REPORT NUMBER: SINCAP-MGA-2016-019

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

HONDA MFG. OF ALABAMA, LLC.
2016 Honda Pilot 2WD EX 5-Dr SUV
NHTSA No.: O20165310

MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105

Test Date: August 11, 2015

Final Report Date: September 9, 2015

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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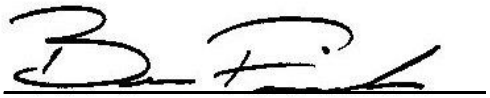
Prepared by: 
Alex Pinelli, Project Engineer

Approved by: 
Ben Fischer, Project Engineer

Approval Date: September 9, 2015

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 2016 Honda Pilot 2WD EX 5-Dr SUV, NHTSA No.: O20165310		*5. Report Date* September 9, 2015 *6. Performing Organization Code* MGA
7. Author(s) Ben Fischer, Project Engineer		*8. Performing Organization Report No.* SINCAP-MGA-2016-019
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-14-D-00353
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 August 11, 2015 to September 9, 2015 *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 2016 Honda Pilot 2WD EX 5-Dr 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 August 11, 2015.

The impact velocity of the Moving Deformable Barrier (MDB) was 62.20 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.4° C. The target vehicle post-test maximum crush was 265 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	109
Maximum Thorax Rib Deflection	mm	44	15
Total Abdominal Force	N	2500	448
Pubic Symphysis Force	N	6000	1196

	Passenger ATD (SID-IIs)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	233
Resultant Lower Spine Acceleration	Gs	82	42
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1354
Maximum Thoracic Rib Deflection	mm	38*	24
Maximum Abdomen Rib Deflection	mm	45*	22

*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 Washington, DC 20590 e-mail: 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 2016 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00353. The purpose of this test is to generate comparative side impact performance in a 2016 Honda Pilot 2WD EX 5-Dr SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Laboratory Test Procedure dated September 2013.

SECTION 2
SUMMARY OF TEST RESULTS

A 2016 Honda Pilot 2WD EX 5-Dr 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 62.20 km/h. 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 August 11, 2015. Pre-test 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 September 2013. 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
Primary Head CG Angular Rate Sensors
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	109
Maximum Thorax Rib Deflection	mm	44	15
Total Abdominal Force	N	2500	448
Pubic Symphysis Force	N	6000	1196

	Passenger ATD (SID-IIs)		
Measurement Description	**Units**	**Threshold**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	233
Resultant Lower Spine Acceleration	Gs	82	42
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1354
Maximum Thoracic Rib Deflection	mm	38*	24
Maximum Abdomen Rib Deflection	mm	45*	22

*Proposed IARV

Supplemental restraint information is given below:

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/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

Left Rear Sill Y has no valid data after 2 msec.

SECTION 3
OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	O20165310
Model Year	2016
Make	Honda
Model	Pilot
Body Style	5-Dr SUV
VIN	5FNYF5H30GB002386
Body Color	Black Forest Pearl
Odometer Reading (km/mi)	296km / 184mi
Engine Displacement (L)	3.5
Type/No. Cylinders	6
Engine Placement	Lateral
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	FWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks (ADL)	Yes
Power Window Auto-Reverse	Yes
Other Optional Feature	N/A
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Restraint Feature	N/A

Does owner's manual provide instruction to turn off automatic door locks?	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	HONDA MFG. OF ALABAMA, LLC.
Date of Manufacture	05/'15
Vehicle Type	MPV

GVWR (kg)	2515
GAWR Front (kg)	1240
GAWR Rear (kg)	1325

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3	3	8	
Capacity Weight (VCW) (kg)				608	(A)
DSC x 68.04 kg				544	(B)
Rated Cargo and Luggage Weight (RCLW)				64	(A-B)

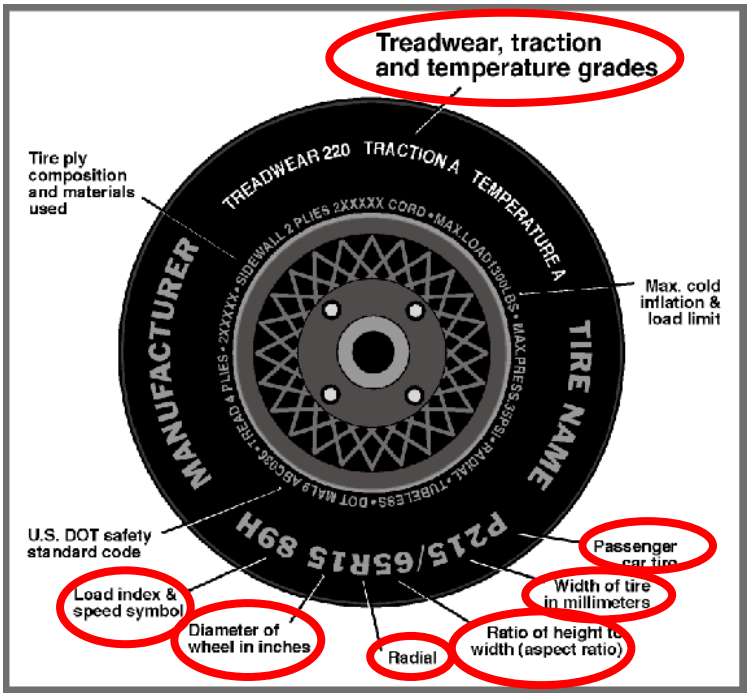
VEHICLE SEAT TYPE

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

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	245/60R18	245/60R18
Tire Size on Vehicle	245/60R18	245/60R18
Tire Manufacturer	Bridgestone	Bridgestone
Tire Model	Dueler	Dueler
Treadwear	500	500
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	2 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	105H	105H
Tire Material	Rubber	Rubber
DOT Safety Code Left	7X83 HPA 1615	7X83 HPA 1415
DOT Safety Code Right	7X83 HPA 1415	7X83 HPA 1415

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	220	234	228	220
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	220	220	220	220
As Tested	kPa	220	220	220	220

MDB TIRE SPECIFICATIONS

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

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	560.5	369.5		606.5	455.0		599.5	459.5	
Right	kg	519.0	389.5		525.0	438.5		521.5	451.5	
Ratio	%	58.7	41.3		55.9	44.1		55.2	44.8	
Totals	kg	1079.5	759.0	1838.5	1131.5	893.5	2025.0	1121.0	911.0	2032.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1838.5	(A)
Sum of Actual Weight of 2 P572 ATDs Used	kg	129	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	64	(C)
Calculated Test Vehicle Target Weight (TVTW)	kg	2031.5	(A+B+C)

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

TEST VEHICLE ATTITUDES AND CG

	Units	Fully Loaded	As Tested	Meets Requirement***
Left Front	mm	805	799	Yes
Right Front	mm	820	812	Yes
Right Rear	mm	823	824	Yes
Left Rear	mm	822	818	Yes
Vehicle CG (Aft of Front Axle)	mm	1263	1244	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	36	41	

*** 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.

Test height adjustable suspension setting, if applicable:	Not Applicable

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Weight of Ballast, if any	24
None	

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

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	25.8	20.2	23.0
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rear-most	Mid-Fore/Aft	Forward-Most
Driver Seat	23.0	0	Max	48	48	48
			Mid	24	24	24
			Min	0	0	0
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

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

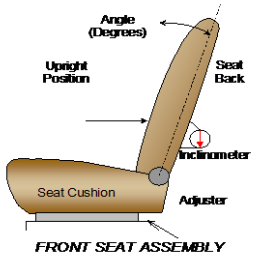
Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	220		110	
Front Passenger Seat	230	24 (1st as 1)	120	12th (1st as 0)
Front Center Seat				
Struck Side Rear Seat	154	16 (1st as 1)	154	15th (1st as 0)
Non-Struck Side	154	16 (1st as 1)	154	15th (1st as 0)
Rear Center Seat	154	16 (1st as 1)	154	15th (1st as 0)

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 adjusted following Appendix C, "Positioning Dummies in the Test Vehicle" in the NCAP Laboratory Test Procedure dated September 2013. The rear center and non-struck side rear outboard seat backs are positioned to match the struck side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents	Degrees	Detent
Driver Seat w/Seated Dummy	59.6		2.8	
Front Passenger Seat	54.2	28 (1st as 1)	3.1	5th (1st as 0)
Front Center Seat				
Struck Side Rear Seat	8.0	5 (1st as 1)	4.0	0th (1st as 0)
Non-Struck Side Rear Seat	8.0	5 (1st as 1)	4.0	0th (1st as 0)
Rear Center Seat	8.0	5 (1st as 1)	4.0	0th (1st as 0)

Seat back angles measured on outboard headrest post.

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total # of Positions	Placed in Position #
Driver Seat	4 detents (1st as 1)	0th (uppermost as 0)
Rear Seat	Fixed	

HEAD RESTRAINT ADJUSTMENT

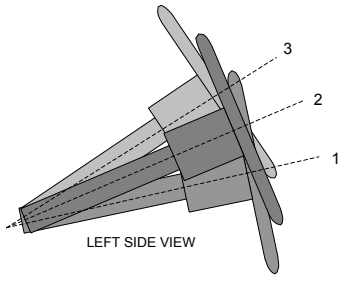
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	6	Highest
Rear Seat	3	Lowest

STEERING COLUMN ADJUSTMENT

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

	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	67.8	190
Geometric Center, Position 2	65.4	212
Uppermost, Position 3	63.0	234
Telescoping Steering Wheel Travel		44
Test Position	65.4	212

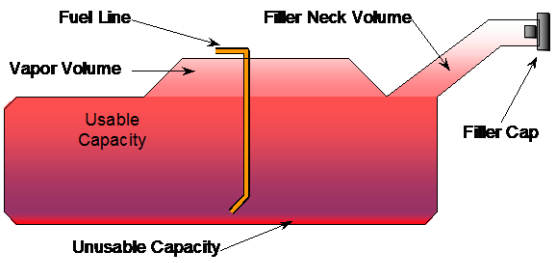


STEERING COLUMN ASSEMBLY

FUEL PUMP

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

The electric fuel pump turns on once the start button is pressed. The fuel pipe is on the left side.



VEHICLE FUEL TANK ASSEMBLY

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

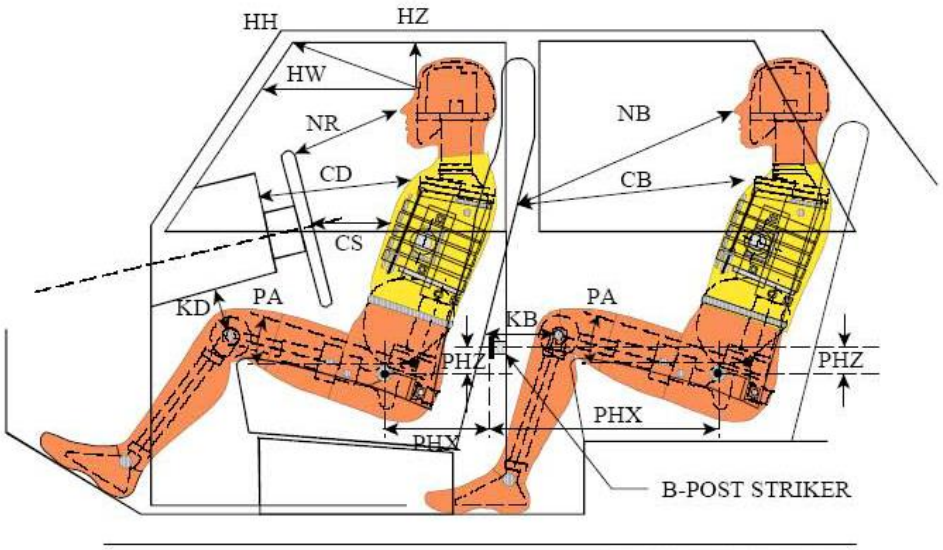
FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard" Tank (see Form No. 1)	73.8
Usable Capacity of "Optional" Tank (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	73.8
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	68.6
Actual Amount of Solvent Used	68.5
1/3 of Usable Capacity	24.6

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: 2016 Honda Pilot 2WD EX 5-Dr SUV
Test Program: NCAP Side MDB Impact Test
NHTSA No. O20165310
Test Date: 8/11/2015



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

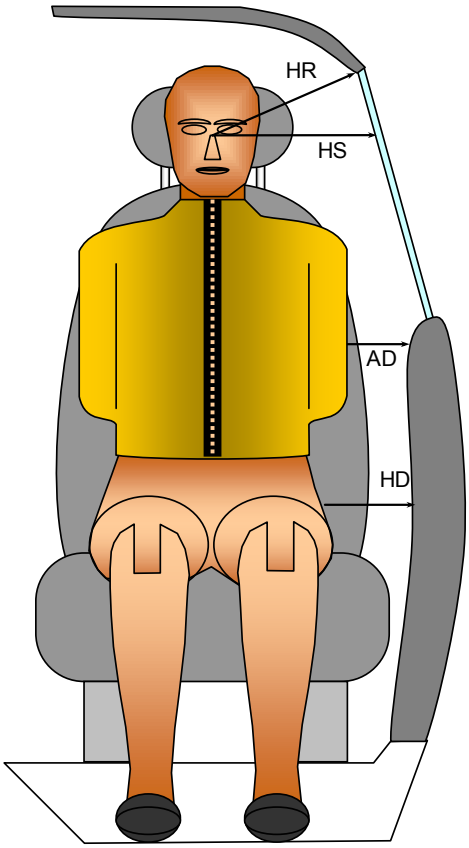
LEFT SIDE VIEW

DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle(°)	Length (mm)	Angle(°)
HH		Head to Header	463	19.4		
HW		Head to Windshield	728			
HZ	HZ	Head to Roof Liner	200		330	
NR	NB	Nose to Rim/Seat Back	475	21.1	590	9.4
CD	CB	Chest to Dashboard/Seat Back	642	7.9	579	4.7
CS		Chest to Steering Wheel	400	4.6		
KDL	KBL	Left Knee to Dash/Seat Back	164	26.9	302	9.6
KDR	KBR	Right Knee to Dash/Seat Back	165	29.8	305	10.2
PAX	PAX	Pelvic Tilt Angle X		22.8		24.7
	PAY	Pelvic Tilt Angle Y		0.2		-1.1
PHX	PHX	Hip Point to Striker (X-Axis)	194		281	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	202		145	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015



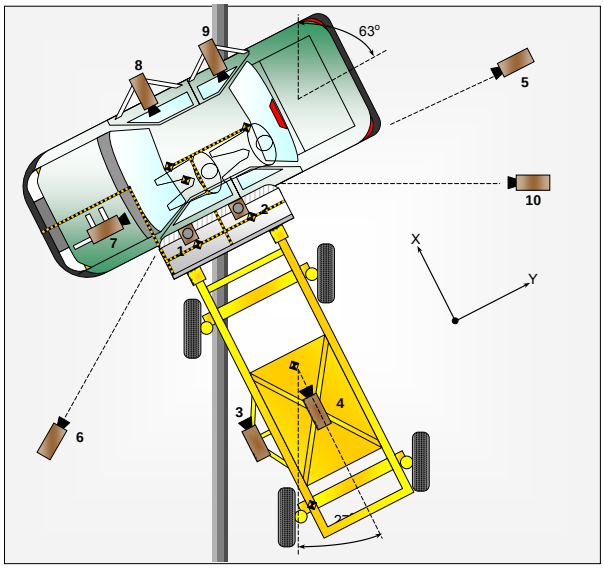
FRONT VIEW OF DUMMY

DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	245	330
HS	Head to Side Window	mm	382	426
AD	Arm to Door	mm	118	180
HD	Hip Point to Door	mm	150	164

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X*	Y*	Z*		
1	Overhead Overall	0	-100	-4250	14	1000
2	Overhead Close-Up	0	0	-4440	20	1000
3	Left Impact Point (MDB)				50	1000
4	Side Overall (MDB)				16	1000
5	Rear	-60	6370	-1160	24	1000
6	Left Front	-1850	-5790	-1180	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

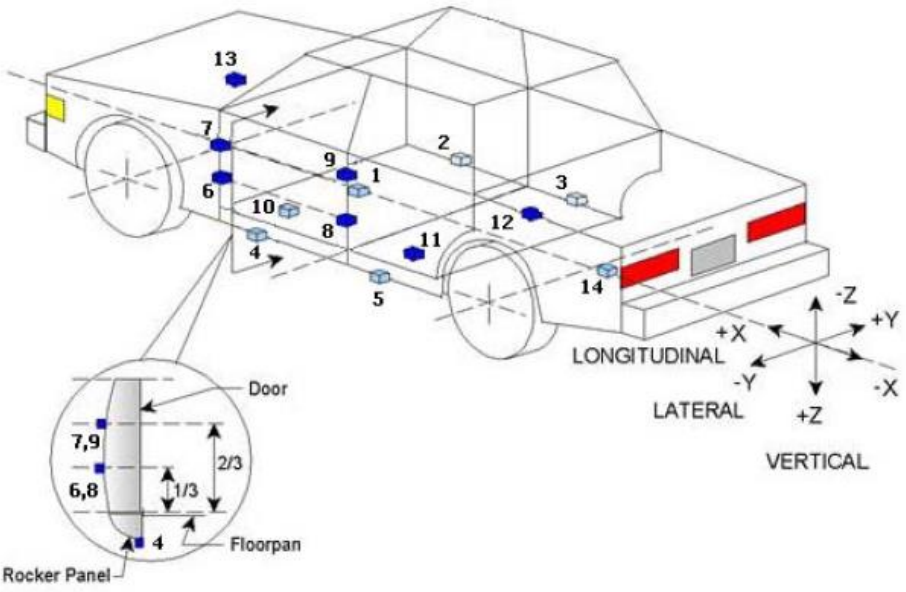
Reference: Impact Point projected to Ground; +X = To Front of MDB, + Y = To Right of MDB, +Z = Down
* All measurements accurate to ± 6 mm

INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Passenger Dummy	19
Vehicle Structure	23
MDB Accelerometers	5
MDB Contacts	2
Total	65

DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015



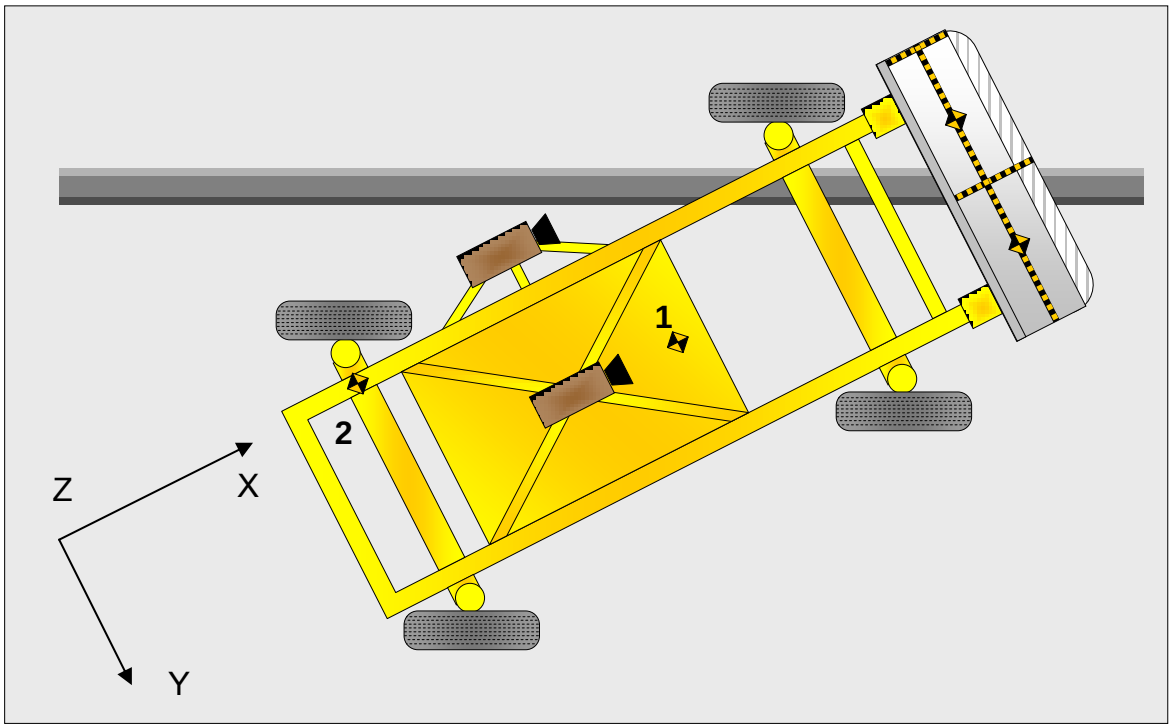
TEST VEHICLE ACCELEROMETER LOCATIONS

Accelerometer Location				
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2713	0	-367
2	Right Sill at Front Seat	3138	785	-295
3	Right Sill at Rear Seat	3484	785	-293
4	Left Sill at Front Door	3430	-785	-293
5	Left Sill at Rear Door	3432	-785	-298
6	Left Lower A-Post	2456	-912	-686
7	Left Middle A-Post	2356	-908	-935
8	Left Lower B-Post	2376	-787	-670
9	Left Middle B-Post	2594	-791	-893
10	Front Seat Track	4051	-446	-409
11	Rear Seat Structure	3934	-380	-556
12	Rt. Rear Occ. Compartment	2477	357	-418
13	Engine Block	3135	5	-903
14	Rear Above Axle	706	0	-623

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: 2016 Honda Pilot 2WD EX 5-Dr SUV
Test Program: NCAP Side MDB Impact Test
NHTSA No. O20165310
Test Date: 8/11/2015



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: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

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, Headliner	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Curtain Airbag, Headrest	Curtain Airbag, Headrest
Left Shoulder	Curtain Airbag	Door Panel
Upper Torso	Side Airbag, Seat Back	Door Panel
Lower Torso	Side Airbag, Seat Back	Door Panel
Left Hip	Side Airbag	Seat Cushion, 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	Fixed	No	Fixed
Seat Disengagement from Floor Pan	No	Fixed	No	Fixed
Seat Back Movement from Initial Position	No	Fixed	No	Fixed
Seat Back Collapse	No	Fixed	No	Fixed

POST-TEST STRUCTURAL OBSERVATIONS

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

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/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		2818
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		469
Actual Impact Point (Aft of Front Axle)	mm		452
Horizontal Offset (+forward / -rearward)	mm	+/- 50 of intended impact point	17
Vertical Offset (+down / -up)	mm	+/- 20 of intended impact point	2

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Face	4119
Wheelbase of Framework Carriage	2588
CG Location aft of Front Axle	1138

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	406.0	283.3	
Right	kg	357.9	316.4	
Ratio	%	56.0	44.0	
Totals	kg	763.9	599.7	1363.5

SPEED AND ANGLE AT IMPACT DATA

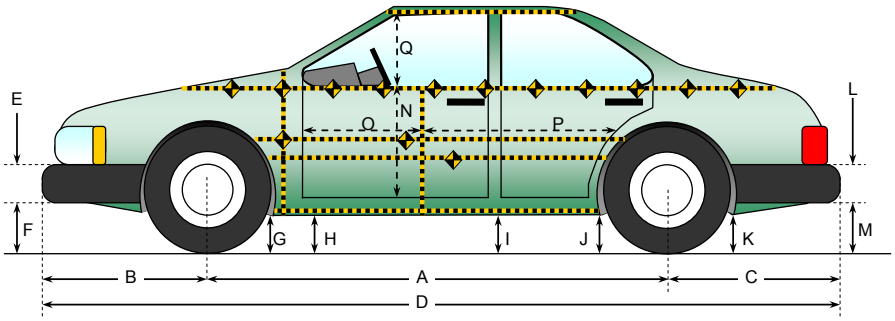
Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.20
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.30
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.7
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.1
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	27.2

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	700	Left	234
B	Top of Bumper	533	800	Left	140
C	Mid-Level	686	800	Left	124
D	Top of Stack	813	800	Left	162

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015



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

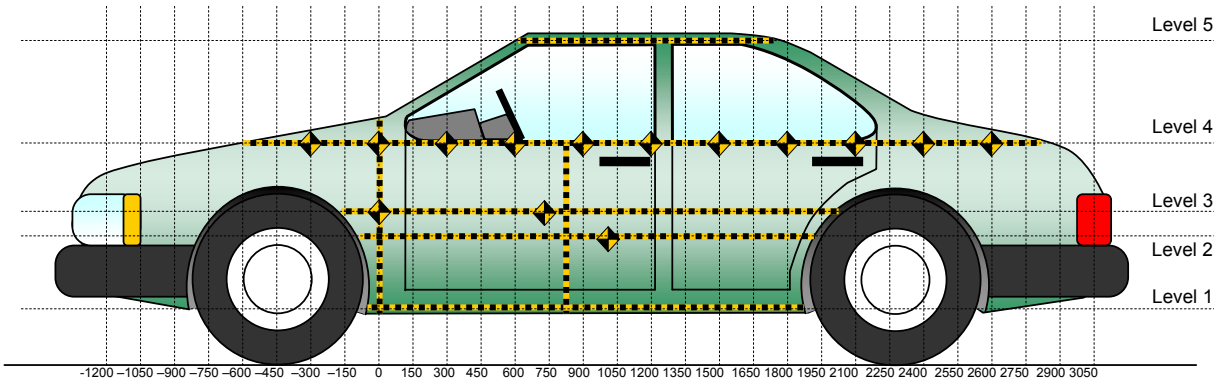
LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2818	2814	4
B	Front Axle to FSOV	985	1007	-22
C	Rear Axle to RSOV	1139	1121	18
D	Total Length at Centerline	4942	4942	0
E	Front Bumper Thickness	136	136	0
F	Front Bumper Bottom to Ground	217	231	-14
G	Sill Height at Front Wheel Well	273	277	-4
H	Sill Height at Front Door Leading Edge	252	258	-6
I	Sill Height at B Pillar	295	290	5
J1	Sill Height at Rear Wheel Well	275	296	-21
J2	Pinch Weld Height at Rear Wheel Well	256	275	-19
K	Sill Height Aft of Rear Wheel Well	292	286	6
L	Rear Bumper Thickness	110	110	0
M	Rear Bumper Bottom to Ground	354	343	11
N	Sill Height to Window Bottom Sill	934	789	145
O	Front Door Leading Edge to Impact CL	840	755	85
P	Rear Door Trailing Edge to Impact CL	1129	1092	39
Q	Front Window Opening	520	522	-2
R	Right Side Length	3762	3762	0
S	Left Side Length	3762	3762	0
T	Vehicle Width at B Post	1994	1840	154

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV
Test Program: NCAP Side MDB Impact Test
NHTSA No. O20165310
Test Date: 8/11/2015



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	492	189	1500
2	Mid Door	714	265	1800
3	Occupant Hip Point	745	233	900
4	Window Sill	1113	86	1650
5	Window Top	1680	0	1500

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

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

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

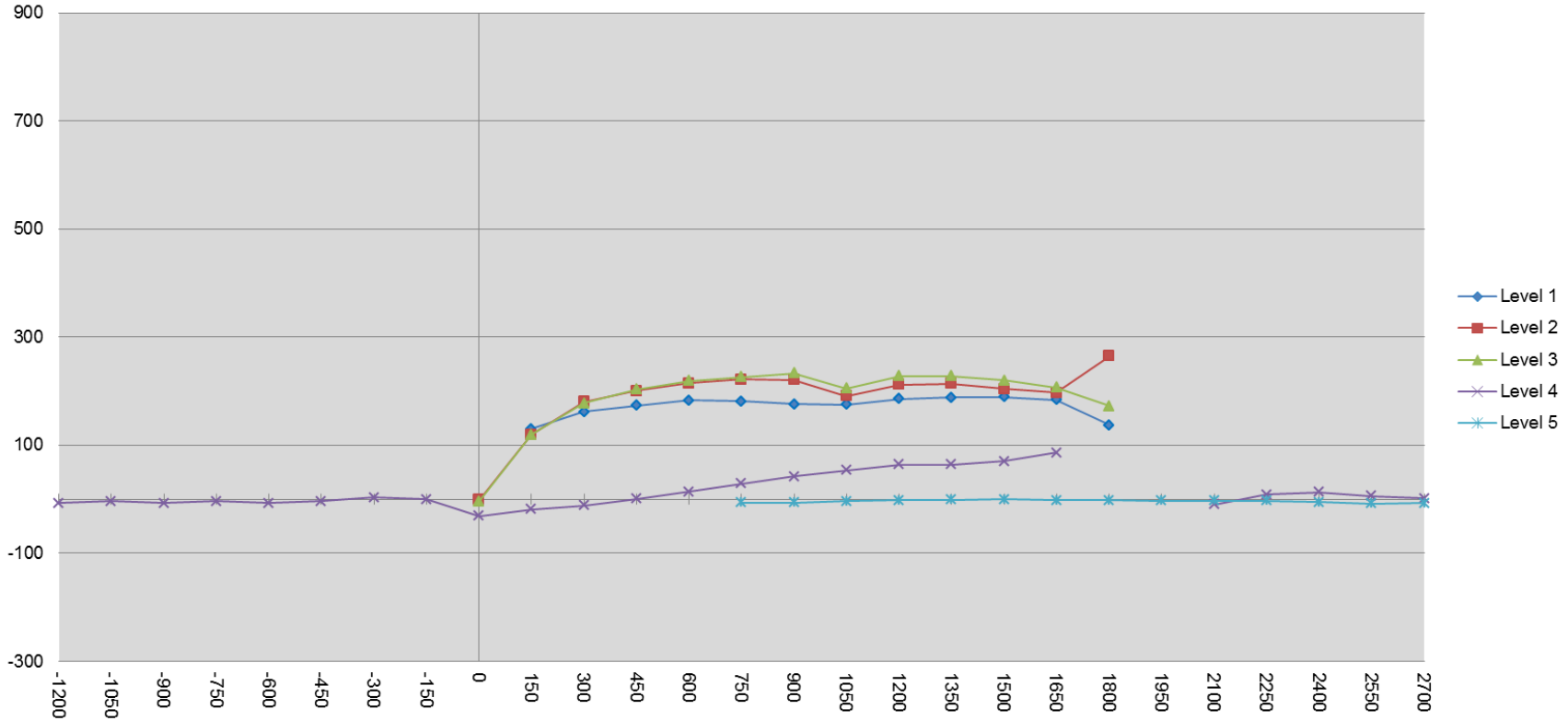
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1200				473					466					-7	
-1050				400					396					-4	
-900				348					341					-7	
-750				303					299					-4	
-600				265					258					-7	
-450				234					230					-4	
-300				215					218					3	
-150				203					203					0	
0		110	110	195			109	106	164			-1	-4	-31	
150	128	120	118	181		258	240	238	162		130	120	120	-19	
300	120	119	117	181		282	299	295	169		162	180	178	-12	
450	115	117	114	172		288	318	317	173		173	201	203	1	
600	110	114	112	166		293	329	331	180		183	215	219	14	
750	112	112	110	160	420	293	334	336	189	414	181	222	226	29	-6
900	112	112	109	155	407	288	333	342	197	401	176	221	233	42	-6
1050	114	113	110	152	400	289	304	315	206	396	175	191	205	54	-4
1200	116	114	111	150	397	302	326	339	214	395	186	212	228	64	-2
1350	120	115	113	148	395	308	329	341	212	394	188	214	228	64	-1
1500	124	118	116	148	392	313	322	336	218	392	189	204	220	70	0
1650	129	119	118	150	393	313	316	325	236	391	184	197	207	86	-2
1800	134	115	114		395	271	380	286		393	137	265	172		-2
1950					397					394					-3
2100				167	402				157	399				-10	-3
2250				166	408				175	405				9	-3
2400				165	415				178	410				13	-5
2550				170	425				176	417				6	-8
2700				181	440				183	433				2	-7
2850				197	459				194	452				-3	-7

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

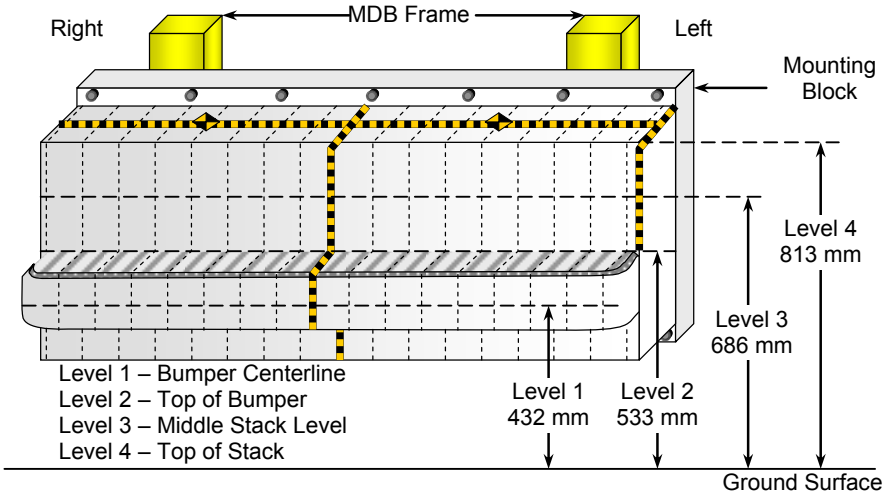
Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No. O20165310
Test Date: 8/11/2015



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015



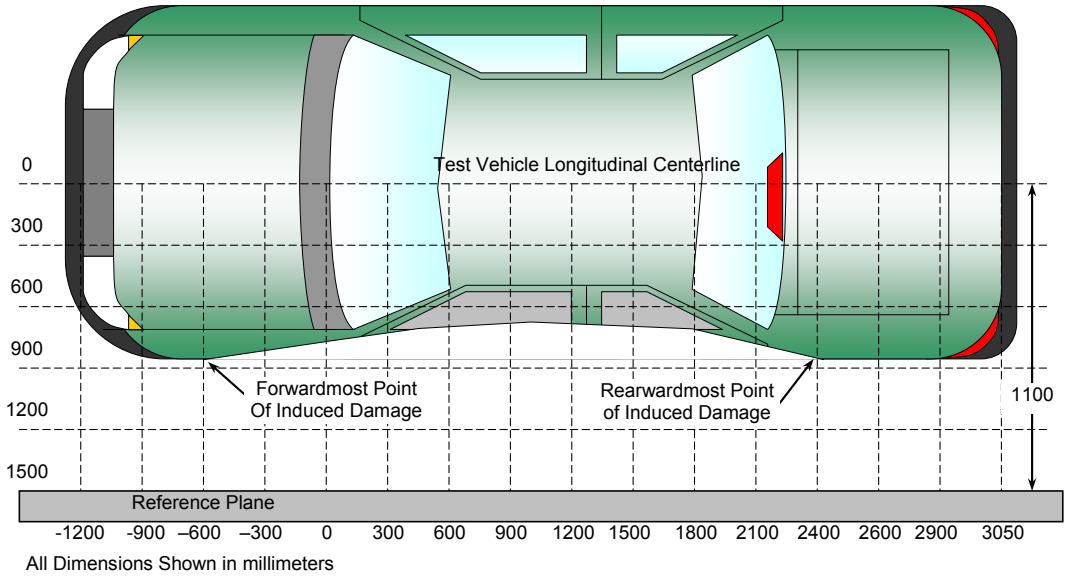
FRONT VIEW

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	82	68	59	47	49	53	74	85	85	83	81	92	107	110	114	131	162
3	119	101	88	69	63	55	63	77	71	50	44	45	49	58	70	86	124
2	131	130	131	123	117	117	124	130	128	137	135	133	133	135	134	135	140
1	219	218	222	222	223	223	222	224	224	224	223	223	224	223	226	234	230

DATA SHEET NO. 13
VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015



TOP VIEW

VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	1925	3	115	198	83
2	1535	3	116	337	221
3	1145	3	111	334	223
4	755	3	110	340	230
5	365	3	116	309	193
6	-25	3	110	108	-2

MDB DAMAGE PROFILE DISTANCES

DPD	Distance from Center of MDB	Level	Post-Test (mm)
1	800 mm right of center	1	219
2	480 mm right of center	1	222
3	160 mm right of center	1	223
4	160 mm left of center	1	223
5	480 mm left of center	1	223
6	800 mm left of center	1	230

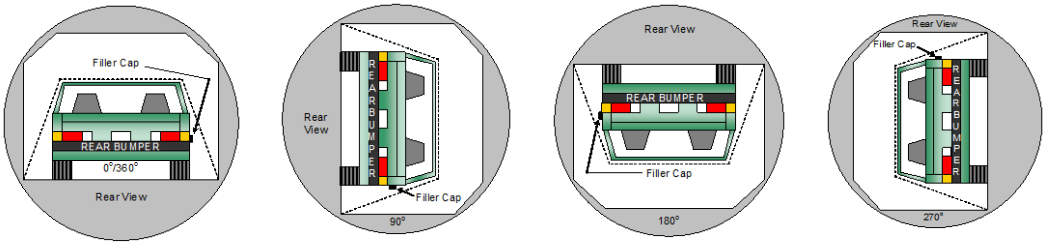
DATA SHEET NO. 14
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2016 Honda Pilot 2WD EX 5-Dr SUV NHTSA No. O20165310
Test Program: NCAP Side MDB Impact Test Test Date: 8/11/2015

Test Time: 2:10 pm Temperature: 21.4° 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°	114	300	414
90° to 180°	110	300	410
180° to 270°	107	300	407
270° to 360°	113	300	413

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

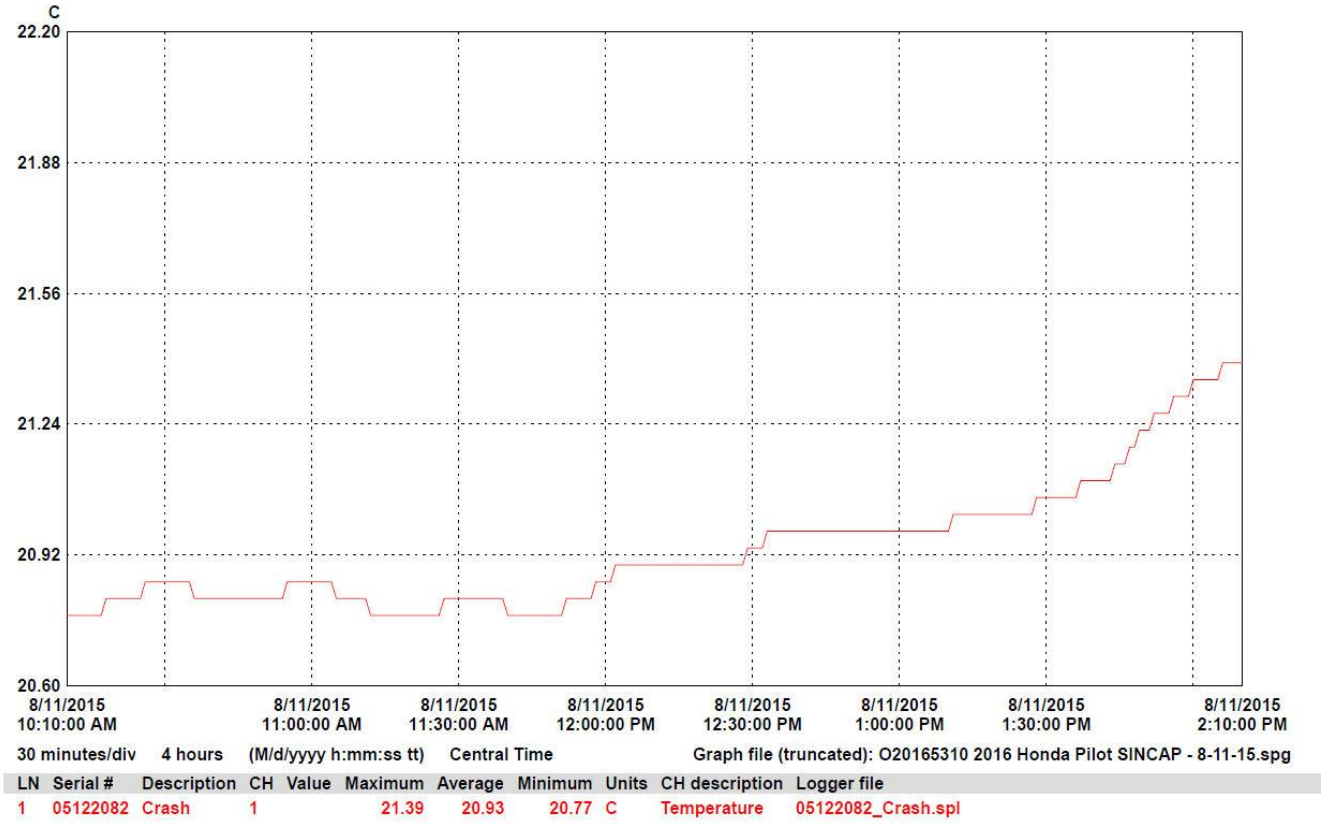
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eight Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 15
DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA

Test Vehicle:	2016 Honda Pilot 2WD EX 5-Dr SUV	NHTSA No.	O20165310
Test Program:	NCAP Side MDB Impact Test	Test Date:	8/11/2015



LN	Serial #	Description	CH	Value	Maximum	Average	Minimum	Units	CH description	Logger file
1	05122082	Crash	1		21.39	20.93	20.77	C	Temperature	05122082_Crash.spl

APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Photo No. 001 - As Delivered Right Front Three-Quarter View of Test Vehicle

Photo No. 002 - As Delivered Left Rear Three-Quarter View of Test Vehicle

Photo No. 003 - Pre-Test Frontal View of Test Vehicle

Photo No. 004 - Post-Test Frontal View of Test Vehicle

Photo No. 005 - Pre-Test Left Front Three-Quarter View of Test Vehicle

Photo No. 006 - Post-Test Left Front Three-Quarter View of Test Vehicle

Photo No. 007 - Pre-Test Left Side View of Test Vehicle

Photo No. 008 - Post-Test Left Side View of Test Vehicle

Photo No. 009 - Pre-Test Left Three-Quarter Rear View of Test Vehicle

Photo No. 010 - Post-Test Left Three-Quarter Rear View of Test Vehicle

Photo No. 011 - Pre-Test Rear View of Test Vehicle

Photo No. 012 - Post-Test Rear View of Test Vehicle

Photo No. 013 - Pre-Test Right Side View of Test Vehicle

Photo No. 014 - Post-Test Right Side View of Test Vehicle

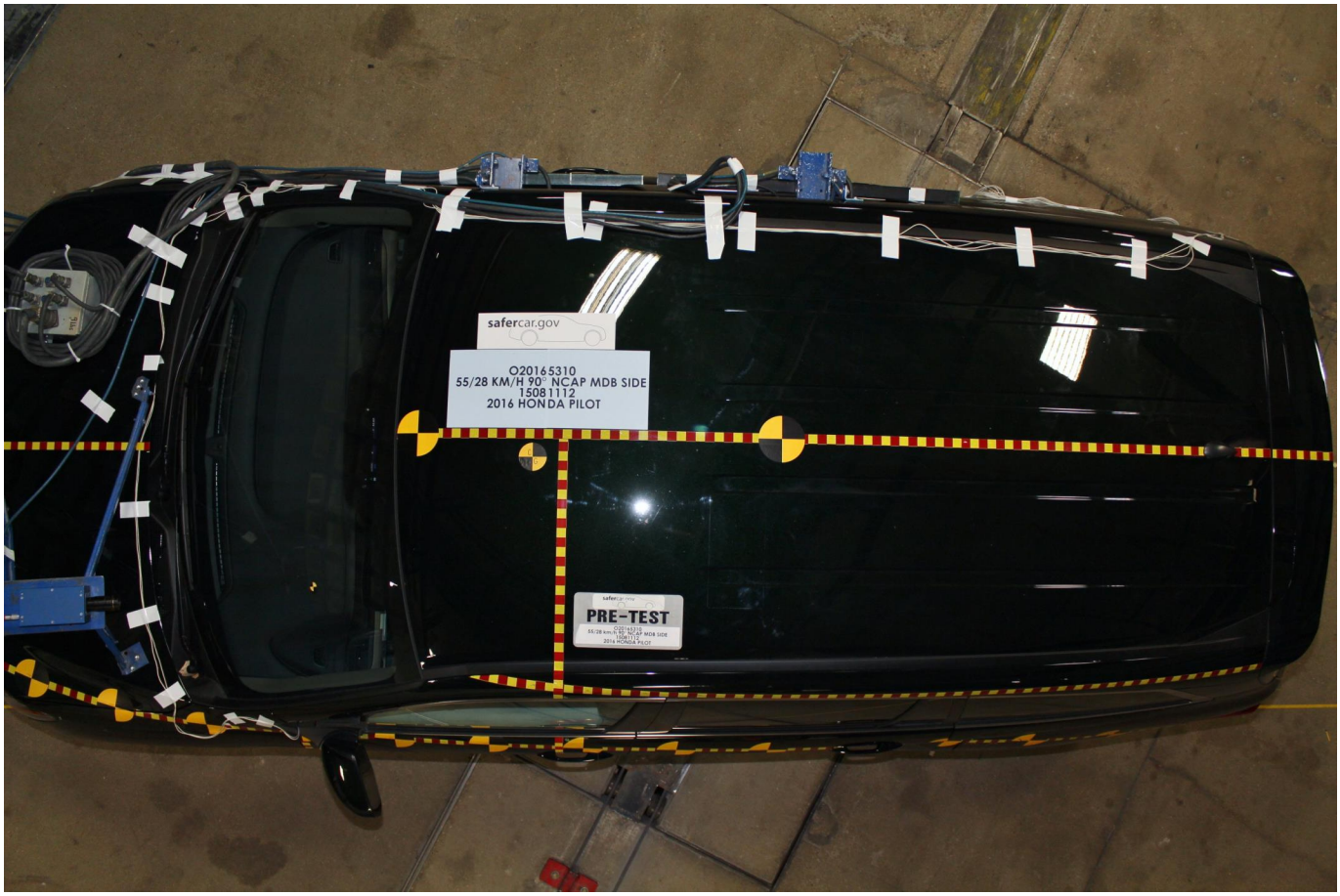


Photo No. 015 - Pre-Test Overhead View of Test Area

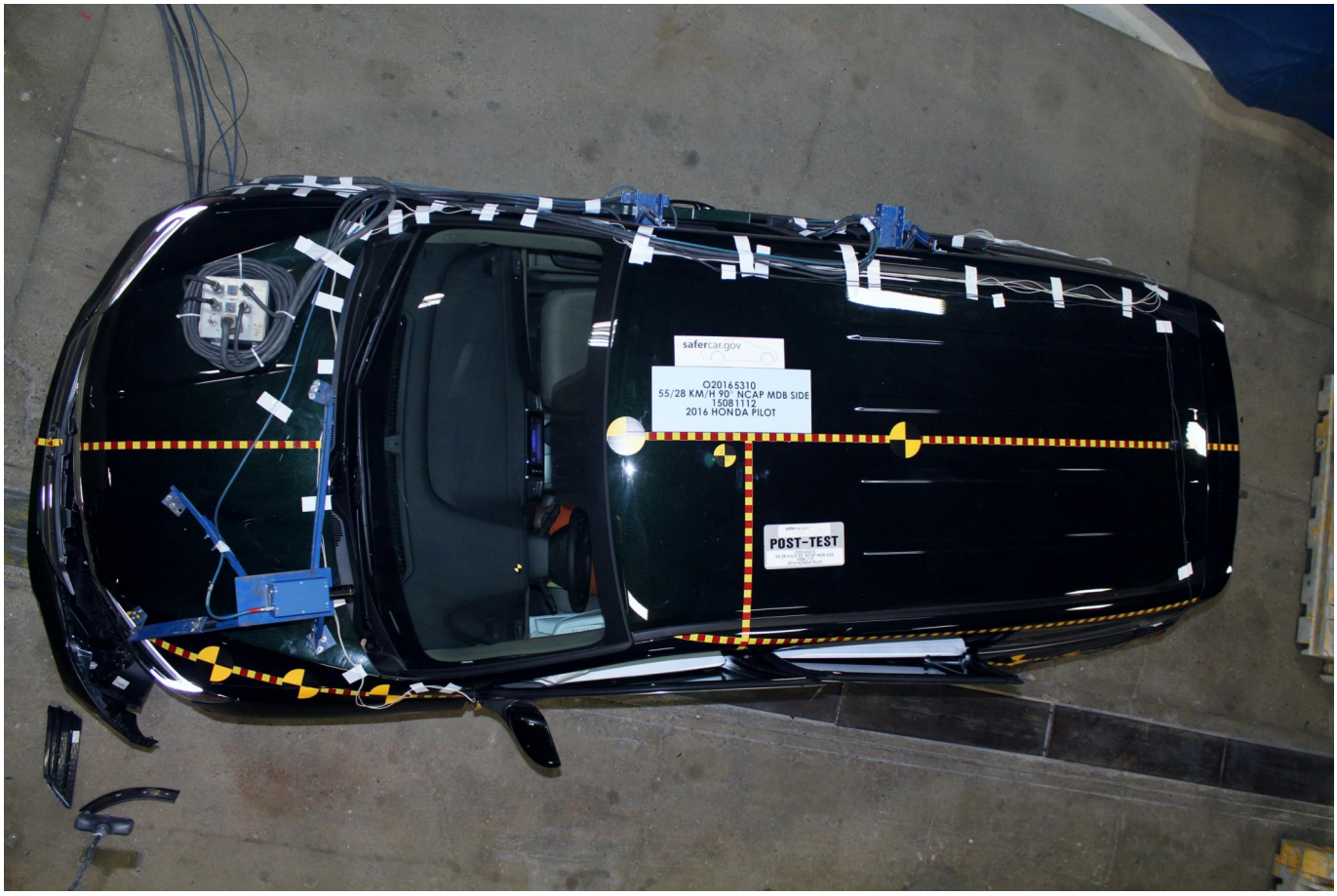


Photo No. 016 - Post-Test Overhead View of Test Area

Photo No. 017 - Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle

Photo No. 018 - Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle

Photo No. 019 - Pre-Test Close-Up View of Impact Point Target

Photo No. 020 - Post-Test Close-Up View of Impact Point Target

Photo No. 021 - Pre-Test Left Front Door Latch Close-Up

Photo No. 022 - Post-Test Left Front Door Latch Close-Up

Photo No. 023 - Pre-Test Left Rear Door Latch Close-Up

Photo No. 024 - Post-Test Left Rear Door Latch Close-Up

Photo No. 025 - Pre-Test Front Close-Up View of Driver Dummy

Photo No. 026 - Post-Test Front Close-Up View of Driver Dummy

Photo No. 027 - Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking

Photo No. 028 - Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View

Photo No. 029 - Post-Test Left Side View of Driver Dummy Shoulder and Door Top View

Photo No. 030 - Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning

Photo No. 031 - Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint

Photo No. 032 - Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning

Photo No. 033 - Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan

Photo No. 034 - Pre-Test Placement of Driver Dummyôs Feet

Photo No. 035 - Pre-Test View of Belt Anchorage for Driver Dummy

Photo No. 036 - Pre-Test Left Side View of Steering Wheel

Photo No. 037 - Pre-Test View of Disengaged Parking Brake

Photo No. 038 - Pre-Test View of Parking Brake

Photo No. 039 - Pre-Test Close-Up Left Side View of Driver Seat Track

Photo No. 040 - Pre-Test Close-Up Left Side View of Driver Seat Back

Photo No. 041 - Pre-Test Close-Up View of Driver Seat Back or Head Restraint

Photo No. 042 - Pre-Test Driver Dummy and Door Clearance View

Photo No. 043 - Post-Test Driver Dummy and Door Clearance View

Photo No. 044 - Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment

Photo No. 045 - Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment

Photo No. 046 - Pre-Test Driver Inner Door Panel View

Photo No. 047 - Post-Test Driver Inner Door Panel View

Photo No. 048 - Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View

Photo No. 049 - Post-Test Driver Dummy Close-up Head Contact with Side Airbag View

Photo No. 050 - Post-Test Driver Dummy Close-up Torso Contact with Vehicle Interior View

Photo No. 051 - Post-Test Driver Dummy Close-up Torso Contact with Side Airbag View

PHOTOGRAPH NOT APPLICABLE

Photo No. 052 - Post-Test Driver Dummy Close-up Pelvis Contact with Vehicle Interior View

Photo No. 053 - Post-Test Driver Dummy Close-up Pelvis Contact with Side Airbag View

Photo No. 054 - Post-Test Driver Dummy Close-up Knee Contact View

Photo No. 055 - Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking

Photo No. 056 - Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View

Photo No. 057 - Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View

Photo No. 058 - Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning

Photo No. 059 - Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head

Photo No. 060 - Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning

Photo No. 061 - Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan

Photo No. 062 - Pre-Test View of Rear Passenger Dummyûs Neck Showing Position of Adjustable Neck

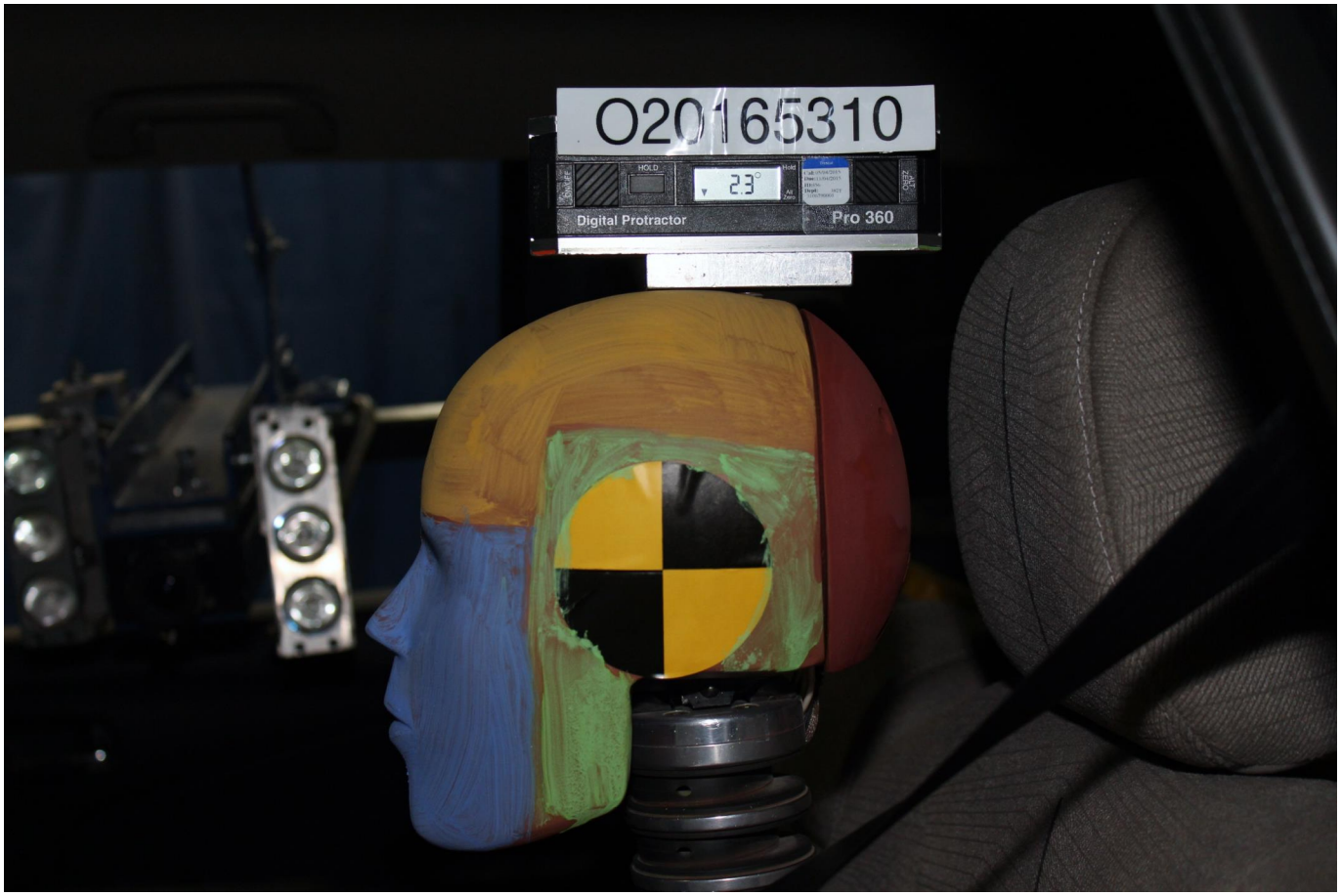


Photo No. 063 - Pre-Test View of Rear Passenger Dummyôs Head Showing Dummyôs Head is Level

Photo No. 064 - Pre-Test Placement of Rear Passenger Dummyôs Feet

Photo No. 065 - Pre-Test View of Belt Anchorage for Rear Passenger Dummy

Photo No. 066 - Pre-Test Close-Up Left Side View of Rear Passenger Seat Track

Photo No. 067 - Pre-Test Close-Up Left Side View of Rear Passenger Seat Back

Photo No. 068 - Pre-Test Close-up View of Rear Passenger Seat Back or Head Restraint

Photo No. 069 - Pre-Test Rear Passenger Dummy and Door Clearance View

Photo No. 070 - Post-Test Rear Passenger Dummy and Door Clearance View

Photo No. 071 - Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant

Photo No. 072 - Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant

Photo No. 073 - Pre-Test Rear Passenger Inner Door Panel View

Photo No. 074 - Post-Test Rear Passenger Inner Door Panel View

Photo No. 075 - Post-Test Rear Passenger Dummy Close-up Head Contact with Vehicle Interior View

Photo No. 076 - Post-Test Rear Passenger Dummy Close-up Head Contact with Side Airbag View

Photo No. 077 - Post-Test Rear Passenger Dummy Close-up Torso Contact with Vehicle Interior View

PHOTOGRAPH NOT APPLICABLE

Photo No. 078 - Post-Test Rear Passenger Dummy Close-up Torso Contact with Side Airbag View

Photo No. 079 - Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Vehicle Interior View

PHOTOGRAPH NOT APPLICABLE

Photo No. 080 - Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Side Airbag View

Photo No. 081 - Post-Test Rear Passenger Dummy Close-up Knee Contact View

Photo No. 082 - Pre-Test View of Fuel Filler Cap or Fuel Filler Neck

Photo No. 083 - Post-Test View of Fuel Filler Cap or Fuel Filler Neck

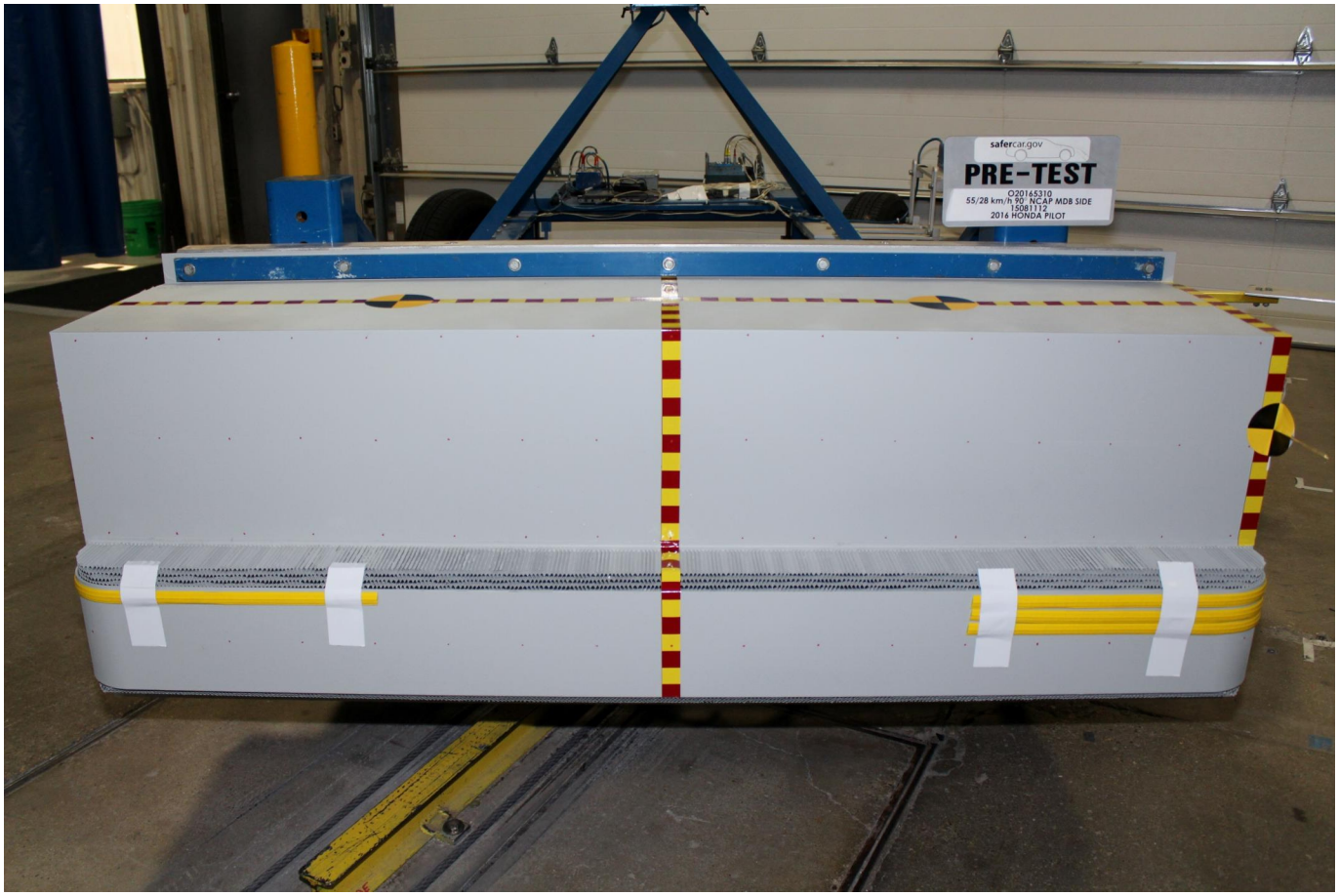


Photo No. 084 - Pre-Test Front View of MDB Impactor Face

Photo No. 085 - Post-Test Front View of MDB Impactor Face

Photo No. 086 - Pre-Test Top View of MDB Impactor Face

Photo No. 087 - Post-Test Top View of MDB Impactor Face

Photo No. 088 - Pre-Test Left Side View of MDB Impactor Face

Photo No. 089 - Post-Test Left Side View of MDB Impactor Face

Photo No. 090 - Pre-Test Right Side View of MDB Impactor Face

Photo No. 091 - Post-Test Right Side View of MDB Impactor Face

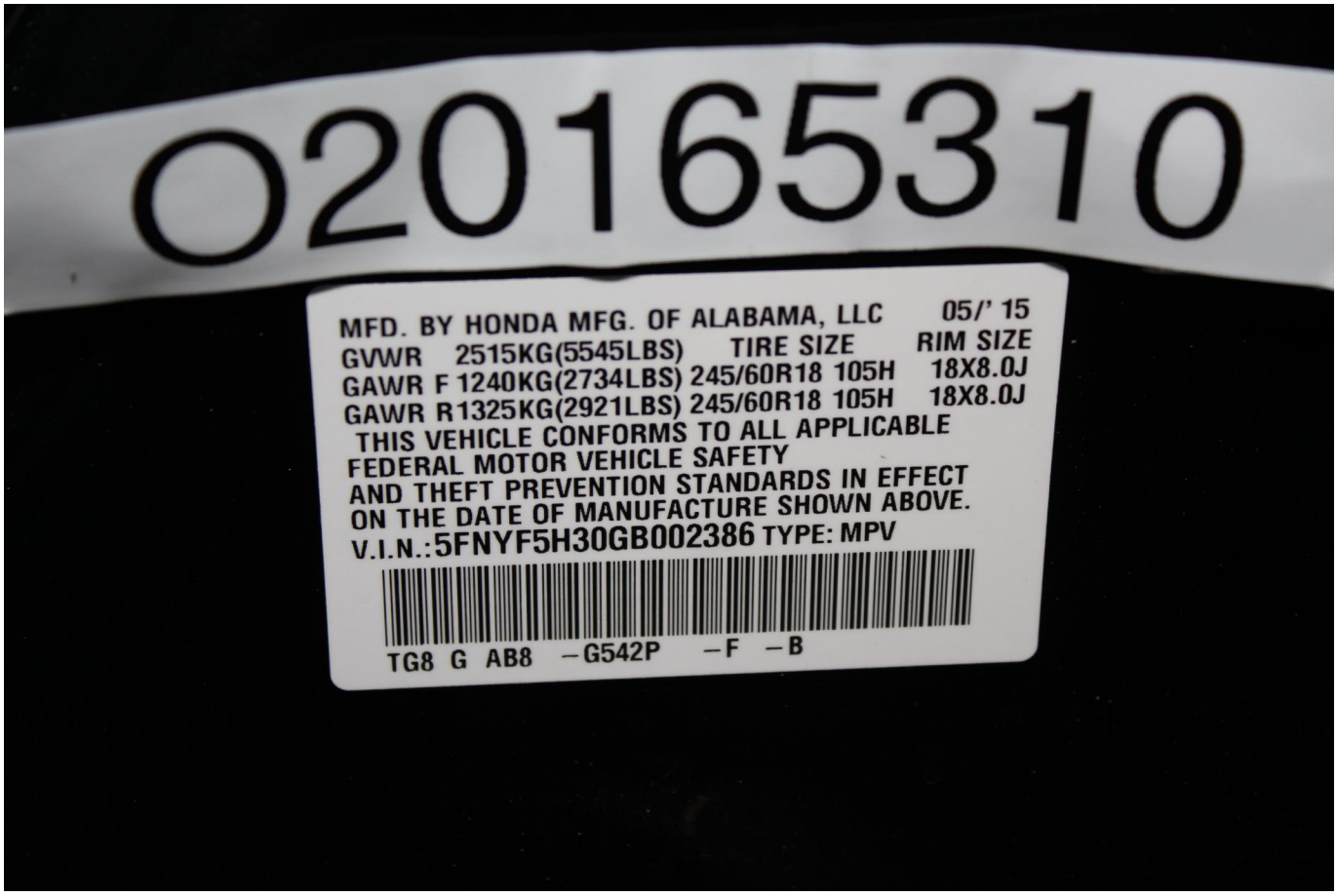


Photo No. 092 - Close-Up View of Vehicle's Certification Label

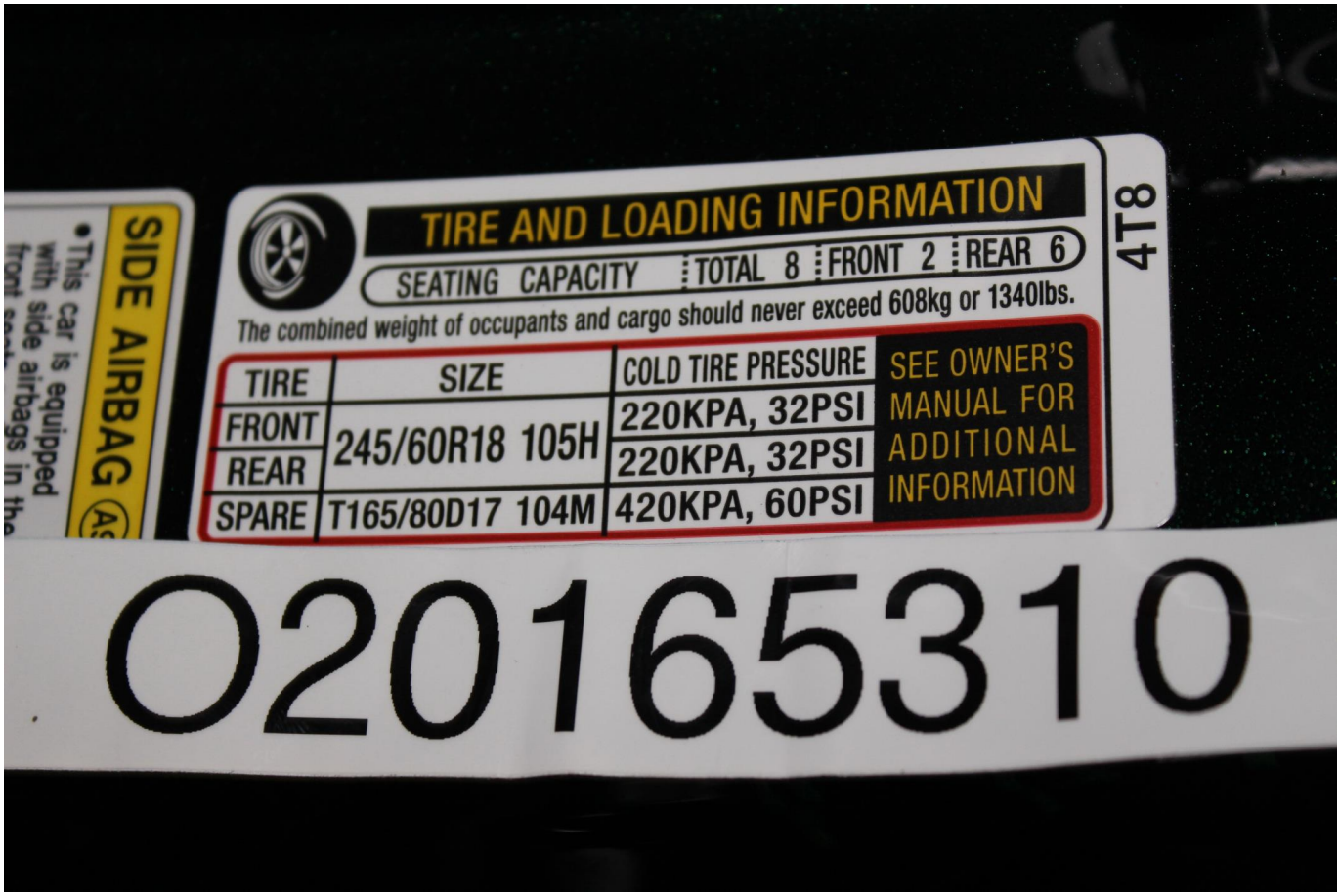


Photo No. 093 - Close-Up View of Vehicleŝ Tire Information Placard or Label

PHOTOGRAPH NOT APPLICABLE

Photo No. 094 - Pre-Test Ballast View

Photo No. 095 - Post-Test Primary and Redundant Speed Trap Read-Out

Photo No. 096 - FMVSS No. 301 Static Rollover 0 Degrees

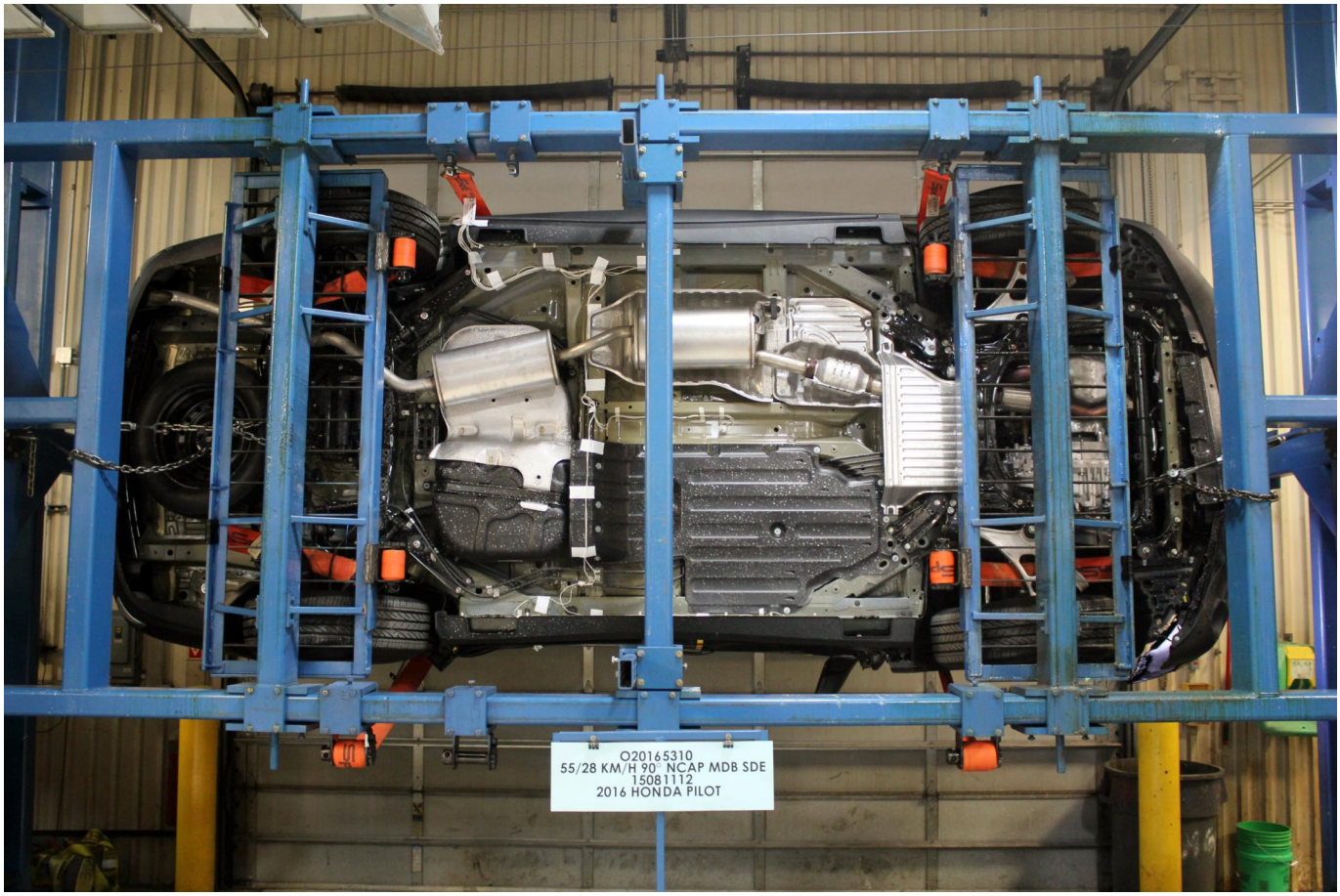


Photo No. 097 - FMVSS No. 301 Static Rollover 90 Degrees

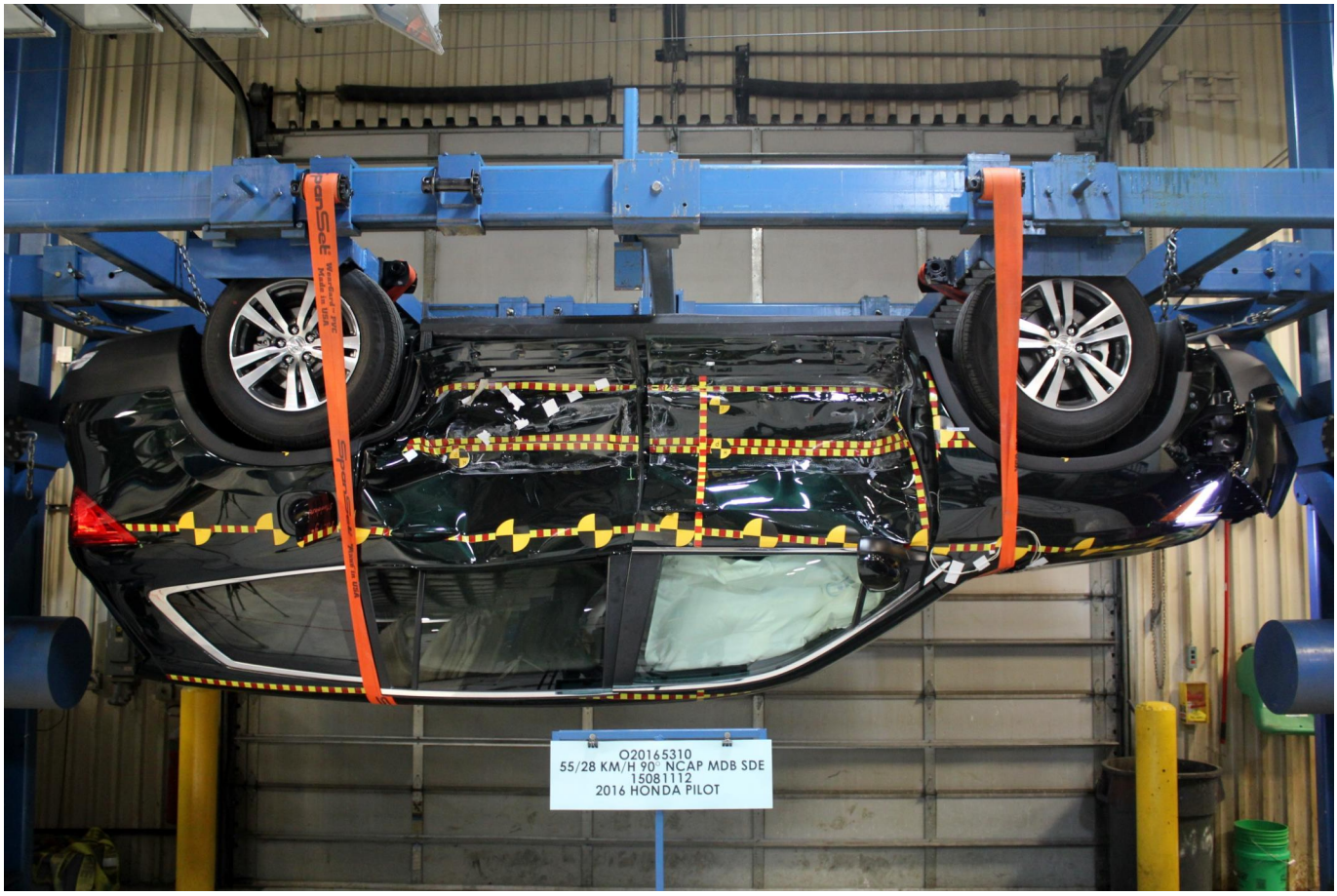


Photo No. 098 - FMVSS No. 301 Static Rollover 180 Degrees

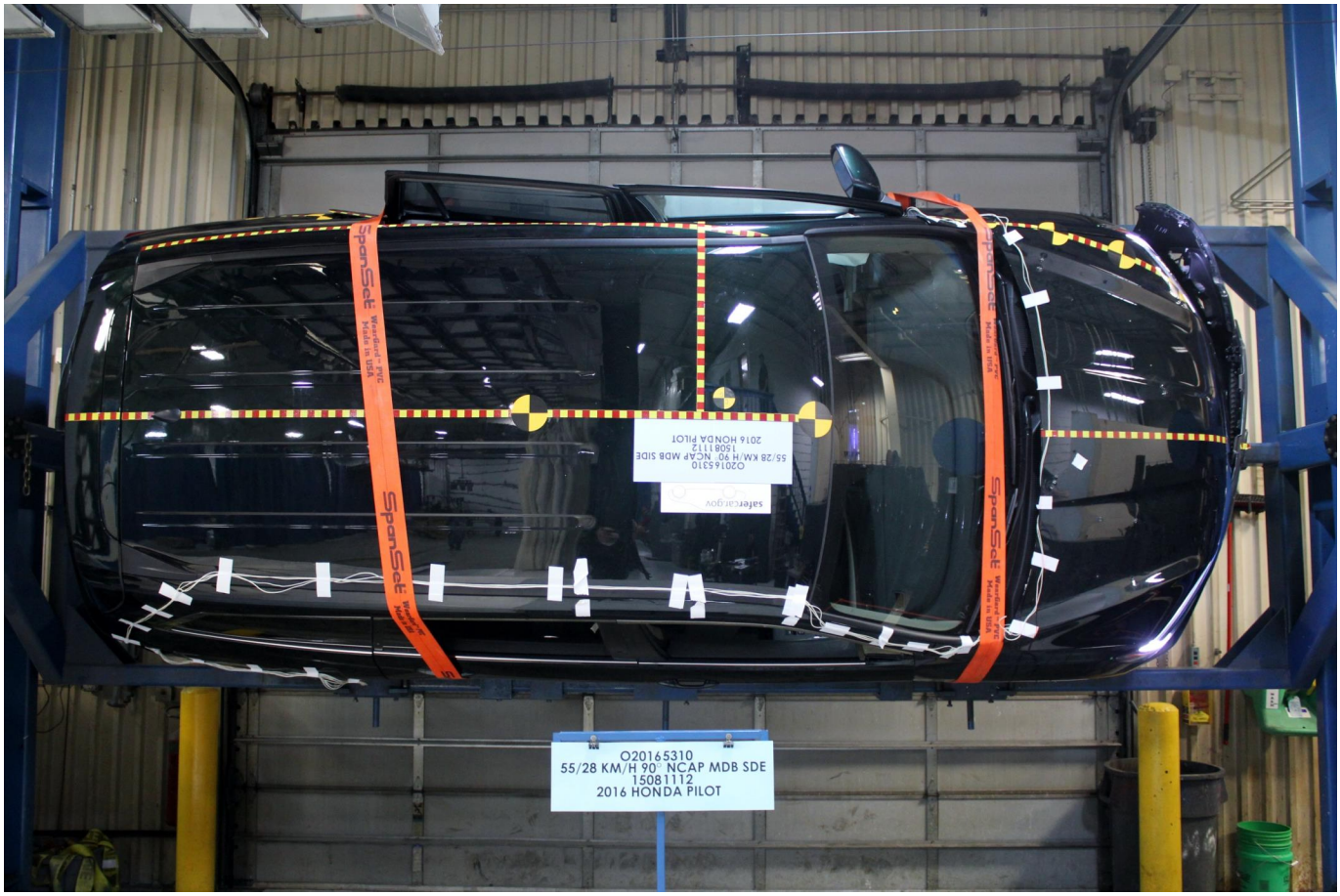


Photo No. 099 - FMVSS No. 301 Static Rollover 270 Degrees

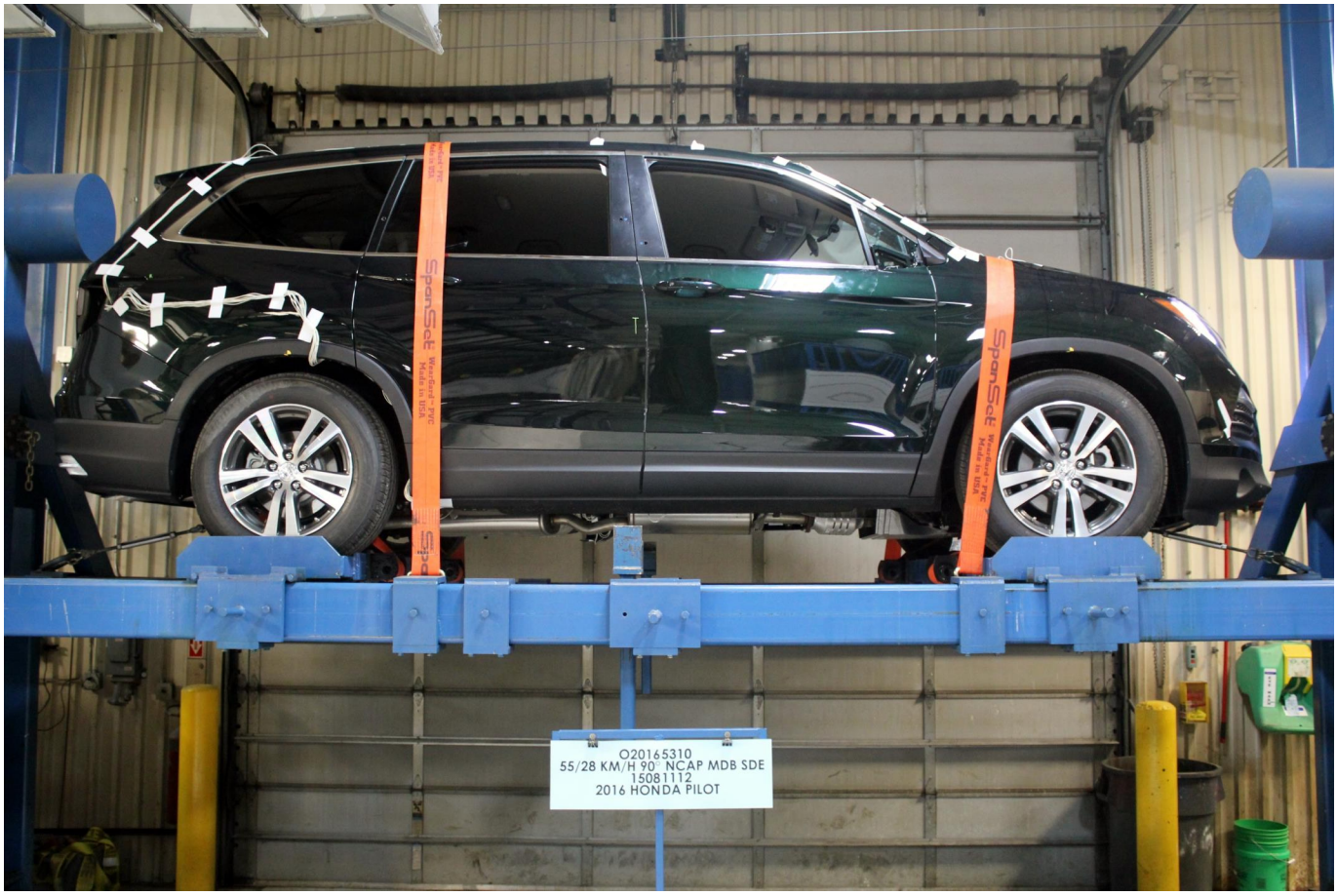


Photo No. 100 - FMVSS No. 301 Static Rollover 360 Degrees

Photo No. 101 - Impact Event

HONDA

2016 PILOT 2WD EX
EXT: BLACK FOREST P. ENGINE NUMBER: J35Y6-1003927
INT: BEIGE

STANDARD EQUIPMENT AT NO EXTRA COST

* TECHNICAL FEATURES *
- 280hp 3.5-Liter SOHC 24-Valve i-VTEC Direct Injection V6 Engine w/ Earth Dreams Technology & Variable Cylinder Management (VCM)
- 6-Speed Automatic Transmission
- Intelligent Traction Management
- Hill Start Assist
- Electric Power-Assisted Rack-and-Pinion Steering

