REPORT NUMBER: SINCAP-MGA-2012-056

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

NISSAN MOTOR CO., LTD.
2012 Nissan Juke SV FWD SUV
NHTSA No.: MC5209

MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105

Test Date: January 19, 2012

Final Report Date: March 9, 2012

FINAL REPORT

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

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Prepared by: 
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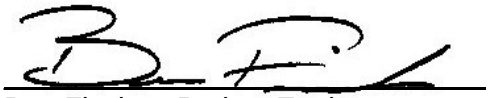
Approved by: 
Ben Fischer, Project Engineer

Approval Date: March 9, 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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4. Title and Subtitle Final Report of New Car Assessment Program Side Impact MDB Testing of a 2012 Nissan Juke SV FWD SUV; NHTSA No.: MC5209		*5. Report Date* March 9, 2012 *6. Performing Organization Code* MGA
7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer		*8. Performing Organization Report No.* SINCAP-MGA-2012-056
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-09-D-00124
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave, SE, Room W43-410 Washington, D.C. 20590		*13. Type of Report and Period Covered:* Final Test Report January 19 to March 9, 2012 *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 Nissan Juke SV FWD SUV 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 19, 2012.

The impact velocity of the Moving Deformable Barrier (MDB) was 62.3 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 241 mm at level 2. The test vehicle's performance was as follows:

		Driver ATD (ES-2re)	
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	105
Maximum Thorax Rib Deflection	mm	44	34
Total Abdominal Force	N	2500	969
Pubic Symphysis Force	N	6000	2521

	Passenger ATD (SID-IIs)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	145
Resultant Lower Spine Acceleration	Gs	82	76
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4263
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdomen Rib Deflection	mm	45*	23

*Proposed IARV

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

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 Nissan Juke SV FWD SUV. 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 Nissan Juke SV FWD SUV 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 62.3 km/h (38.7 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 19, 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

	Driver ATD (ES-2re)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	105
Maximum Thorax Rib Deflection	mm	44	34
Total Abdominal Force	N	2500	969
Pubic Symphysis Force	N	6000	2521

	Passenger ATD (SID-IIs)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	145
Resultant Lower Spine Acceleration	Gs	82	76
Total Pelvic Force	N	5525	4263
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdomen Rib Deflection	mm	45*	23

*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	Yes		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Abdomen/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

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

GENERAL COMMENTS

There was no valid data collected for:

Left Lower A-Post Y after 2 msec.
Left Mid A-Post Y after 11 msec.
Left Lower B-Post Y after 4 msec.
Left Mid B-Post Y
Driver Seat Track Y after 13 msec.

Left Front Sill Y is questionable from 4-35 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 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MC5209	Traction Control System (TCS)	Yes
Model Year	2012	Auto-Leveling System	No
Make	Nissan	Automatic Door Locks (ADL)	Yes
Model	Juke	Power Window Auto-Reverse	Yes
Body Style	SUV	Other Optional Feature	N/A
VIN	JN8AF5MR3CT101484	Driver Front Airbag	Yes
Body Color	Cayenne Red	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	82 / 51	Driver Head/Torso Airbag	No
Engine Displacement (L)	1.6	Driver Torso Airbag	No
Type/No. Cylinders	4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Lateral	Driver Pelvis Airbag	No
Transmission Type	Manual	Driver Knee Airbag	No
Transmission Speeds	6	Rear Pass. Curtain Airbag	Yes
Overdrive	No	Rear Pass. Head/Torso Airbag	No
Final Drive	Front	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	Yes	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
All Wheel Drive (AWD)	No	Other Safety Restraint	N/A
Does owner's manual provide instruction to turn off automatic door locks?			No

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.	GVWR (kg)	1770
Date of Manufacture	10/11	GAWR Front (kg)	950
Vehicle Type	MPV	GAWR Rear (kg)	840

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				390	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW)				50	(A-B)

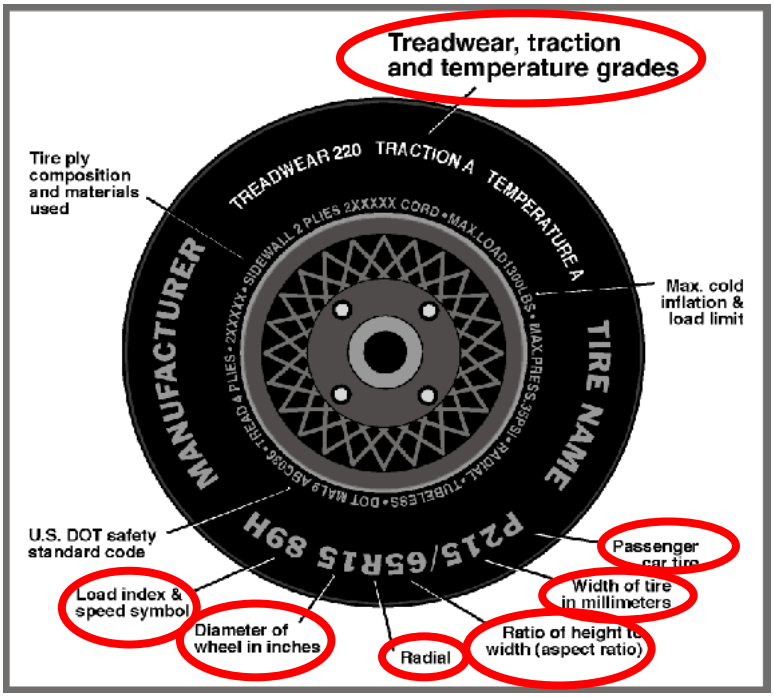
VEHICLE SEAT TYPE

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

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

Test Vehicle: 2012 Nissan Juke SV FWD SUV
Test Program: NCAP Side MDB Impact Test
NHTSA No. MC5209
Test Date: 1/19/2012

VEHICLE TIRE INFORMATION



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	230	230
Recommended Tire Size	P215/55R17	P215/55R17

TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Tire Size on Vehicle	P215/55R17	P215/55R17
Tire Manufacturer	Goodyear	Goodyear
Tire Name	Eagle RS-A	Eagle RS-A
Tire Type	Passenger	Passenger
Tire Width	215	215
Aspect Ratio	55	55
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index/Speed Symbol	93V	93V
Treadwear	260	260
Traction Grade	A	A
Temperature Grade	A	A
Tire Material	Rubber	Rubber

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

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

TEST PRESSURES

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

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

		As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
	Units	Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	402.3	255.4		445.0	320.7		440.4	332.9	
Right	kg	411.0	255.8		424.1	306.6		417.4	313.0	
Ratio	%	61.4	38.6		58.1	41.9		57.0	43.0	
Totals	kg	813.3	511.2	1324.5	869.1	627.3	1496.4	857.8	645.9	1503.7

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1324.5	(A)
Sum of Actual Weight of 2 P572 ATDs Used	kg	129.3	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	50	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1503.8	(A+B+C)

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

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Weight of Ballast, if any	17.7
Spare tire, jack & tools, right taillight, cargo holder, trunk carpet.	24.0

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

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

TEST VEHICLE ATTITUDES AND CG

	Units	Fully Loaded	As Tested	Meets Requirement***
Left Front	mm	729	726	Yes
Right Front	mm	729	726	Yes
Right Rear	mm	722	731	Yes
Left Rear	mm	721	731	Yes
Vehicle CG (Aft of Front Axle)	mm	1089	1063	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	21	17	

*** 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 Nissan Juke SV FWD SUV	NHTSA No.	MC5209
Test Program:	NCAP Side MDB Impact Test	Test Date:	1/19/2012

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	19.0	15.2	17.1
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

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

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

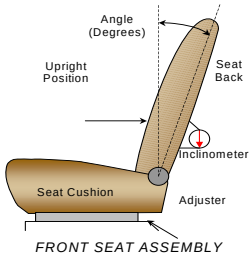
Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	240	24 (1st as 0)	120	12th (1st as 0)
Front Passenger Seat	240	24 (1st as 0)	120	12th (1st 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	69.5		0.0	7th (1st as 0)
Front Passenger Seat	69.2		-0.7	7th (1st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	11.0*	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	11.0*	Fixed
Rear Center Seat	Fixed	Fixed	11.0*	Fixed

*Seat back was fixed, angle measured on headrest post.

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

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

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	3 detents (1st as 0)	0 (uppermost as 0)
Rear Seat	Fixed	Not Applicable

HEAD RESTRAINT ADJUSTMENT

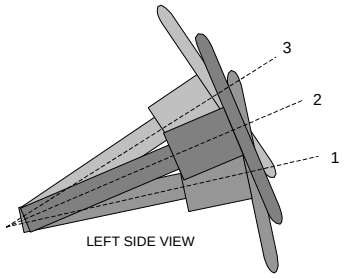
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	5	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.

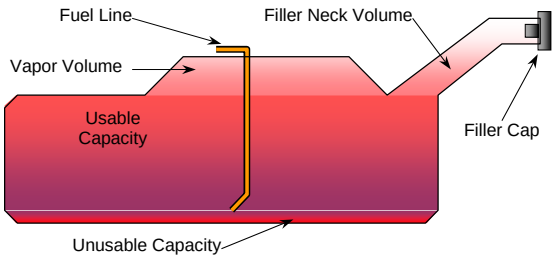
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	66.9	
Geometric Center, Position 2	64.2	
Uppermost, Position 3	61.5	
Telescoping Steering Wheel Travel		
Test Position	64.2	



STEERING COLUMN ASSEMBLY

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 ignition key is in the "ON" position. The fuel pipe is on the right side.



VEHICLE FUEL TANK ASSEMBLY

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

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

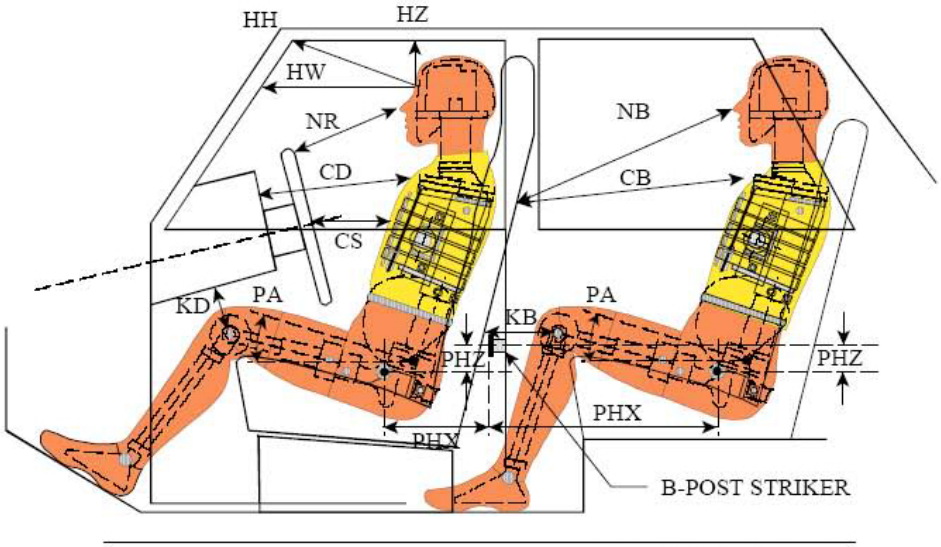
FUEL TANK CAPACITY DATA

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

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

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012



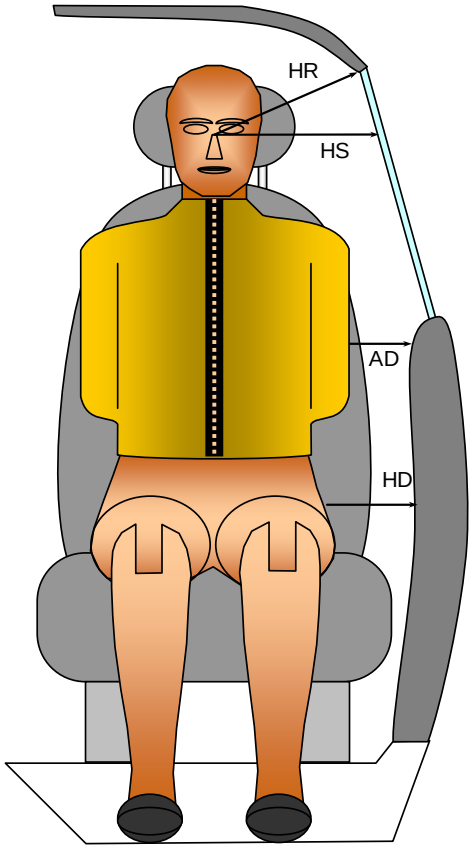
LEFT SIDE VIEW

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	343	17.4		
HW		Head to Windshield	549			
HZ	HZ	Head to Roof Liner	155		227	
NR	NB	Nose to Rim/Seat Back	454	19.6	472	11.2
CD	CB	Chest to Dashboard/Seat Back	520	2.9	471	17.4
CS		Chest to Steering Wheel	328	13.8		
KDL	KBL	Left Knee to Dash/Seat Back	108	30.8	238	17.5
KDR	KBR	Right Knee to Dash/Seat Back	103	32.3	240	15.9
PAX	PAX	Pelvic Tilt Angle X		23.5		21.1
	PAY	Pelvic Tilt Angle Y		-1.4		1.2
PHX	PHX	Hip Point to Striker (X-Axis)	239		205	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	113		258	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Nissan Juke SV FWD SUV
Test Program: NCAP Side MDB Impact Test
NHTSA No. MC5209
Test Date: 1/19/2012



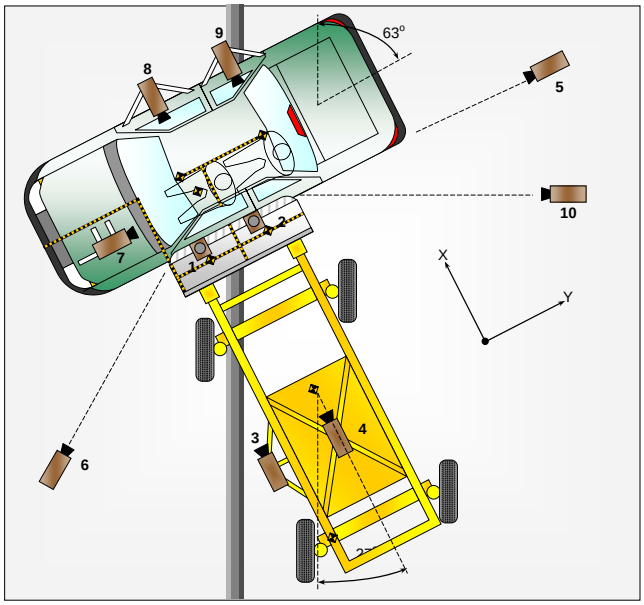
FRONT VIEW OF DUMMY

DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver S/N 032	Passenger S/N 306
HR	Head to Side Header	mm	168	220
HS	Head to Side Window	mm	283	340
AD	Arm to Door	mm	54	157
HD	Hip Point to Door	mm	135	169

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012



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	4580	-1100	24	1000
6	Left Front	2080	-4160	-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

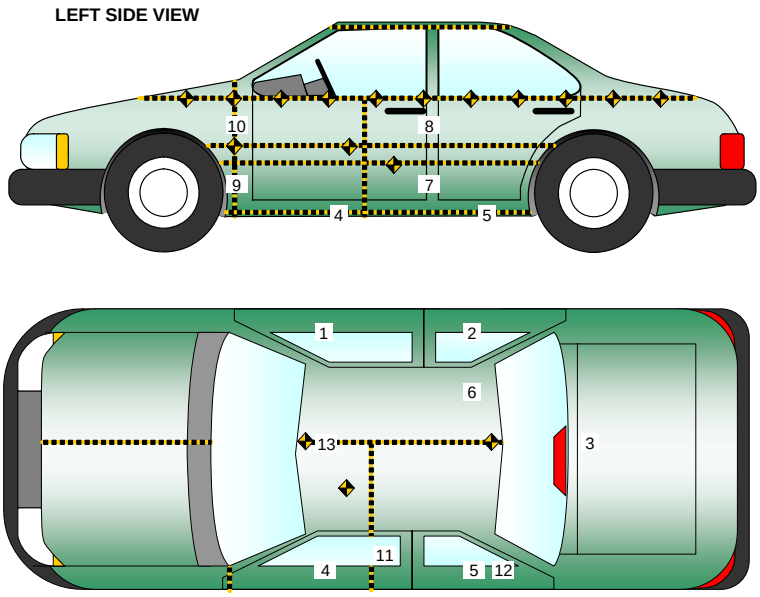
Explain why camera(s) did not operate as intended: Not Applicable

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 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012



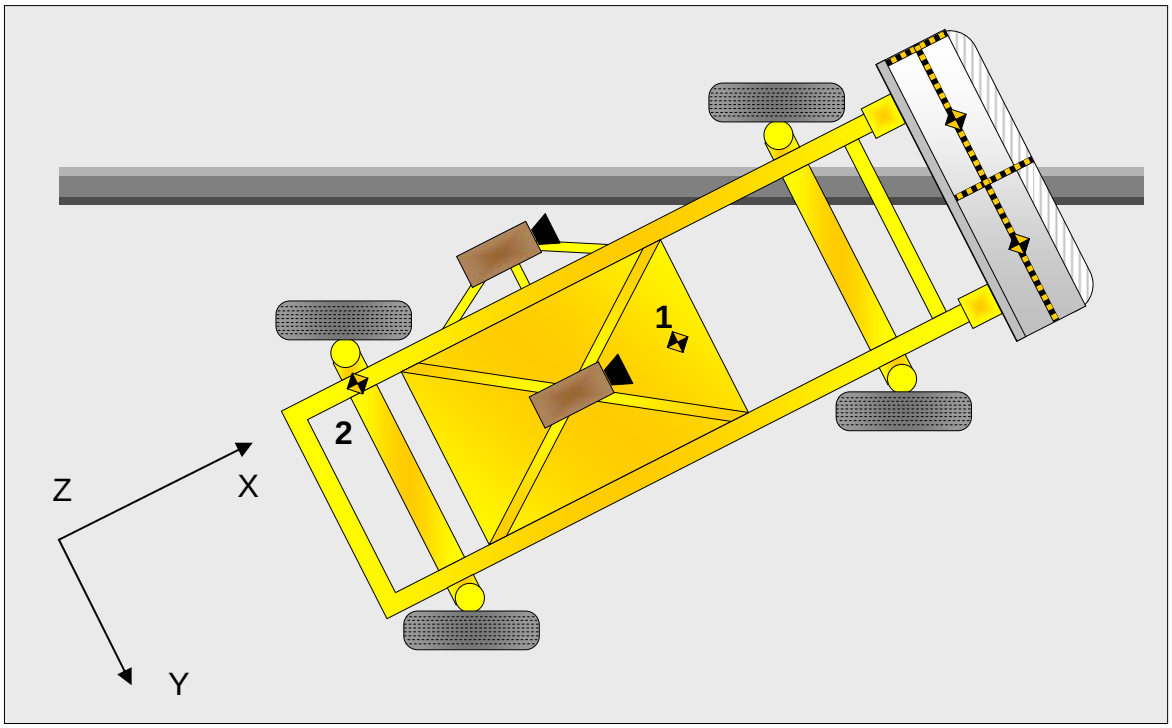
TEST VEHICLE ACCELEROMETER LOCATIONS

Accelerometer Location				
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2165	-168	-235
2	Right Sill at Front Seat	2302	708	-254
3	Right Sill at Rear Seat	1600	708	-250
4	Left Sill at Front Door	2297	-708	-245
5	Left Sill at Rear Door	1561	-708	-250
6	Left Lower A-Post	2730	-650	-596
7	Left Middle A-Post	2805	-741	-876
8	Left Lower B-Post	1695	-681	-614
9	Left Middle B-Post	1784	-668	-842
10	Front Seat Track	2072	-537	-345
11	Rear Seat Structure	1452	-265	-444
12	Rt. Rear Occ. Compartment	1496	416	-279
13	Engine Block	3448	0	-885
14	Rear Above Axle	834	62	-378

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 Nissan Juke SV FWD SUV
Test Program: NCAP Side MDB Impact Test
NHTSA No. MC5209
Test Date: 1/19/2012



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 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

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
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Curtain Airbag, Headrest, Side Header	Curtain Airbag, Headrest
Left Shoulder	Curtain Airbag	C-Post, Door Panel
Upper Torso	Side Airbag	C-Post
Lower Torso	Side Airbag, Seatback	C-Post, Door Panel
Left Hip	Side Airbag	C-Post, Door Panel
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

	Struck Side		Non-Struck Side	
Description	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 Broke
Other Notable Effects	None

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

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2535
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		328
Actual Impact Point (Aft of Front Axle)	mm		346
Horizontal Offset (+forward / -rearward)	mm	+/- 50 of intended impact point	-18
Vertical Offset (+down / -up)	mm	+/- 20 of intended impact point	-2

DATA SHEET NO. 9

MDB SUMMARY OF RESULTS

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

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

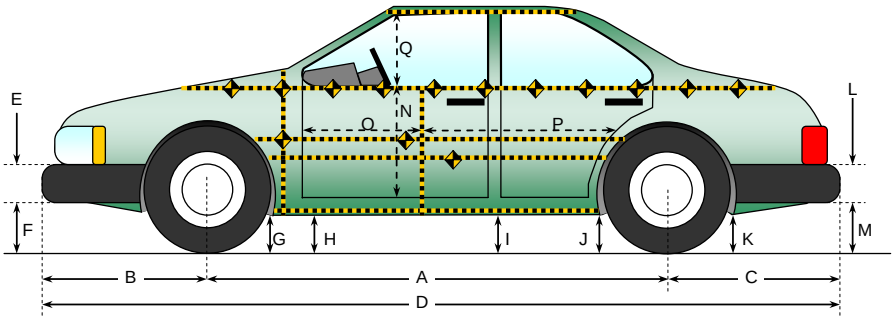
Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.3
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.2
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.9
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.2
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	26.8

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Left	134
B	Top of Bumper	533	800	Left	71
C	Mid-Level	686	800	Left	91
D	Top of Stack	813	800	Left	124

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012



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

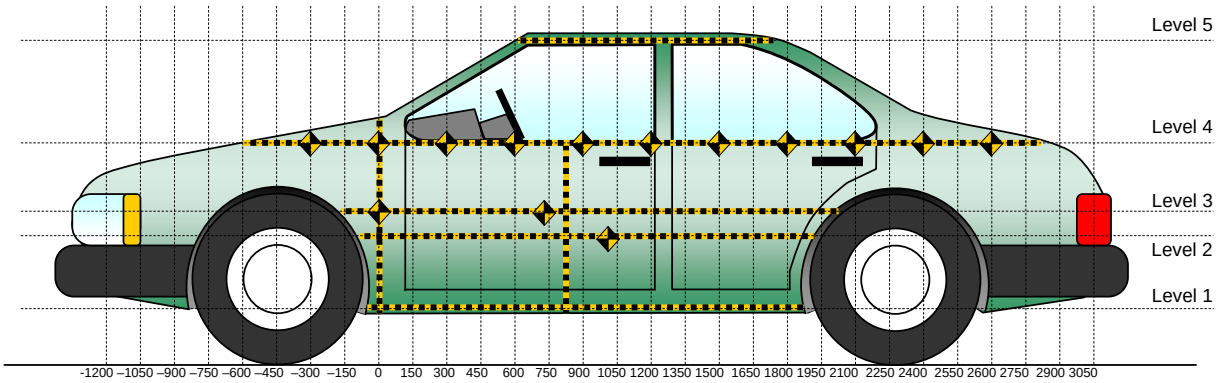
LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2535	2550	-15
B	Front Axle to FSOV	836	804	32
C	Rear Axle to RSOV	753	726	27
D	Total Length at Centerline	4124	4080	44
E	Front Bumper Thickness	140	140	0
F	Front Bumper Bottom to Ground	192	207	-15
G	Sill Height at Front Wheel Well	223	238	-15
H	Sill Height at Front Door Leading Edge	220	247	-27
I	Sill Height at B Pillar	231	260	-29
J1	Sill Height at Rear Wheel Well	232	261	-29
J2	Pinch Weld Height at Rear Wheel Well	232	253	-21
K	Sill Height Aft of Rear Wheel Well	298	308	-10
L	Rear Bumper Thickness	165	165	0
M	Rear Bumper Bottom to Ground	342	344	-2
N	Sill Height to Window Bottom Sill	779	688	91
O	Front Door Leading Edge to Impact CL	722	678	44
P	Rear Door Trailing Edge to Impact CL	1060	1006	54
Q	Front Window Opening	444	495	-51
R	Right Side Length	3135	3129	6
S	Left Side Length	3135	3086	49
T	Vehicle Width at B Post	1728	1606	122

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012



All Measurements Shown in mm

LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEAUREMENTS

Level	Measurement Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	354	184	750
2	Occupant Hip Point	609	241	1500
3	Mid Door	702	238	900
4	Window Sill	1041	82	1650
5	Window Top	1487	26	1350

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

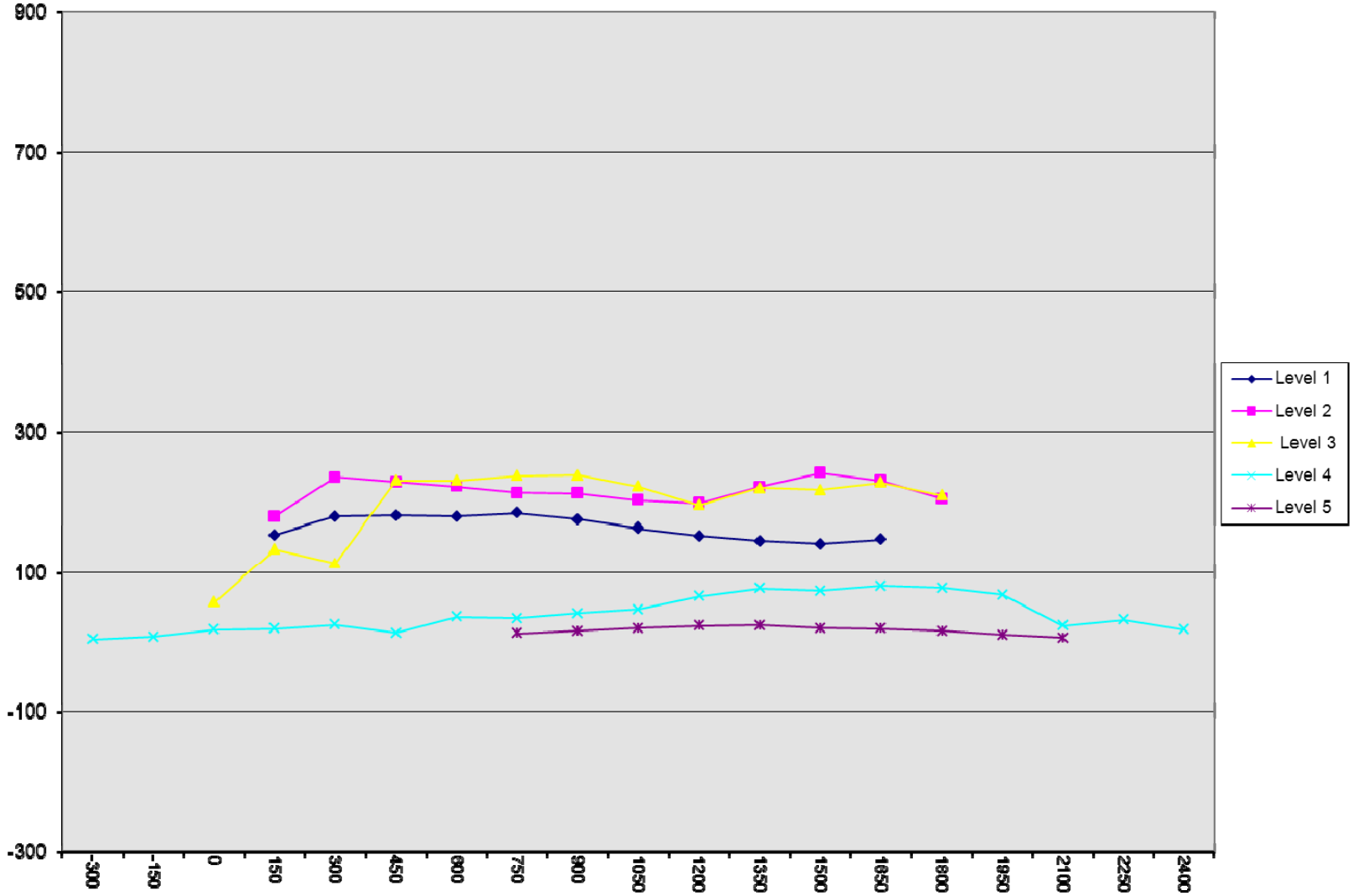
Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-300				380					386					6	
-150				368					377					9	
0			233	359				292	379				59	20	
150	264	241	244	350		418	420	378	371		154	179	134	21	
300	280	257	260	340		459	492	374	367		179	235	114	27	
450	289	262	260	331		470	490	490	346		181	228	230	15	
600	289	253	248	323		468	475	478	361		179	222	230	38	
750	285	246	239	314	531	469	459	476	350	545	184	213	237	36	14
900	285	241	234	306	520	460	453	472	349	538	175	212	238	43	18
1050	285	240	233	300	518	448	442	455	348	540	163	202	222	48	22
1200	285	243	236	296	520	438	441	431	363	545	153	198	195	67	25
1350	291	250	243	294	523	437	471	463	372	549	146	221	220	78	26
1500	293	254	251	298	528	435	495	468	373	550	142	241	217	75	22
1650	281	246	245	307	532	429	476	472	389	553	148	230	227	82	21
1800		241	236	314	538		445	445	393	556		204	209	79	18
1950				295	547				364	559				69	12
2100				282	559				307	567				25	8
2250				284					318					34	
2400				295					315					20	

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.

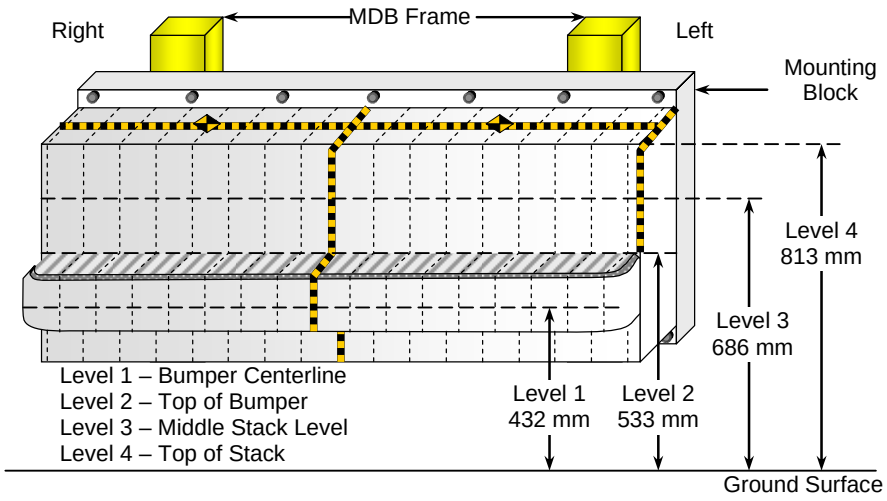
DATA SHEET NO. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Tes Test Date: 1/19/2012



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012



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	800
4	48	12	9	14	23	45	59	57	35	30	27	24	26	35	46	67	124
3	50	7	9	10	14	28	49	47	25	14	13	10	13	16	19	30	91
2	68	70	64	67	48	39	43	48	46	48	58	57	56	55	55	64	71
1	127	124	121	117	114	113	111	111	109	107	107	105	105	106	107	131	134

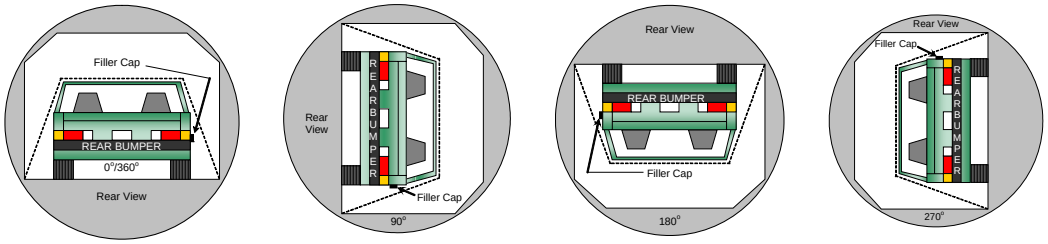
DATA SHEET NO. 13
FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2012 Nissan Juke SV FWD SUV NHTSA No. MC5209
Test Program: NCAP Side MDB Impact Test Test Date: 1/19/2012

Test Time: 12:21 pm 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



0°/360° 90° 180° 270°

ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	112	300	412
90° to 180°	111	300	411
180° to 270°	105	300	405
270° to 360°	115	300	415

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

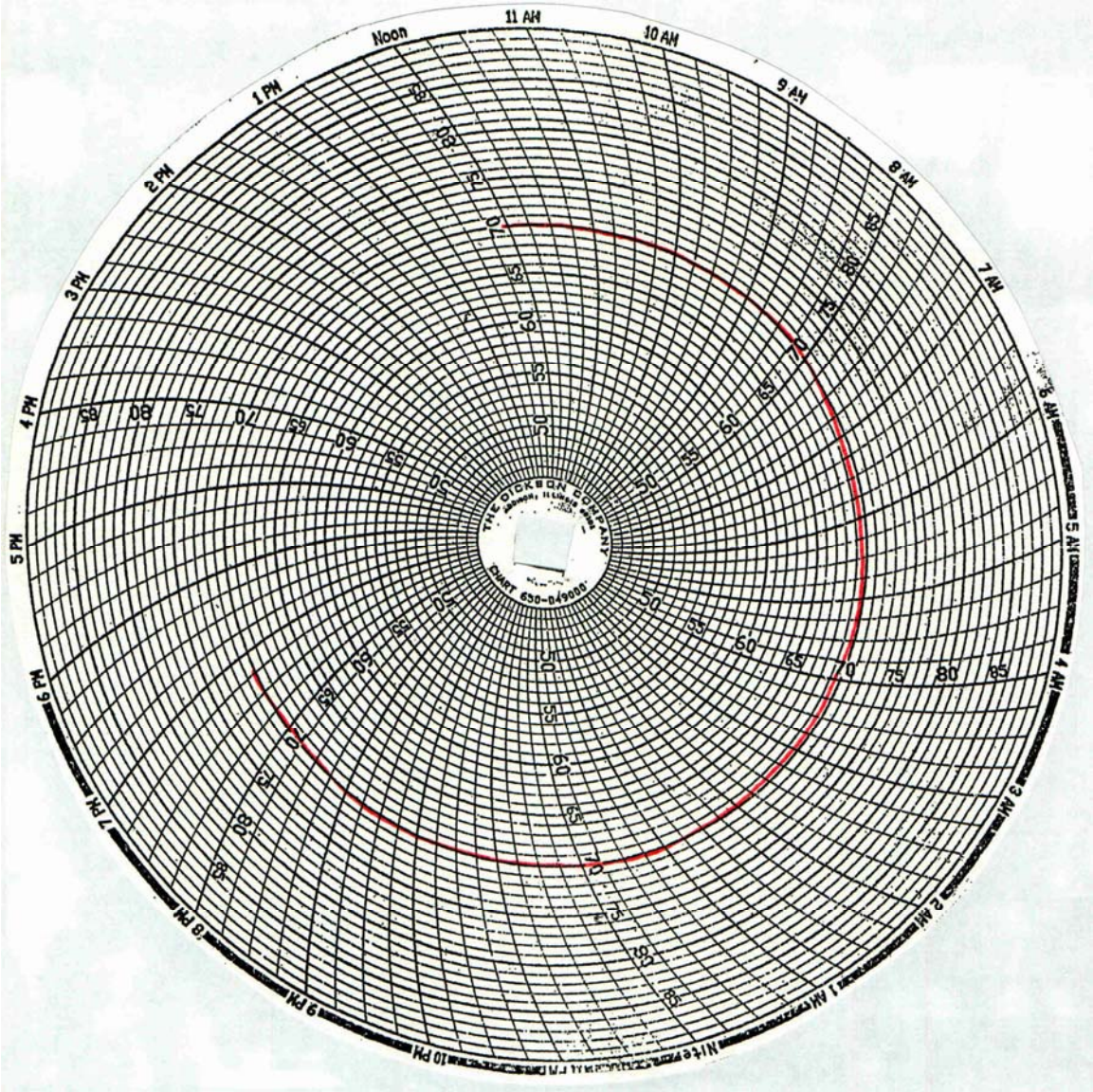
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eight Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

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

Test Vehicle:	2012 Nissan Juke SV FWD SUV	NHTSA No.	MC5209
Test Program:	NCAP Side MDB Impact Test	Test Date:	1/19/2012



APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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

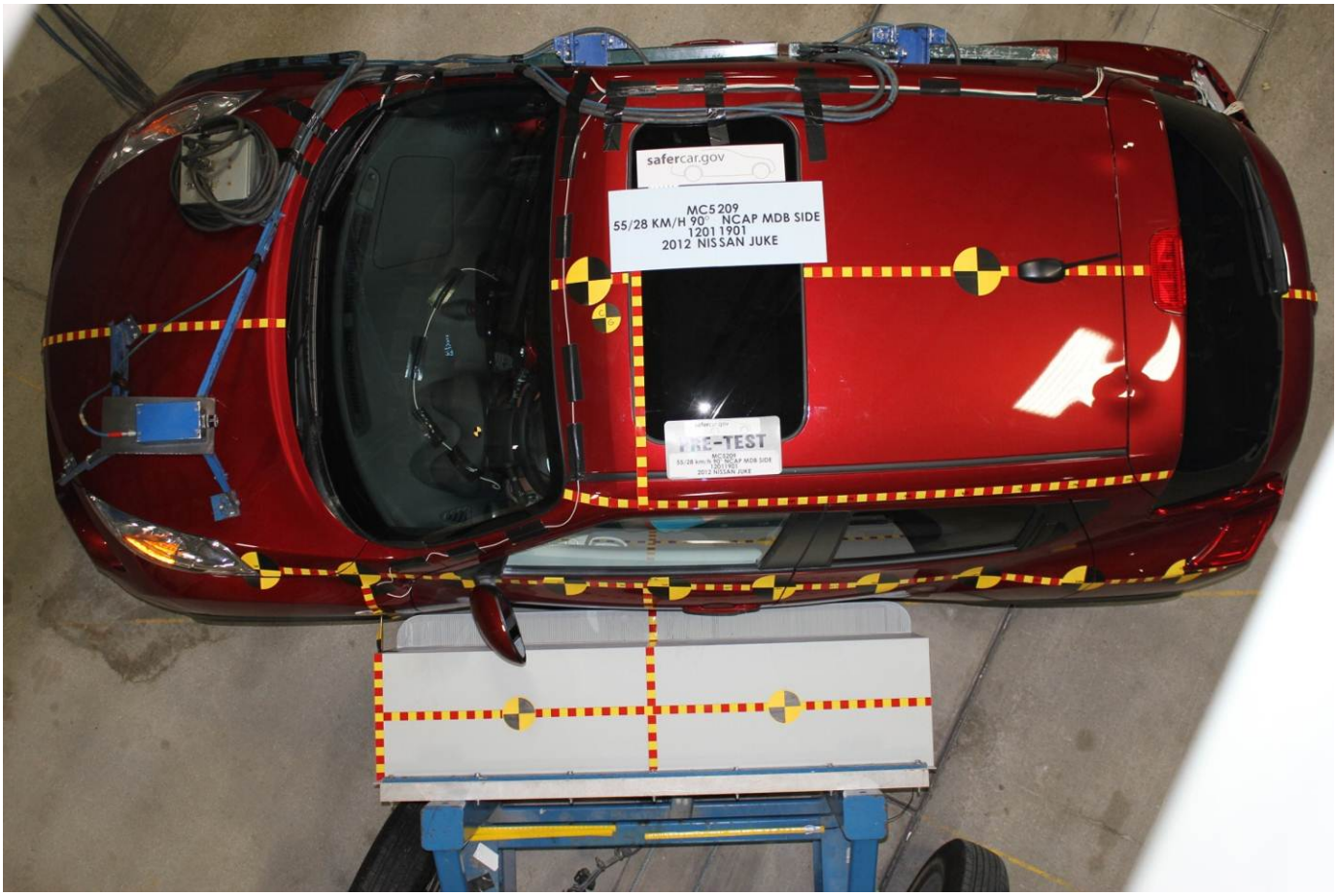
Post-Test Left Three-Quarter Rear View of Test Vehicle

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

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

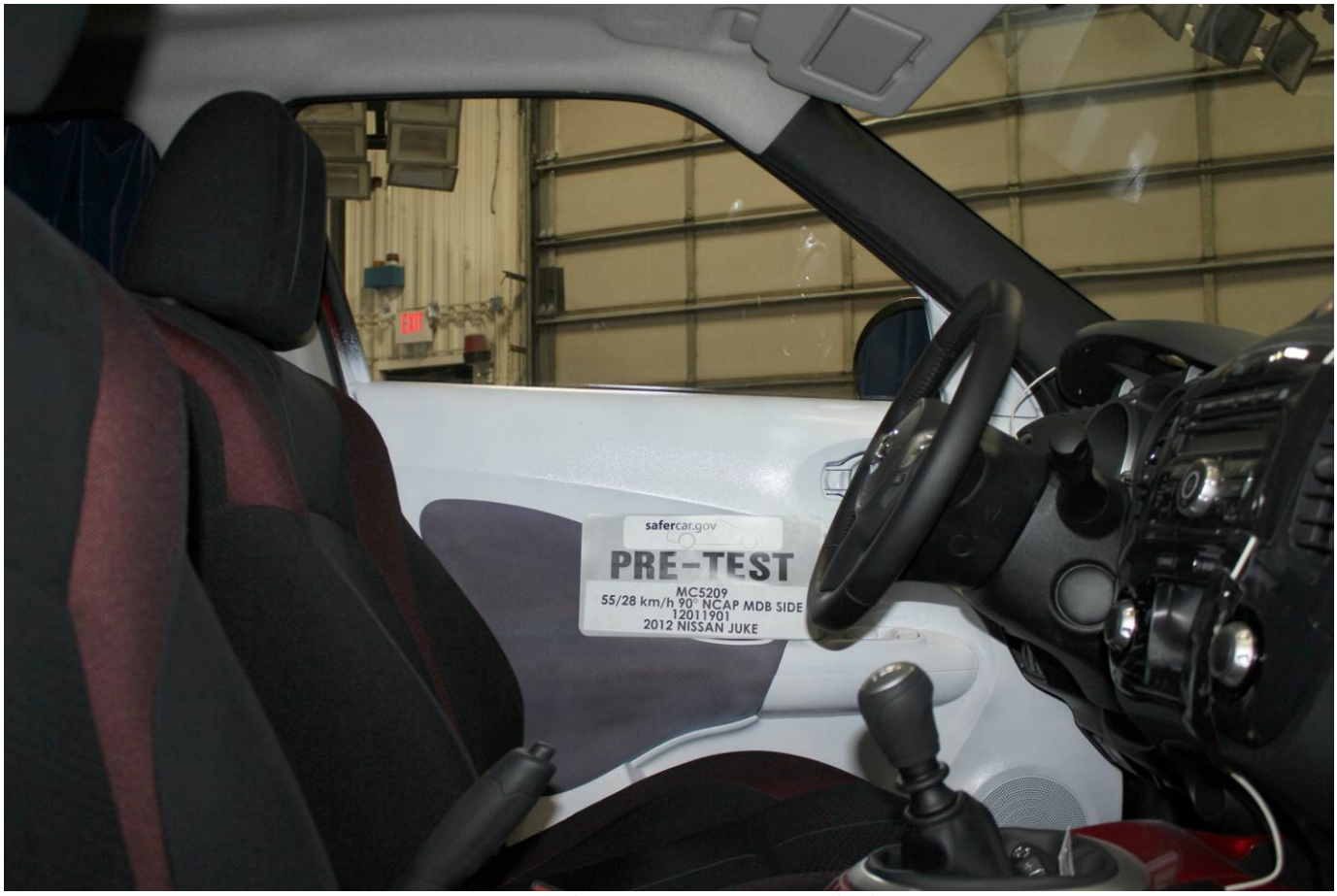
Pre-Test Close-Up View of Driver Seat Back or Head Restraint

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

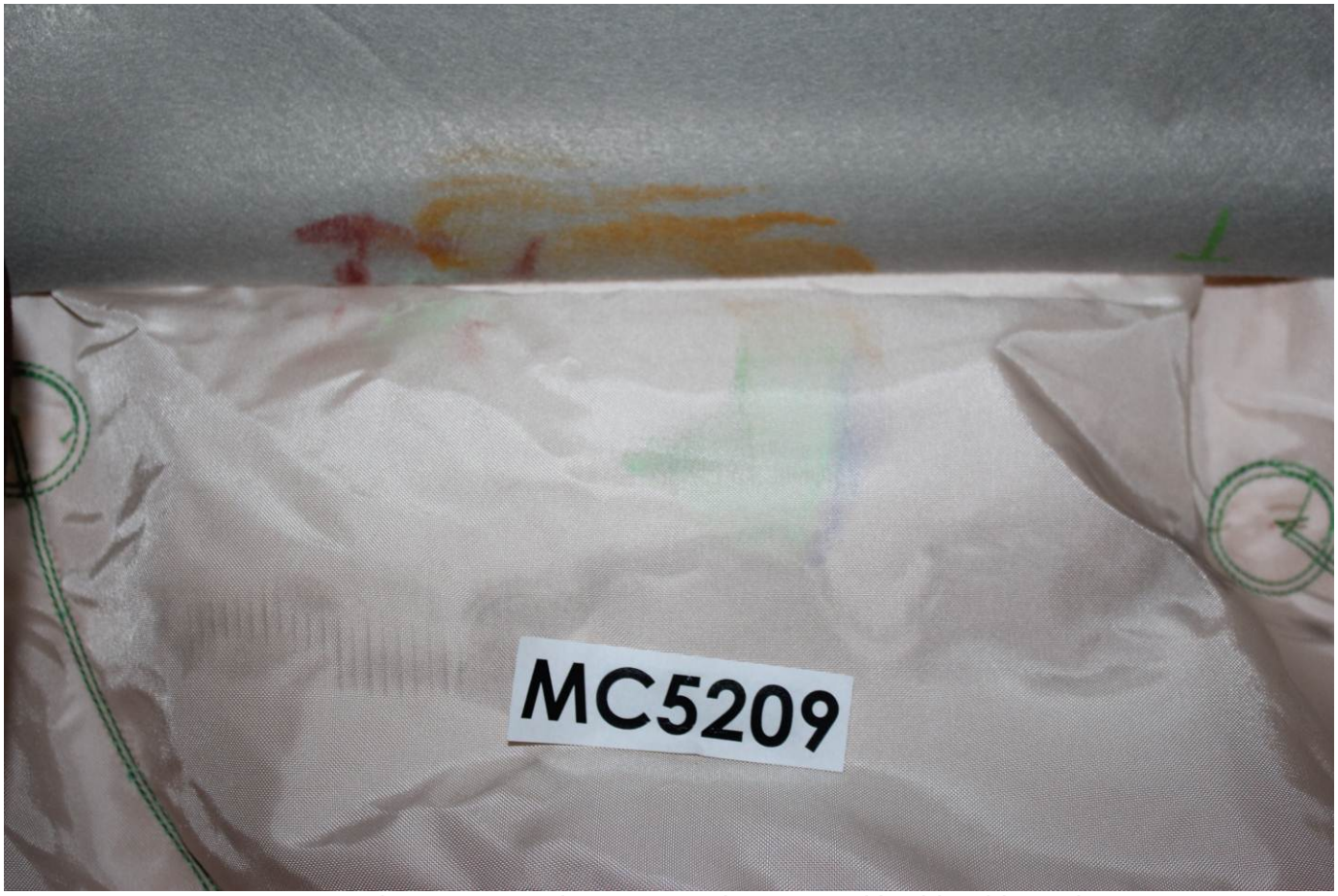


Pre-Test Driver Inner Door Panel View

Post-Test Driver Inner Door Panel View

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

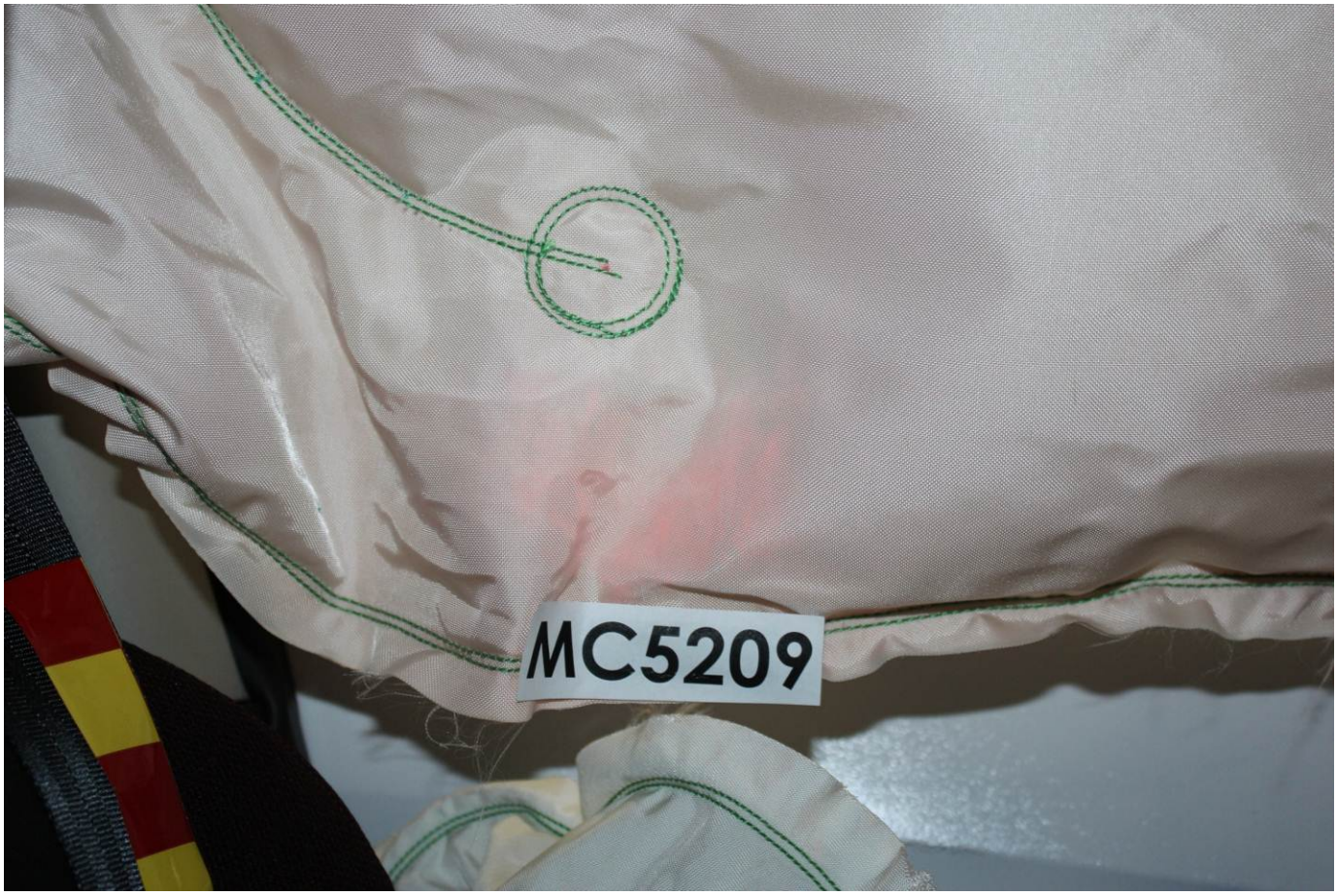
Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View



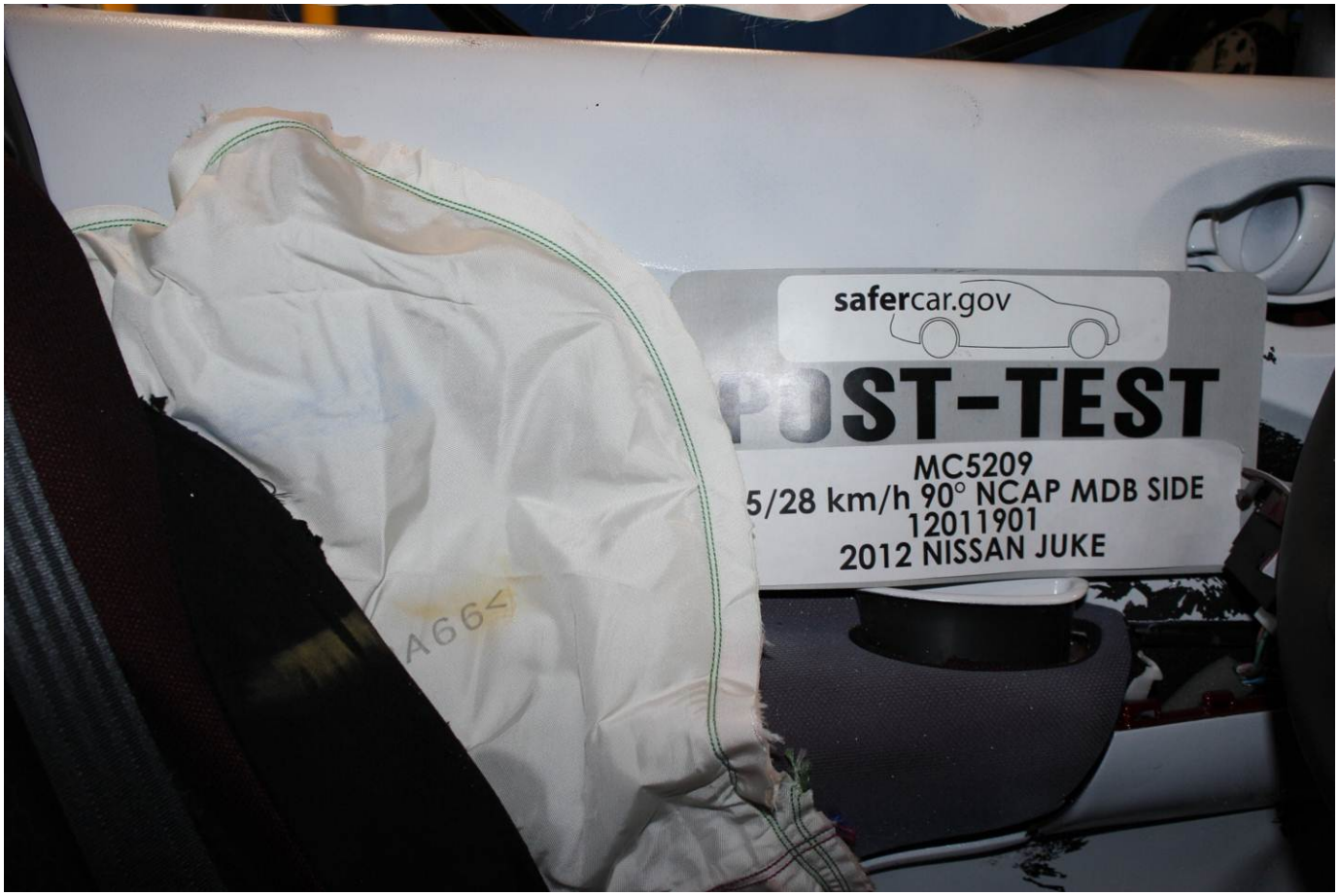
Post-Test Driver Dummy Close-up Head Contact with Side Airbag View

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

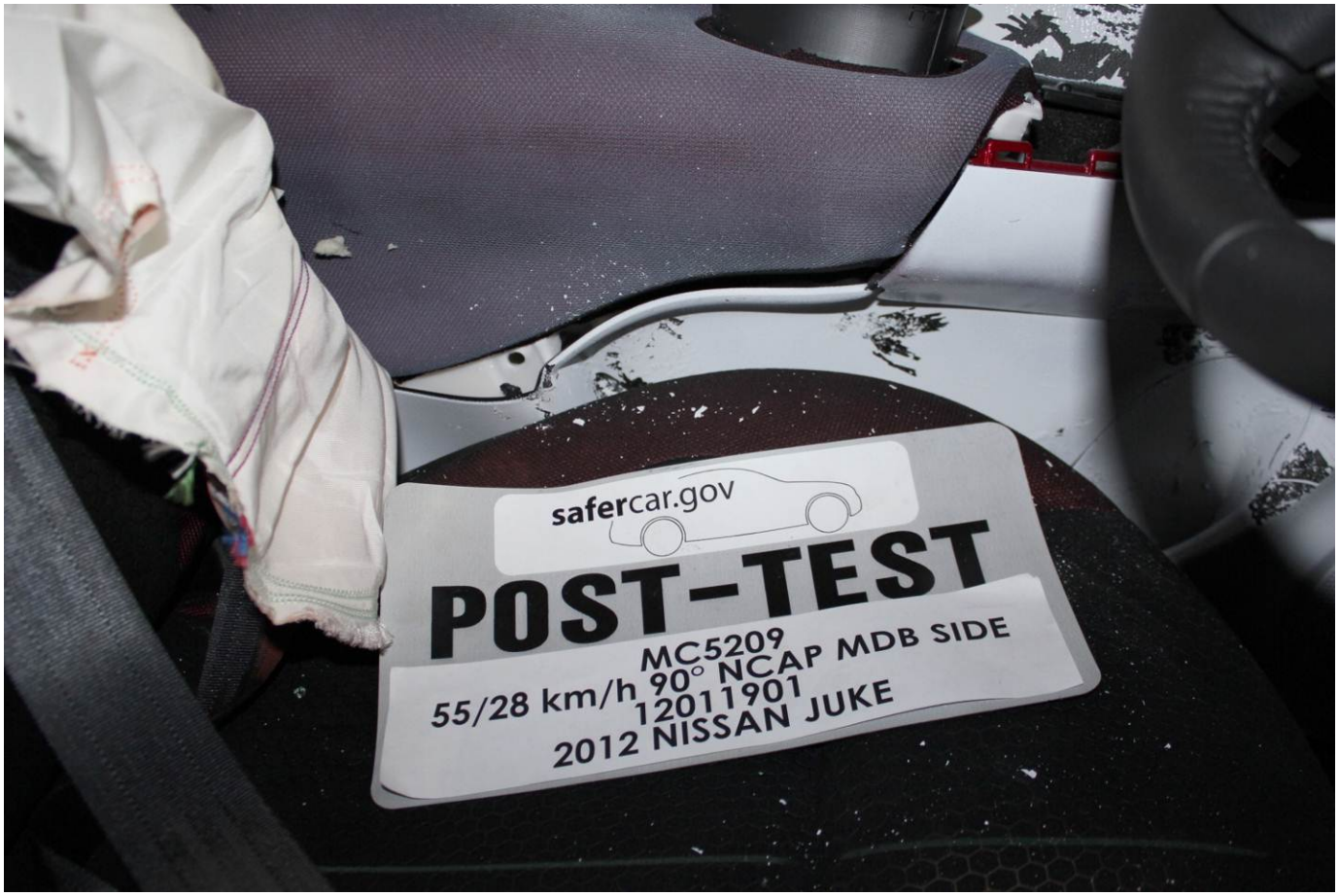
Post-Test Driver Dummy Close-up Torso Contact with Vehicle Interior View



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



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

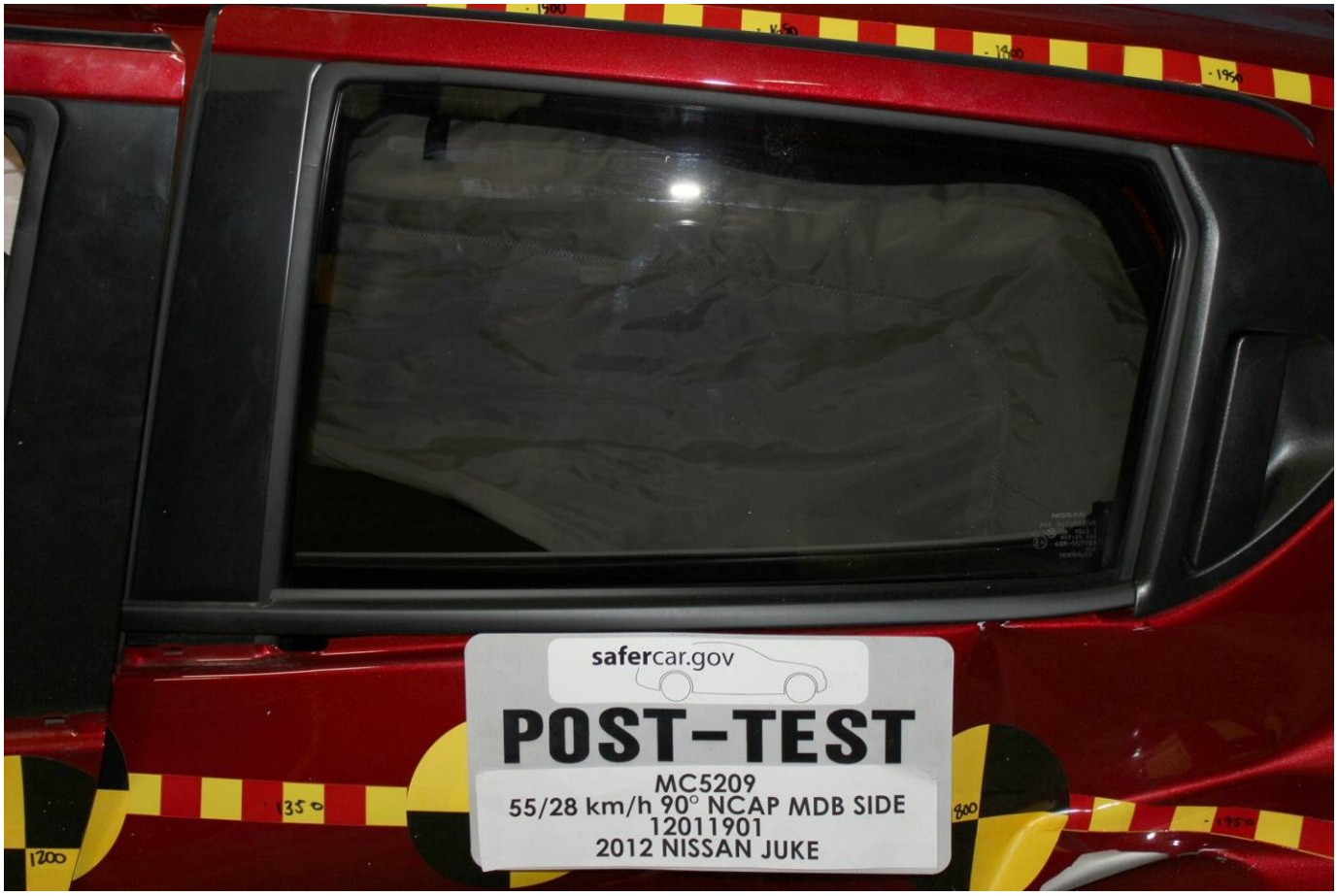


Post-Test Driver Dummy Close-up Pelvis Contact with Vehicle Interior View

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

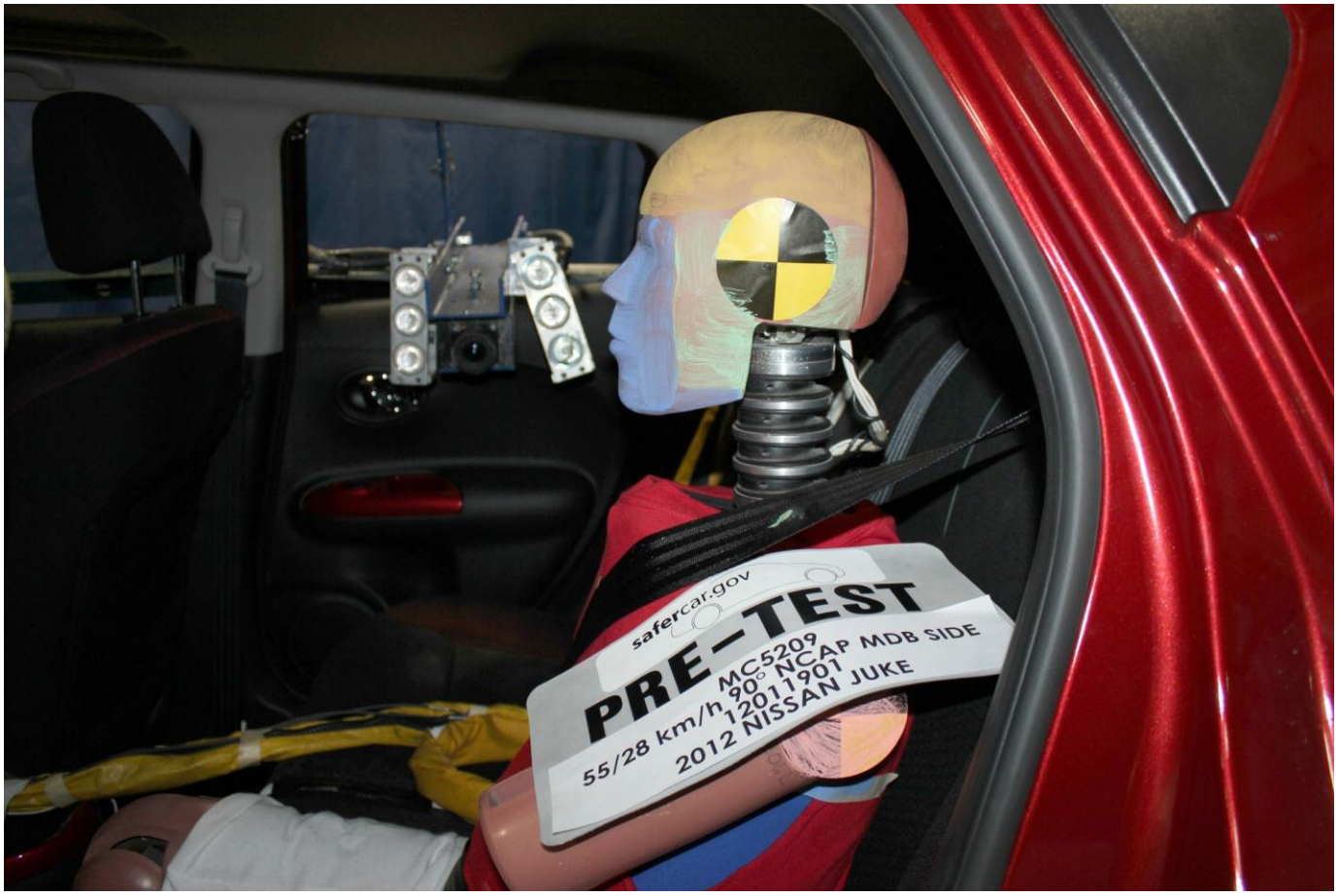
Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket

