

REPORT NUMBER: SPNCAP-KAR-11-054

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**TOYOTA MOTOR MANUFACTURING, TEXAS, INC.
2011 TOYOTA TUNDRA 4X2 DOUBLE CAB 4-DOOR TRUCK**

NHTSA No: MB5124

**PREPARED BY:
KARCO ENGINEERING, LLC.
9270 HOLLY ROAD
ADELANTO, CA 92301**



FEBRUARY 2, 2011

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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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, February 2010																				
				14. Sponsoring Agency Code NVS-111																				
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16. Abstract A 32.2 km/h (20 mph) 75° oblique impact Side NCAP test was conducted on the subject 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on February 2, 2011. The impact velocity was 32.92 km/h and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 6.1° C. The test vehicle's post-test maximum crush was 505 mm at level 2. The test vehicle's performance was as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Passenger ATD</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>509.3</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>G</td> <td>82</td> <td>62</td> </tr> <tr> <td>Combined Acetabular and Iliac Pelvic Force</td> <td>N</td> <td>5525</td> <td>3525</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the vehicle at the hinges or latches. The opposite side doors did not open during the impact event.						Measurement Description	Passenger ATD			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	509.3	Resultant Lower Spine Acceleration	G	82	62	Combined Acetabular and Iliac Pelvic Force	N	5525	3525
Measurement Description	Passenger ATD																							
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Resultant Lower Spine Acceleration	G	82	62																					
Combined Acetabular and Iliac Pelvic Force	N	5525	3525																					
17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs				18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Washington, DC 20590																				
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2011 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck. The subject vehicle was towed into the rigid pole at a target angle of 75° and a velocity of 32.92 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California, on February 2, 2011. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010. Camera location and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) dummy was instrumented as follows:

- Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper and Lower Rib Displacement Potentiometers
- Lower Spine Triaxial Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report.

The following table summarizes the results of the test:

Dummy	HIC (36ms)	Resultant Lower Spine Acceleration	Pelvic Force (N)	
SID-IIs 5th Percentile Adult Female	509	62	Iliac Wing	1101
			Acetabulur	2831
			Sum	3525

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	Yes	No	
Knee Airbag	Yes	Yes	No	
Side Airbag 1 (Torso)	Yes	Yes	No	
Side Airbag 2 (Curtain)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	

GENERAL COMMENTS

Both of the struck side doors of the test vehicle remained closed and latched and were jammed shut after the impact. There was no separation at the hinges or the latches. The non-struck side doors remained closed and latched. There were no driver injury values that exceeded their limits. There was no FMVSS 301 Stoddard solvent spillage as a result of the impact.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 02/02/11

CONVERSION FACTORS

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck NHTSA No. MB5124
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 02/02/11

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MB5124
Model Year	2011
Make	Toyota
Model	Tundra Double Cab
Body Style	4-Door Truck
VIN	5TFRY5F13BX103372
Body Color	Barcelona Red
Delivery Date	1/14/2010
Odometer Reading (km / mi)	97 / 60
Dealer	Crown Toyota
Transmission	6-Speed Automatic
Final Drive	Rear
Type / No. of Cylinders	V8
Engine Displacement (L)	5.7
Engine Placement	Longitudinal
Roof Rack	No
Sunroof / T-Top	No
Tinted Glass	Yes
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes

Anti-Lock Brakes	Yes
All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	Yes
Driver Torso/Pelvis Airbag	No
Driver Pelvis Airbag	No
Driver Knee Airbag	Yes
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Toso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Pretensioners	Yes
Load Limiters	Yes
Automatic Door Locks	Yes
Bucket Seats	Yes
Tilt Steering	Yes
Other	
Other	

Does Owner's Manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Manufacturing, Texas, Inc.
Date of Manufacture	Oct-11

GVWR (kg)	3125
GAWR Front (kg)	1765
GAWR Rear (kg)	1855

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	3	3		6	
Capacity Weight (VCW) (kg)				641.0	A
DSC x 68.04 (kg)				408.2	B
Cargo Weight (RCLW) (kg)				136.0	A-B

VEHICLE SEAT TYPE

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	Yes					Yes	
Rear or Second Row Seat			Yes		Yes		
Third Row Seat							

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck NHTSA No. MB5124
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 02/02/11

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	723.0	545.5		743.5	618.0		743.5	628.0	
Right	kg	661.5	511.5		678.0	578.5		665.0	588.5	
Ratio	%	56.7%	43.3%	100.0%	54.3%	45.7%	100.0%	53.7%	46.3%	100.0%
Total	kg	1384.5	1057.0	2441.5	1421.5	1196.5	2618.0	1408.5	1216.5	2625.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2441.5	A
Actual Weight of 1 P572V ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	136.0	C
Calculated Vehicle Target Wt (TVTW)	kg	2626.5	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	As Delivered	As Tested	Fully Loaded
Driver Door Sill Angle (front-to-rear)	Deg	-1.0	-0.8	-0.4
Front Passenger Sill Angle (front-to-rear)	Deg	-0.9	-0.6	-0.6
Front Bumper Angle (left-to-right)	Deg	-0.3	-0.3	-0.4
Rear Bumper Angle (left-to-right)	Deg	0.3	0.3	0.3
Vehicle CG (Aft of Front Axle)	mm	1603	1692	1716
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	33	34	38

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Weight of Ballast in Cargo Area	kg	89.5
Weight of Vehicle Components Removed	kg	15.0

Vehicle components removed to make Target Vehicle Test Weight:

Non-struck side door panels (8.5 kg), Jack and Tools (4.0 kg), Non-struck side mirror (2.5 kg)

TEST VEHICLE IMPACT POINT DATA

Measurement Description	Units	Value
Vertical Impact Reference Line (Aft of Front Axle)	mm	1184
Actual Impact Point (Aft of Front Axle)	mm	1157
Impact Point Difference (- forward/+ rearward)	mm	-27

DATA SHEET NO. 2

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

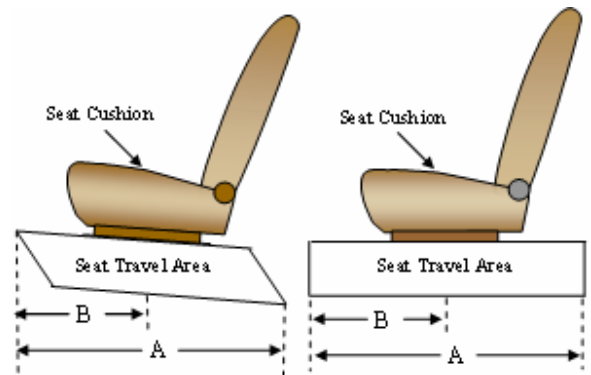
NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 02/02/11

SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rearmost possible position with the seat set at mid angle and lowest height. The driver's seat is set to the forward most position where the ATD will not contact any interior panels at the mid angle and mid height positions.

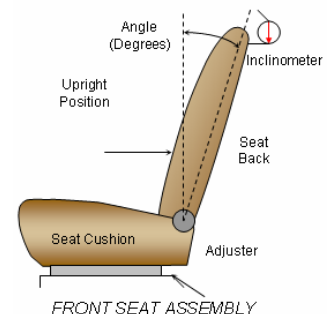


SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position	Cushion Range	Placed in Position
Driver Seat	210 mm	0 mm	6.5 - 16.0	11.3
Front Passenger Seat	240 mm	0 mm	Fixed	Fixed
Rear Seat - Struck Side	Fixed	Fixed	Fixed	Fixed
Rear Seat - Non-Struck Side	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE POSITIONING

The procedure for the driver is as follows: the seat back is set to level the driver ATD's (SID-IIs) head transverse instrumentation platform; seat back angle is measured at the headrest post using a digital inclinometer. Detent zero (0) is the full forward position.



SEAT BACK ANGLE POSITIONS

Seating Position	Degrees	Detent
Driver Seat Back Angle w/Seated Dummy	7.0	2
Front Passenger Seat Back Angle	7.0	2
Struck Side Rear Seat Back Angle	4.7	Fixed
Non-Struck Side Rear Seat Back Angle	4.7	Fixed

SEAT BELT UPPER ANCHORAGE POSITIONING

The seat belt upper anchorage is positioned to the manufacturer's design position for a 5th percentile adult female ATD. Position zero (0) is the uppermost position.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	4	1

DATA SHEET NO. 2 ... (CONTINUED)

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

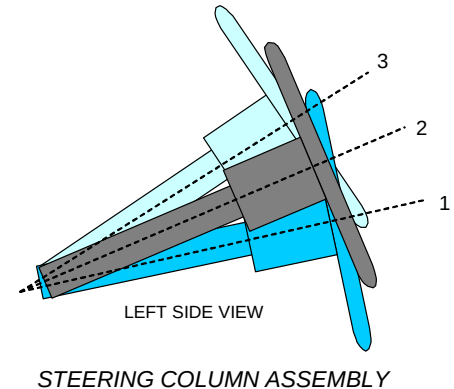
NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 02/02/11

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. A digital inclinometer is used to measure a plate placed across the rim of the steering wheel for angle. A tape measure is used with a reference mark on the steering column to measure telescoping travel.

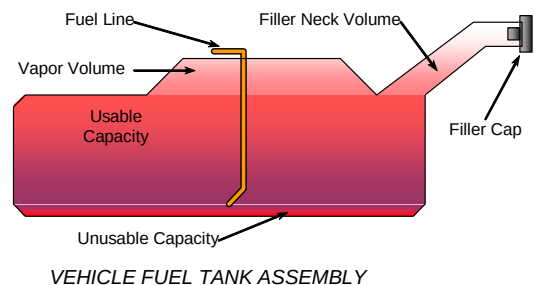


STEERING COLUMN POSITIONS

	Angle (°)	Fore-Aft Position (mm)
Lowermost Position, No. 1	24.4	Fixed
Geometric Center Position, No. 2	27.5	Fixed
Uppermost Position, No. 3	30.6	Fixed
Steering Wheel Travel	6.2	Fixed
Test Position	27.5	Fixed

FUEL PUMP

The test vehicle is equipped with an electric fuel pump. The fuel pump is activated when the ignition is turned on. The fuel filler door is located on the left bedside. The standard fuel tank occupies the area under the rear seat on the left side of the vehicle.



FUEL CAPACITY DATA

Description	Liters
Usable Capacity of "Standard Tank"	99.92
Usable Capacity of "Optional Tank"	
Usable Capacity of Standard Tank as Specified In Owner's Manual	
Usable Capacity of Optional Tank as Specified in Owner's Manual	
92 - 94% of Usable Capacity	91.93 to 93.93
Actual Amount of Stoddard Solvent Used	92.92
1/3 of Usable Capacity	33.31

DATA SHEET NO. 3

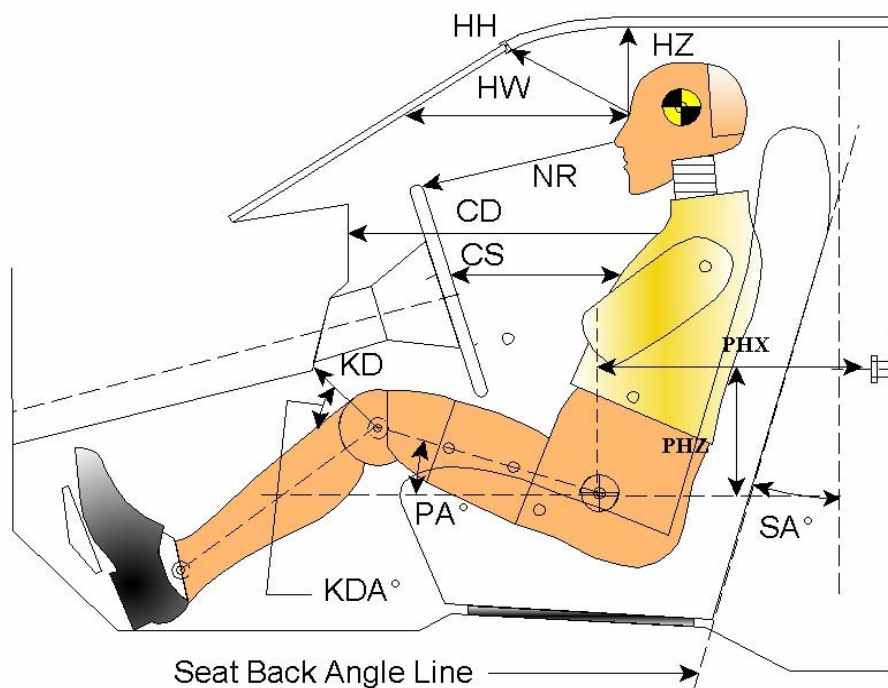
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 02/02/11



DUMMY LONGITUDINAL CLEARANCE DIMENSIONS (S/N: 299)

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	306	43.5
HW	Head to Windshield	652	
HZ	Head to Roof	225	
NR	Nose to Rim	269	11.3
CD	Chest to Dash	430	11.5
CS	Chest to Steering Wheel	211	11.8
KDL / KDAL°	Left Knee to Dash	124	33.8
KDR / KDAR°	Right Knee to Dash	104	
PA°	Pelvic Angle		17.7
PHX	H-Point to Striker (x-direction)	395	
PHZ	H-Point to Striker (z-direction)	143	
SA°	Seat Back Angle		7.0

DATA SHEET NO. 4

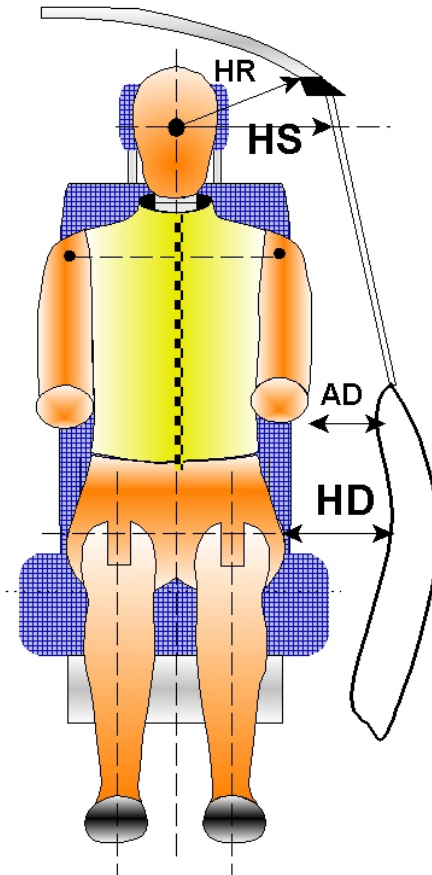
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 02/02/11



DUMMY LATERAL CLEARANCE DIMENSIONS (S/N: 299)

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	278
HS	Head to Side Window	mm	342
AD	Arm to Door	mm	174
HD	H-Point to Door	mm	199

DATA SHEET NO. 5

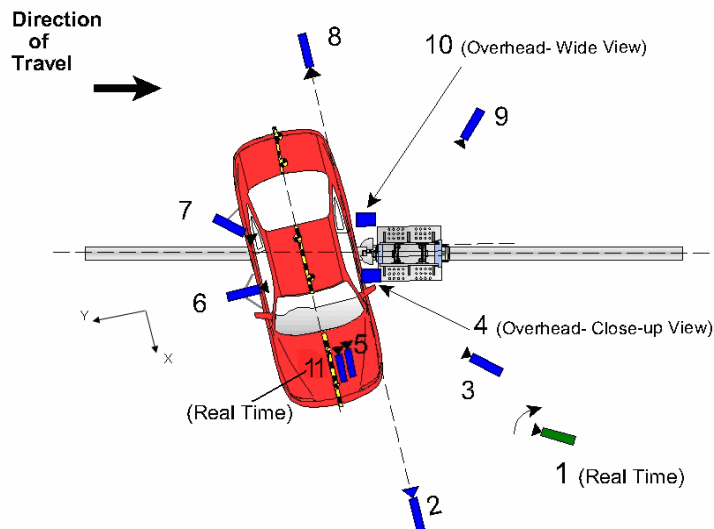
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 02/02/11



Reference: +X = Forward of Vehicle (from Point of Impact)
 +Y = Right of Vehicle (from Point of Impact)
 +Z = Down (from Ground)

