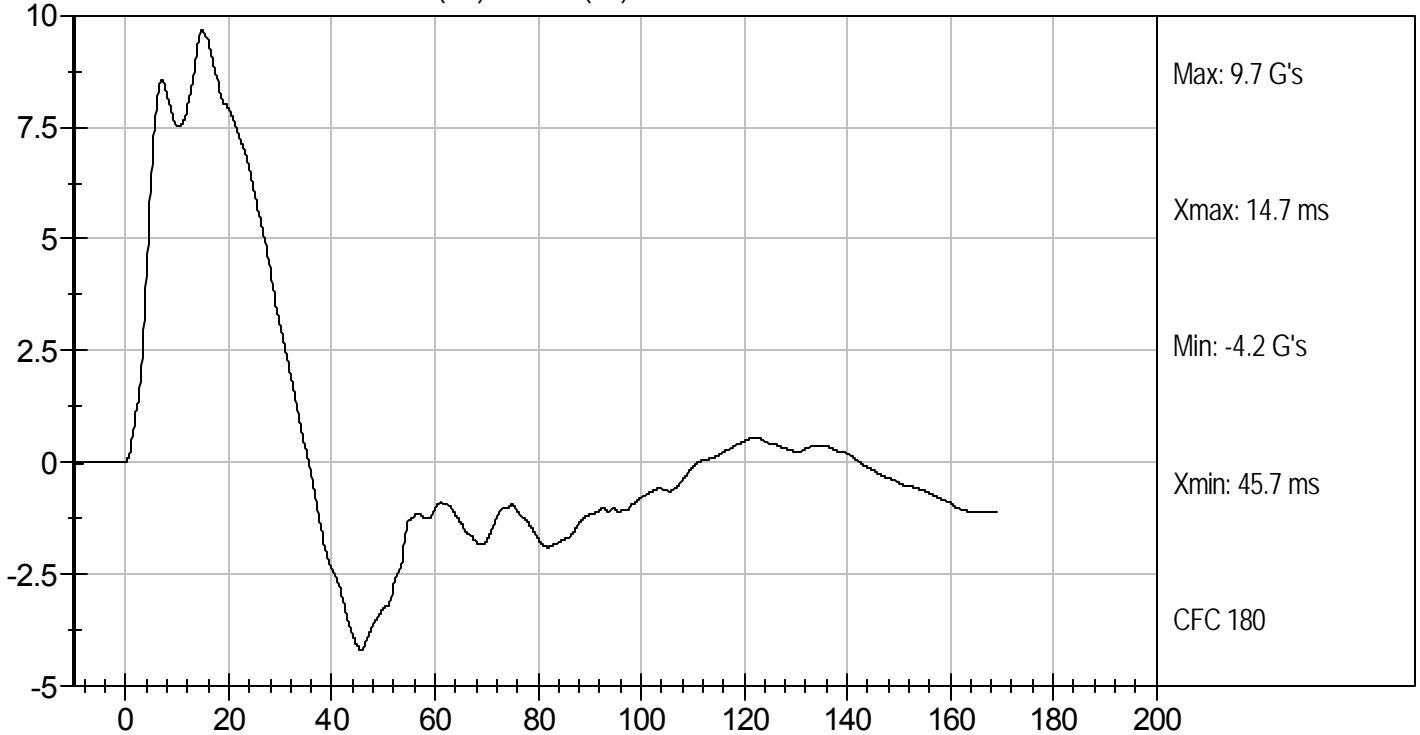
Test Desc: Thorax Without Arm
Component ID: D114405

Test Date: 12/23/11
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: 306

Test I.D: D114406

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	12 to 16	14	Pass
Upper Rib Displacement	mm	36 to 47	39	Pass
Lower Rib Displacement	mm	33 to 44	36	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

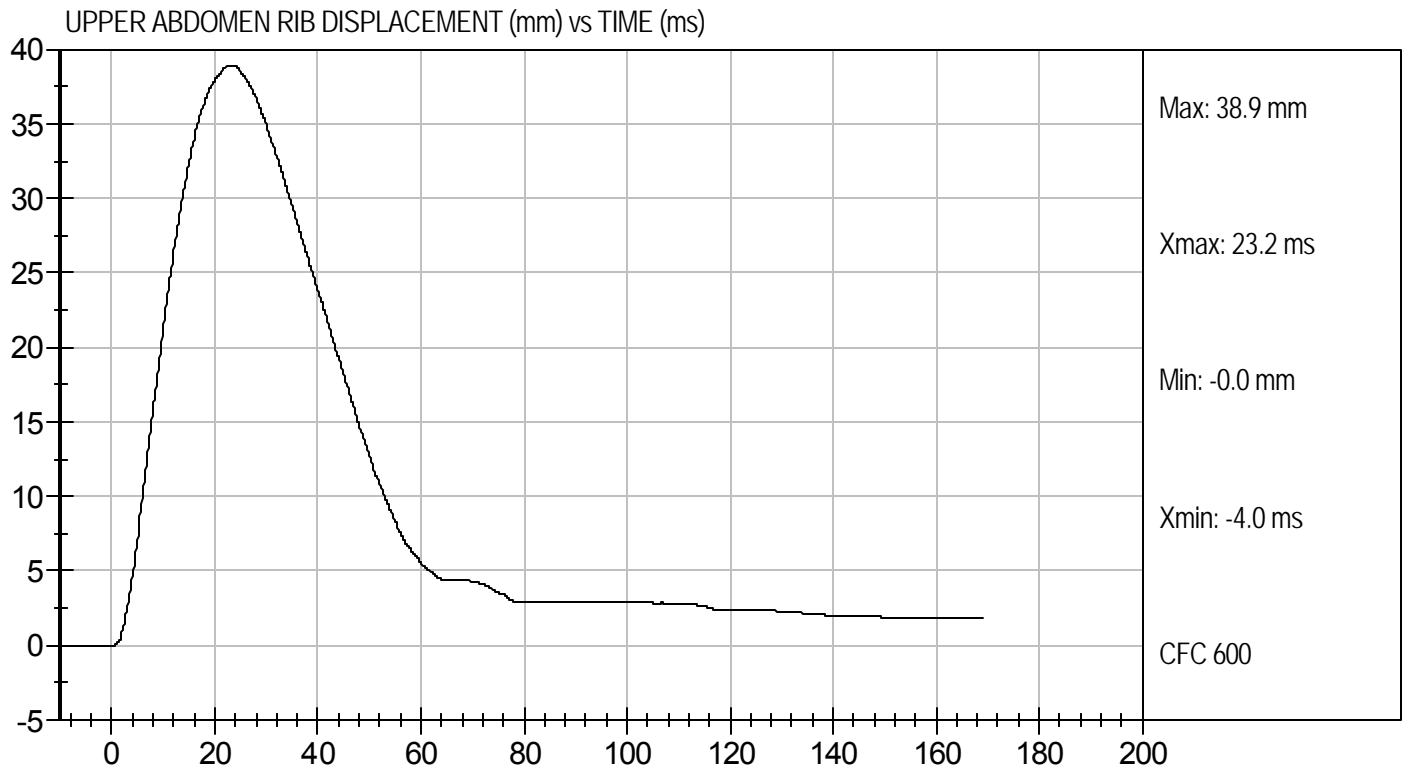
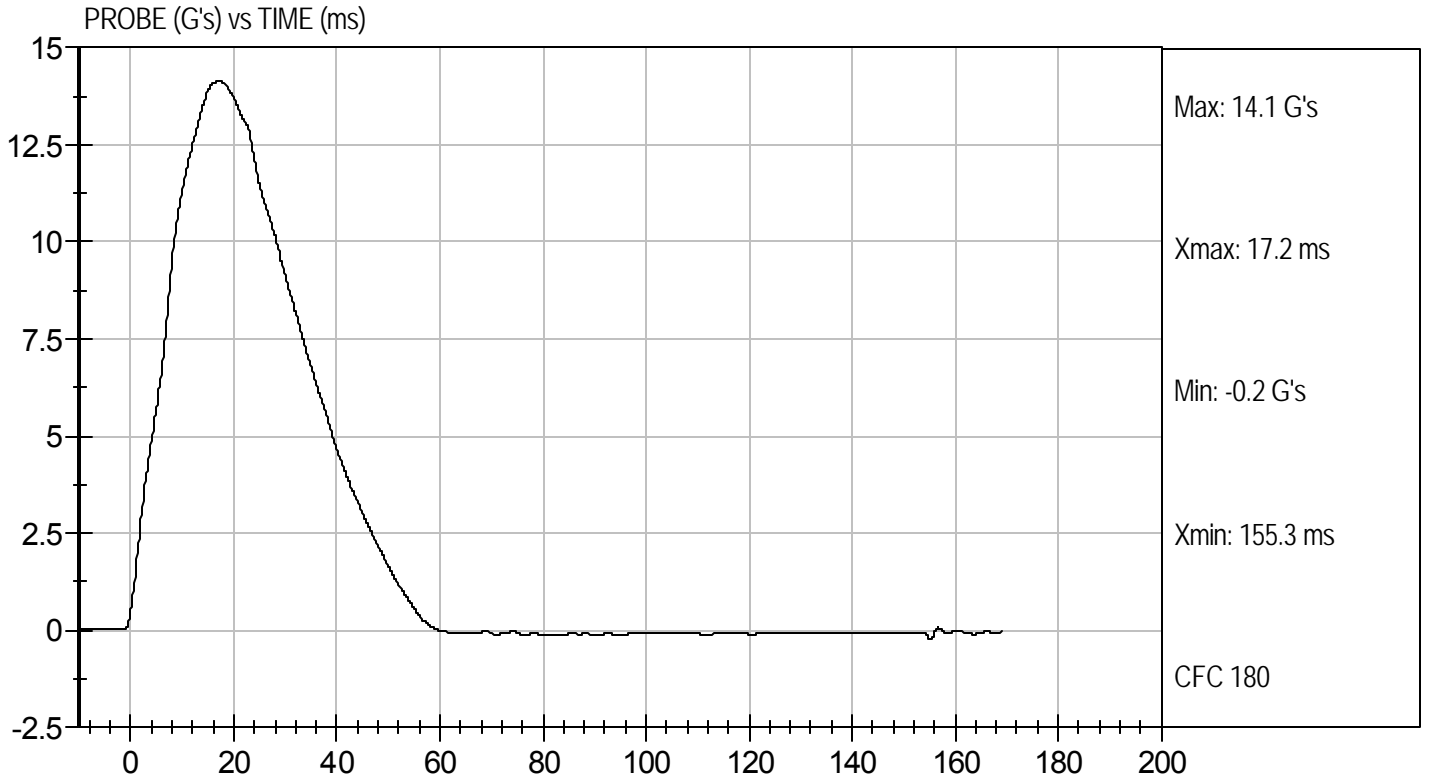
12/23/11
Test Date

David Winkelbauer
Approved By



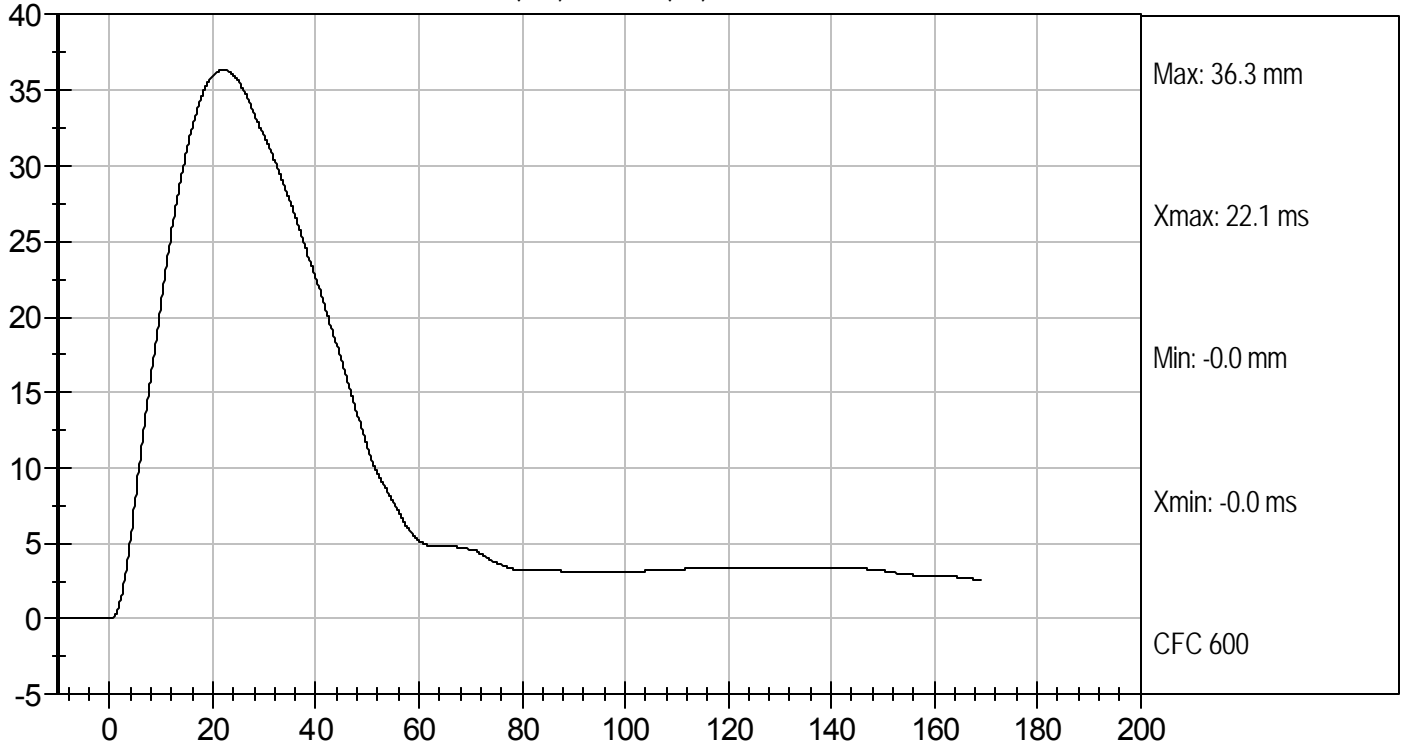
Test Desc: Abdomen Impact
Component ID: D114406

Test Date: 12/23/11
Velocity: 14.36 ft/s, 4.38 m/s

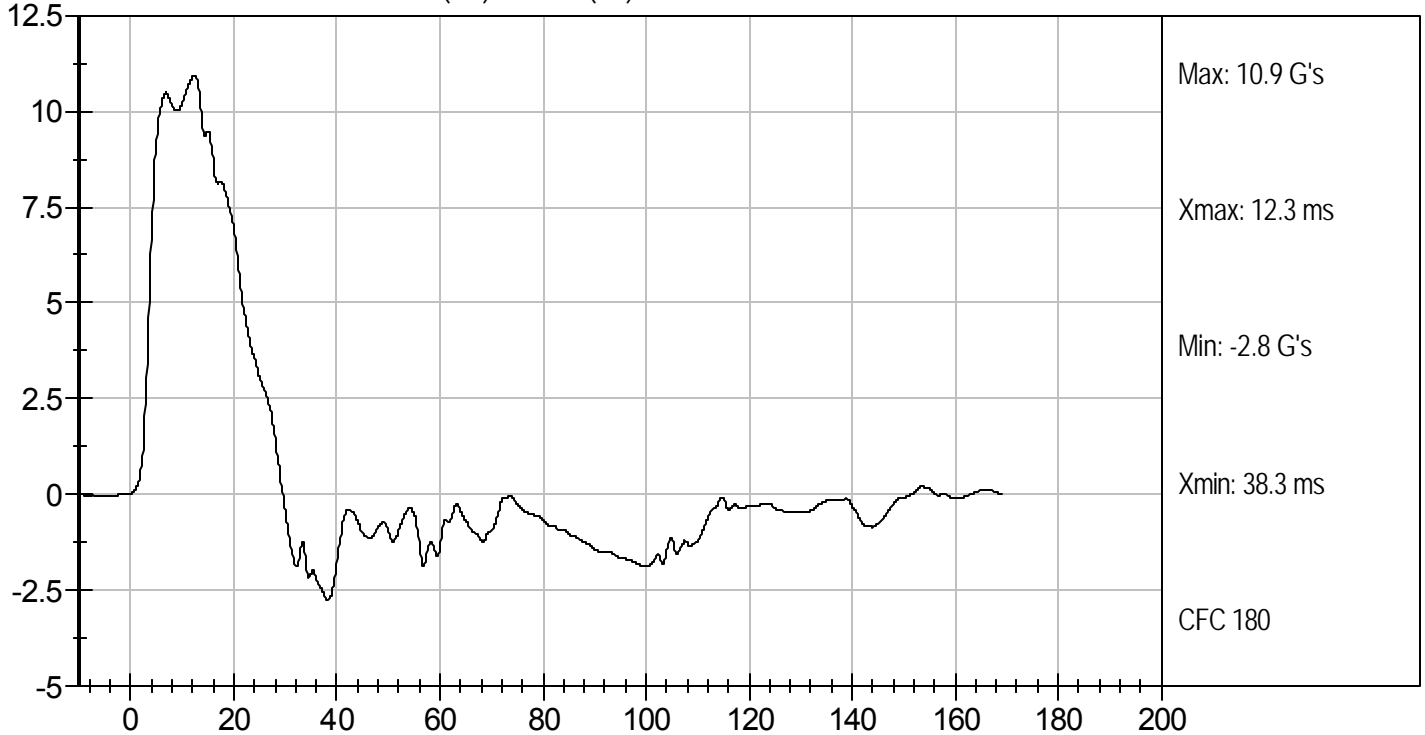




LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



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



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

ATD Serial No: 306

Test I.D: D114407

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor Acceleration	G's	38 to 47	43	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	42	Pass
Peak Acetabulum Force	N	3600 to 4300	3852	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