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

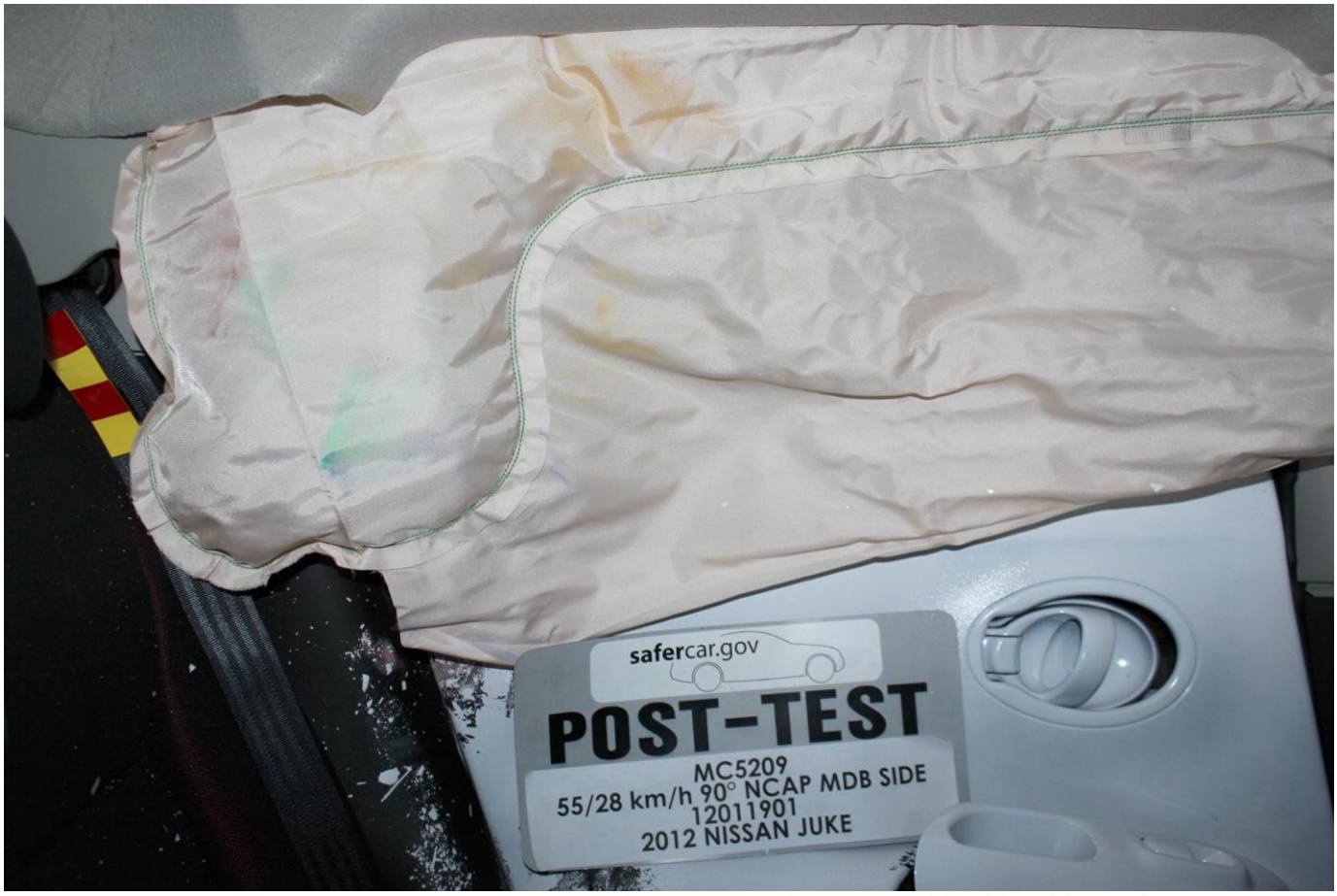
Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment

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 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

PHOTOGRAPH NOT APPLICABLE

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

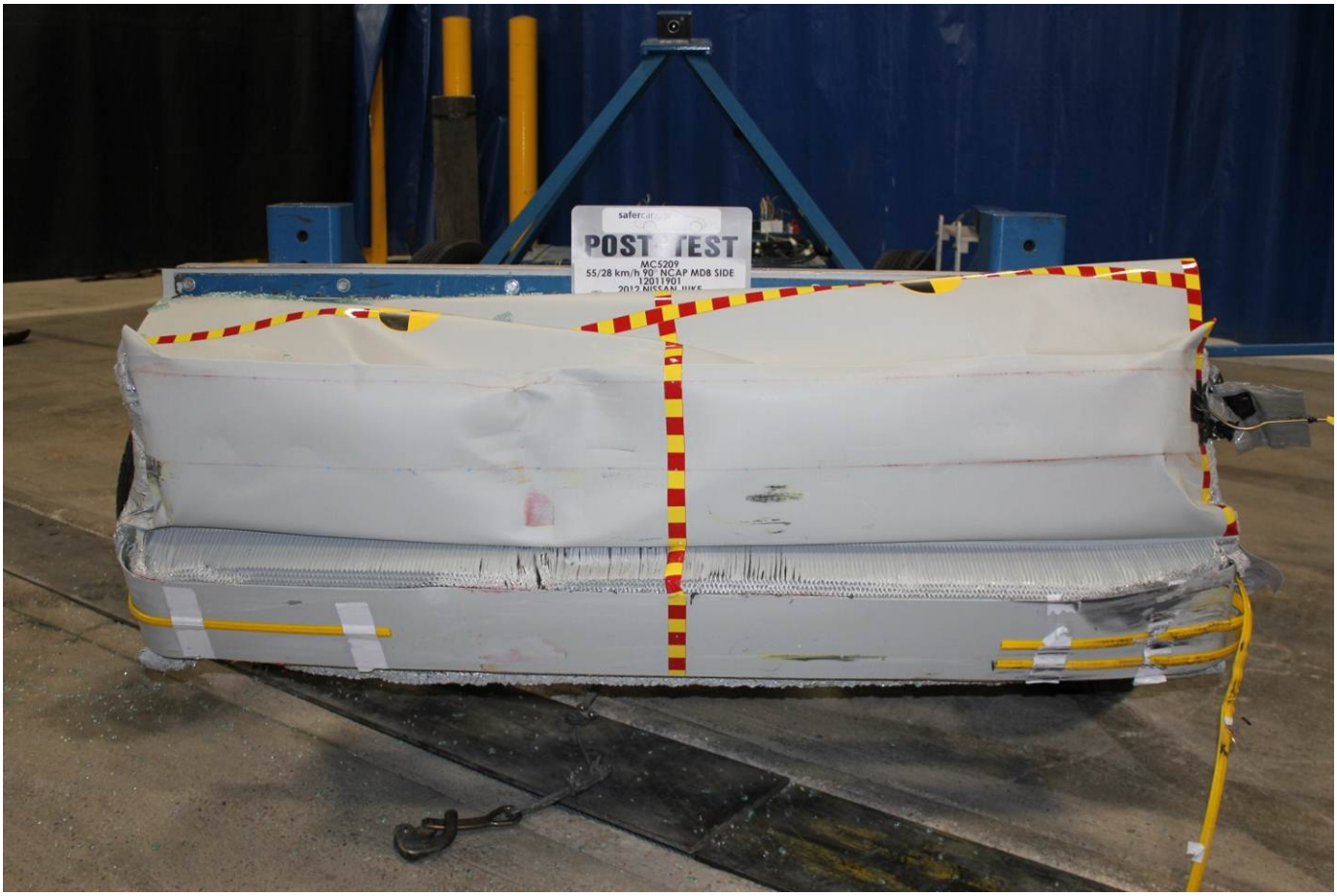
PHOTOGRAPH NOT APPLICABLE

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

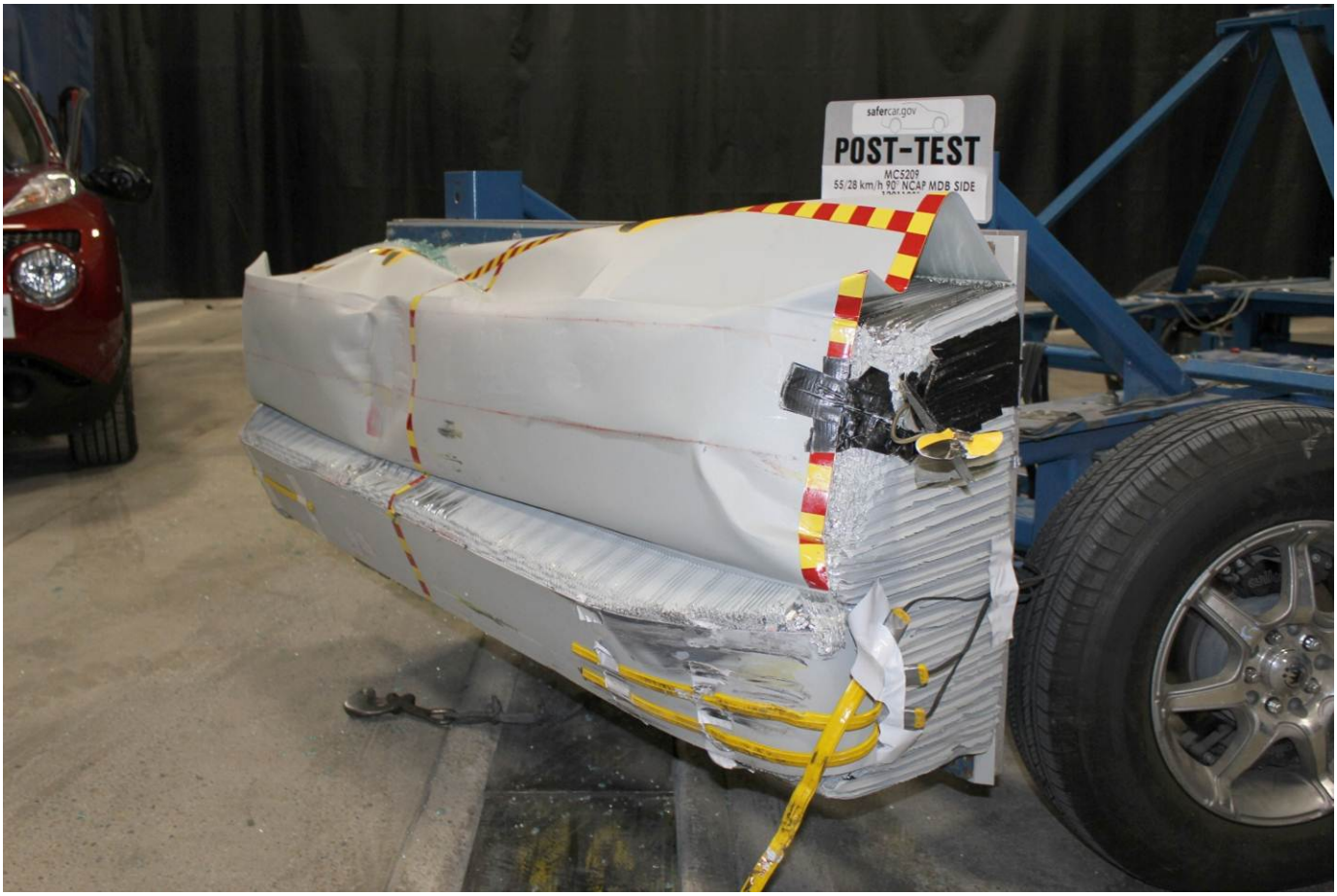


Post-Test Front View of MDB Impactor Face

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



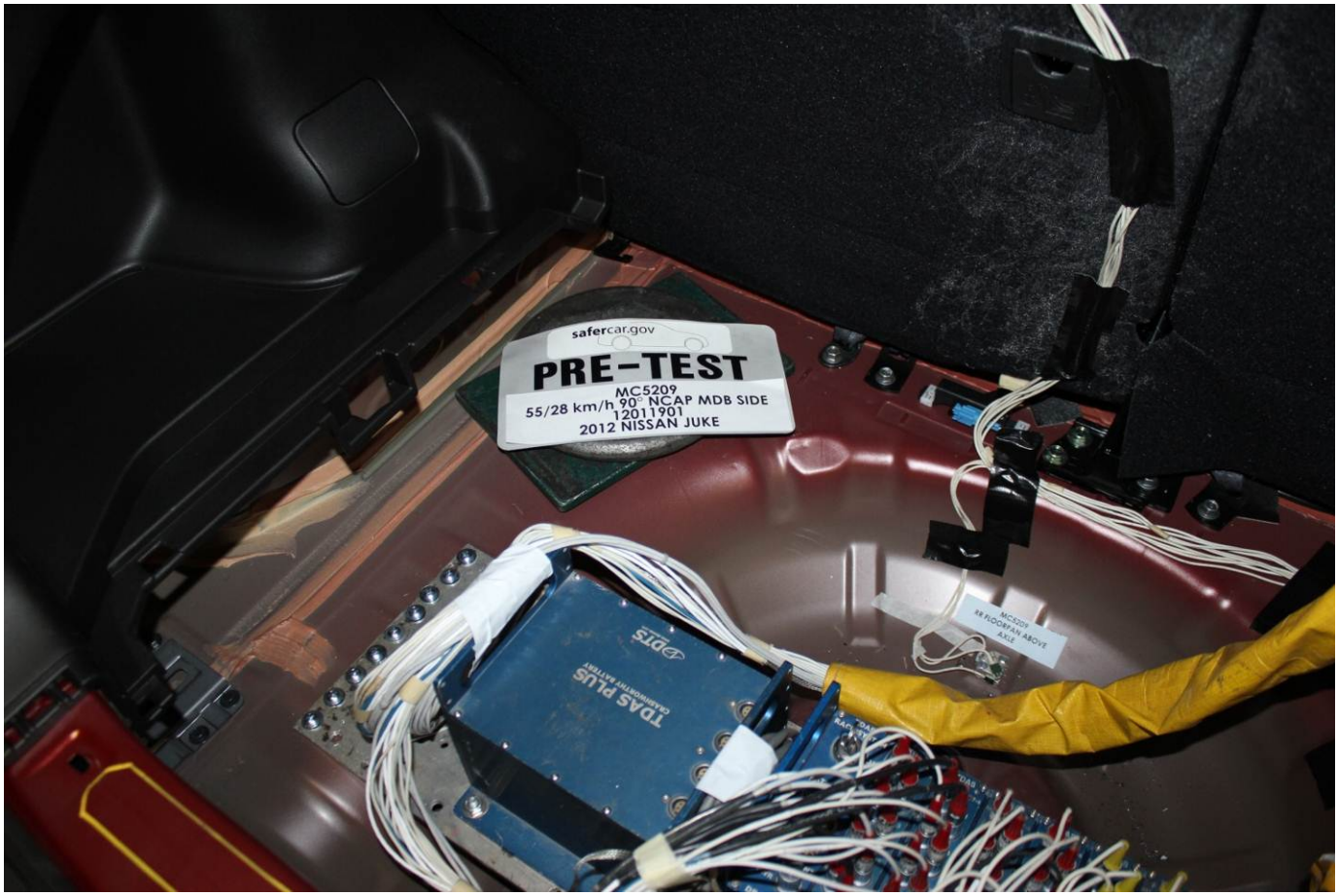
Post-Test Left Side View of MDB Impactor Face

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



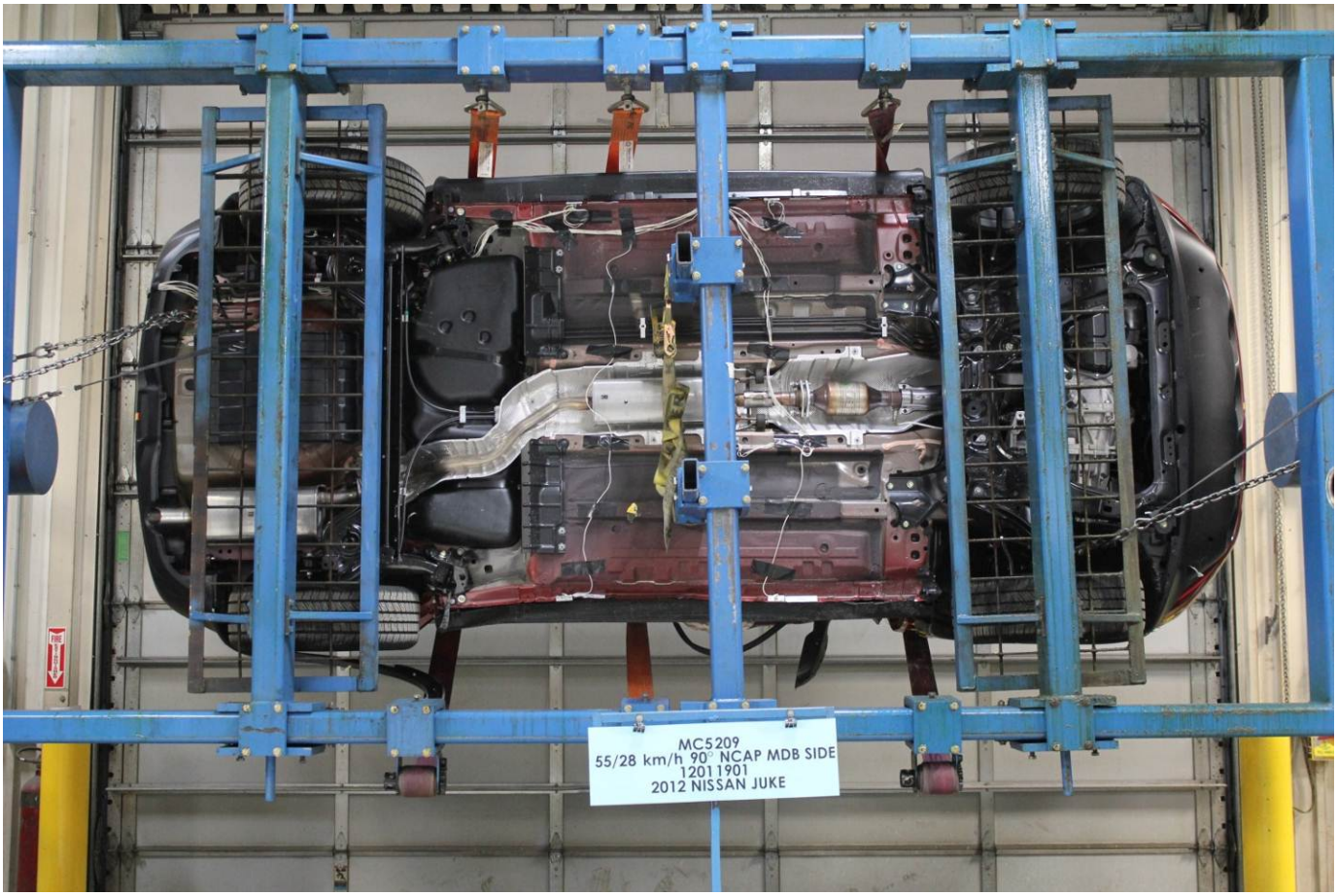
Pre-Test Ballast View

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 JUKE SV FWD M/T

The Bold Urban Sport Cross

Standard Equipment Included at No Extra Charge

MECHANICAL & PERFORMANCE
1.6 Liter Direct Injection Gasoline (DIG™) Turbocharged 4-Cylinder Engine
188 Horsepower & 177 lb.-ft. Torque
6-Speed Manual Transmission
Front-Wheel Drive (FWD)
17" Aluminum Alloy Wheels

SAFETY AND SECURITY
Driver & Front Passenger, Side Impact, & Curtain Air bags
Front-Seat Active Head Restraints
Lower Anchors and Tethers for Children (LATCH)
4-Wheel Anti-Lock Braking System (ABS)
Vehicle Dynamic Control (VDC) w/ Traction Control System (TCS)
Tire Pressure Monitoring System (TPMS)
Electronic Brake-force Distribution (EBD) & Brake Assist (BA)
Vehicle Security System (VSS)
Nissan Vehicle Immobilizer System

COMFORT & CONVENIENCE
6-Way Manual Driver Seat
4-Way Manual Front Passenger Seat
60/40 Fold-Flat Second Row Seats
Leather Wrapped Steering Wheel
Steering Wheel Cruise/Audio Controls
6-Speaker AM/FM/CD Audio System w/ Auxiliary Audio Input & MP3 playback
XM® Satellite Radio**
Interface System for iPod®
Bluetooth® Hands-Free Phone System
Integrated Control System (i-CON) w/ Auto A/C & Drive Mode Selector
Nissan Intelligent Key® w/ Push Button Start
Power Door Locks w/ Auto Locking Feature
Power Sliding Moonroof
Cargo Area Under-Floor Storage
12 Volt DC Power Outlet

EXTERIOR FEATURES
Halogen Headlights w/ Auto Off Feature
Manual Folding Power Outside Mirrors
Rear Privacy Glass

**XM® includes activation & 3 months of service only. XM® coverage and/or Navigation not available in HI and AK and some markets.

Manufacturer's Suggested Retail Base Price:	$21,060.00
Options Included by Manufacturer CARPETED FLOOR MATS AND CARGO MAT	175.00
Destination Charges:	760.00
Total*	$22,015.00

N 7276
10/11
18 Miles

*Does not include dealer installed options and accessories, local taxes or license fees. This label has been applied pursuant to federal law. Do not remove prior to delivery to the ultimate purchaser.

EPA Fuel Economy Estimates

CITY MPG **25**
Expected range for most drivers **20** to **30** MPG

Estimated Annual Fuel Cost
$2,192
based on 15,000 miles at $3.96 per gallon

Combined Fuel Economy
This Vehicle 27
14 — 34
AVERAGE FOR ALL SMALL STATION WAGONS

HIGHWAY MPG **31**
Expected range for most drivers **25** to **37** 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

Frontal Crash	Driver	To Be Rated
	Passenger	To Be Rated

Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.

Side Crash	Front seat	To Be Rated
	Rear seat	To Be Rated

Star ratings based on the risk of injury in a side impact.

Rollover — To Be Rated
Star ratings based on the risk of rollover in a single vehicle crash.

Star ratings range from 1 to 5 stars (★ ★ ★ ★ ★), with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA).

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

This Vehicle qualifies for Nissan's
Security+Plus Vehicle Protection Plan
The only service agreement backed by Nissan!
Ask your dealer for details, or call 1-800-NISSAN-1 for more information

DELIVERY

VEHICLE COLORS:
EXT: CAYENNE RED
INT: BLACK/RED

FINAL ASSEMBLY POINT:
LOS ANGELES

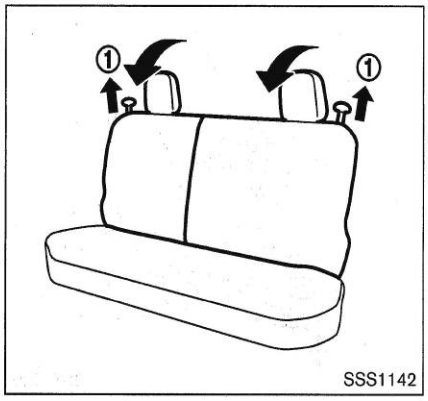
TRANSPORT METHOD:
TRUCK

DEALER:
LIBERTY IMPORT CENTER
920 S. MILWAUKEE AVENUE
LIBERTYVILLE IL
60048

VIN: JN8AF5MR3CT101484
EMS: 50 STATE EMISSIONS
MDL: 20362-101484 NAH-R
OPT: E-C03L92Z66

20111027011032RF3076

Monroney Label



REAR SEATS

Folding

Before folding the rear seats:

Secure the seat belts on the seat belt hooks on the side wall. (See "Seat belt hooks" (P.1-16).)

To fold the seat back, pull the adjusting knob ①.

To return the seatback to the seating position, lift up each seatback and push it to the upright position until it is latched.

CAUTION

When folding or returning the seatback(s) to the upright position, to avoid injury to yourself and others:

- Make sure that the seat path is clear before moving the seat.

WARNING

- Do not fold down the rear seats when occupants are in the rear seat area or any objects are on the rear seats.
- Never allow anyone to ride in the cargo area or on the rear seats when they are in the fold-down position. Use of these areas by passengers without proper restraints could result in serious injury in an accident or sudden stop.
- Properly secure all cargo with ropes or straps to help prevent it from sliding or shifting. Do not place cargo higher than the seatbacks. In a sudden stop or collision, unsecured cargo could cause personal injury.
- When returning the seatbacks to the upright position, be certain they are completely secured in the latched position. If they are not completely secured, passengers may be injured in an accident or sudden stop.

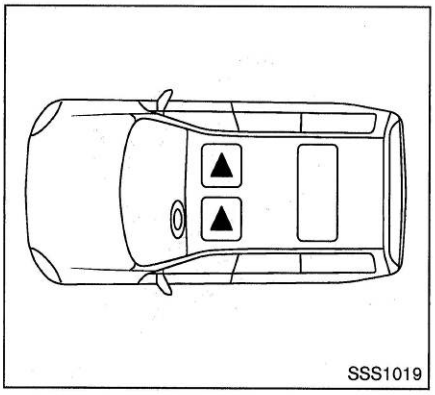
HEAD RESTRAINTS

WARNING

Head restraints supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear end collisions. Adjust the head restraints properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not attach anything to the head restraint stalks or remove the head restraint. Do not use the seat if the head restraint has been removed. If the head restraint was removed, reinstall and properly adjust the head restraint before an occupant uses the seating position. Failure to follow these instructions can reduce the effectiveness of the head restraints. This may increase the

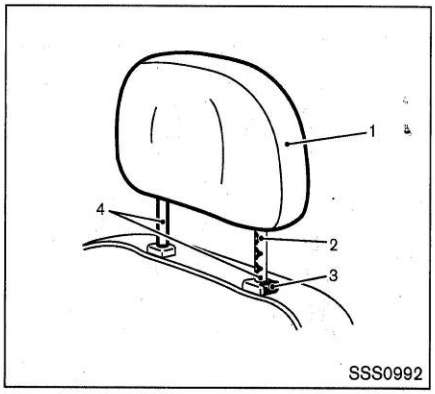
Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

risk of serious injury or death in a collision.



The illustration shows the seating positions equipped with head restraints. The head restraints are adjustable.

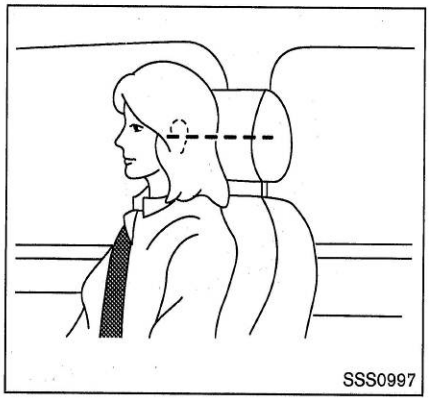
▲ Indicates the seating position is equipped with a head restraint.



Components.

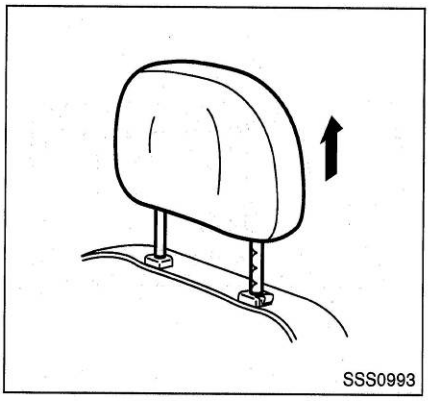
1. Head restraint
2. Adjustment notches
3. Lock knob
4. Stalks

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

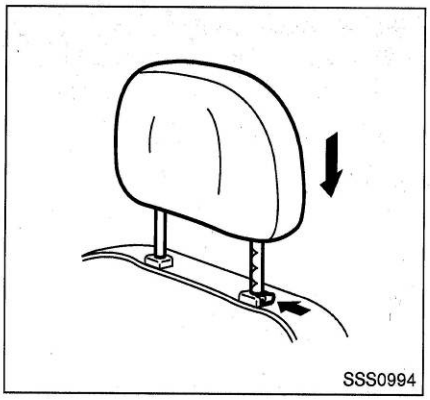


Adjustment

Adjust the head restraint so the center is level with the center of your ears.

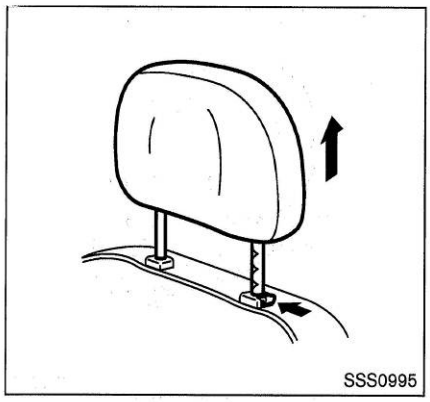


To raise the head restraint, pull it up.



To lower, push and hold the lock knob and push the head restraint down.

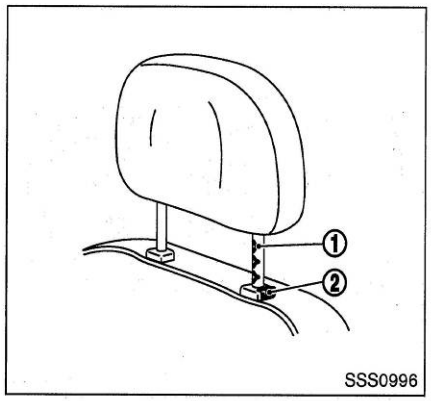
Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Removal

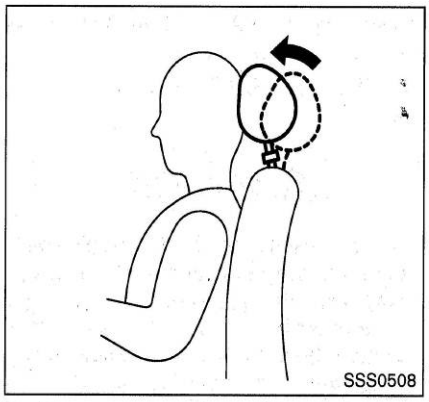
Use the following procedure to remove the adjustable head restraints.

1. Pull the head restraint up to the highest position.
2. Push and hold the lock knob.
3. Remove the head restraint from the seat.
4. Store the head restraint properly in a secure place so it is not loose in the vehicle.
5. Reinstall and properly adjust the head restraint before an occupant uses the seating position.



Install

1. Align the head restraint stalks with the holes in the seat. Make sure that the head restraint is facing the correct direction. The stalk with the adjustment notches ① must be installed in the hole with the lock knob ②.
2. Push and hold the lock knob and push the head restraint down.
3. Properly adjust the head restraint before an occupant uses the seating position.



Front-seat Active Head Restraints

The Active Head Restraint moves forward utilizing the force that the seatback receives from the occupant in a rear-end collision. The movement of the head restraint helps support the occupant's head by reducing its backward movement and helping absorb some of the forces that may lead to whiplash-type injuries.

Active Head Restraints are effective for collisions at low to medium speeds in which it is said that whiplash injury occurs most.

Active Head Restraints operate only in certain rear-end collisions. After the collision, the head restraints return to their original positions.

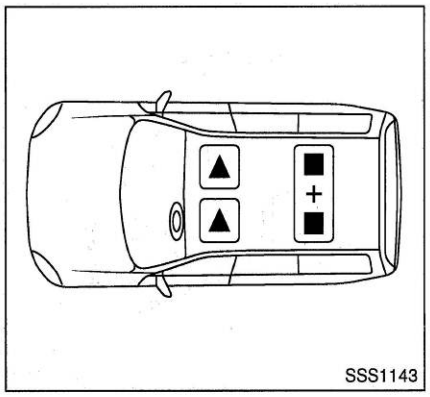
Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Properly adjust the Active Head Restraints as described in this section.

ADJUSTABLE HEADRESTS (if so equipped)

WARNING

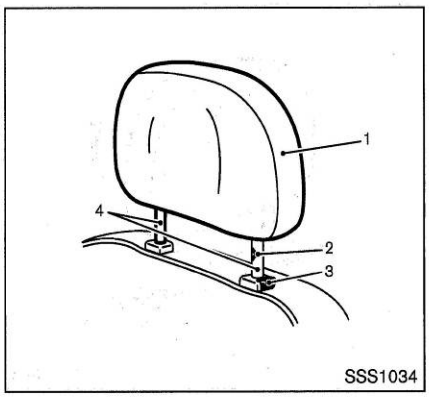
The adjustable headrests supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear end collisions. Adjust the headrest properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not attach anything to the adjustable headrest stalks or remove the adjustable headrest. Do not use the seat if the adjustable headrest has been removed. If the adjustable headrest was removed, reinstall and properly adjust the headrest before an occupant uses the seating position. Failure to follow these instructions can reduce the effectiveness of the adjustable headrests. This may increase the risk of serious injury or death in a collision.



The illustration shows the seating positions equipped with adjustable headrests.

■ Indicates the seating position is equipped with an adjustable headrest.

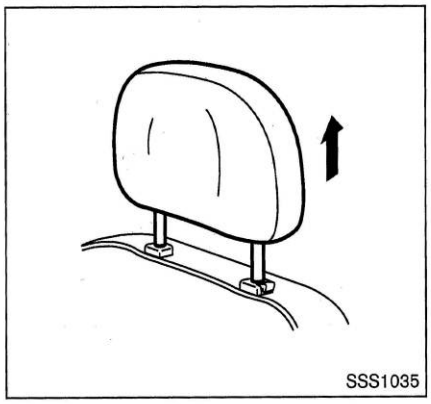
+ Indicates the seating position is not equipped with a head restraint or adjustable headrest.



Components

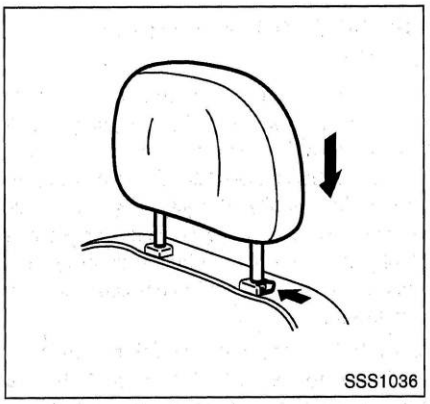
1. Adjustable headrest
2. Adjustment notch
3. Lock knob
4. Stalks

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

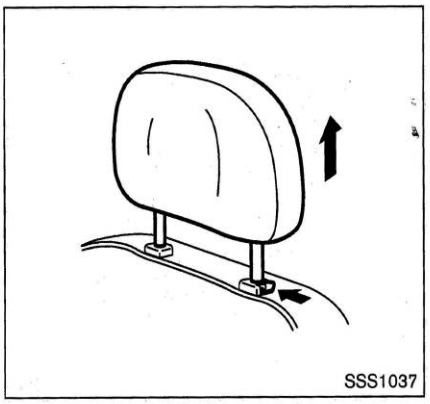

SSS1035

Adjustment

To raise the headrest, pull it up to the lock position.


SSS1036

To lower, push and hold the lock knob and push the headrest down.


SSS1037

Removal

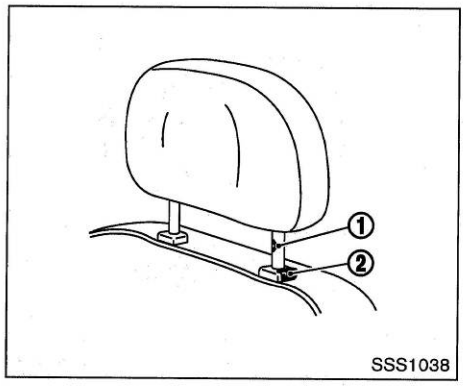
Use the following procedure to remove the adjustable headrests.

Before removing the headrests, fold down the seatback. (See "Rear seats" (P.1-4).)

1. Pull the headrest up to the highest position.
2. Push and hold the lock knob.
3. Remove the headrest from the seat.
4. Store the headrest properly in a secure place so it is not loose in the vehicle.
5. Reinstall and properly adjust the headrest before an occupant uses the seating position.

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

SEAT BELTS



SSS1038

Install

Before installing the headrests, fold down the seatback. (See "Rear seats" (P.1-4).)

1. Align the headrest stalks with the holes in the seat. Make sure that the headrest is facing the correct direction. The stalk with the adjustment notch ① must be installed in the hole with the lock knob ②.
2. Push and hold the lock knob and push the headrest down.
3. Properly adjust the headrest before an occupant uses the seating position.

PRECAUTIONS ON SEAT BELT USAGE

If you are wearing your seat belt properly adjusted, and you are sitting upright and well back in your seat with both feet on the floor, your chances of being injured or killed in an accident and/or the severity of injury may be greatly reduced. NISSAN strongly encourages you and all of your passengers to buckle up every time you drive, even if your seating position includes a supplemental air bag.

Most U.S. states and Canadian provinces or territories specify that seat belts be worn at all times when a vehicle is being driven.

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

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)

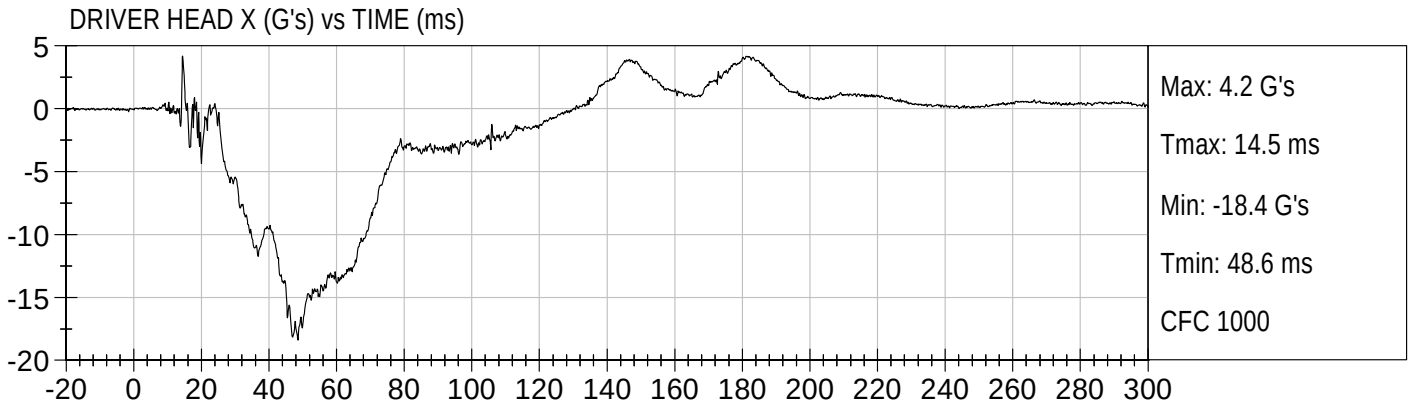
MDB Rear Acceleration (Y)

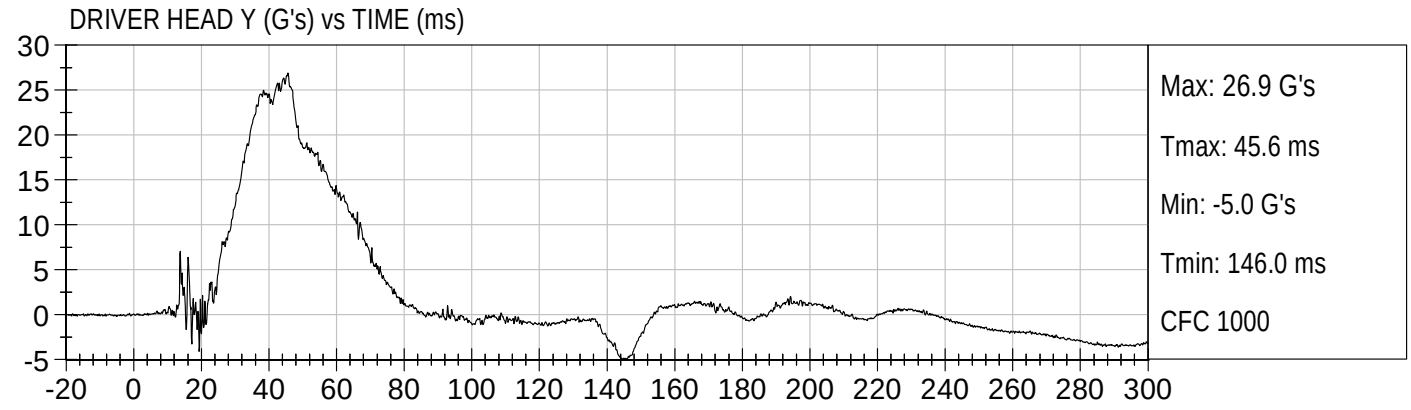
Left MDB Contact Switch

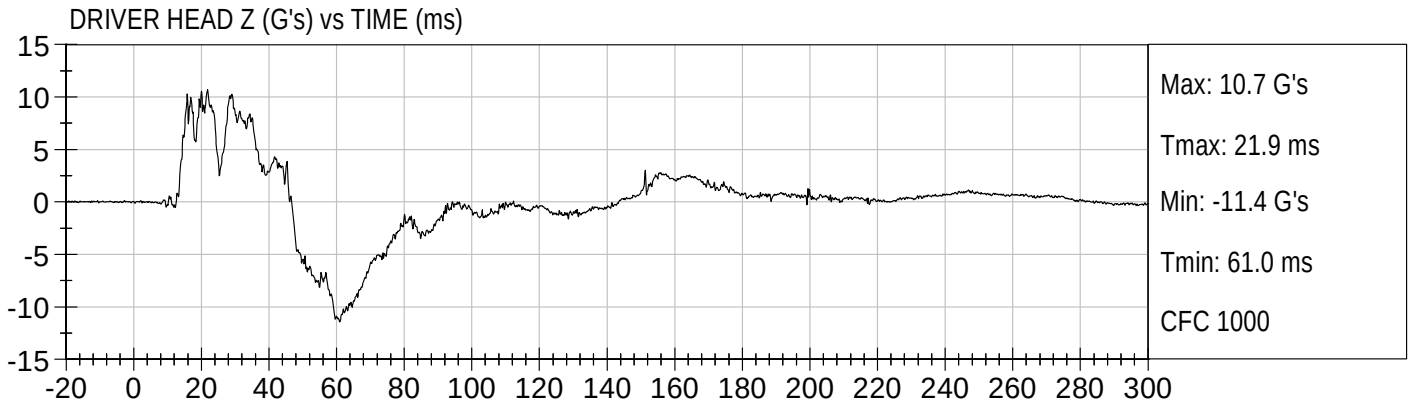
Right MDB Contact Switch

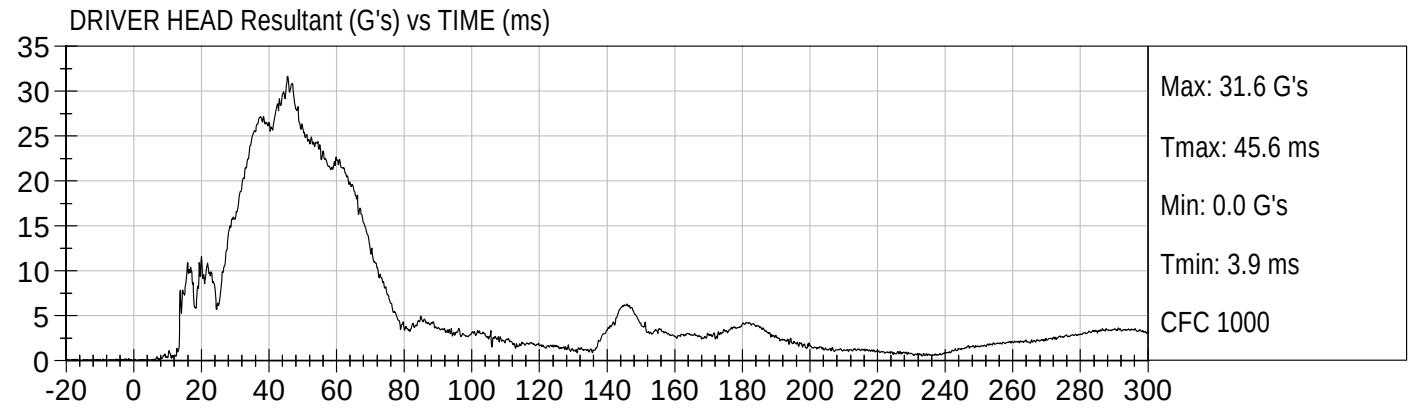
55/28 km/h 90° MDB Side Impact
2012 Nissan Juke - MC5209

Test Date: 01/19/2012
Speed: 38.7 mph (62.3 km/h)

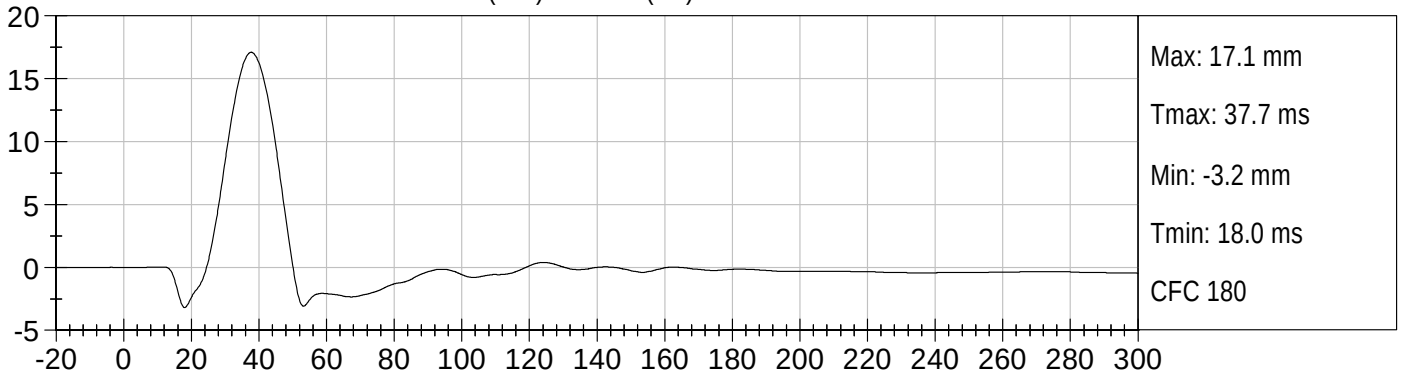




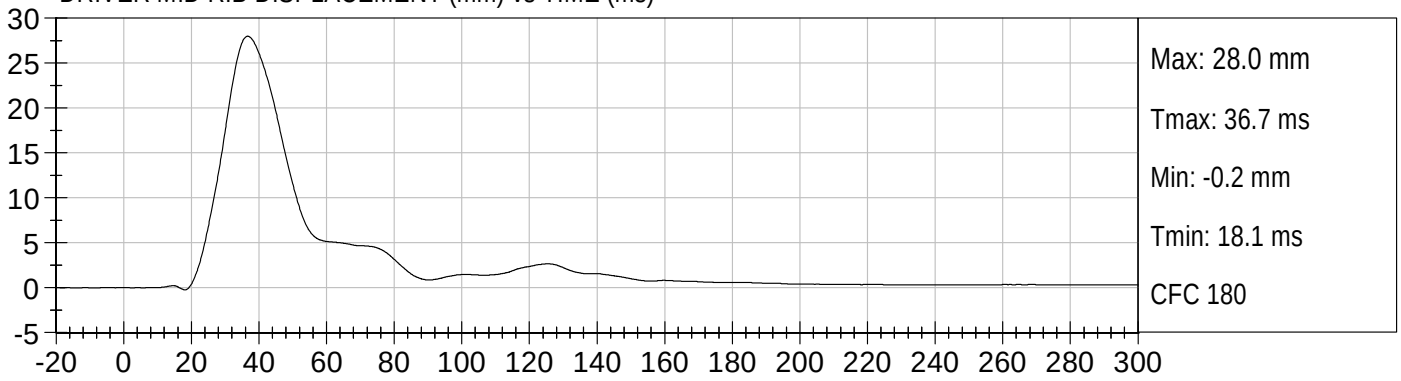




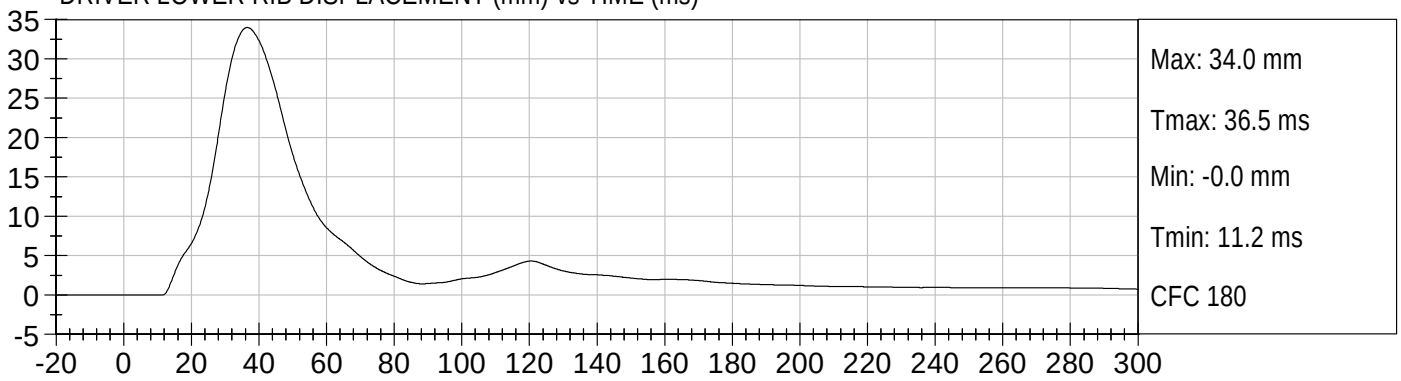
DRIVER UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



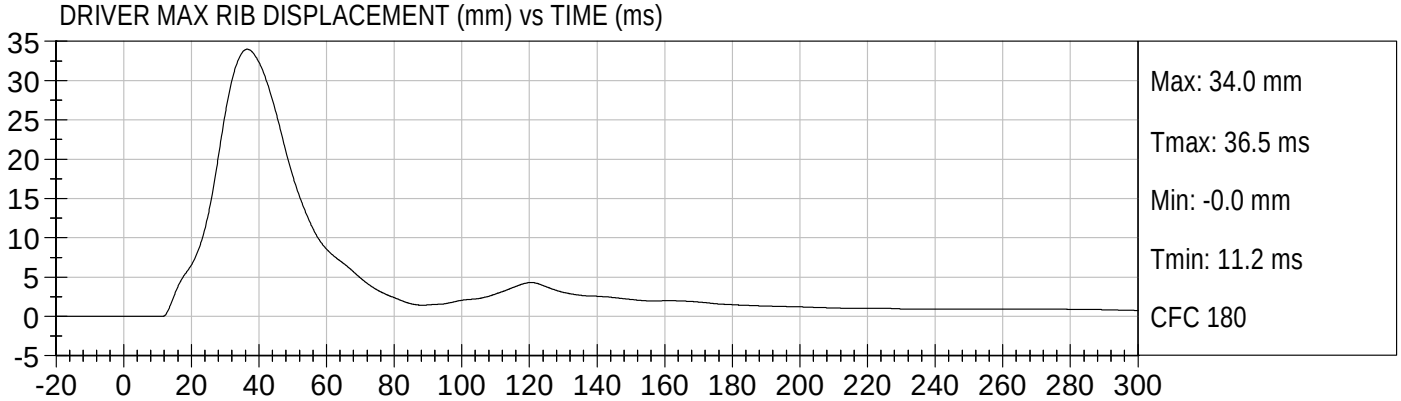
DRIVER MID RIB DISPLACEMENT (mm) vs TIME (ms)



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



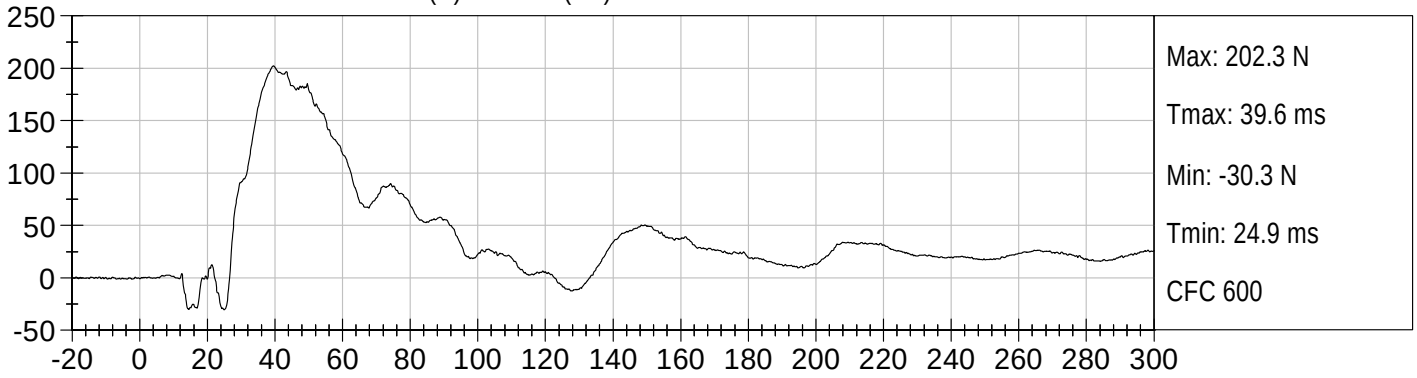
DRIVER MAX RIB DISPLACEMENT (mm) vs TIME (ms)



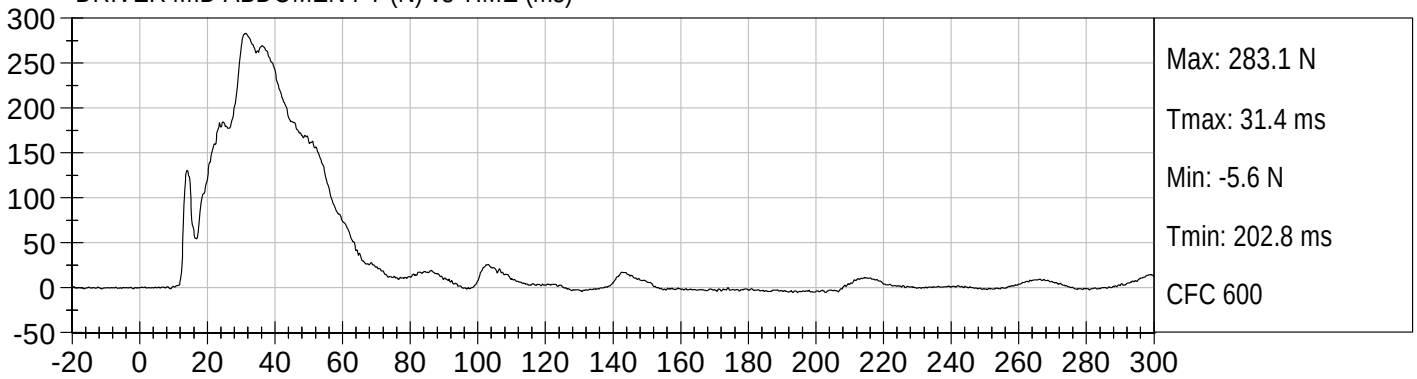
55/28 km/h 90° MDB Side Impact
2012 Nissan Juke - MC5209

Test Date: 01/19/2012
Speed: 38.7 mph (62.3 km/h)

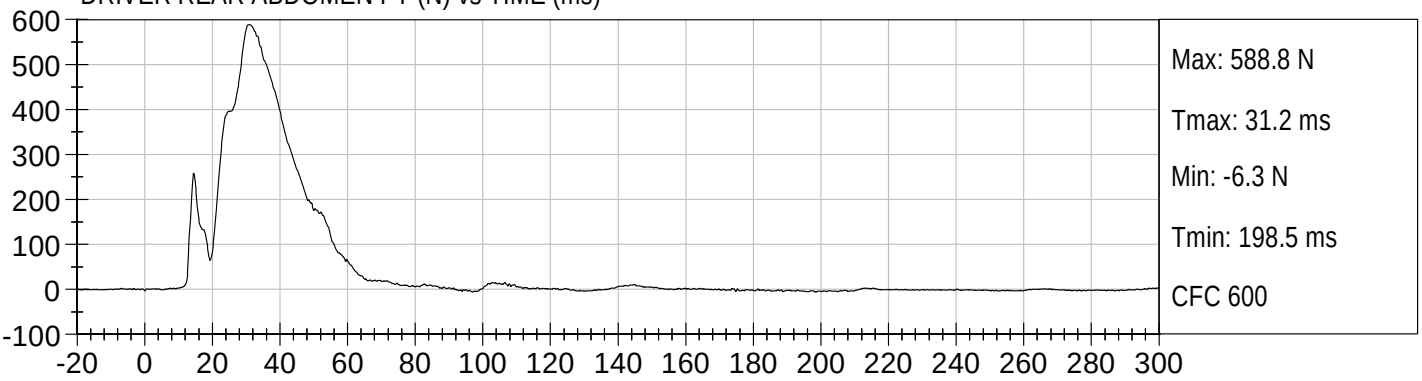
DRIVER FRONT ABDOMEN FY (N) vs TIME (ms)



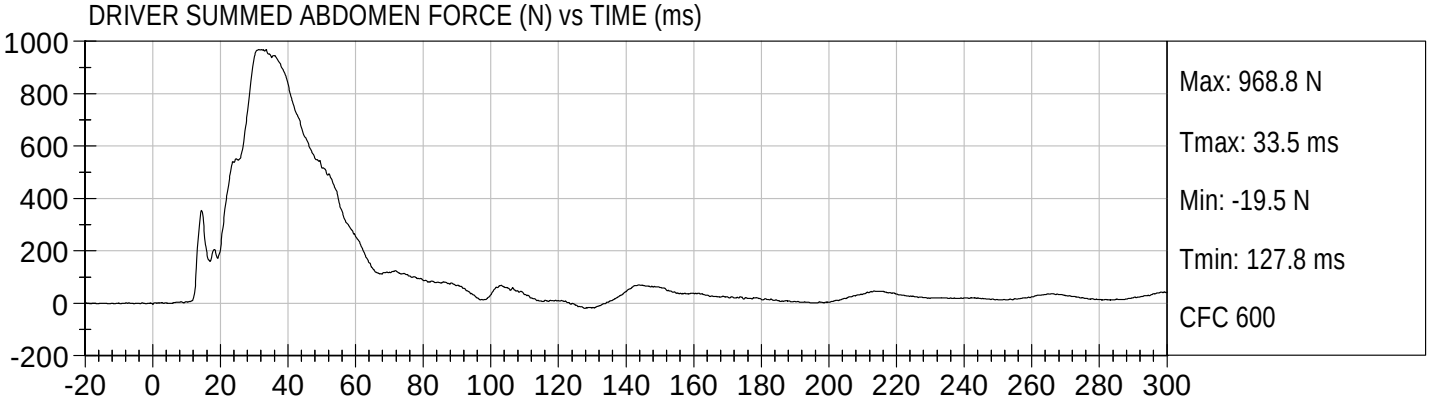
DRIVER MID ABDOMEN FY (N) vs TIME (ms)



DRIVER REAR ABDOMEN FY (N) vs TIME (ms)

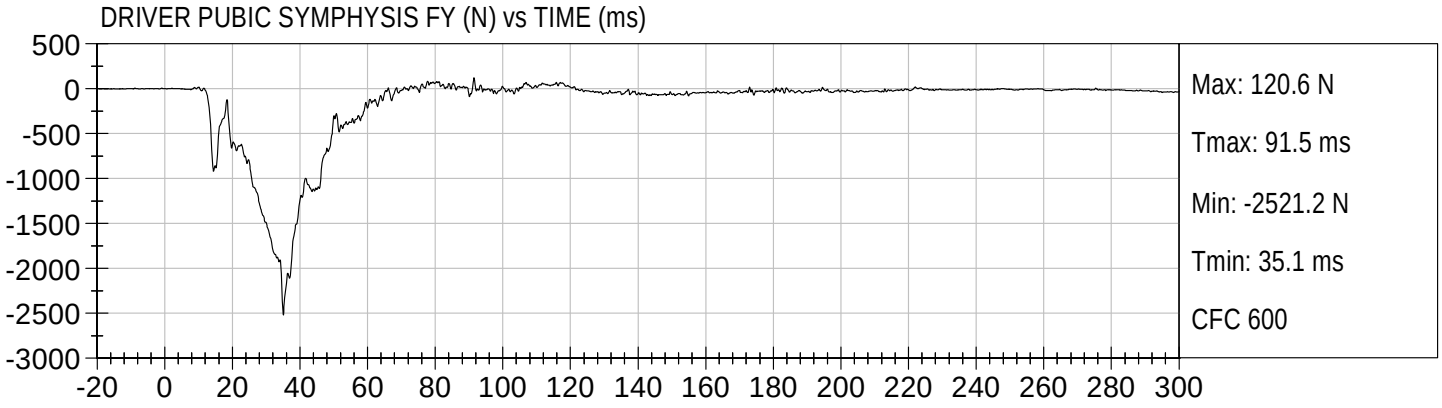


DRIVER SUMMED ABDOMEN FORCE (N) vs TIME (ms)



55/28 km/h 90° MDB Side Impact
2012 Nissan Juke - MC5209

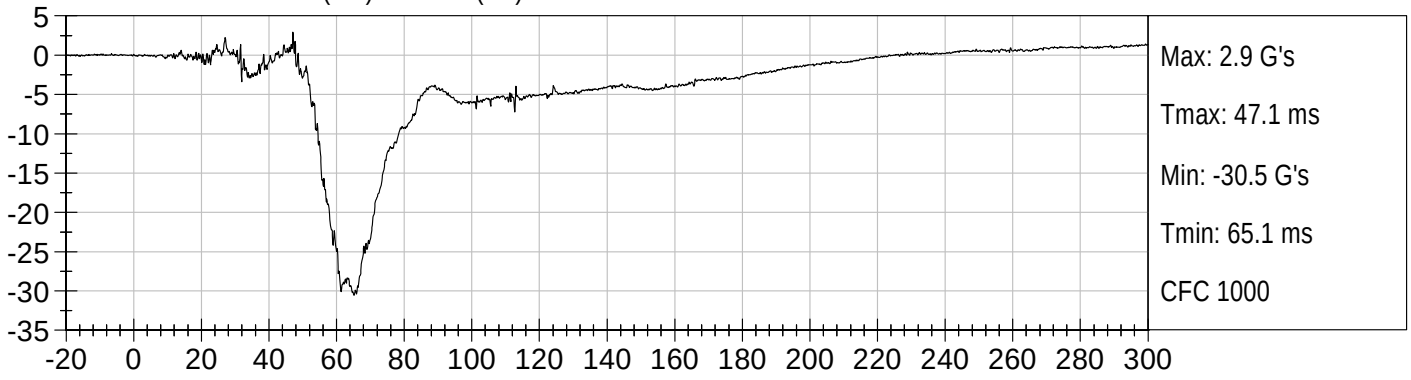
Test Date: 01/19/2012
Speed: 38.7 mph (62.3 km/h)



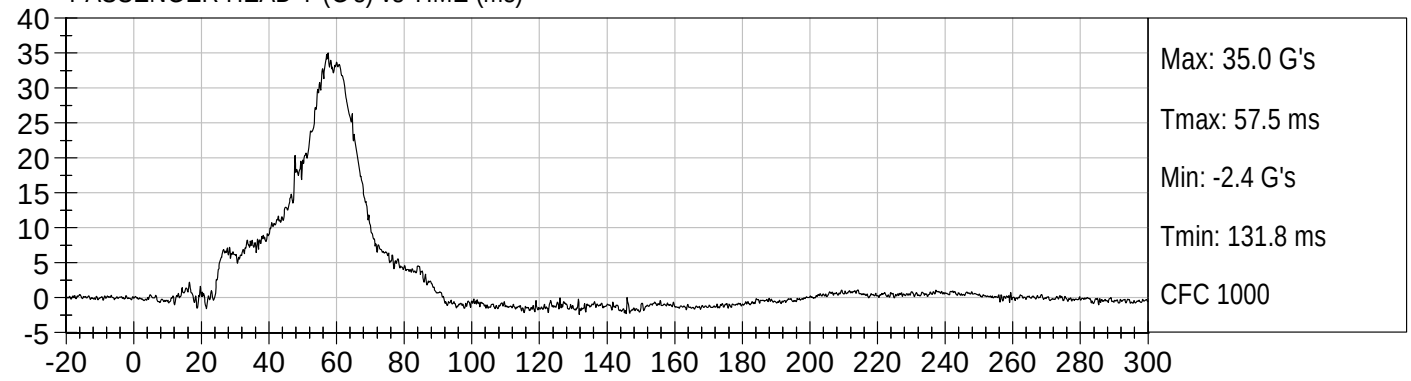
55/28 km/h 90° MDB Side Impact
2012 Nissan Juke - MC5209

Test Date: 01/19/2012
Speed: 38.7 mph (62.3 km/h)

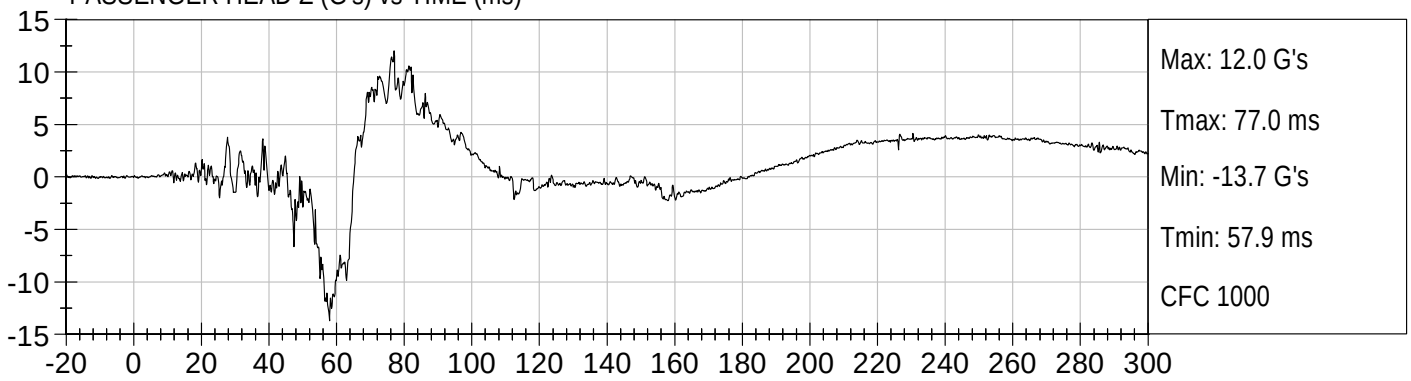
PASSENGER HEAD X (G's) vs TIME (ms)



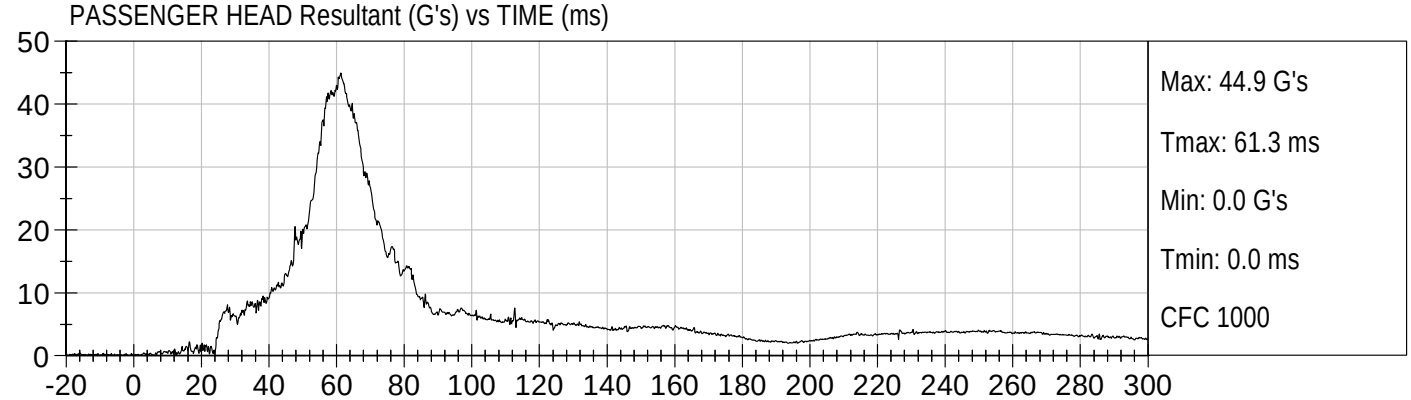
PASSENGER HEAD Y (G's) vs TIME (ms)



