

**REPORT NUMBER: SPNCAP-MGA-2016-041**

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

**TOYOTA MOTOR CORPORATION  
2016 Toyota Prius Two 5-Door Hatchback  
NHTSA No.: M20165109**

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



**Test Date: March 9, 2016**

**Final Report Date: April 28, 2016**

**FINAL REPORT**

**U.S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Office of Crashworthiness Standards  
Mail Code: NRM-110  
1200 New Jersey Ave, SE  
Room W43-410  
Washington, DC 20590**

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof.

If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by:   
Ben Fischer, Project Engineer

Approved by:   
Robert Schnorenberg, Project Engineer

Approval Date: April 28, 2016

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

| <b>1. Report No.</b><br>SPNCAP-MGA-2016-041                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>2. Government Accession No.</b>                         | <b>3. Recipient's Catalog No.</b>                                                                                                                                                                                                                                                                                                |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--|--|----------------------|--|-------------------------|-------|-----------|--------|-------------------------------------------|-----|------|-----|------------------------------------|----|----|----|------------------------------------------------------------|---|------|------|---------------------------------|----|-----|----|--------------------------------|----|-----|----|
| <b>4. Title and Subtitle</b><br>Final Report of New Car Assessment Program<br>Side Impact Pole Testing of a 2016 Toyota Prius Two 5-Door Hatchback, NHTSA No.: M20165109                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                            | <b>5. Report Date</b><br>April 28, 2016                                                                                                                                                                                                                                                                                          |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            | <b>6. Performing Organization Code</b><br>MGA                                                                                                                                                                                                                                                                                    |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>7. Author(s)</b><br>Ben Fischer, Project Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                            | <b>8. Performing Organization Report No.</b><br>SPNCAP-MGA-2016-041                                                                                                                                                                                                                                                              |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>9. Performing Organization Name and Address</b><br>MGA Research Corporation<br>5000 Warren Road<br>Burlington, WI 53105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                            | <b>10. Work Unit No.</b>                                                                                                                                                                                                                                                                                                         |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            | <b>11. Contract or Grant No.</b><br>DTNH22-14-D-00353                                                                                                                                                                                                                                                                            |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>12. Sponsoring Agency Name and Address</b><br>United States Department of Transportation<br>National Highway Traffic Safety Administration<br>Office of Crashworthiness Standards (NRM-110)<br>1200 New Jersey Ave, SE, Room W43-410<br>Washington, DC 20590                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            | <b>13. Type of Report and Period Covered:</b><br>Final Test Report<br>March 9, 2016 to April 28, 2016                                                                                                                                                                                                                            |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            | <b>14. Sponsoring Agency Code</b><br>NRM-110                                                                                                                                                                                                                                                                                     |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>15. Supplementary Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                  |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>16. Abstract</b><br><p>A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2016 Toyota Prius Two 5-Door Hatchback in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at MGA Research Corporation in Burlington, Wisconsin on March 9, 2016.</p> <p>The impact velocity was 32.32 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.5°C. The test vehicle post-test maximum crush was 308 mm at level 3. The test vehicle's performance was as follows:</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Driver ATD (SID-IIs)</th> </tr> <tr> <th>Measurement Description</th> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>)</td> <td>N/A</td> <td>1000</td> <td>288</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>Gs</td> <td>82</td> <td>48</td> </tr> <tr> <td>Total Pelvic Force<br/>(sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>5397</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>19</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>27</td> </tr> </tbody> </table> <p>*Proposed IARV</p> <p>The 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.</p> |                                                            |                                                                                                                                                                                                                                                                                                                                  |                  |  |  | Driver ATD (SID-IIs) |  | Measurement Description | Units | Threshold | Result | Head Injury Criteria (HIC <sub>36</sub> ) | N/A | 1000 | 288 | Resultant Lower Spine Acceleration | Gs | 82 | 48 | Total Pelvic Force<br>(sum of acetabular and iliac forces) | N | 5525 | 5397 | Maximum Thoracic Rib Deflection | mm | 38* | 19 | Maximum Abdomen Rib Deflection | mm | 45* | 27 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            | Driver ATD (SID-IIs)                                                                                                                                                                                                                                                                                                             |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| Measurement Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Units                                                      | Threshold                                                                                                                                                                                                                                                                                                                        | Result           |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| Head Injury Criteria (HIC <sub>36</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | N/A                                                        | 1000                                                                                                                                                                                                                                                                                                                             | 288              |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| Resultant Lower Spine Acceleration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Gs                                                         | 82                                                                                                                                                                                                                                                                                                                               | 48               |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| Total Pelvic Force<br>(sum of acetabular and iliac forces)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | N                                                          | 5525                                                                                                                                                                                                                                                                                                                             | 5397             |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| Maximum Thoracic Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | mm                                                         | 38*                                                                                                                                                                                                                                                                                                                              | 19               |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| Maximum Abdomen Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | mm                                                         | 45*                                                                                                                                                                                                                                                                                                                              | 27               |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>17. Key Words</b><br>New Car Assessment Program (NCAP)<br>Side Impact<br>Pole<br>Part 572V<br>SID-IIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                            | <b>18. Distribution Statement</b><br>Copies of this report are available from:<br>National Highway Traffic Safety Administration<br>Technical Information Services Division, NPO-411<br>1200 New Jersey Ave, SE<br>Washington, DC 20590<br>e-mail: <a href="mailto:tis@nhtsa.dot.gov">tis@nhtsa.dot.gov</a><br>FAX: 202-493-2833 |                  |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |
| <b>19. Security Classification of Report</b><br>Unclassified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>20. Security Classification of Page</b><br>Unclassified | <b>21. No. of Pages</b><br>136                                                                                                                                                                                                                                                                                                   | <b>22. Price</b> |  |  |                      |  |                         |       |           |        |                                           |     |      |     |                                    |    |    |    |                                                            |   |      |      |                                 |    |     |    |                                |    |     |    |

## TABLE OF CONTENTS

| <u>Section</u> | <u>Page No.</u> |
|----------------|-----------------|
|----------------|-----------------|

|   |                                  |   |
|---|----------------------------------|---|
| 1 | Test Purpose and Procedure       | 1 |
| 2 | Summary of Test Results          | 2 |
| 3 | Occupant and Vehicle Information | 4 |

| <u>Data Sheet No.</u> | <u>Page No.</u> |
|-----------------------|-----------------|
|-----------------------|-----------------|

|    |                                                                 |    |
|----|-----------------------------------------------------------------|----|
| 1  | General Test and Vehicle Parameter Data                         | 5  |
| 2  | Seat, Seat Belt, Steering Wheel Adjustment and Fuel System Data | 8  |
| 3  | Dummy Longitudinal Clearance Dimensions                         | 11 |
| 4  | Dummy Lateral Clearance Dimensions                              | 12 |
| 5  | Camera and Instrumentation Data                                 | 13 |
| 6  | Vehicle Accelerometer Data                                      | 14 |
| 7  | Rigid Pole Load Cell Data                                       | 15 |
| 8  | Post-Test Observations                                          | 16 |
| 9  | Vehicle Profile Measurements                                    | 18 |
| 10 | Vehicle Exterior Crush Measurements                             | 19 |
| 11 | Vehicle Damage Profile Distances                                | 22 |
| 12 | FMVSS No. 301 Static Rollover Results                           | 23 |
| 13 | Dummy/Vehicle Temperature Stabilization Data                    | 24 |

### Appendix

|   |                                                       |   |
|---|-------------------------------------------------------|---|
| A | Photographs                                           | A |
| B | Vehicle and Dummy Response Data Plots                 | B |
| C | Dummy Configuration and Performance Verification Data | C |
| D | Test Equipment and Instrumentation Calibration Data   | D |

## **SECTION 1**

### **TEST PURPOSE AND PROCEDURE**

This 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 Toyota Prius Two 5-Door Hatchback. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated October 2015.

## SECTION 2 SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2016 Toyota Prius Two 5-Door Hatchback. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.32 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin on March 9, 2016. 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 October 2015. Camera locations and other pertinent camera information are included in this report.

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

Primary and Redundant Head CG Triaxial Accelerometers  
Thorax Upper, Middle, and Lower Rib Displacement Potentiometers  
Abdomen Upper Rib and Lower Rib Displacement Potentiometers  
Lower Spine (T12) 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. Appendix D contains the test equipment and instrumentation calibration data.

Injury readings for the SID-IIs dummy were recorded as follows:

| Measurement Description                                    | Driver ATD (SID-IIs) |           |        |
|------------------------------------------------------------|----------------------|-----------|--------|
|                                                            | Units                | Threshold | Result |
| Head Injury Criteria (HIC <sub>36</sub> )                  | N/A                  | 1000      | 288    |
| Resultant Lower Spine Acceleration                         | Gs                   | 82        | 48     |
| Total Pelvic Force<br>(sum of acetabular and iliac forces) | N                    | 5525      | 5397   |
| Maximum Thoracic Rib Deflection                            | mm                   | 38*       | 19     |
| Maximum Abdominal Rib Deflection                           | mm                   | 45*       | 27     |

\*Proposed IARV

Supplemental restraint information is given below:

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

The test data can be found on the NHTSA website at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov)

#### **GENERAL COMMENTS**

Left Floor Sill Y recorded no valid data.

Left Mid A-Post Y recorded no valid data after 14ms.

Left Mid B-Post Y recorded no valid data after 7ms.

Firewall Y recorded no valid data after 14ms.

All pole load cell data channels recorded no valid data.

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

**SECTION 3**  
**OCCUPANT AND VEHICLE INFORMATION**

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016

**TEST VEHICLE INFORMATION AND OPTIONS**

|                          |                        |                                   |     |
|--------------------------|------------------------|-----------------------------------|-----|
| NHTSA No.                | M20165109              | Traction Control System (TCS)     | Yes |
| Model Year               | 2016                   | Auto-Leveling System              | No  |
| Make                     | Toyota                 | Automatic Door Locks (ADL)        | Yes |
| Model                    | Prius Two              | Power Window Auto-Reverse         | Yes |
| Body Style               | 5-Door Hatchback       | Other Optional Feature            | N/A |
| VIN                      | JTDKBRFU3G3003940      | Driver Front Airbag               | Yes |
| Body Color               | Magnetic Gray Metallic | Driver Curtain Airbag             | Yes |
| Odometer Reading (km/mi) | 87km / 54mi            | Driver Head/Torso Airbag          | No  |
| Engine Displacement (L)  | 1.8                    | Driver Torso Airbag               | No  |
| Type/No. Cylinders       | 4                      | Driver Torso/Pelvis Airbag        | Yes |
| Engine Placement         | Lateral                | Driver Pelvis Airbag              | No  |
| Transmission Type        | Automatic              | Driver Knee Airbag                | Yes |
| Transmission Speeds      |                        | Rear Pass. Curtain Airbag         | Yes |
| Overdrive                | Yes                    | Rear Pass. Head/Torso Airbag      | No  |
| Final Drive              | FWD                    | Rear Pass. Torso Airbag           | No  |
| Roof Rack                | No                     | Rear Pass. Torso/Pelvis Airbag    | No  |
| Sunroof/T-Top            | No                     | Rear Pass. Pelvis Airbag          | No  |
| Running Boards           | No                     | Driver Seat Belt Pretensioner     | Yes |
| Tilt Steering Wheel      | Yes                    | Rear Pass. Seat Belt Pretensioner | Yes |
| Power Seats              | No                     | Driver Load Limiter               | Yes |
| Anti-Lock Brakes (ABS)   | Yes                    | Rear Pass. Load Limiter           | No  |
|                          |                        | Other Restraint Feature           | N/A |

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| Does owner's manual provide instructions to turn off automatic door locks? | Yes |
|----------------------------------------------------------------------------|-----|

**DATA FROM CERTIFICATION LABEL**

|                     |                          |                 |      |
|---------------------|--------------------------|-----------------|------|
| Manufactured By     | TOYOTA MOTOR CORPORATION | GVWR (kg)       | 1776 |
| Date of Manufacture | 01/16                    | GAWR Front (kg) | 1021 |
| Vehicle Type        | Passenger Car            | GAWR Rear (kg)  | 975  |

**VEHICLE SEATING AND WEIGHT CAPACITY DATA**

| Measured Parameter                         | Front | Rear | Third | Total |       |
|--------------------------------------------|-------|------|-------|-------|-------|
| Designated Seating Capacity (DSC)          | 2     | 3    |       | 5     | (A)   |
| Capacity Weight (VCW) (kg)                 |       |      |       | 375   | (B)   |
| DSC x 68.04 kg                             |       |      |       | 340   | (A-B) |
| Rated Cargo and Luggage Weight (RCLW) (kg) |       |      |       | 28    |       |

**VEHICLE SEAT TYPE**

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



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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016

**TEST PRESSURES**

|                | Units | LF  | RF  | LR  | RR  |
|----------------|-------|-----|-----|-----|-----|
| As Delivered   | kpa   | 250 | 250 | 250 | 250 |
| Tire Placard   | kpa   | 250 | 250 | 240 | 240 |
| Owner's Manual | kpa   | 250 | 250 | 240 | 240 |
| As Tested      | kpa   | 250 | 250 | 240 | 240 |

**TEST VEHICLE WEIGHTS**

|        | Units | As Delivered (UVW) |       |        | As Tested (ATW) |       |        | Fully Loaded |       |        |
|--------|-------|--------------------|-------|--------|-----------------|-------|--------|--------------|-------|--------|
|        |       | Front              | Rear  | Total  | Front           | Rear  | Total  | Front        | Rear  | Total  |
| Left   | kg    | 442.5              | 280.5 |        | 466.5           | 304.5 |        | 462.5        | 313.0 |        |
| Right  | kg    | 407.5              | 277.0 |        | 416.0           | 293.5 |        | 413.5        | 298.0 |        |
| Ratio  | %     | 60.4%              | 39.6% |        | 59.6%           | 40.4% |        | 58.9%        | 41.1% |        |
| Totals | kg    | 850.0              | 557.5 | 1407.5 | 882.5           | 598.0 | 1480.5 | 876.0        | 611.0 | 1487.0 |

**TARGET TEST WEIGHT CALCULATION**

| Measured Parameter                              | Units | Value  |         |
|-------------------------------------------------|-------|--------|---------|
| Total Delivered Weight (UVW)                    | kg    | 1407.5 | (A)     |
| Actual Weight of 1 P572V ATD (SID-IIs) ATD Used | kg    | 52     | (B)     |
| Rated Cargo/Luggage Weight (RCLW)               | kg    | 28     | (C)     |
| Calculated Vehicle Target Weight (TVTW)         | kg    | 1487.5 | (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 | As Delivered | As Tested | Fully Loaded | Meets Requirement*** |
|----------------------------------------------------------------|-------|--------------|-----------|--------------|----------------------|
| Driver Door Sill Angle (front-to-rear)*                        | deg   | -0.4         | -0.4      | -0.2         | Yes                  |
| Front Pass. Sill Angle (front-to-rear)*                        | deg   | -0.6         | -0.5      | -0.4         | Yes                  |
| Front Bumper Angle (left-to-right)**                           | deg   | 0.3          | 0.4       | 0.4          | Yes                  |
| Rear Bumper Angle (left-to-right)**                            | deg   | 0.4          | 0.4       | 0.4          | Yes                  |
| Vehicle CG (Aft of Front Axle)                                 | mm    | 1067         | 1088      | 1107         |                      |
| Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline) | mm    | 21           | 53        | 54           |                      |

\*ND=Nose Down (-), NU=Nose Up (+) \*\* LD=Left Down (-), LU=Left Up (+)

\*\*\* The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements.

**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

| Component Description                                                                     | Weight (kg) |
|-------------------------------------------------------------------------------------------|-------------|
| Ballast (if any)                                                                          |             |
| RF, RR Door Panel, RR Speaker, RR Window Glass / Motor / Track, Rear Bumper Beam / Fascia | 25          |

|                                                           |                |
|-----------------------------------------------------------|----------------|
| Test height adjustable suspension setting, if applicable: | Not Applicable |
|-----------------------------------------------------------|----------------|

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016

**SEAT POSITIONING**

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

**SCRL ANGLE RANGE**

| Seat                      | SCRL (°) |       |       |
|---------------------------|----------|-------|-------|
|                           | Max      | Min   | Mid   |
| Driver Seat               | 19.8     | 15.0  | 17.4  |
| 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<br>SCRL Angle<br>(Mid) (°) | As Tested<br>SCRIP Height<br>(mm) | SCRIP<br>Height<br>Position | SCRIP Height (mm) |                  |                  |
|------------------------------|--------------------------------------|-----------------------------------|-----------------------------|-------------------|------------------|------------------|
|                              |                                      |                                   |                             | Rear-<br>most     | Mid-<br>Fore/Aft | Forward-<br>Most |
| Driver Seat                  | 17.4                                 | Fixed                             | Max                         | Fixed             | Fixed            | Fixed            |
|                              |                                      |                                   | Mid                         | Fixed             | Fixed            | Fixed            |
|                              |                                      |                                   | Min                         | Fixed             | Fixed            | Fixed            |
| 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<br>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 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

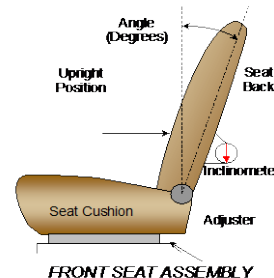
NHTSA No. M20165109  
 Test Date: 3/9/2016

**SEAT FORE/AFT POSITIONS**

| Seat                      | Total Fore/Aft Travel |                           | Test Position from Forward-most Position |                                        |
|---------------------------|-----------------------|---------------------------|------------------------------------------|----------------------------------------|
|                           | mm                    | Detents                   | mm                                       | Detent                                 |
| Driver Seat               | 260                   | 27 (1 <sup>st</sup> as 1) | 0                                        | 0 <sup>th</sup> (1 <sup>st</sup> as 0) |
| Front Passenger Seat      | 260                   | 27 (1 <sup>st</sup> as 1) | 0                                        | 0 <sup>th</sup> (1 <sup>st</sup> as 0) |
| Front Center Seat         |                       |                           |                                          |                                        |
| Struck Side Rear Seat     | Fixed                 | Fixed                     | Fixed                                    | Fixed                                  |
| Non-Struck Side Rear Seat | Fixed                 | Fixed                     | Fixed                                    | Fixed                                  |
| Rear Center Seat          | Fixed                 | Fixed                     | Fixed                                    | Fixed                                  |

**SEAT BACK ANGLE ADJUSTMENT**

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1 for the 5<sup>th</sup> percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



| Seat                       | Total Seat Back Angle Range |                           | Test Position from Vertical |                                        |
|----------------------------|-----------------------------|---------------------------|-----------------------------|----------------------------------------|
|                            | Degrees                     | Detents                   | Degree                      | Detent                                 |
| Driver Seat w/Seated Dummy | 64.1                        | 36 (1 <sup>st</sup> as 1) | -2.5                        | 2 <sup>nd</sup> (1 <sup>st</sup> as 0) |
| Front Passenger Seat       | 68.0                        | 33 (1 <sup>st</sup> as 1) | -2.7                        | 2 <sup>nd</sup> (1 <sup>st</sup> as 0) |
| Front Center Seat          |                             |                           |                             |                                        |
| Struck Side Rear Seat      | Fixed                       | Fixed                     | -6.3                        |                                        |
| Non-Struck Side Rear Seat  | Fixed                       | Fixed                     | -6.3                        |                                        |
| Rear Center Seat           | Fixed                       | Fixed                     | -6.3                        |                                        |

Seat back angles measured on headrest post.

**SEAT BELT ANCHORAGE ADJUSTMENT**

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

|             | <b>Total # of Positions</b>      | <b>Placed in Position #</b> |
|-------------|----------------------------------|-----------------------------|
| Driver Seat | 4 detents (1 <sup>st</sup> as 1) | 0 (Uppermost as 0)          |

**HEAD RESTRAINT ADJUSTMENT**

Head restraints are adjusted to the lowest and most full forward in-use position.

|             | <b>Total # of Positions</b> | <b>Placed in Position #</b> |
|-------------|-----------------------------|-----------------------------|
| Driver Seat | 3                           | Lowest / Fixed Fore-Aft     |

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

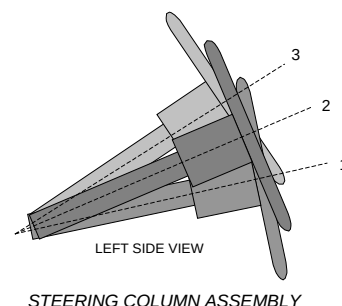
Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016

**STEERING COLUMN ADJUSTMENT**

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

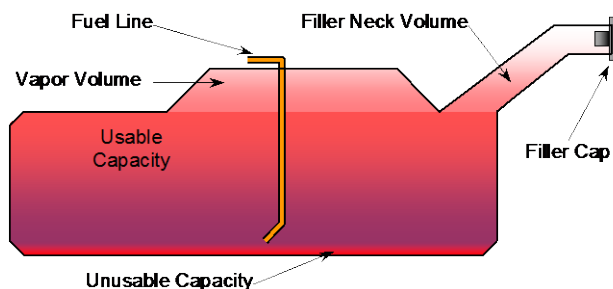
|                                   | Degrees | Fore/Aft Position (mm) |
|-----------------------------------|---------|------------------------|
| Lowermost, Position 1             | 71.3    | 200                    |
| Geometric Center, Position 2      | 69.4    | 218                    |
| Uppermost, Position 3             | 67.4    | 235                    |
| Telescoping Steering Wheel Travel |         | 35                     |
| Test Position                     | 69.4    | 218                    |



**FUEL PUMP**

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

The filler neck is located on the driver's side.



**FUEL TANK CAPACITY DATA**

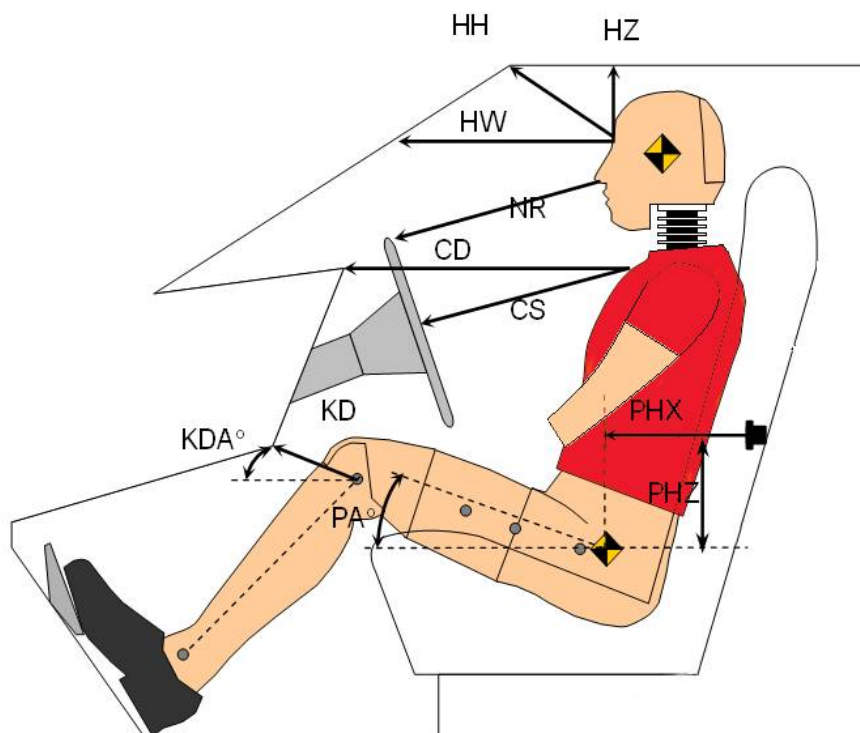
|                                                                 | Liters |
|-----------------------------------------------------------------|--------|
| Usable Capacity of "Standard Tank" (see Form No. 1)             | 43.0   |
| Usable Capacity of "Optional Tank" (see Form No. 1)             |        |
| Usable Capacity of Standard Tank as Specified in Owner's Manual | 43.0   |
| Usable Capacity of Optional Tank as Specified in Owner's Manual |        |
| 93% of Usable Capacity                                          | 40.0   |
| Actual Amount of Solvent Used                                   | 40.1   |
| 1/3 of Usable Capacity                                          | 14.3   |

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

**.DATA SHEET NO. 3**  
**DUMMY LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016



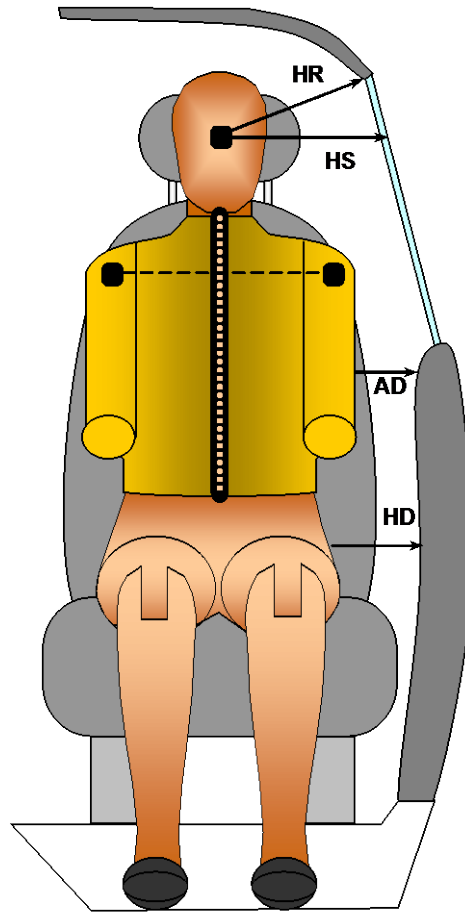
**LEFT SIDE VIEW**

| Code      | Measurement Description       | Driver      |           |
|-----------|-------------------------------|-------------|-----------|
|           |                               | Length (mm) | Angle (°) |
| HH        | Head to Header                | 352         |           |
| HW        | Head to Windshield            | 730         |           |
| HZ        | Head to Roof Liner            | 251         |           |
| NR        | Nose to Rim                   | 221         |           |
| CD        | Chest to Dashboard            | 678         |           |
| CS        | Chest to Steering Wheel       | 165         |           |
| KDL/KDAL° | Left Knee to Dash             | 134         | 50.2      |
| KDR/KDAR° | Right Knee to Dash            | 132         | 39.4      |
| PAX°      | Pelvic Tilt Angle (X-Axis)    |             | 19.6      |
| PAY°      | Pelvic Tilt Angle (Y-Axis)    |             | -0.8      |
| PHX       | Hip Point to Striker (X-Axis) | 339         |           |
| PHZ       | Hip Point to Striker (Z-Axis) | 210         |           |

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016



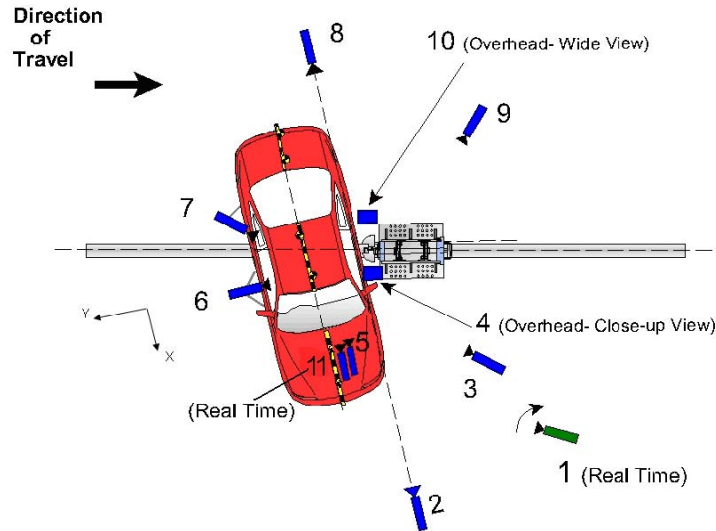
*FRONT VIEW OF DUMMY*

| Code | Measurement Description | Driver      |
|------|-------------------------|-------------|
|      |                         | Length (mm) |
| HR   | Head to Side Header     | 169         |
| HS   | Head to Side Window     | 389         |
| AD   | Arm to Door             | 172         |
| HD   | Hip Point to Door       | 169         |

## DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016



Reference: (from Point of Impact for X and Y; from Ground for Z):  
+X = Forward of Impact, + Y = Right of Impact, +Z = Down

| Camera No. | View                       | Coordinates (mm) |       |       | Lens (mm) | Film Speed (fps) |
|------------|----------------------------|------------------|-------|-------|-----------|------------------|
|            |                            | X*               | Y*    | Z*    |           |                  |
| 1          | Real-Time Pan View         |                  |       |       |           | 30               |
| 2          | Front Ground Level         | 5860             | -180  | -1840 | 24        | 1000             |
| 3          | Impact Side 45° Forward    | 4850             | -1530 | -1830 | 20        | 1000             |
| 4          | Overhead Closeup           | 0                | 0     | -4890 | 50        | 1000             |
| 5          | Onboard – Driver Front     |                  |       |       | 16        | 1000             |
| 6          | Onboard – Driver Side      |                  |       |       | 8         | 1000             |
| 7          | Onboard – Driver Rear      |                  |       |       | 8         | 1000             |
| 8          | Rear Ground Level          | -6350            | 0     | -1860 | 24        | 1000             |
| 9          | Impact Side 45° Rearward   | -3880            | -3720 | -1880 | 20        | 1000             |
| 10         | Overhead Wide View         | 0                | -170  | -4910 | 14        | 1000             |
| 11         | Real-Time Dummy Front View |                  |       |       |           | 30               |

\*All measurements accurate to  $\pm 6$  mm

Note: Vehicle was at a 75° angle to the rigid pole.