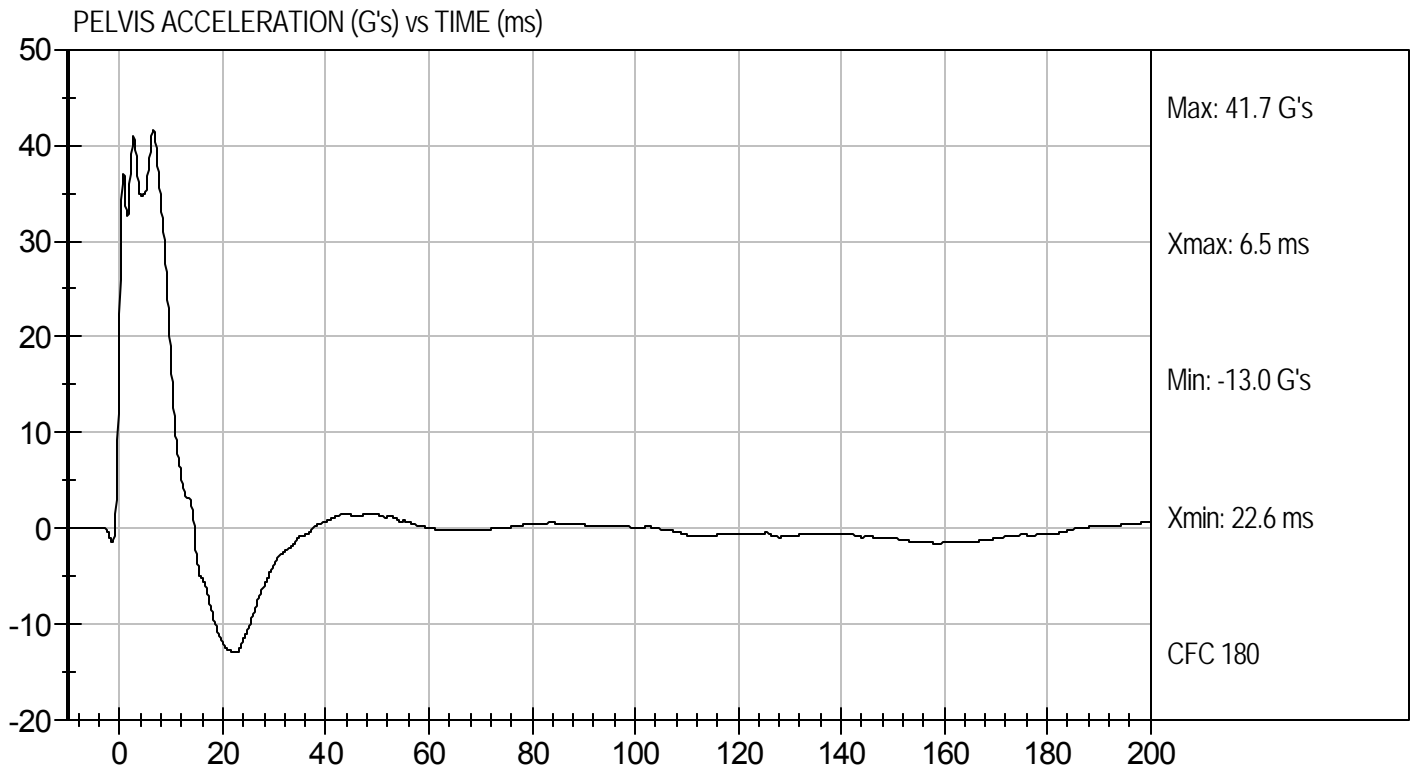
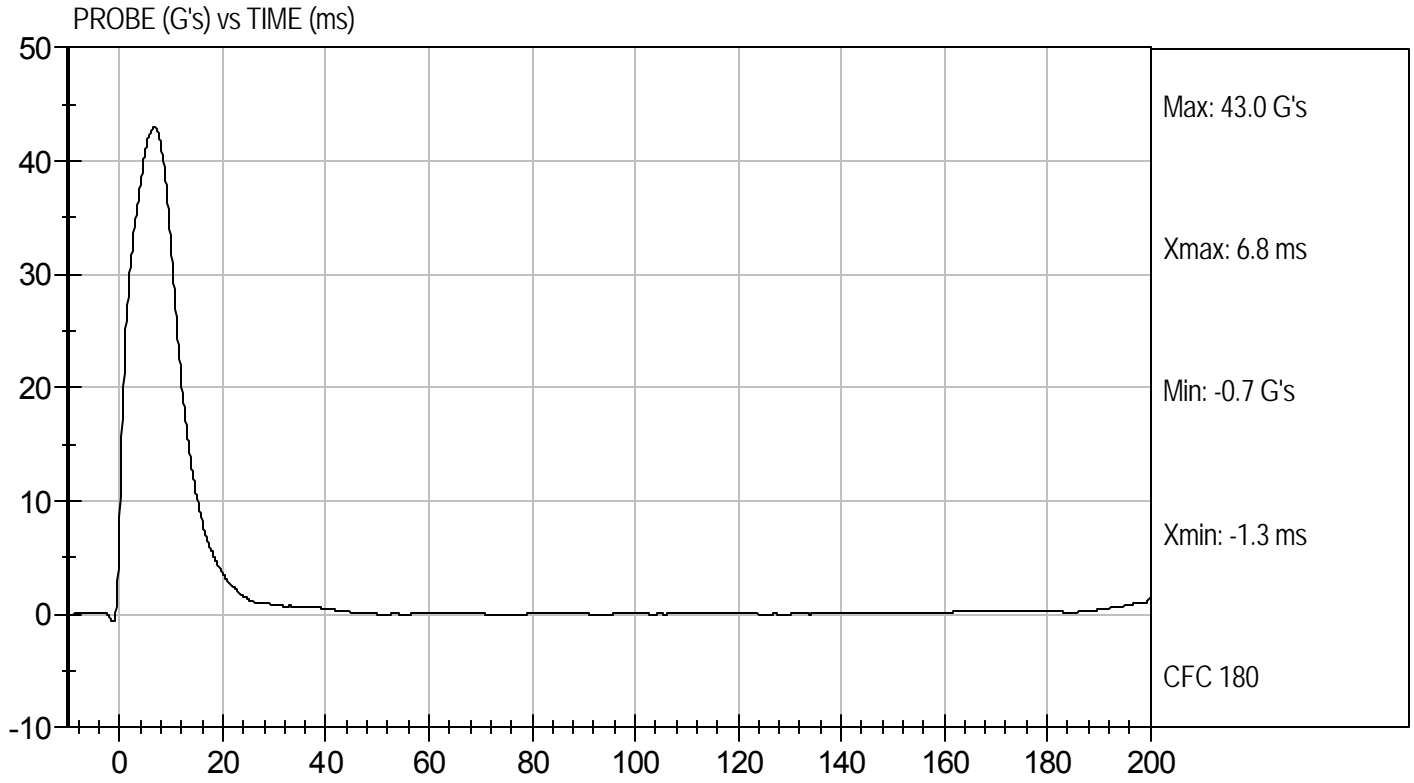
12/23/11
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D114407

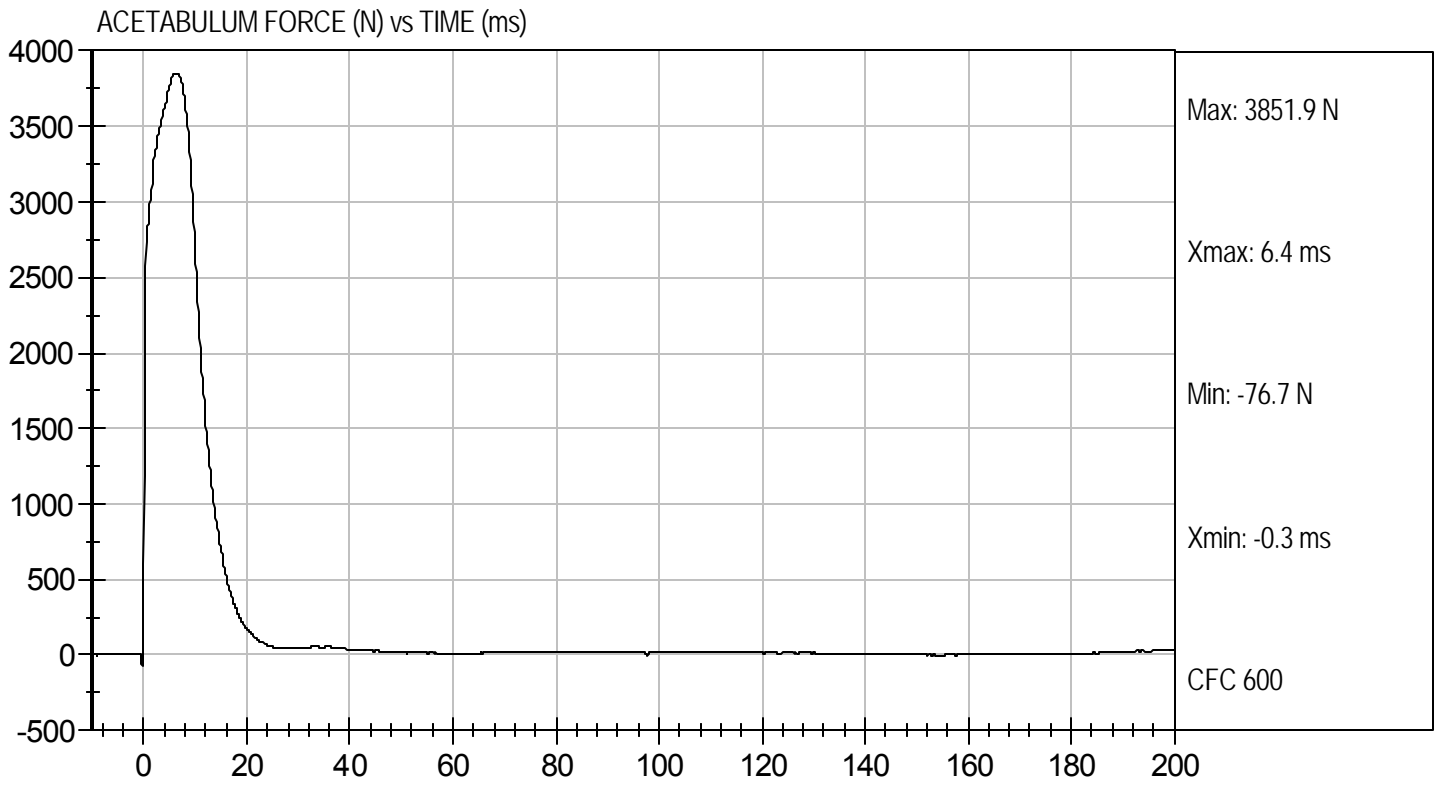
Test Date: 12/23/11
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D114407

Test Date: 12/23/11
Velocity: 21.9 ft/s, 6.68 m/s



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

ATD Serial No: 306

Test I.D: D114408

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	36 to 45	40	Pass
Pelvis Y Acceleration	G's	28 to 39	33	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4756	Pass
Overall Test Results				Pass

Jessica Gall

 Laboratory Technician

12/23/11

 Test Date

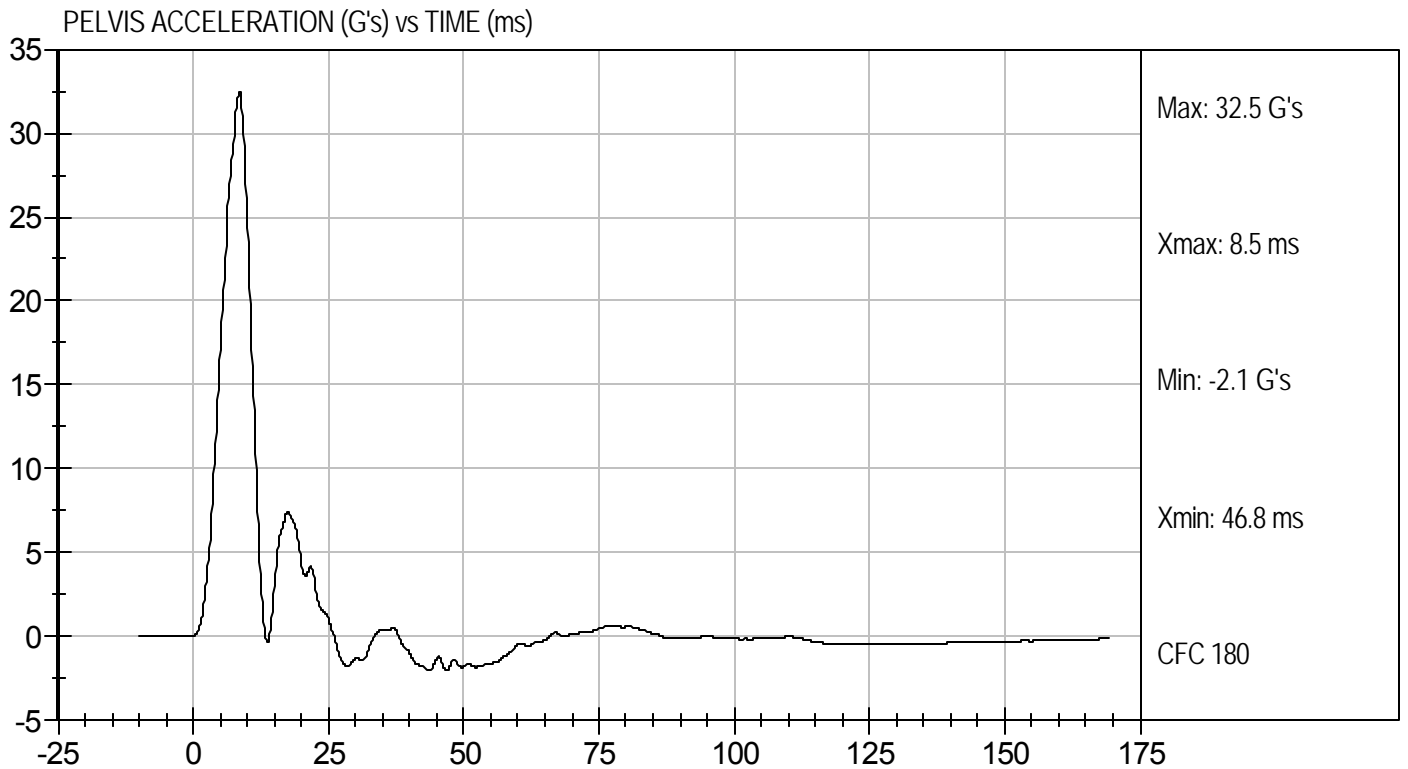
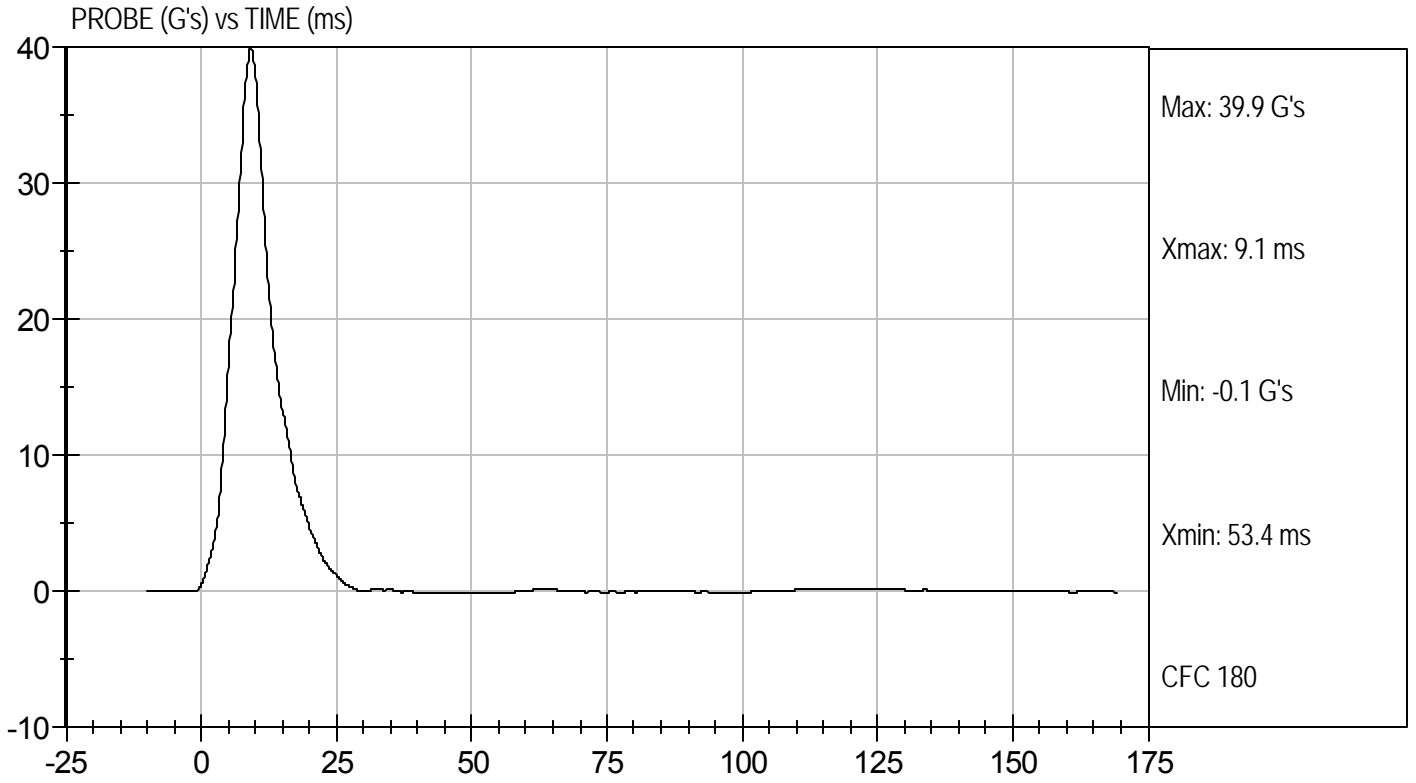
David Winkelbauer

 Approved By



Test Desc: Iliac Impact
Component ID: D114408

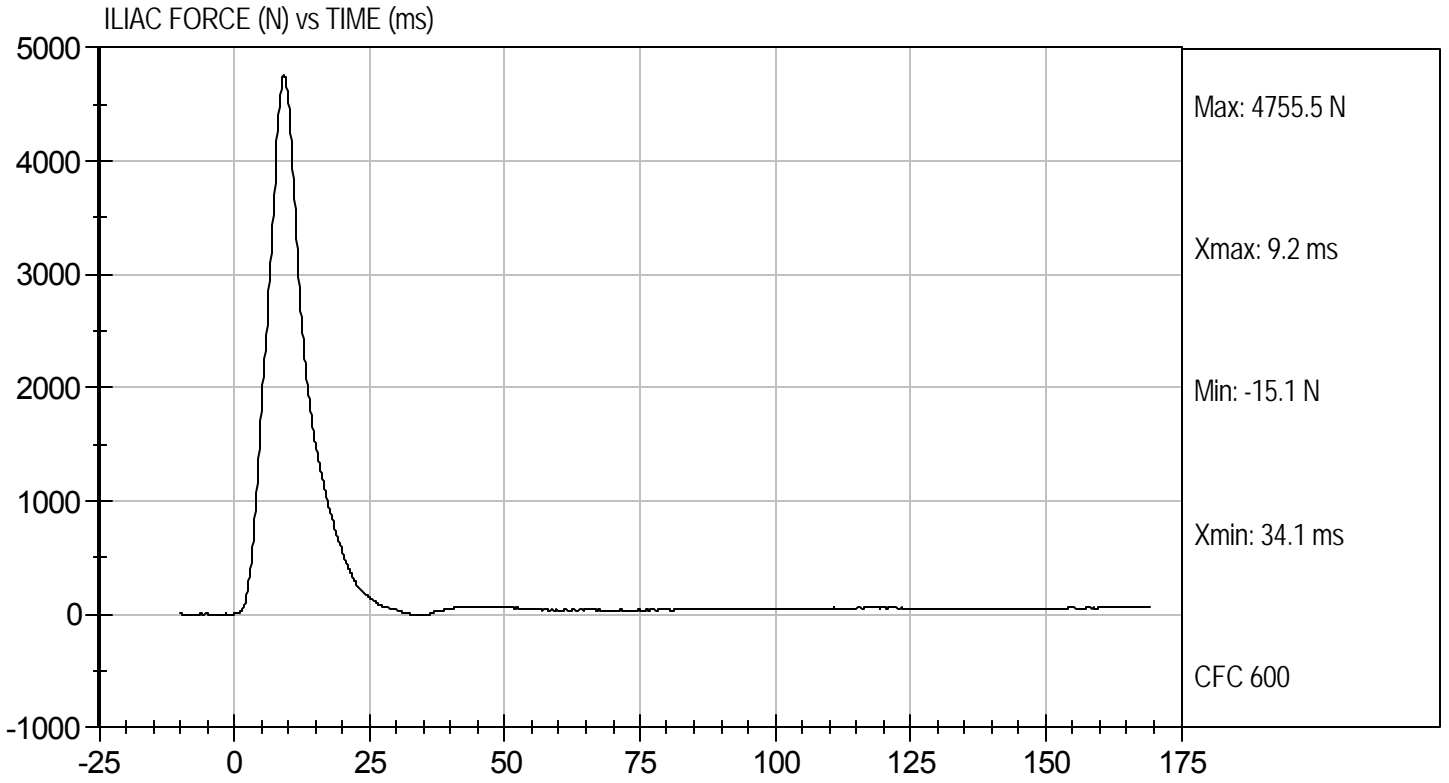
Test Date: 12/23/11
Velocity: 14.36 ft/s, 4.38 m/s