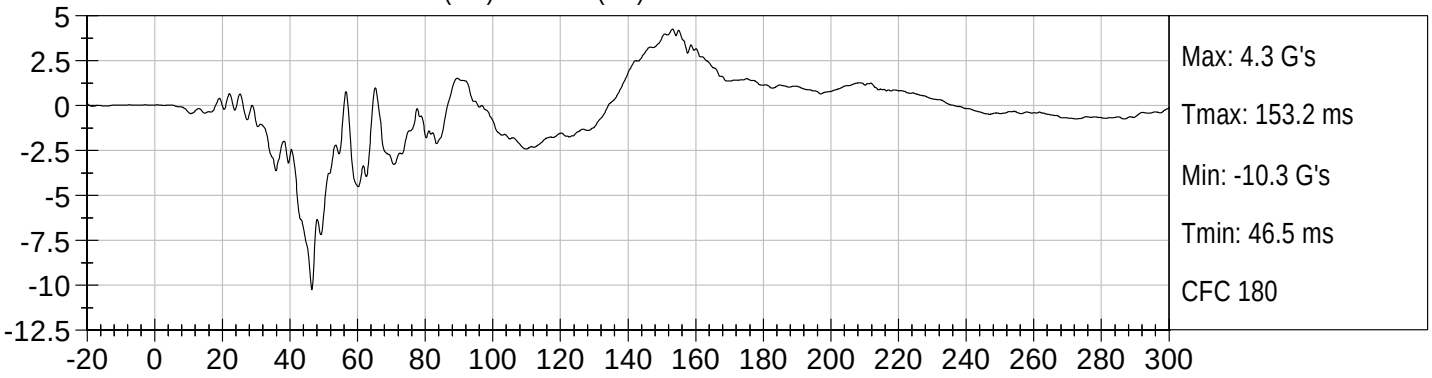
PASSENGER HEAD Z (G's) vs TIME (ms)



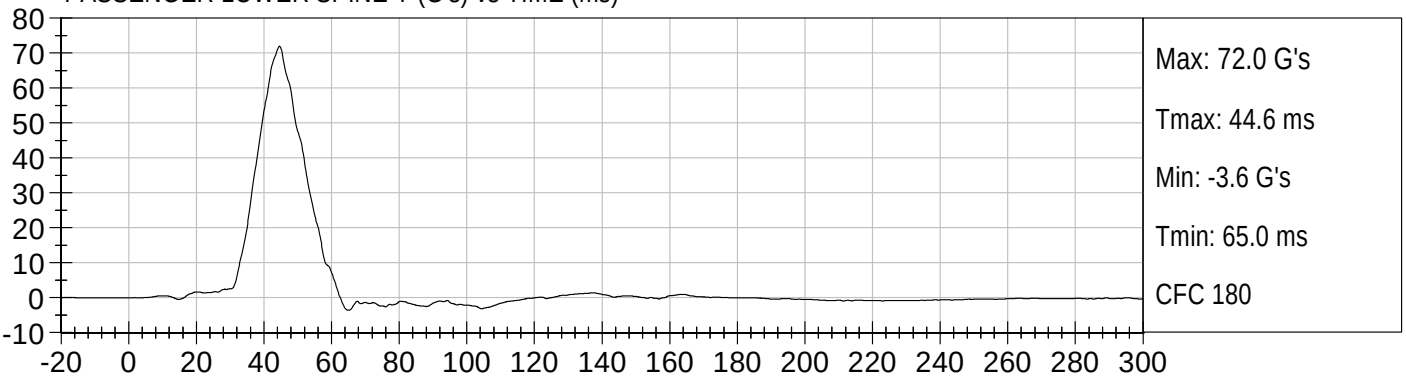
PASSENGER HEAD Resultant (G's) vs TIME (ms)



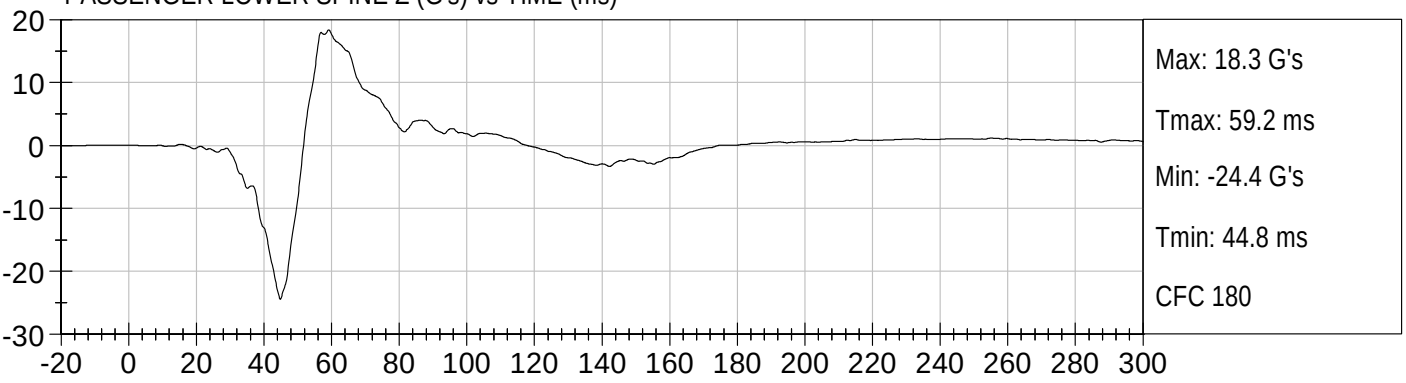
PASSENGER LOWER SPINE X (G's) vs TIME (ms)



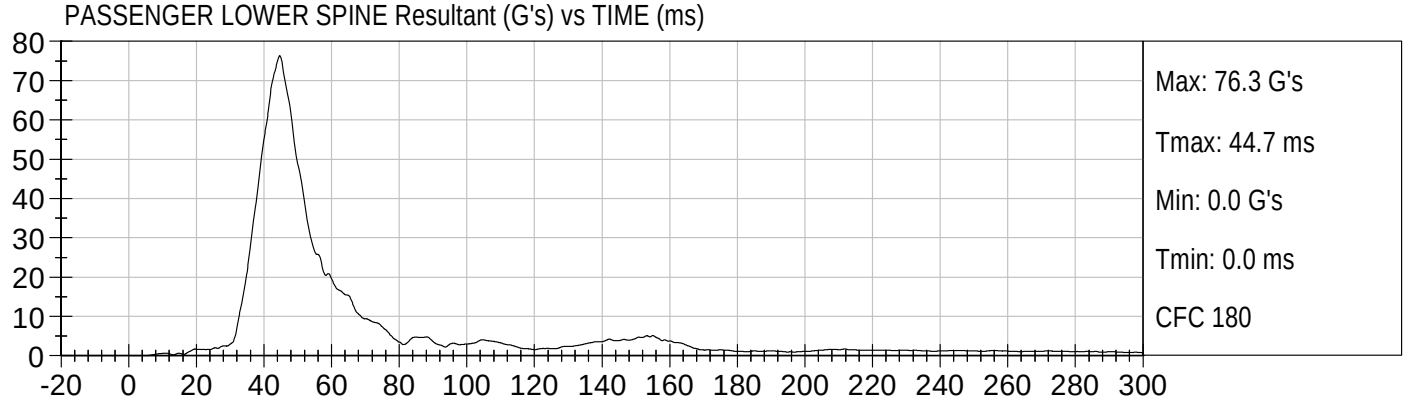
PASSENGER LOWER SPINE Y (G's) vs TIME (ms)



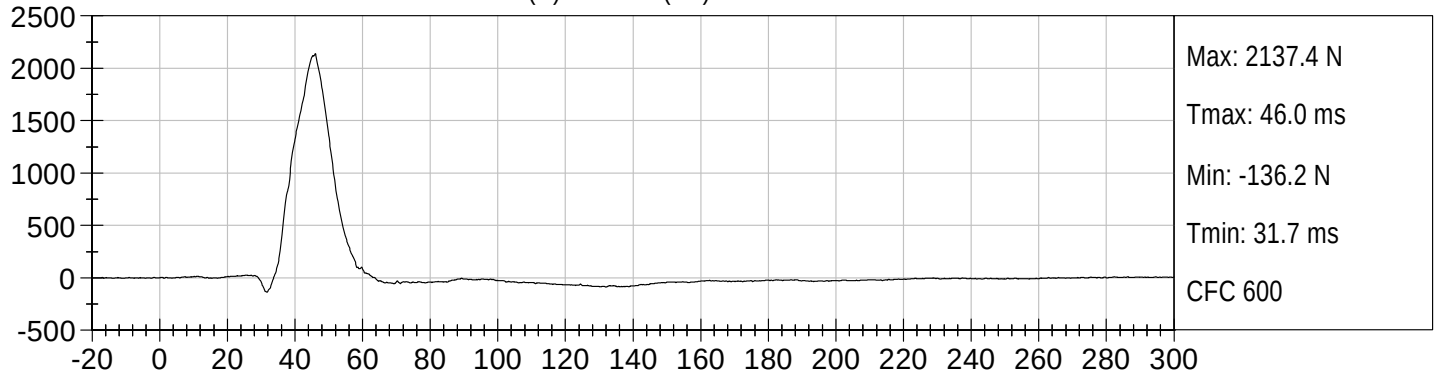
PASSENGER LOWER SPINE Z (G's) vs TIME (ms)



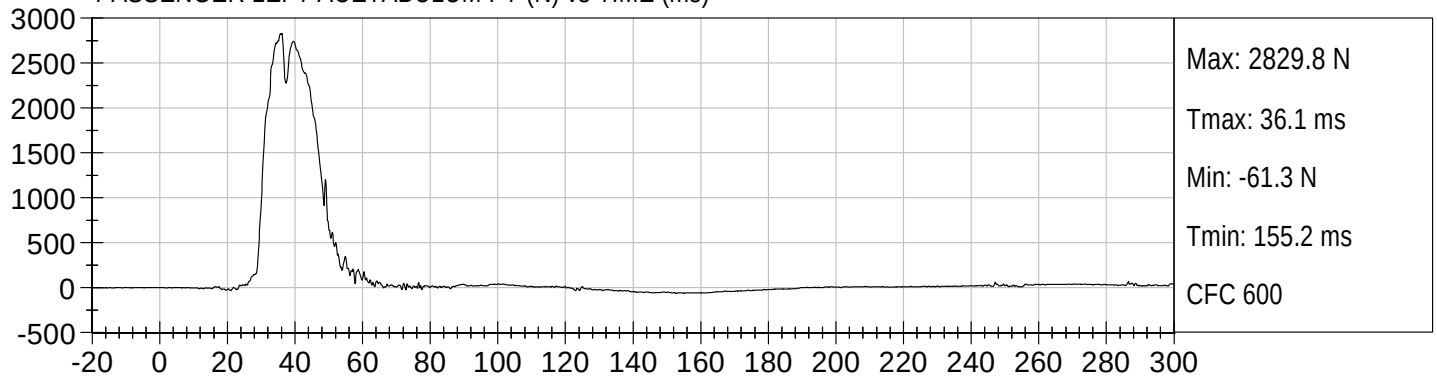
PASSENGER LOWER SPINE Resultant (G's) vs TIME (ms)



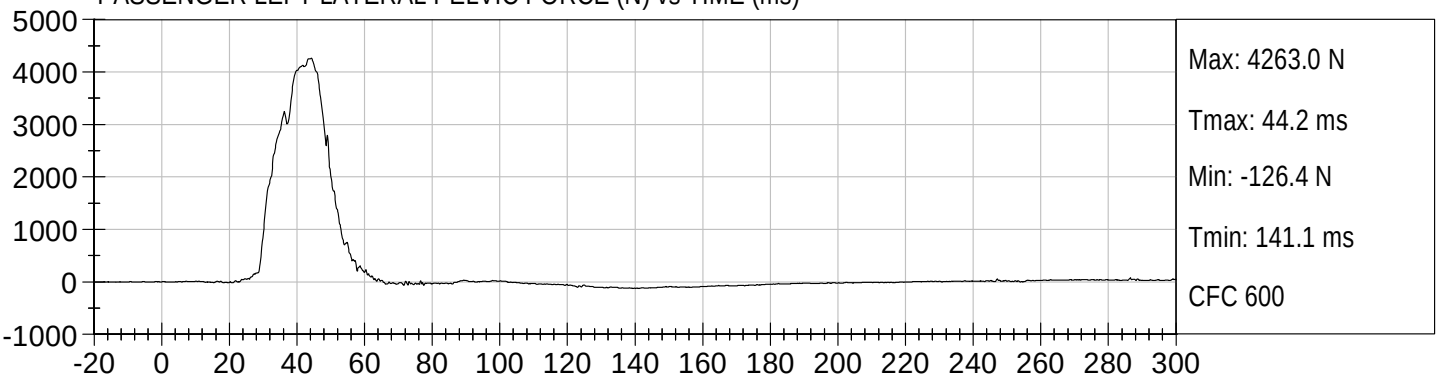
PASSENGER LEFT ILLIUM CREST FY (N) vs TIME (ms)



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



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



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:** D12091

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	22.0	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	-9.2	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

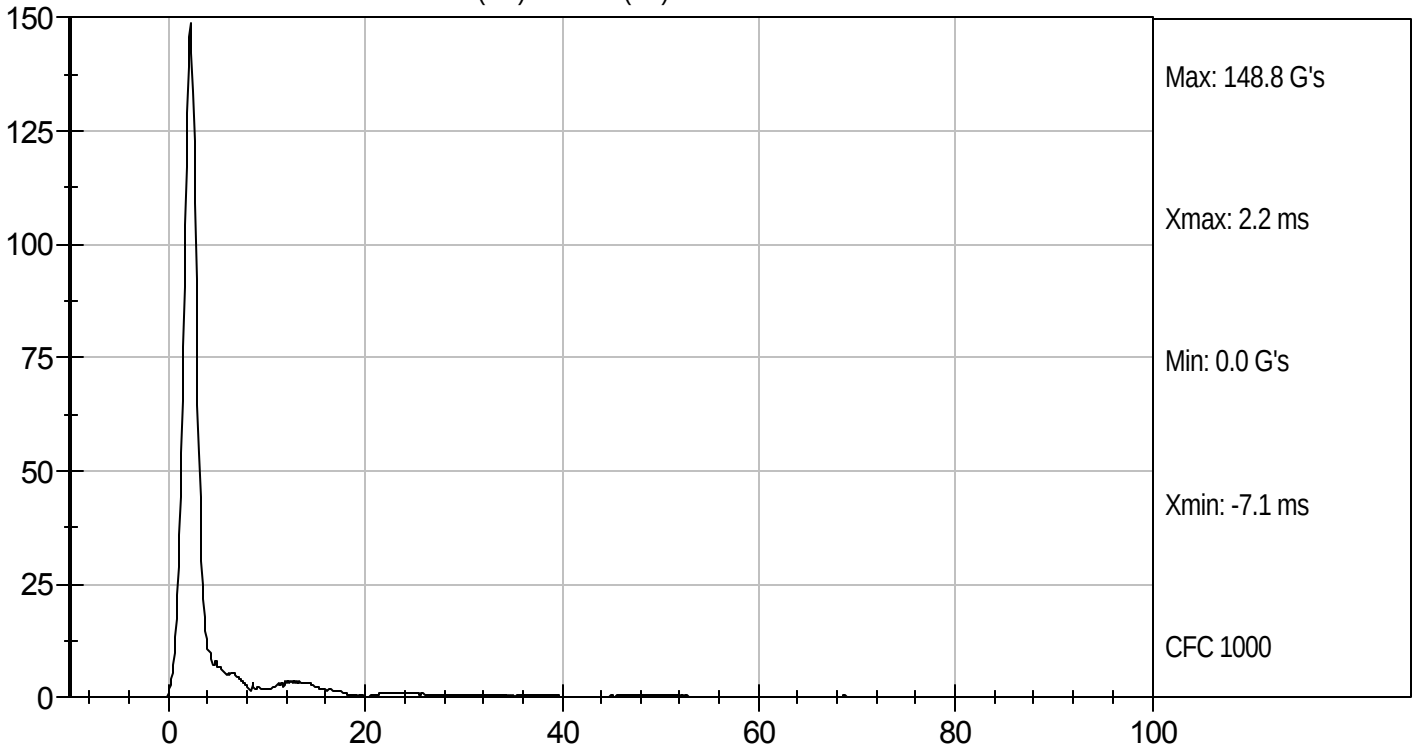
1/10/12
Test Date

David Winkelbauer
Approved By

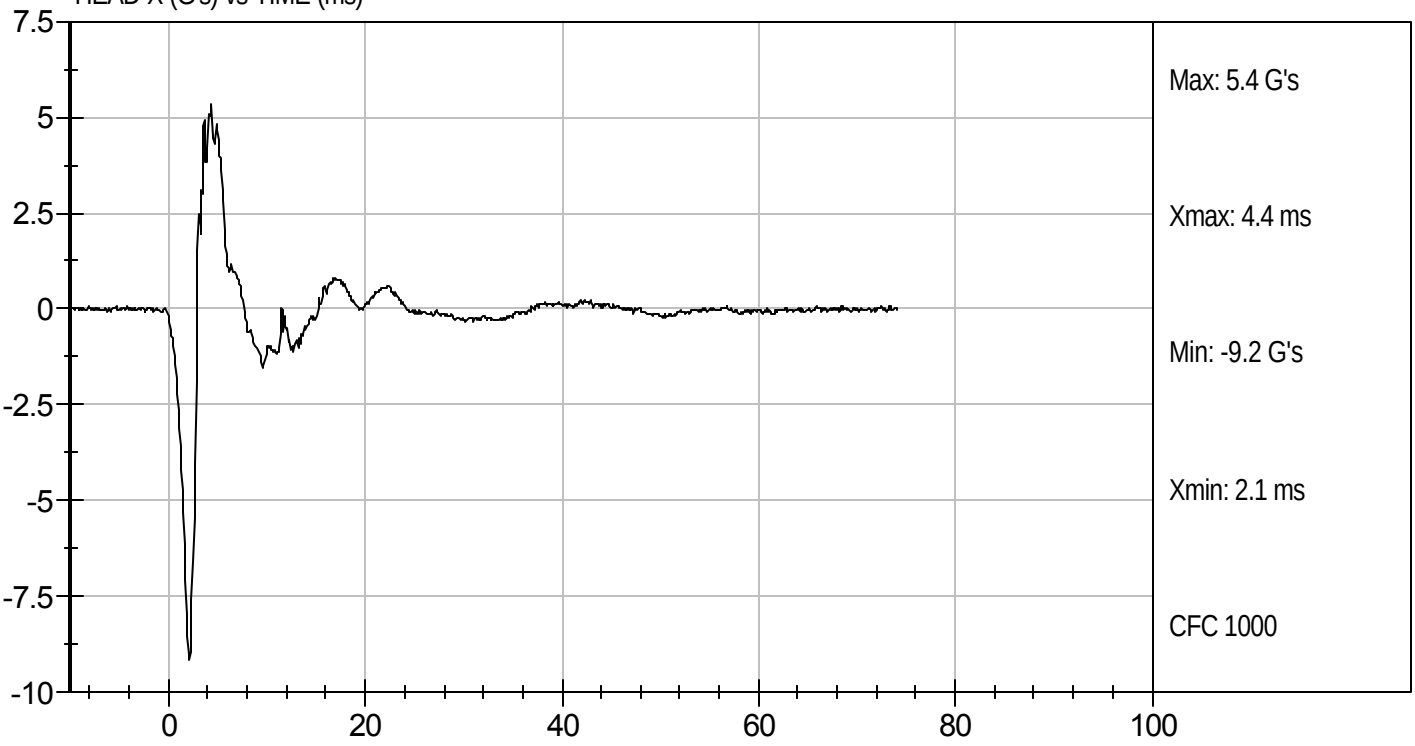
Test Desc: Head Drop
Component ID: D12091

Test Date: 1/10/12
Velocity: 0 ft/s, 0 m/s

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



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



MGA RESEARCH CORPORATION

NECK PENDULUM TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12092

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	23	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	-0.34	Pass
	14 ms	m/s	-3.20 to -3.70	-3.28	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	52.8	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	58.7	Pass
Head Rotation Decay Time to 0 degree		ms	53.0 to 88.0	56.6	Pass
			Overall Test Results		Pass

Jessica Hall
Laboratory Technician

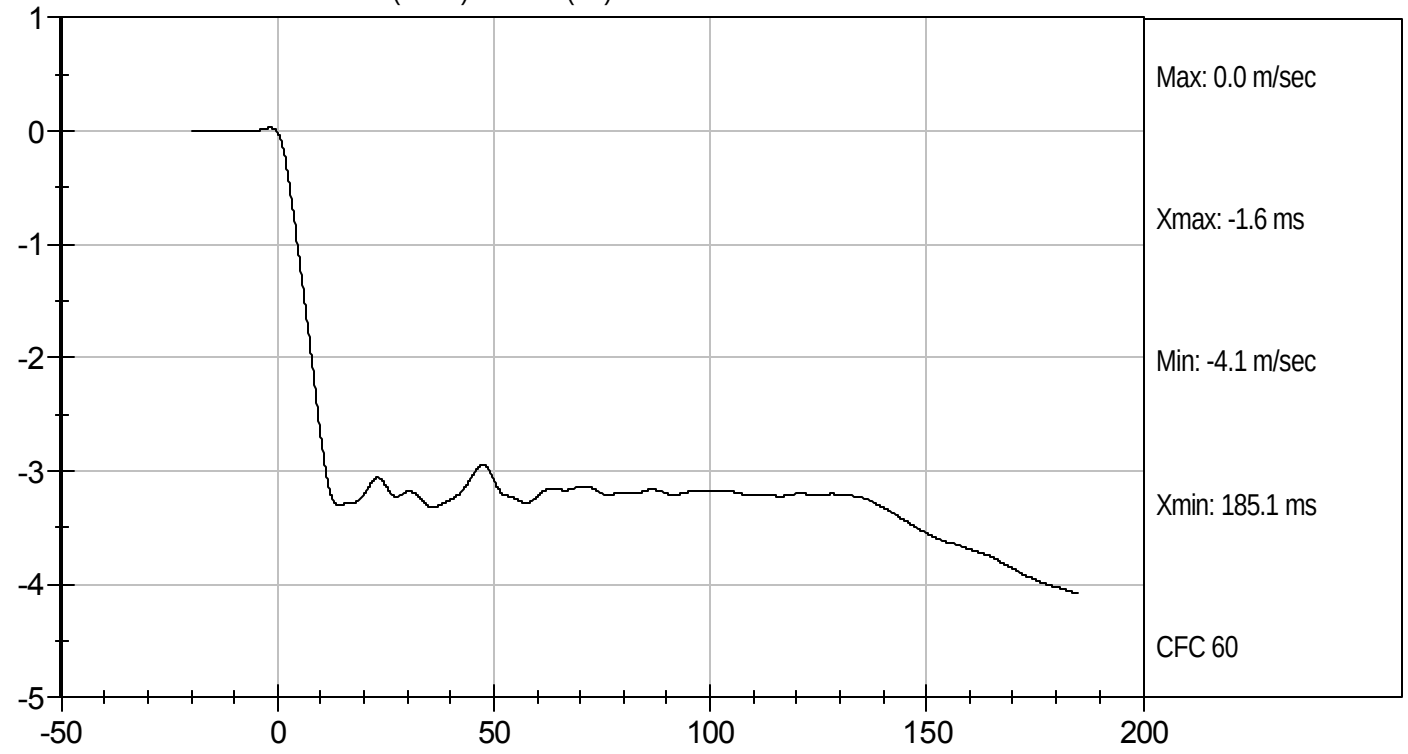
1/10/12
Test Date

David Winkelbauer
Approved By

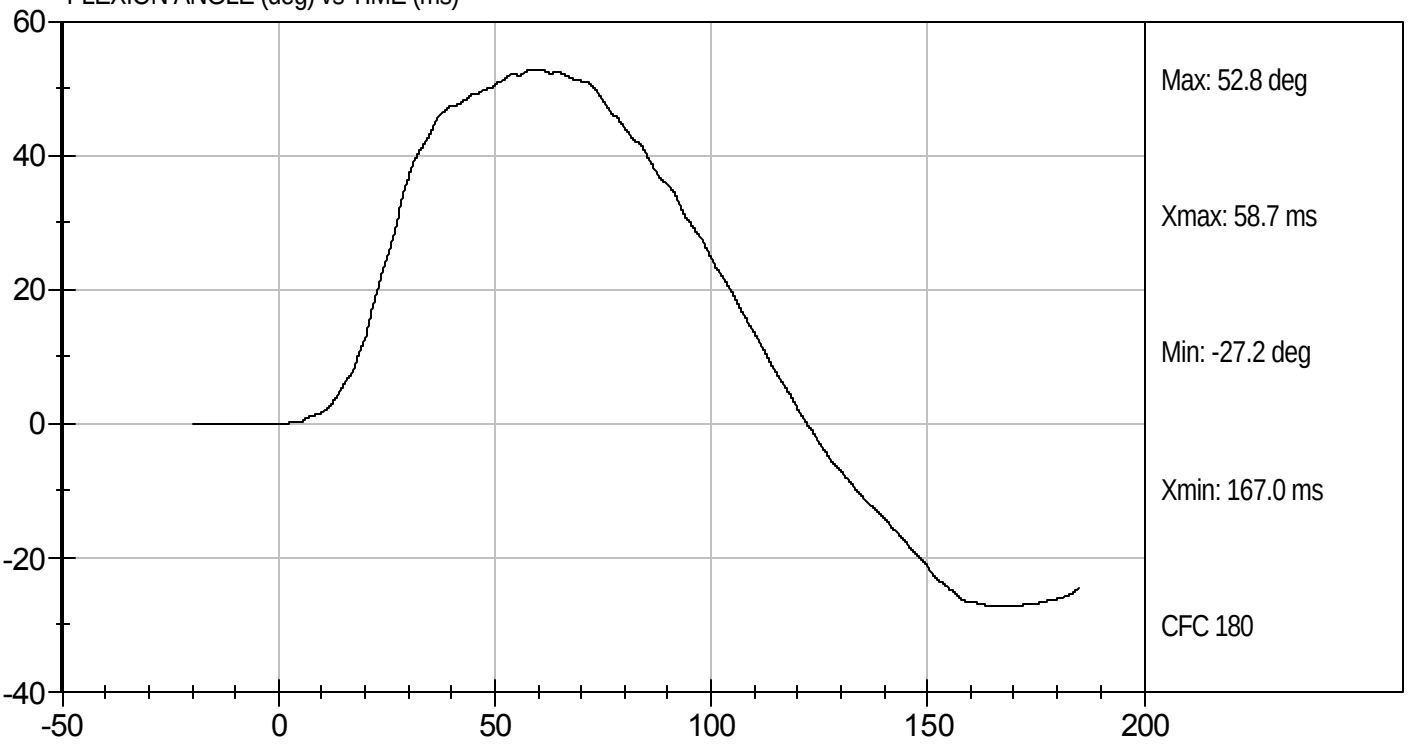
Test Desc: Neck Bending
Component ID: D12092

Test Date: 1/10/12
Velocity: 11.42 ft/s, 3.48 m/s

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

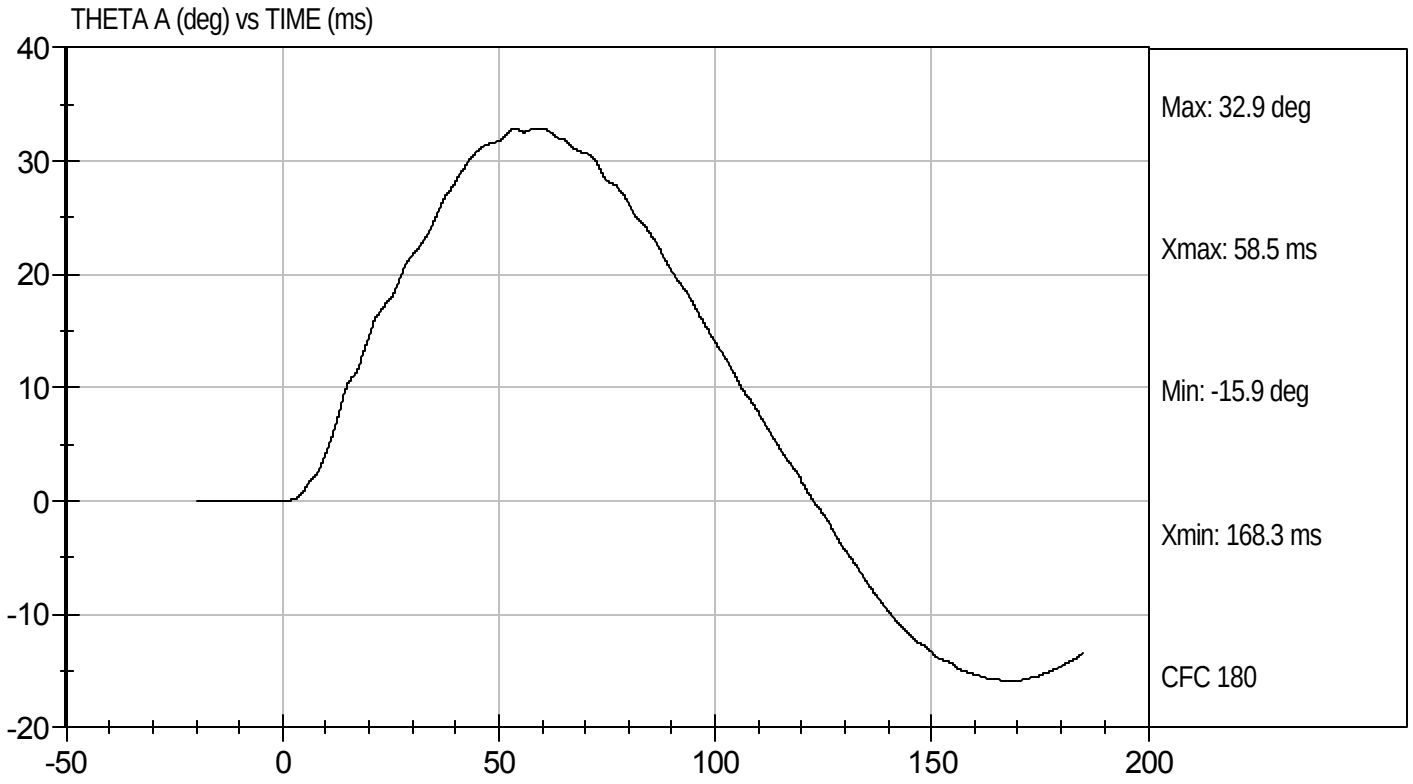


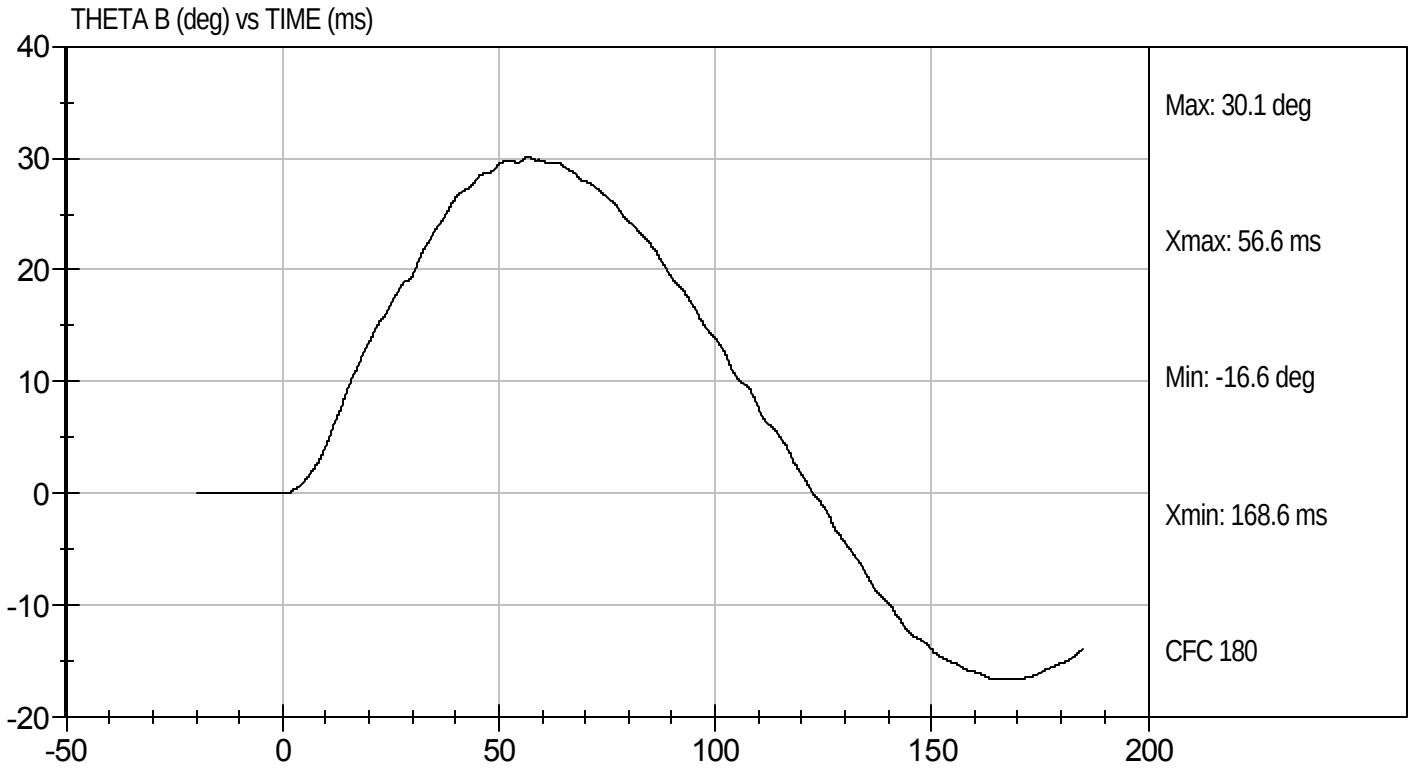
FLEXION ANGLE (deg) vs TIME (ms)



Test Desc: Neck Bending
Component ID: D12092

Test Date: 1/10/12
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:** D12093

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.3	Pass
Peak Shoulder Acceleration	G's	7.5 to 10.5	9.6	Pass
Time of Peak Shoulder Acceleration	ms	NA	13.3	Pass
		Overall Test Results		Pass

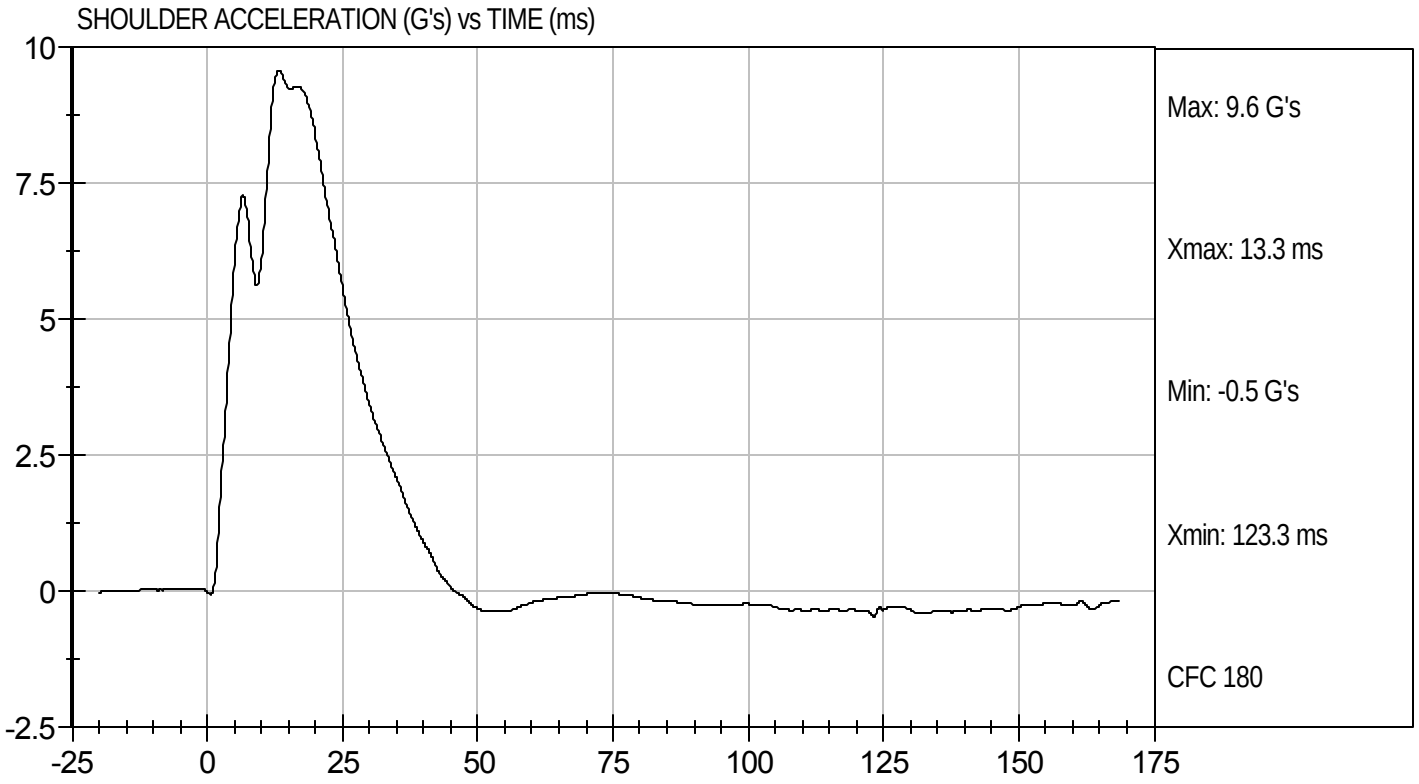
Jessica Hall
Laboratory Technician

1/11/12
Test Date

David Winkelbauer
Approved By

Test Desc: Shoulder Impact
Component ID: D12093

Test Date: 1/11/12
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:** D12094

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.1	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.3	Pass
		Overall Test Results		Pass

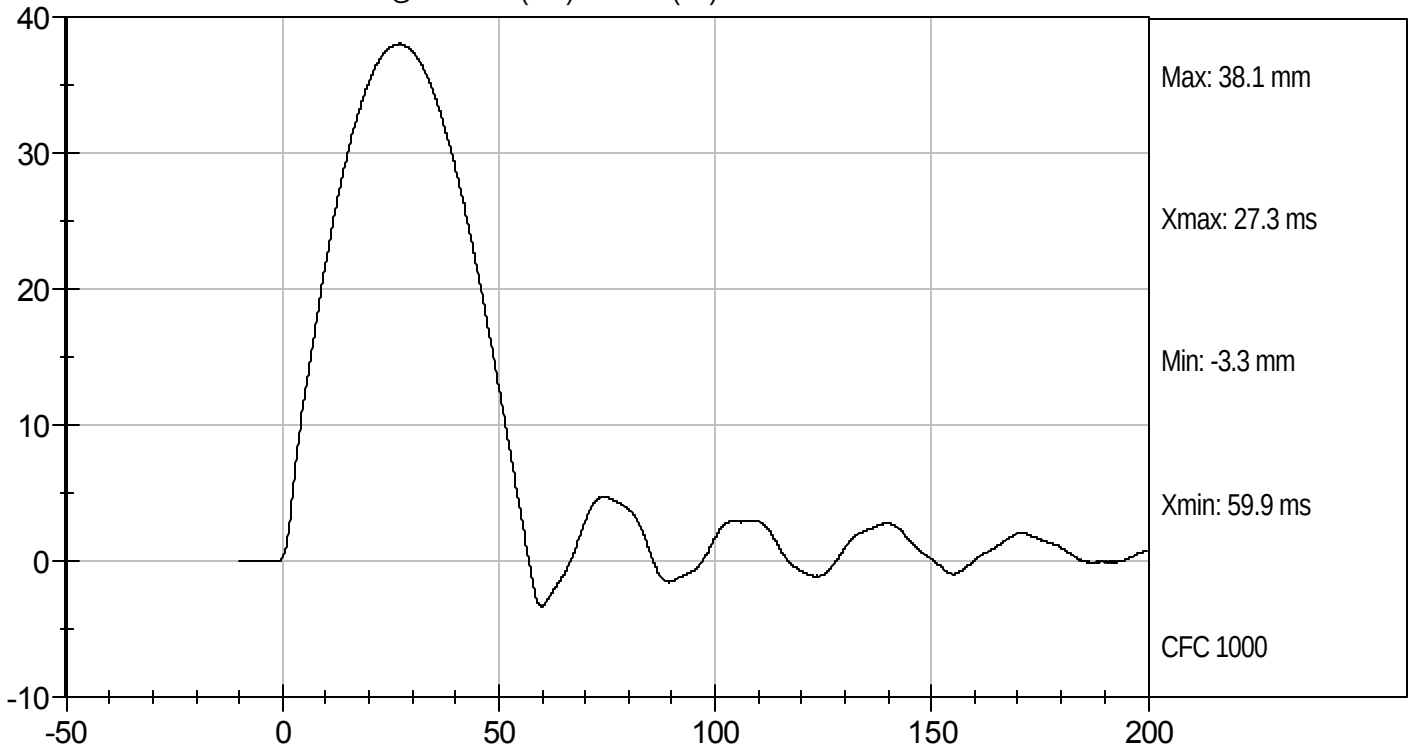
Jessica Hall
Laboratory Technician

1/10/12
Test Date

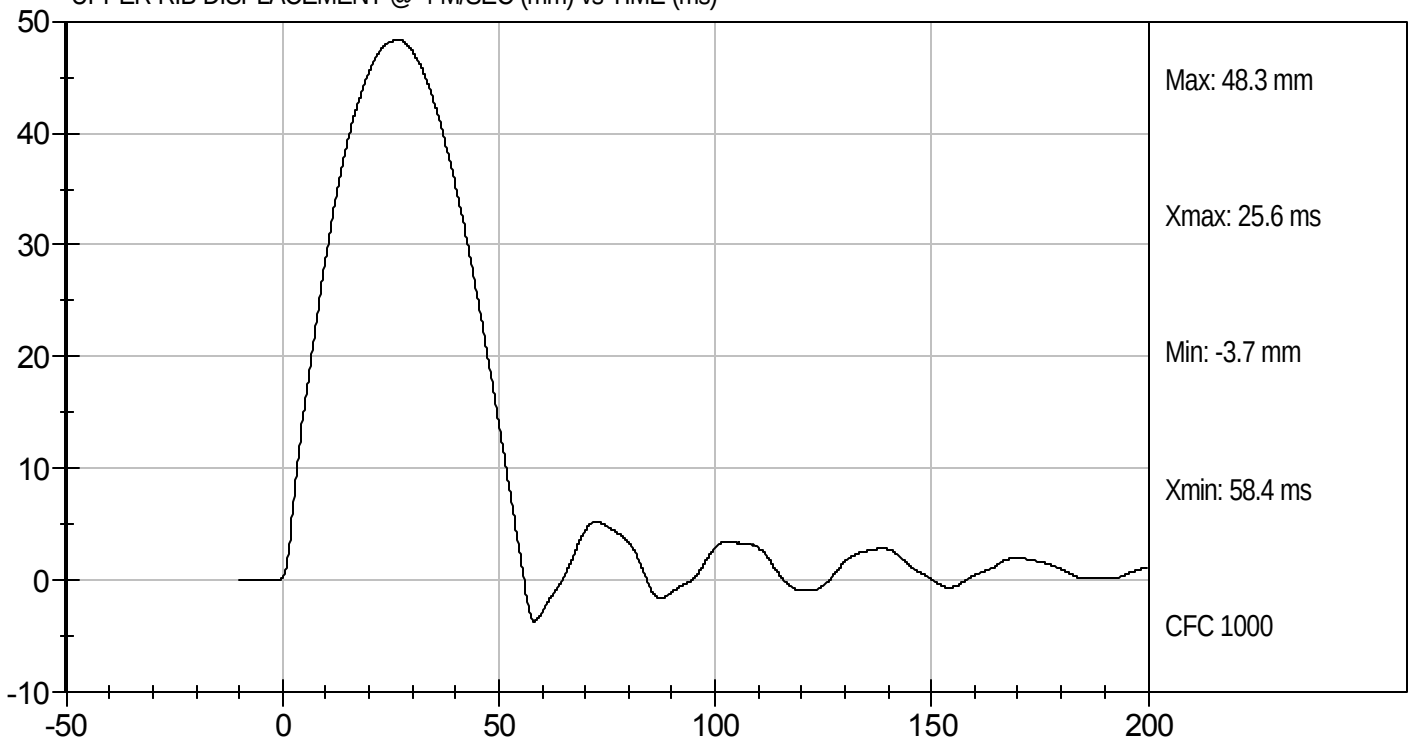
David Winkelbauer
Approved By

Test Desc: Rib Impact - Upper
Component ID: D12094
Test Date: 1/10/12

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:** D12095

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.2	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.1	Pass
		Overall Test Results		Pass

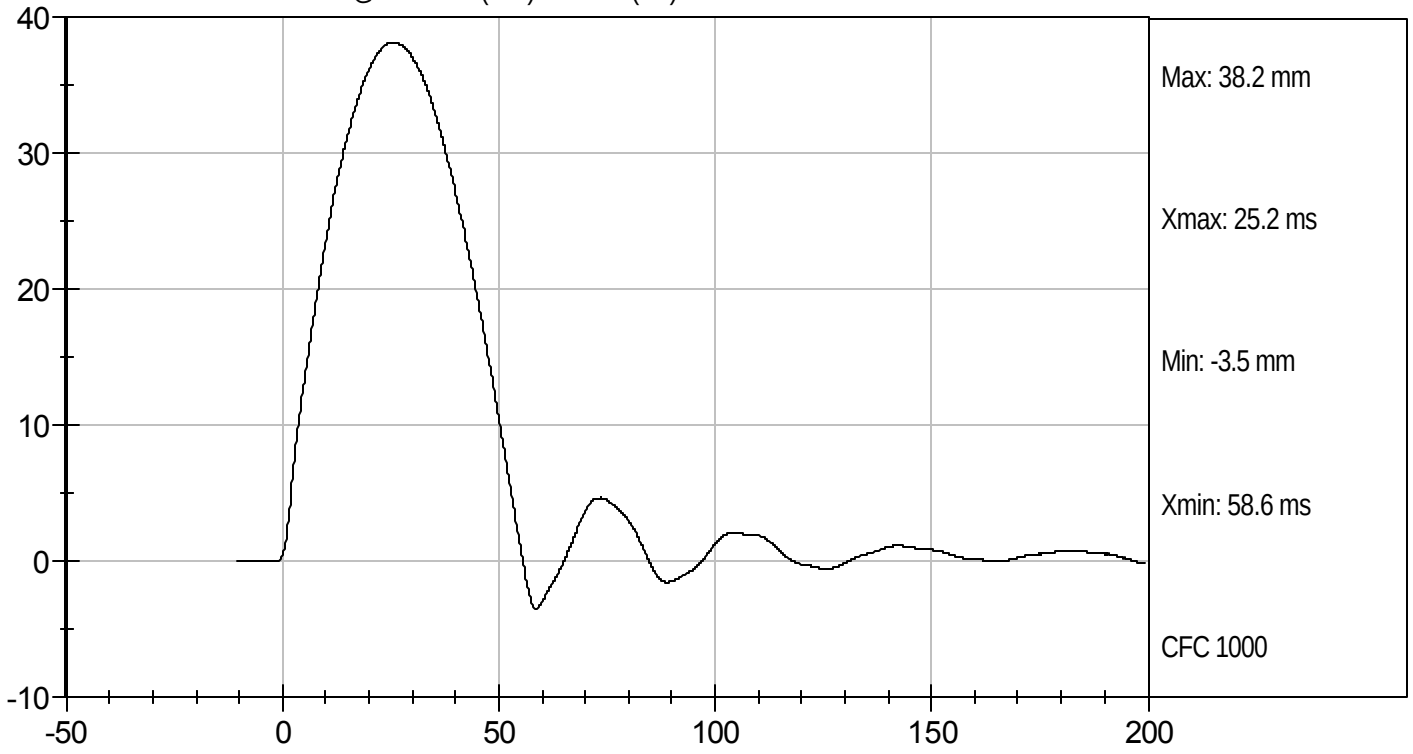
Jessica Hall
Laboratory Technician

1/10/12
Test Date

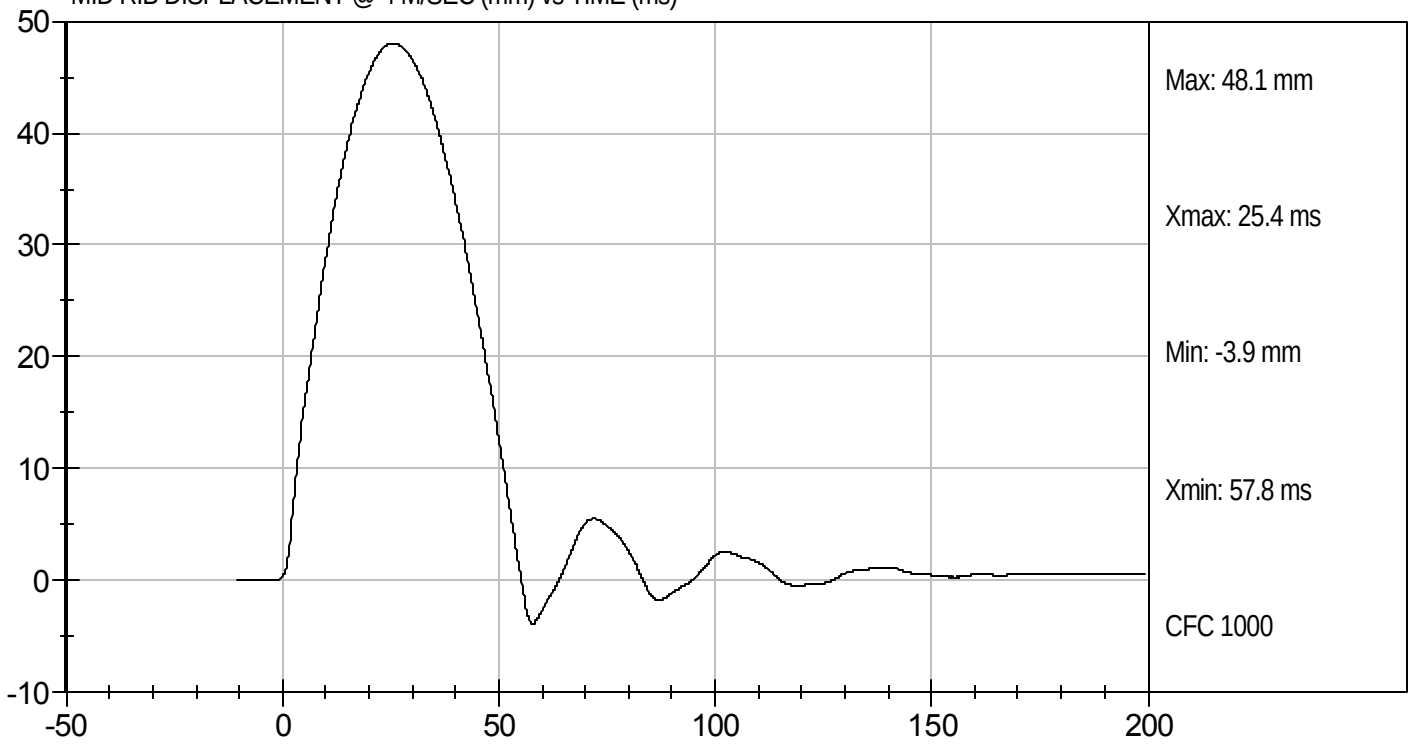
David Winkelbauer
Approved By

Test Desc: Rib Impact - Mid
Component ID: D12095
Test Date: 1/10/12

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:** D12096

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	39.0	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.9	Pass
		Overall Test Results		Pass

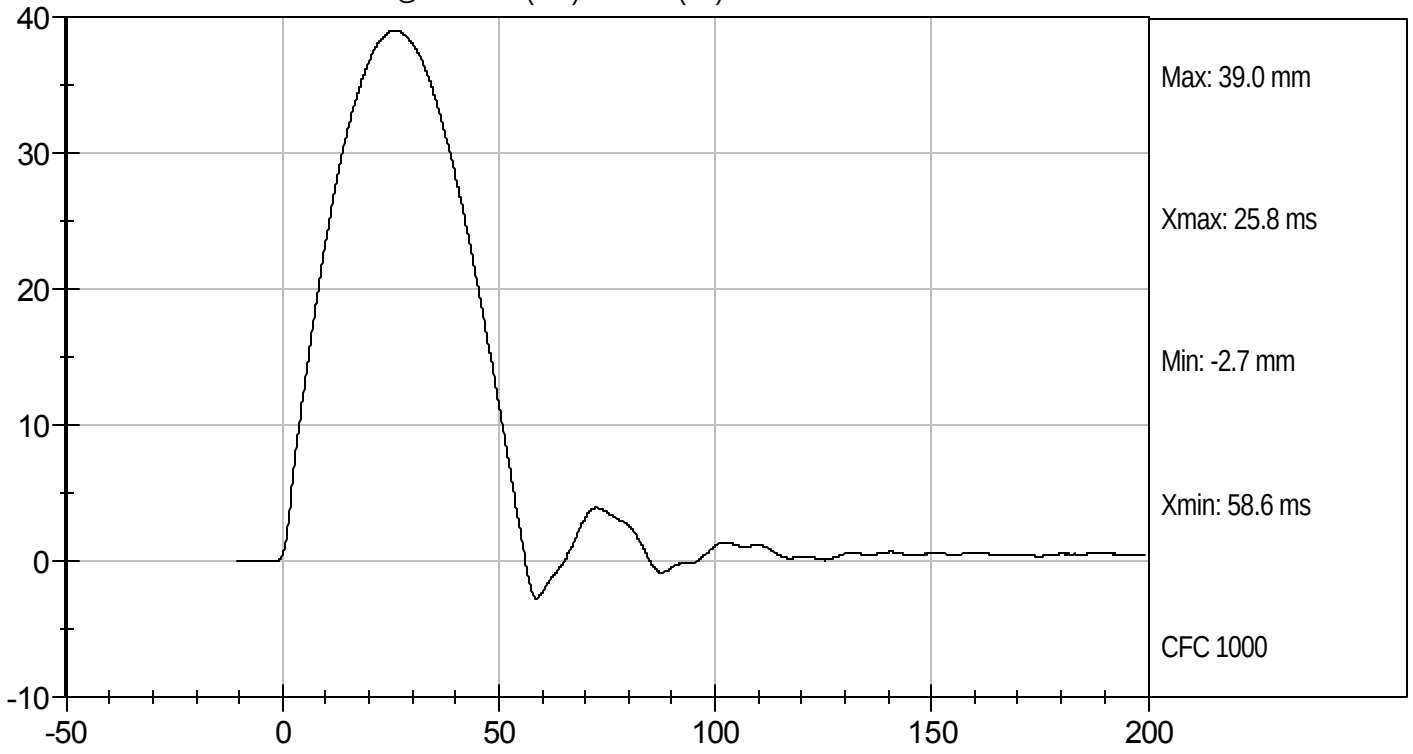
Jessica Gall
Laboratory Technician

1/10/12
Test Date

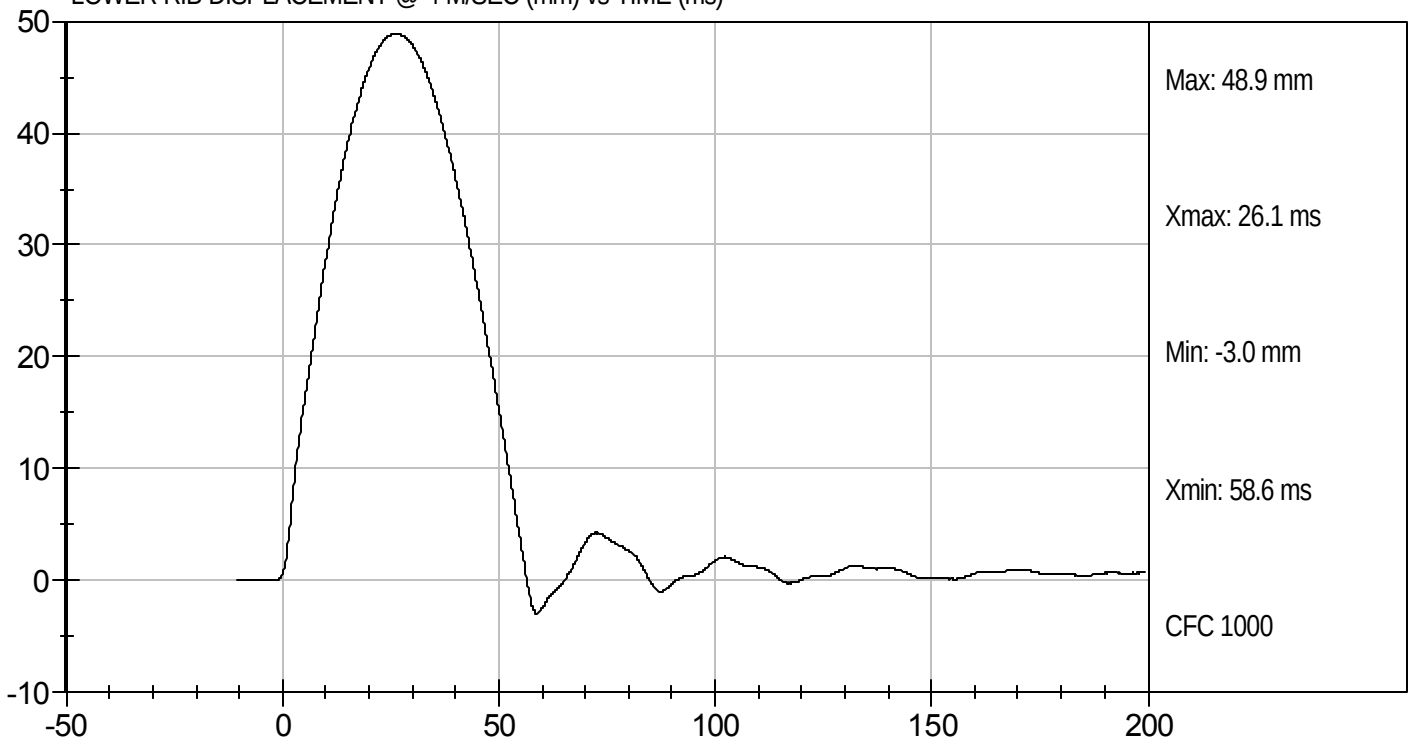
David Winkelbauer
Approved By

Test Desc: Rib Impact - Lower
Component ID: D12096
Test Date: 1/10/12

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:** D12090

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	22	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	5.31	Pass
Upper Rib Displacement	mm	34.0 to 41.0	36.5	Pass
Middle Rib Displacement	mm	37.0 to 45.0	39.1	Pass
Lower Rib Displacement	mm	37.0 to 44.0	38.5	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

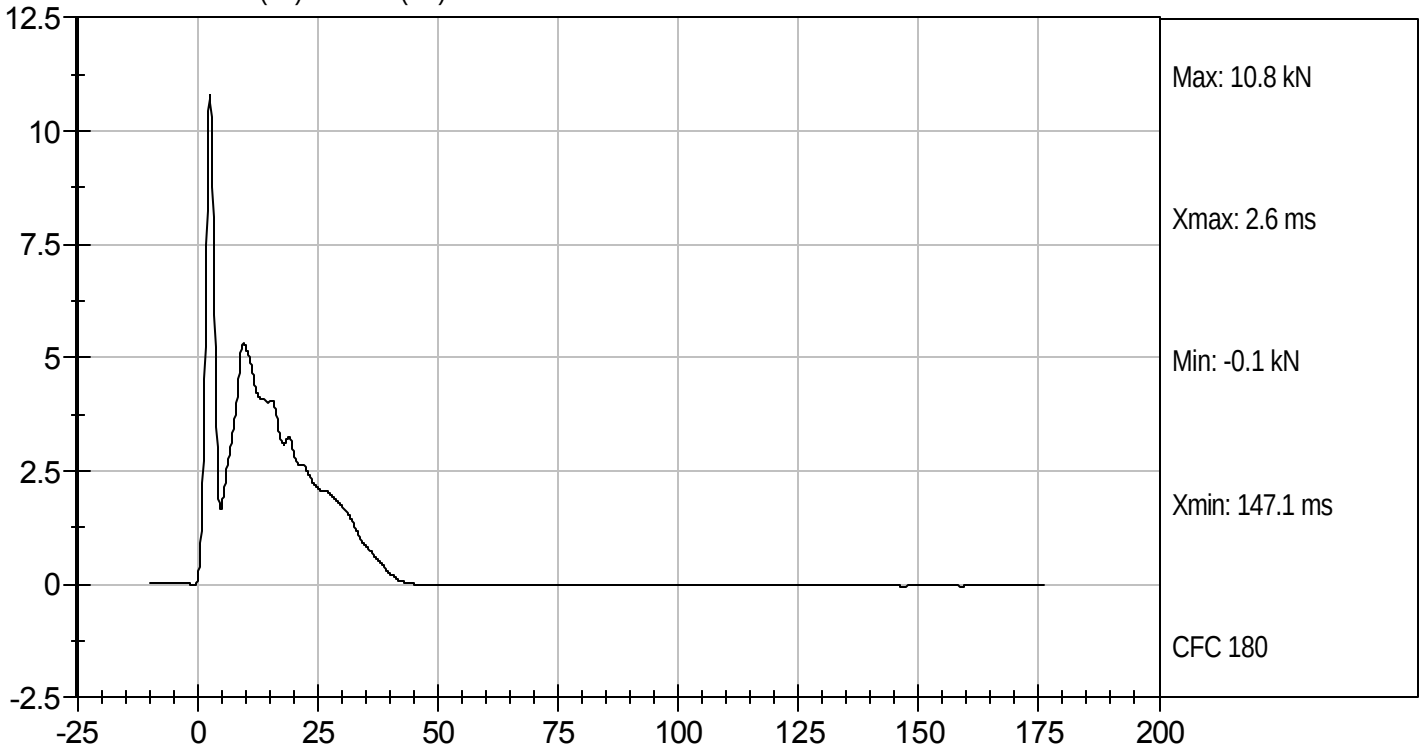
1/11/12
Test Date

David Winkelbauer
Approved By

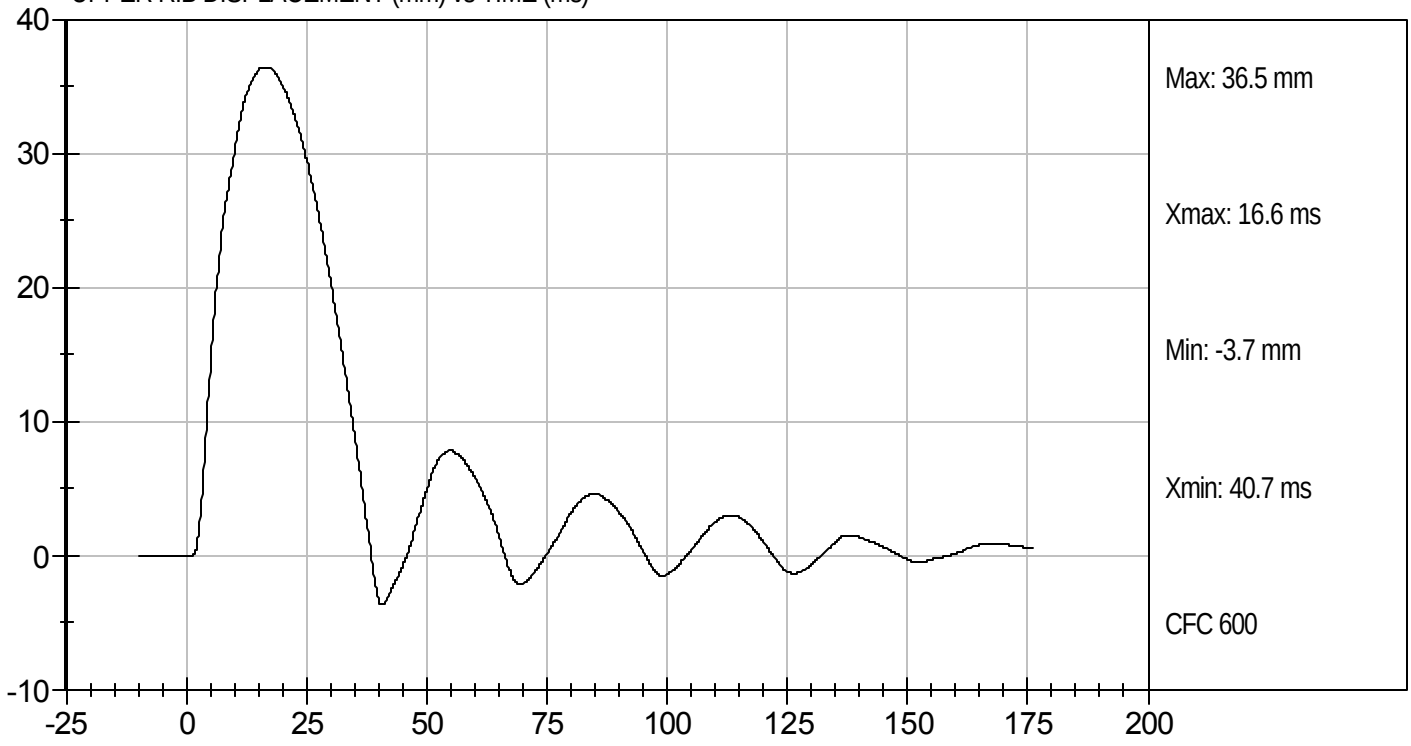
Test Desc: Thorax Impact
Component ID: D12090

Test Date: 1/11/12
Velocity: 18.32 ft/s, 5.58 m/s

PROBE FORCE (kN) vs TIME (ms)



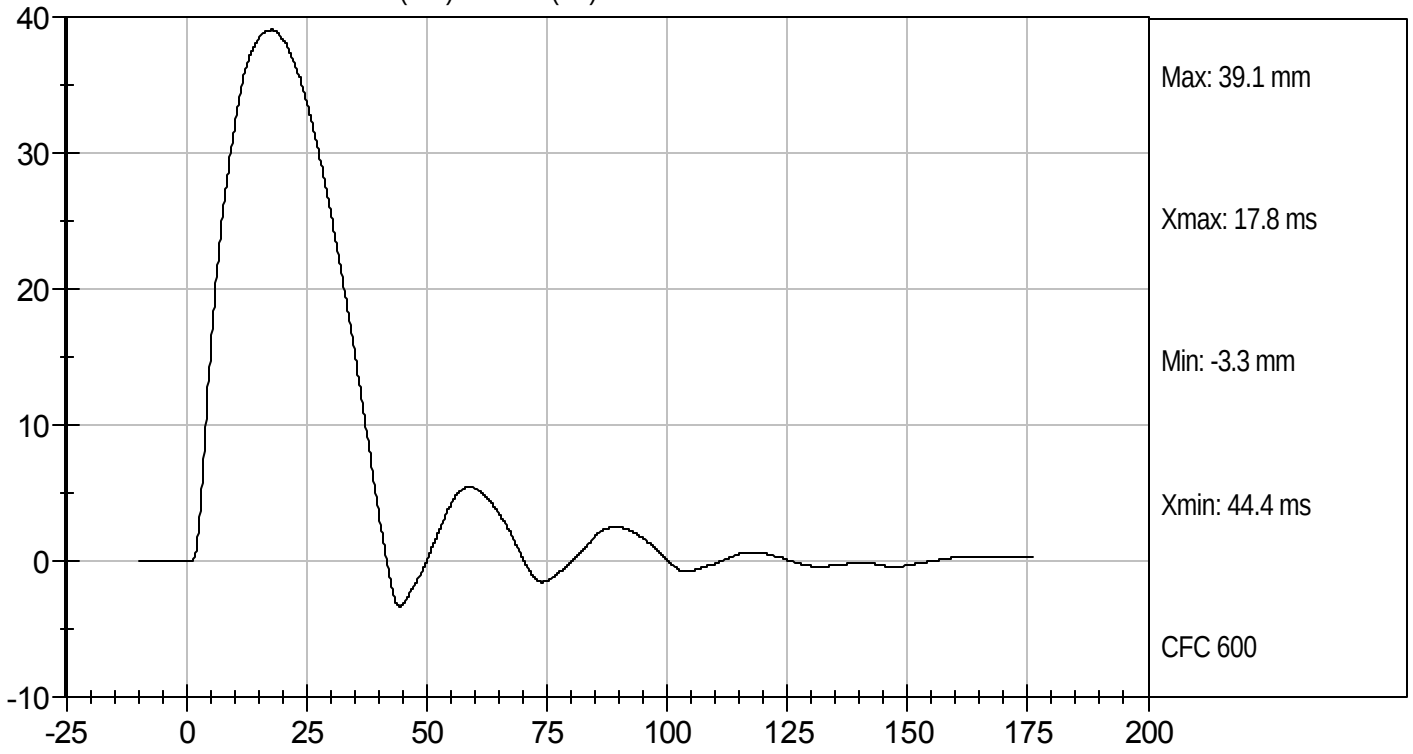
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