CAMERA LOCATIONS

Camera No.	View	Coordinates (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View					
3	Impact Side 45° - Forward Pole View					
4	Overhead Close-Up View of Impact					
5	On-Board - Dummy Front View	1.64	0.51	-1.58	35	400
6	On-Board - Dummy Side View					
7	On-Board - Dummy Rear Oblique View	-0.95	1.85	-1.49	20	1000
8	Rear Ground Level - Impact View					
9	Impact Side 45° - Rearward Pole View					
10	Overhead Wide View of Impact					
11	Real Time Dummy Front View	1.82	0.54	-1.61		30

* All measurements accurate to ± 3 mm

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

INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	21
Pole Load Cells	8
Contact Switches	3
Airbag Timing Sensor	2
Total No. of Data Channels	50

DATA SHEET NO. 6

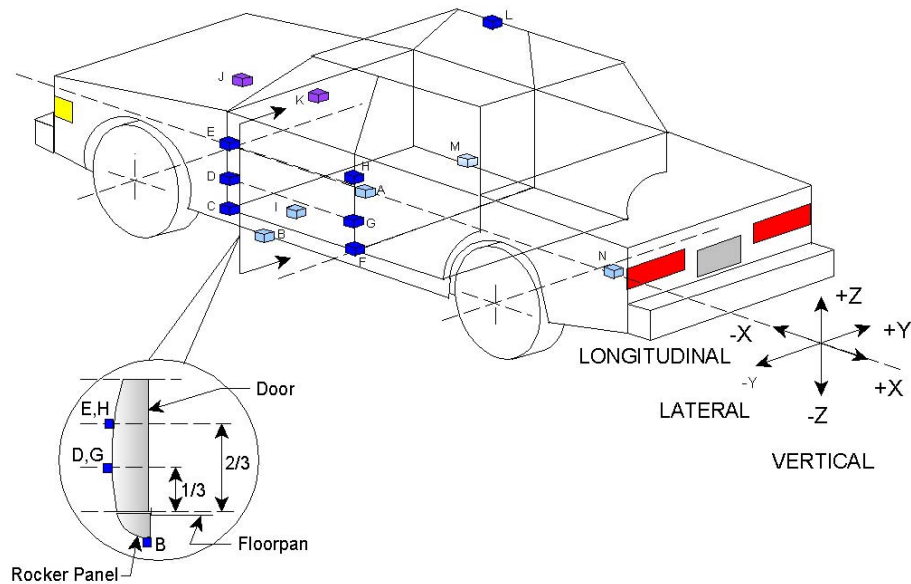
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 02/02/11



VEHICLE ACCELEROMETER LOCATIONS

	Sensor Description	Coordinates (mm)		
		X	Y	Z
A	Vehicle CG Accelerometer	3021	0	-698
	Vehicle CG ARS	3021	0	-698
B	Left Floor Sill	3865	-685	-314
C	A-Pillar Sill	4320	-912	-595
D	A-Pillar Lower	4320	-912	-852
E	A-Pillar Mid	4320	-912	-1190
F	B-Pillar Sill	3117	-819	-571
G	B-Pillar Lower	3117	-819	-758
H	B-Pillar Mid	3117	-819	-1145
I	Driver Seat	3481	-664	-685
J	Engine Top	4898	12	-1004
K	Firewall	563	538	-1003
L	Right Roof Sill	3319	619	-1856
M	Right Floor Sill	3317	819	-571
N	Rear Floorpan	1206	561	-839

Reference: X = + Forward
Y = + To Right
Z = + Down

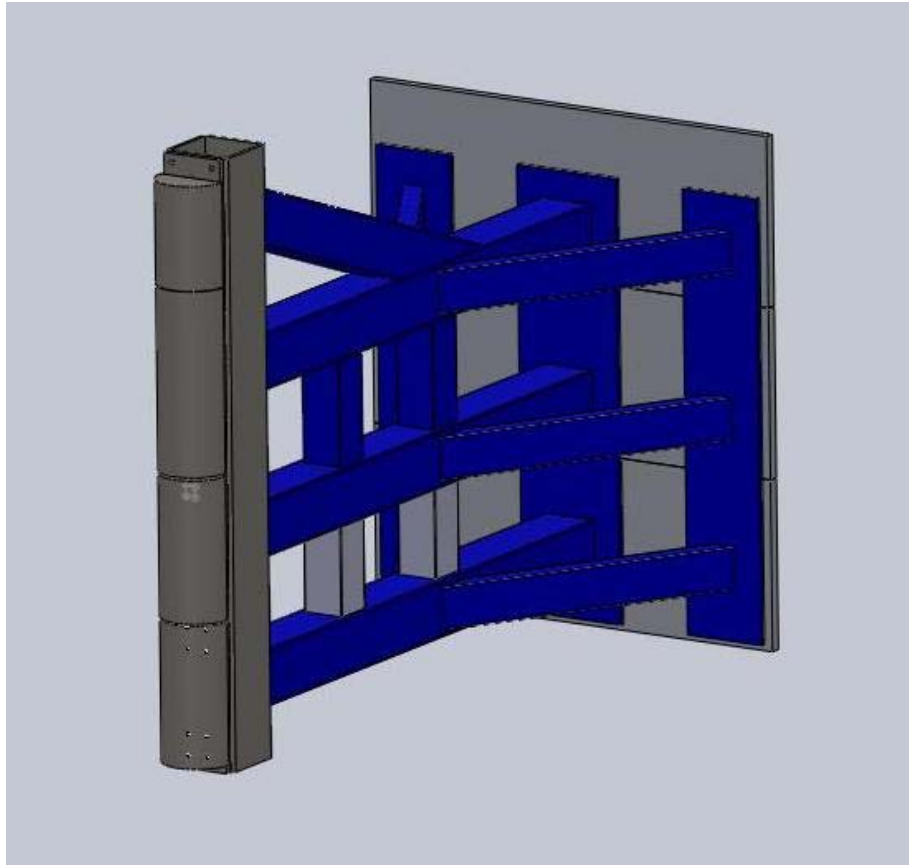
DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 02/02/11



RIGID POLE LOAD CELL LOCATIONS

ID	Units	Height From Ground
1	mm	87
2	mm	468
3	mm	648
4	mm	978
5	mm	1168
6	mm	1651
7	mm	1816
8	mm	2057

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck NHTSA No. MB5124
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 02/02/11

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver Dummy
Dummy Type/Serial No.	P572V (SID-IIs) / Serial No. 299
Head Contact	Curtain Airbag, Front Airbag, Head Restraint
Upper Torso Contact	Torso Airbag
Lower Torso Contact	Door Panel
Left Knee Contact	Knee Airbag, Right Knee
Right Knee Contact	Knee Airbag, Left Knee

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Jammed shut	Jammed shut
Right Side Door Opening	Remained closed and operational	Remained closed and operational
Seat Movement	None	None
Seatback Failure	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation occurred
Sill Separation	No separation occurred
Windshield Damage	Broken
Window Damage	Left front window broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Installed	Deployed	Installed	Deployed
Frontal Airbag	Yes	Yes	No	
Knee Airbag	Yes	Yes	No	
Side Airbag 1 (Torso)	Yes	Yes	No	
Side Airbag 2 (Curtain)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other				

VEHICLE SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset From Vertical Reference Line	mm	+/- 38	-27 (Left)
Trap No. 1 Velocity (Primary)	km/h	30.4 to 33.0	32.9
Trap No. 2 Velocity (Redundant)	km/h	30.4 to 33.0	33.0

DATA SHEET NO. 9

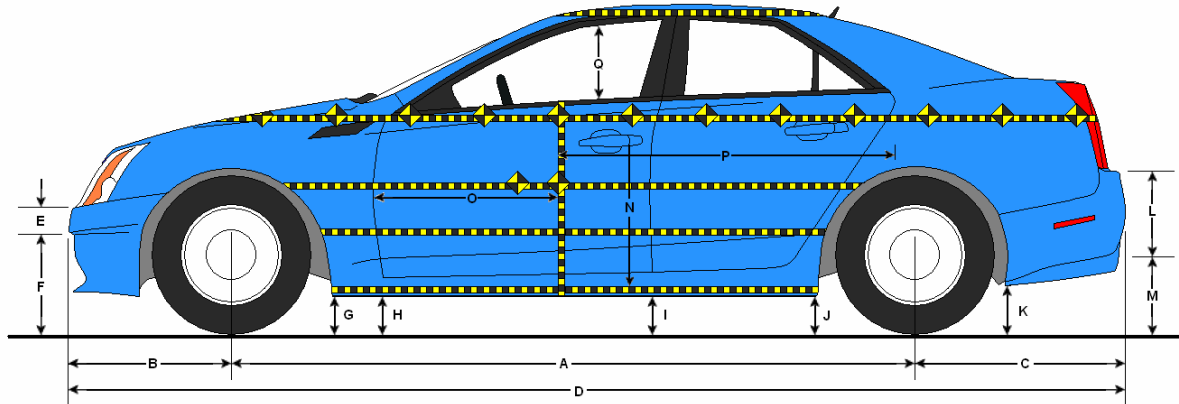
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 02/02/11



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Vehicle Wheelbase	3702	3677	-25
B	Front Axle to FSOV	901	958	57
C	Rear Axle to RSOV	1226	1179	-47
D1	Total Vehicle Length at Left Side	5080	5068	-12
D2	Total Vehicle Length at Centerline	5803	5814	11
D3	Total Vehicle Length at Right Side	5078	5050	-28
E	Front Bumper Thickness	287	287	0
F	Front Bumper Bottom to Ground	381	397	16
G	Sill Height at Front Wheel Well	384	393	9
H	Sill Height at Front Door Leading Edge	392	399	7
I	Sill Height at B-Pillar	422	438	16
J1	Sill Height at Rear Wheel Well	405	449	44
J2	Pinch Weld Height at Rear Wheel Well	407	452	45
K	Sill Aft of Rear Wheel Well	434	495	61
L	Rear Bumper Thickness	233	233	0
M	Rear Bumper Bottom to Ground	496	518	22
N	Sill Height to Window Bottom Sill	764	926	162
O	Front Door Leading Edge to Impact CL	648	502	-146
P	Rear Door Trailing Edge to Impact CL	1383	1255	-128
Q	Front Window Opening	520	535	15
R	Right Side Length	5078	5050	-28
S	Left Side Length	5080	5068	-12
T	Vehicle Width at B-Pillar	2022	1986	-36

* All measurements accurate to ± 3 mm

DATA SHEET NO. 10

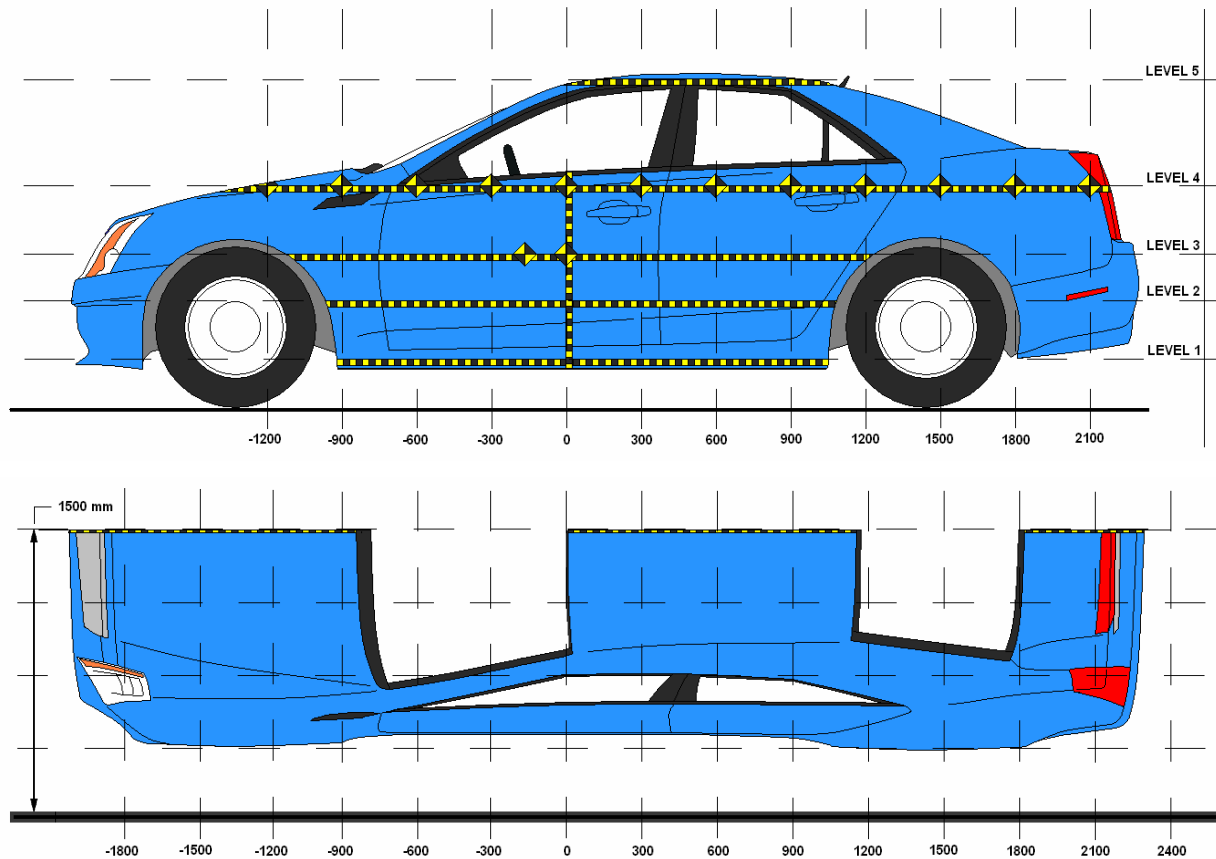
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 02/02/11



NOTE: All measurements are in millimeters (mm)

Level	Description	Height Above Ground (mm)
1	Sill Top Height	477
2	Occupant H-Point Height	933
3	Mid-Door Height	884
4	Window Sill Height	1269
5	Window Top Height	1840

DATA SHEET NO. 10 ... (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 02/02/11

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900		485	484	613			577	570	698			92	86	85	
-750		486	482	597			587	581	690			101	99	93	
-600	516	491	486	584		637	627	623	680		121	136	137	96	
-450	542	494	495	577		725	708	705	744		183	214	210	167	
-300	546	493	496	569		804	806	808	824		258	313	312	255	
-150	545	491	494	565		882	918	917	925		337	427	423	360	
0	544	490	493	559	813	966	995	993	1010	1075	422	505	500	451	262
150	543	489	492	556	807	905	942	938	964	1094	362	453	446	408	287
300	544	488	492	552	806	783	808	807	837	1007	239	320	315	285	201
450	543	488	492	550	807	689	681	681	719	955	146	193	189	169	148
600	543	488	492	546	808	686	628	633	682	929	143	140	141	136	121
750	544	488	493	546	811	669	610	616	664	916	125	122	123	118	105
900	546	489	494	544	813	652	593	599	644	908	106	104	105	100	95
1050	548	490	495	543	816	635	576	582	625	902	87	86	87	82	86
1200	550	492	497	543	824	619	560	566	606	901	69	68	69	63	77
1350	555	494	499	546		599	544	549	591		44	50	50	45	
1500	564	510	514	560		528	481	485	534		-36	-29	-29	-26	
1650	562	505	510	560		528	480	485	538		-34	-25	-25	-22	
1800	543	500	504	559		513	480	482	541		-30	-20	-22	-18	
1950	529	493	493	558		502	477	475	545		-27	-16	-18	-13	
2100		489	490	556			477	476	547			-12	-14	-9	
2250		491		557			482		552			-9		-5	
2400				557					557					0	
2550															
2700															
2850															