* SAFETY FEATURES *
- Driver's and Front Passenger's Dual-Stage Airbags (SRS)
- Driver's and Front Passenger's Side Airbags
- Three Row Side Curtain Airbags
- Vehicle Stability Assist (VSA)
- Anti-Lock Braking System (ABS)
- Electronic Brake Distribution (EBD)
- Brake Assist
- ACE Body Structure
- Tire Pressure Monitoring System (TPMS) with Tire Fill Assist
- LED Daytime Running Lights
- LATCH System for Child Seats

* INTERIOR FEATURES *
- AM/FM Audio System with 7 Speakers including Subwoofer
- 8-Inch Display Audio w/ Electrostatic Touchscreen and Multi-View Rear Camera
- 4.2-Inch Multi-Information Display
- XM Satellite Radio
- Next Generation HondaLink with Smartphone Applications
- Pandora Internet Radio Interface
- Bluetooth HandsFreeLink & Audio
- USB Audio Interface
- Honda LaneWatch
- Push-Button Start
- Tri-Zone Automatic Climate Control
- Driver's 10-Way Power Seat
- Tilt & Telescopic Steering Column
- 60/40 Fold-Down 2nd and 3rd Rows
- Sunglasses Holder with Conversation Mirror
- Power Windows and Programmable Auto Door Locks
- Exterior Temperature Display
- HomeLink System
- Illuminated Visor Vanity Mirrors
- Cruise Control
- 1st and 2nd Row Floor Mats

* EXTERIOR FEATURES *
- 18" x 8" Alloy Wheels
- 245/60 R18 All-Season Tires
- Remote Engine Start
- Auto-On/Off Headlights
- Fog Lights
- Power Door Mirrors
- Capless Fuel Filler
- LED Taillights
- Rear Privacy Glass
- Smart Entry System with Security System
- Walk Away Auto Lock

Manufacturer's Suggested Retail Price $32,430.00

Full Tank of Fuel No Charge

-XM Satellite Radio Includes Free Activation and 3 Months Free Service (excl. AK & HI)

-Honda Roadside Assistance 3YR/36K Mile Warranty Term For more information please visit: http://owners.honda.com/vehicles/roadside-assistance

Destination and Handling 880.00

TOTAL VEHICLE PRICE
(Includes Pre-Delivery Service)
$33,310.00

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

FLETCHER JONES HONDA
1100 NORTH CLARK ST.
CHICAGO, IL 60610

PORT OF ENTRY: ALABAMA
DELIVERY POINT: SCHAUMBURG
SHIP#:
ROW/SPACE: 452-008
TRANS.METHOD: N50 ELWOOD

ORIG. DLR: 208310
REF.NO: 40561
HN CODE: HN-4230
EMISSION: 50 STATE
CONTROL NO: 525476
DEALER: 208310

VIN: 5FNYF5H30GB002386

EPA DOT Fuel Economy and Environment — Gasoline Vehicle

Fuel Economy
22 MPG
combined city/hwy
19 city
27 highway
4.5 gallons per 100 miles

Small SUVs range from 17 to 32 MPG. The best vehicle rates 119 MPGe.

You spend $1,250 in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost $2,050

Fuel Economy & Greenhouse Gas Rating (tailpipe only) 5 (1 Worst, 10 Best)

Smog Rating (tailpipe only) 5 (1 Worst, 10 Best)

This vehicle emits 803 grams CO2 per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions; learn more at fueleconomy.gov.

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 25 MPG and costs $9,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at $3.05 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fueleconomy.gov
Calculate personalized estimates and compare vehicles

Smartphone QR Code™

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE
U.S./Canadian Parts Content: 75 %

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

FOR THIS VEHICLE
Final Assembly Point:
LINCOLN, ALABAMA
USA
Country of Origin: Engine:
U.S.A.
Transmission:
U.S.A.

GOVERNMENT 5-STAR SAFETY RATING

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

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

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

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

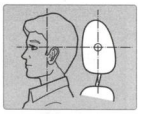
Star Ratings range from 1 to 5 stars (★★★★★) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236

Photo No. 102 - Monroney Label

Adjusting the Head Restraints

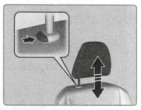
Your vehicle is equipped with head restraints in all seating positions. Head restraints are most effective for protection against whiplash and other rear-impact crash injuries.

The center of the back of the occupant's head should rest against the center of the restraint. The tops of the occupant's ears should be level with the center height of the restraint.



To raise the head restraint: Pull it upward.

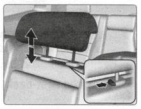
To lower the head restraint: Push it down while pressing the release button.



Front and second-row head restraints

To remove the head restraint: Pull the restraint up as far as it will go. Then press the release button(s), and pull the restraint up and out.

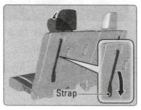
To reinstall a head restraint: Insert the legs back in place, then adjust the head restraint to an appropriate height while pressing the release button(s). Pull up on the restraint to make sure it is locked in position.



Folding down the third-row head restraints

To fold down: Pull the strap.

To return to upright position: Pull up the head and push rearward until it latches.



⚠WARNING

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

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

⚠WARNING

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

Always replace the head restraints before driving.

Photo No. 103 - Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

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

Passenger Head Angular Velocity (X)

Passenger Head Angular Velocity (Y)

Passenger Head Angular Velocity (Z)

Driver Lower Spine T12 Acceleration (X)

Driver Lower Spine T12 Acceleration (Y)

Driver Lower Spine T12 Acceleration (Z)

Passenger Upper Thorax Rib Deflection (Y)

Passenger Middle Thorax Rib Deflection (Y)

Passenger Lower Thorax Rib Deflection (Y)

Passenger Upper Abdomen Rib Deflection (Y)

Passenger Lower Abdomen Rib Deflection (Y)

Driver Head Acceleration Redundant (X)

Driver Head Acceleration Redundant (Y)

Driver Head Acceleration Redundant (Z)

Passenger Head Acceleration Redundant (X)

Passenger Head Acceleration Redundant (Y)

Passenger Head Acceleration Redundant (Z)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)

Vehicle Center of Gravity Acceleration (Y)

Vehicle Center of Gravity Acceleration (Z)

Right Side Sill at Front Seat Acceleration (X)

Right Side Sill at Front Seat Acceleration (Y)

Right Side Sill at Front Seat Acceleration (Z)

Right Side Sill at Rear Seat Acceleration (X)

Right Side Sill at Rear Seat Acceleration (Y)

Right Side Sill at Rear Seat Acceleration (Z)

Left Side Sill at Front Seat Acceleration (Y)

Left Side Sill at Rear Seat Acceleration (Y)

Lower A-Post Acceleration (Y)

Middle A-Post Acceleration (Y)

Lower B-Post Acceleration (Y)

Middle B-Post Acceleration (Y)

Front Seat Track Acceleration (Y)

Rear Seat Track Acceleration (Y)

Right Rear Occupant Compartment Acceleration (Y)

Engine Block (X)

Engine Block (Y)

Rear Floorpan Above Axle Acceleration (X)

Rear Floorpan Above Axle Acceleration (Y)

Rear Floorpan Above Axle Acceleration (Z)

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

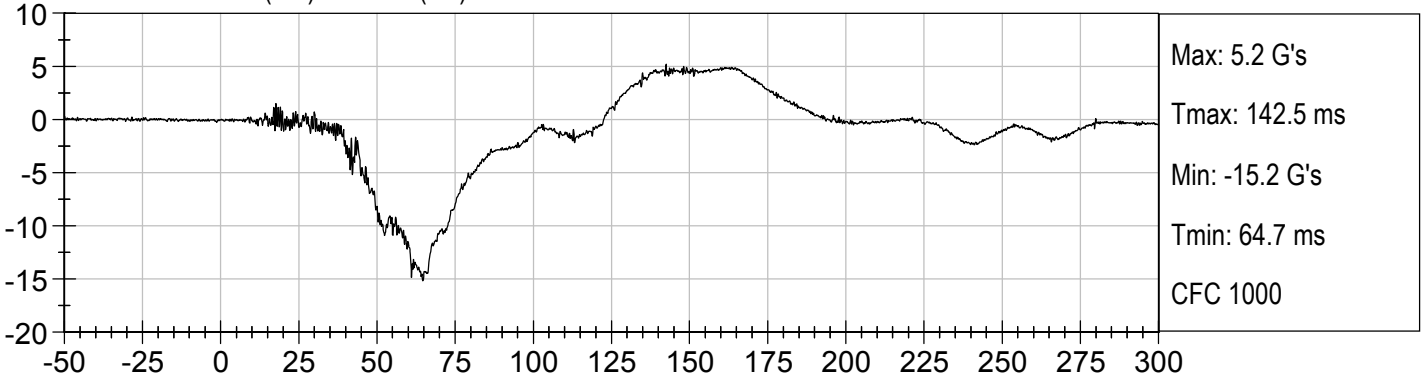
MDB Rear Acceleration (X)

MDB Rear Acceleration (Y)

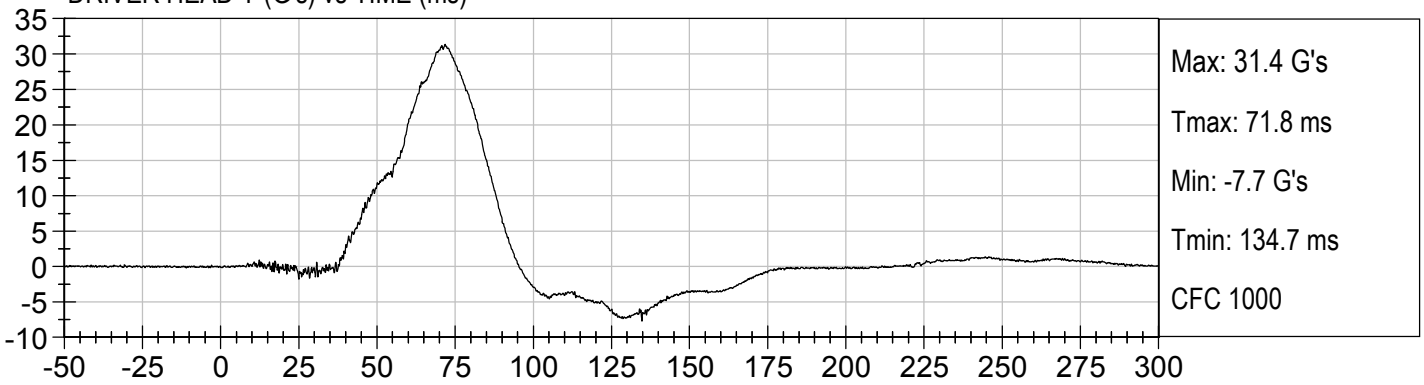
Left MDB Contact Switch

Right MDB Contact Switch

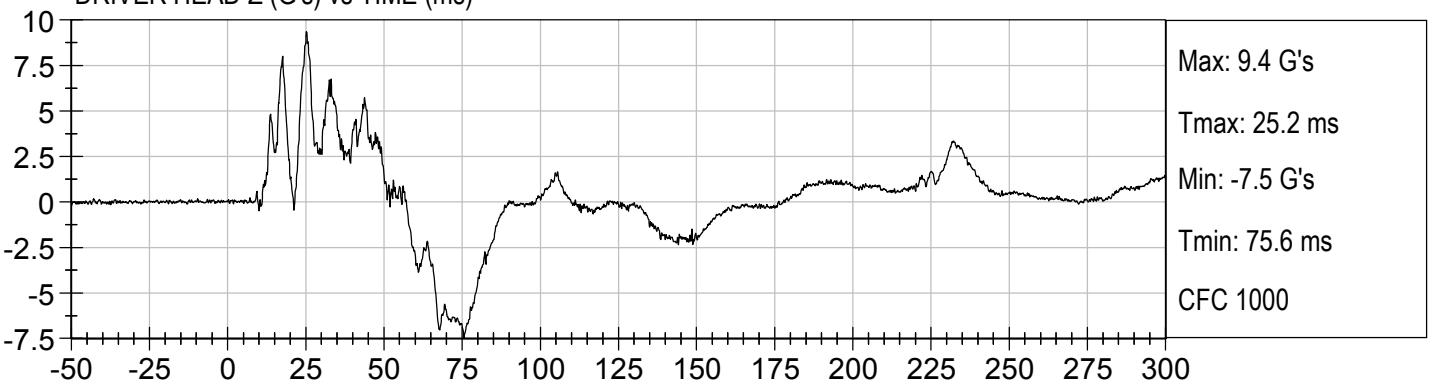
DRIVER HEAD X (G's) vs TIME (ms)



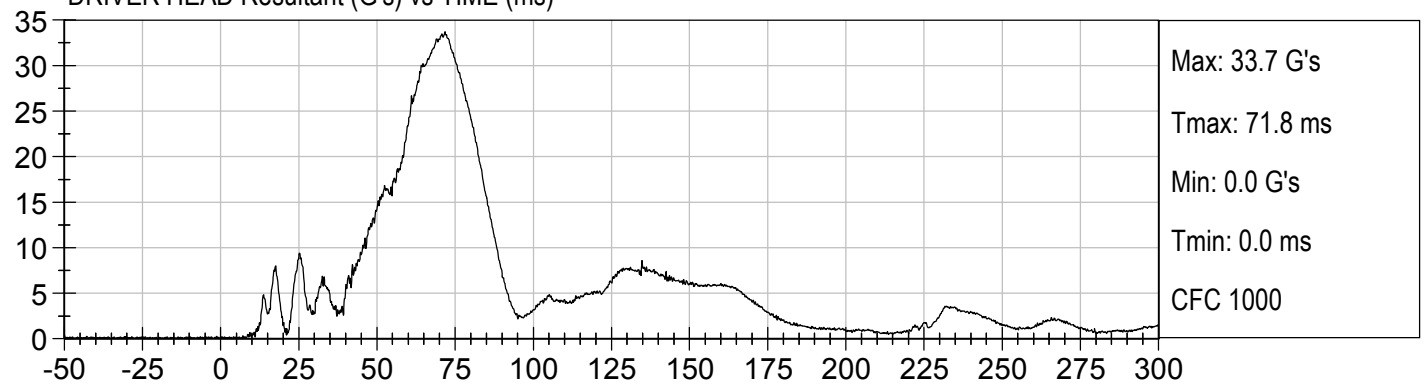
DRIVER HEAD Y (G's) vs TIME (ms)



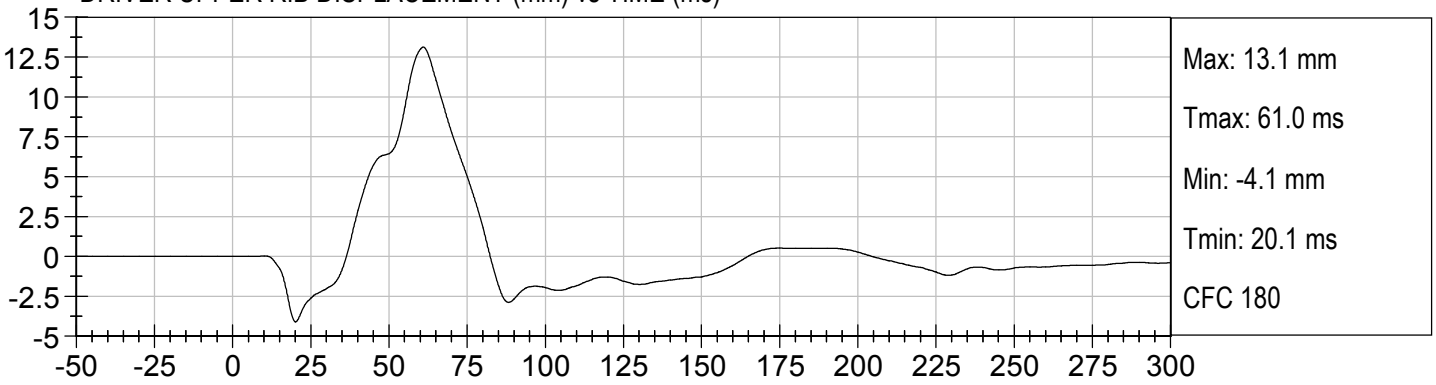
DRIVER HEAD Z (G's) vs TIME (ms)



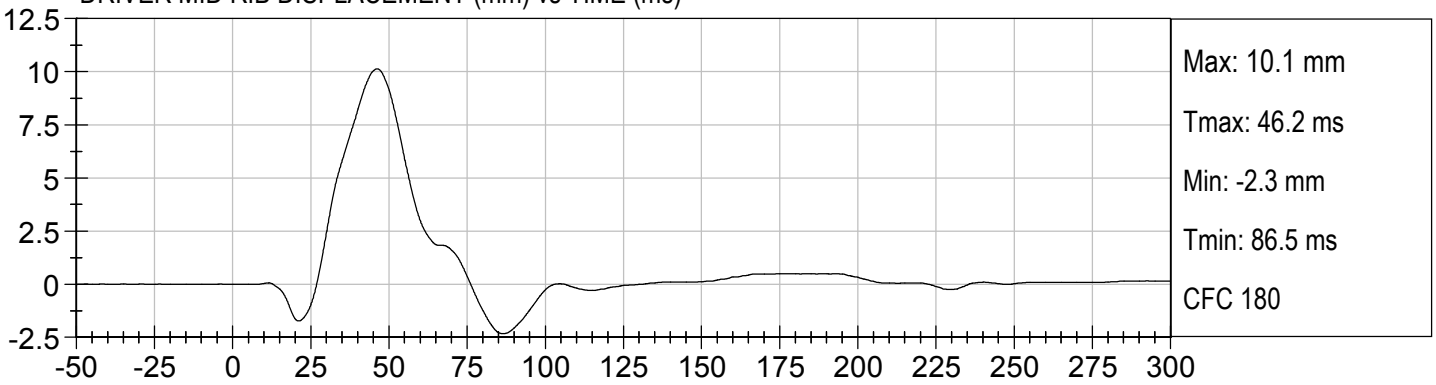
DRIVER HEAD Resultant (G's) vs TIME (ms)



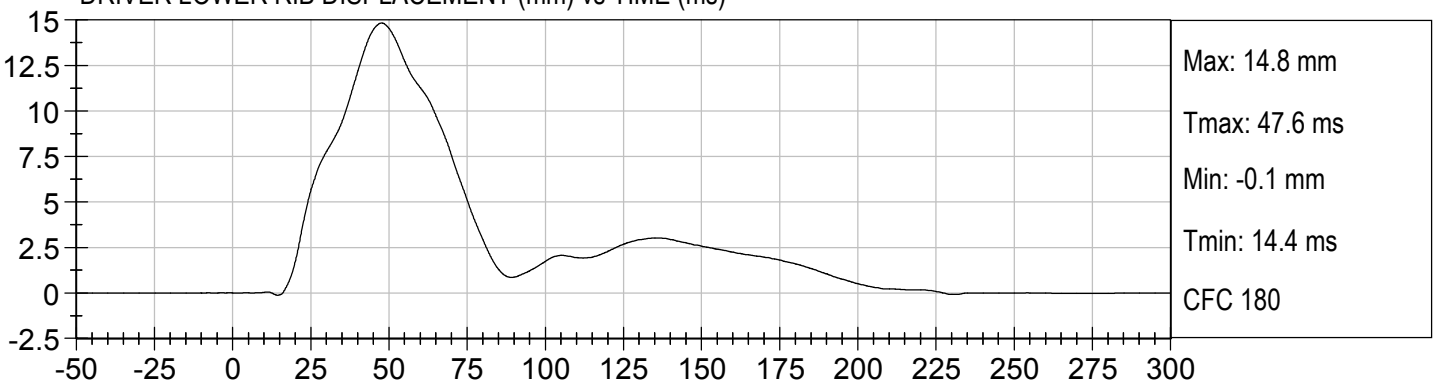
DRIVER UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



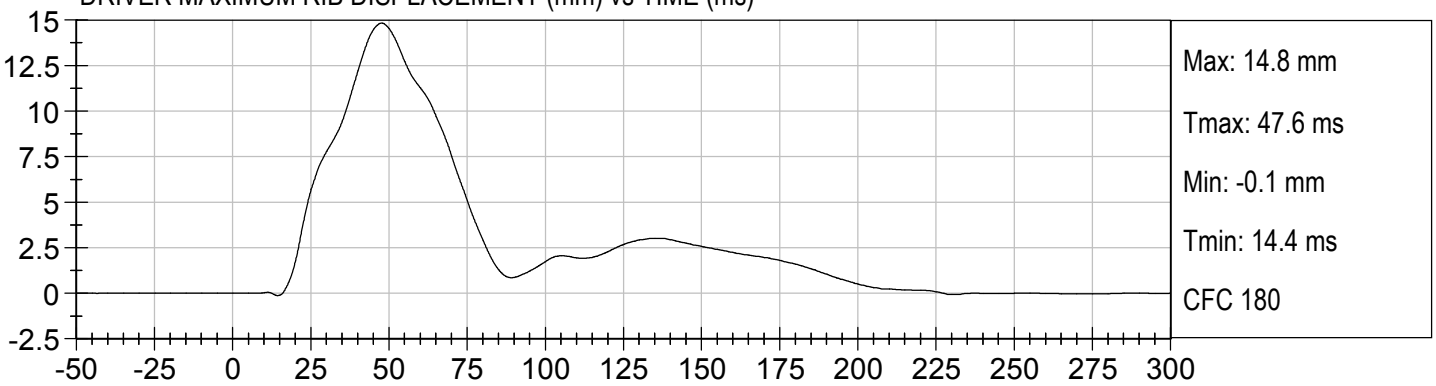
DRIVER MID RIB DISPLACEMENT (mm) vs TIME (ms)



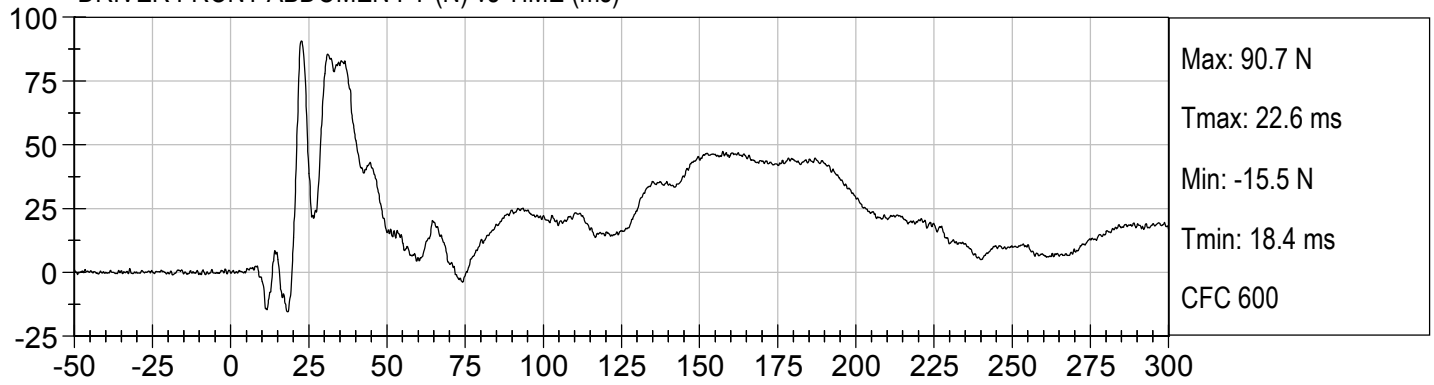
DRIVER LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



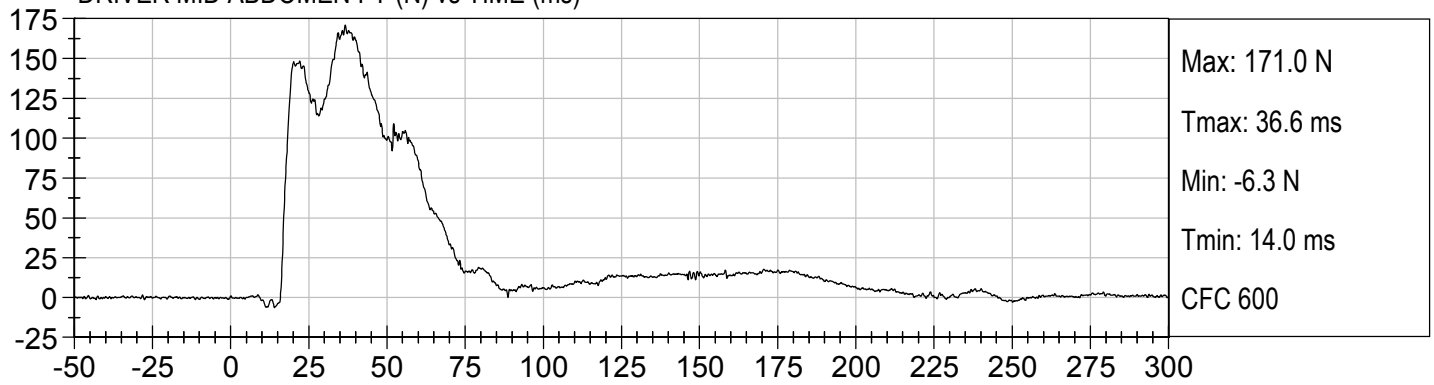
DRIVER MAXIMUM RIB DISPLACEMENT (mm) vs TIME (ms)



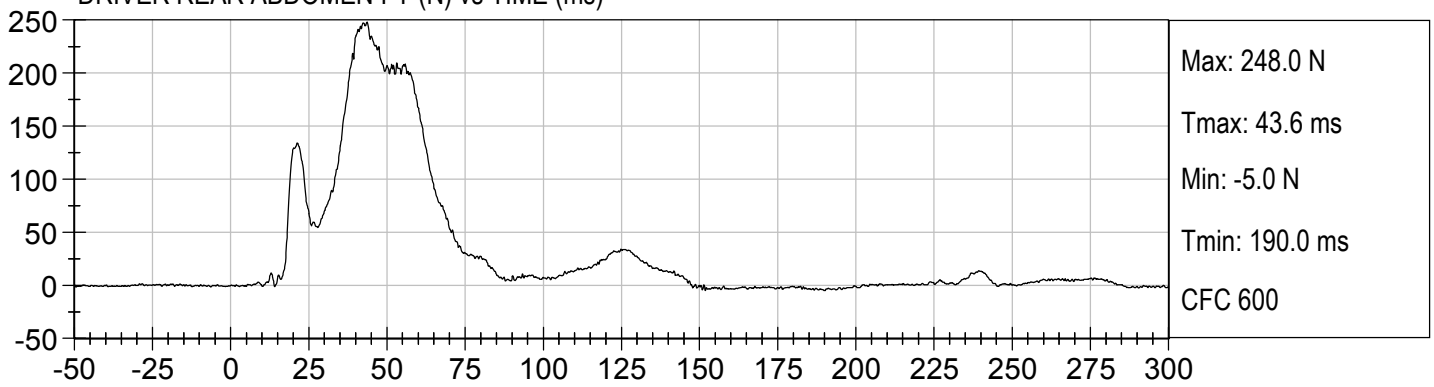
DRIVER FRONT ABDOMEN FY (N) vs TIME (ms)



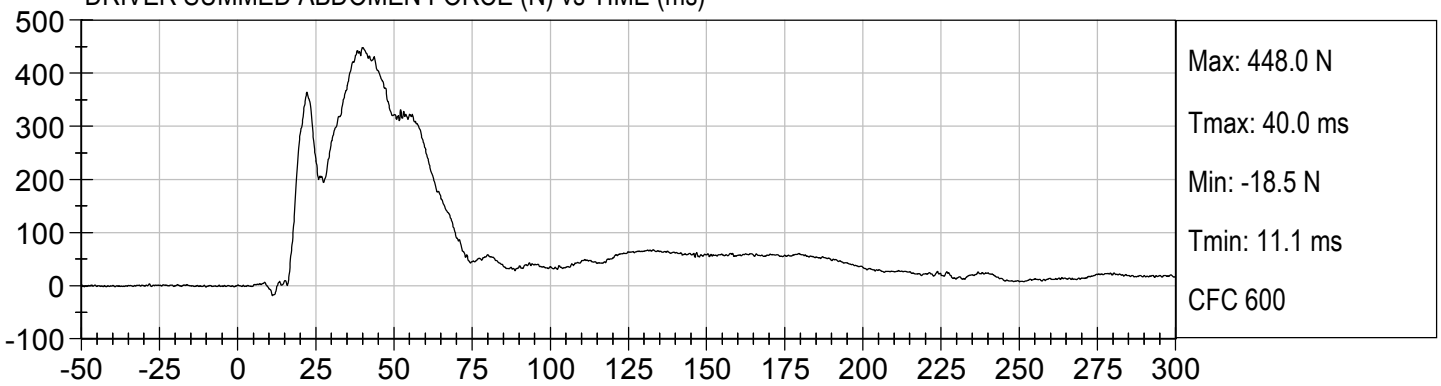
DRIVER MID ABDOMEN FY (N) vs TIME (ms)

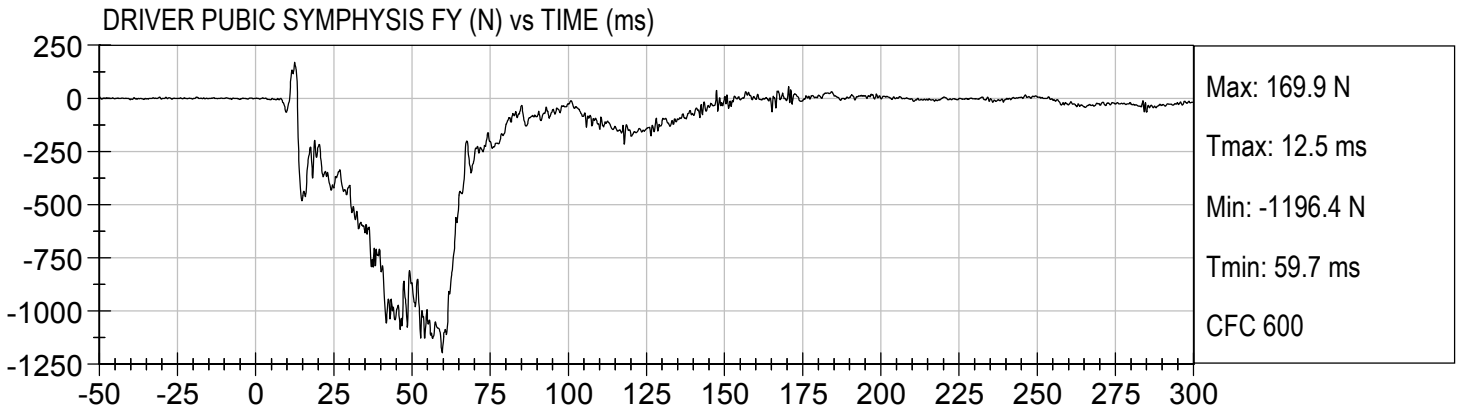


DRIVER REAR ABDOMEN FY (N) vs TIME (ms)

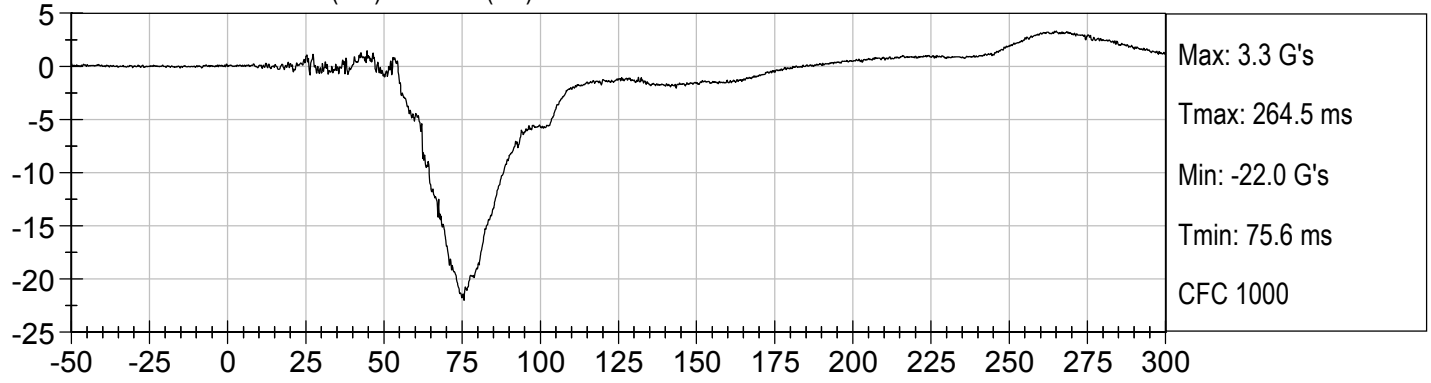


DRIVER SUMMED ABDOMEN FORCE (N) vs TIME (ms)

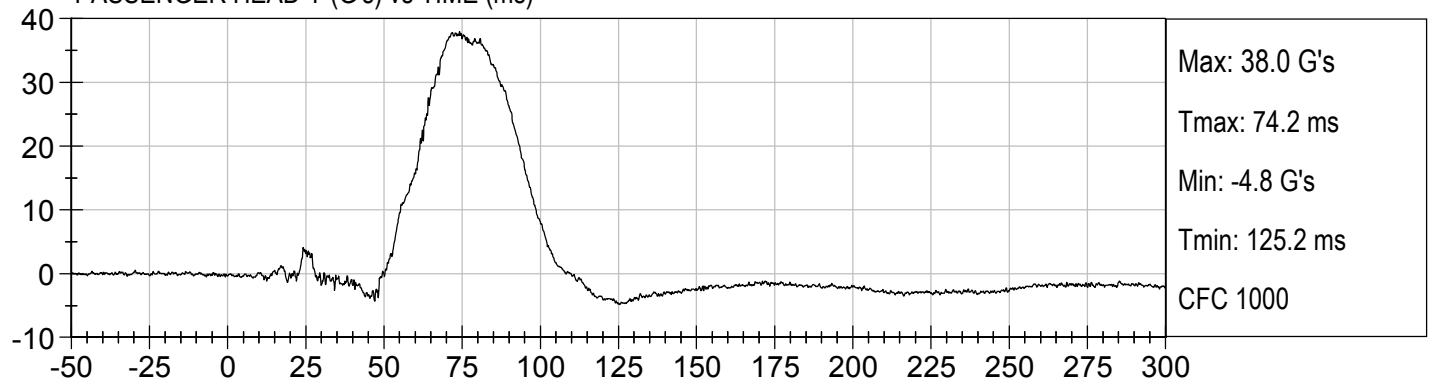



DRIVER PUBIC SYMPHYSIS FY (N) vs TIME (ms)
250
0
-250
-500
-750
-1000
-1250
-50
-25
0
25
50
75
100
125
150
175
200
225
250
275
300
Max: 169.9 N
Tmax: 12.5 ms
Min: -1196.4 N
Tmin: 59.7 ms
CFC 600

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

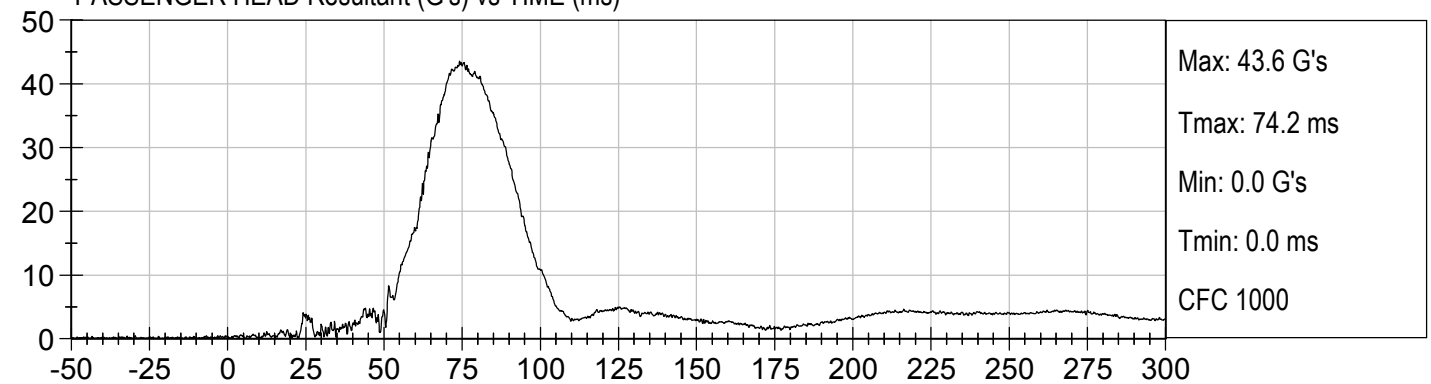


PASSENGER HEAD Y (G's) vs TIME (ms)



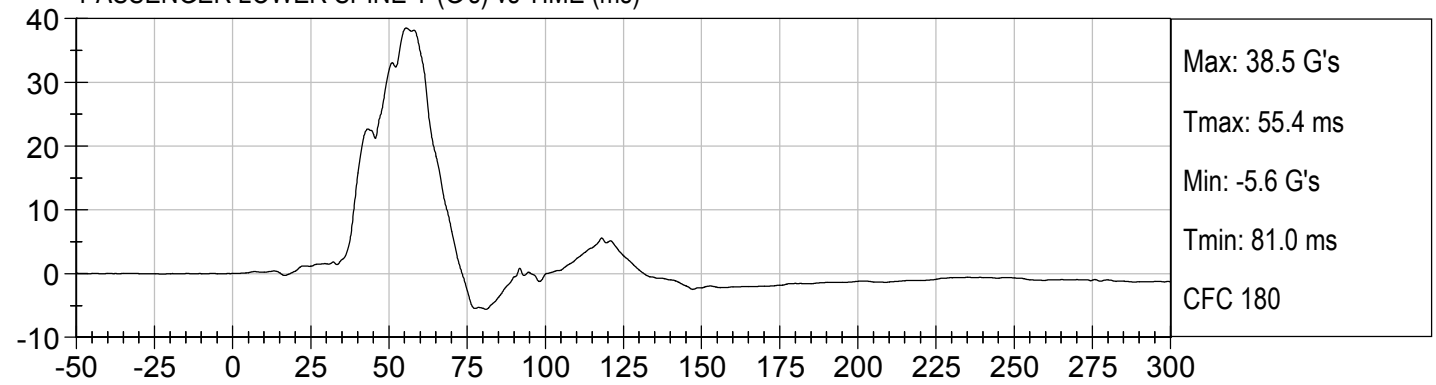
PASSENGER HEAD Z (G's) vs TIME (ms)

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

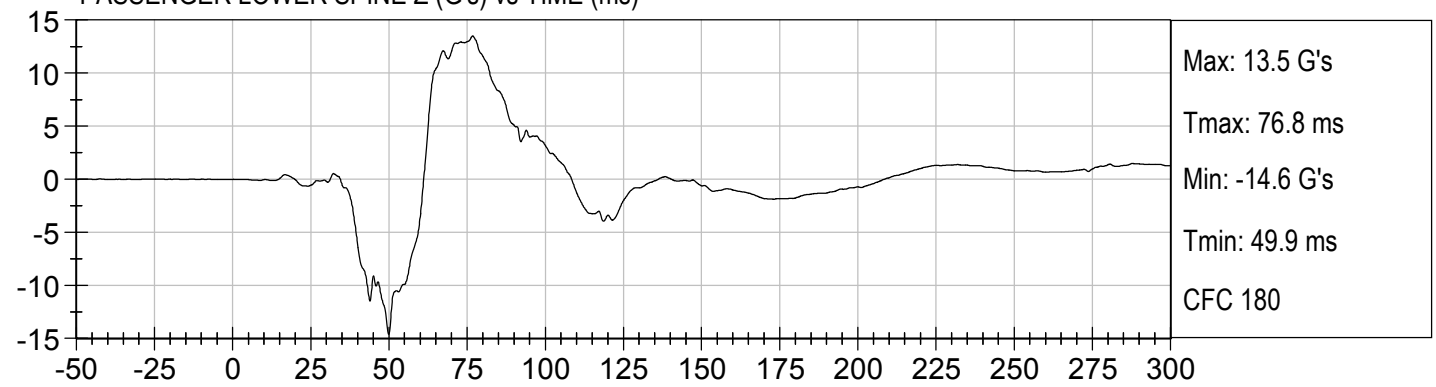


PASSENGER LOWER SPINE X (G's) vs TIME (ms)

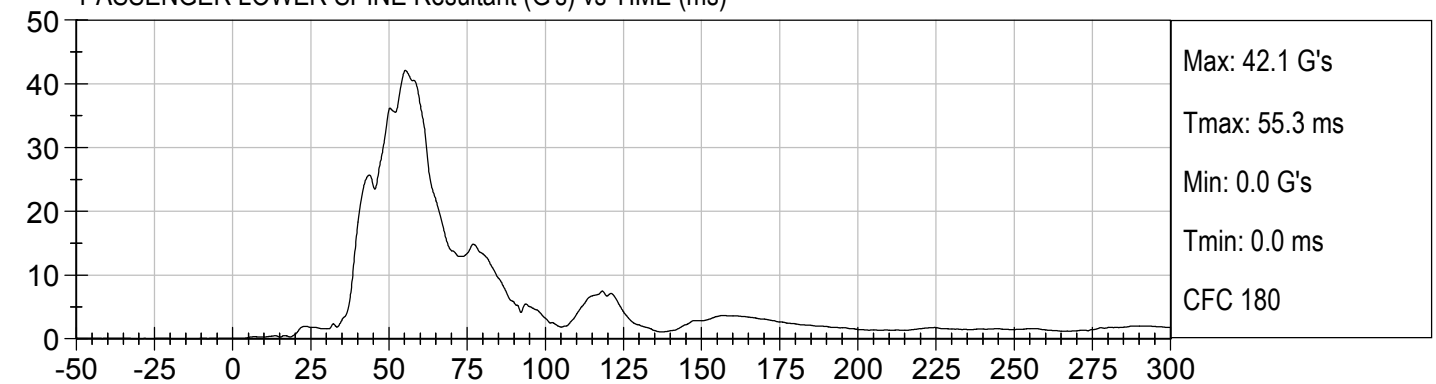
PASSENGER LOWER SPINE Y (G's) vs TIME (ms)



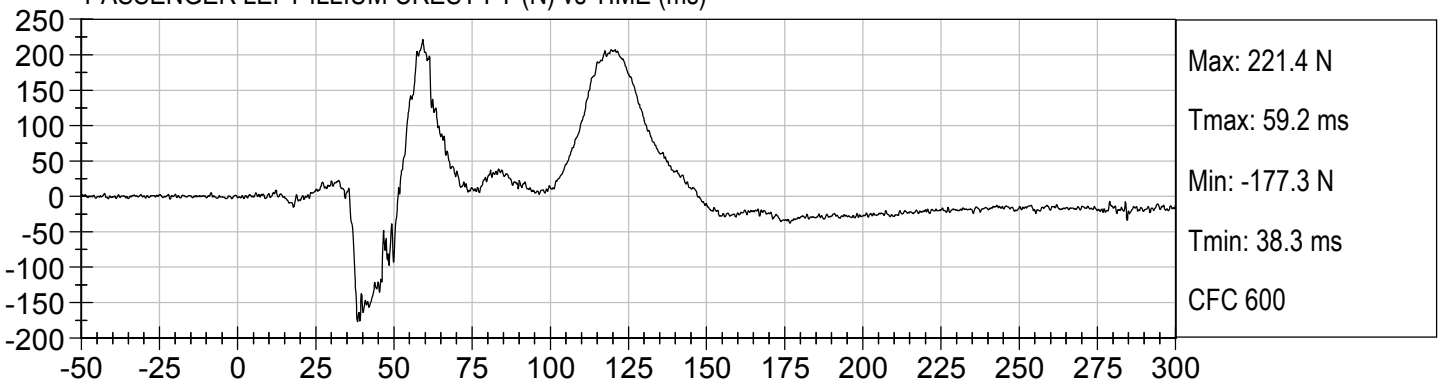
PASSENGER LOWER SPINE Z (G's) vs TIME (ms)



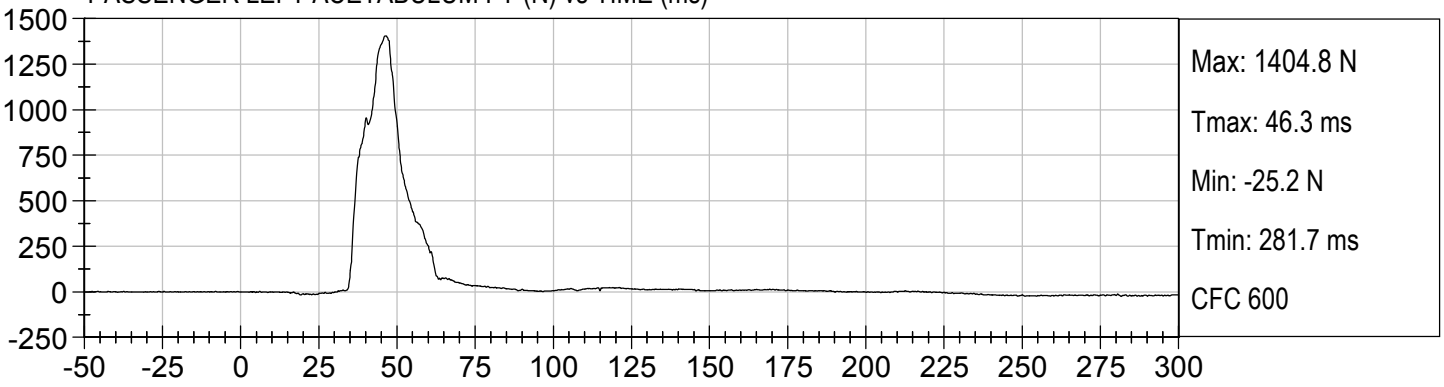
PASSENGER LOWER SPINE Resultant (G's) vs TIME (ms)



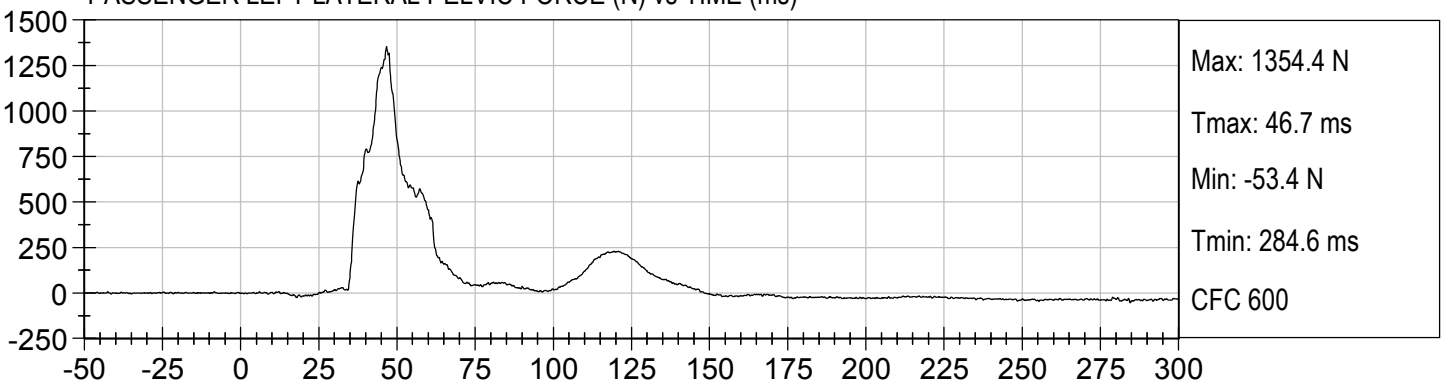
PASSENGER LEFT ILLIUM CREST FY (N) vs TIME (ms)



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:** D152151

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Peak Resultant Acceleration	G's	125 to 155	135	Pass
Peak Longitudinal Acceleration	G's	<= +/- 15.0	7.9	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

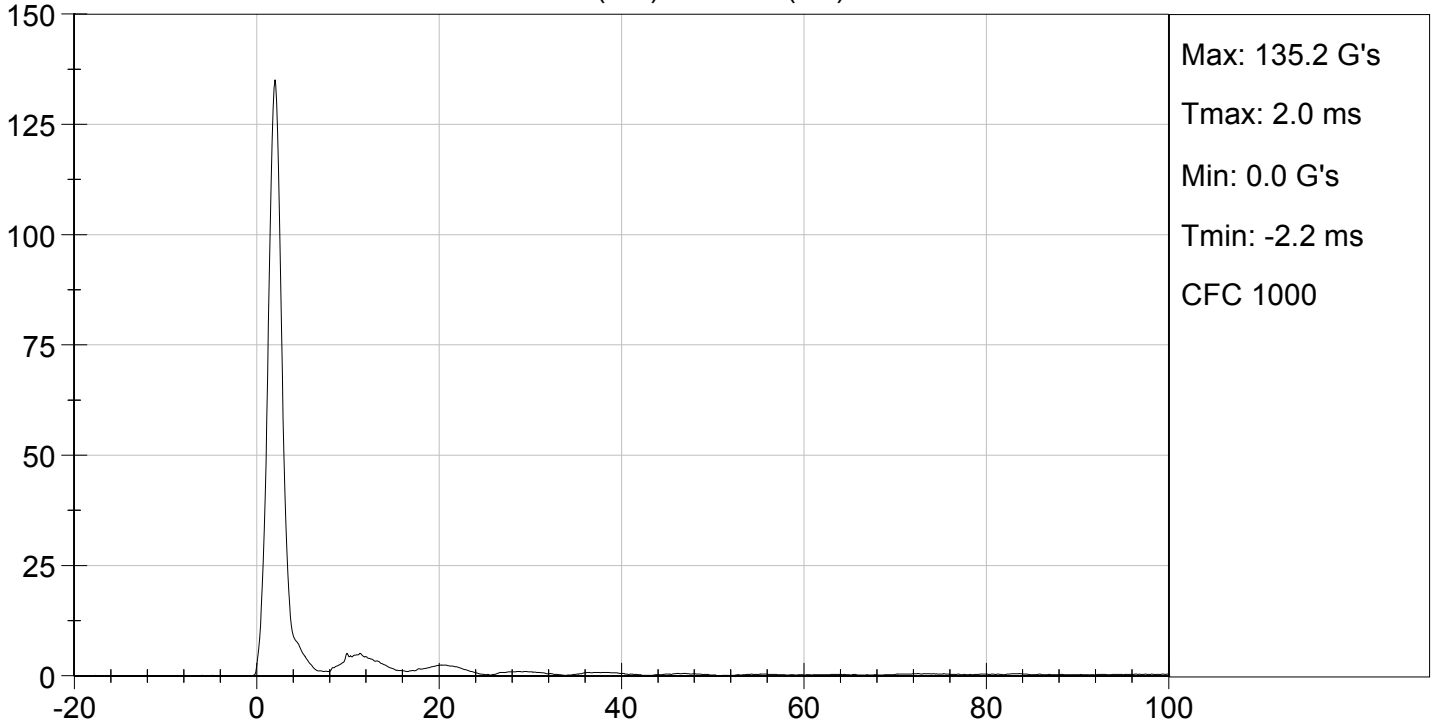
07/17/2015
Test Date

Jessica Hall
Approved By

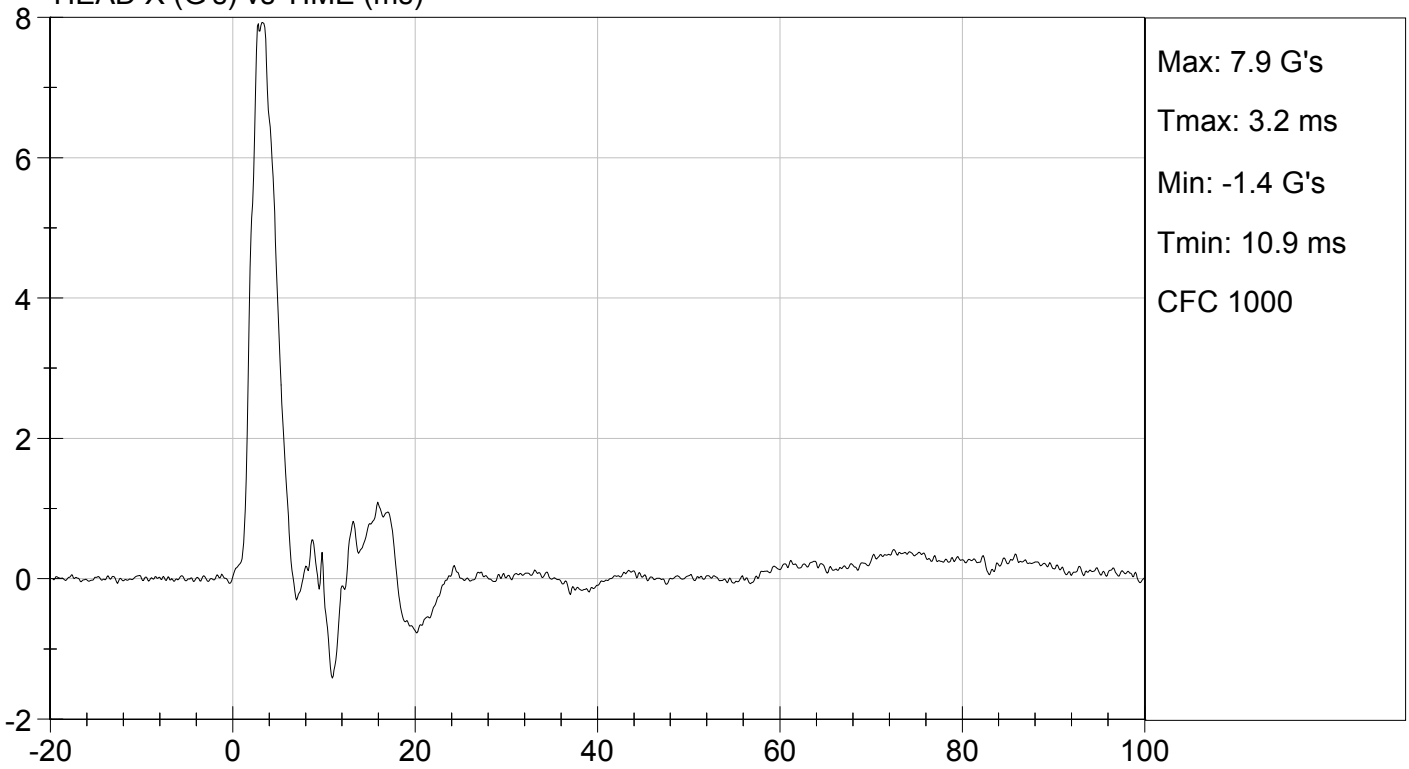
TEST DESC: HEAD DROP

TEST DATE: 07/17/2015
TEST #: D152151

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



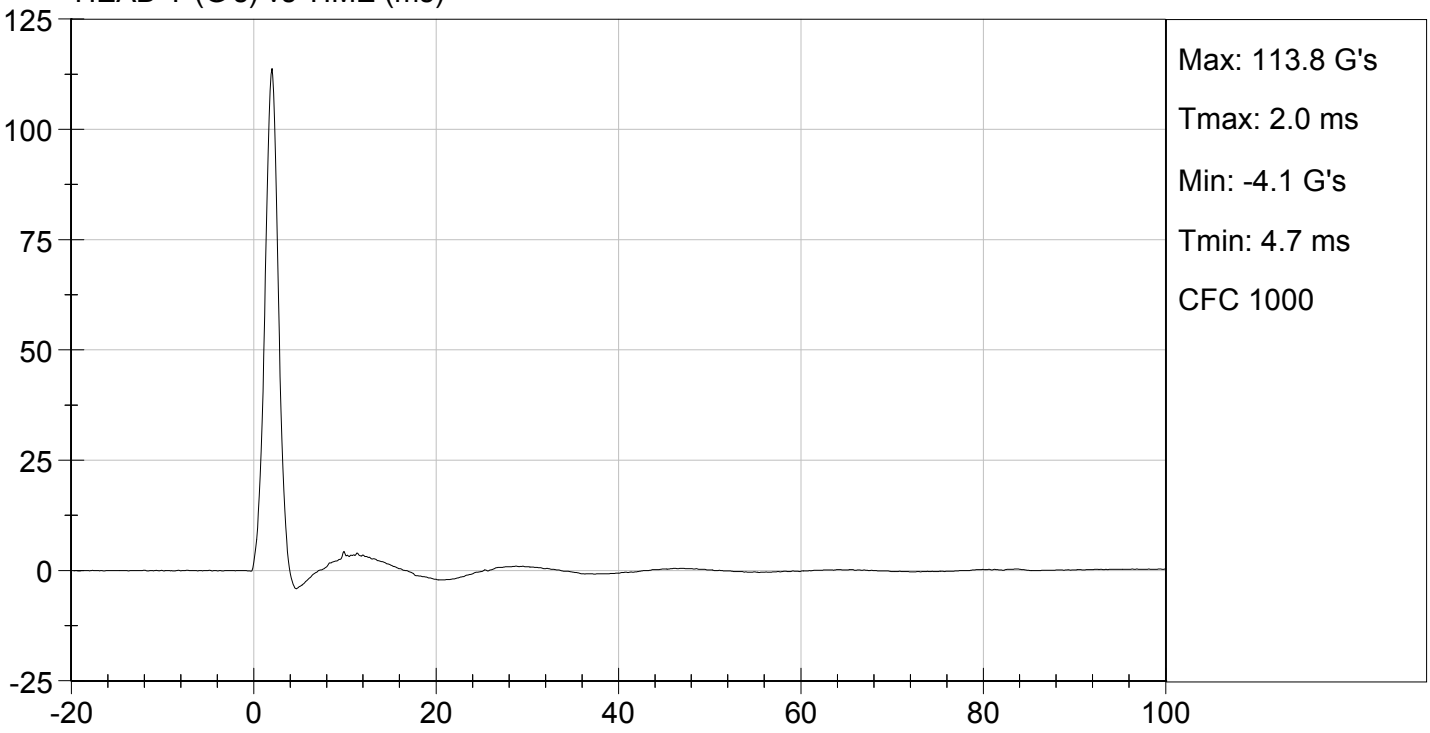
HEAD X (G's) vs TIME (ms)



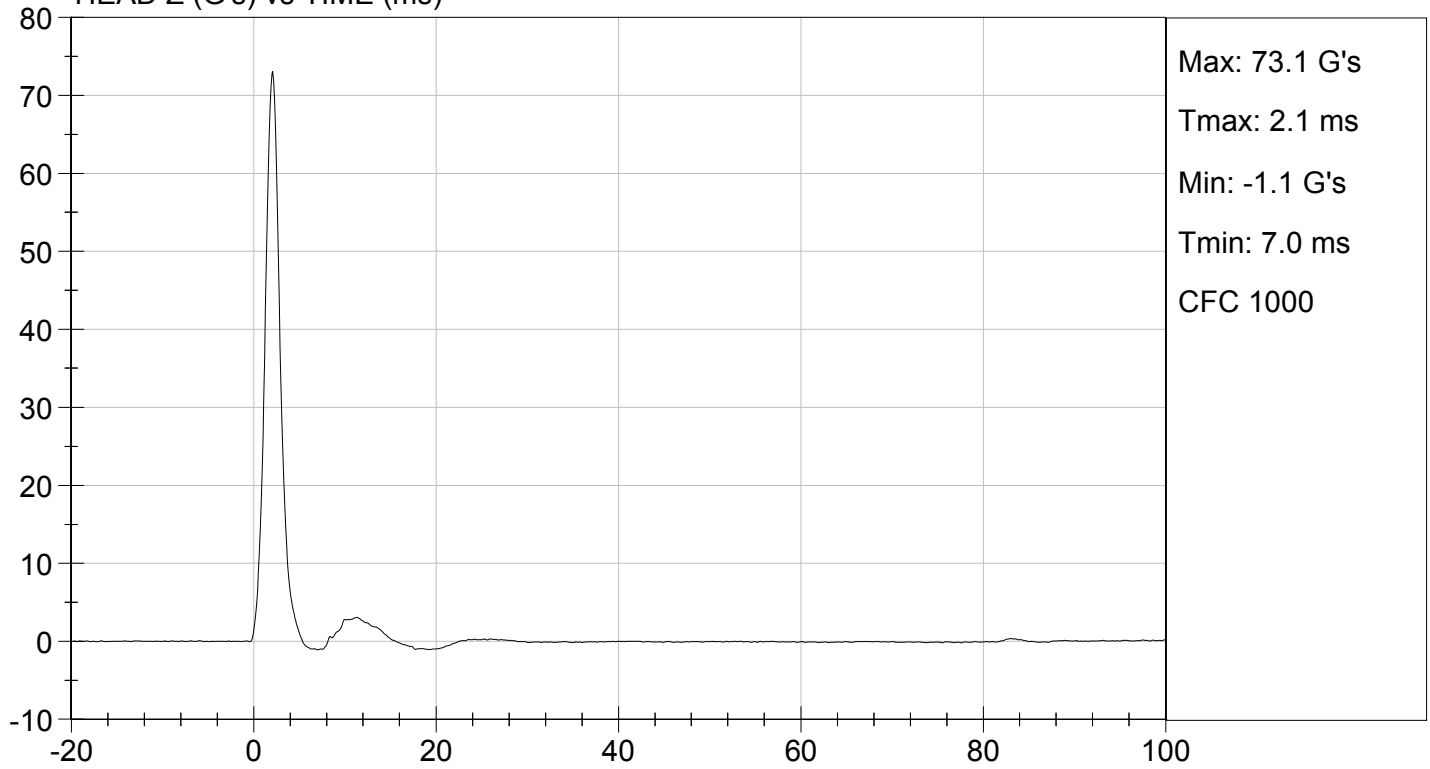
TEST DESC: HEAD DROP

TEST DATE: 07/17/2015
TEST #: D152151

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



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



MGA RESEARCH CORPORATION

NECK PENDULUM TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152152

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	48	Pass
Pendulum Speed		m/s	3.30 to 3.50	3.48	Pass
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.03	Pass
	3 ms	m/s	-0.25 to -0.375	-0.33	Pass
	14 ms	m/s	-3.20 to -3.70	-3.38	Pass
	17 ms	m/s	>= -3.70	-3.67	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	51.3	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	63.6	Pass
Head Rotation Decay Time to 0 Degree		ms	53.0 to 88.0	54.5	Pass
			Overall Results		Pass

Jack Coleman
Laboratory Technician

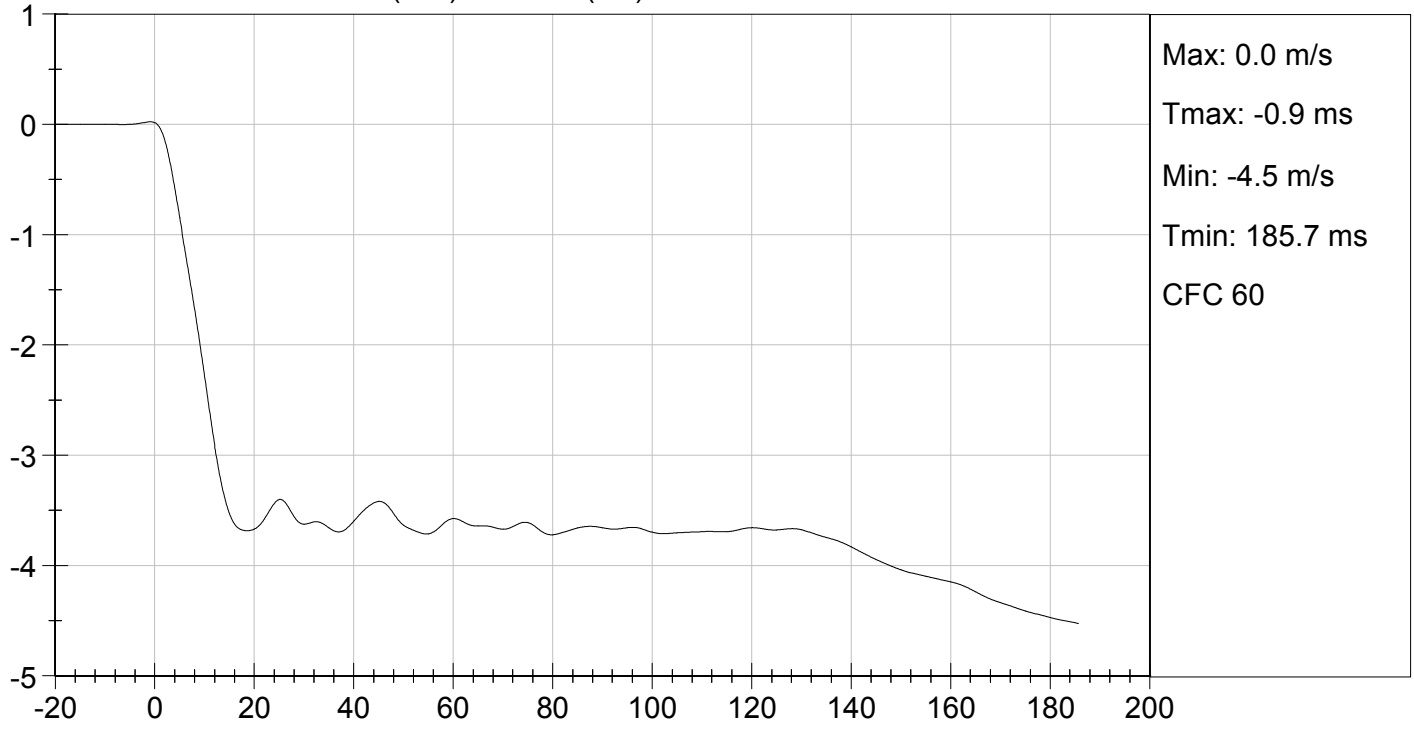
07/17/2015
Test Date

Jessica Gall
Approved By

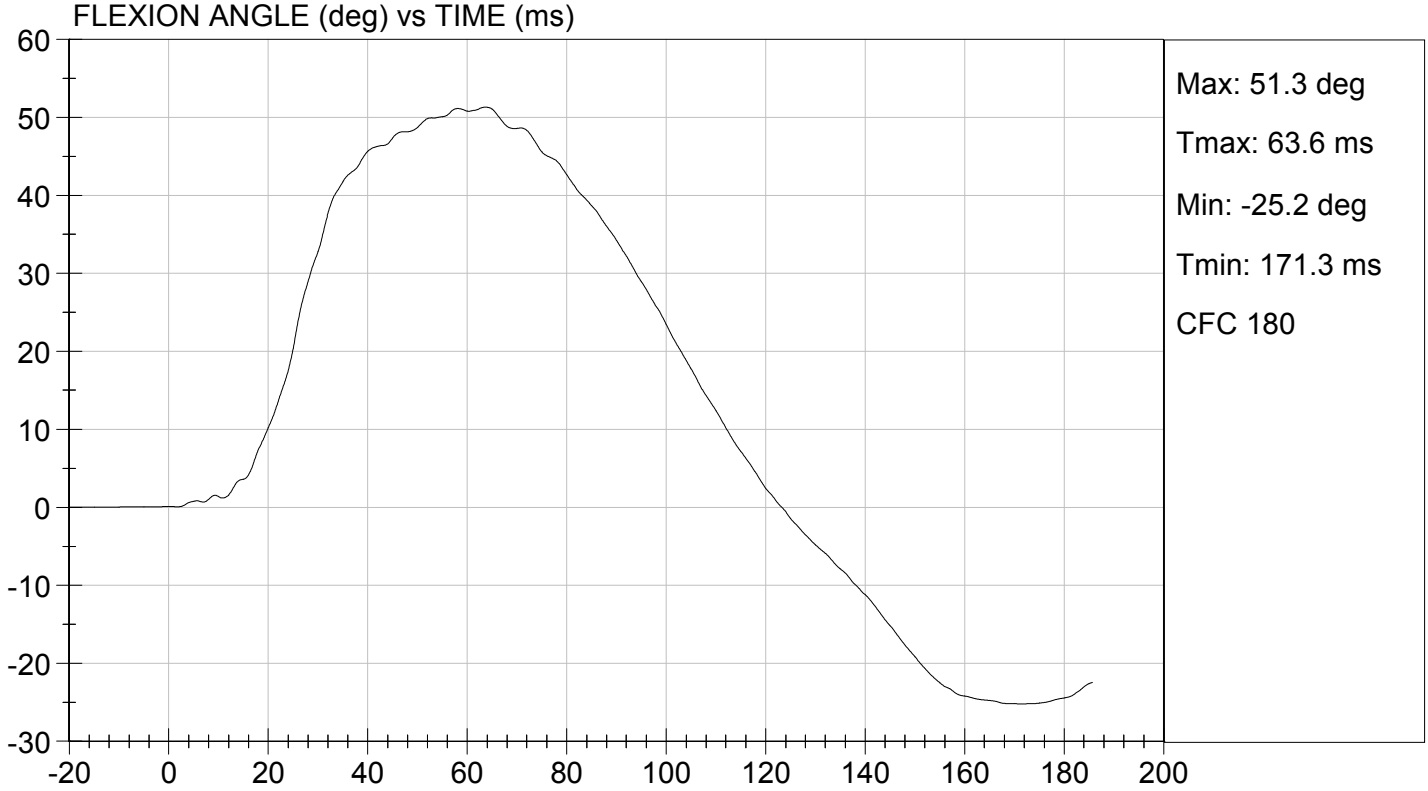
TEST DESC: NECK BENDING
VELOCITY: 11.42 ft/s, 3.48 m/s