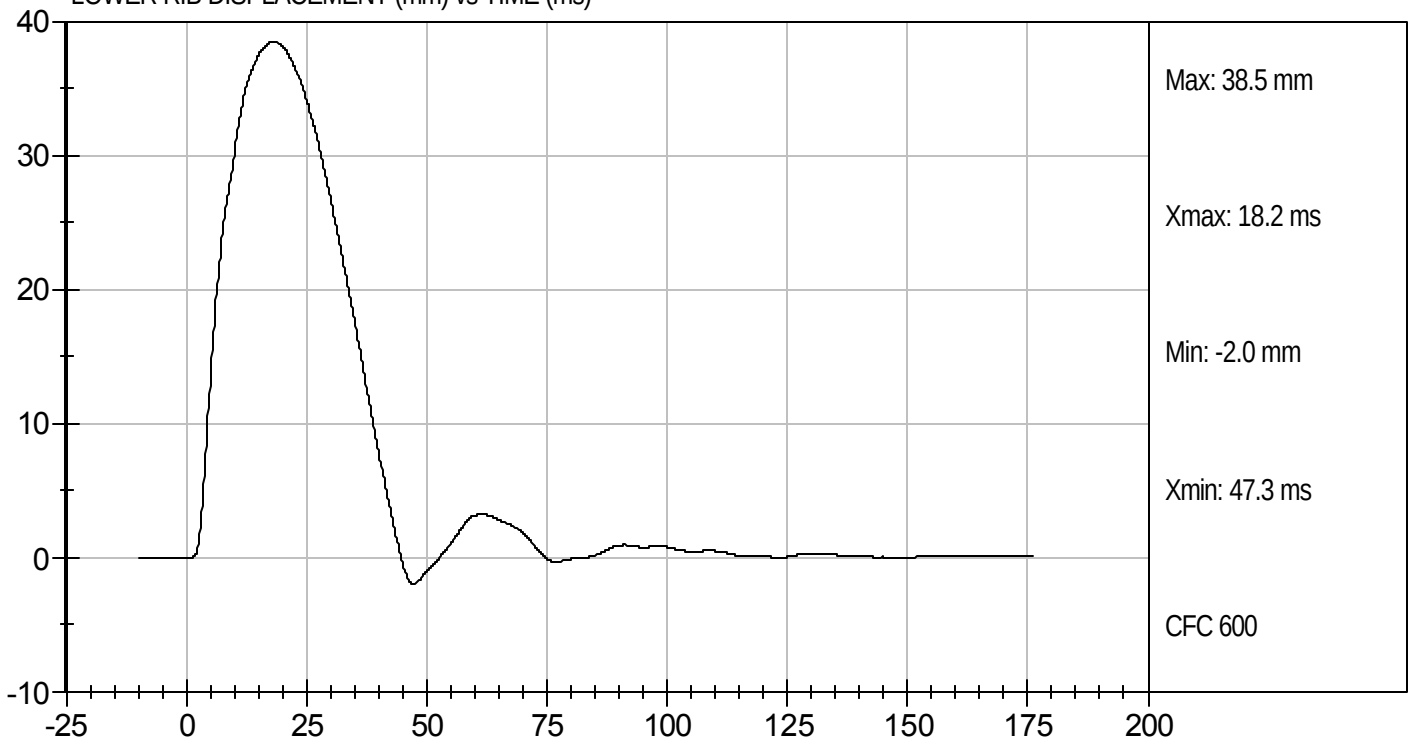
Test Desc: Thorax Impact
Component ID: D12090

Test Date: 1/11/12
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:** D12097

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Probe Speed	m/s	3.90 to 4.10	4.10	Pass
Maximum Impact Force	kN	4.00 to 4.80	4.29	Pass
Time of Maximum Impactor Force	ms	10.60 to 13.00	10.90	Pass
Maximum Total Abdomen Force	kN	2.20 to 2.70	2.46	Pass
Time of Maximum Abdomen Force	ms	10.00 to 12.30	10.20	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

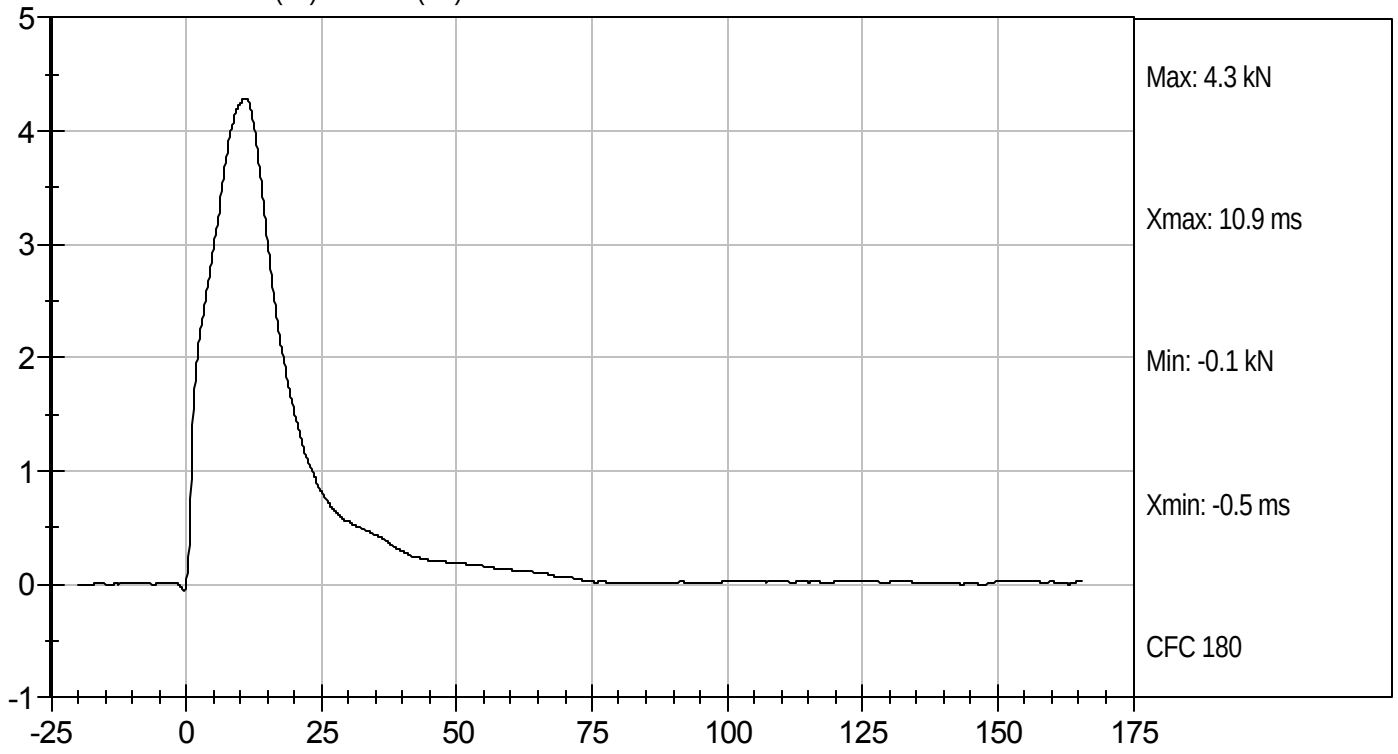
1/11/12
Test Date

David Winkelbauer
Approved By

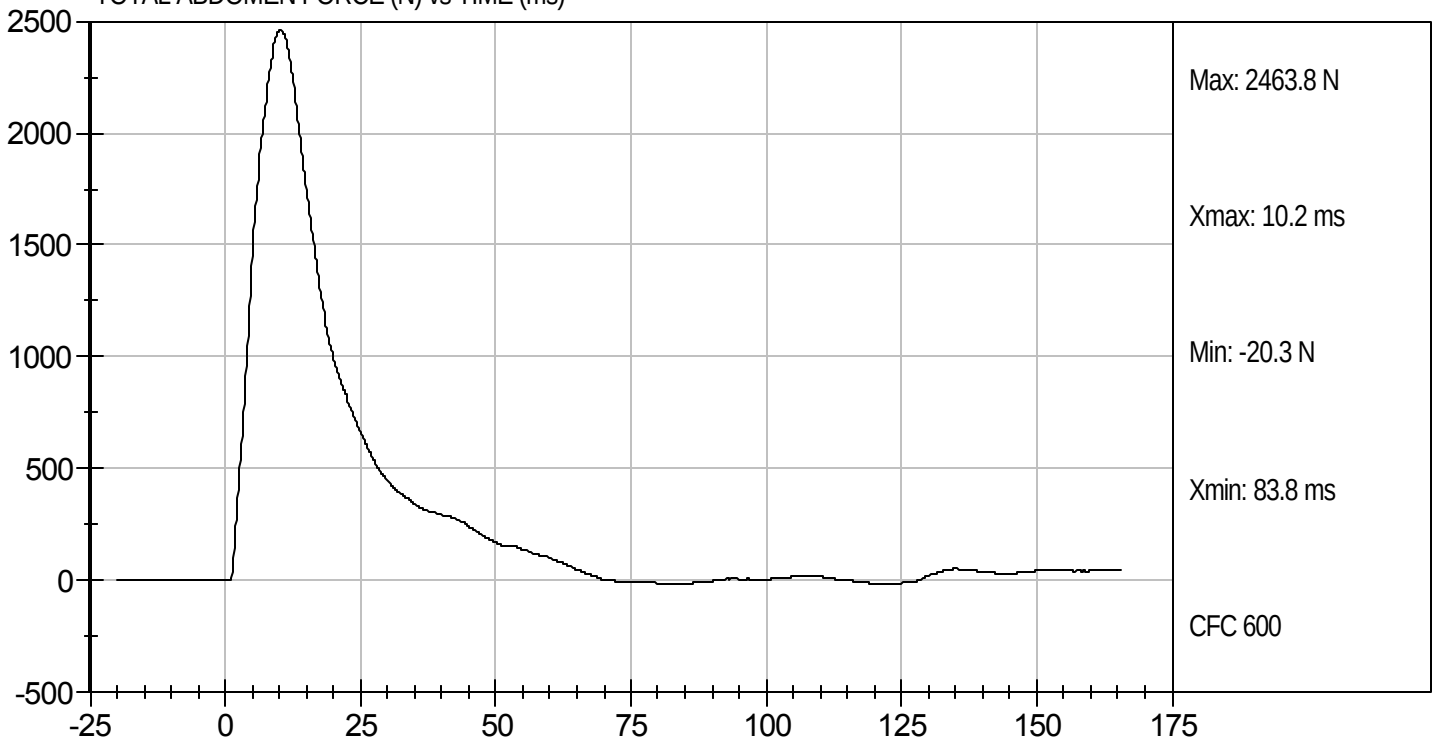
Test Desc: Abdomen Impact
Component ID: D12097

Test Date: 1/11/12
Velocity: 13.44 ft/s, 4.1 m/s

IMPACTOR FORCE (kN) vs TIME (ms)



TOTAL ABDOMEN FORCE (N) vs TIME (ms)



MGA RESEARCH CORPORATION

LUMBAR SPINE TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12098

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	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	-0.42	Pass
	27 ms	m/s	-6.50 to -5.80	-5.83	Pass
	30 ms	m/s	>= -6.5	-5.70	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	46.5	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	43.0	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	42	Pass
			Overall Results		Pass

Jessica Hall
Laboratory Technician

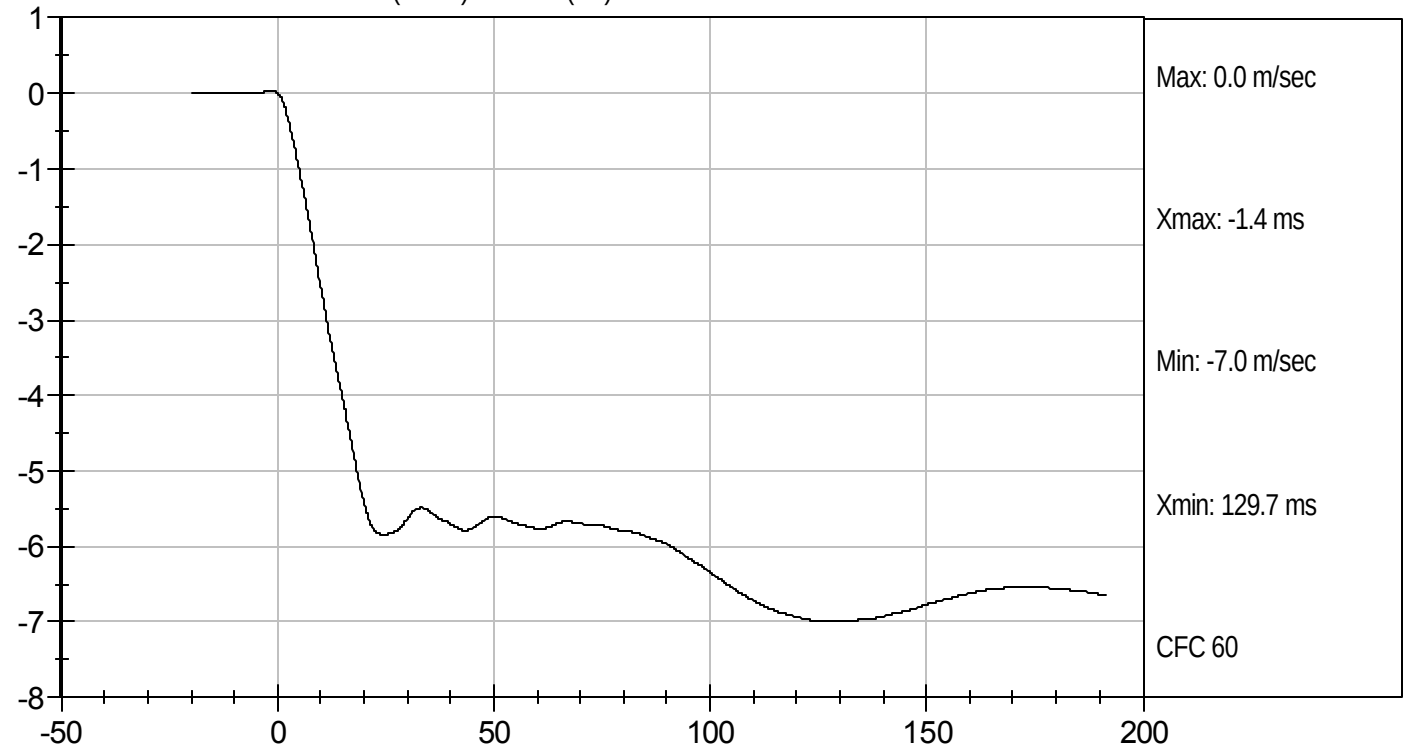
1/10/12
Test Date

David Winkelbauer
Approved By

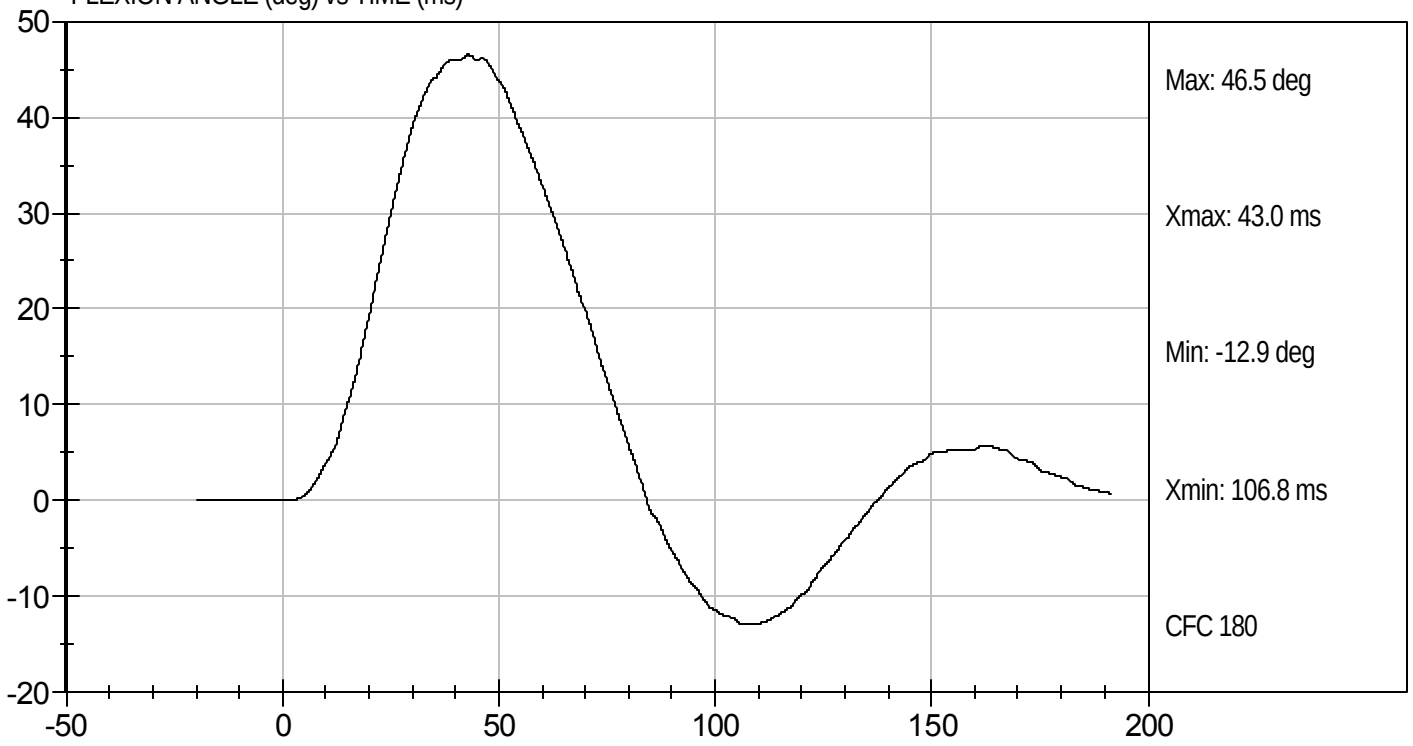
Test Desc: Lumbar Bending
Component ID: D12098

Test Date: 1/10/12
Velocity: 20.08 ft/s, 6.12 m/s

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

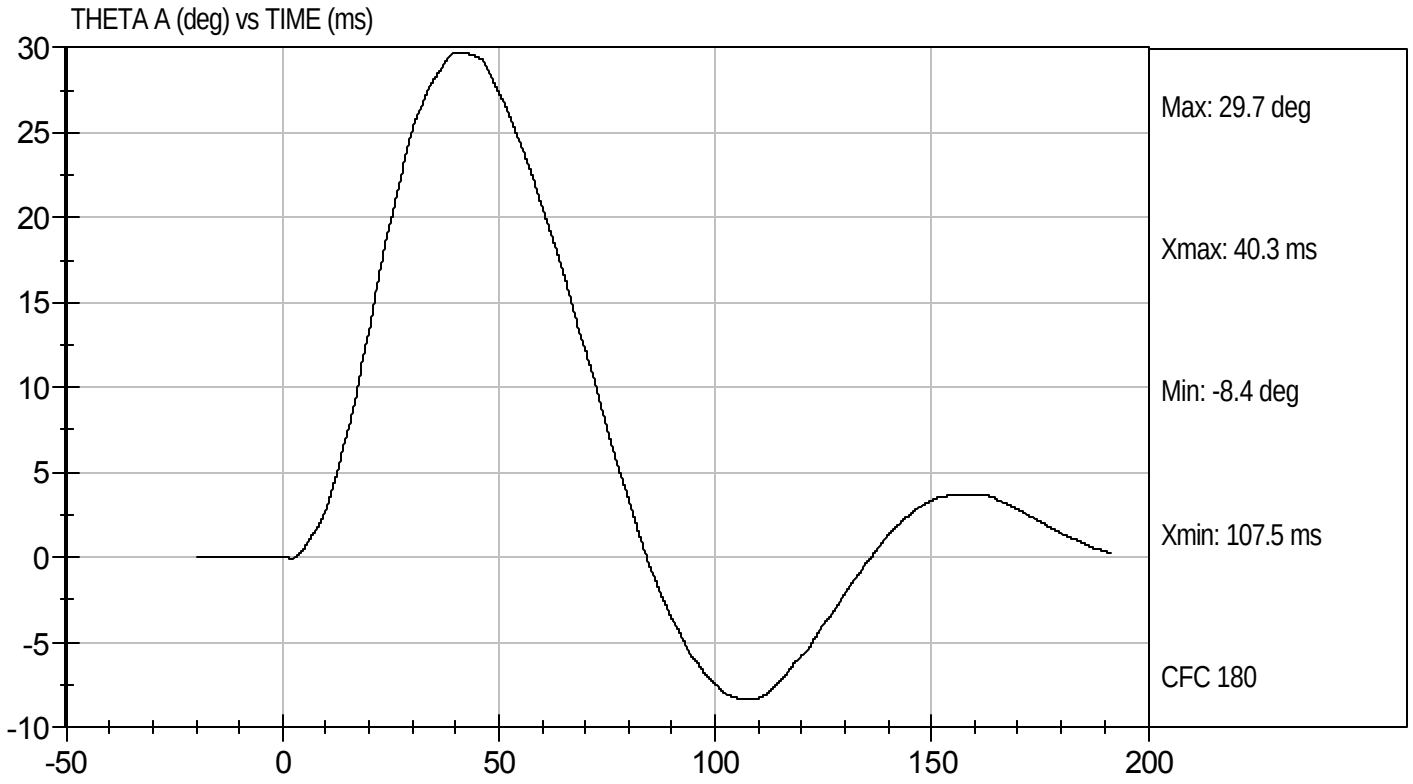


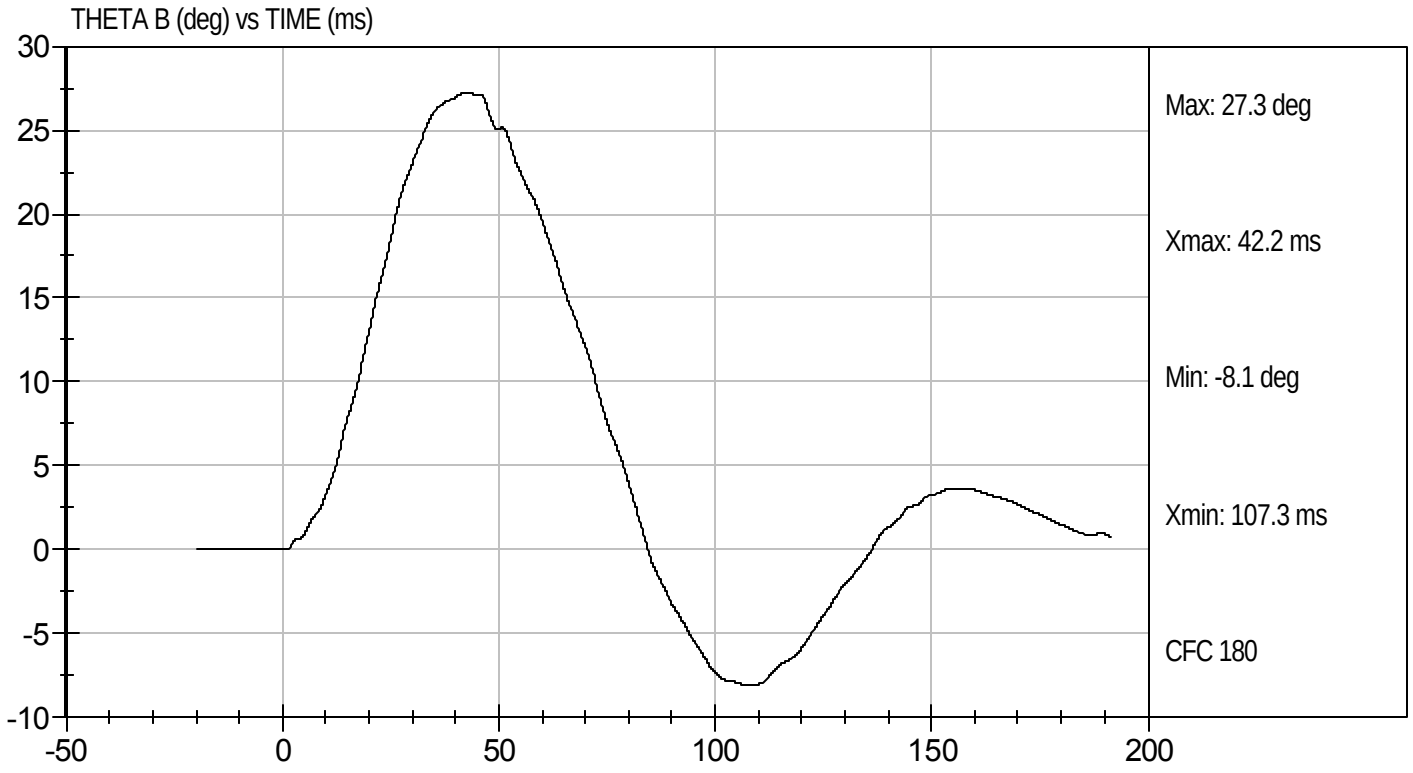
FLEXION ANGLE (deg) vs TIME (ms)



Test Desc: Lumbar Bending
Component ID: D12098

Test Date: 1/10/12
Velocity: 20.08 ft/s, 6.12 m/s





MGA RESEARCH CORPORATION

PELVIS TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12099

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	kN	4.70 to 5.40	4.86	Pass
Time of Maximum Impactor Force	ms	11.80 to 16.10	13.10	Pass
Maximum Pubic Force	kN	1.23 to 1.59	1.34	Pass
Time of Maximum Pubic Force	ms	12.20 to 17.00	13.40	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

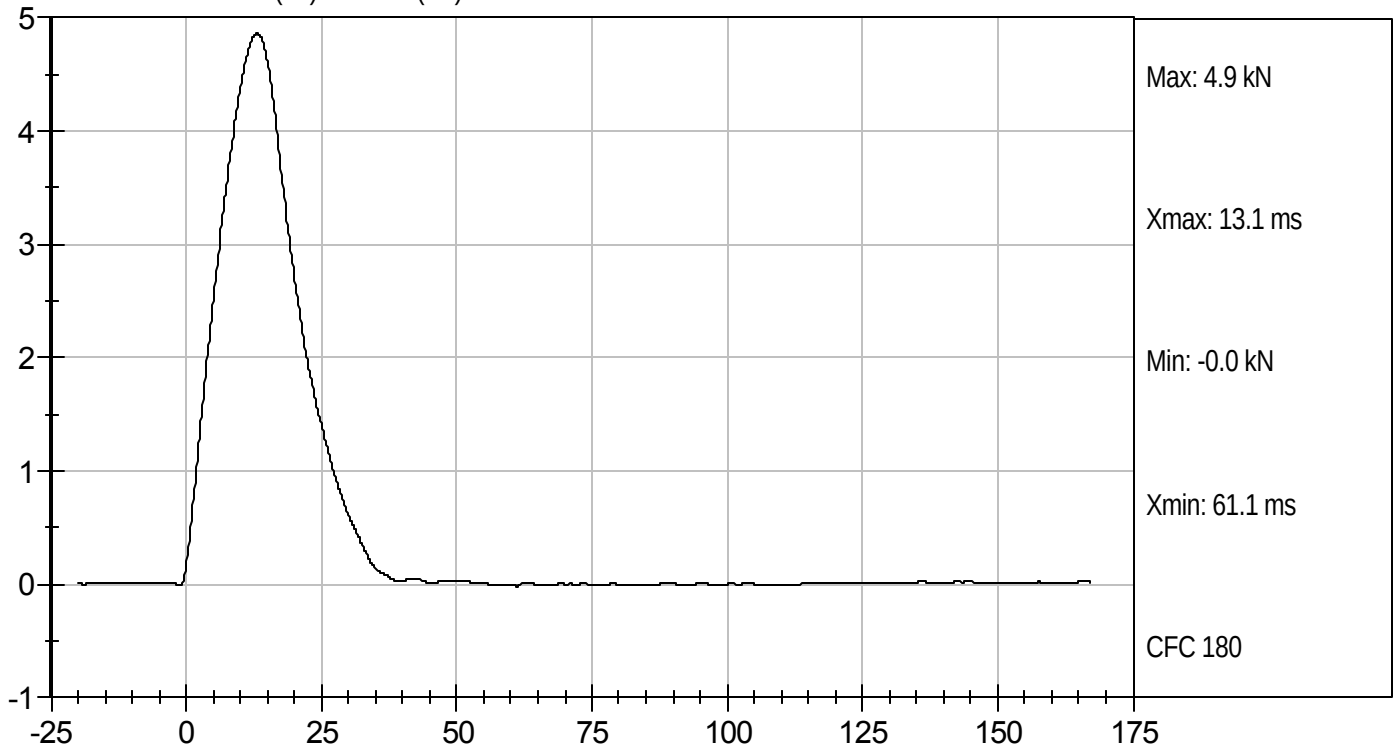
1/11/12
Test Date

David Winkelbauer
Approved By

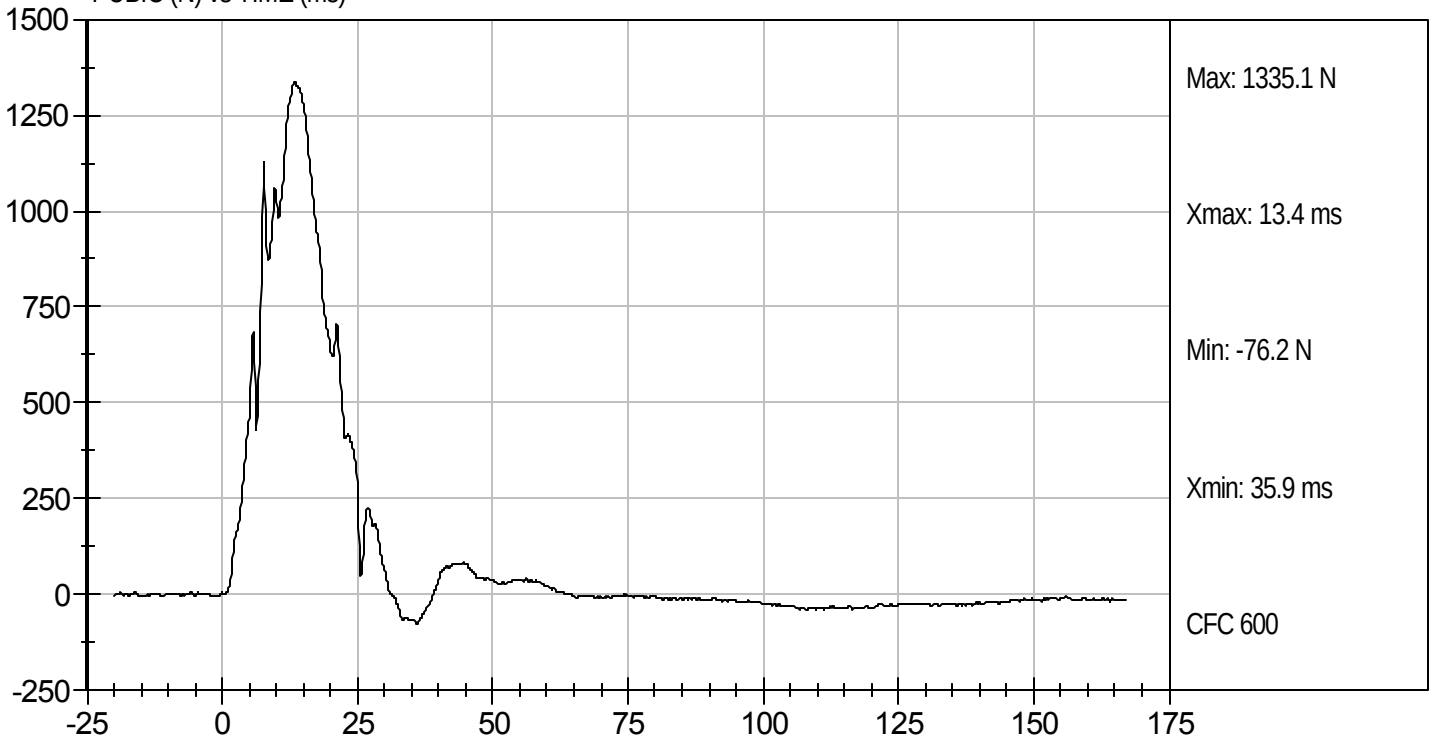
Test Desc: Pelvis Impact
Component ID: D12099

Test Date: 1/11/12
Velocity: 14.12 ft/s, 4.3 m/s

IMPACTOR FORCE (kN) vs TIME (ms)



PUBIC (N) vs TIME (ms)



MGA RESEARCH CORPORATION

HEAD DROP TEST

ES-2re DUMMY

ATD Serial No: 032 **Test ID:** D12241

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	11	Pass
Peak Resultant Acceleration	G's	125 to 155	147	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-13.2	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

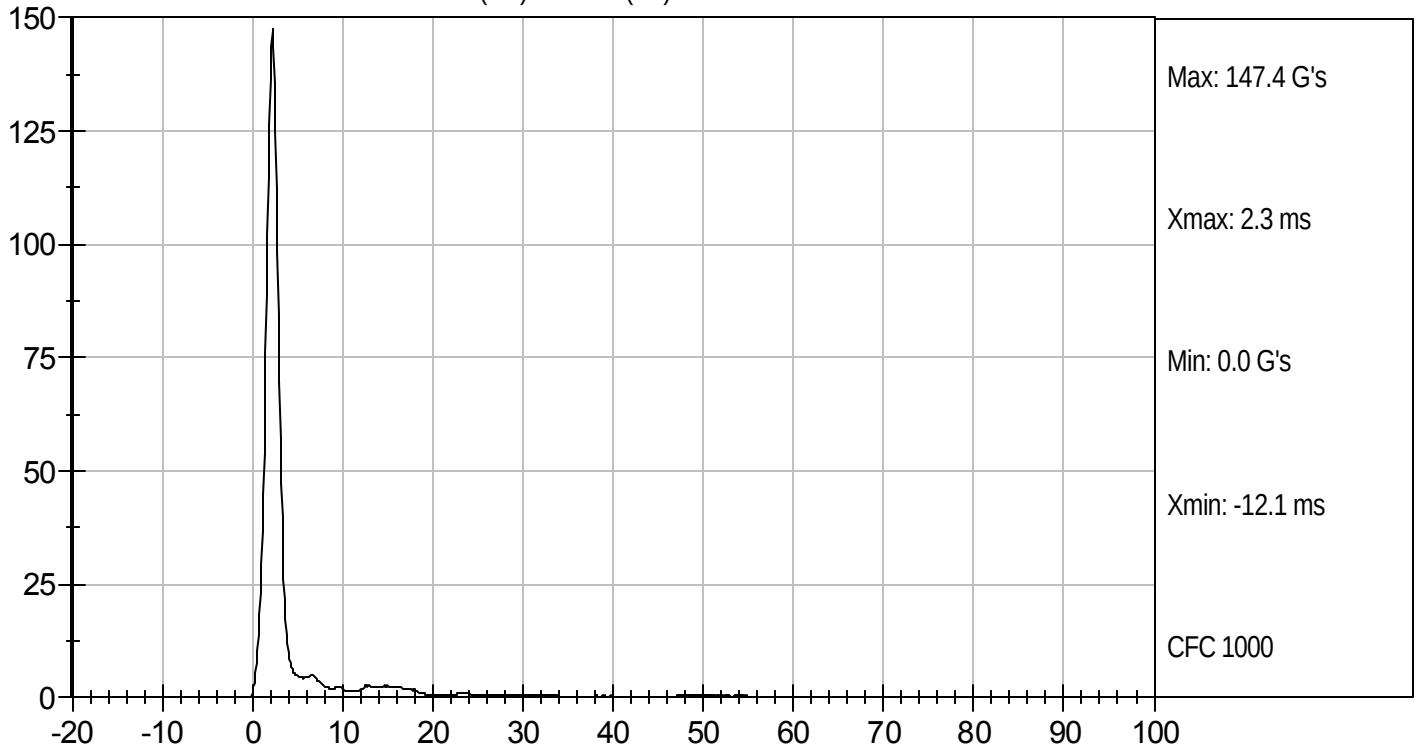
1/20/12
Test Date

David Winkelbauer
Approved By

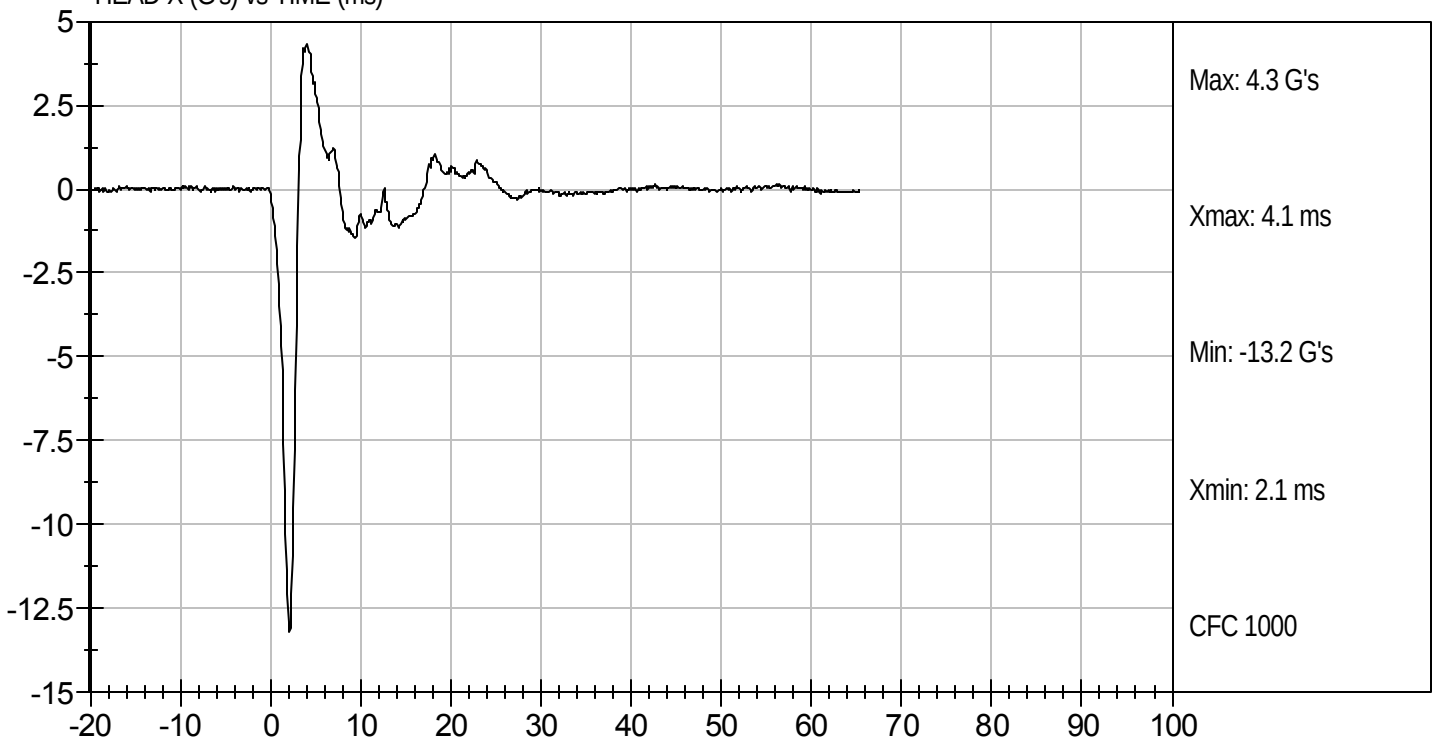
Test Desc: Head Drop
Component ID: D12241

Test Date: 1/20/12
Velocity: 0 ft/s, 0 m/s

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



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



MGA RESEARCH CORPORATION

NECK PENDULUM TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12242

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.0 to 22.0	21.8	Pass
Laboratory Relative Humidity		%	10 to 70	11	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	-0.32	Pass
	14 ms	m/s	-3.20 to -3.70	-3.26	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	51.2	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	57.8	Pass
Head Rotation Decay Time to 0 degree		ms	53.0 to 88.0	55.6	Pass
			Overall Test Results		Pass

Jessica Gall
Laboratory Technician

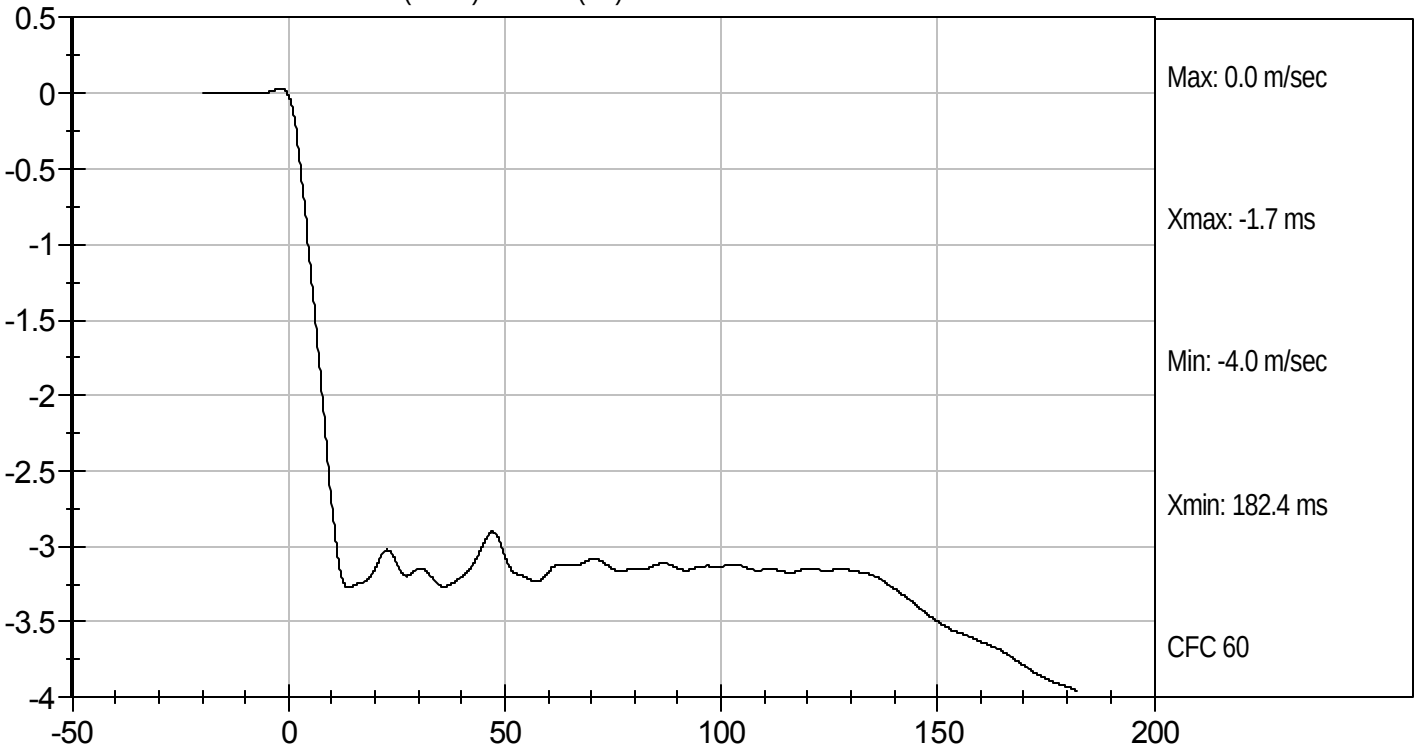
1/20/12
Test Date

David Winkelbauer
Approved By

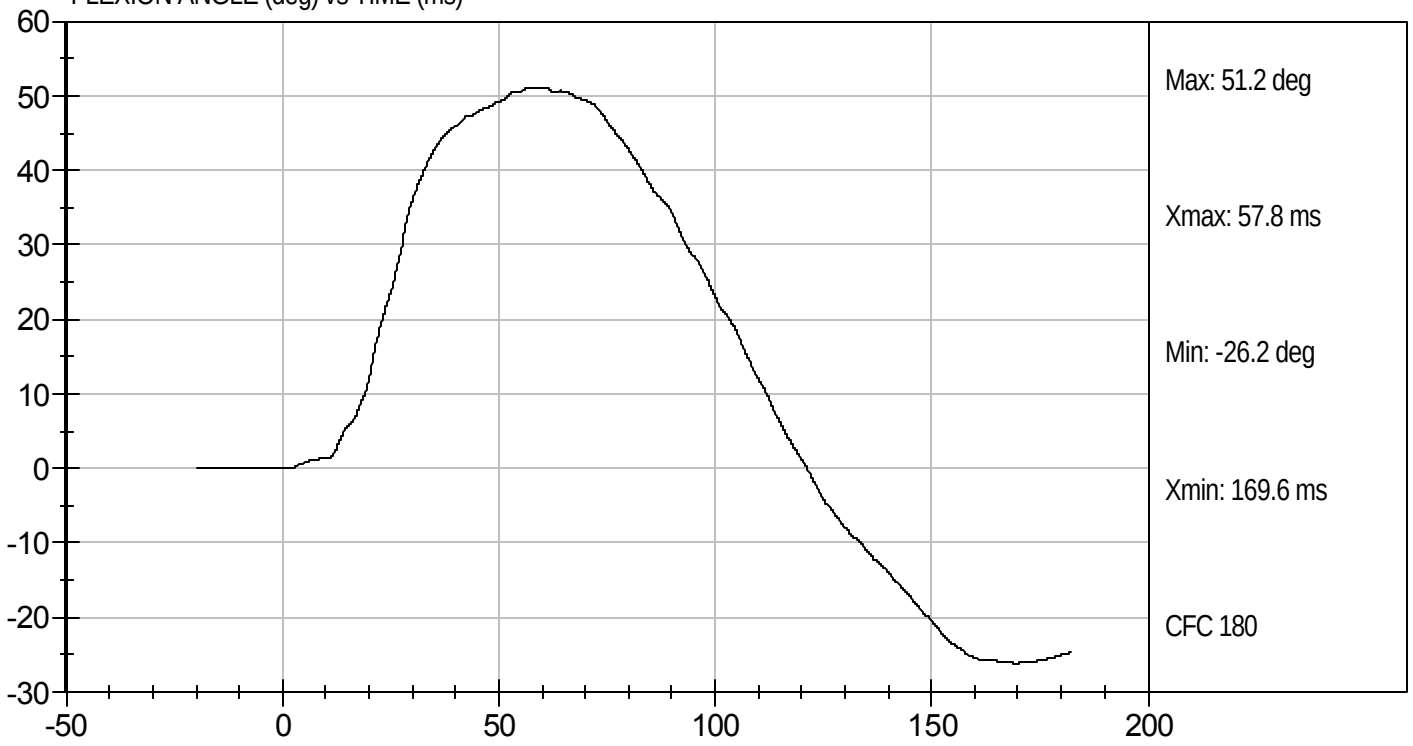
Test Desc: Neck Bending
Component ID: D12242

Test Date: 1/20/12
Velocity: 11.26 ft/s, 3.4 m/s

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

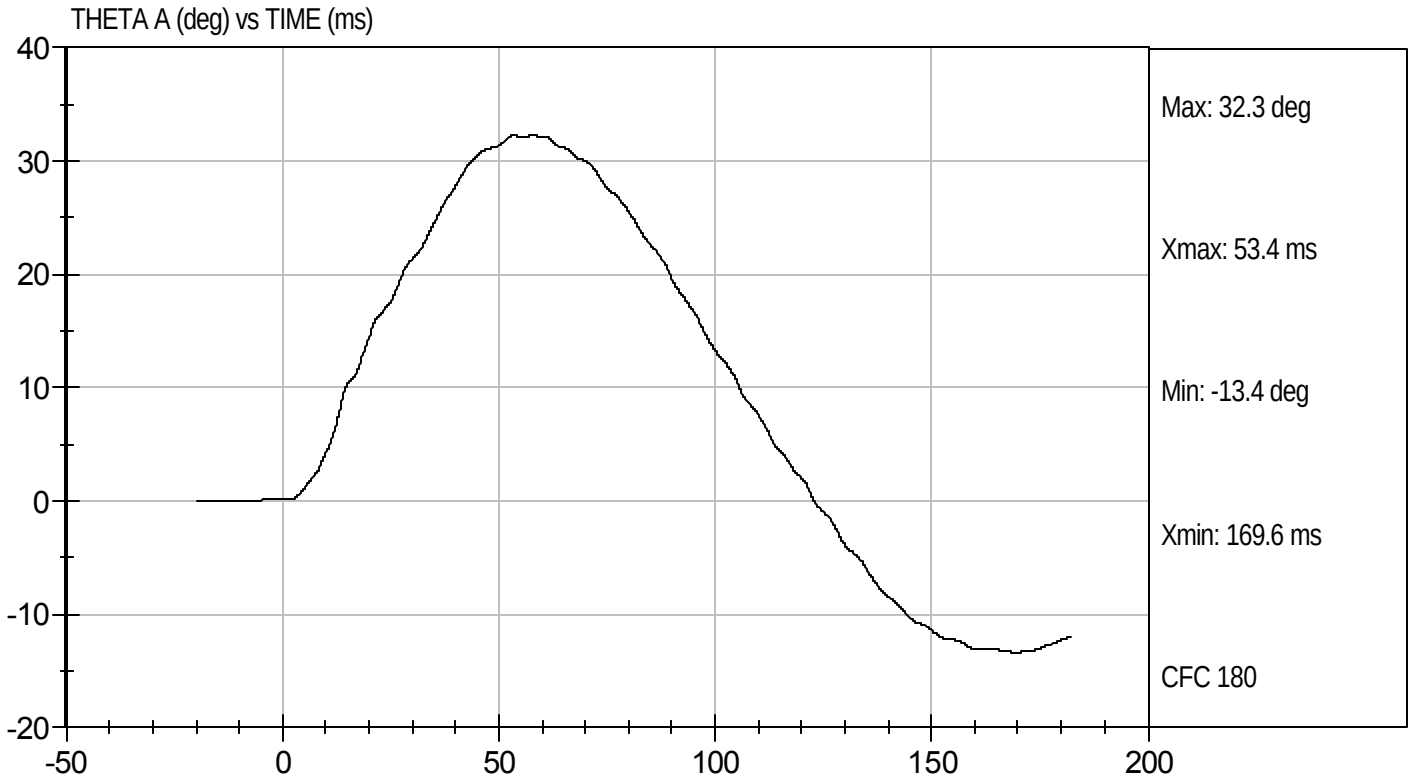


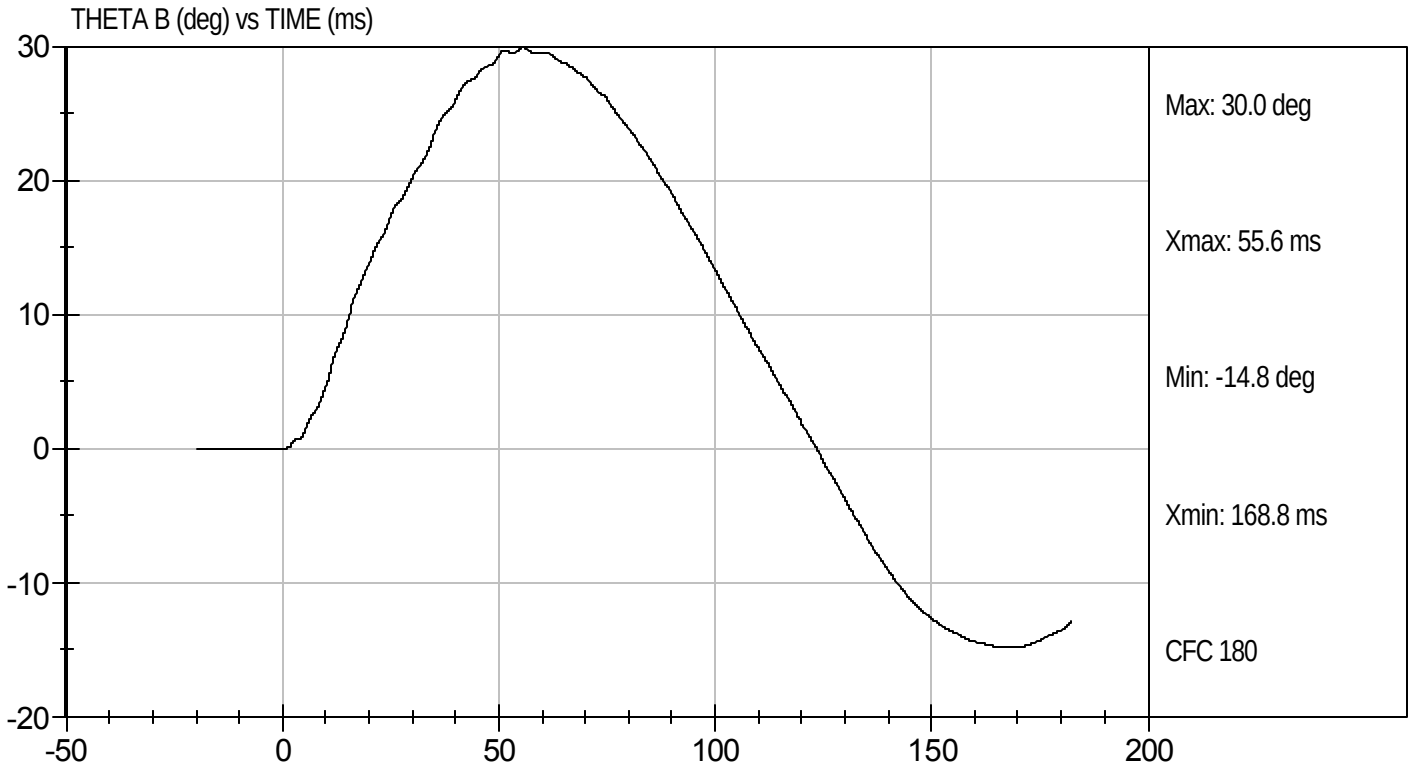
FLEXION ANGLE (deg) vs TIME (ms)



Test Desc: Neck Bending
Component ID: D12242

Test Date: 1/20/12
Velocity: 11.26 ft/s, 3.4 m/s





MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12243

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	14	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.3	Pass
Peak Shoulder Acceleration	G's	7.5 to 10.5	10.1	Pass
Time of Peak Shoulder Acceleration	ms	NA	13.2	Pass
		Overall Test Results		Pass

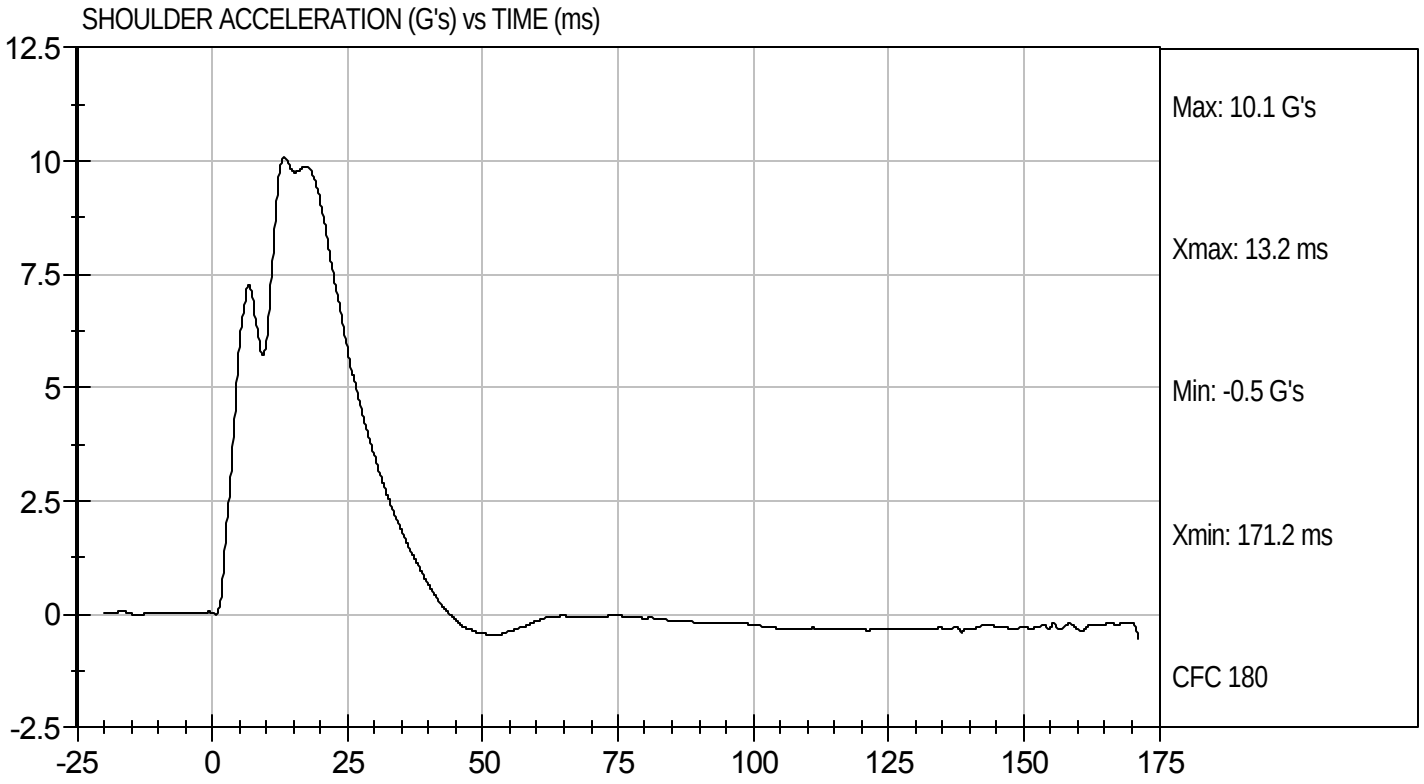
Jessica Hall
Laboratory Technician

1/19/12
Test Date

David Winkelbauer
Approved By

Test Desc: Shoulder Impact
Component ID: D12243

Test Date: 1/19/12
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:** D12244

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	11	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.0	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.3	Pass
		Overall Test Results		Pass

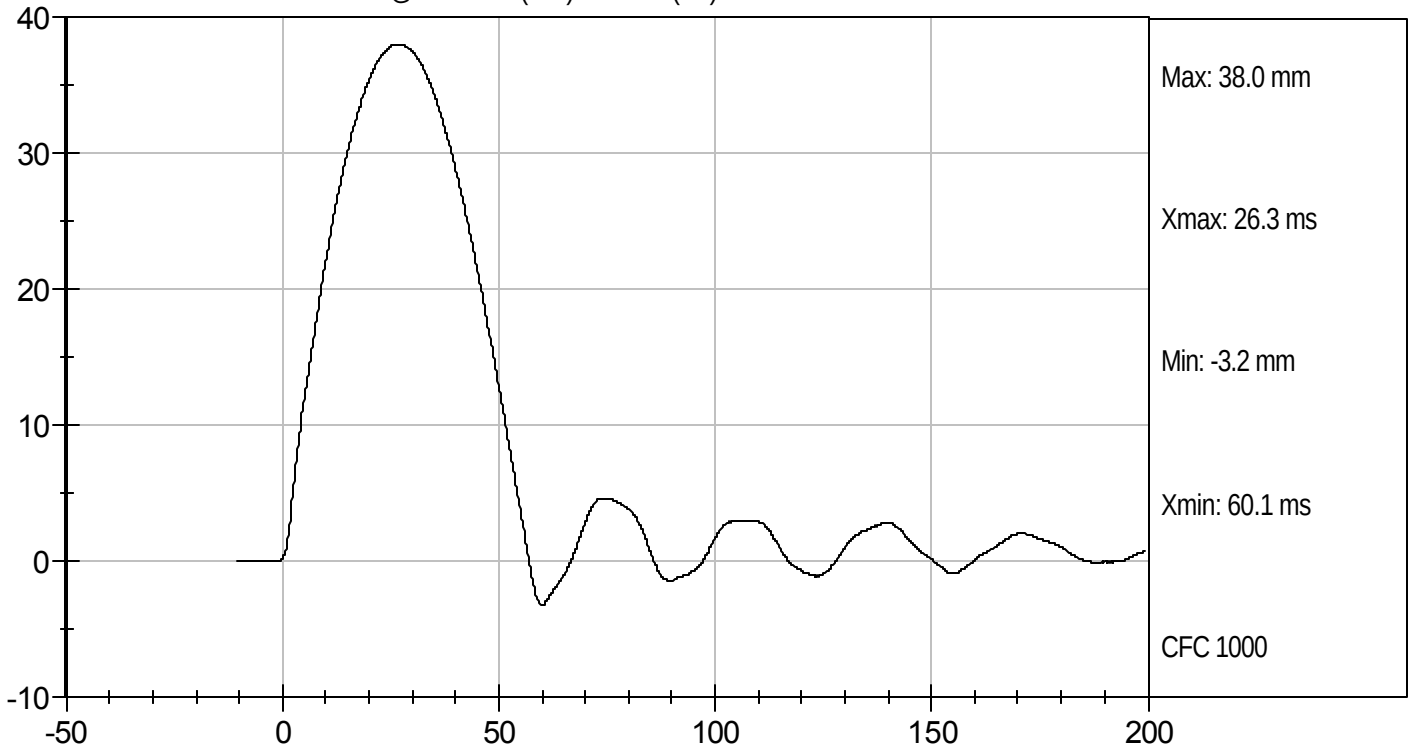
Jessica Hall
Laboratory Technician

1/20/12
Test Date

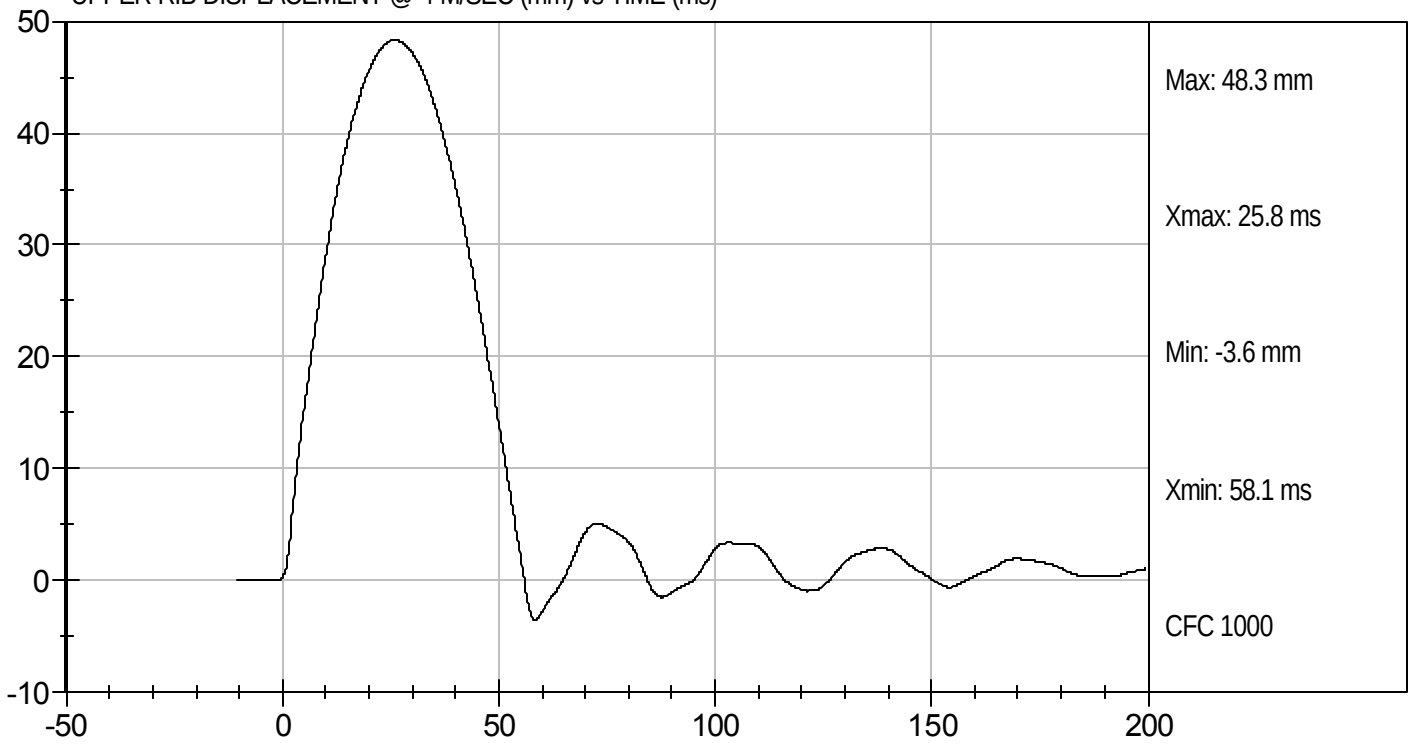
David Winkelbauer
Approved By

Test Desc: Rib Impact - Upper
Component ID: D12244
Test Date: 1/20/12

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:** D12245

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	11	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.2	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	47.8	Pass
		Overall Test Results		Pass