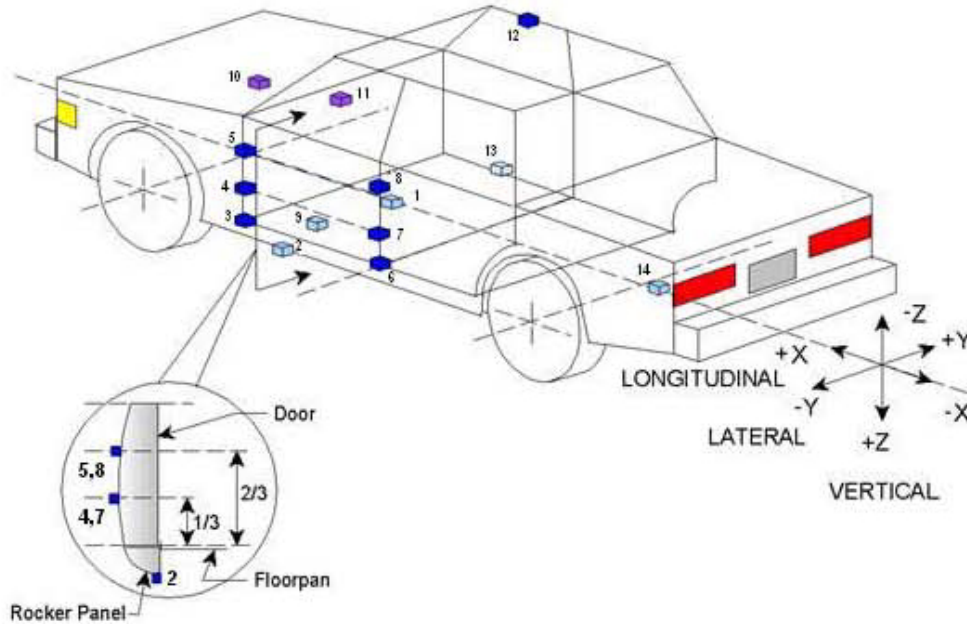
Explain why camera(s) did not operate as intended: None

| INSTRUMENTATION   | Number of Channels |
|-------------------|--------------------|
| Driver Dummy      | 19                 |
| Vehicle Structure | 16                 |
| Pole Load Cells   | 8                  |
| <b>TOTAL</b>      | <b>43</b>          |

## DATA SHEET NO. 6 VEHICLE ACCELEROMETER DATA

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016



|    | Accelerometer Location |                  |      |       |
|----|------------------------|------------------|------|-------|
|    | ID                     | Coordinates (mm) |      |       |
|    |                        | X                | Y    | Z     |
| 1  | Vehicle CG             | 2536             | 180  | -187  |
| 2  | Left Floor Sill        | 2635             | -720 | -203  |
| 3  | A Pillar Sill          | 3119             | -720 | -204  |
| 4  | A Pillar Low           | 2990             | -828 | -564  |
| 5  | A Pillar Mid           | 3023             | -834 | -806  |
| 6  | B Pillar Sill          | 1832             | -720 | -201  |
| 7  | B Pillar Low           | 1936             | -727 | -593  |
| 8  | B Pillar Mid           | 1928             | -717 | -815  |
| 9  | Driver Seat Track      | 2357             | -373 | -203  |
| 10 | Engine Top             | 3744             | -32  | -810  |
| 11 | Firewall               | 3569             | 0    | -840  |
| 12 | Right Roof             | 2051             | 492  | -1480 |
| 13 | Right Floor Sill       | 2637             | 720  | -194  |
| 14 | Rear Floorpan          | 951              | 28   | -545  |

Reference:

X – Test Vehicle Rear Bumper (+forward)  
Y – Test Vehicle Centerline (+ to right)  
Z – Ground Plane (+ down)

**DATA SHEET NO. 7**  
**RIGID POLE LOAD CELL DATA**

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016



254 mm Diameter Rigid Pole

| Load Cell Locations |                                 |
|---------------------|---------------------------------|
| ID                  | Height From Impact Surface (mm) |
| 1                   | 182                             |
| 2                   | 470                             |
| 3                   | 698                             |
| 4                   | 986                             |
| 5                   | 1212                            |
| 6                   | 1641                            |
| 7                   | 1854                            |
| 8                   | 2053                            |

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016

**TEST DUMMY INFORMATION AND CONTACT POINTS**

| Description       | Driver SID-IIs Dummy      |
|-------------------|---------------------------|
| Face              | Curtain Airbag            |
| Top of Head       | Curtain Airbag            |
| Left Side of Head | Curtain Airbag            |
| Back of Head      | Curtain Airbag, Headrest  |
| Left Shoulder     | Side Airbag               |
| Upper Torso       | Side Airbag, Seat Back    |
| Lower Torso       | Side Airbag, Seat Back    |
| Left Hip          | Side Airbag, Seat Cushion |
| Left Knee         | Door Panel                |

**POST-TEST DOOR PERFORMANCE**

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

**POST-TEST SEAT PERFORMANCE**

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

**POST-TEST STRUCTURAL OBSERVATIONS**

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

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

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

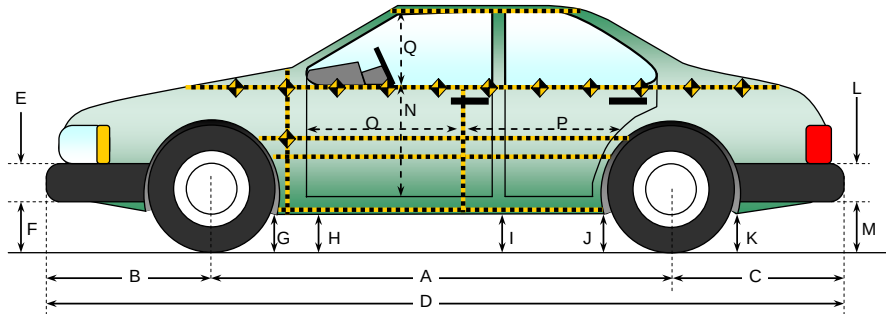
**VEHICLE SPEED, VEHICLE ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA**

| Measured Parameter                                                            | Units | Tolerance                       | Value |
|-------------------------------------------------------------------------------|-------|---------------------------------|-------|
| Vertical Impact Reference Line (Aft of Front Axle)<br>(Intended Impact Point) | mm    |                                 | 1109  |
| Actual Impact Point (Aft of Front Axle)                                       | mm    |                                 | 1108  |
| Horizontal Offset (+forward / -rearward)                                      | mm    | +/- 38 of Intended Impact Point | 1     |
| Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion    | deg   | 75 +/- 3                        | 75    |
| Trap No. 1 Velocity (Primary)                                                 | km/h  | 31.4 to 33.0                    | 32.32 |
| Trap No. 2 Velocity (Redundant)                                               | km/h  | 31.4 to 33.0                    | 32.33 |

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016



All measurements in (mm) with tolerance of  $\pm 3$  mm

**LEFT SIDE VIEW**

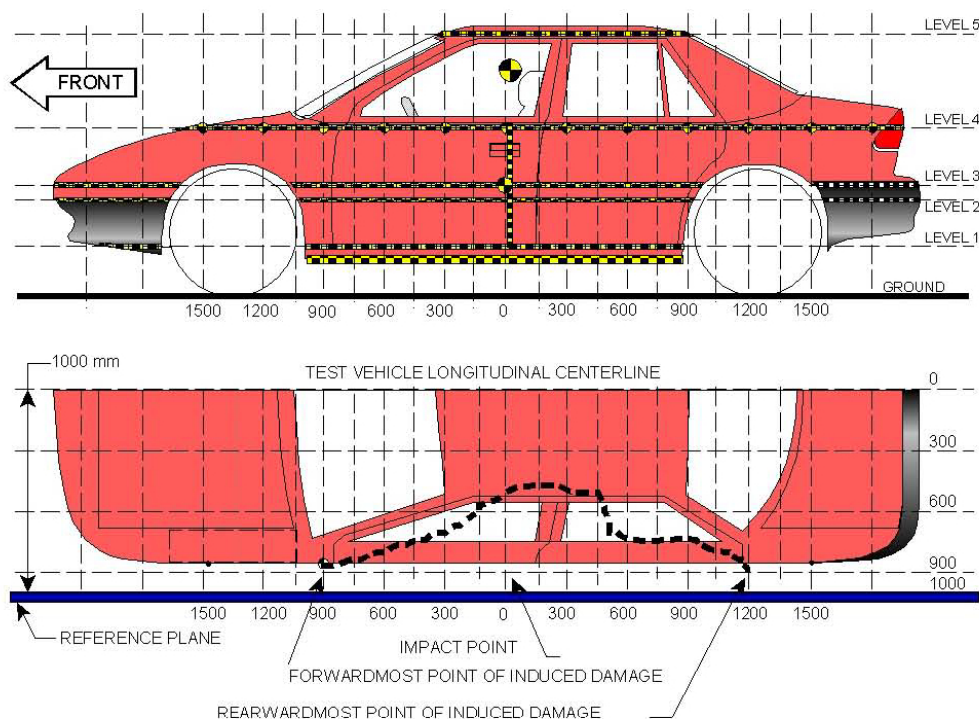
**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

| Code | Measurement Description                    | Pre-Test | Post-Test | Difference |
|------|--------------------------------------------|----------|-----------|------------|
| A    | Wheelbase                                  | 2695     | 2614      | 81         |
| B    | Front Axle to FSOV                         | 953      | 991       | -38        |
| C    | Rear Axle to RSOV                          | 821      | 830       | -9         |
| D    | Total Vehicle Length at Centerline         | 4469     | 4435      | 34         |
| E    | Front Bumper Thickness                     | 122      | 122       | 0          |
| F    | Front Bumper Bottom to Ground              | 200      | 220       | -20        |
| G    | Sill Height at Front Wheel Well            | 156      | 152       | 4          |
| H    | Sill Height at Front Door Leading Edge     | 157      | 151       | 6          |
| I    | Sill Height at B-Pillar                    | 170      | 172       | -2         |
| J1   | Sill Height at Rear Wheel Well             | 175      | 178       | -3         |
| J2   | Pinch Weld Height at Rear Wheel Well       | 169      | 172       | -3         |
| K    | Sill Height Aft of Rear Wheel Well         | 470      | 474       | -4         |
| L    | Rear Bumper Thickness                      |          |           |            |
| M    | Rear Bumper Bottom to Ground               | 432      | 423       | 9          |
| N    | Sill Height to Bottom of Front Window Sill | 718      | 731       | -13        |
| O    | Front Door Leading Edge to Impact CL       | 636      | 536       | 100        |
| P    | Rear Door Trailing Edge to Impact CL       | 1272     | 1204      | 68         |
| Q    | Front Window Opening                       | 460      | 430       | 30         |
| R    | Right Side Length                          | 3797     | 3799      | -2         |
| S    | Left Side Length                           | 3797     | 3700      | 97         |
| T    | Vehicle Width at B-Pillars                 | 1757     | 1705      | 52         |

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016



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

## **MAXIMUM EXTERIOR CRUSH MEASUREMENTS**

| Level | Measurement Description | Height Above Ground (mm) | Maximum Exterior Static Crush | Distance from Impact |
|-------|-------------------------|--------------------------|-------------------------------|----------------------|
| 1     | Sill Top                | 204                      | 251                           | 0                    |
| 2     | Occupant Hip Point      | 527                      | 301                           | 75                   |
| 3     | Mid Door                | 589                      | 308                           | 75                   |
| 4     | Window Sill             | 845                      | 298                           | 75                   |
| 5     | Window Top              | 1410                     | 117                           | 0                    |

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016

|       | Pre-Test |     |     |     |     | Post-Test |     |     |     |     | Difference |     |     |     |     |
|-------|----------|-----|-----|-----|-----|-----------|-----|-----|-----|-----|------------|-----|-----|-----|-----|
|       | 1        | 2   | 3   | 4   | 5   | 1         | 2   | 3   | 4   | 5   | 1          | 2   | 3   | 4   | 5   |
| -2700 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -2550 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -2400 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -2250 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -2100 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -1950 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -1800 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -1650 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -1500 |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -1350 |          |     |     | 354 |     |           |     |     | 347 |     |            |     |     | -7  |     |
| -1200 |          |     |     | 328 |     |           |     |     | 345 |     |            |     |     | 17  |     |
| -1050 |          |     |     | 304 |     |           |     |     | 330 |     |            |     |     | 26  |     |
| -900  |          |     |     | 285 |     |           |     |     | 312 |     |            |     |     | 27  |     |
| -825  |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| -750  |          | 219 | 219 | 277 |     |           | 234 | 235 | 294 |     |            | 15  | 16  | 17  |     |
| -675  | 248      | 221 | 222 | 275 |     | 264       | 237 | 237 | 294 |     | 16         | 16  | 15  | 19  |     |
| -600  | 246      | 223 | 221 | 271 |     | 267       | 239 | 239 | 285 |     | 21         | 16  | 18  | 14  |     |
| -525  | 246      | 223 | 221 | 268 |     | 280       | 271 | 271 | 301 |     | 34         | 48  | 50  | 33  |     |
| -450  | 247      | 223 | 221 | 264 |     | 300       | 301 | 302 | 321 |     | 53         | 78  | 81  | 57  |     |
| -375  | 248      | 224 | 221 | 260 |     | 320       | 332 | 333 | 349 |     | 72         | 108 | 112 | 89  |     |
| -300  | 248      | 224 | 222 | 257 |     | 344       | 367 | 367 | 383 |     | 96         | 143 | 145 | 126 |     |
| -225  | 247      | 225 | 222 | 254 |     | 374       | 406 | 405 | 422 |     | 127        | 181 | 183 | 168 |     |
| -150  | 246      | 225 | 223 | 251 |     | 405       | 437 | 440 | 455 |     | 159        | 212 | 217 | 204 |     |
| -75   | 246      | 226 | 223 | 248 |     | 444       | 478 | 481 | 495 |     | 198        | 252 | 258 | 247 |     |
| 0     | 245      | 227 | 224 | 246 | 512 | 496       | 524 | 527 | 536 | 629 | 251        | 297 | 303 | 290 | 117 |
| 75    | 245      | 228 | 224 | 243 | 508 | 495       | 529 | 532 | 541 | 597 | 250        | 301 | 308 | 298 | 89  |
| 150   | 244      | 229 | 225 | 242 | 504 | 445       | 490 | 497 | 508 | 575 | 201        | 261 | 272 | 266 | 71  |
| 225   | 243      | 229 | 225 | 242 | 502 | 389       | 438 | 447 | 453 | 557 | 146        | 209 | 222 | 211 | 55  |
| 300   | 243      | 230 | 226 | 225 | 500 | 357       | 395 | 397 | 375 | 545 | 114        | 165 | 171 | 150 | 45  |
| 375   | 243      | 230 | 227 | 228 | 499 | 330       | 344 | 342 | 322 | 535 | 87         | 114 | 115 | 94  | 36  |
| 450   | 244      | 233 | 228 | 239 | 499 | 307       | 283 | 283 | 295 | 522 | 63         | 50  | 55  | 56  | 23  |
| 525   | 245      | 233 | 229 | 238 | 499 | 295       | 285 | 281 | 282 | 520 | 50         | 52  | 52  | 44  | 21  |
| 600   | 246      | 234 | 230 | 238 | 500 | 282       | 280 | 275 | 276 | 515 | 36         | 46  | 45  | 38  | 15  |
| 675   |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| 750   | 247      | 236 | 232 | 238 | 507 | 259       | 265 | 262 | 261 | 515 | 12         | 29  | 30  | 23  | 8   |
| 825   |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| 900   | 246      | 235 | 232 | 238 | 519 | 249       | 257 | 254 | 255 | 527 | 3          | 22  | 22  | 17  | 8   |
| 1050  | 245      | 230 | 229 | 240 | 533 | 237       | 235 | 237 | 248 | 542 | -8         | 5   | 8   | 8   | 9   |
| 1200  | 244      | 222 | 223 | 242 | 549 | 230       | 218 | 218 | 240 | 560 | -14        | -4  | -5  | -2  | 11  |
| 1350  |          |     |     | 245 | 570 |           |     |     | 234 | 579 |            |     |     | -11 | 9   |
| 1500  |          |     |     | 251 |     |           |     |     | 254 |     |            |     |     | 3   |     |
| 1650  |          |     |     | 259 |     |           |     |     | 261 |     |            |     |     | 2   |     |
| 1800  |          |     |     | 269 |     |           |     |     | 272 |     |            |     |     | 3   |     |
| 1950  |          |     |     | 283 |     |           |     |     | 288 |     |            |     |     | 5   |     |
| 2100  |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| 2250  |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| 2400  |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| 2550  |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |
| 2700  |          |     |     |     |     |           |     |     |     |     |            |     |     |     |     |

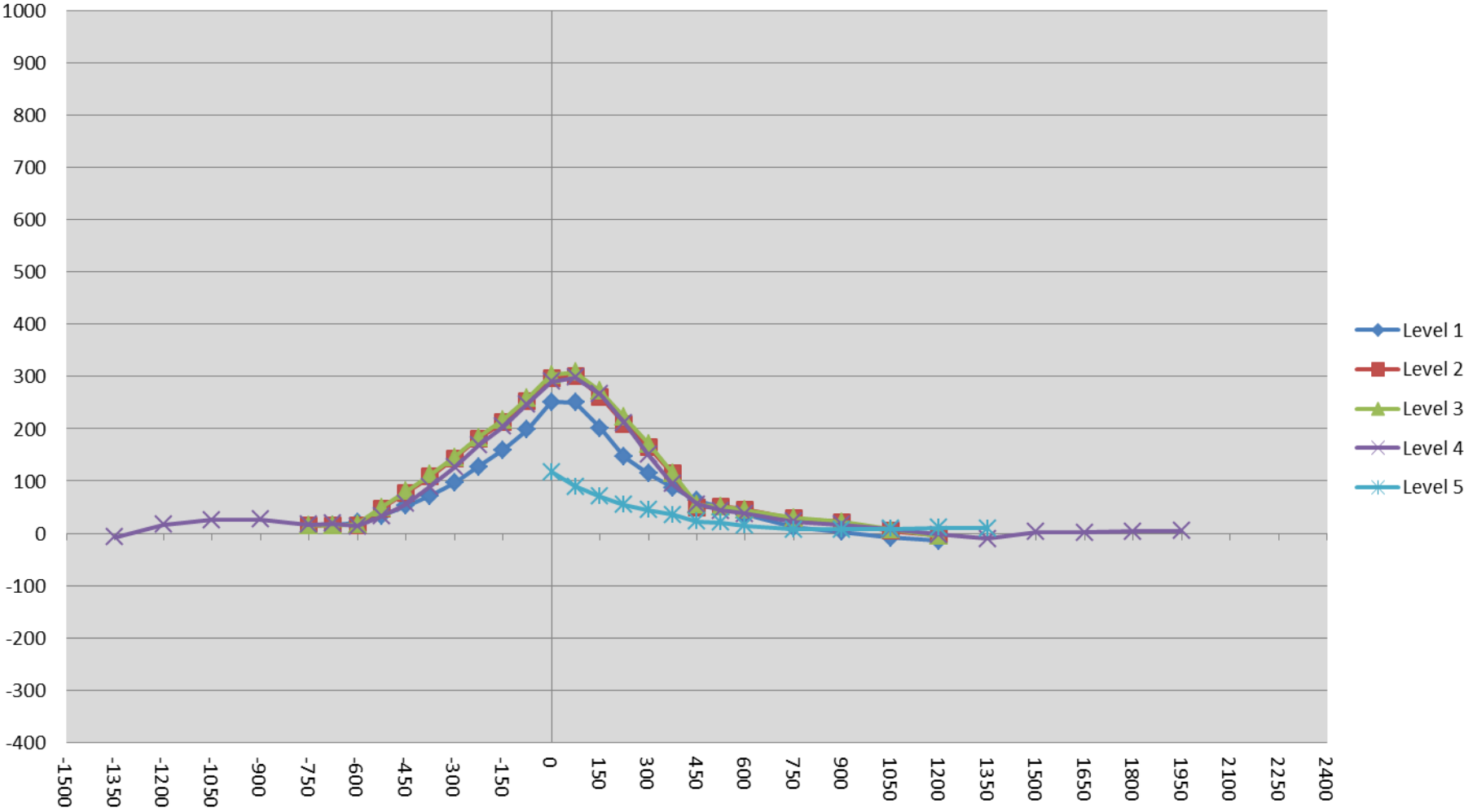
Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush pile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

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

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
Test Date: 3/9/2016

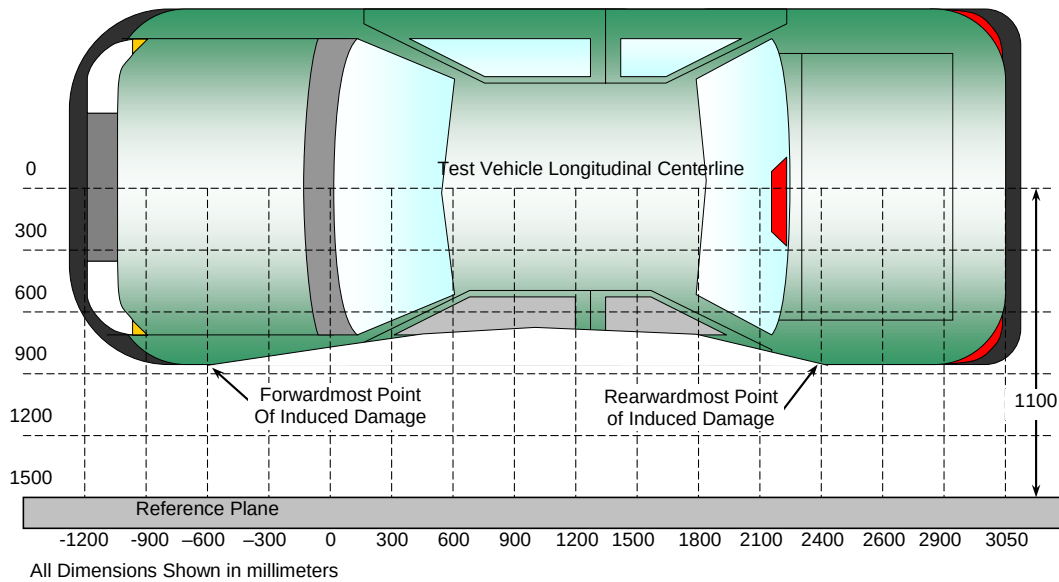
21



# **DATA SHEET NO. 11** **VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016



**TOP VIEW**

## **DAMAGE PROFILE DISTANCES**

| DPD | Distance from Impact Point (mm) | Level | Pre-Test (mm) | Post-Test (mm) | Crush (mm) |
|-----|---------------------------------|-------|---------------|----------------|------------|
| 1   | 650                             | 3     | 231           | 319            | 88         |
| 2   | 395                             | 3     | 227           | 407            | 180        |
| 3   | 140                             | 3     | 224           | 598            | 374        |
| 4   | -115                            | 3     | 222           | 473            | 251        |
| 5   | -370                            | 3     | 221           | 336            | 115        |
| 6   | -625                            | 3     | 220           | 273            | 53         |

**DATA SHEET NO. 12**  
**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

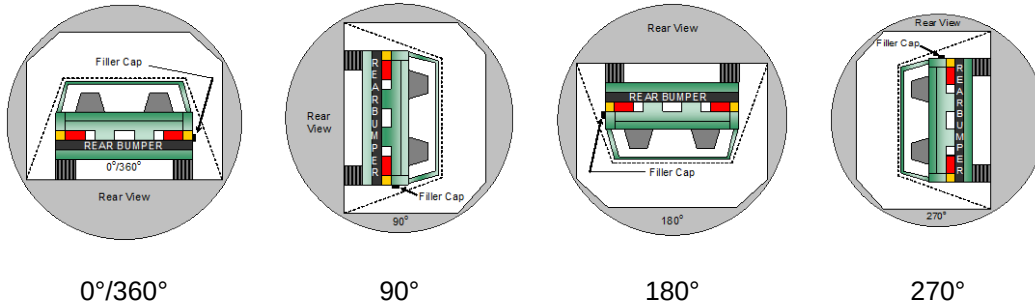
NHTSA No. M20165109  
 Test Date: 3/9/2016

Test Time: 9:35 a.m.

Temperature: 21.5°C

- A. From impact until vehicle motion ceases: 0 oz.  
 (Maximum Allowable = 1 ounce)  
 B. For the 5 minute period after motion ceases: None  
 (Maximum allowable = 5 ounces)  
 C. For the following 25 minutes: None  
 (Maximum allowable = 1 oz./minute)  
 D. Spillage Details: None

**FMVSS 301 STATIC ROLLOVER DATA**



**ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS**

| Test Phase   | Rotation Time | Hold Time | Total Time |
|--------------|---------------|-----------|------------|
| 0° to 90°    | 113           | 300       | 413        |
| 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            |

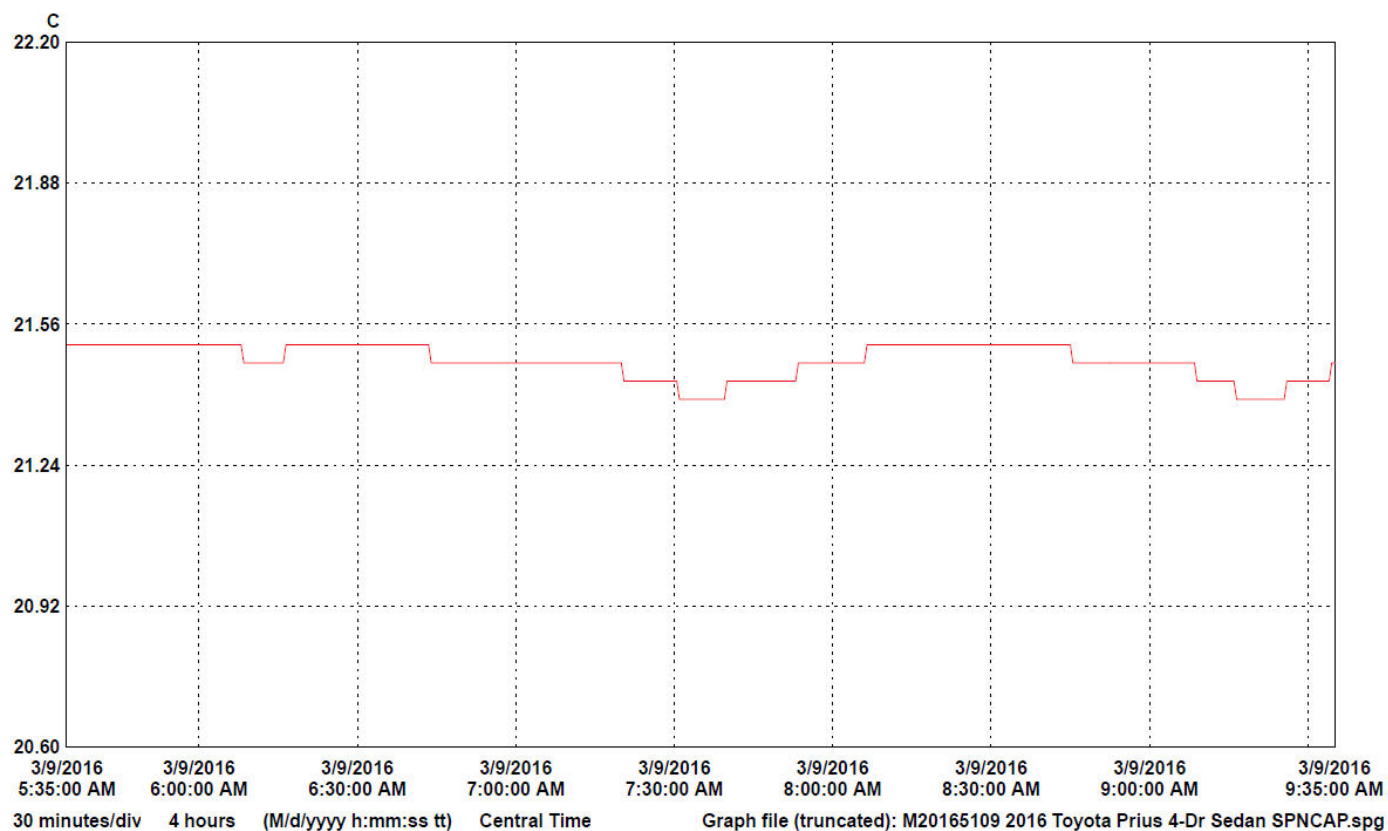
**ROLLOVER SOLVENT SPILLAGE LOCATION TABLE**

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

# **DATA SHEET NO. 13** **DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA**

Test Vehicle: 2016 Toyota Prius Two 5-Door Hatchback  
 Test Program: NCAP Side Pole Impact Test

NHTSA No. M20165109  
 Test Date: 3/9/2016



**APPENDIX A**  
**PHOTOGRAPHS**

## TABLE OF PHOTOGRAPHS

|               |                                                                        | <u>Page No.</u> |
|---------------|------------------------------------------------------------------------|-----------------|
| Photo No. 001 | As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle            | A-1             |
| Photo No. 002 | As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle              | A-1             |
| Photo No. 003 | Pre-Test Frontal View of Test Vehicle                                  | A-2             |
| Photo No. 004 | Post-Test Frontal View of Test Vehicle                                 | A-2             |
| Photo No. 005 | Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle                 | A-3             |
| Photo No. 006 | Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle                | A-3             |
| Photo No. 007 | Pre-Test Left Side View of Test Vehicle                                | A-4             |
| Photo No. 008 | Post-Test Left Side View of Test Vehicle                               | A-4             |
| Photo No. 009 | Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle                  | A-5             |
| Photo No. 010 | Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle                 | A-5             |
| Photo No. 011 | Pre-Test Rear View of Test Vehicle                                     | A-6             |
| Photo No. 012 | Post-Test Rear View of Test Vehicle                                    | A-6             |
| Photo No. 013 | Pre-Test Right Side View of Test Vehicle                               | A-7             |
| Photo No. 014 | Post-Test Right Side View of Test Vehicle                              | A-7             |
| Photo No. 015 | Pre-Test Overhead View of Test Area                                    | A-8             |
| Photo No. 016 | Post-Test Overhead View of Test Area                                   | A-8             |
| Photo No. 017 | Pre-Test Left Side View of Pole Positioned Against Side of Vehicle     | A-9             |
| Photo No. 018 | Pre-Test Right Side View of Pole Positioned Against Side of Vehicle    | A-9             |
| Photo No. 019 | Pre-Test Close-Up View of Impact Point Target                          | A-10            |
| Photo No. 020 | Post-Test Close-Up View of Impact Point Target Showing Impact Location | A-10            |
| Photo No. 021 | Pre-Test Front Close-Up View of Dummy Head and Chest                   | A-11            |
| Photo No. 022 | Post-Test Front Close-Up View of Dummy                                 | A-11            |
| Photo No. 023 | Pre-Test Left Side View of Dummy Showing Belt and Chalking             | A-12            |
| Photo No. 024 | Pre-Test Left Side View of Dummy Shoulder and Door Top View            | A-12            |
| Photo No. 025 | Post-Test Left Side View of Dummy Shoulder and Door Top View           | A-13            |

|               |                                                                                        | <u>Page No.</u> |
|---------------|----------------------------------------------------------------------------------------|-----------------|
| Photo No. 026 | Pre-Test Front View of Seat Back Prior to Dummy Positioning                            | A-13            |
| Photo No. 027 | Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint | A-14            |
| Photo No. 028 | Pre-Test Front View of Seat Pan Prior to Dummy Positioning                             | A-14            |
| Photo No. 029 | Pre-Test Overhead View of Dummy Thighs on Seat Pan                                     | A-15            |
| Photo No. 030 | Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket    | A-15            |
| Photo No. 031 | Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level                  | A-16            |
| Photo No. 032 | Pre-Test Placement of Dummy's Feet                                                     | A-16            |
| Photo No. 033 | Pre-Test View of Belt Anchorage for Dummy                                              | A-17            |
| Photo No. 034 | Pre-Test Left Side View of Steering Wheel                                              | A-17            |
| Photo No. 035 | Pre-Test View of Disengaged Parking Brake                                              | A-18            |
| Photo No. 036 | Pre-Test View of Parking Brake                                                         | A-18            |
| Photo No. 037 | Pre-Test Close-Up Left Side View of Driver Seat Track                                  | A-19            |
| Photo No. 038 | Pre-Test Close-Up Left Side View of Driver Seat Back                                   | A-19            |
| Photo No. 039 | Pre-Test Close-Up View of Driver Seat Back or Head Restraint                           | A-20            |
| Photo No. 040 | Pre-Test Dummy and Door Clearance View                                                 | A-20            |
| Photo No. 041 | Post-Test Dummy and Door Clearance View                                                | A-21            |
| Photo No. 042 | Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment               | A-21            |
| Photo No. 043 | Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment              | A-22            |
| Photo No. 044 | Pre-Test Inner Door Panel View                                                         | A-22            |
| Photo No. 045 | Post-Test Inner Door Panel View Showing Dummy Contact Location                         | A-23            |
| Photo No. 046 | Post-Test Dummy Close-Up Head Contact with Vehicle Interior View                       | A-23            |
| Photo No. 047 | Post-Test Dummy Close-Up Head Contact with Side Air Bag View                           | A-24            |
| Photo No. 048 | Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View                      | A-24            |
| Photo No. 049 | Post-Test Dummy Close-Up Torso Contact with Side Air Bag View                          | A-25            |
| Photo No. 050 | Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View                     | A-25            |
| Photo No. 051 | Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View                         | A-26            |

|                |                                                                           | <u>Page No.</u> |
|----------------|---------------------------------------------------------------------------|-----------------|
| Photo No. 052  | Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View          | A-26            |
| Photo No. 053  | Pre-Test View of Fuel Filler Cap or Fuel Filler Neck                      | A-27            |
| Photo No. 054  | Post-Test View of Fuel Filler Cap or Fuel Filler Neck                     | A-27            |
| Photo No. 055  | Close-Up View of Vehicle's Certification Label                            | A-28            |
| Photo No. 056  | Close-Up View of Vehicle's Tire Information Placard or Label              | A-28            |
| Photo No. 056a | Close-Up View of Vehicle's Capacity Reduction Label                       | A-29            |
| Photo No. 057  | Pre-Test Pole Barrier Front View                                          | A-29            |
| Photo No. 058  | Post-Test Pole Barrier Front View                                         | A-30            |
| Photo No. 059  | Pre-Test Pole Barrier Side View                                           | A-30            |
| Photo No. 060  | Post-Test Pole Barrier Side View                                          | A-31            |
| Photo No. 061  | Pre-Test Ballast View                                                     | A-31            |
| Photo No. 062  | Post-Test Primary and Redundant Speed Trap Read-Out                       | A-32            |
| Photo No. 063  | FMVSS No. 301 Static Rollover 0 Degrees                                   | A-32            |
| Photo No. 064  | FMVSS No. 301 Static Rollover 90 Degrees                                  | A-33            |
| Photo No. 065  | FMVSS No. 301 Static Rollover 180 Degrees                                 | A-33            |
| Photo No. 066  | FMVSS No. 301 Static Rollover 270 Degrees                                 | A-34            |
| Photo No. 067  | FMVSS No. 301 Static Rollover 360 Degrees                                 | A-34            |
| Photo No. 068  | Impact Event                                                              | A-35            |
| Photo No. 069  | Monroney Label                                                            | A-35            |
| Photo No. 070  | Head Restraint Use and Adjustment Information from Vehicle Owner's Manual | A-36            |
| Photo No. 071  | Post-Test View of Shattered Vehicle Inner Door Panel                      | A-36            |