TEST DATE: 07/17/2015
TEST #: D152152

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



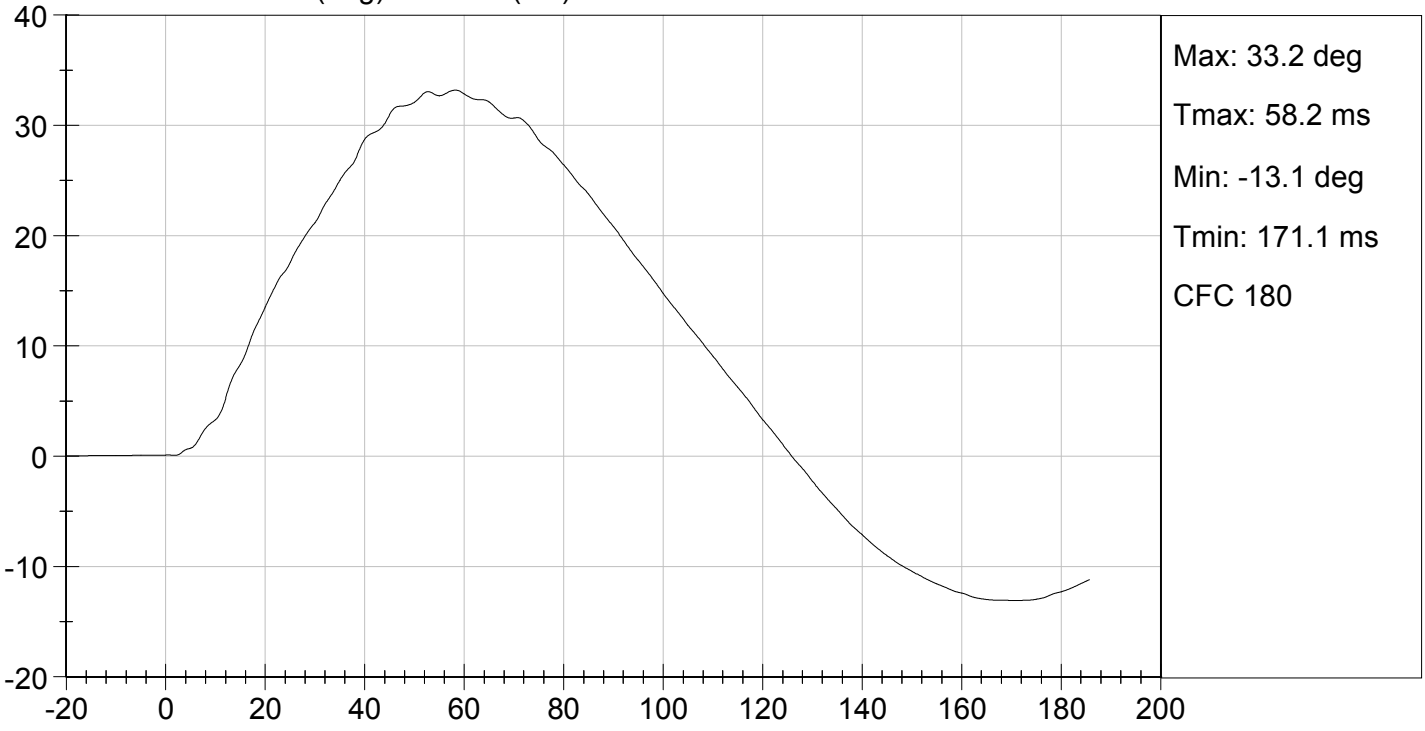
FLEXION ANGLE (deg) vs TIME (ms)



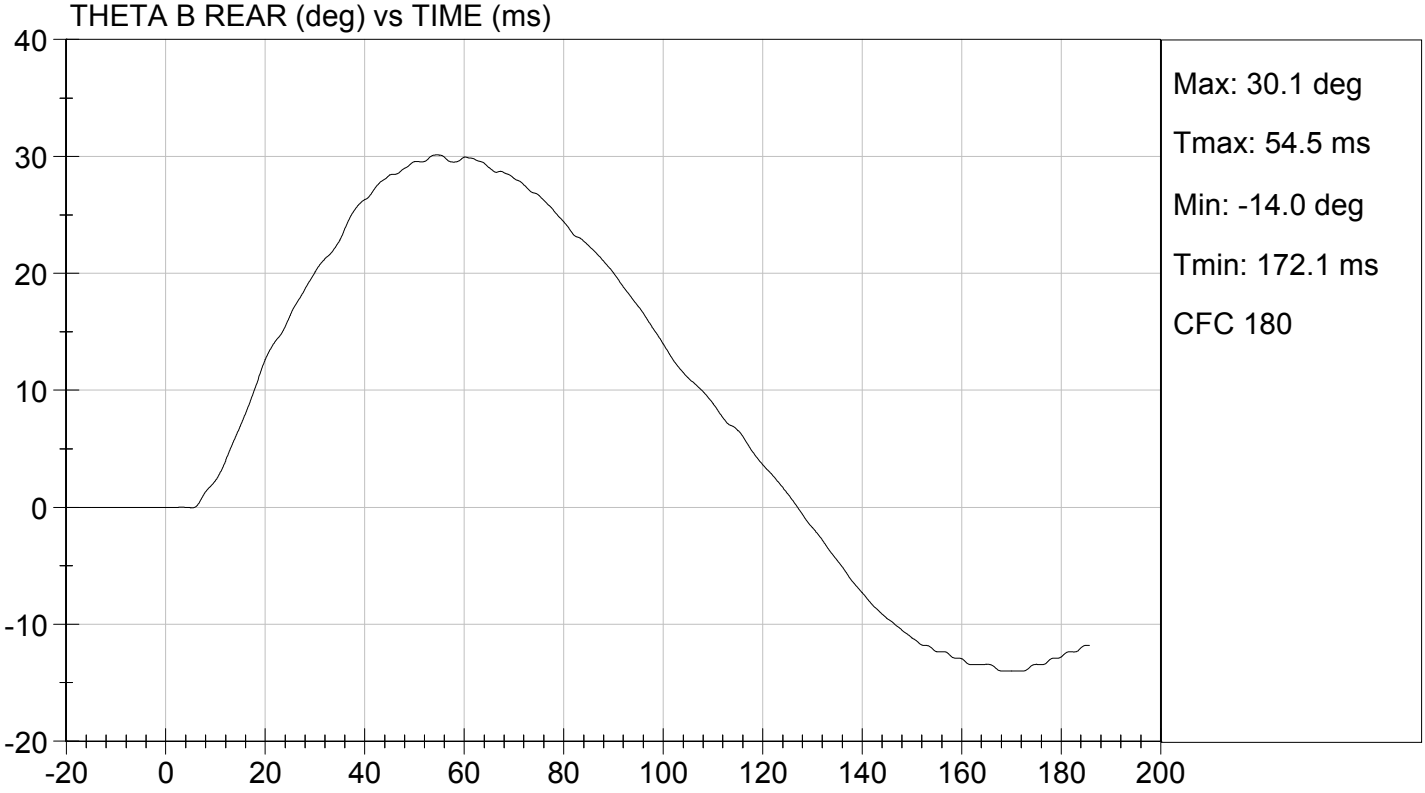
TEST DESC: NECK BENDING
VELOCITY: 11.42 ft/s, 3.48 m/s

TEST DATE: 07/17/2015
TEST #: D152152

THETA A FRONT (deg) vs TIME (ms)



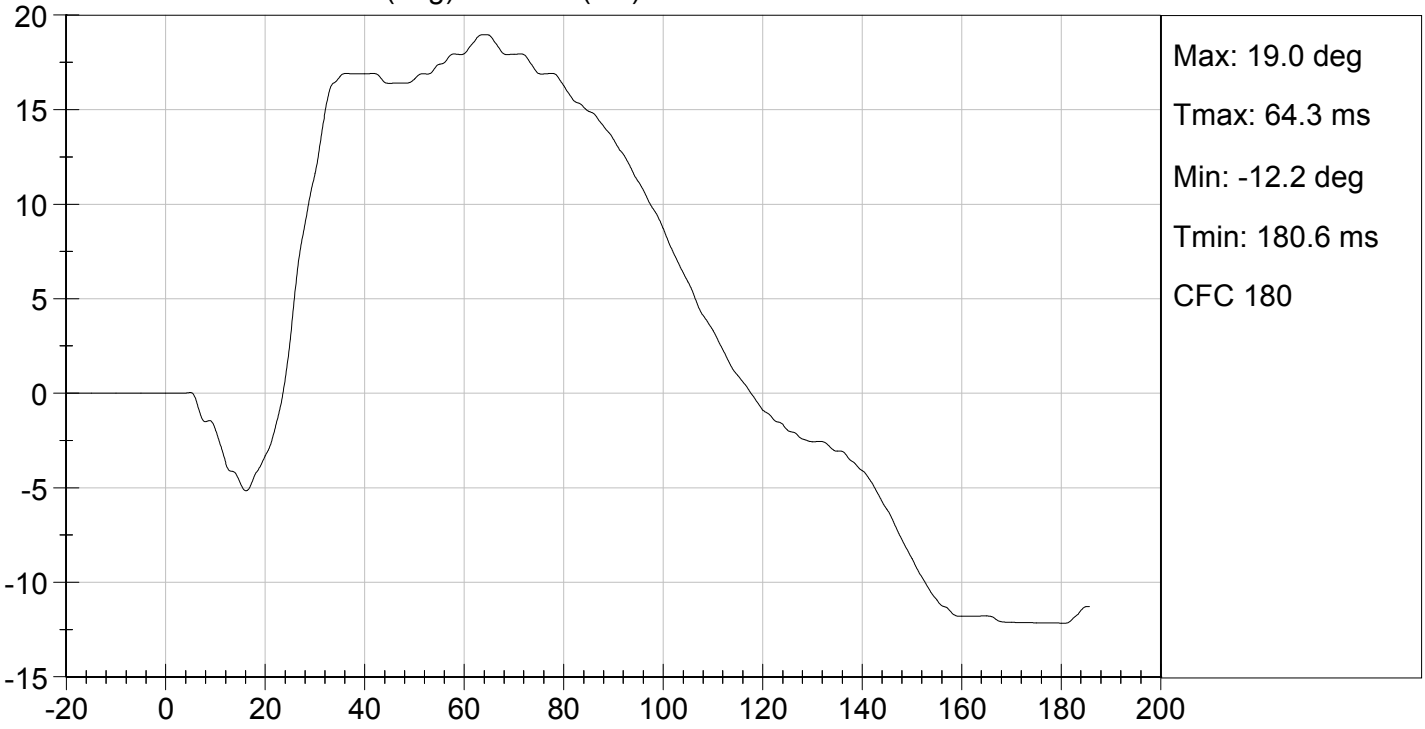
THETA B REAR (deg) vs TIME (ms)



TEST DESC: NECK BENDING
VELOCITY: 11.42 ft/s, 3.48 m/s

TEST DATE: 07/17/2015
TEST #: D152152

THETA C HEADFORM (deg) vs TIME (ms)



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152153

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	49	Pass
Pendulum Speed	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	8.6	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

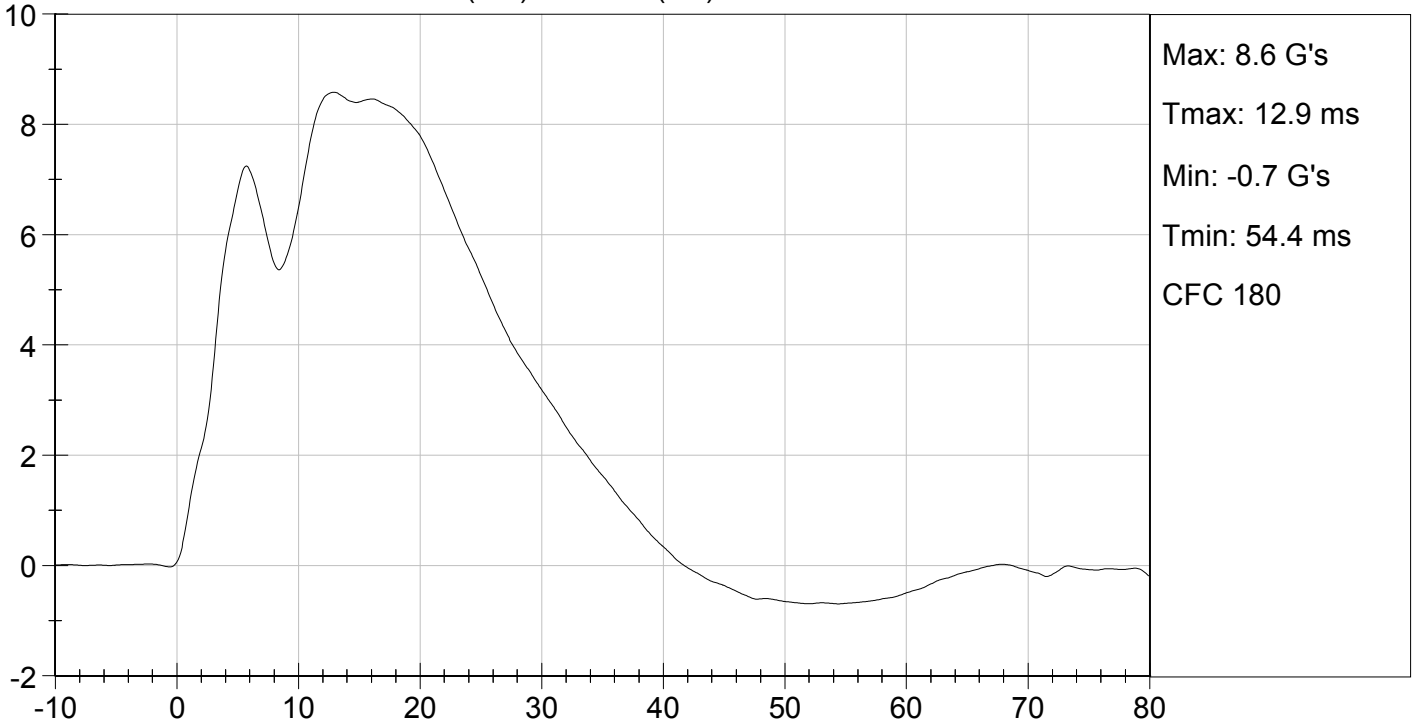
07/17/2015
Test Date

Jessica Hall
Approved By

TEST DESC: SHOULDER IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/17/2015
TEST #: D152153

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



MGA RESEARCH CORPORATION

UPPER RIB TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152154

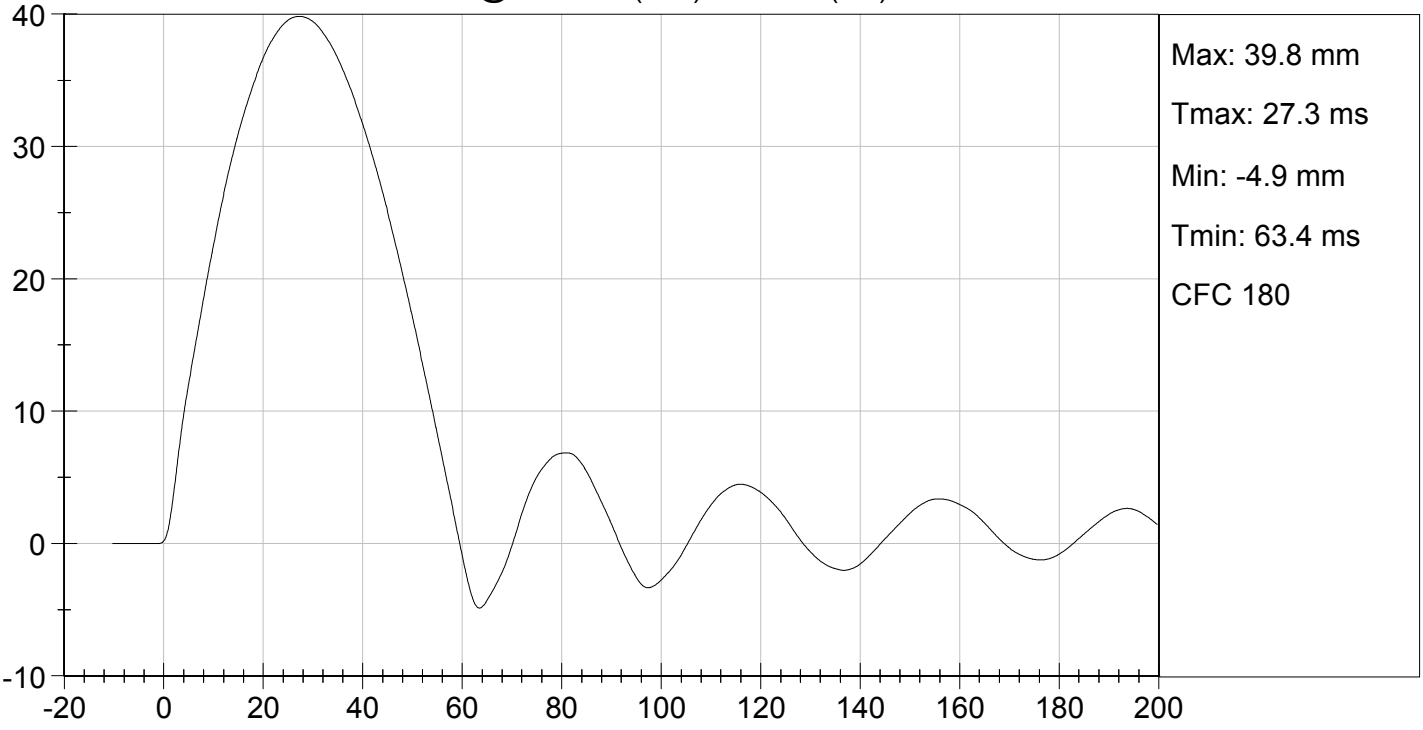
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.8	Pass
Displacement at 815 mm	mm	46.0 to 51.0	49.9	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

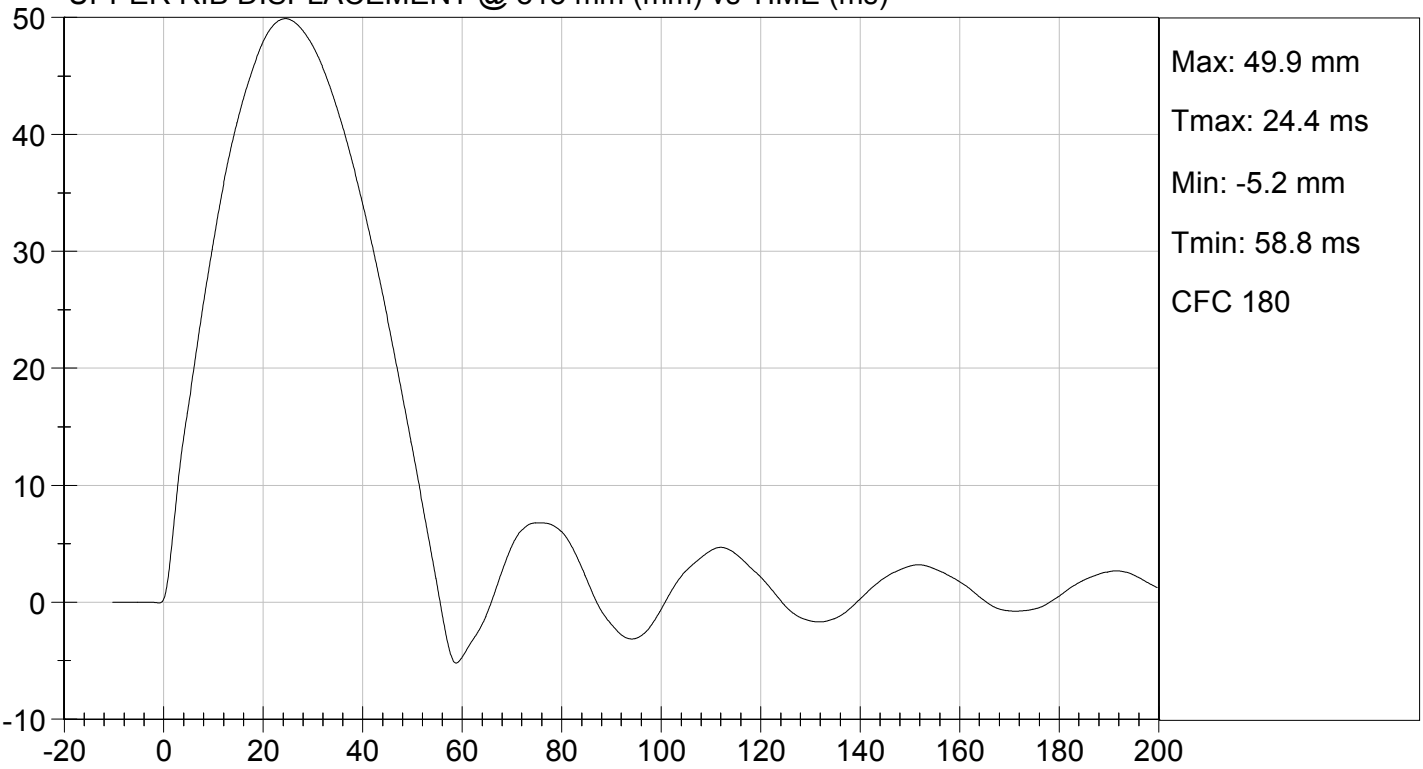
07/16/2015
Test Date

Jessica Hall
Approved By

UPPER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

MID RIB TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152155

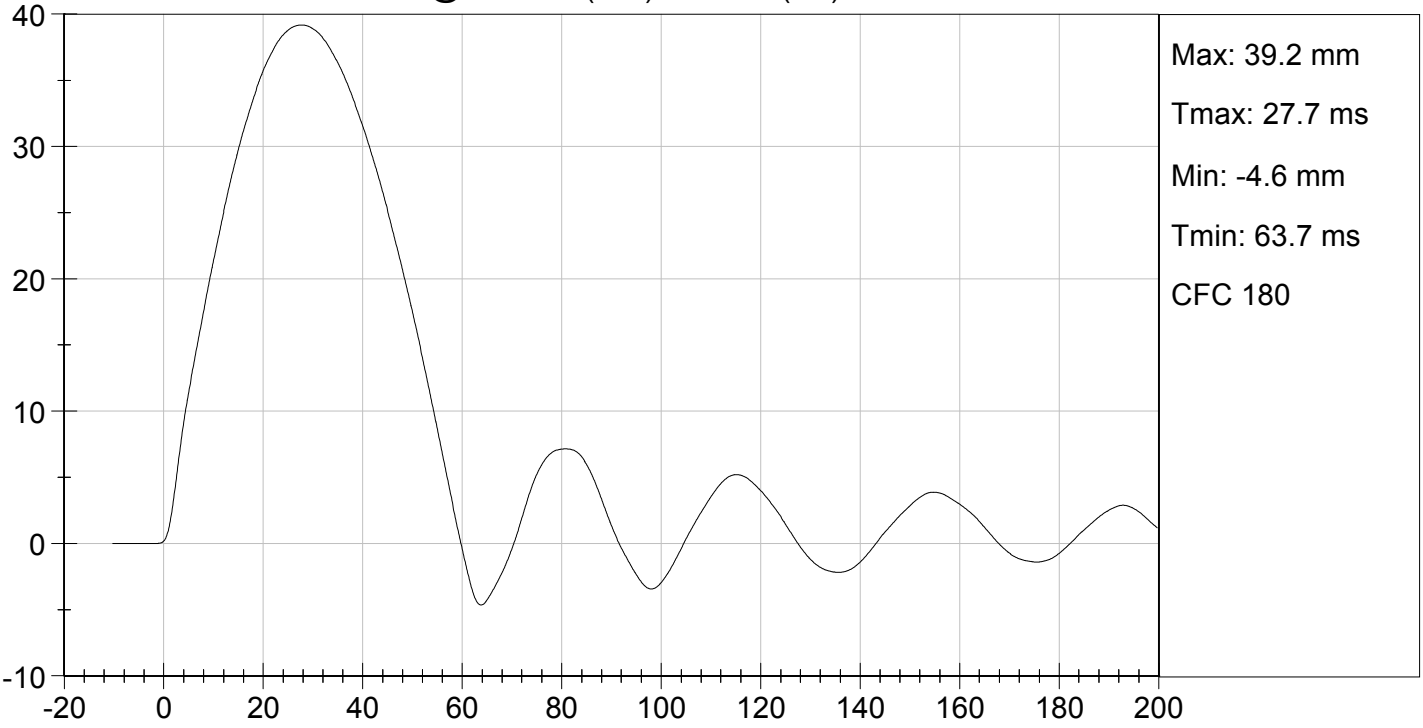
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.2	Pass
Displacement at 815 mm	mm	46.0 to 51.0	48.7	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

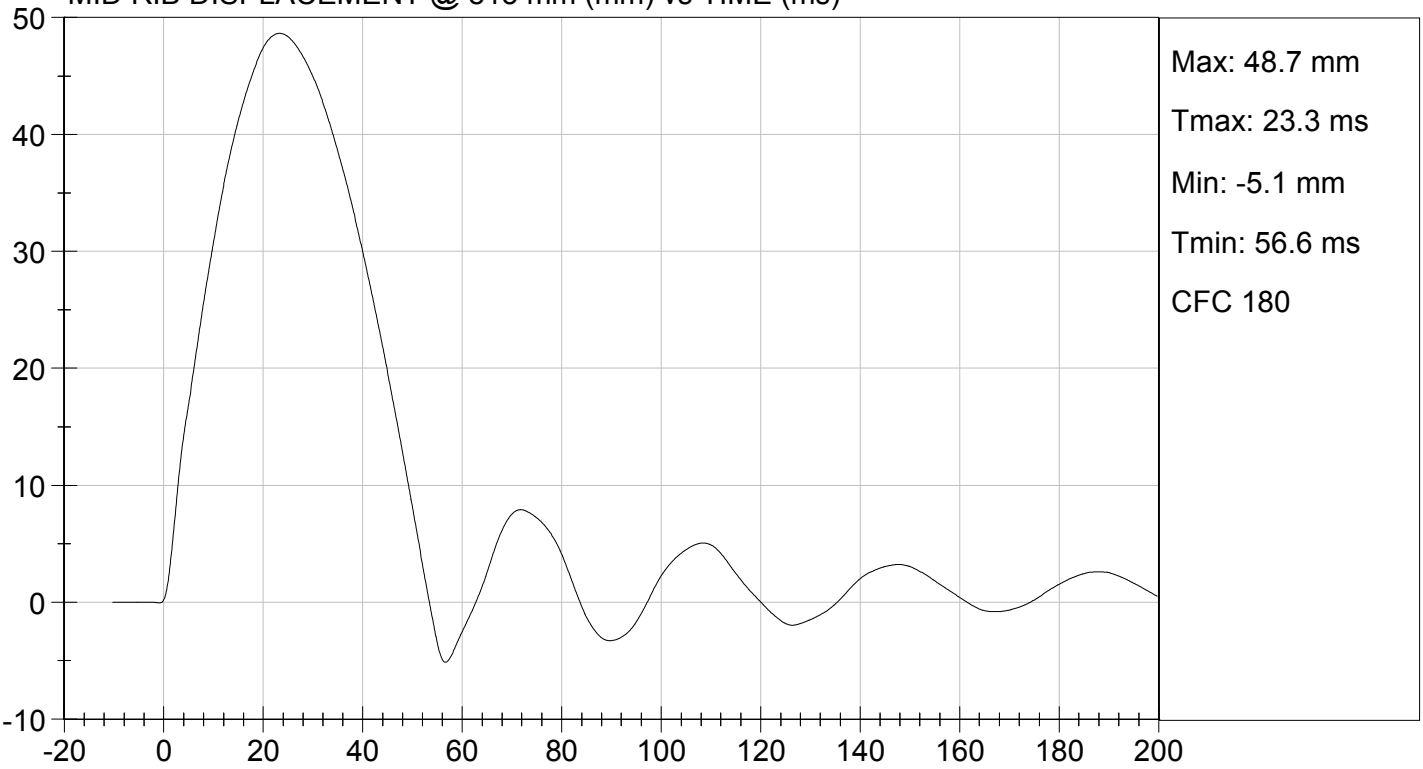
07/16/2015
Test Date

Jessica Gall
Approved By

MID RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



MID RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

LOWER RIB TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152156

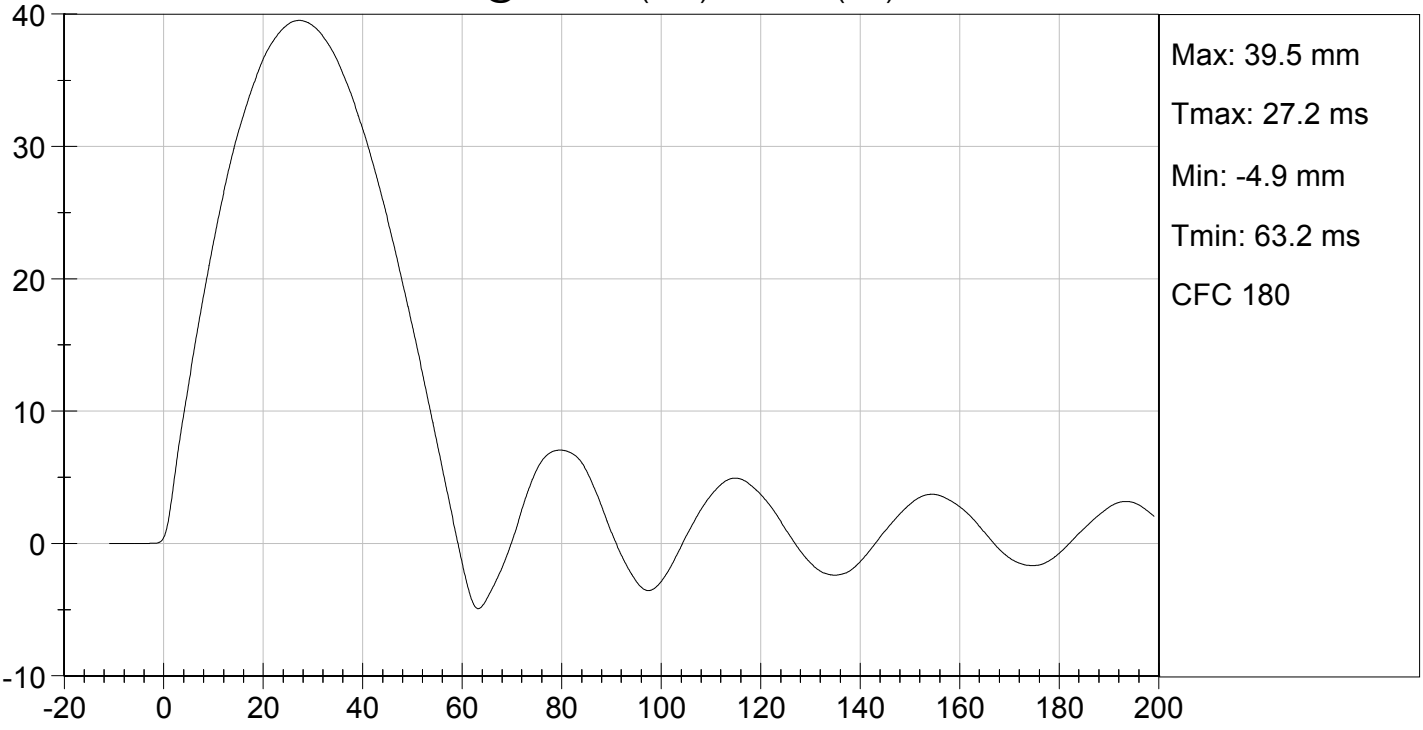
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.5	Pass
Displacement at 815 mm	mm	46.0 to 51.0	50.2	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

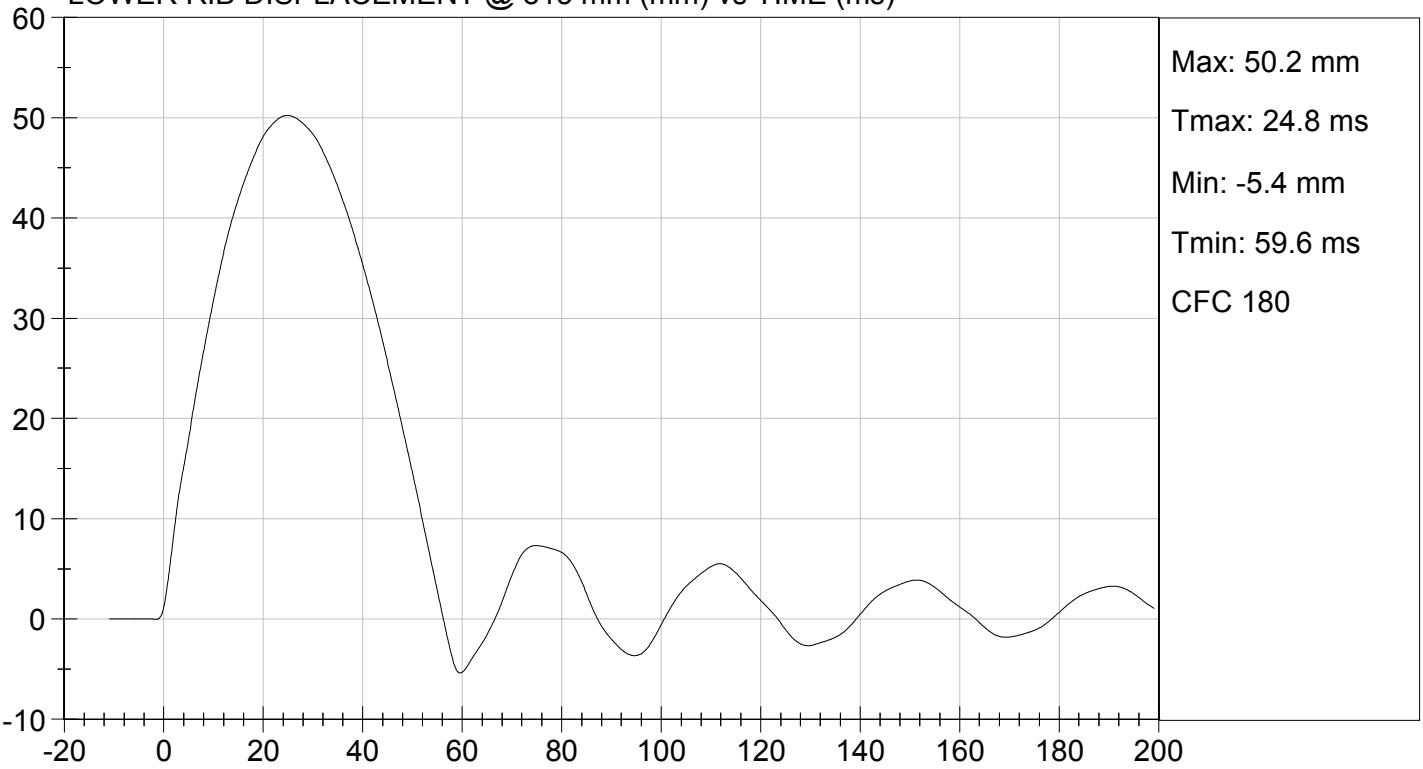
07/16/2015
Test Date

Jessica Gall
Approved By

LOWER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152150

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	49	Pass
Probe Speed	m/s	5.40 to 5.60	5.58	Pass
Maximum Impactor Force (after 6 ms)	N	5100 to 6200	5542	Pass
Upper Rib Displacement	mm	34.0 to 41.0	38.3	Pass
Middle Rib Displacement	mm	37.0 to 45.0	41.2	Pass
Lower Rib Displacement	mm	37.0 to 44.0	41.2	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

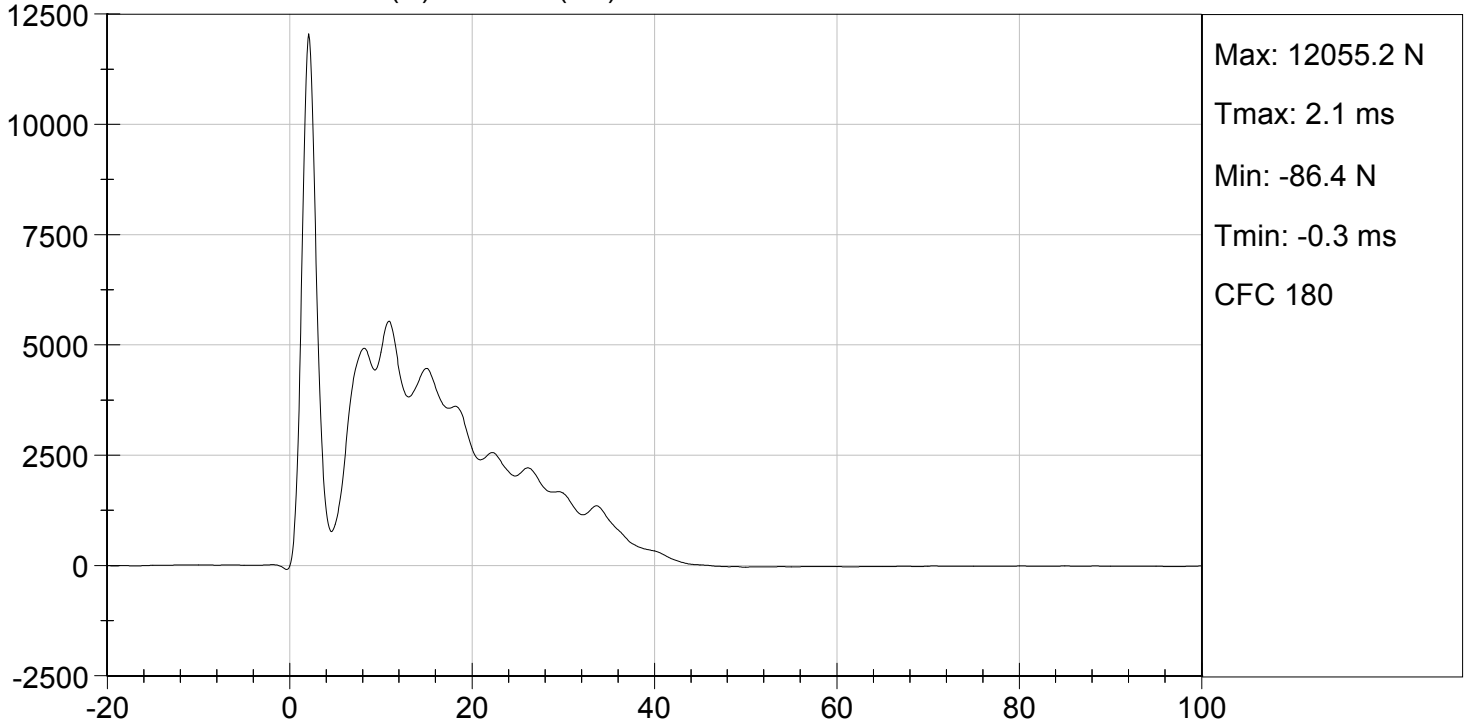
07/17/2015
Test Date

Jessica Hall
Approved By

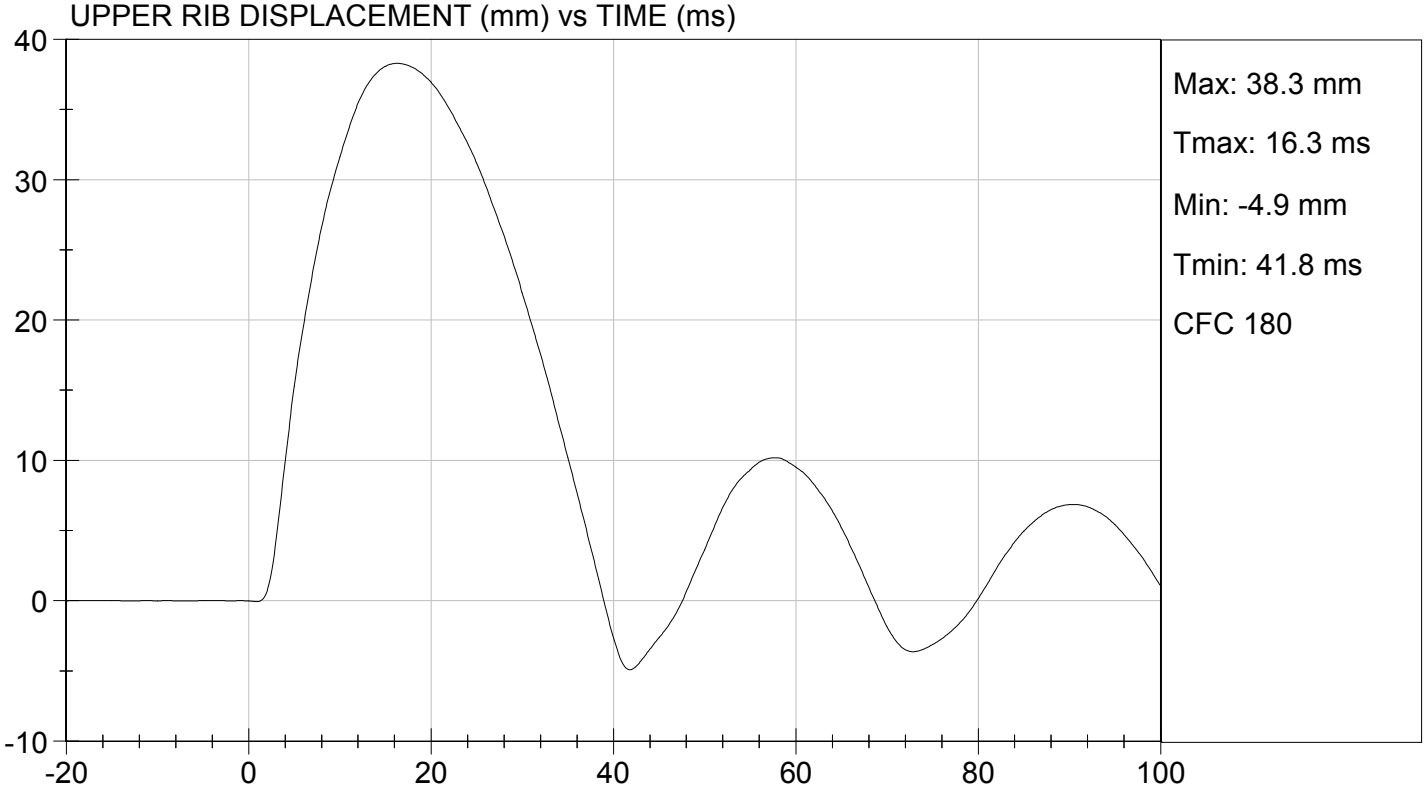
TEST DESC: THORAX IMPACT
VELOCITY: 18.32 ft/s, 5.58 m/s

TEST DATE: 07/17/2015
TEST #: D152150

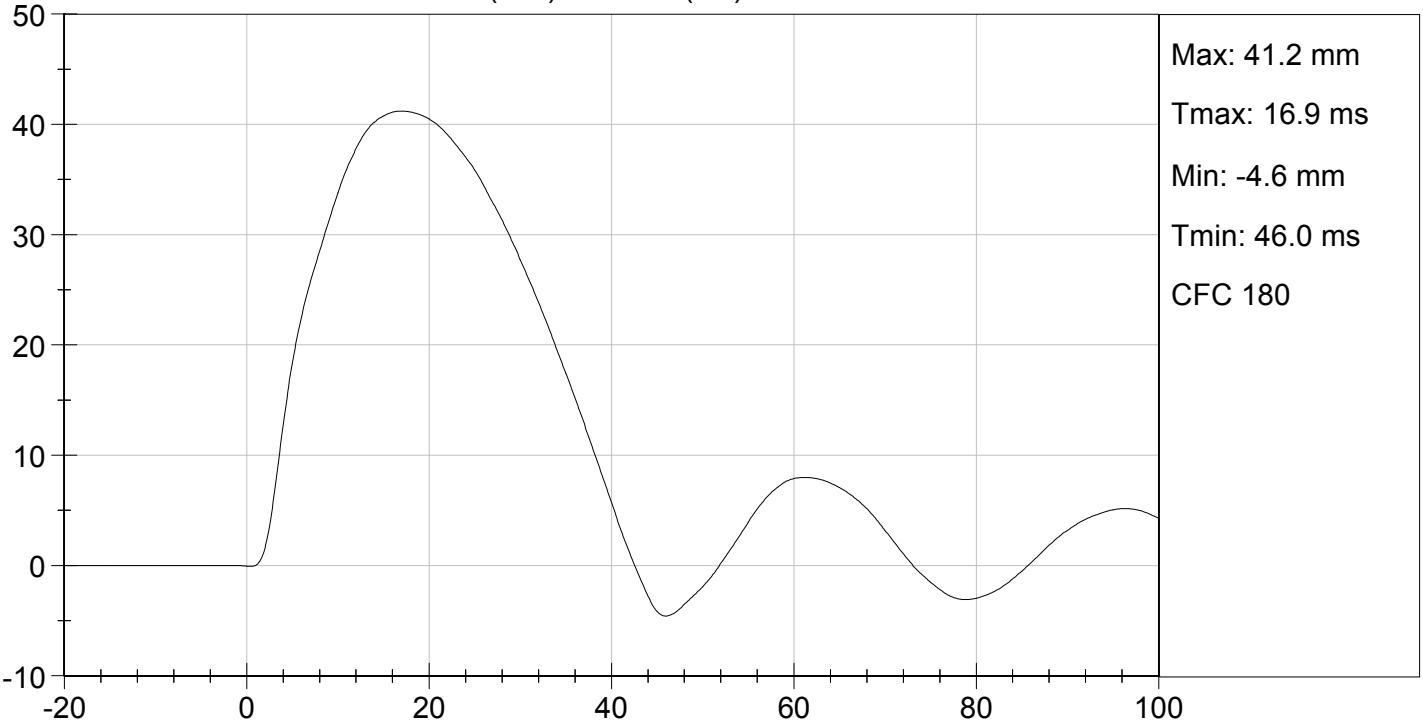
IMPACTOR FORCE (N) vs TIME (ms)



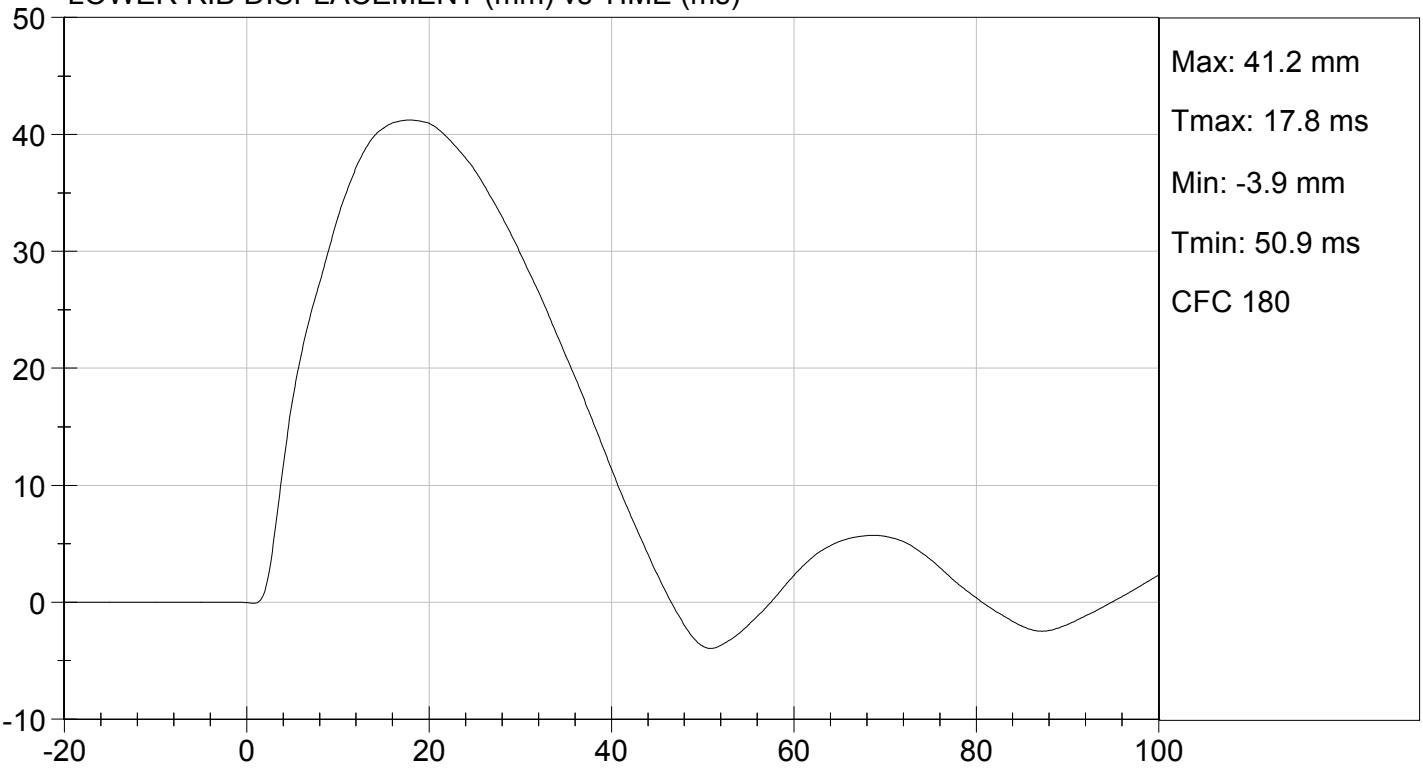
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



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:** D152157

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	49	Pass
Probe Speed	m/s	3.90 to 4.10	4.03	Pass
Maximum Impactor Force	N	4000 to 4800	4275	Pass
Time of Maximum Impactor Force	ms	10.6 to 13.0	12.0	Pass
Maximum Total Abdomen Force	N	2200 to 2700	2339	Pass
Time of Maximum Abdomen Force	ms	10.0 to 12.3	11.9	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

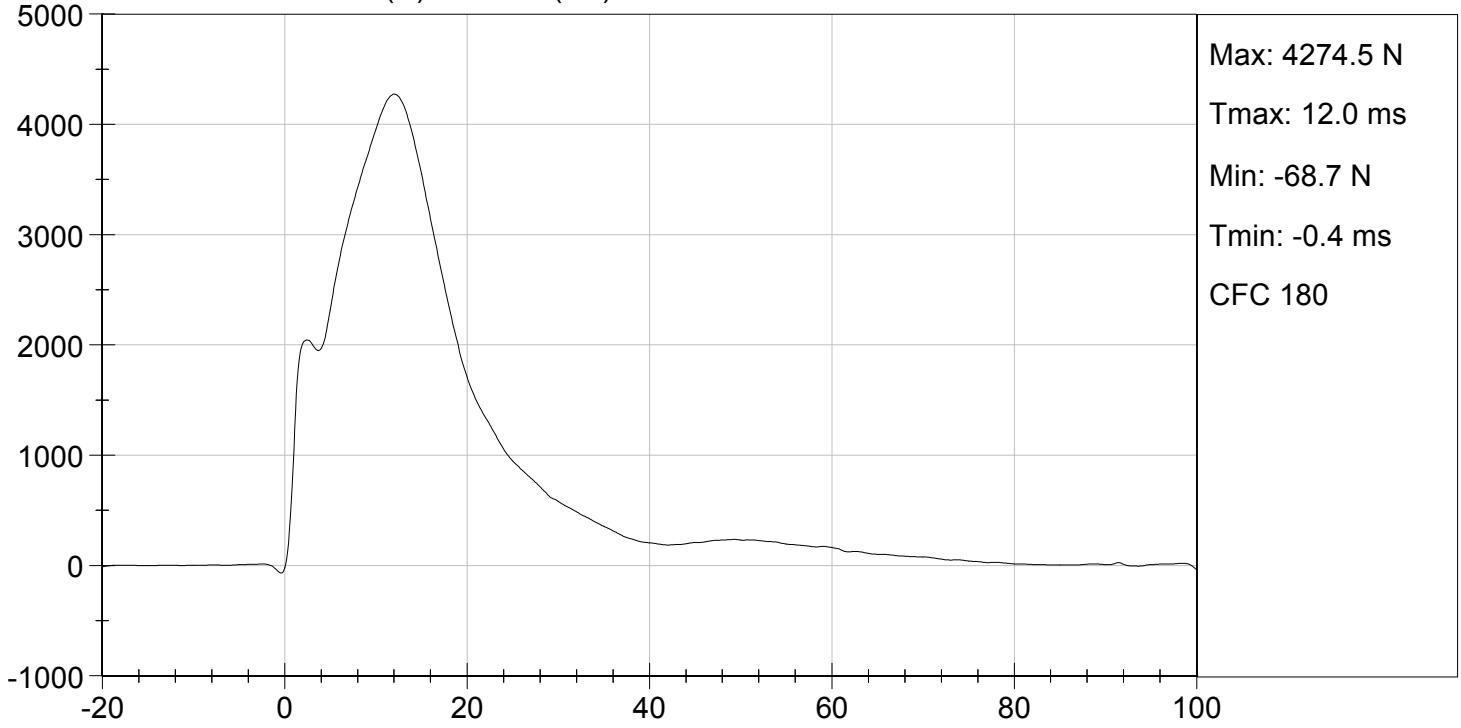
07/17/2015
Test Date

Jessica Hall
Approved By

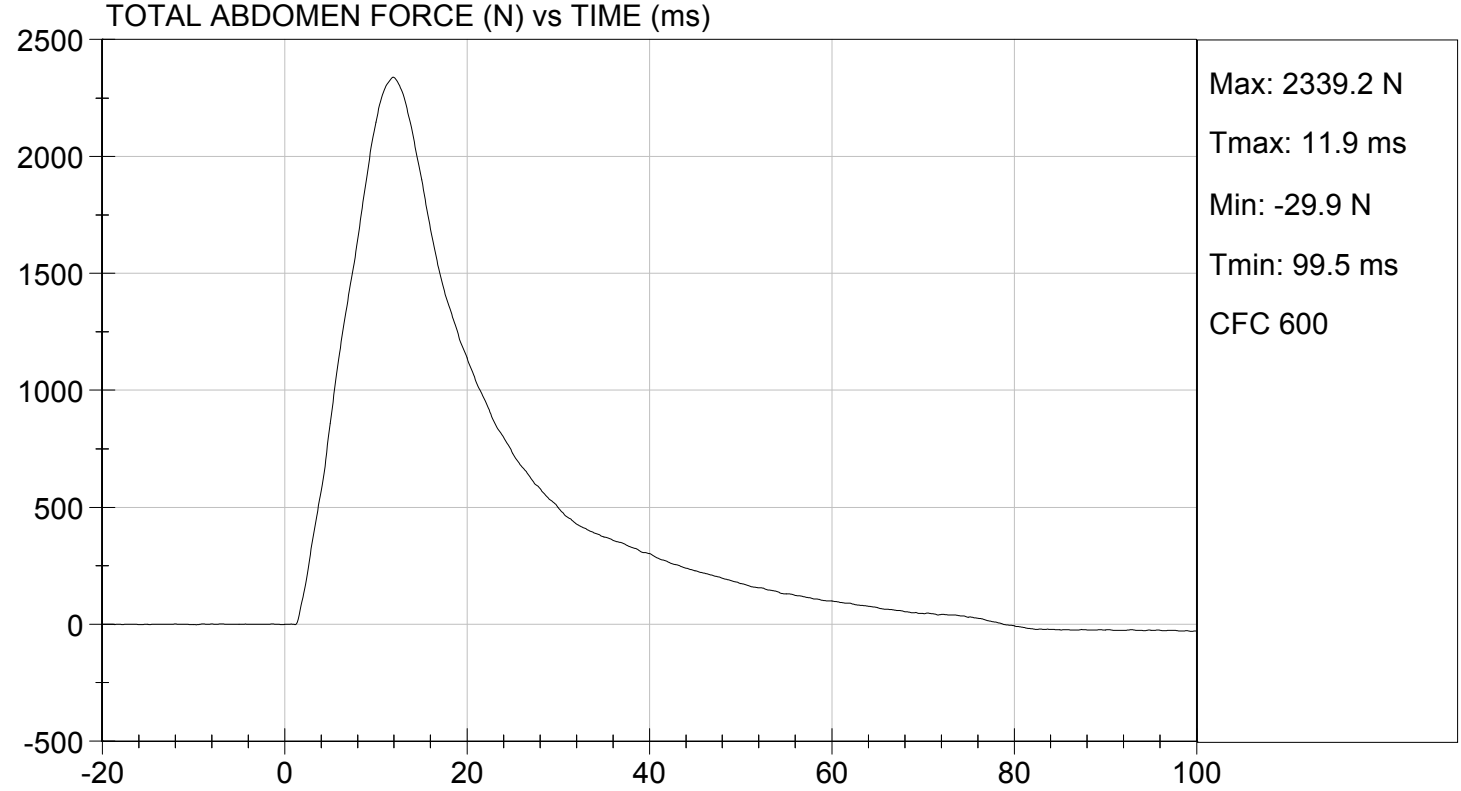
TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.23 ft/s, 4.03 m/s

TEST DATE: 07/17/2015
TEST #: D152157

IMPACTOR FORCE (N) vs TIME (ms)



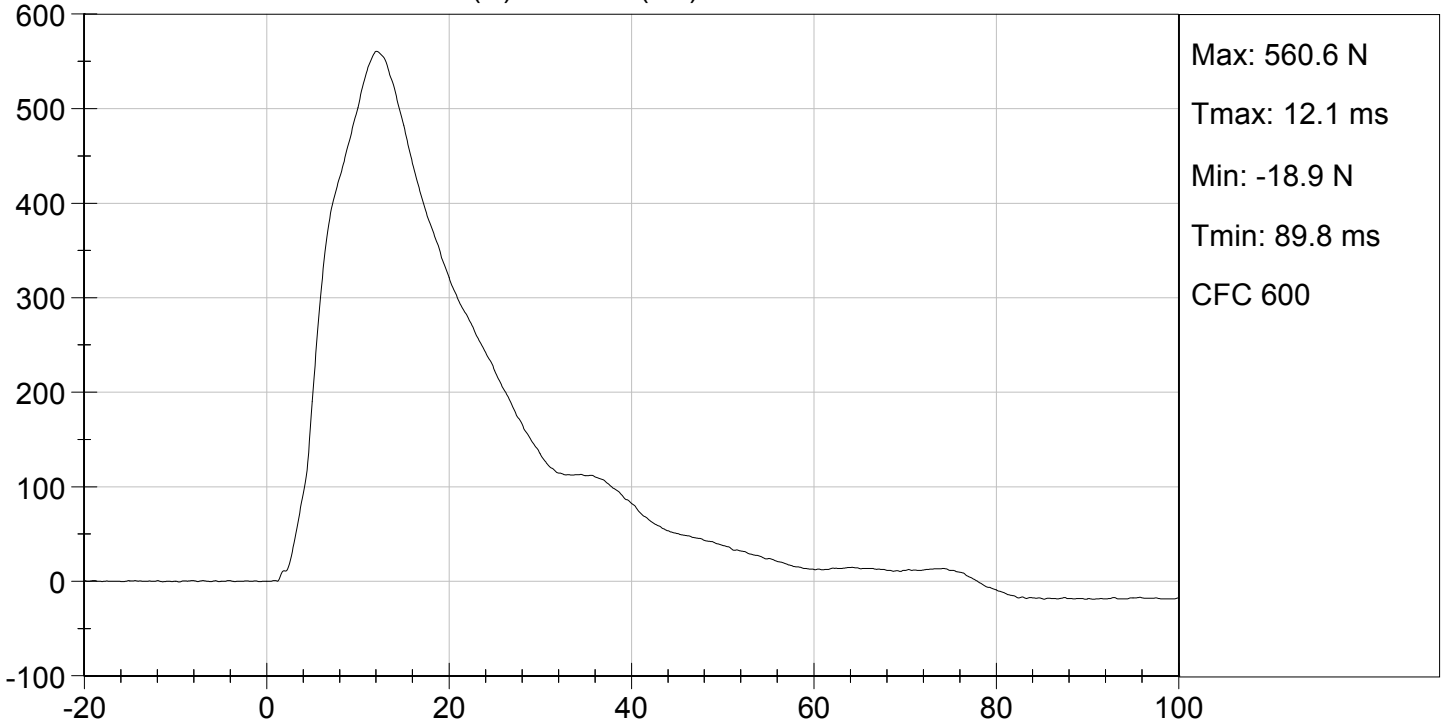
TOTAL ABDOMEN FORCE (N) vs TIME (ms)



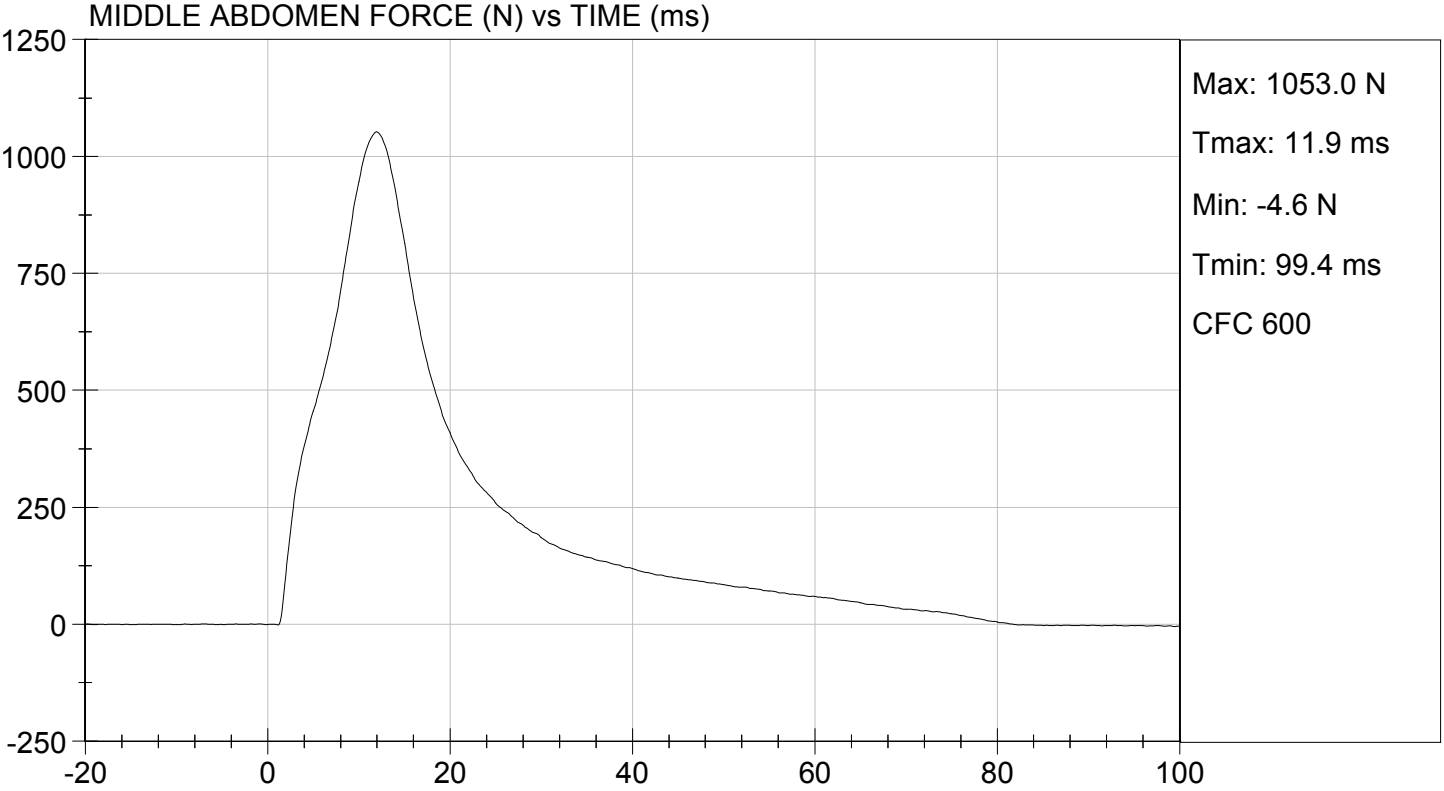
TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.23 ft/s, 4.03 m/s

TEST DATE: 07/17/2015
TEST #: D152157

FRONT ABDOMEN FORCE (N) vs TIME (ms)



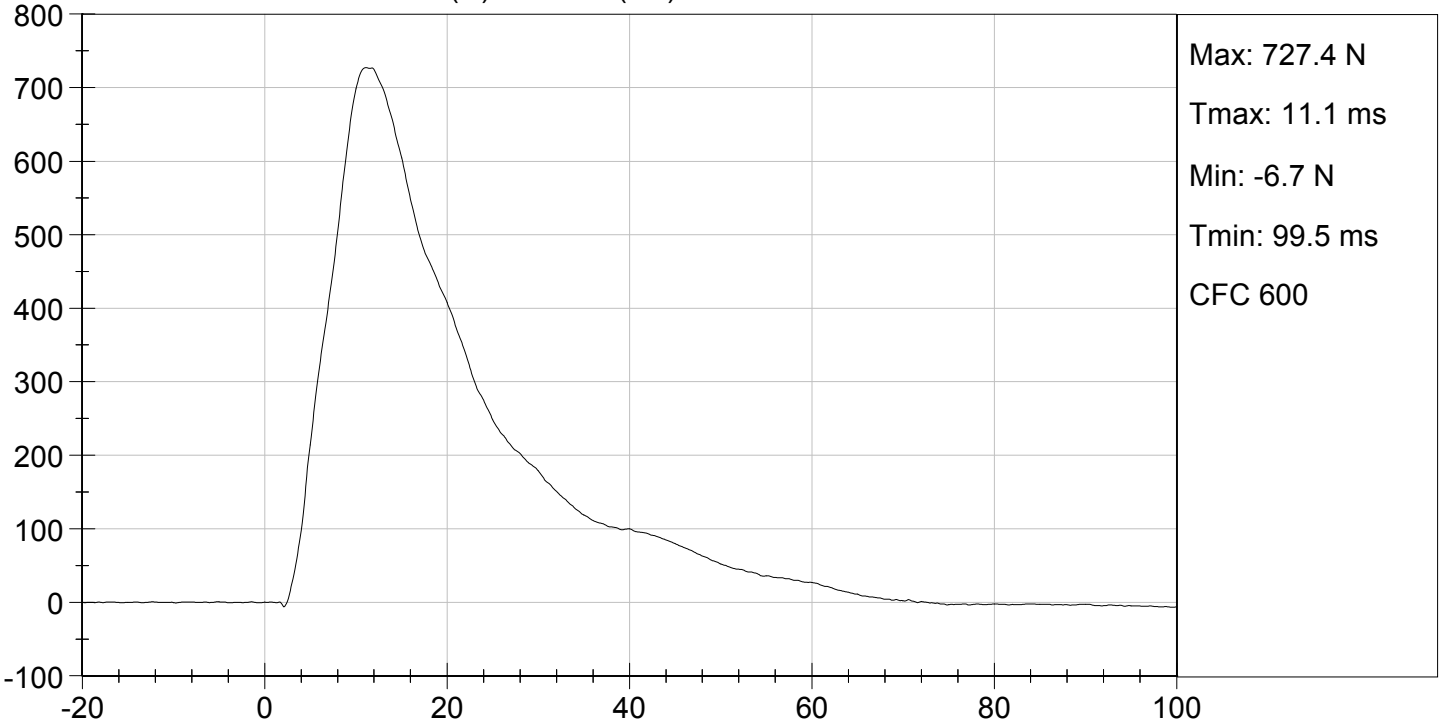
MIDDLE ABDOMEN FORCE (N) vs TIME (ms)



TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.23 ft/s, 4.03 m/s

TEST DATE: 07/17/2015
TEST #: D152157

REAR ABDOMEN FORCE (N) vs TIME (ms)



MGA RESEARCH CORPORATION

LUMBAR SPINE TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152158

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	48	Pass
Pendulum Speed		m/s	5.95 to 6.15	6.12	Pass
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.01	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.404	Pass
	27 ms	m/s	-6.50 to -5.80	-6.02	Pass
	30 ms	m/s	>= -6.50	-6.18	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	46.4	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	46.0	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	47	Pass
			Overall Results		Pass

Jack Coleman
Laboratory Technician

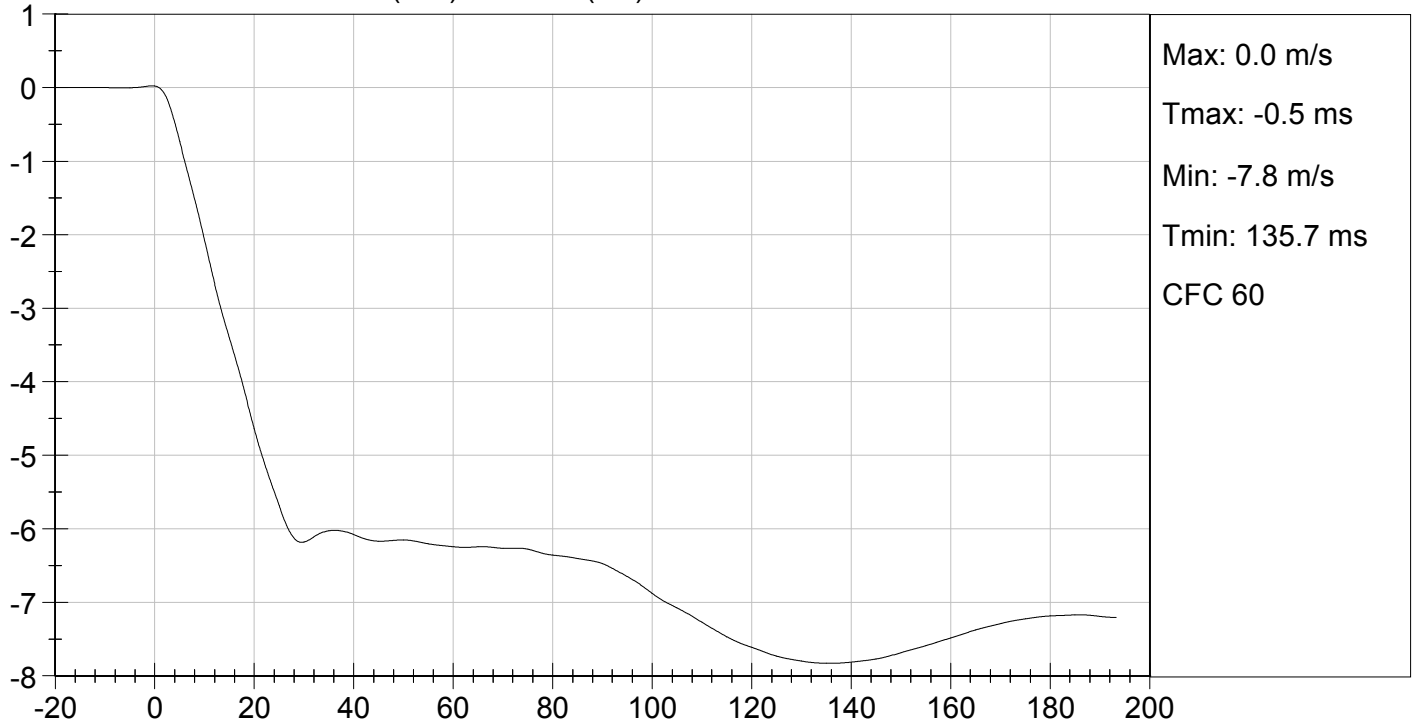
07/17/2015
Test Date

Jessica Hall
Approved By

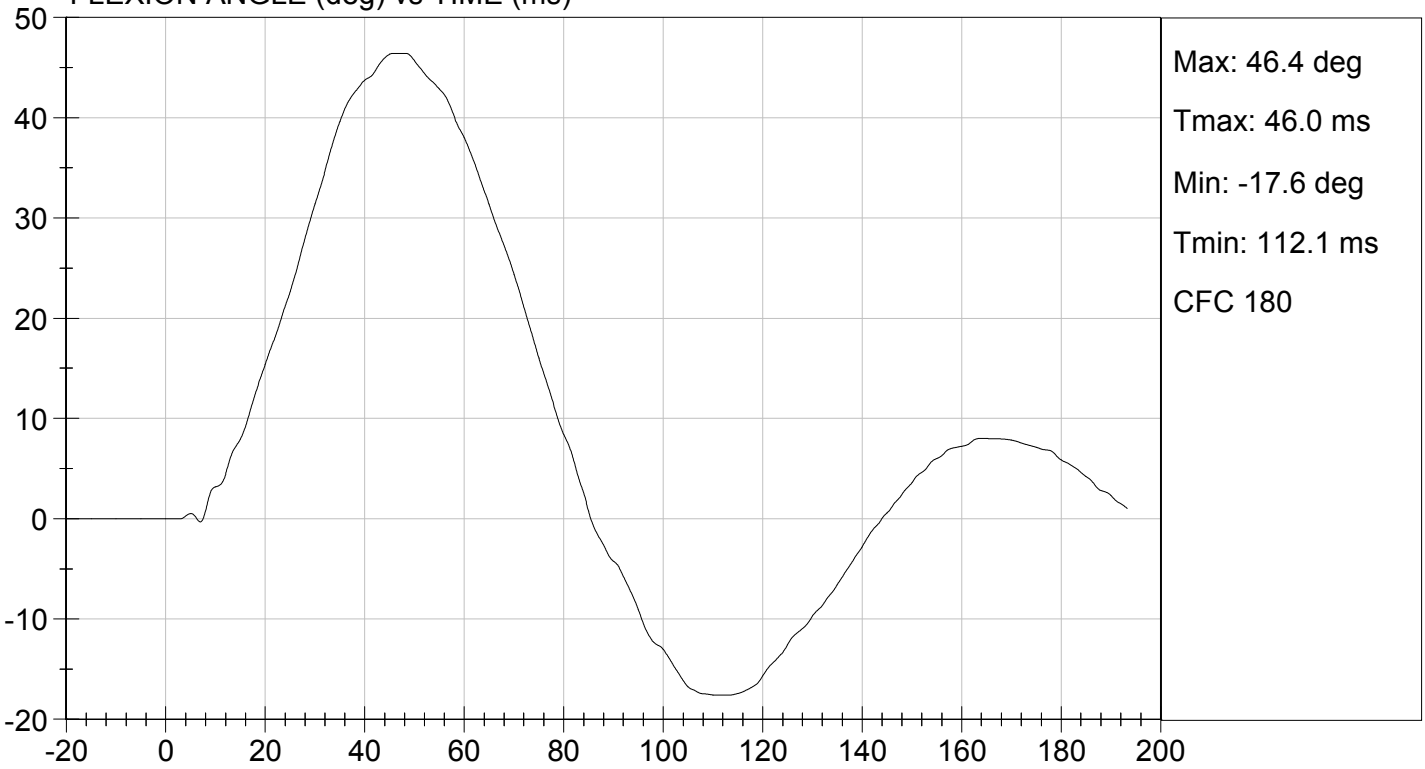
TEST DESC: LUMBAR BENDING
VELOCITY: 20.08 ft/s, 6.12 m/s