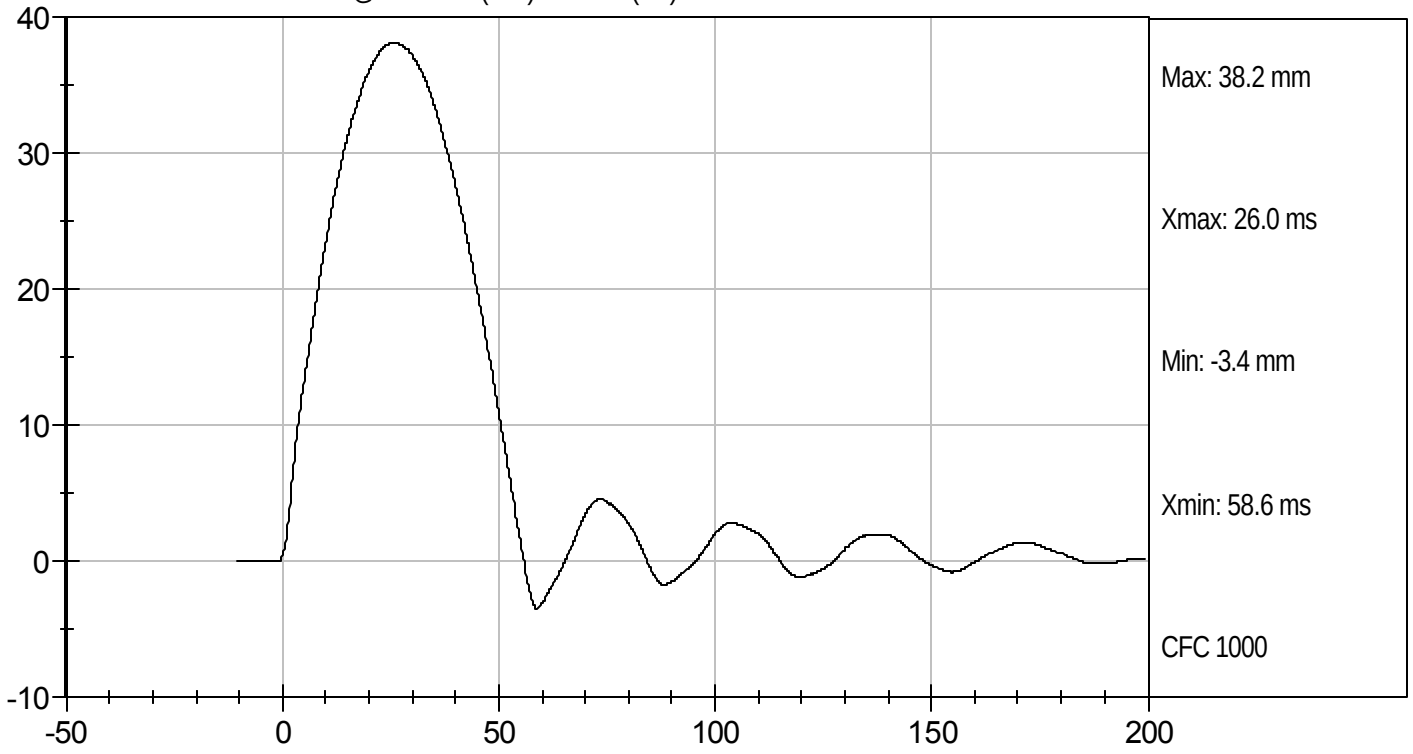
Jessica Hall
Laboratory Technician

1/20/12
Test Date

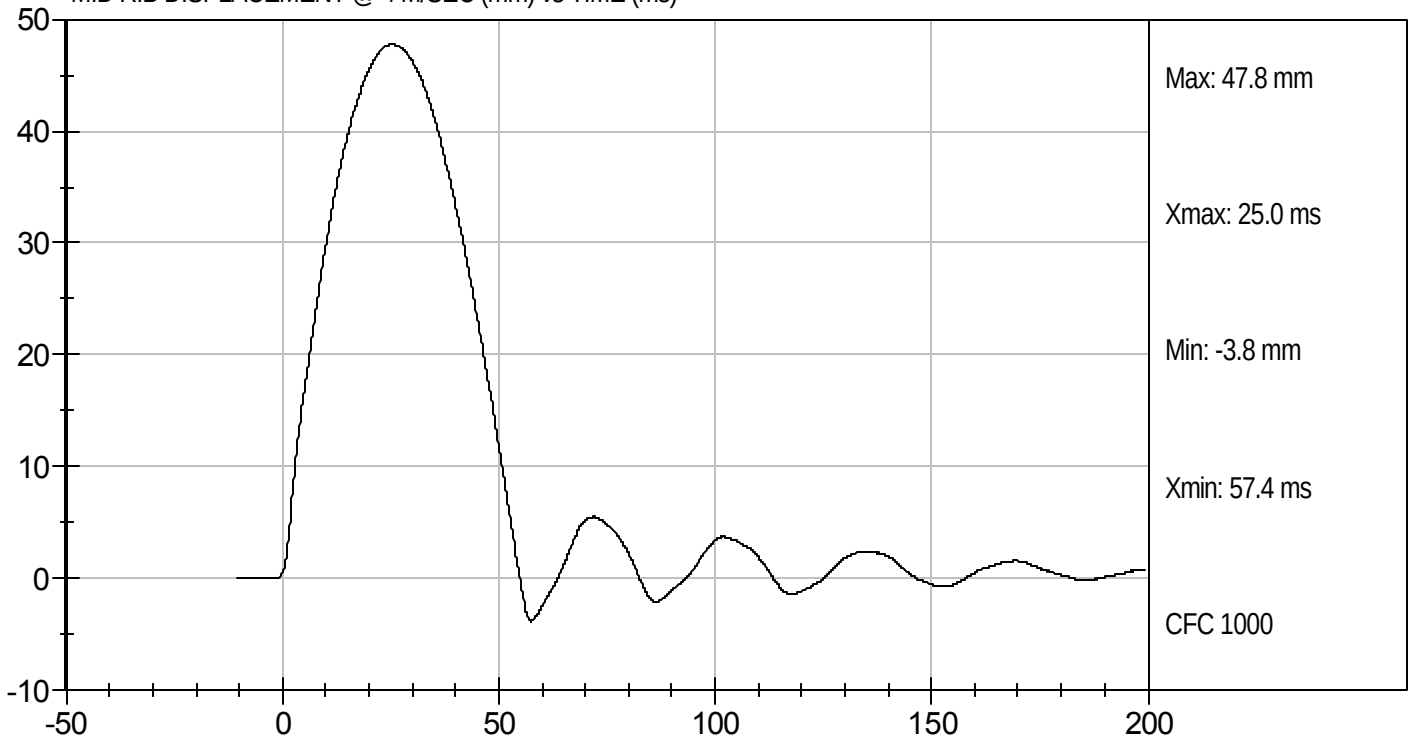
David Winkelbauer
Approved By

Test Desc: Rib Impact - Mid
Component ID: D12245
Test Date: 1/20/12

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:** D12246

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	11	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.9	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.2	Pass
		Overall Test Results		Pass

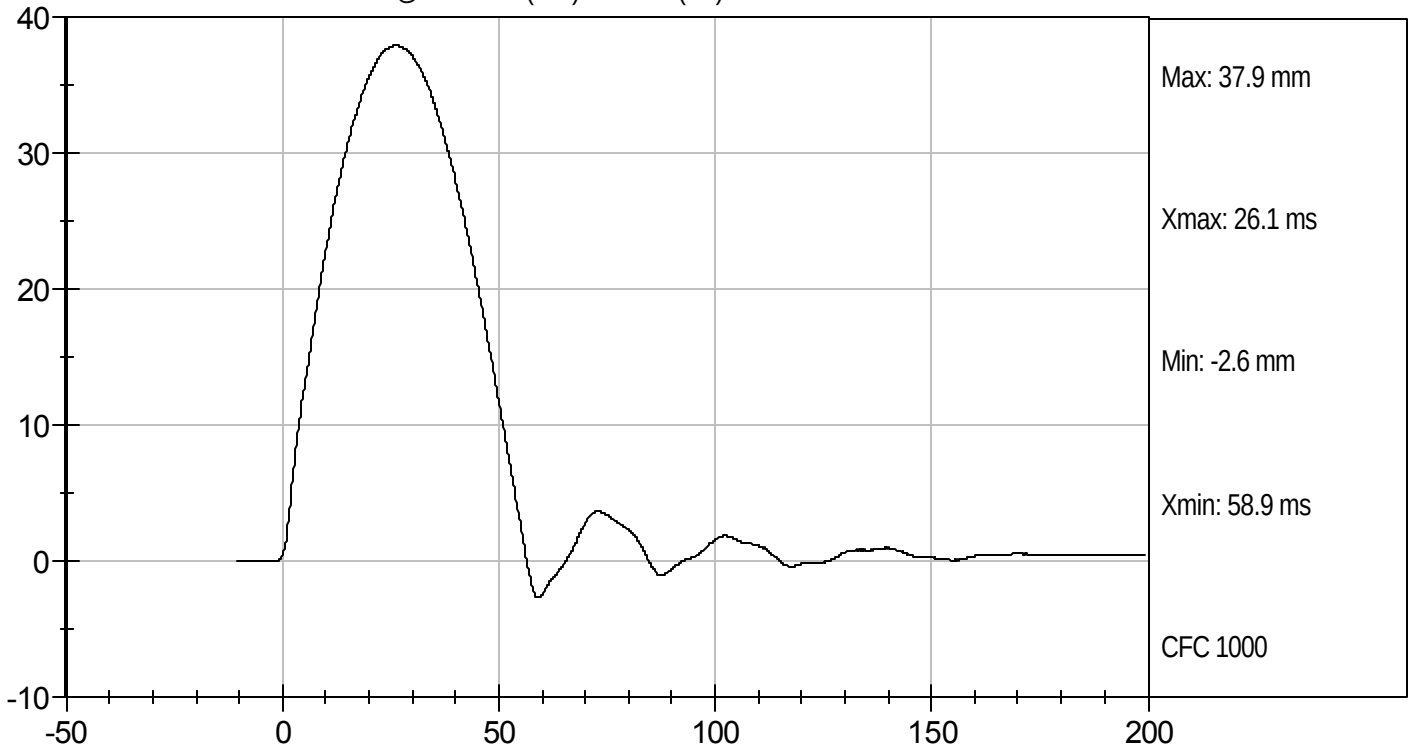
Jessica Gall
Laboratory Technician

1/20/12
Test Date

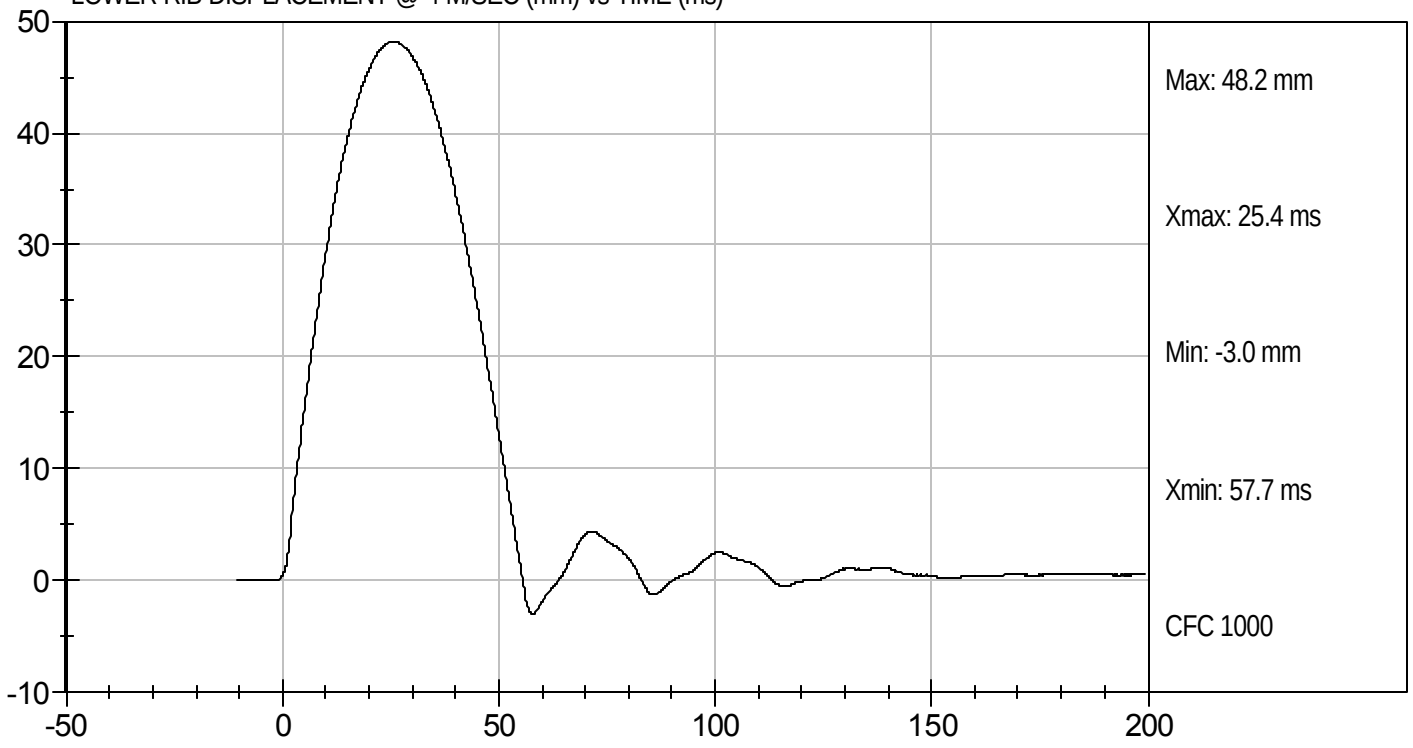
David Winkelbauer
Approved By

Test Desc: Rib Impact - Lower
Component ID: D12246
Test Date: 1/20/12

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:** D12240

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	14	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	5.19	Pass
Upper Rib Displacement	mm	34.0 to 41.0	36.7	Pass
Middle Rib Displacement	mm	37.0 to 45.0	39.9	Pass
Lower Rib Displacement	mm	37.0 to 44.0	39.5	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

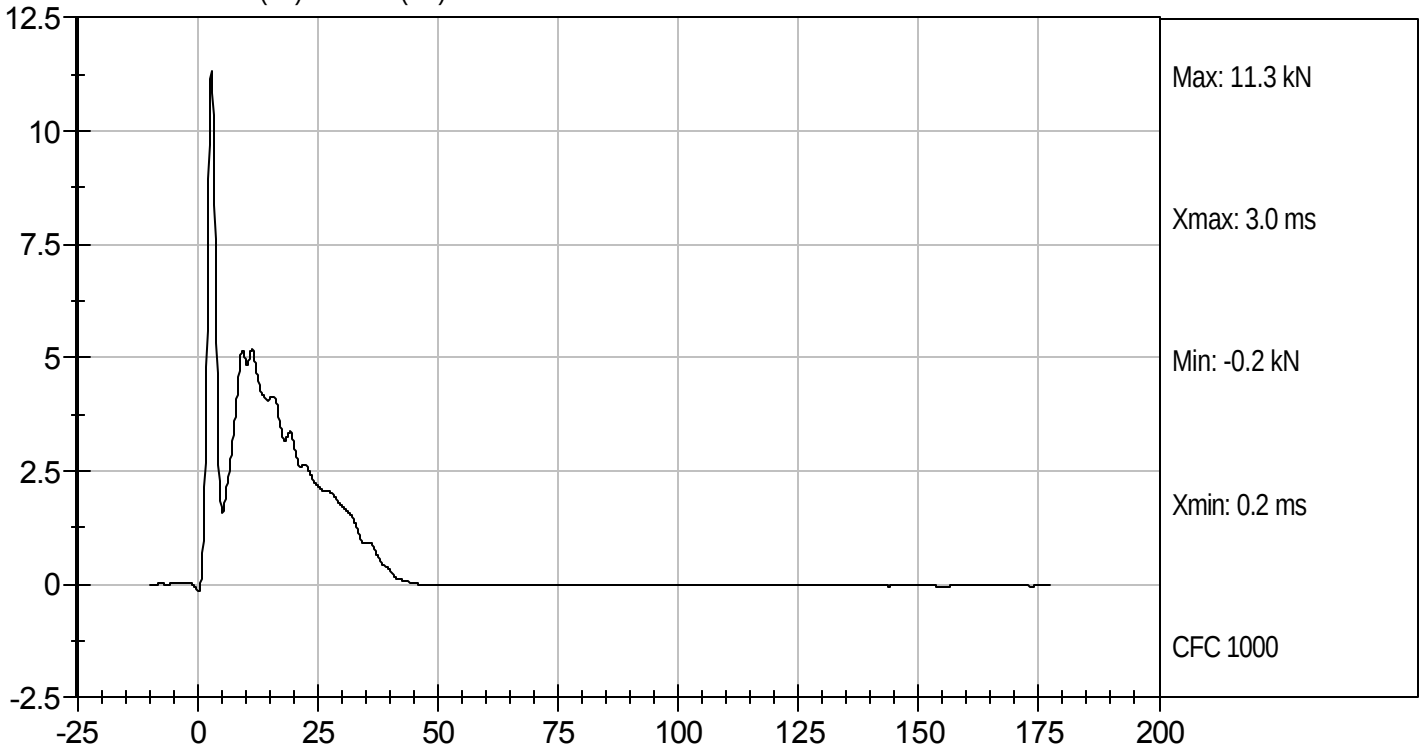
1/19/12
Test Date

David Winkelbauer
Approved By

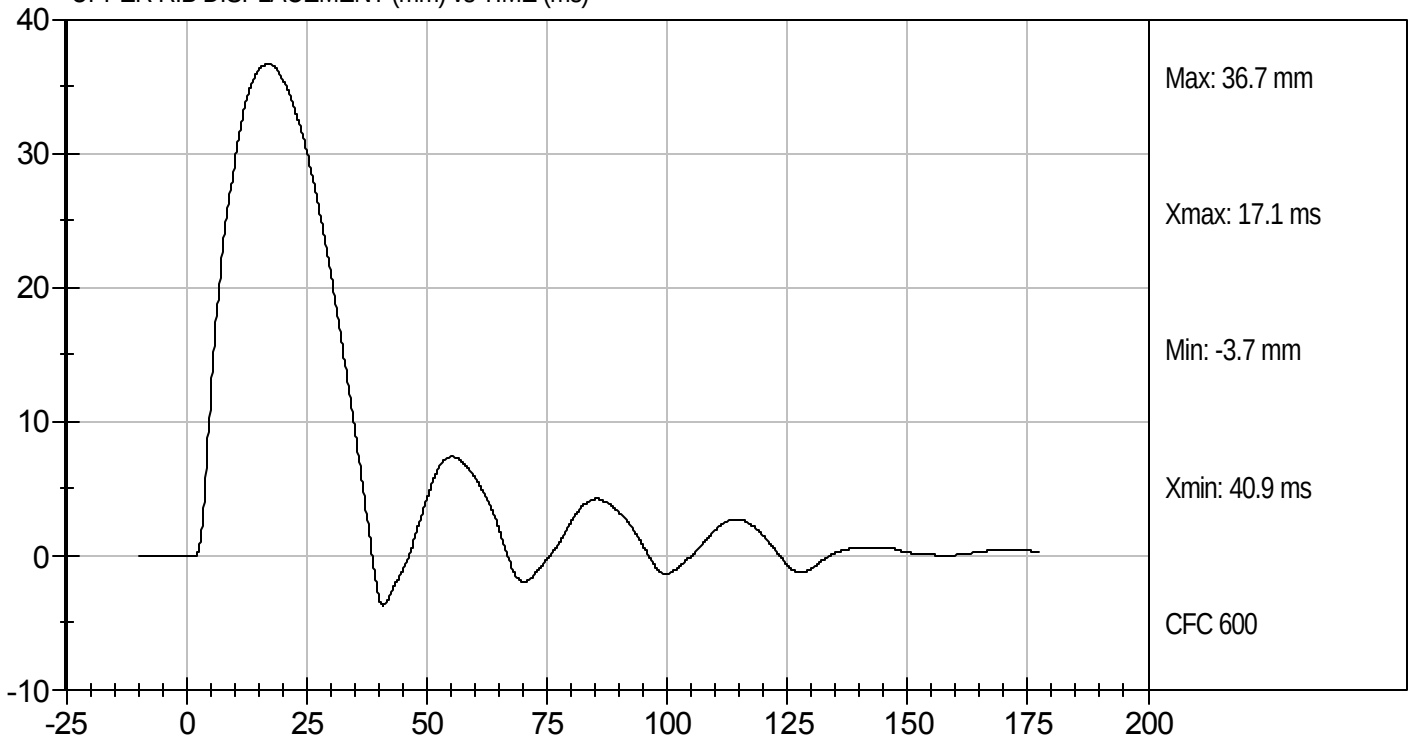
Test Desc: Thorax Impact
Component ID: D12240

Test Date: 1/19/12
Velocity: 18.31 ft/s, 5.58 m/s

PROBE FORCE (kN) vs TIME (ms)



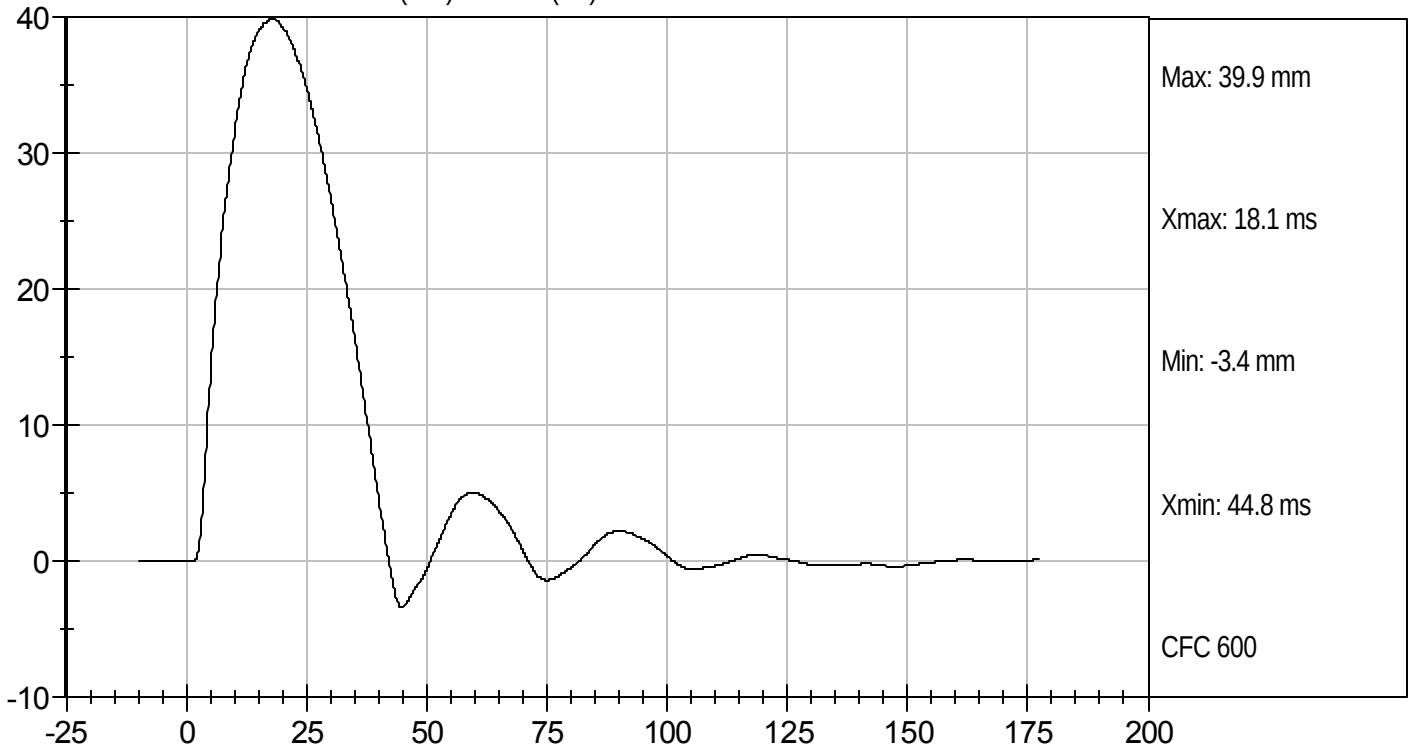
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



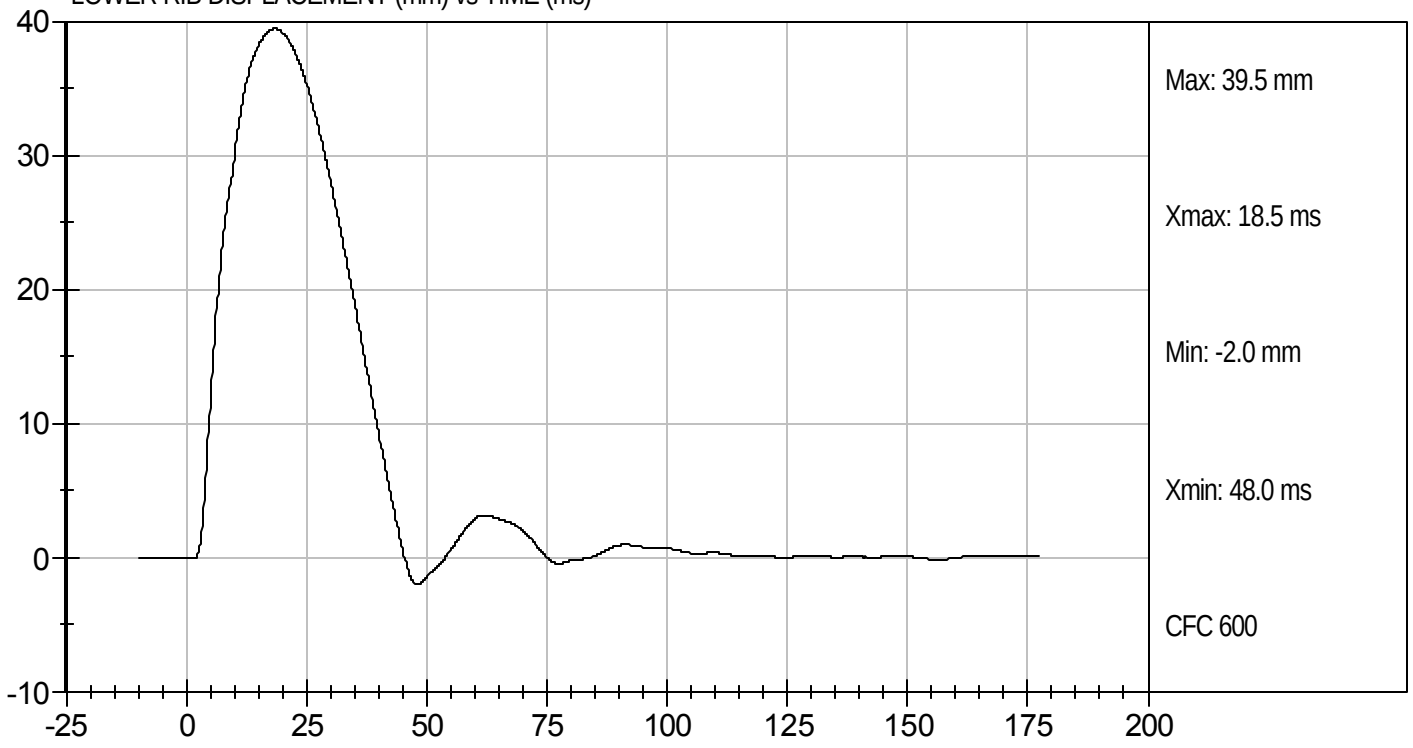
Test Desc: Thorax Impact
Component ID: D12240

Test Date: 1/19/12
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:** D12247

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	13	Pass
Probe Speed	m/s	3.90 to 4.10	4.06	Pass
Maximum Impact Force	kN	4.00 to 4.80	4.38	Pass
Time of Maximum Impactor Force	ms	10.60 to 13.00	10.70	Pass
Maximum Total Abdomen Force	kN	2.20 to 2.70	2.57	Pass
Time of Maximum Abdomen Force	ms	10.00 to 12.30	10.40	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

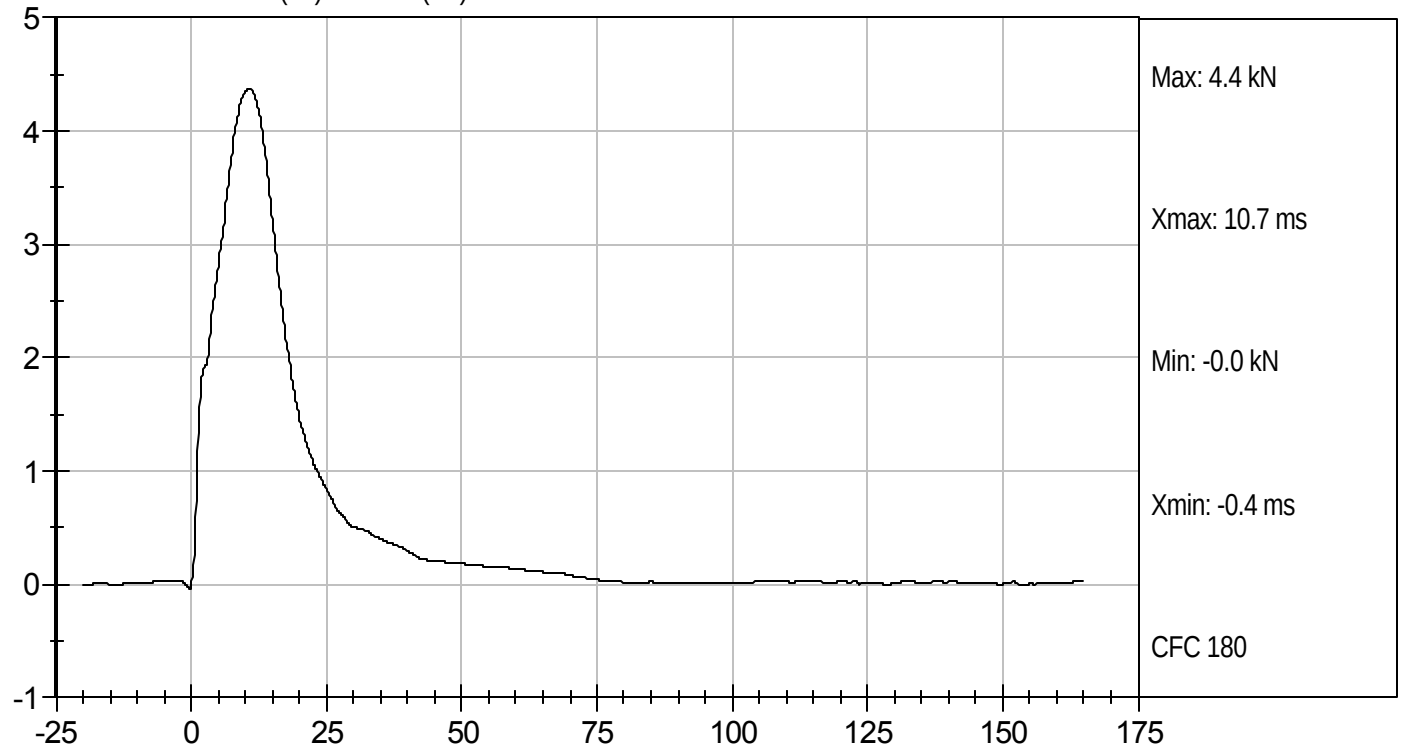
1/20/12
Test Date

David Winkelbauer
Approved By

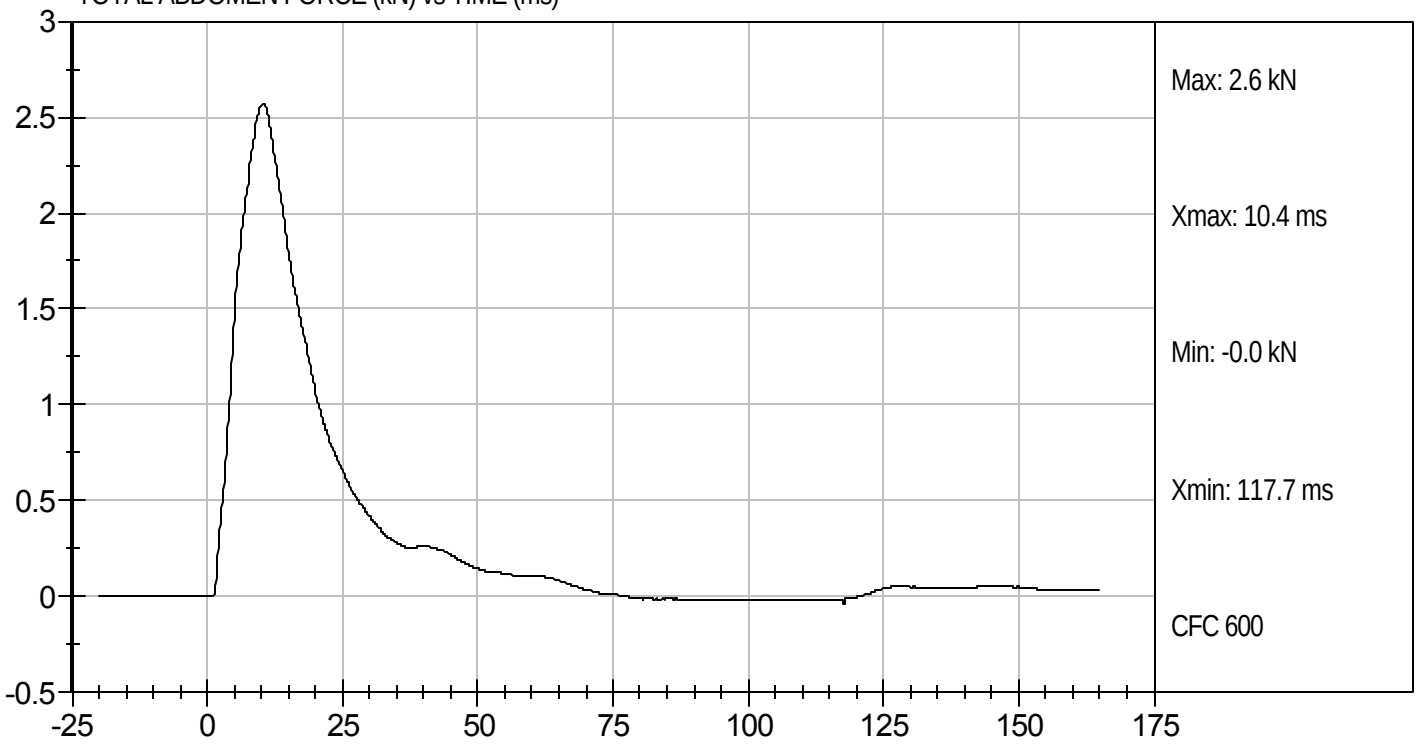
Test Desc: Abdomen Impact
Component ID: D12247

Test Date: 1/20/12
Velocity: 13.33 ft/s, 4.06 m/s

IMPACTOR FORCE (kN) vs TIME (ms)



TOTAL ABDOMEN FORCE (kN) vs TIME (ms)



MGA RESEARCH CORPORATION

LUMBAR SPINE TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12248

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	11	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	-0.42	Pass
	27 ms	m/s	-6.50 to -5.80	-5.81	Pass
	30 ms	m/s	>= -6.5	-5.68	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	50.9	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	43.7	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	43	Pass
			Overall Results		Pass

Jessica Gall
Laboratory Technician

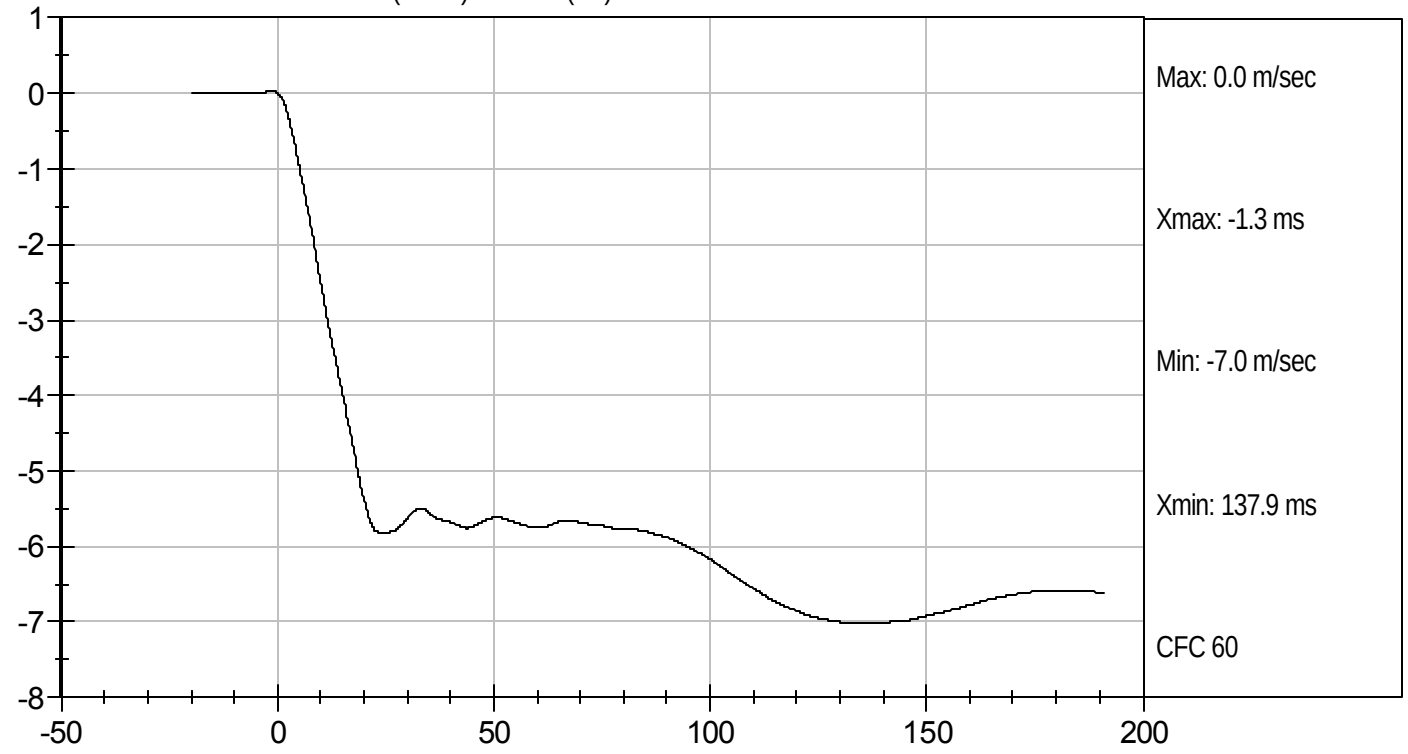
1/20/12
Test Date

David Winkelbauer
Approved By

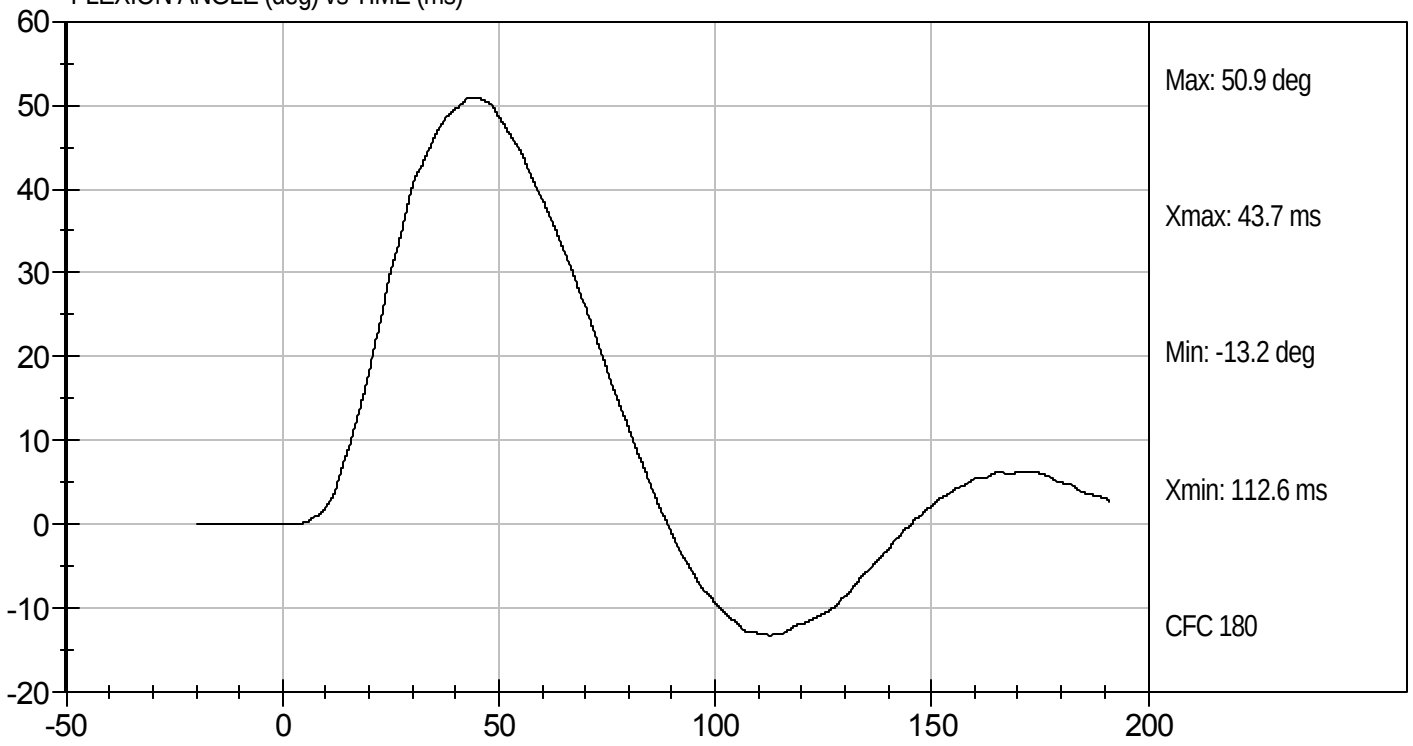
Test Desc: Lumbar Bending
Component ID: D12248

Test Date: 1/20/12
Velocity: 20.08 ft/s, 6.12 m/s

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

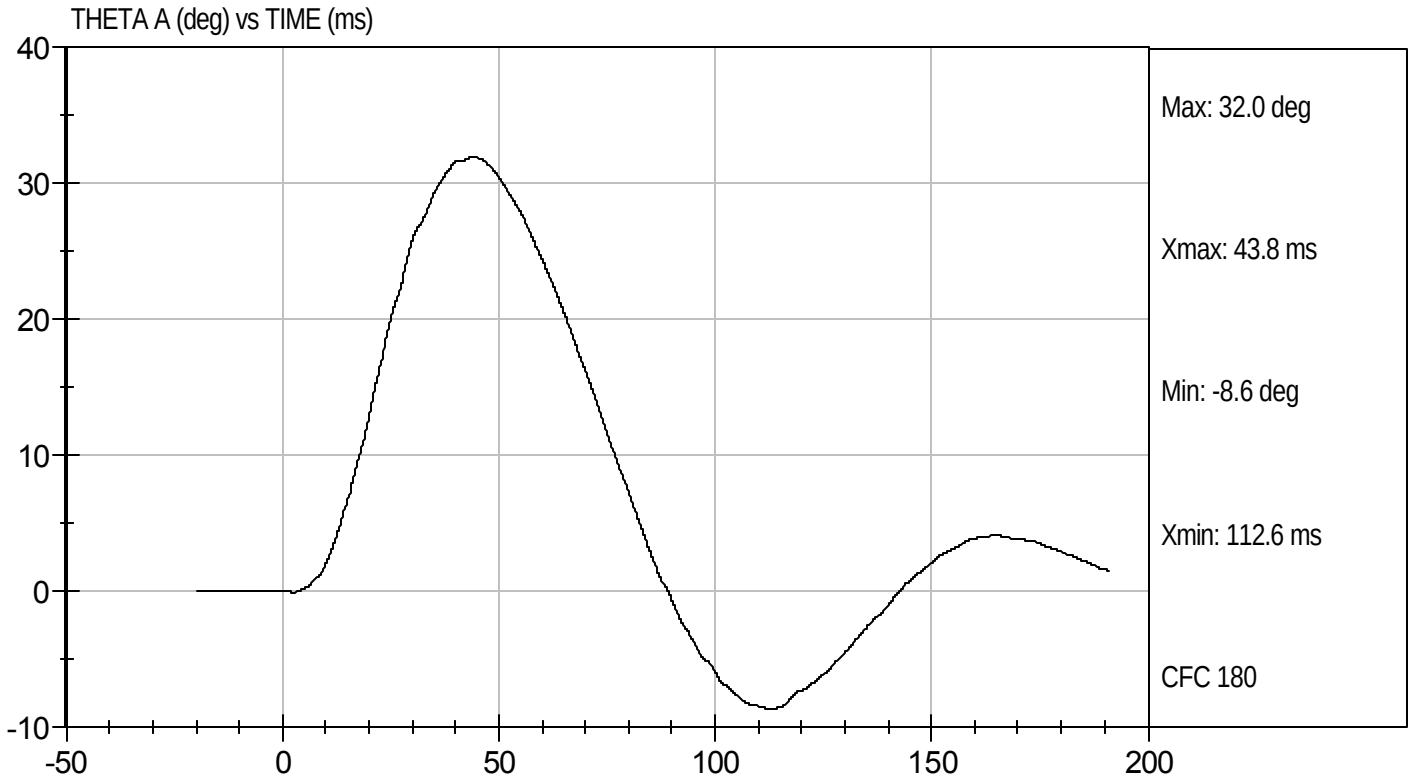


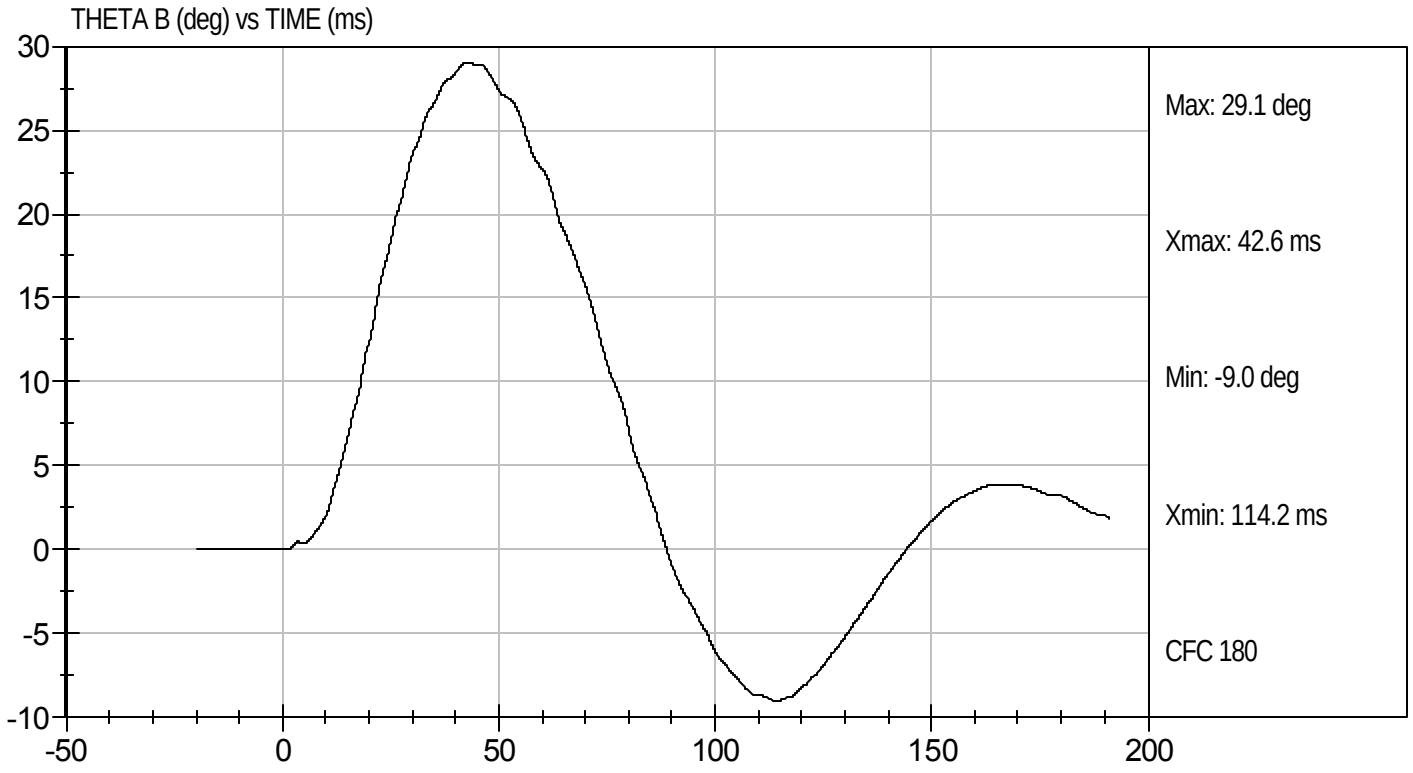
FLEXION ANGLE (deg) vs TIME (ms)



Test Desc: Lumbar Bending
Component ID: D12248

Test Date: 1/20/12
Velocity: 20.08 ft/s, 6.12 m/s





MGA RESEARCH CORPORATION

PELVIS TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D12249

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	14	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	kN	4.70 to 5.40	4.93	Pass
Time of Maximum Impactor Force	ms	11.80 to 16.10	12.50	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

Jessica Gall
Laboratory Technician

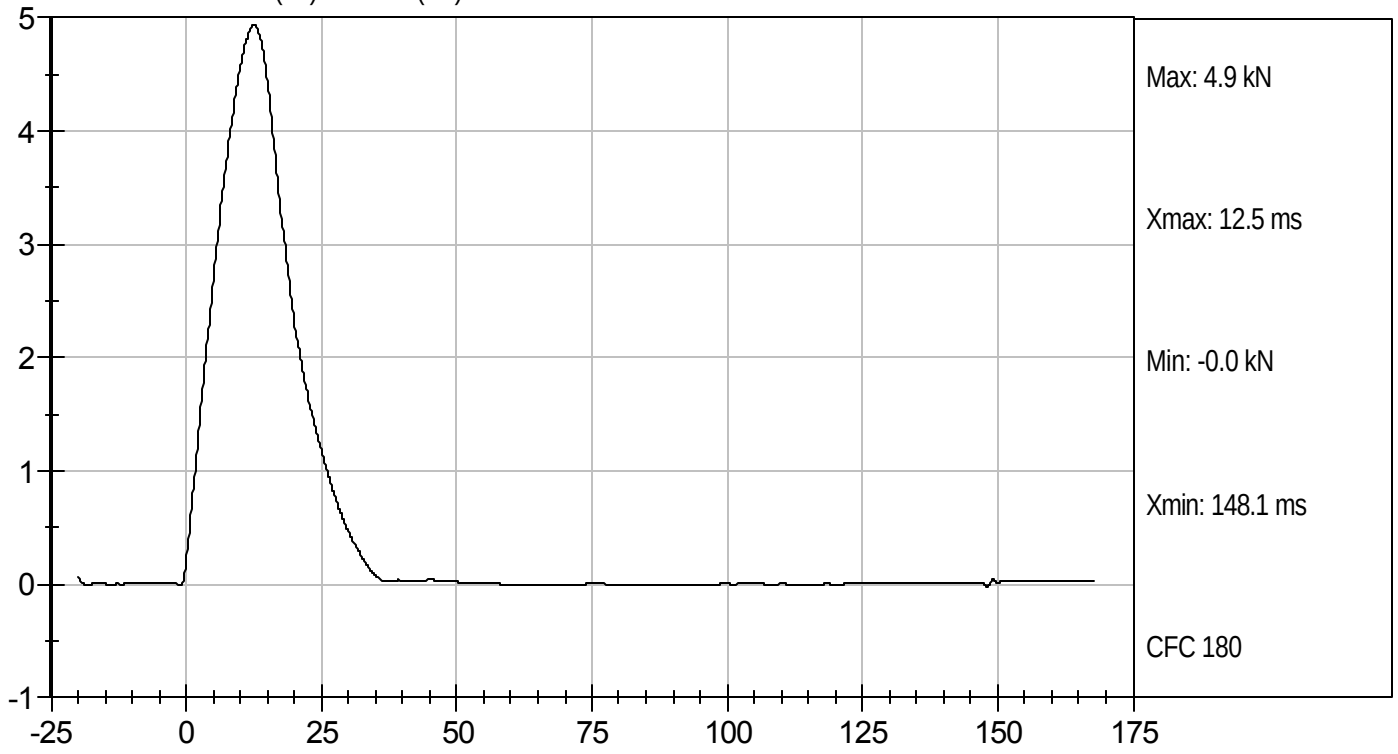
1/19/12
Test Date

David Winkelbauer
Approved By

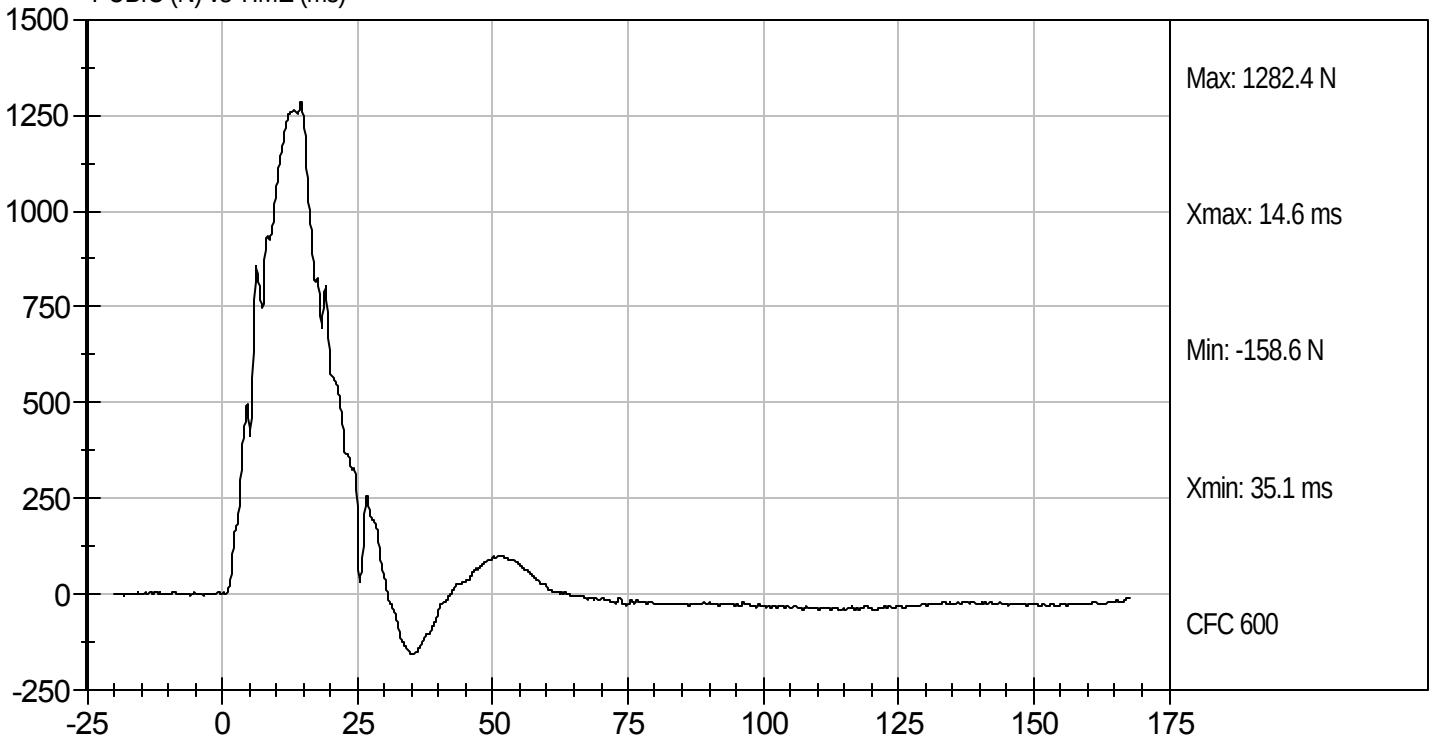
Test Desc: Pelvis Impact
Component ID: D12249

Test Date: 1/19/12
Velocity: 14.12 ft/s, 4.30 m/s

IMPACTOR FORCE (kN) vs TIME (ms)



PUBIC (N) vs TIME (ms)



SID-IIsD External Measurements
SN: 306

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

MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test ID:** D12101

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Peak Resultant Acceleration	G's	115 to 137	120	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-2.7	Pass
Unimodal	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

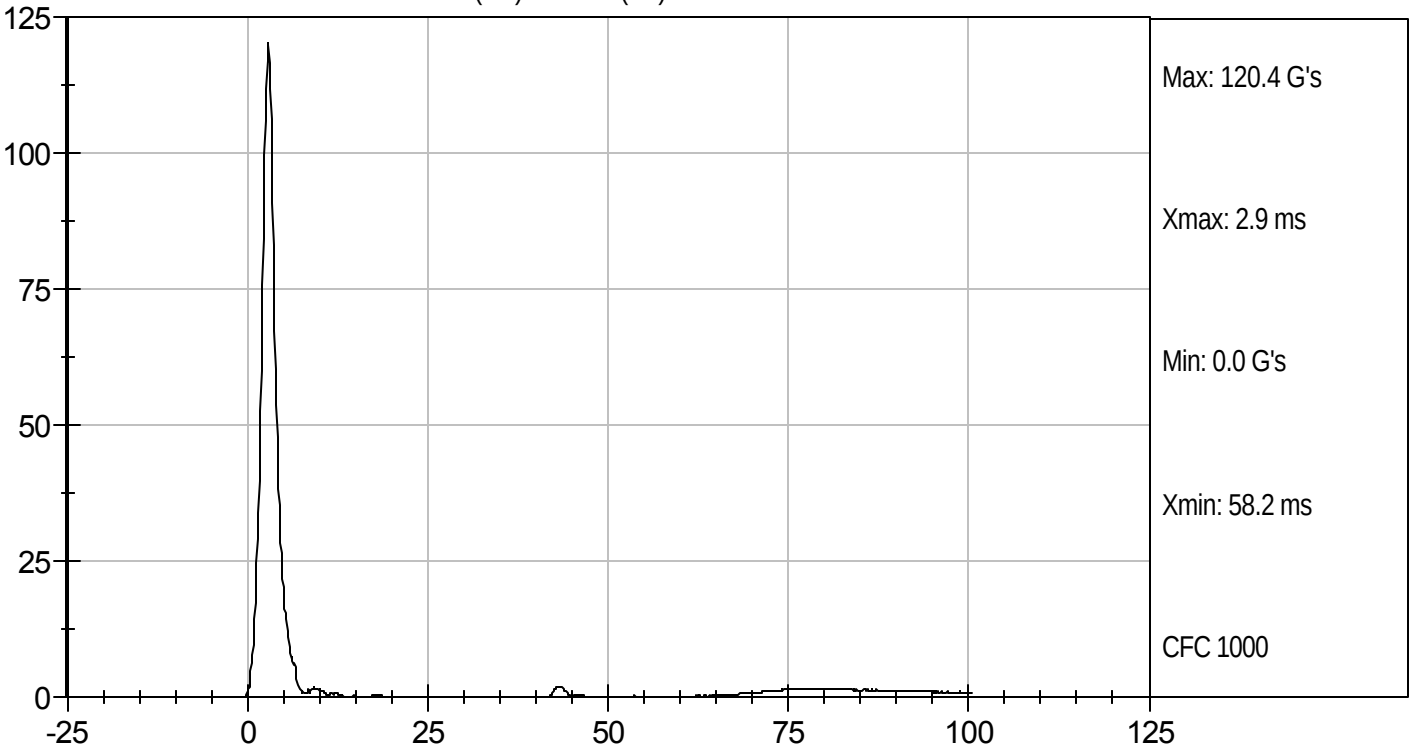
1/11/12
Test Date

David Winkelbauer
Approved By

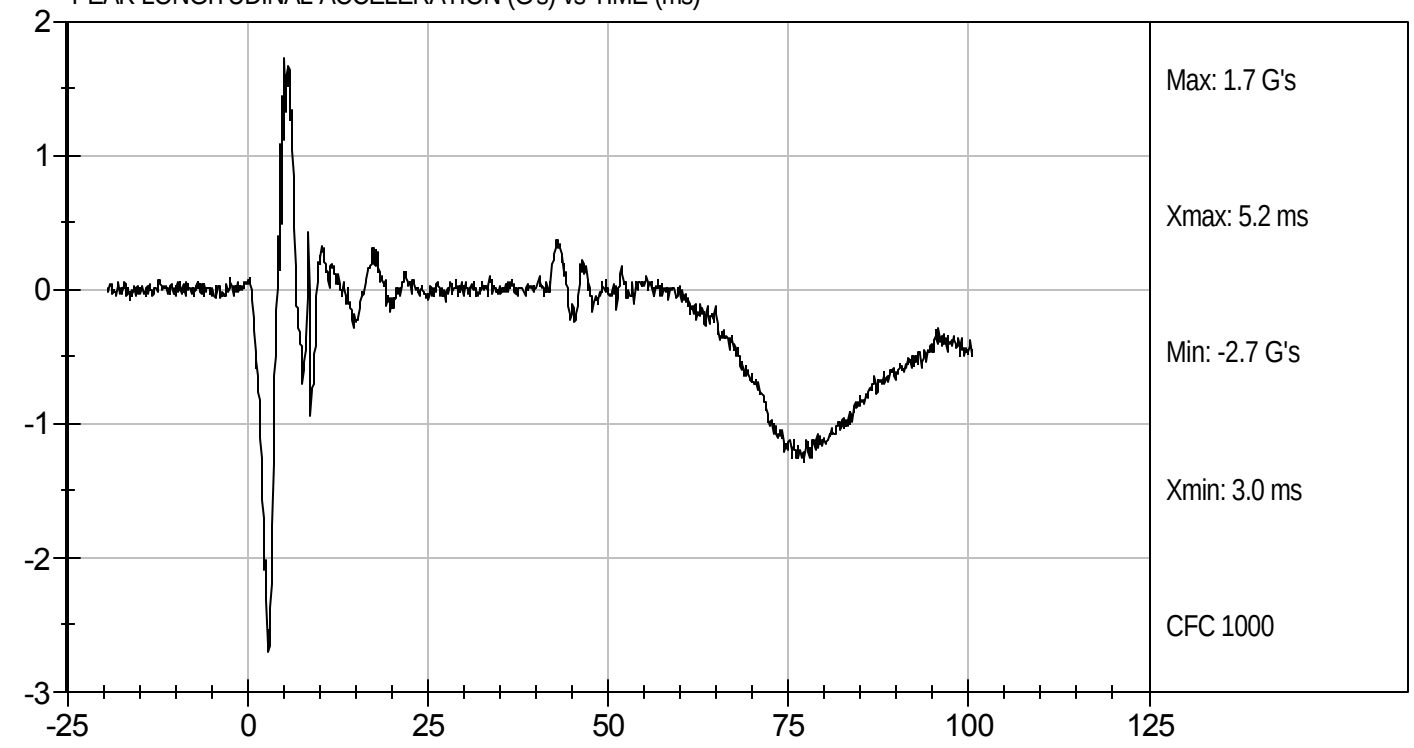
Test Desc: Head Drop
Component ID: D12101

Test Date: 1/11/12
Velocity: 0 ft/s, 0 m/s

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



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



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D12102

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	20.8	Pass
Humidity		%	10 to 70	21	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.69	Pass
	15 ms	m/s	3.30 to 4.10	3.87	Pass
	20 ms	m/s	4.40 to 5.40	5.21	Pass
	25 ms	m/s	5.40 to 6.10	5.54	Pass
	25-100 ms	m/s	5.50 to 6.20	5.55	Pass
Maximum D-Plane Rotation		deg	71 to 81	77	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	62	Pass
Maximum Occipital Condyle Moment during Rotation Interval		Nm	-44 to -36	-42	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	119	Pass
			Overall Test Results		Pass

Jessica Hall
Laboratory Technician

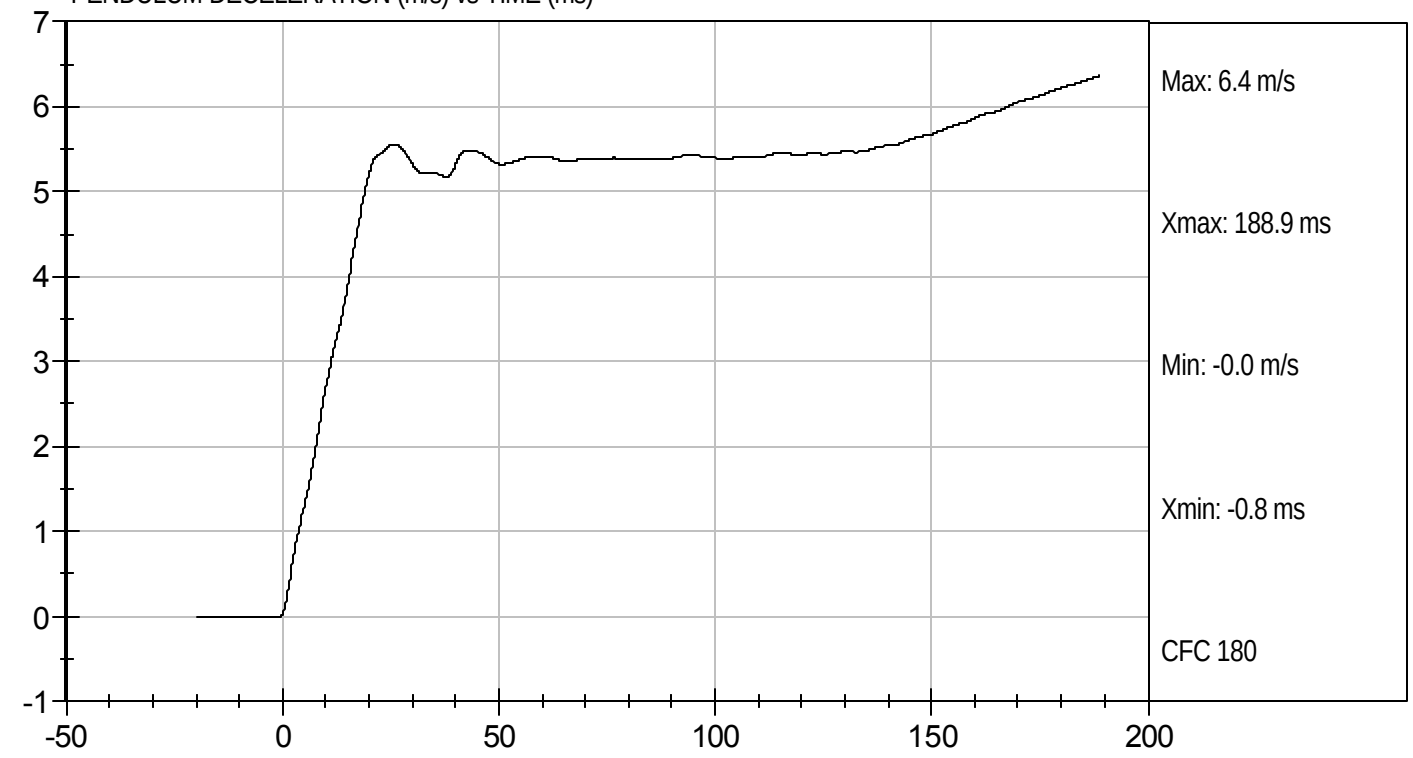
1/11/12
Test Date

David Winkelbauer
Approved By

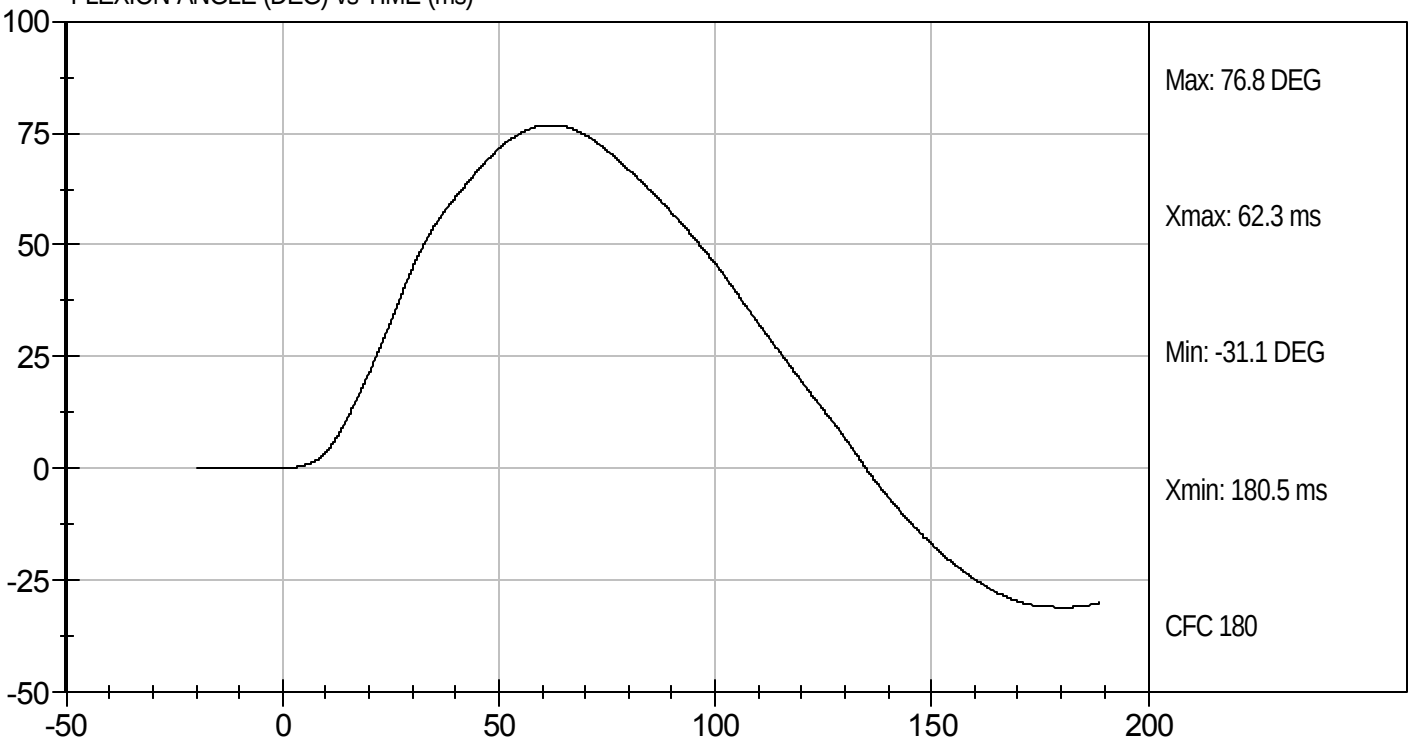
Test Desc: Neck Bending
Component ID: D12102