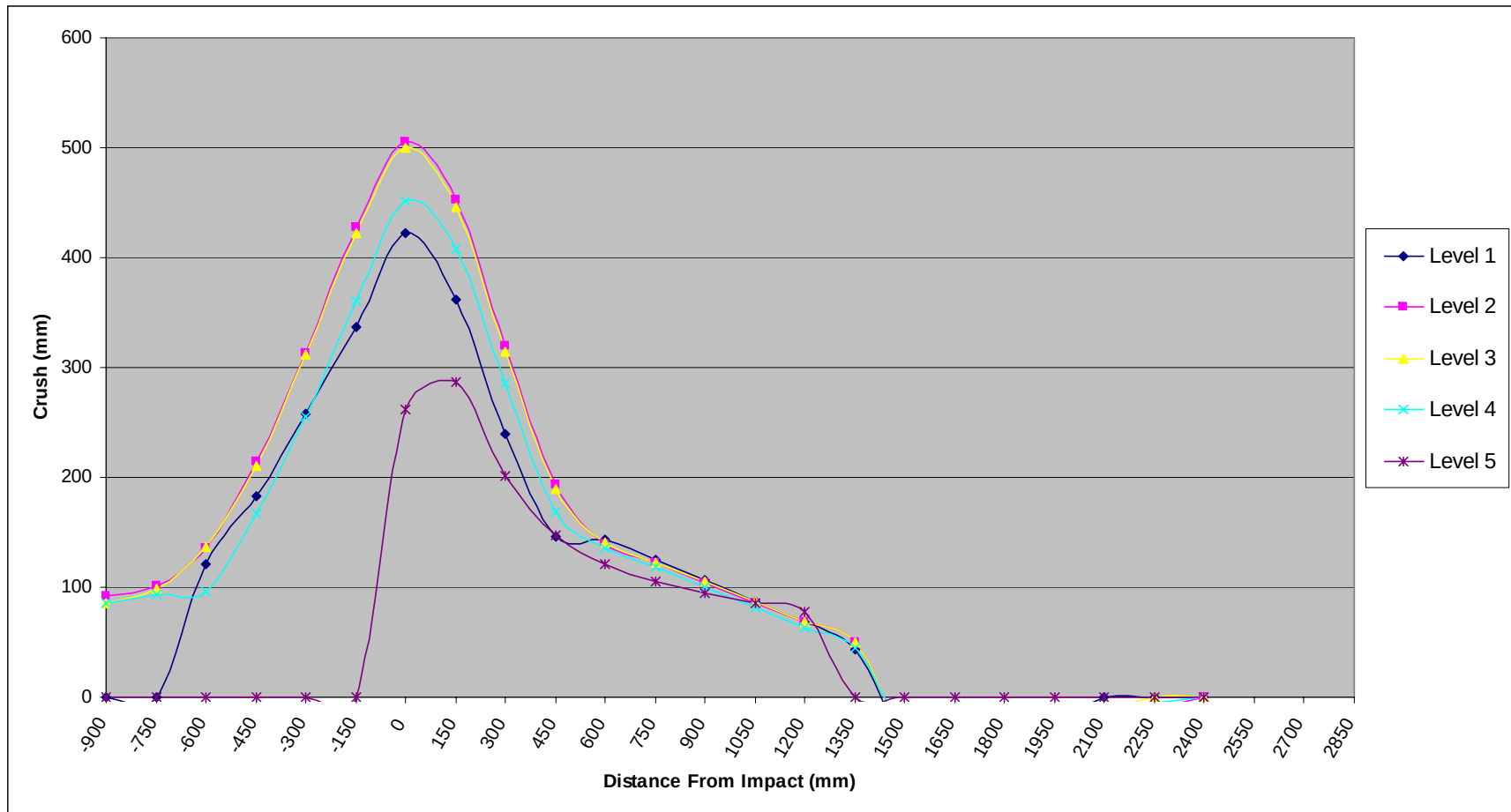
MAXIMUM CRUSH DATA

	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	422	505	500	451	287
Distance From Impact	mm	0	0	0	0	150

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

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck
Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

NHTSA No. MB5124
Test Date: 02/02/11



DATA SHEET NO. 11

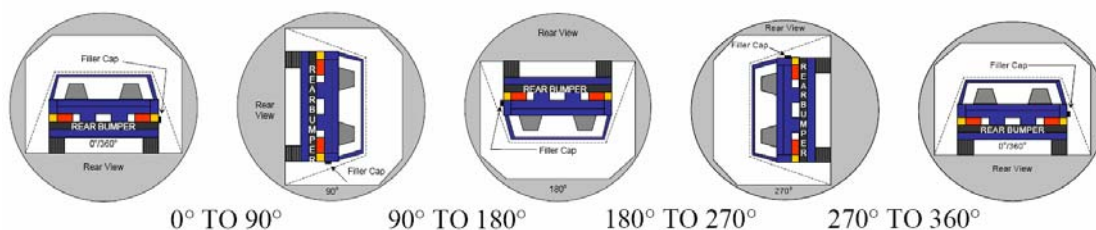
FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck NHTSA No. MB5124
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test Date: 02/02/11

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 6.1° C Test Time: 12:18 PM

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
 (Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
 (Maximum allowable = 1 oz./minute)
- D. Spillage Details: No spillage occurred



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	89	300	389
90° To 180°	79	300	379
180° To 270°	80	300	380
270° To 360°	77	300	377

FMVSS 301 SPILLAGE TABLE

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° To 90°	0			
90° To 180°	0			
180° To 270°	0			
270° To 360°	0			

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° To 90°	None
90° To 180°	None
180° To 270°	None
270° To 360°	None

DATA SHEET NO. 12

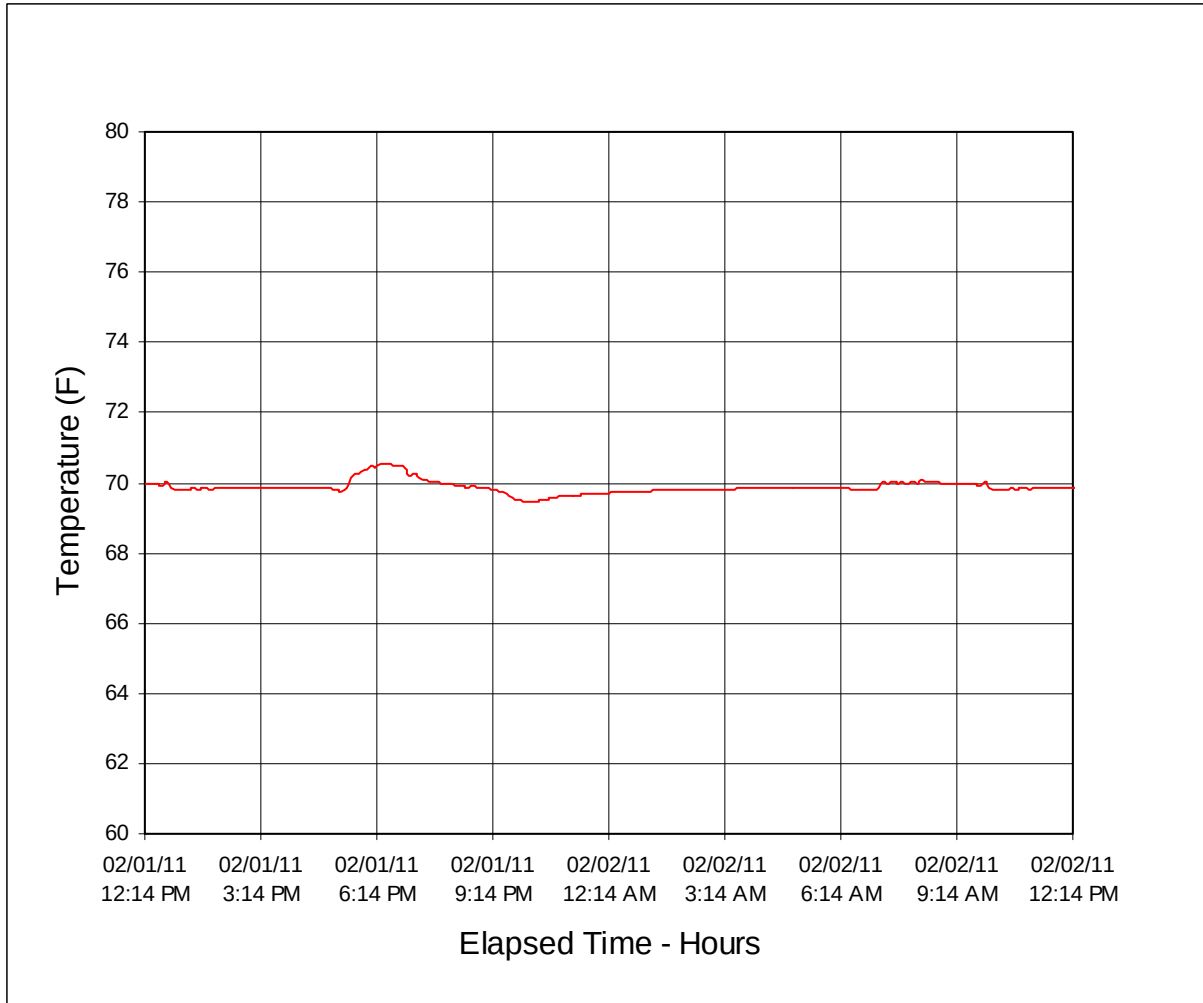
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2011 Toyota Tundra 4x2 Double Cab 4-Door Truck

NHTSA No. MB5124

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 02/02/11



APPENDIX A
PHOTOGRAPHS

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FIGURE 1. As-Delivered Right Front Three-Quarter View of Test Vehicle



FIGURE 2. As-Delivered Left Rear Three-Quarter View of Test Vehicle



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front Three-Quarter View of Test Vehicle



FIGURE 6. Post-Test Left Front Three-Quarter View of Test Vehicle



FIGURE 7. Pre-Test Left Side View of Test Vehicle



FIGURE 8. Post-Test Left Side View of Test Vehicle



FIGURE 9. Pre-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 10. Post-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



FIGURE 13. Pre-Test Right Side View of Test Vehicle



FIGURE 14. Post-Test Right Side View of Test Vehicle



FIGURE 15. Pre-Test Overhead View of Test Vehicle and Pole



FIGURE 16. Post-Test Overhead View of Test Vehicle and Pole



FIGURE 17. Pre-Test Left Side View of Pole
Positioned Against Side of Vehicle at Impact Point



FIGURE 18. Pre-Test Right Side View of Pole
Positioned Against Side of Vehicle at Ideal Impact Point



FIGURE 19. Pre-Test Close-Up View of Impact Point Target



FIGURE 20. Post-Test Close-Up View of Impact Point Target Showing Impact Location



FIGURE 21. Pre-Test Front Close-Up View of Dummy



FIGURE 22. Post-Test Front Close-Up View of Dummy



FIGURE 23. Pre-Test Left Side View of Dummy Showing Belt, Chalking, and Contact Switches



FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Driver Door Top View



FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 26. Pre-Test Frontal View of Seat Back Prior to Dummy



FIGURE 27. Pre-Test Frontal View of Dummy Head and Shoulders
in Relation to Head Restraint



FIGURE 28. Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning



FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



FIGURE 30. Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test View of Dummy's Head Showing Dummy's Head Is Level



FIGURE 32. Pre-Test Placement of Dummy's Feet



FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. Pre-Test View of Parking Brake



FIGURE 36. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Back

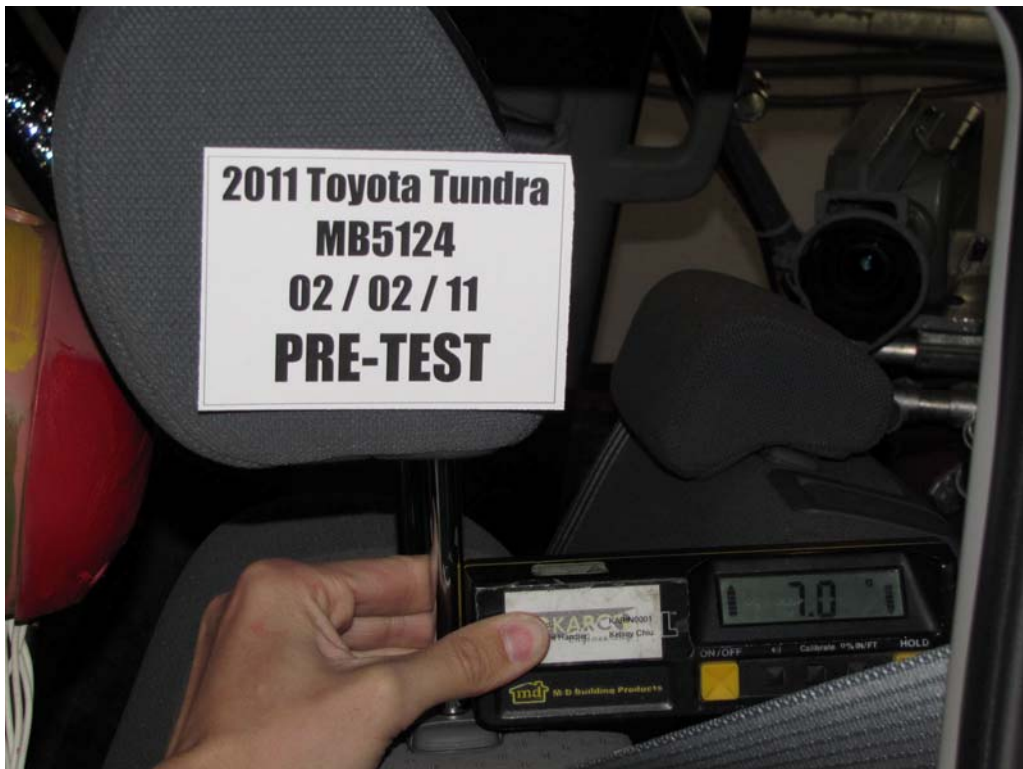


FIGURE 38. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 39. Pre-Test Driver Dummy and Door Clearance



FIGURE 40. Post-Test Driver Dummy and Door Clearance



FIGURE 41. Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment



FIGURE 42. Post-Test Right Side View of Dummy and Front Seat Occupant Compartment



FIGURE 43. Pre-Test Inner Driver Door Panel View



FIGURE 44. Post-Test Inner Driver Door Panel View
Showing Dummy Contact Locations



FIGURE 45. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



FIGURE 46. Post-Test Dummy Close-Up Head Contact with Side Airbag View



FIGURE 47. Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact with Side Airbag View



FIGURE 49. Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View

Photograph Not Applicable

No Dummy Pelvis Contact
With Side Airbag

FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



FIGURE 51. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 52. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 53. Close-Up View of Vehicle's Certification Label