Photo No. 001 - As Delivered Right Front  $\frac{3}{4}$  View of Test Vehicle



Photo No. 002 - As Delivered Left Rear  $\frac{3}{4}$  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  $\frac{3}{4}$  View of Test Vehicle



Photo No. 006 - Post-Test Left Front  $\frac{3}{4}$  View of Test Vehicle

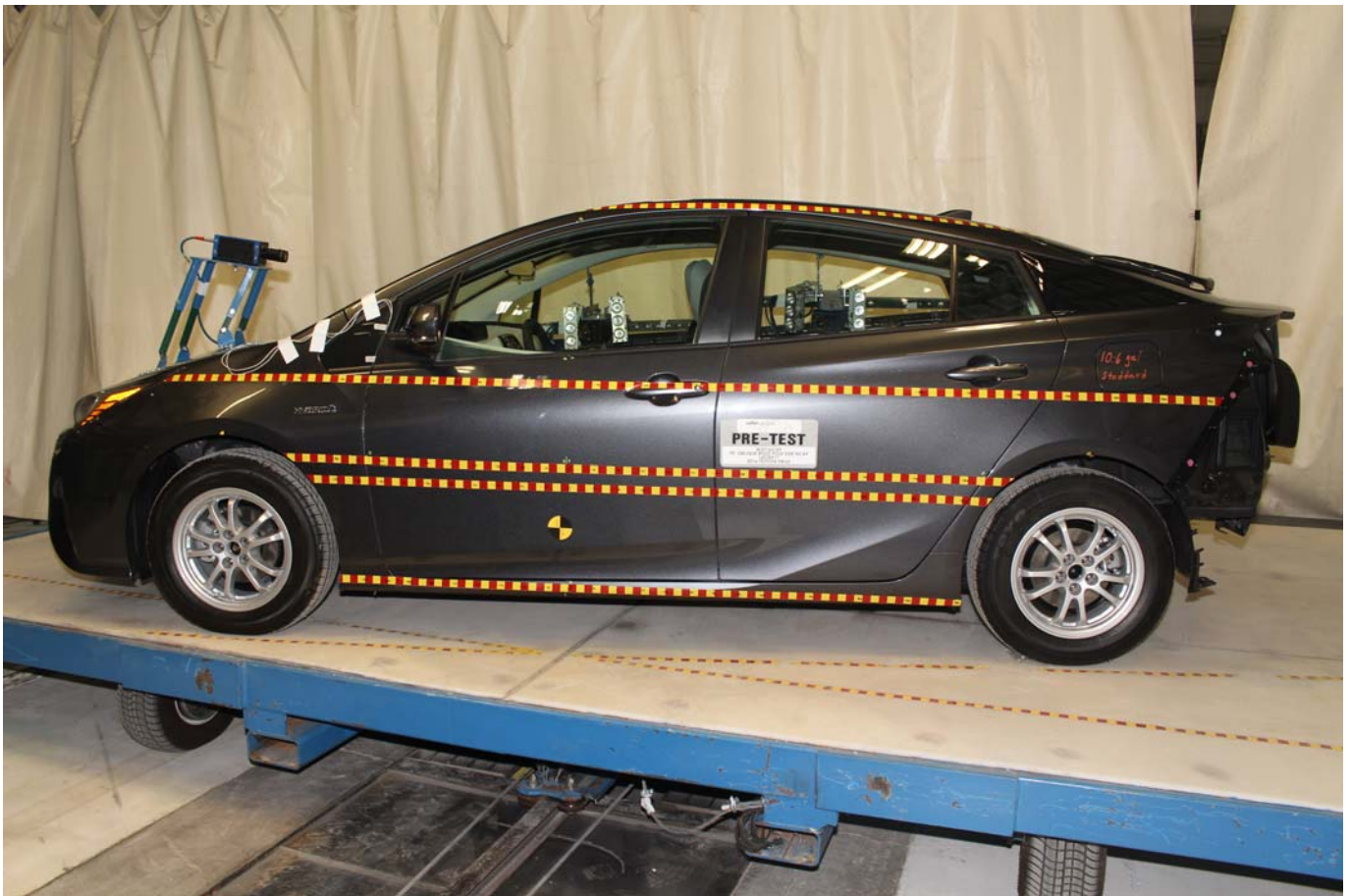


Photo No. 007 - Pre-Test Left Side View of Test Vehicle



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



Photo No. 009 - Pre-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle



Photo No. 010 - Post-Test Left Rear  $\frac{3}{4}$  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

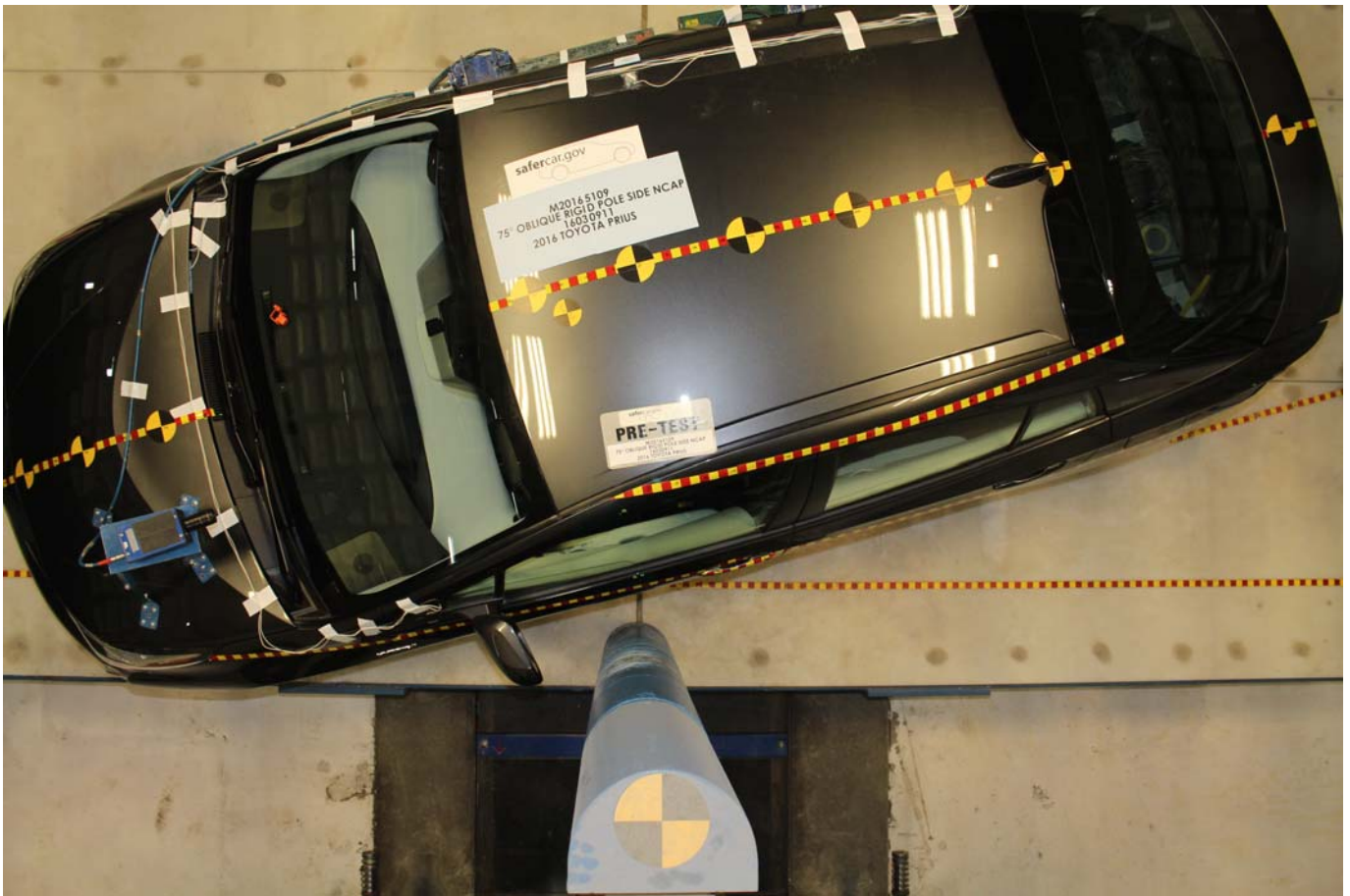


Photo No. 015 - Pre-Test Overhead View of Test Area



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



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



Photo No. 018 - Pre-Test Right Side View of Pole Positioned Against Side of 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 Showing Impact Location



Photo No. 021 - Pre-Test Front Close-Up View of Dummy Head and Chest



Photo No. 022 - Post-Test Front Close-Up View of Dummy



Photo No. 023 - Pre-Test Left Side View of Dummy Showing Belt and Chalking



Photo No. 024 - Pre-Test Left Side View of Dummy Shoulder and Door Top View



Photo No. 025 - Post-Test Left Side View of Dummy Shoulder and Door Top View



Photo No. 026 - Pre-Test Front View of Seat Back Prior to Dummy Positioning



Photo No. 027 - Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



Photo No. 028 - Pre-Test Front View of Seat Pan Prior to Dummy Positioning



Photo No. 029 - Pre-Test Overhead View of Dummy Thighs on Seat Pan



Photo No. 030 - Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket



Photo No. 031 - Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level



Photo No. 032 - Pre-Test Placement of Dummy's Feet



Photo No. 033 - Pre-Test View of Belt Anchorage for Dummy



Photo No. 034 - Pre-Test Left Side View of Steering Wheel



Photo No. 035 - Pre-Test View of Disengaged Parking Brake



Photo No. 036 - Pre-Test View of Parking Brake



Photo No. 037 - Pre-Test Close-Up Left Side View of Driver Seat Track

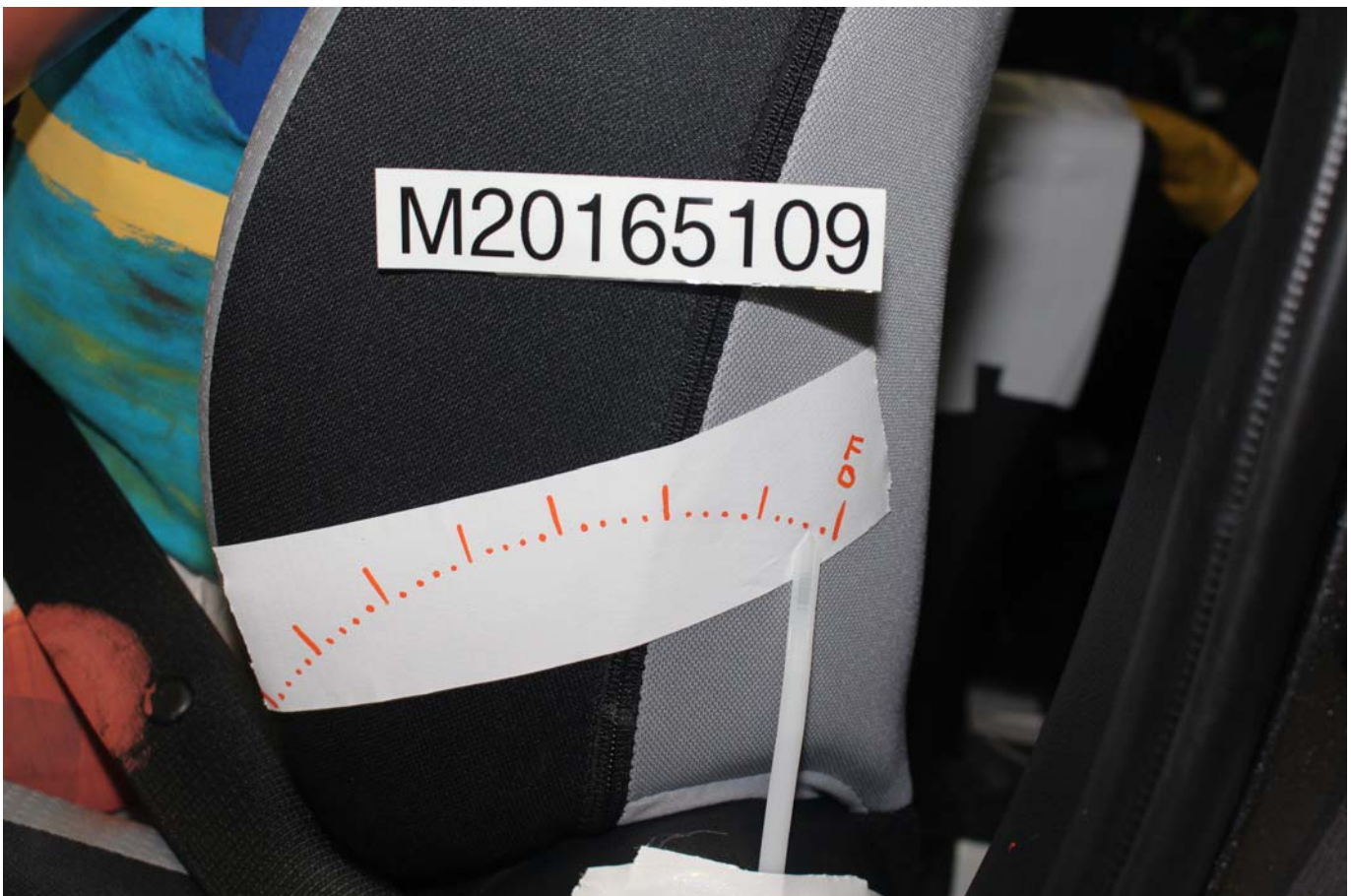


Photo No. 038 - Pre-Test Close-Up Left Side View of Driver Seat Back



Photo No. 039 - Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Photo No. 040 - Pre-Test Dummy and Door Clearance View



Photo No. 041 - Post-Test Dummy and Door Clearance View



Photo No. 042 - Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Photo No. 043 - Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Photo No. 044 - Pre-Test Inner Door Panel View



Photo No. 045 - Post-Test Inner Door Panel View Showing Dummy Contact Location



Photo No. 046 - Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



Photo No. 047 - Post-Test Dummy Close-Up Head Contact with Side Air Bag View



Photo No. 048 - Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



Photo No. 049 - Post-Test Dummy Close-Up Torso Contact with Side Air Bag View



Photo No. 050 - Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



Photo No. 051 - Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View



Photo No. 052 - Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



Photo No. 053 - Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 054 - Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 055 - Close-Up View of Vehicle's Certification Label

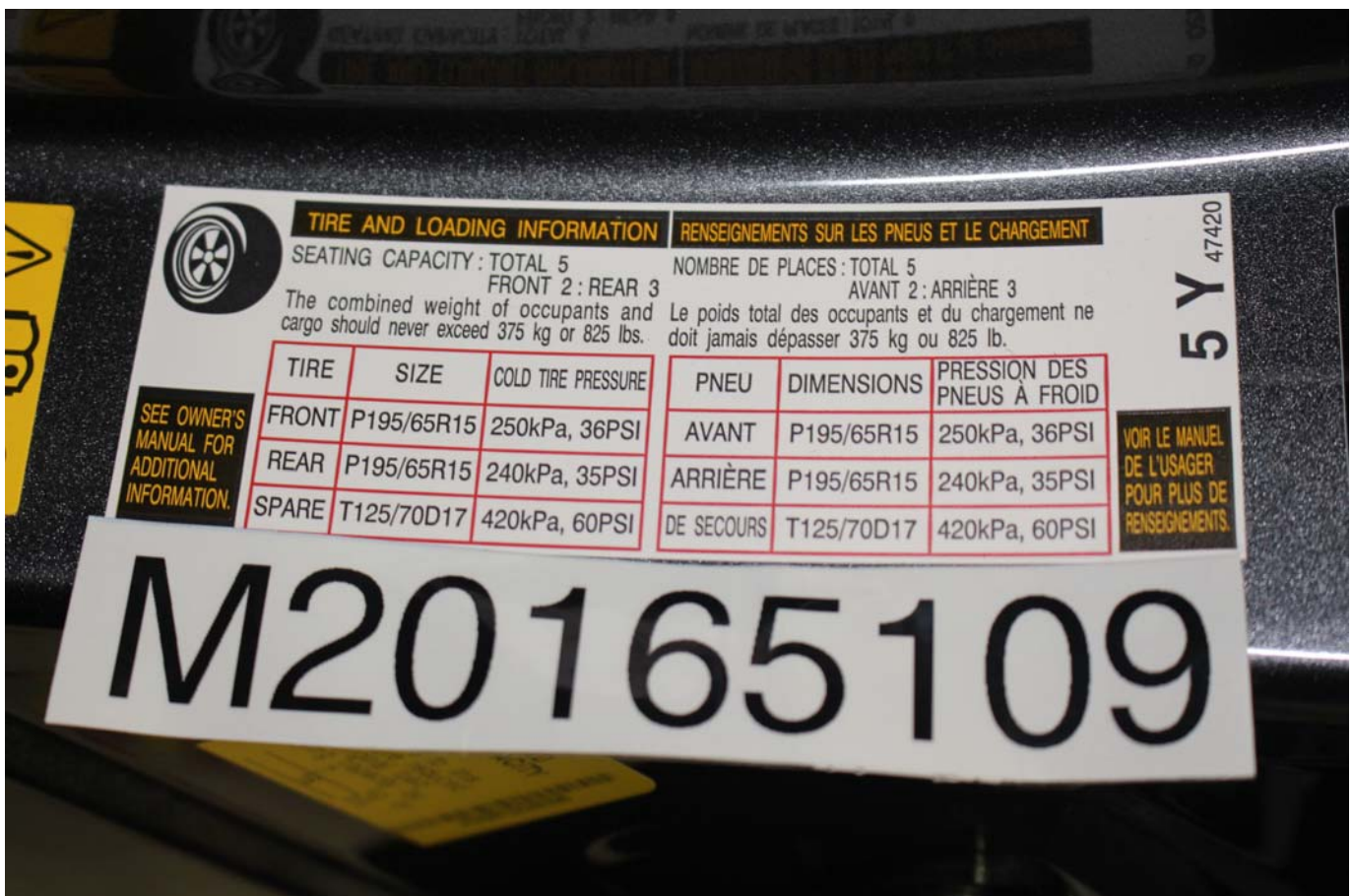


Photo No. 056 - Close-Up View of Vehicle's Tire Information Placard or Label

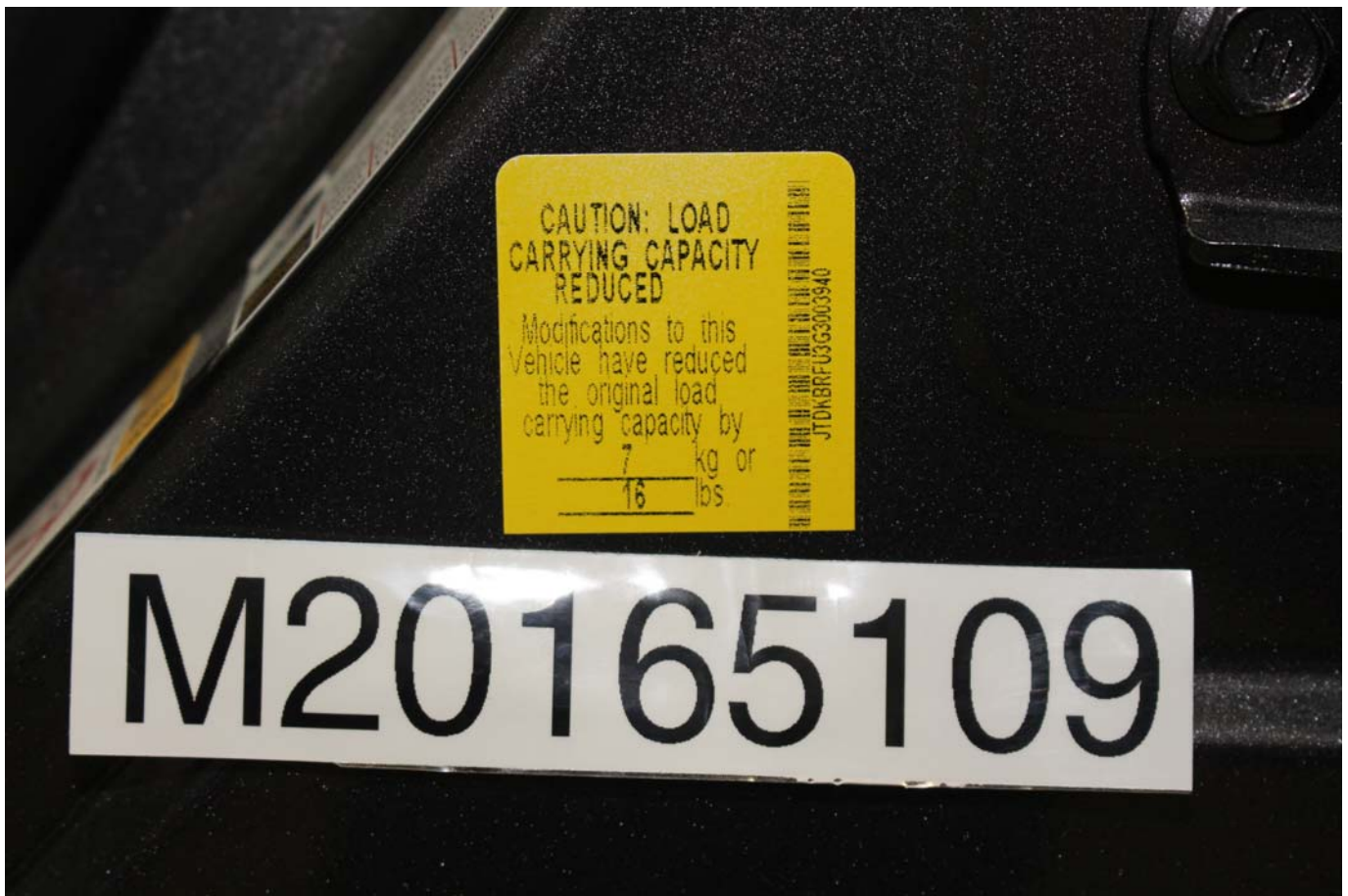


Photo No. 056a - Close-Up View of Vehicle's Capacity Reduction Label



Photo No. 057 - Pre-Test Pole Barrier Front View



Photo No. 058 - Post-Test Pole Barrier Front View



Photo No. 059 - Pre-Test Pole Barrier Side View



Photo No. 060 - Post-Test Pole Barrier Side View

**PHOTOGRAPH NOT APPLICABLE**

Photo No. 061 - Pre-Test Ballast View



Photo No. 062 - Post-Test Primary and Redundant Speed Trap Read-Out

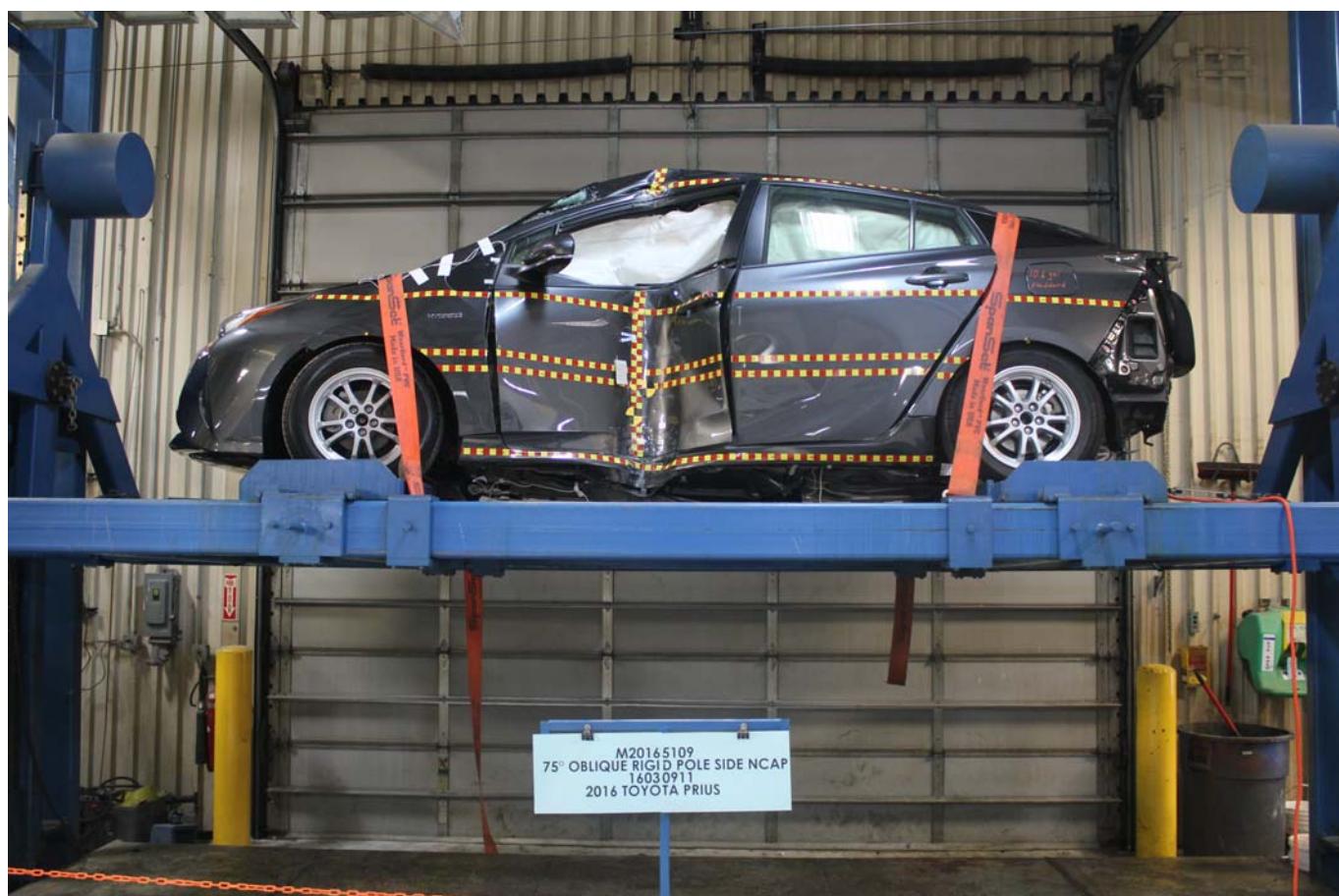


Photo No. 063 - FMVSS No. 301 Static Rollover 0 Degrees



Photo No. 064 - FMVSS No. 301 Static Rollover 90 Degrees



Photo No. 065 - FMVSS No. 301 Static Rollover 180 Degrees



Photo No. 066 - FMVSS No. 301 Static Rollover 270 Degrees



Photo No. 067 - FMVSS No. 301 Static Rollover 360 Degrees



Photo No. 068 - Impact Event



# TOYOTA

Let's Go Places

DESC: **PRIUS** **TWO**  
VIN: **JTDKBRFU3G3003940**  
YR/MDL: 2016/1229G  
CLR: **MAGNETIC GRAY MET./FA10** (01G3/10)  
FINAL ASSEMBLY POINT: **TOYOTA, AICHI, JAPAN**

**GOVERNMENT 5-STAR SAFETY RATINGS**

This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.

Our ratings range from 1 to 5 stars (★★★★★) with 5 being the highest.  
Source: National Highway Traffic Safety Administration (NHTSA)  
[www.safercar.gov](http://www.safercar.gov) or 1-888-327-4236

**EPA DOT Fuel Economy and Environment**

**Fuel Economy**

**52 MPG**  
combined city/hwy  
**1.9** gallons per 100 miles

City: **54** MPG  
Hwy: **50** MPG

Midsize Car, range from 32 to 114 MPG.  
The best vehicle rated 119 MPG.

**Annual fuel cost \$ 850**

**Fuel Economy & Greenhouse Gas Rating (higher is better)**

**1** (Best) **10** (Worst)

The vehicle emits 170 grams CO2 per mile. The best score is 69 grams per mile (higher is better). Producing and distributing fuel also emits emissions. (EPA only, not including tailpipe emissions.)

**Smog Rating (higher is better)**

**1** (Best) **7** (Worst)

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 29 MPG combined, 19,300 to 100 miles per gallon. Fuel economy estimates are based on 15,000 miles per year at 63.0 miles per gallon. MPG is miles per gallon (urban/combined). Vehicle emissions are a significant source of climate change and smog.

**ueleconomy.gov**

Use this site to compare vehicles, get more information, and find a dealer.

## STANDARD EQUIPMENT

- Hybrid Synergy Drive System, AT-P2EV
- 1.8L DOHC 18V VVT-i 4-Cylinder Engine
- Active Cruise Control
- EV-ECOPOWER Modes
- 15" Alloy Wheel w/CRUISE, P185/65R15 Tires
- Elect. Park Steering (EPS) 4-Wheel Disc Brakes
- Rear Side Sash, Dual Whistle R/S Suspension

## SAFETY & CONVENIENCE

- Star Safety System, Veh. Stability Ctrl.
- Traction Control, ABS, Brk. Assist, Power Windows, Distrib. Brake Assist & Smart Stop Tech
- Dr & Fr Passenger Airbag
- Dr & Fr Passenger Active Headrests
- Dr & Fr Passenger Mounted Side, Side Curtain, & Knee, Rear Seat Airbags
- Dr & Fr Passenger Active Headrests
- LATCH/LATCH Anchor & Tethers for Children
- Dr & Fr Passenger Airbag Positioning Only
- Eng. Immobilizer, Tire Pressure Monitor Sys

## EXTERIOR

- Rear Spoiler, Intermittent Rear Wiper
- LED Headlights w/Auto-On, LED DRLs
- Heated Power Outside Mirrors

## INTERIOR

- 8-Spe. Audio Climate Control System
- 6.1" Touch-Screen Display Audio, Backup Camera, AM/FM/CAS/DVD/USB, 6 Speakers, Bluetooth, Siri Eyes Free
- 4.2" Color Dual Multi-Info Display
- Fabric-Trimmed 8-Way Adj. Dr. Seat & 4-Way Adj. Pass Seat/40/20 Split-Fold-Down Rear Bench Seat w/Fold-Down Ctr. Armrest
- Cruise Control
- 10-Speed Power Steering w/Variable Control
- Driver Door Smart Key System
- Push-Start Start w/Remote Illum. Entry
- Power Locks & Auto Up/Down Power Windows
- Center Console w/Armrest and Storage
- Lightweight Cargo Area Tonneau Cover
- 17V Power Outlets
- 2 Front & 2 Rear Cup Holders
- Temporary Spare Tire

\*\*\*Full Tank of Gas\*\*\*

**Gasoline Vehicle**

**You save \$4,750**

**in fuel costs over 5 years**  
compared to the average new vehicle.

**Smartphone App**

Scan QR Code

## MANUFACTURER'S SUGGESTED RETAIL PRICE \$24,200.00

FE 50 State Emissions  
ZT All-Weather Floor Liners & Cargo Tray Plus 238.00

**DELIVERY PROCESSING AND HANDLING FEE \$35.00**

**TOTAL \$25,235.00**

The New Vehicle Limited Warranty provides 3-year/50,000-mile coverage for the vehicle and its major components. Powertrain coverage is 5-year/100,000-mile coverage. Some components may have longer warranties under certain conditions. See dealer for details. An extended service contract may be available for the vehicle. See dealer for details. Manufacturer's suggested retail price includes manufacturer's recommended pre-delivery service. Gasoline, license and title fees, registration, license, title and front-wheel and dealer and distributor installation options are not included in the manufacturer's suggested retail price. Transportation charges are not included in the manufacturer's suggested retail price.