Test Date: 1/11/12
Velocity: 18.31 ft/s, 5.58 m/s

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

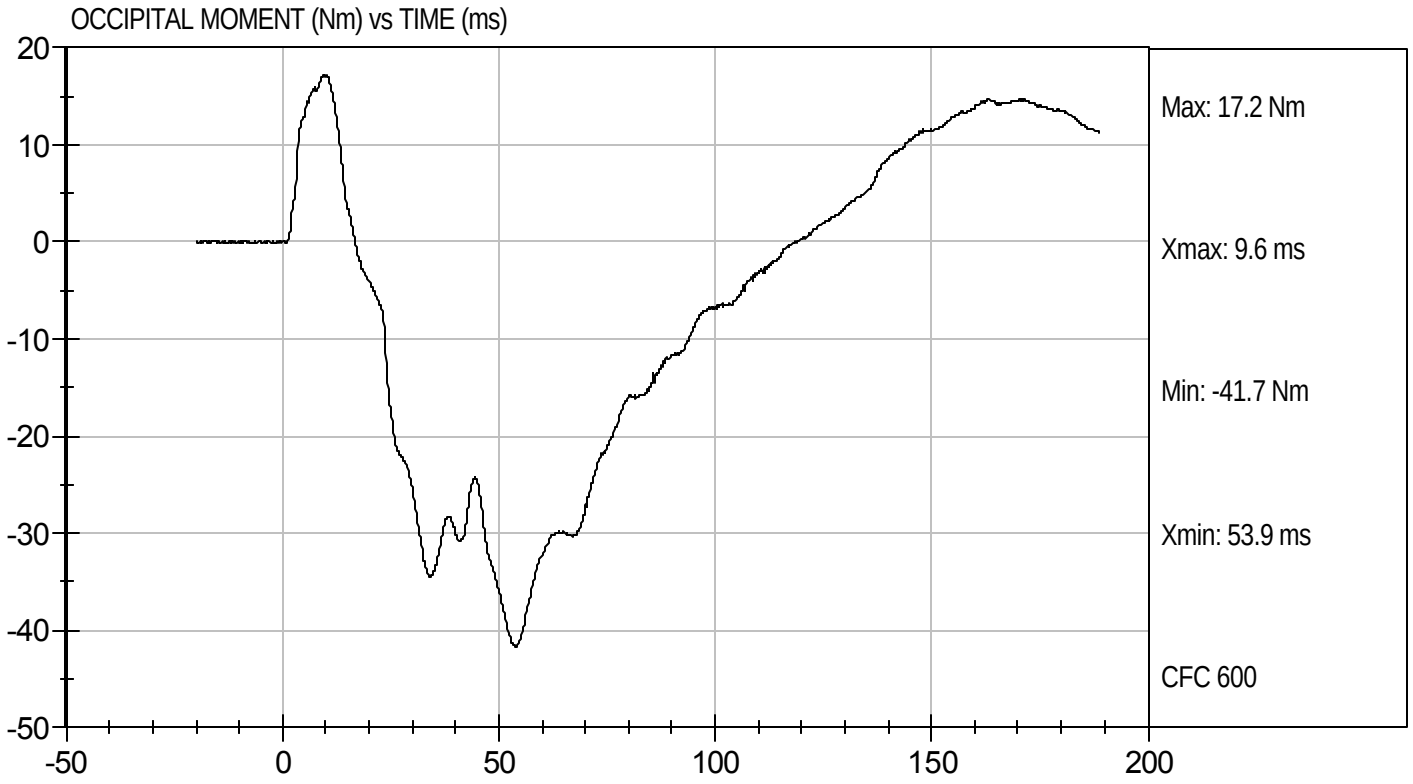


FLEXION ANGLE (DEG) vs TIME (ms)



Test Desc: Neck Bending
Component ID: D12102

Test Date: 1/11/12
Velocity: 18.31 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test ID:** D12103

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	23	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

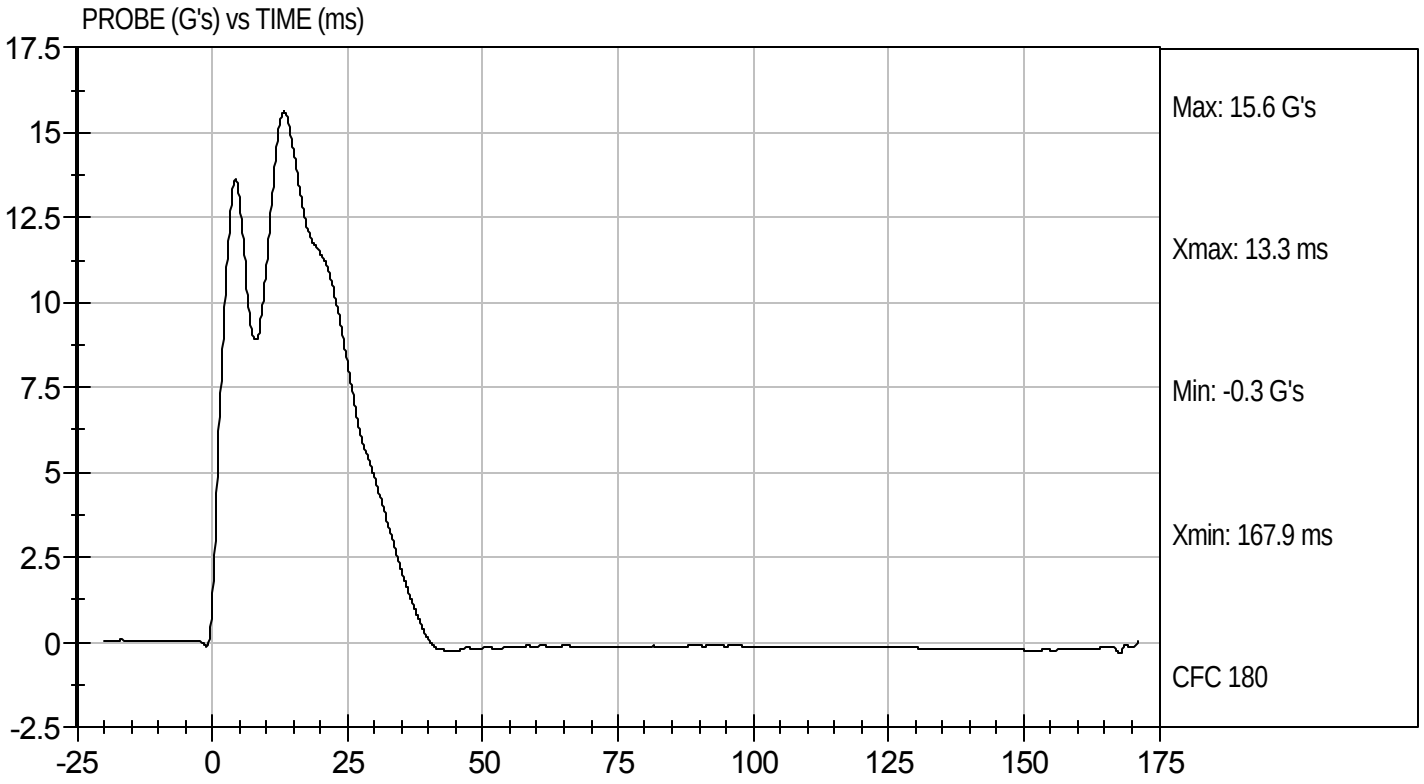
Jessica Gall
Laboratory Technician

1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Shoulder Impact
Component ID: D12103

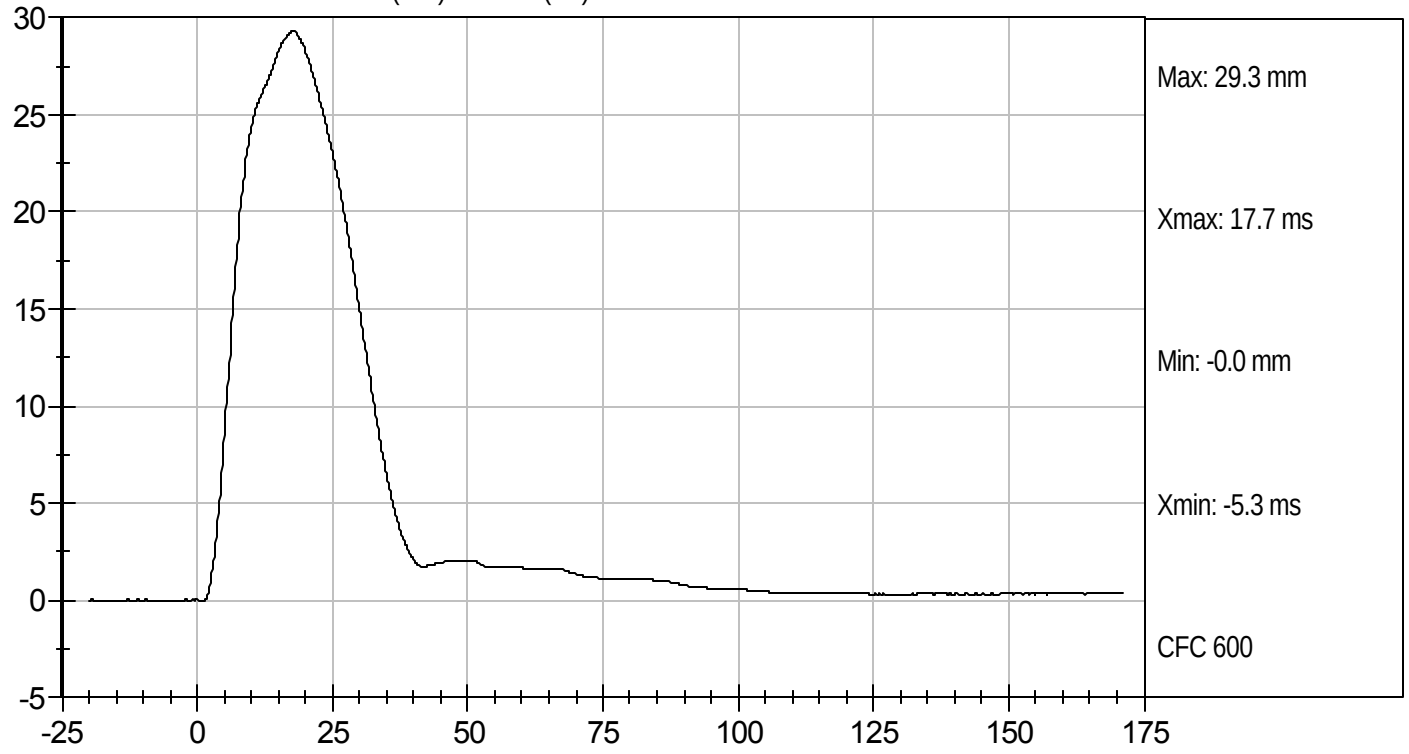
Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 m/s



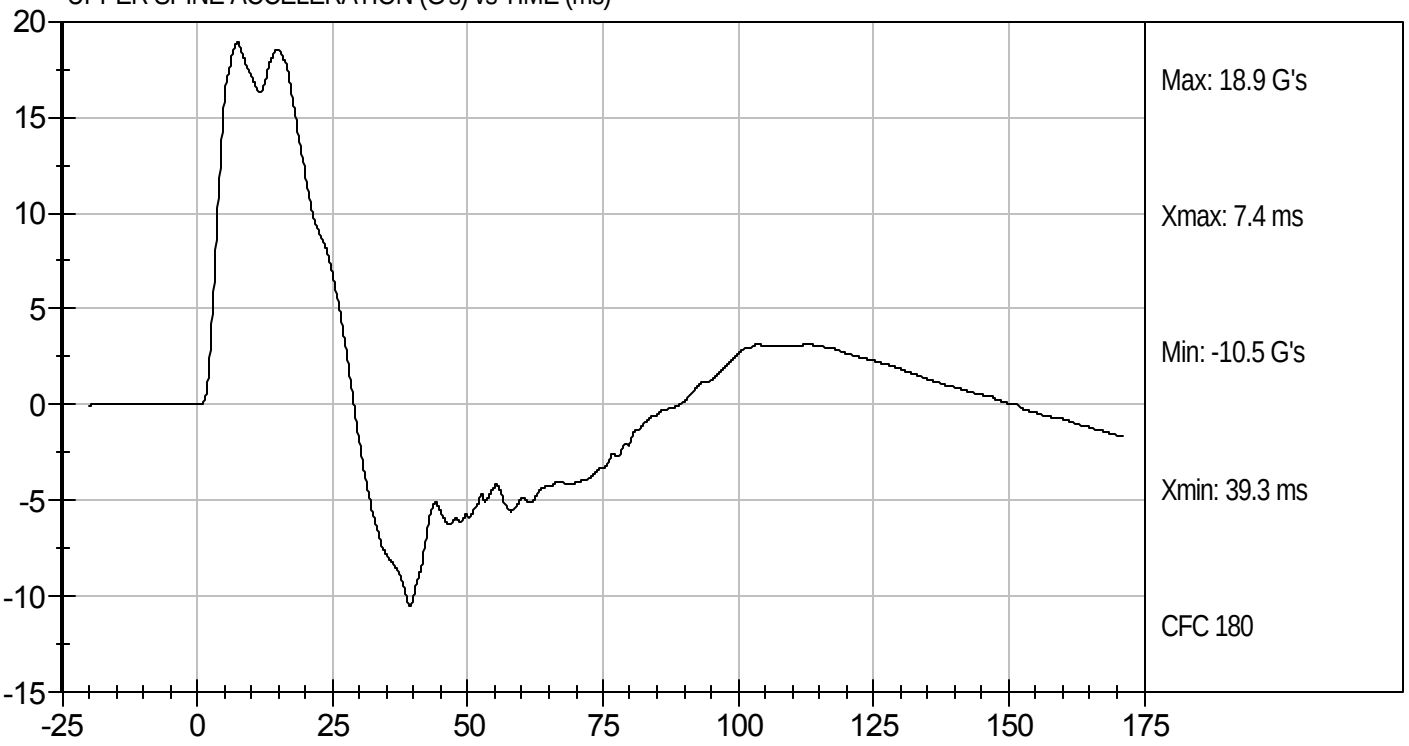
Test Desc: Shoulder Impact
Component ID: D12103

Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



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



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D12104

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	23	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	34	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	40	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
		Overall Test Results		Pass

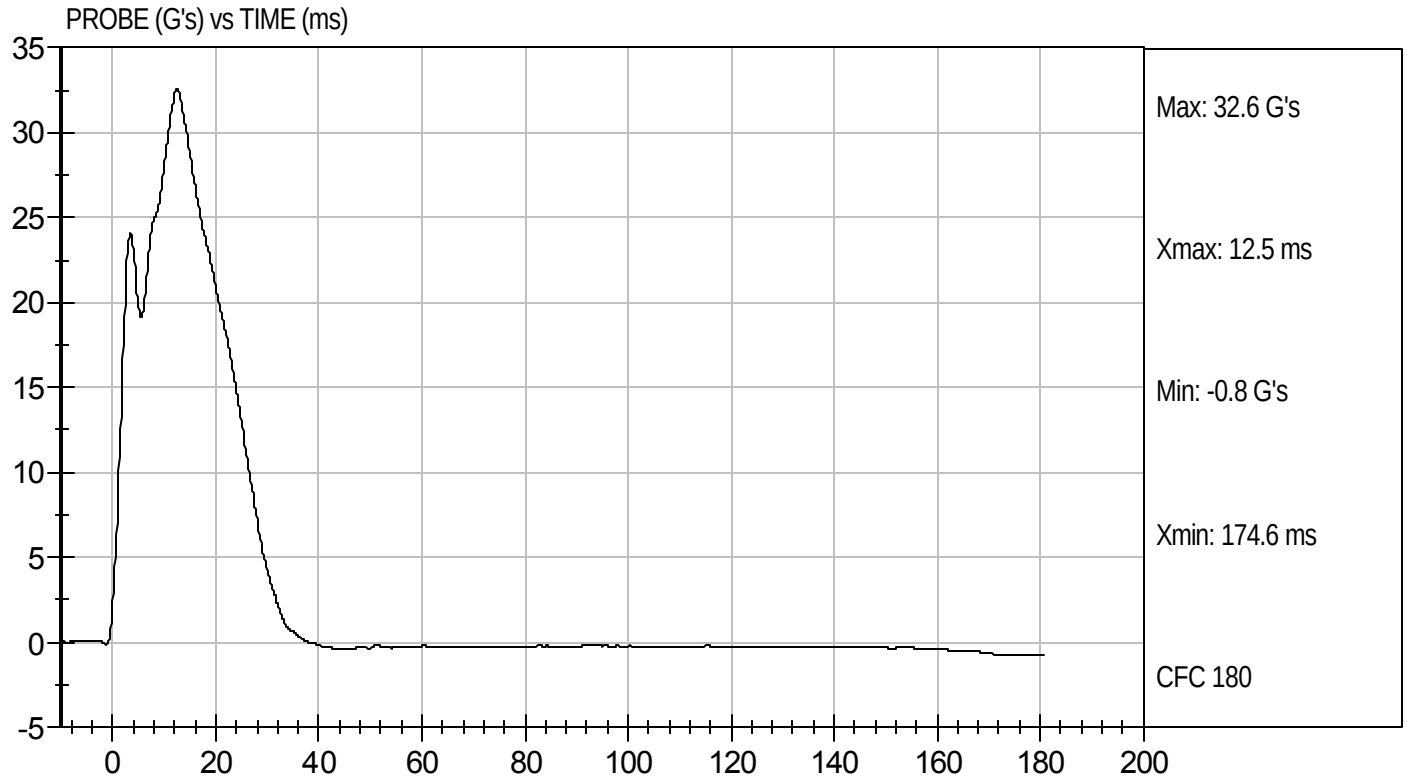
Jessica Hall
Laboratory Technician

1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax With Arm
Component ID: D12104

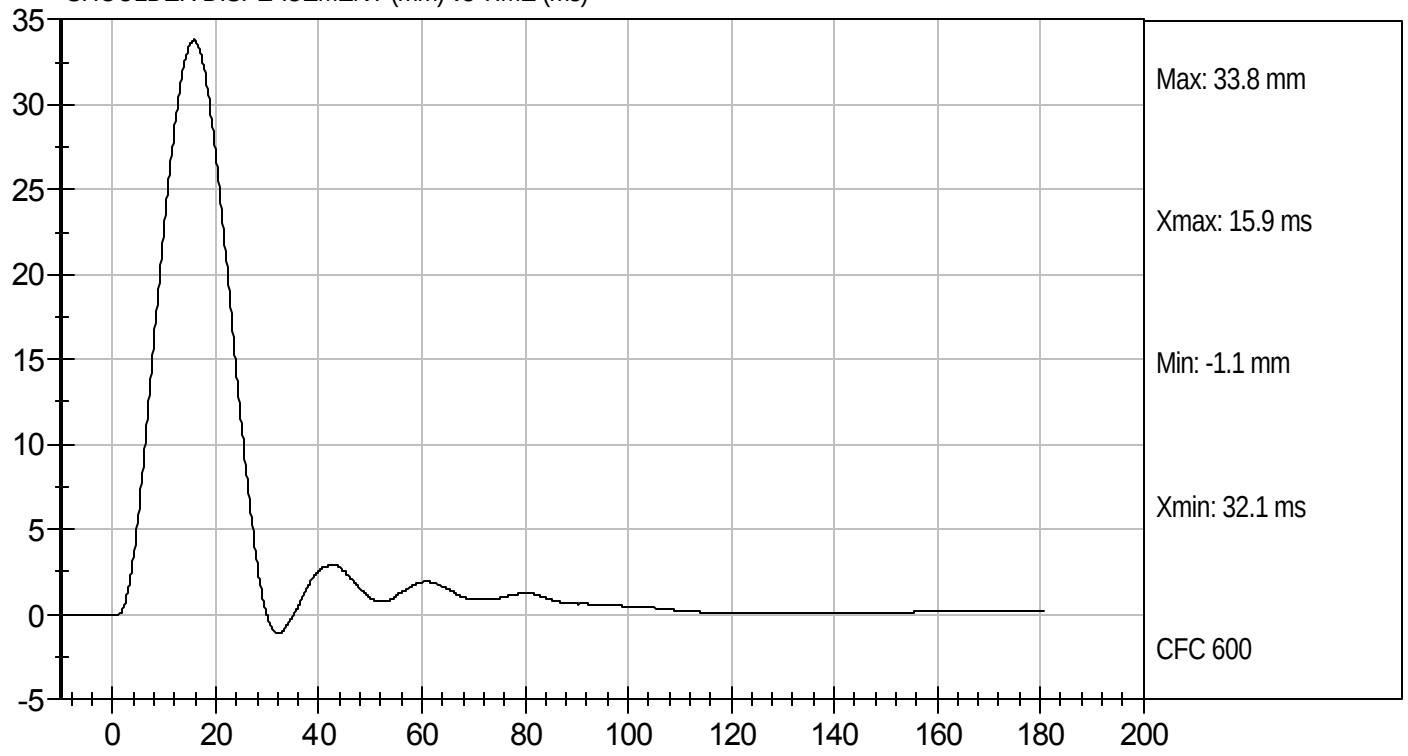
Test Date: 1/10/12
Velocity: 21.9 ft/s, 6.68 m/s



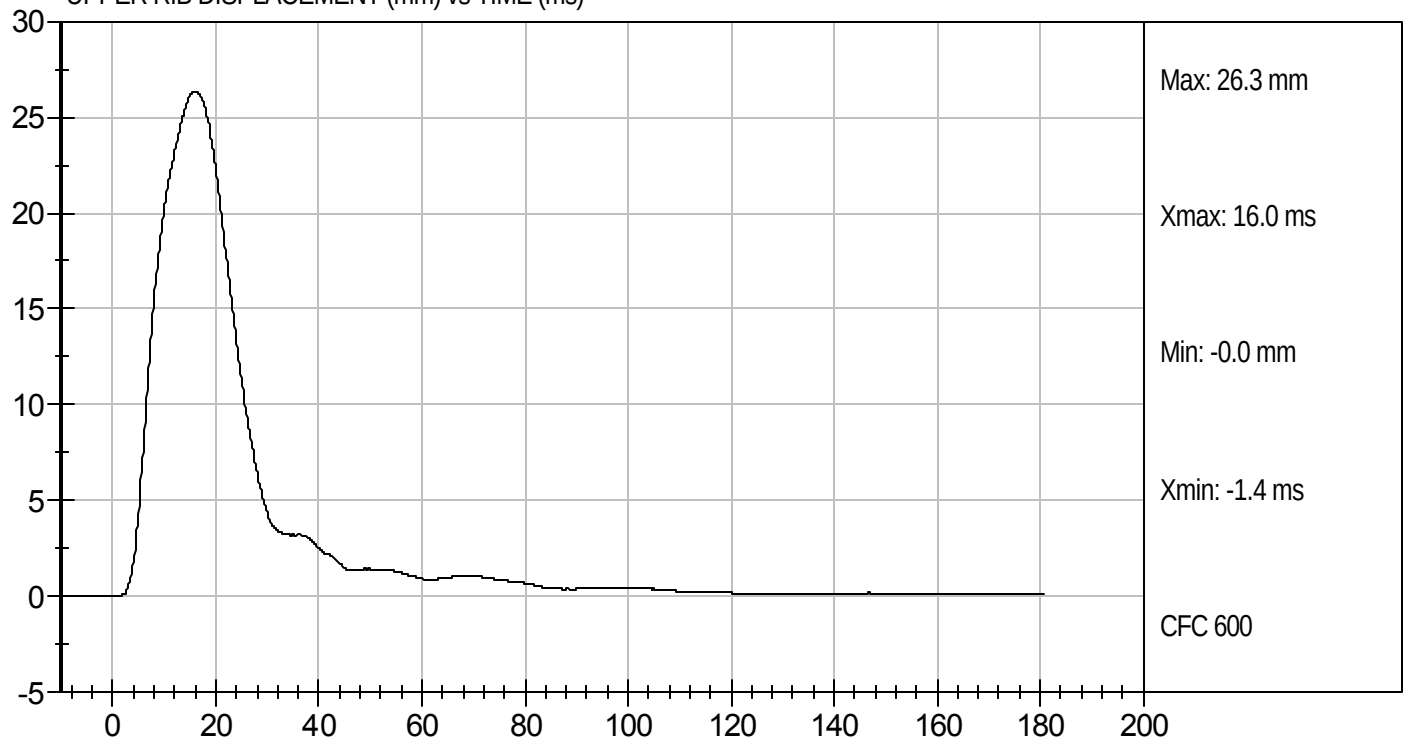
Test Desc: Thorax With Arm
Component ID: D12104

Test Date: 1/10/12
Velocity: 21.9 ft/s, 6.68 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



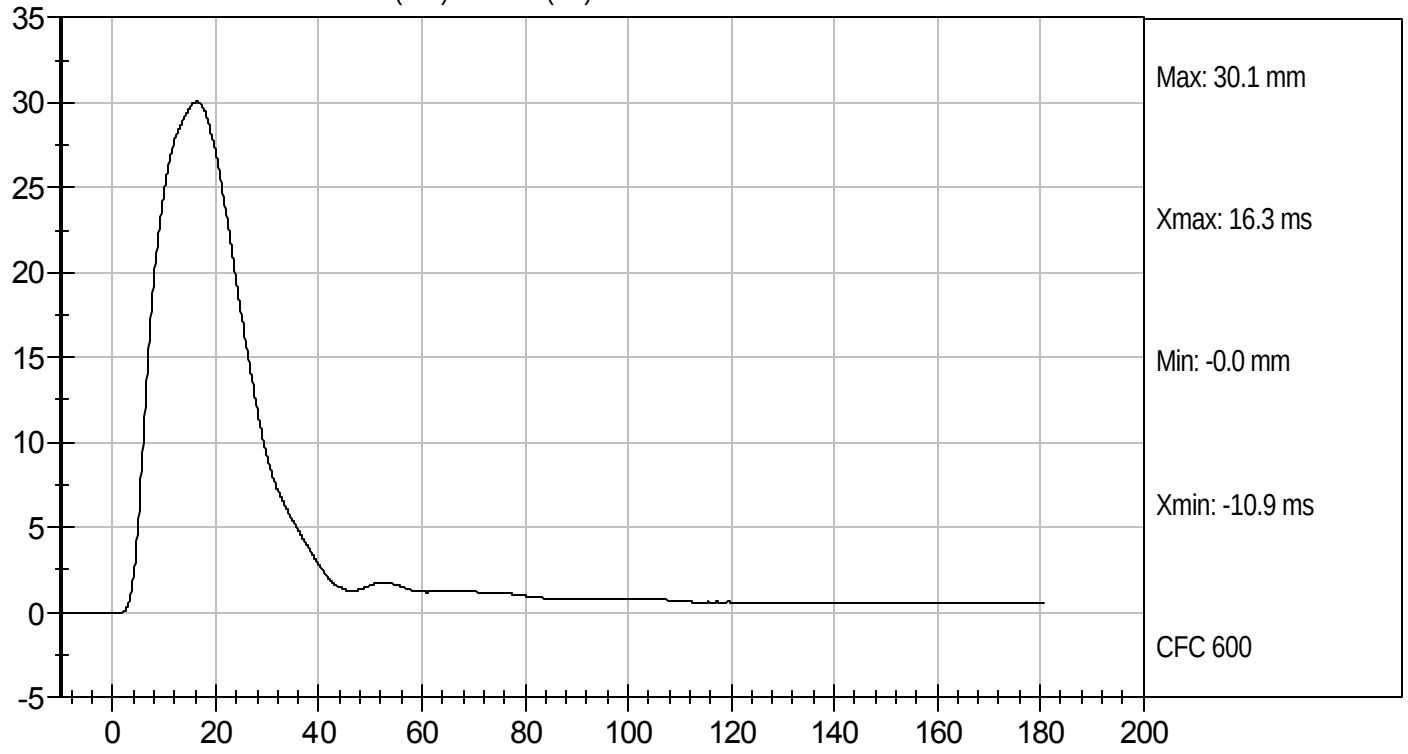
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



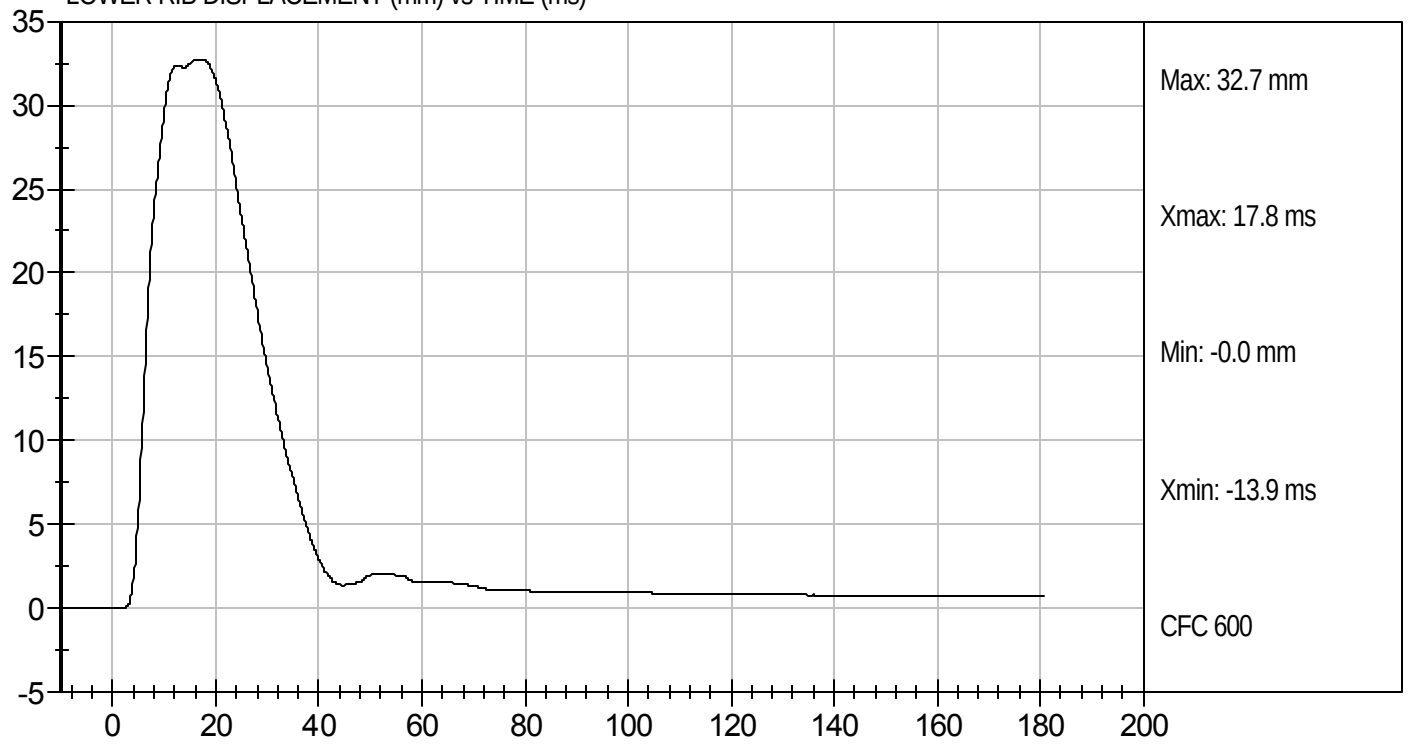
Test Desc: Thorax With Arm
Component ID: D12104

Test Date: 1/10/12
Velocity: 21.9 ft/s, 6.68 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



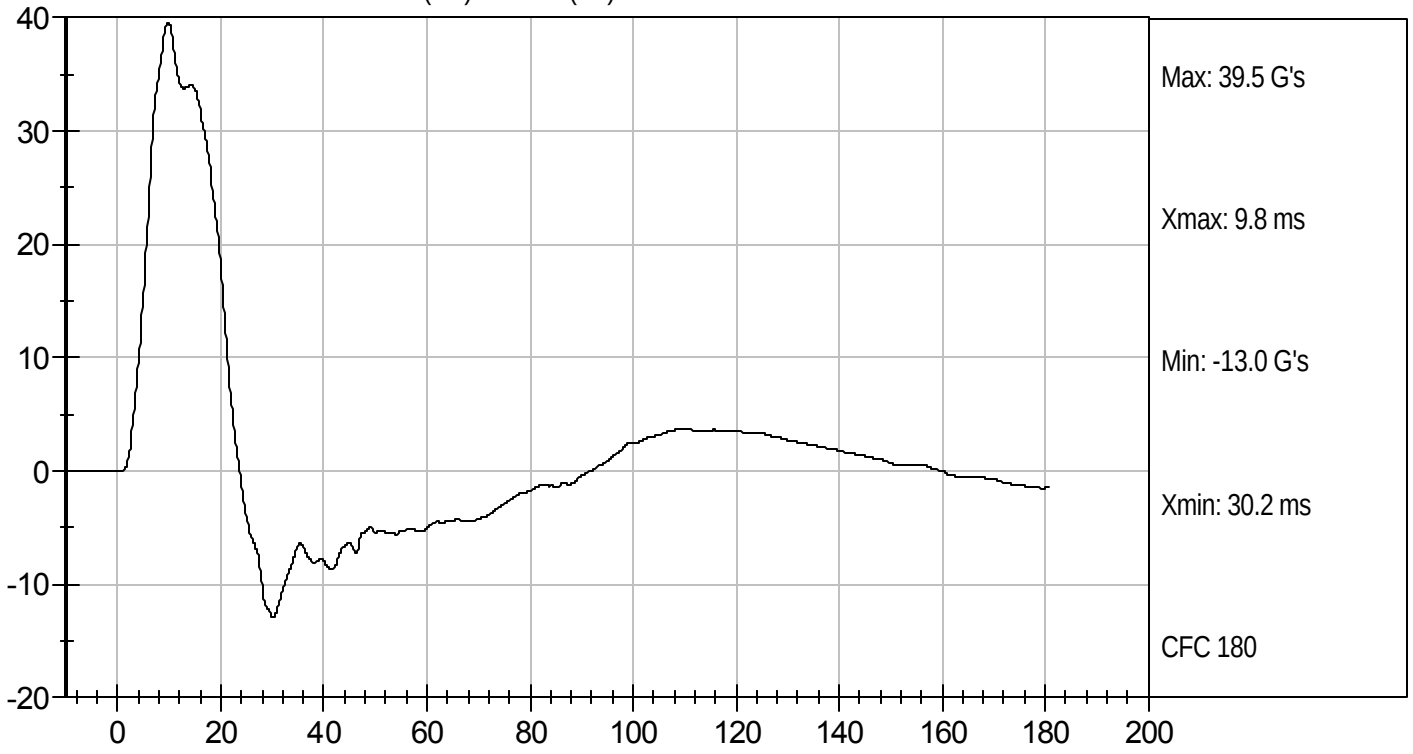
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



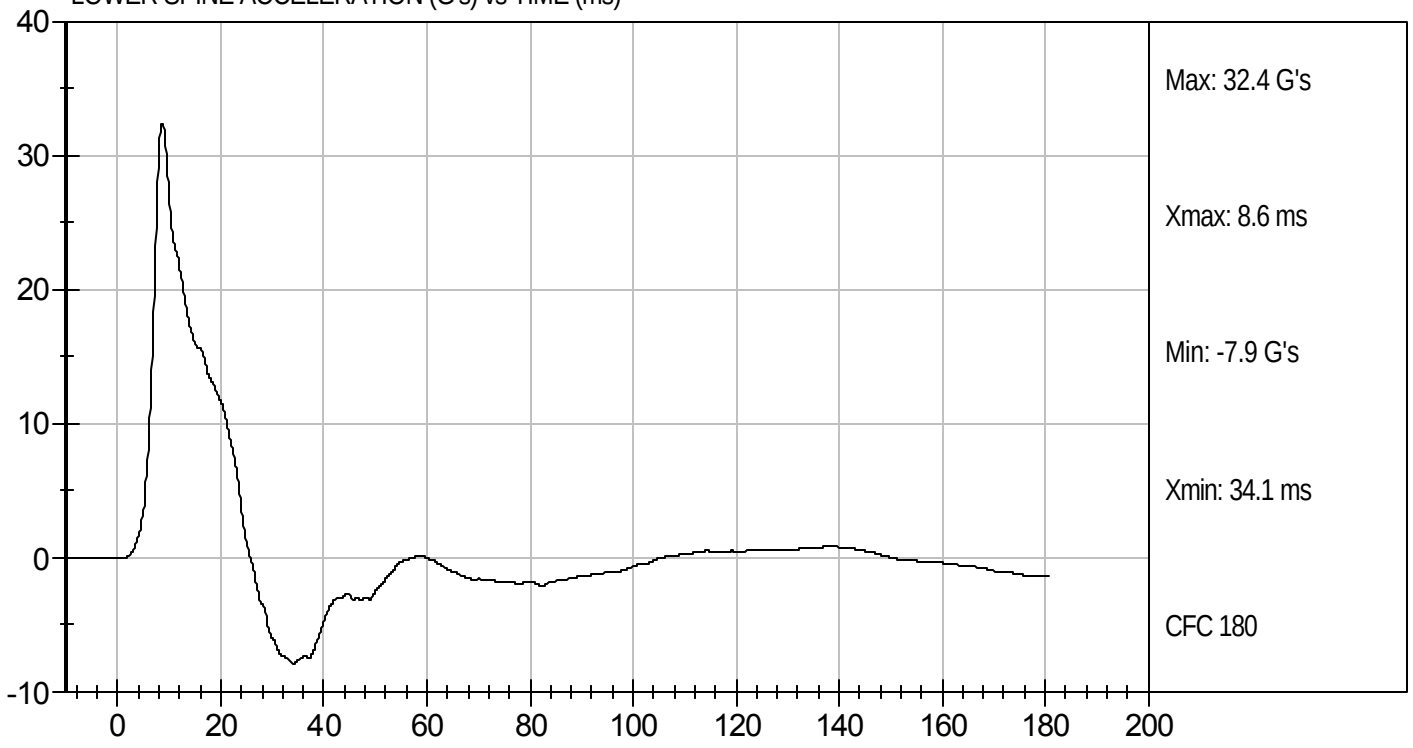
Test Desc: Thorax With Arm
Component ID: D12104

Test Date: 1/10/12
Velocity: 21.9 ft/s, 6.68 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:** D12105

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	23	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	36	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	40	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
		Overall Test Results		Pass

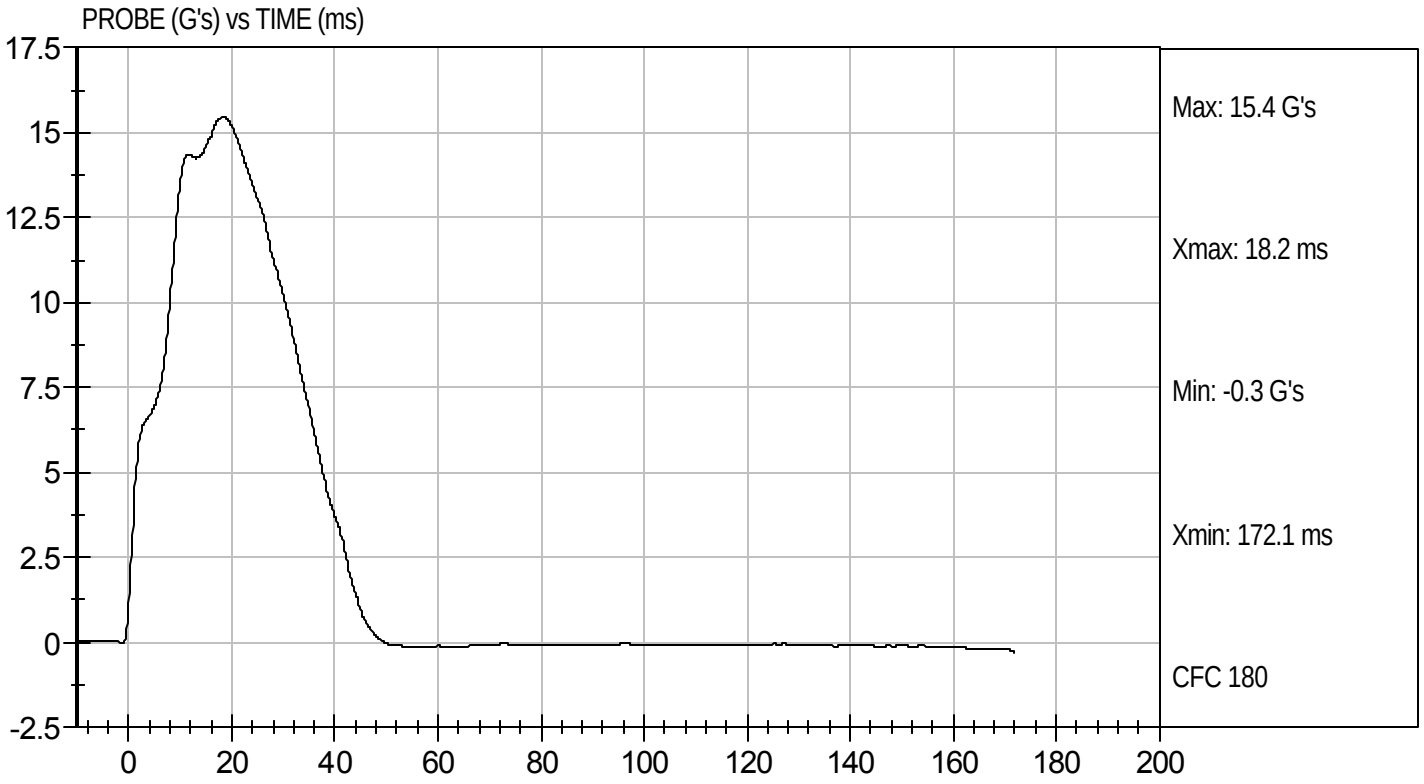
Jessica Gall
Laboratory Technician

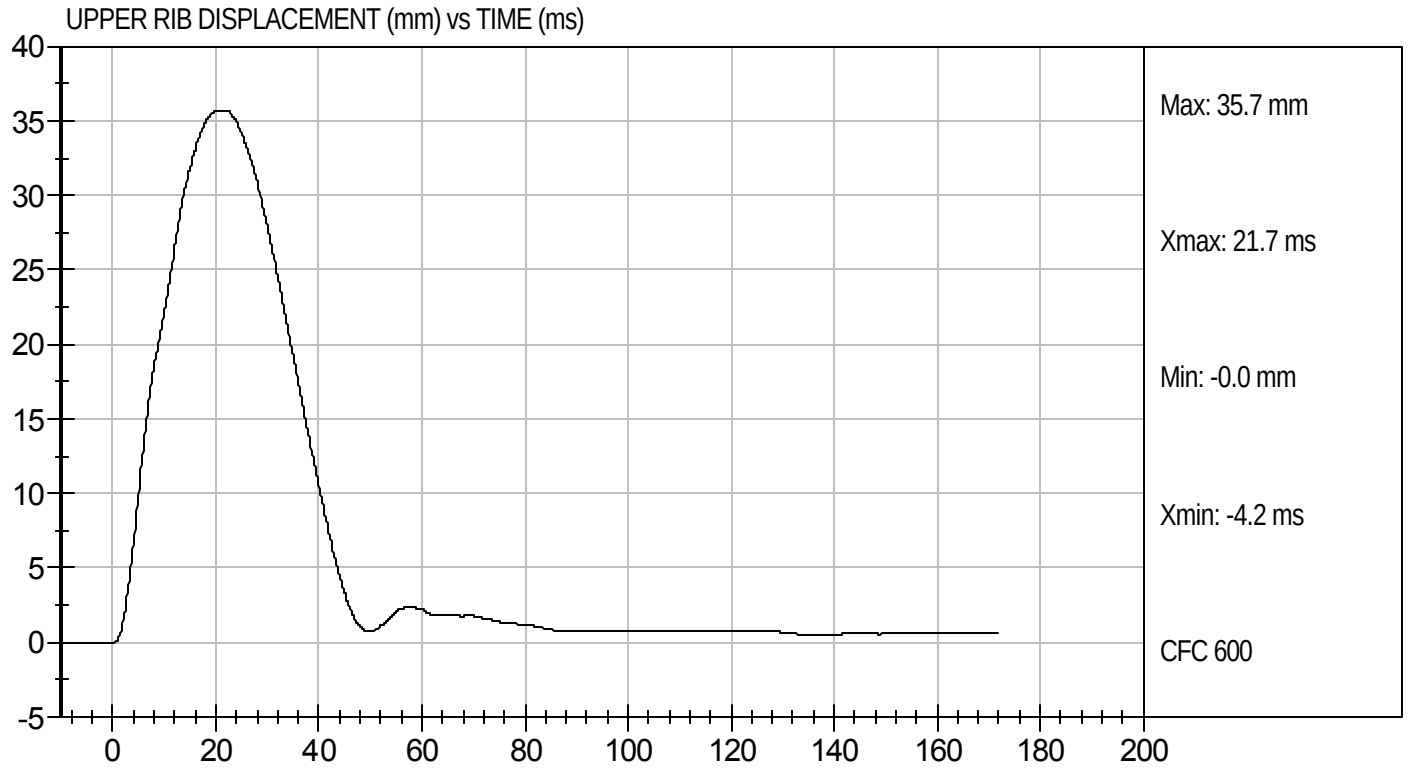
1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax Without Arm
Component ID: D12105

Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 m/s

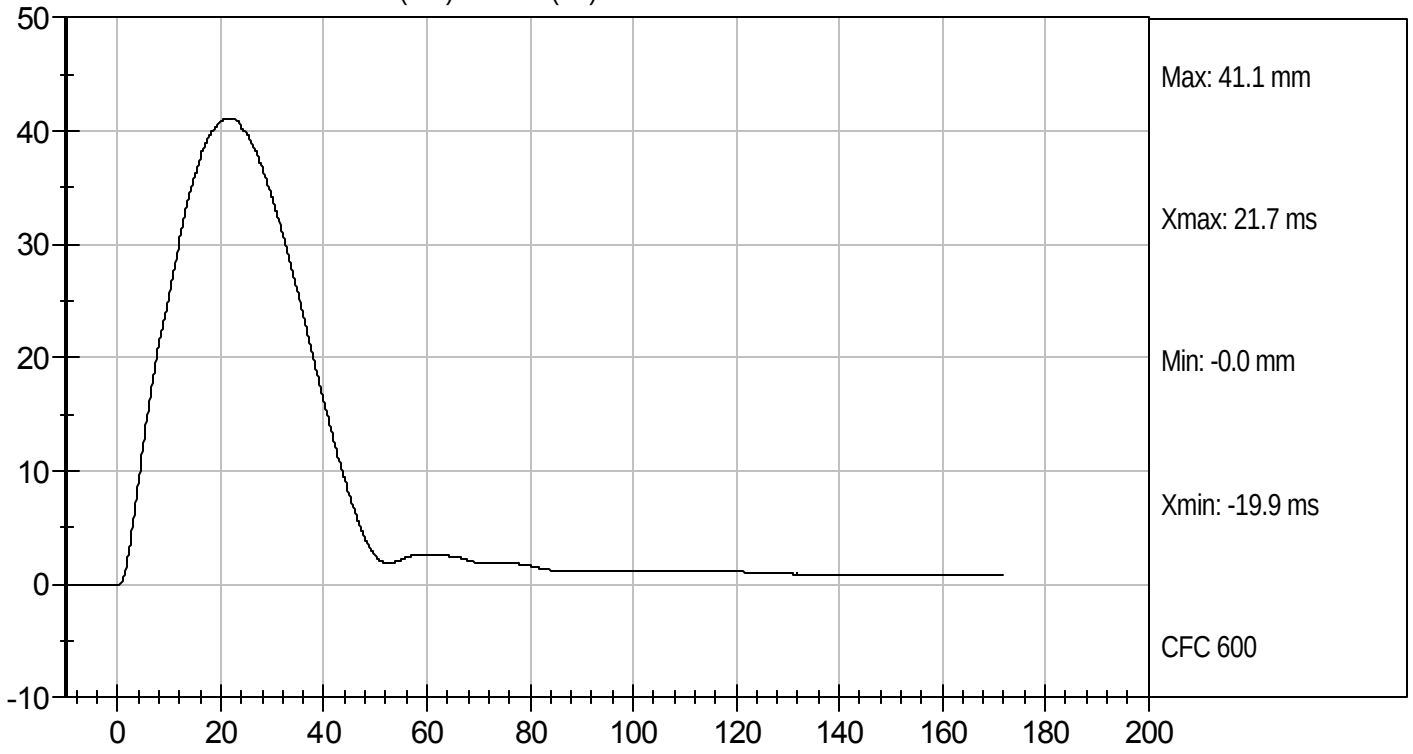




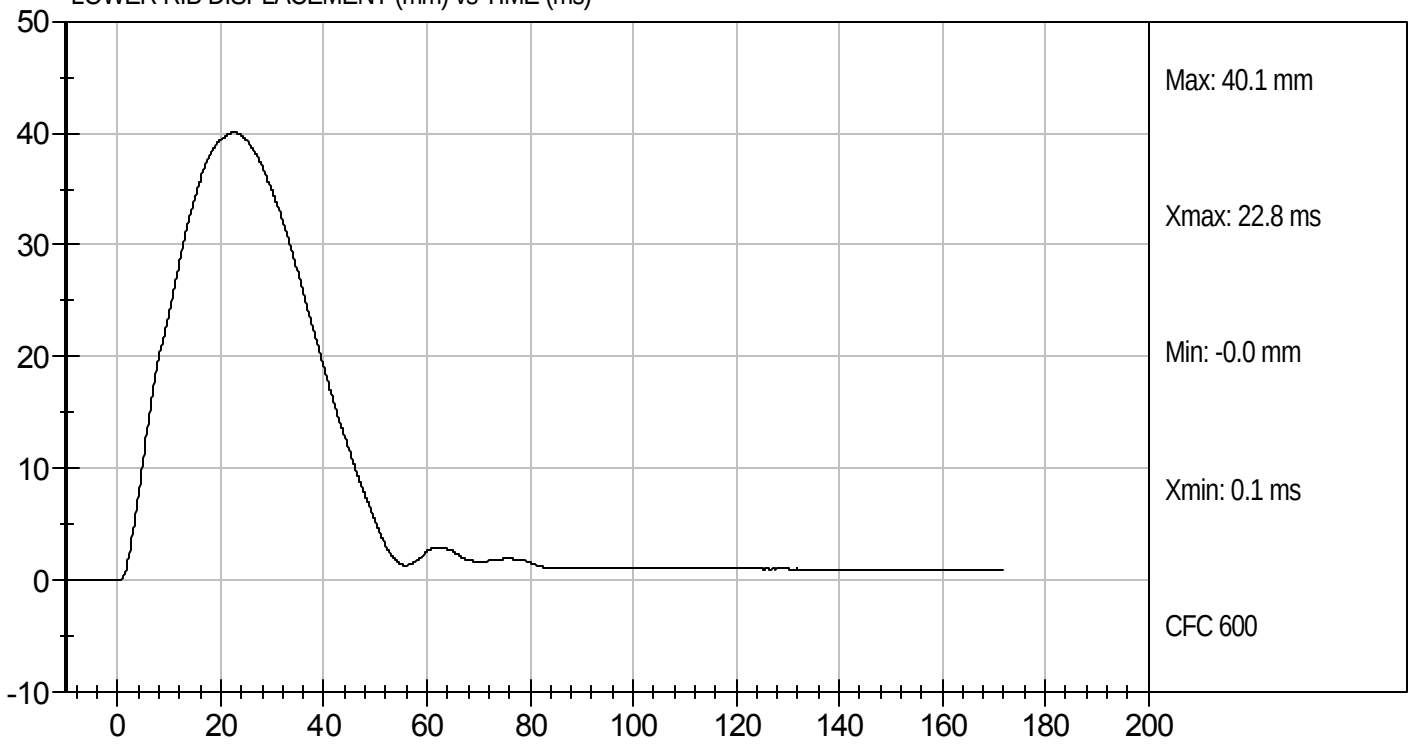
Test Desc: Thorax Without Arm
Component ID: D12105

Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



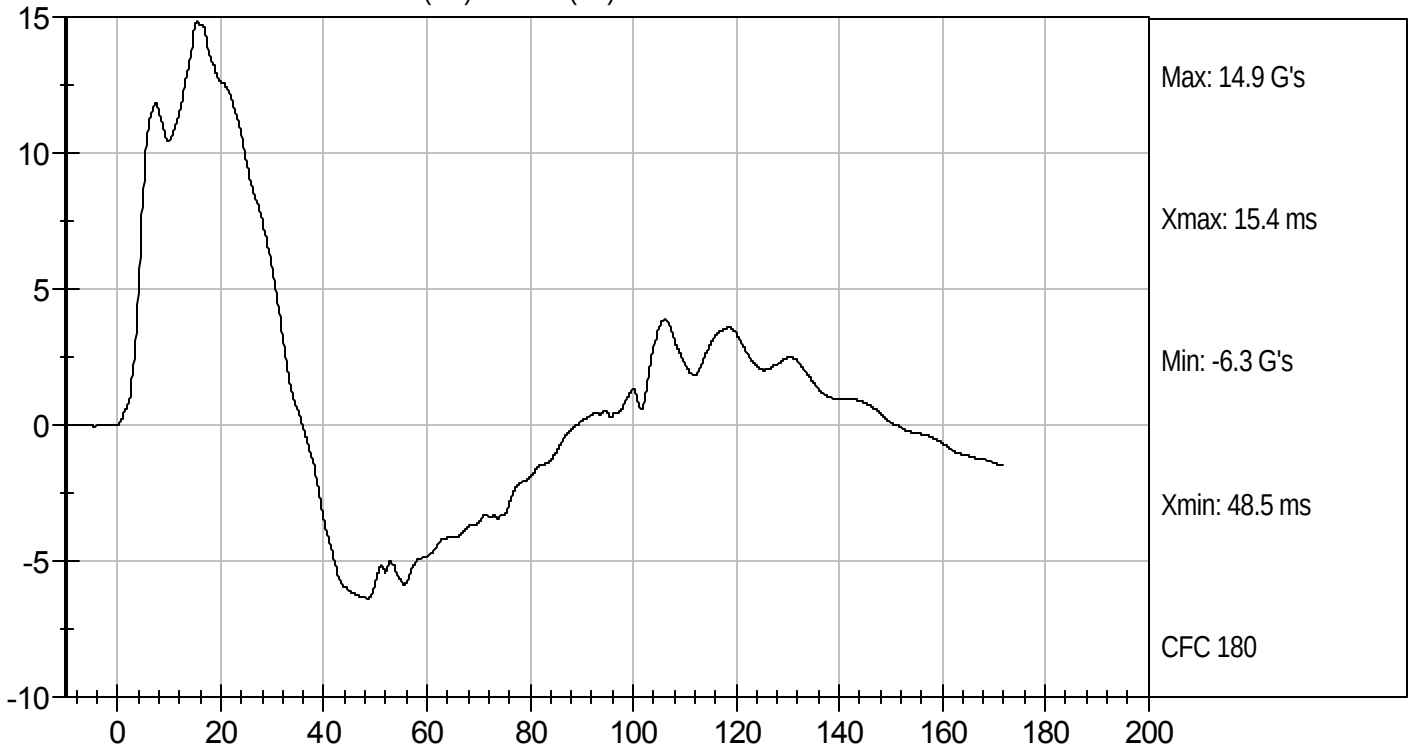
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



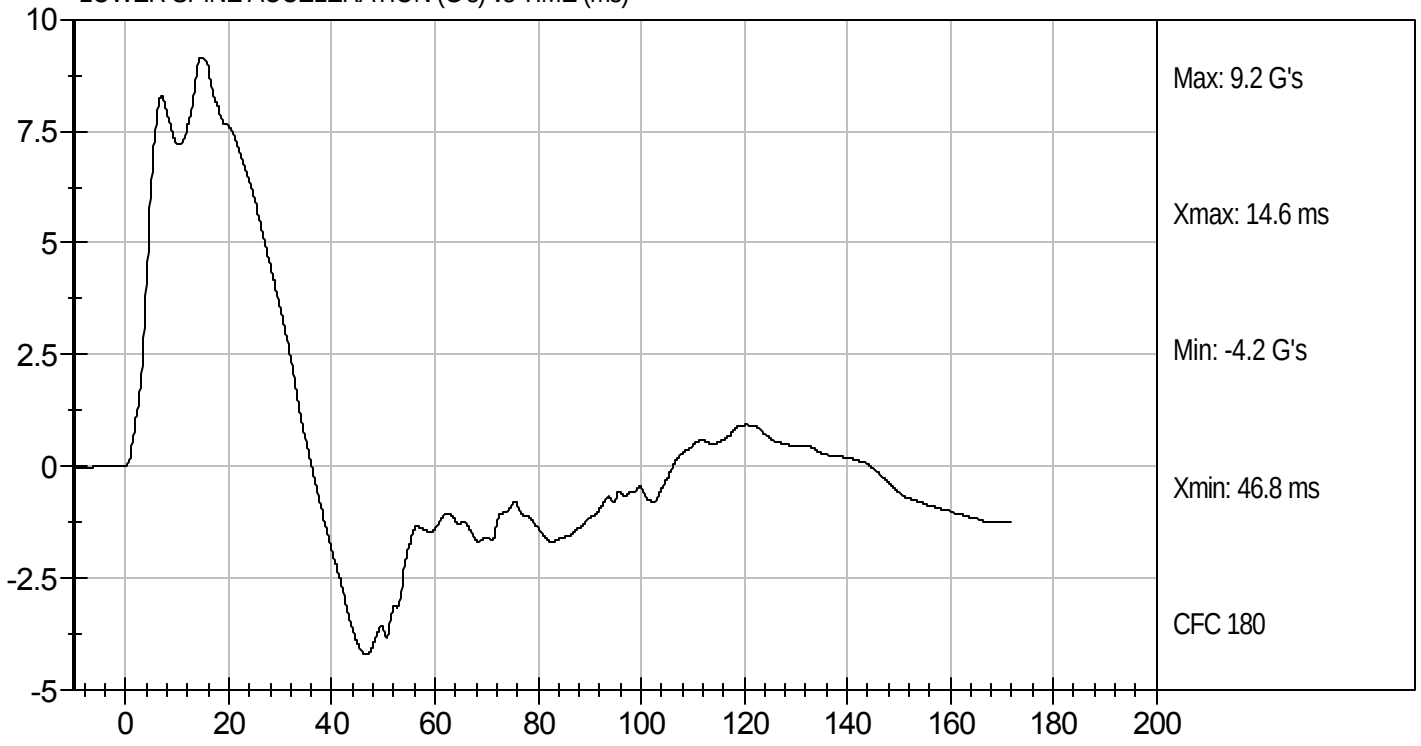
Test Desc: Thorax Without Arm
Component ID: D12105

Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 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:** D12106

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	23	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	39	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

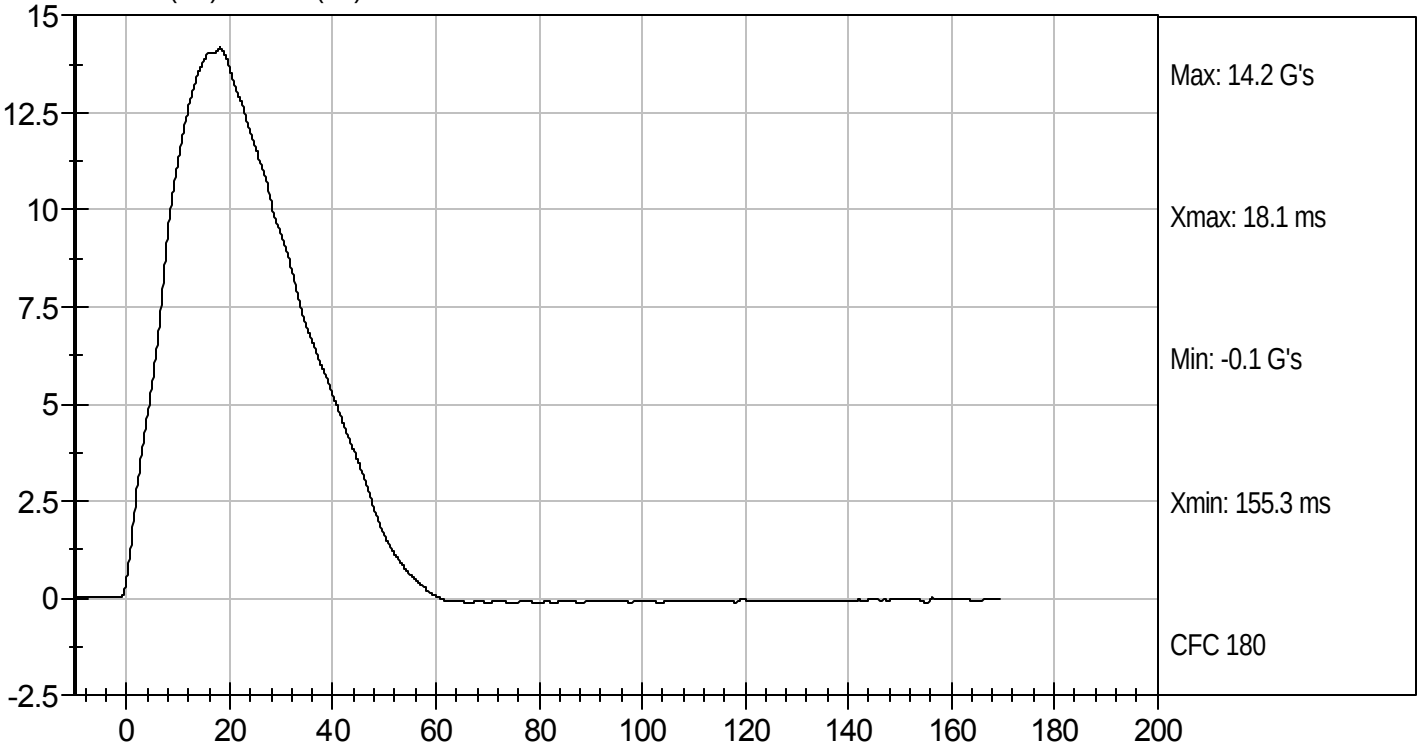
1/10/12
Test Date

David Winkelbauer
Approved By

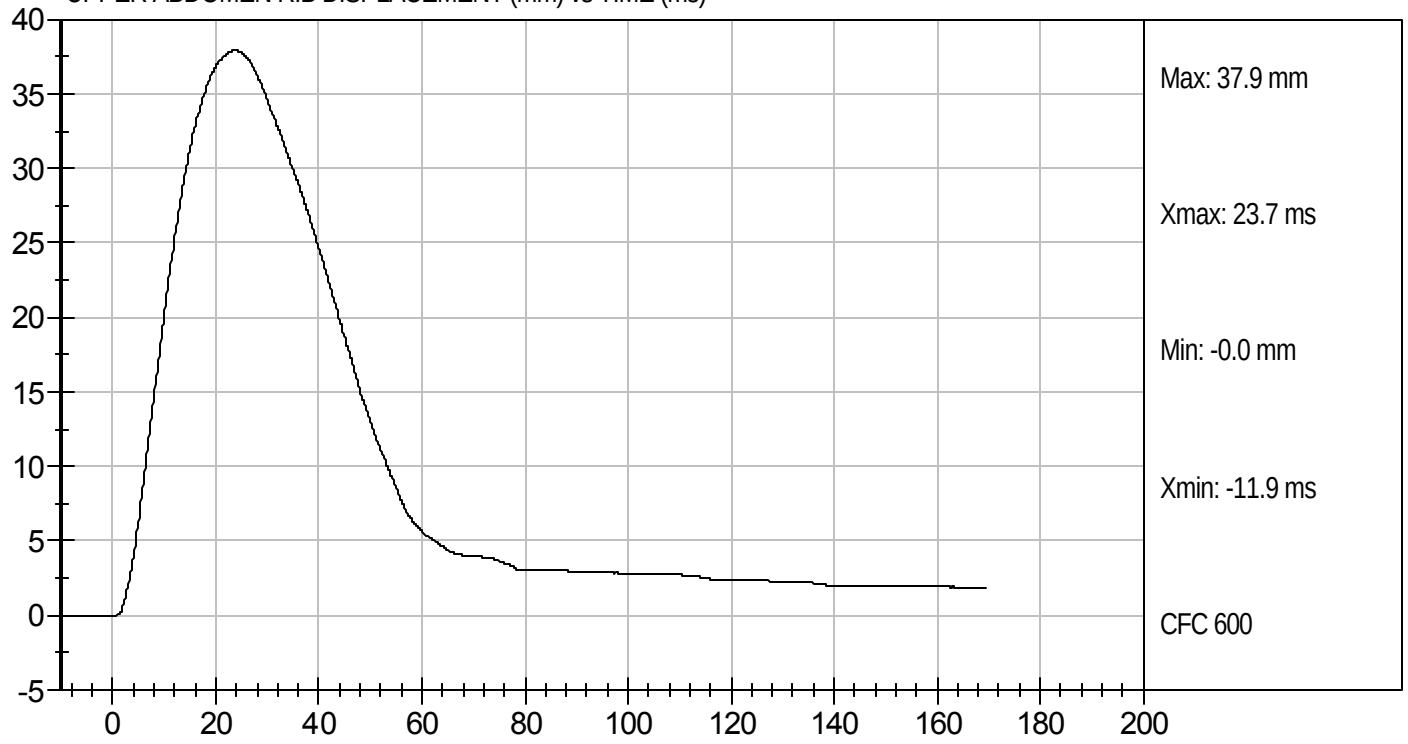
Test Desc: Abdomen Impact
Component ID: D12106

Test Date: 1/10/12
Velocity: 14.12 ft/s, 4.30 m/s

PROBE (G's) vs TIME (ms)