TEST DATE: 07/17/2015
TEST #: D152158

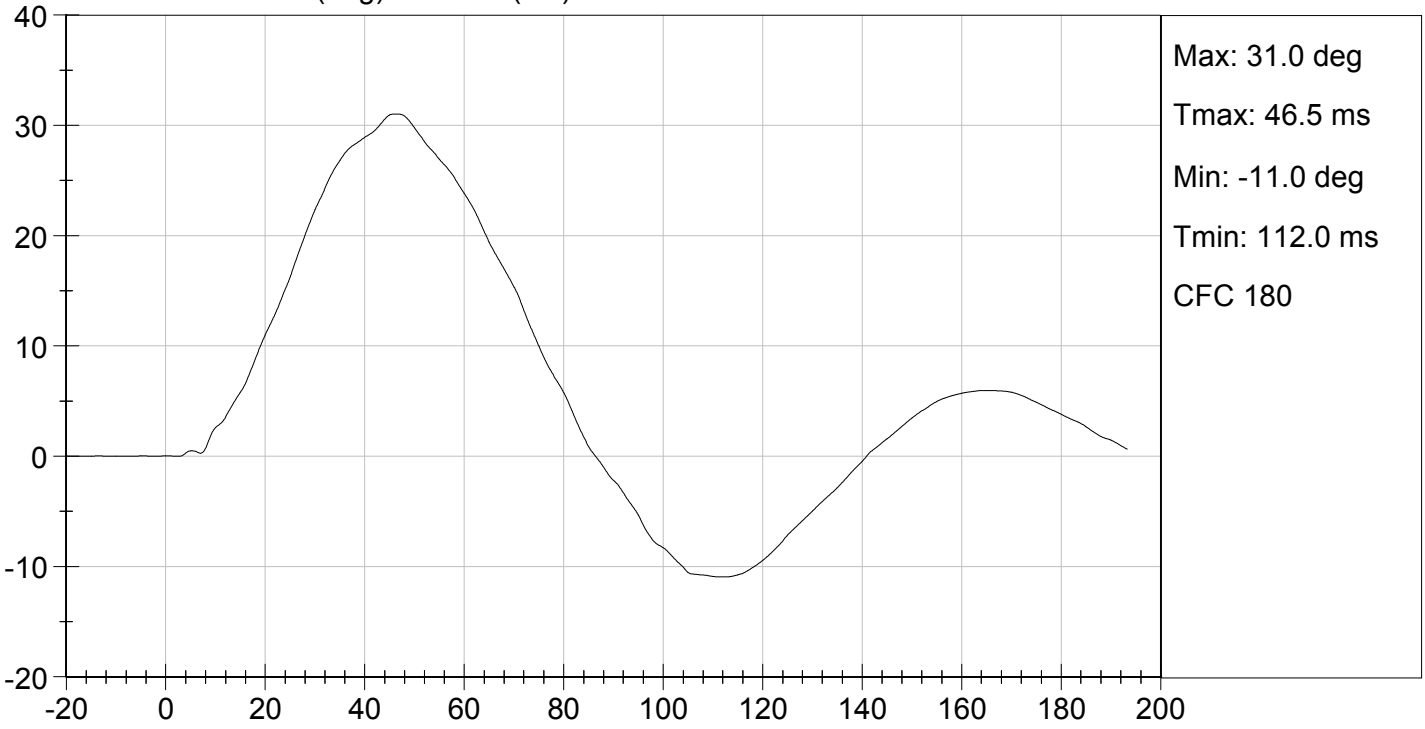
PENDULUM VELOCITY (m/s) vs TIME (ms)



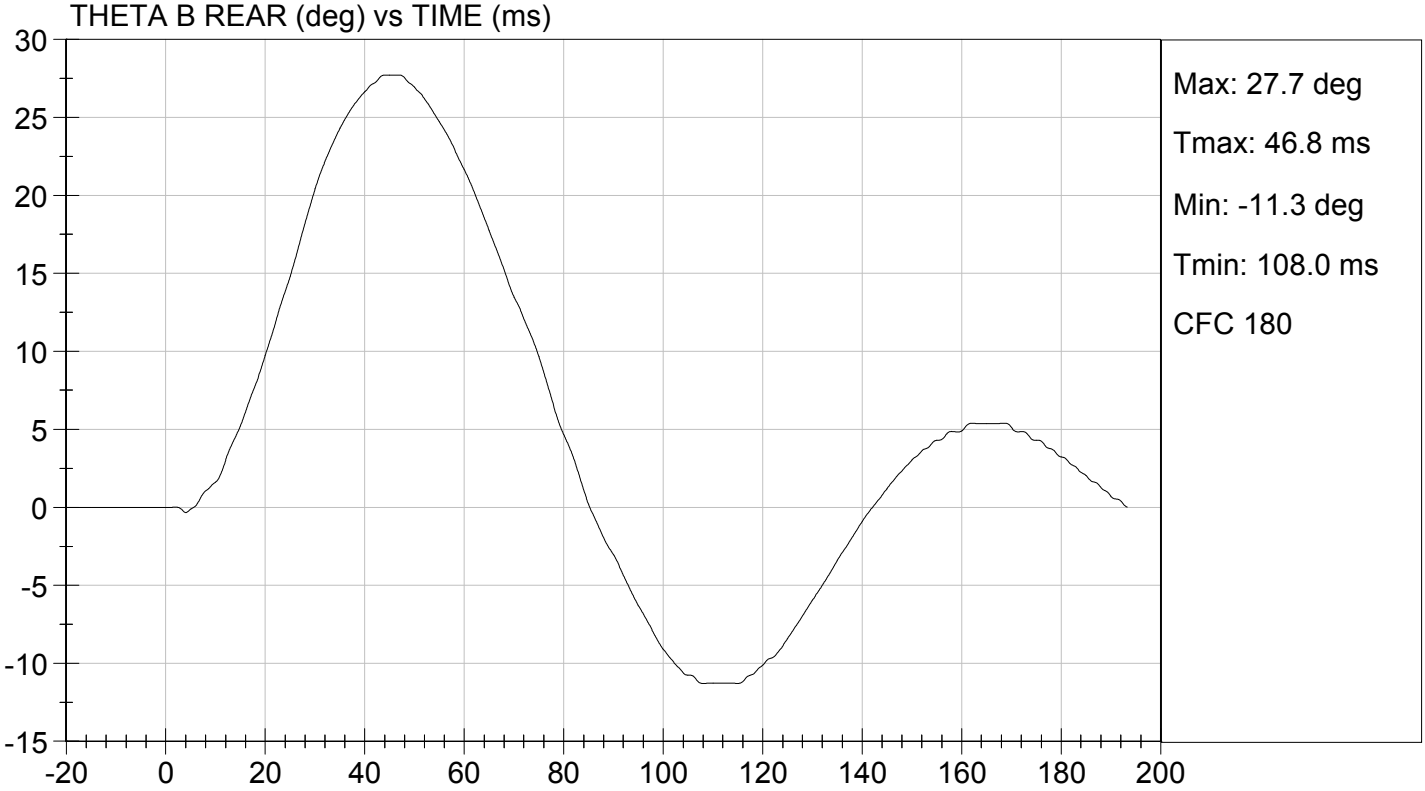
FLEXION ANGLE (deg) vs TIME (ms)



THETA A FRONT (deg) vs TIME (ms)

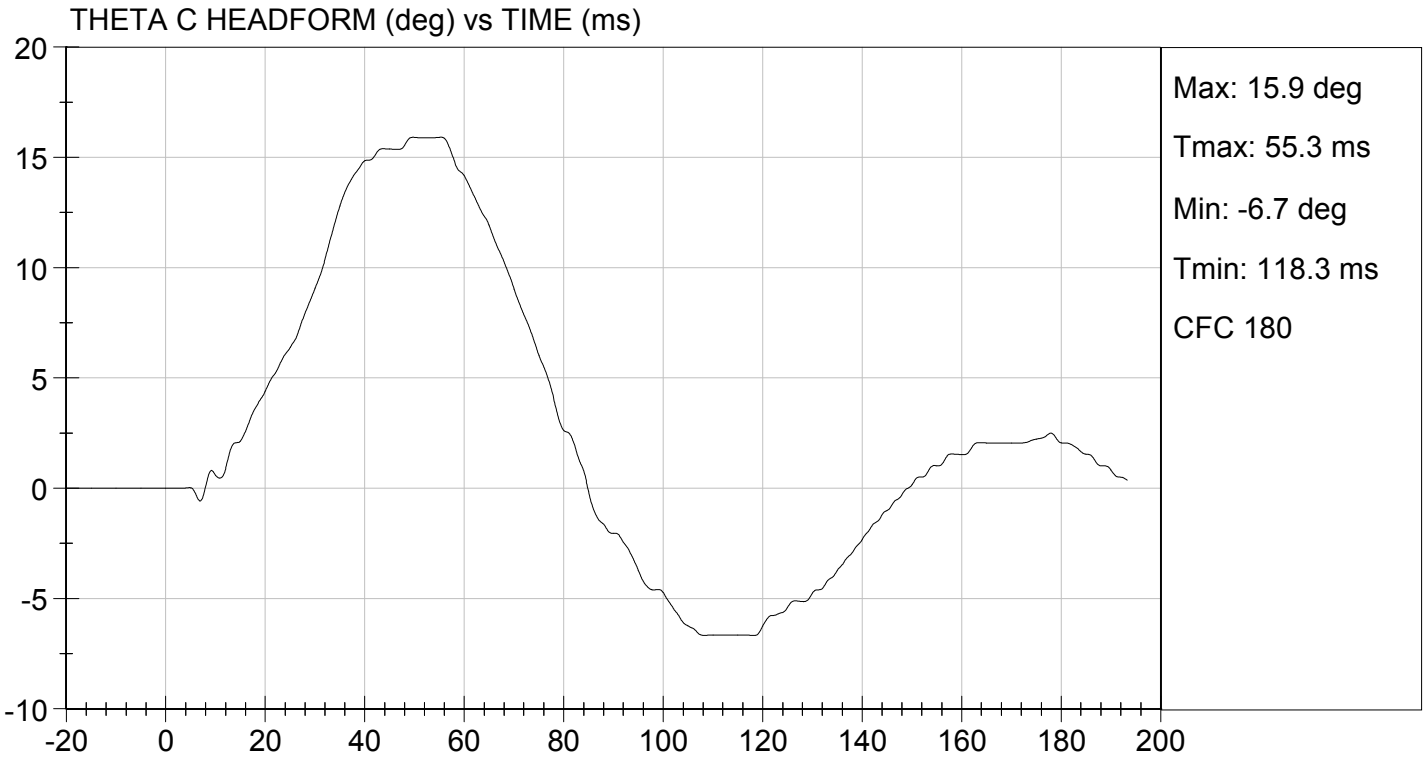


THETA B REAR (deg) vs TIME (ms)



TEST DESC: LUMBAR BENDING
VELOCITY: 20.08 ft/s, 6.12 m/s

TEST DATE: 07/17/2015
TEST #: D152158



MGA RESEARCH CORPORATION

PELVIS TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152159

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	49	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	N	4700 to 5400	5035	Pass
Time of Maximum Impactor Force	ms	11.8 to 16.1	14.4	Pass
Maximum Pubic Force	N	1230 to 1590	1315	Pass
Time of Maximum Pubic Force	ms	12.2 to 17.0	15.4	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

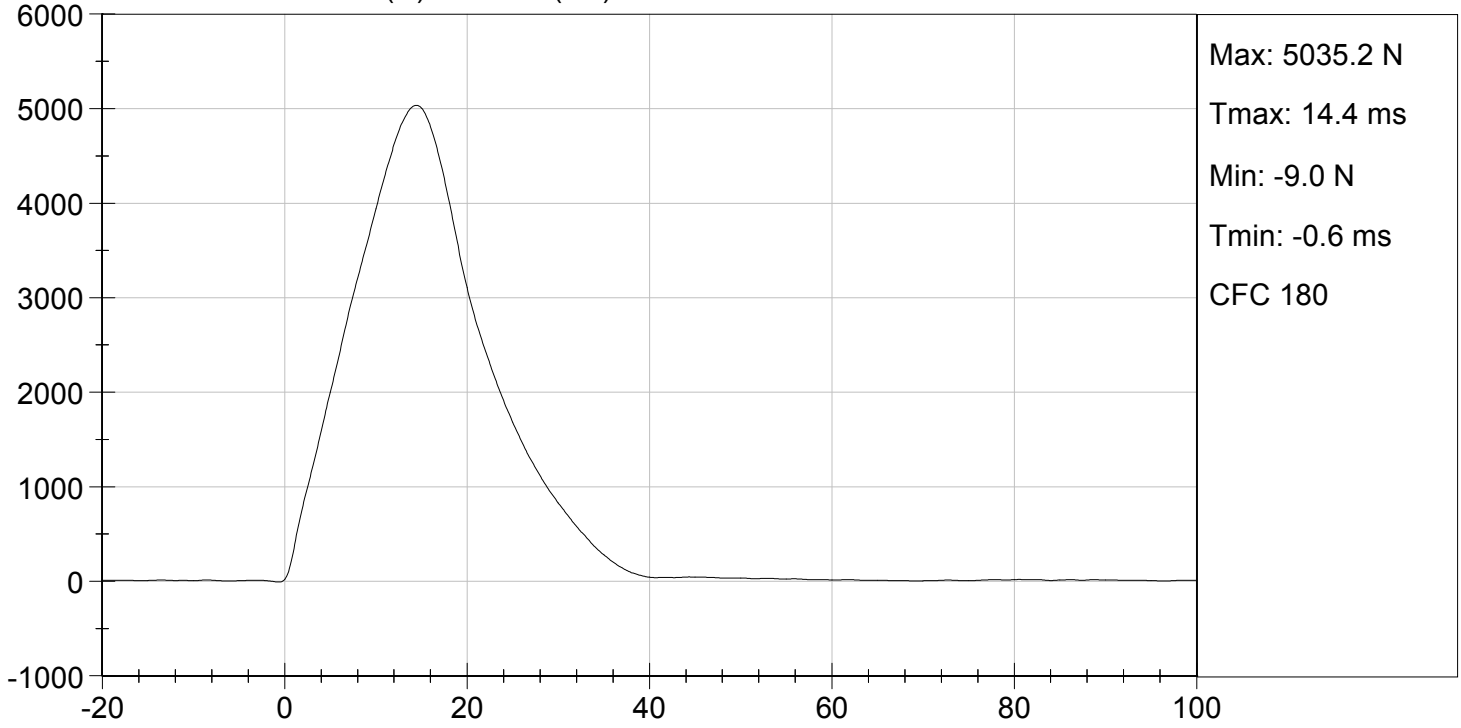
07/17/2015
Test Date

Jessica Gall
Approved By

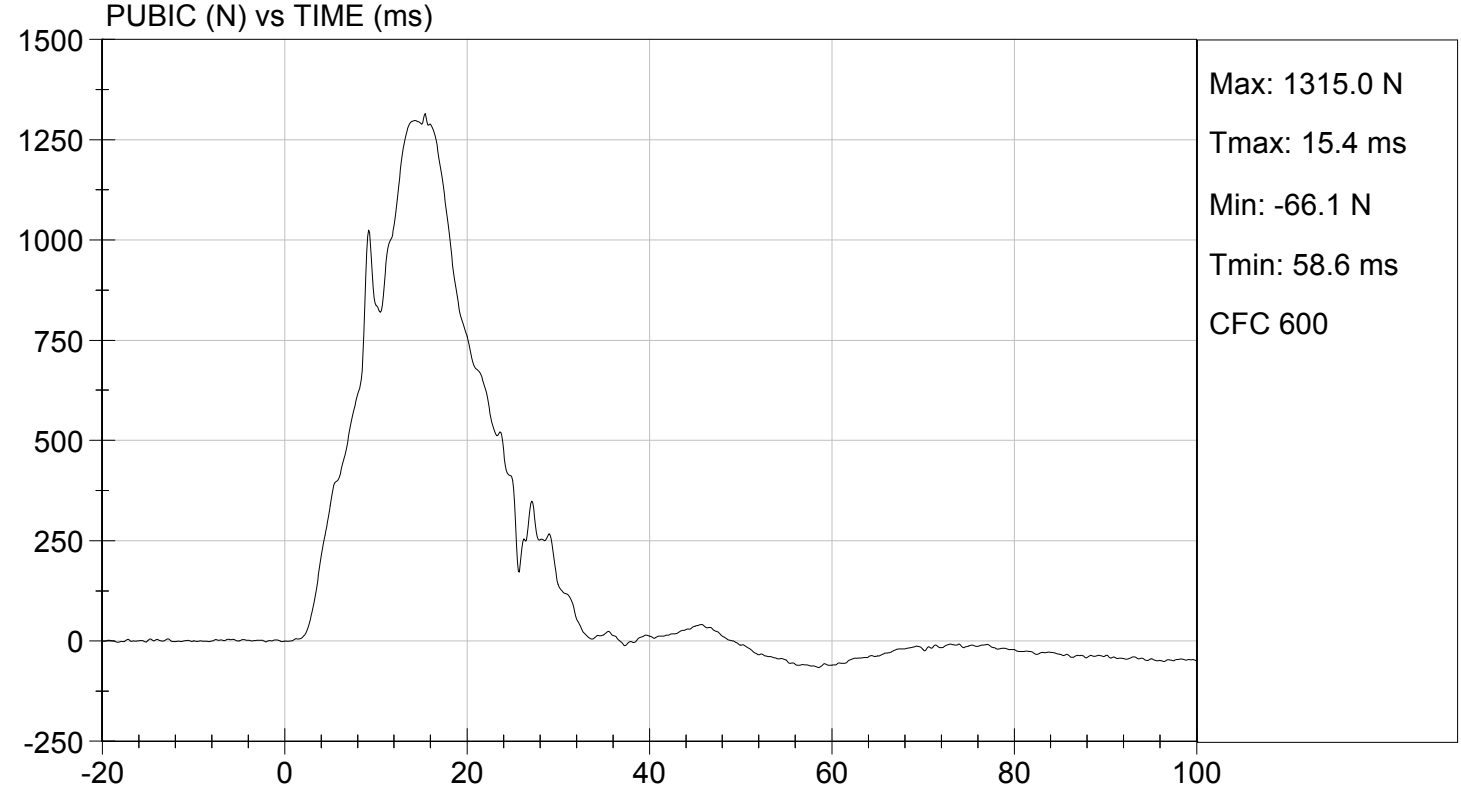
TEST DESC: PELVIS IMPACT
VELOCITY: 14.12 ft/s, 4.3 m/s

TEST DATE: 07/17/2015
TEST #: D152159

IMPACTOR FORCE (N) vs TIME (ms)



PUBIC (N) vs TIME (ms)



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:** D152471

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	47	Pass
Peak Resultant Acceleration	G's	125 to 155	139	Pass
Peak Longitudinal Acceleration	G's	<= +/- 15.0	-8.5	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

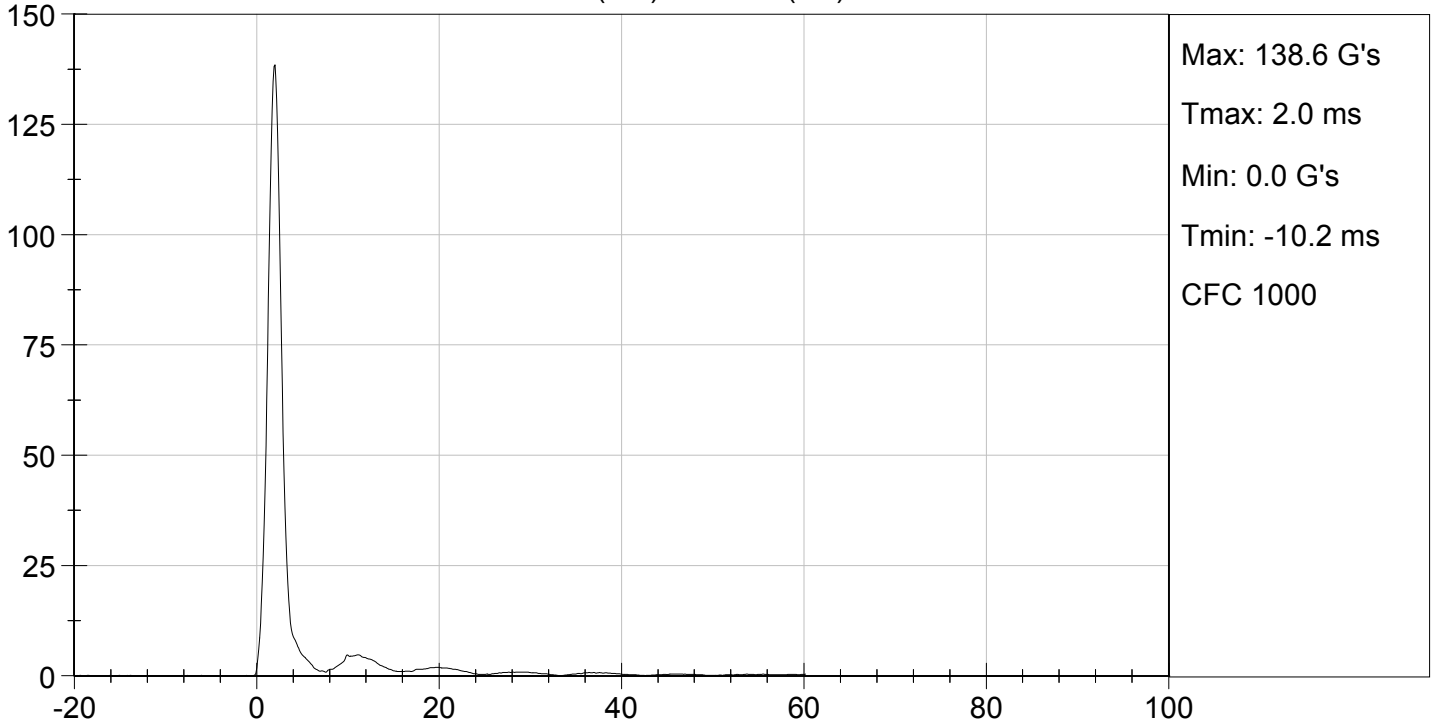
08/12/2015
Test Date

Jessica Hall
Approved By

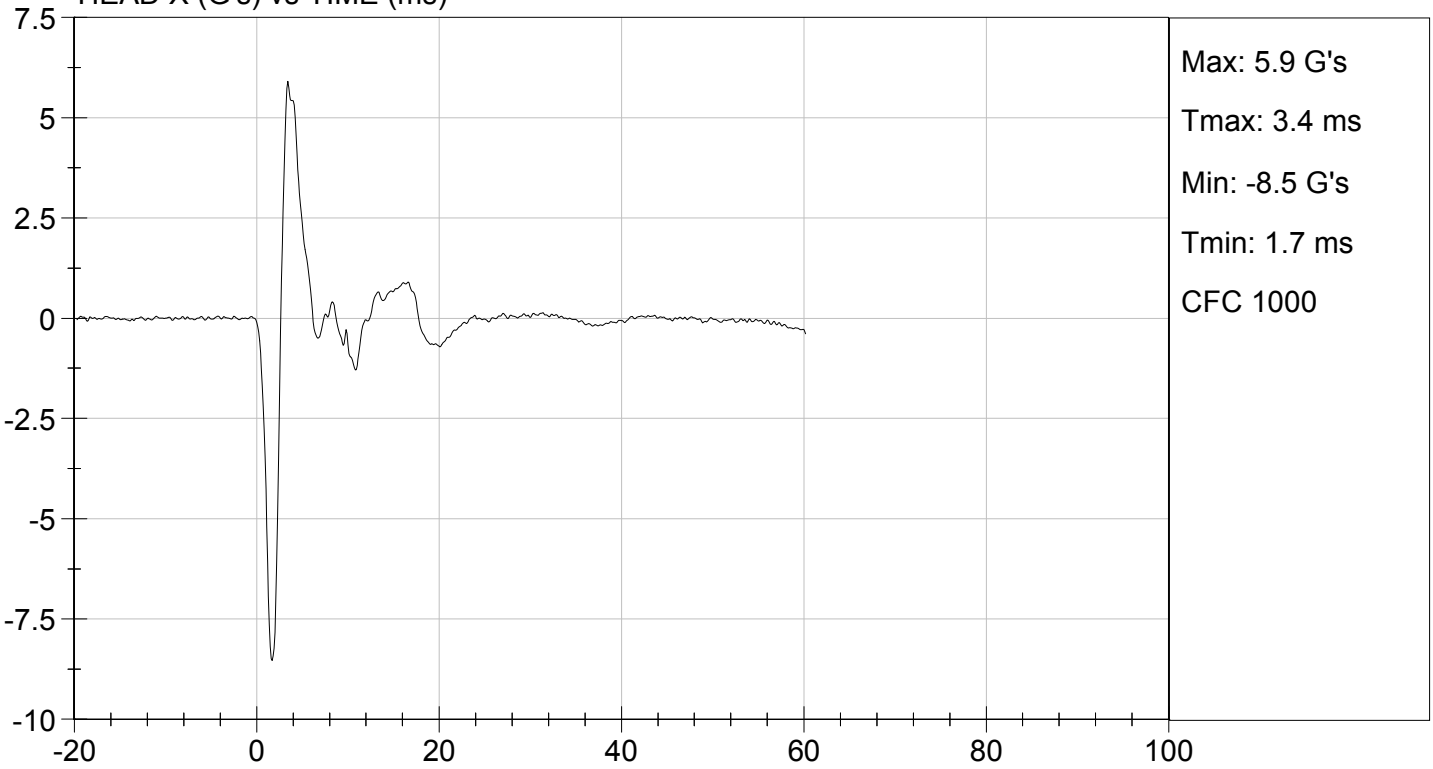
TEST DESC: HEAD DROP

TEST DATE: 08/12/2015
TEST #: D152471

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



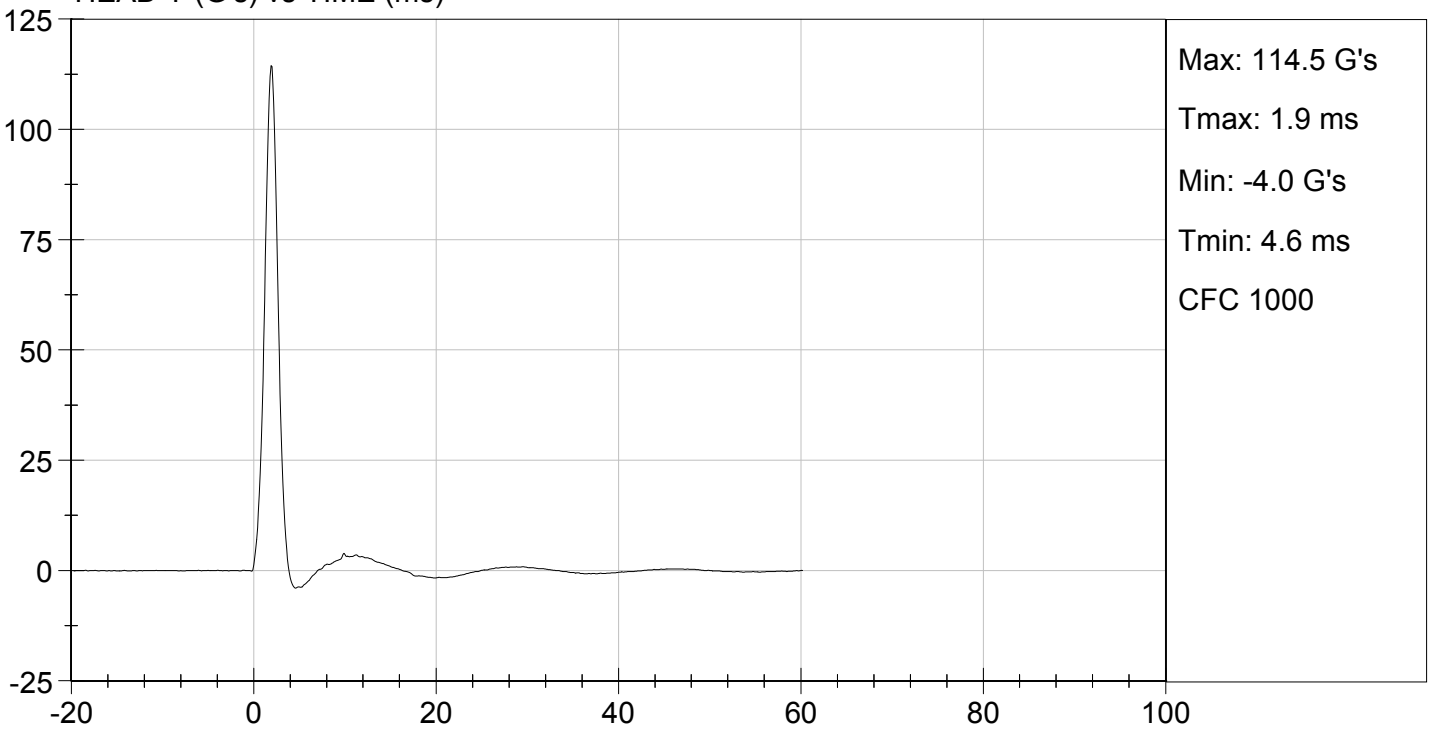
HEAD X (G's) vs TIME (ms)



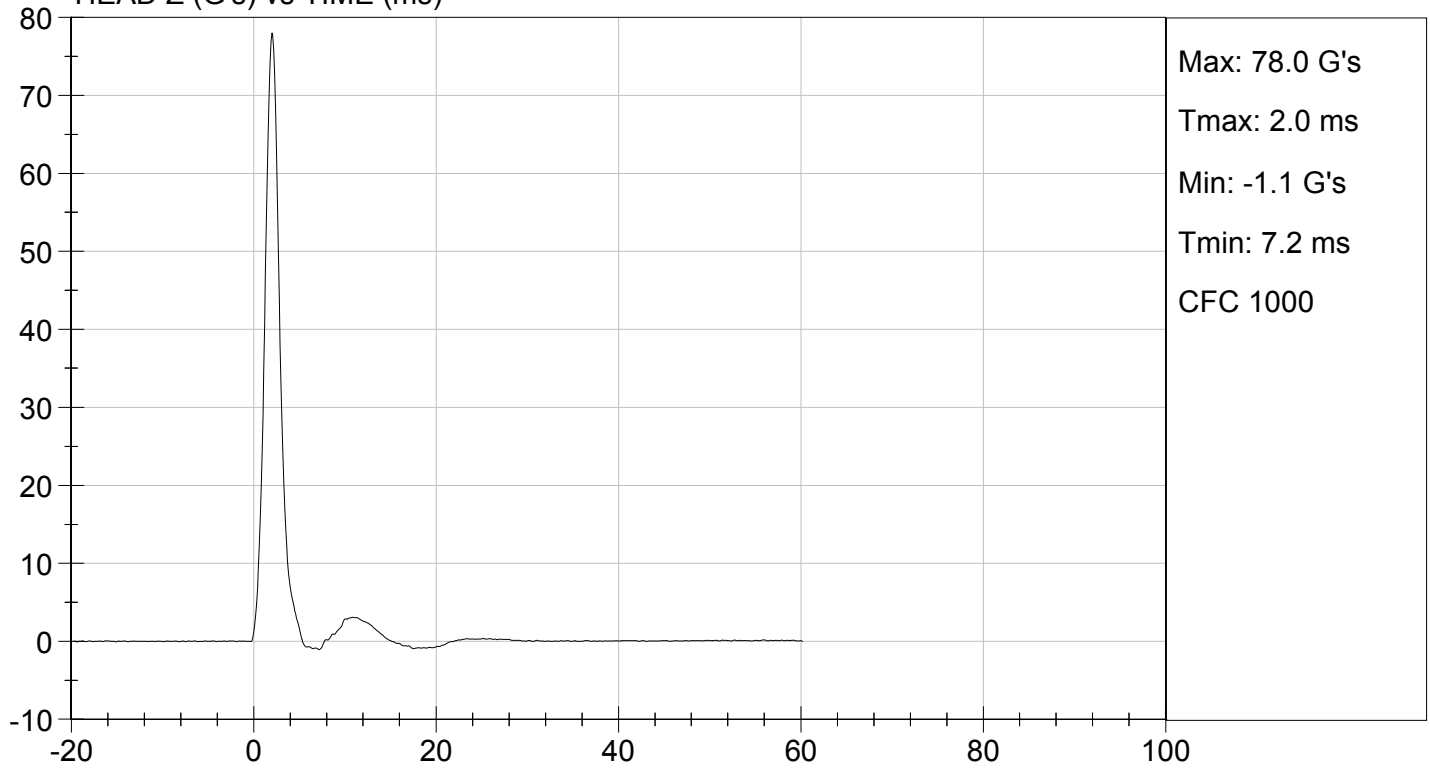
TEST DESC: HEAD DROP

TEST DATE: 08/12/2015
TEST #: D152471

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



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



MGA RESEARCH CORPORATION

NECK PENDULUM TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152472

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	46	Pass
Pendulum Speed		m/s	3.30 to 3.50	3.43	Pass
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.02	Pass
	3 ms	m/s	-0.25 to -0.375	-0.33	Pass
	14 ms	m/s	-3.20 to -3.70	-3.40	Pass
	17 ms	m/s	>= -3.70	-3.50	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	50.0	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	62.6	Pass
Head Rotation Decay Time to 0 Degree		ms	53.0 to 88.0	60.1	Pass
			Overall Results		Pass

Jack Coleman
Laboratory Technician

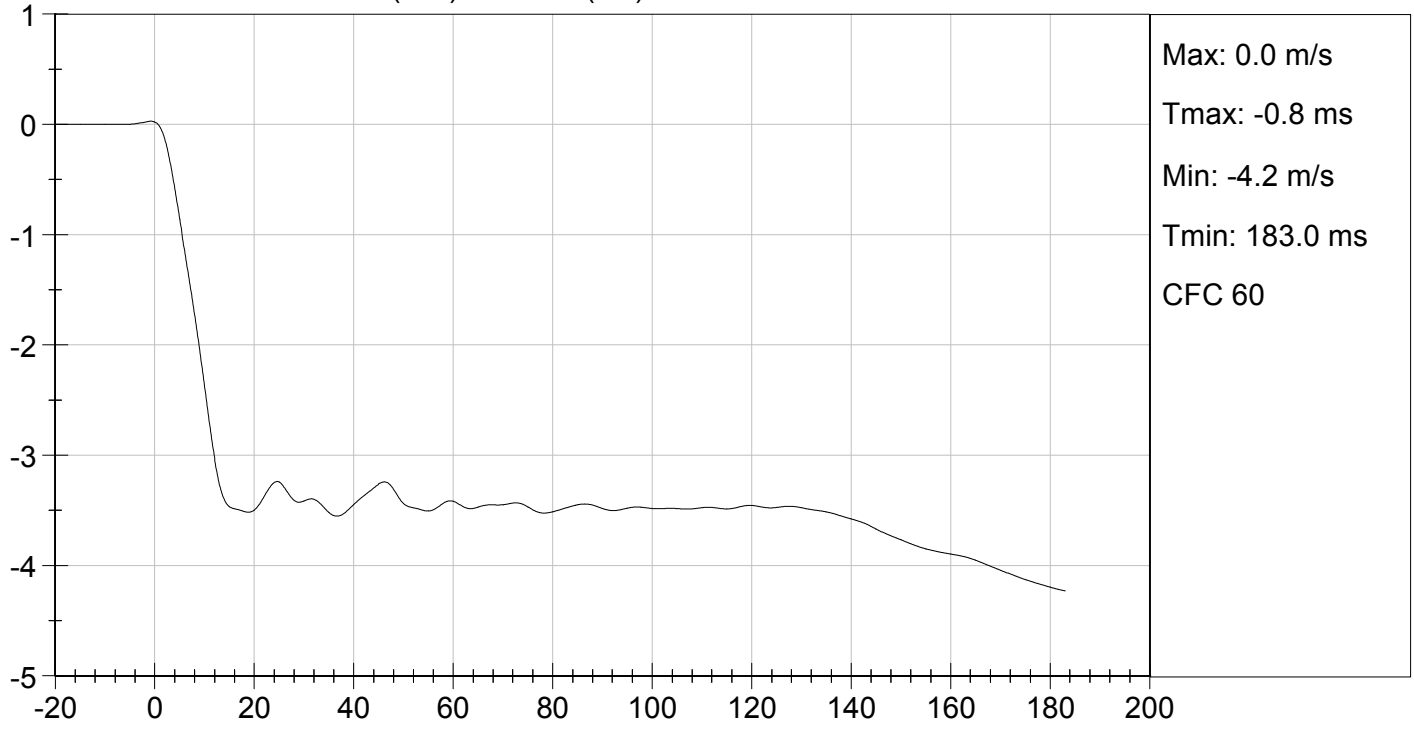
08/12/2015
Test Date

Jessica Gall
Approved By

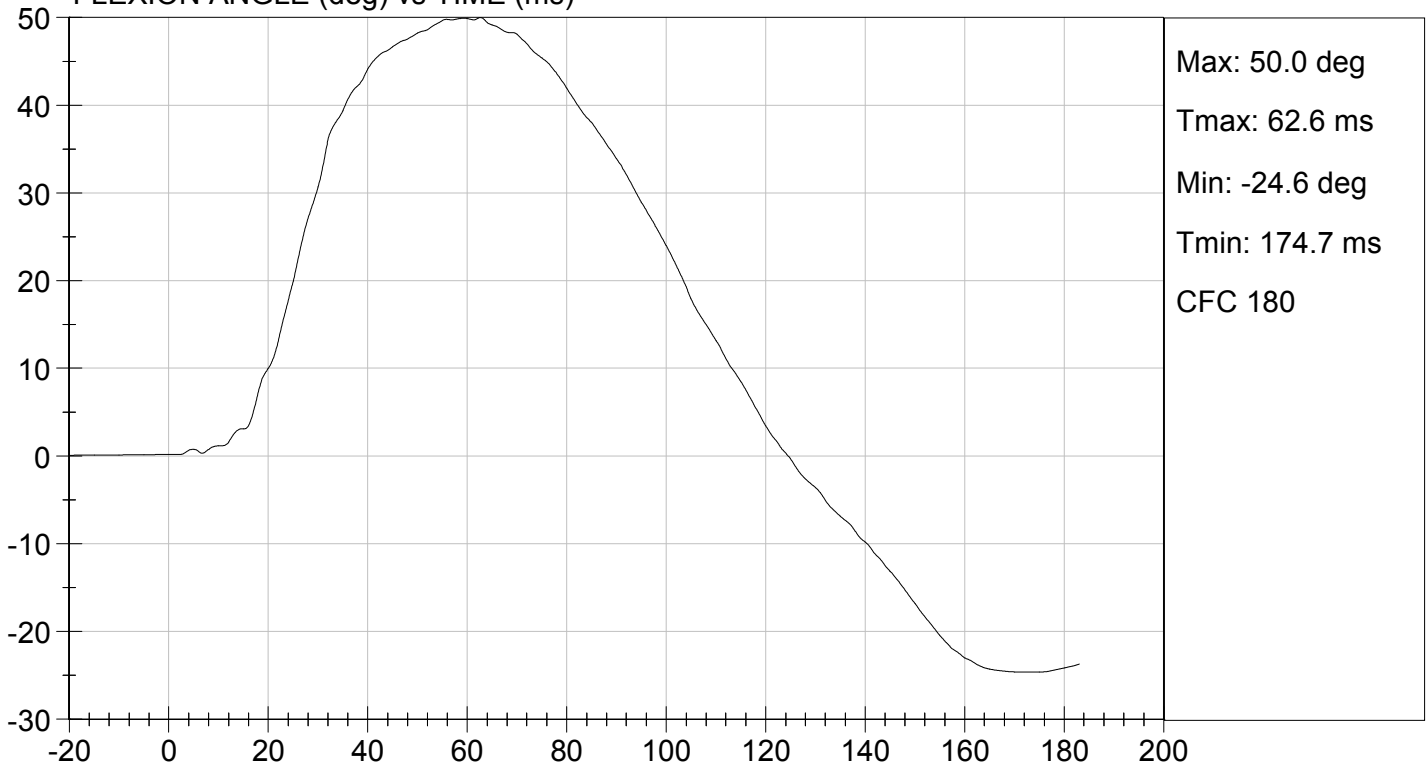
TEST DESC: NECK BENDING
VELOCITY: 11.26 ft/s, 3.43 m/s

TEST DATE: 08/12/2015
TEST #: D152472

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



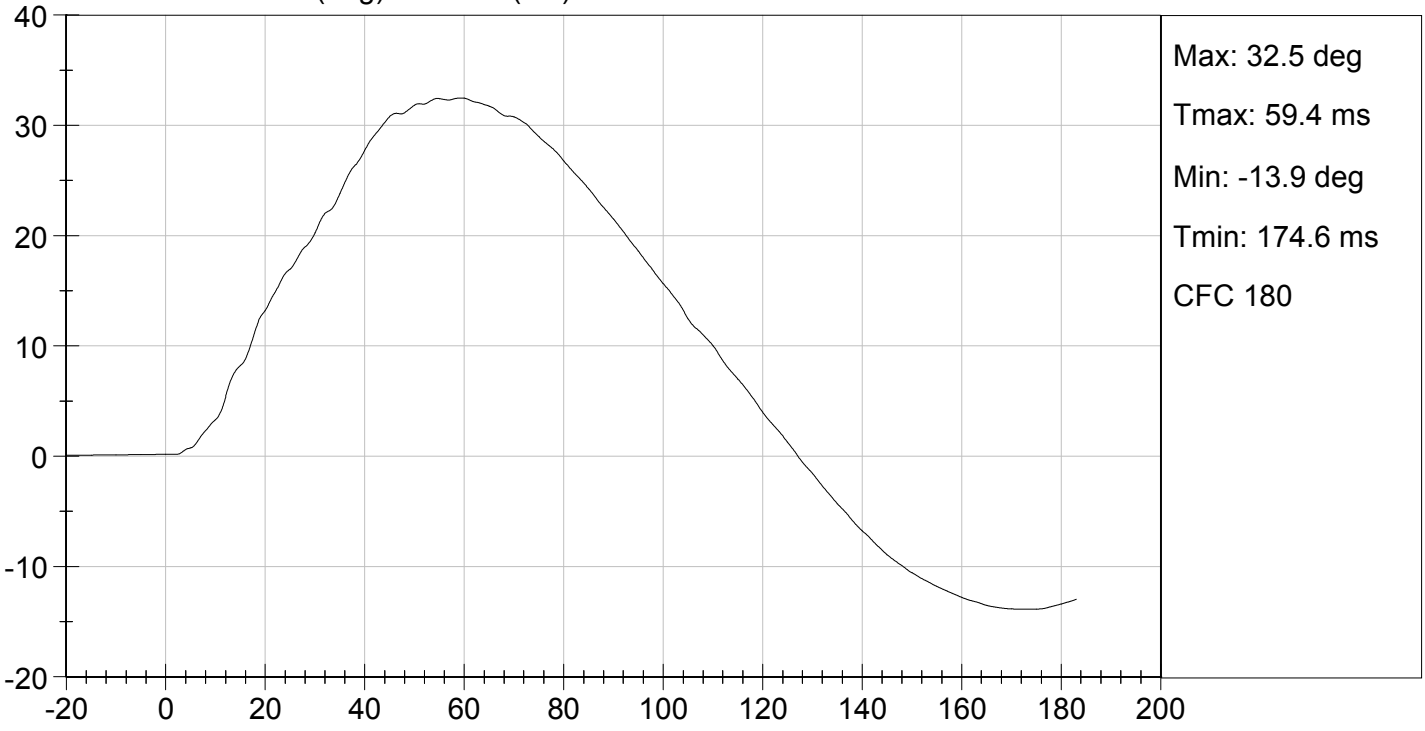
FLEXION ANGLE (deg) vs TIME (ms)



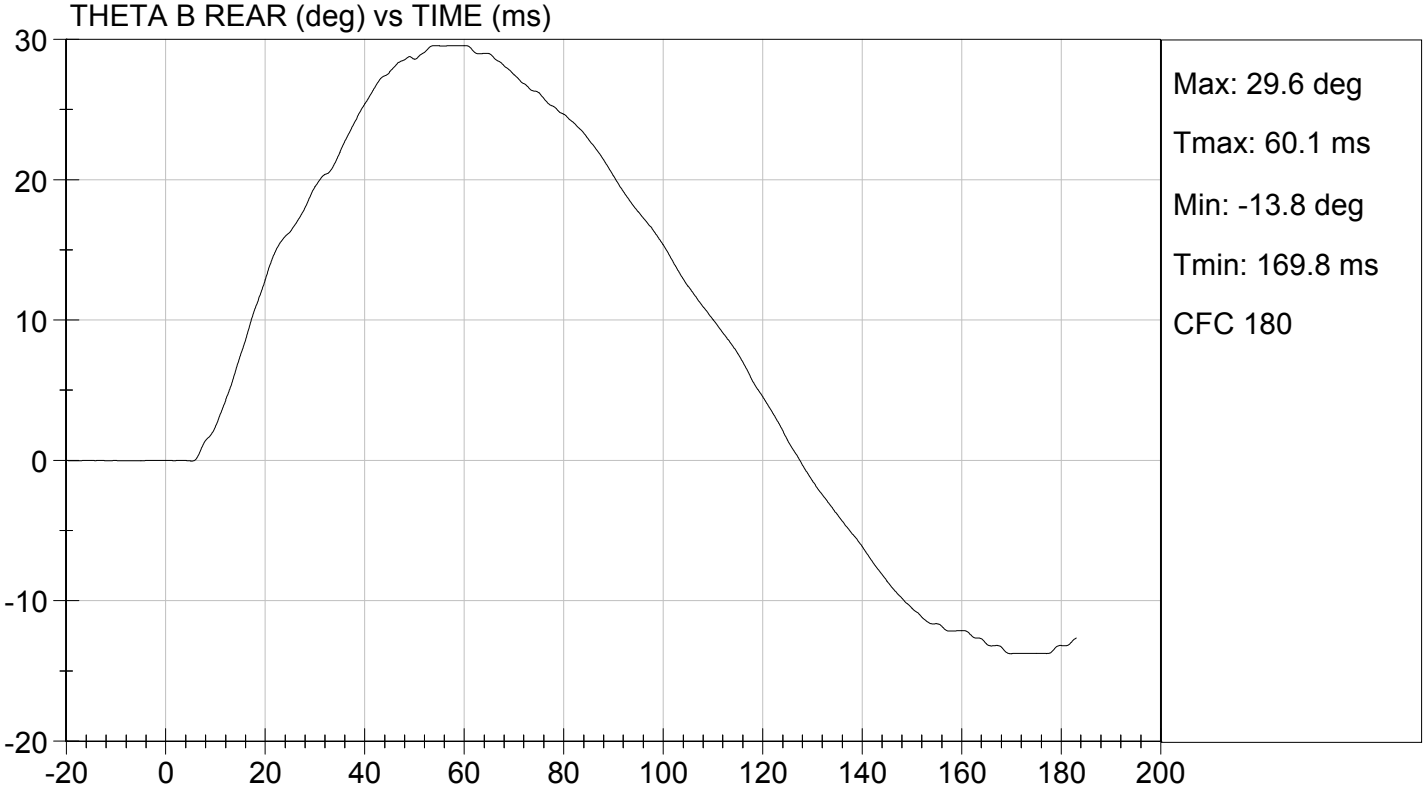
TEST DESC: NECK BENDING
VELOCITY: 11.26 ft/s, 3.43 m/s

TEST DATE: 08/12/2015
TEST #: D152472

THETA A FRONT (deg) vs TIME (ms)

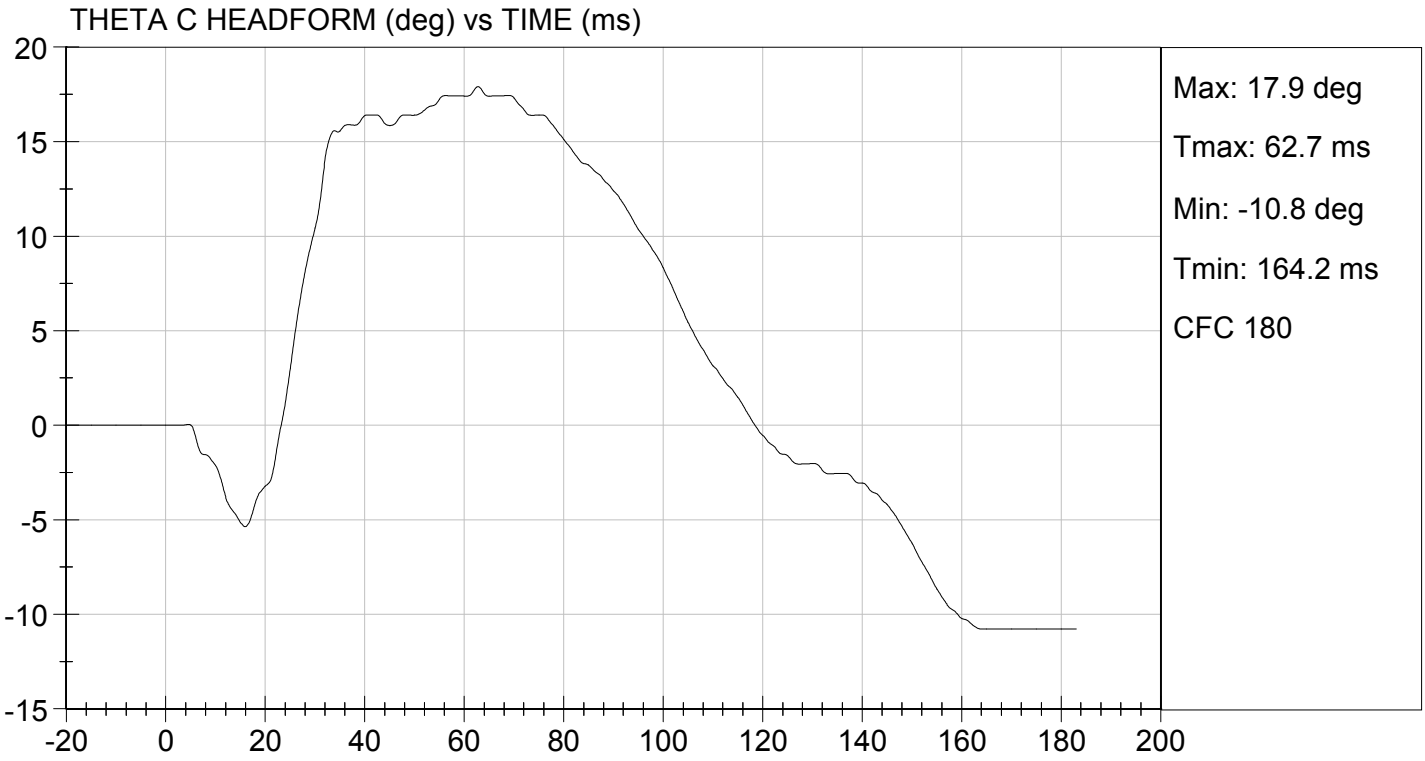


THETA B REAR (deg) vs TIME (ms)



TEST DESC: NECK BENDING
VELOCITY: 11.26 ft/s, 3.43 m/s

TEST DATE: 08/12/2015
TEST #: D152472



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152473

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Pendulum Speed	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	8.3	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

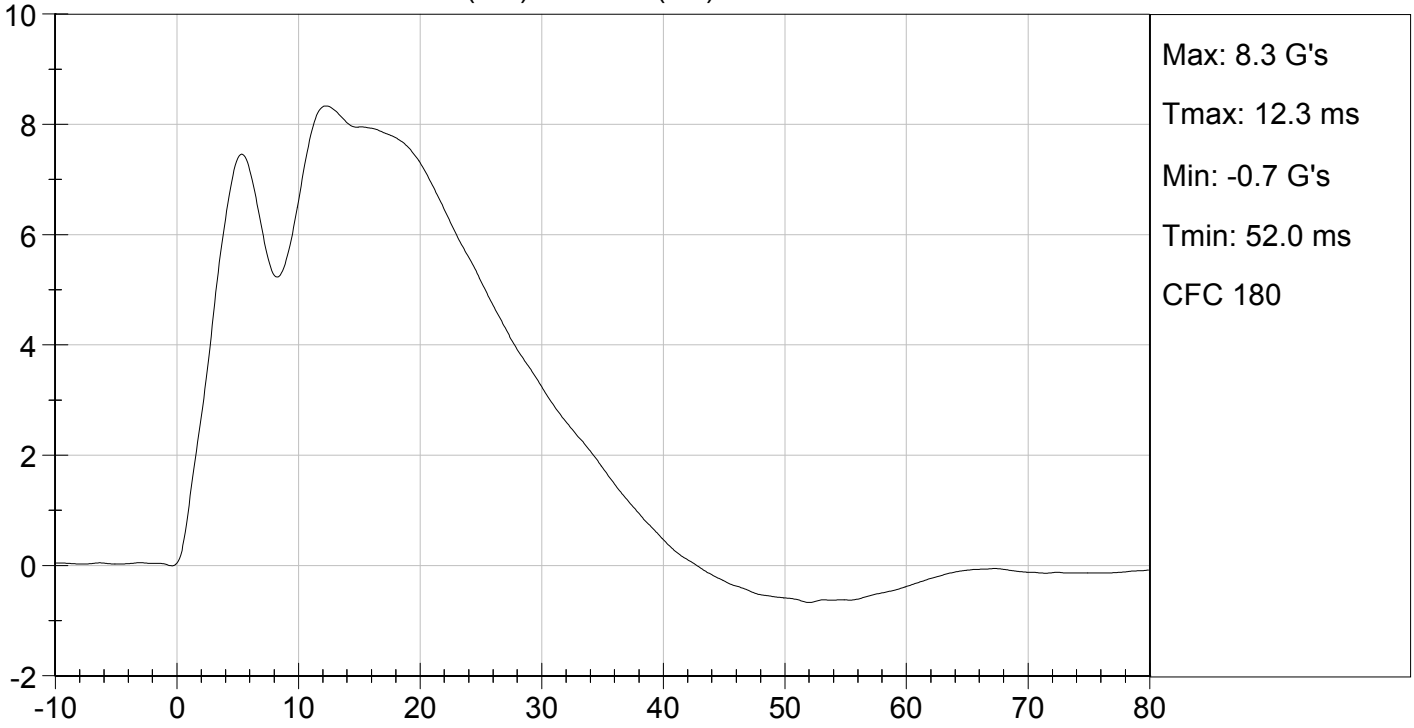
08/12/2015
Test Date

Jessica Hall
Approved By

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

TEST DATE: 08/12/2015
TEST #: D152473

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



MGA RESEARCH CORPORATION

UPPER RIB TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152474

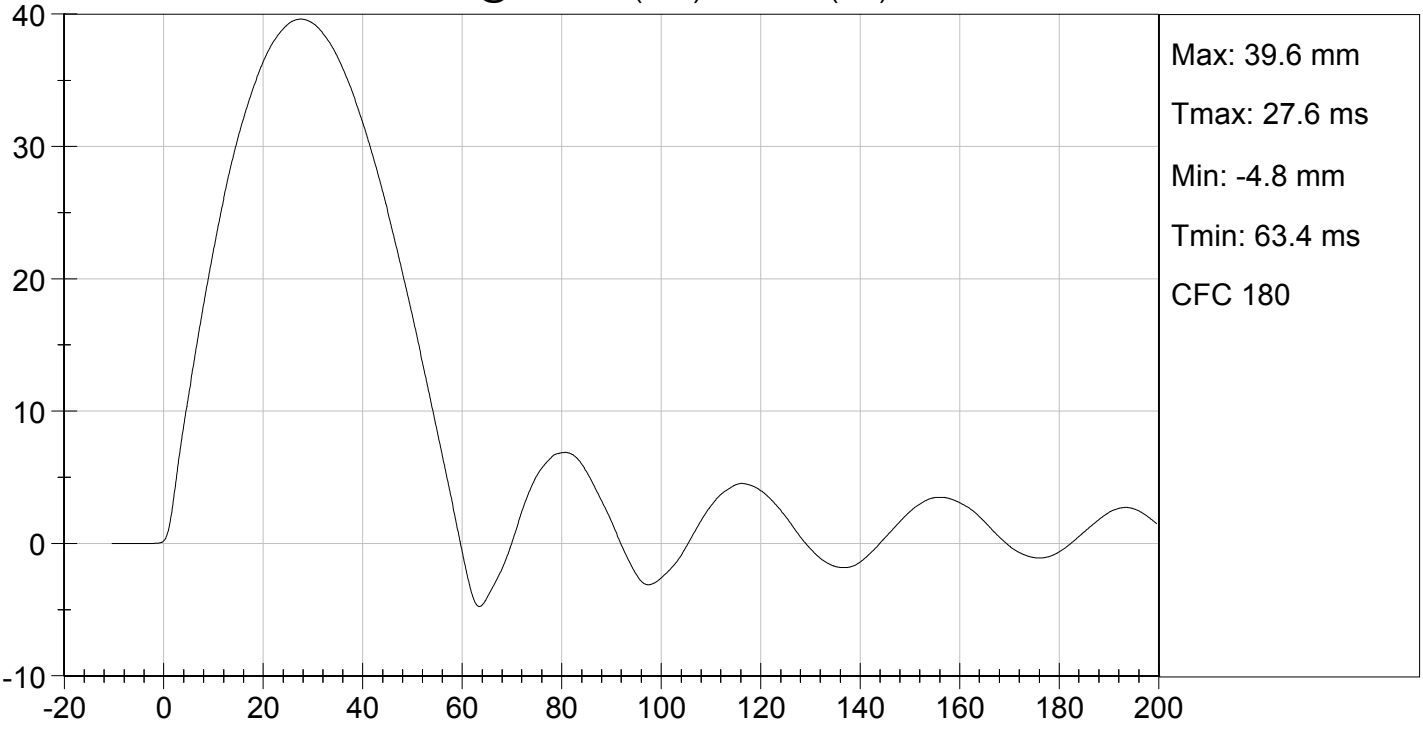
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.6	Pass
Displacement at 815 mm	mm	46.0 to 51.0	49.3	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

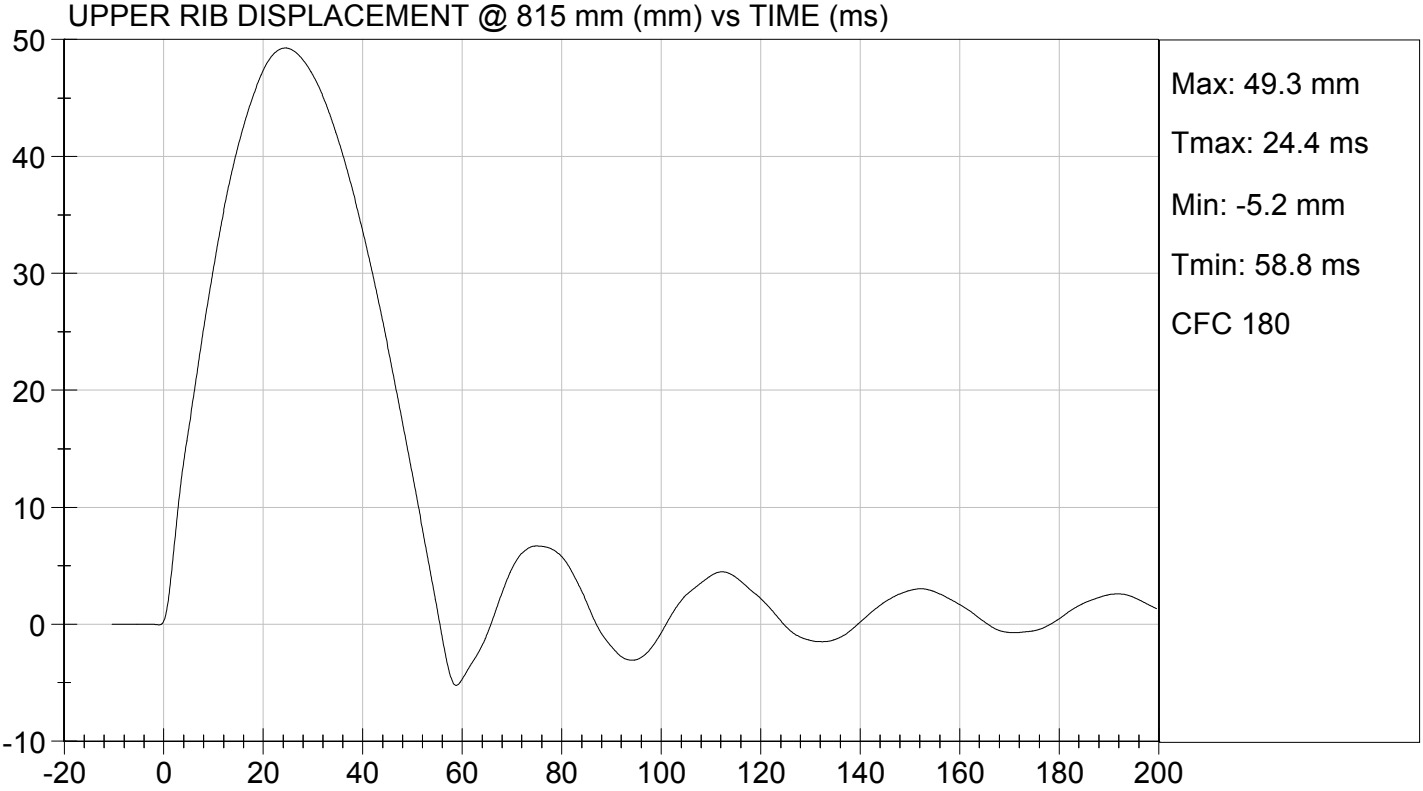
08/12/2015
Test Date

Jessica Hall
Approved By

UPPER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

MID RIB TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152475

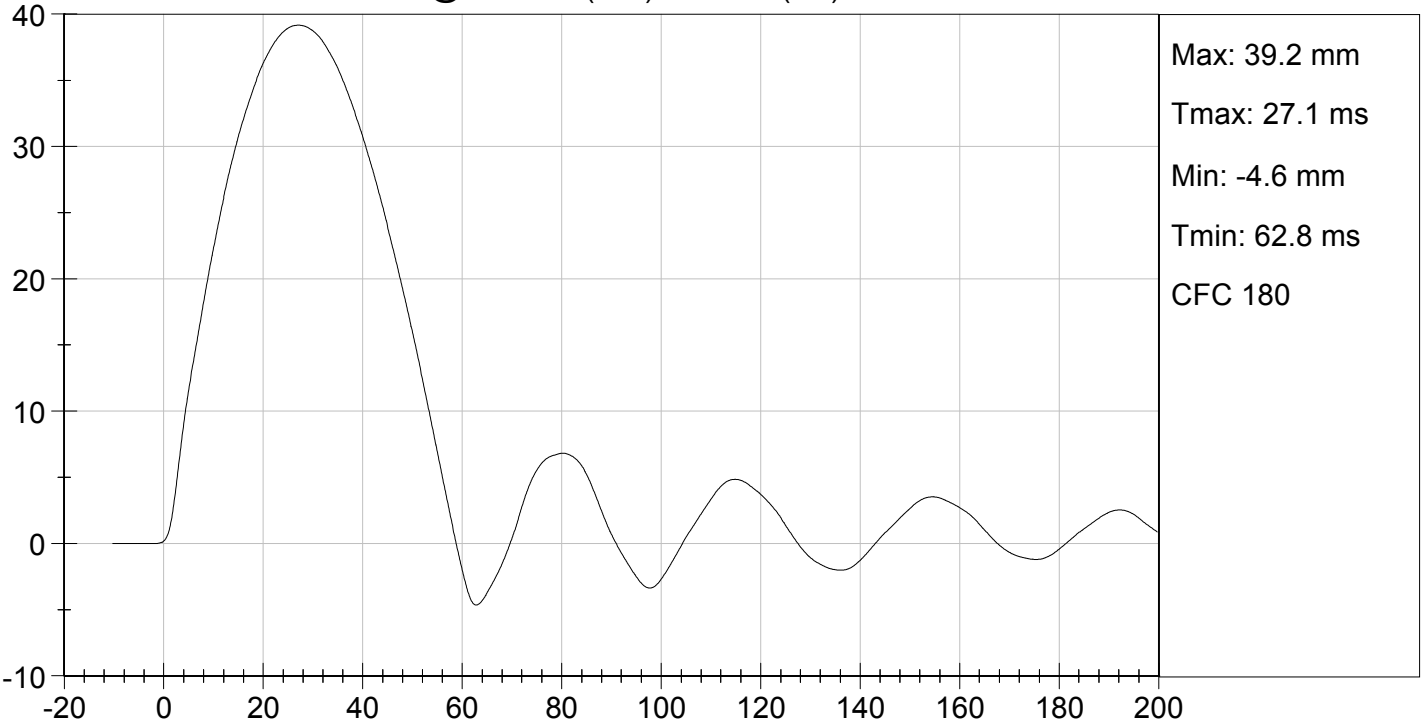
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.2	Pass
Displacement at 815 mm	mm	46.0 to 51.0	48.5	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

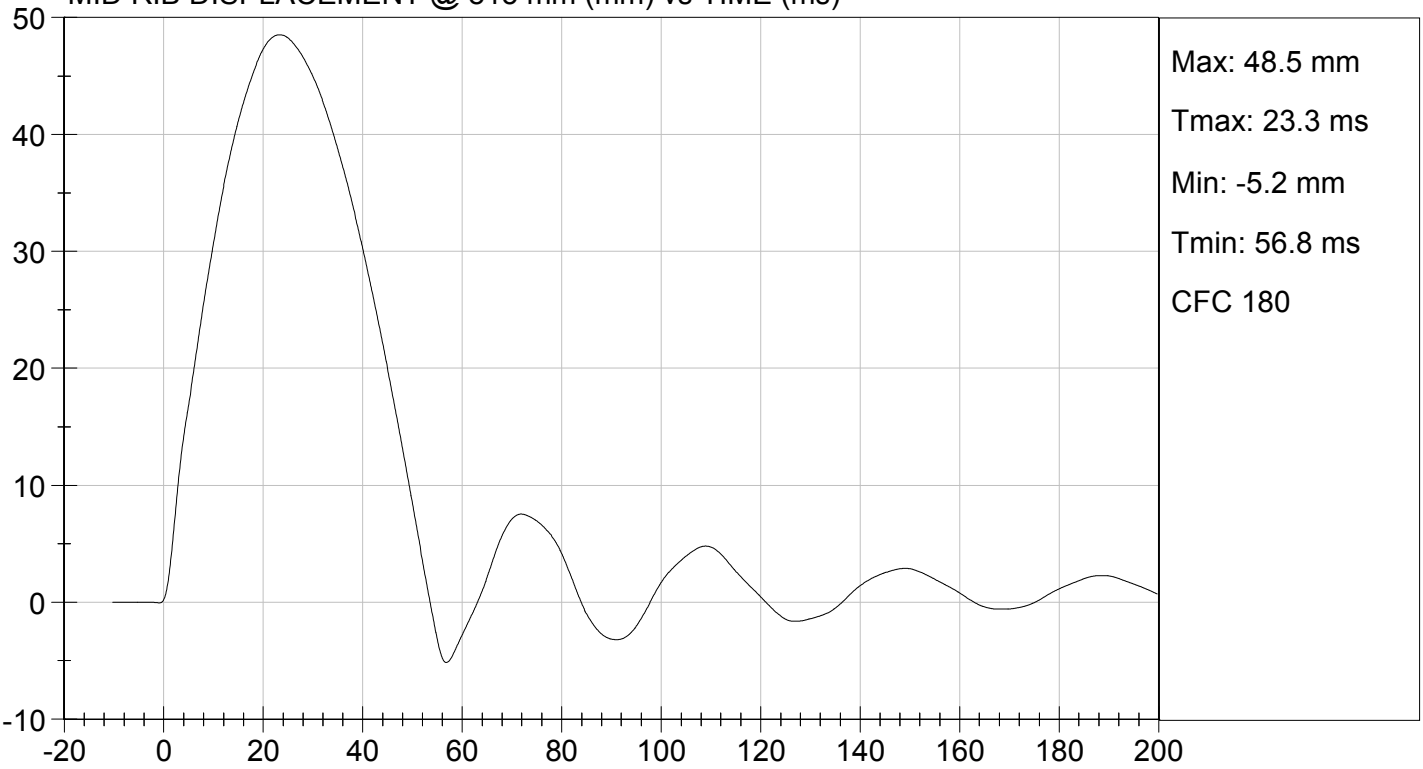
08/12/2015
Test Date

Jessica Hall
Approved By

MID RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



MID RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

LOWER RIB TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152476

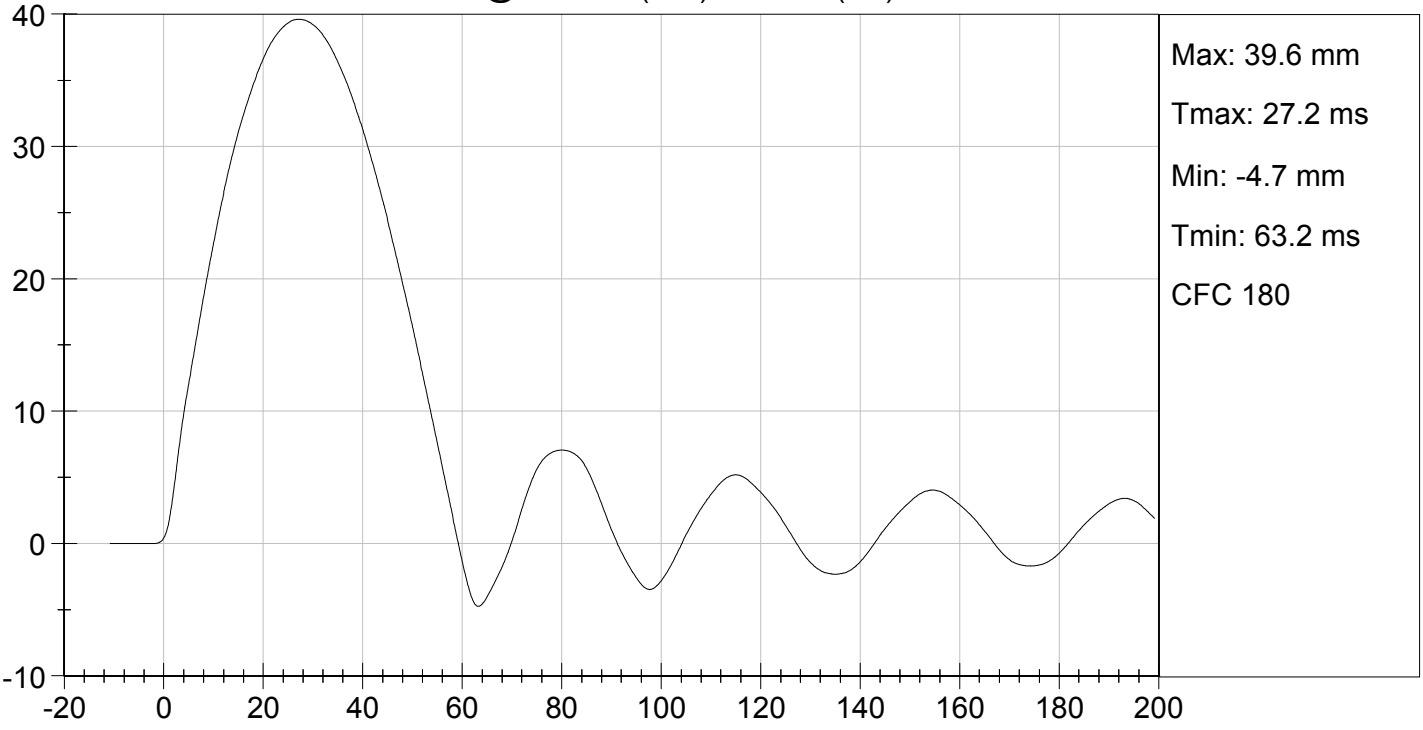
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.6	Pass
Displacement at 815 mm	mm	46.0 to 51.0	50.1	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

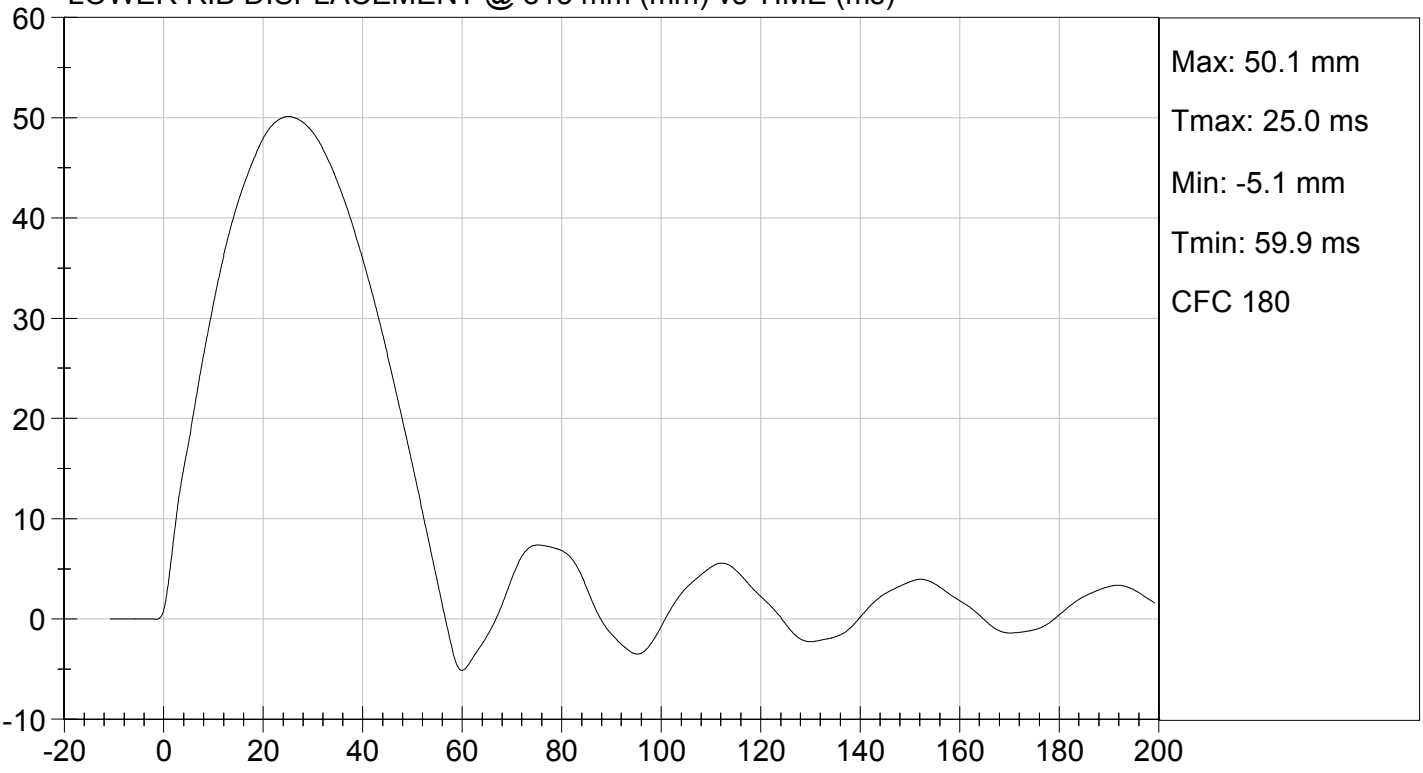
08/12/2015
Test Date

Jessica Hall
Approved By

LOWER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

THORAX IMPACT TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152470

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.4	Pass
Humidity	%	10 to 70	44	Pass
Probe Speed	m/s	5.40 to 5.60	5.52	Pass
Maximum Impactor Force (after 6 ms)	N	5100 to 6200	5501	Pass
Upper Rib Displacement	mm	34.0 to 41.0	38.5	Pass
Middle Rib Displacement	mm	37.0 to 45.0	41.1	Pass
Lower Rib Displacement	mm	37.0 to 44.0	41.3	Pass
		Overall Test Results		Pass