Photo No. 069 - Monroney Label

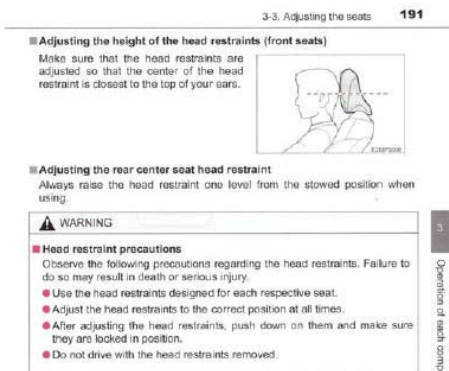
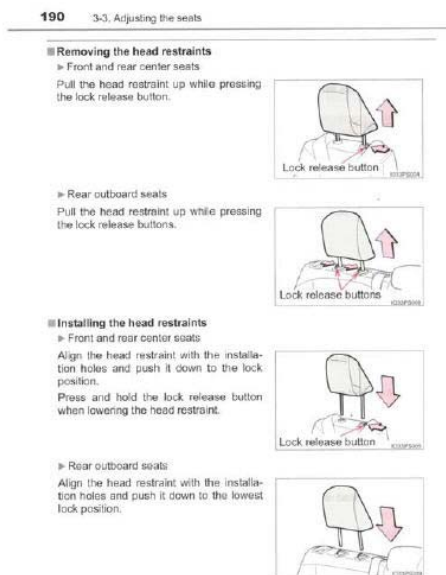
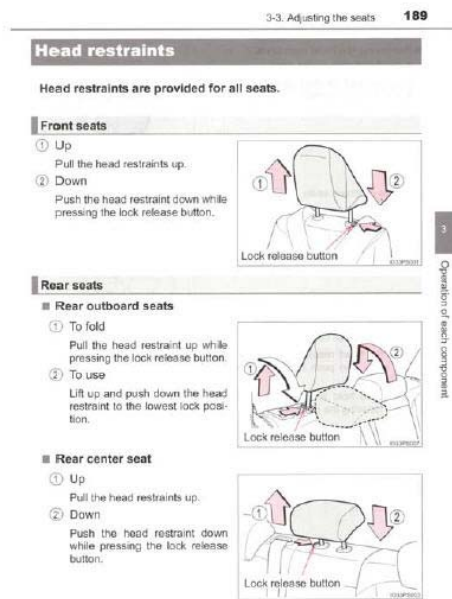


Photo No. 070 - Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



Photo No. 071 - Post-Test View of Shattered Vehicle Inner Door Panel

**APPENDIX B**  
**DUMMY RESPONSE DATA PLOTS**

**TABLE OF DATA PLOTS**  
**Driver Dummy Instrumentation Plots**

|                |                                                        | <u>Page No.</u> |
|----------------|--------------------------------------------------------|-----------------|
| Figure No. 1.  | Driver Head CG Acceleration (X) vs. Time               | B-1             |
| Figure No. 2.  | Driver Head CG Acceleration (Y) vs. Time               | B-1             |
| Figure No. 3.  | Driver Head CG Acceleration (Z) vs. Time               | B-1             |
| Figure No. 4.  | Driver Head CG Resultant Acceleration (X) vs. Time     | B-1             |
| Figure No. 5.  | Driver Lower Spine T12 Acceleration (X) vs. Time       | B-2             |
| Figure No. 6.  | Driver Lower Spine T12 Acceleration (Y) vs. Time       | B-2             |
| Figure No. 7.  | Driver Lower Spine T12 Acceleration (Z) vs. Time       | B-2             |
| Figure No. 8.  | Driver Lower Spine T12 Resultant Acceleration vs. Time | B-2             |
| Figure No. 9.  | Driver Iliac Wing Force on Impact Side (Y) vs. Time    | B-3             |
| Figure No. 10. | Driver Acetabulum Force on Impact Side (Y) vs. Time    | B-3             |
| Figure No. 11. | Driver Total Pelvis Force on Impact Side (Y) vs. Time  | B-3             |

**The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at [www.NHTSA.dot.gov](http://www.NHTSA.dot.gov)**

**Additional Driver Dummy Instrumentation Data**

Driver Head CG Redundant Acceleration (X) vs. Time  
Driver Head CG Redundant Acceleration (Y) vs. Time  
Driver Head CG Redundant Acceleration (Z) vs. Time  
Driver Head Angular Velocity X (Deg/Sec) vs. Time  
Driver Head Angular Velocity Y (Deg/Sec) vs. Time  
Driver Head Angular Velocity Z (Deg/Sec) vs. Time  
Driver Upper Thorax Rib Deflection (Y)  
Driver Middle Thorax Rib Deflection (Y)  
Driver Lower Thorax Rib Deflection (Y)  
Driver Upper Abdomen Rib Deflection (Y)  
Driver Lower Abdomen Rib Deflection (Y)

### **Vehicle Instrumentation Data**

Vehicle Center of Gravity Acceleration (X)

Vehicle Center of Gravity Acceleration (Y)

Vehicle Center of Gravity Acceleration (Z)

Left Floor Sill Acceleration (Y)

Left A-Pillar Sill Acceleration (Y)

Left Lower A-Pillar Acceleration (Y)

Left Mid A-Pillar Acceleration (Y)

Left B-Pillar Sill Acceleration (Y)

Left Lower B-Pillar Acceleration (Y)

Left Mid B-Pillar Acceleration (Y)

Driver Seat Track at Dummy Hip Point Acceleration (Y)

Engine Top Acceleration (X)

Engine Top Acceleration (Y)

Firewall Center Acceleration (Y)

Right Roof at Vertical Impact Reference Line Acceleration (Y)

Right Sill at Vertical Impact Reference Line Acceleration (Y)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

### **Pole Instrumentation Data**

Load Cell Pole Barrier #1 Force (Y)

Load Cell Pole Barrier #2 Force (Y)

Load Cell Pole Barrier #3 Force (Y)

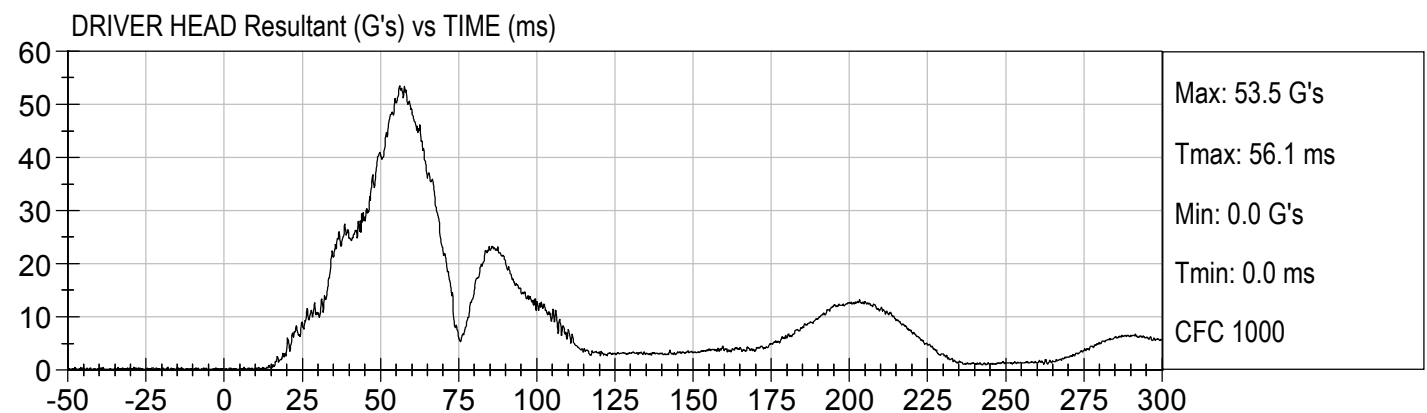
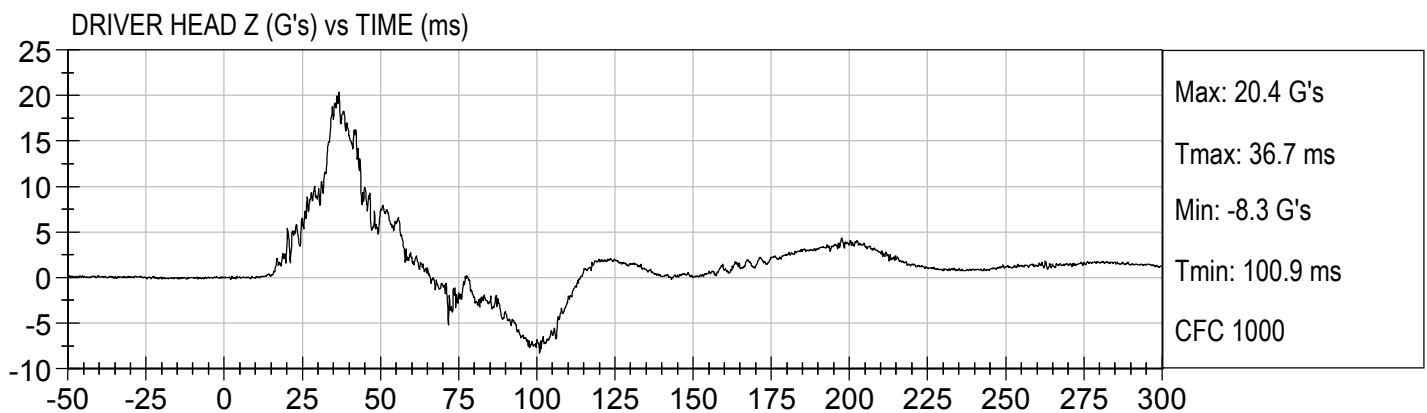
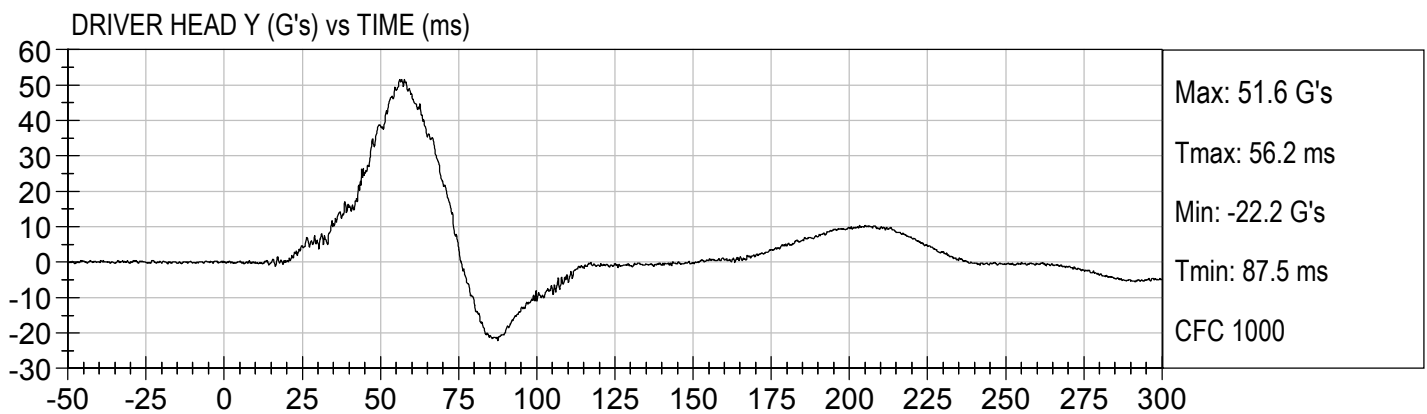
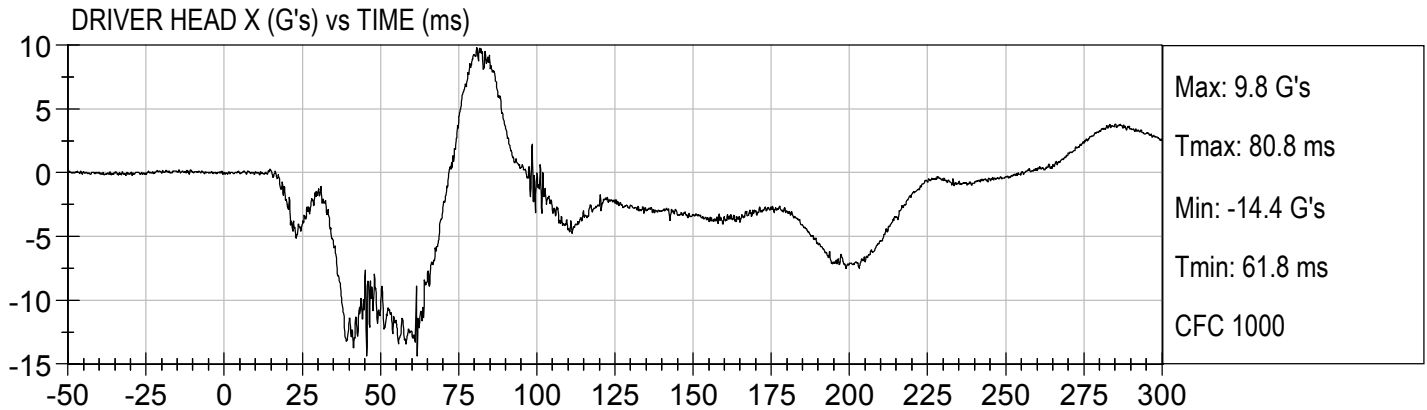
Load Cell Pole Barrier #4 Force (Y)

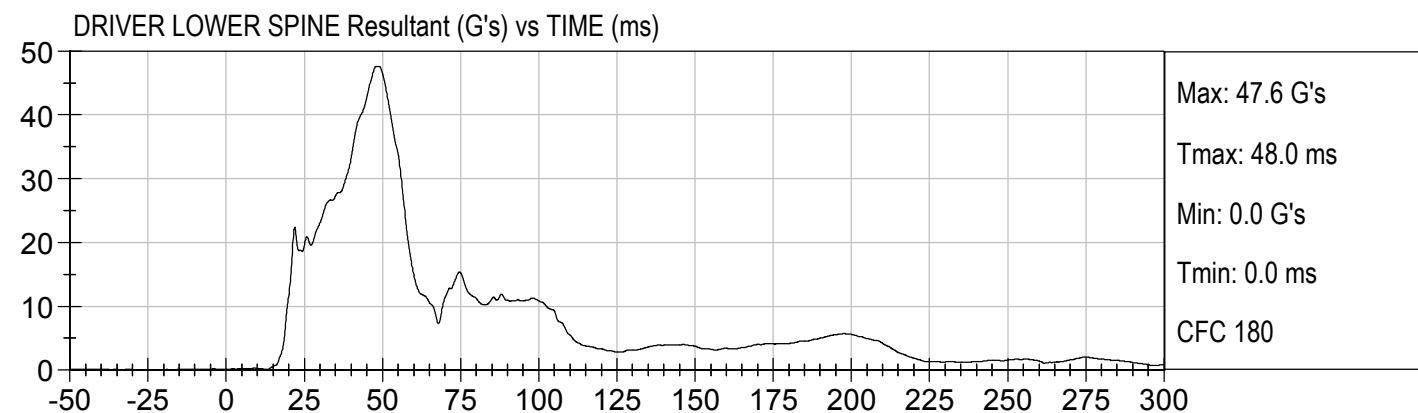
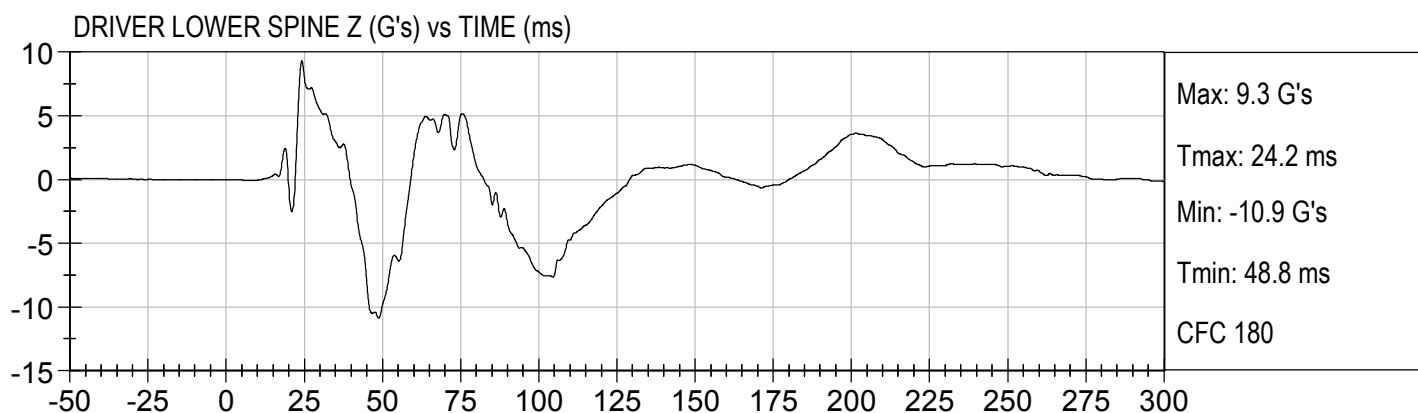
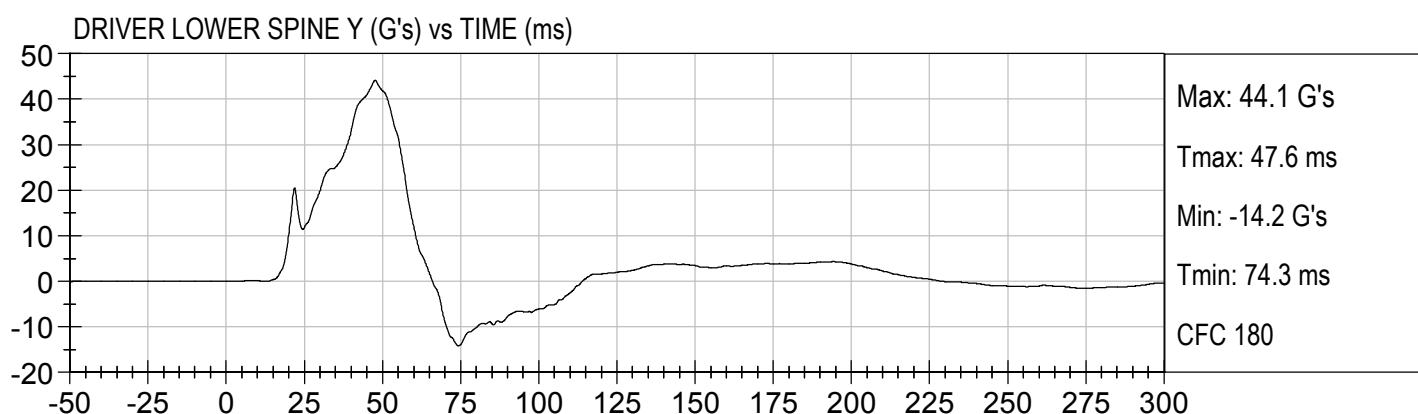
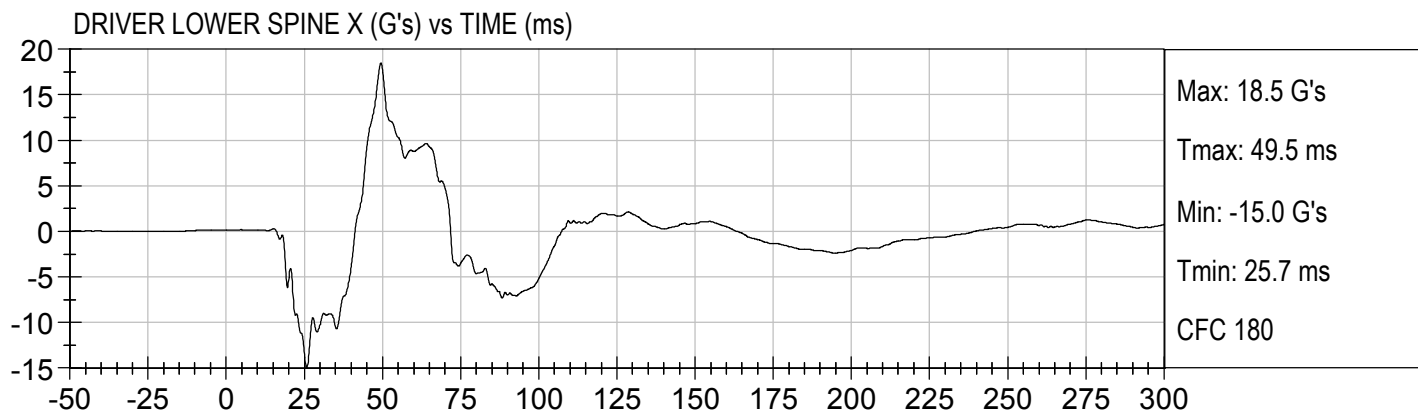
Load Cell Pole Barrier #5 Force (Y)

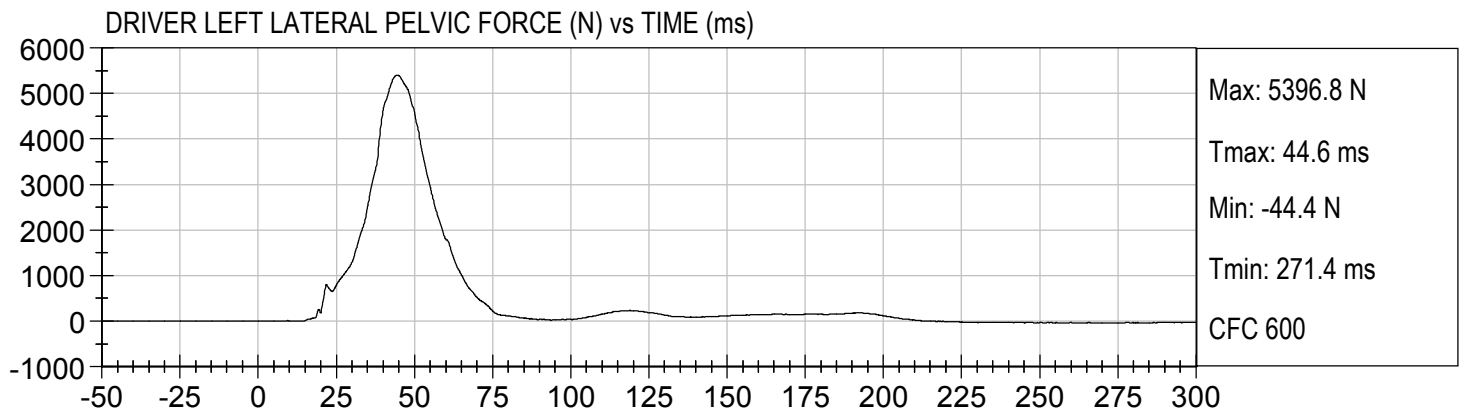
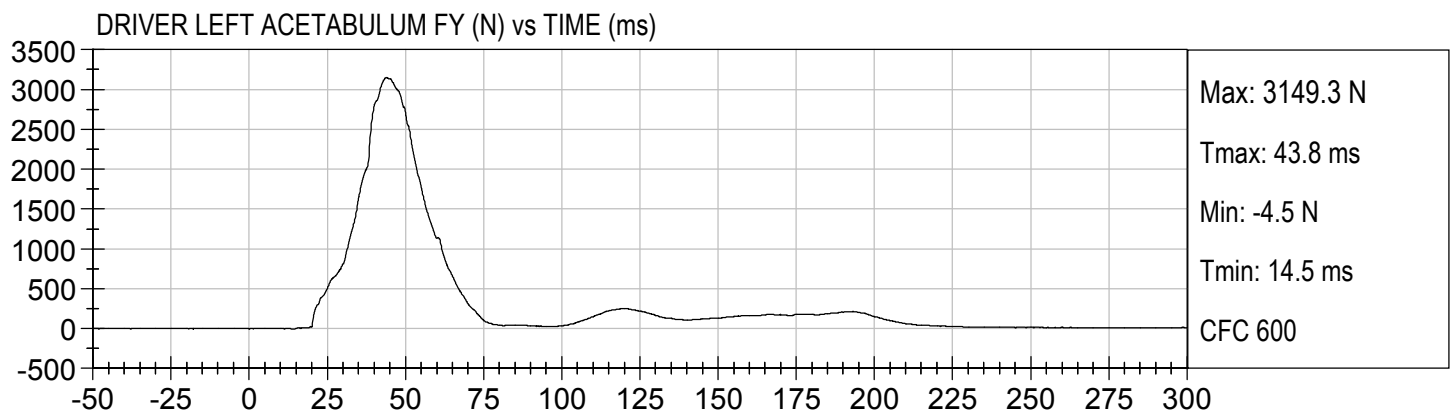
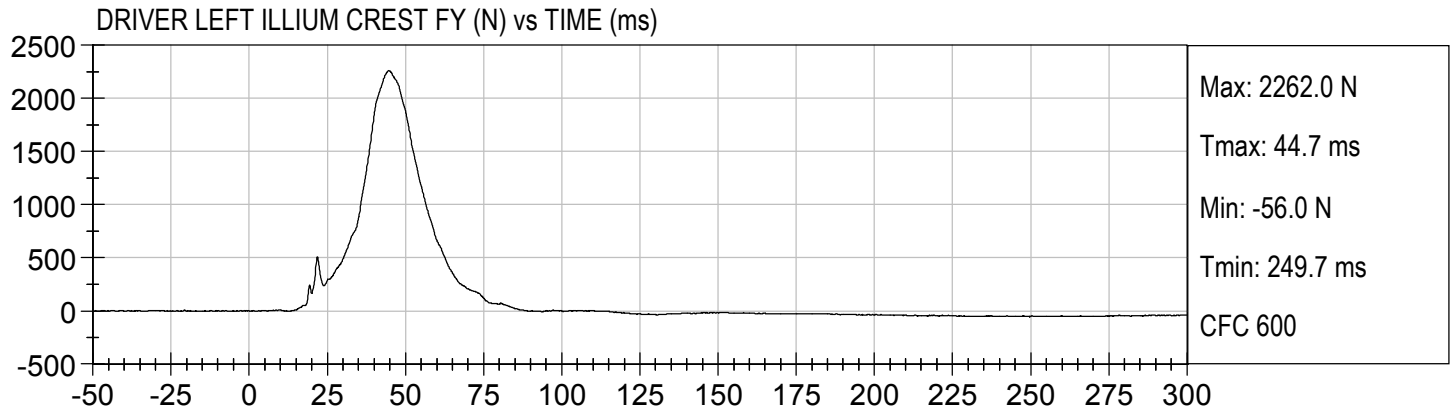
Load Cell Pole Barrier #6 Force (Y)

Load Cell Pole Barrier #7 Force (Y)

Load Cell Pole Barrier #8 Force (Y)







**APPENDIX C**  
**DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

**SID-IIsD External Measurements**  
**SN: 296**

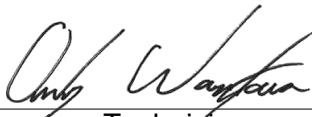
| <b>No.</b> | <b>Name</b>                   | <b>Spec. (mm)</b> | <b>Result</b> | <b>Pass/Fail</b> |
|------------|-------------------------------|-------------------|---------------|------------------|
| <b>A</b>   | Sitting Height                | 772 - 788         | 784           | Pass         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

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

**ATD Serial No:** 296

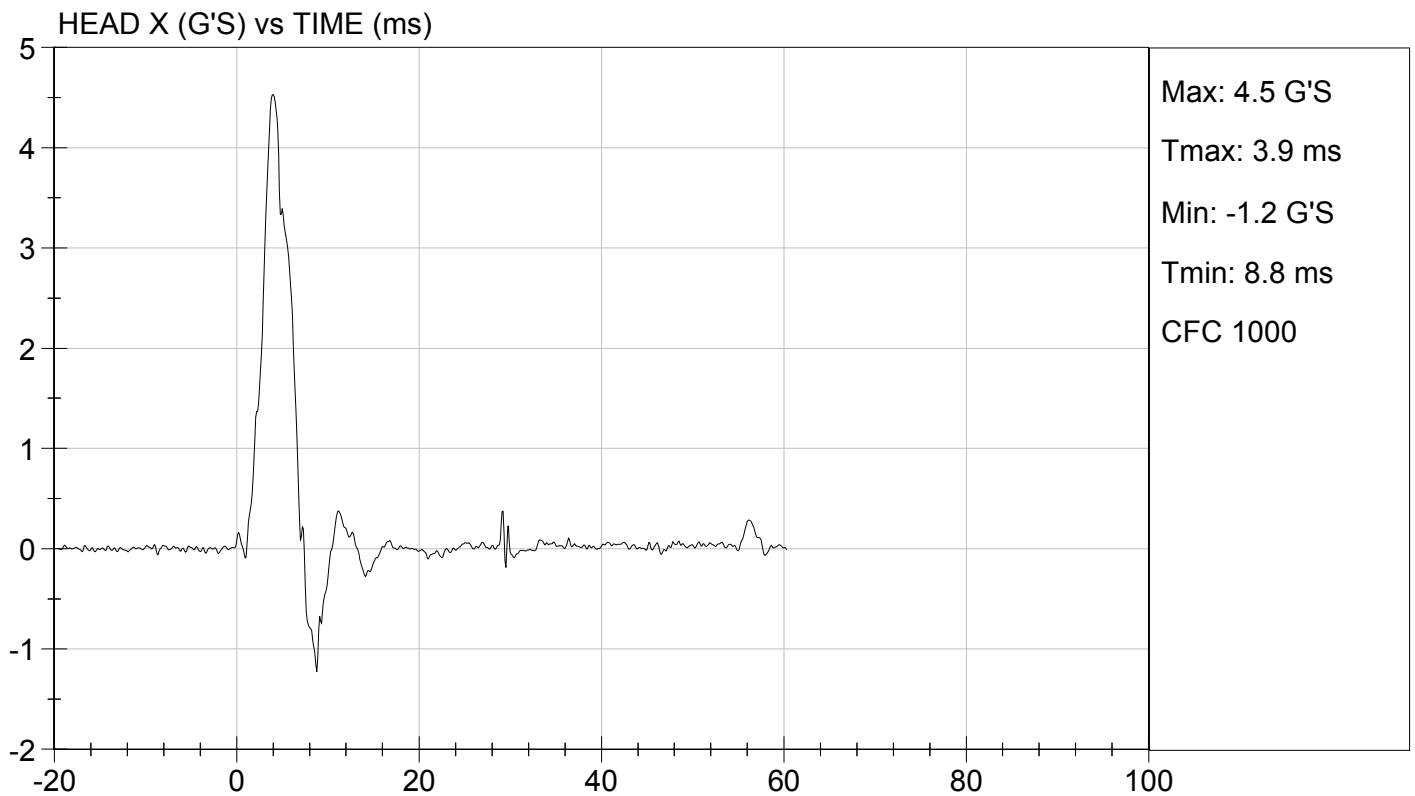
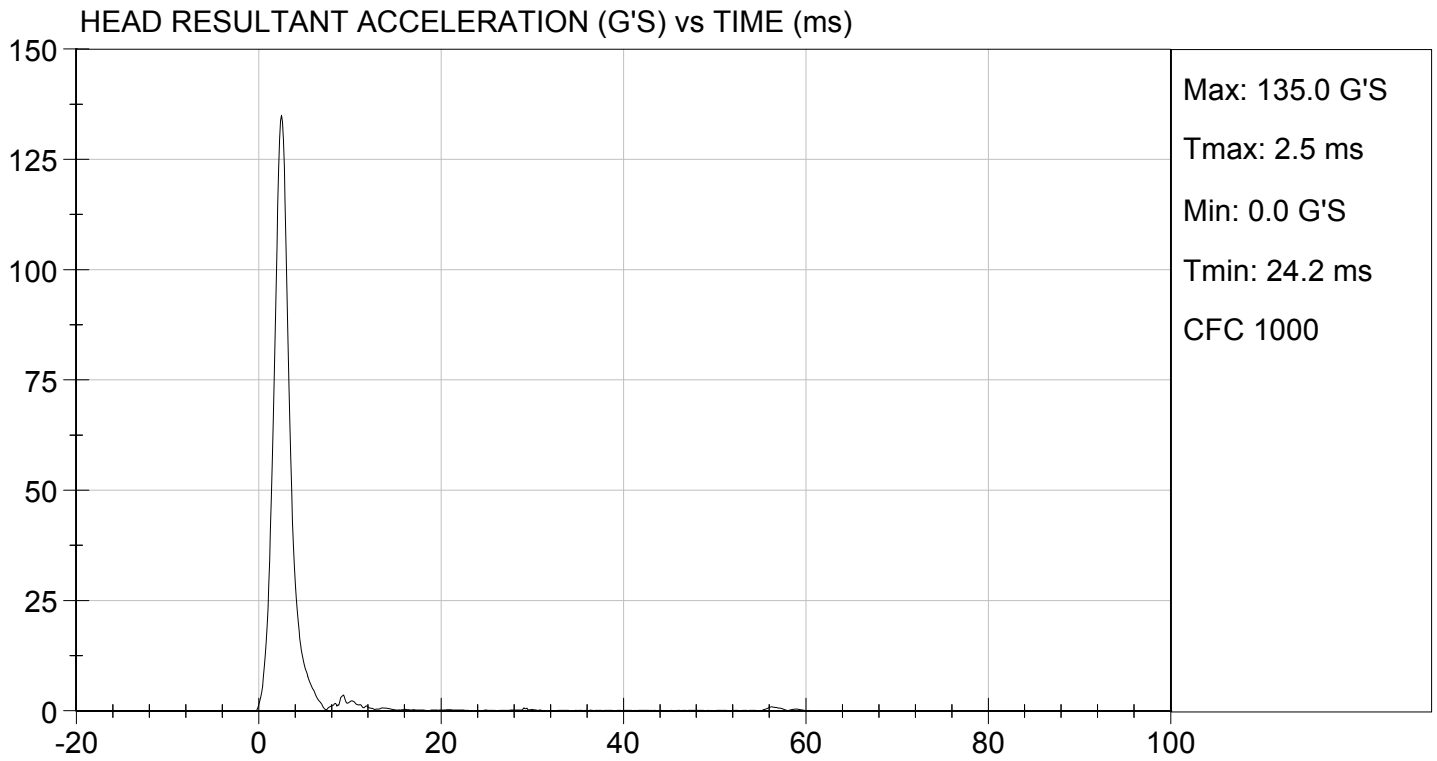
**Test ID:** D16891