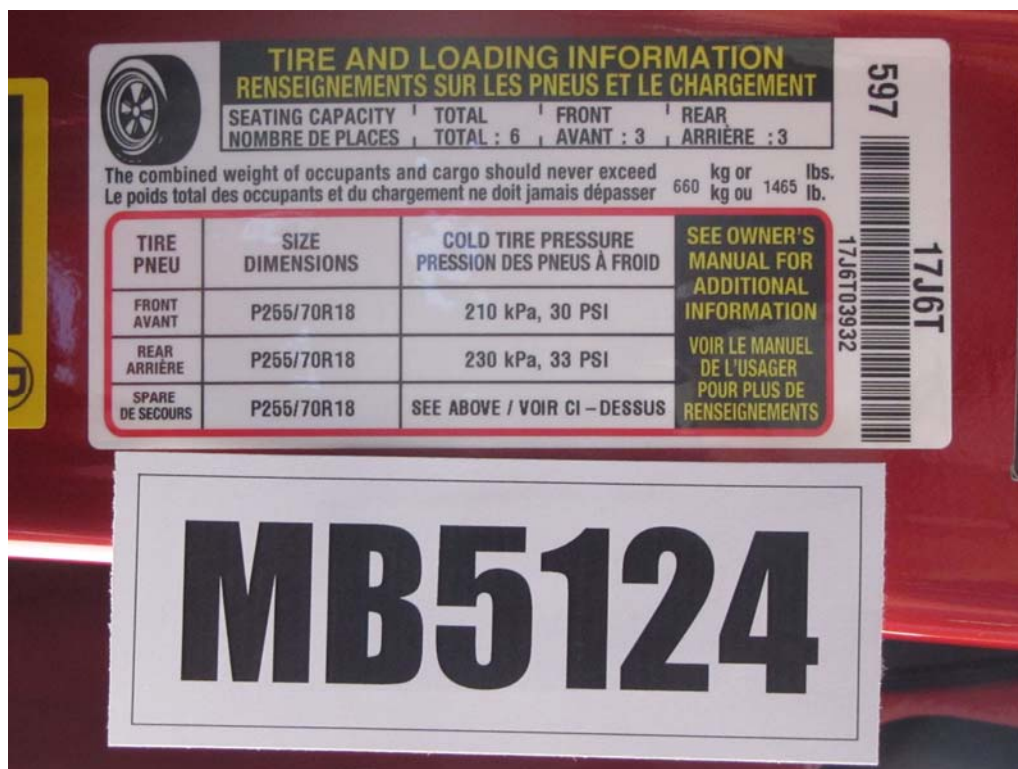


FIGURE 54. Close-Up View of Vehicle's Tire Information Placard



FIGURE 55. Pre-Test Pole Barrier Front View



FIGURE 56. Post-Test Pole Barrier Front View



FIGURE 57. Pre-Test Pole Barrier Side View



FIGURE 58. Post-Test Pole Barrier Side View

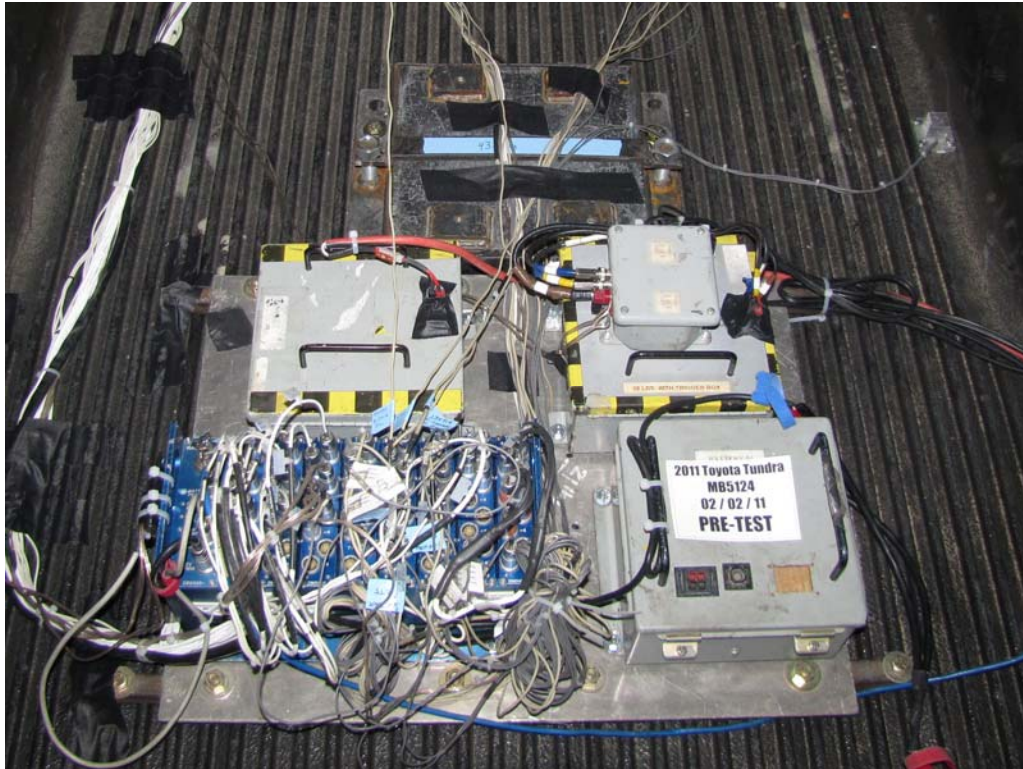


FIGURE 59. Pre-Test Ballast View



FIGURE 60. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 61. FMVSS No. 301-305 Rollover 0 Degrees



FIGURE 62. FMVSS No. 301-305 Rollover 90 Degrees



FIGURE 63. FMVSS No. 301-305 Rollover 180 Degrees



FIGURE 64. FMVSS No. 301-305 Rollover 270 Degrees



FIGURE 65. FMVSS No. 301-305 Rollover 360 Degrees



FIGURE 66. Impact Event

TOYOTA
moving forward

DESC: **TUNDRA 4X2** DBL CAB 5.7L V8
VIN: **5TFRY5F13BX103372**
YR/MDL: 2011/241A
CLR: BARCELONA RED MET./#113 (5R3/13)
PORT/PLANT: San Antonio, TX/TMMTX RAILHEAD

GOVERNMENT SAFETY RATINGS

Frontal	Driver	Not Rated
Crash	Passenger	Not Rated

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

Side	Front seat	Not Rated
Crash	Rear seat	Not Rated

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

Rollover **★★★**

Star ratings based on the risk of rollover in a single vehicle crash.

Star ratings 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

STANDARD EQUIPMENT

MECHANICAL & PERFORMANCE

- 5.7L DOHC 32V i-FORCE V8 with Dual Independent VVT-i (310/3400) hp
- 6-Spd Automatic Trans. w/Sequential Shift
- Traction Control, Hill-Holder, 1st Lockup
- Power Windows, Power Locks, C-Door Lock
- 4.10 Rear Differential w/3.75 Ring Gear
- Automatic Locking Differential
- Front End Coil-Spring High-Mounted Double Wishbone Suspension
- Tripartite Multi-Leaf Rear Suspension
- 8-Stamped Outboard Mounted Shocks
- Power-Assisted 4 Wheel Disc Brakes
- 18" Steel Wheels w/ P255/70R18 Tires

SAFETY

- Star Safety System: Vehicle Stability Control (VSC), Traction Control (TRAC), Anti-lock Brake System (ABS) with Electronic Brake Force Distribution (EBD) & Brake Assist
- Smart Stop Technology
- Trailer Sway Control
- Dr & Fr Pass Advanced Airbag System
- Dr & Fr Pass Side-Side Airbags
- Dr & Fr Pass Knee Airbags
- Non-Inflating Curtain Airbags (ISCA)
- 3-Point Seatbelts in All Positions with Driver AIR & AIRLIFE for All Passengers
- Tire Pressure Monitor System (TPMS)

EXTERIOR

- 6.5' Double-Matted Bed w/Rail Clips
- Max-Load Headlamp Level Control

INTERIOR

- 40/20/40 Split- & Fold 8-Way Driver's Seat
- 4-Way Passenger Adjustable Bench Seat
- Dual Zone Climate Control w/Sync Mode
- AM/FM CD w/ MP3/WMA Playback Capability
- 6 Speakers, XM Compact (Hdwr & Sub Freq), Aux
- Power Windows/Door Locks/Mirrors
- Remote Keyless Entry System
- Tilt Steering Wheel with Column Shifter
- Variable Information Headlamps
- Cruise Control, Engine Immobilizer
- Full Tank of Gas

MANUFACTURER'S SUGGESTED RETAIL PRICE \$27,665.00

OPTIONAL EQUIPMENT

FE	50 STATE EMISSIONS	160.00
CK	Cold Weather Package	
	Includes Heavy-Duty Battery and Starter, Windshield Wiper De-Icer Grid with Timer and Front and Rear Mudguards	
HM	Heated Power Outside Mirrors	30.00
RL	Daytime Running Lights (DRL)	40.00
ST	18" Styled Steel Wheels	110.00
TO	with P255/70R18 Tires	660.00
	Tow Package	
	Includes Tow Hitch Receiver, Trailer Brake Controller, Fuses, 4,000 Rear Axle Ratio, TOW/HAUL Mode Switch, Transmission Fluid Temperature Gauge, Supplemental Transmission Cooler, Engine Oil Cooler, 7-Pin Connector, Heavy-Duty Alternator and Battery	
UT	Rear Under-Seat Storage Box	40.00
WR	Sliding Rear Window	345.00
CF	Carpenter Floor Mats w/Door Sill Protector with Privacy Glass	118.00
LU	Bedliner w/out Deck Rail System	345.00

DELIVERY PROCESSING AND HANDLING FEE 975.00

TOTAL \$30,548.00

The headline's Limited Warranty provides 3-year/50,000-mile basic coverage, 5-year/100,000-mile powertrain coverage and 10-year/unlimited-mile corrosion protection. See Owner's Manual for details. Dealer's suggested retail price includes manufacturer's recommended pre-delivery service. Certain equipment is not included in the manufacturer's suggested retail price.

Dealer Name / Address: DECK JOHN ELMER'S TOYOTA 1201 KETTERING DRIVE ONTARIO CANADA

FIGURE 67. Monroney Label

1-3. Adjustable components (seats, mirrors, steering wheel)

Head restraints

Head restraints are provided for all seats.

Front separated type seats

Vertical adjustment

- 1 Up Pull the head restraints up.
- 2 Down Push the head restraint down while pushing the lock release button.

Front bench type seat

Vertical adjustment

- 1 Up Pull the head restraints up.
- 2 Down Push the head restraint down while pushing the lock release button.

Rear seat (Double Cab models)

Vertical adjustment

- 1 Up Pull the head restraints up.
- 2 Down Push the head restraint down while pushing the lock release button.

1-3. Adjustable components (seats, mirrors, steering wheel)

Vertical adjustment

- 1 Up Pull the head restraints up.
- 2 Down Push the head restraint down while pushing the lock release button.

Removing the front head restraints

Pull the head restraint up while pushing the lock release button.

Removing the rear head restraints

Double Cab models

Pull the head restraint up while pushing the lock release button.

1-3. Adjustable components (seats, mirrors, steering wheel)

CrewMax models

Pull the head restraint up while pushing the lock release button.

Installing the front head restraints

Align the head restraint with the installation holes and push it down to the lock position. Press and hold the lock release button when lowering the head restraint.

Installing the rear head restraints

Double Cab models

Align the head restraint with the installation holes and push it down to the lock position. Press and hold the lock release button when lowering the head restraint.

CrewMax models

Align the head restraint with the installation holes and push it down to the lock position. Press and hold the lock release button when lowering the head restraint.

FIGURE 68. Head Restraint Use and Adjustment Information from Vehicle Manual

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

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3	Driver Head Acceleration(Z) Primary	B-1
4	Driver Head Resultant Primary	B-1
5	Driver Lower Spine T12 Acceleration (X)	B-2
6	Driver Lower Spine T12 Acceleration (Y)	B-2
7	Driver Lower Spine T12 Acceleration (Z)	B-2
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9	Driver Iliac Wing Force on Impact Side (Y)	B-3
10	Driver Acetabulum Force on Impact Side (Y)	B-3
11	Driver Total Pelvis Force on Impact Side (Y)	B-3

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration (X) Redundant
 Driver Head Acceleration (Y) Redundant
 Driver Head Acceleration (Z) Redundant
 Driver Upper Thorax Rib Deflection (Y)
 Driver Middle Thorax Rib Deflection (Y)
 Driver Lower Thorax Rib Deflection (Y)
 Driver Upper Abdomen Rib Deflection (Y)
 Driver Lower Abdomen Rib Deflection (Y)
 Driver Shoulder Contact Switch
 Driver Torso Contact Switch
 Driver Pelvis Contact Switch
 Center of Gravity Acceleration (X)
 Vehicle Center of Gravity Acceleration (Y)
 Vehicle Center of Gravity Acceleration (Z)
 Vehicle Center of Gravity Angular Rate About X (Roll)
 Vehicle Center of Gravity Angular Rate About Y (Pitch)
 Vehicle Center of Gravity Angular Rate About Z (Yaw)

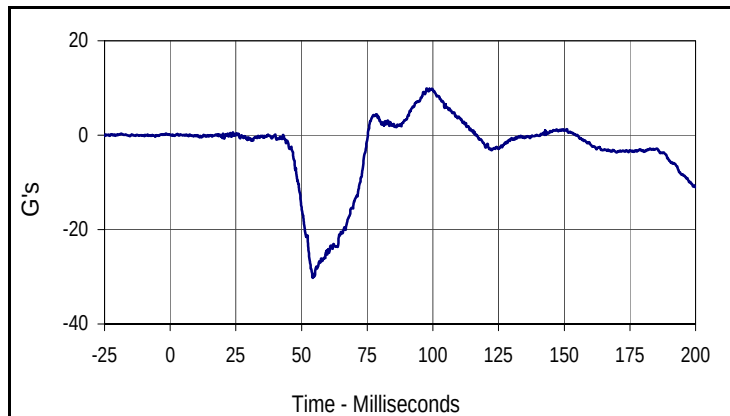
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration (Y)
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy H-Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)
Driver Side Airbag Timing
Driver Side Curtain Airbag Timing

Pole Instrumentation Data

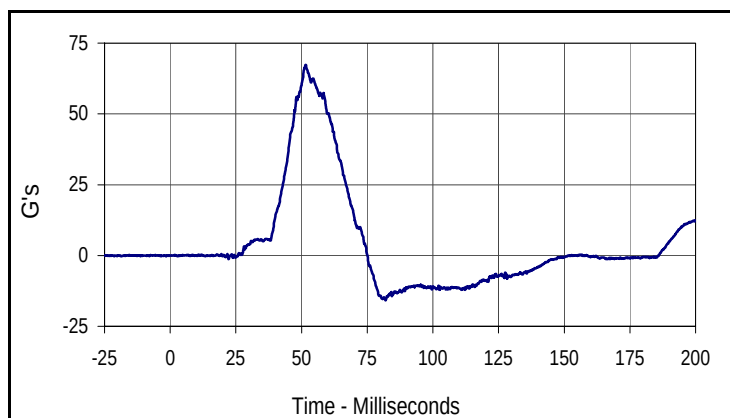
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2011 Toyota Tundra 4-Door Truck
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

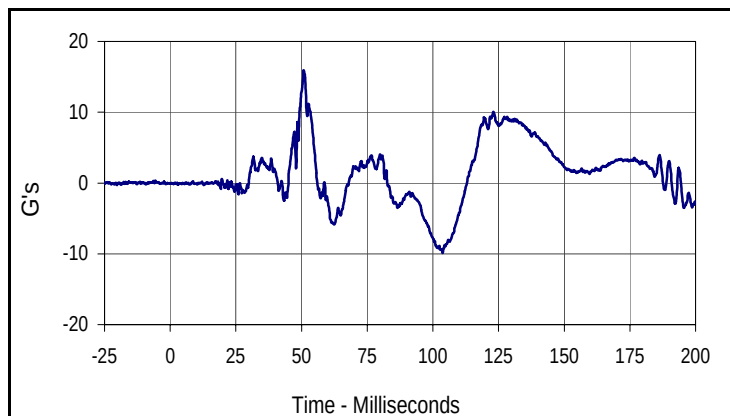
Test Date: 2/2/11
 NHTSA No.: MB5124



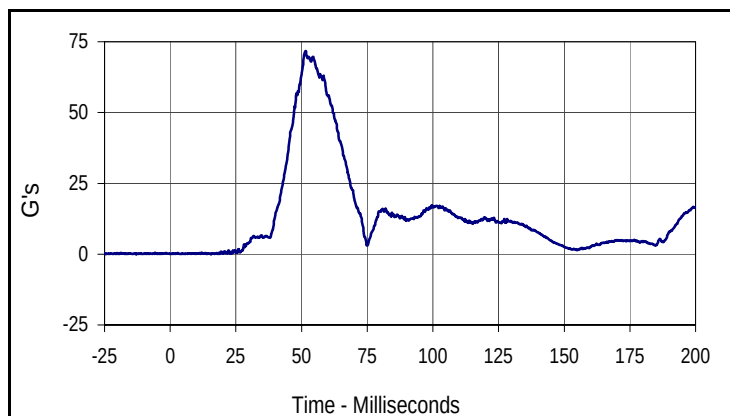
Curve Description			
Driver Head Acceleration X Primary			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
9.9	97.6	-30.3	54.3



Curve Description			
Driver Head Acceleration Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
67.4	51.6	-15.9	82.0



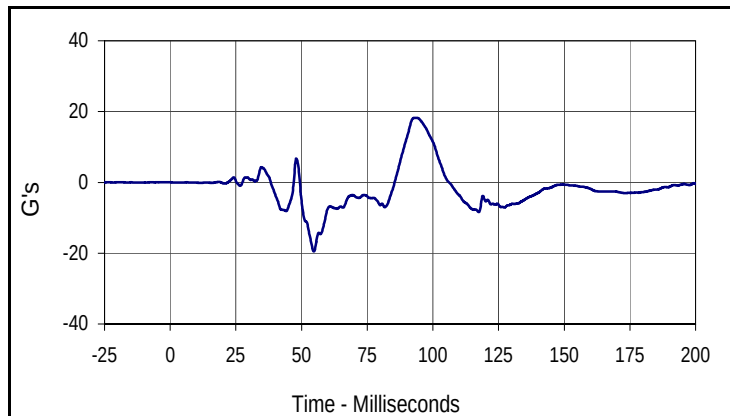
Curve Description			
Driver Head Acceleration Z Primary			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
15.9	50.8	-9.9	103.8