Jack Coleman
Laboratory Technician

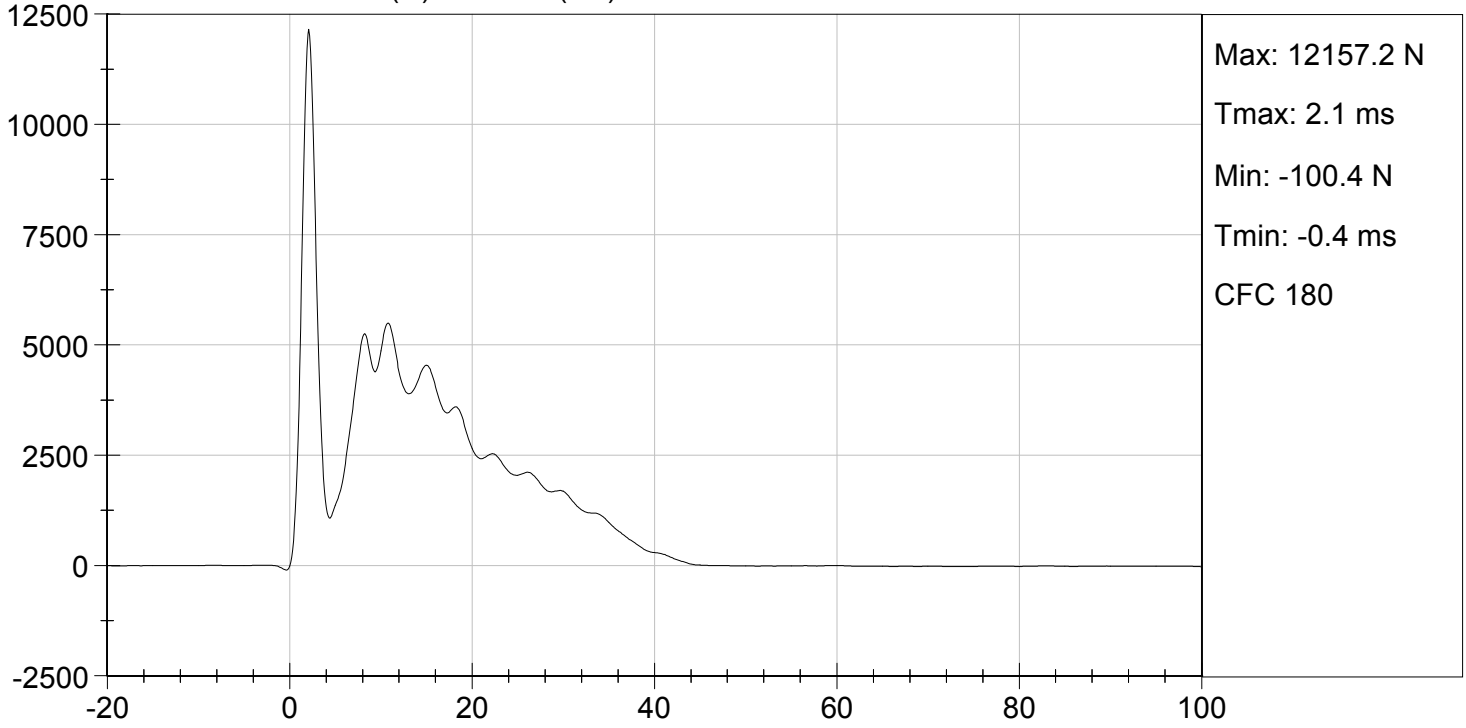
08/12/2015
Test Date

Jessica Gall
Approved By

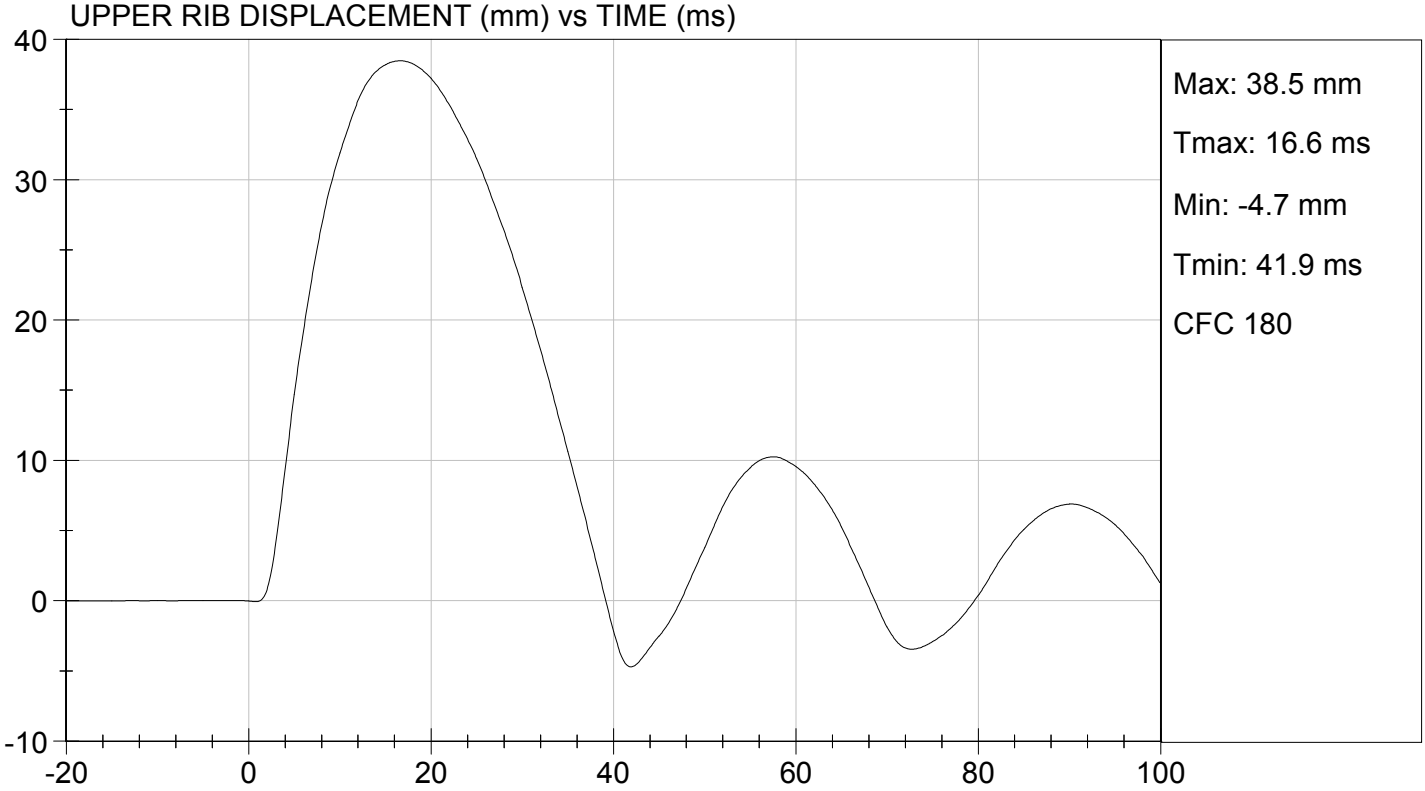
TEST DESC: THORAX IMPACT
VELOCITY: 18.12 ft/s, 5.52 m/s

TEST DATE: 08/12/2015
TEST #: D152470

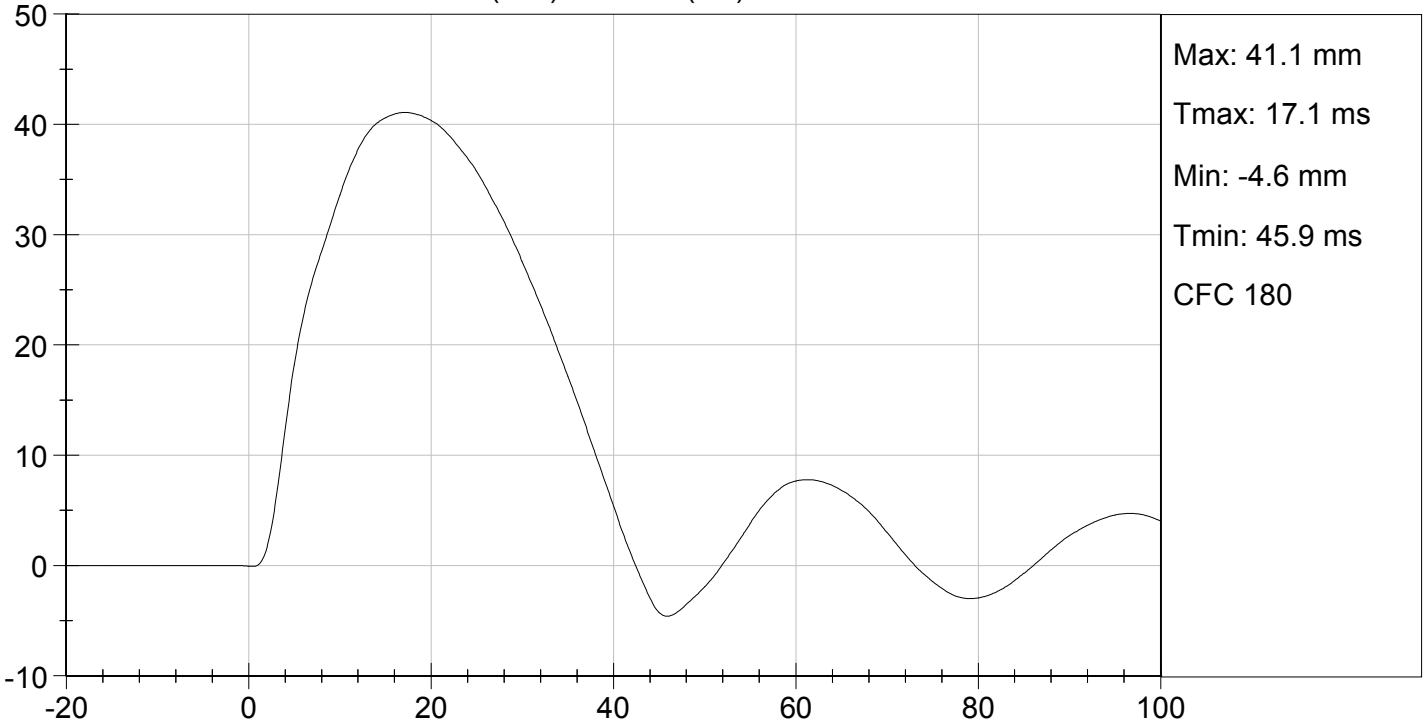
IMPACTOR FORCE (N) vs TIME (ms)



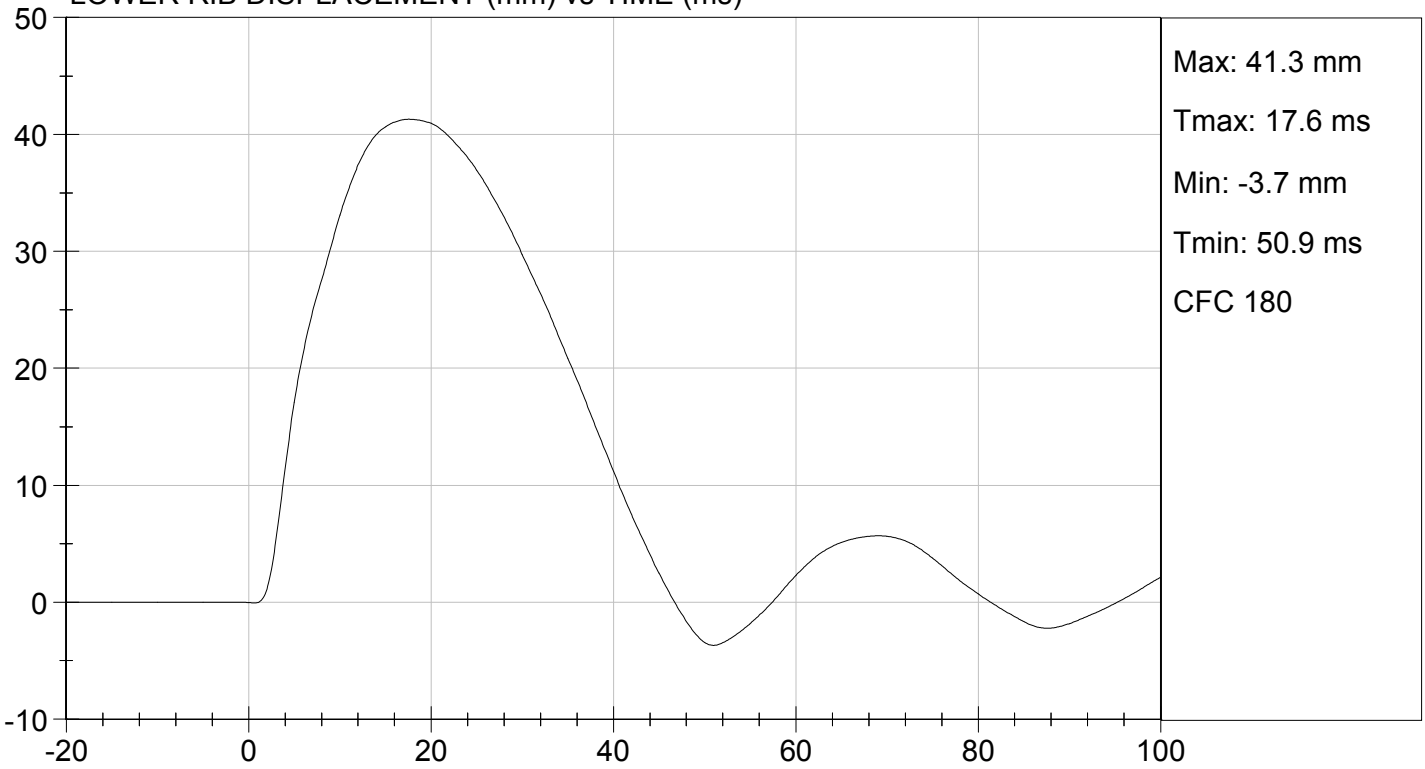
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



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:** D152477

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Speed	m/s	3.90 to 4.10	4.03	Pass
Maximum Impactor Force	N	4000 to 4800	4413	Pass
Time of Maximum Impactor Force	ms	10.6 to 13.0	12.3	Pass
Maximum Total Abdomen Force	N	2200 to 2700	2435	Pass
Time of Maximum Abdomen Force	ms	10.0 to 12.3	11.8	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

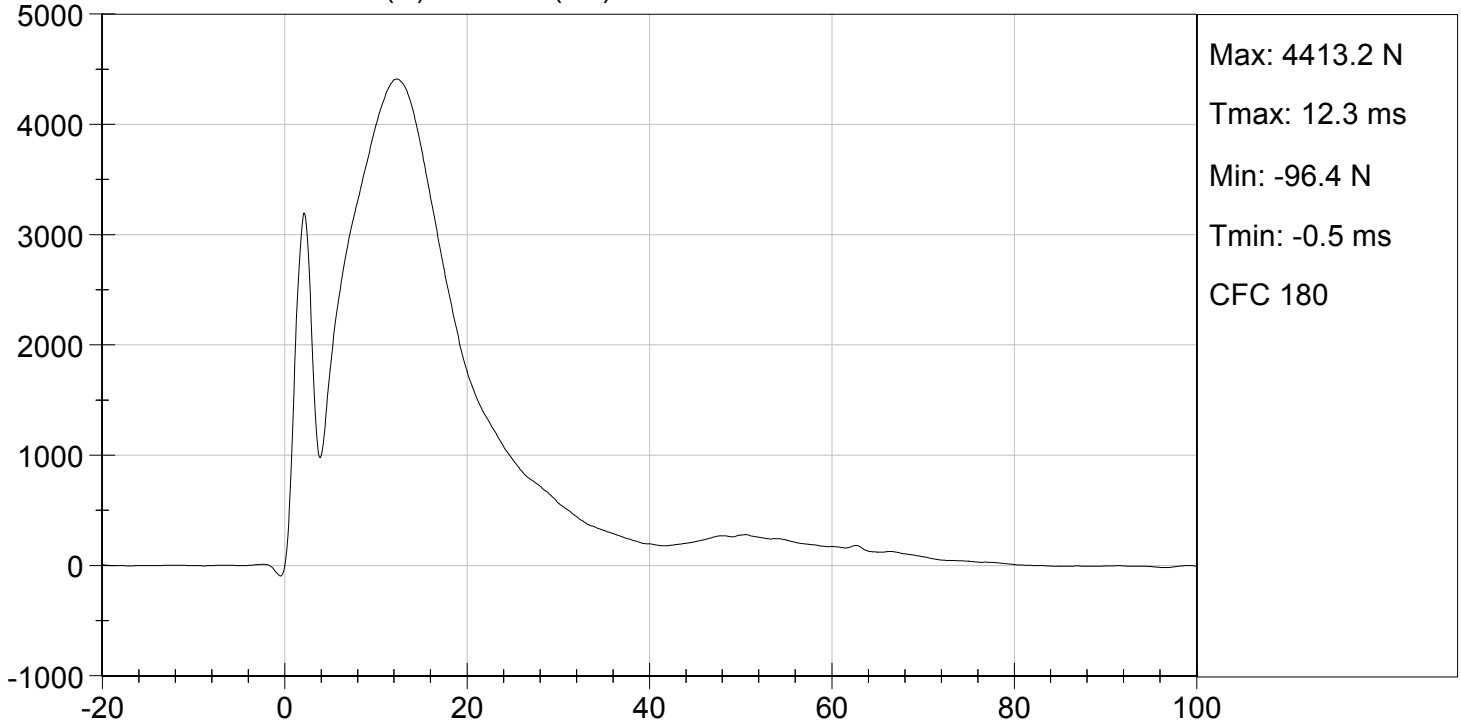
08/12/2015
Test Date

Jessica Hall
Approved By

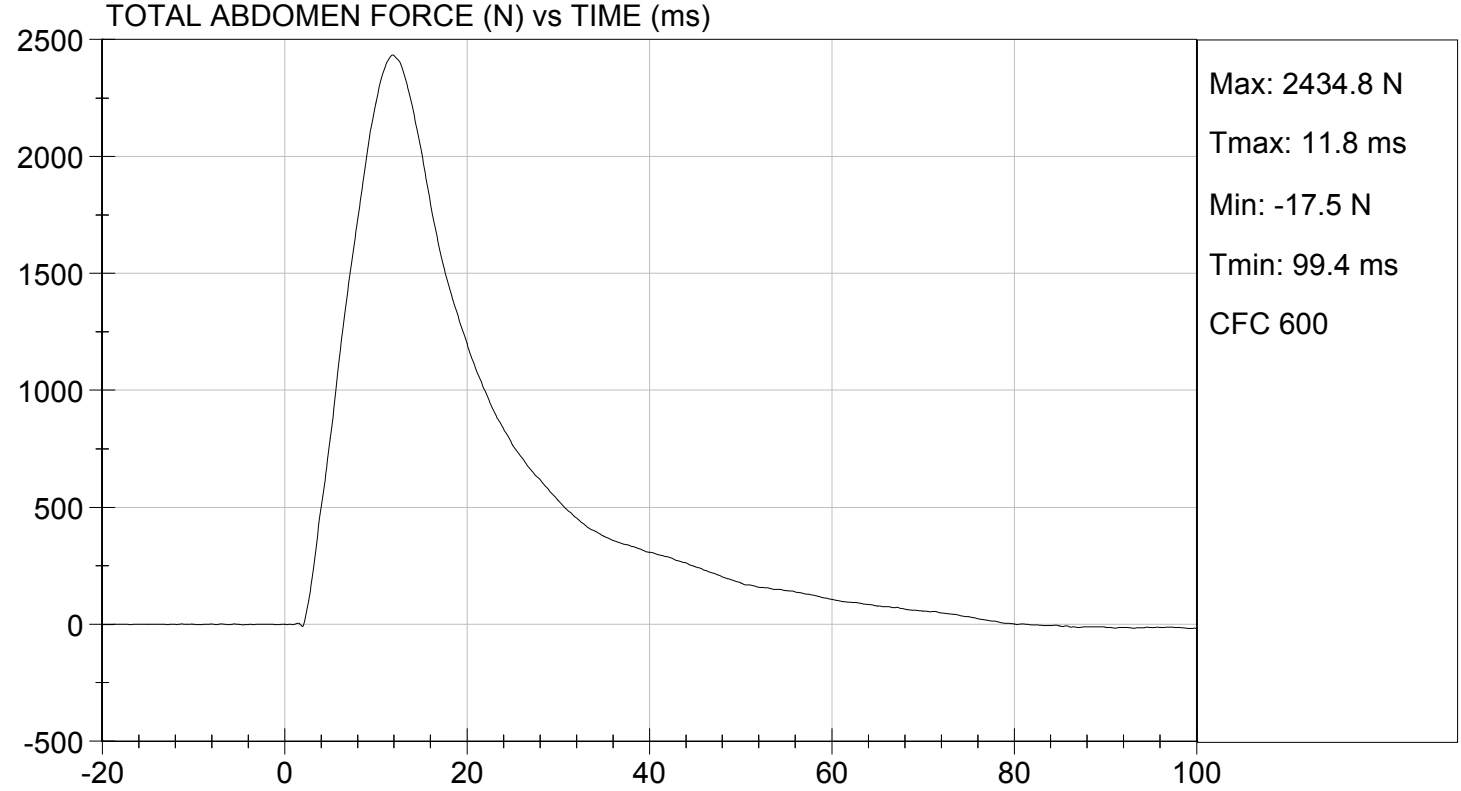
TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.23 ft/s, 4.03 m/s

TEST DATE: 08/12/2015
TEST #: D152477

IMPACTOR FORCE (N) vs TIME (ms)



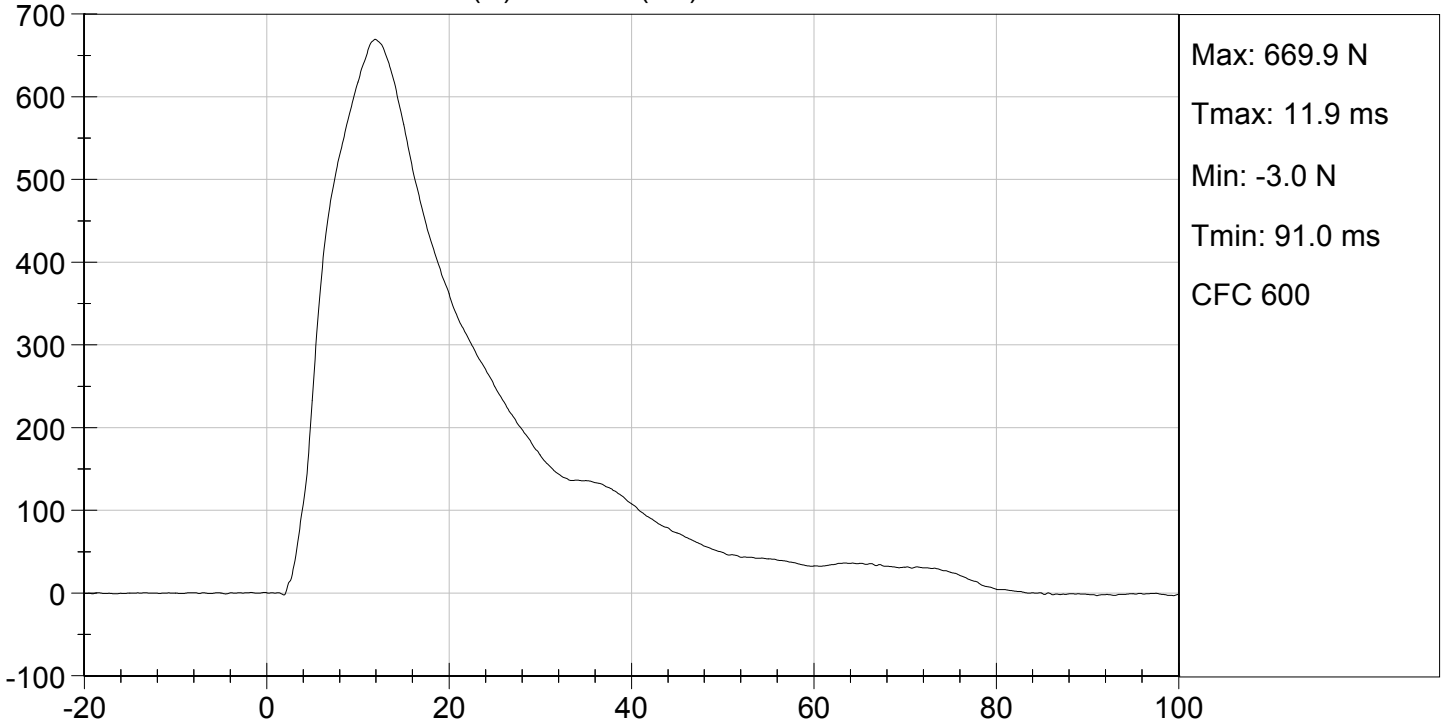
TOTAL ABDOMEN FORCE (N) vs TIME (ms)



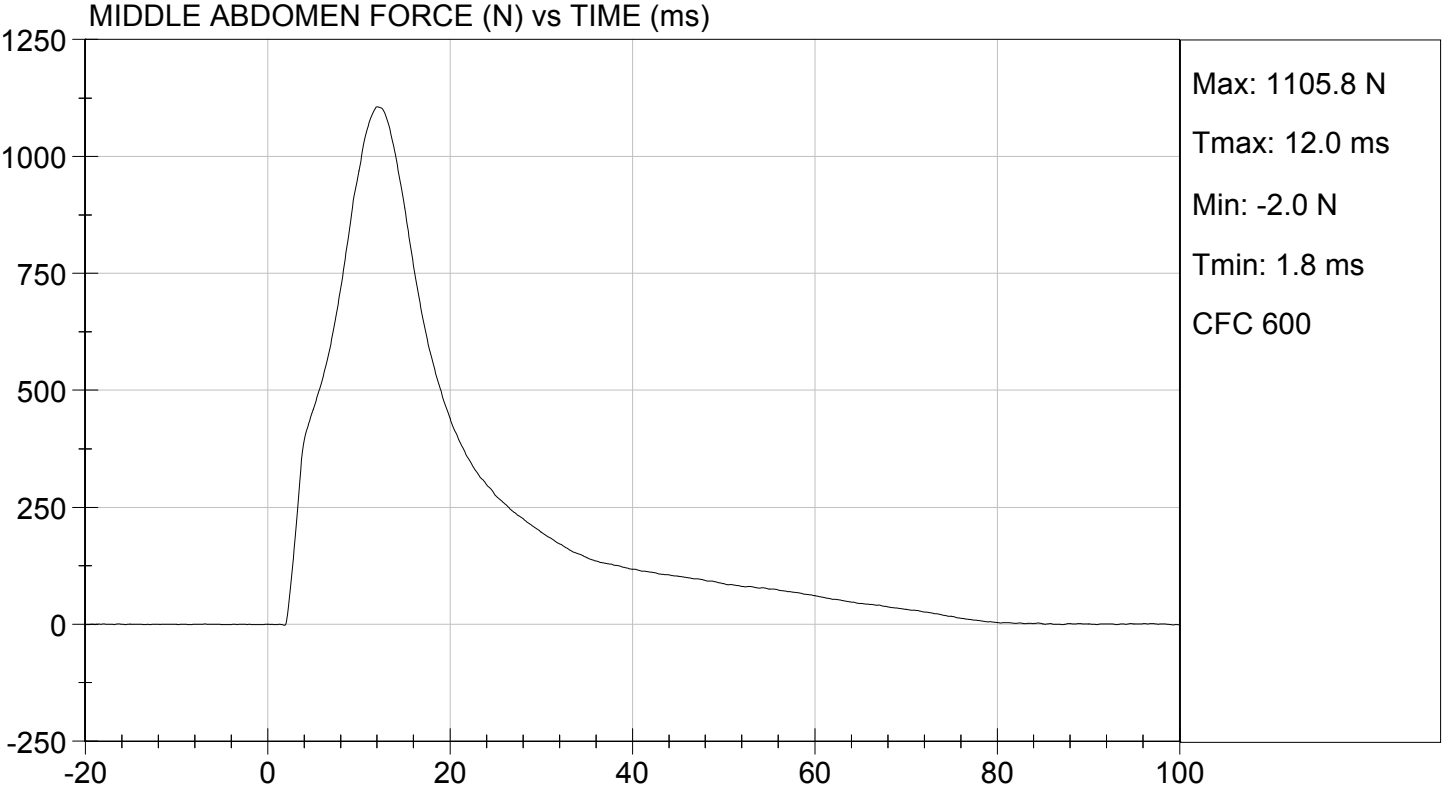
TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.23 ft/s, 4.03 m/s

TEST DATE: 08/12/2015
TEST #: D152477

FRONT ABDOMEN FORCE (N) vs TIME (ms)



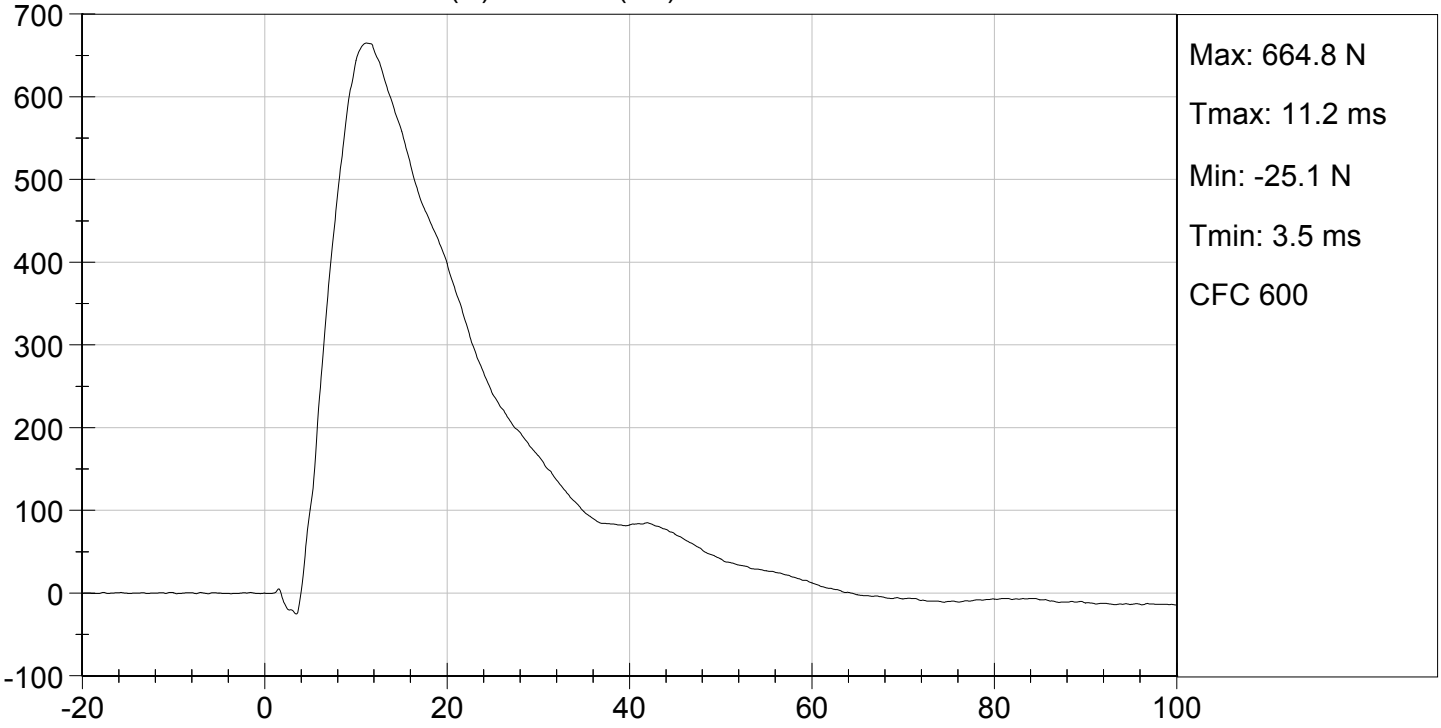
MIDDLE ABDOMEN FORCE (N) vs TIME (ms)



TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.23 ft/s, 4.03 m/s

TEST DATE: 08/12/2015
TEST #: D152477

REAR ABDOMEN FORCE (N) vs TIME (ms)



MGA RESEARCH CORPORATION

LUMBAR SPINE TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152478

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	46	Pass
Pendulum Speed		m/s	5.95 to 6.15	6.12	Pass
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.00	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.412	Pass
	27 ms	m/s	-6.50 to -5.80	-6.18	Pass
	30 ms	m/s	>= -6.50	-6.24	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	46.9	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	45.0	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	47	Pass
			Overall Results		Pass

Jack Coleman
Laboratory Technician

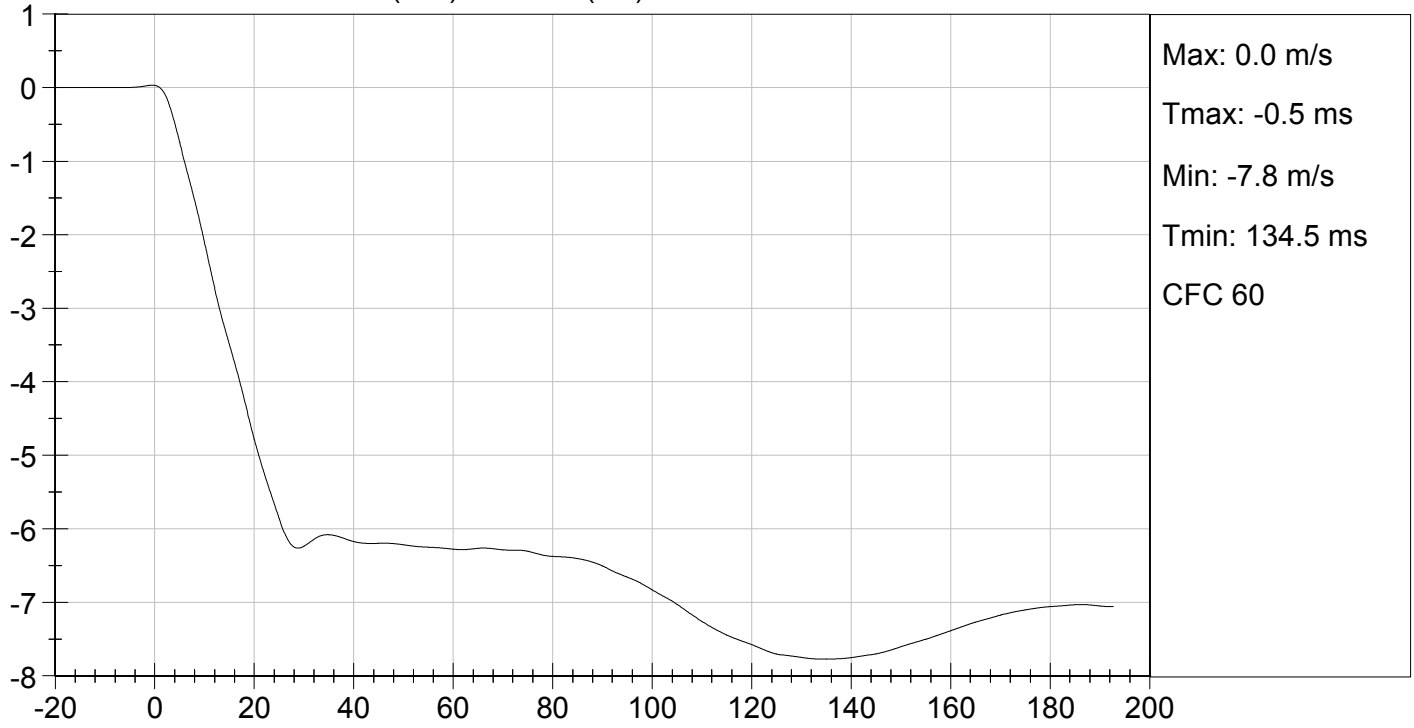
08/12/2015
Test Date

Jessica Gall
Approved By

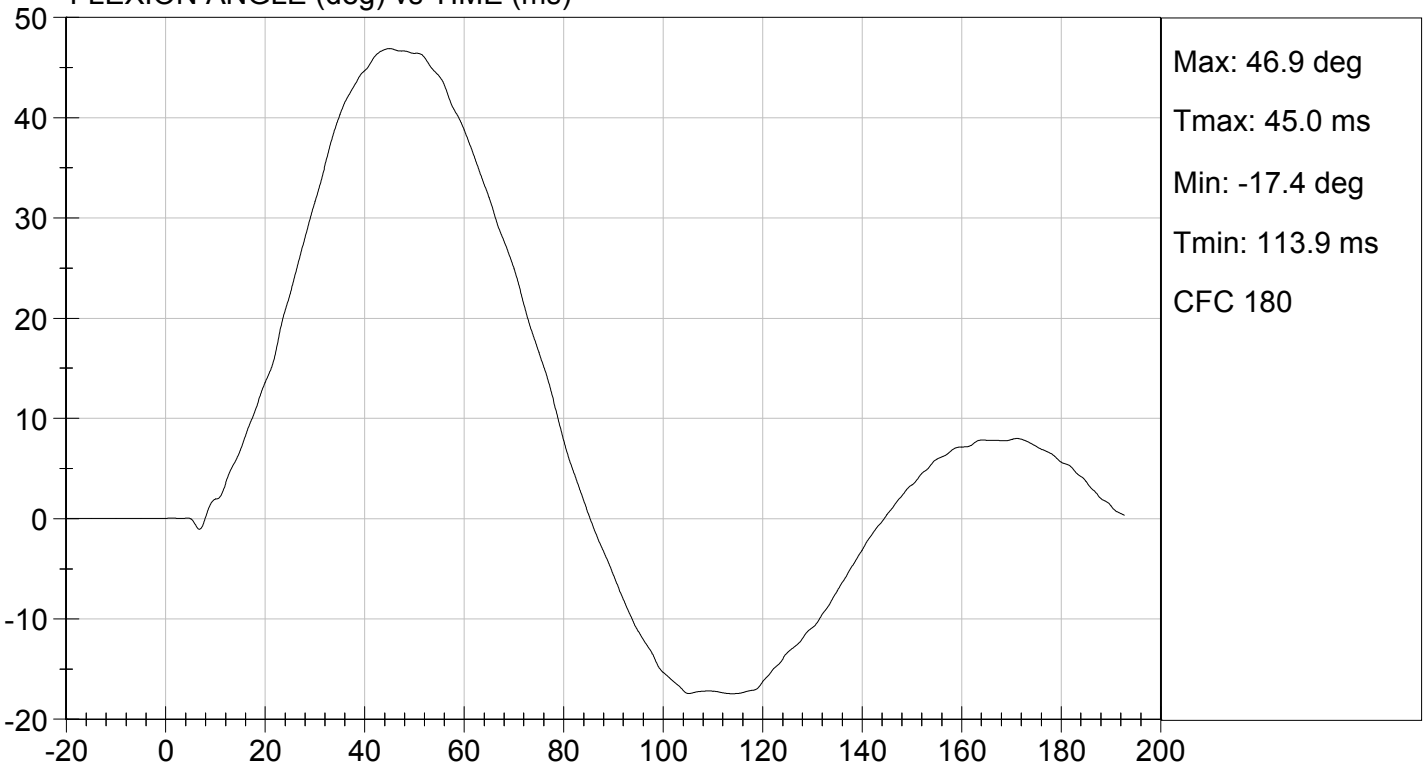
TEST DESC: LUMBAR BENDING
VELOCITY: 20.08 ft/s, 6.12 m/s

TEST DATE: 08/12/2015
TEST #: D152478

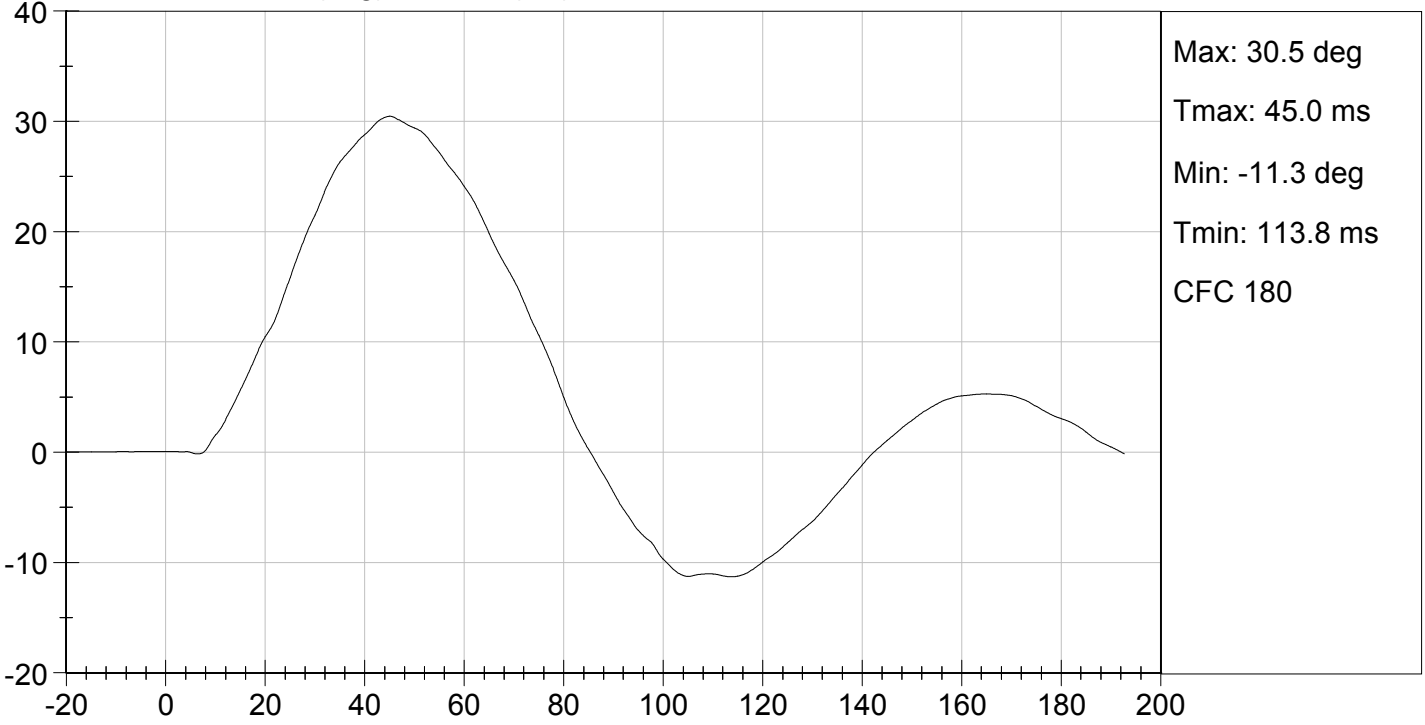
PENDULUM VELOCITY (m/s) vs TIME (ms)



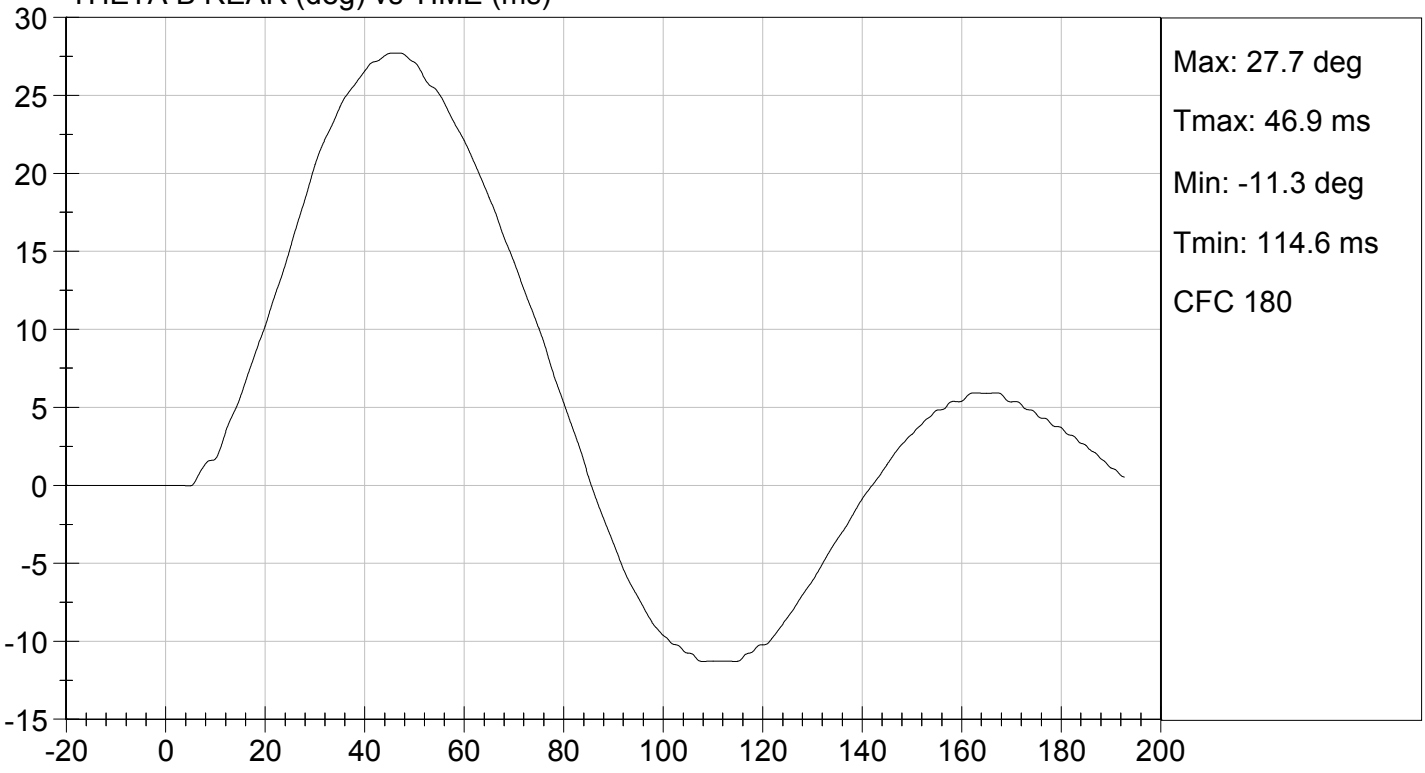
FLEXION ANGLE (deg) vs TIME (ms)



THETA A FRONT (deg) vs TIME (ms)

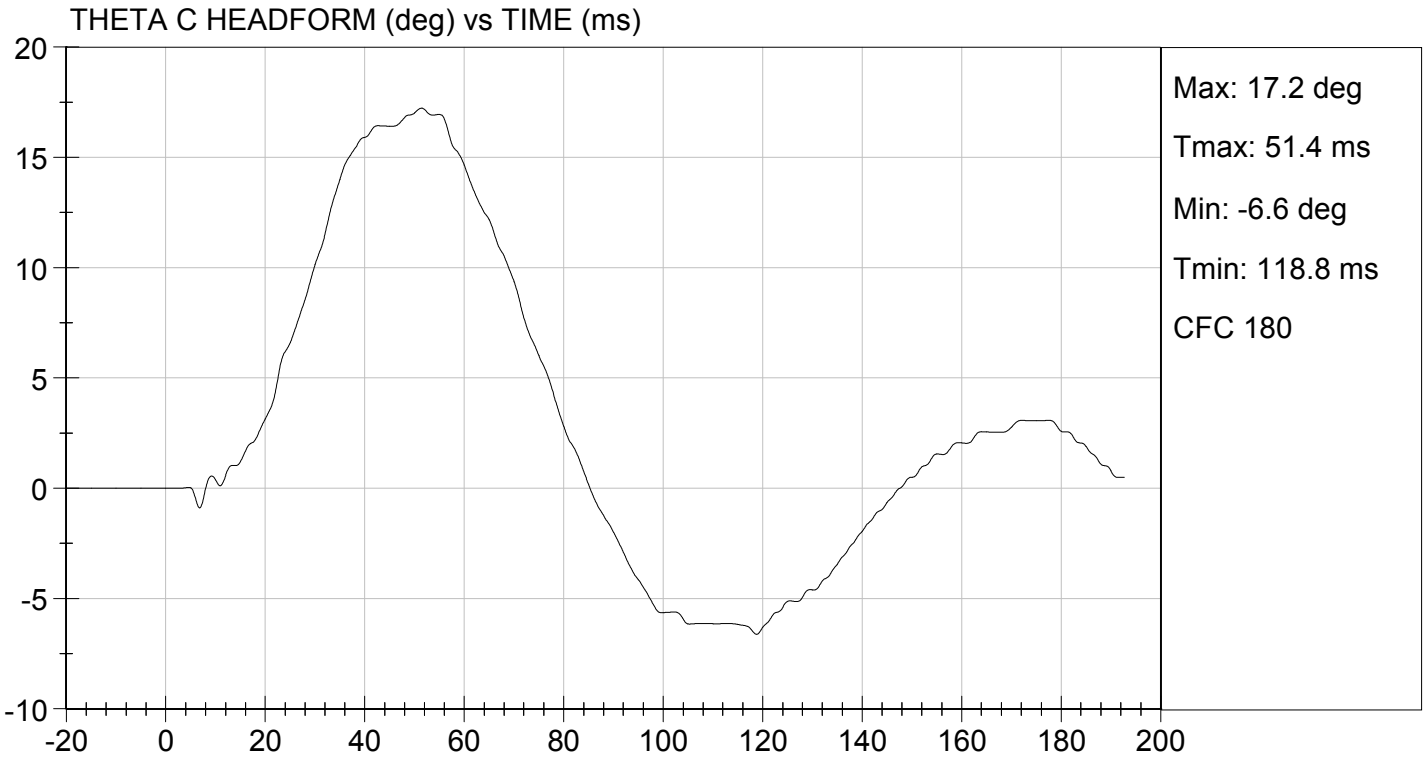


THETA B REAR (deg) vs TIME (ms)



TEST DESC: LUMBAR BENDING
VELOCITY: 20.08 ft/s, 6.12 m/s

TEST DATE: 08/12/2015
TEST #: D152478



MGA RESEARCH CORPORATION

PELVIS TEST

ES-2re DUMMY

ATD Serial No: 032 **Test I.D:** D152479

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Speed	m/s	4.20 to 4.40	4.27	Pass
Maximum Impactor Force	N	4700 to 5400	5075	Pass
Time of Maximum Impactor Force	ms	11.8 to 16.1	14.5	Pass
Maximum Pubic Force	N	1230 to 1590	1317	Pass
Time of Maximum Pubic Force	ms	12.2 to 17.0	15.3	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

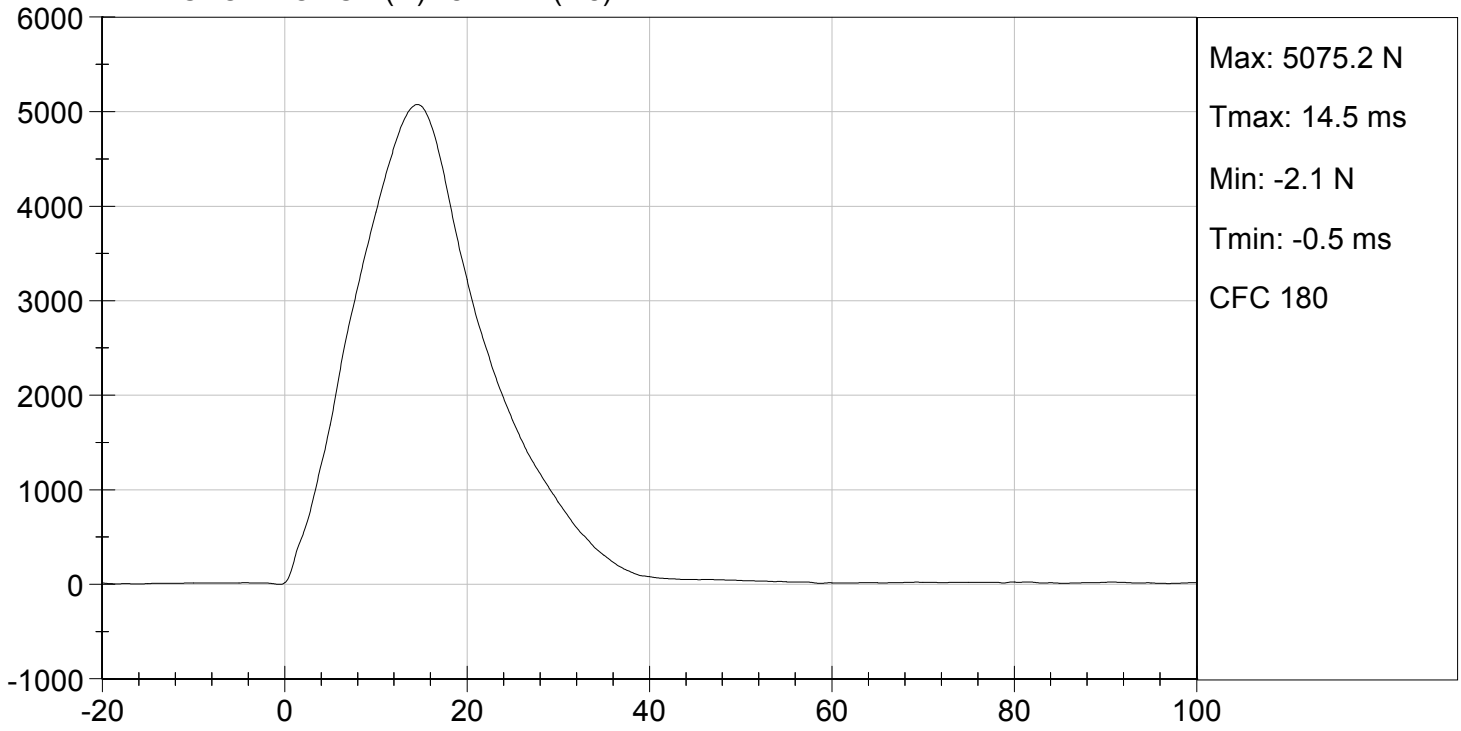
08/12/2015
Test Date

Jessica Hall
Approved By

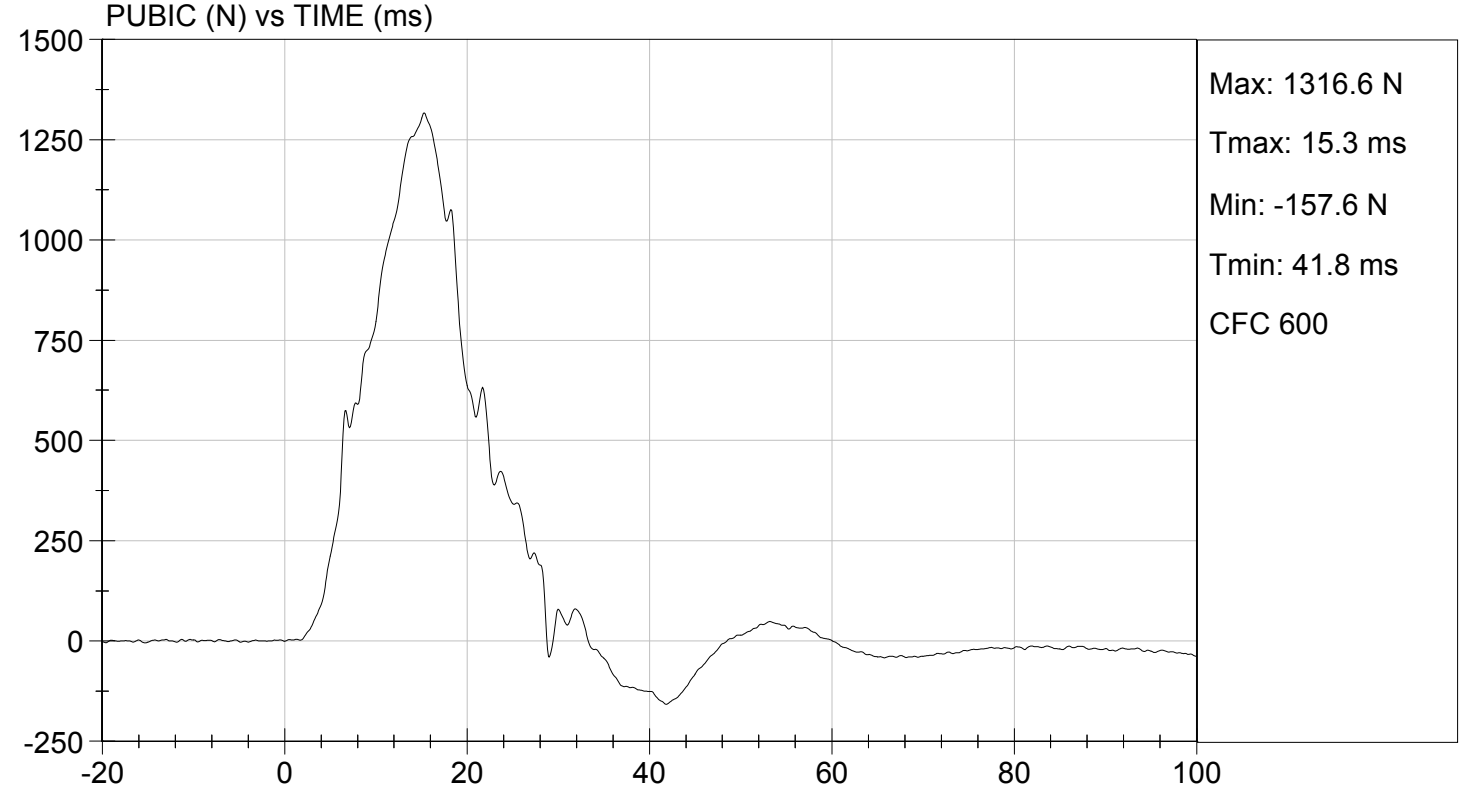
TEST DESC: PELVIS IMPACT
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152479

IMPACTOR FORCE (N) vs TIME (ms)



PUBIC (N) vs TIME (ms)



SID-IIsD External Measurements
SN: 296

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

MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D152141

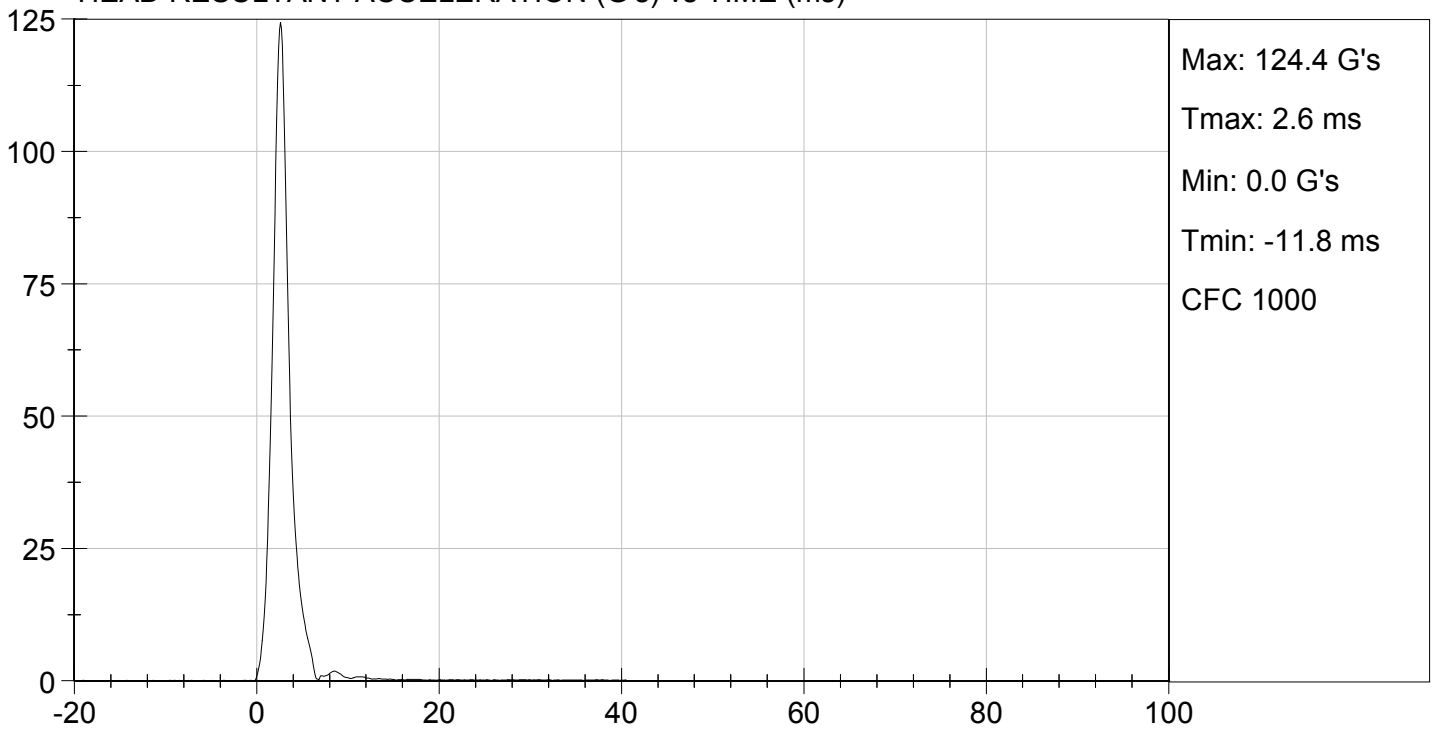
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Peak Resultant Acceleration	G's	115 to 137	124	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-4.7	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

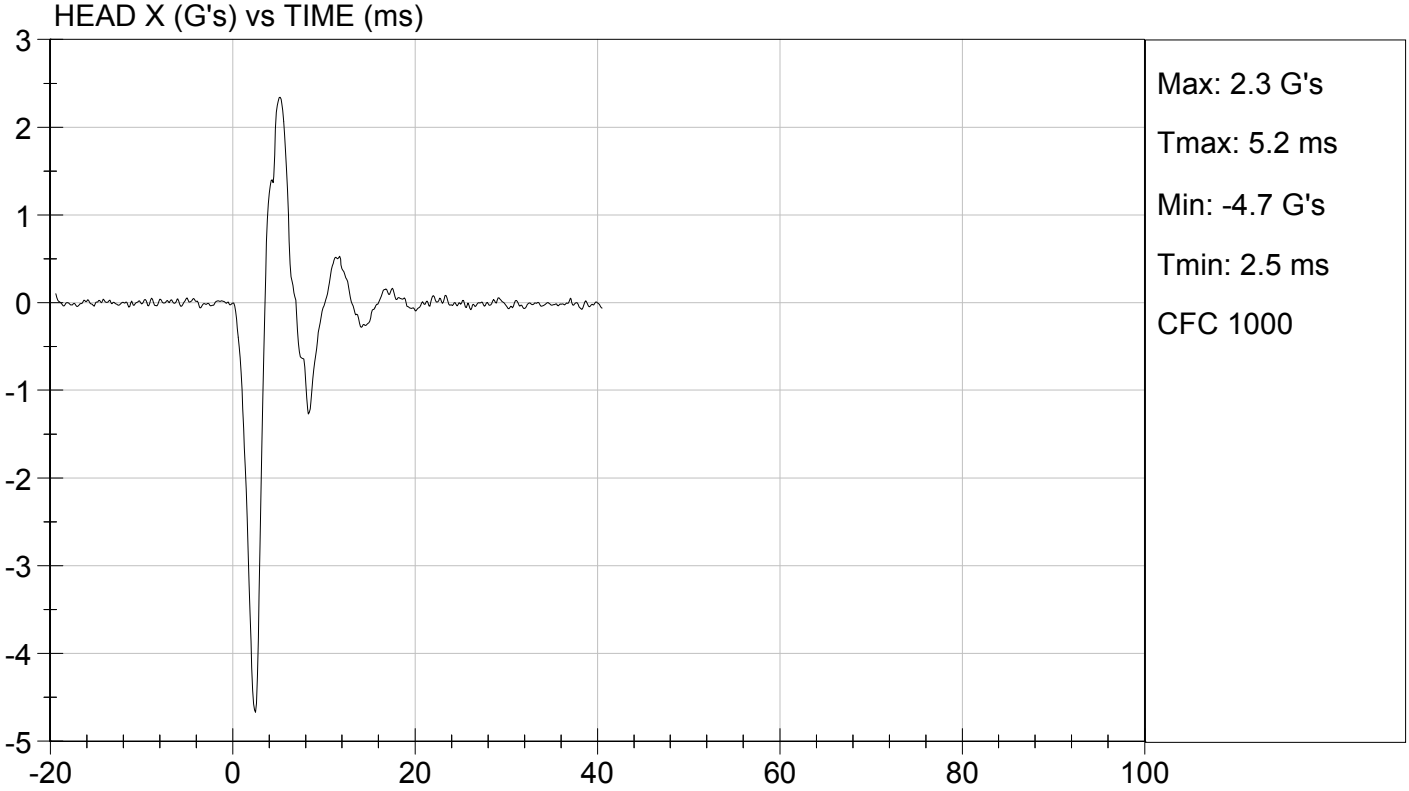
07/16/2015
Test Date

Jessica Hall
Approved By

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



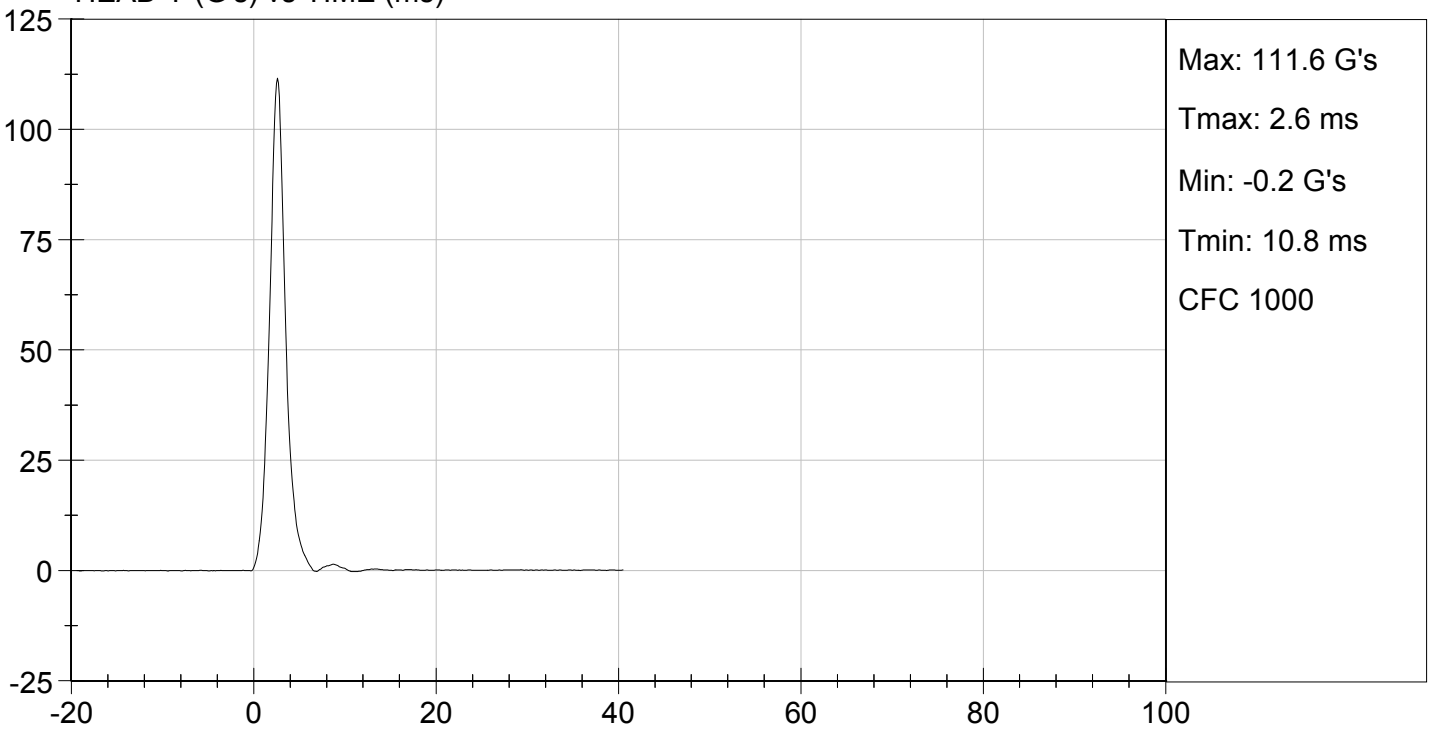
HEAD X (G's) vs TIME (ms)



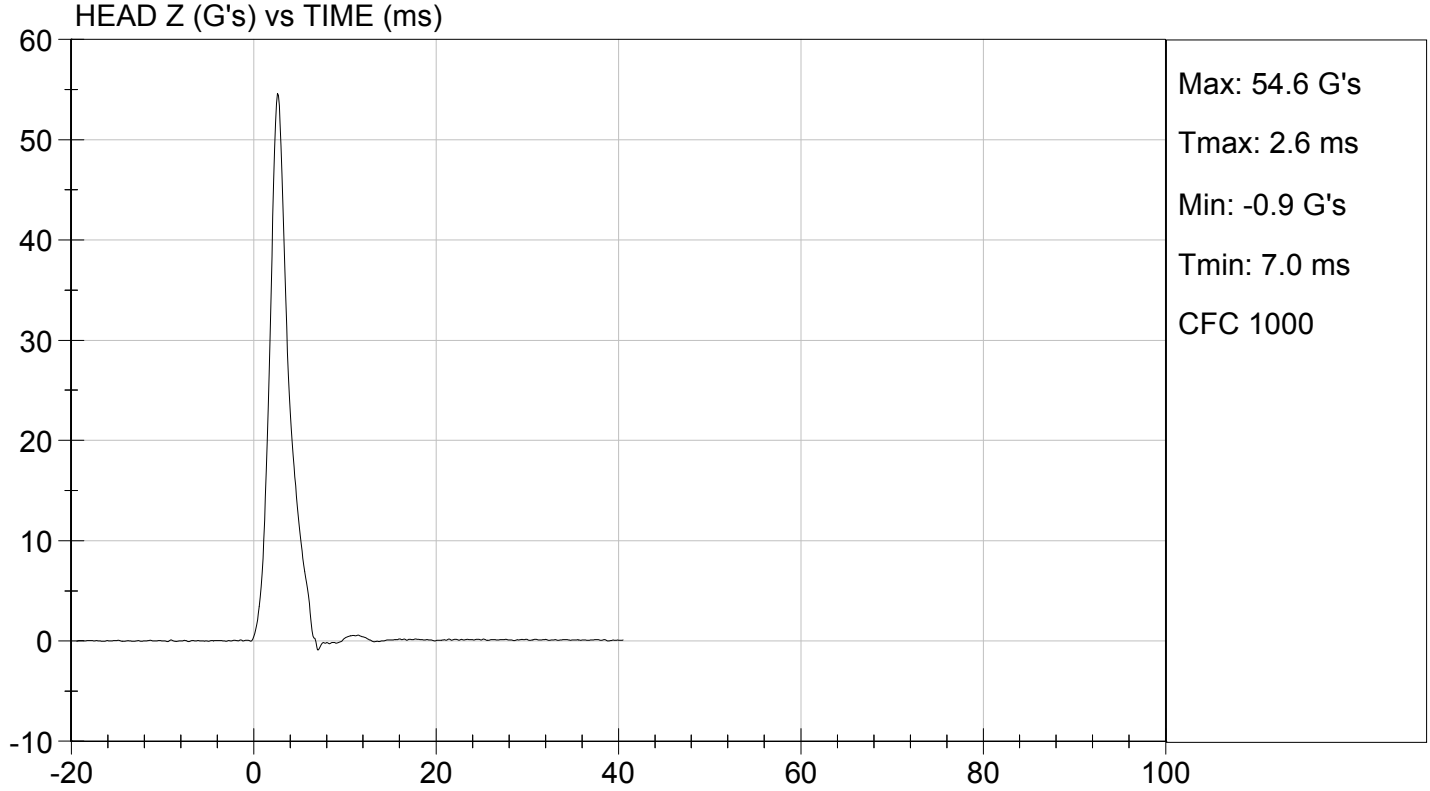
TEST DESC: HEAD DROP

TEST DATE: 07/16/2015
TEST #: D152141

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



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



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152142

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	22.1	Pass
Humidity		%	10 to 70	47	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.45	Pass
	15 ms	m/s	3.30 to 4.10	3.40	Pass
	20 ms	m/s	4.40 to 5.40	4.52	Pass
	25 ms	m/s	5.40 to 6.10	5.50	Pass
	25-100 ms	m/s	5.50 to 6.20	6.17	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	59	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-38	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
			Overall Test Results		Pass