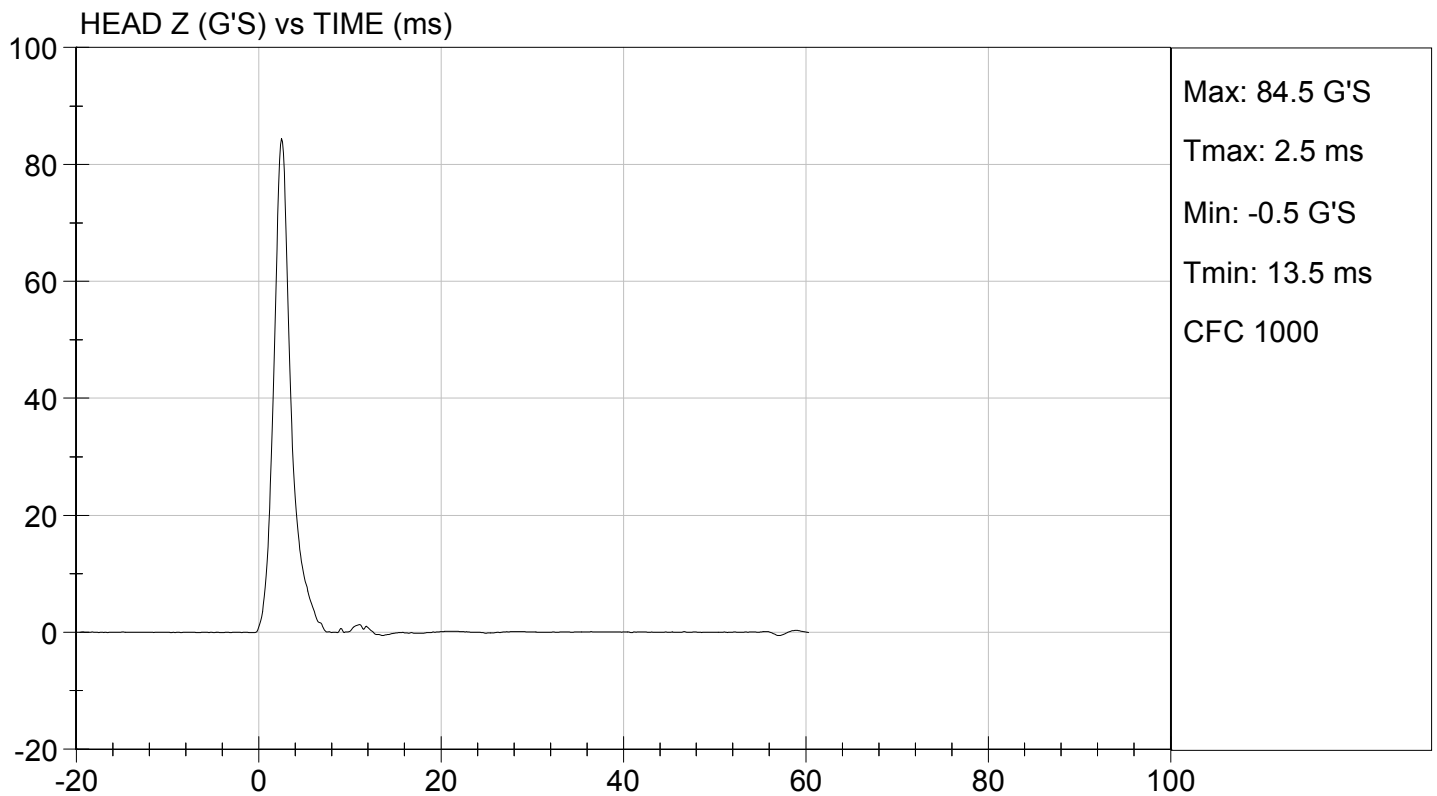
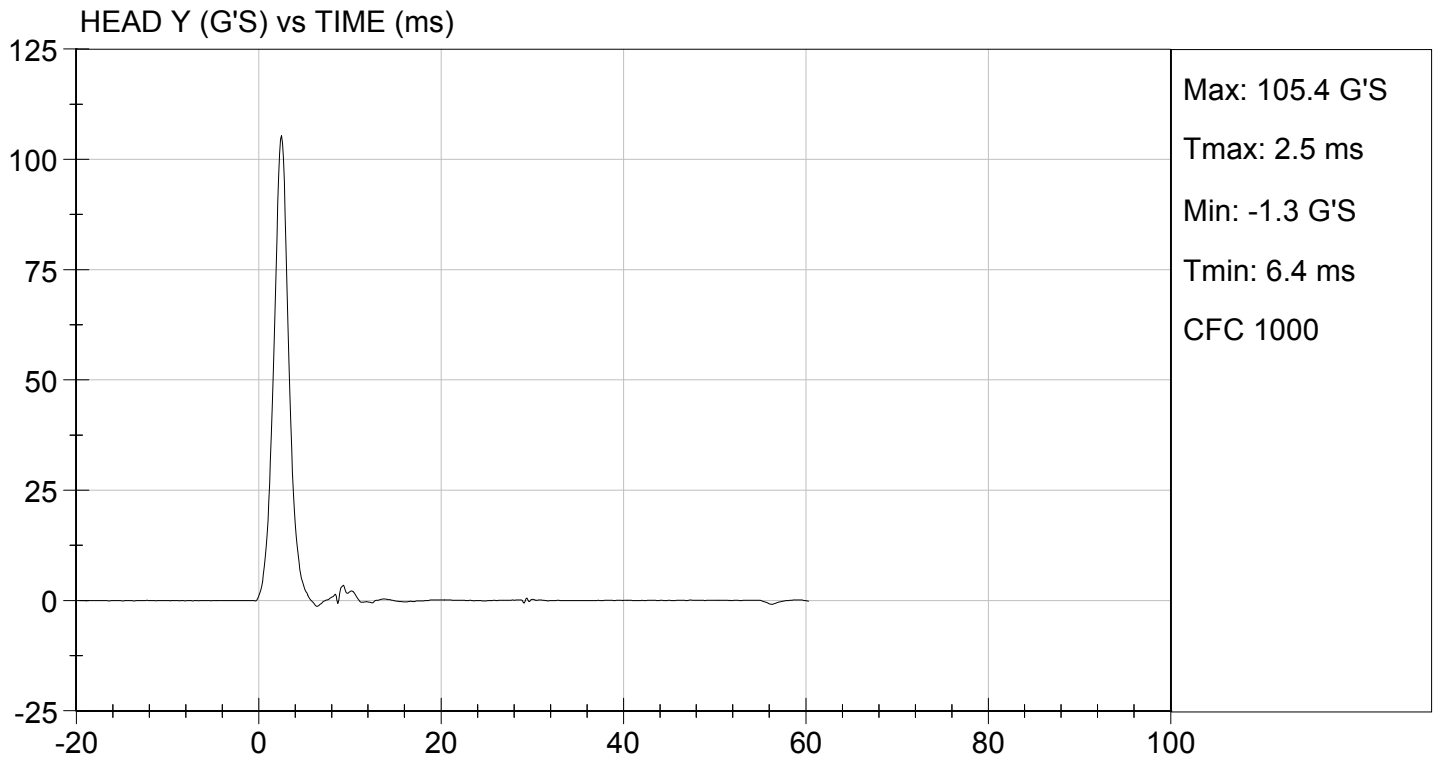
| Tested Parameter               | Units | Specification | Result               | Pass/Fail |
|--------------------------------|-------|---------------|----------------------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.2                 | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 24                   | Pass      |
| Peak Resultant Acceleration    | G's   | 115 to 137    | 135                  | Pass      |
| Peak Longitudinal Acceleration | G's   | +/- 15        | 4.5                  | Pass      |
| Unimodal                       | N/A   | Yes           | Yes                  | Pass      |
| Oscillations                   | N/A   | <15%          | Yes                  | Pass      |
|                                |       |               | Overall Test Results | Pass      |

  
\_\_\_\_\_  
Laboratory Technician

03/03/2016  
Test Date

  
\_\_\_\_\_  
Approved By





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

**ATD Serial No:** 296

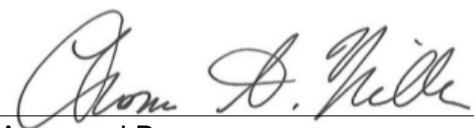
**Test I.D:** D16892

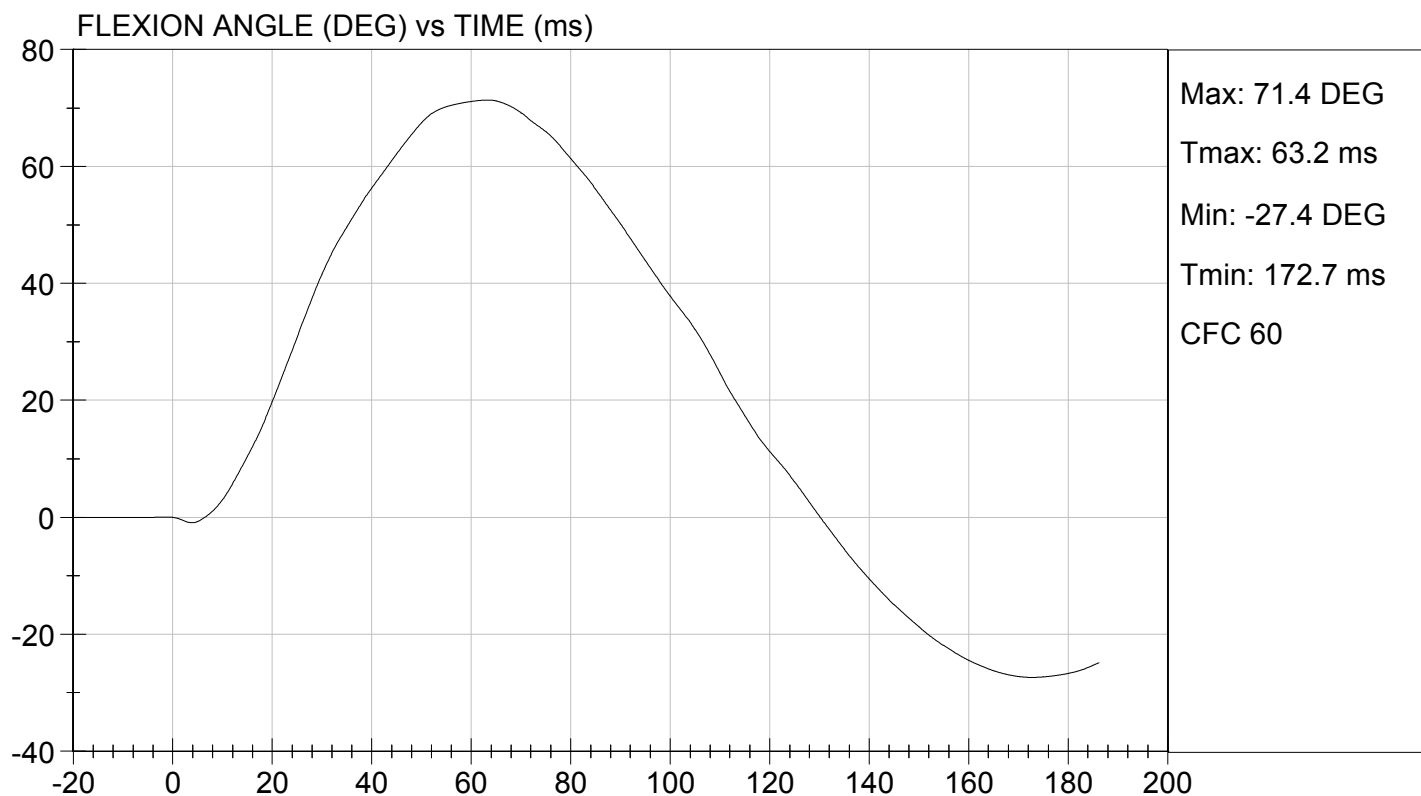
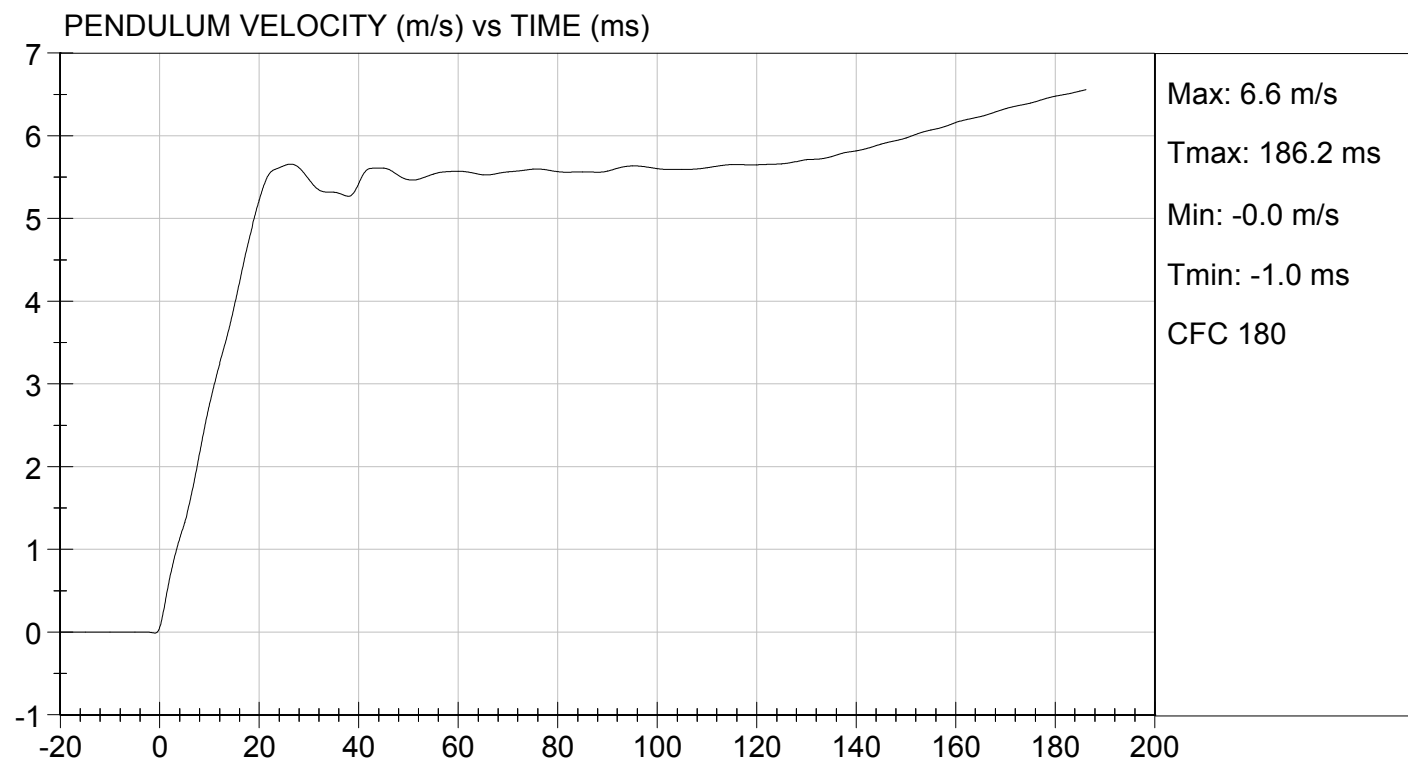
| Tested Parameter                 |           | Units | Specification | Result | Pass/Fail |
|----------------------------------|-----------|-------|---------------|--------|-----------|
| Temperature                      |           | deg C | 20.6 to 22.2  | 21.2   | Pass      |
| Humidity                         |           | %     | 10 to 70      | 24     | Pass      |
| Impact Velocity                  |           | m/s   | 5.51 to 5.63  | 5.58   | Pass      |
| Pendulum Velocity                | 10 ms     | m/s   | 2.20 to 2.80  | 2.76   | Pass      |
|                                  | 15 ms     | m/s   | 3.30 to 4.10  | 3.95   | Pass      |
|                                  | 20 ms     | m/s   | 4.40 to 5.40  | 5.22   | Pass      |
|                                  | 25 ms     | m/s   | 5.40 to 6.10  | 5.64   | Pass      |
|                                  | 25-100 ms | m/s   | 5.50 to 6.20  | 5.66   | Pass      |
| Maximum D-Plane Rotation         |           | deg   | 71 to 81      | 71     | Pass      |
| Time of Maximum D-Plane Rotation |           | ms    | 50 to 70      | 63     | Pass      |
| Maximum Occipital Condyle Moment |           | Nm    | -44 to -36    | -41    | Pass      |
| Time of Moment Decay to 0 Nm     |           | ms    | 102 to 126    | 113    | Pass      |
| Overall Test Results             |           |       |               |        | Pass      |

  
 Laboratory Technician

03/03/2016

Test Date

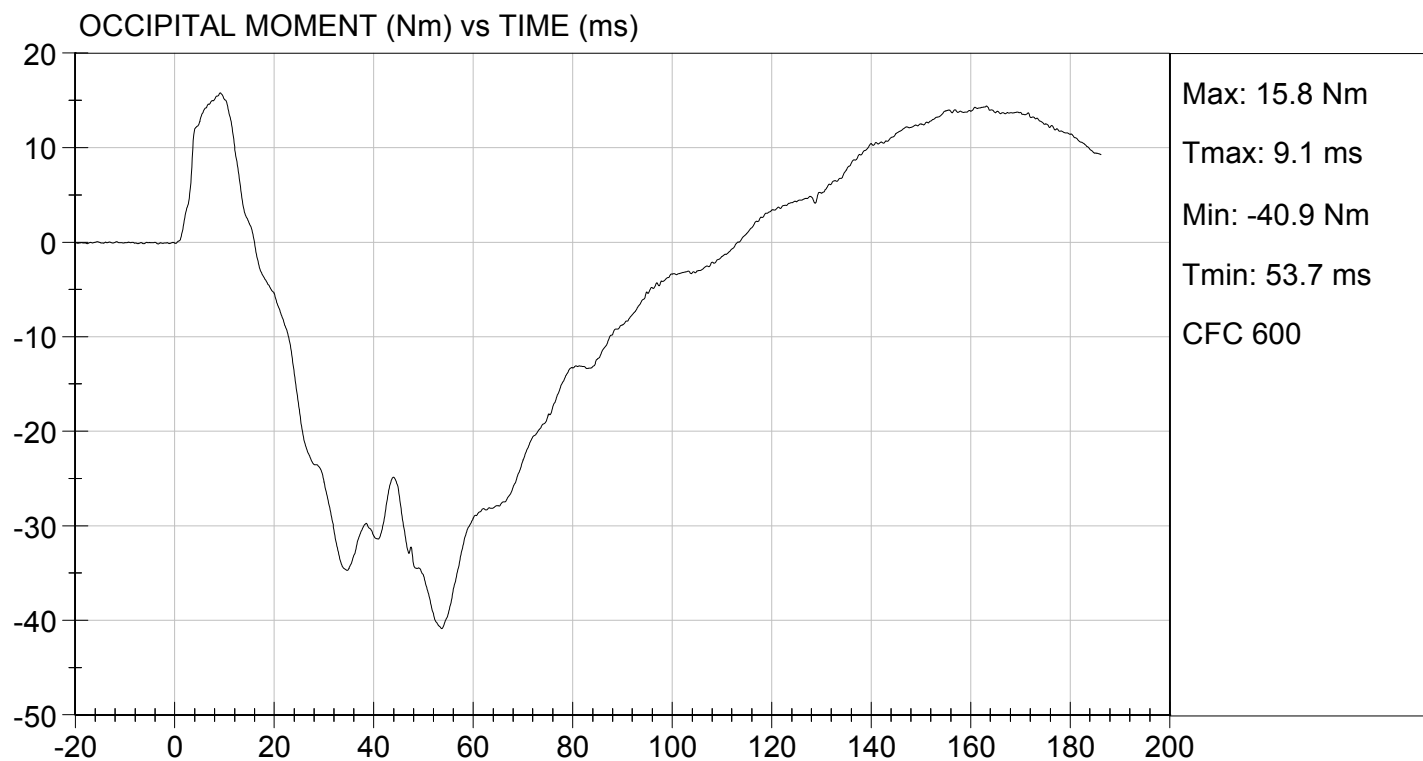
  
 Approved By





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

TEST DATE: 03/03/2016  
TEST #: D16892

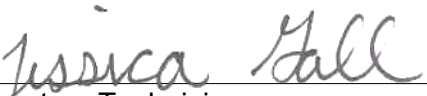


**MGA RESEARCH CORPORATION**  
**SHOULDER IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

**Test ID:** D16893

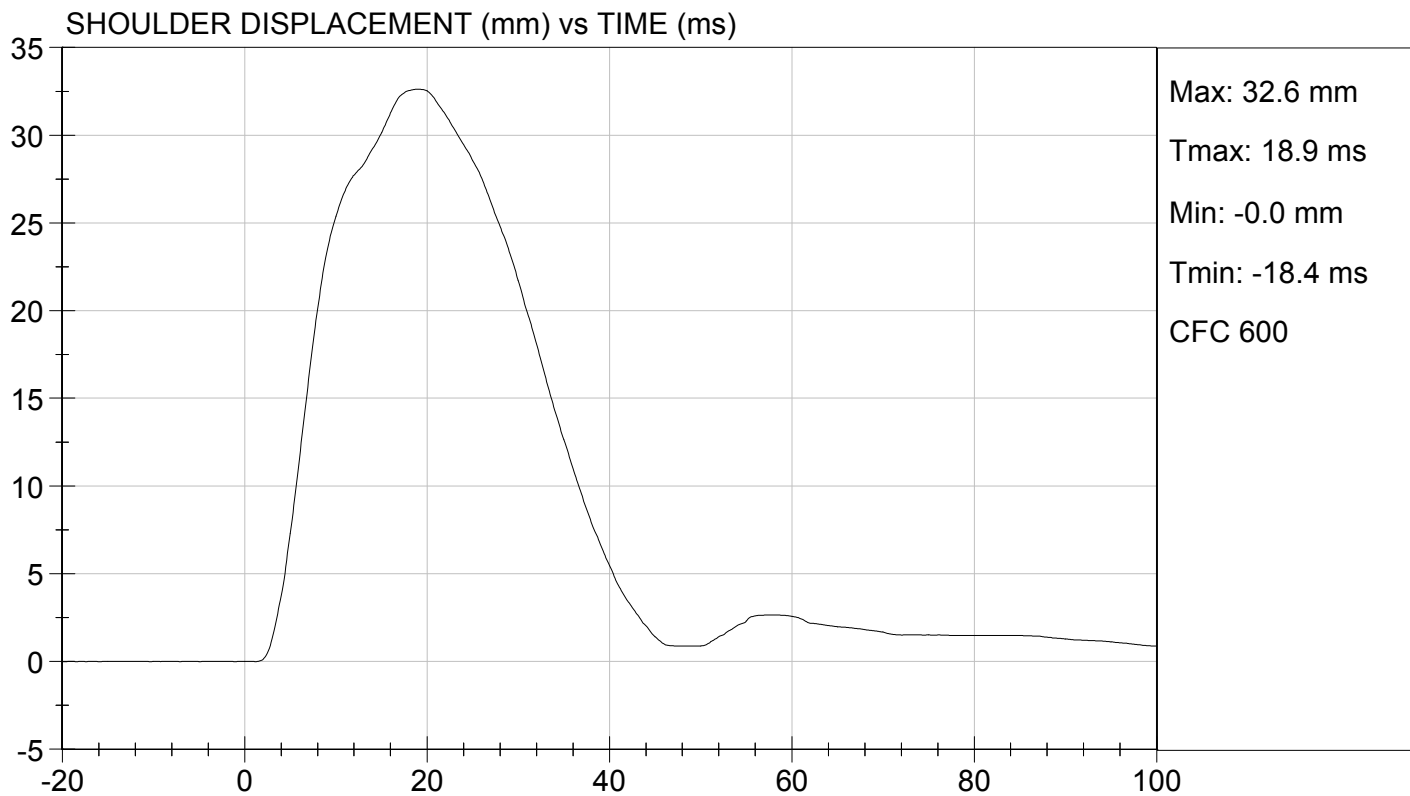
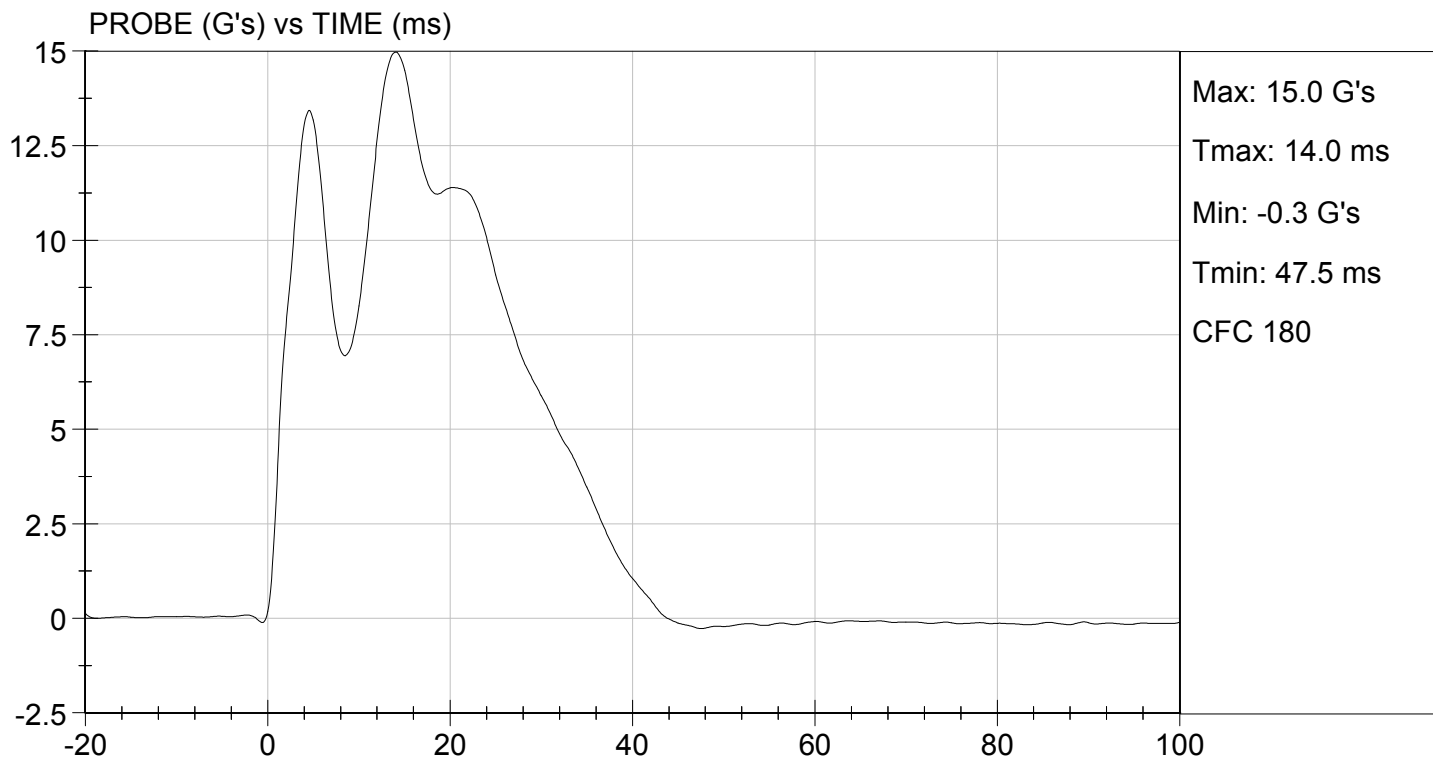
| Tested Parameter                | Units | Specification | Result               | Pass/Fail |
|---------------------------------|-------|---------------|----------------------|-----------|
| Laboratory Temperature          | deg C | 20.6 to 22.2  | 21.0                 | Pass      |
| Laboratory Relative Humidity    | %     | 10 to 70      | 26                   | Pass      |
| Impact Velocity                 | m/s   | 4.20 to 4.40  | 4.30                 | Pass      |
| Maximum Probe Acceleration      | G's   | 13 to 18      | 15                   | Pass      |
| Shoulder Displacement           | mm    | 28 to 37      | 33                   | Pass      |
| Upper Spine (T1) Y Acceleration | G's   | 17 to 22      | 18                   | Pass      |
|                                 |       |               | Overall Test Results | Pass      |

  
Laboratory Technician

03/03/2016

Test Date

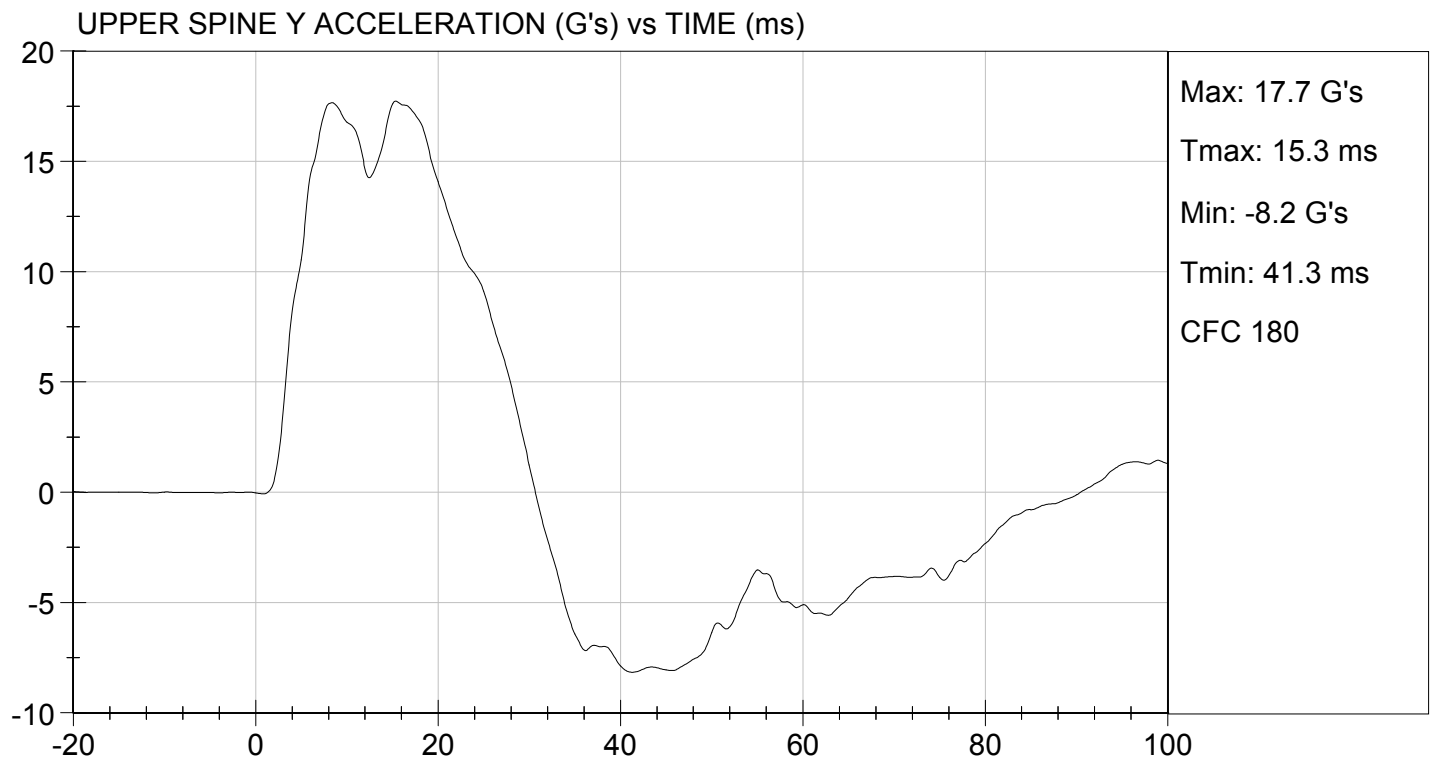
  
Approved By





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

TEST DATE: 03/03/2016  
TEST #: D16893



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

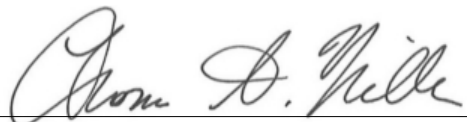
**ATD Serial No:** 296

**Test I.D:** D16894

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.0   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.68   | Pass      |
| Maximum Probe Acceleration       | G's   | 30 to 36      | 30     | Pass      |
| Shoulder Displacement            | mm    | 31 to 40      | 38     | Pass      |
| Upper Rib Displacement           | mm    | 25 to 32      | 29     | Pass      |
| Middle Rib Displacement          | mm    | 30 to 36      | 31     | Pass      |
| Lower Rib Displacement           | mm    | 32 to 38      | 33     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 34 to 43      | 37     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 29 to 37      | 31     | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
Laboratory Technician