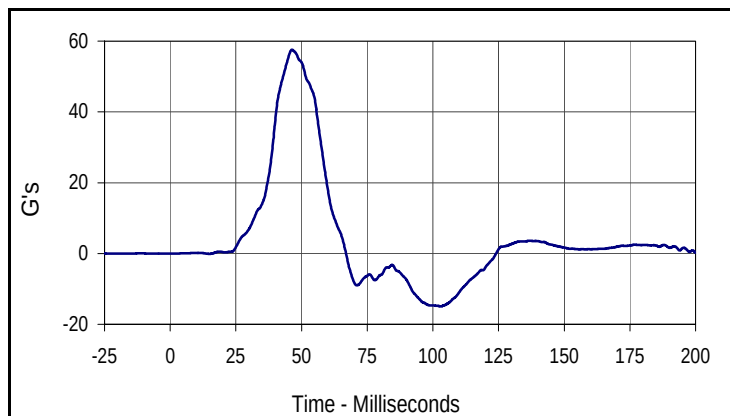
Curve Description			
Driver Head Acceleration Primary Res.			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
71.8	51.6	0.0	15.6

Test Vehicle: 2011 Toyota Tundra 4-Door Truck
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

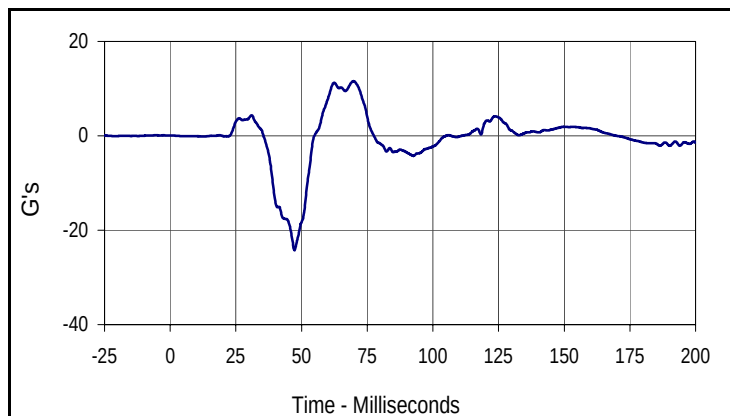
Test Date: 2/2/11
 NHTSA No.: MB5124



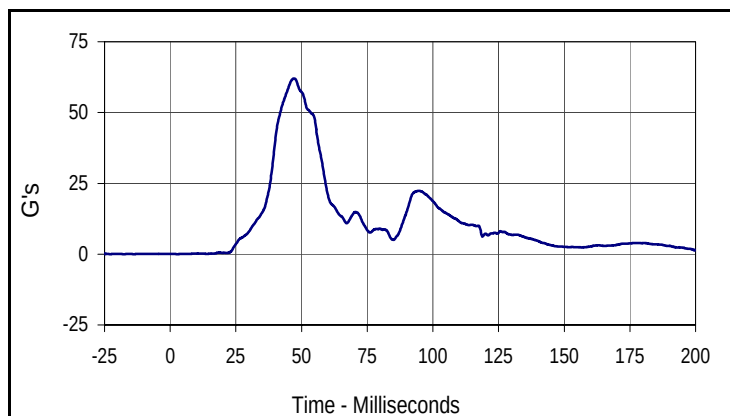
Curve Description			
Driver Lower Spine T12 Acceleration X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
18.3	93.7	-19.5	54.7



Curve Description			
Driver Lower Spine T12 Acceleration Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
57.6	46.3	-15.0	103.0



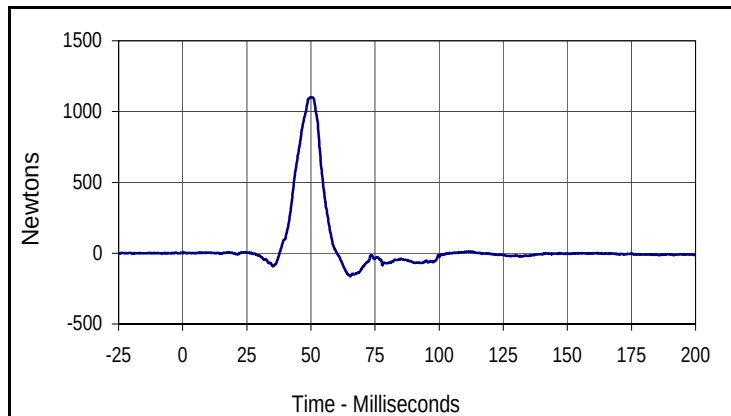
Curve Description			
Driver Lower Spine T12 Acceleration Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
11.6	69.9	-24.2	47.3



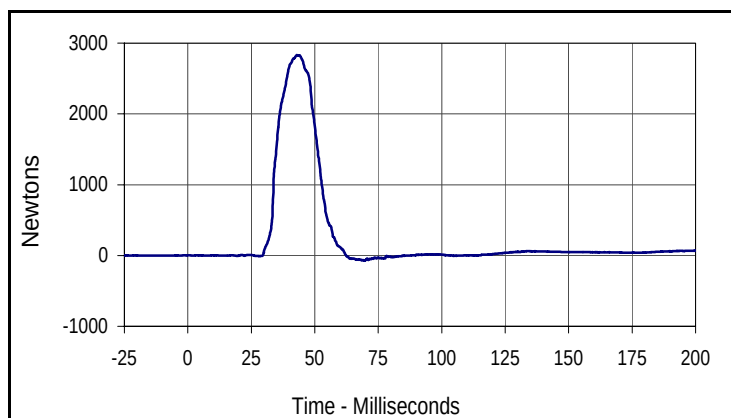
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
62.0	47.2	0.0	2.9

Test Vehicle: 2011 Toyota Tundra 4-Door Truck
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

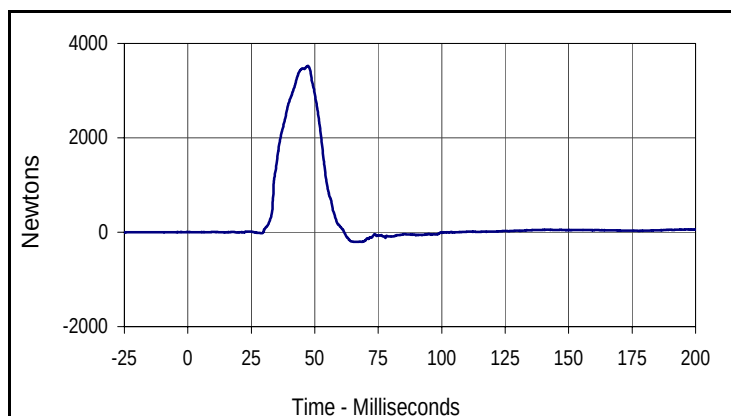
Test Date: 2/2/11
 NHTSA No.: MB5124



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
1100.6	50.4	-162.7	65.3



Curve Description			
Driver Acetabulum Force on Impact Side Y			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
2831.1	43.0	-74.2	69.6



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
CURNO	Type	SAE Class	Units
015	SUM	600	Newtons
Max	Time	Min	Time
3524.7	47.3	-206.6	65.4

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

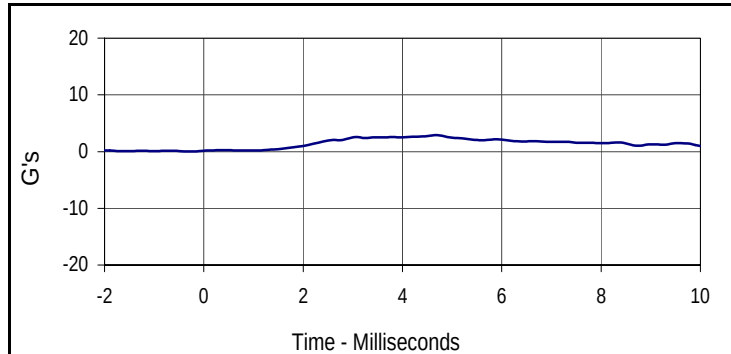
APPENDIX C
PRE-TEST / SID-IIs CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID IIs Lateral Head Drop Calibration
 ATD Serial No.: 299

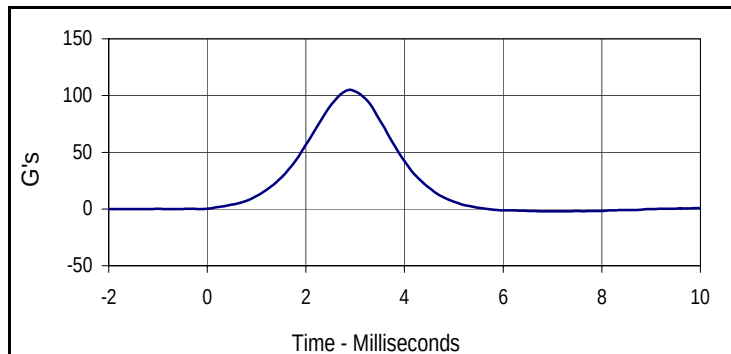
Test Date: 1/31/11
 Test I.D.: HDP02A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.68	Pass
Laboratory Relative Humidity	%	10 to 70	25.08	Pass
Peak Resultant Acceleration	G's	115 to 137	127.4	Pass
Peak Longitudinal Acceleration	G's	≤15	2.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	8.5	Pass
Overall Test Results			Pass	



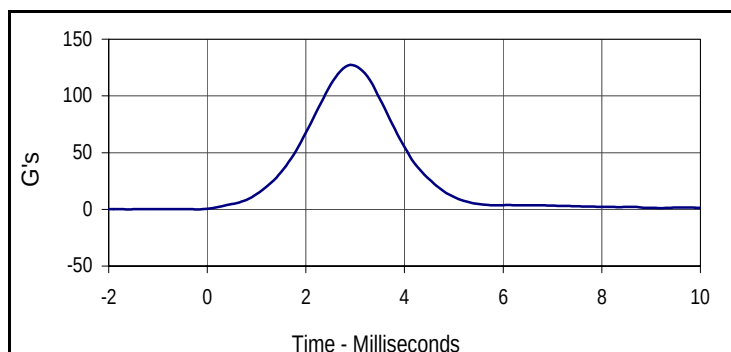
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.9	4.7	0.0	-0.3



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
105.0	2.9	-2.0	7.2



Curve Description			
Head Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
72.2	3.0	-0.4	9.6



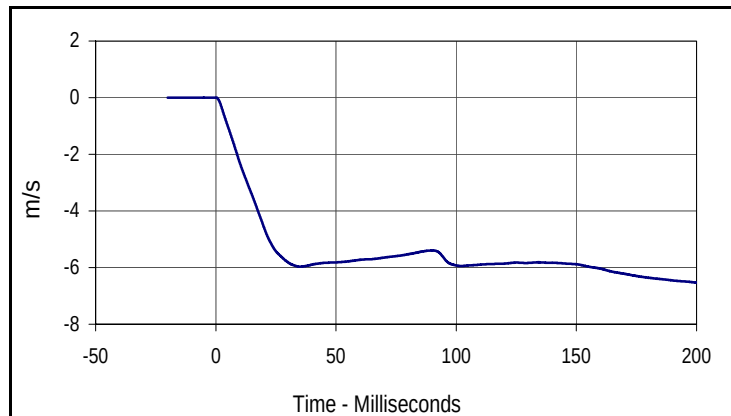
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
127.4	2.9	0.1	-1.6

Test Program: SID IIs Neck Calibration
 ATD Serial No.: 299

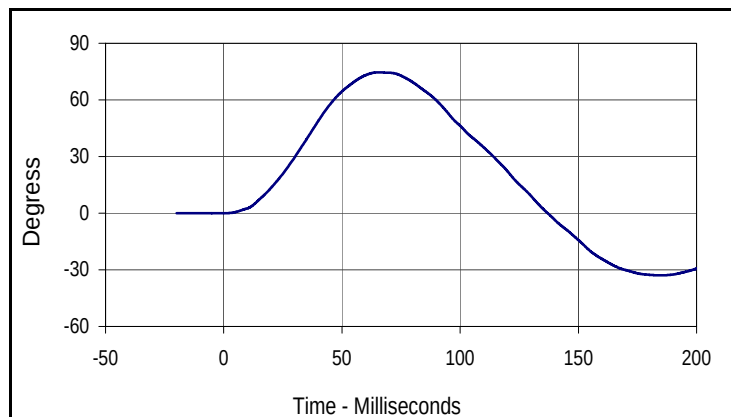
Test Date: 1/31/11
 Test I.D.: NBP02A



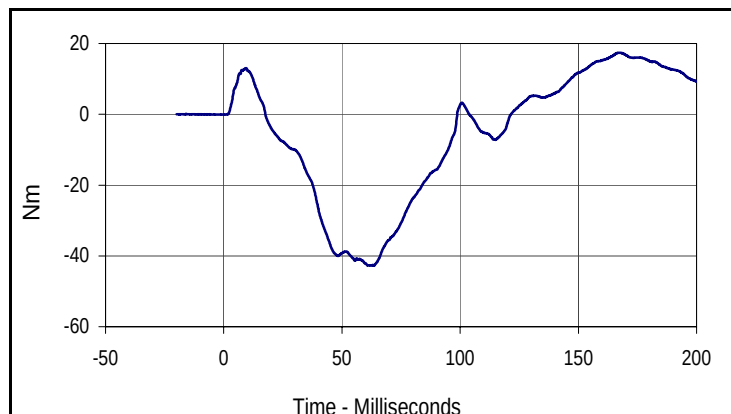
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.63	Pass
Laboratory Relative Humidity		%	10 to 70	25.03	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.6	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.3	Pass
	15 msec	m/s	-3.30 to -4.10	-3.4	Pass
	20 msec	m/s	-4.40 to -5.40	-4.6	Pass
	25 msec	m/s	-5.40 to -6.10	-5.4	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.0	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	74.6	Pass
	Time	msec	50.0 to 70.0	65.5	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-42.8	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	121.5	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.3	-6.5	200.0



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
74.6	65.5	-32.9	184.6



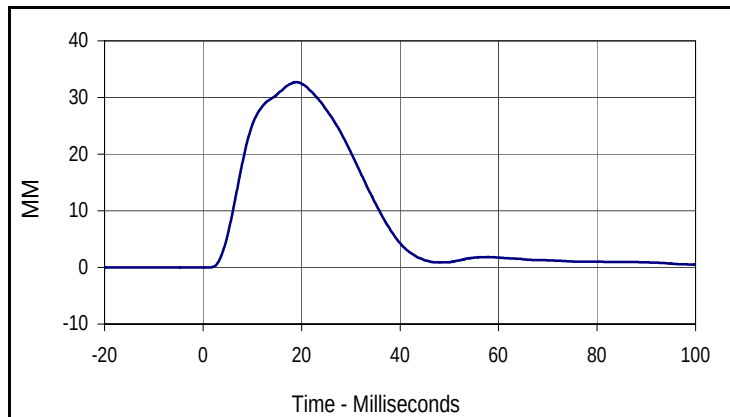
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
17.4	167.2	-42.8	62.5

Test Program: SID IIs Shoulder Calibration
 ATD Serial No.: 299

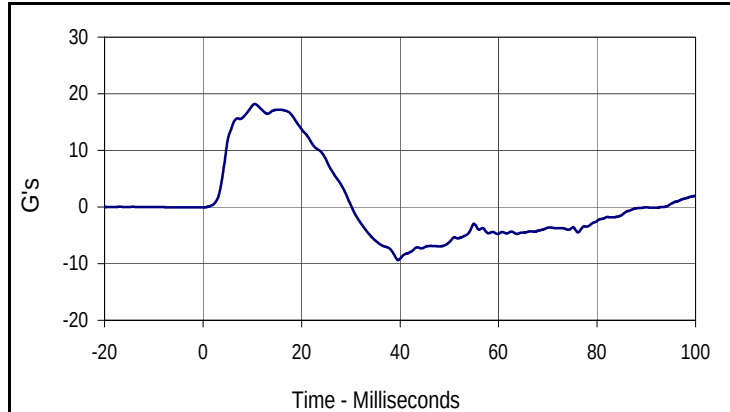
Test Date: 1/31/11
 Test I.D.: SHP02A



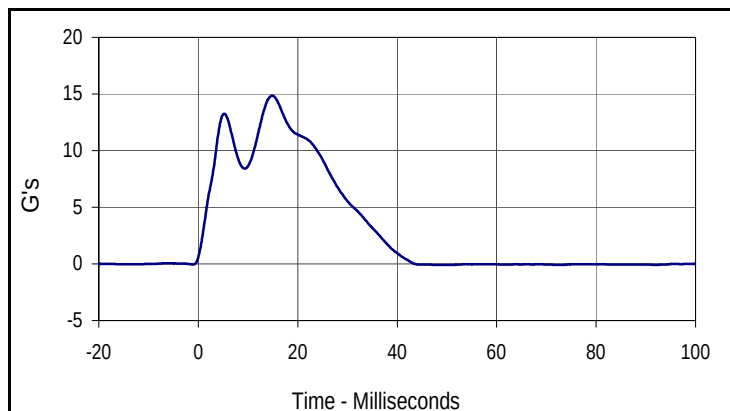
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.57	Pass
Laboratory Relative Humidity	%	10 to 70	25.03	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.30	Pass
Shoulder Deflection	MM	28 to 37	32.7	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	18.2	Pass
Peak Impactor Acceleration	G's	13 to 18	14.8	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
32.7	18.9	0.0	-17.8