David Schoedel

Laboratory Technician

07/16/2015

Test Date

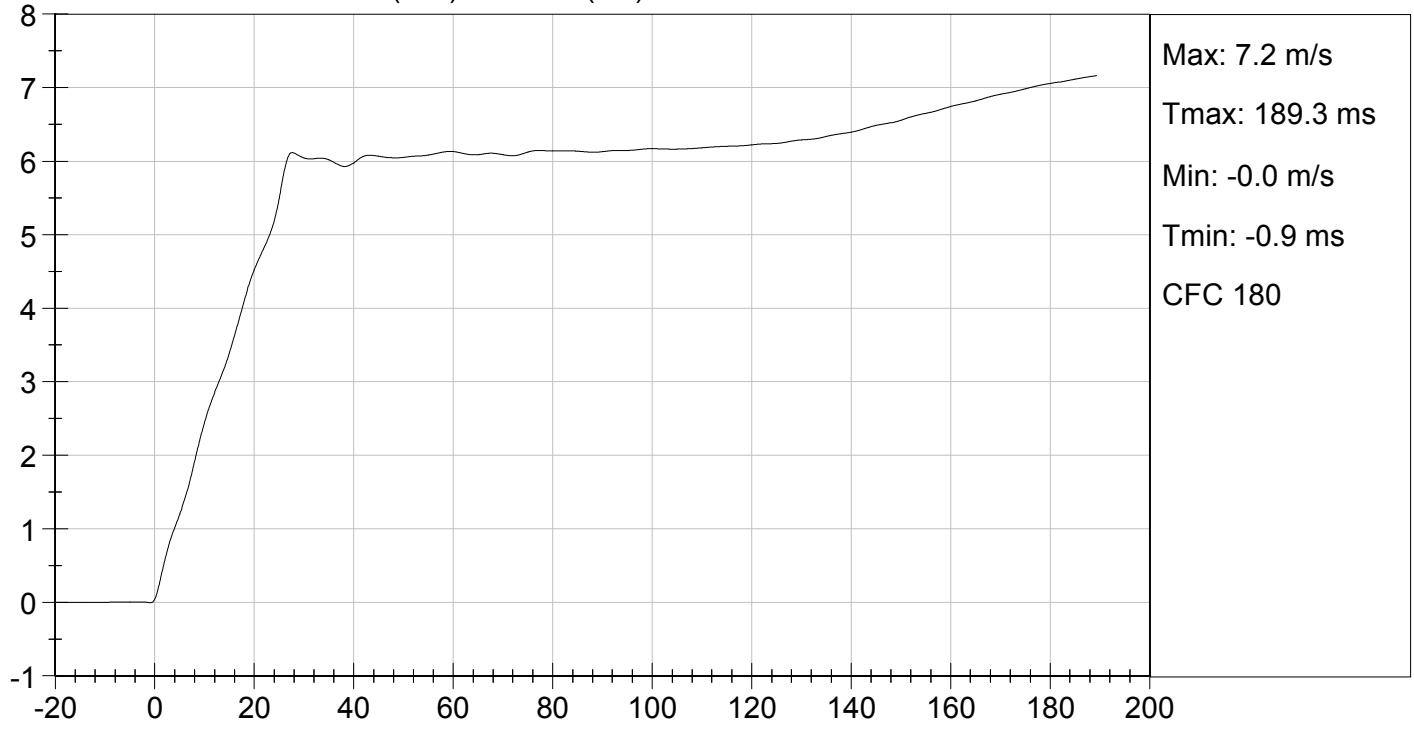
Jessica Gall

Approved By

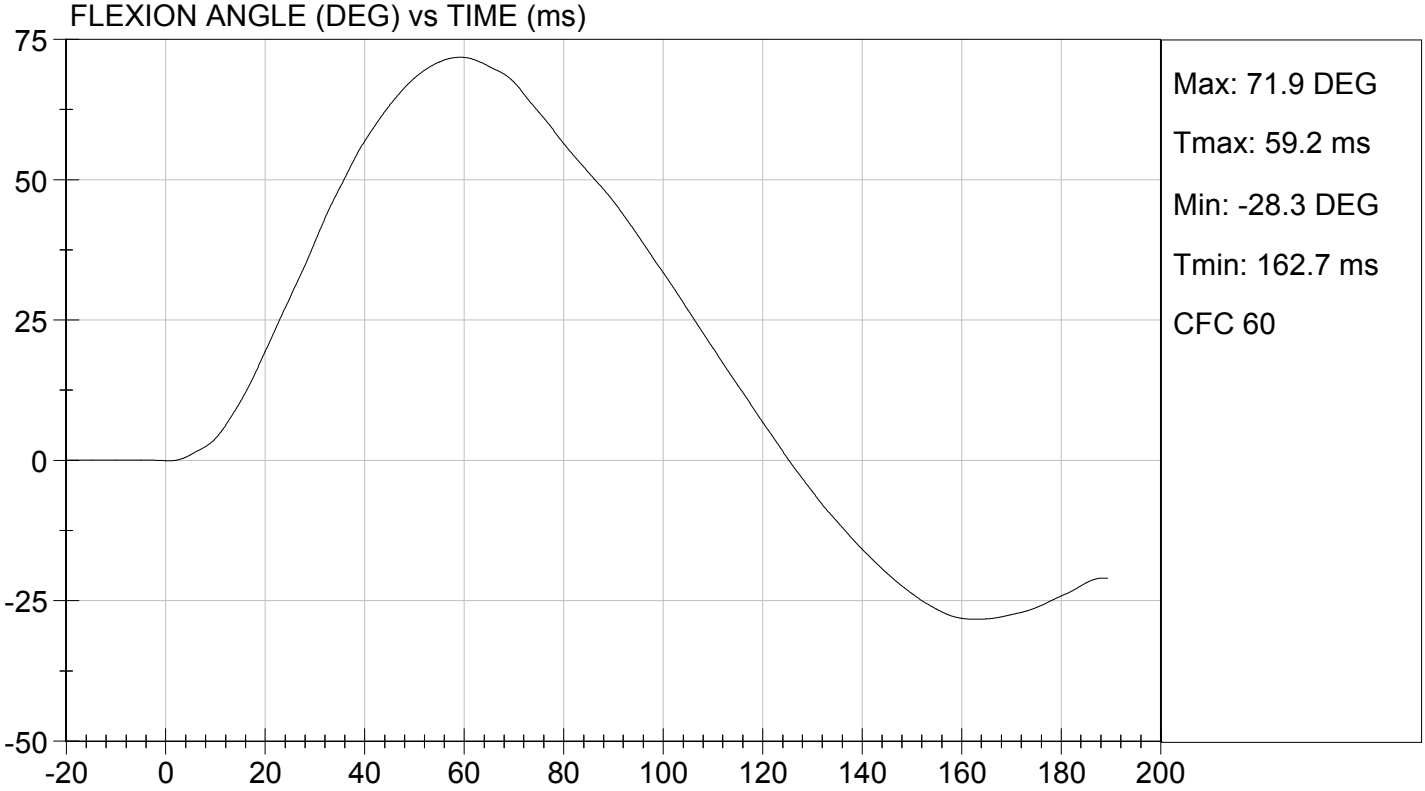
TEST DESC: NECK BENDING
VELOCITY: 18.31 ft/s, 5.58 m/s

TEST DATE: 07/16/2015
TEST #: D152142

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



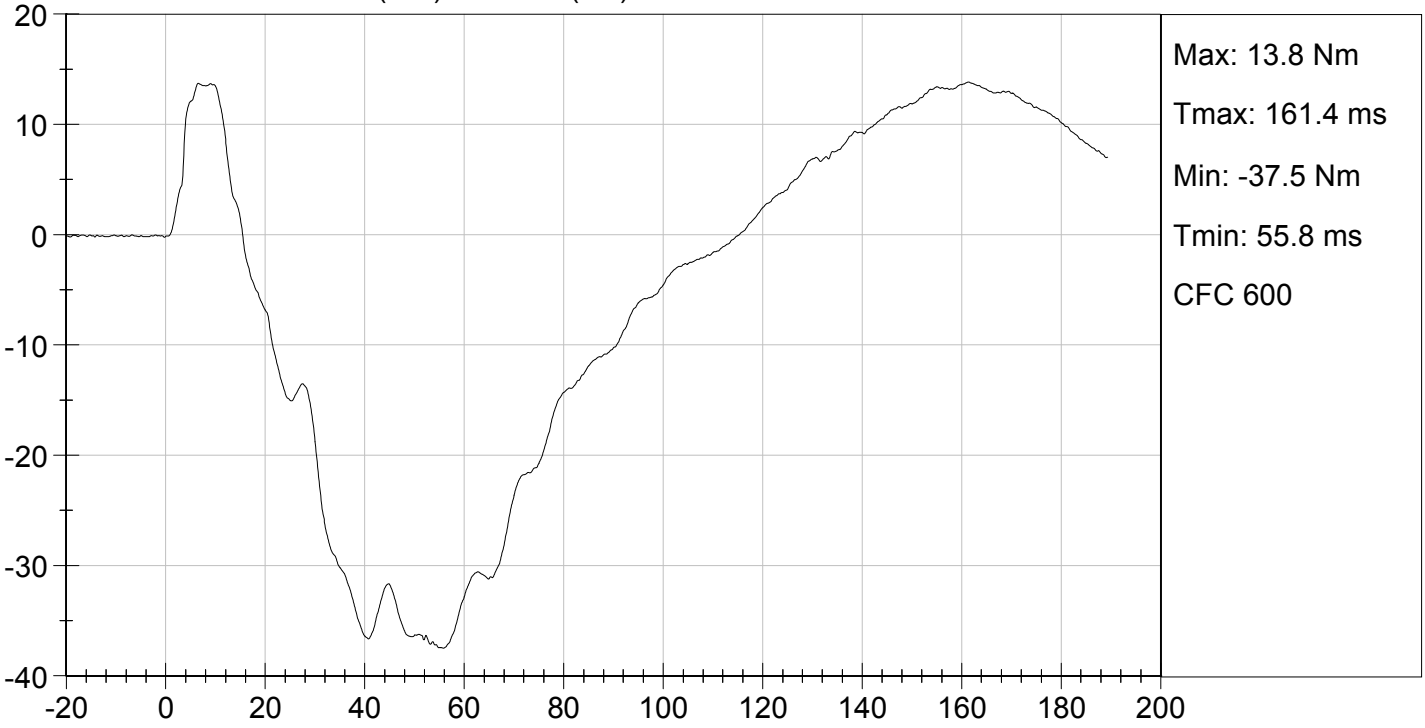
FLEXION ANGLE (DEG) vs TIME (ms)



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

TEST DATE: 07/16/2015
TEST #: D152142

OCCIPITAL MOMENT (Nm) vs TIME (ms)



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D152143

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	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	29	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

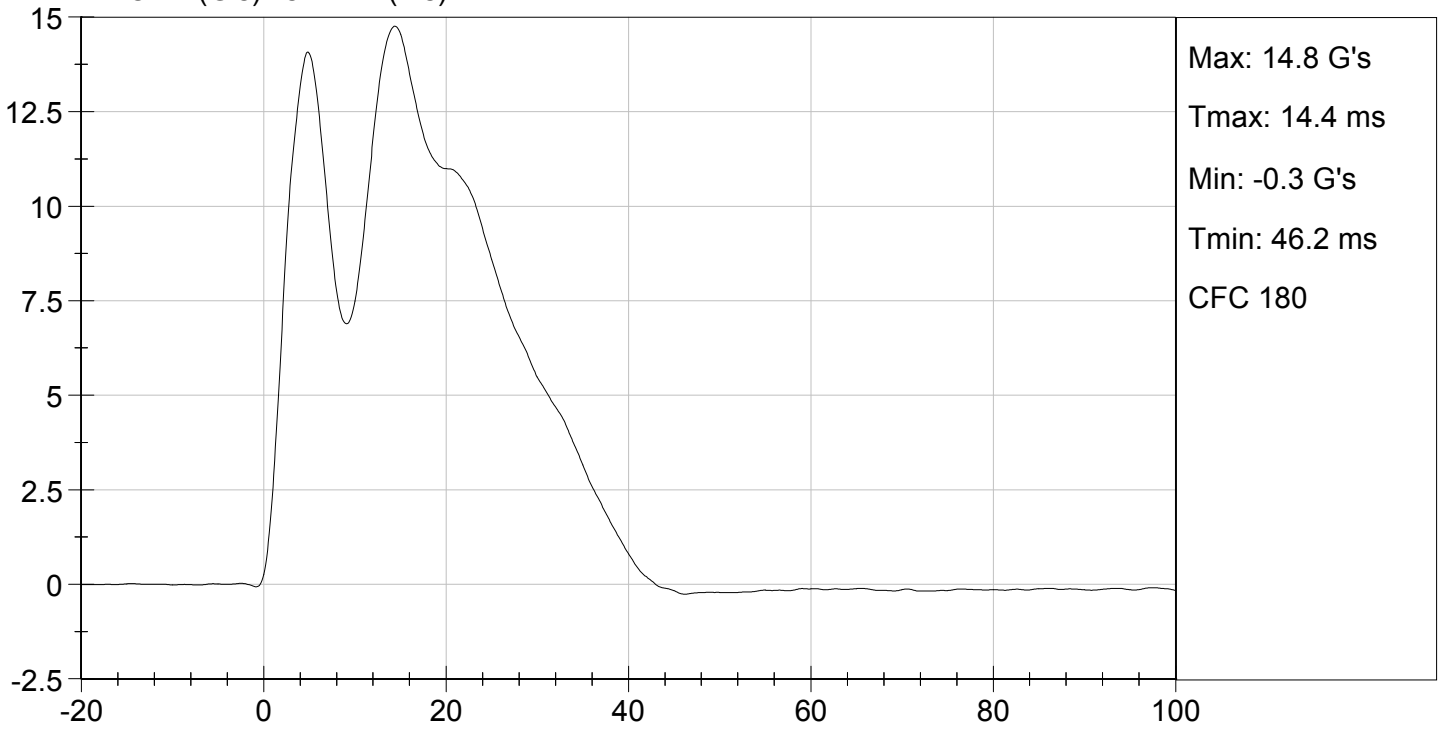
07/16/2015
Test Date

Jessica Gall
Approved By

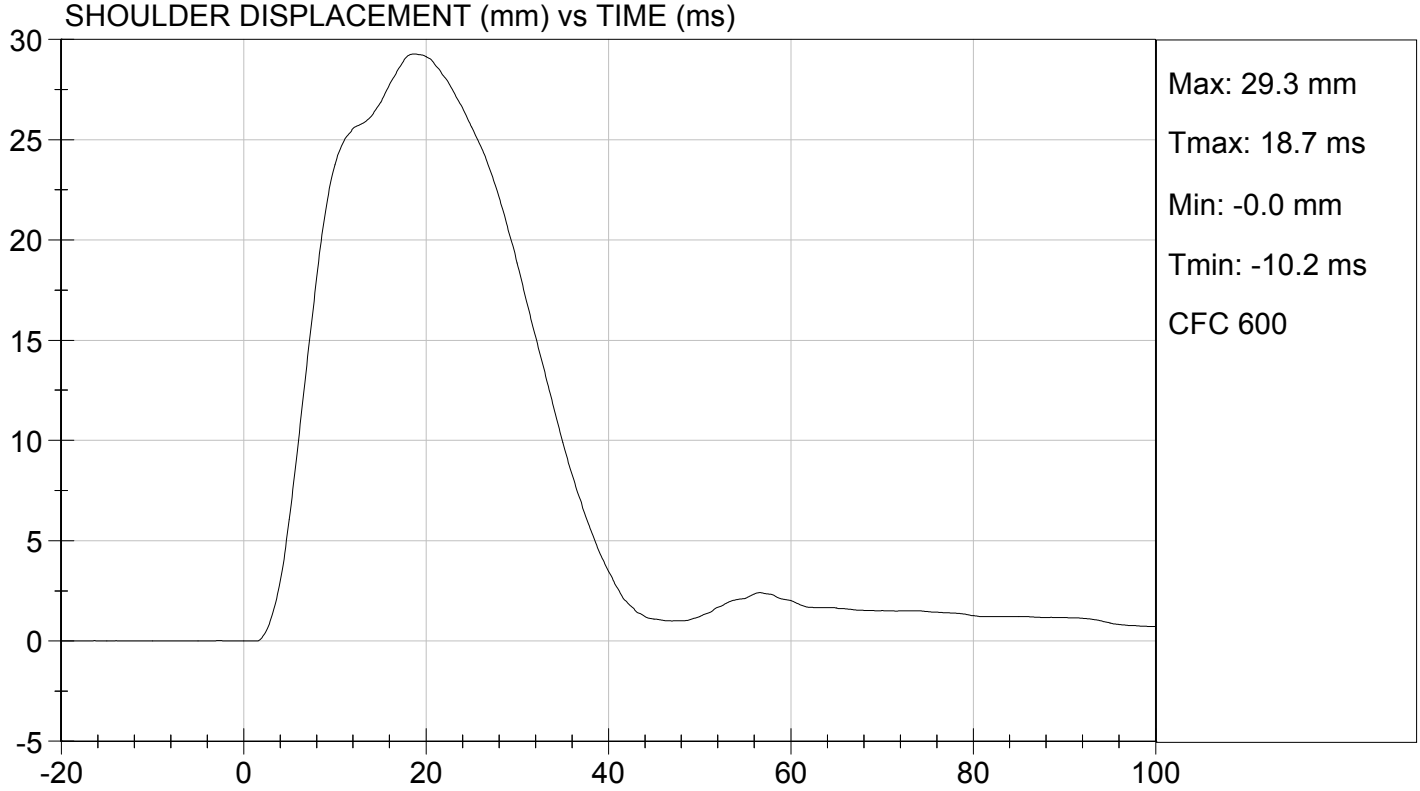
TEST DESC: SHOULDER IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/16/2015
TEST #: D152143

PROBE (G's) vs TIME (ms)

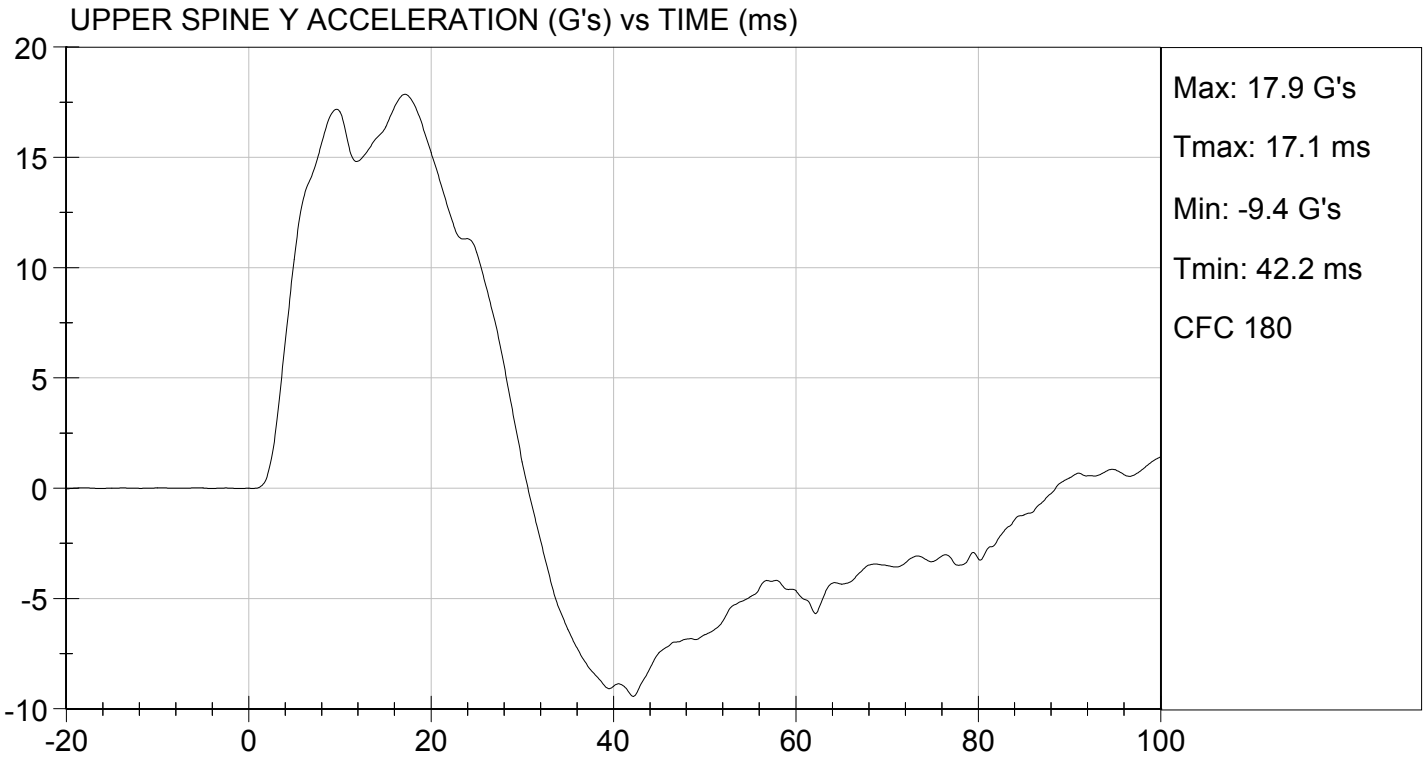


SHOULDER DISPLACEMENT (mm) vs TIME (ms)



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/16/2015
TEST #: D152143



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152144

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	30 to 36	31	Pass
Shoulder Displacement	mm	31 to 40	34	Pass
Upper Rib Displacement	mm	25 to 32	28	Pass
Middle Rib Displacement	mm	30 to 36	33	Pass
Lower Rib Displacement	mm	32 to 38	35	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	36	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	29	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

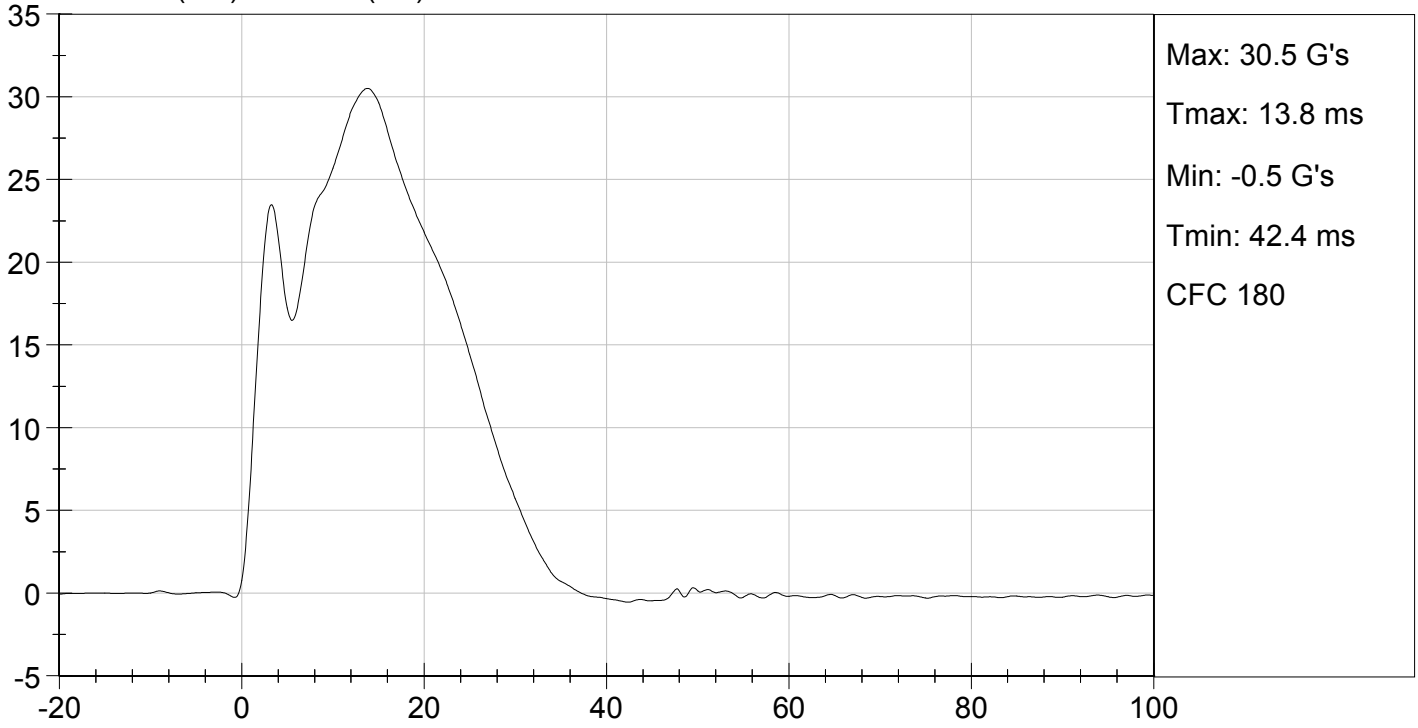
07/16/2015
Test Date

Jessica Hall
Approved By

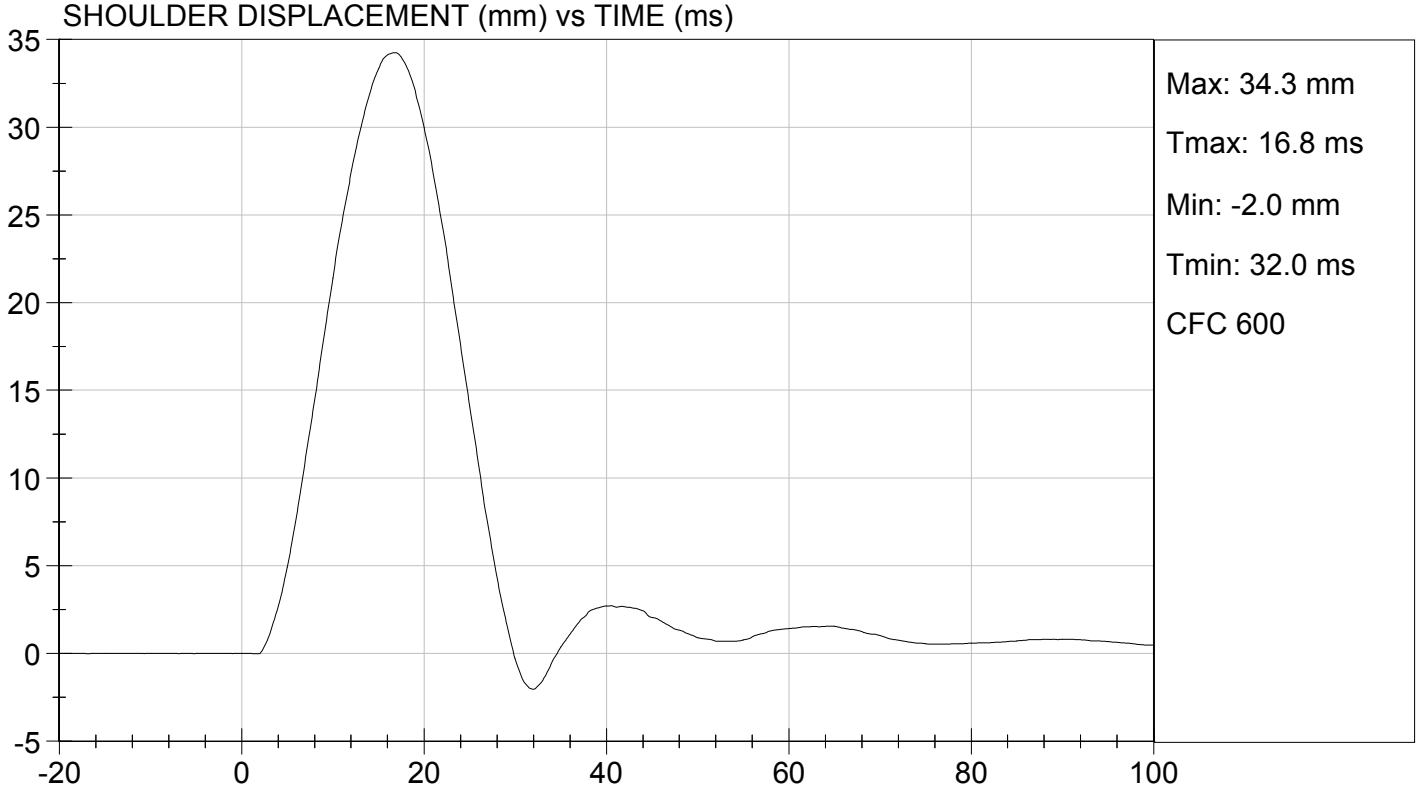
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 07/16/2015
TEST #: D152144

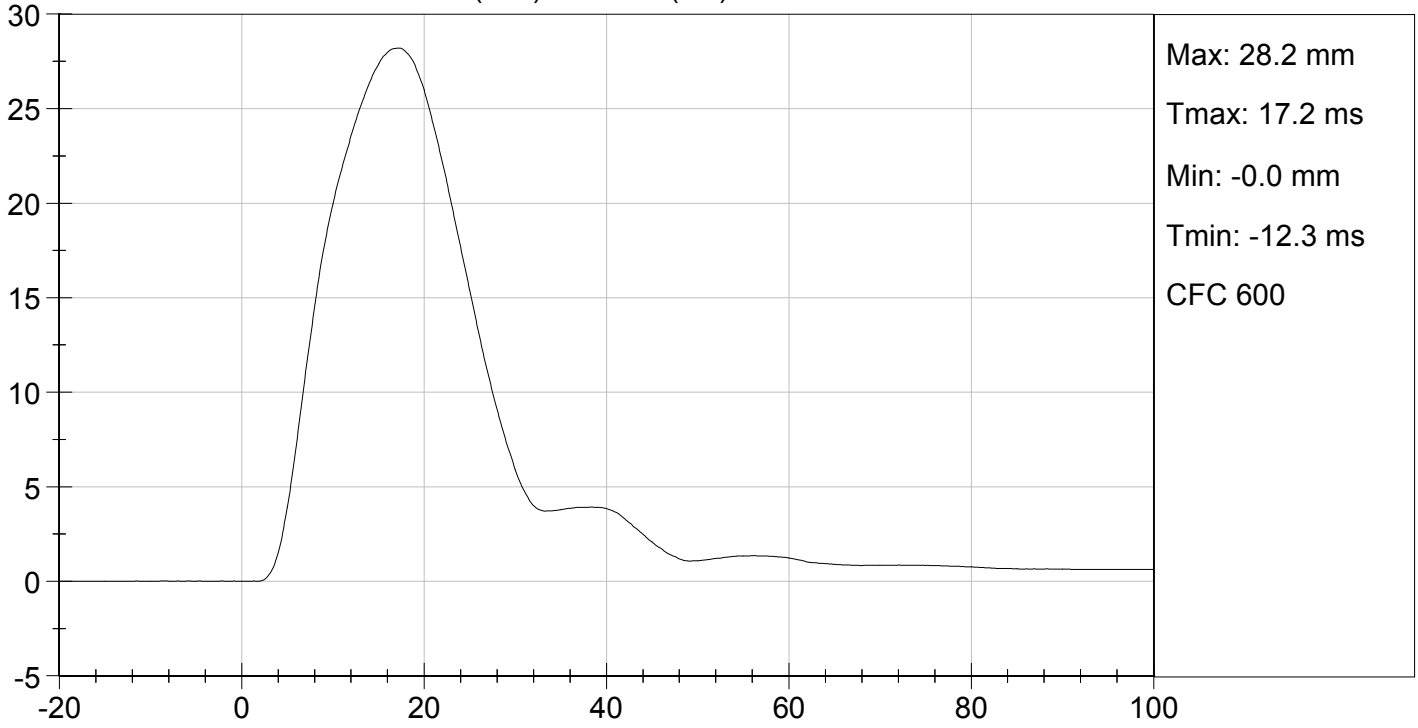
PROBE (G's) vs TIME (ms)



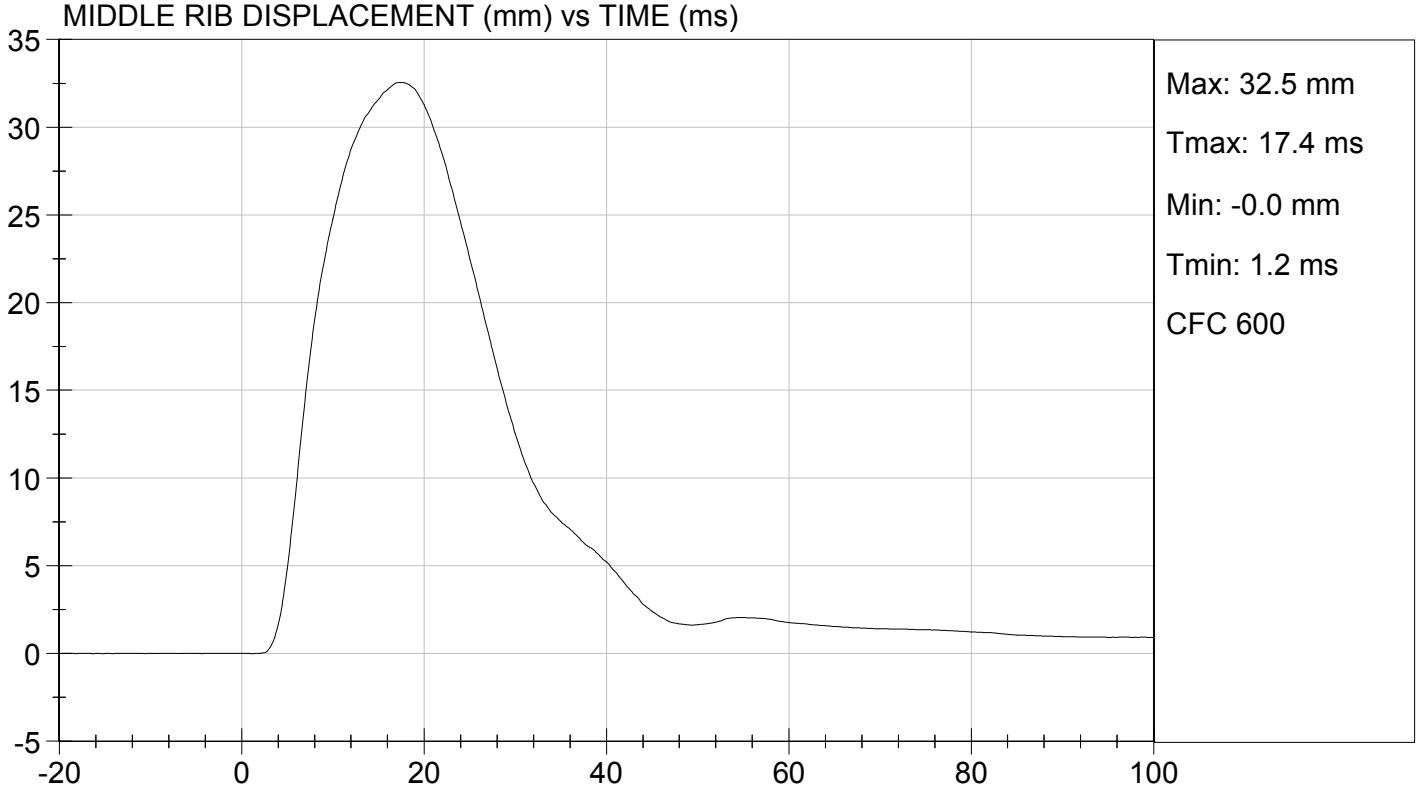
SHOULDER DISPLACEMENT (mm) vs TIME (ms)



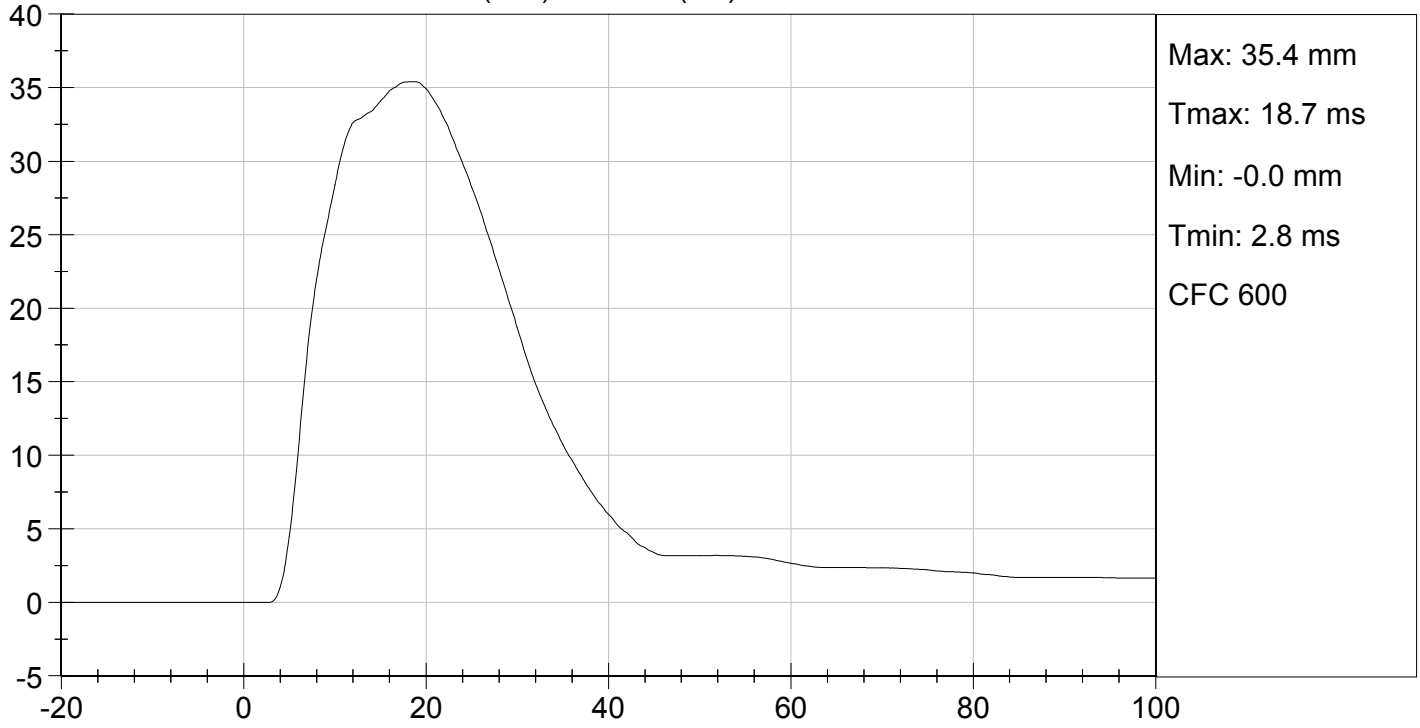
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



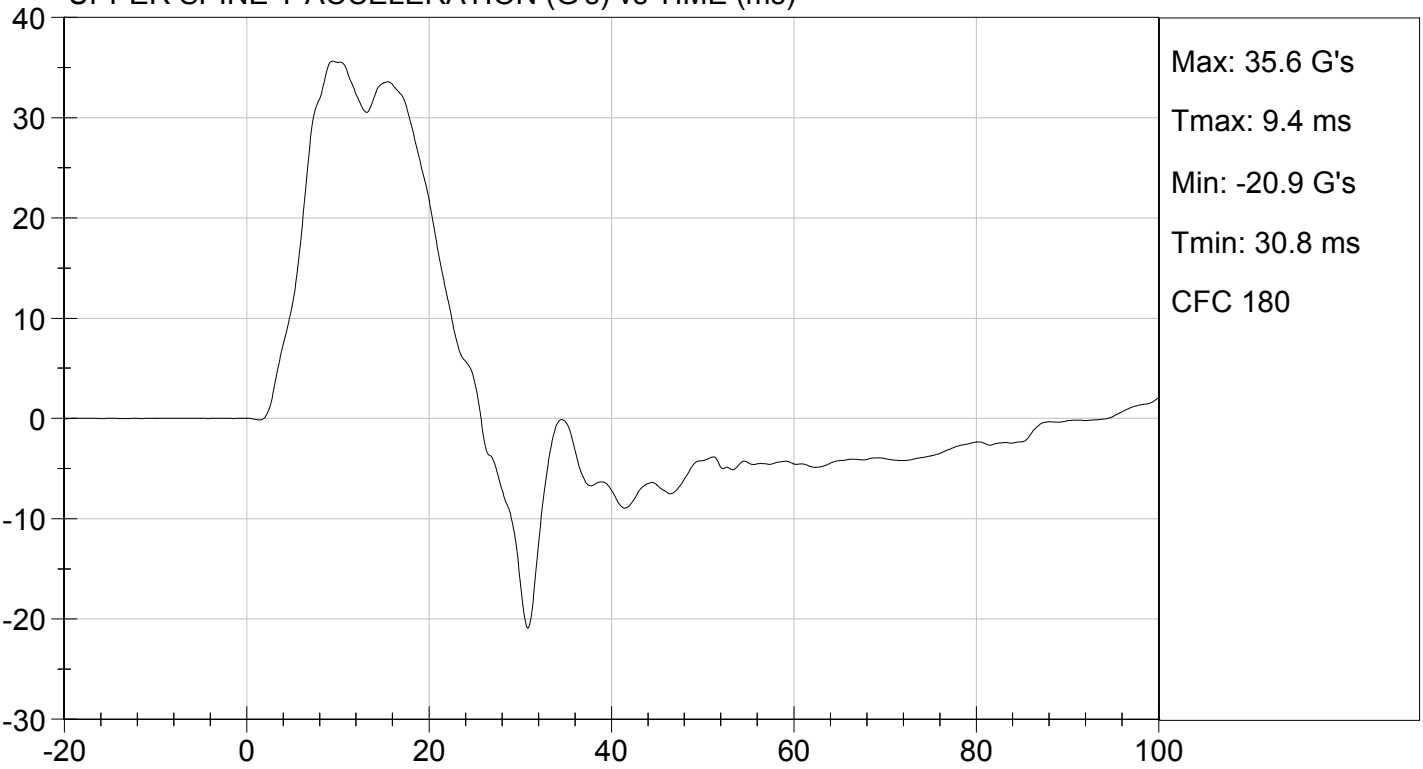
MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)

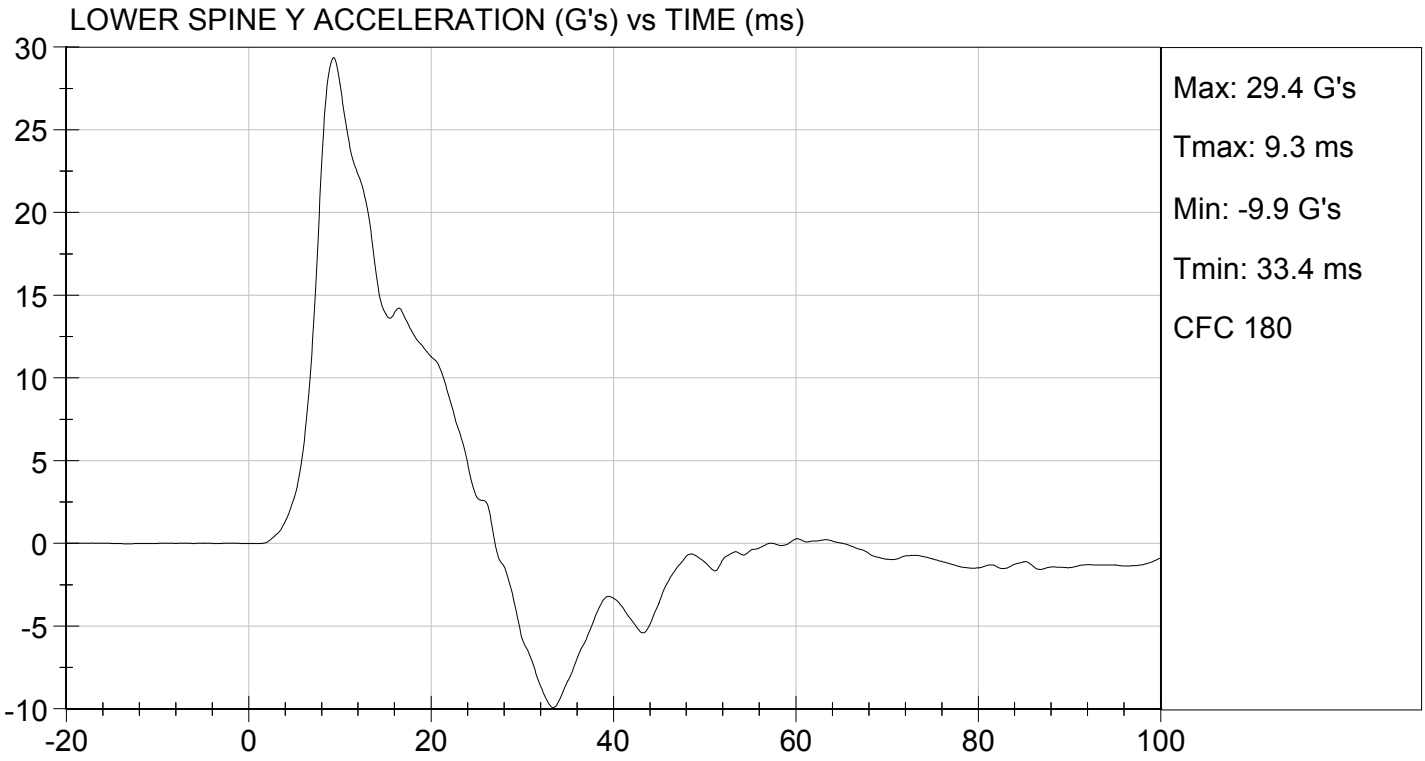


UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 07/16/2015
TEST #: D152144



MGA RESEARCH CORPORATION

THORAX (WITHOUT ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152145

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	36	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	39	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

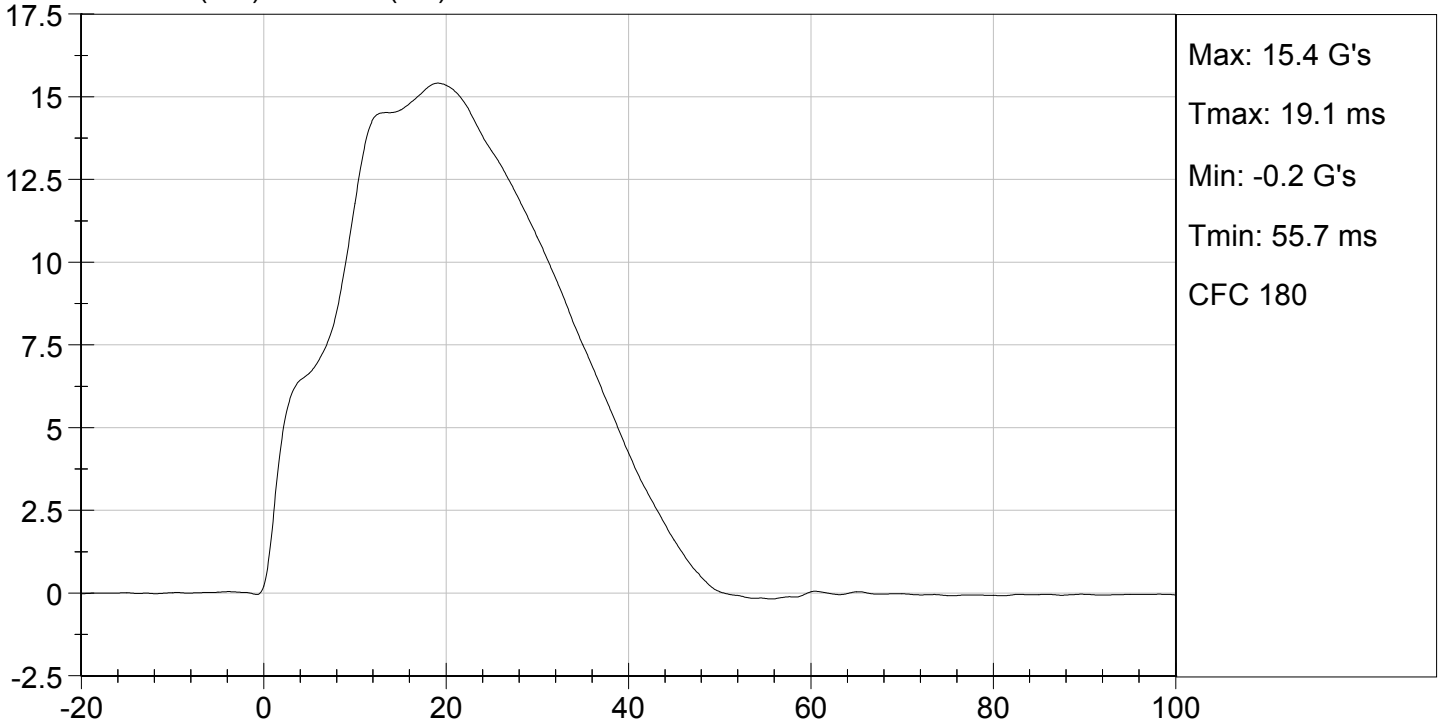
07/16/2015
Test Date

Jessica Hall
Approved By

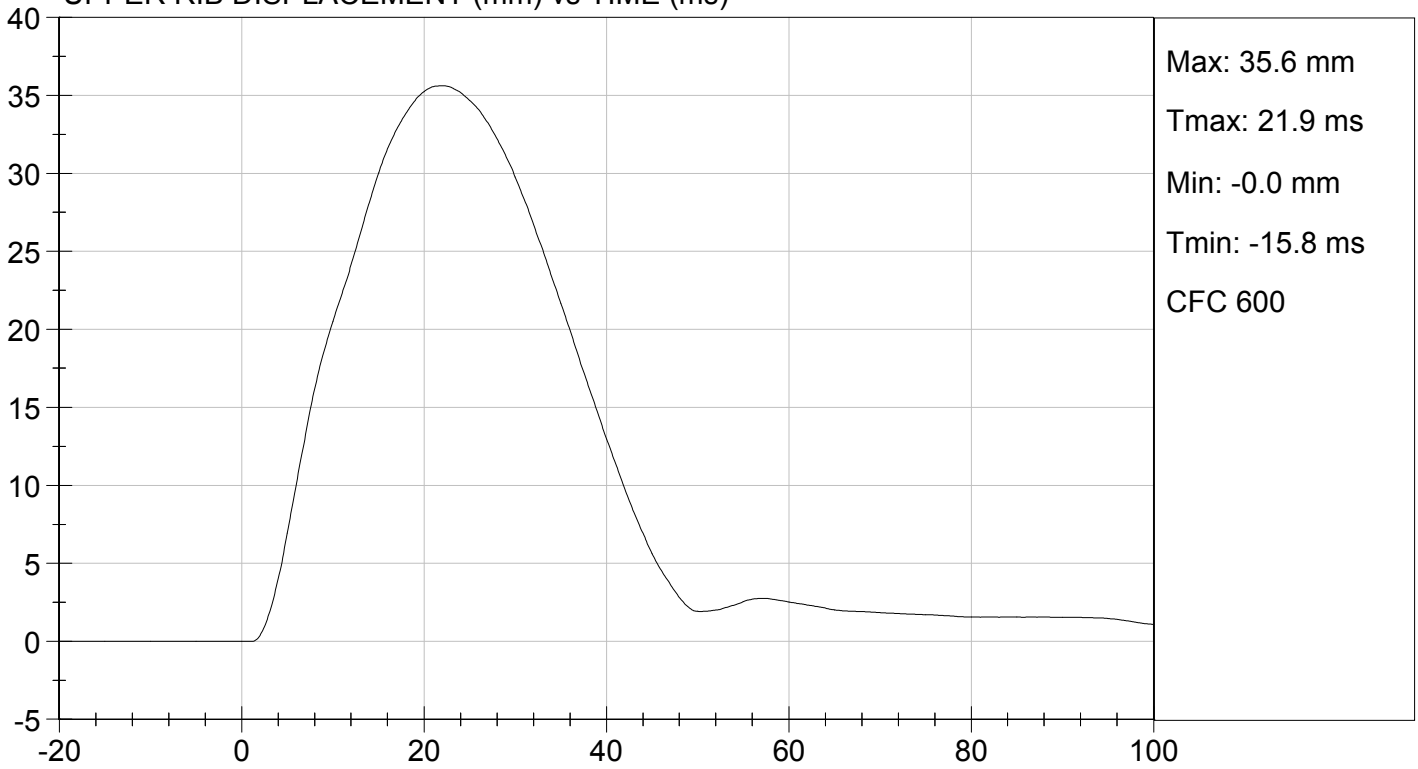
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 13.88 ft/s, 4.23 m/s

TEST DATE: 07/16/2015
TEST #: D152145

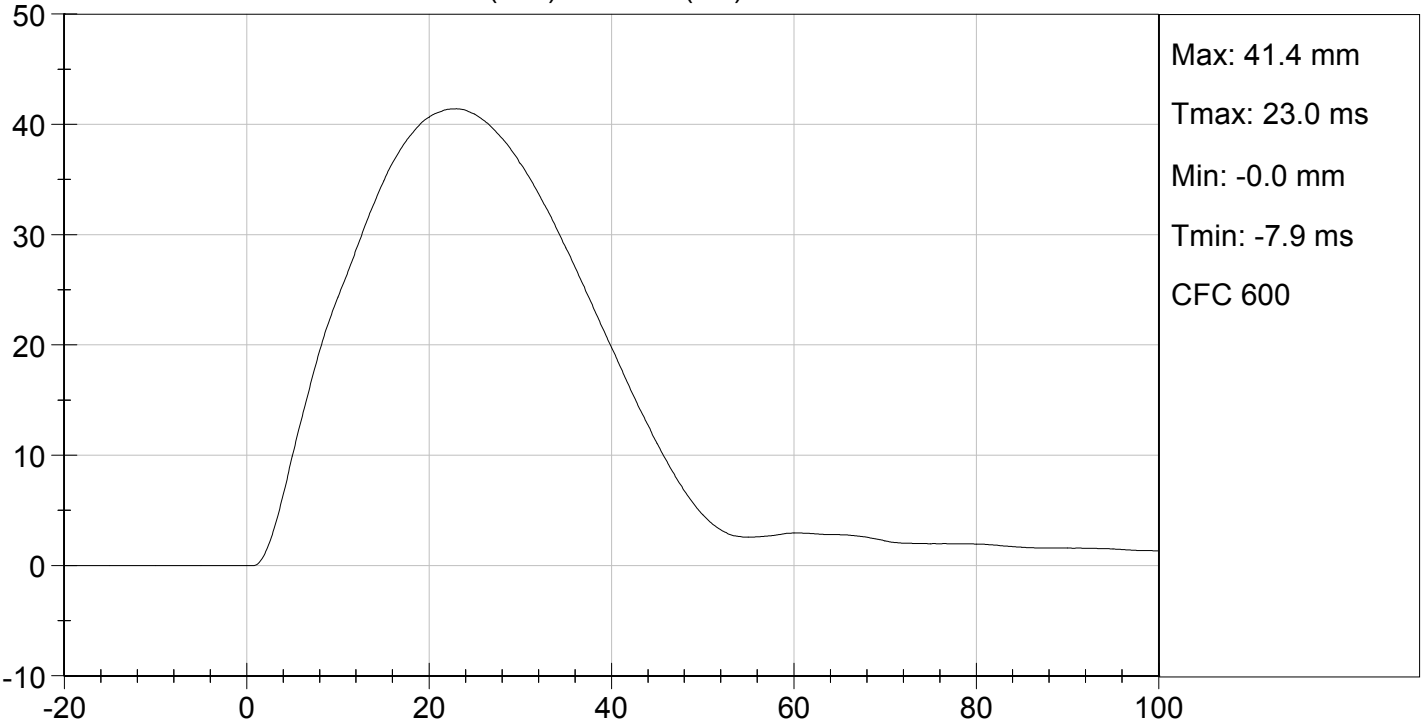
PROBE (G's) vs TIME (ms)



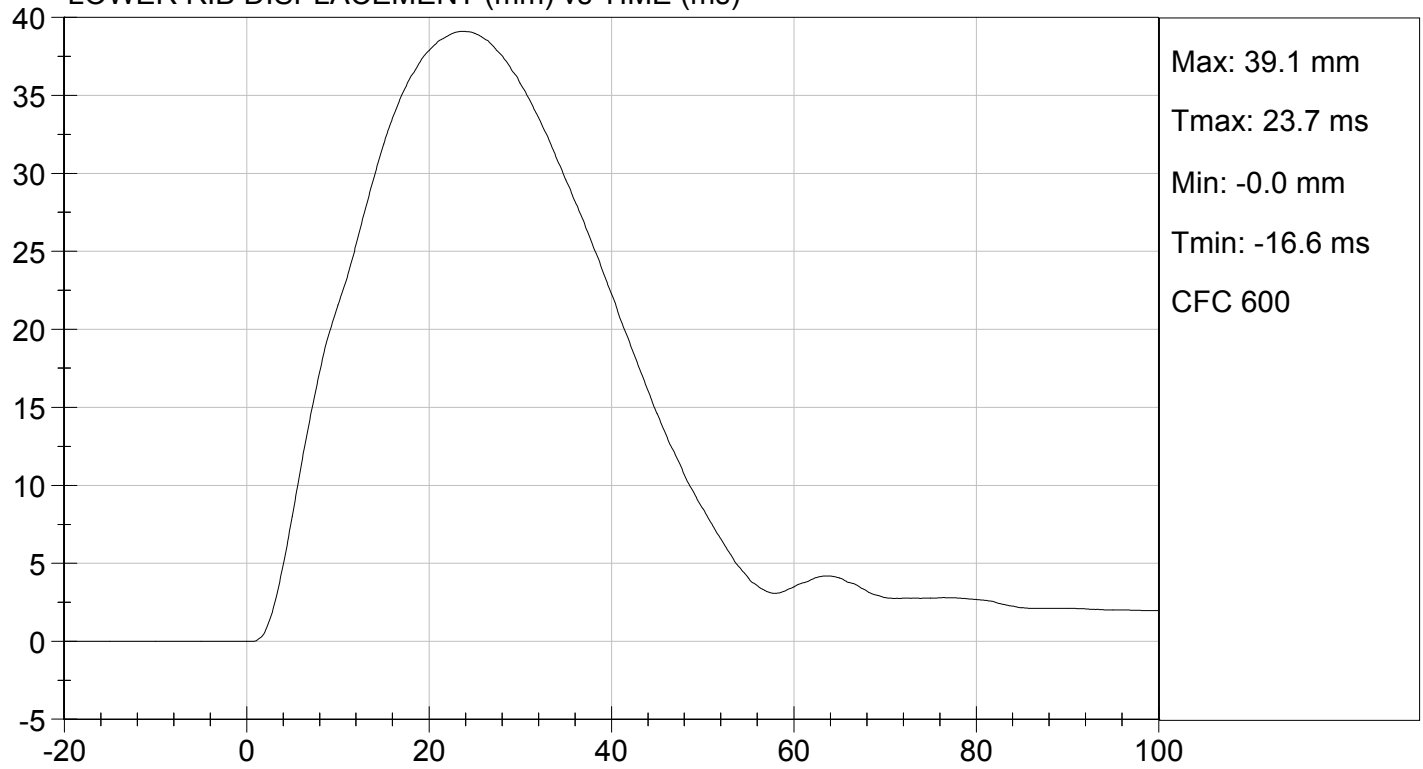
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



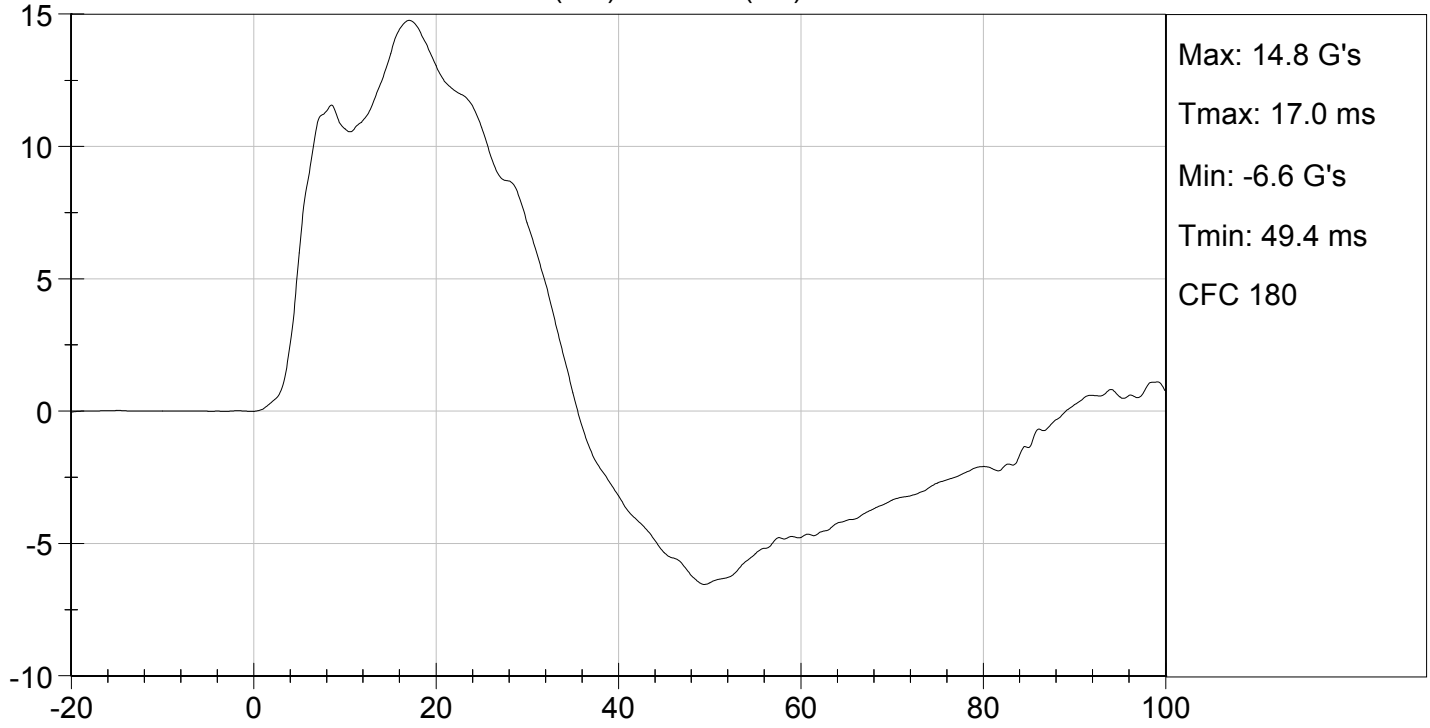
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



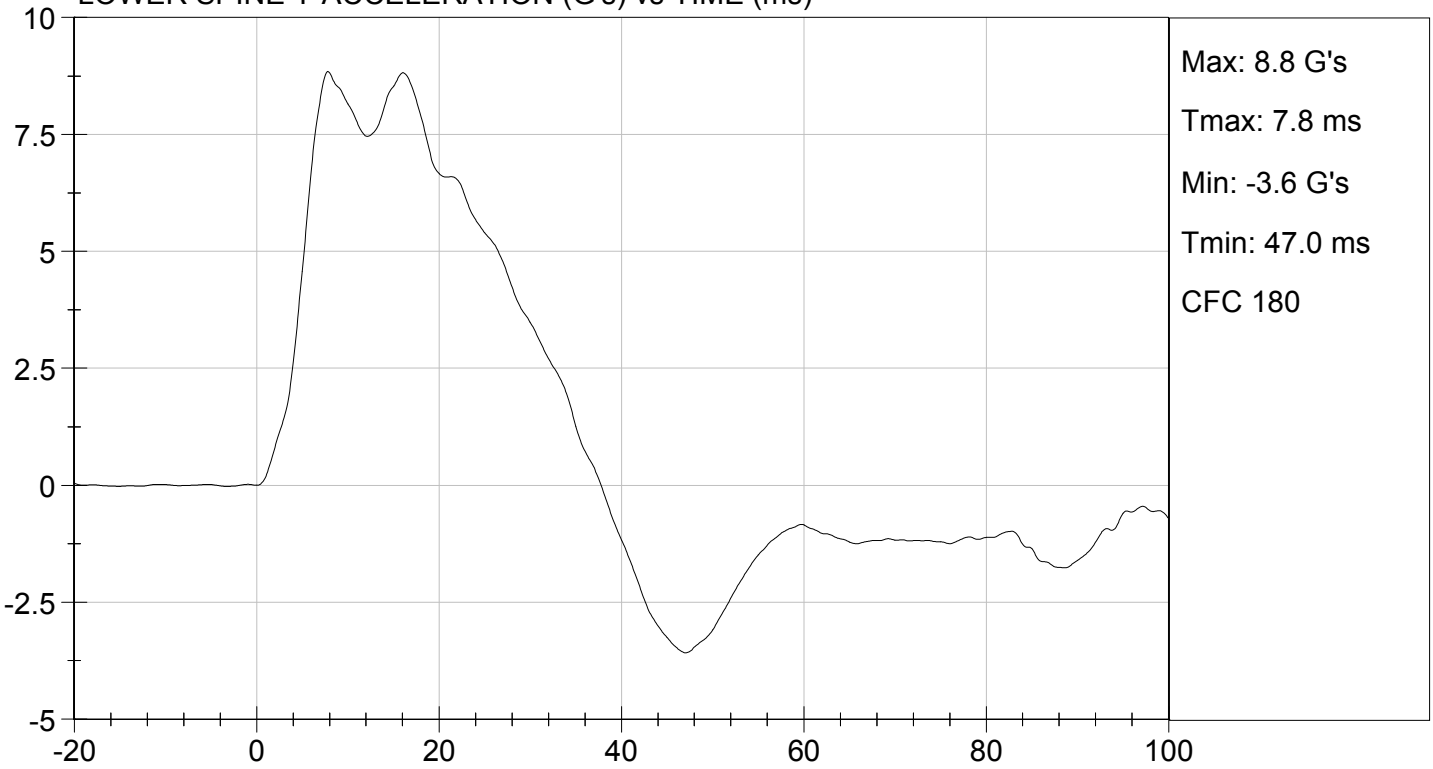
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 13.88 ft/s, 4.23 m/s

TEST DATE: 07/16/2015
TEST #: D152145

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



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



MGA RESEARCH CORPORATION

ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152146

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	12 to 16	12	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	46	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	42	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

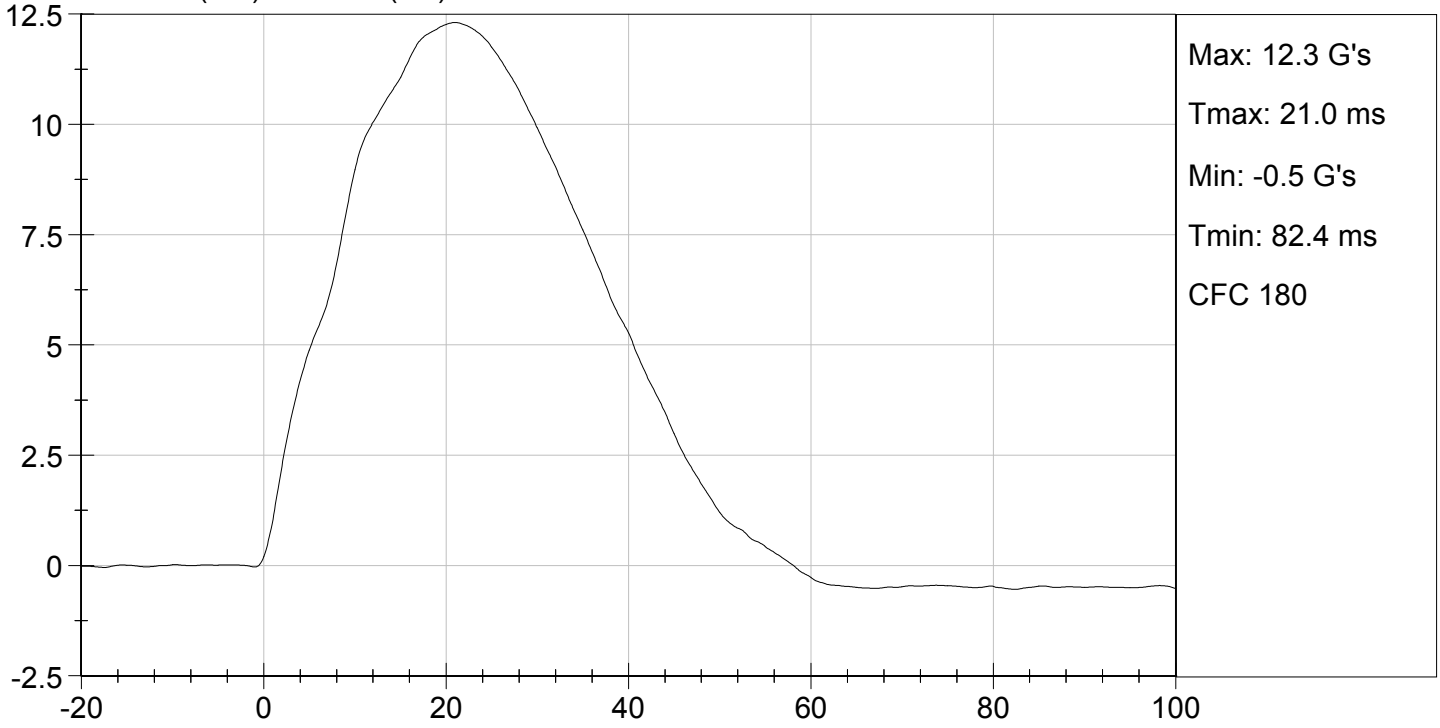
07/16/2015
Test Date

Jessica Gall
Approved By

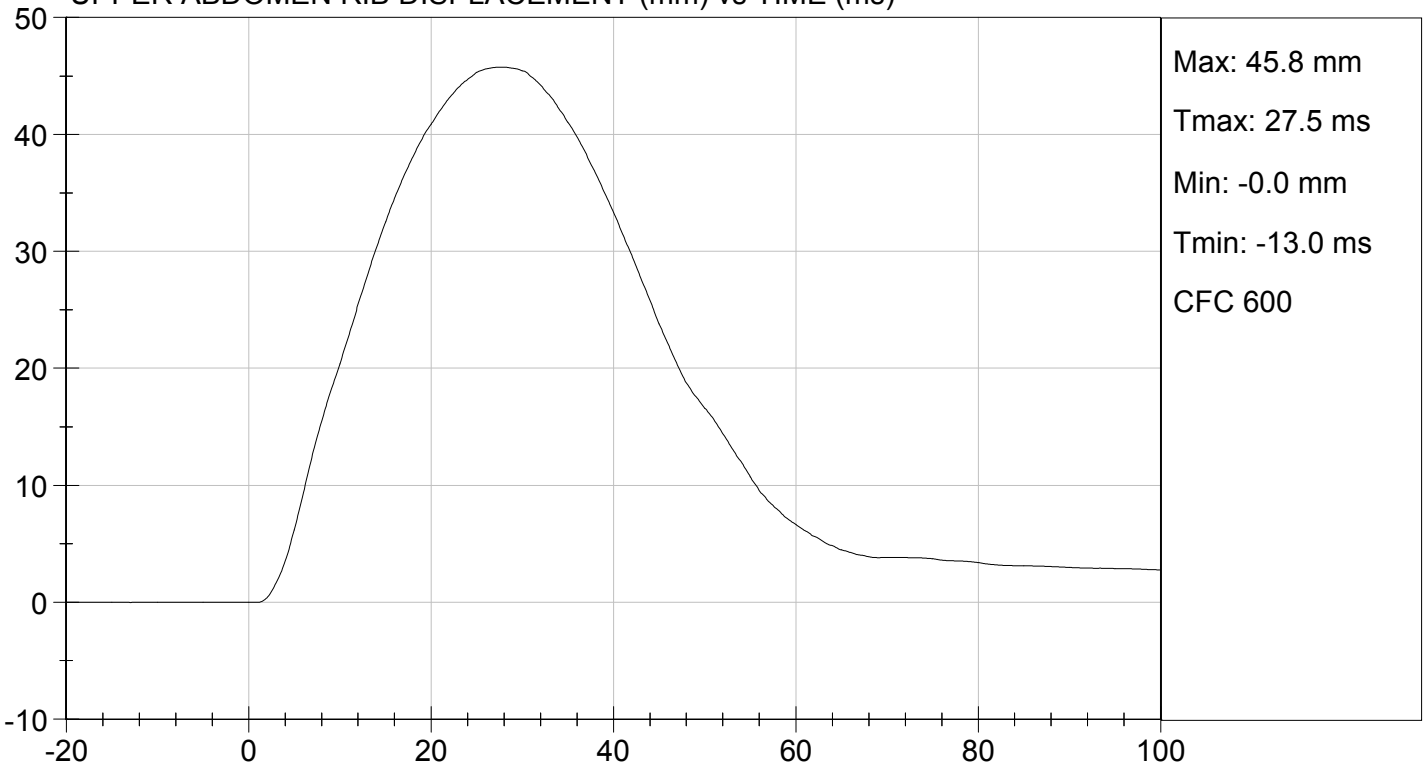
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 07/16/2015
TEST #: D152146

PROBE (G's) vs TIME (ms)



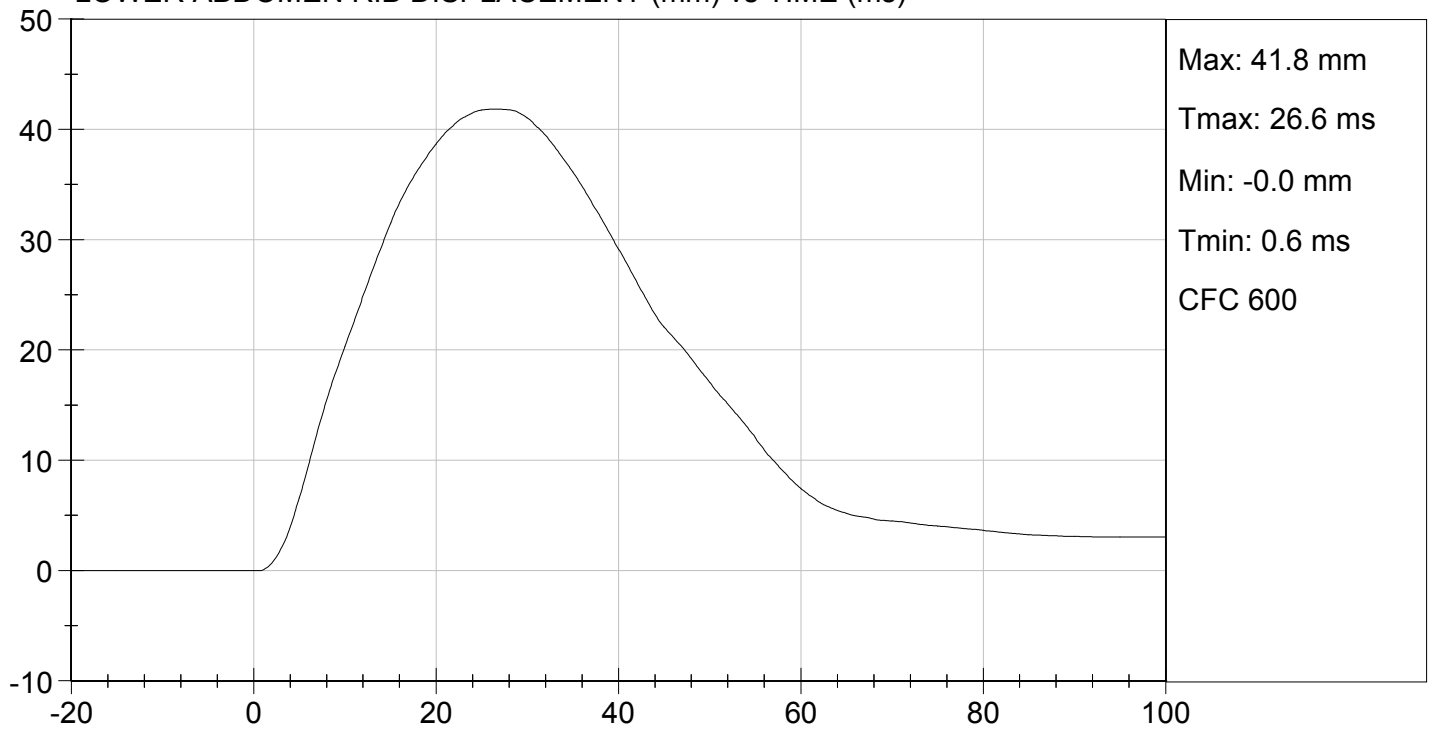
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