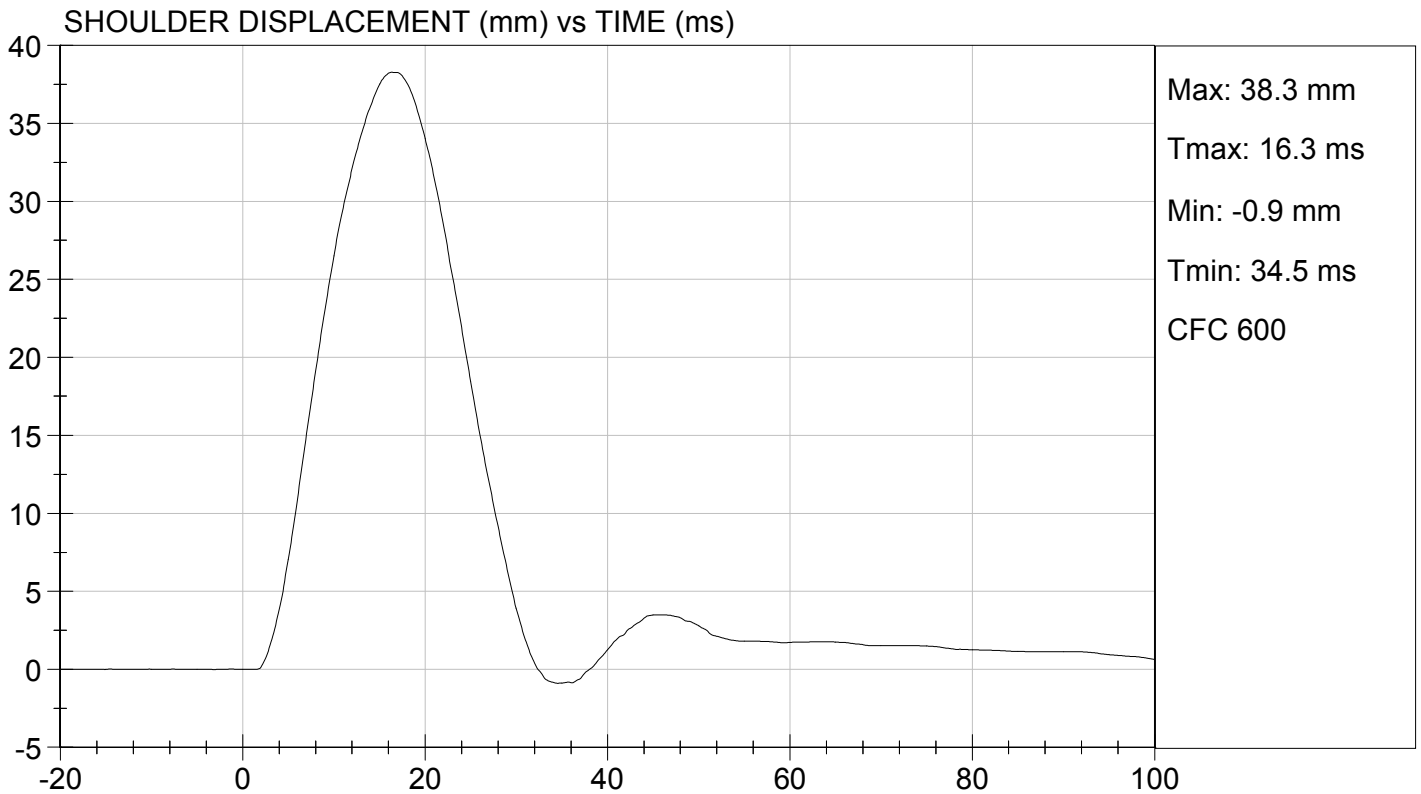
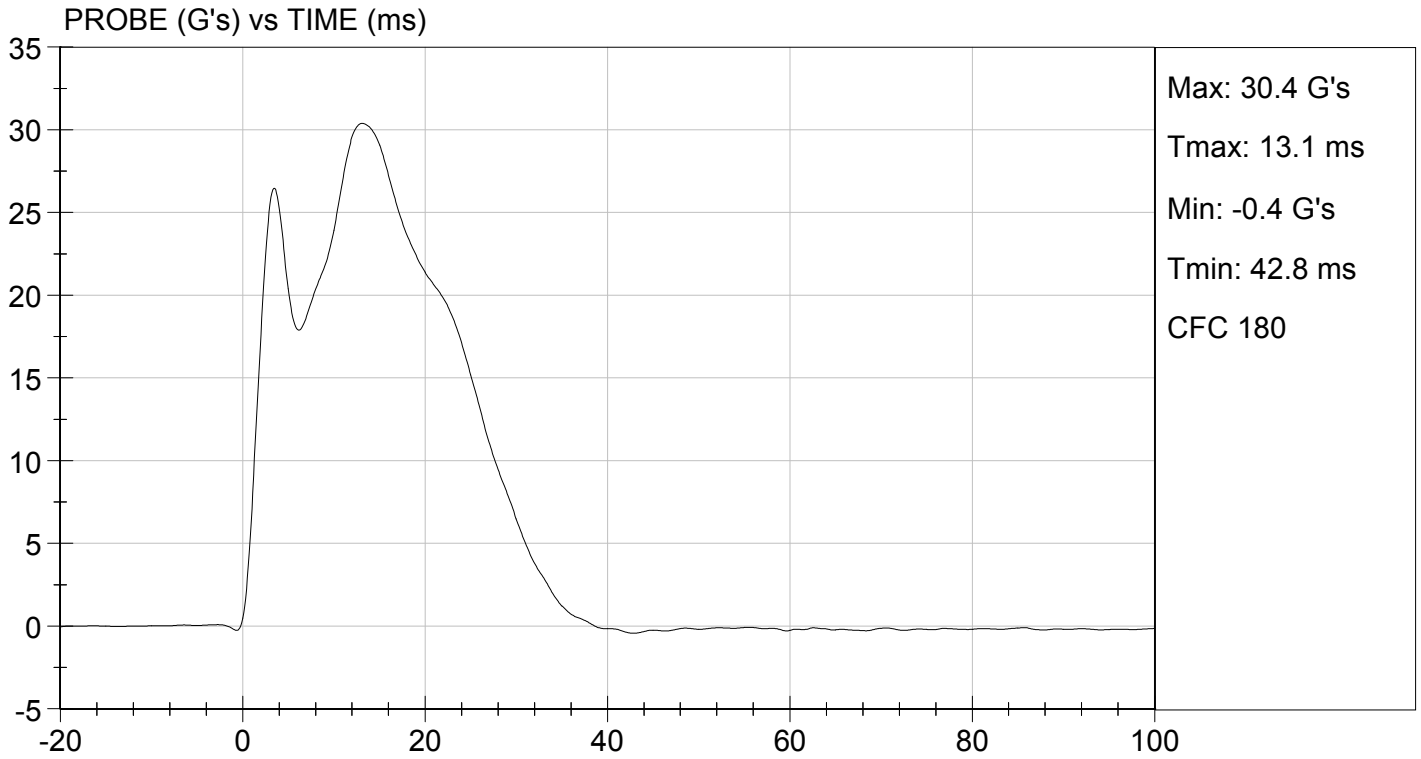
03/03/2016  
Test Date

  
Approved By



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

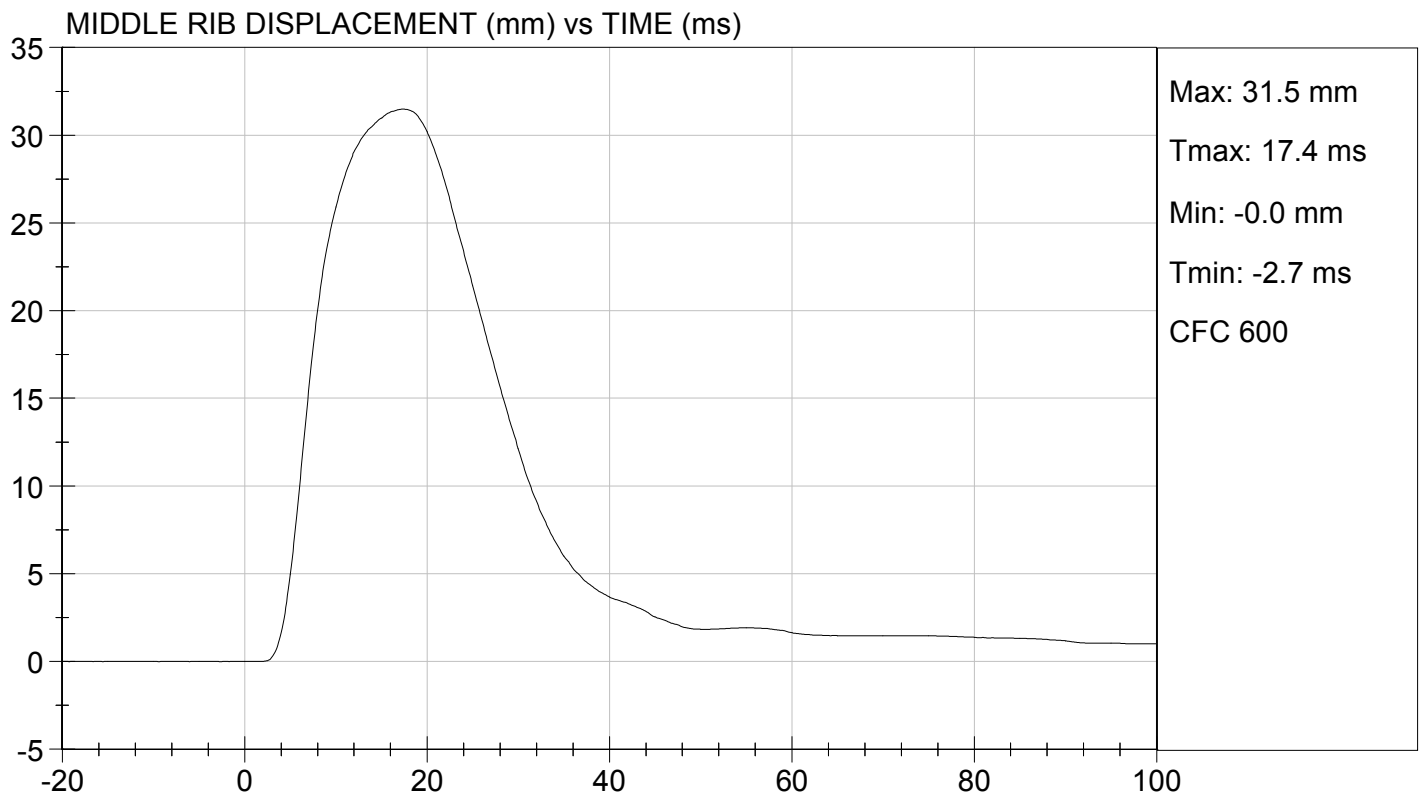
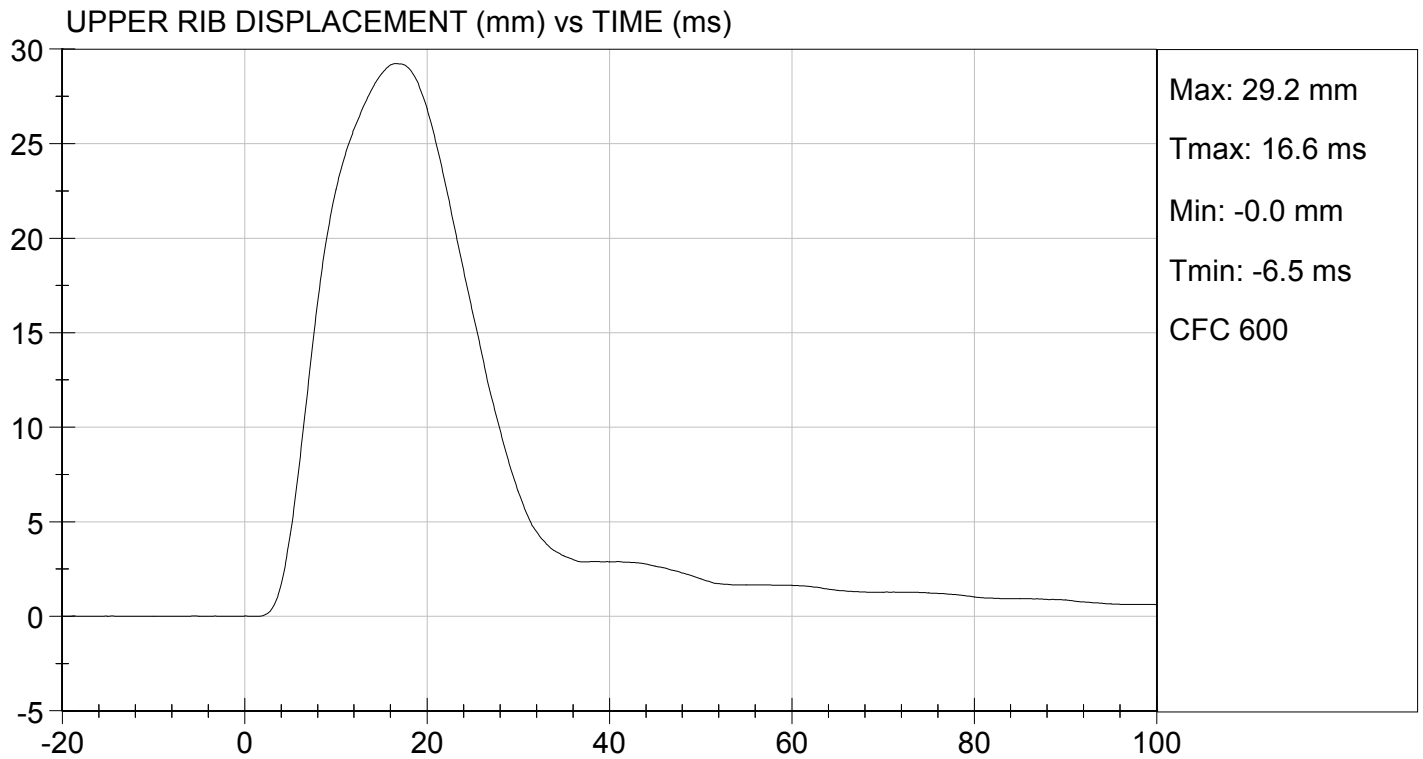
TEST DATE: 03/03/2016  
TEST #: D16894





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

TEST DATE: 03/03/2016  
TEST #: D16894

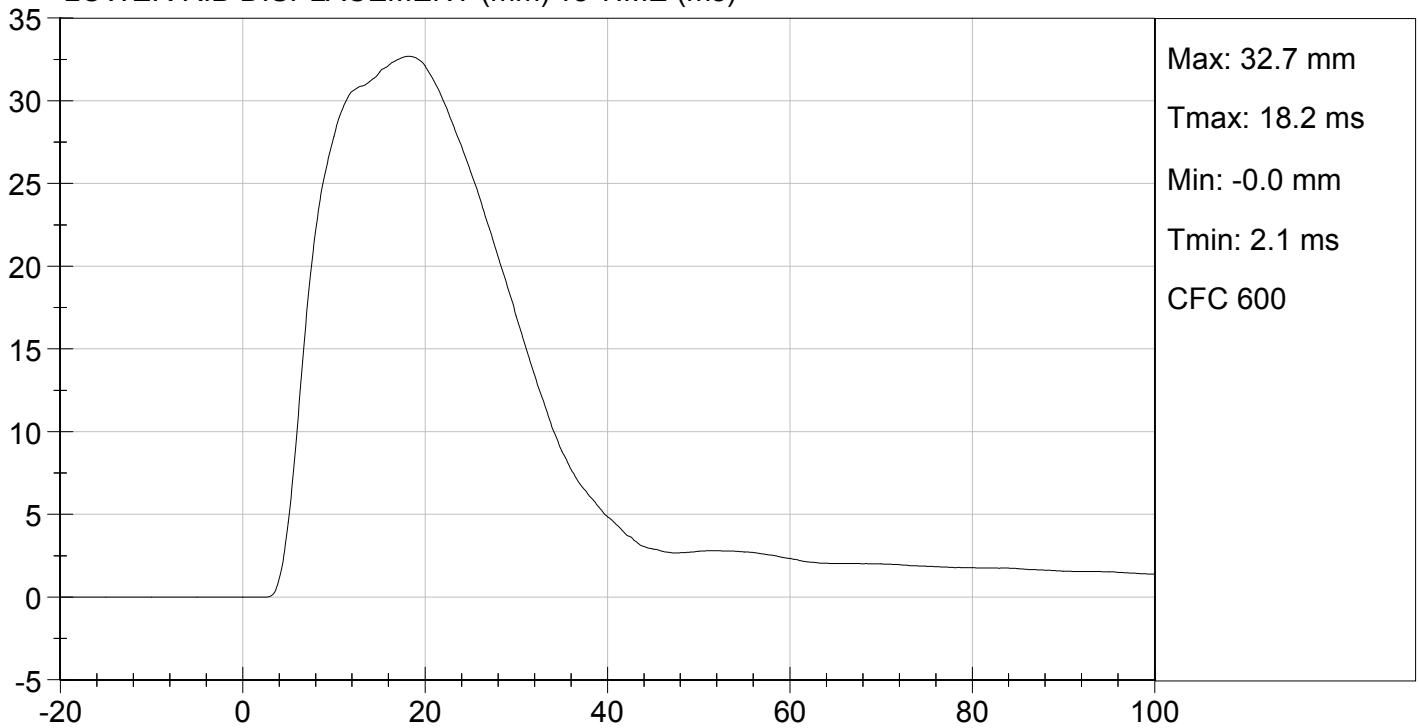




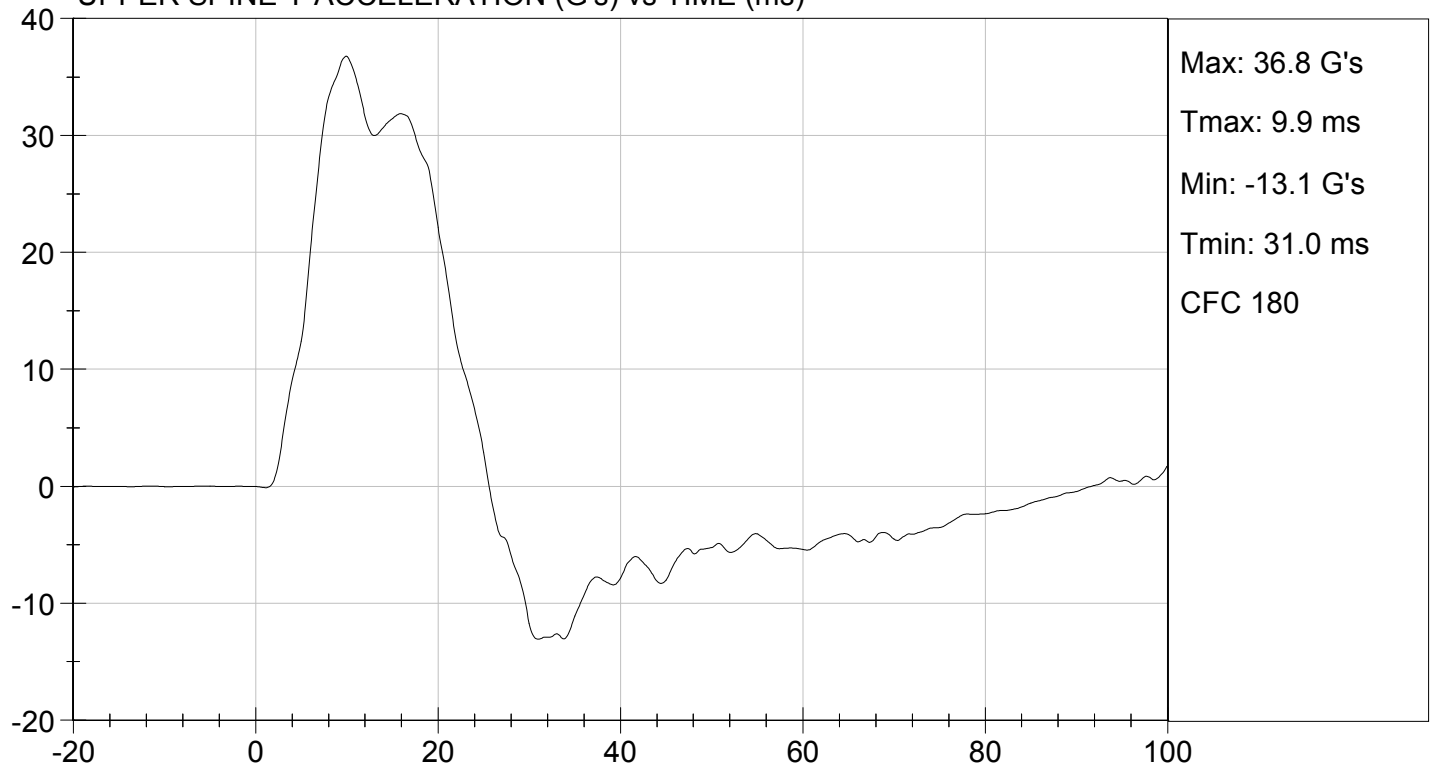
TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 03/03/2016  
TEST #: D16894

LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



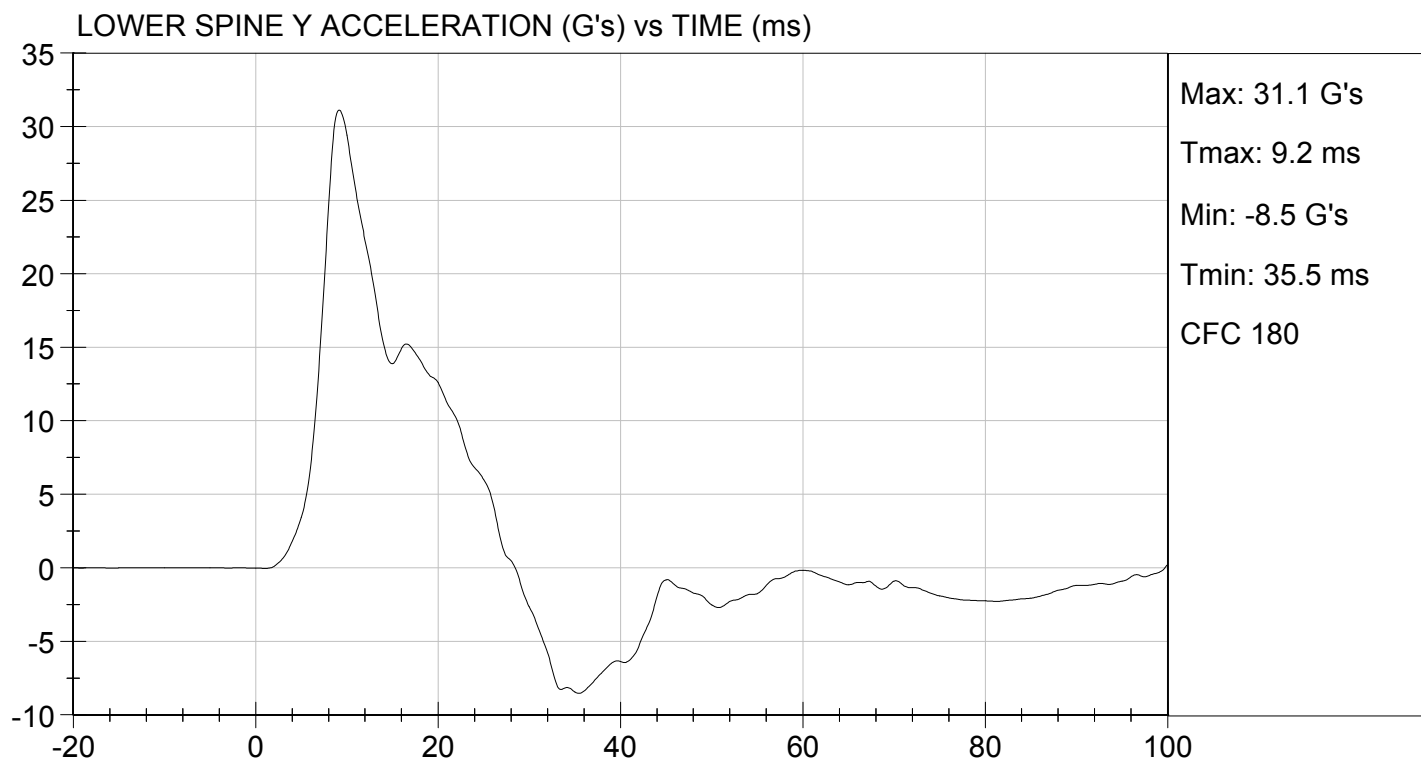
UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)





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

TEST DATE: 03/03/2016  
TEST #: D16894

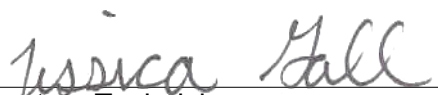


**MGA RESEARCH CORPORATION**  
**THORAX (WITHOUT ARM) IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

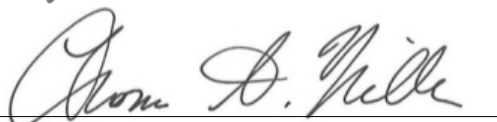
**Test I.D:** D16895

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.0   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.27   | Pass      |
| Maximum Probe Acceleration       | G's   | 14 to 18      | 15     | Pass      |
| Upper Rib Displacement           | mm    | 32 to 40      | 37     | Pass      |
| Middle Rib Displacement          | mm    | 39 to 45      | 40     | Pass      |
| Lower Rib Displacement           | mm    | 35 to 43      | 36     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 13 to 17      | 14     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 7 to 11       | 9      | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
 Laboratory Technician

03/03/2016

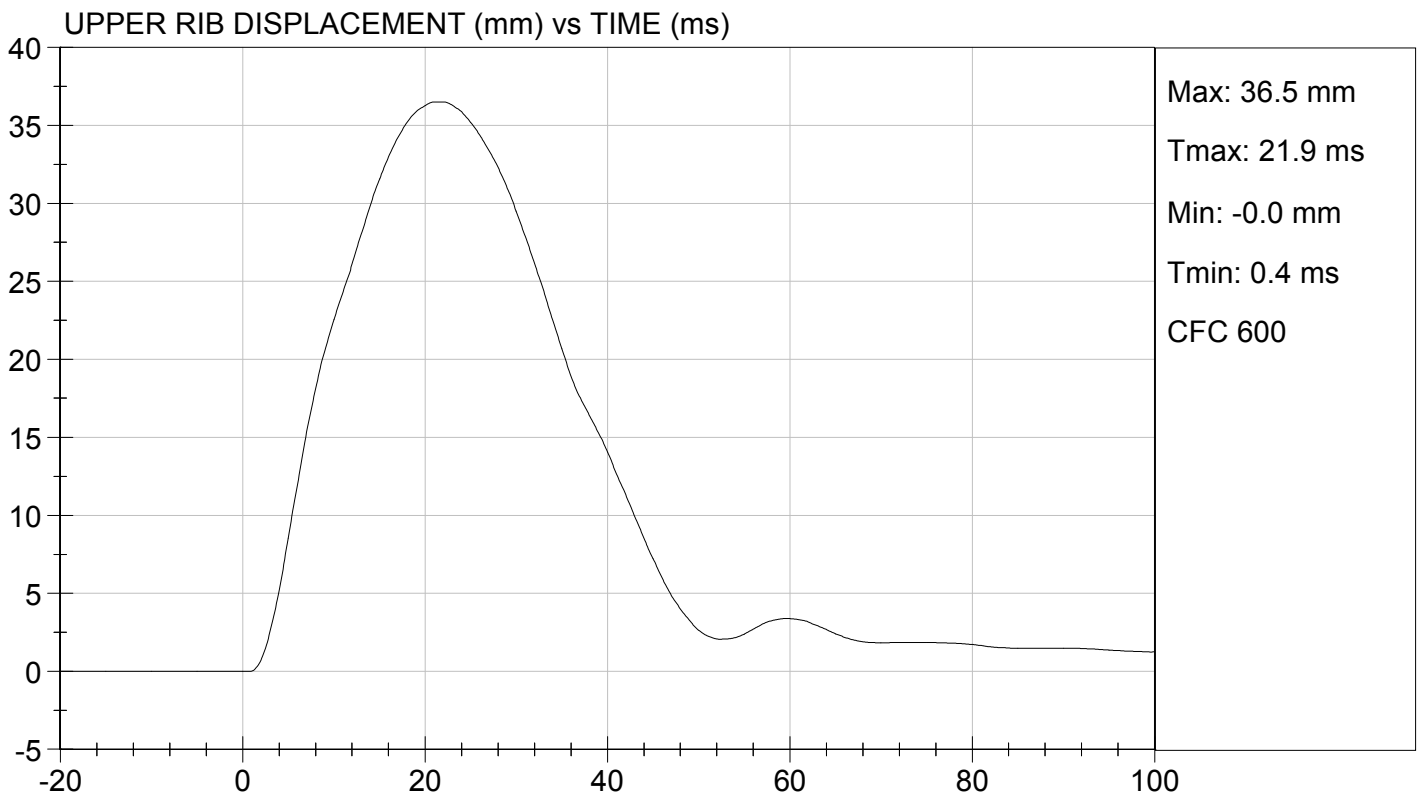
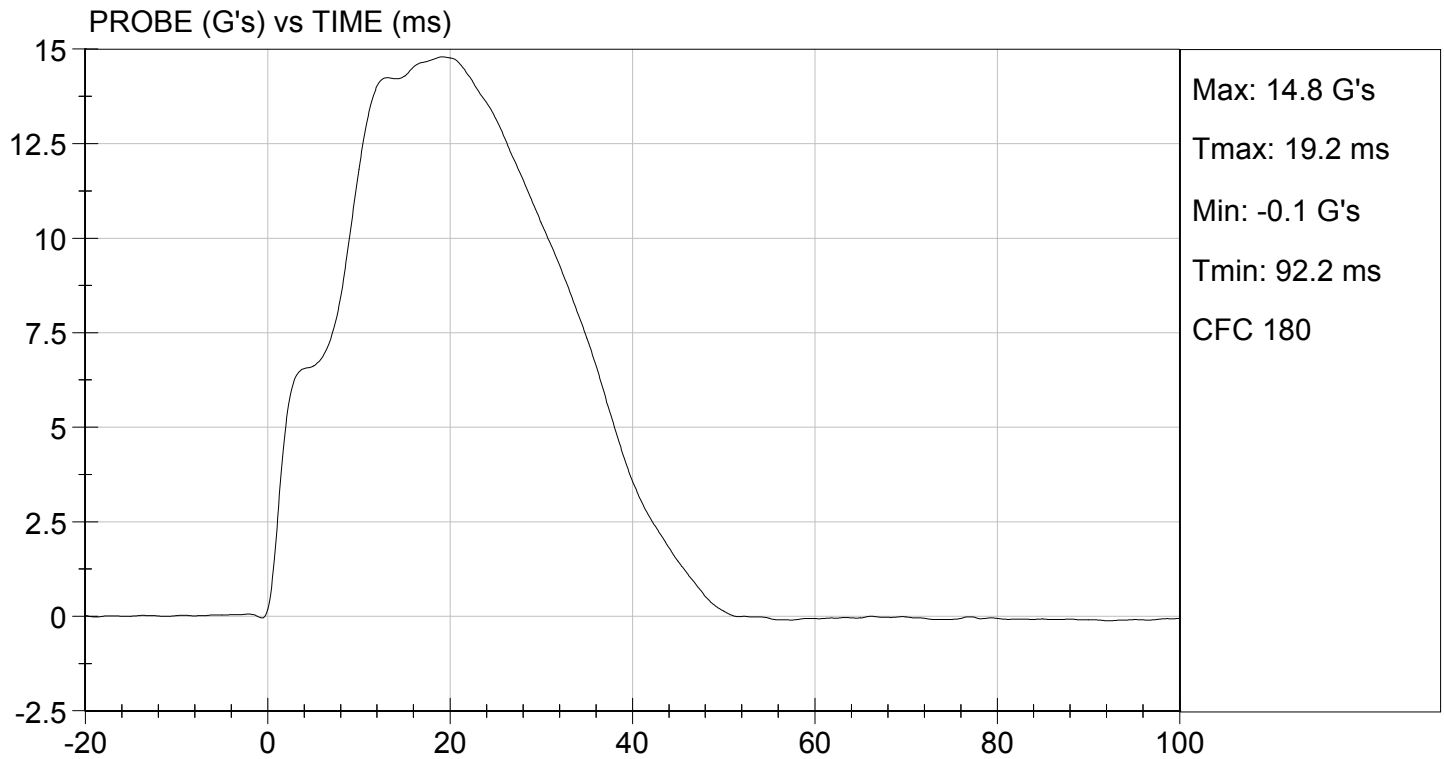
Test Date