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.2	10.5	-9.4	39.6



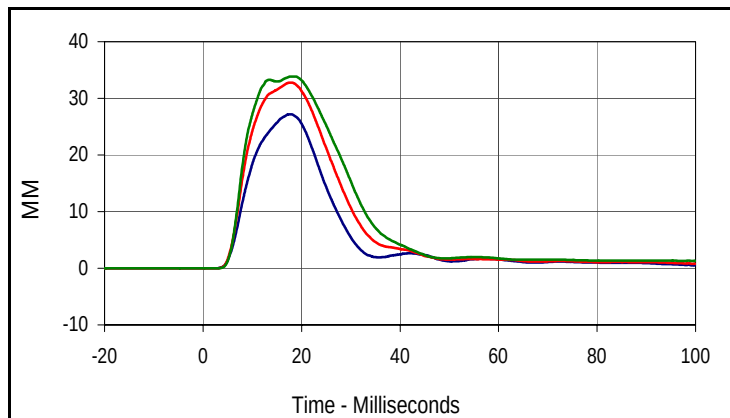
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
14.8	14.9	-0.1	48.1

Test Program: SID IIs Thorax with Arm Calibration
 ATD Serial No.: 299

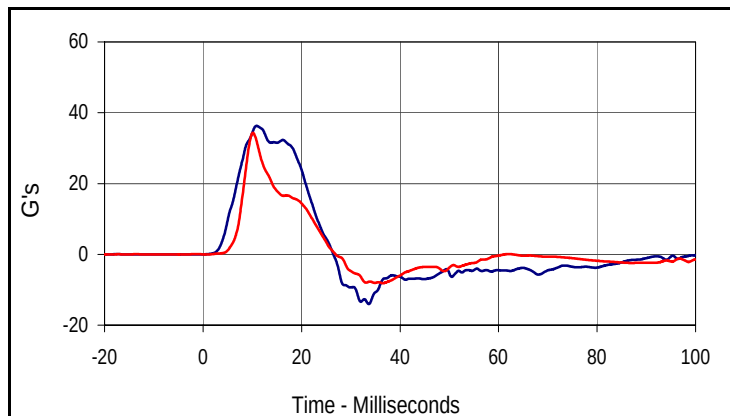
Test Date: 1/31/11
 Test I.D.: TWAP02A



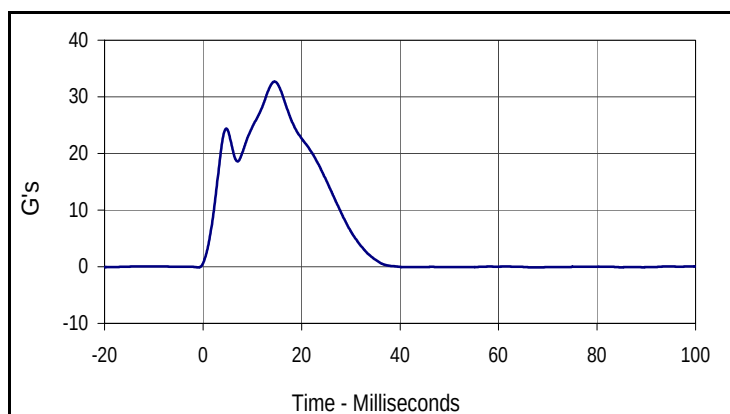
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.71	Pass
Shoulder Deflection	MM	31 to 40	37.2	Pass
Upper Thorax Rib Deflection	MM	25 to 32	27.2	Pass
Middle Thorax Rib Deflection	MM	30 to 36	32.8	Pass
Lower Thorax Rib Deflection	MM	32 to 38	33.9	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.3	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	34.3	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	32.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.2	17.7	0.0	-17.7
Middle Thorax Deflection			
Max	Time	Min	Time
32.8	17.7	0.0	-0.5
Lower Thorax Deflection			
Max	Time	Min	Time
33.9	18.0	0.0	-1.1



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.3	10.8	-14.1	33.7
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
34.3	10.1	-8.2	36.5



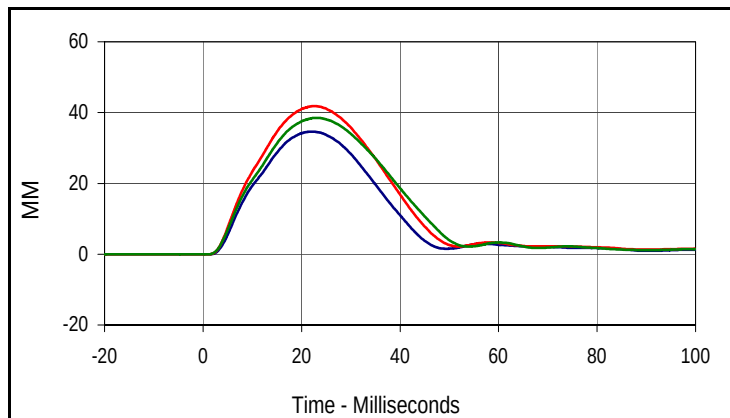
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
32.7	14.5	-0.1	68.4

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 299

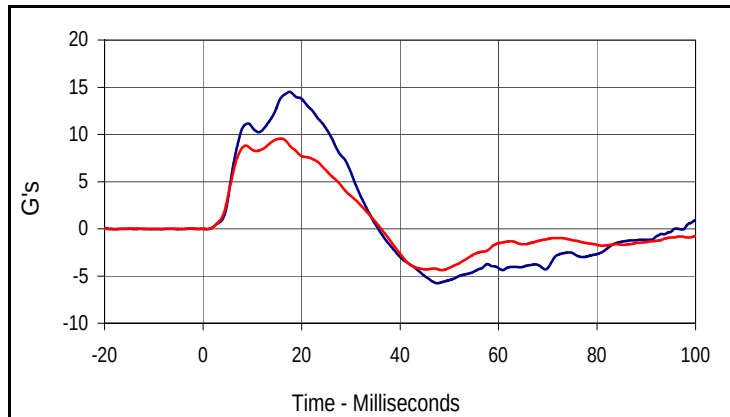
Test Date: 1/31/11
 Test I.D.: TOAP02A



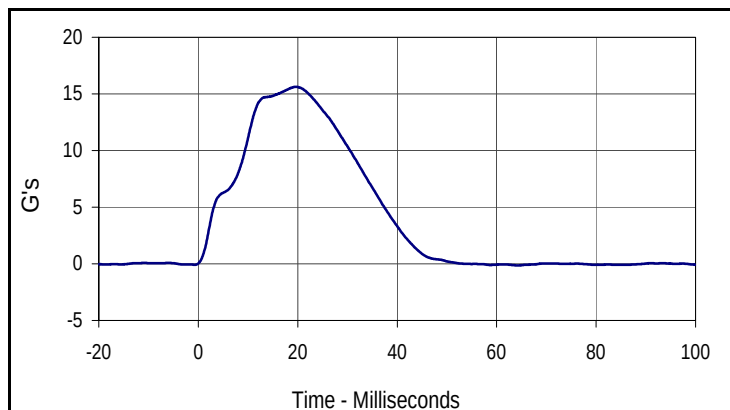
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.52	Pass
Laboratory Relative Humidity	%	10 to 70	24.99	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.36	Pass
Upper Thorax Rib Deflection	MM	32 to 40	34.6	Pass
Middle Thorax Rib Deflection	MM	39 to 45	41.8	Pass
Lower Thorax Rib Deflection	MM	35 to 43	38.5	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	14.5	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.5	Pass
Peak Impactor Acceleration	G's	14 to 18	15.6	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
34.6	22.2	0.0	-18.2
Middle Thorax Deflection			
Max	Time	Min	Time
41.8	22.6	0.0	-2.8
Lower Thorax Deflection			
Max	Time	Min	Time
38.5	23.0	0.0	-15.9



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.5	17.6	-5.8	47.5
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.5	15.8	-4.4	48.5



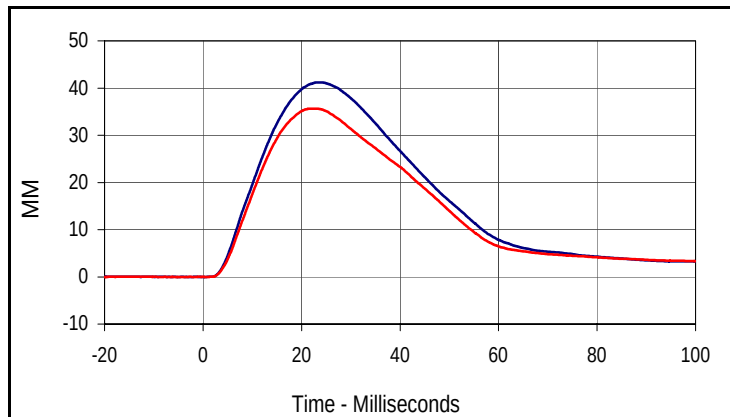
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.6	19.6	-0.1	64.3

Test Program: SID IIs Abdomen Calibration
 ATD Serial No.: 299

Test Date: 1/31/11
 Test I.D.: ABDP02A

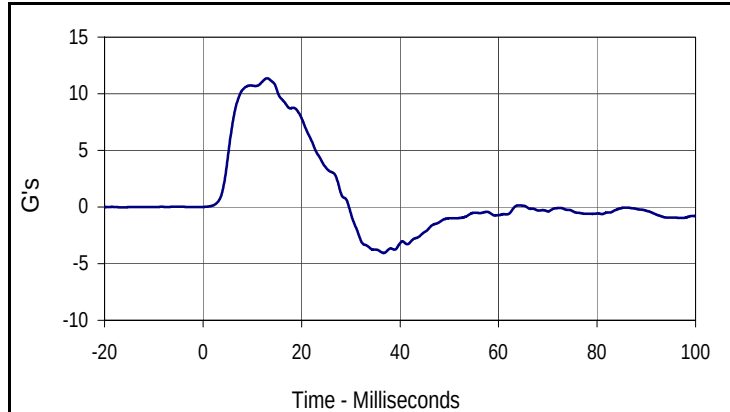


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.46	Pass
Laboratory Relative Humidity	%	10 to 70	24.86	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.36	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	41.2	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	35.6	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.4	Pass
Peak Impactor Acceleration	G's	12 to 16	14.4	Pass
Overall Test Results			Pass	

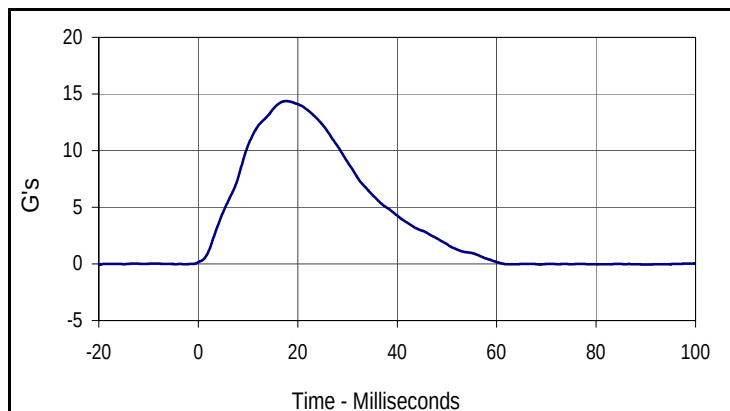


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
41.2	23.5	0.0	-6.3

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
35.6	22.3	0.0	-5.6



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.4	13.0	-4.1	36.7



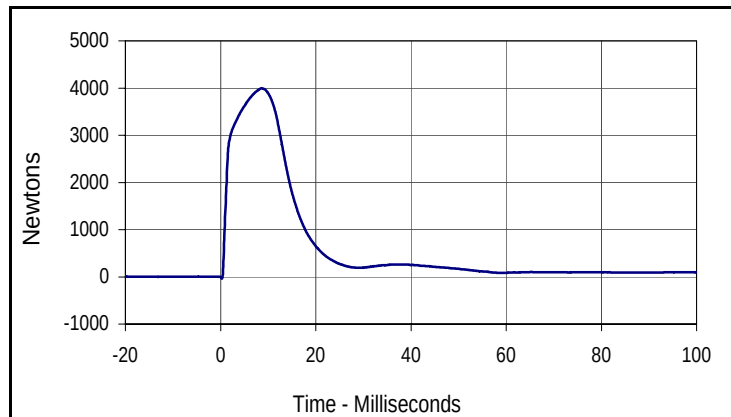
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.4	17.7	-0.1	-20.0

Test Program: SID IIs Pelvis Acetabulum Calibration
 ATD Serial No.: 299

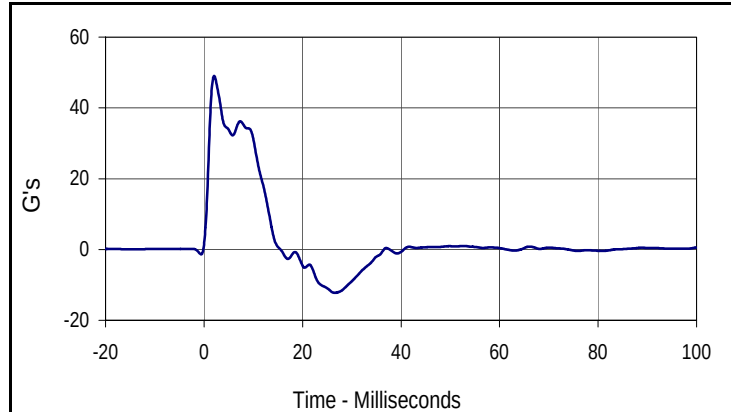
Test Date: 1/31/11
 Test I.D.: PAP02A



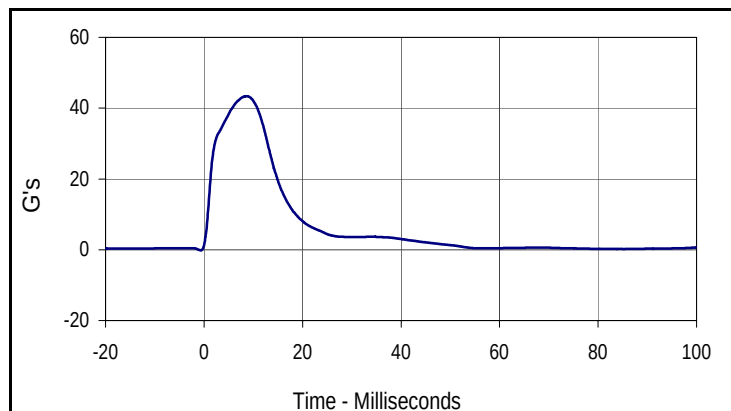
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.46	Pass
Laboratory Relative Humidity	%	10 to 70	24.86	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.67	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3996.2	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	36.2	Pass
Peak Impactor Acceleration	G's	38 to 47	43.4	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3996.2	8.6	-34.7	0.3