Test Desc: Iliac Impact
Component ID: D114408

Test Date: 12/23/11
Velocity: 14.36 ft/s, 4.38 m/s



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

ATD Serial No: 306

Test ID: D12031

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Peak Resultant Acceleration	G's	115 to 137	121	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-2.3	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

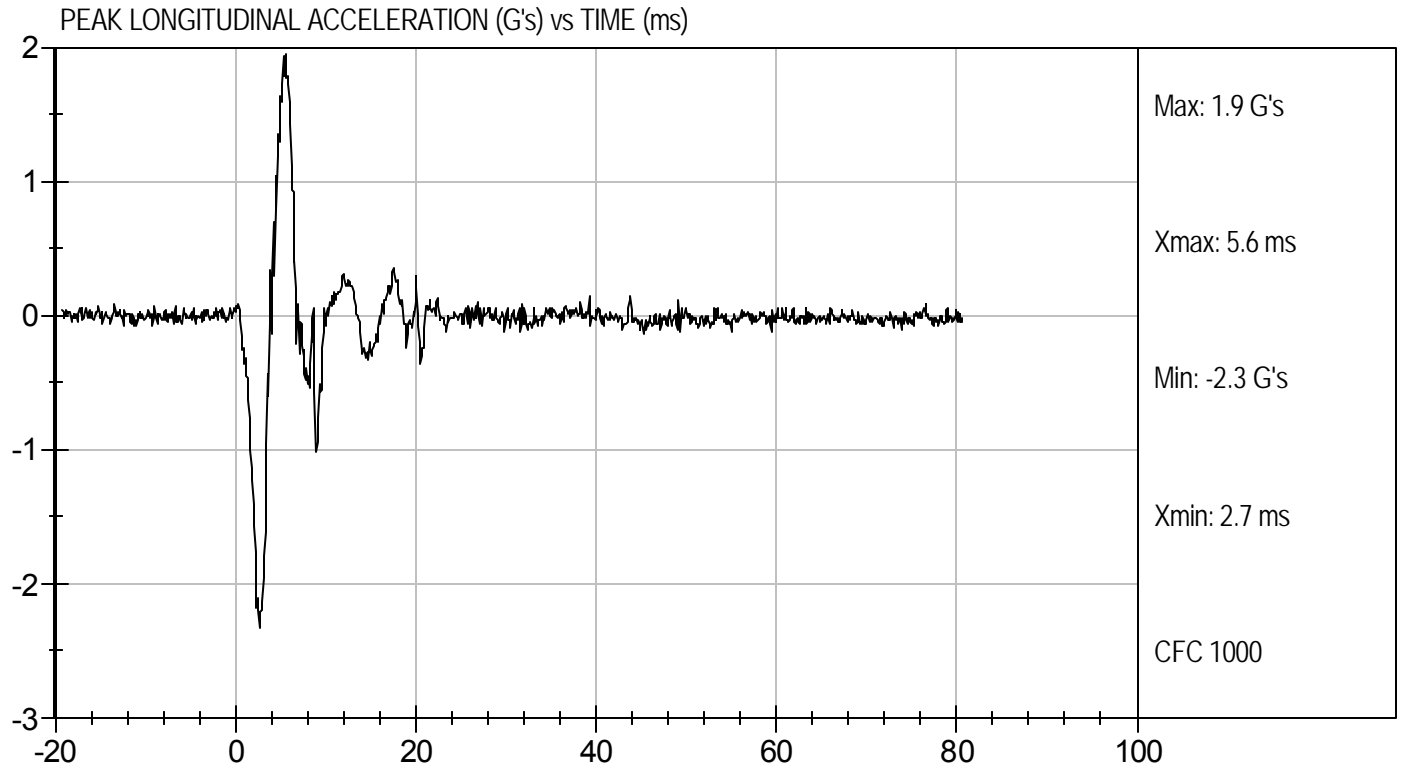
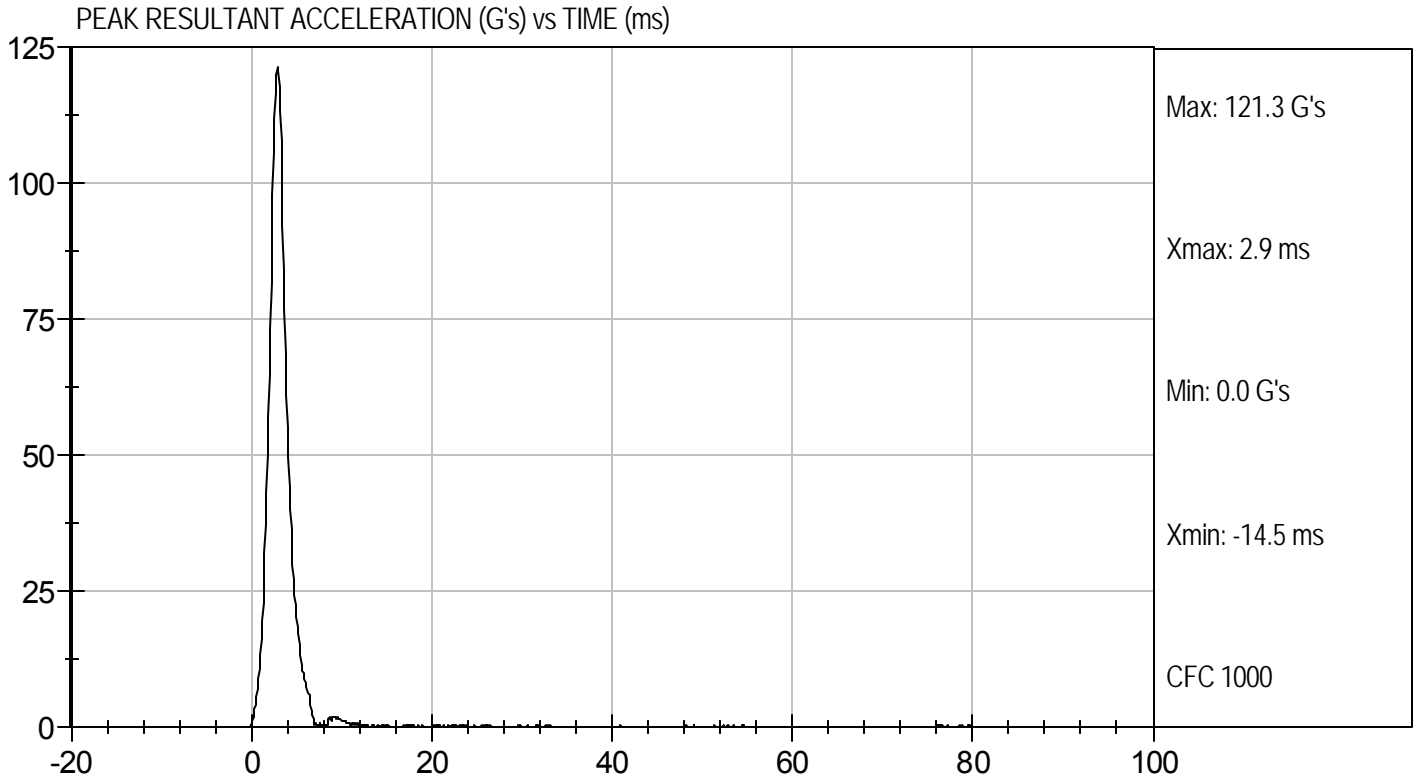
1/6/12
Test Date

David Winkelbauer
Approved By



Test Desc: Head Drop
Component ID: D12031

Test Date: 1/6/12
Velocity: 0 ft/s, 0 m/s



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


ATD Serial No: 306

Test I.D.: D12032

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.4	Pass
Humidity		%	10 to 70	23	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.72	Pass
	15 ms	m/s	3.30 to 4.10	3.93	Pass
	20 ms	m/s	4.40 to 5.40	5.18	Pass
	25 ms	m/s	5.40 to 6.10	5.51	Pass
	25-100 ms	m/s	5.50 to 6.20	5.56	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 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

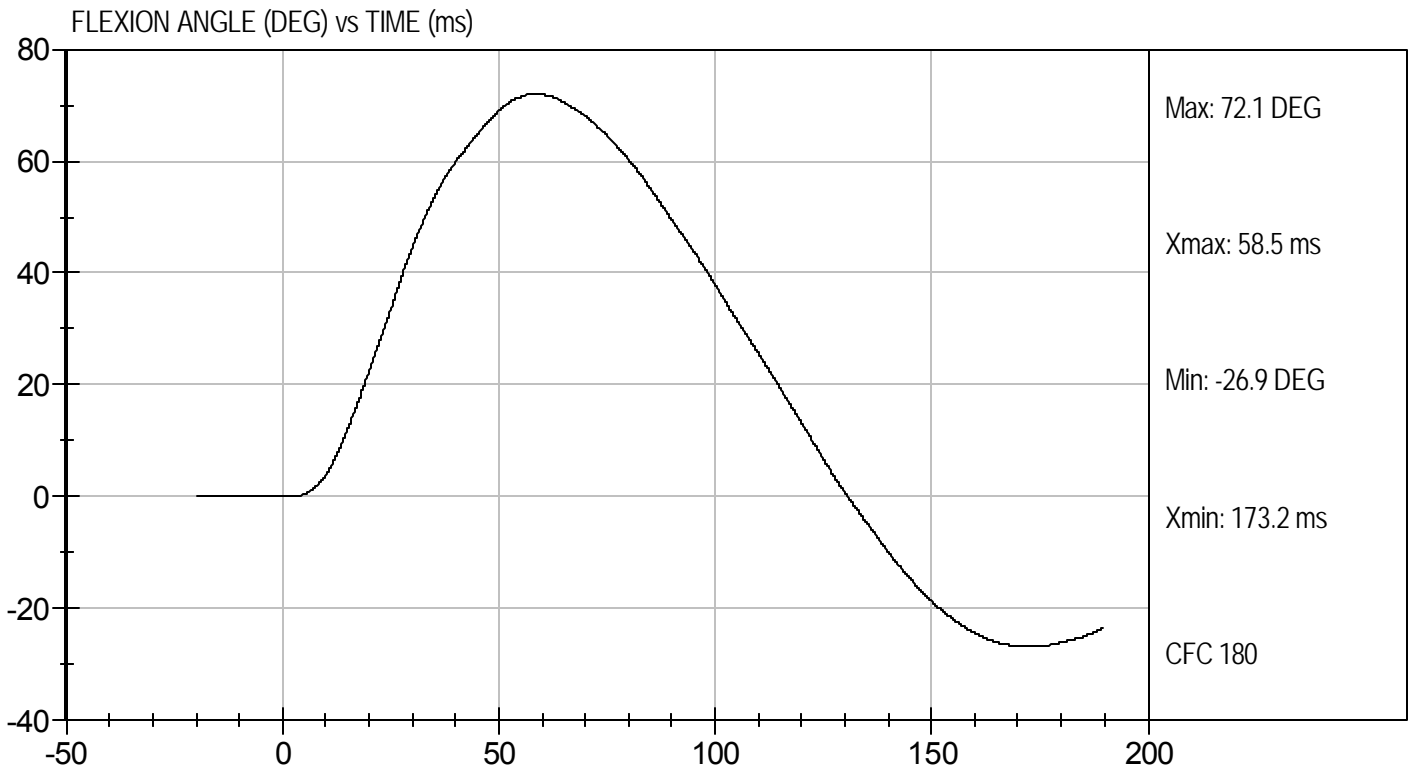
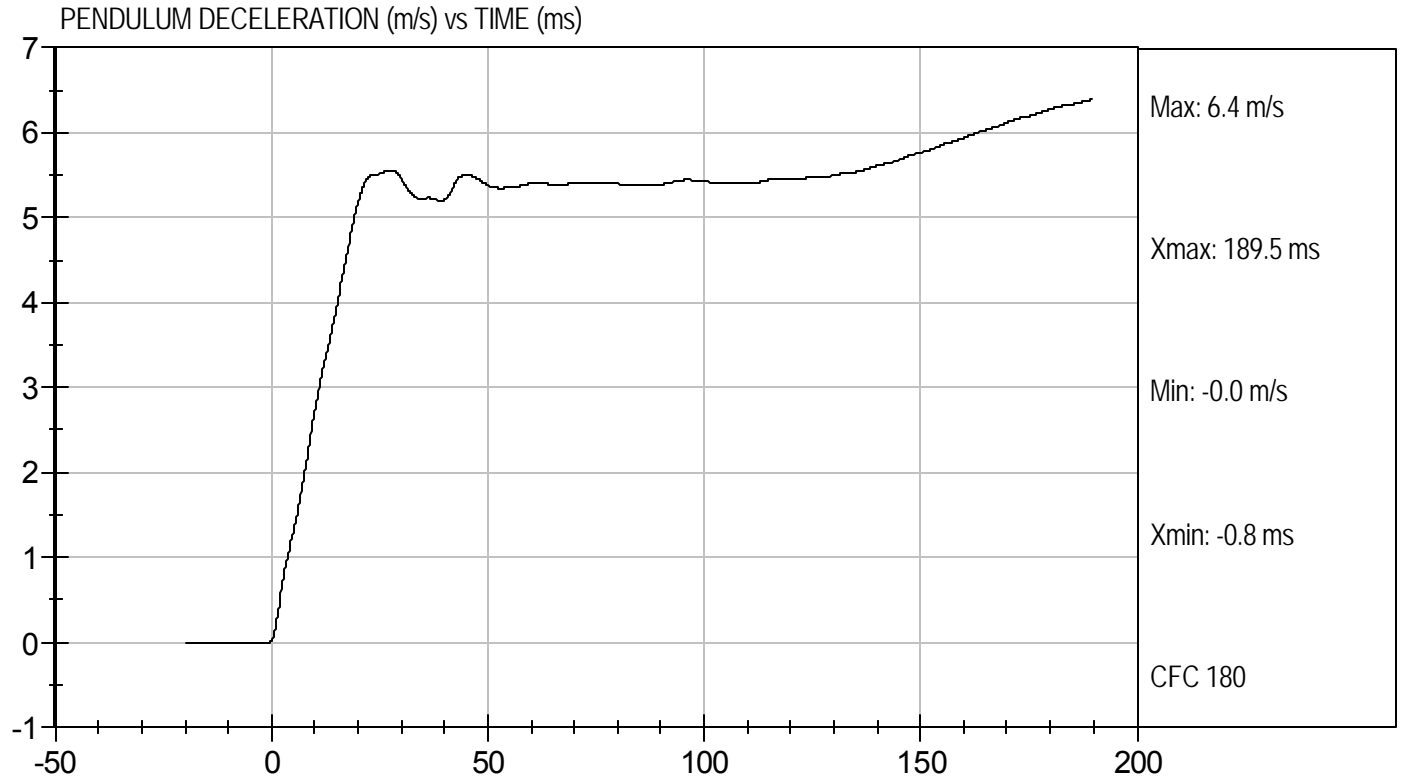
1/6/12
Test Date


Approved By



Test Desc: Neck Bending
Component ID: D12032

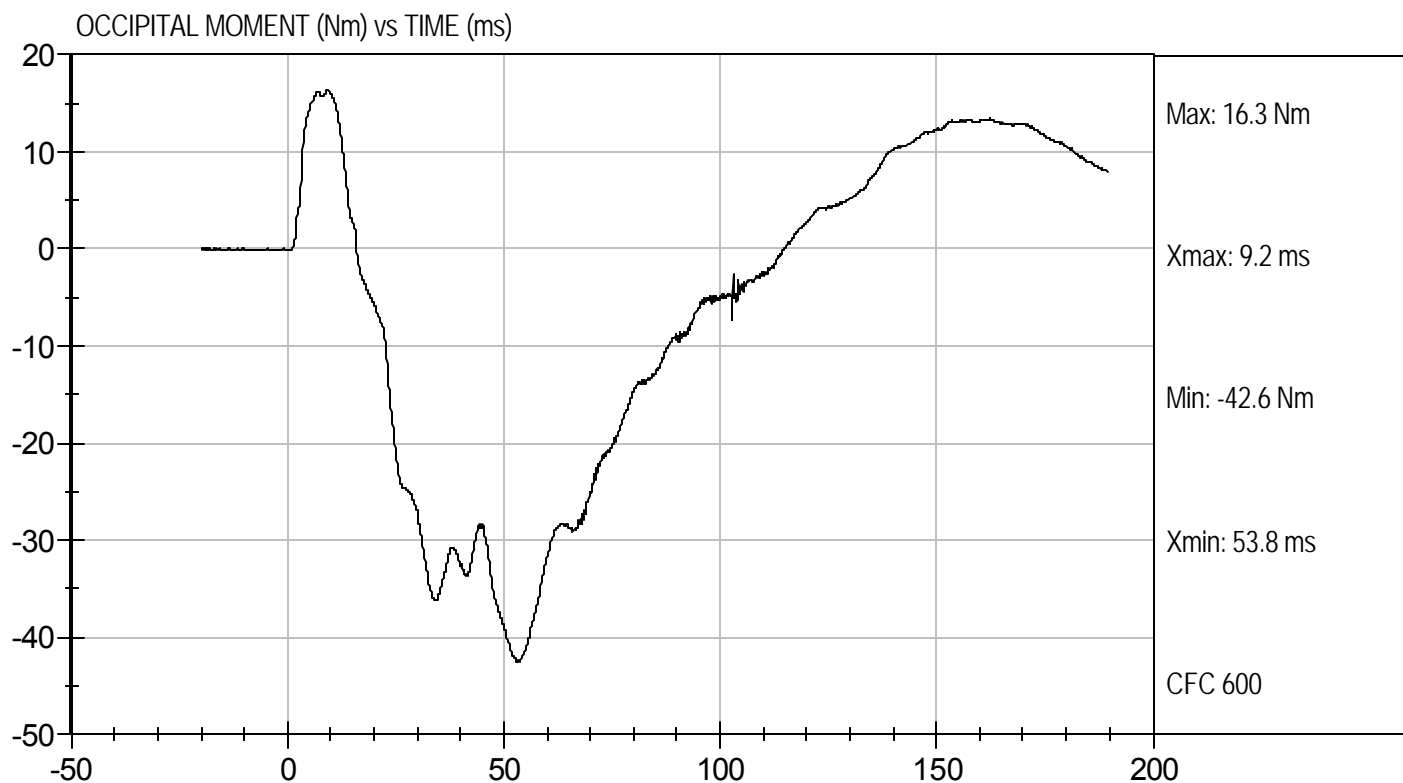
Test Date: 1/6/12
Velocity: 18.32 ft/s, 5.58 m/s