  
 Approved By



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

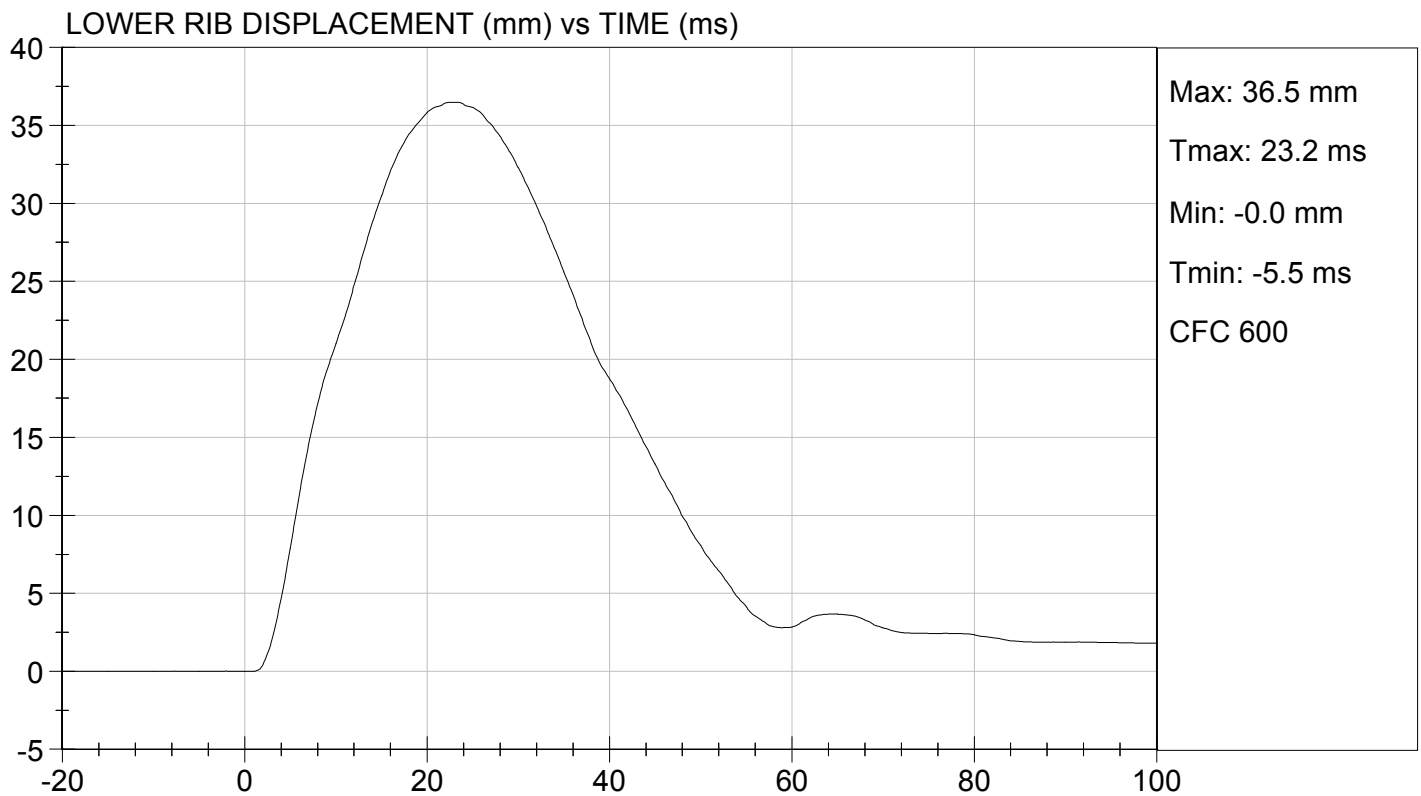
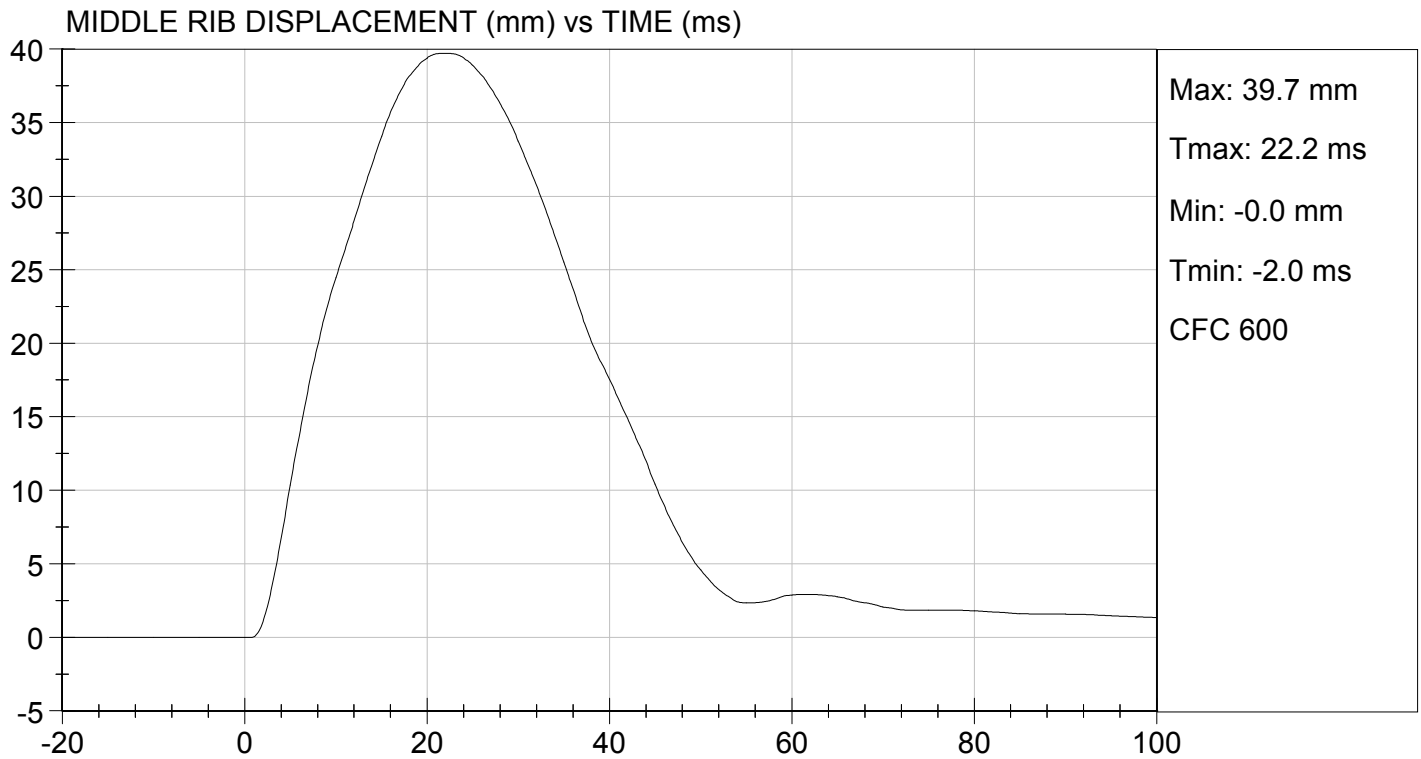
TEST DATE: 03/03/2016  
TEST #: D16895





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

TEST DATE: 03/03/2016  
TEST #: D16895

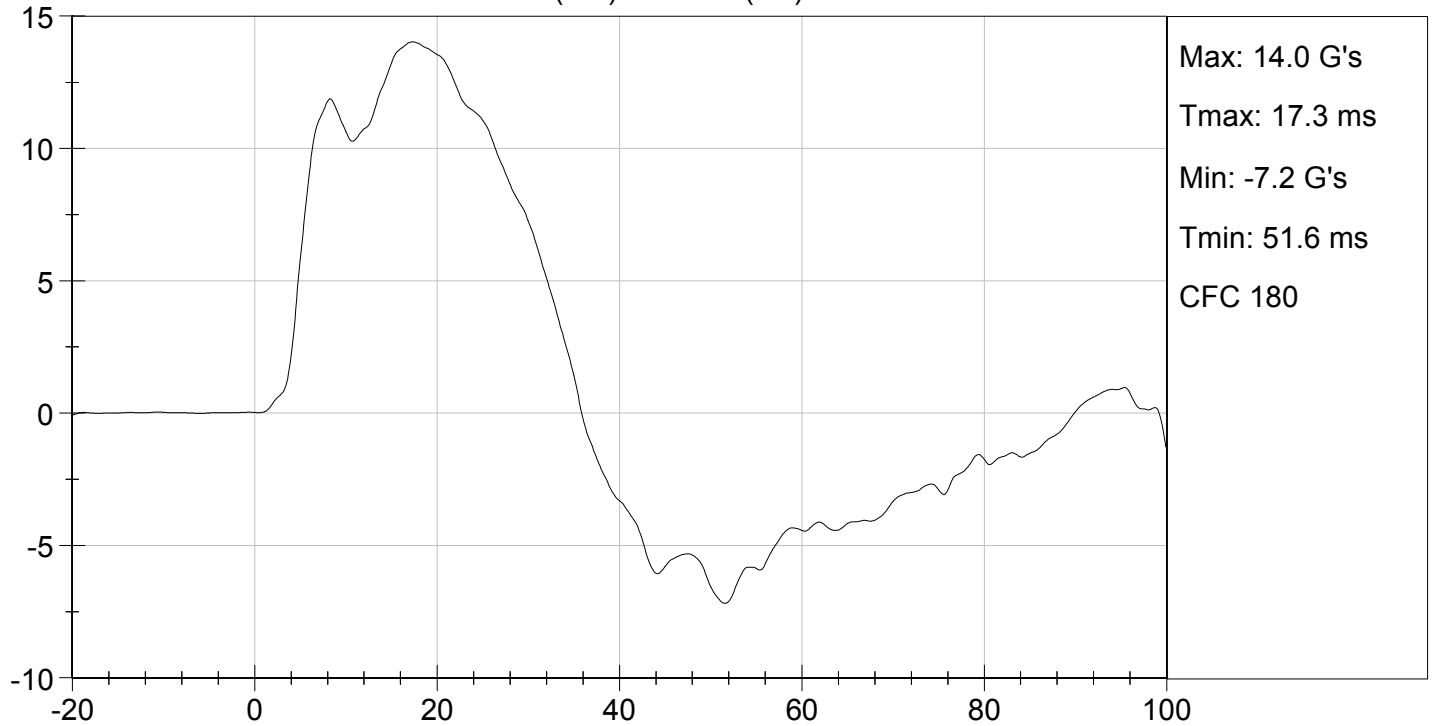




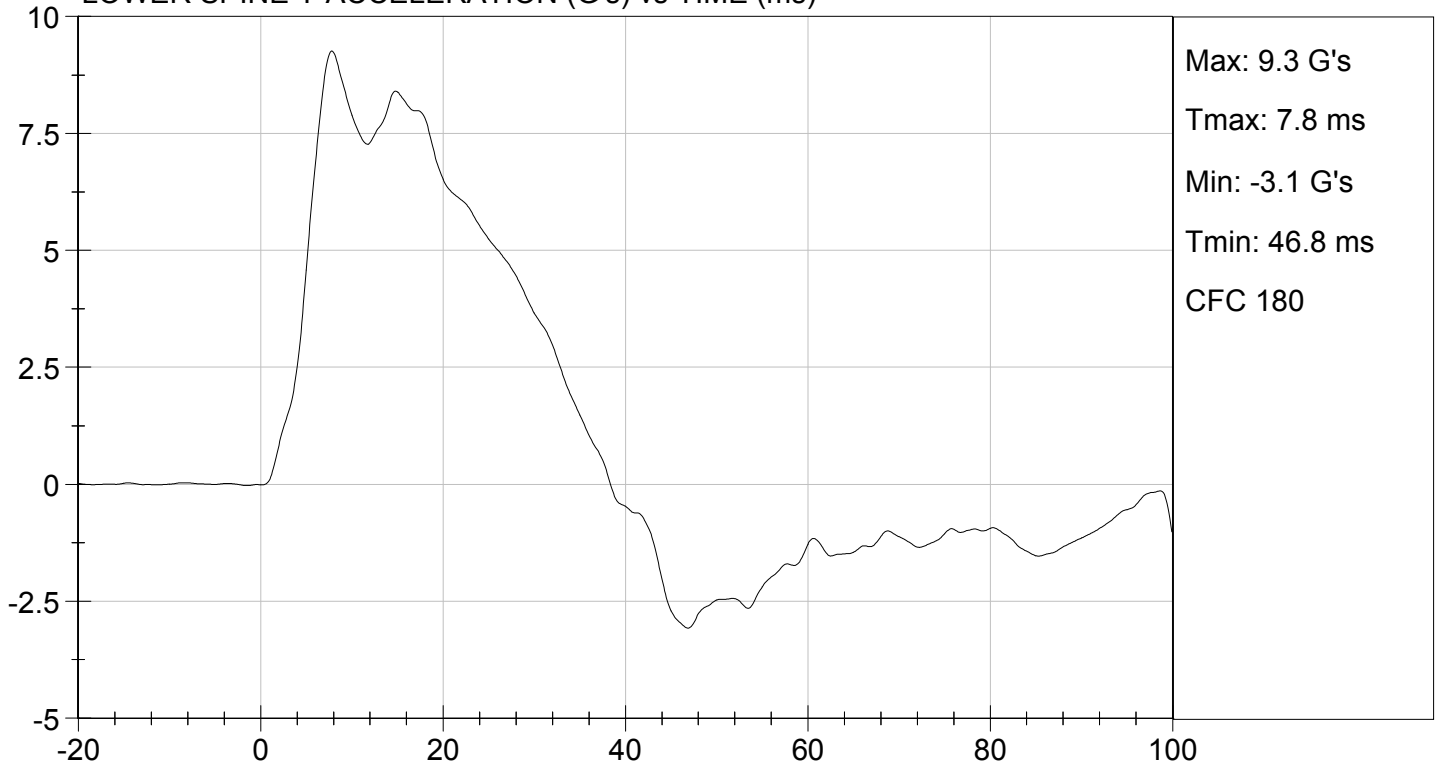
TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 03/03/2016  
TEST #: D16895

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:** D16896

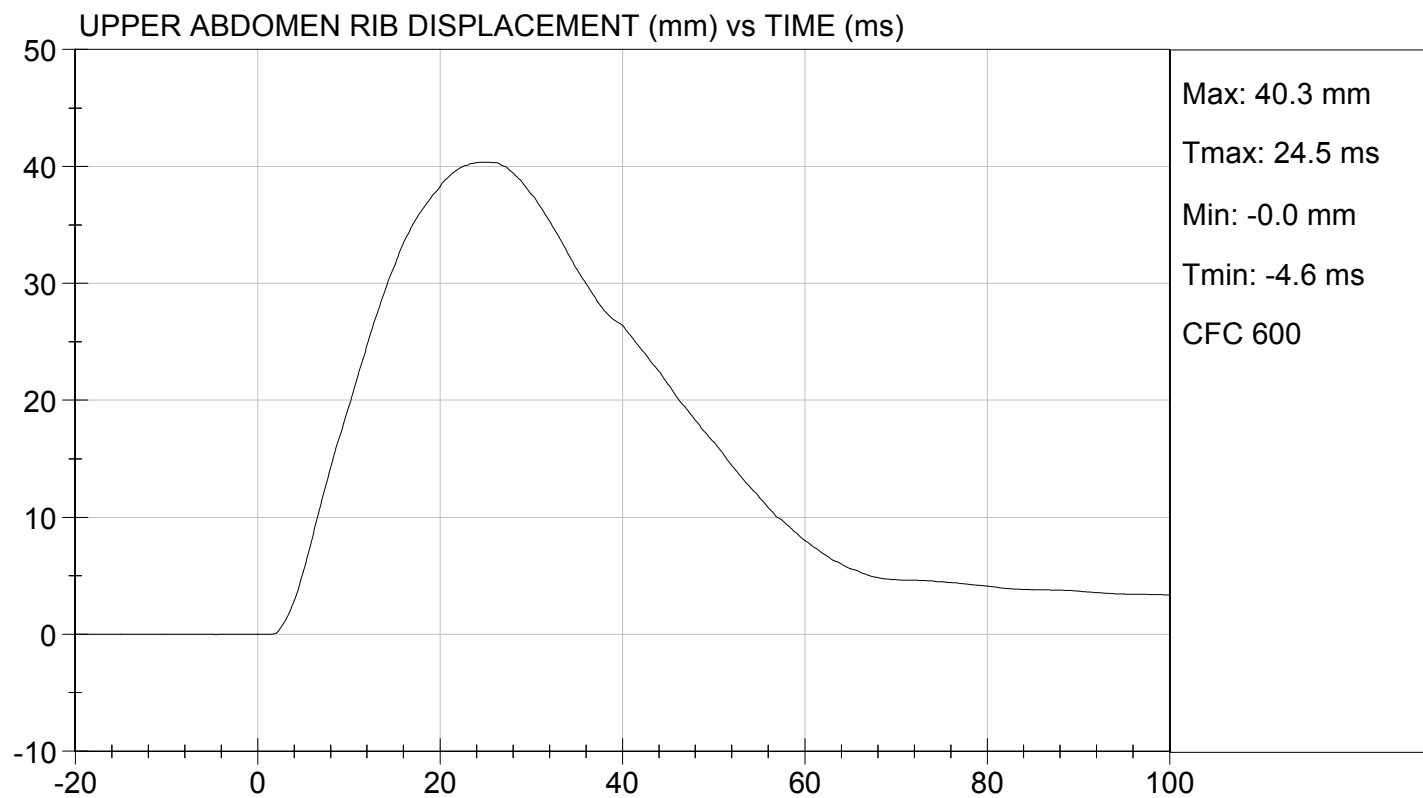
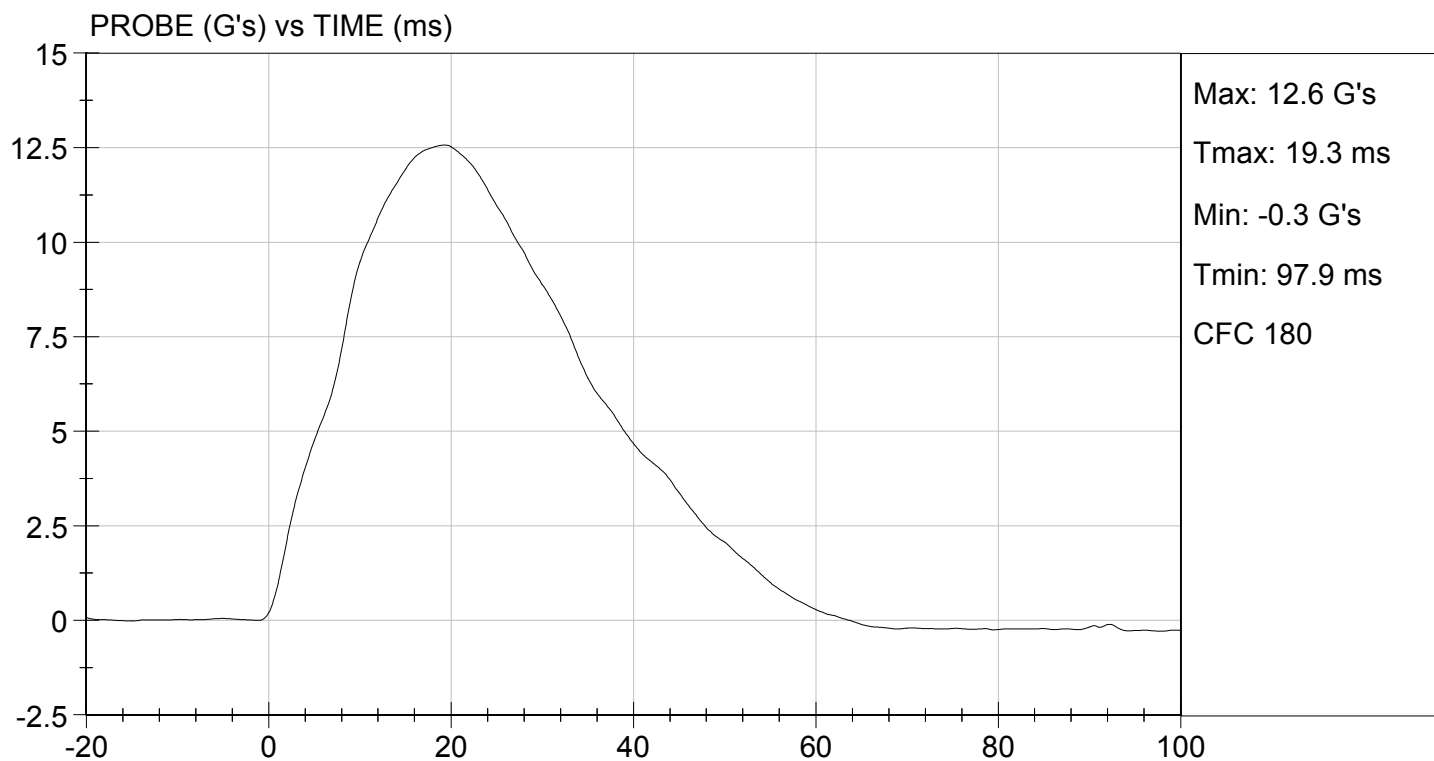
| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.0   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.23   | Pass      |
| Maximum Probe Acceleration       | G's   | 12 to 16      | 13     | Pass      |
| Upper Abdomen Rib Displacement   | mm    | 36 to 47      | 40     | Pass      |
| Lower Abdomen Rib Displacement   | mm    | 33 to 44      | 40     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 9 to 14       | 10     | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
Laboratory Technician

03/03/2016

Test Date

  
Approved By

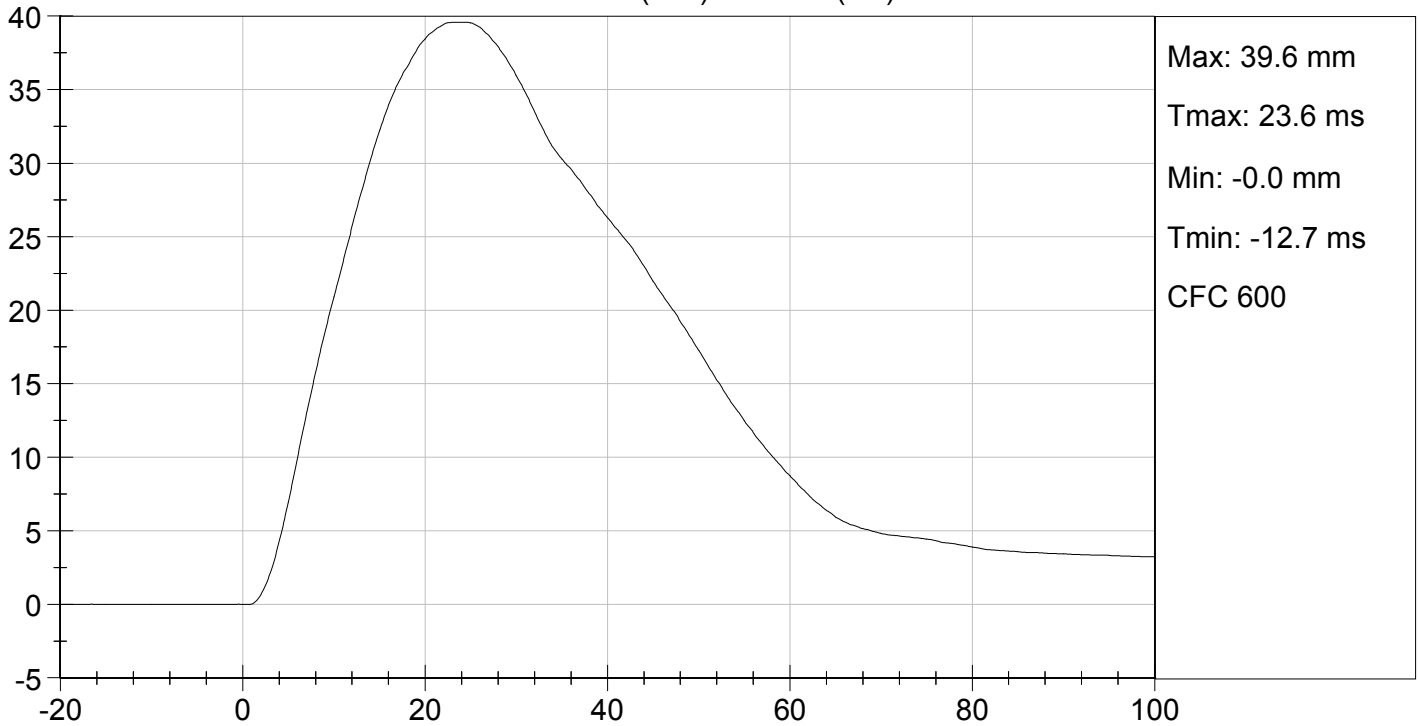




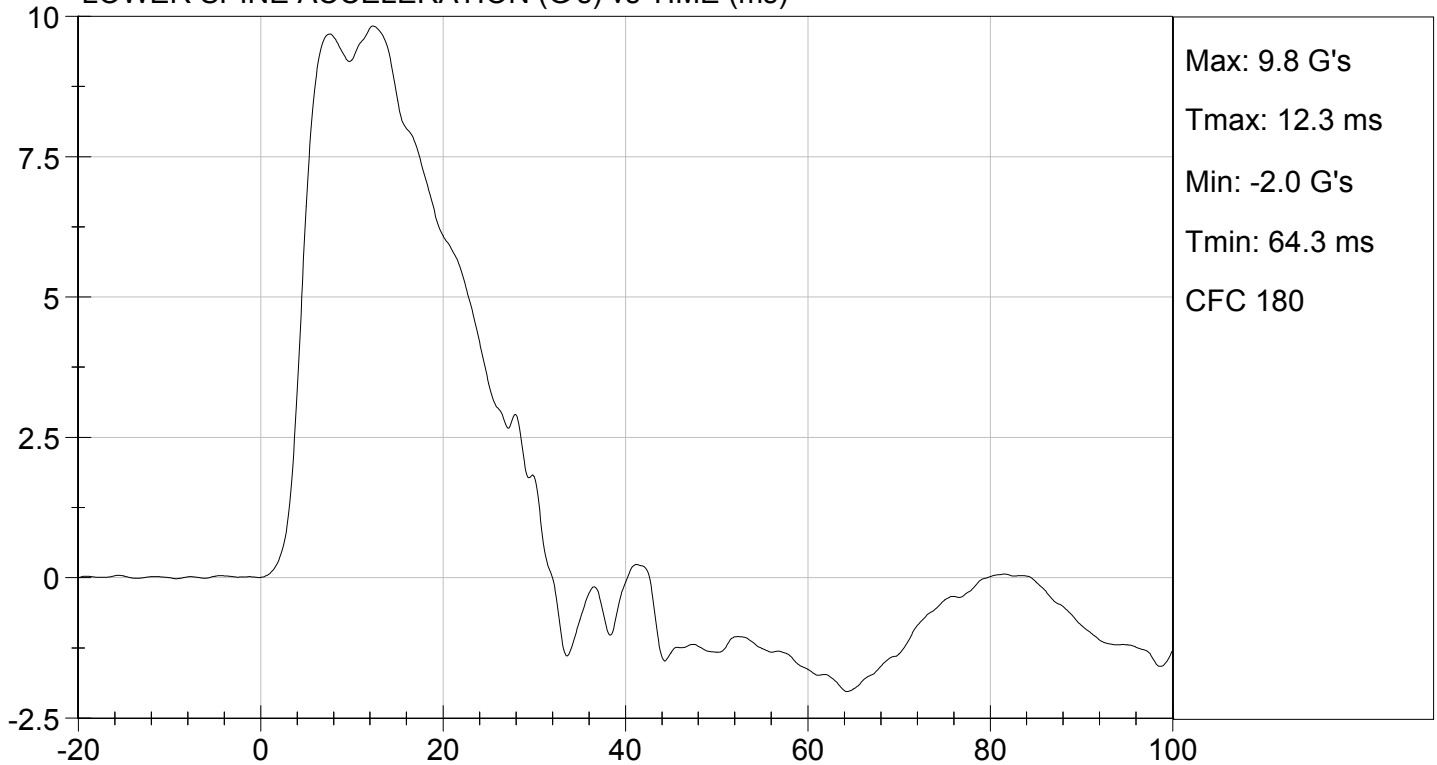
TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 03/03/2016  
TEST #: D16896