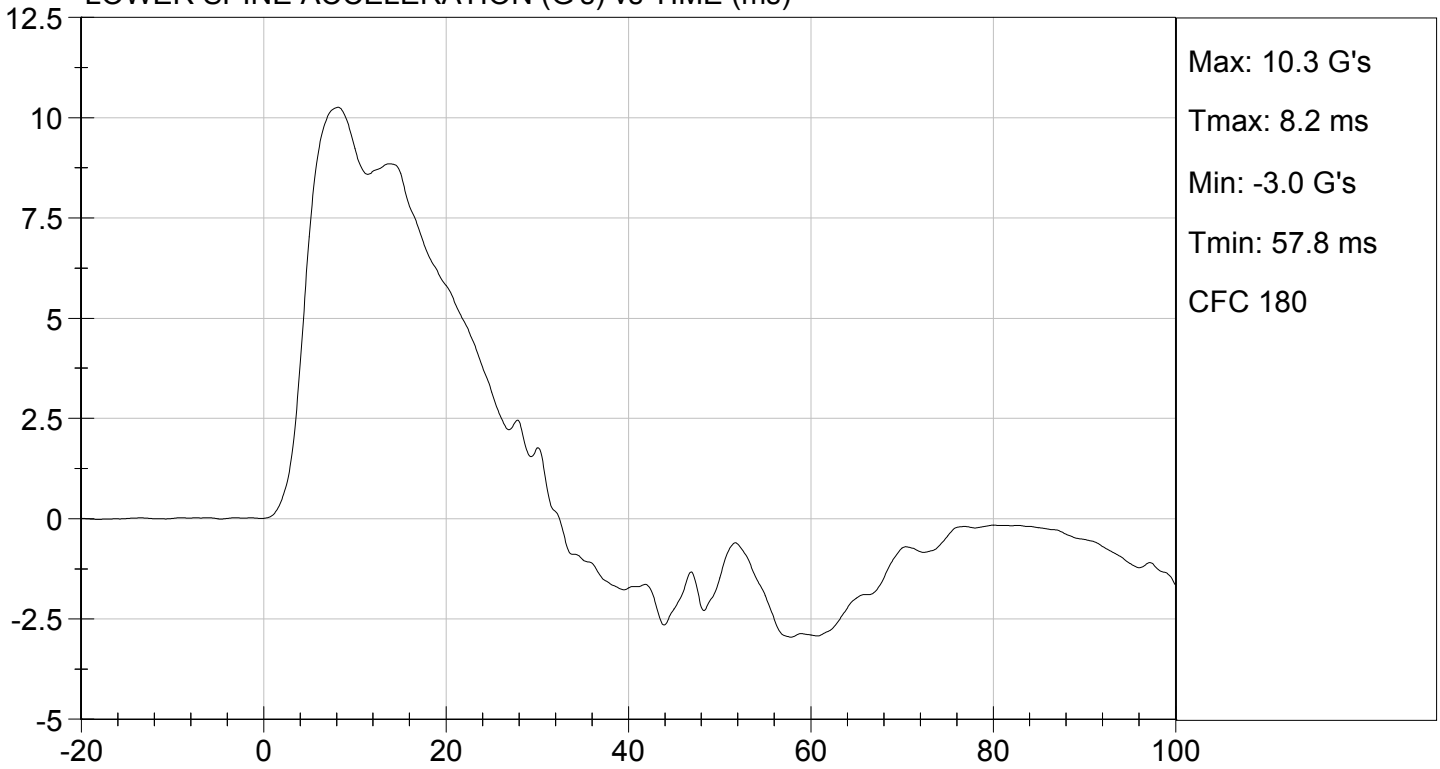
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 07/16/2015
TEST #: D152146

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



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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152147

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	44	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	4,073	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

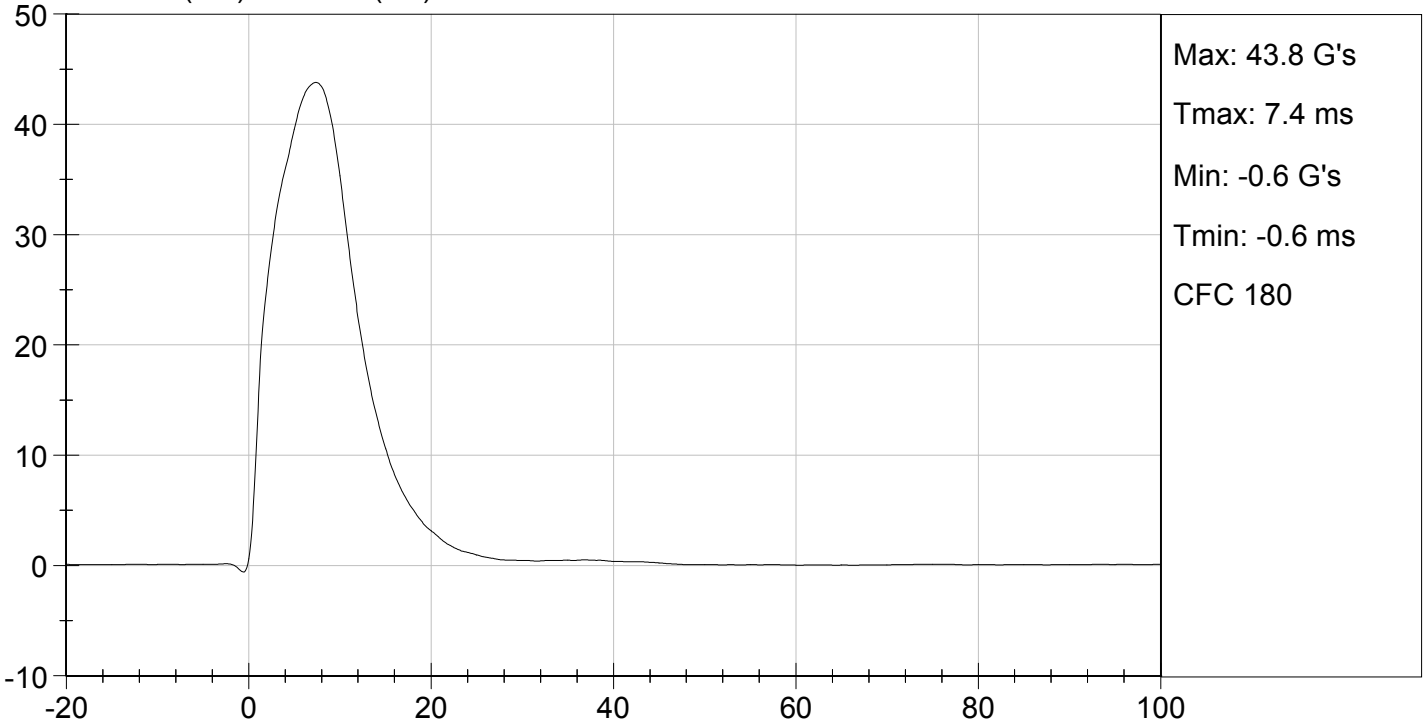
07/16/2015
Test Date

Jessica Gall
Approved By

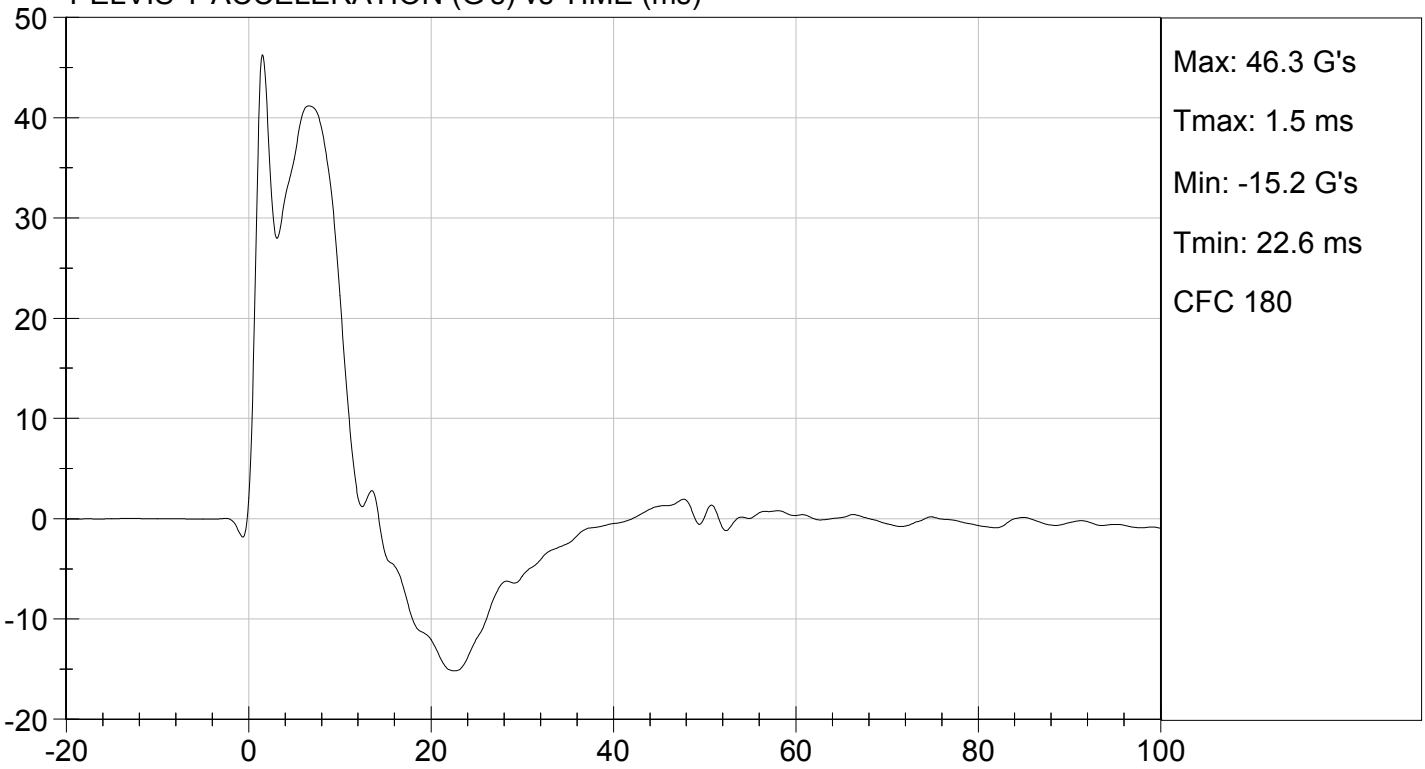
TEST DESC: PELVIS IMPACT
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 07/16/2015
TEST #: D152147

PROBE (G's) vs TIME (ms)

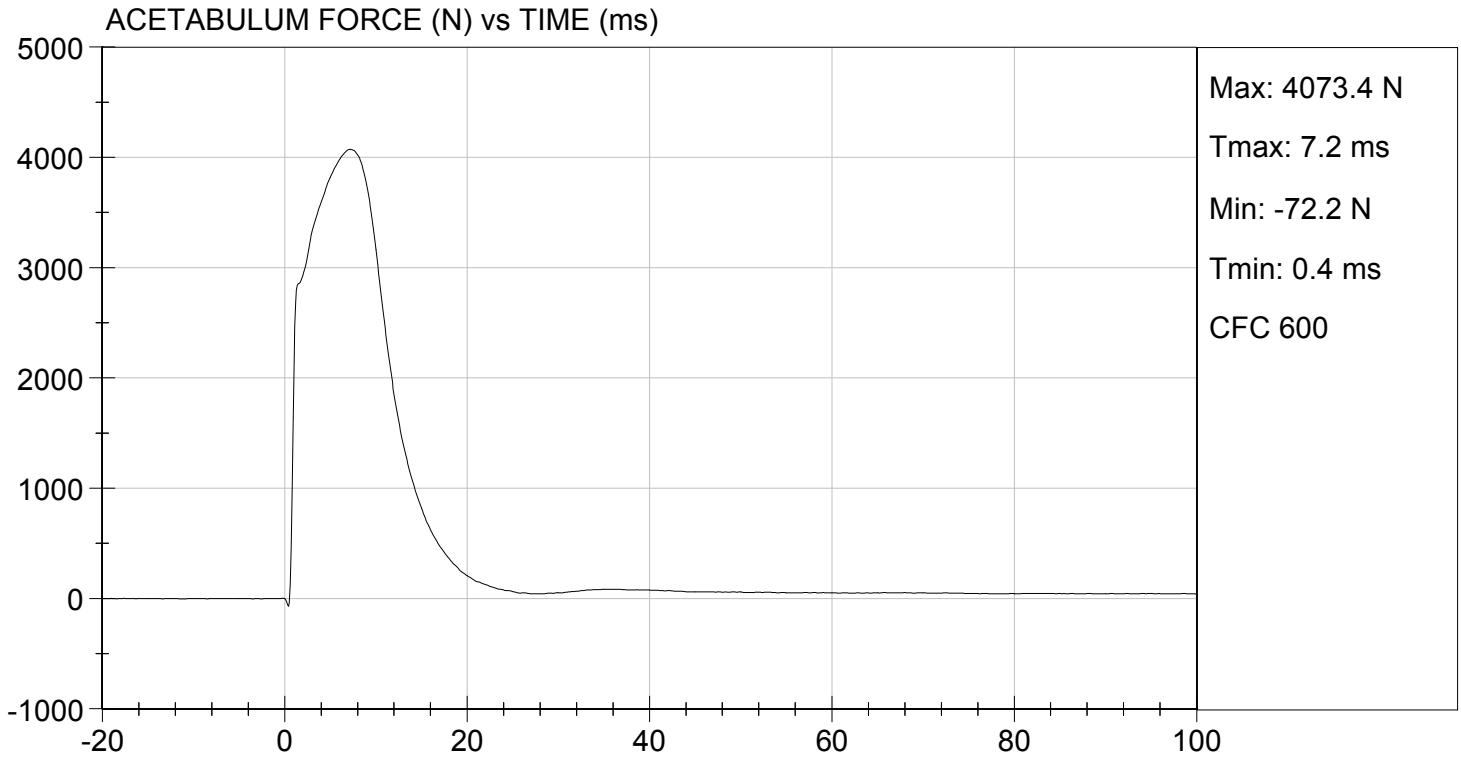


PELVIS Y ACCELERATION (G's) vs TIME (ms)



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

TEST DATE: 07/16/2015
TEST #: D152147



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152148

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.0	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	41	Pass
Pelvis Y Acceleration	G's	28 to 39	31	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,780	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

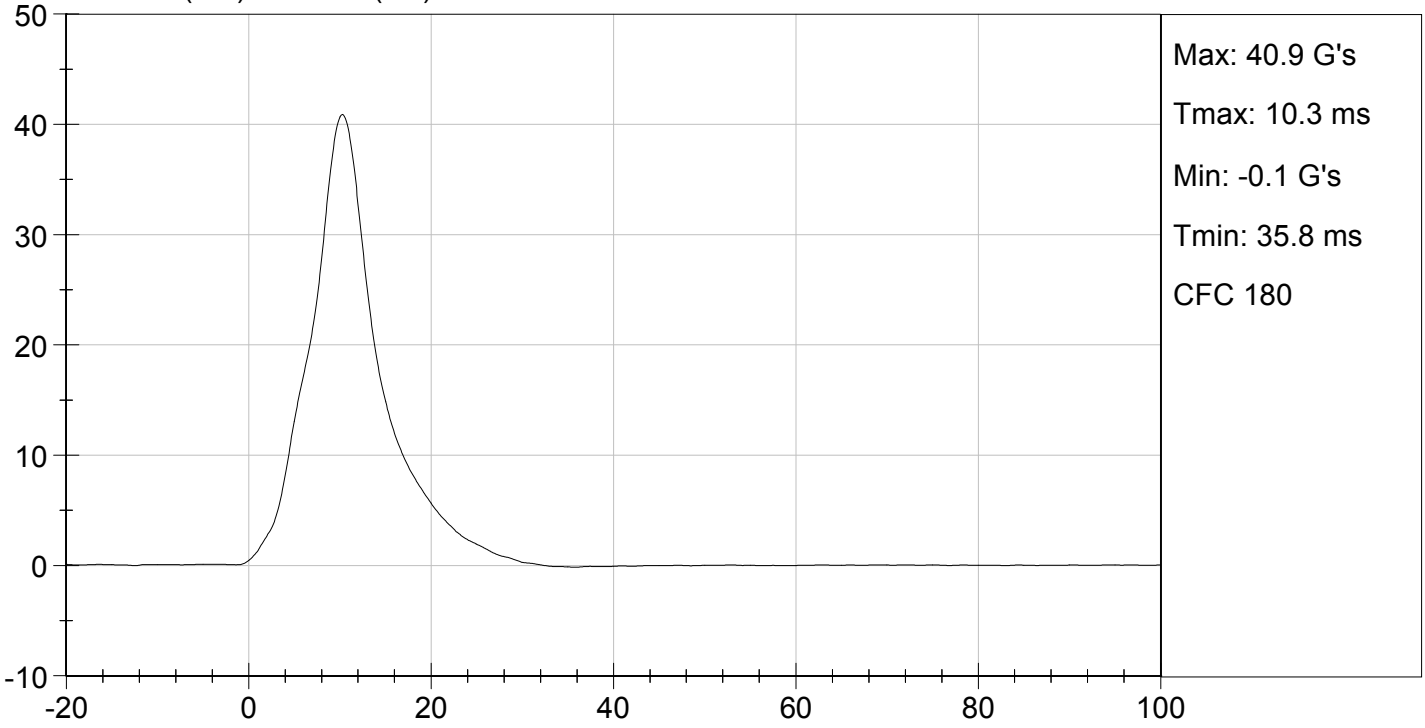
07/16/2015
Test Date

Jessica Hall
Approved By

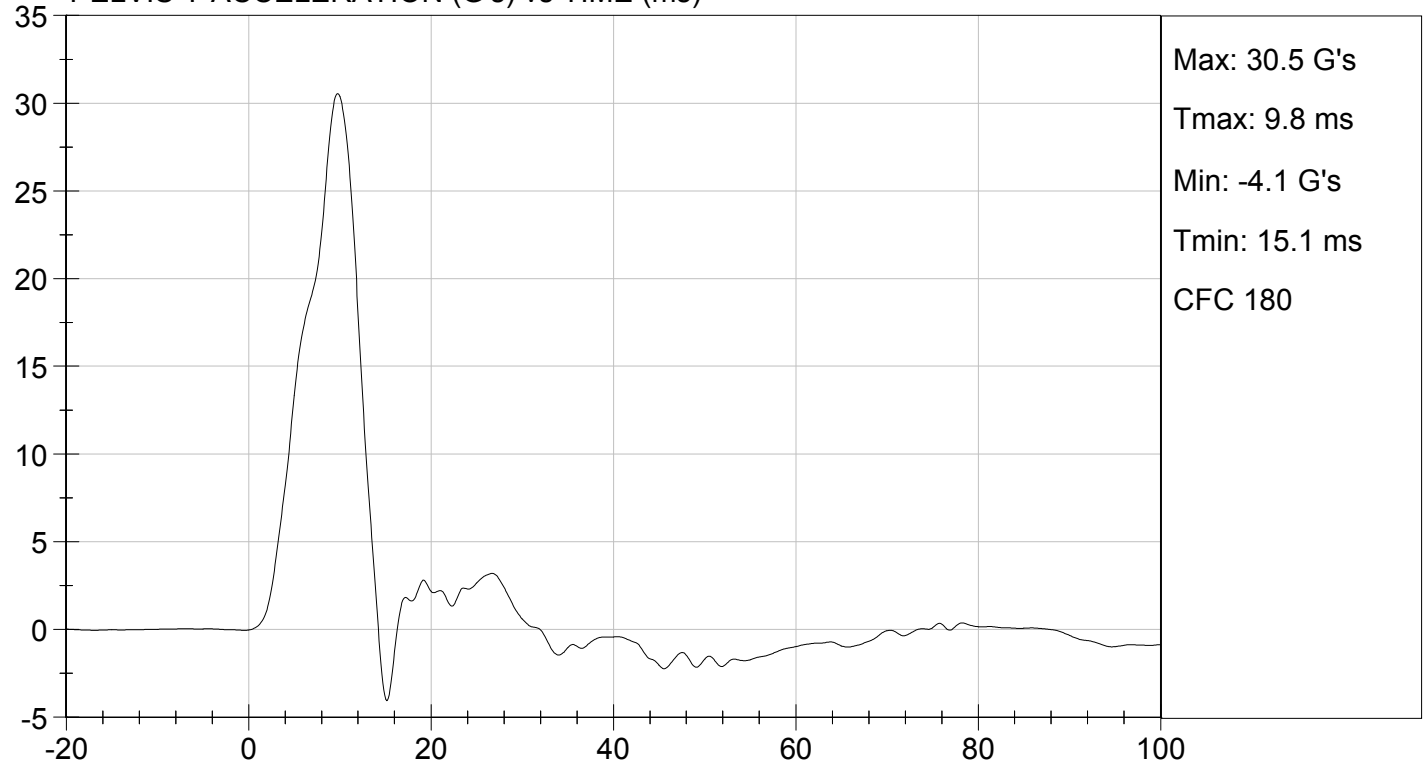
TEST DESC: ILLIAC
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 07/16/2015
TEST #: D152148

PROBE (G's) vs TIME (ms)

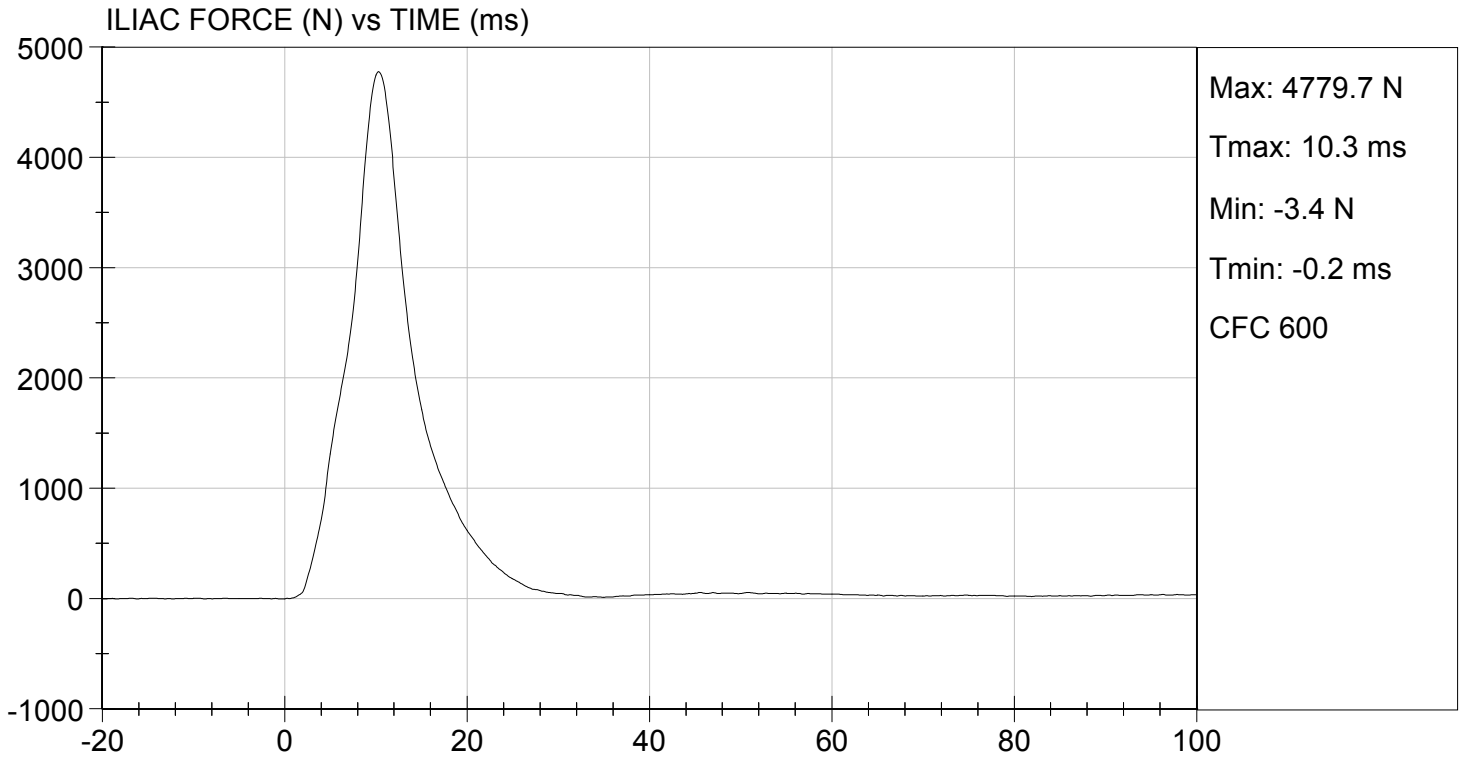


PELVIS Y ACCELERATION (G's) vs TIME (ms)



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

TEST DATE: 07/16/2015
TEST #: D152148



SID-IIsD External Measurements
SN: 296

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

MGA RESEARCH CORPORATION

HEAD DROP TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D152461

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	47	Pass
Peak Resultant Acceleration	G's	115 to 137	127	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-3.6	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

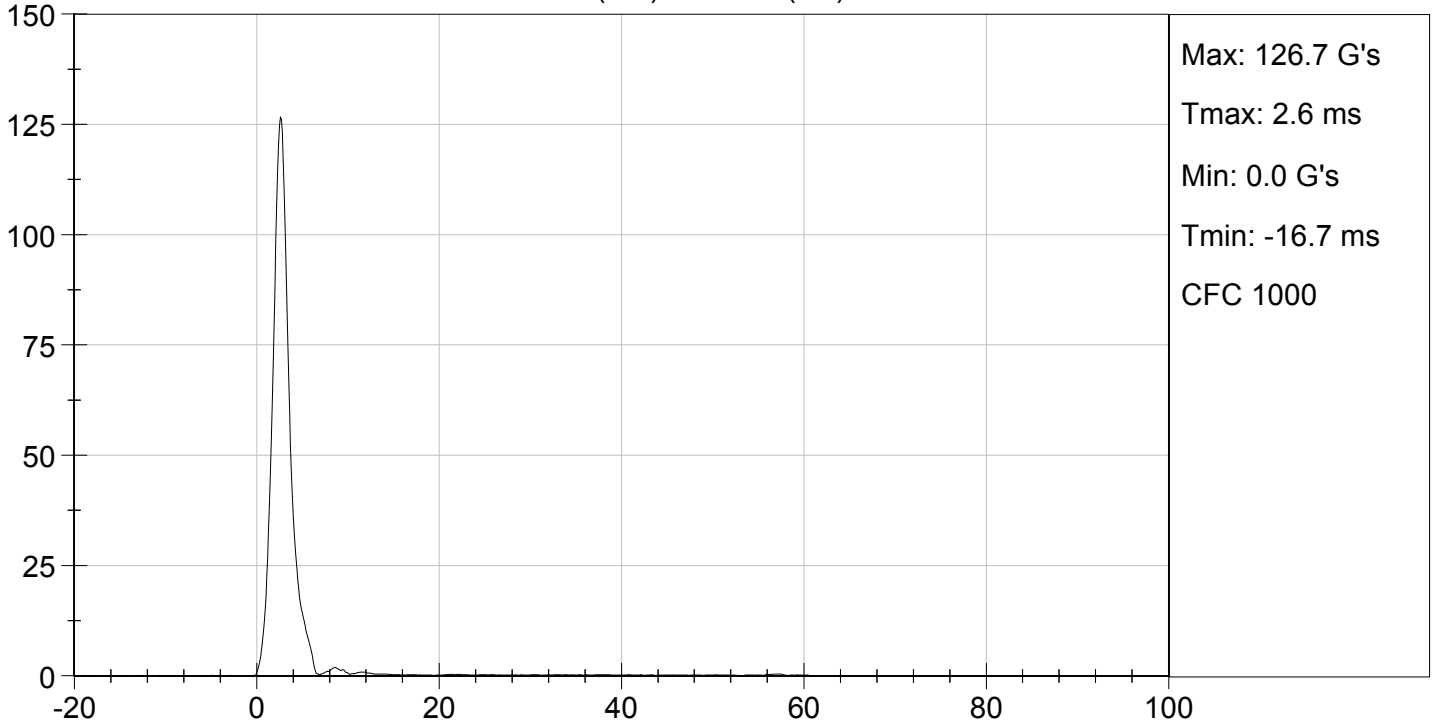
08/12/2015
Test Date

Jessica Hall
Approved By

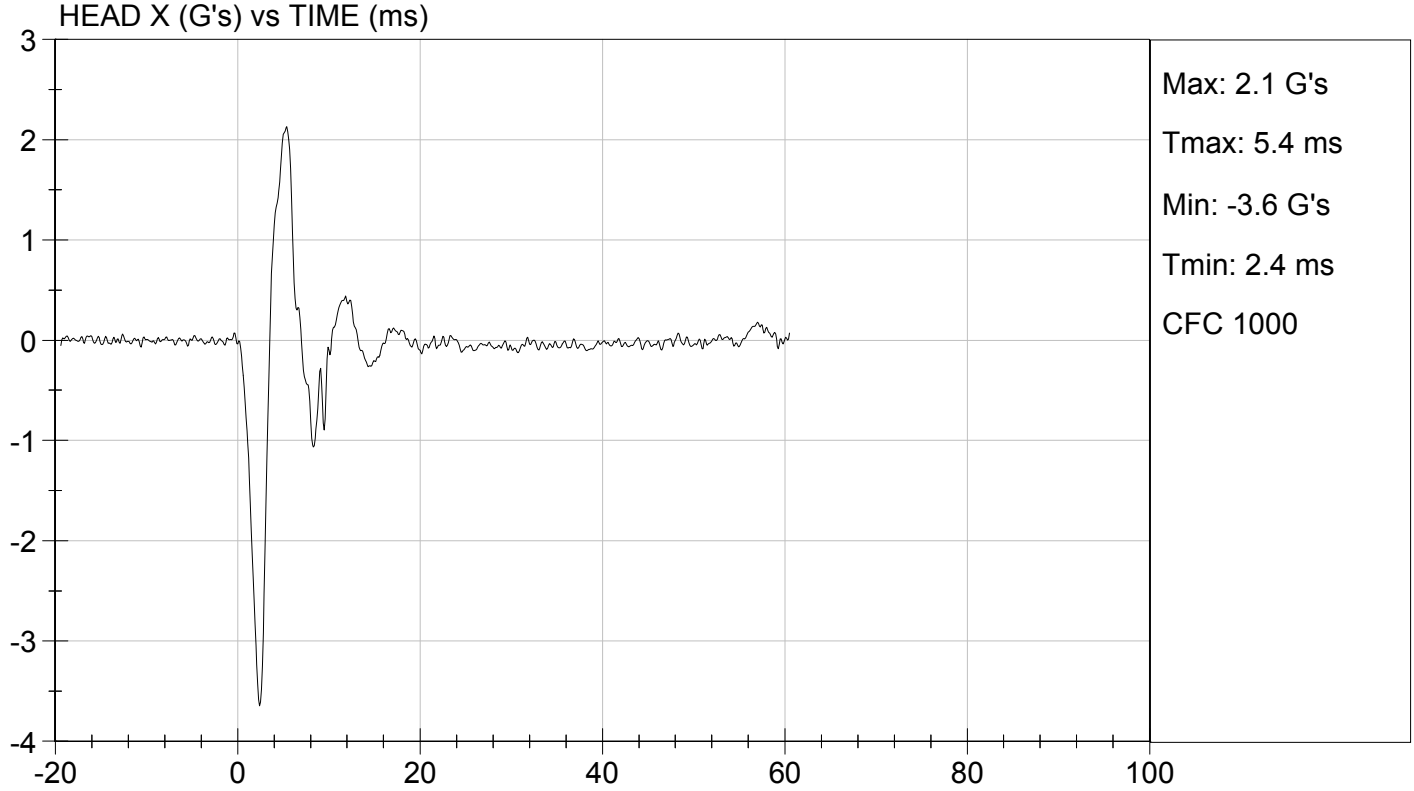
TEST DESC: HEAD DROP

TEST DATE: 08/12/2015
TEST #: D152461

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



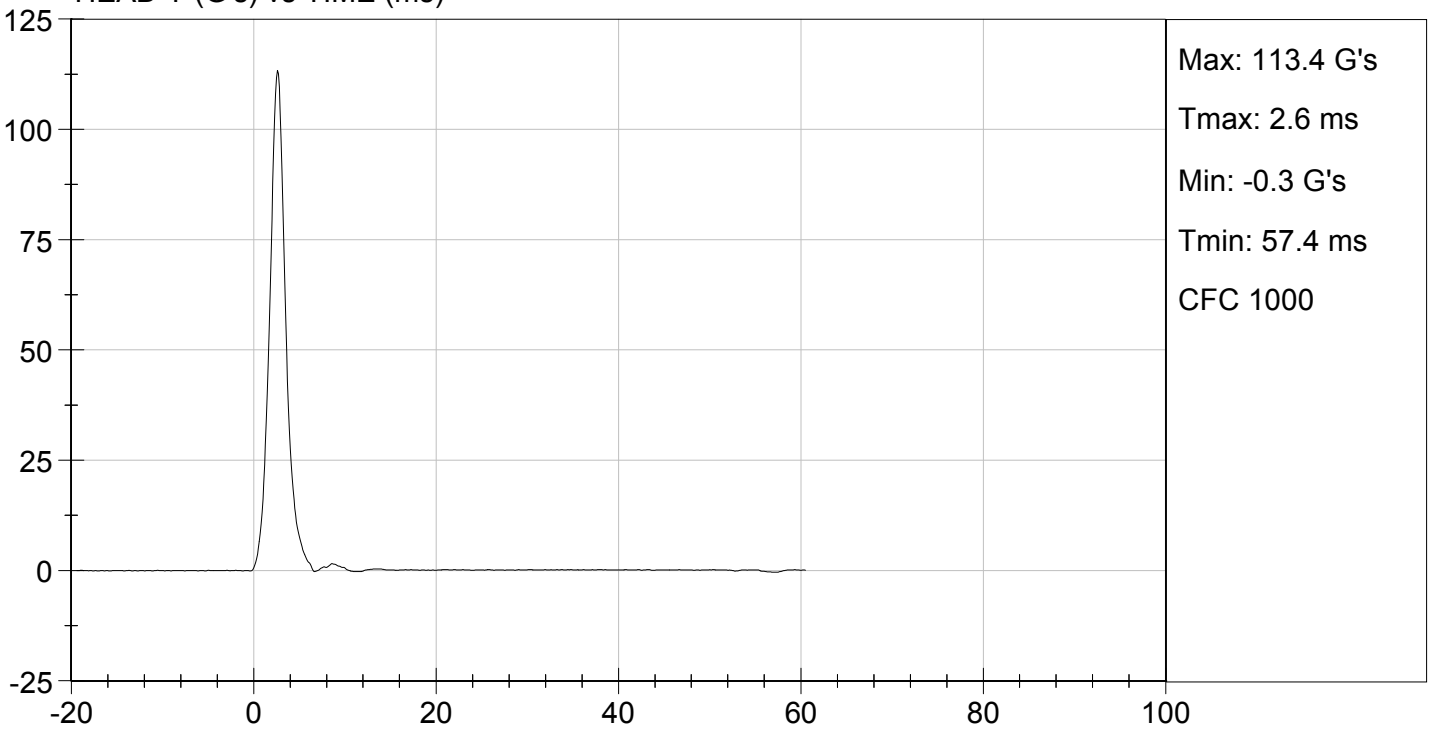
HEAD X (G's) vs TIME (ms)



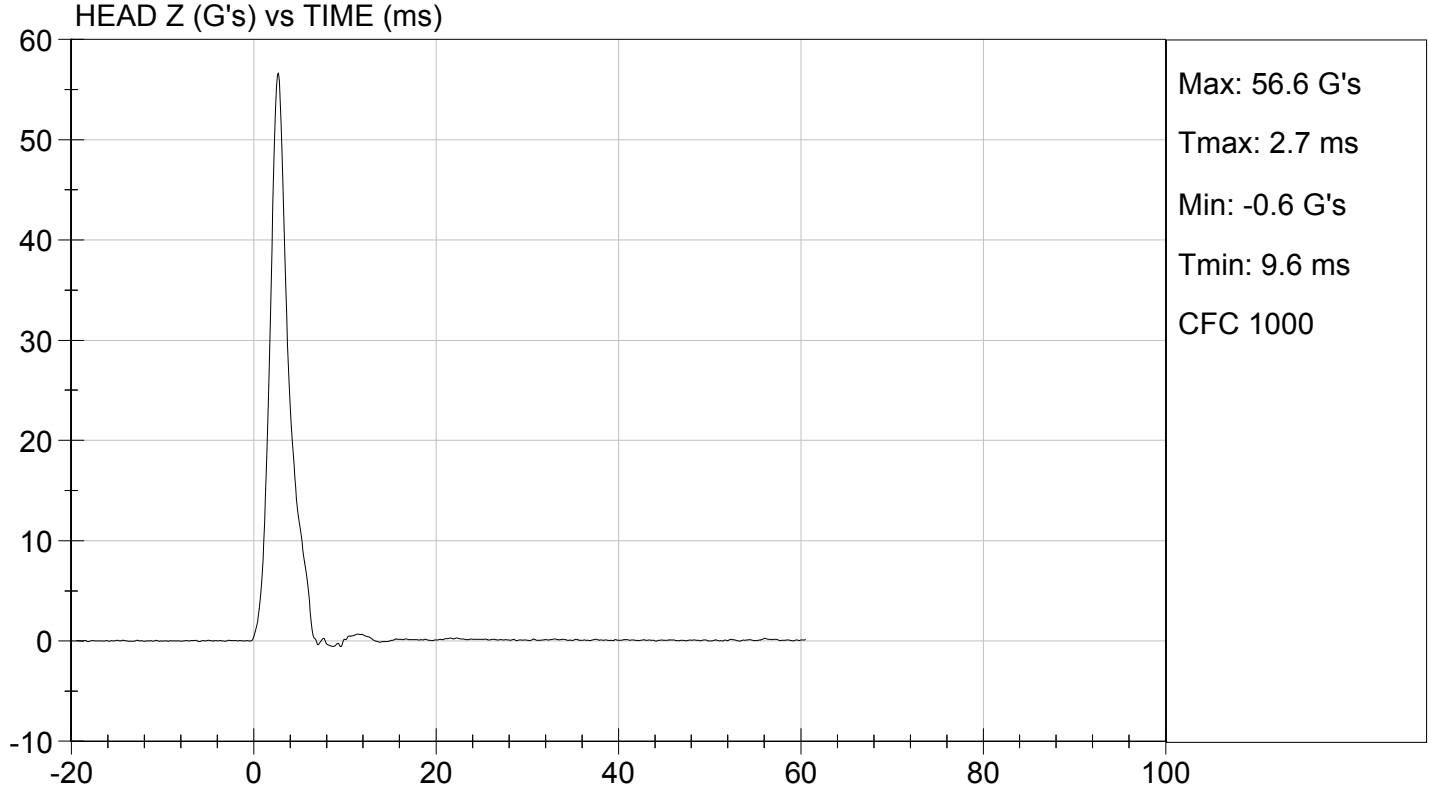
TEST DESC: HEAD DROP

TEST DATE: 08/12/2015
TEST #: D152461

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



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



MGA RESEARCH CORPORATION

LATERAL NECK PENDULUM TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152462

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.7	Pass
Humidity		%	10 to 70	46	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.45	Pass
	15 ms	m/s	3.30 to 4.10	3.34	Pass
	20 ms	m/s	4.40 to 5.40	4.46	Pass
	25 ms	m/s	5.40 to 6.10	5.47	Pass
	25-100 ms	m/s	5.50 to 6.20	5.95	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	66	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-37	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	121	Pass
			Overall Test Results		Pass

David Schoedel
Laboratory Technician

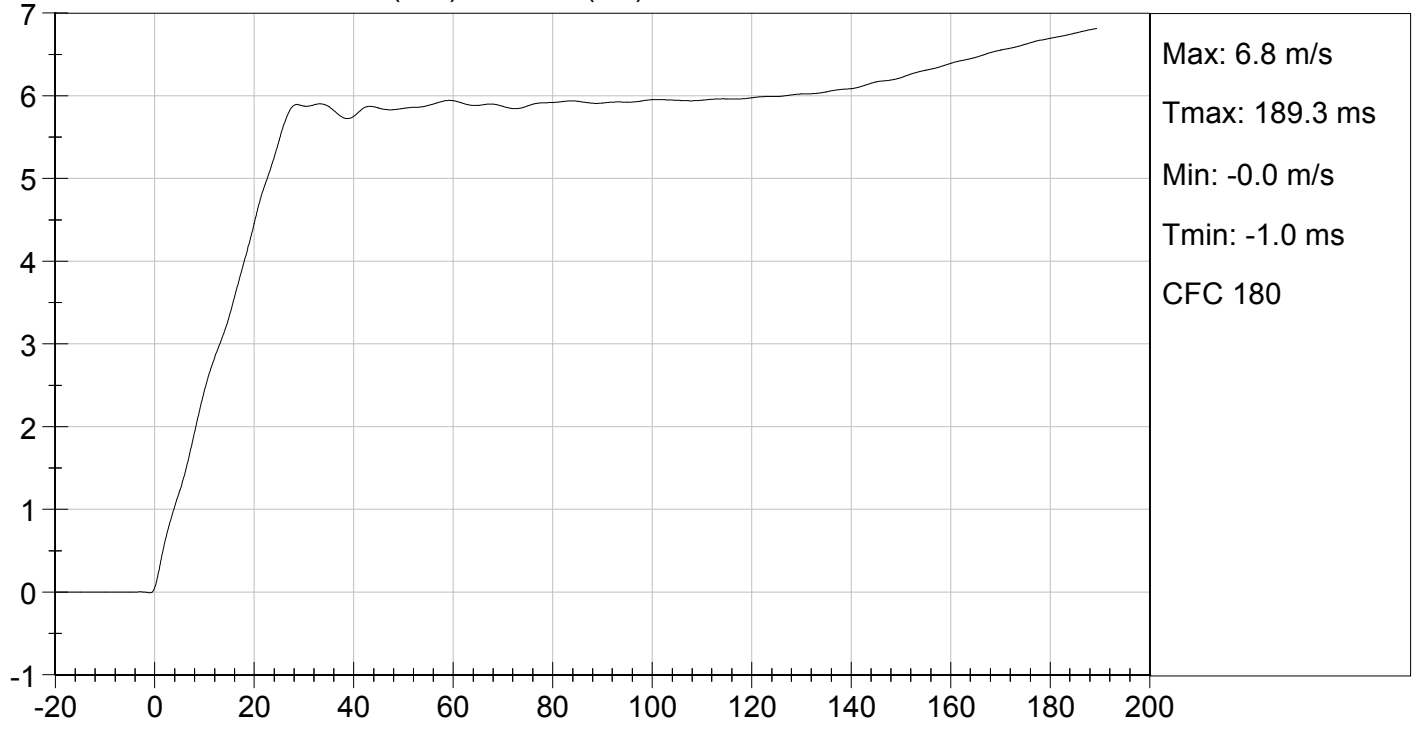
08/12/2015
Test Date

Jessica Gall
Approved By

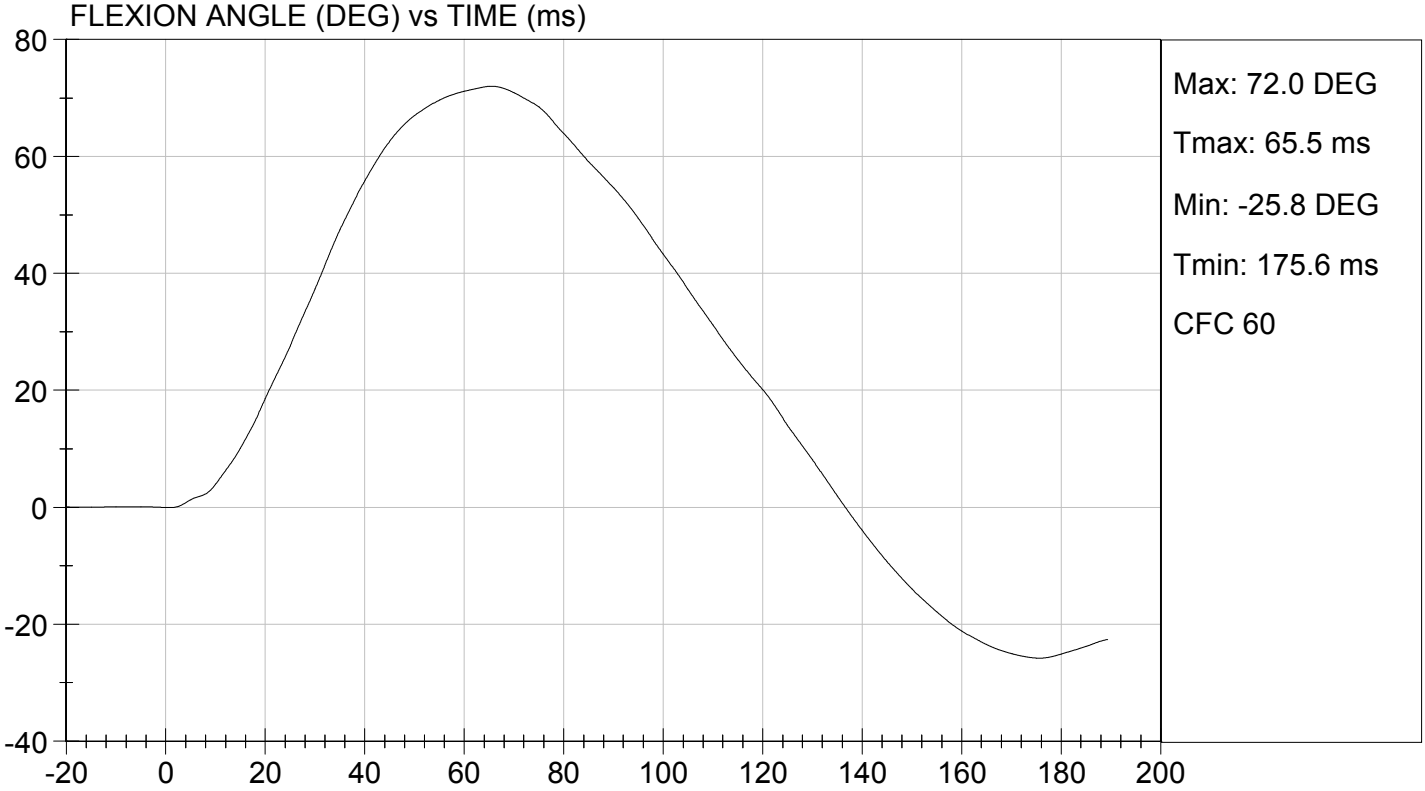
TEST DESC: NECK BENDING
VELOCITY: 18.31 ft/s, 5.58 m/s

TEST DATE: 08/12/2015
TEST #: D152462

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

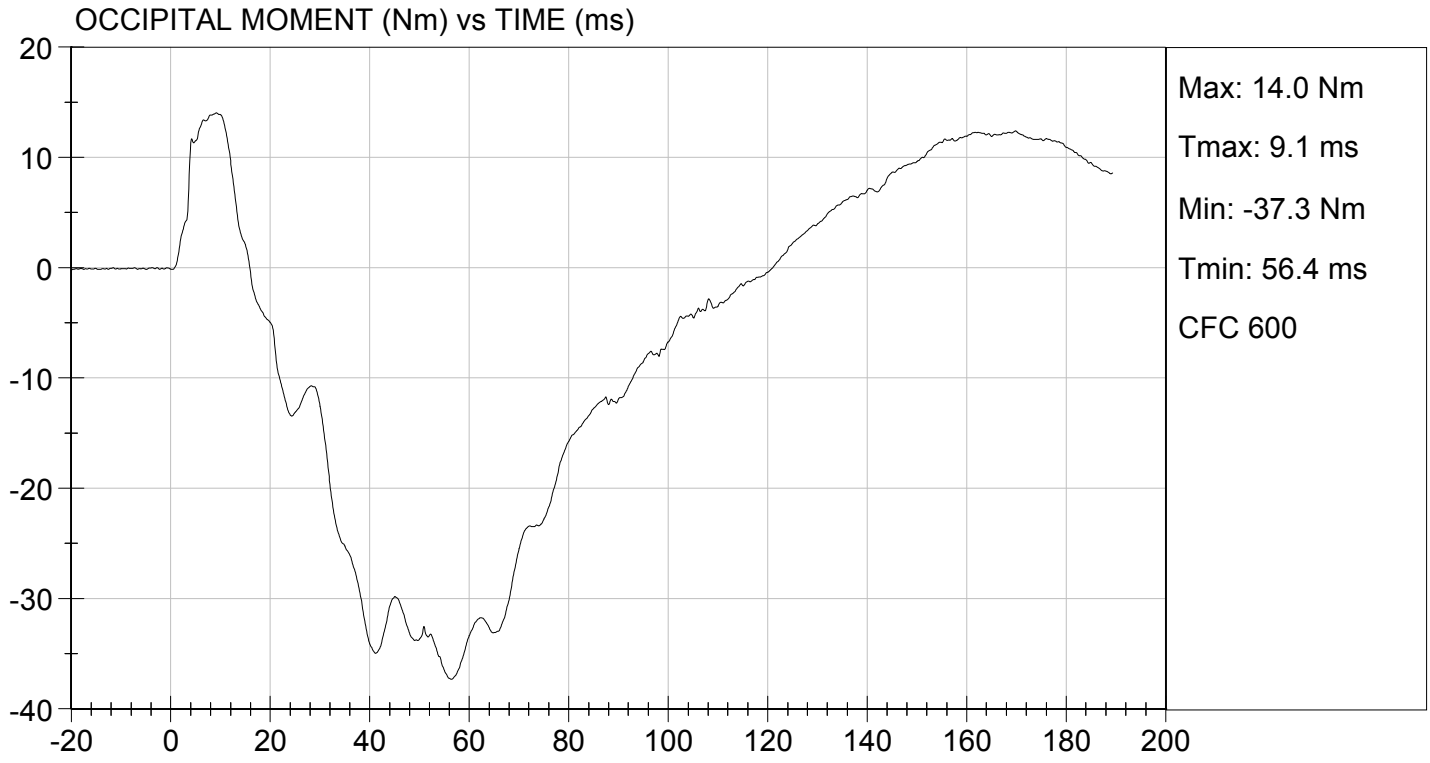


FLEXION ANGLE (DEG) vs TIME (ms)



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

TEST DATE: 08/12/2015
TEST #: D152462



MGA RESEARCH CORPORATION

SHOULDER IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test ID:** D152463

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	47	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

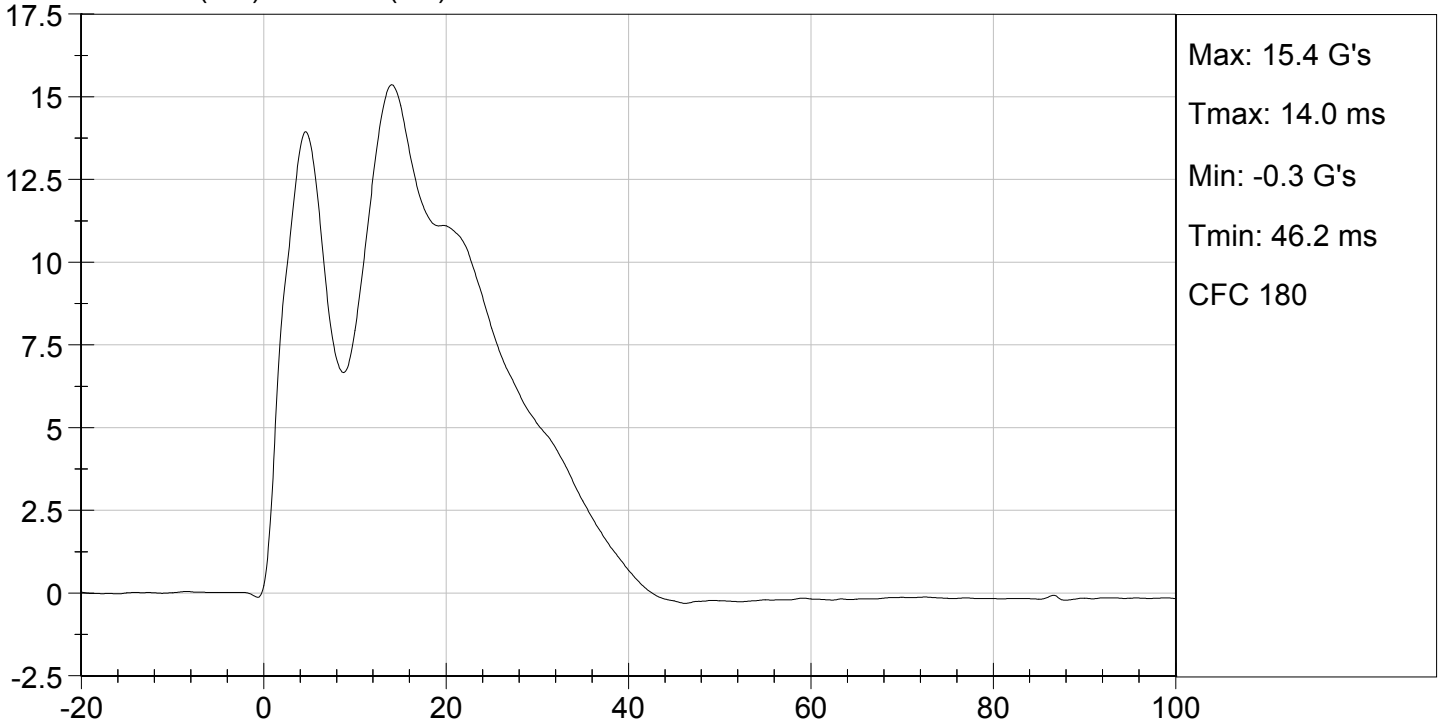
08/12/2015
Test Date

Jessica Gall
Approved By

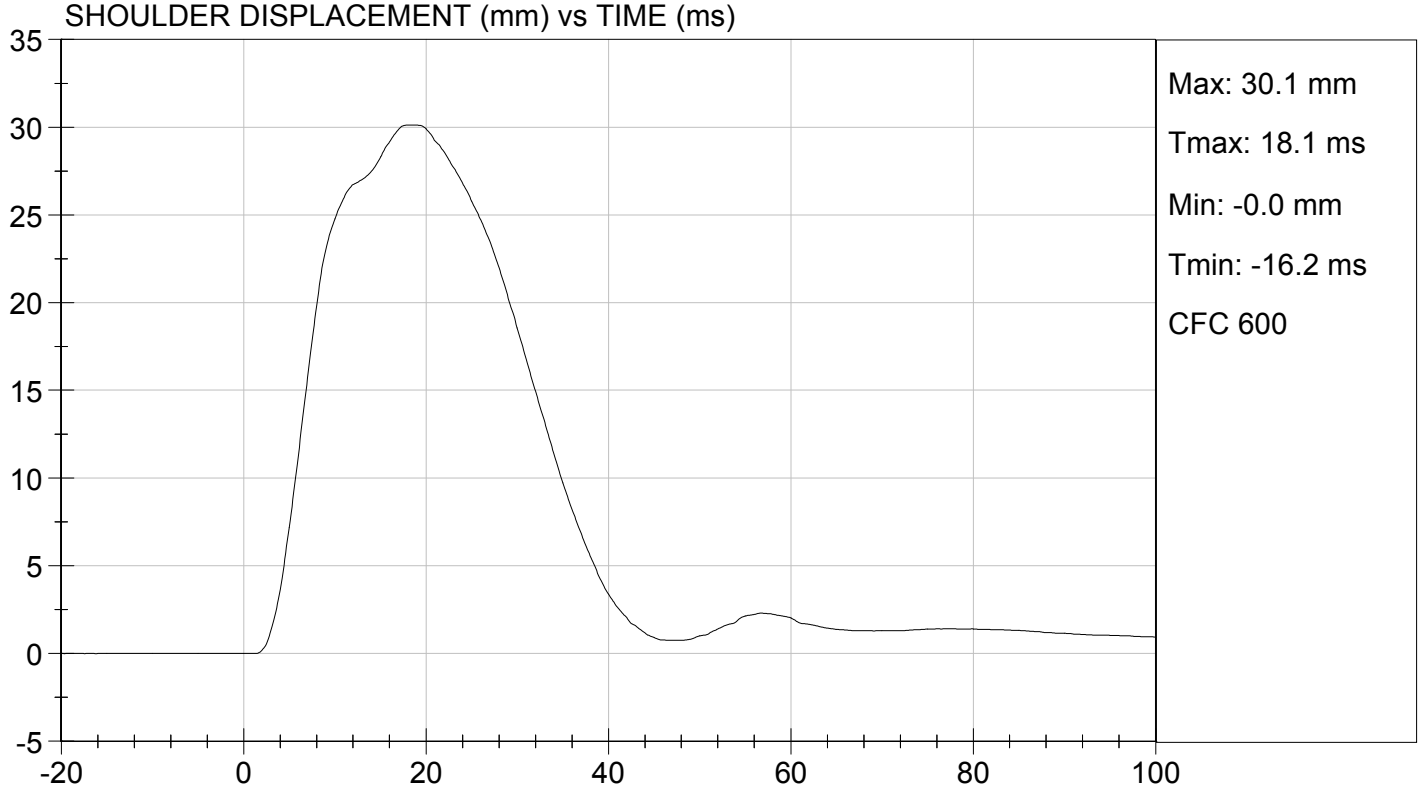
TEST DESC: SHOULDER IMPACT
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 08/12/2015
TEST #: D152463

PROBE (G's) vs TIME (ms)

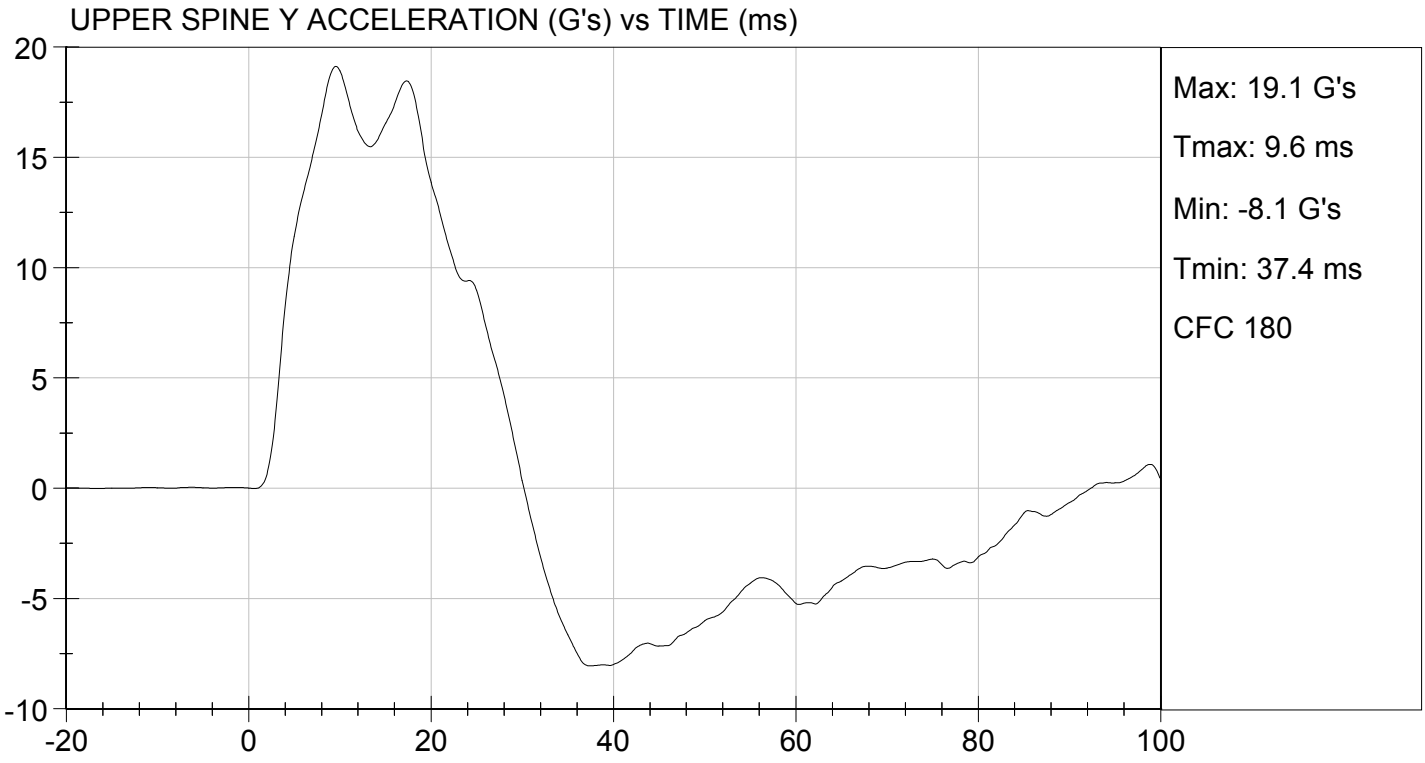


SHOULDER DISPLACEMENT (mm) vs TIME (ms)



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

TEST DATE: 08/12/2015
TEST #: D152463



MGA RESEARCH CORPORATION

THORAX (WITH ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152464

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	31	Pass
Shoulder Displacement	mm	31 to 40	37	Pass
Upper Rib Displacement	mm	25 to 32	29	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	30	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

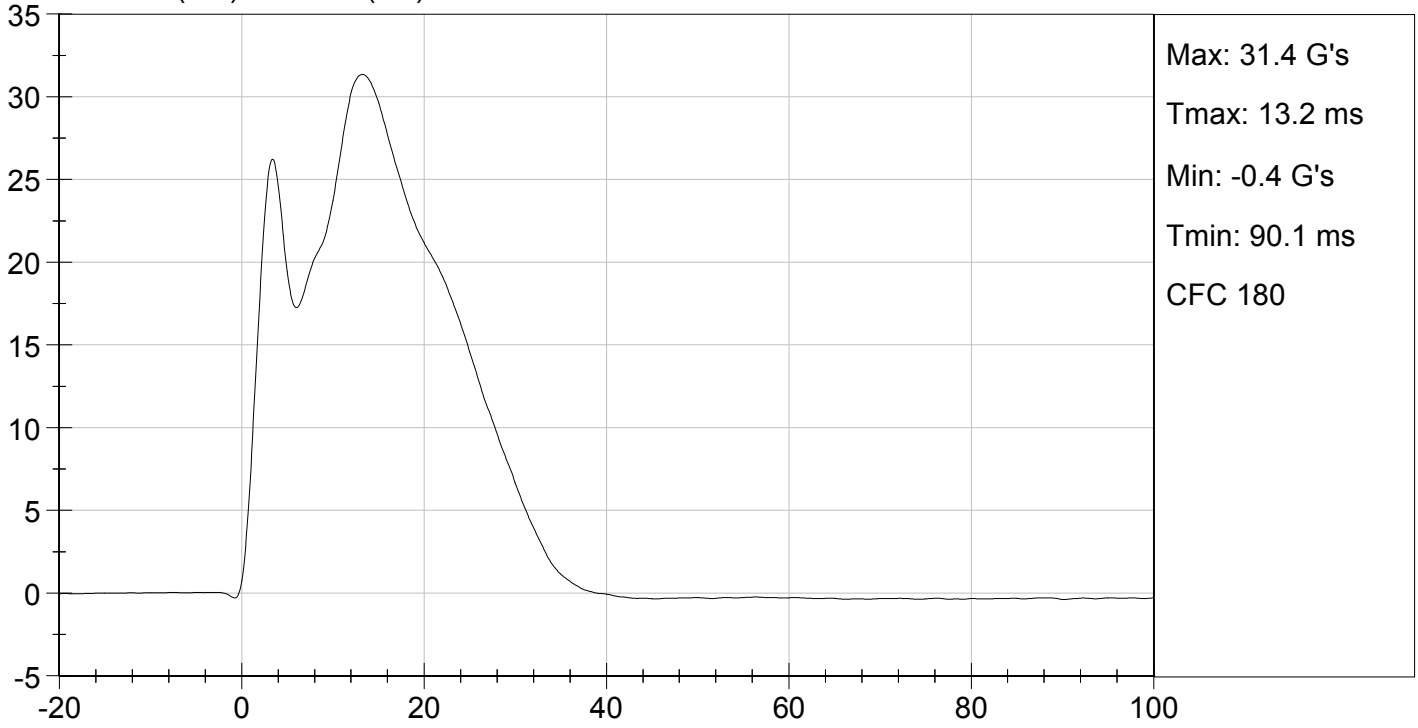
08/12/2015
Test Date

Jessica Hall
Approved By

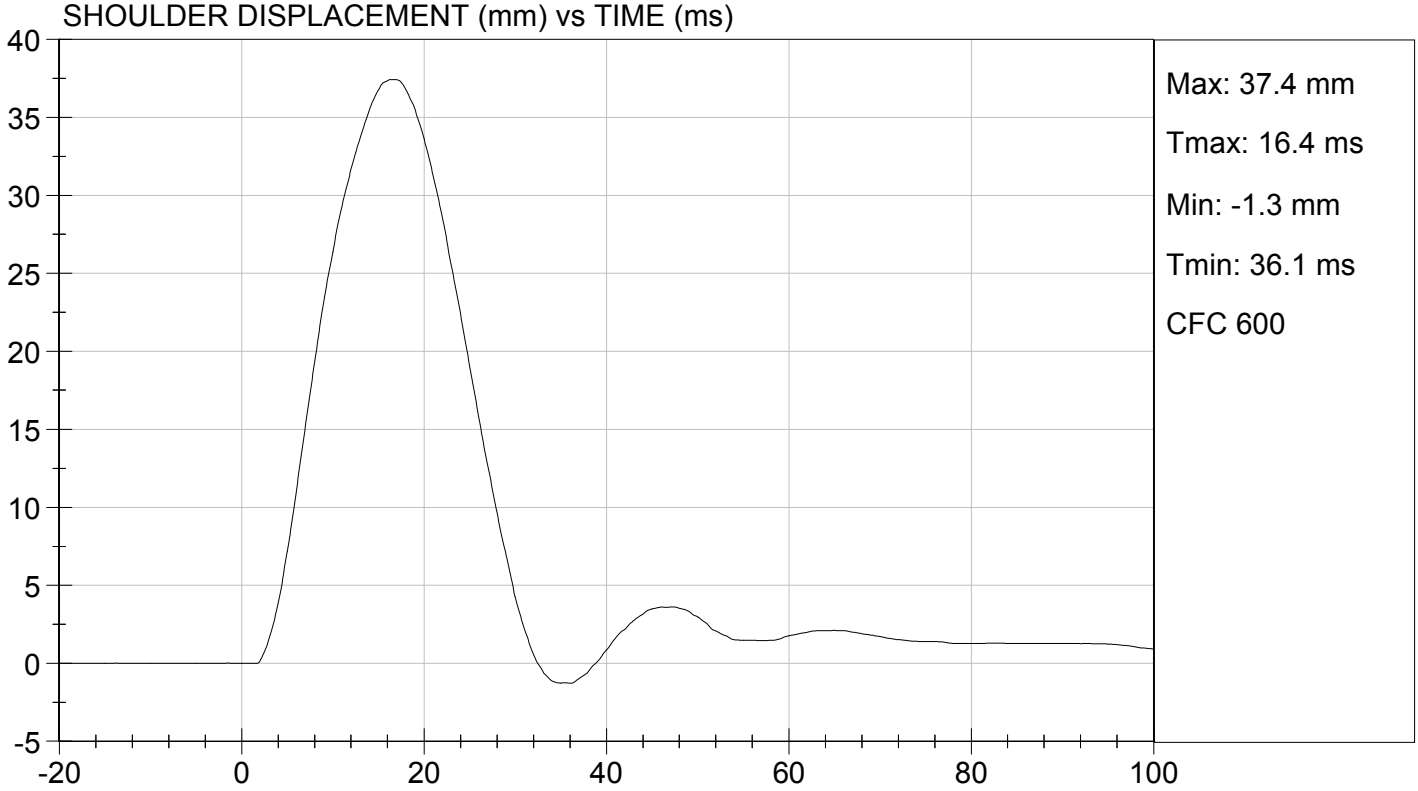
TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 08/12/2015
TEST #: D152464

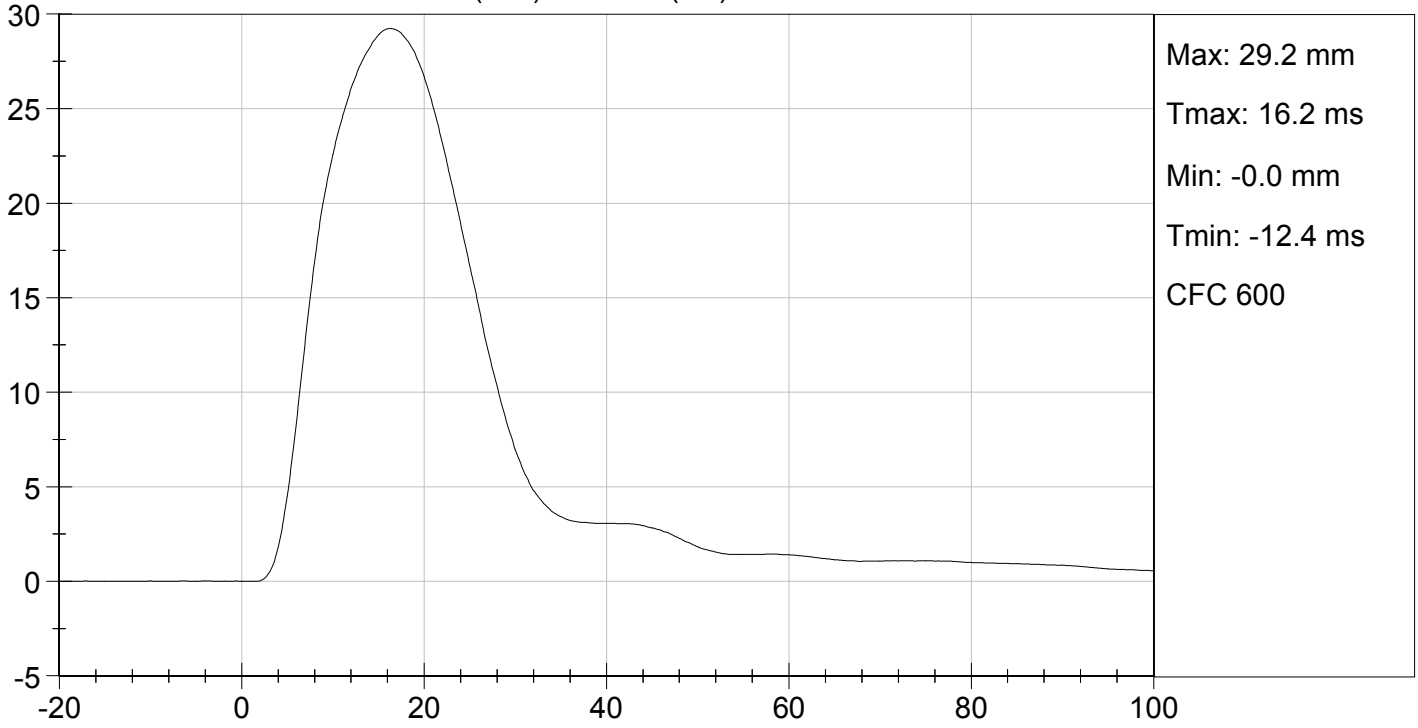
PROBE (G's) vs TIME (ms)



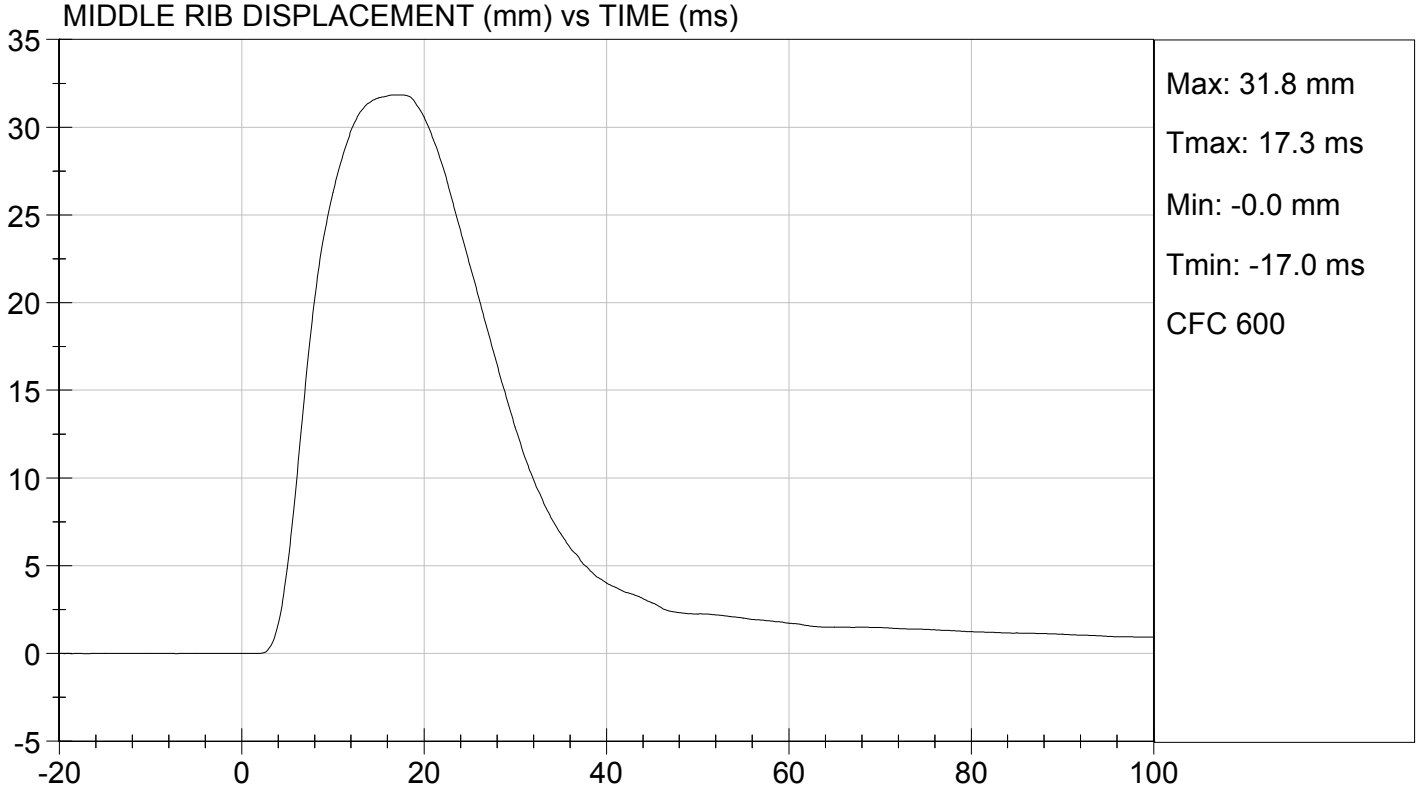
SHOULDER DISPLACEMENT (mm) vs TIME (ms)



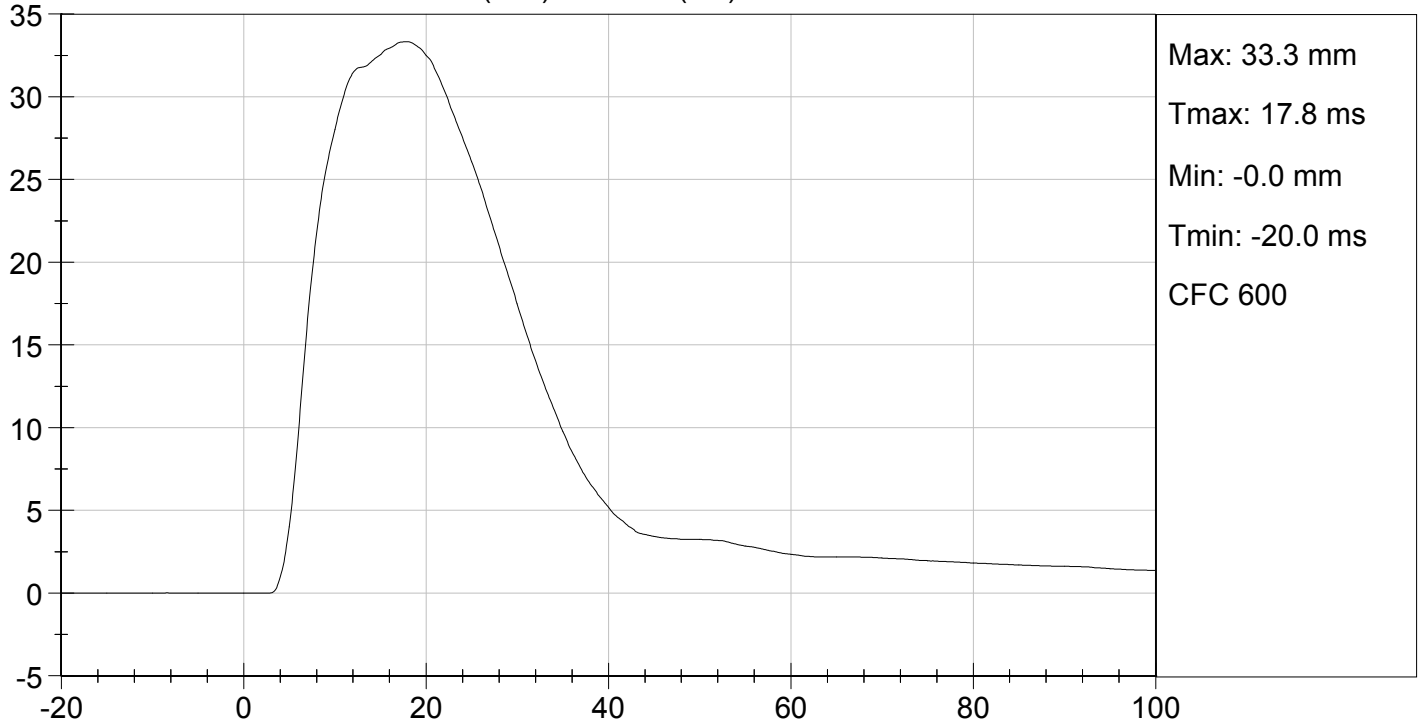
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