Test Desc: Neck Bending
Component ID: D12032

Test Date: 1/6/12
Velocity: 18.32 ft/s, 5.58 m/s



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

ATD Serial No: 306

Test ID: D12033

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	13 to 18	16	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

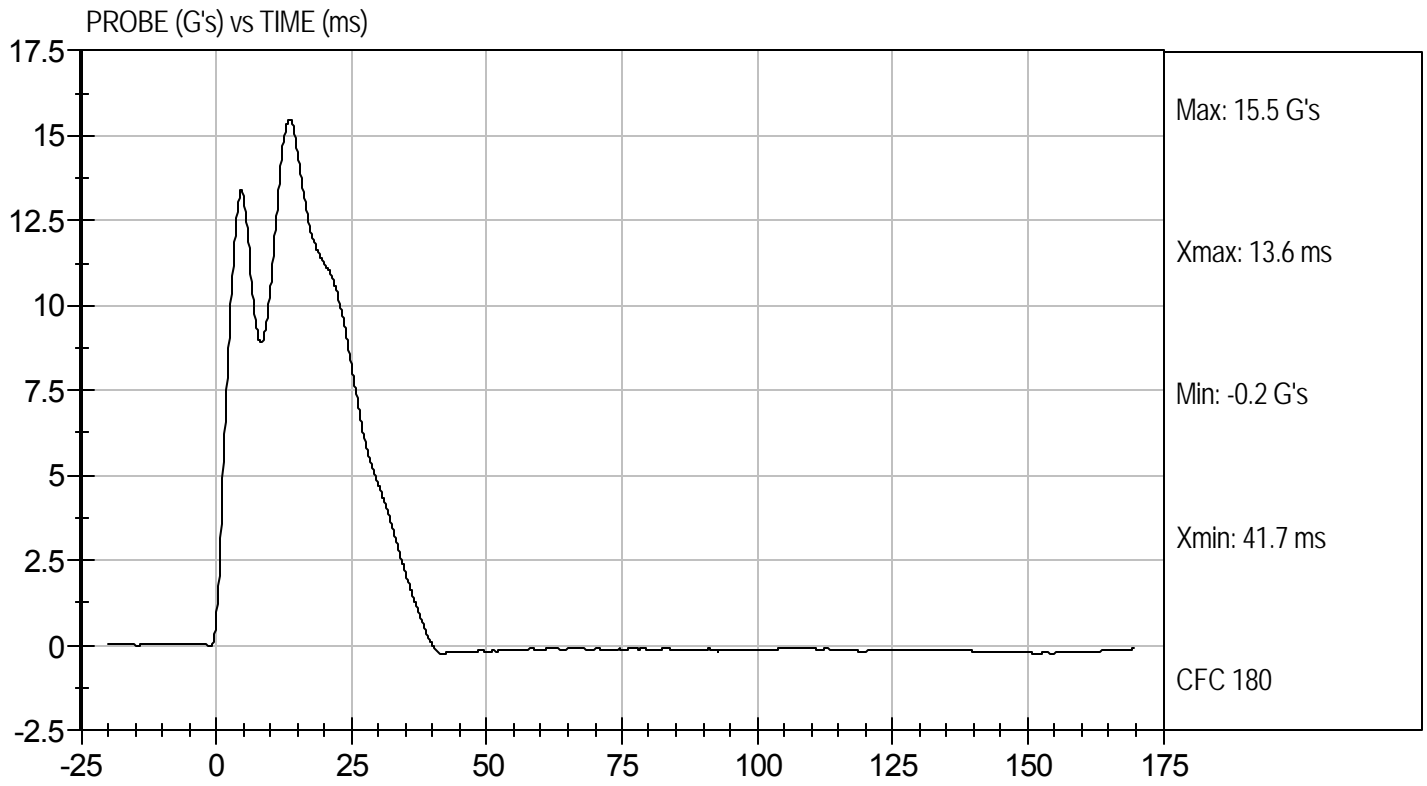
1/5/12
Test Date

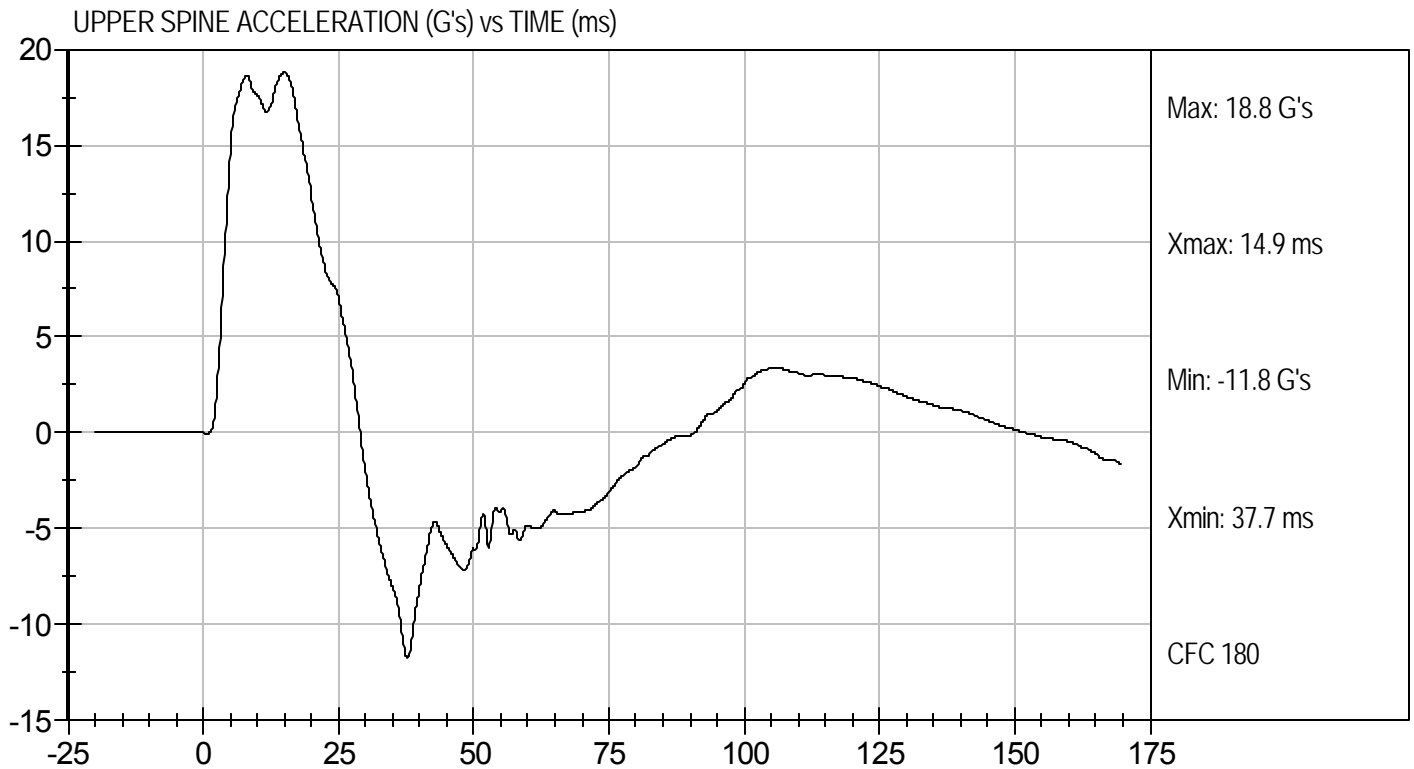
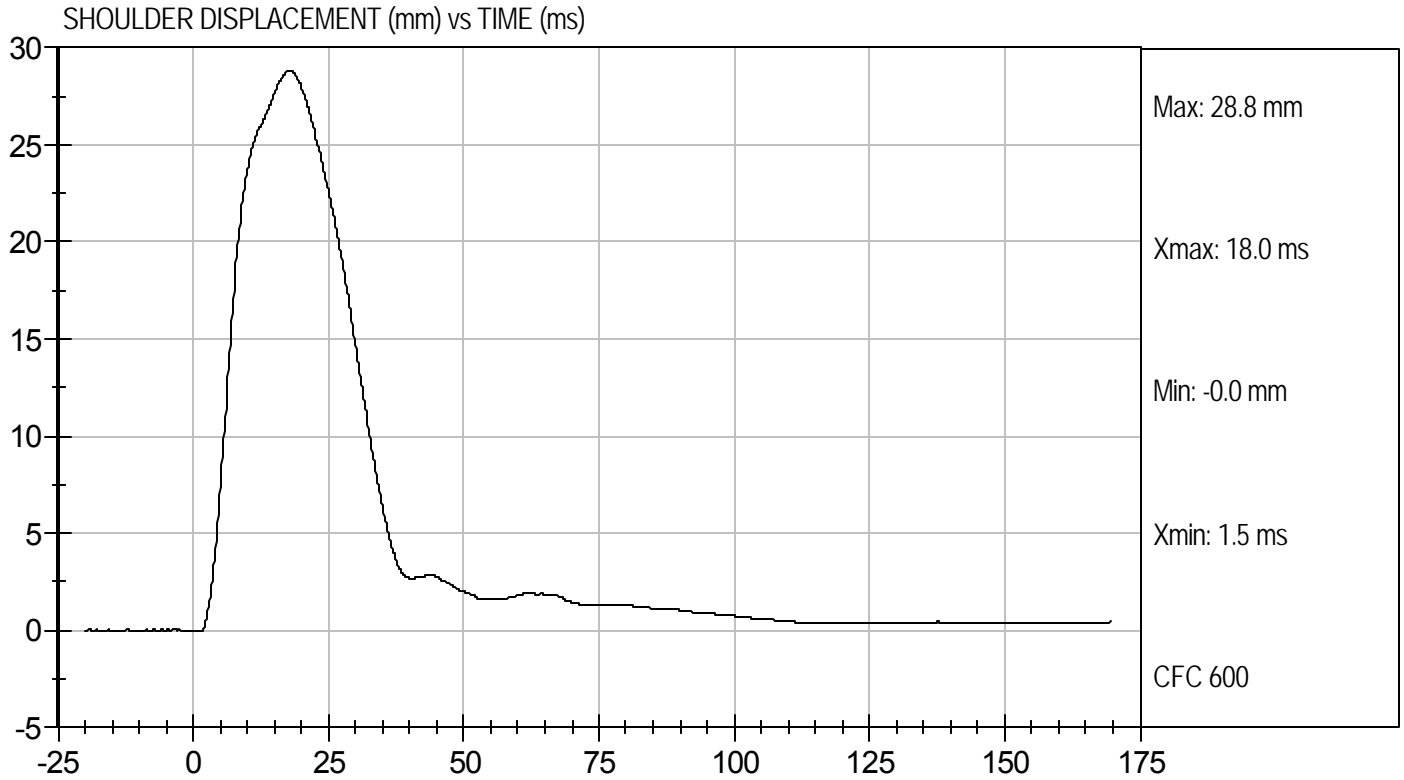
David Winkelbauer
Approved By



Test Desc: Shoulder Impact
Component ID: D12033

Test Date: 1/5/12
Velocity: 14.24 ft/s, 4.34 m/s





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

ATD Serial No: 306

Test I.D: D12034

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	34	Pass
Shoulder Displacement	mm	31 to 40	33	Pass
Upper Rib Displacement	mm	25 to 32	26	Pass
Middle Rib Displacement	mm	30 to 36	30	Pass
Lower Rib Displacement	mm	32 to 38	34	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	40	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	34	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

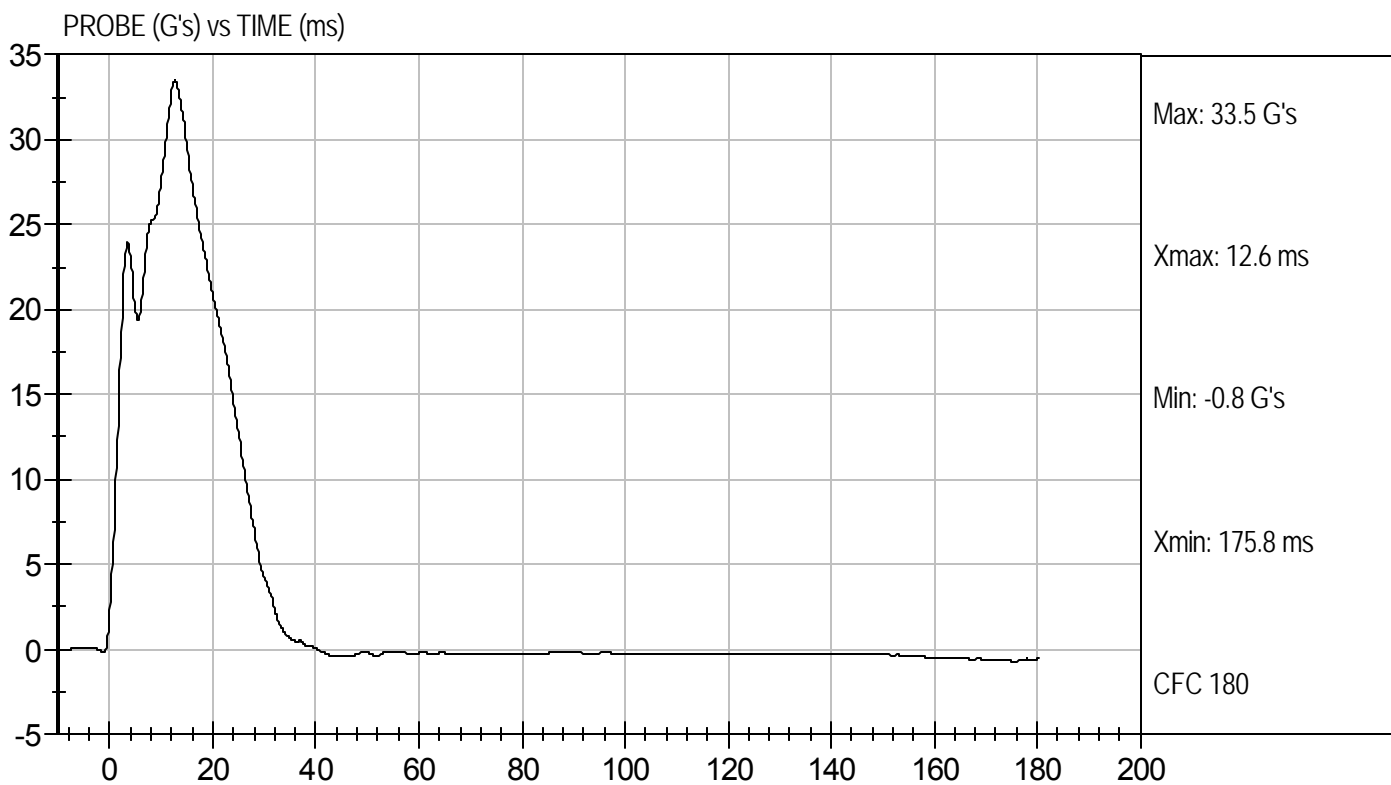
1/5/12
Test Date

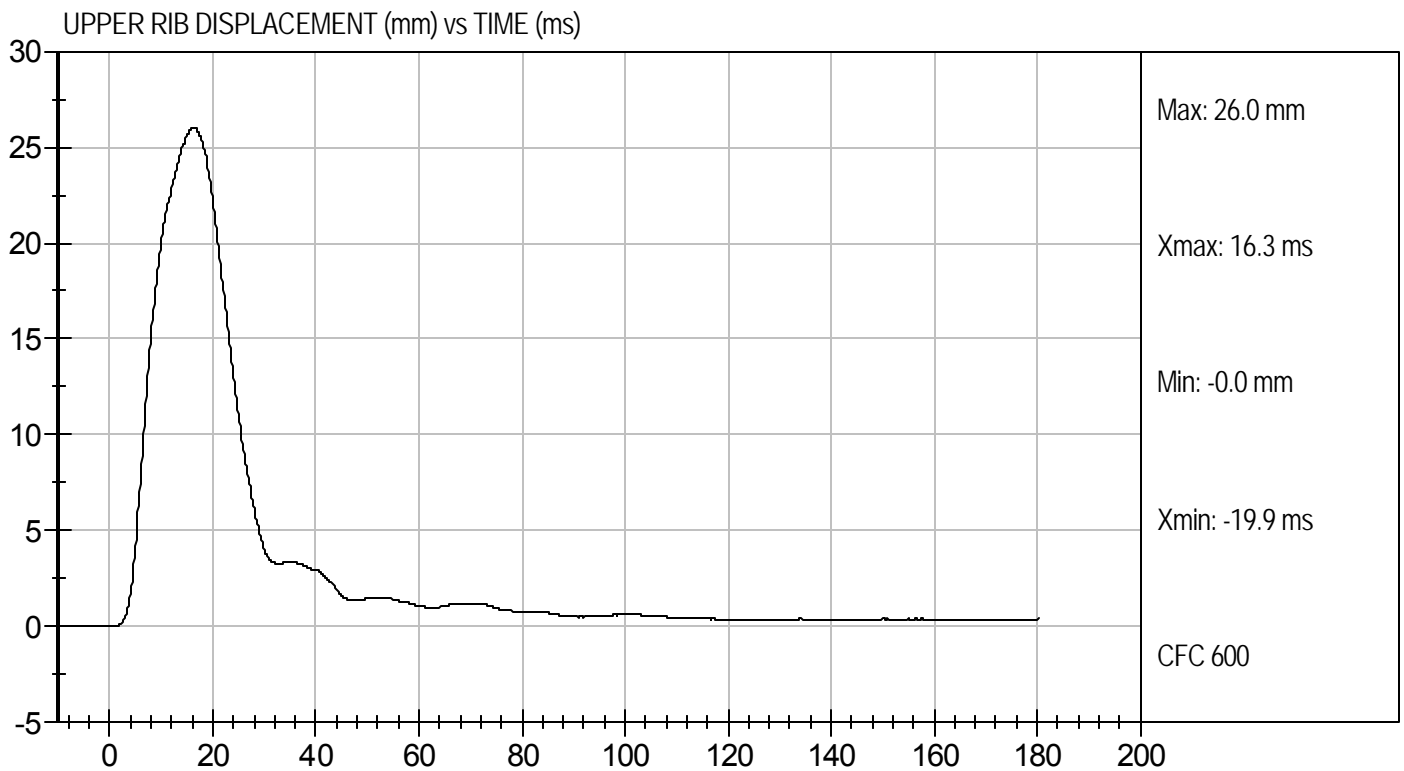
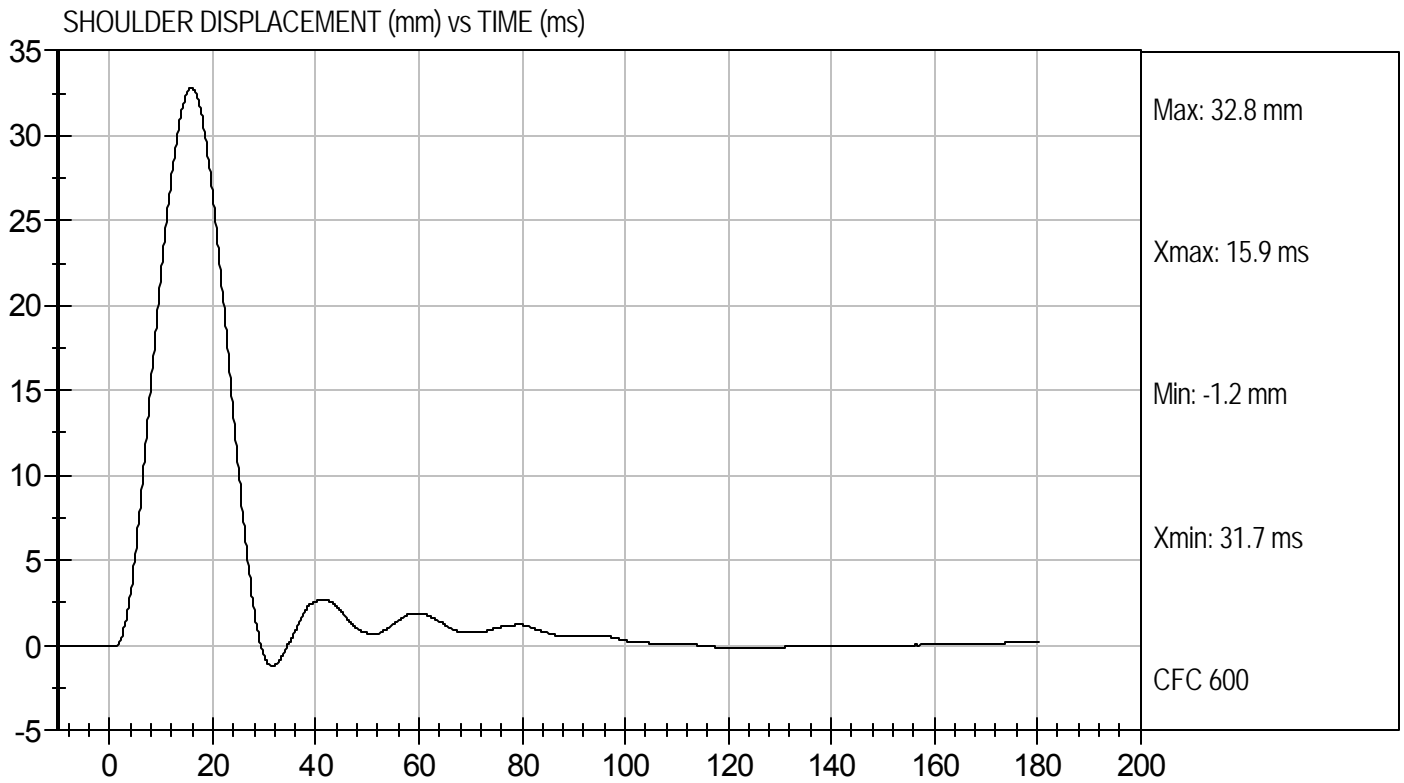
David Winkelbauer
Approved By