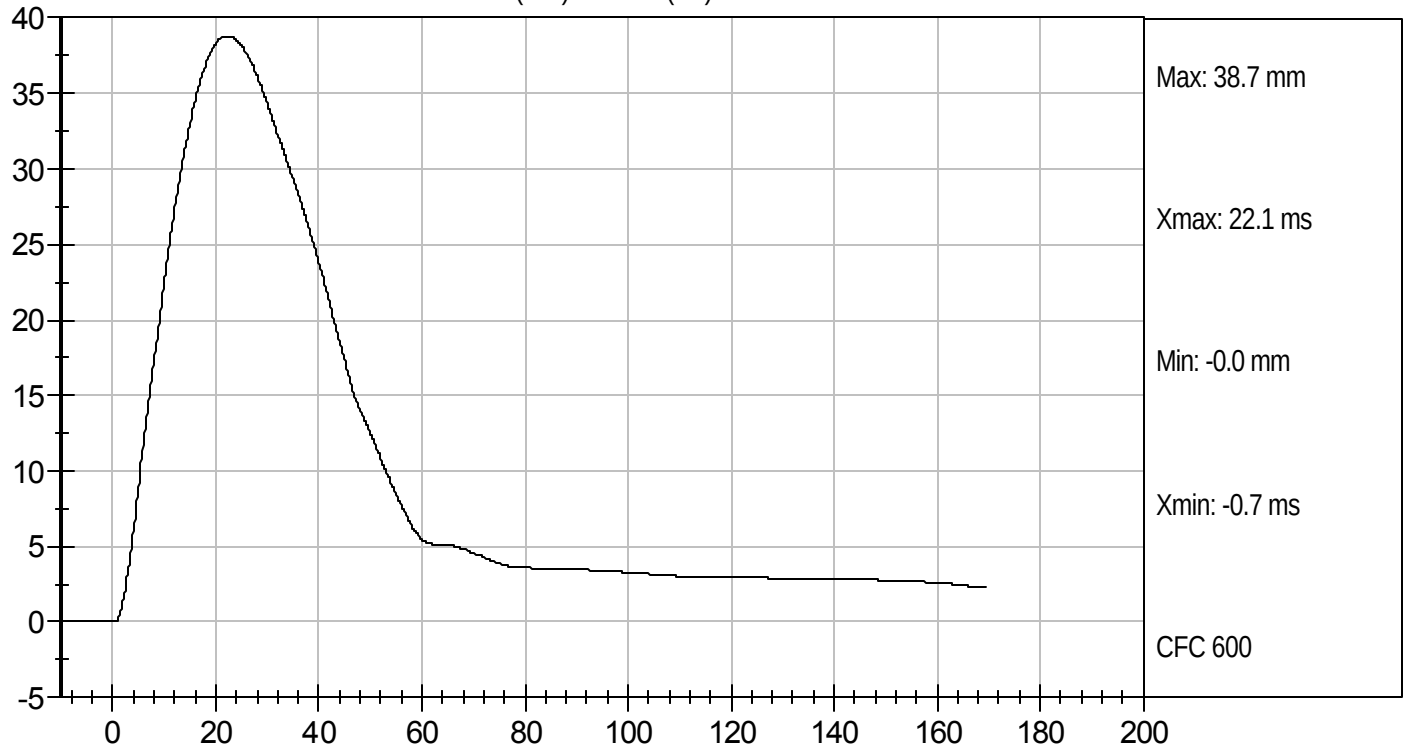
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



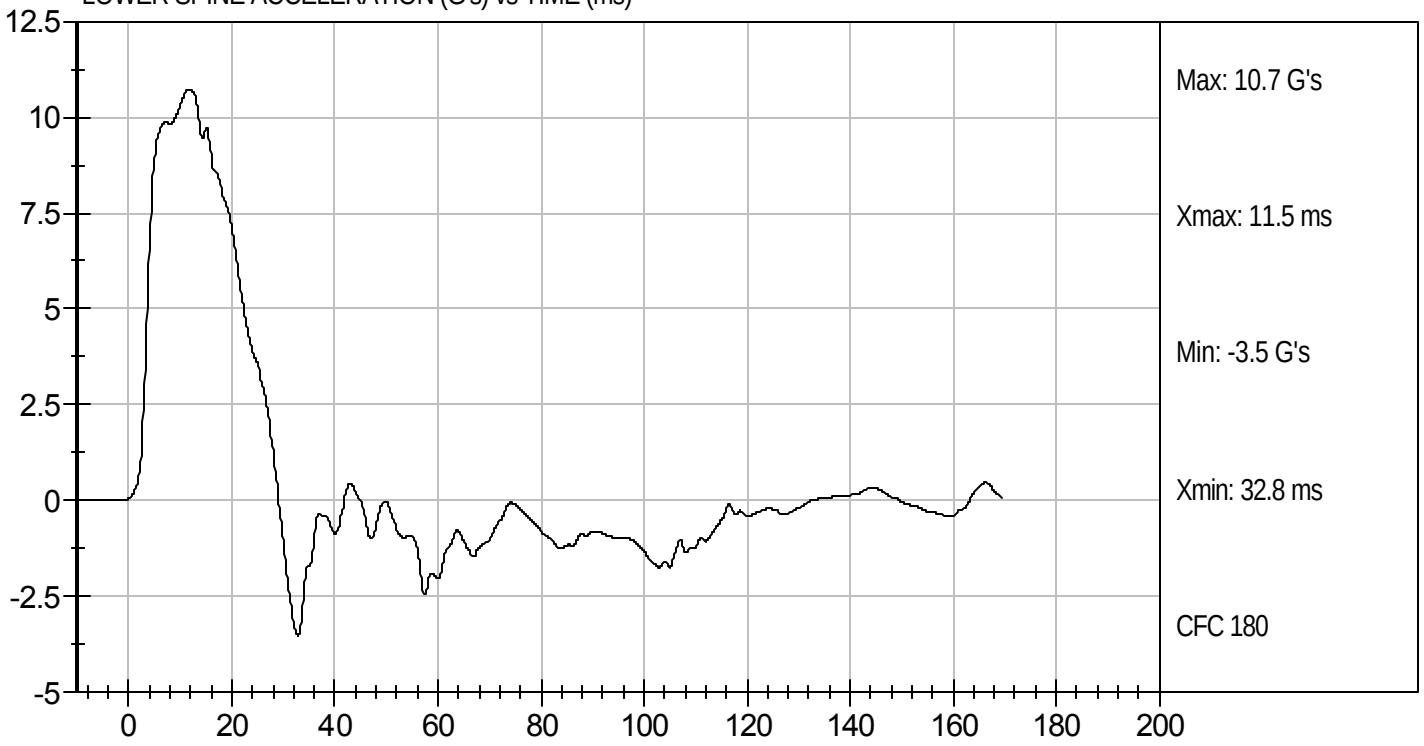
Test Desc: Abdomen Impact
Component ID: D12106

Test Date: 1/10/12
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:** D12107

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	23	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	3884	Pass
		Overall Test Results		Pass

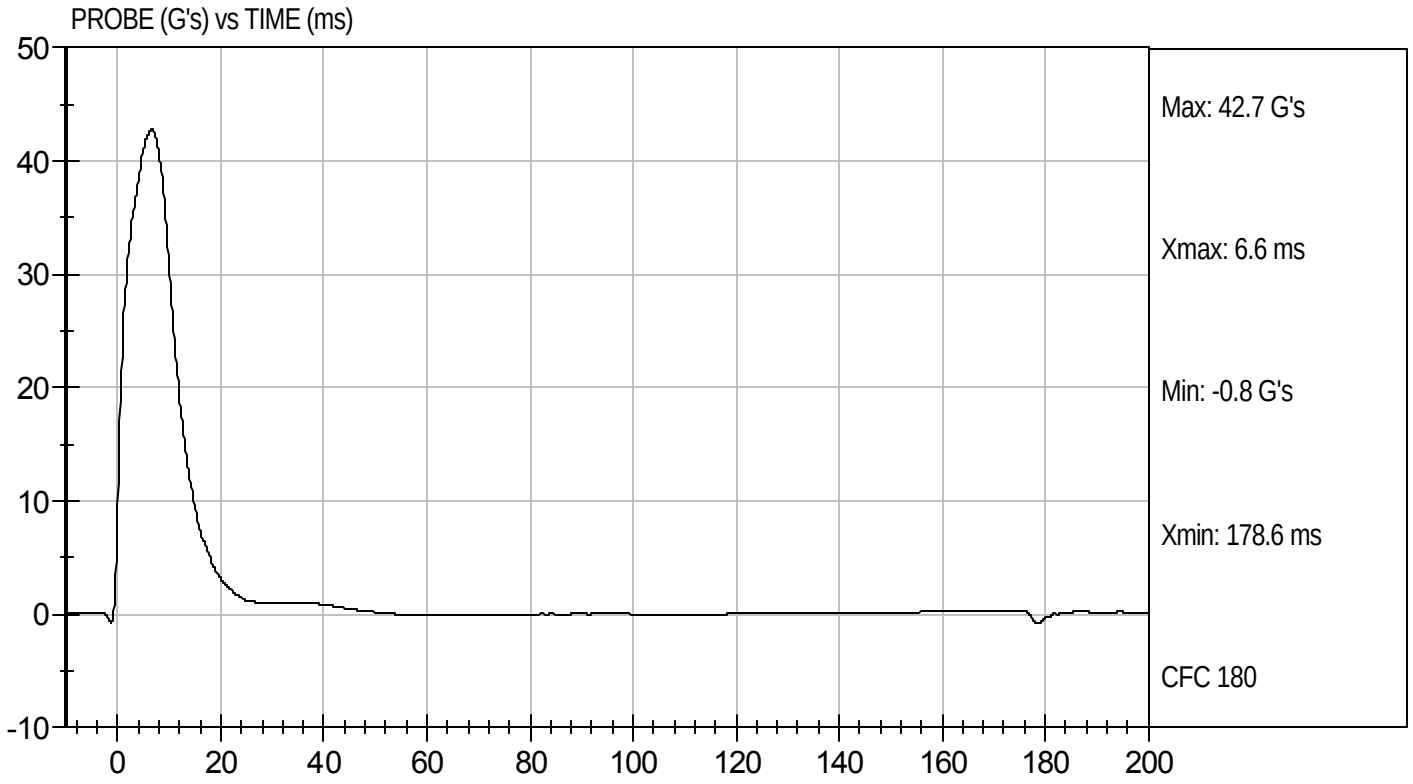
Jessica Hall
Laboratory Technician

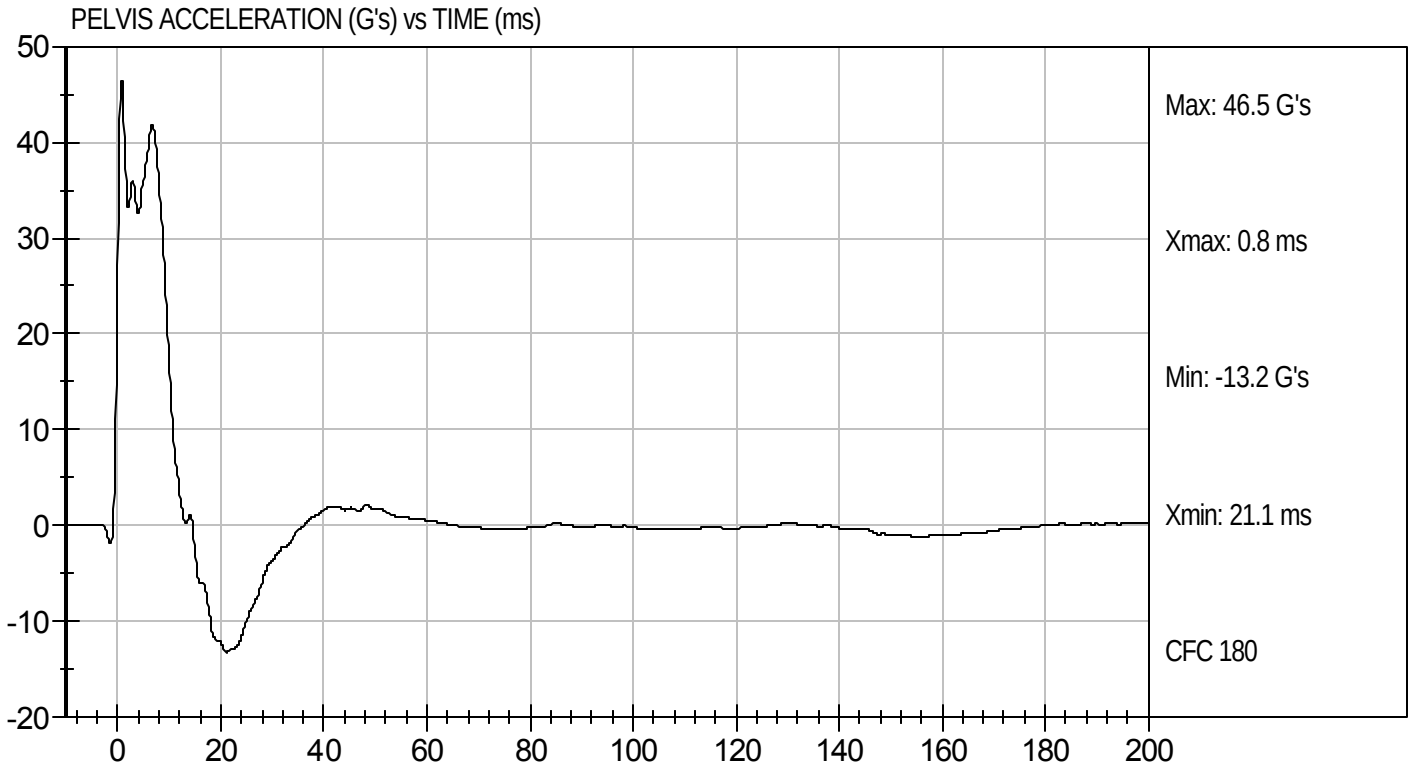
1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Pelvis Impact
Component ID: D12107B

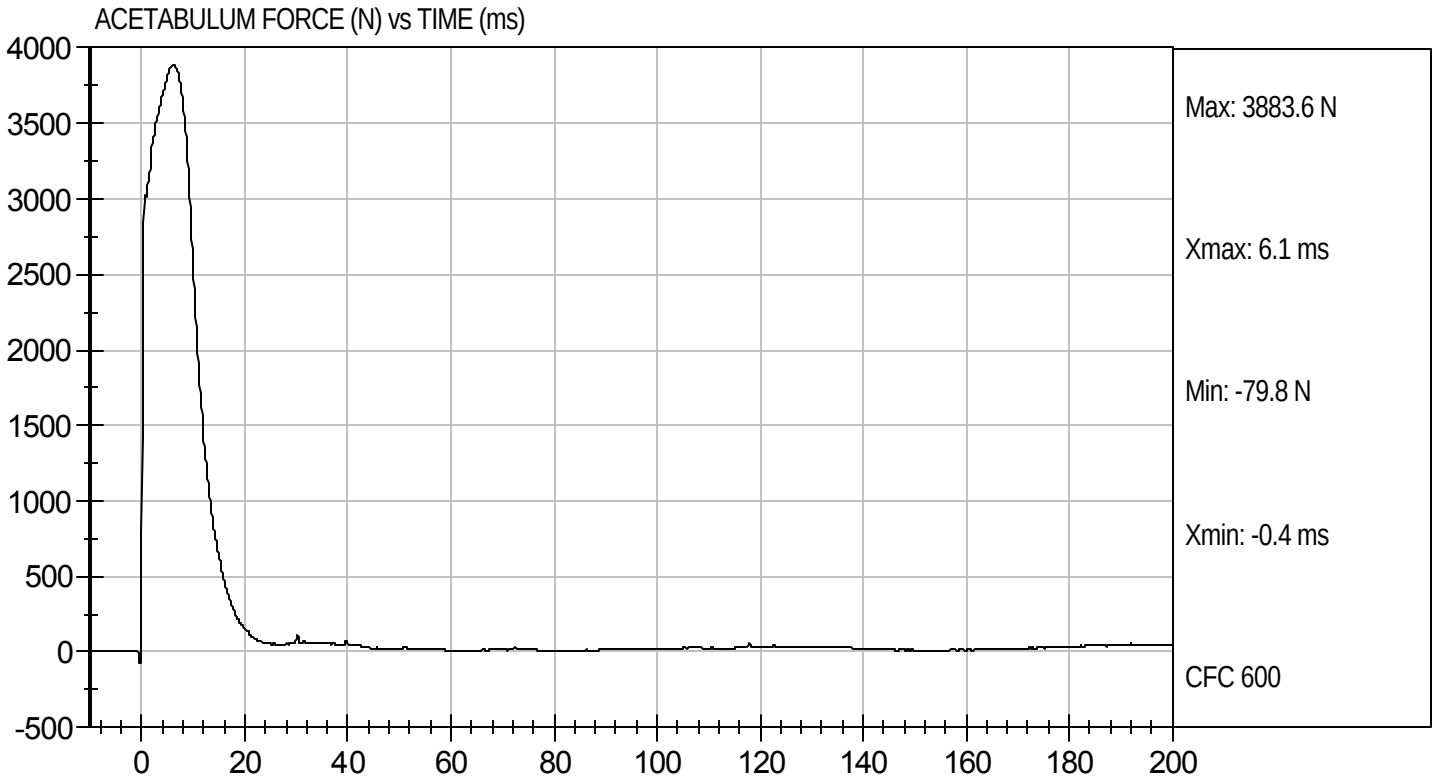
Test Date: 1/10/12
Velocity: 21.93 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D12107B

Test Date: 1/10/12
Velocity: 21.93 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:** D12108

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	23	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	36 to 45	39	Pass
Pelvis Y Acceleration	G's	28 to 39	32	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4656	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

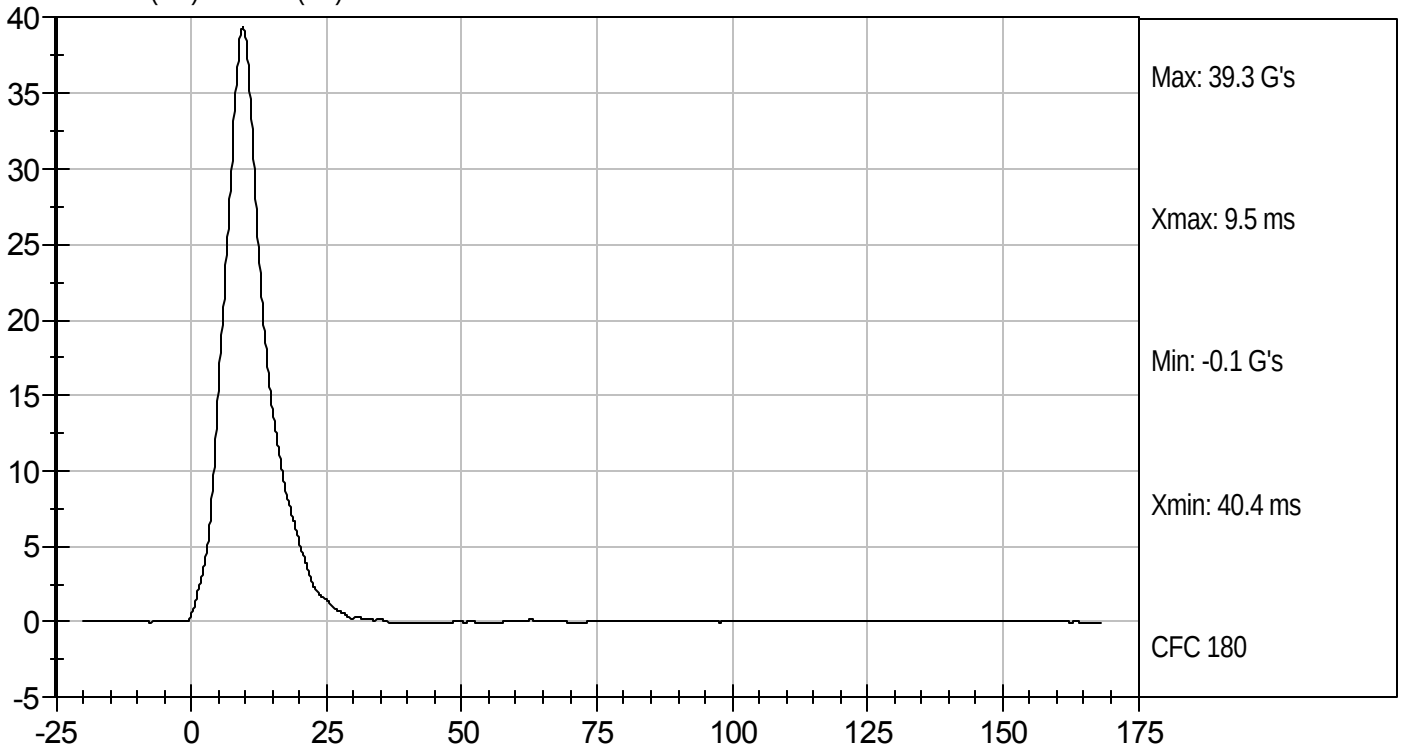
1/10/12
Test Date

David Winkelbauer
Approved By

Test Desc: Iliac Impact
Component ID: D12108

Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 m/s

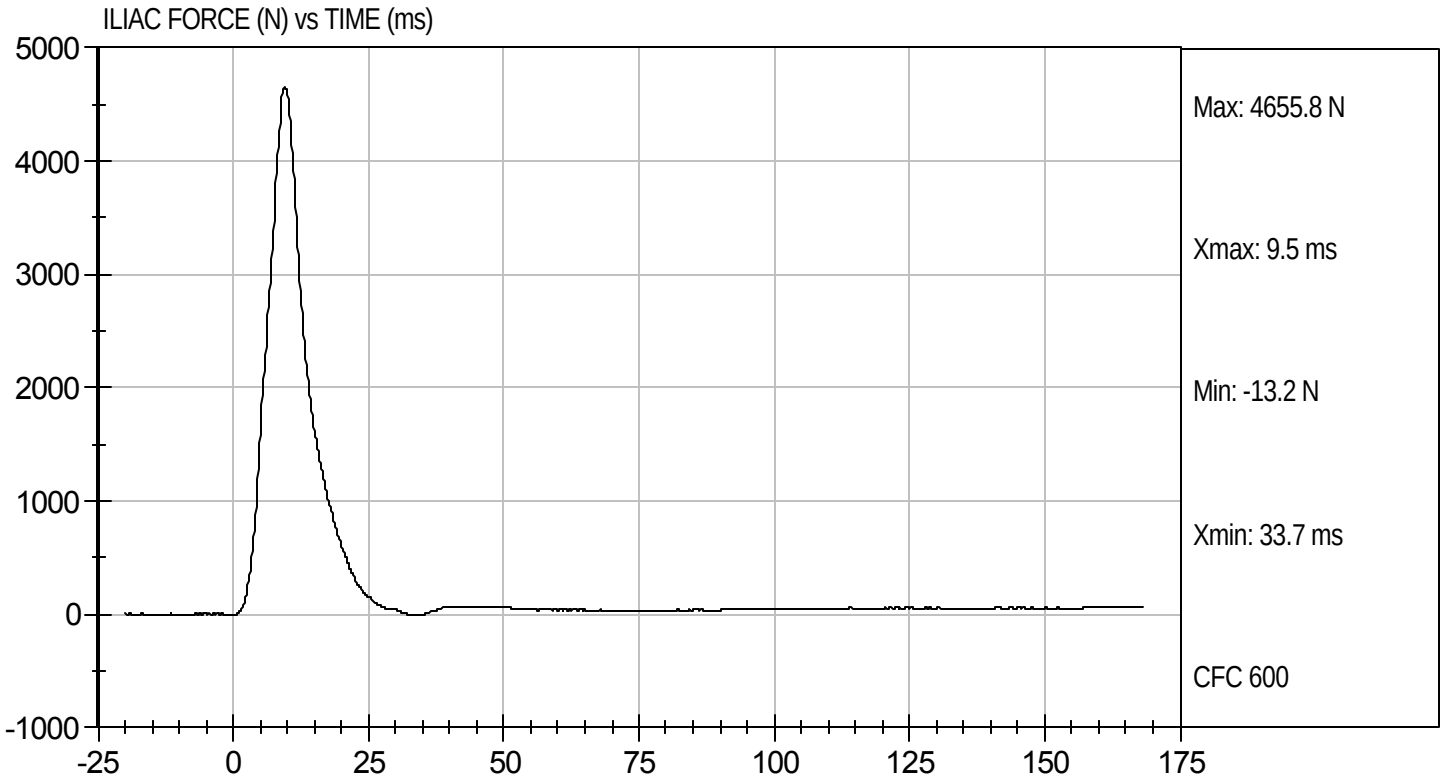
PROBE (G's) vs TIME (ms)



PELVIS ACCELERATION (G's) vs TIME (ms)

Test Desc: Iliac Impact
Component ID: D12108

Test Date: 1/10/12
Velocity: 14.24 ft/s, 4.34 m/s



MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test ID:** D12251

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	14	Pass
Peak Resultant Acceleration	G's	115 to 137	118	Pass
Peak Longitudinal Acceleration	G's	+/- 15	2.9	Pass
Unimodal	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

Jessica Gall
Laboratory Technician

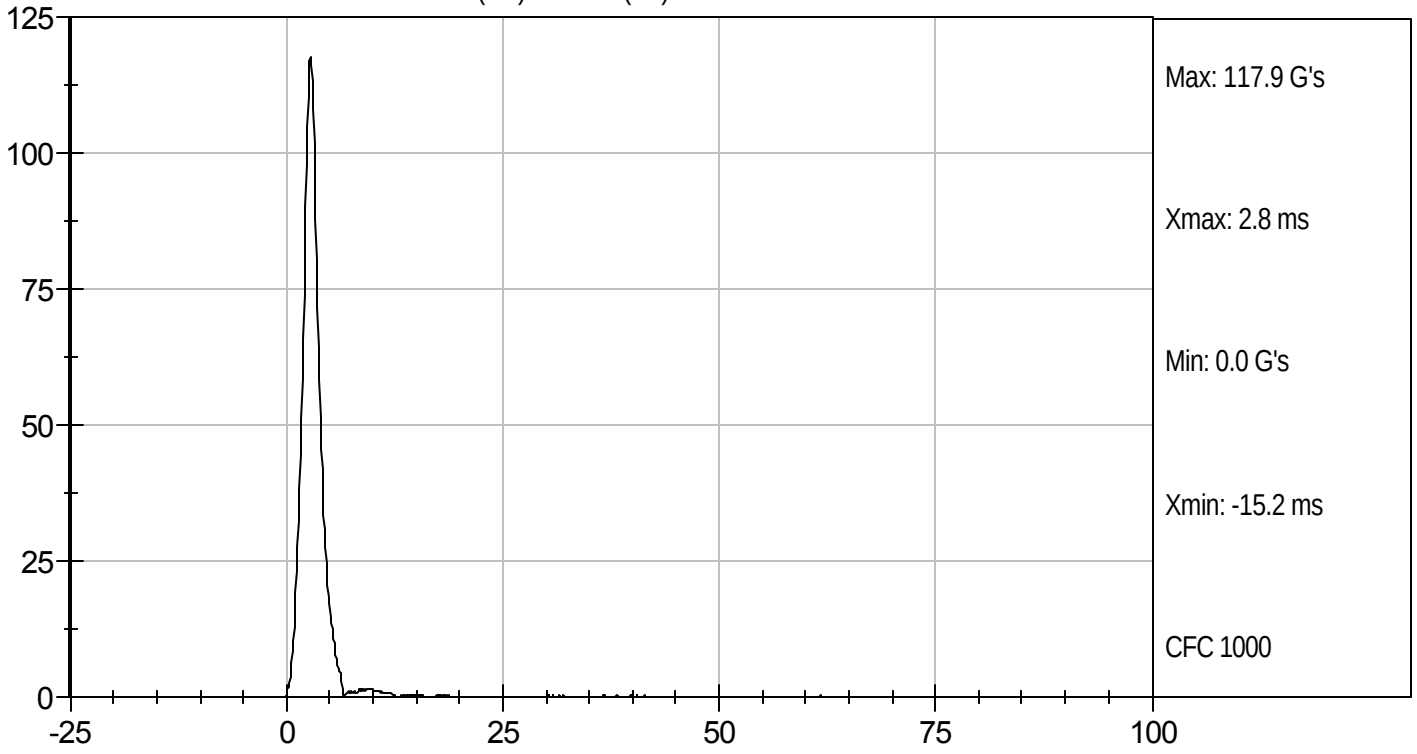
1/19/12
Test Date

David Winkelbauer
Approved By

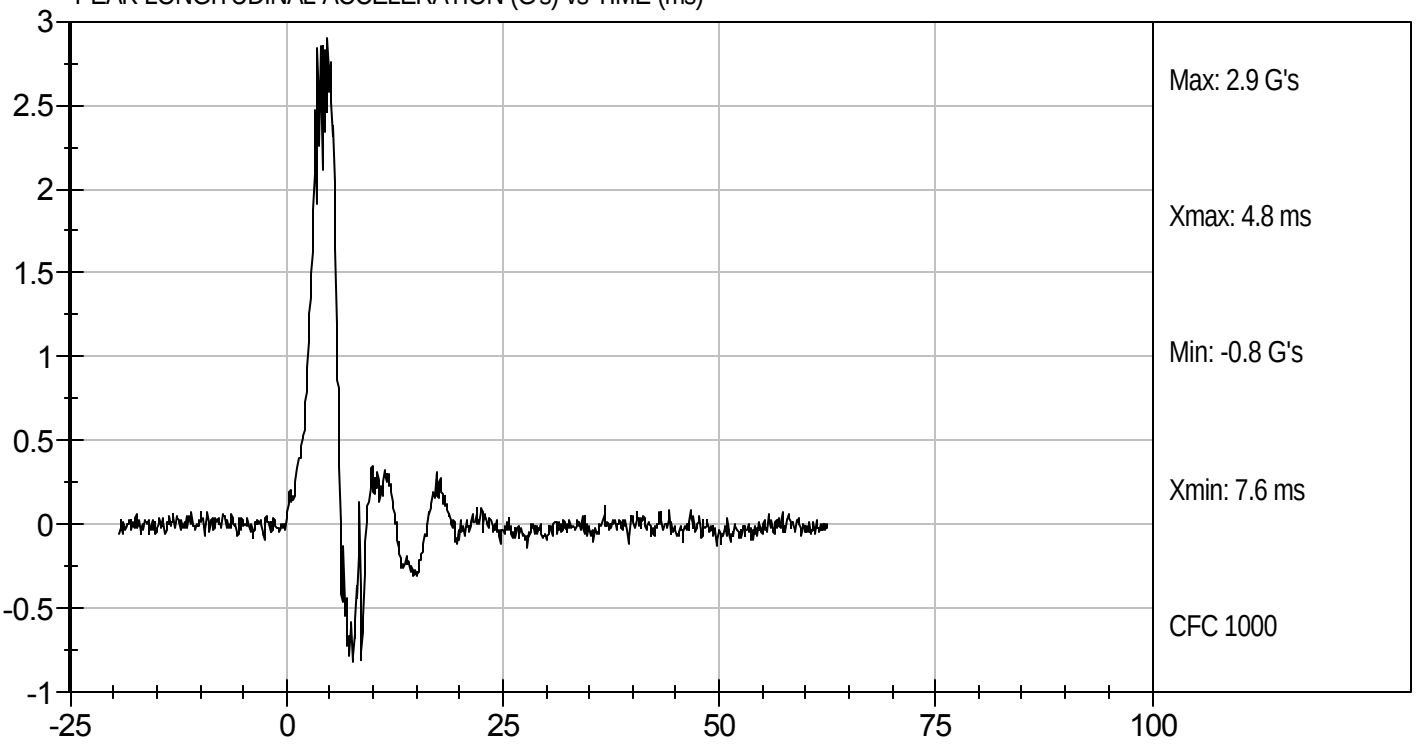
Test Desc: Head Drop
Component ID: D12251

Test Date: 1/19/12
Velocity: 0 ft/s, 0 m/s

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



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



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D12252

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	22.1	Pass
Humidity		%	10 to 70	14	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.66	Pass
	15 ms	m/s	3.30 to 4.10	3.85	Pass
	20 ms	m/s	4.40 to 5.40	5.06	Pass
	25 ms	m/s	5.40 to 6.10	5.61	Pass
	25-100 ms	m/s	5.50 to 6.20	5.69	Pass
Maximum D-Plane Rotation		deg	71 to 81	71	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	60	Pass
Maximum Occipital Condyle Moment during Rotation Interval		Nm	-44 to -36	-39	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
			Overall Test Results		Pass

Jessica Hall
Laboratory Technician

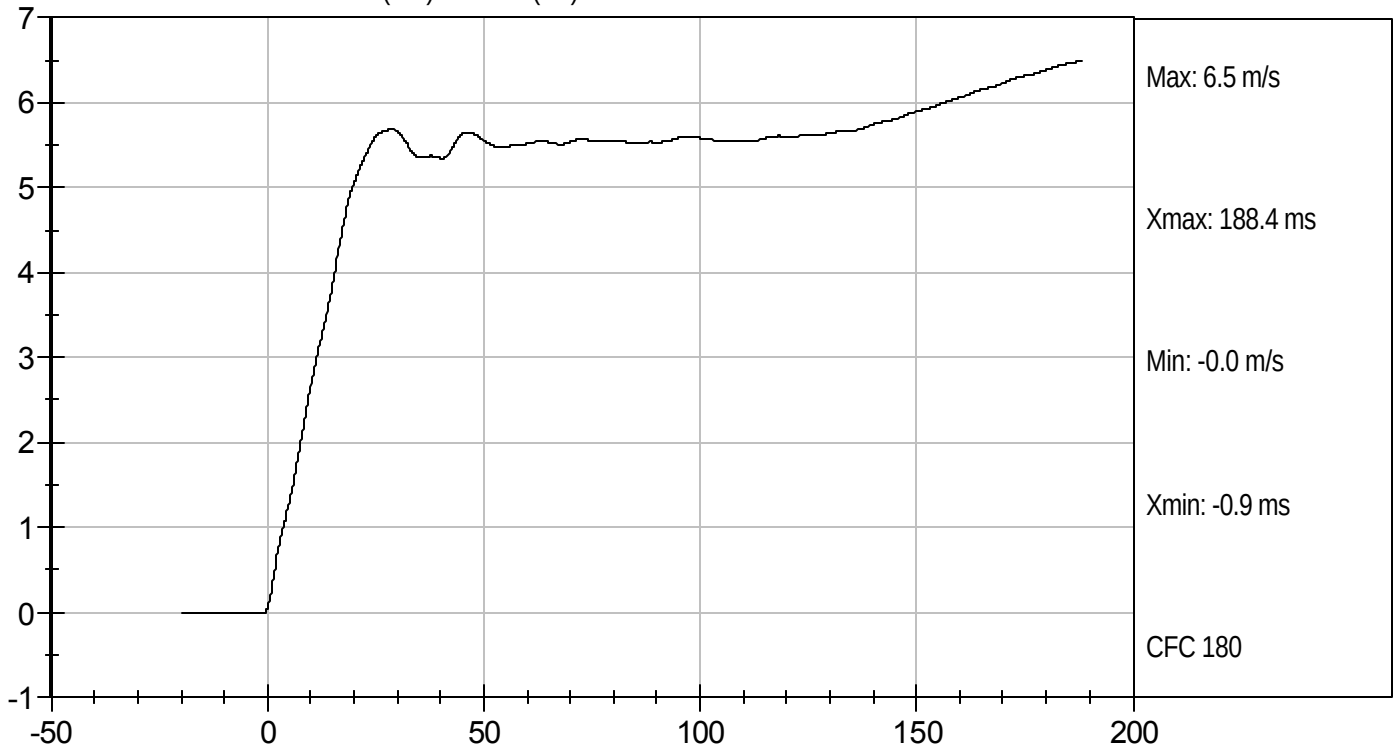
1/19/12
Test Date

David Winkelbauer
Approved By

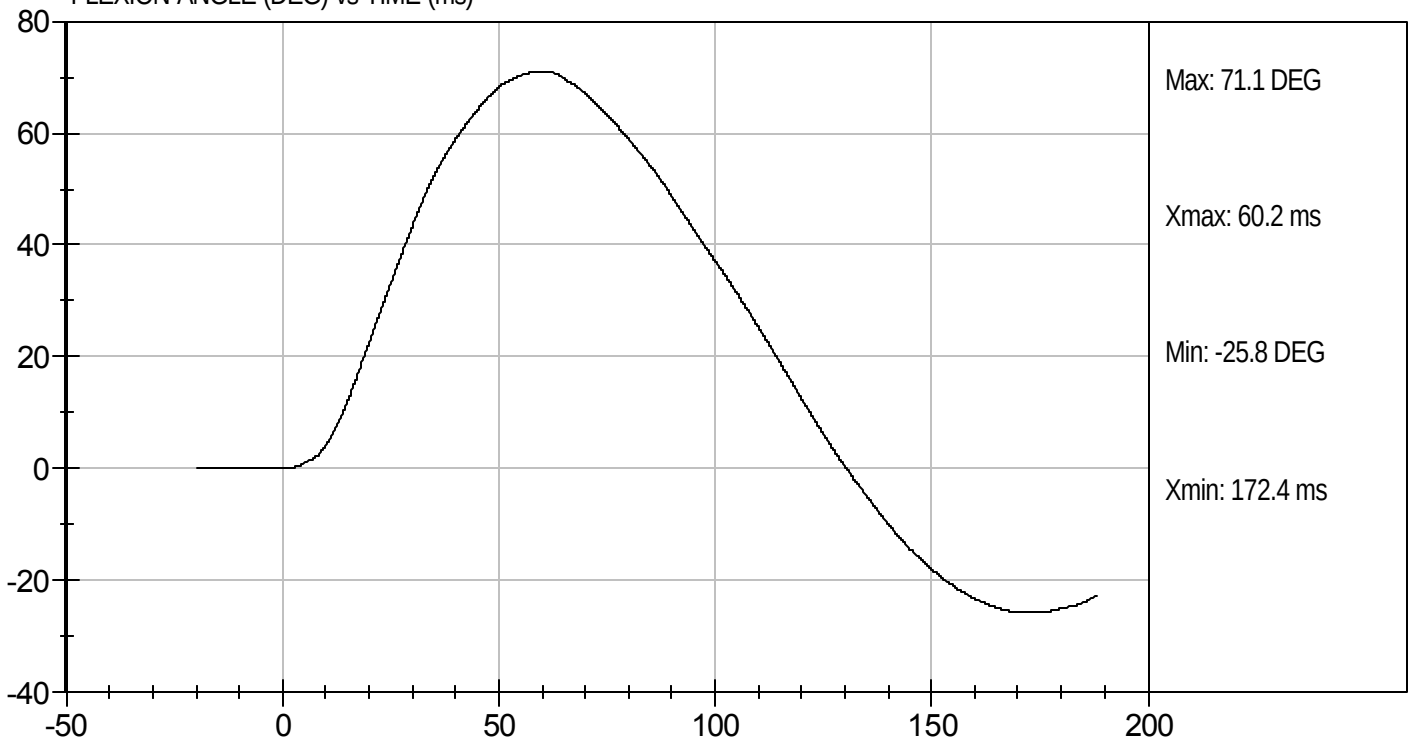
Test Desc: Neck Bending
Component ID: D12252

Test Date: 1/19/12
Velocity: 18.32 ft/s, 5.58 m/s

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

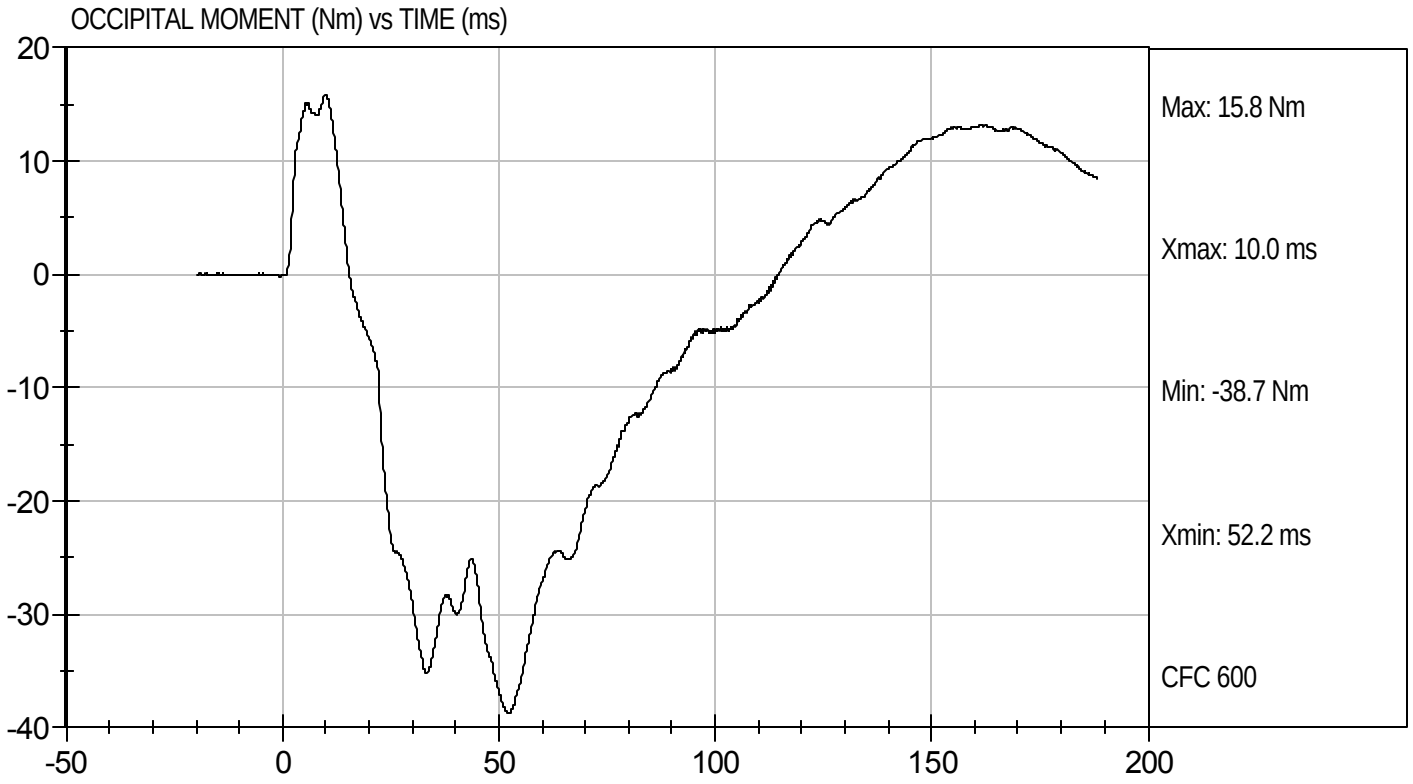


FLEXION ANGLE (DEG) vs TIME (ms)



Test Desc: Neck Bending
Component ID: D12252

Test Date: 1/19/12
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:** D12253

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	12	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	28	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
		Overall Test Results		Pass

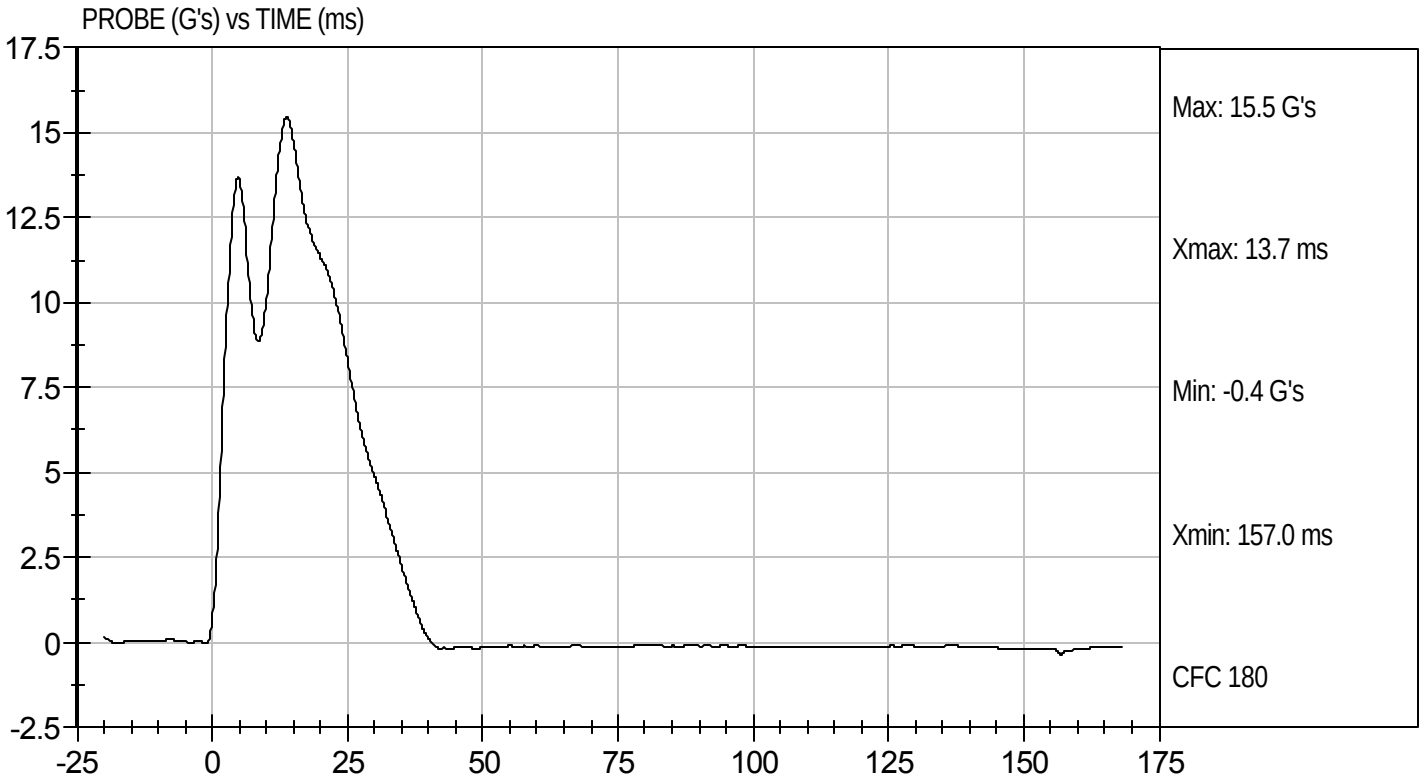
Jessica Hall
Laboratory Technician

1/20/12
Test Date

David Winkelbauer
Approved By

Test Desc: Shoulder Impact
Component ID: D12253

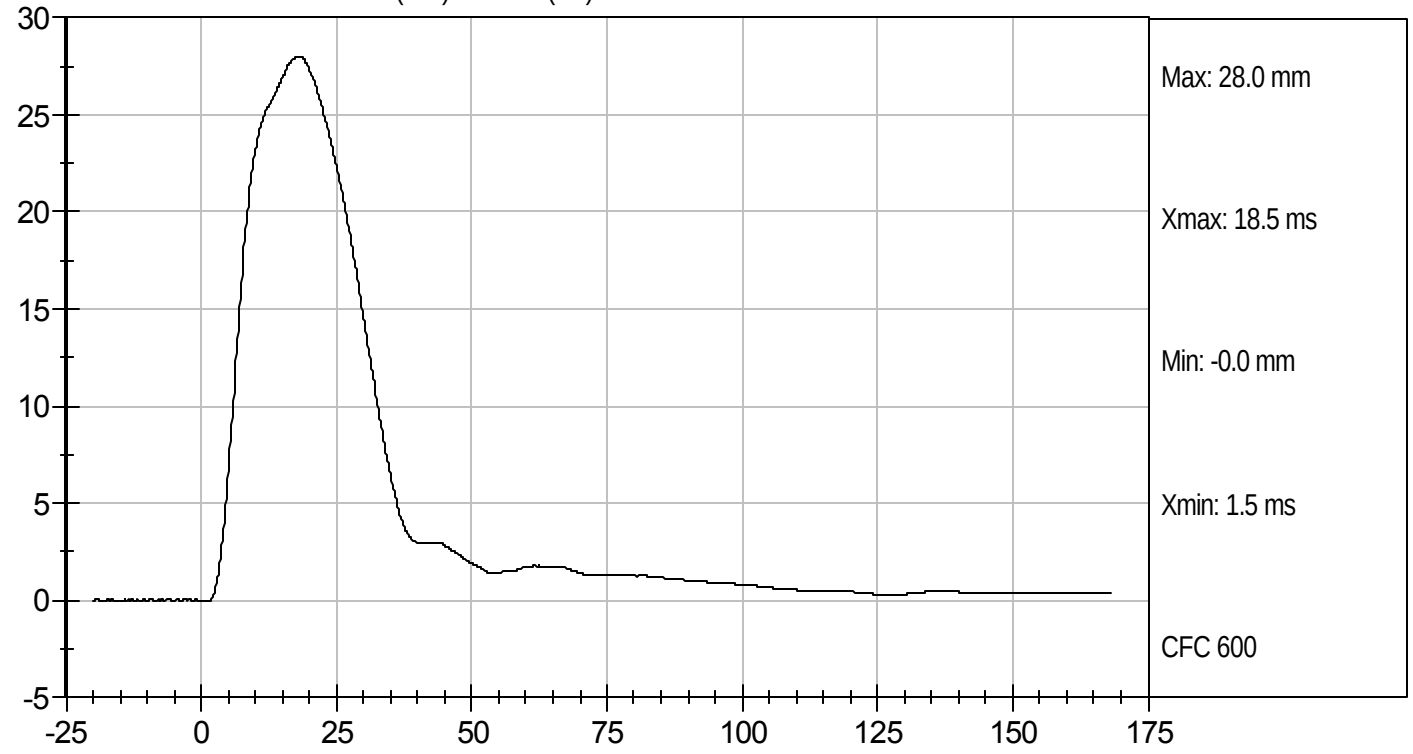
Test Date: 1/20/12
Velocity: 14.25 ft/s, 4.34 m/s



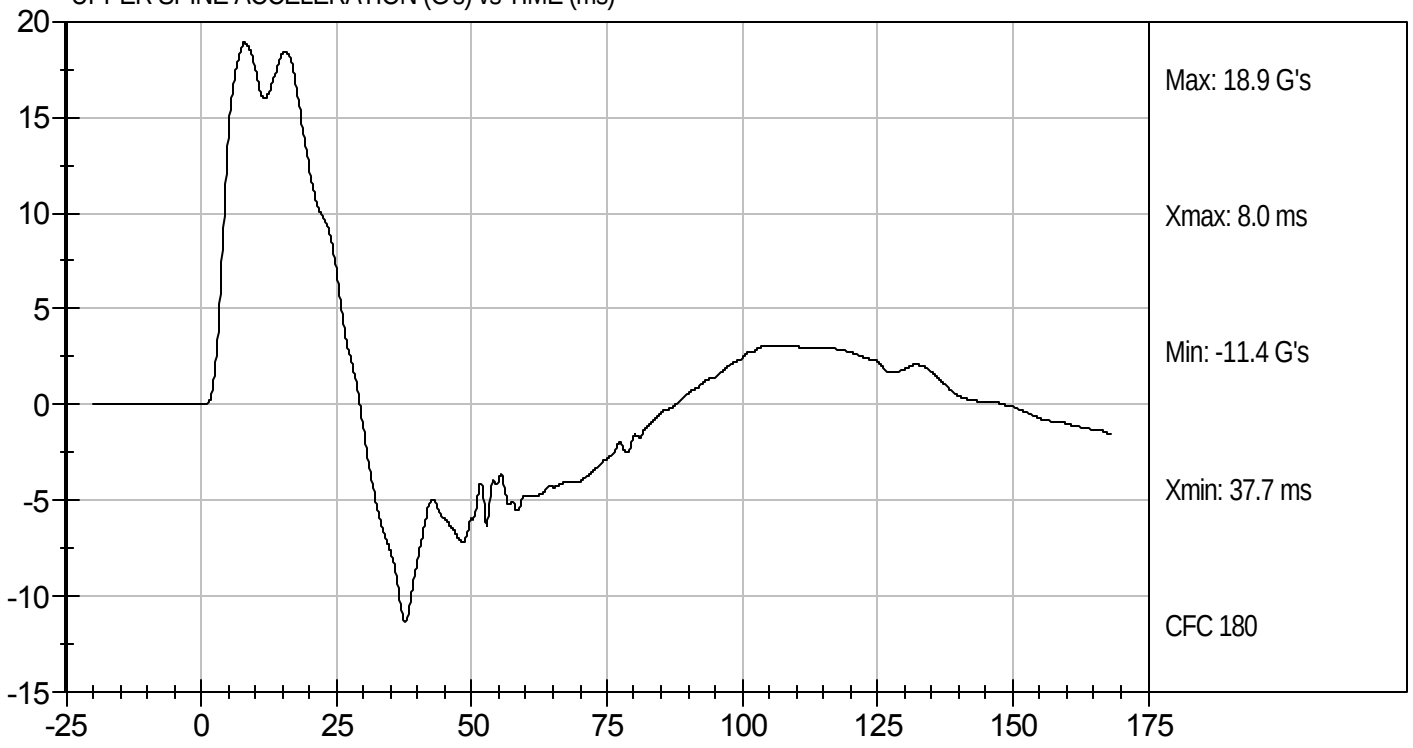
Test Desc: Shoulder Impact
Component ID: D12253

Test Date: 1/20/12
Velocity: 14.25 ft/s, 4.34 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



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



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 306 **Test I.D:** D12254

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	12	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	32	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	39	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	34	Pass
		Overall Test Results		Pass

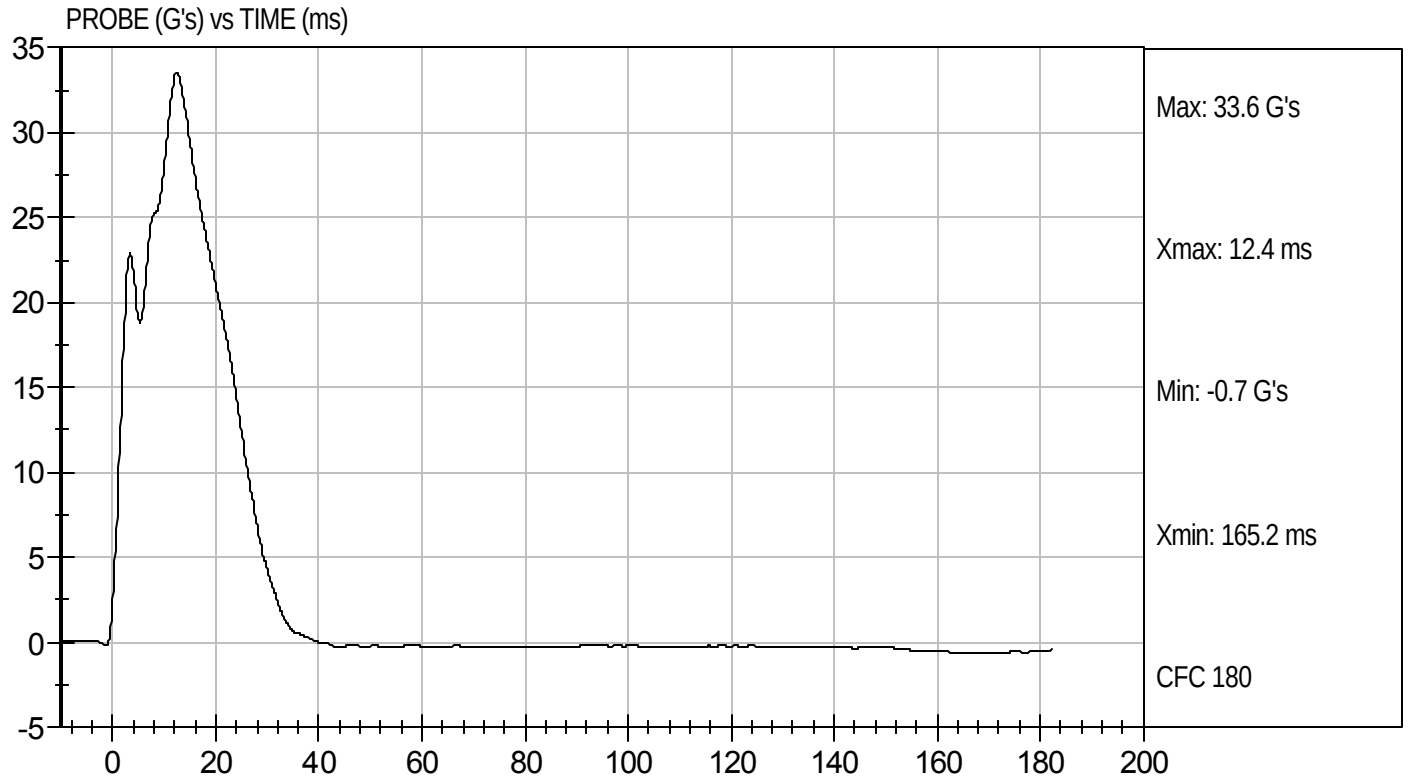
Jessica Hall
Laboratory Technician

1/20/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax With Arm
Component ID: D12254

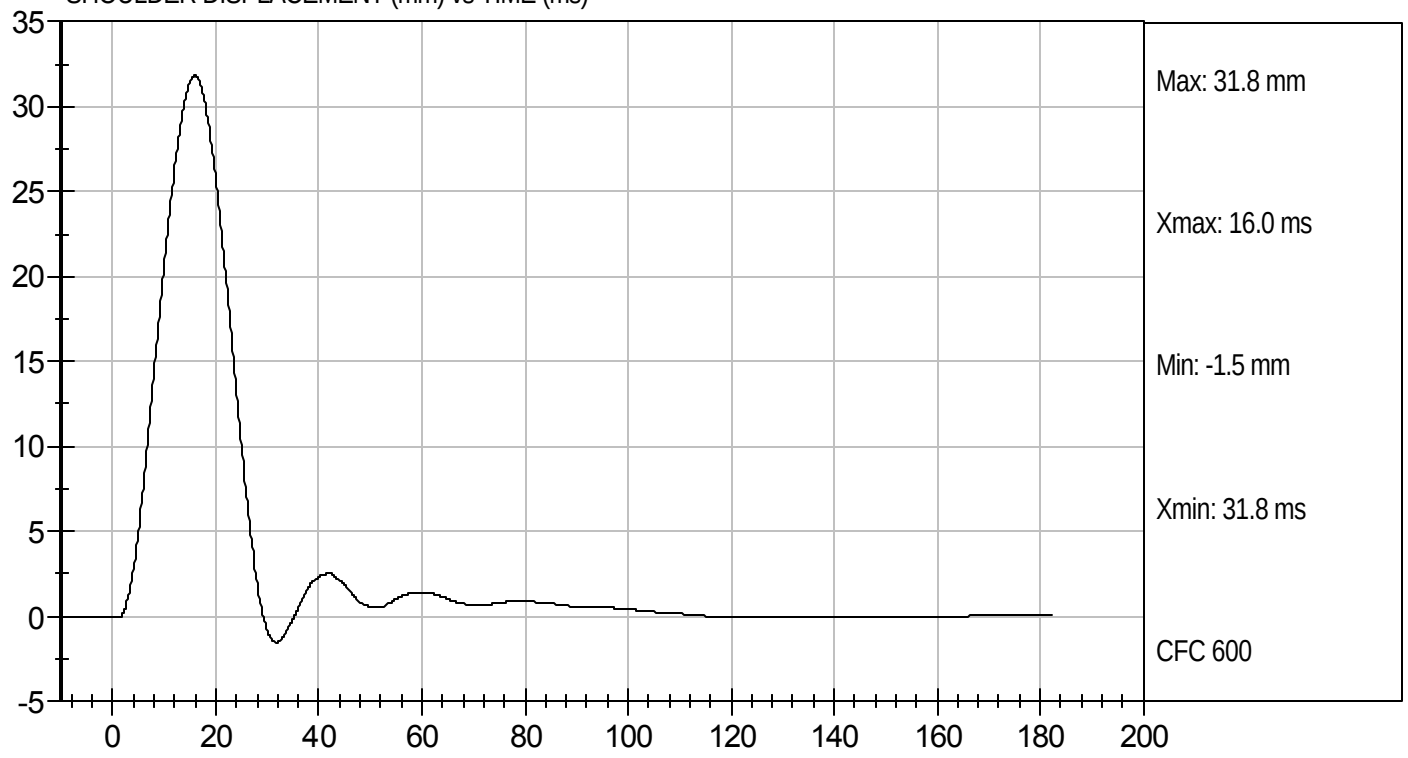
Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s



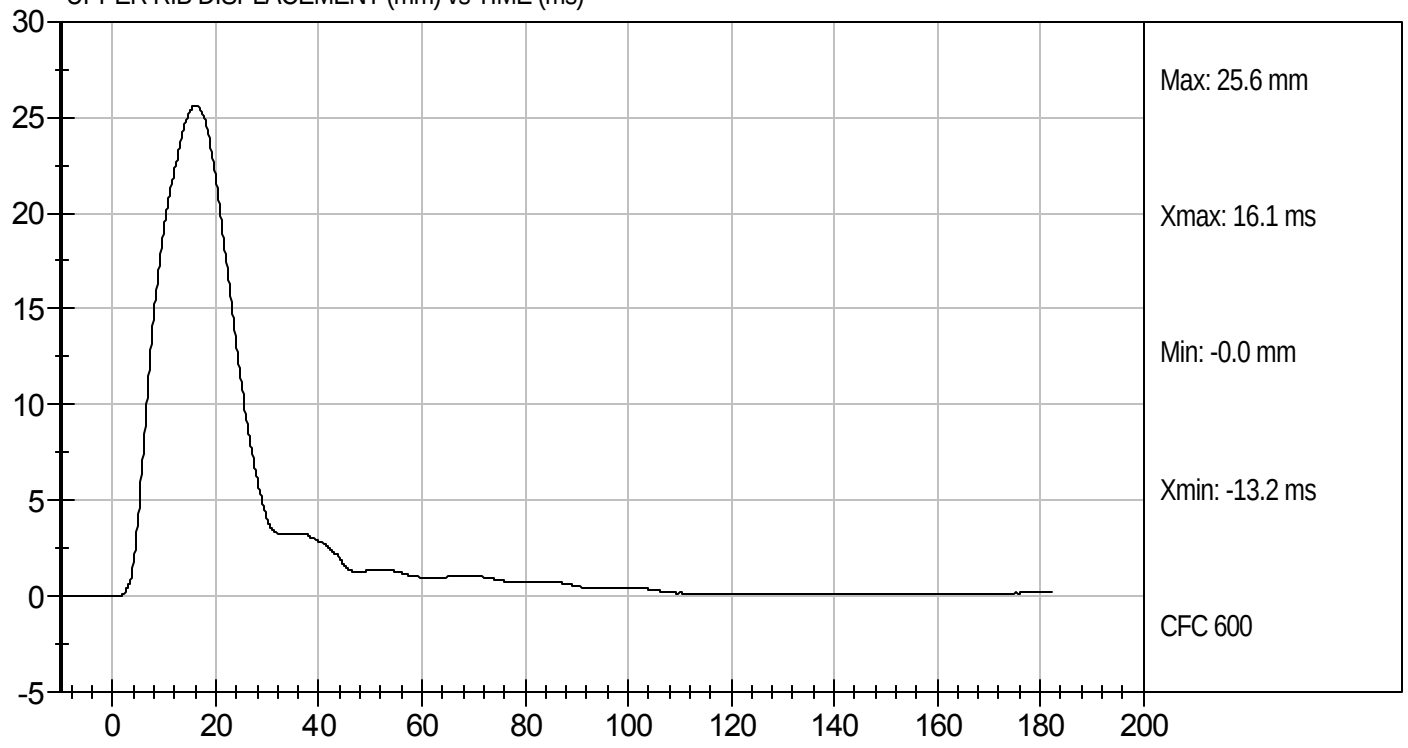
Test Desc: Thorax With Arm
Component ID: D12254

Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



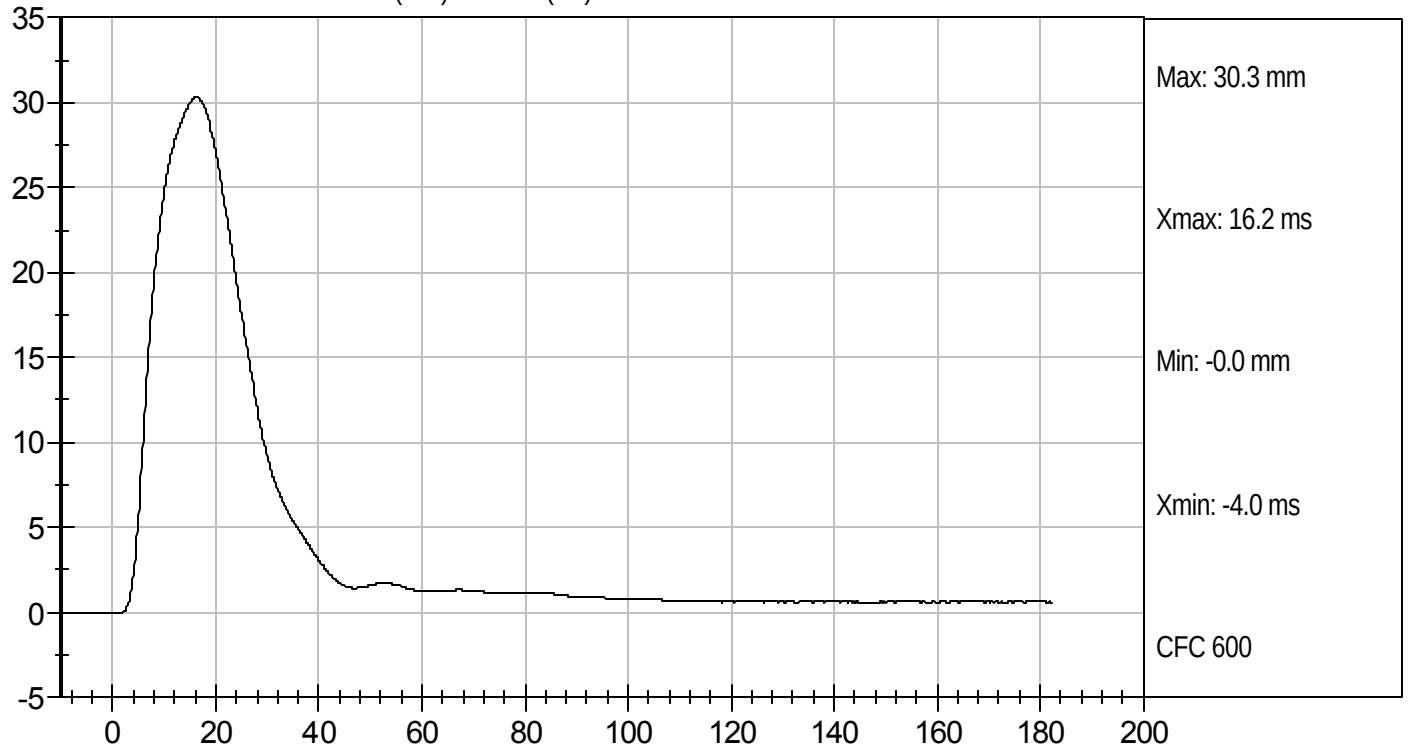
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