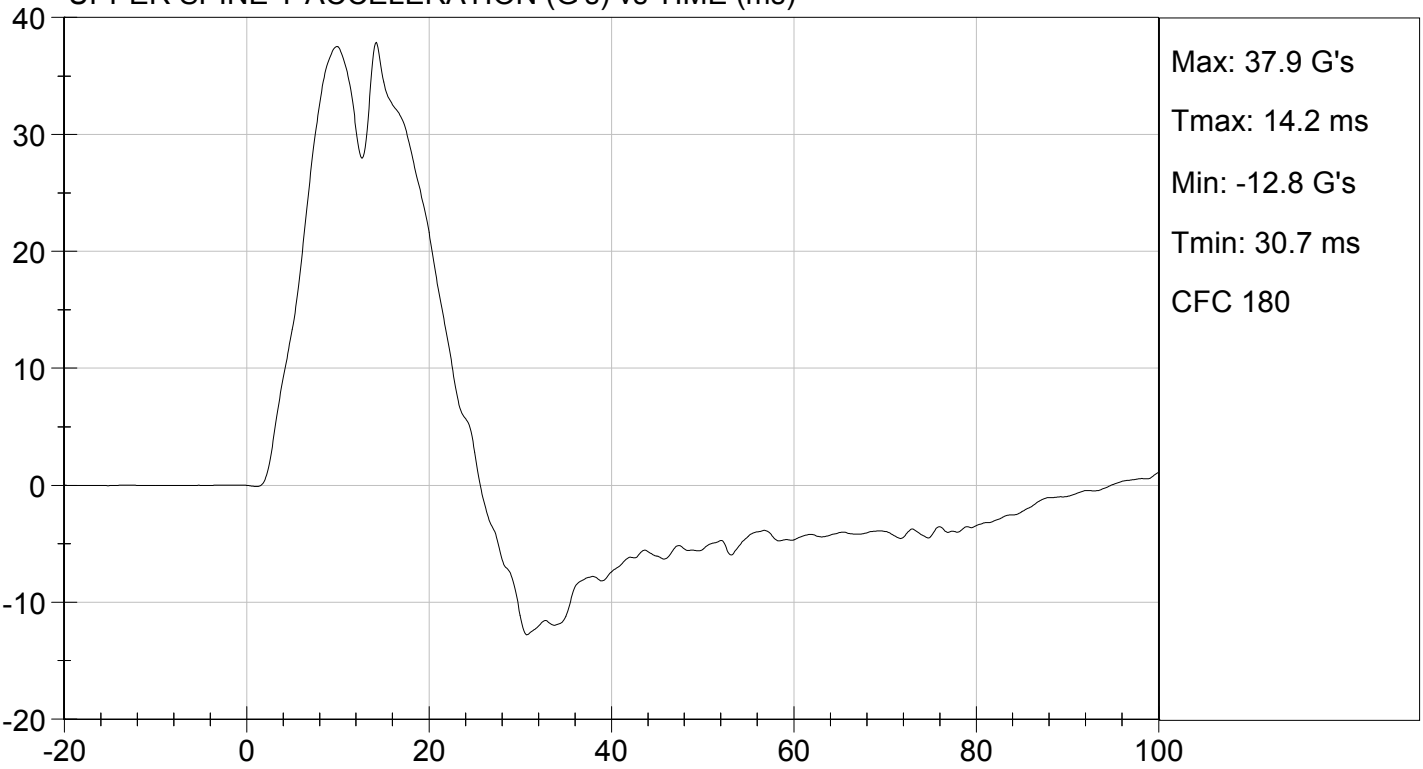
MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



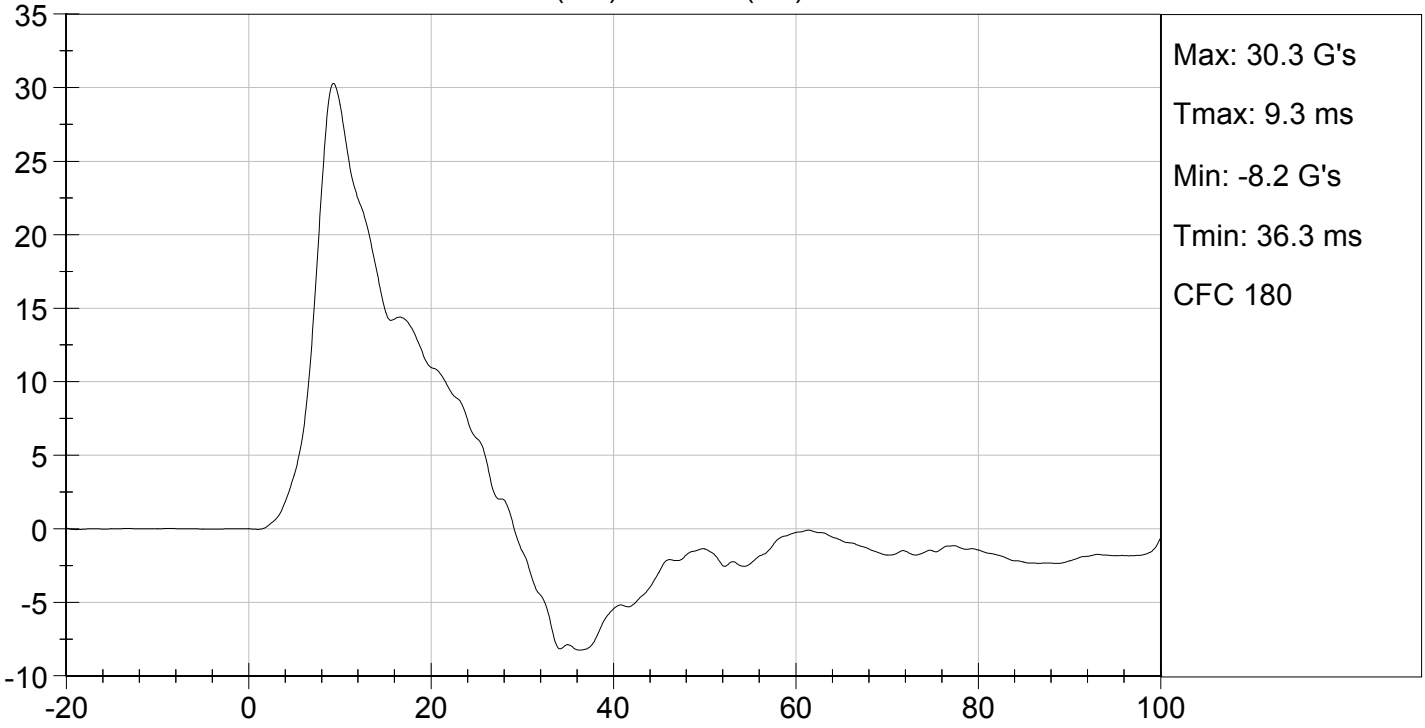
UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



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

TEST DATE: 08/12/2015
TEST #: D152464

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



MGA RESEARCH CORPORATION

THORAX (WITHOUT ARM) IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152465

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	14 to 18	16	Pass
Upper Rib Displacement	mm	32 to 40	34	Pass
Middle Rib Displacement	mm	39 to 45	42	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

David Schoedel
Laboratory Technician

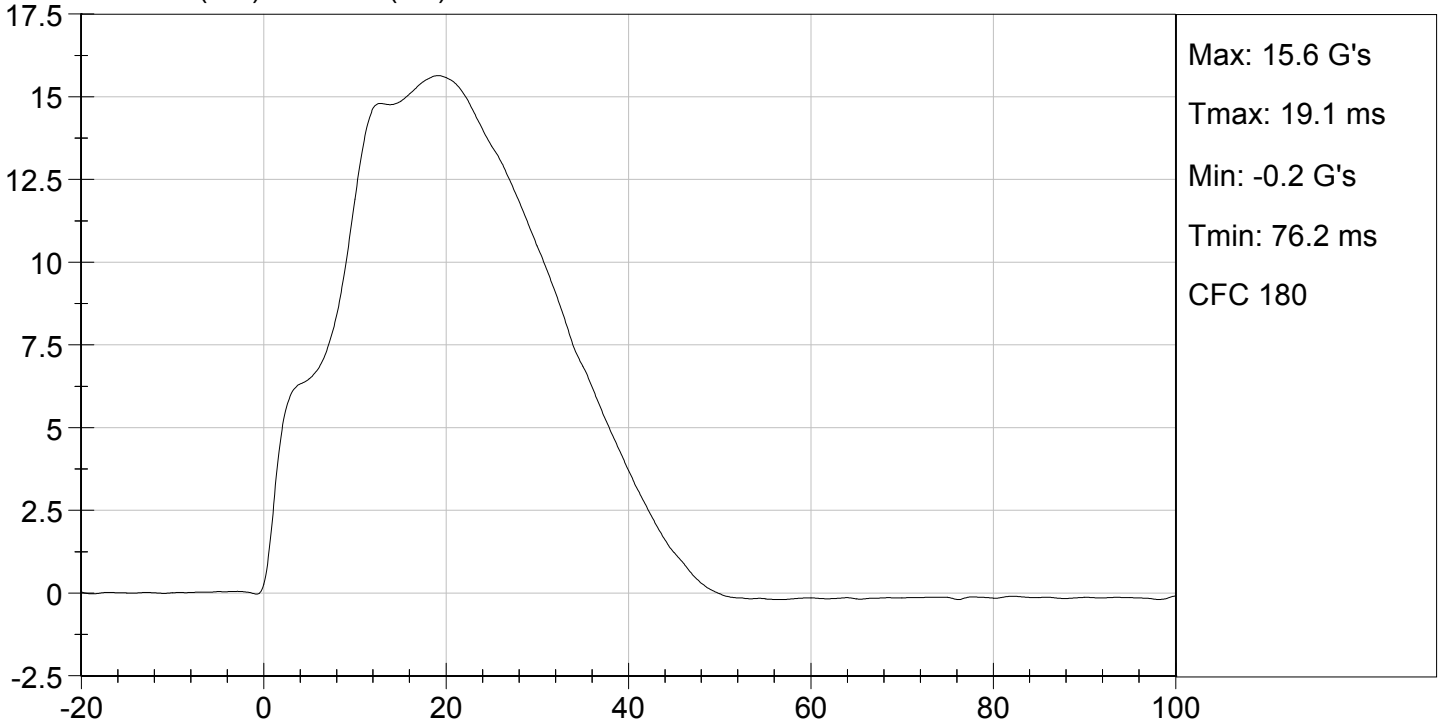
08/12/2015
Test Date

Jessica Hall
Approved By

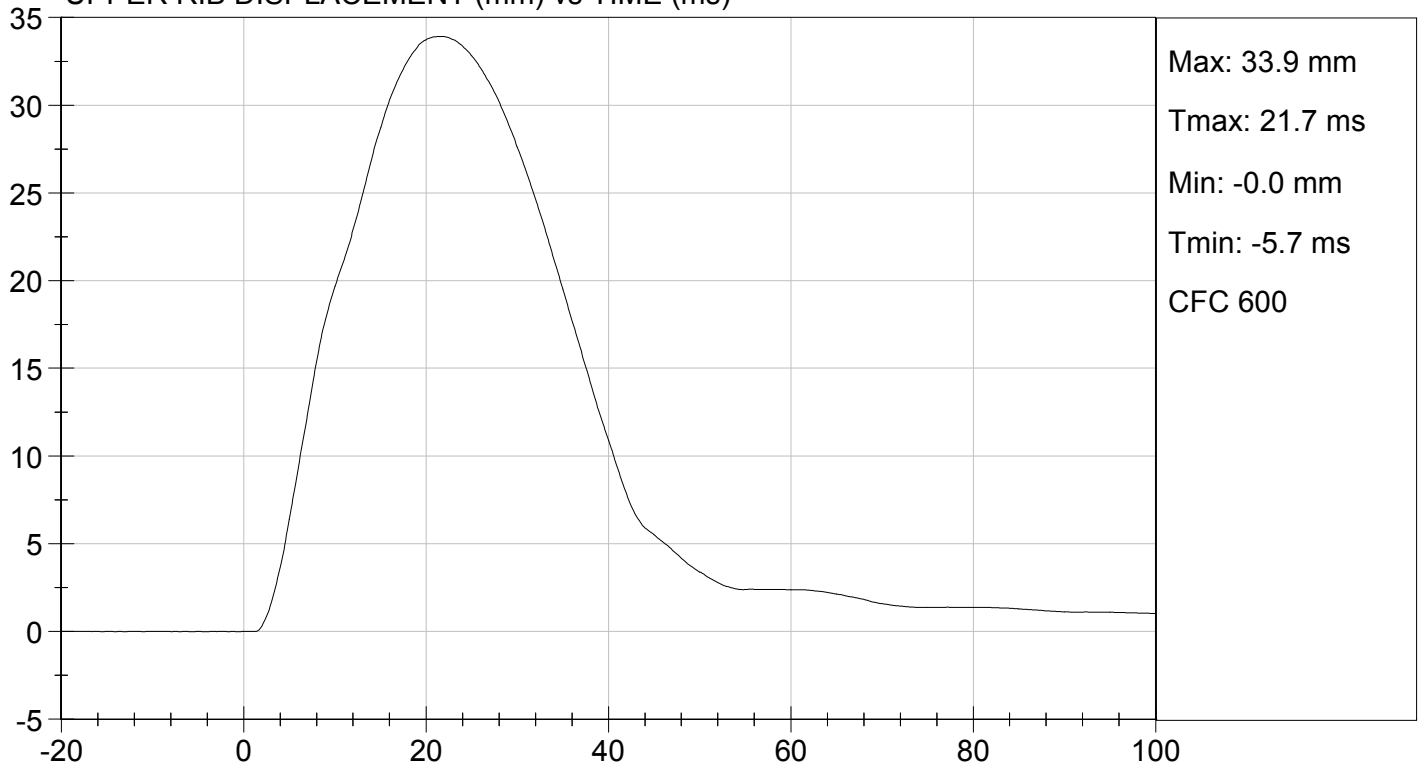
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152465

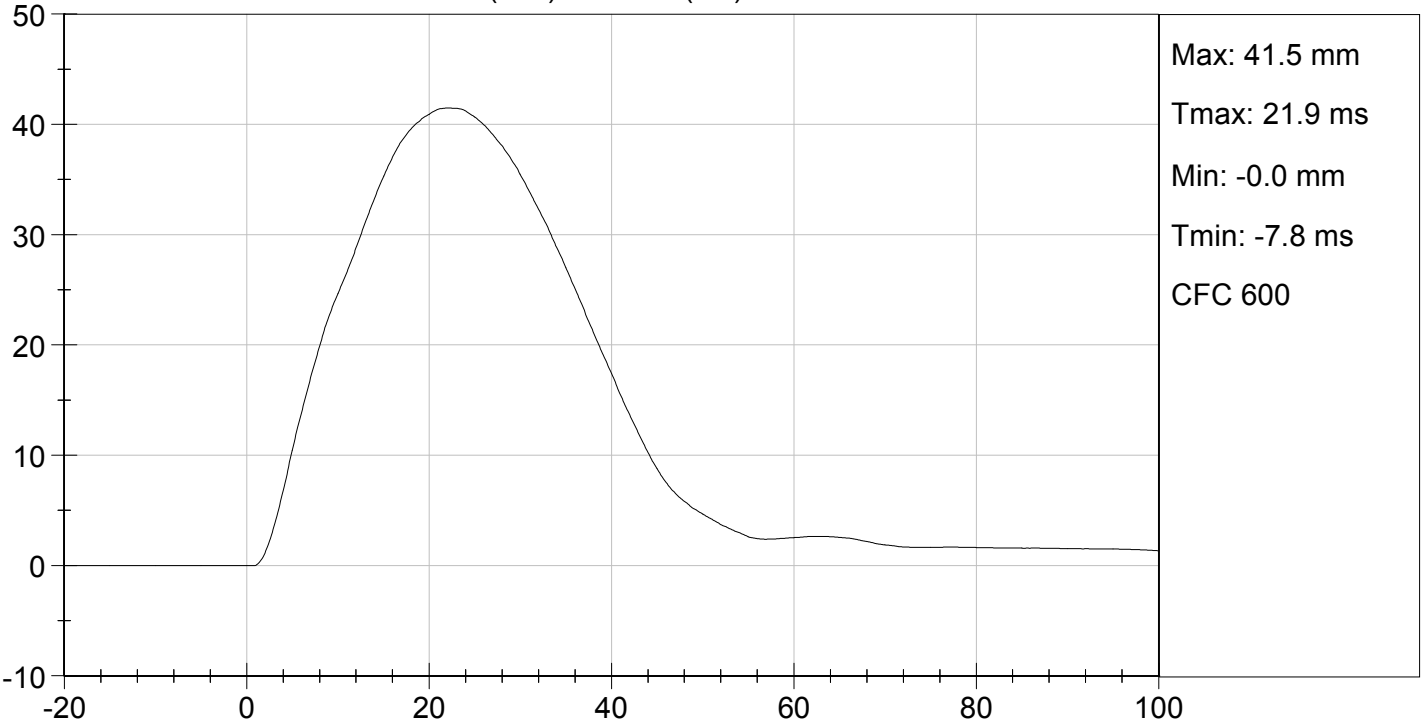
PROBE (G's) vs TIME (ms)



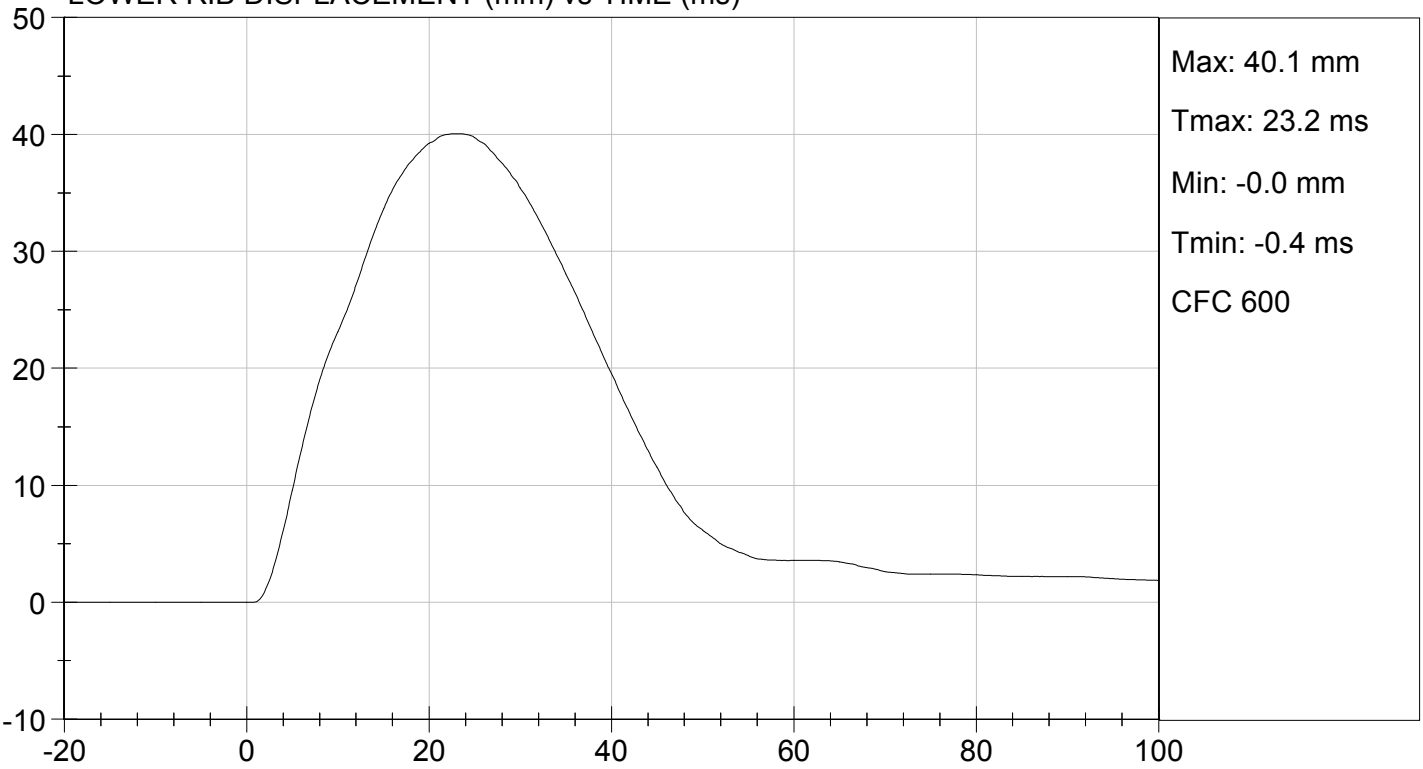
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)



MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



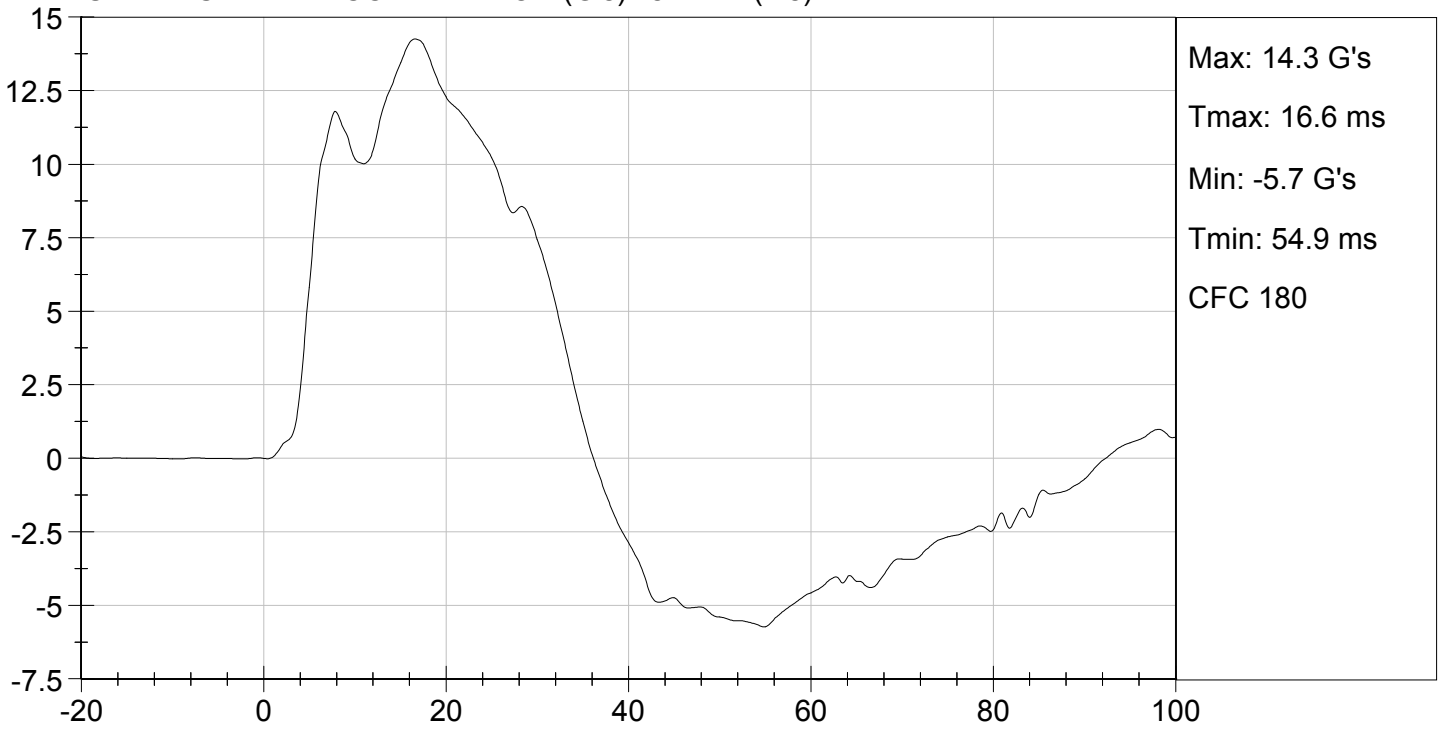
LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



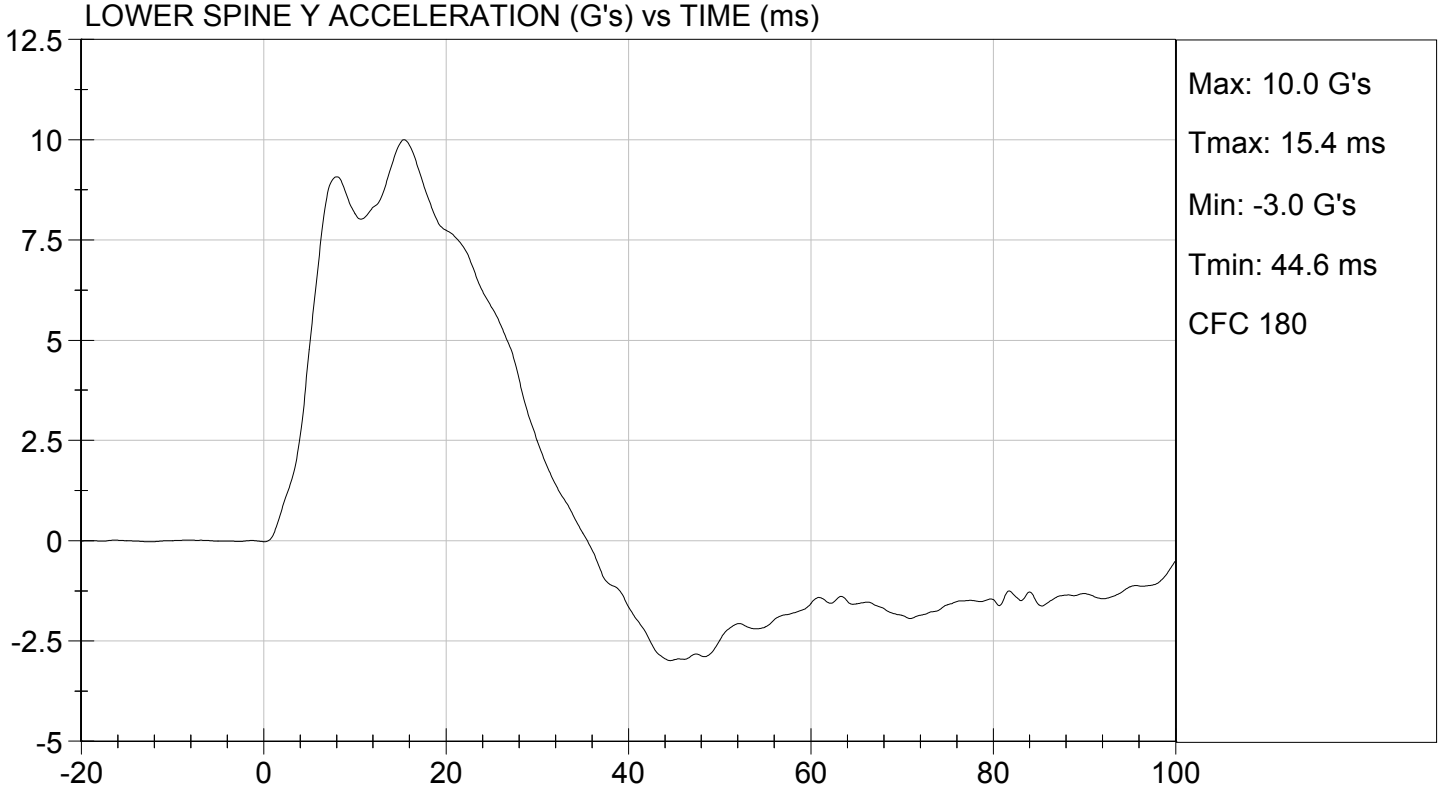
TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152465

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



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



MGA RESEARCH CORPORATION

ABDOMINAL IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152466

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	12 to 16	12	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	46	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	41	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

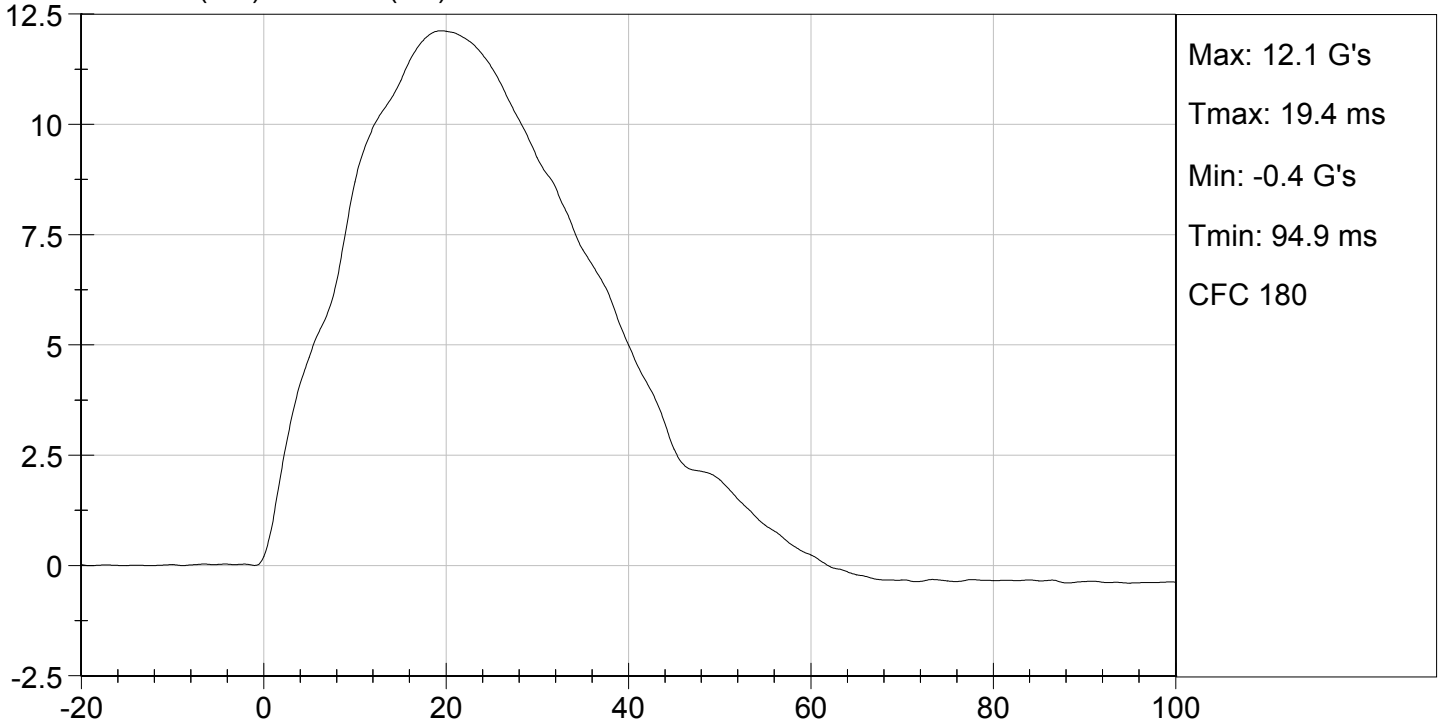
08/12/2015
Test Date

Jessica Hall
Approved By

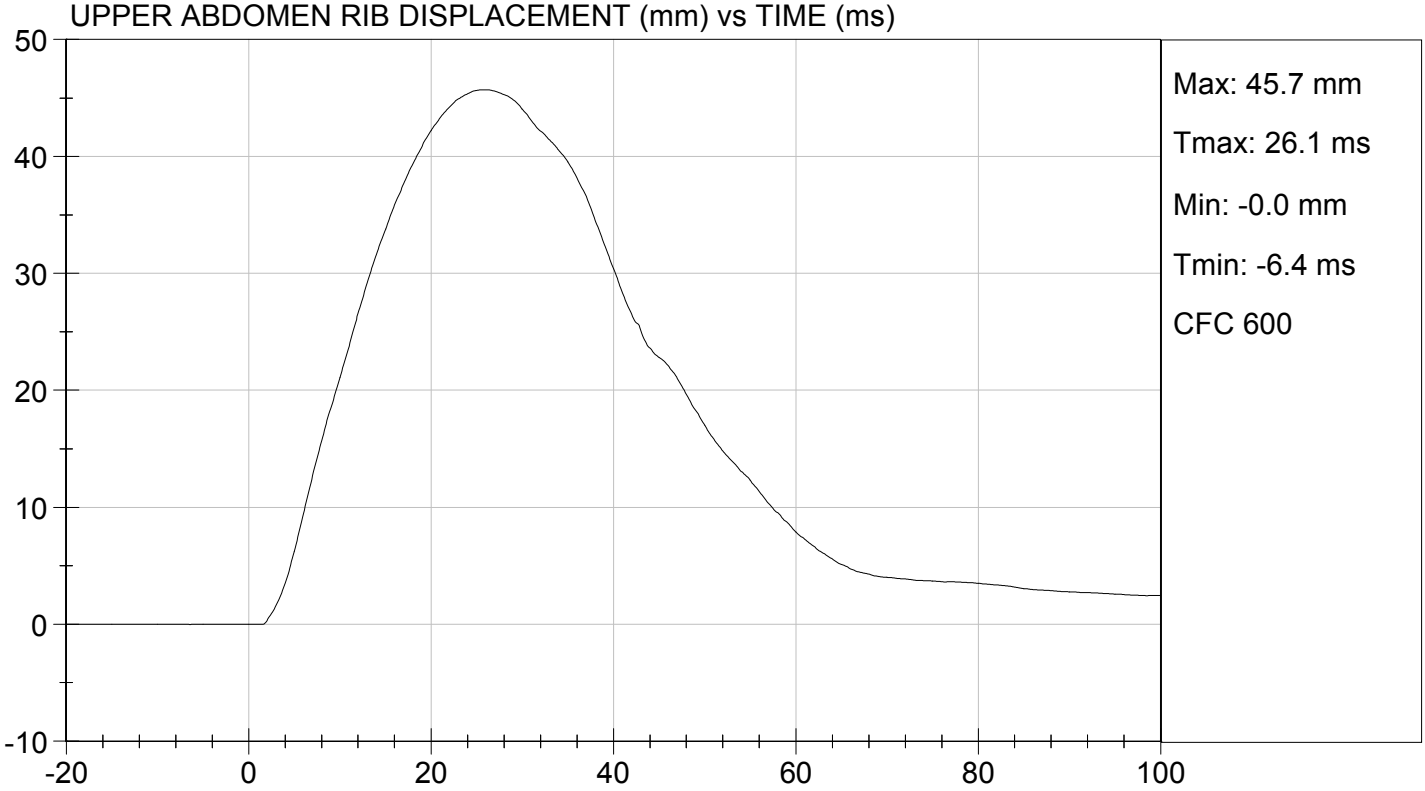
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152466

PROBE (G's) vs TIME (ms)



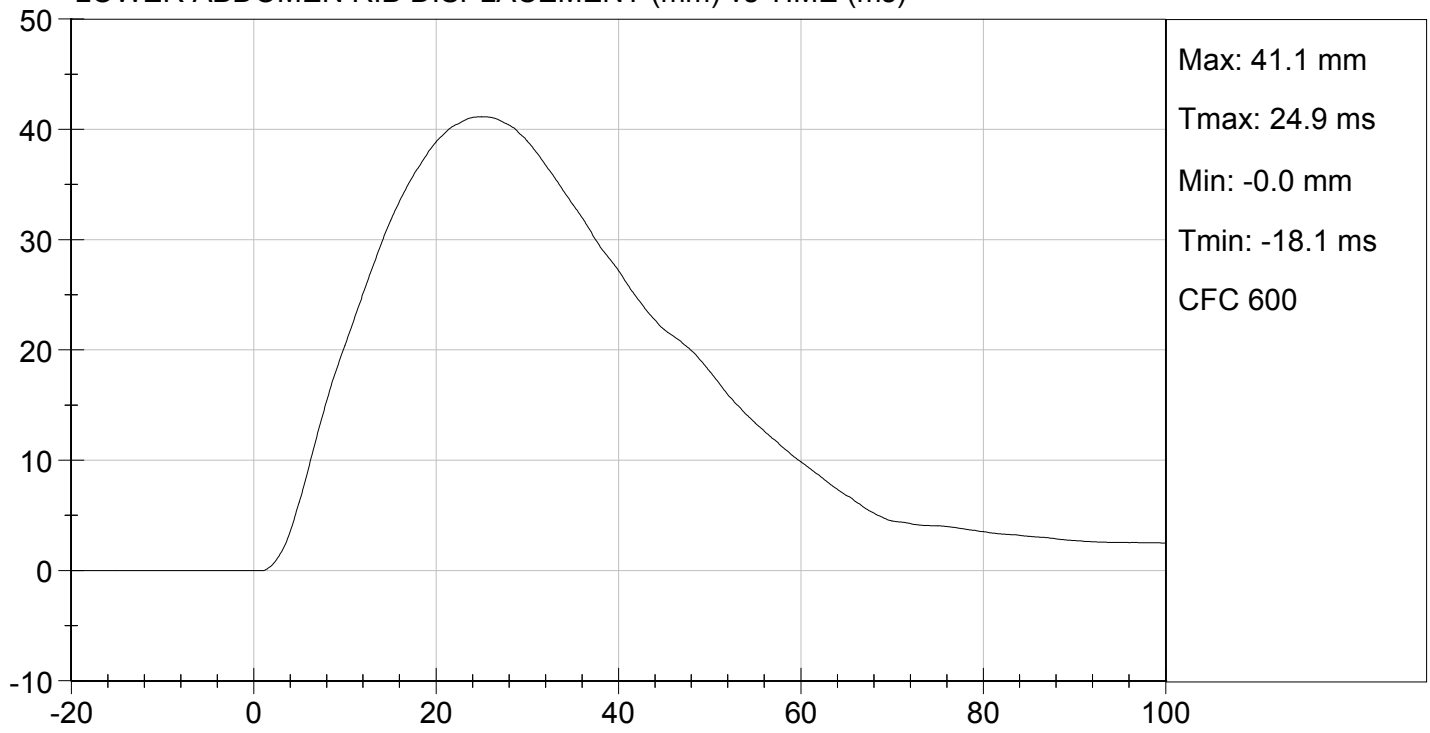
UPPER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



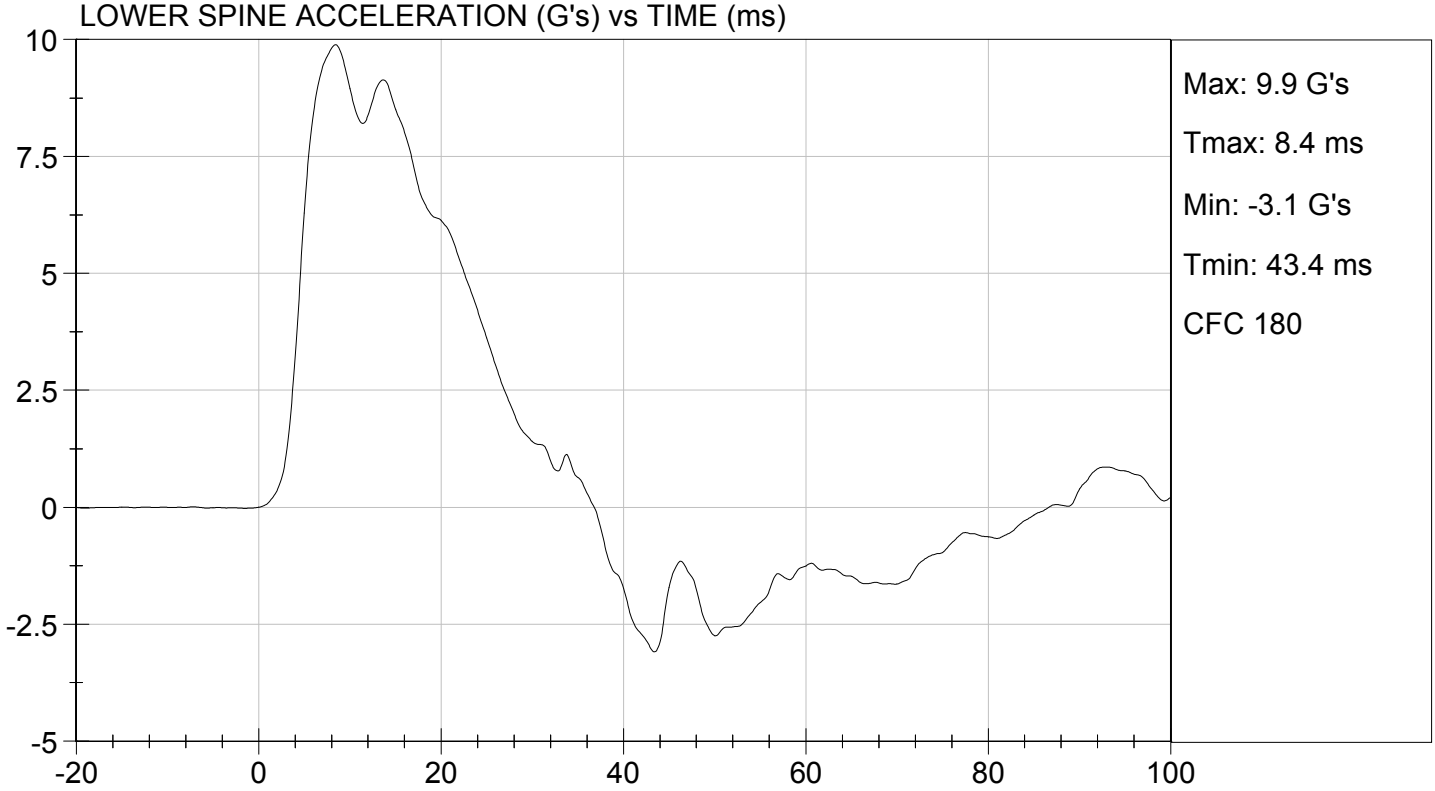
TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152466

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



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



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152467

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	43	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	4,008	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

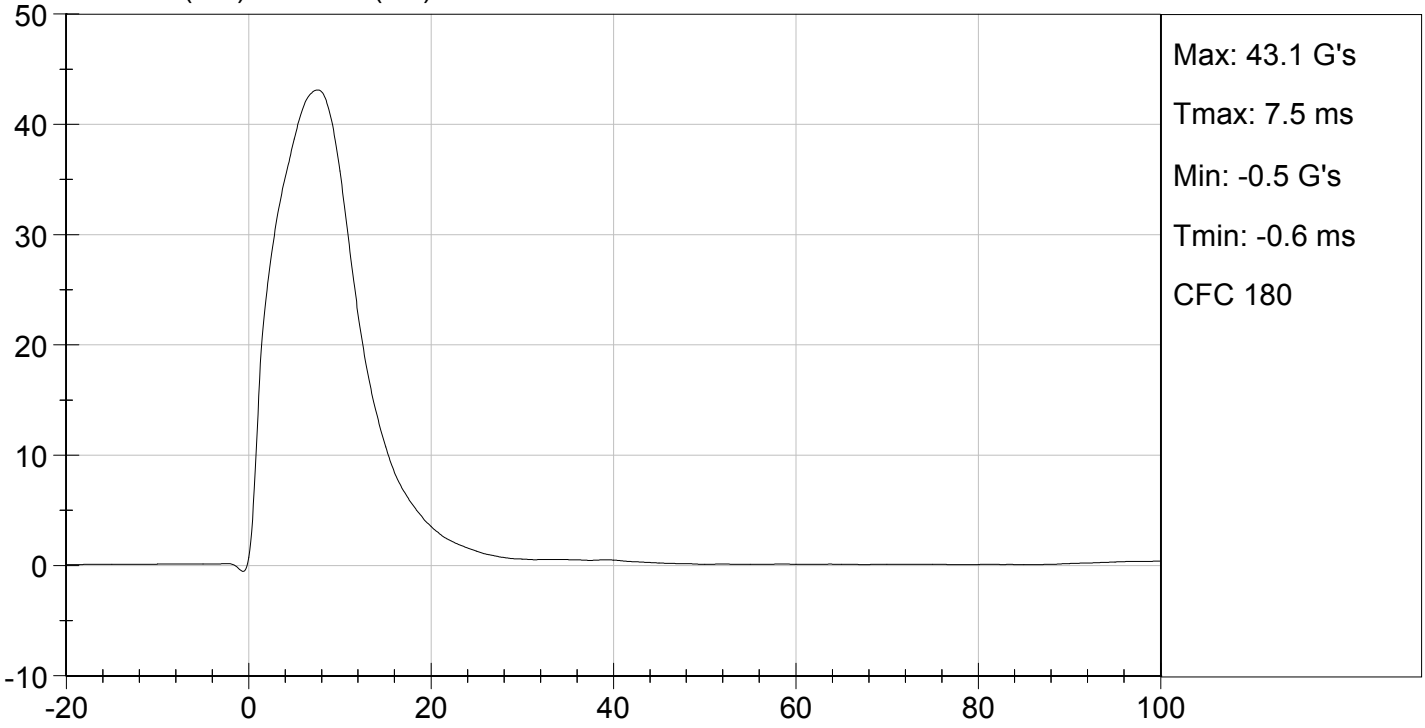
08/12/2015
Test Date

Jessica Hall
Approved By

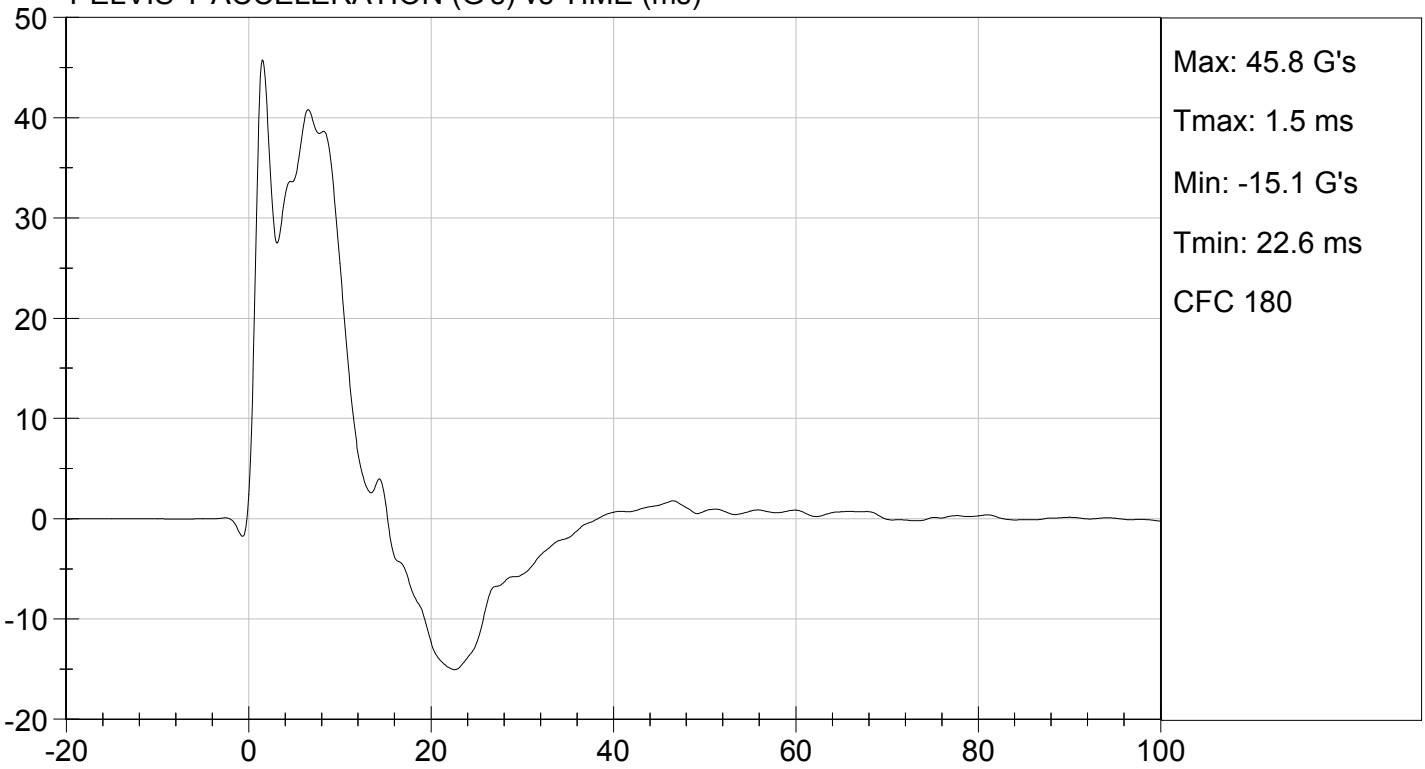
TEST DESC: PELVIS IMPACT
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 08/12/2015
TEST #: D152467

PROBE (G's) vs TIME (ms)

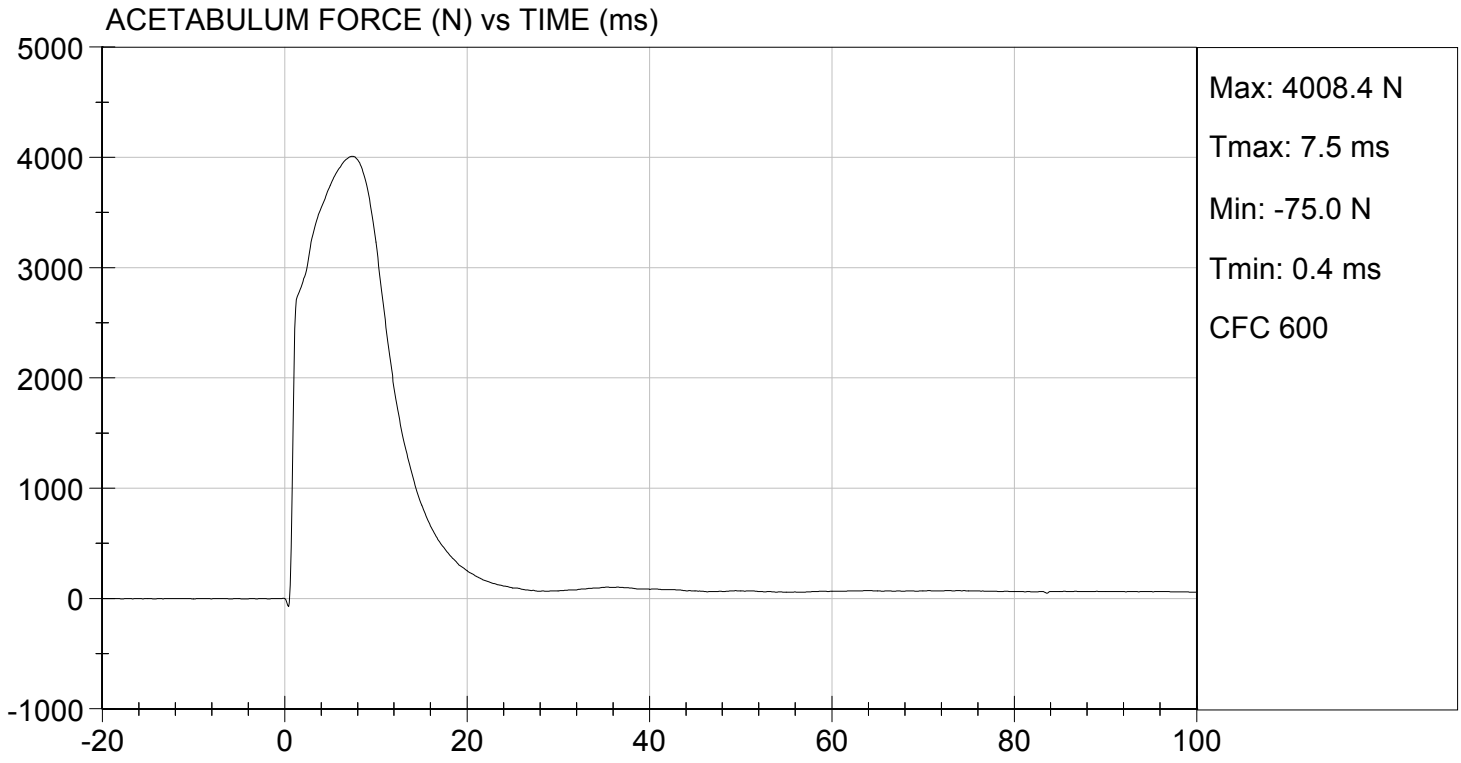


PELVIS Y ACCELERATION (G's) vs TIME (ms)



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

TEST DATE: 08/12/2015
TEST #: D152467



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296 **Test I.D:** D152468

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.8	Pass
Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	36 to 45	41	Pass
Pelvis Y Acceleration	G's	28 to 39	34	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	5,040	Pass
		Overall Test Results		Pass

David Schoedel
Laboratory Technician

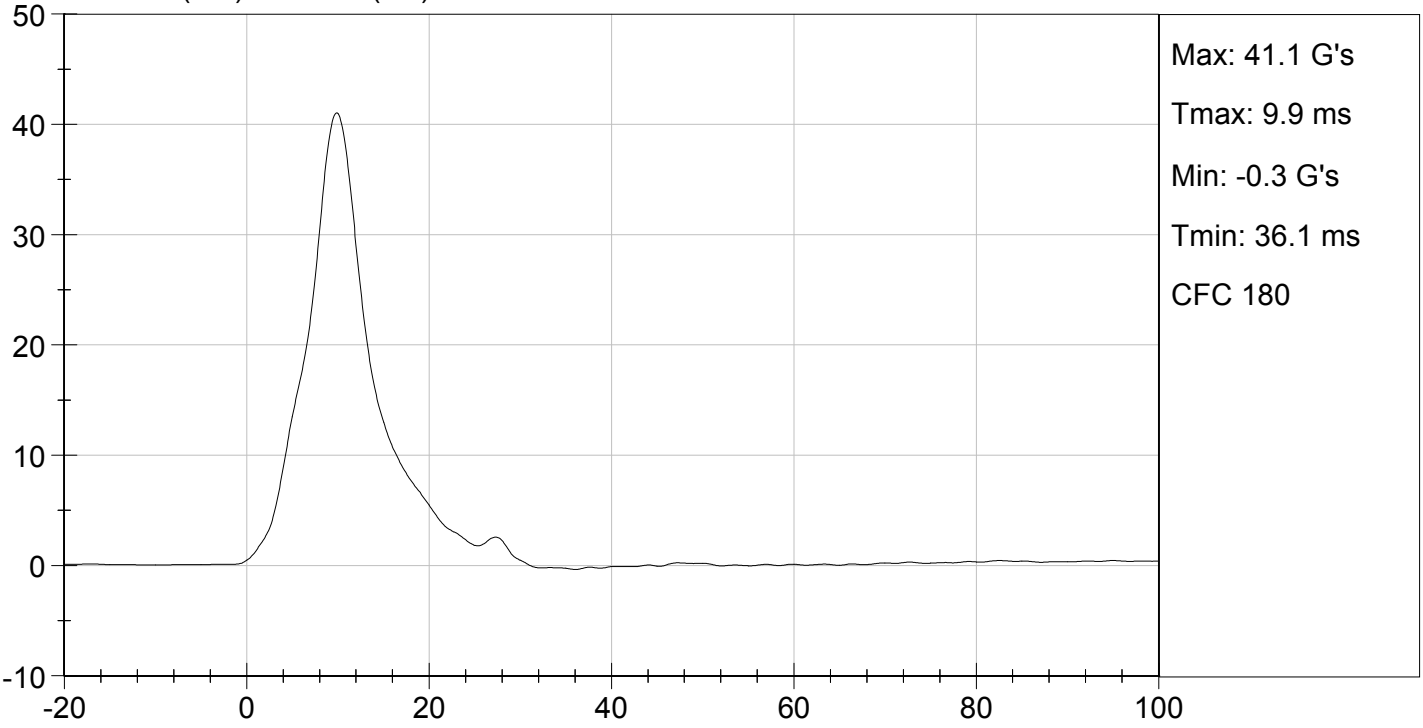
08/12/2015
Test Date

Jessica Gall
Approved By

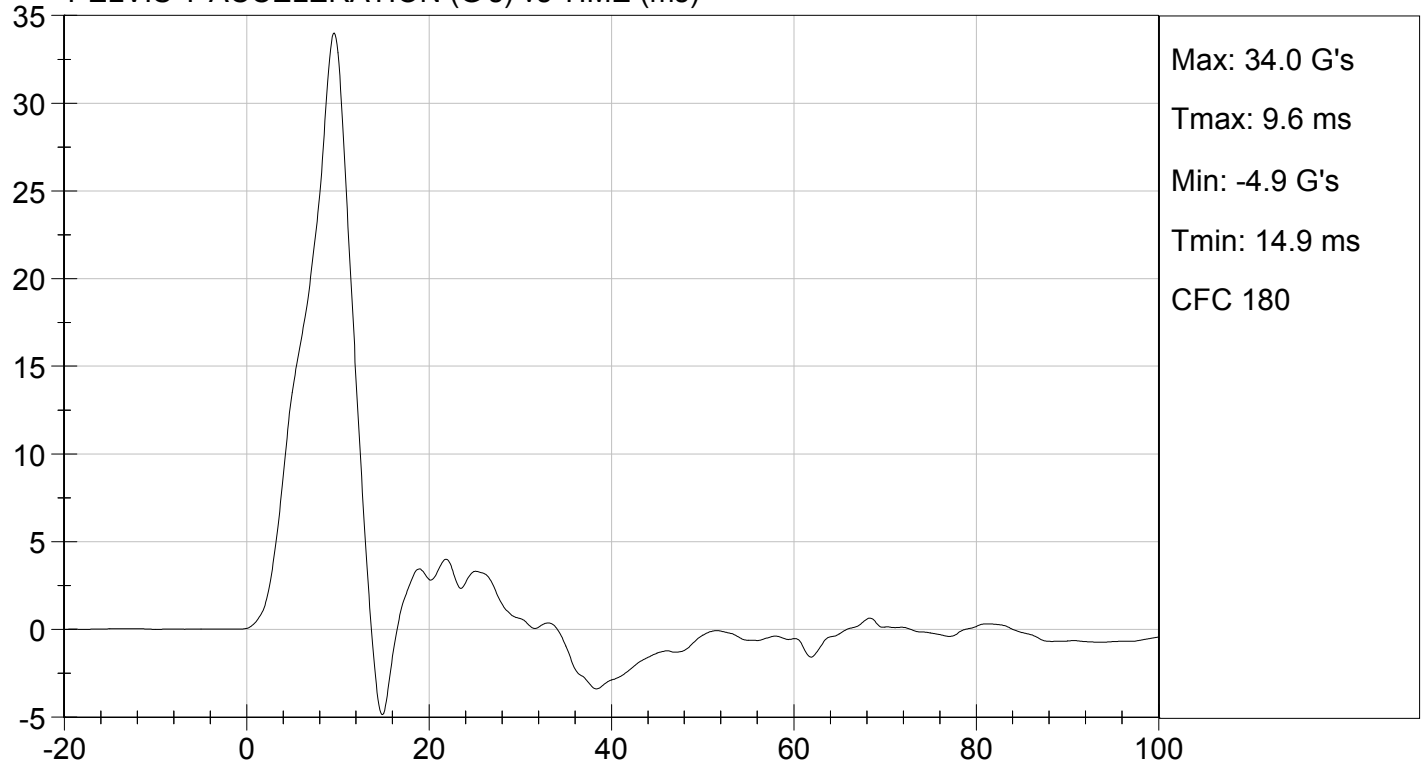
TEST DESC: ILLIAC
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152468

PROBE (G's) vs TIME (ms)

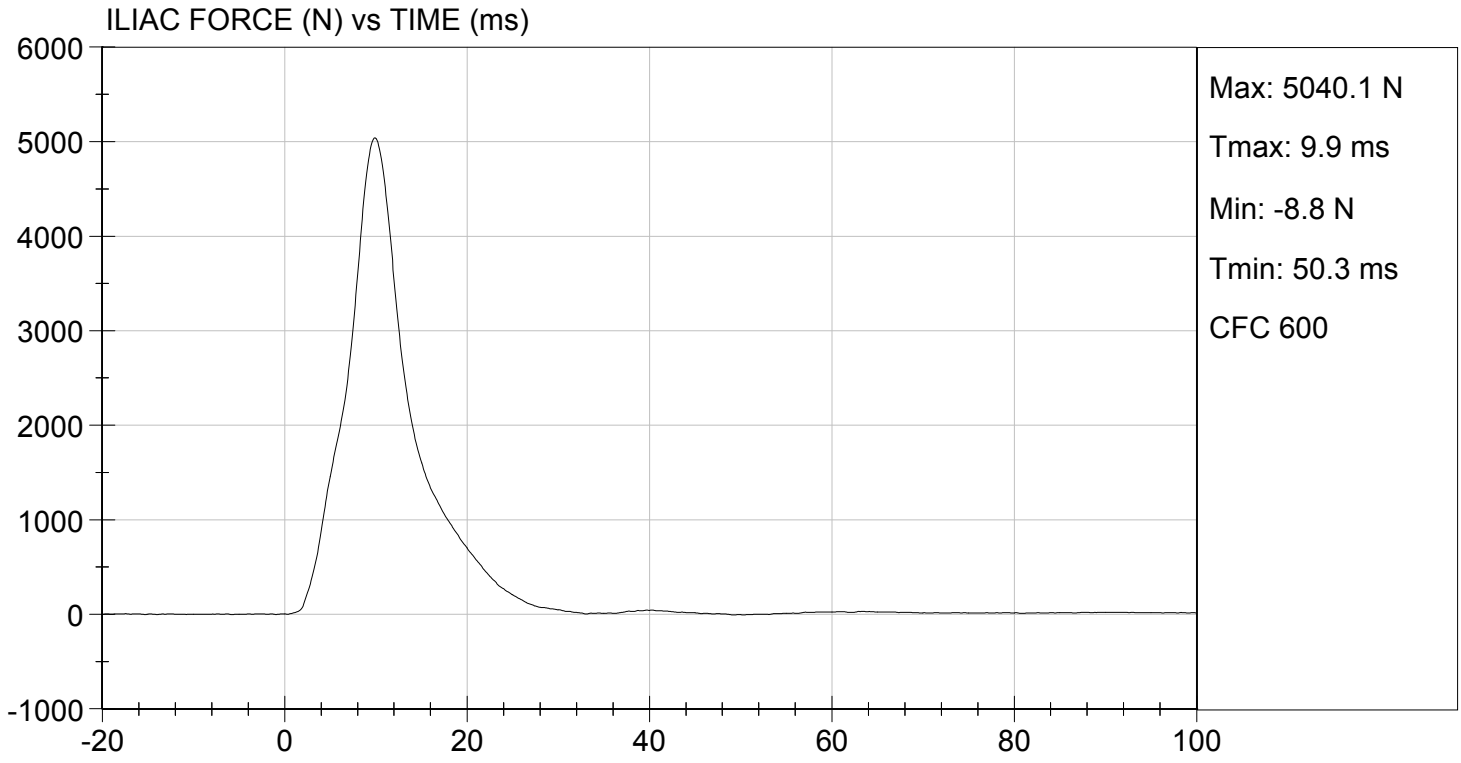


PELVIS Y ACCELERATION (G's) vs TIME (ms)

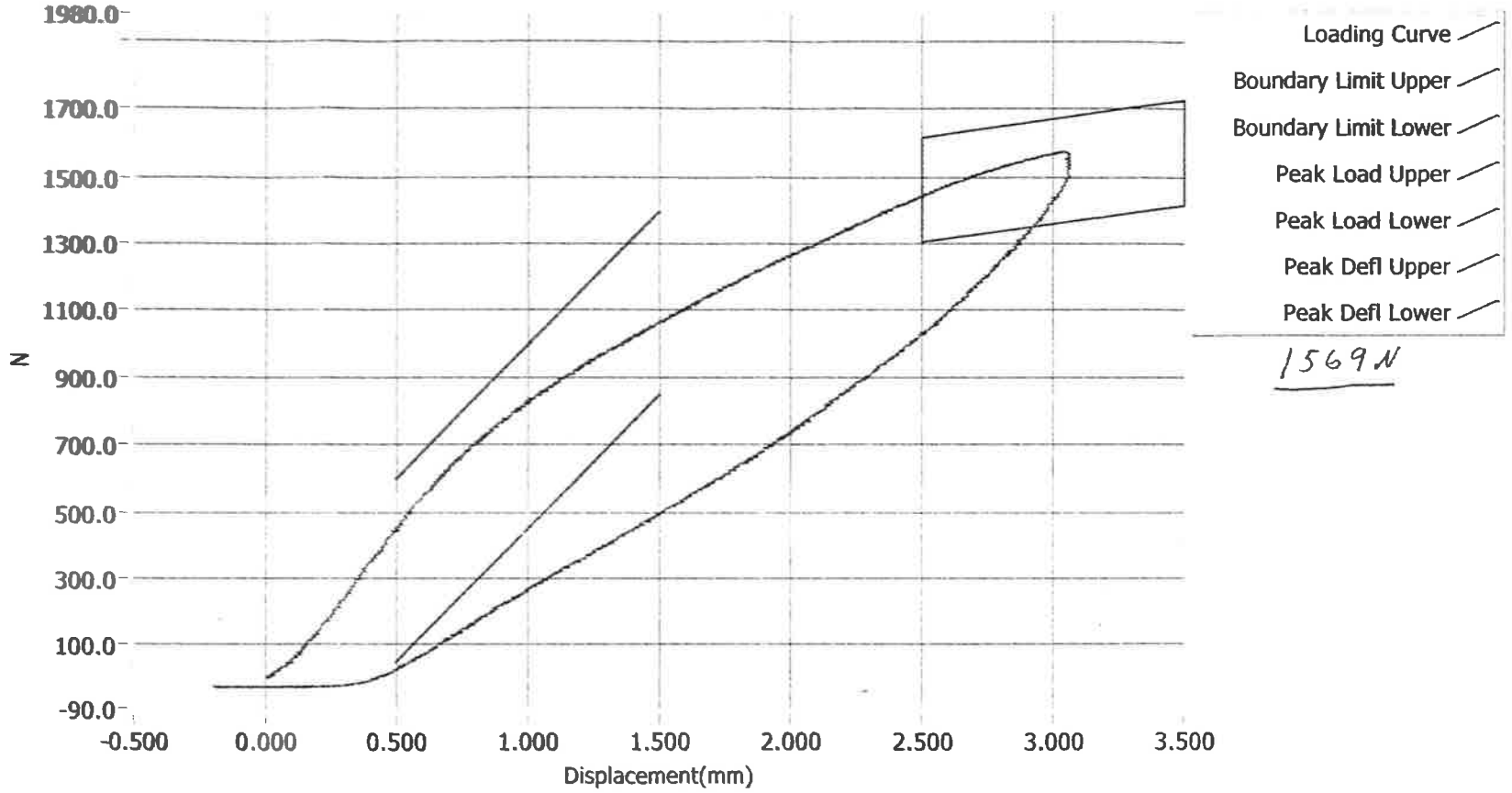


TEST DESC: ILLIAC
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 08/12/2015
TEST #: D152468



Resultant Data - SIDIIs Plug Compression

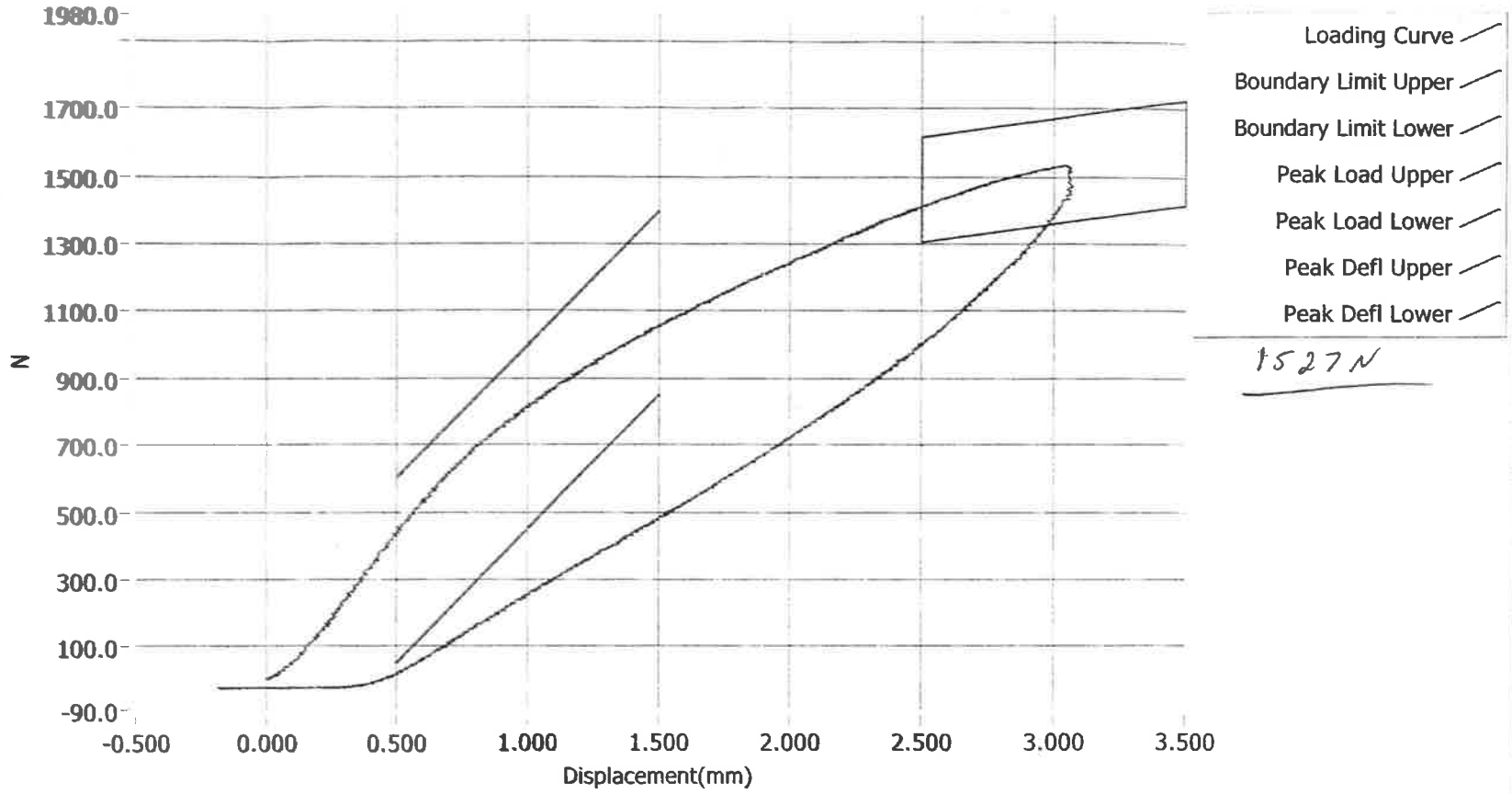


ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	71089	12/18/2013	8:17 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/18/2013 Current Time : 20:17:34

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	70750	12/13/2013	3:31 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/13/2013 Current Time : 15:32:22

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 CG Accelerometers		X	P79600	Endevco	07/22/15
		Y	P83187	Endevco	07/22/15
		Z	P83188	Endevco	07/22/15
		Xr	P84438	Endevco	07/22/15
		Yr	P84445	Endevco	07/22/15
		Zr	P84449	Endevco	07/22/15
Thorax Rib Displacement Potentiometers	Upper	Y	G176	Honeywell	07/24/15
	Middle	Y	G169	Honeywell	07/24/15
	Lower	Y	G164	Honeywell	07/24/15
Abdomen Load Cells	Forward	Y	ABG1513	Denton	12/15/14
	Middle	Y	ABG1531	Denton	12/15/14
	Rear	Y	ABG1536	Denton	12/15/14
Lower Spine Accelerometers (T12)		X	P86742	Endevco	07/01/15
		Y	P86743	Endevco	07/01/15
		Z	P86744	Endevco	07/01/15
Public Symphysis Load Cell		Y	PG462	Denton	12/15/14

Table 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 296		
				Serial Number	Manufacturer	Calibration Date
Head CG Accelerometers			X	P79586	Endevco	07/16/15
			Y	P79590	Endevco	07/16/15
			Z	P79592	Endevco	07/16/15
			Xr	P79741	Endevco	07/16/15
			Yr	P79743	Endevco	07/16/15
			Zr	P79744	Endevco	07/16/15
Head Angular Rate Sensors			X	ARS7413	DTS	07/15/14
			Y	ARS7421	DTS	07/15/14
			Z	ARS7423	DTS	07/15/14
Displacement Potentiometers	Thoracic Rib	Upper	Y	G012	Servo	07/17/15
		Middle	Y	G1163	FTSS	07/17/15
		Lower	Y	G1158	FTSS	07/17/15
	Abdominal Rib	Upper	Y	G1146	FTSS	07/17/15
		Lower	Y	G1126	FTSS	07/17/15
Lower Spine Accelerometers (T12)			X	P80116	Endevco	07/16/15
			Y	P80118	Endevco	07/16/15
			Z	P80119	Endevco	07/16/15
Acetabulum Load Cell			Y	ACG268	Denton	01/06/15
Iliac Wing Load Cell			Y	IWG282	Denton	01/06/15
Pelvis Plug (struck side)				71089	FTSS	12/18/13
Pelvis Plug (non-struck side)				70750	FTSS	12/13/13

Table 3 – Vehicle Instrumentation

			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	P82315	Endevco	02/26/15
	Vehicle Center of Gravity	Y	P82314	Endevco	02/26/15
	Vehicle Center of Gravity	Z	P82313	Endevco	02/26/15
2	Right Sill at Front Seat	X	P85033	Endevco	03/06/15
	Right Sill at Front Seat	Y	P85034	Endevco	03/06/15
	Right Sill at Front Seat	Z	P85035	Endevco	03/06/15
3	Right Sill at Rear Seat	X	P77627	Endevco	02/26/15
	Right Sill at Rear Seat	Y	P77625	Endevco	02/26/15
	Right Sill at Rear Seat	Z	P77626	Endevco	02/26/15
4	Left Sill at Front Door	Y	P78831	Endevco	06/10/15
5	Left Sill at Rear Door	Y	P72789	Endevco	03/23/15
6	Left A-Post Lower	Y	P78741	Endevco	06/24/15
7	Left A-Post Middle	Y	P63353	Endevco	06/10/15
8	Left B-Post Lower	Y	P79863	Endevco	05/22/15
9	Left B-Post Middle	Y	P78748	Endevco	06/10/15
10	Front Seat Track	Y	P74580	Endevco	03/24/15
11	Rear Seat Track or Structure	Y	P78890	Endevco	04/23/15
12	Right Rear Occ. Compartment	Y	P74010	Endevco	05/29/15
13	Engine Block	X	P59325	Endevco	05/28/15
	Engine Block	Y	P66872	Endevco	06/04/15
14	Rear Floorpan Above Axle	X	P88165	Endevco	04/16/15
	Rear Floorpan Above Axle	Y	P88166	Endevco	04/16/15
	Rear Floorpan Above Axle	Z	P88164	Endevco	04/16/15

Table 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	P85036	Endevco	01/16/15
MDB Center of Gravity	Y	P85037	Endevco	01/16/15
MDB Center of Gravity	Z	P85038	Endevco	01/16/15
Left Frame at Rear Axle Centerline	X	P67517	Endevco	01/16/15
Left Frame at Rear Axle Centerline	Y	P67518	Endevco	01/16/15