Test Desc: Thorax With Arm
Component ID: D12034

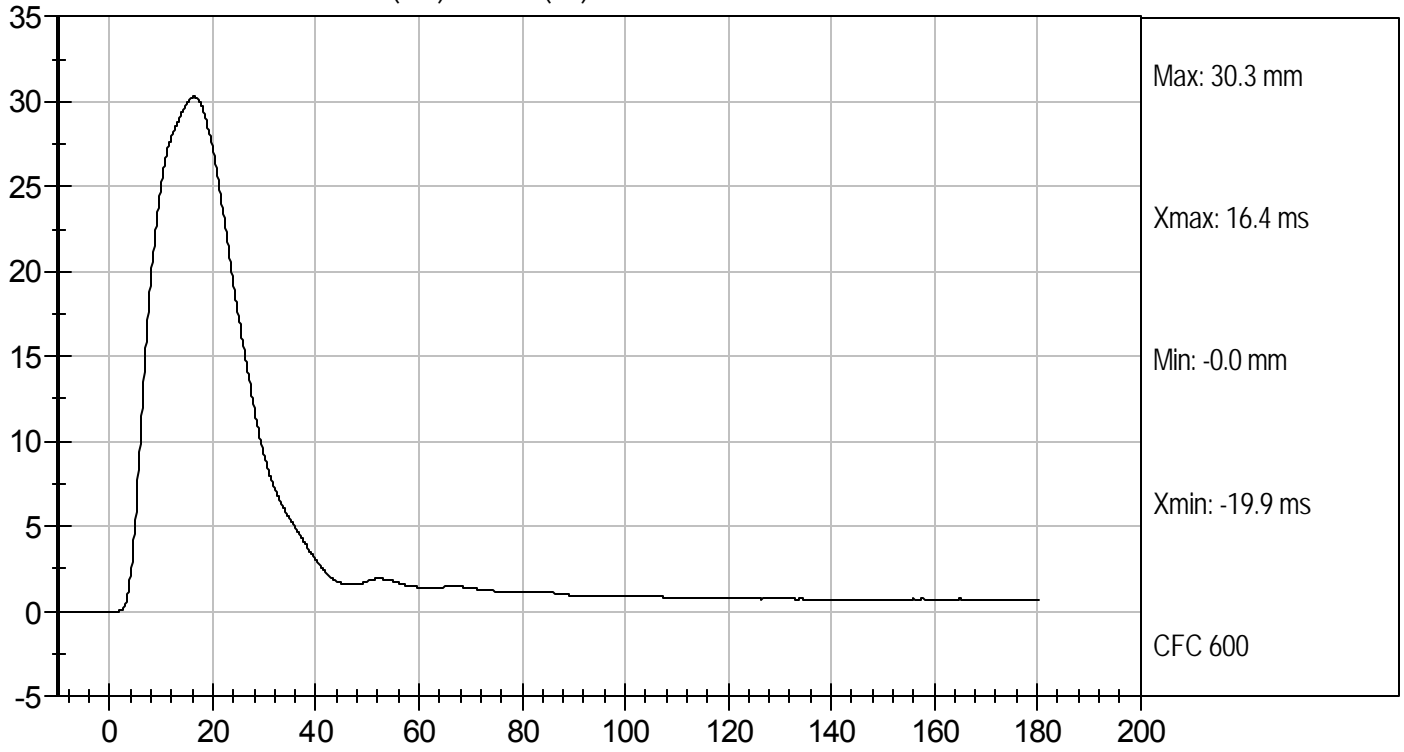
Test Date: 1/5/12
Velocity: 22.22 ft/s, 6.77 m/s



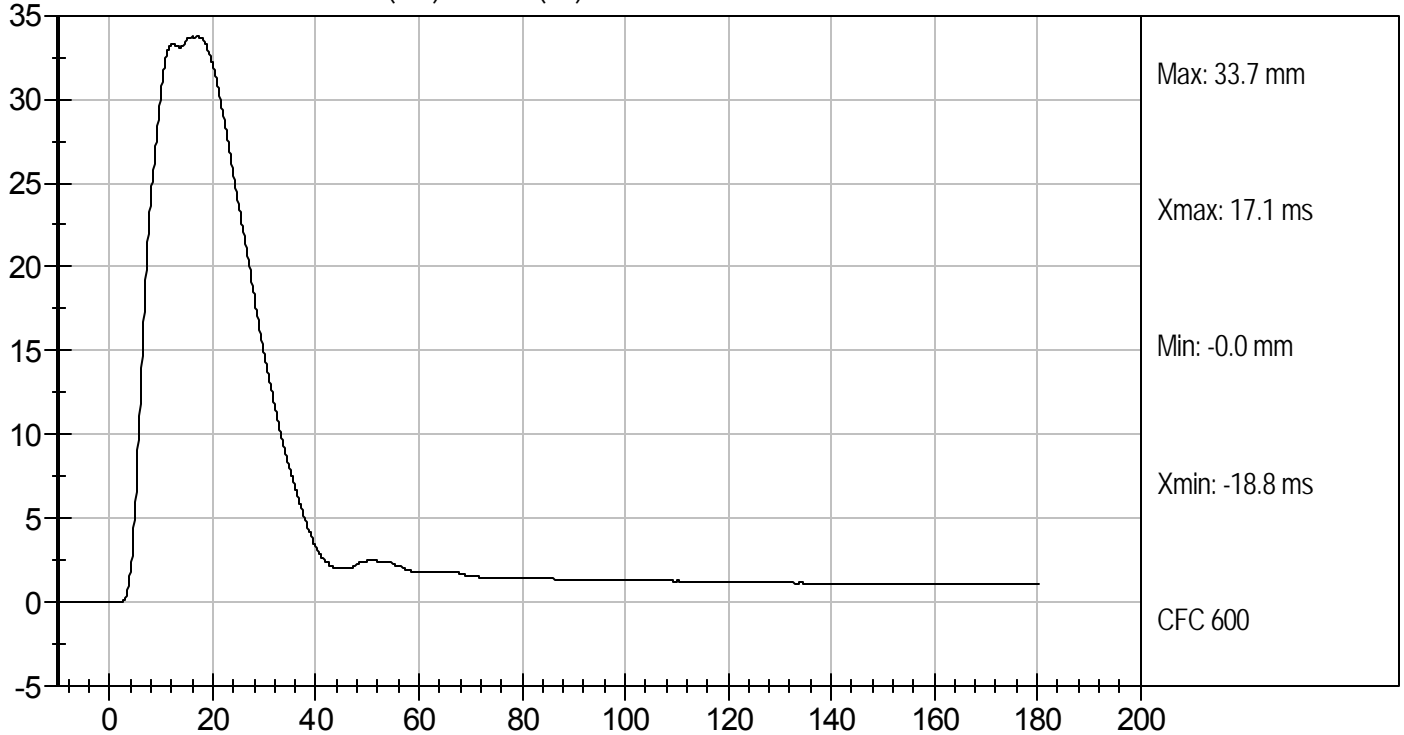


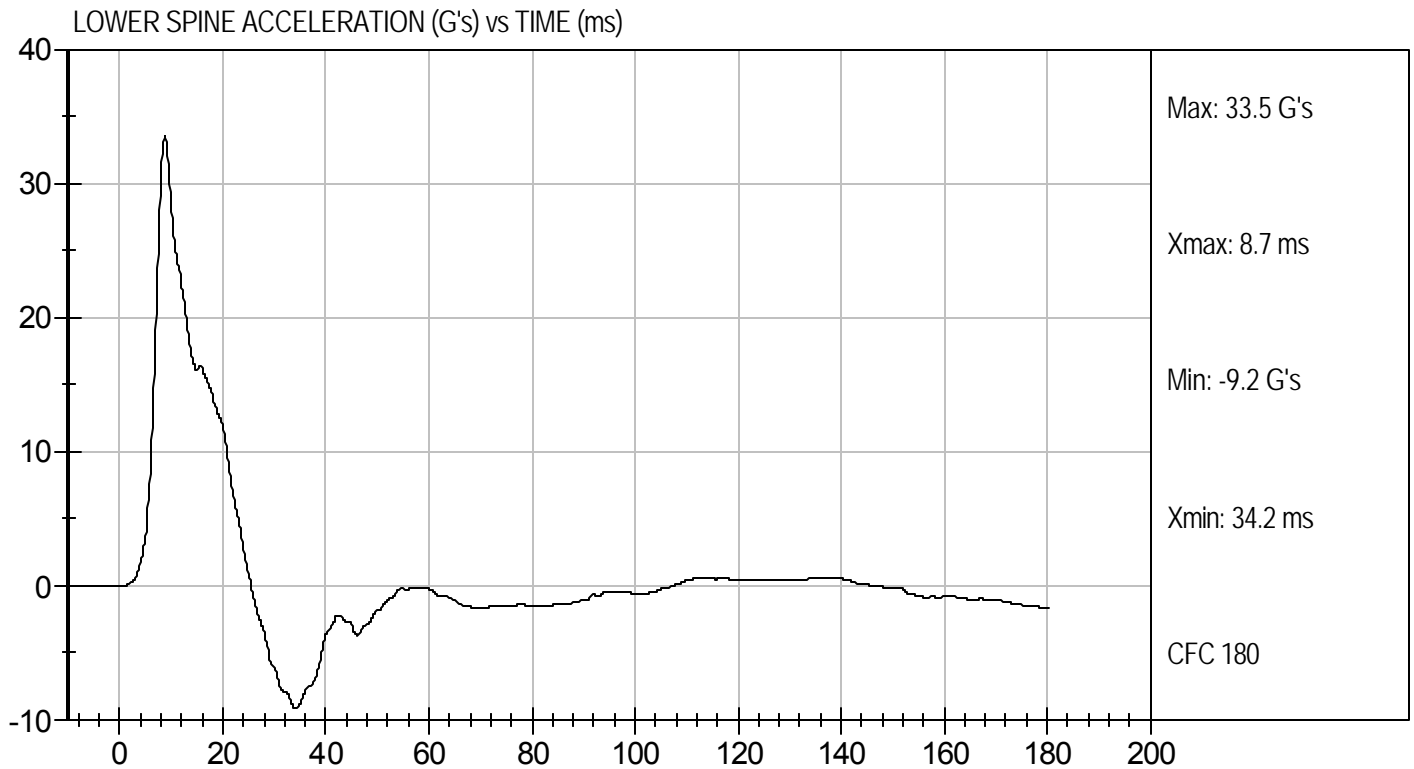
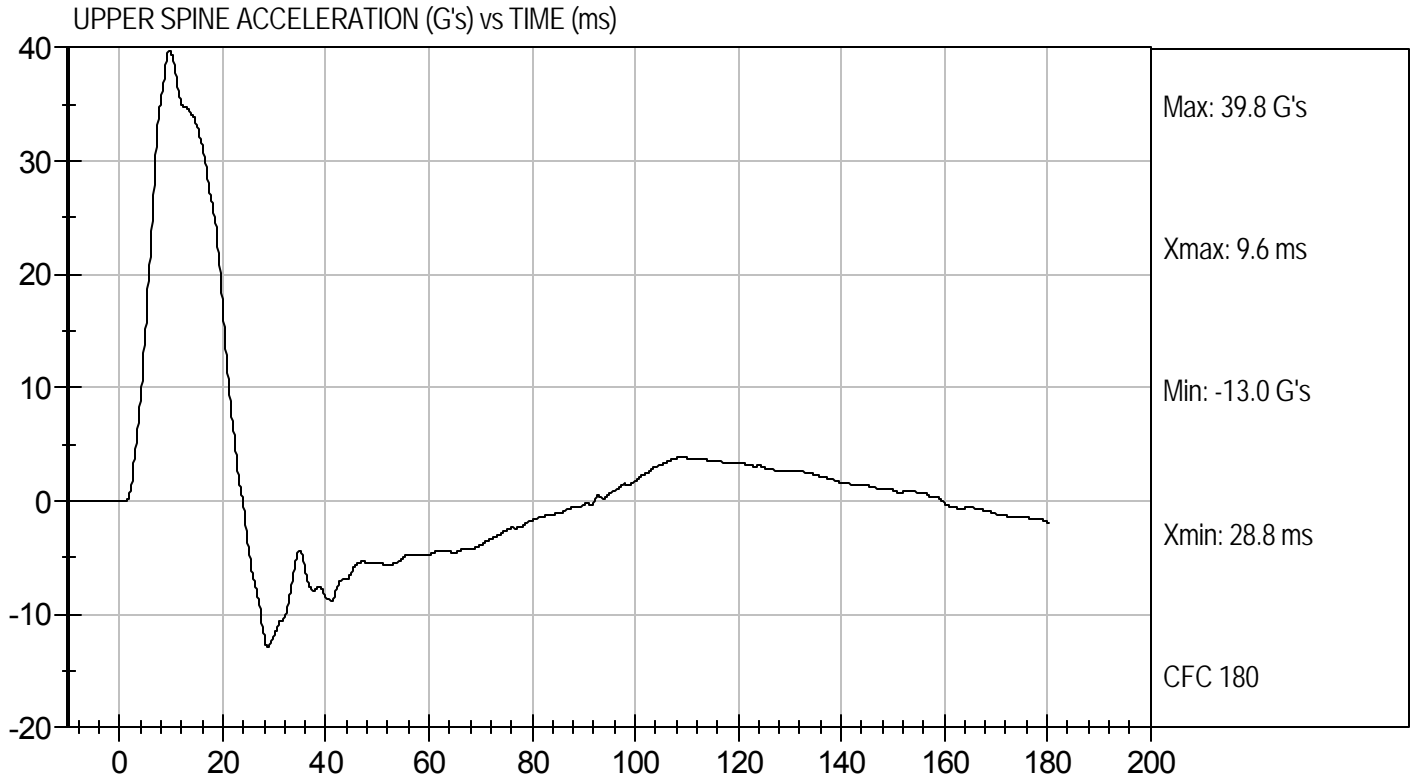


MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)





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

ATD Serial No: 306

Test I.D: D12035

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Force	G's	14 to 18	16	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	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