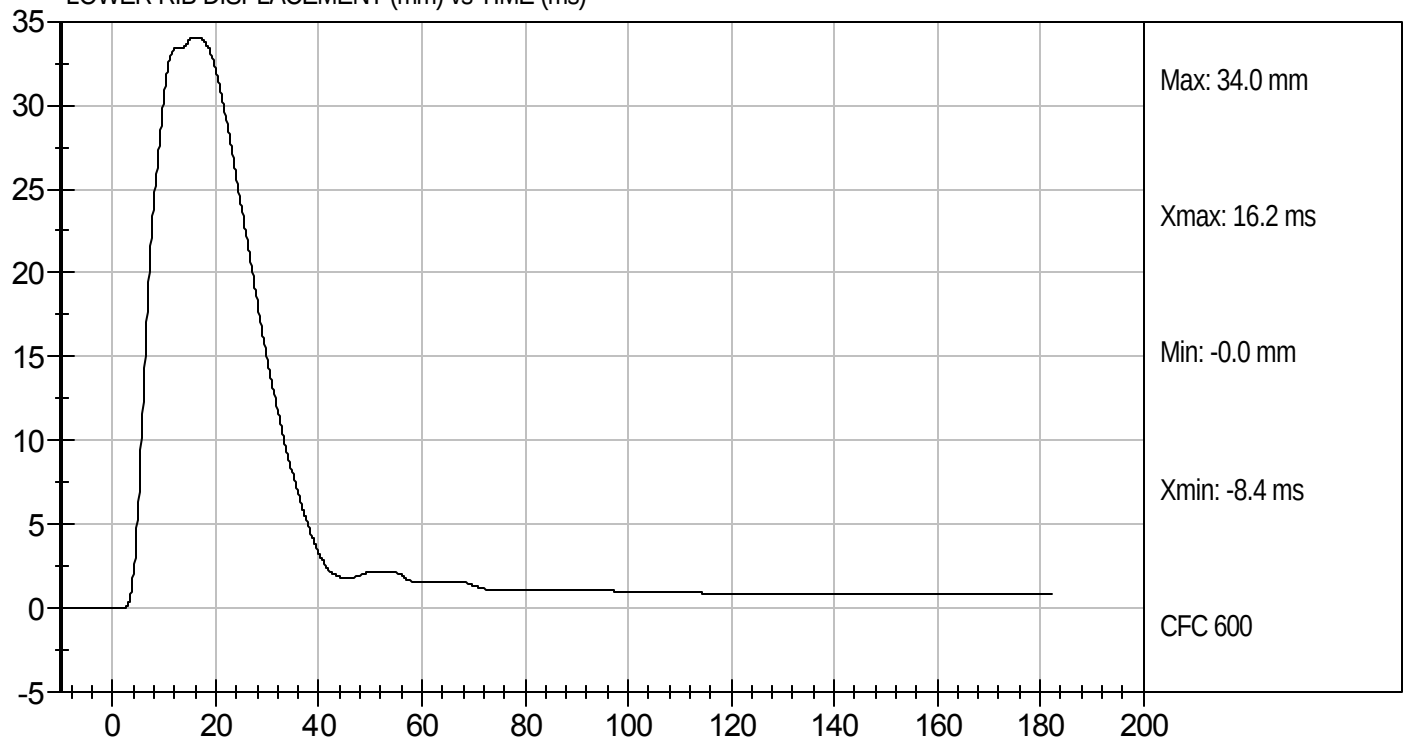
Test Desc: Thorax With Arm
Component ID: D12254

Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



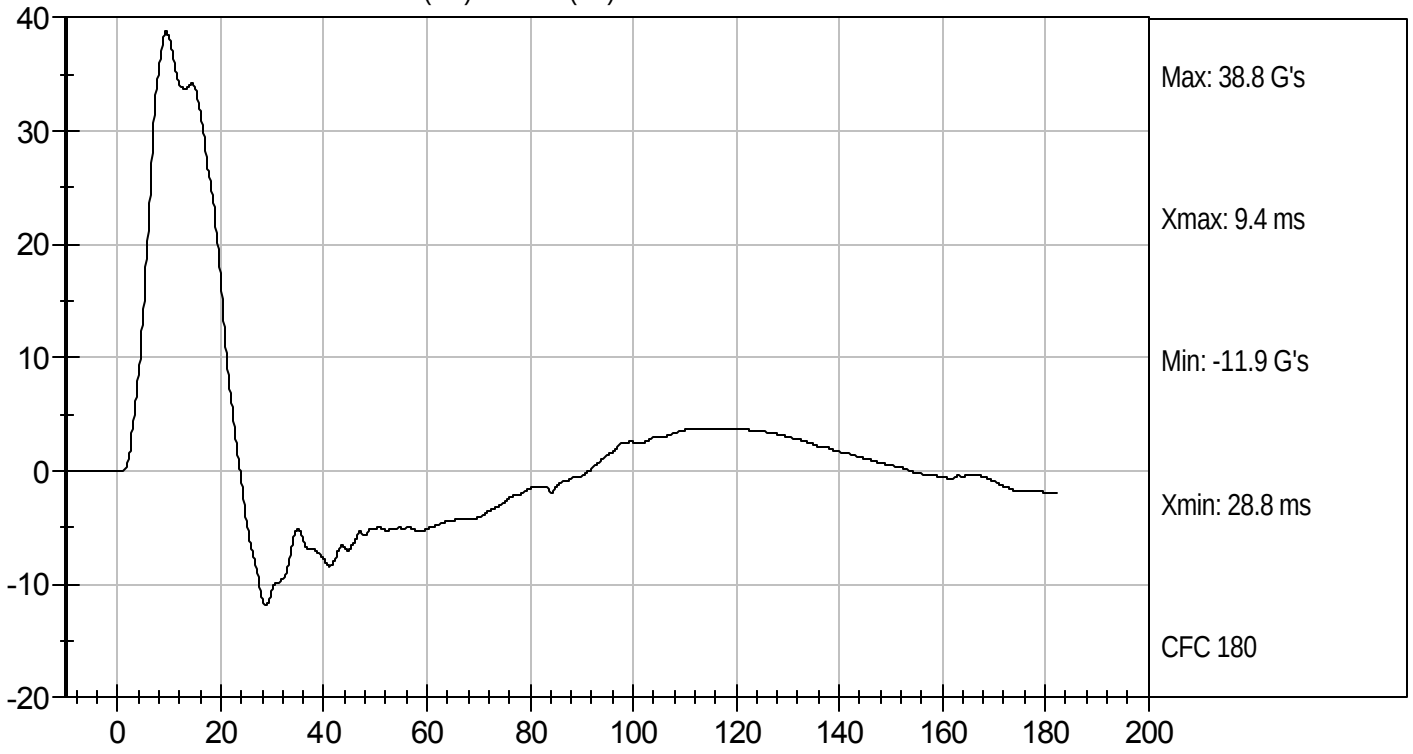
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



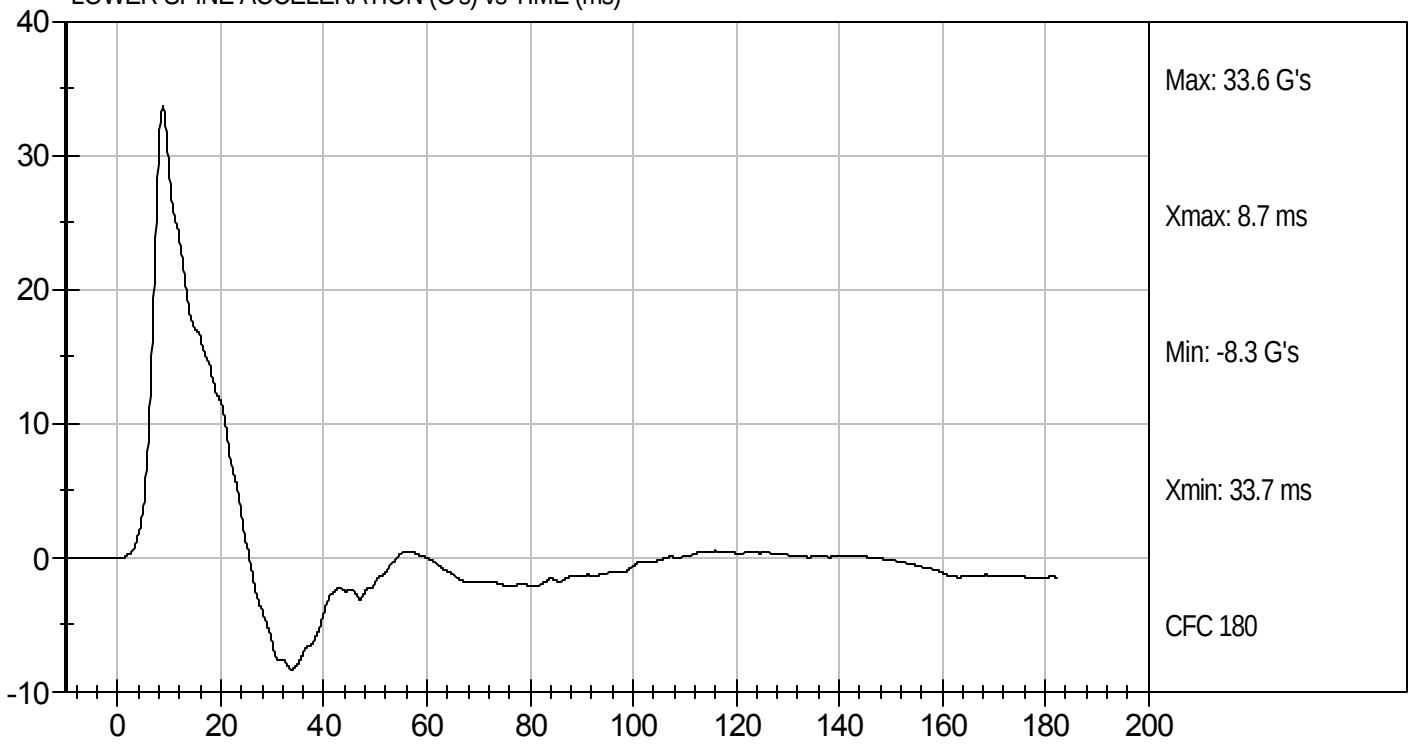
Test Desc: Thorax With Arm
Component ID: D12254

Test Date: 1/20/12
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:** D12255

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.9	Pass
Humidity	%	10 to 70	12	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	34	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	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
		Overall Test Results		Pass

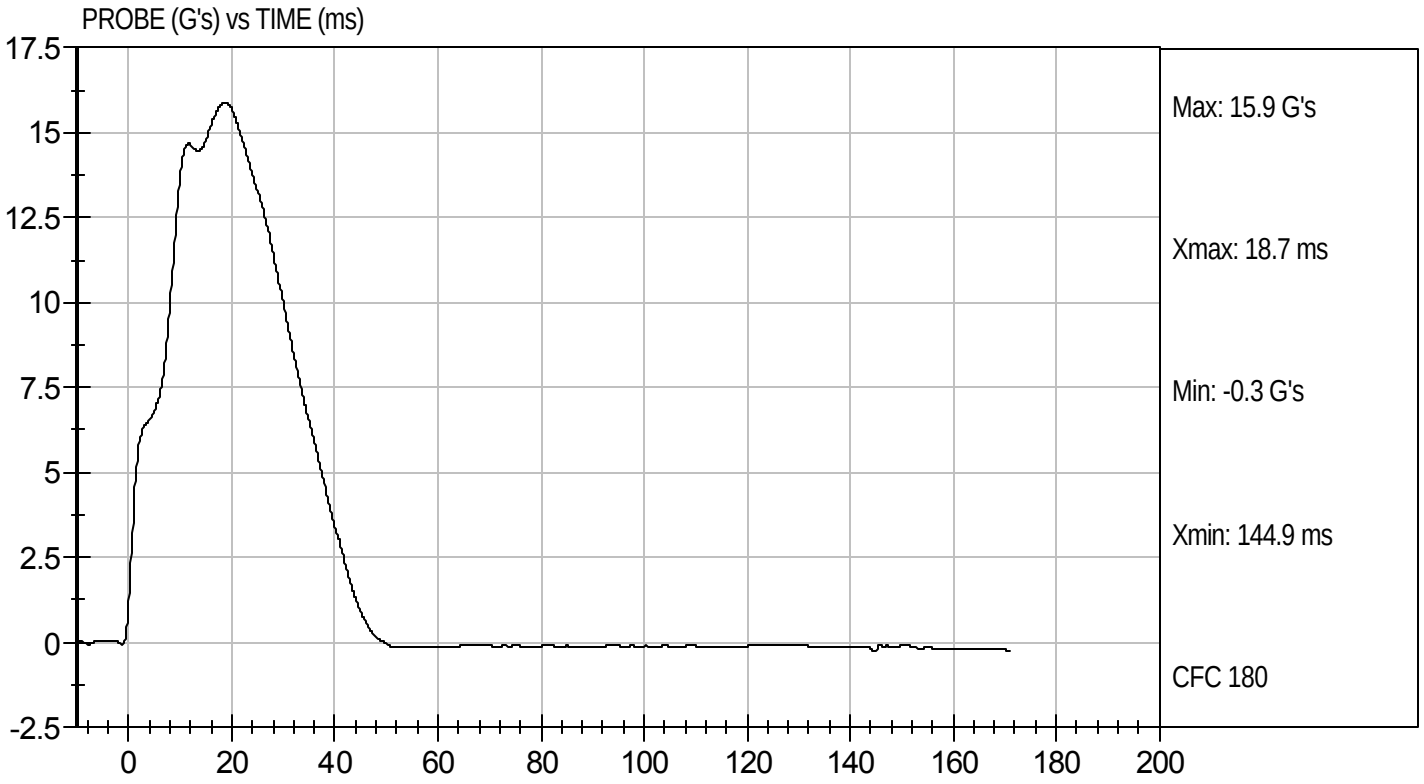
Jessica Gall
Laboratory Technician

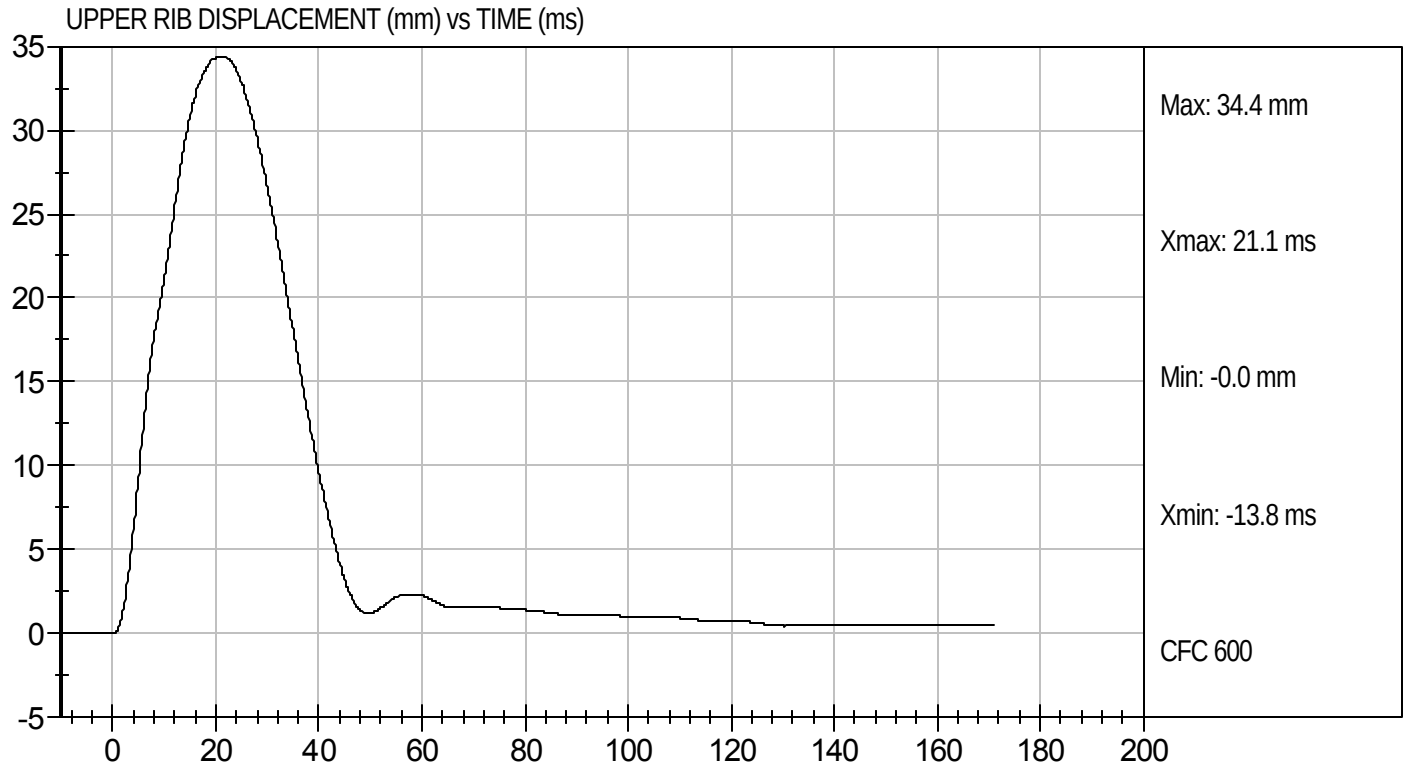
1/20/12
Test Date

David Winkelbauer
Approved By

Test Desc: Thorax Without Arm
Component ID: D12255

Test Date: 1/20/12
Velocity: 14.37 ft/s, 4.38 m/s

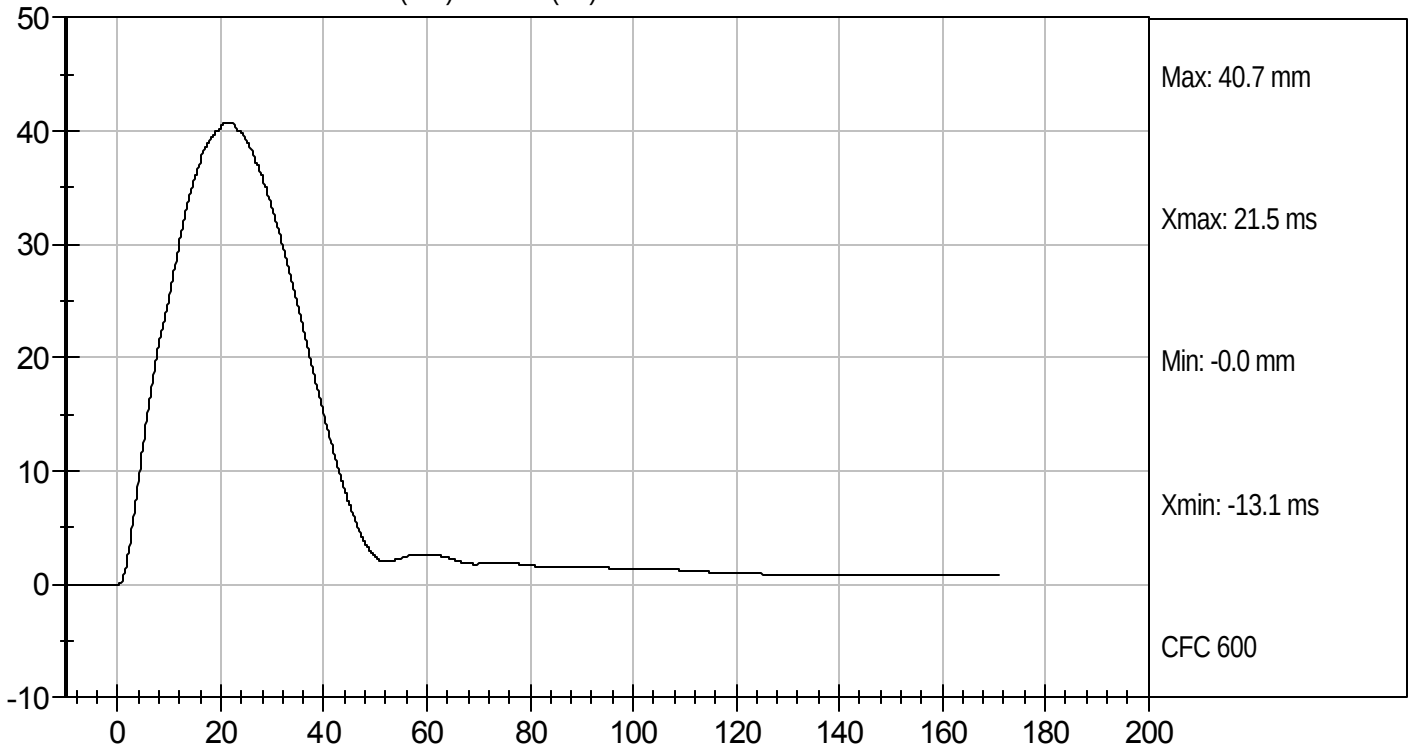




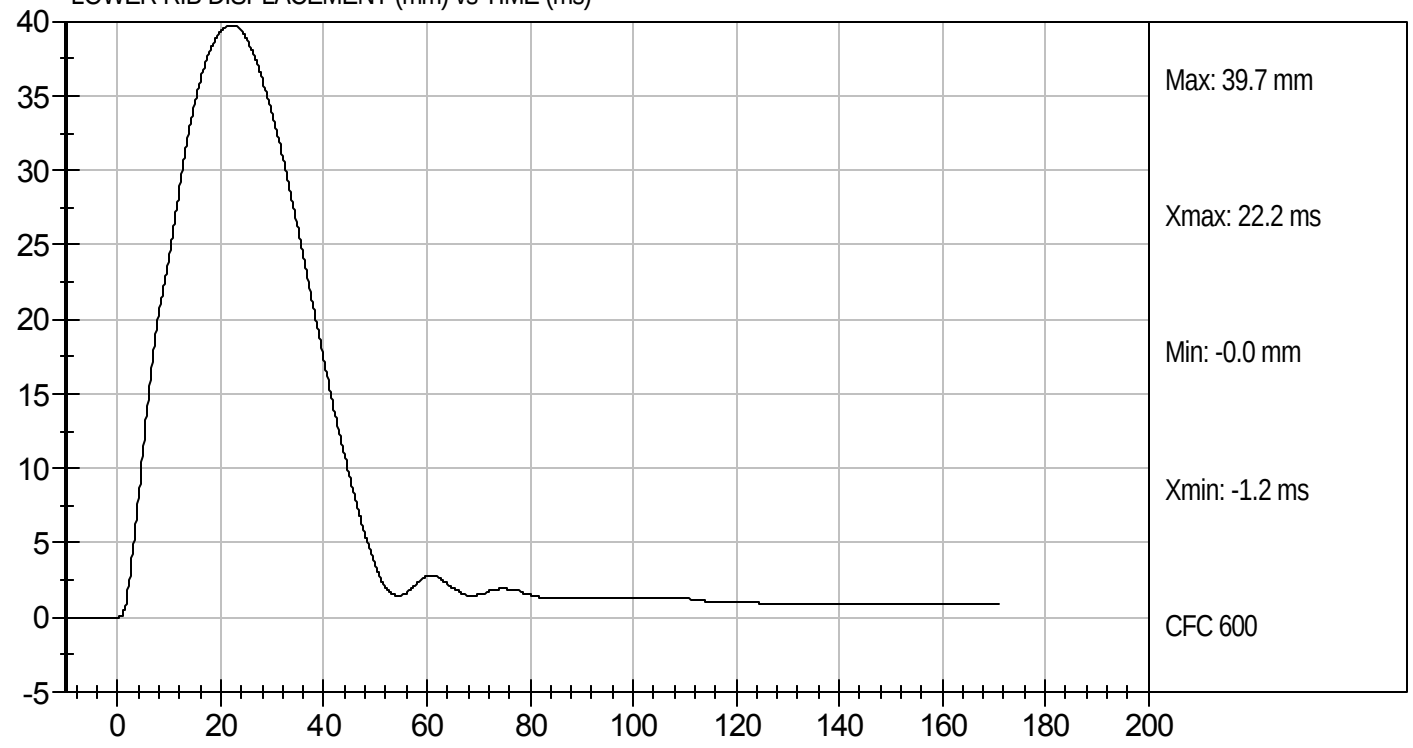
Test Desc: Thorax Without Arm
Component ID: D12255

Test Date: 1/20/12
Velocity: 14.37 ft/s, 4.38 m/s

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



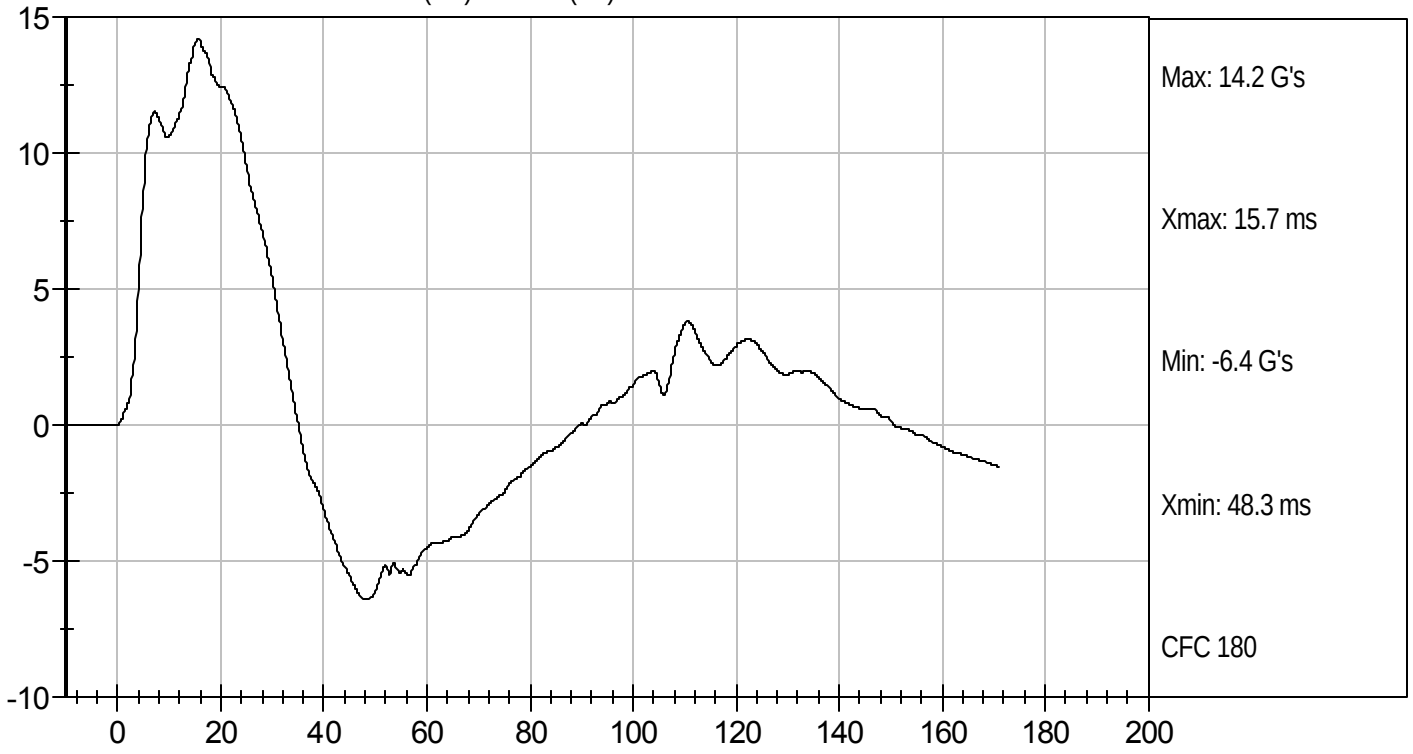
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



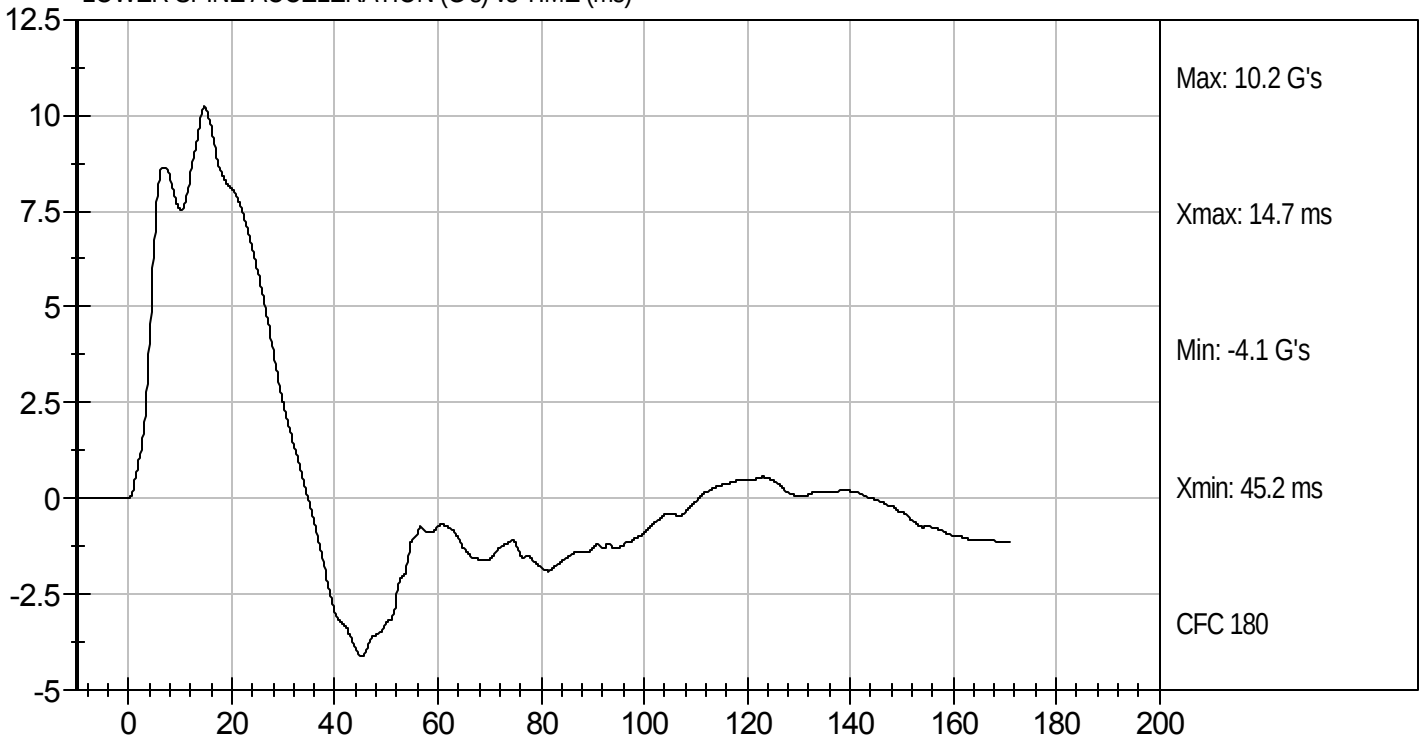
Test Desc: Thorax Without Arm
Component ID: D12255

Test Date: 1/20/12
Velocity: 14.37 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:** D12256

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	12	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	41	Pass
Lower Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

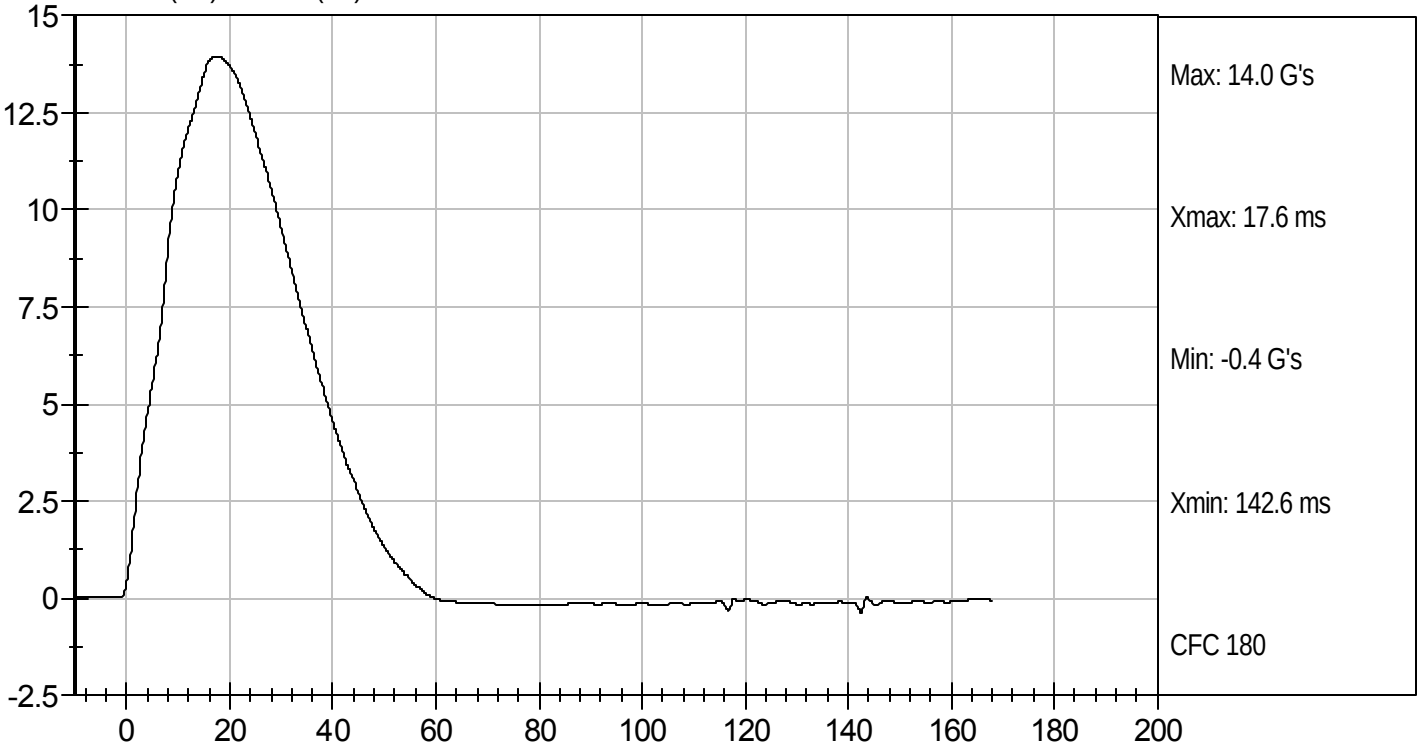
1/20/12
Test Date

David Winkelbauer
Approved By

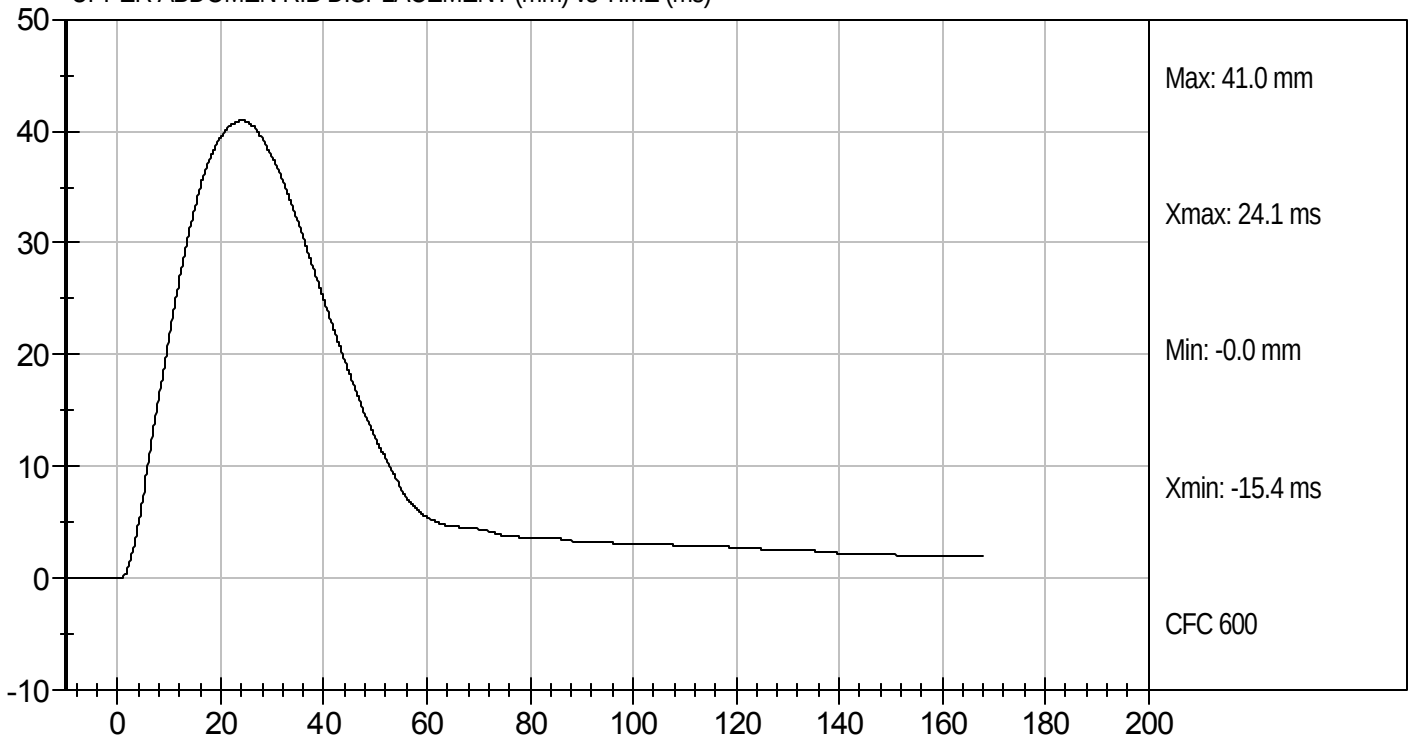
Test Desc: Abdomen Impact
Component ID: D12256

Test Date: 1/20/12
Velocity: 14.12 ft/s, 4.30 m/s

PROBE (G's) vs TIME (ms)



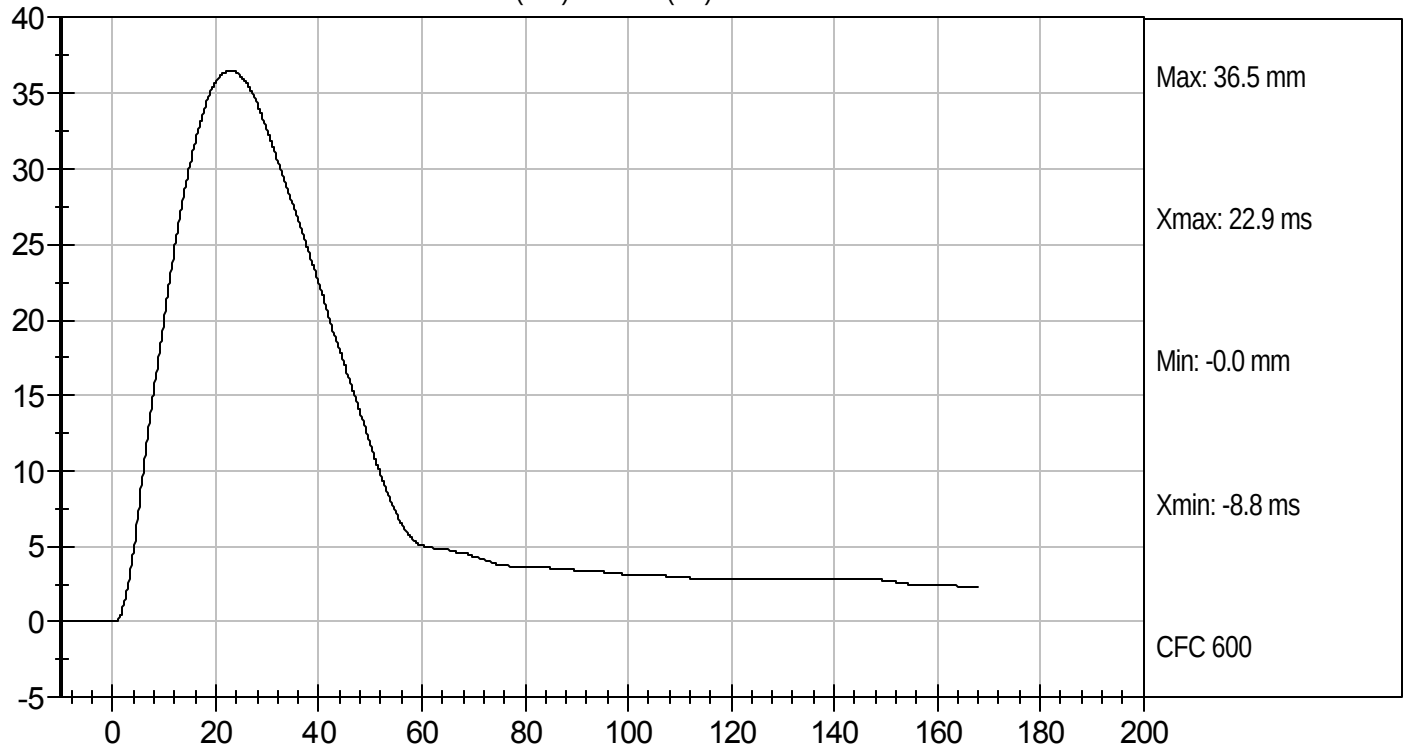
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



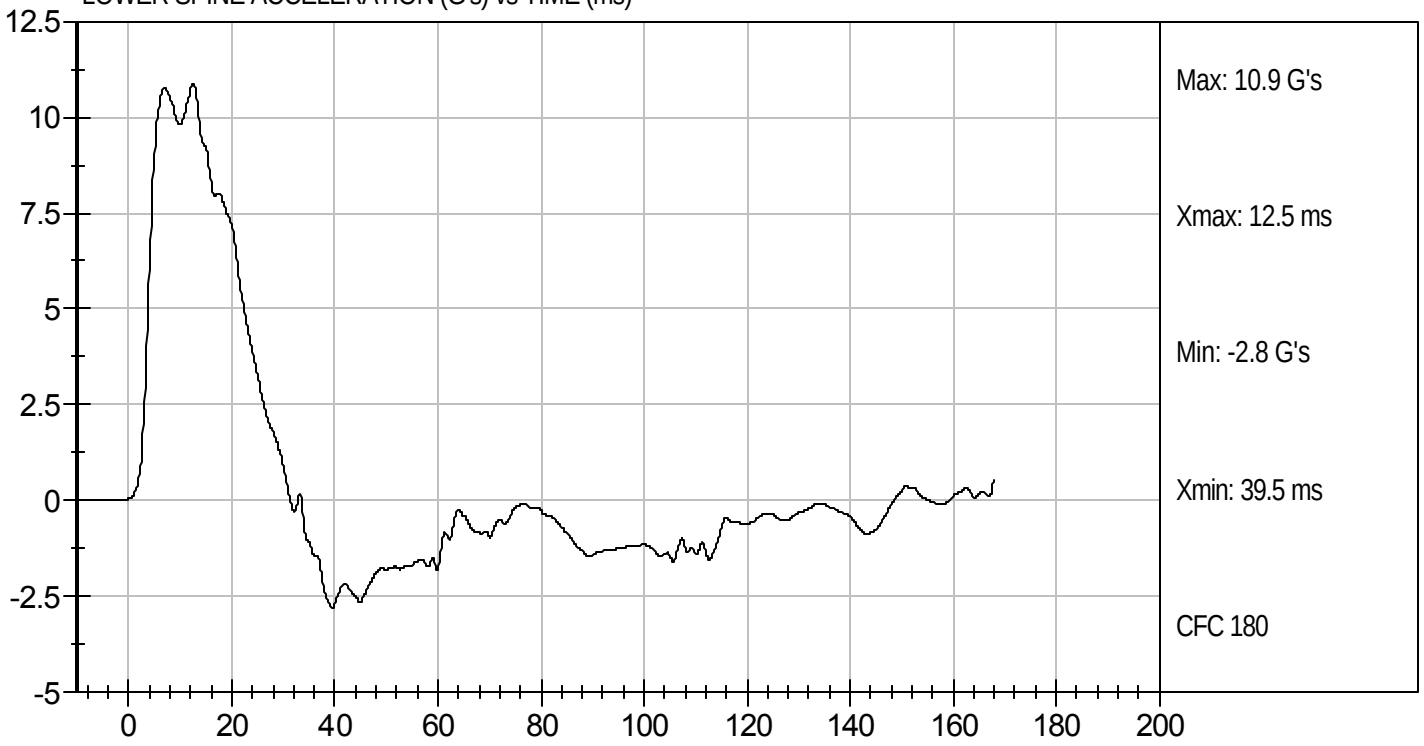
Test Desc: Abdomen Impact
Component ID: D12256

Test Date: 1/20/12
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:** D12257

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	12	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	3867	Pass
		Overall Test Results		Pass

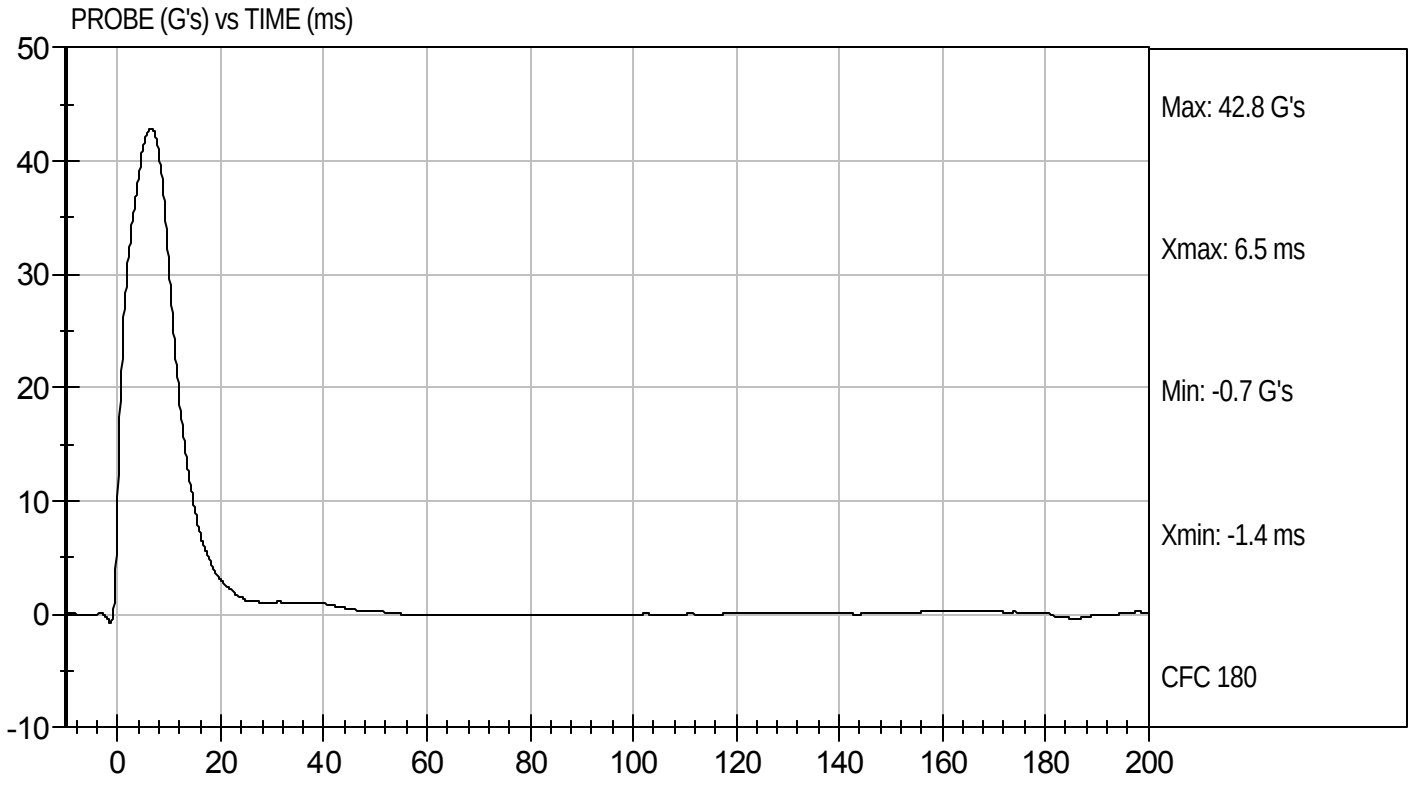
Jessica Hall
Laboratory Technician

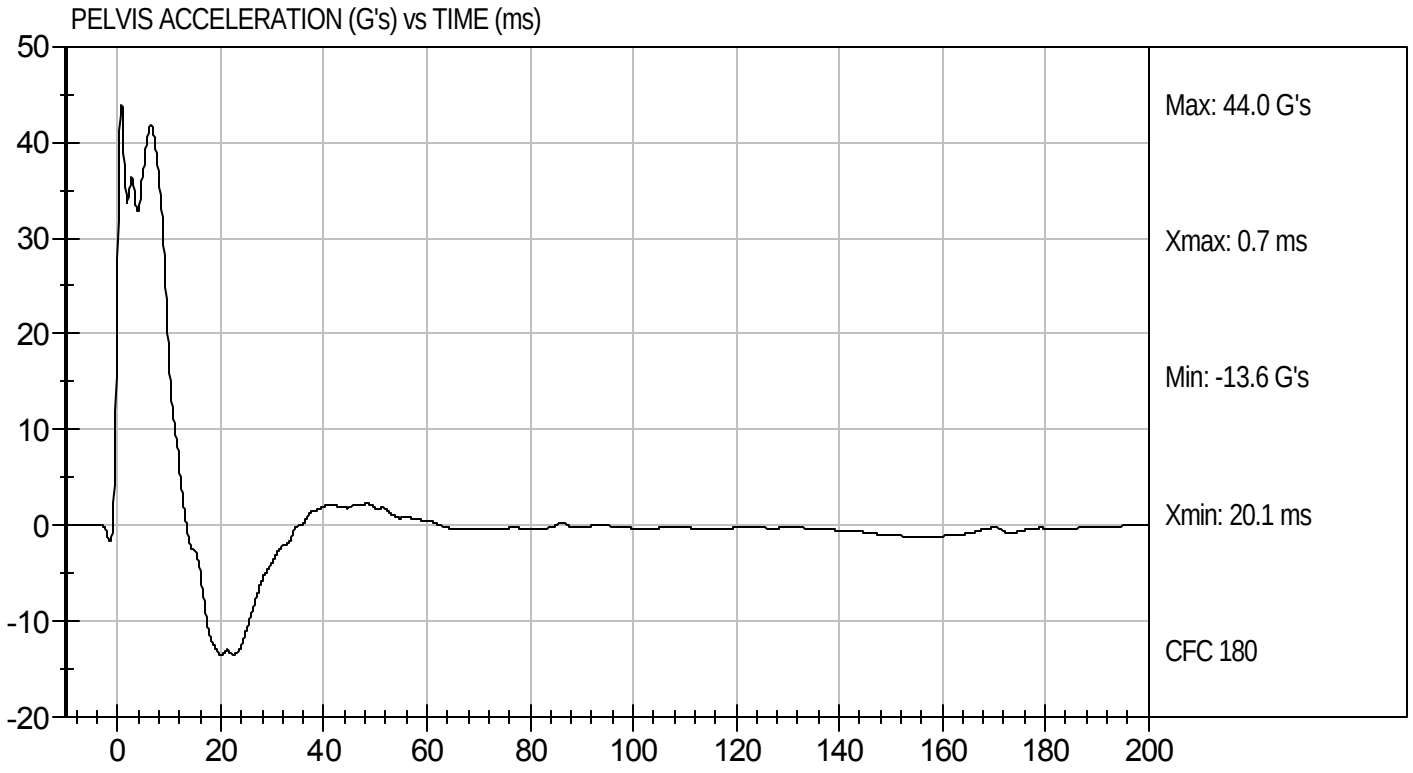
1/20/12
Test Date

David Winkelbauer
Approved By

Test Desc: Pelvis Impact
Component ID: D12257

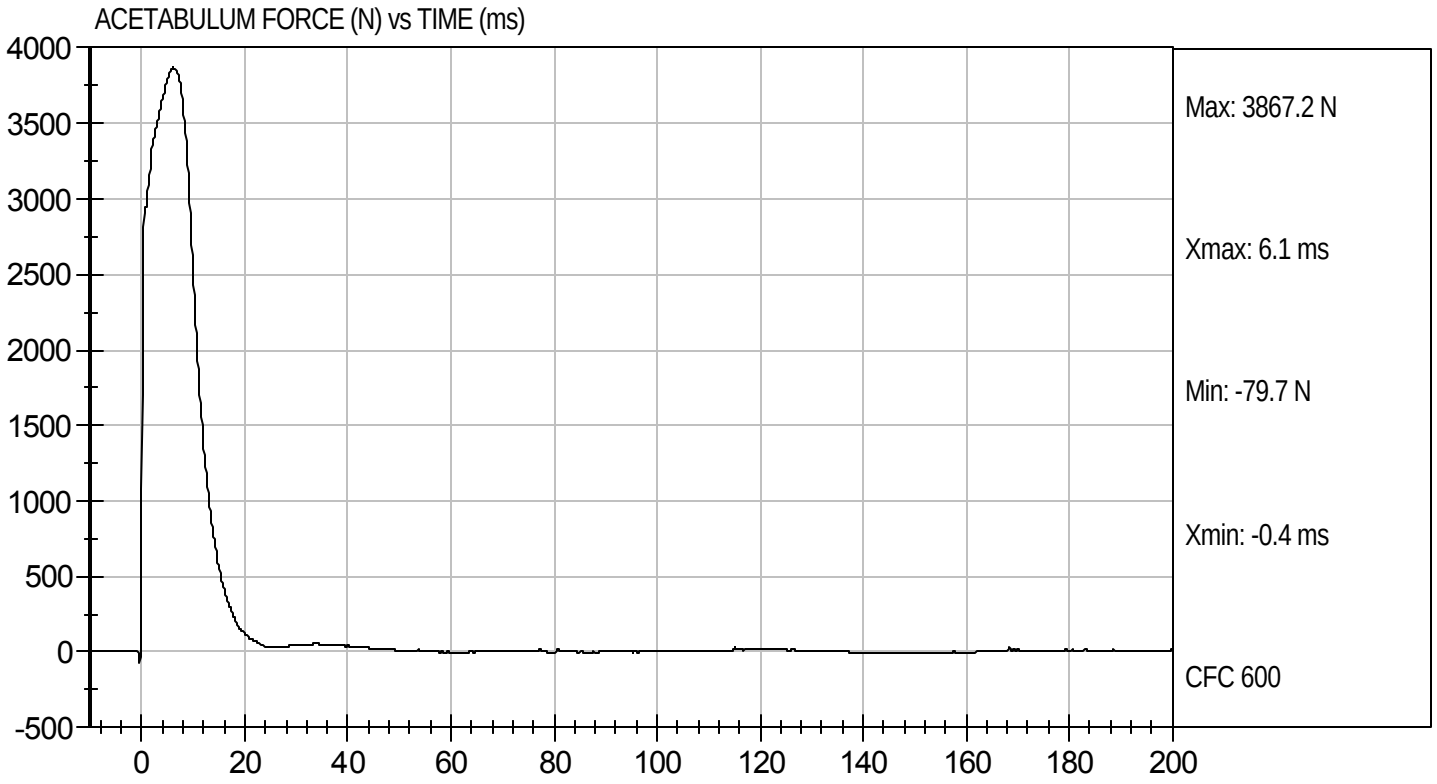
Test Date: 1/20/12
Velocity: 21.93 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D12257

Test Date: 1/20/12
Velocity: 21.93 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:** D12258

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	13	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	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	4854	Pass
		Overall Test Results		Pass

Jessica Hall
Laboratory Technician

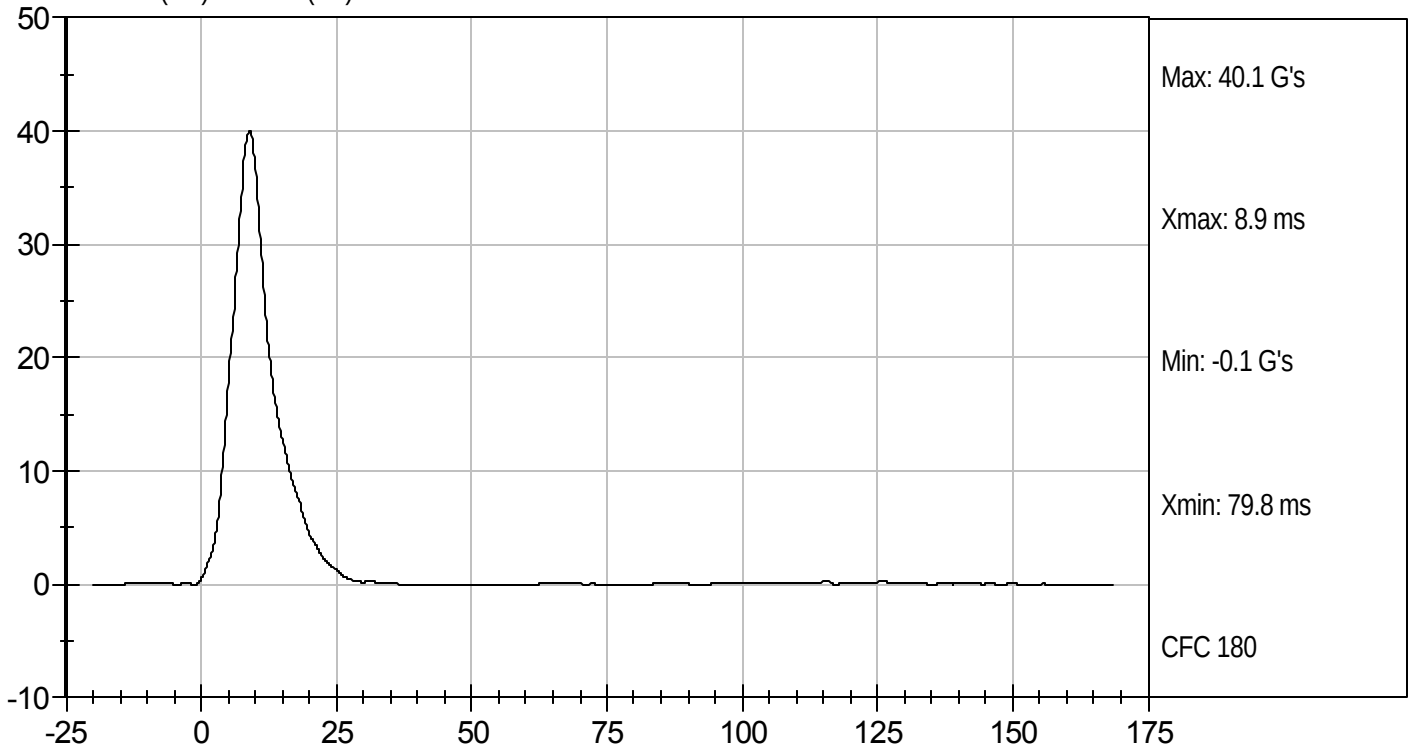
1/20/12
Test Date

David Winkelbauer
Approved By

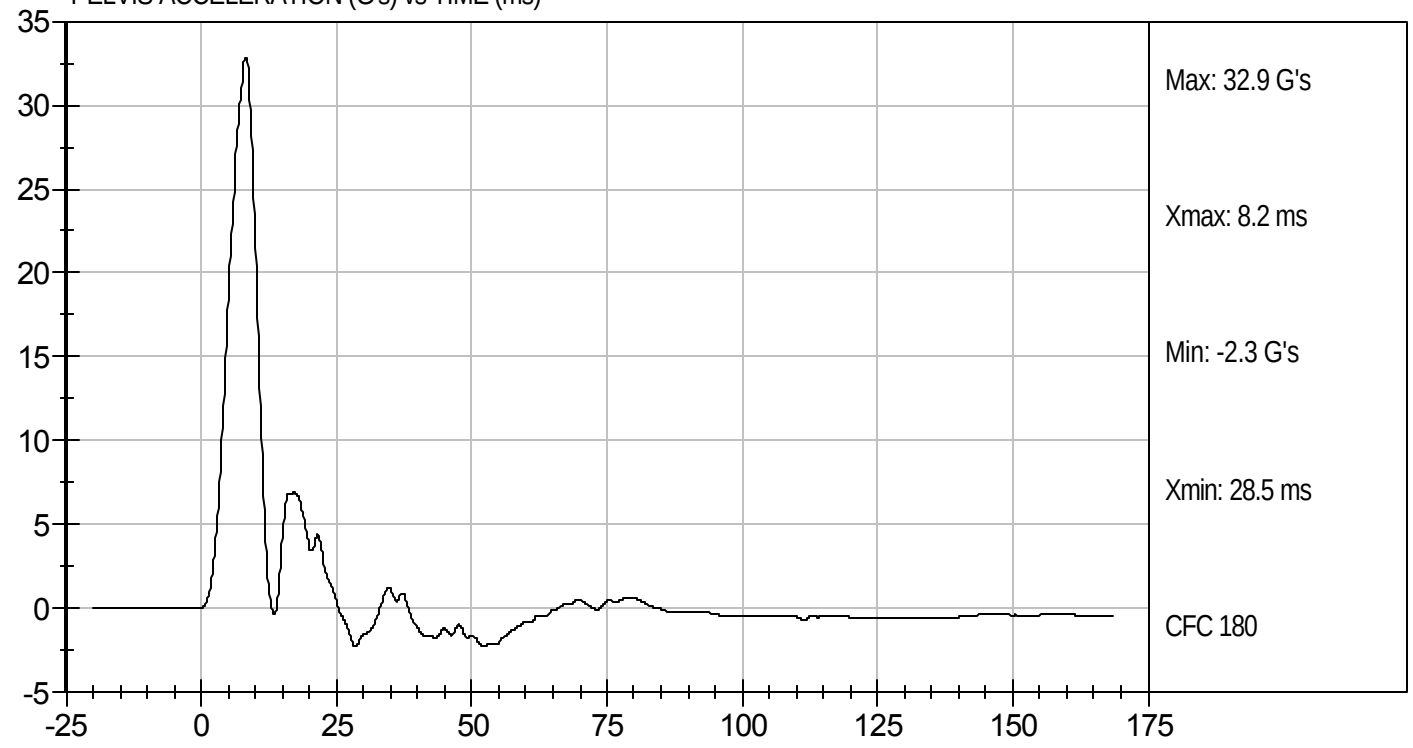
Test Desc: Iliac Impact
Component ID: D12258

Test Date: 1/20/12
Velocity: 14.25 ft/s, 4.34 m/s

PROBE (G's) vs TIME (ms)

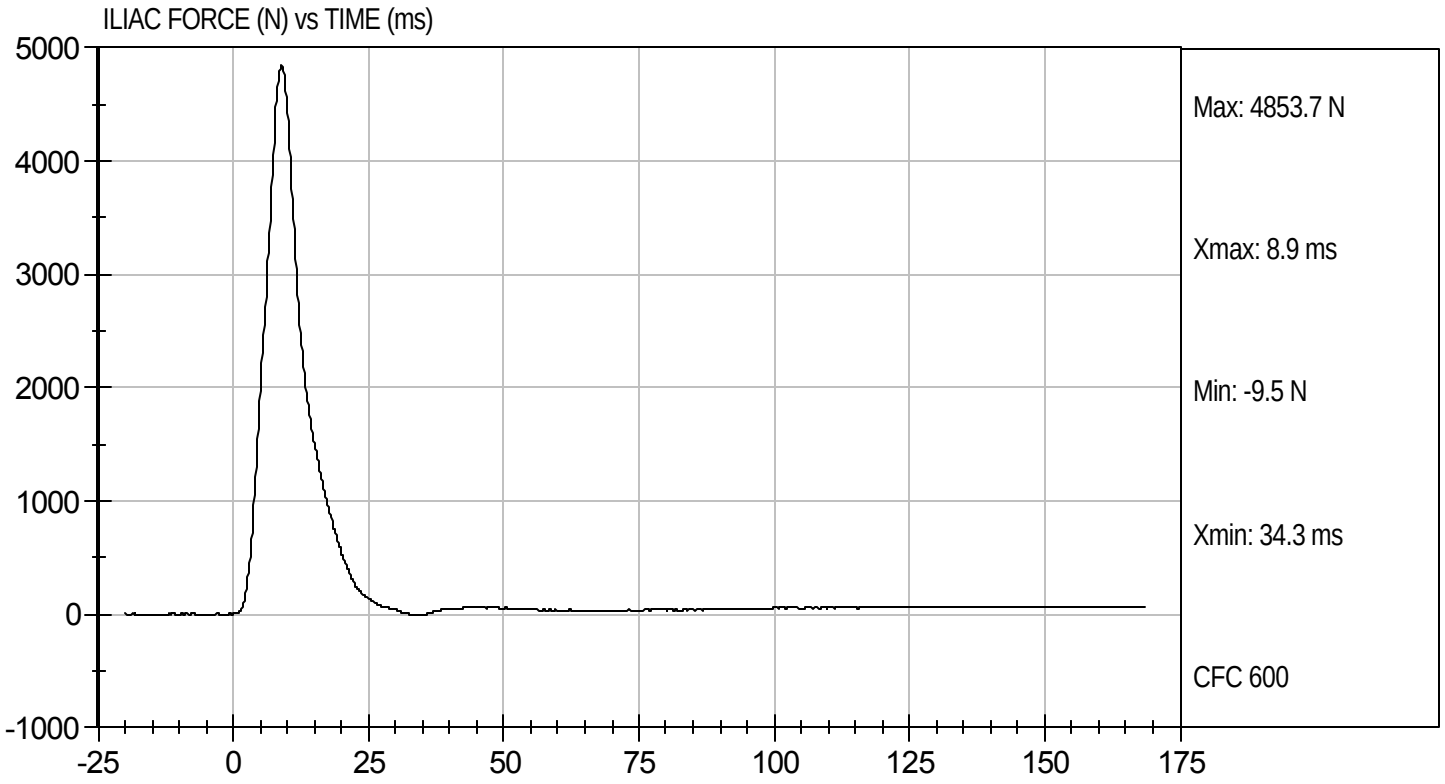


PELVIS ACCELERATION (G's) vs TIME (ms)



Test Desc: Iliac Impact
Component ID: D12258

Test Date: 1/20/12
Velocity: 14.25 ft/s, 4.34 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	05/20/11

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)				46413	FTSS	09/22/11
Pelvis Plug (non-struck side)				46412	FTSS	09/22/11

Table 3 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P63500	Endevco	10/25/11
Vehicle Center of Gravity	Y	P63502	Endevco	10/25/11
Vehicle Center of Gravity	Z	P63501	Endevco	10/25/11
Right Sill at Front Seat	X	P59657	Endevco	12/14/11
Right Sill at Front Seat	Y	P59659	Endevco	12/14/11
Right Sill at Front Seat	Z	P59658	Endevco	12/14/11
Right Sill at Rear Seat	X	P63352	Endevco	10/25/11
Right Sill at Rear Seat	Y	P63354	Endevco	10/25/11
Right Sill at Rear Seat	Z	P63353	Endevco	10/25/11
Left Sill at Front Door	Y	P63492	Endevco	12/14/11
Left Sill at Rear Door	Y	P63491	Endevco	12/14/11
Left A-Post Lower	Y	P47894	Endevco	09/12/11
Left A-Post Middle	Y	P63490	Endevco	12/14/11
Left B-Post Lower	Y	P52180	Endevco	08/22/11
Left B-Post Middle	Y	P52178	Endevco	08/22/11
Front Seat Track	Y	P52179	Endevco	08/22/11
Rear Seat Track or Structure	Y	P47115	Endevco	09/12/11
Right Rear Occ. Compartment	Y	P63284	Endevco	08/22/11
Engine Block	X	P63348	Endevco	11/04/11
Engine Block	Y	P63349	Endevco	11/04/11
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	P59379	Endevco	12/14/11
MDB Center of Gravity	Y	P59380	Endevco	12/14/11
MDB Center of Gravity	Z	P59381	Endevco	12/14/11
Left Frame at Rear Axle Centerline	X	P59279	Endevco	12/13/11
Left Frame at Rear Axle Centerline	Y	P59280	Endevco	12/13/11