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
49.0	2.0	-12.3	26.5



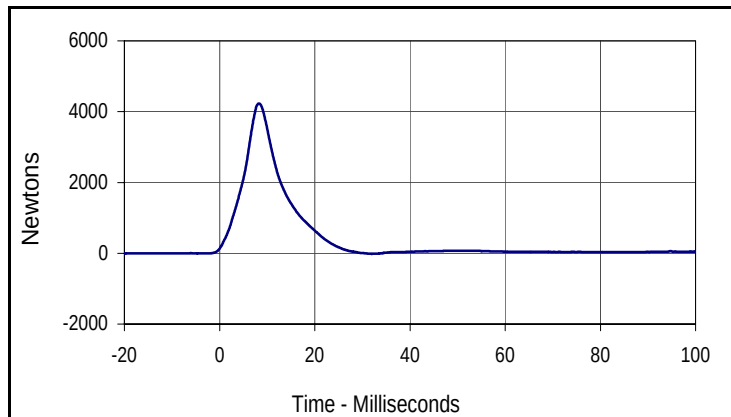
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.4	8.7	-0.2	-0.7

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

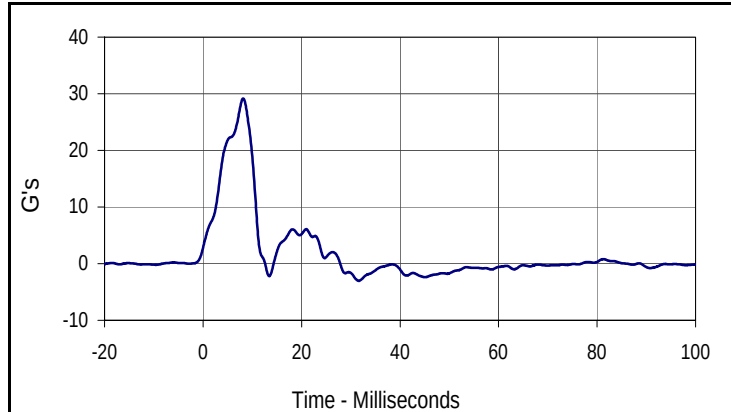
Test Date: 1/31/11
 Test I.D.: PLP02A



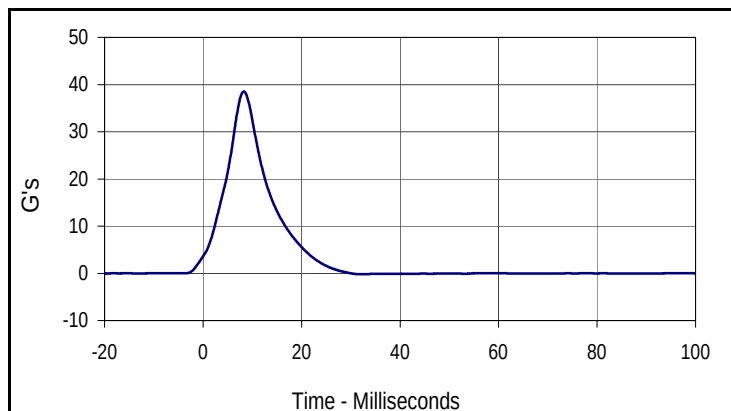
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.36	Pass
Laboratory Relative Humidity	%	10 to 70	24.86	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Iliac Force	Newtons	4100 to 5100	4232.0	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	29.2	Pass
Peak Impactor Acceleration	G's	36 to 45	38.5	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4232.0	8.3	-16.2	32.0



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
29.2	8.1	-3.0	31.6



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
38.5	8.3	-0.2	31.9

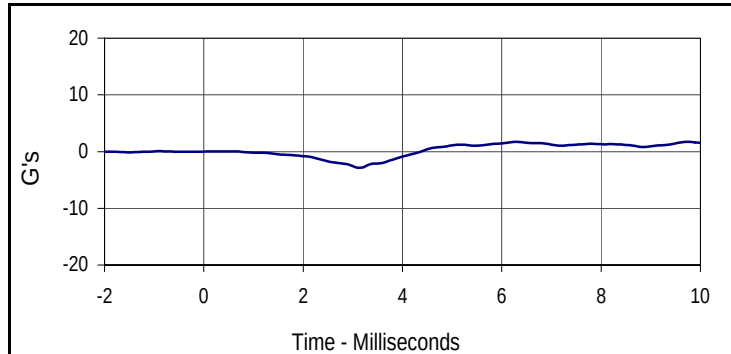
APPENDIX C
POST-TEST / SID-IIs CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID IIs Lateral Head Drop Calibration
 ATD Serial No.: 299

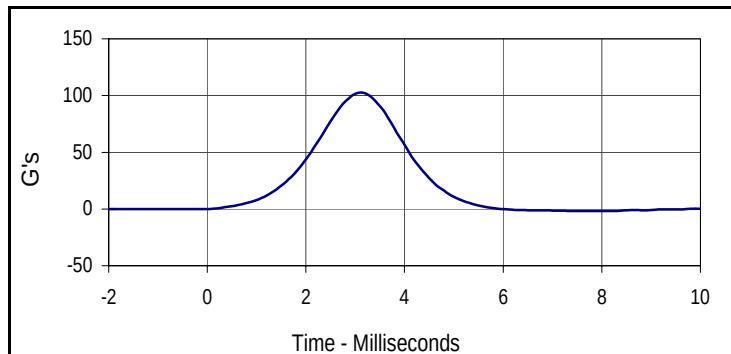
Test Date: 2/4/11
 Test I.D.: HDP02B



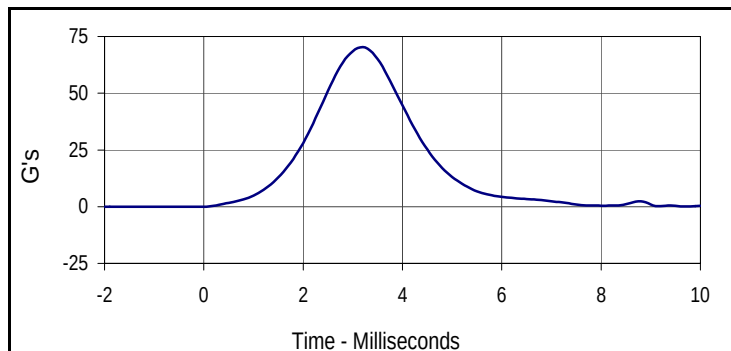
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.52	Pass
Laboratory Relative Humidity	%	10 to 70	24.99	Pass
Peak Resultant Acceleration	G's	115 to 137	124.3	Pass
Peak Longitudinal Acceleration	G's	≤15	2.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	13.7	Pass
Overall Test Results			Pass	



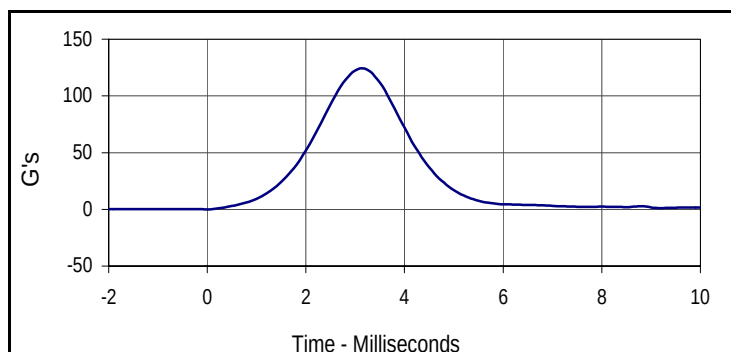
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
1.7	9.7	-2.8	3.1



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
102.7	3.1	-1.9	8.0



Curve Description			
Head Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
70.4	3.2	-0.1	-1.8



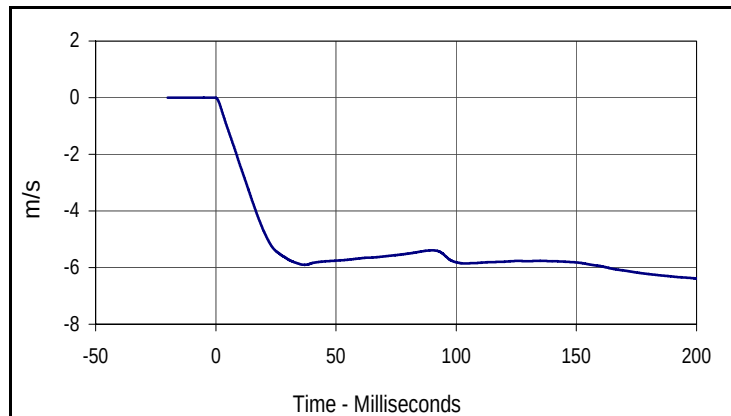
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
124.3	3.1	0.1	0.0

Test Program: SID IIs Neck Calibration
 ATD Serial No.: 299

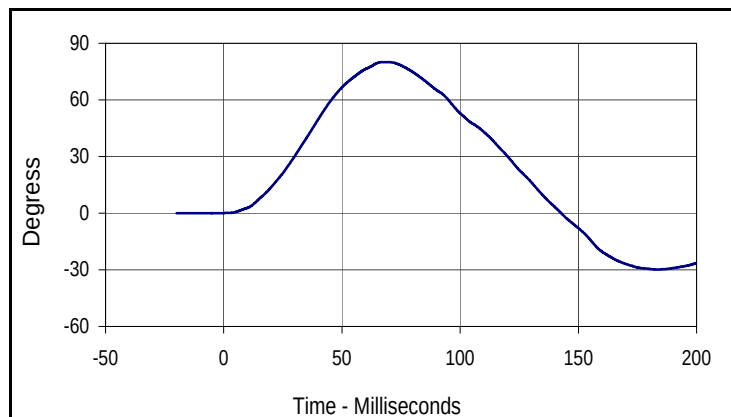
Test Date: 2/4/11
 Test I.D.: NBP02B



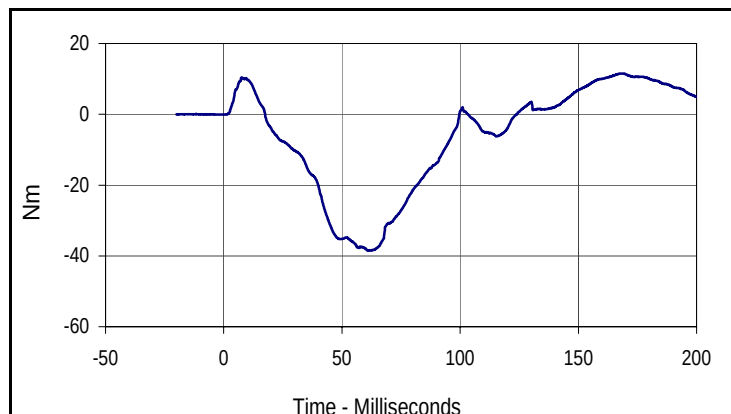
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.46	Pass
Laboratory Relative Humidity		%	10 to 70	24.86	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.5	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.4	Pass
	15 msec	m/s	-3.30 to -4.10	-3.6	Pass
	20 msec	m/s	-4.40 to -5.40	-4.7	Pass
	25 msec	m/s	-5.40 to -6.10	-5.4	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.9	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	80.1	Pass
	Time	msec	50.0 to 70.0	67.2	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-38.5	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	124.0	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.6	-6.4	200.0



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
80.1	67.2	-29.8	183.4



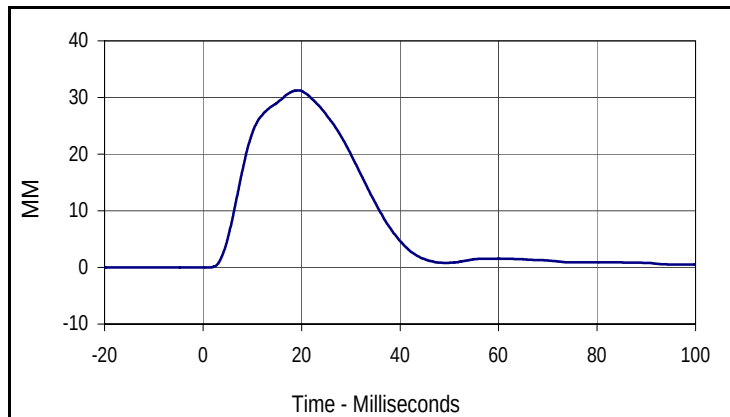
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
11.5	168.5	-38.5	62.0

Test Program: SID IIs Shoulder Calibration
 ATD Serial No.: 299

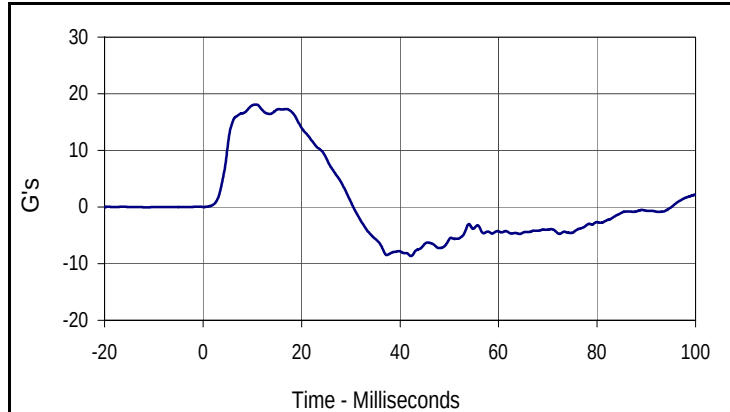
Test Date: 2/4/11
 Test I.D.: SHP02B



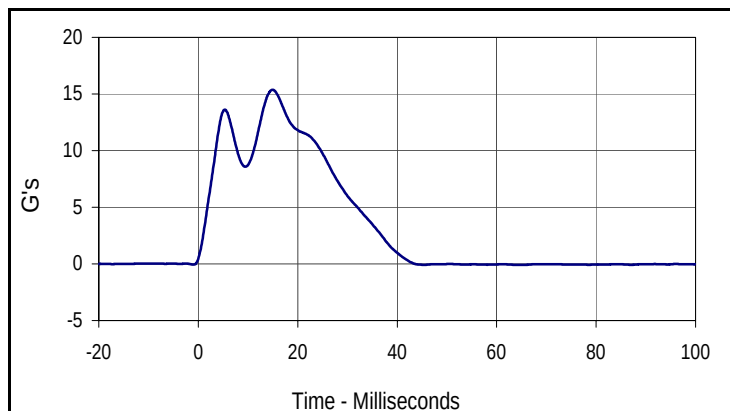
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.46	Pass
Laboratory Relative Humidity	%	10 to 70	24.86	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.29	Pass
Shoulder Deflection	MM	28 to 37	31.3	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	18.1	Pass
Peak Impactor Acceleration	G's	13 to 18	15.4	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.3	19.2	0.0	-18.7



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.1	10.8	-8.7	42.2



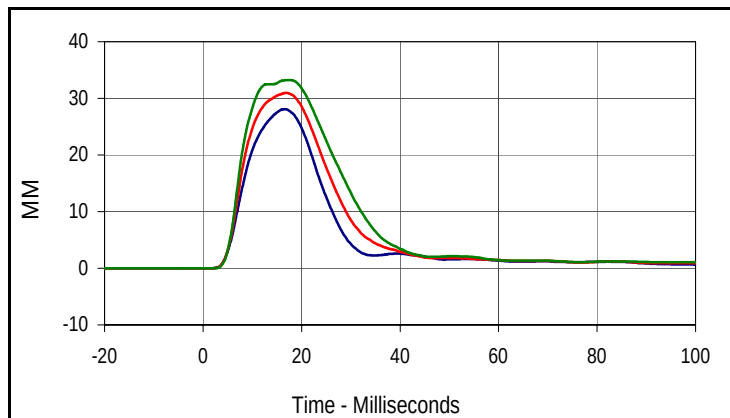
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.4	14.9	-0.1	65.4