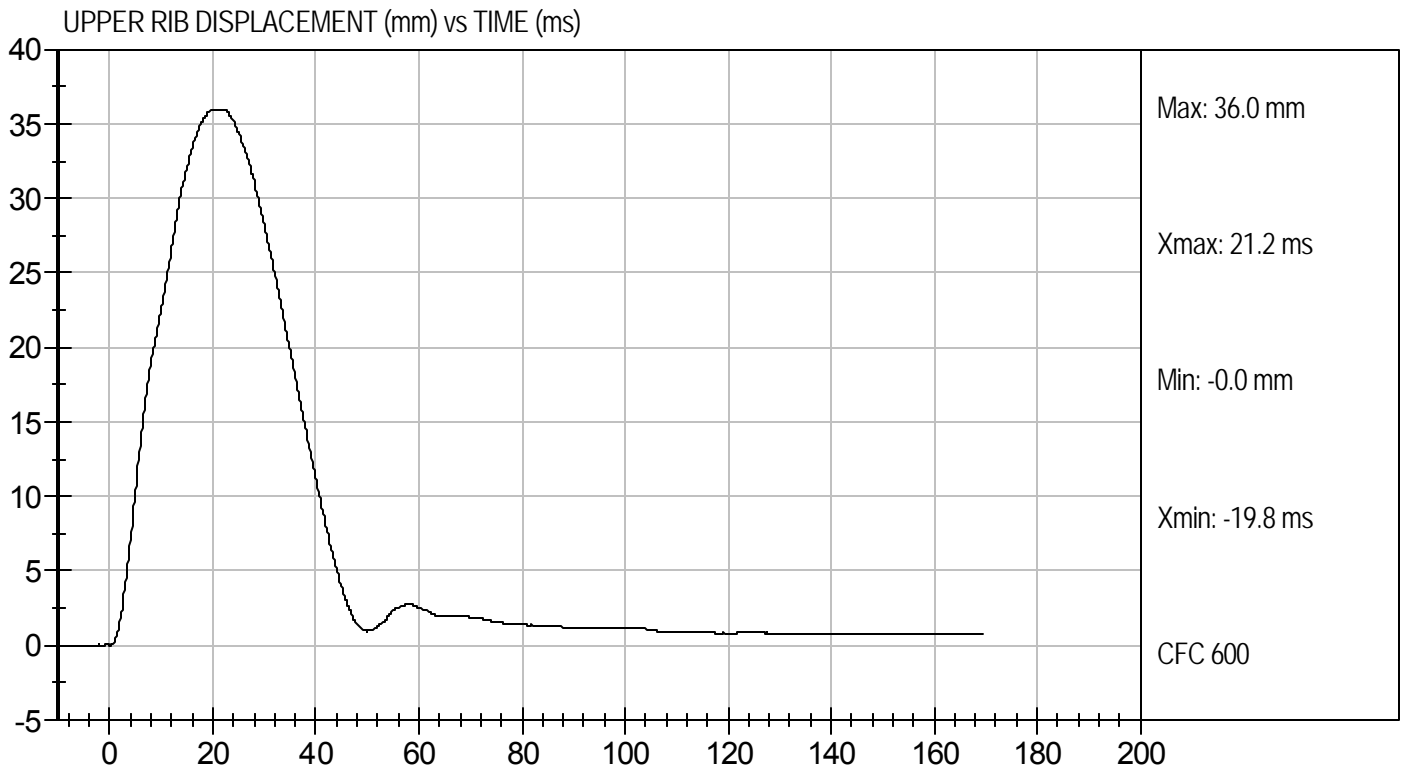
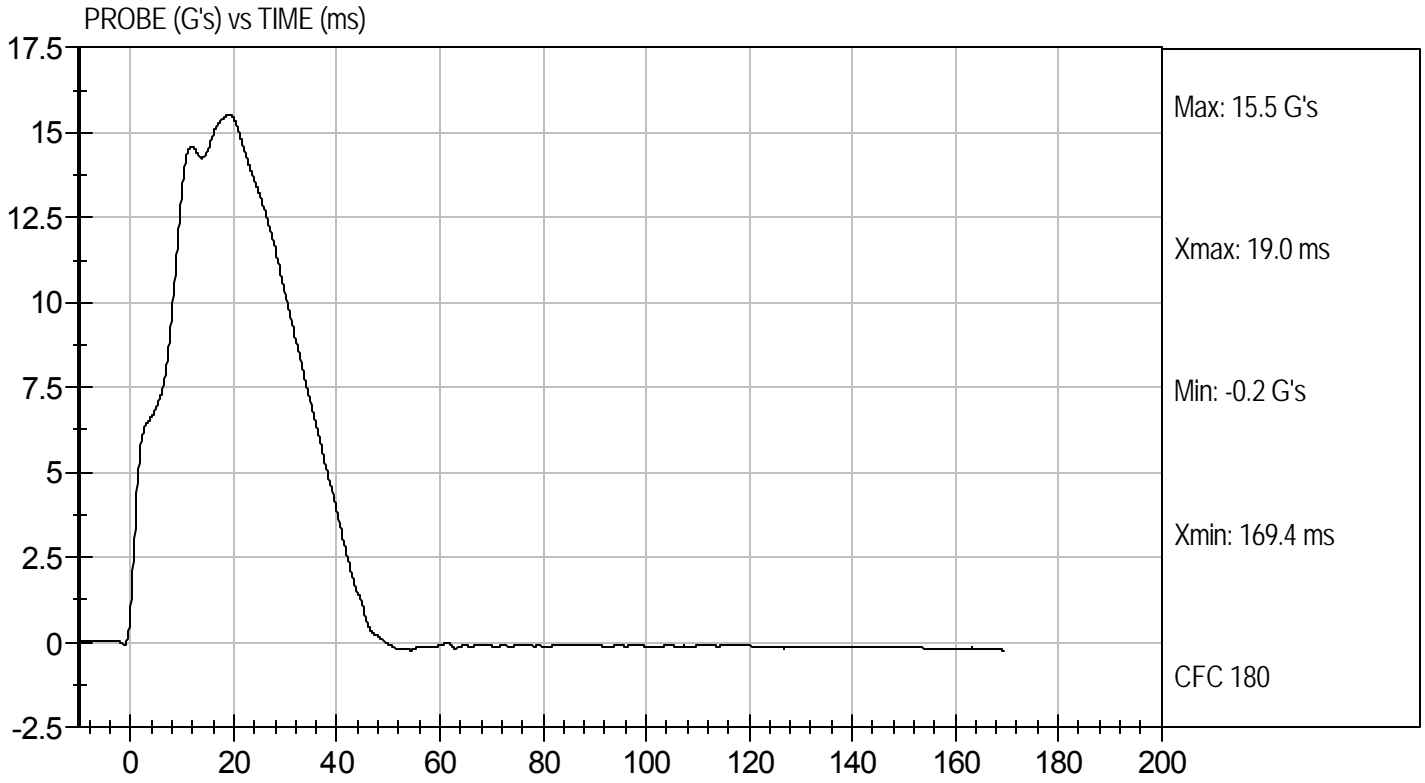
1/5/12
Test Date

David Winkelbauer
Approved By



Test Desc: Thorax Without Arm
Component ID: D12035

Test Date: 1/5/12
Velocity: 14.24 ft/s, 4.34 m/s

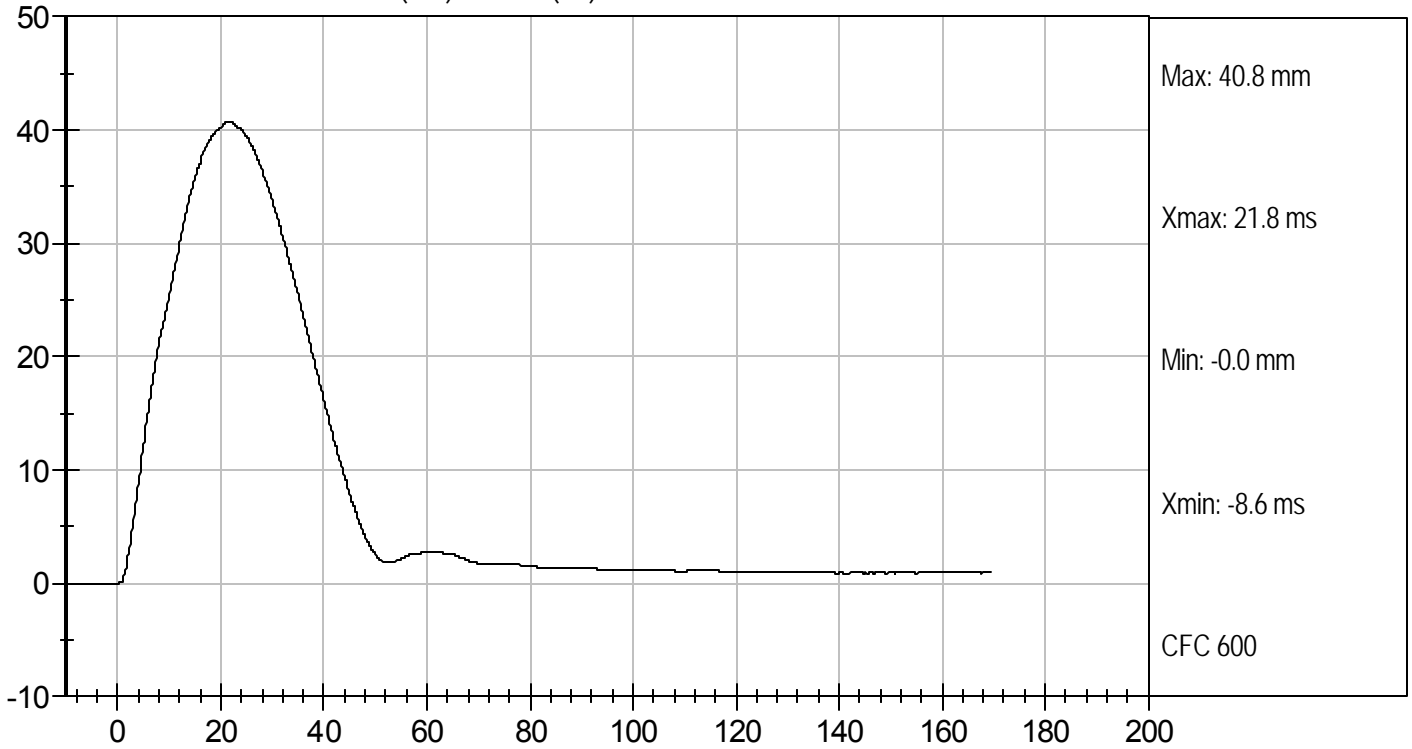




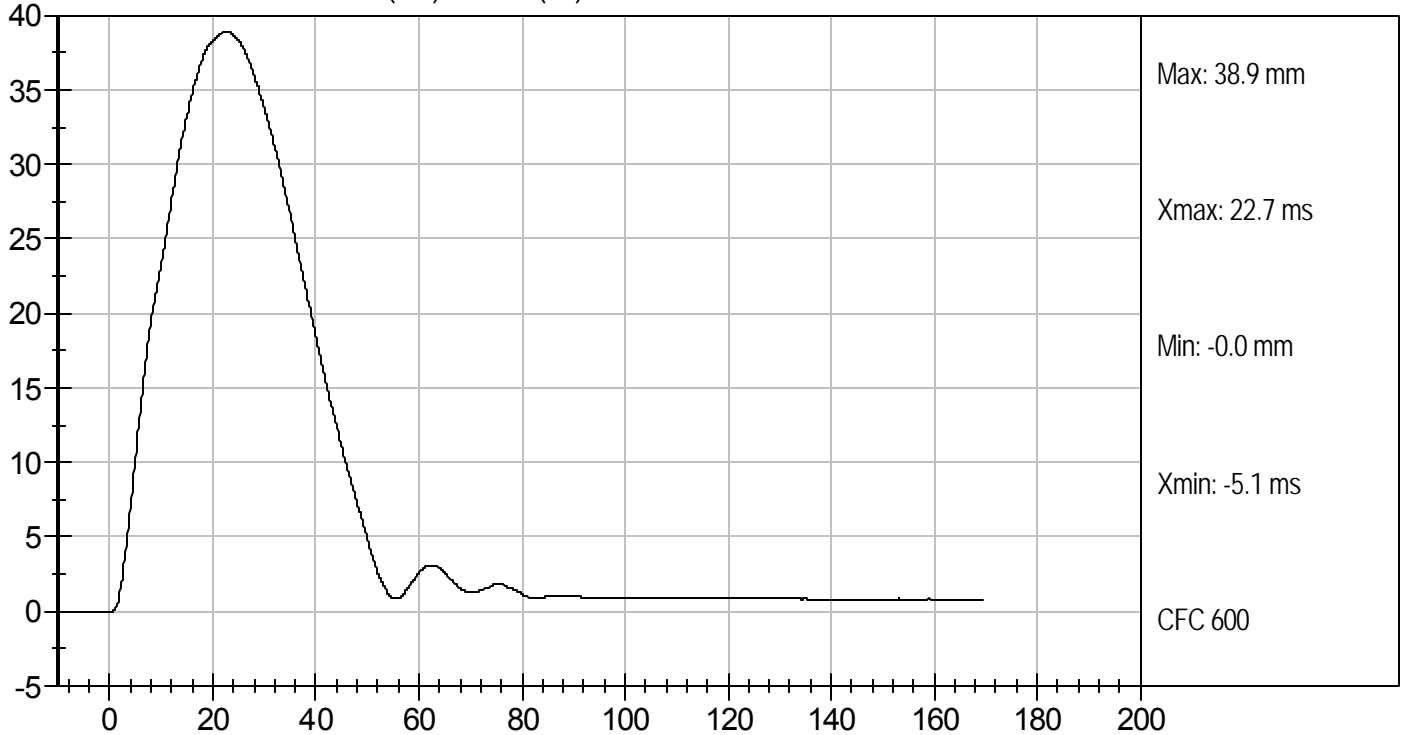
Test Desc: Thorax Without Arm
Component ID: D12035

Test Date: 1/5/12
Velocity: 14.24 ft/s, 4.34 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)

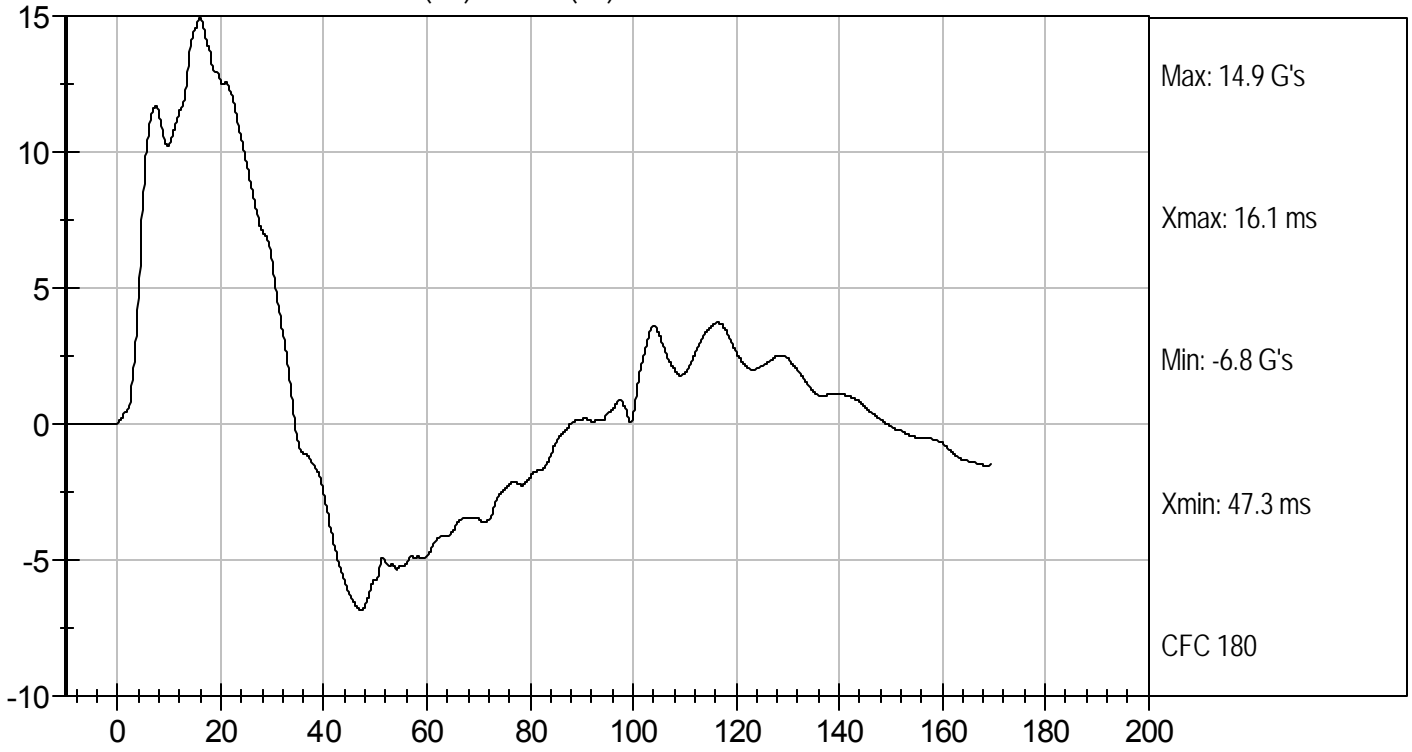


LOWER RIB DISPLACEMENT (mm) vs TIME (ms)

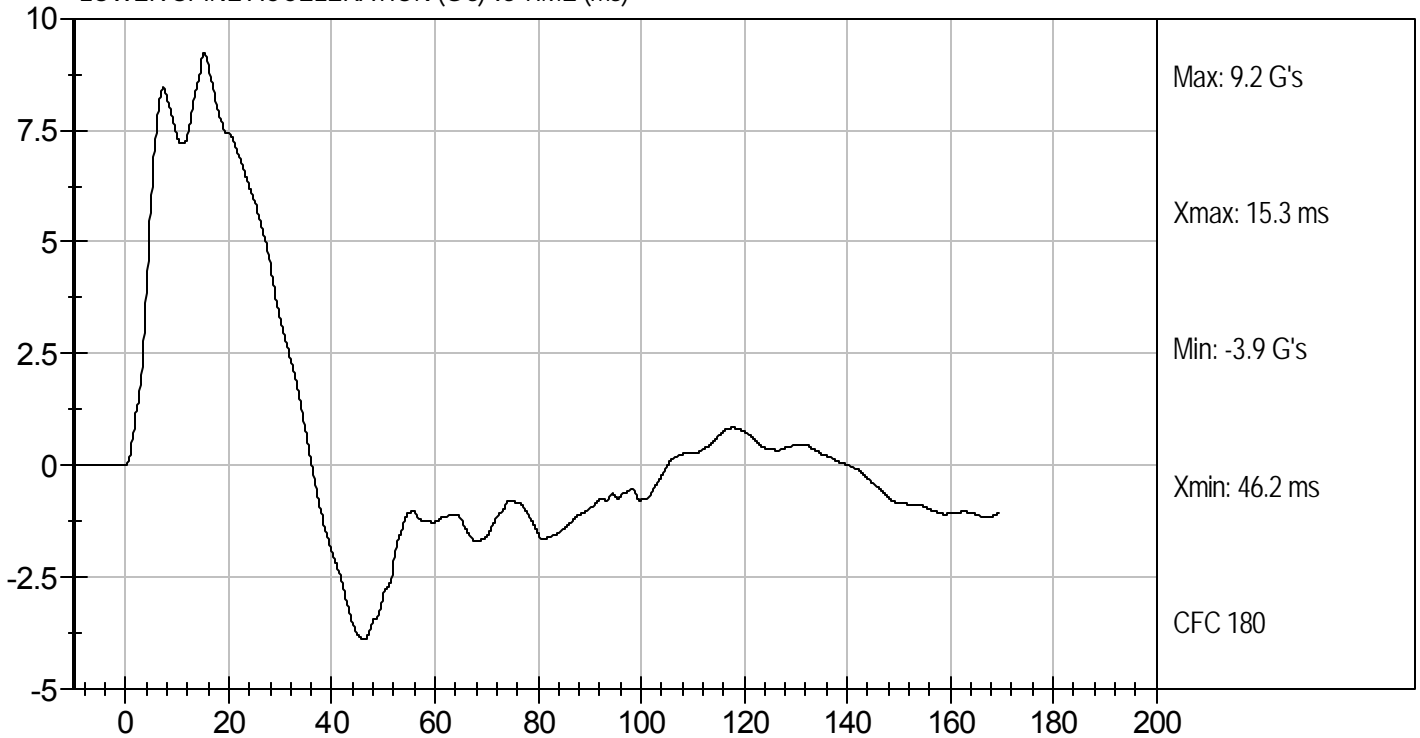




UPPER SPINE ACCELERATION (G's) vs TIME (ms)



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



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

ATD Serial No: 306

Test I.D: D12036

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Peak Impactor Acceleration	G's	12 to 16	14	Pass
Upper Rib Displacement	mm	36 to 47	38	Pass
Lower Rib Displacement	mm	33 to 44	35	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

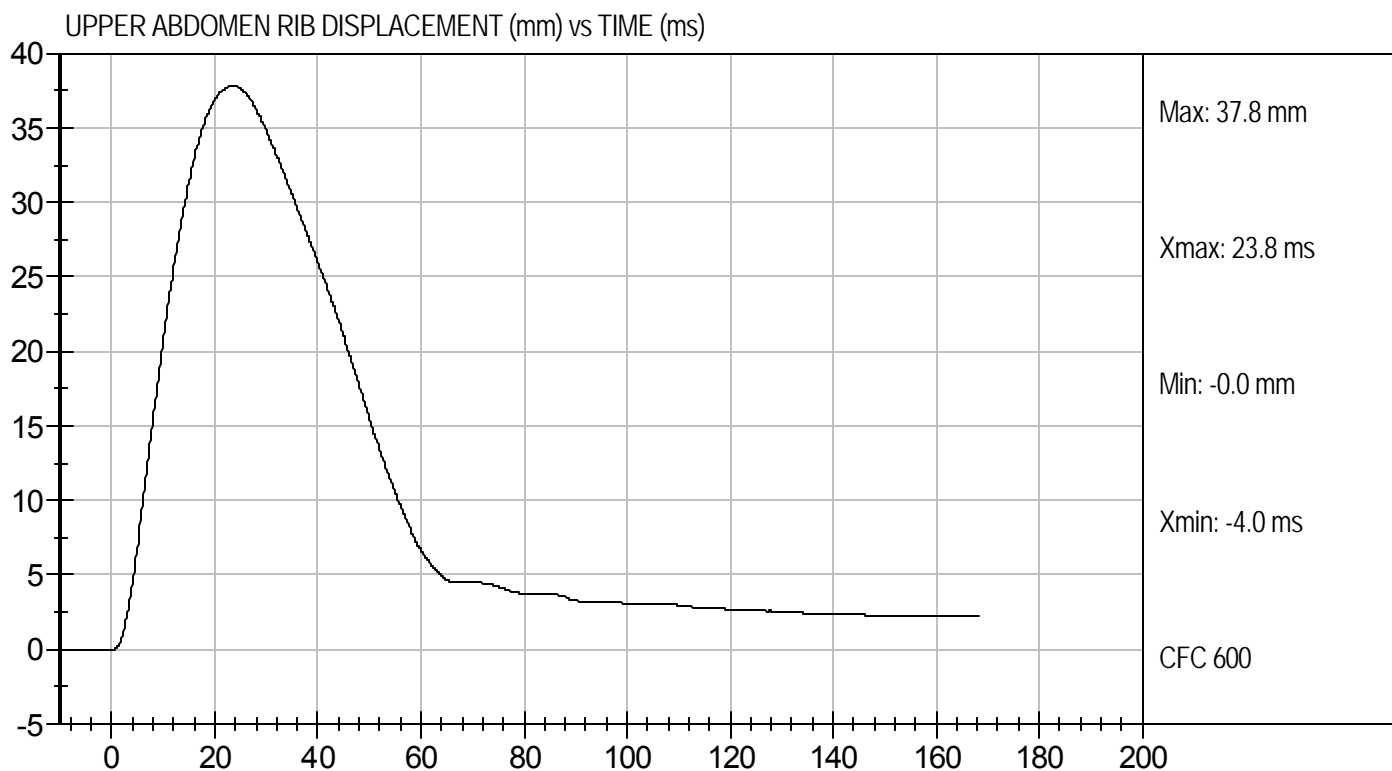
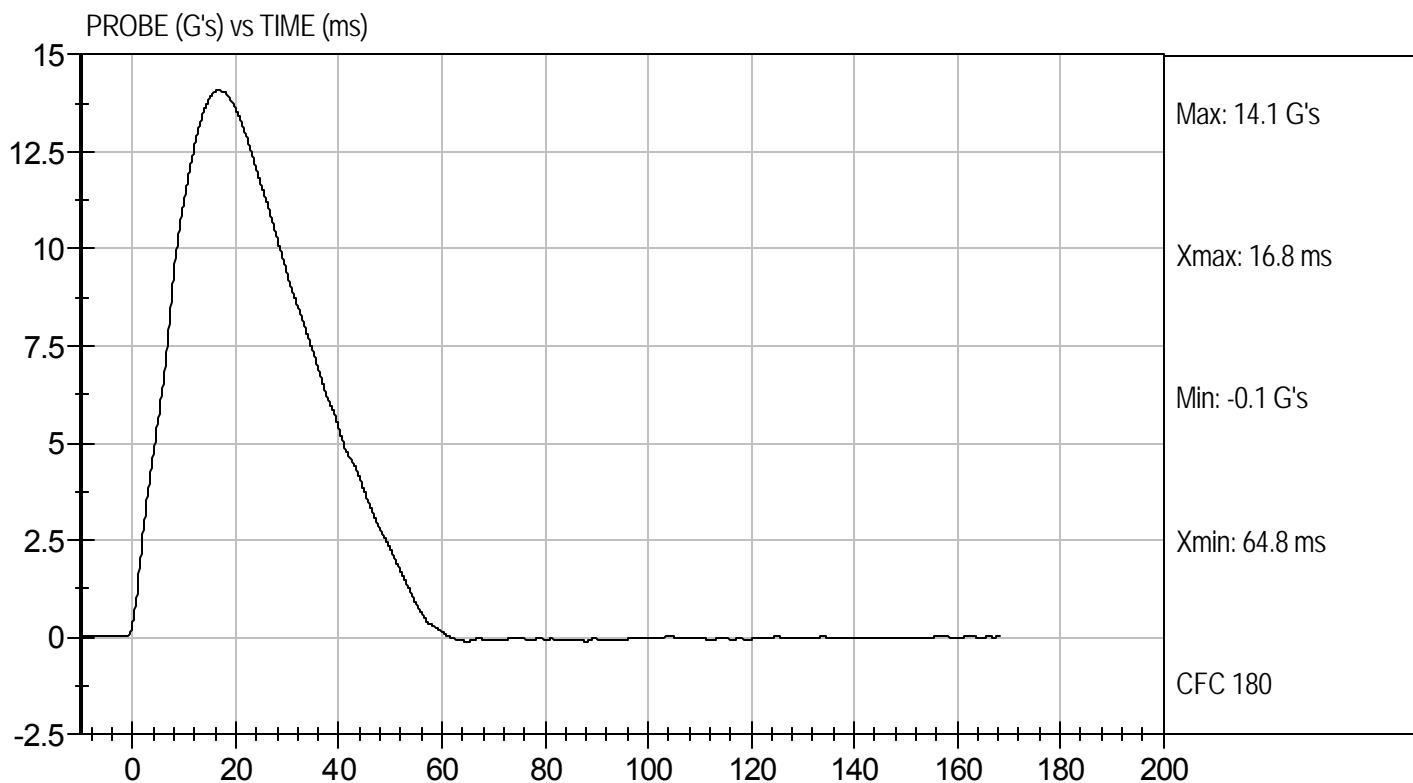
1/5/12
Test Date

David Winkelbauer
Approved By



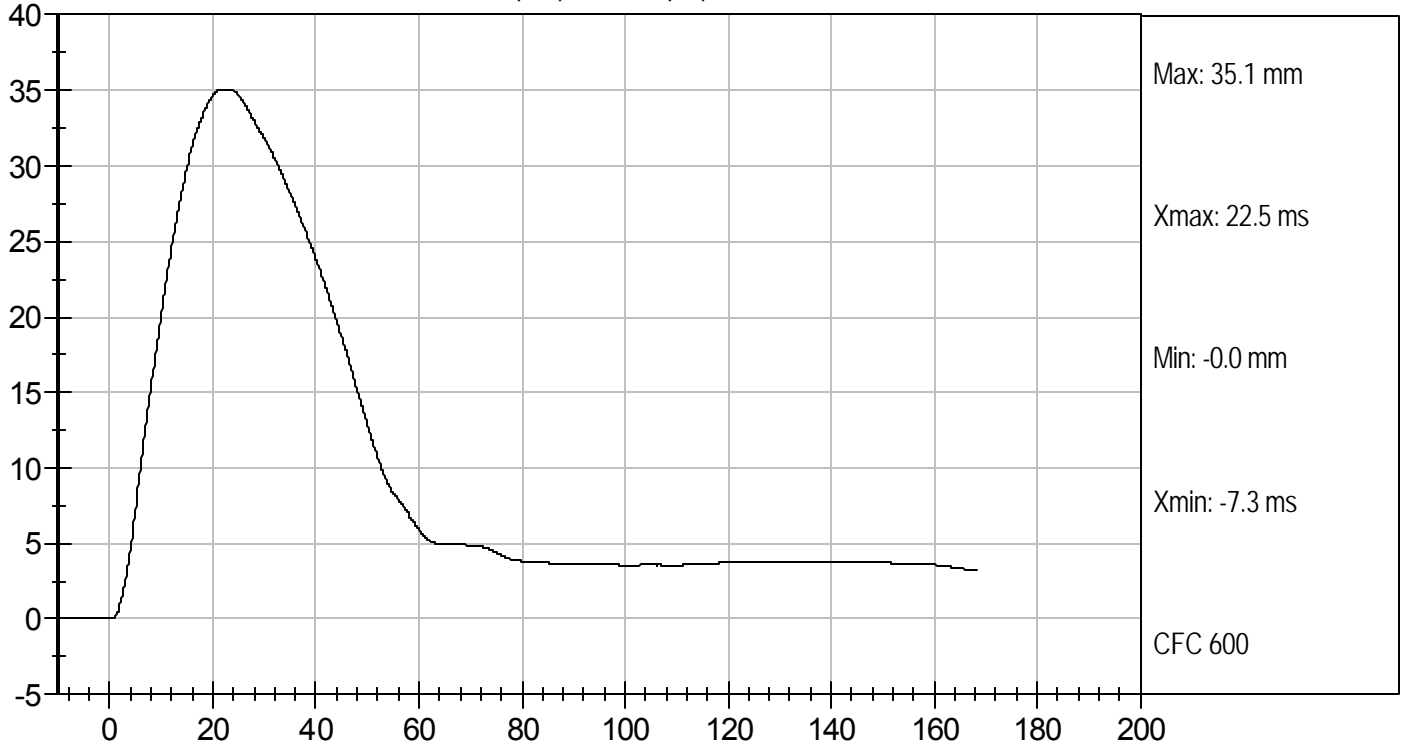
Test Desc: Abdomen Impact
Component ID: D12036

Test Date: 1/5/12
Velocity: 14.12 ft/s, 4.30 m/s

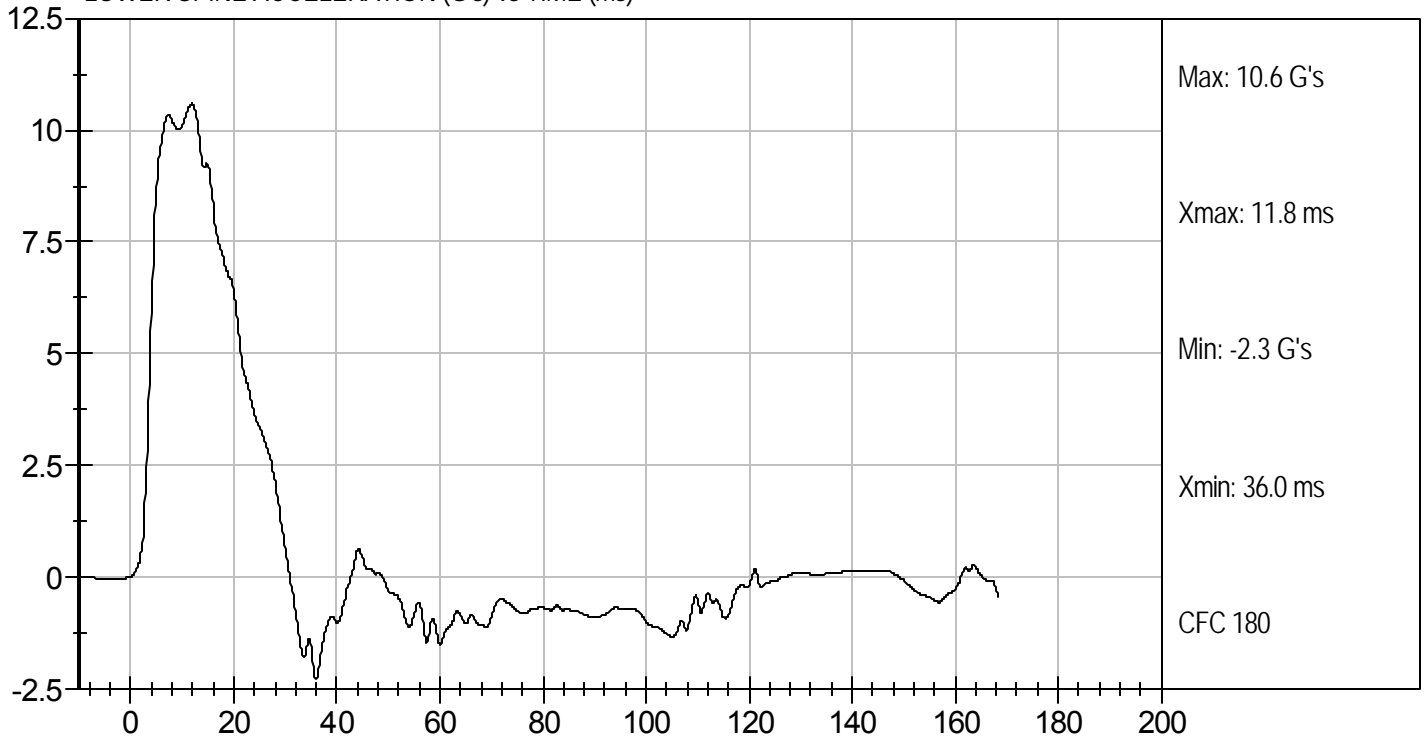




LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



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



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

ATD Serial No: 306

Test I.D: D12037

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor Acceleration	G's	38 to 47	42	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	42	Pass
Peak Acetabulum Force	N	3600 to 4300	3810	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

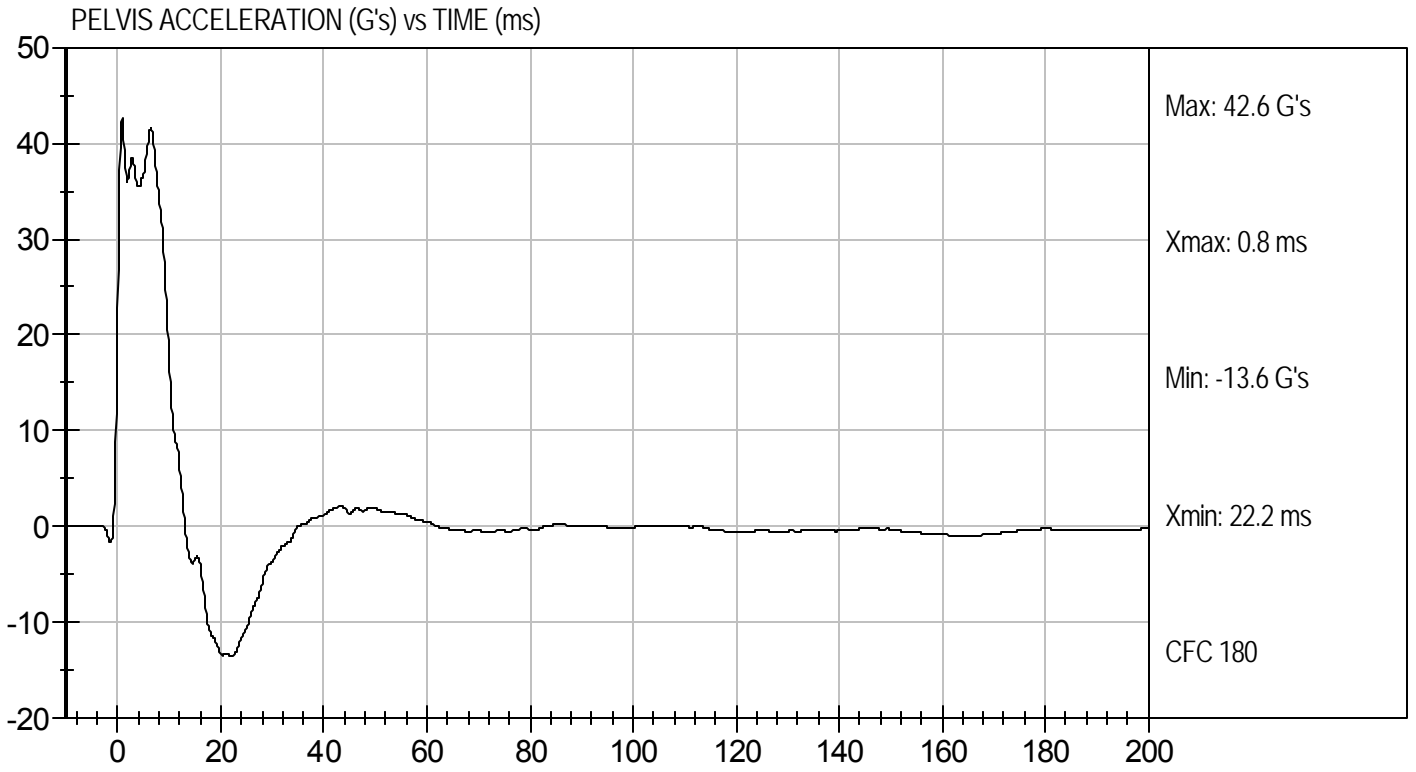
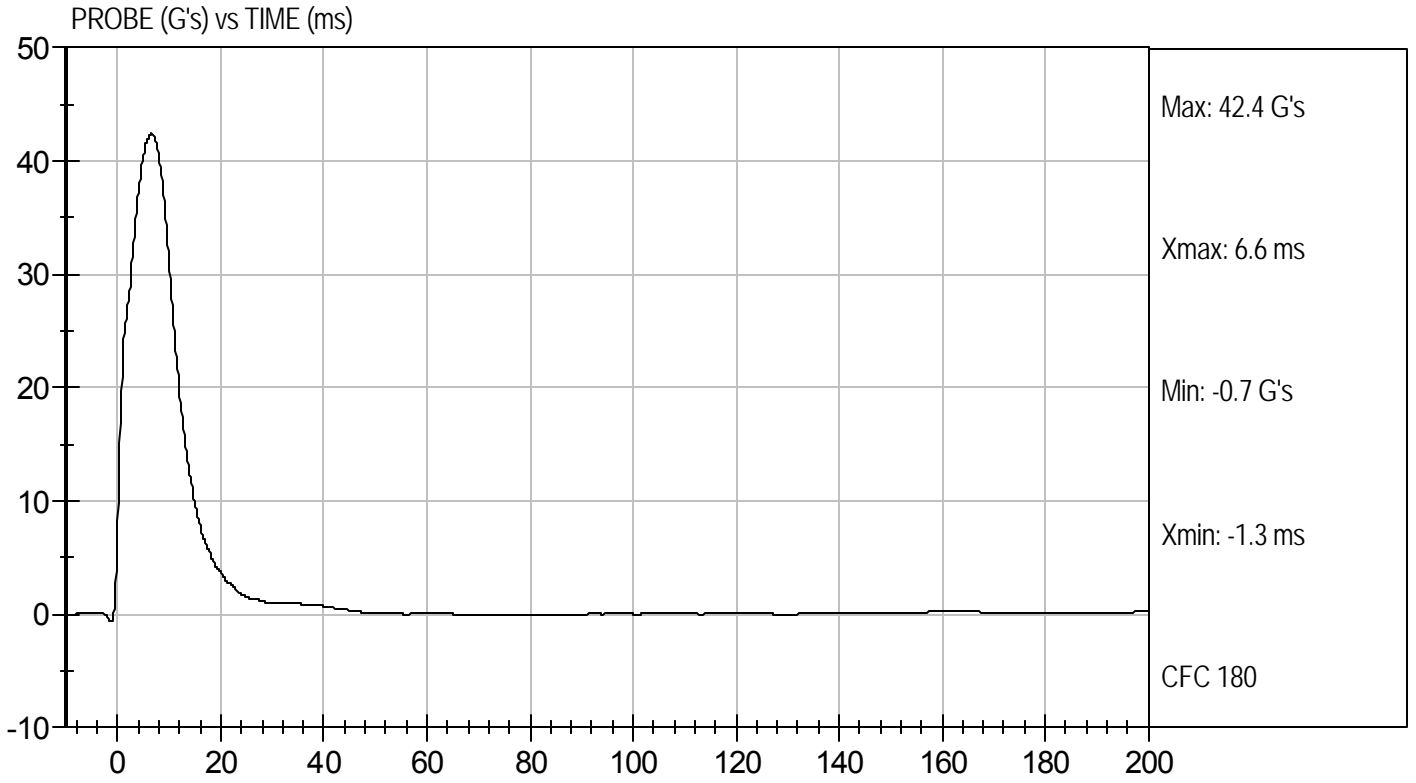
1/5/12
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D12037