Test Program: SID IIs Thorax with Arm Calibration
 ATD Serial No.: 299

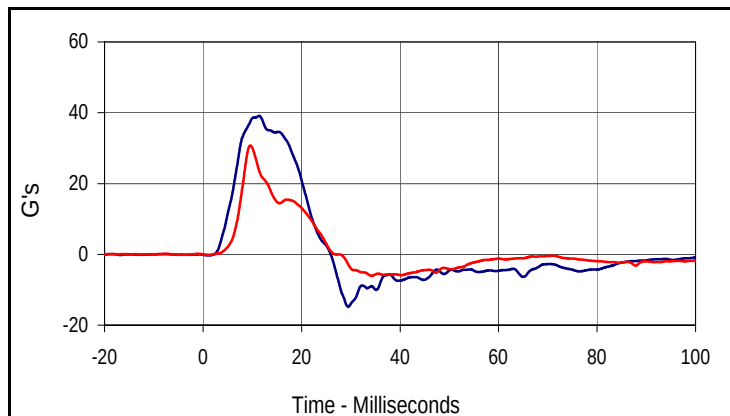
Test Date: 2/4/11
 Test I.D.: TWAP02B



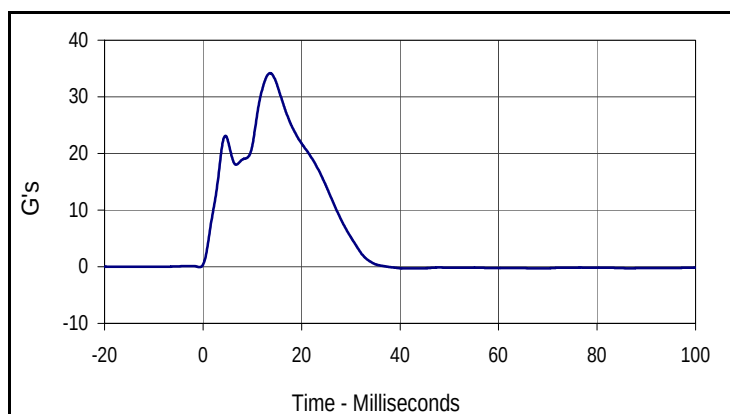
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.70	Pass
Shoulder Deflection	MM	31 to 40	36.5	Pass
Upper Thorax Rib Deflection	MM	25 to 32	28.1	Pass
Middle Thorax Rib Deflection	MM	30 to 36	31.0	Pass
Lower Thorax Rib Deflection	MM	32 to 38	33.2	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	39.1	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	30.7	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	34.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.1	16.5	0.0	-8.8
Middle Thorax Deflection			
Max	Time	Min	Time
31.0	16.9	0.0	-15.7
Lower Thorax Deflection			
Max	Time	Min	Time
33.2	17.2	0.0	-10.7



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
39.1	11.4	-14.8	29.5
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
30.7	9.6	-6.1	34.2



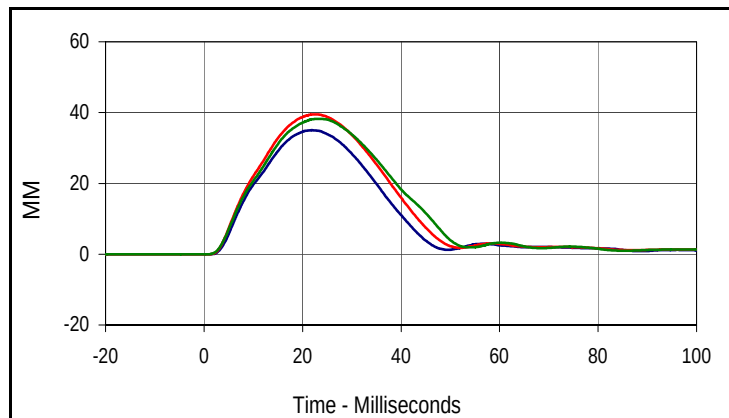
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.2	13.6	-0.3	40.8

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 299

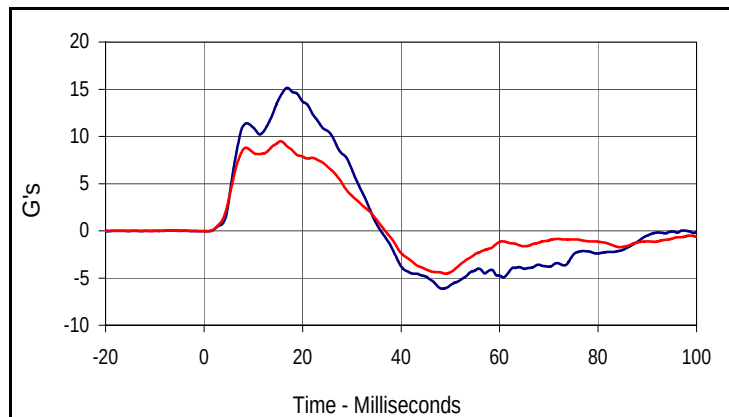
Test Date: 2/4/11
 Test I.D.: TOAP02B



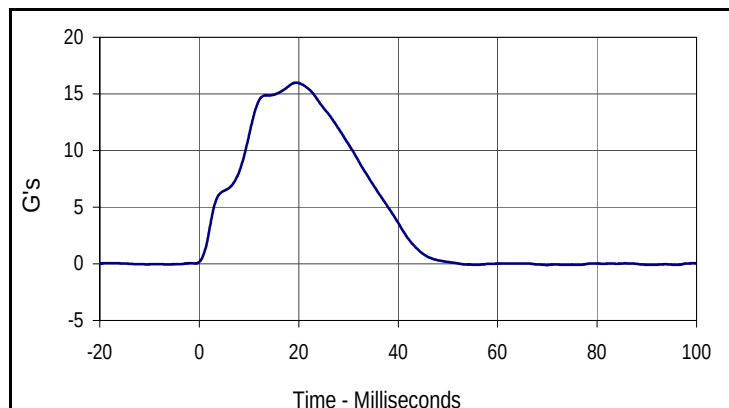
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.30	Pass
Laboratory Relative Humidity	%	10 to 70	24.86	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.36	Pass
Upper Thorax Rib Deflection	MM	32 to 40	35.0	Pass
Middle Thorax Rib Deflection	MM	39 to 45	39.5	Pass
Lower Thorax Rib Deflection	MM	35 to 43	38.2	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.1	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.5	Pass
Peak Impactor Acceleration	G's	14 to 18	16.0	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.0	21.9	0.0	-4.7
Middle Thorax Deflection			
Max	Time	Min	Time
39.5	22.5	0.0	-4.4
Lower Thorax Deflection			
Max	Time	Min	Time
38.2	23.4	0.0	-7.9



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	16.9	-6.1	48.4
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.5	15.6	-4.5	49.1



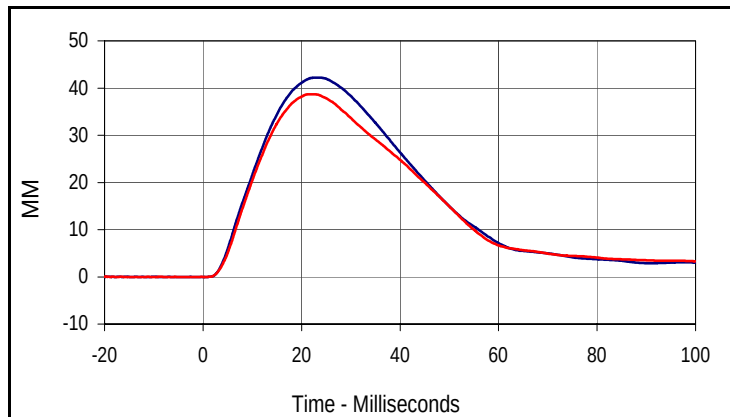
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.0	19.5	-0.1	69.9

Test Program: SID IIs Abdomen Calibration
 ATD Serial No.: 299

Test Date: 2/4/11
 Test I.D.: ABDP02B

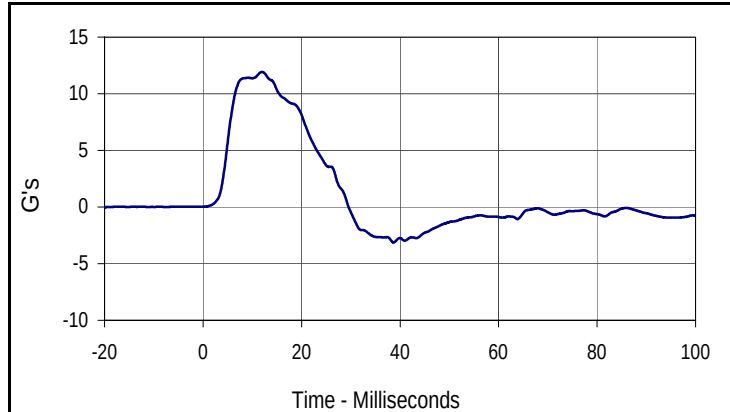


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.30	Pass
Laboratory Relative Humidity	%	10 to 70	24.82	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.36	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	42.2	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	38.7	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.9	Pass
Peak Impactor Acceleration	G's	12 to 16	13.9	Pass
Overall Test Results			Pass	

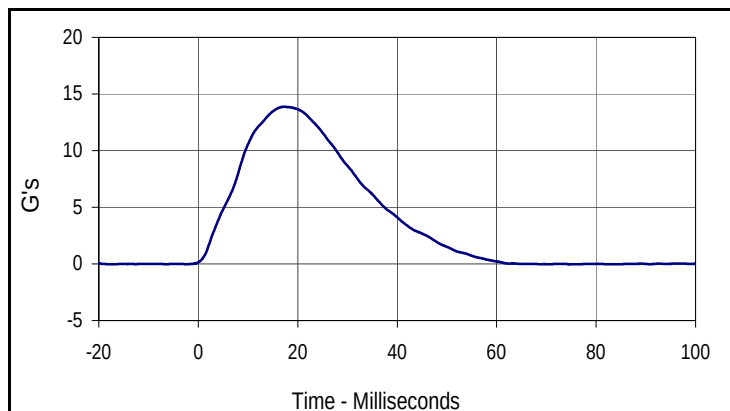


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
42.2	23.2	0.0	-11.2

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
38.7	22.2	0.0	-6.3



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	12.0	-3.1	38.7



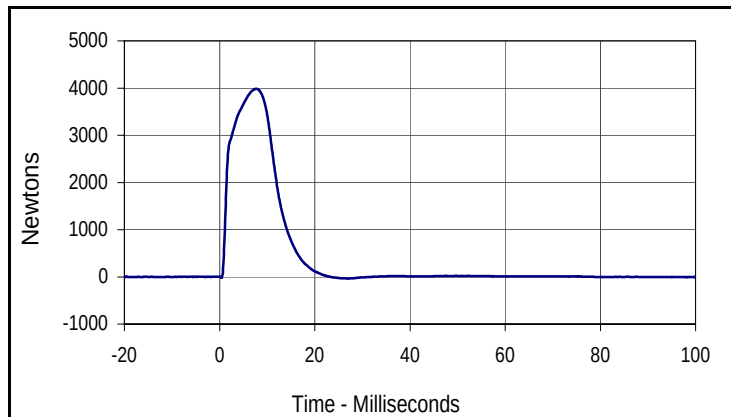
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
13.9	17.3	0.0	76.2

Test Program: SID IIs Pelvis Acetabulum Calibration
 ATD Serial No.: 299

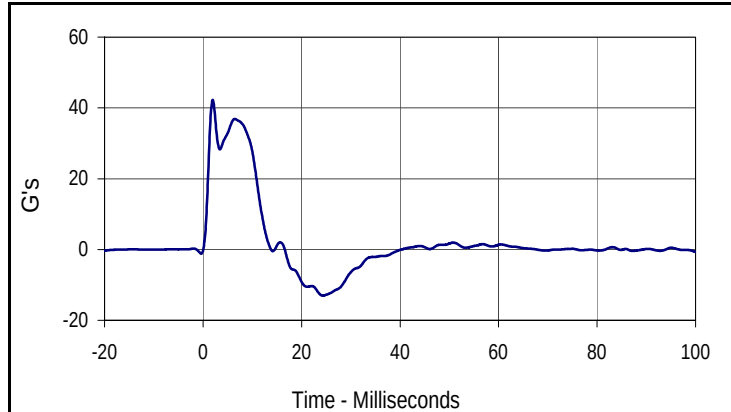
Test Date: 2/4/11
 Test I.D.: PAP02B



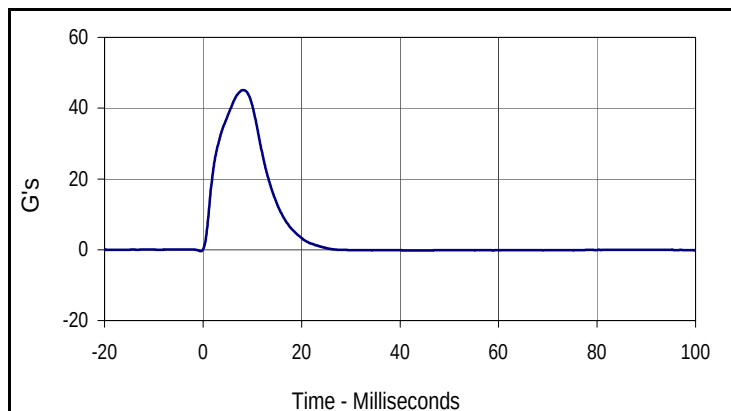
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.24	Pass
Laboratory Relative Humidity	%	10 to 70	24.77	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.66	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3984.8	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	36.9	Pass
Peak Impactor Acceleration	G's	38 to 47	45.1	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3984.8	7.7	-35.6	27.0



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
42.2	2.0	-13.0	24.3



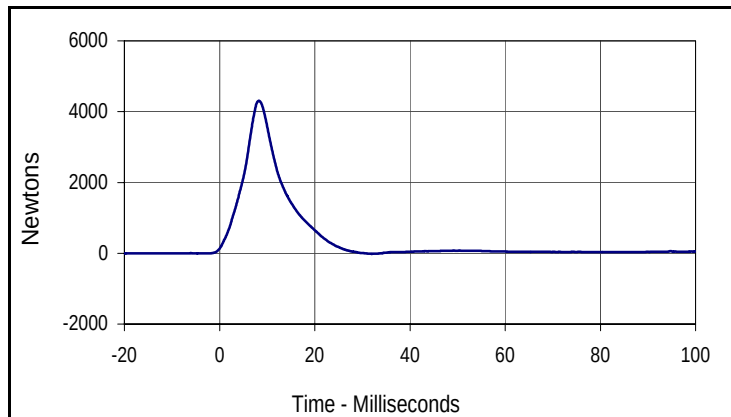
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.1	8.2	-0.4	-0.5

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

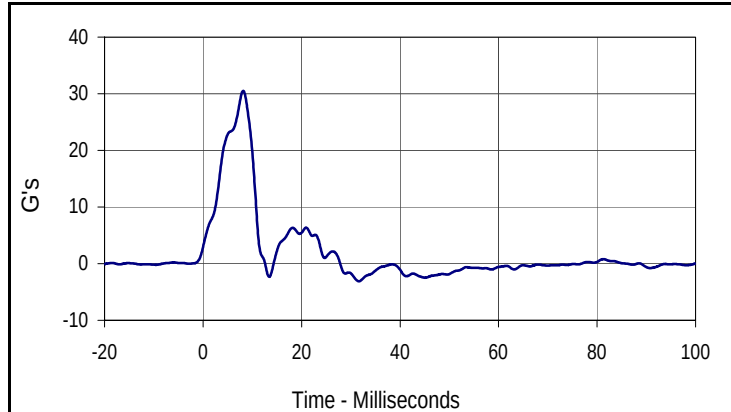
Test Date: 2/4/11
 Test I.D.: PLP02B



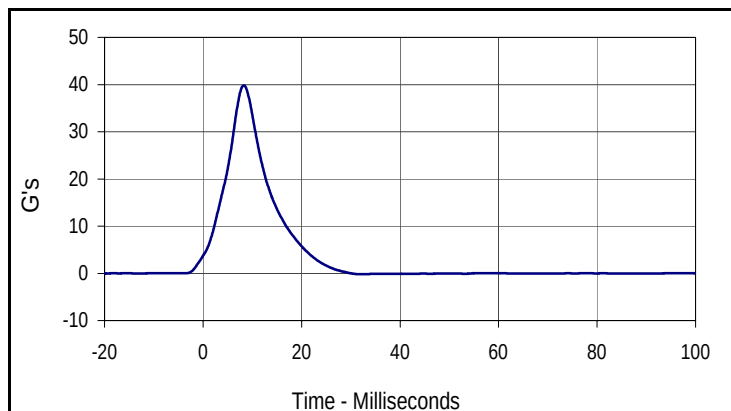
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.19	Pass
Laboratory Relative Humidity	%	10 to 70	24.78	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Iliac Force	Newtons	4100 to 5100	4305.5	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	30.5	Pass
Peak Impactor Acceleration	G's	36 to 45	39.8	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4305.5	8.3	-16.1	32.0



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
30.5	8.1	-3.1	31.6



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
39.8	8.3	-0.2	31.9