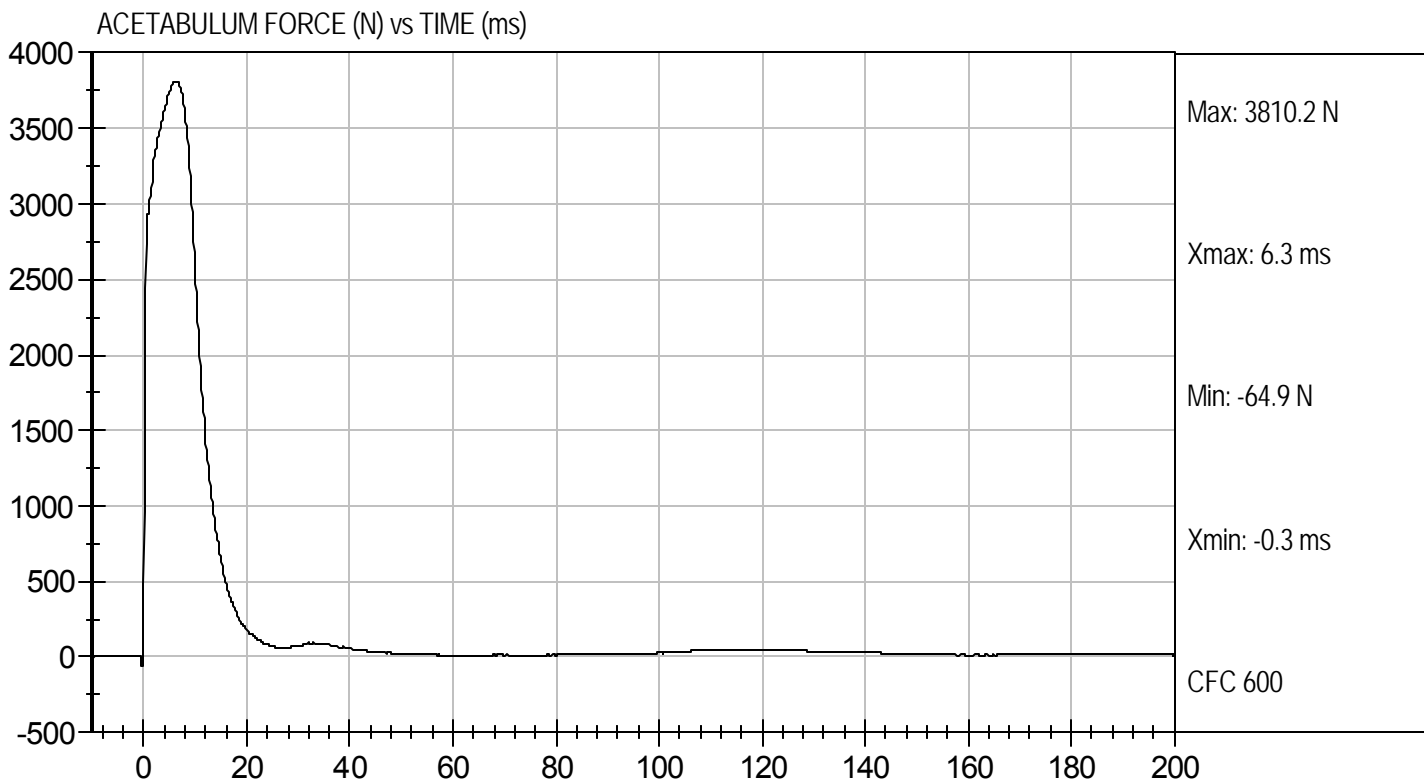
Test Date: 1/5/12
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D12037

Test Date: 1/5/12
Velocity: 21.9 ft/s, 6.68 m/s



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

ATD Serial No: 306

Test I.D: D12038

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	36 to 45	40	Pass
Pelvis Y Acceleration	G's	28 to 39	35	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4912	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

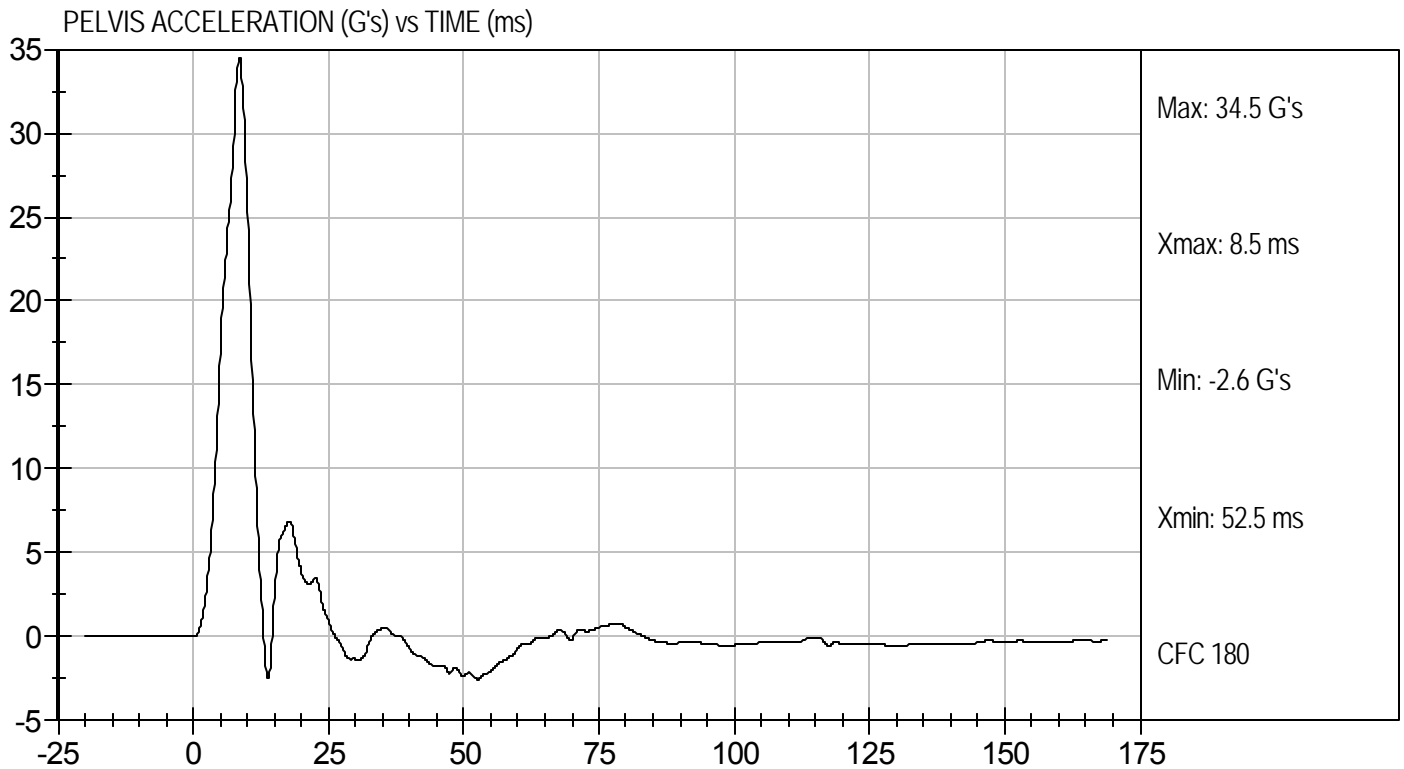
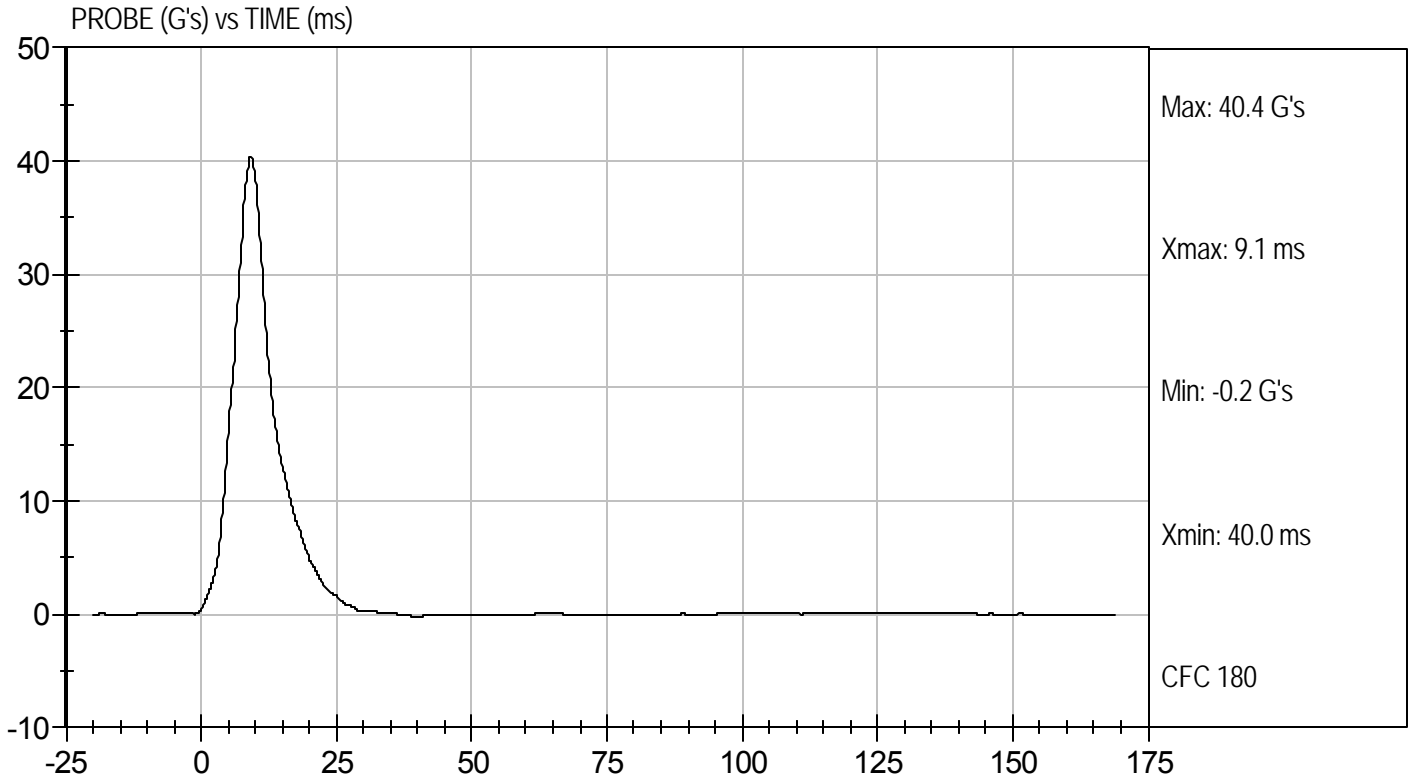
1/5/12
 Test Date

David Winkelbauer
 Approved By



Test Desc: Iliac Impact
Component ID: D12038

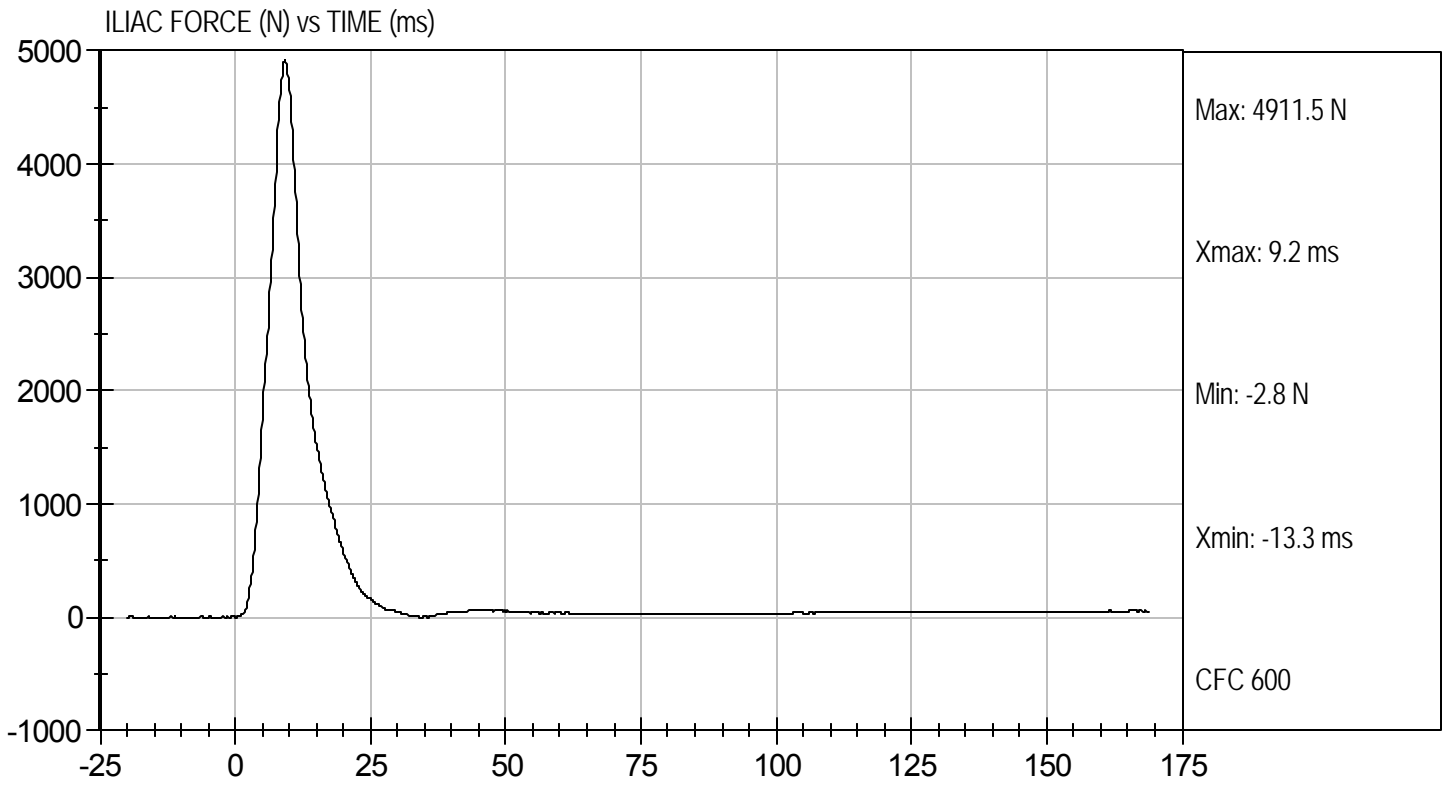
Test Date: 1/5/12
Velocity: 14.36 ft/s, 4.38 m/s





Test Desc: Iliac Impact
Component ID: D12038

Test Date: 1/5/12
Velocity: 14.36 ft/s, 4.38 m/s



APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N 032		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers		X	P73737	Endevco	10/04/11
		Y	P73738	Endevco	10/04/11
		Z	P73740	Endevco	10/04/11
Head Accelerometers		Xr	P66627	Endevco	10/10/11
		Yr	P73753	Endevco	10/04/11
		Zr	P73754	Endevco	10/04/11
Thorax Rib Displacement Potentiometers	Upper	Y	G176	Honeywell	10/12/11
	Middle	Y	G169	Honeywell	10/12/11
	Lower	Y	G164	Honeywell	10/12/11
Abdomen Load Cells	Forward	Y	ABG1513	Denton	05/20/11
	Middle	Y	ABG1531	Denton	05/20/11
	Rear	Y	ABG1536	Denton	05/20/11
Lower Spine Accelerometers (T12)		X	P73742	Endevco	10/04/11
		Y	P73743	Endevco	10/04/11
		Z	P73749	Endevco	10/04/11
Pubic Symphysis Load Cell		Y	PG462	Denton	05/02/11

Table 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 306		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers			X	P67884	Endevco	12/06/11
			Y	P67886	Endevco	12/06/11
			Z	P67887	Endevco	12/06/11
Head Accelerometers			X	P67888	Endevco	12/06/11
			Y	P67889	Endevco	12/06/11
			Z	P67890	Endevco	12/06/11
Displacement Potentiometers	Thoracic Rib	Upper	Y	G1187	FTSS	12/06/11
		Middle	Y	G1261	FTSS	12/06/11
		Lower	Y	G1270	FTSS	12/06/11
	Abdominal Rib	Upper	Y	G1287	FTSS	12/06/11
		Lower	Y	G1304	FTSS	12/06/11
Lower Spine Accelerometers (T12)			X	P67893	Endevco	12/06/11
			Y	P67894	Endevco	12/06/11
			Z	P67895	Endevco	12/06/11
Acetabulum Load Cell			Y	ACG111	FTSS	05/20/11
Iliac Wing Load Cell			Y	IWG226	FTSS	05/20/11
Pelvis Plug (struck side)				46404	FTSS	09/22/11
Pelvis Plug (non-struck side)				46396	FTSS	09/22/11

Table 3 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P50055	Endevco	11/04/11
Vehicle Center of Gravity	Y	P50056	Endevco	11/04/11
Vehicle Center of Gravity	Z	P50057	Endevco	11/04/11
Right Sill at Front Seat	X	P59401	Endevco	12/14/11
Right Sill at Front Seat	Y	P59402	Endevco	12/14/11
Right Sill at Front Seat	Z	P59403	Endevco	12/14/11
Right Sill at Rear Seat	X	P59663	Endevco	12/14/11
Right Sill at Rear Seat	Y	P47881	Endevco	11/04/11
Right Sill at Rear Seat	Z	P59665	Endevco	12/14/11
Left Sill at Front Door	Y	P63512	Endevco	11/04/11
Left Sill at Rear Door	Y	P63277	Endevco	11/04/11
Left A-Post Lower	Y	P47837	Endevco	08/22/11
Left A-Post Middle	Y	P48166	Endevco	12/13/11
Left B-Post Lower	Y	P48388	Endevco	11/04/11
Left B-Post Middle	Y	P47118	Endevco	09/12/11
Front Seat Track	Y	P47079	Endevco	10/20/11
Rear Seat Track or Structure	Y	P55682	Endevco	10/20/11
Right Rear Occ. Compartment	Y	P49520	Endevco	08/22/11
Engine Block	X	P63283	Endevco	08/22/11
Engine Block	Y	P63284	Endevco	08/22/11
Rear Floorpan Above Axle	X	P63338	Endevco	10/20/11
Rear Floorpan Above Axle	Y	P63336	Endevco	10/20/11
Rear Floorpan Above Axle	Z	P63337	Endevco	10/20/11

Table 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	P63411	Endevco	07/08/11
MDB Center of Gravity	Y	P63412	Endevco	07/08/11
MDB Center of Gravity	Z	P63413	Endevco	07/08/11
Left Frame at Rear Axle Centerline	X	P59322	Endevco	07/07/11
Left Frame at Rear Axle Centerline	Y	P59323	Endevco	07/07/11