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

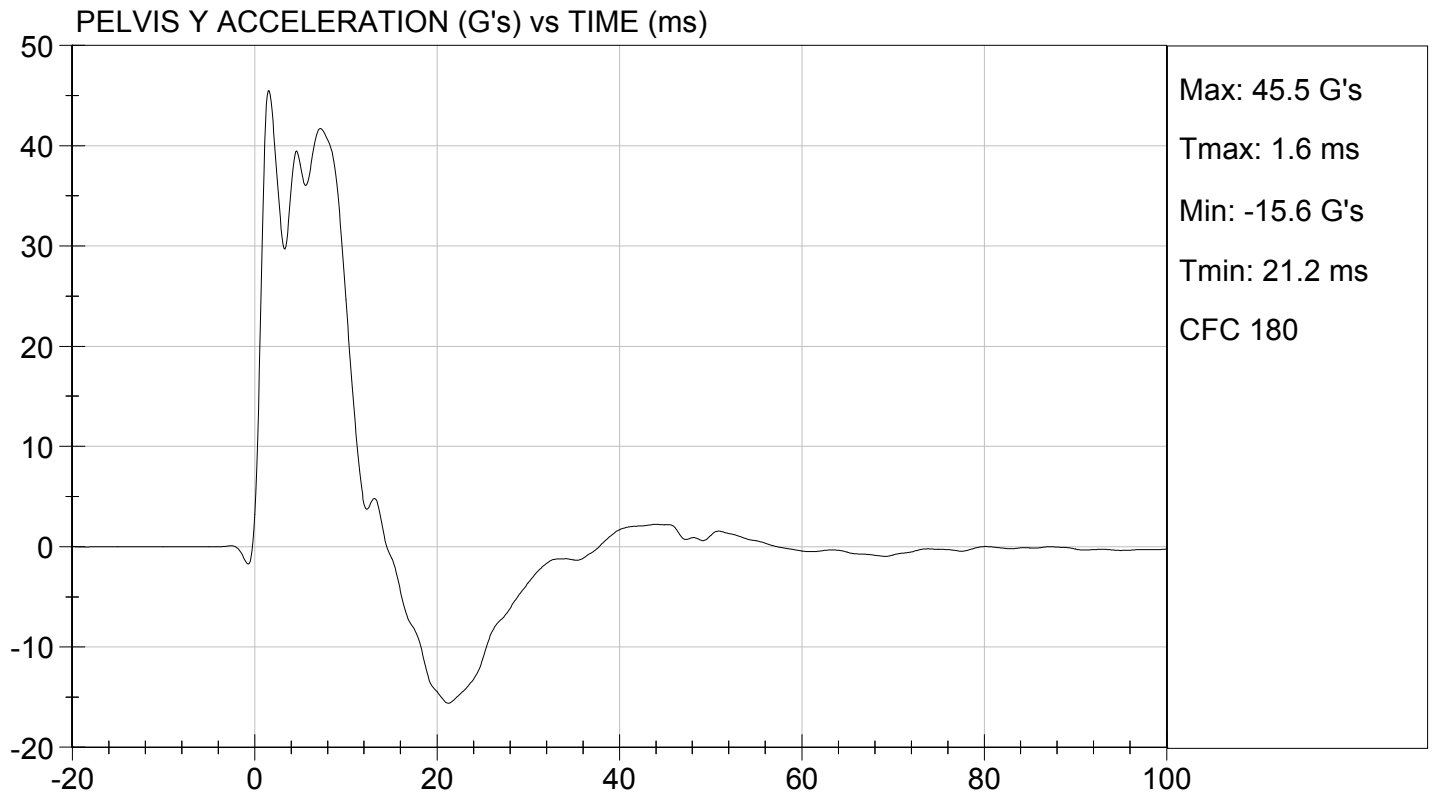
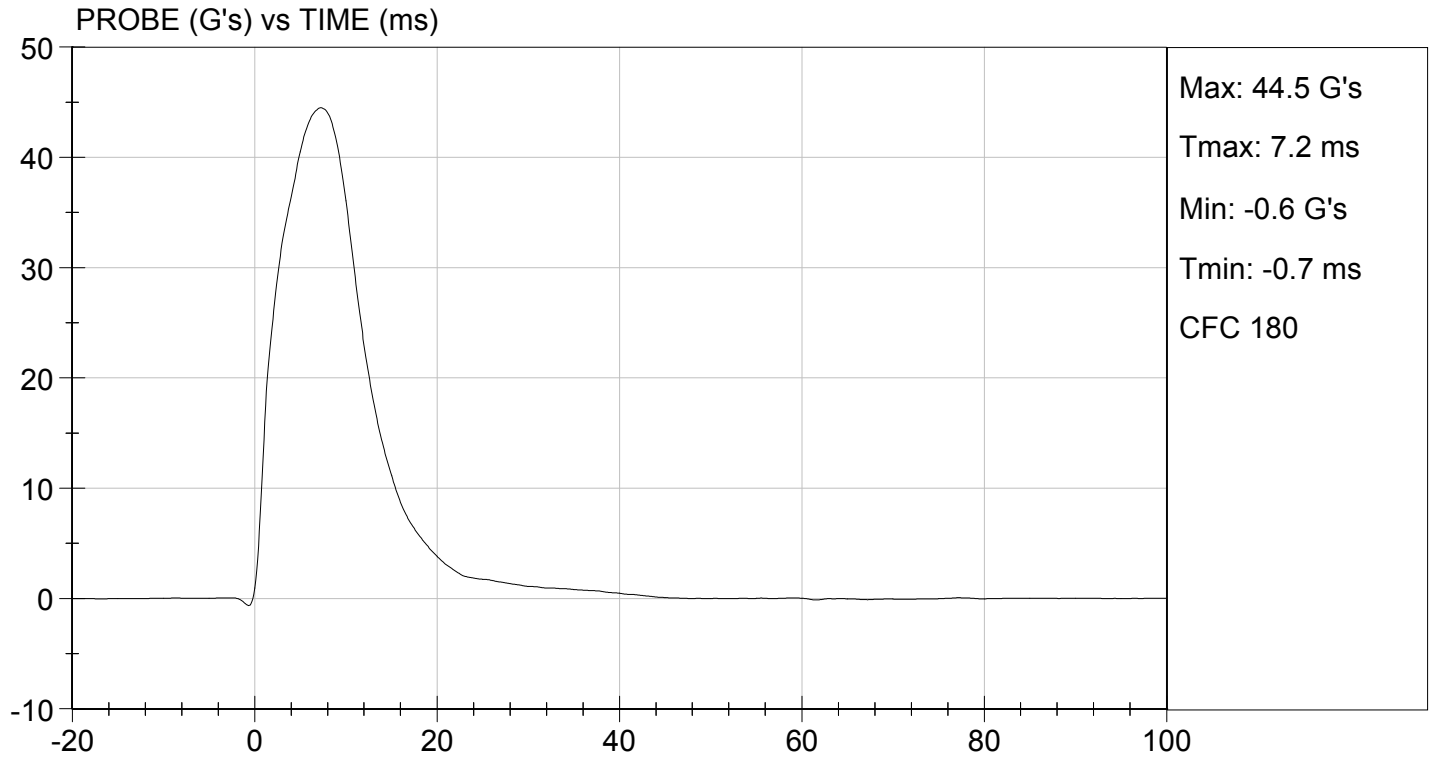
**Test I.D:** D16897

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.0   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.68   | Pass      |
| Maximum Probe Acceleration       | G's   | 38 to 47      | 45     | Pass      |
| Pelvis Y Acceleration After 6 ms | G's   | 34 to 42      | 42     | Pass      |
| Peak Acetabulum Force            | N     | 3600 to 4300  | 4,258  | Pass      |
| Overall Test Results             |       |               |        | Pass      |

Jessica Hall  
Laboratory Technician

Thomas D. Miller  
Approved By

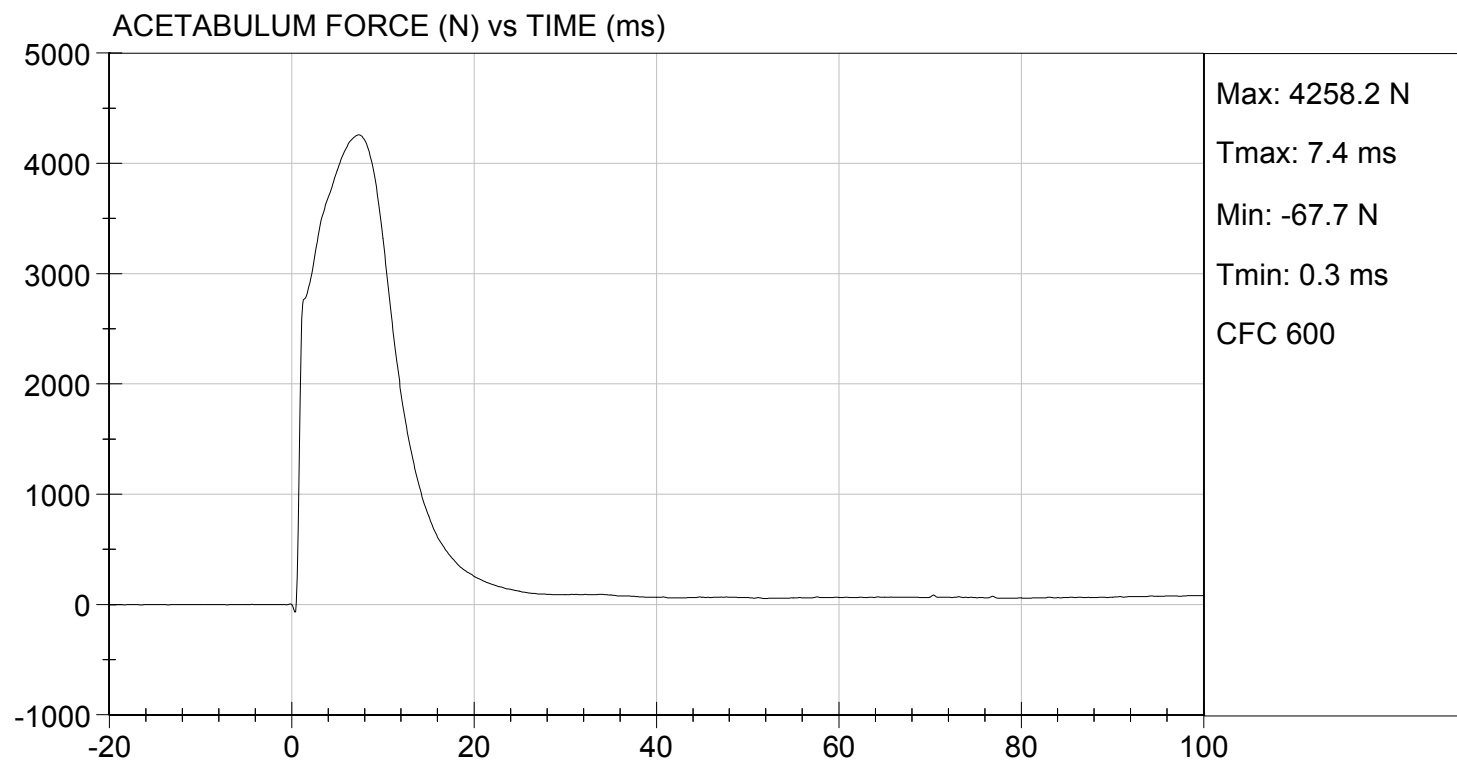
03/03/2016  
Test Date





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

TEST DATE: 03/03/2016  
TEST #: D16897



**MGA RESEARCH CORPORATION**

**ILIAC IMPACT TEST**

**SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

**Test I.D:** D16898

| Tested Parameter           | Units | Specification | Result | Pass/Fail |
|----------------------------|-------|---------------|--------|-----------|
| Temperature                | deg C | 20.6 to 22.2  | 21.0   | Pass      |
| Humidity                   | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity            | m/s   | 4.20 to 4.40  | 4.30   | Pass      |
| Maximum Probe Acceleration | G's   | 36 to 45      | 38     | Pass      |
| Pelvis Y Acceleration      | G's   | 28 to 39      | 30     | Pass      |
| Peak Pelvis Iliac Force    | N     | 4100 to 5100  | 4,315  | Pass      |
| Overall Test Results       |       |               |        | Pass      |

Jessica Hall  
Laboratory Technician

03/03/2016

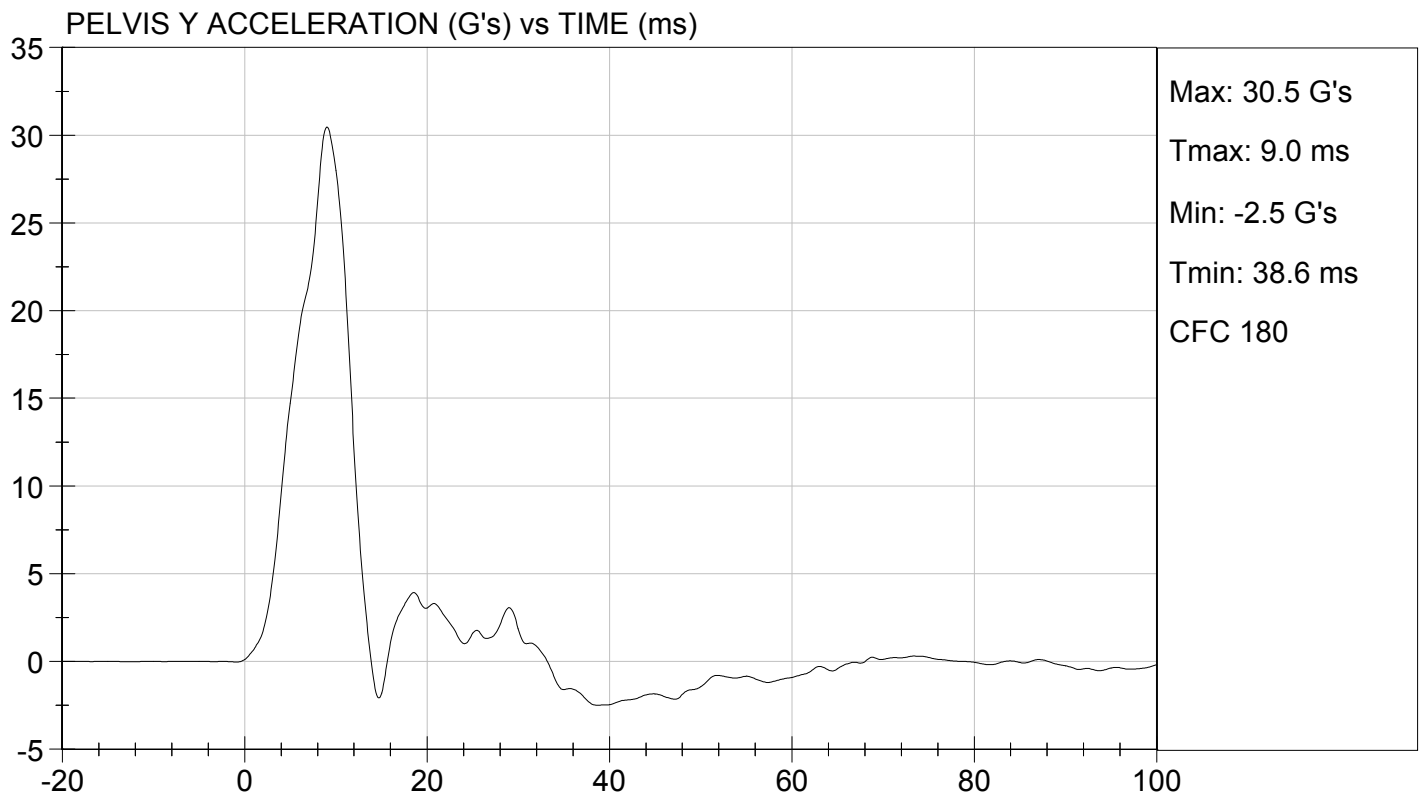
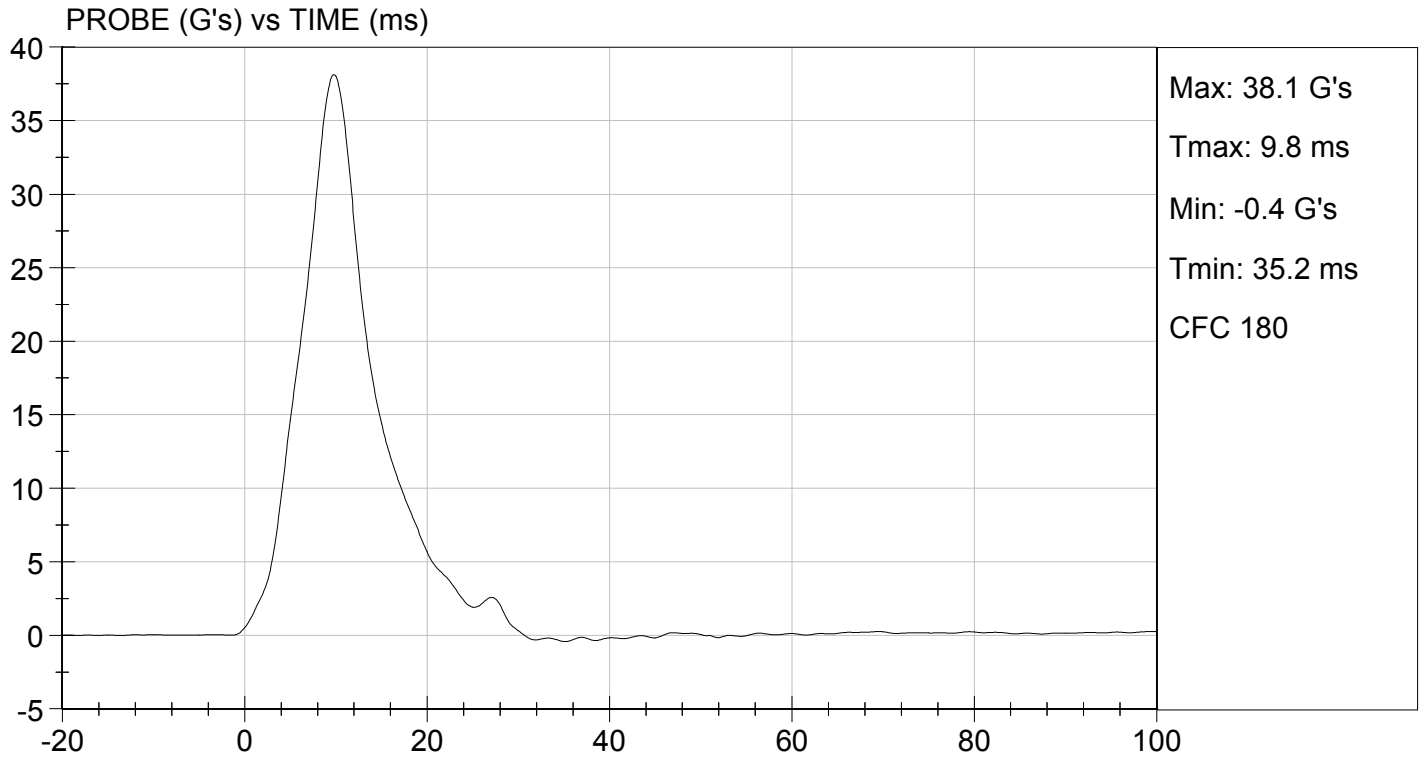
Test Date

Adam D. Hill  
Approved By



TEST DESC: ILLIAC  
VELOCITY: 14.12 ft/s, 4.30 m/s

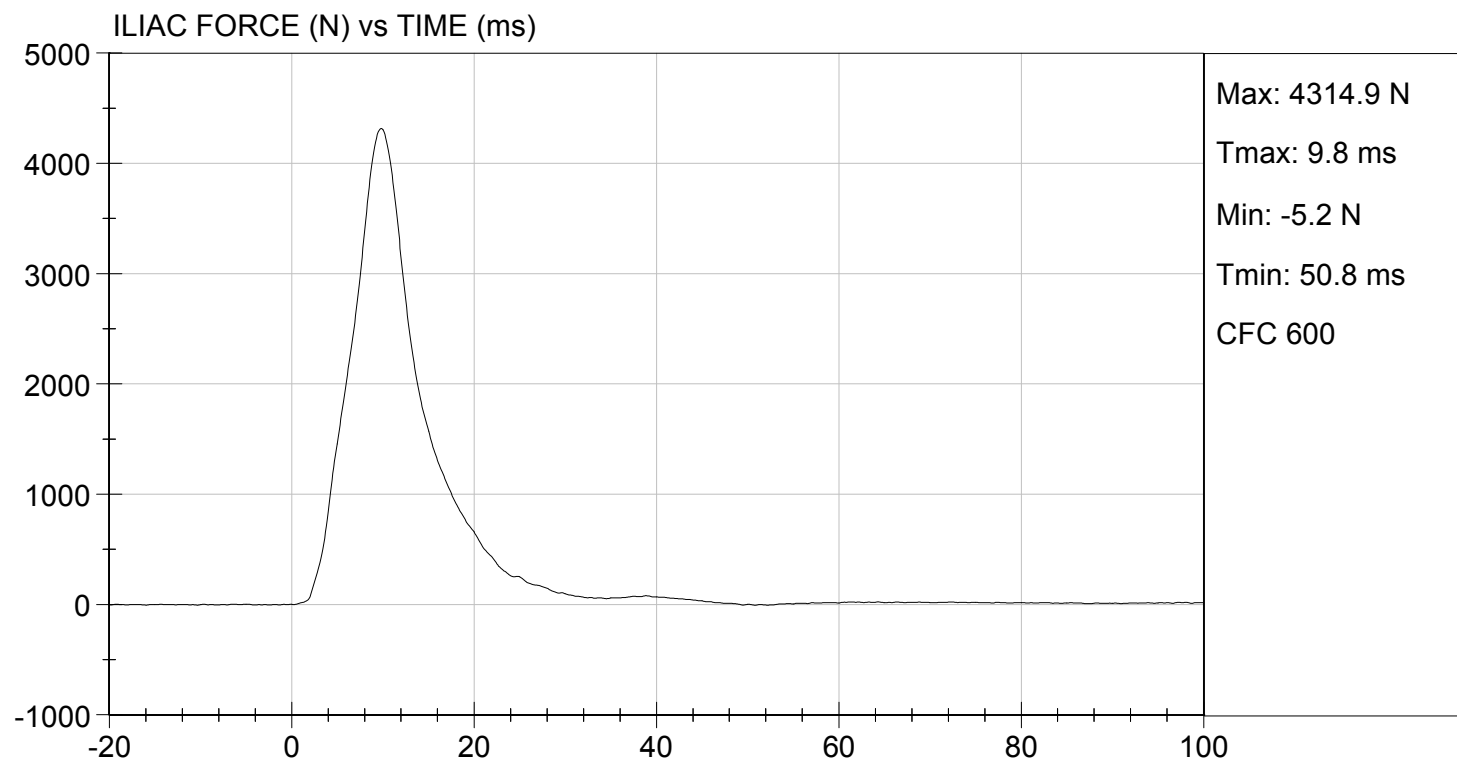
TEST DATE: 03/03/2016  
TEST #: D16898





TEST DESC: ILLIAC  
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 03/03/2016  
TEST #: D16898



**SID-IIsD External Measurements**  
**SN: 296**

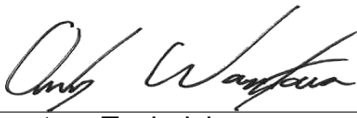
| <b>No.</b> | <b>Name</b>                   | <b>Spec. (mm)</b> | <b>Result</b> | <b>Pass/Fail</b> |
|------------|-------------------------------|-------------------|---------------|------------------|
| <b>A</b>   | Sitting Height                | 772 - 788         | 784           | Pass         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

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

**ATD Serial No:** 296

**Test ID:** D16971

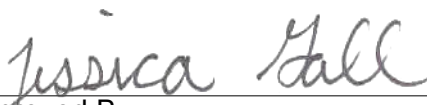
| Tested Parameter               | Units | Specification | Result               | Pass/Fail |
|--------------------------------|-------|---------------|----------------------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.8                 | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 48                   | Pass      |
| Peak Resultant Acceleration    | G's   | 115 to 137    | 135                  | Pass      |
| Peak Longitudinal Acceleration | G's   | +/- 15        | 4.5                  | Pass      |
| Unimodal                       | N/A   | Yes           | Yes                  | Pass      |
| Oscillations                   | N/A   | <15%          | Yes                  | Pass      |
|                                |       |               | Overall Test Results | Pass      |



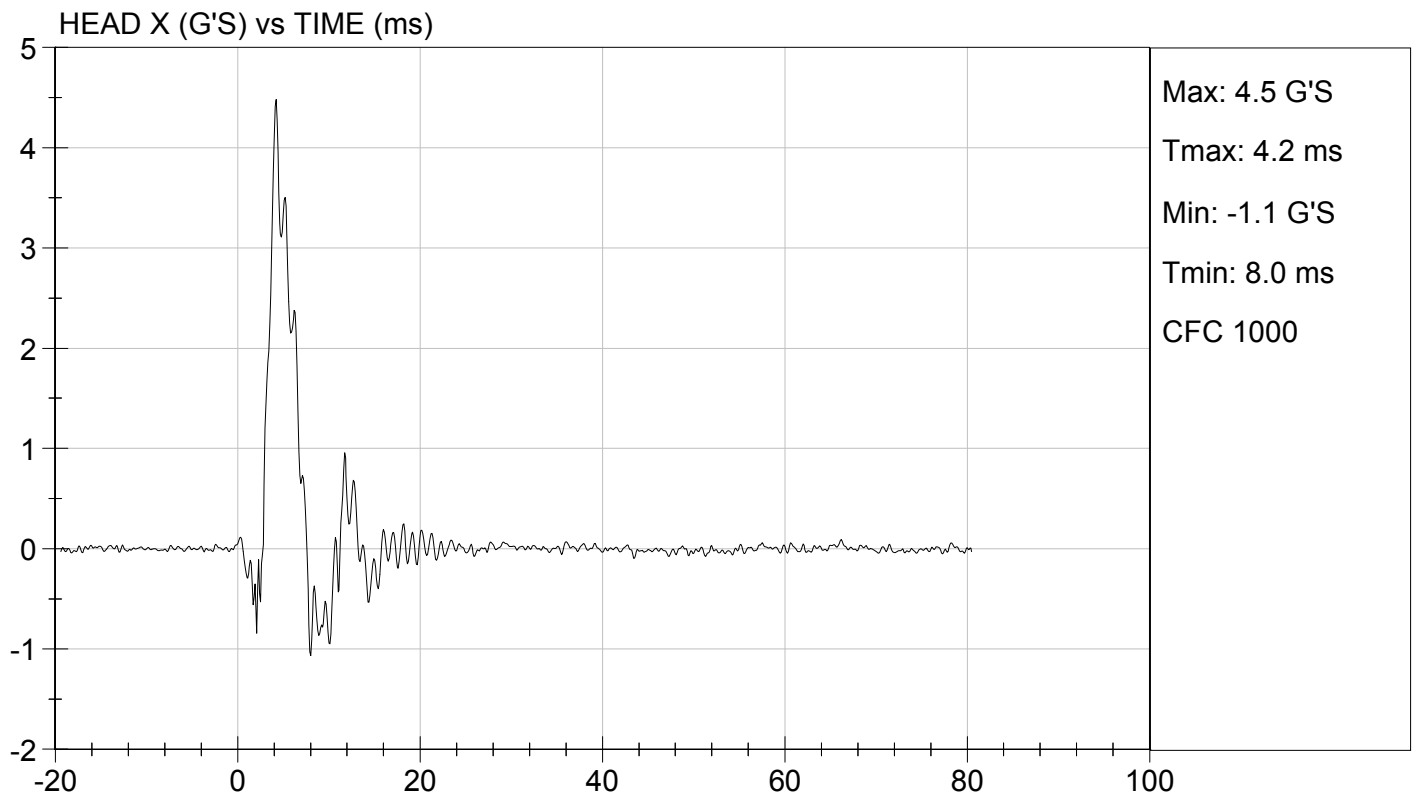
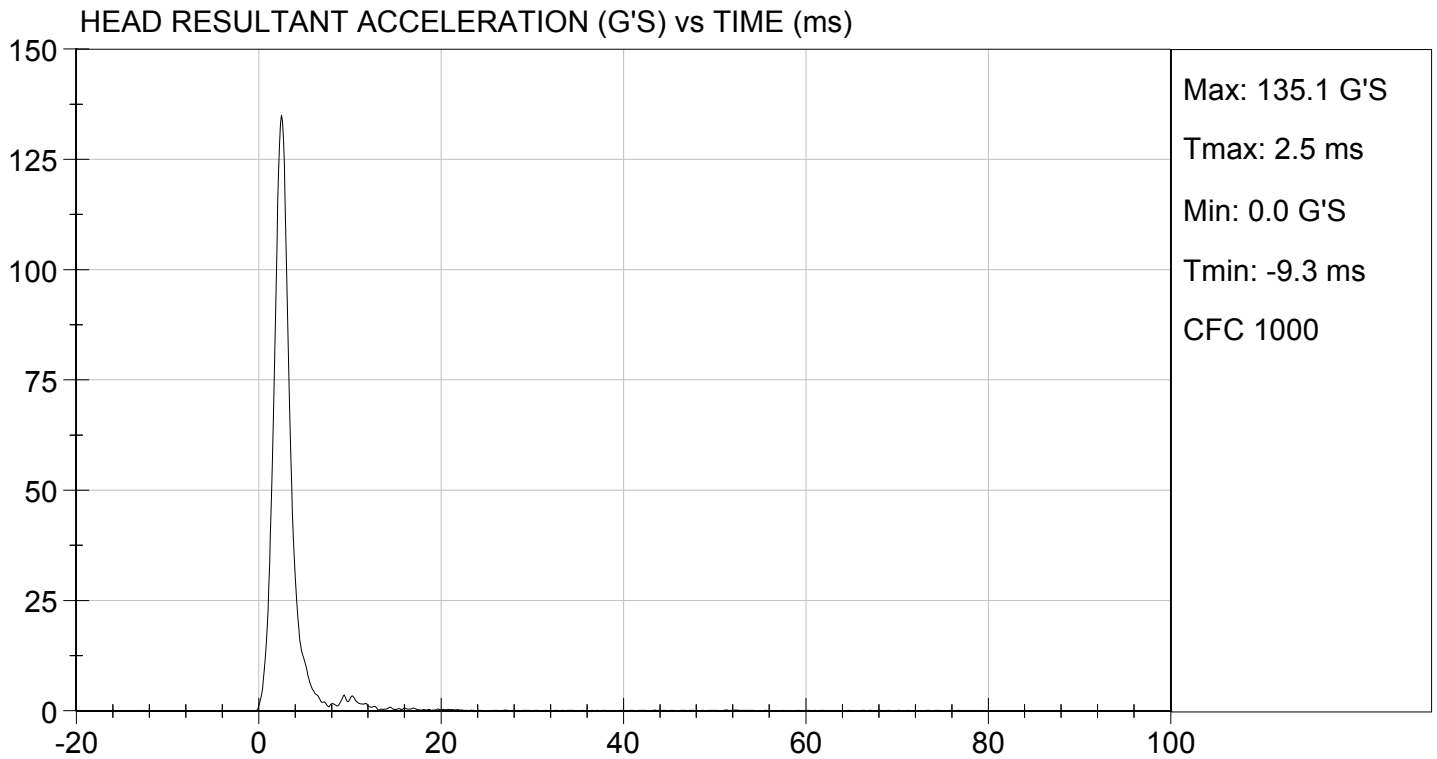
Laboratory Technician

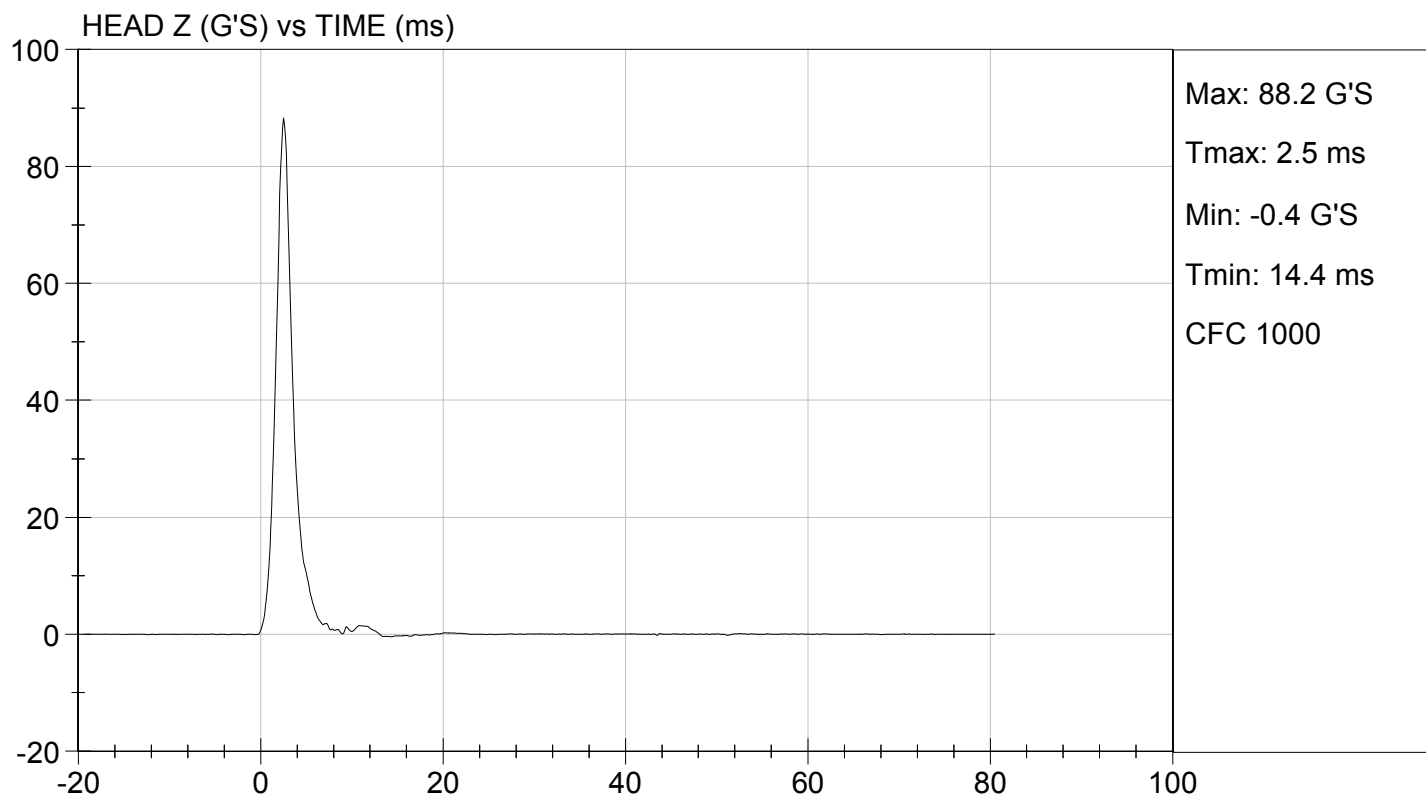
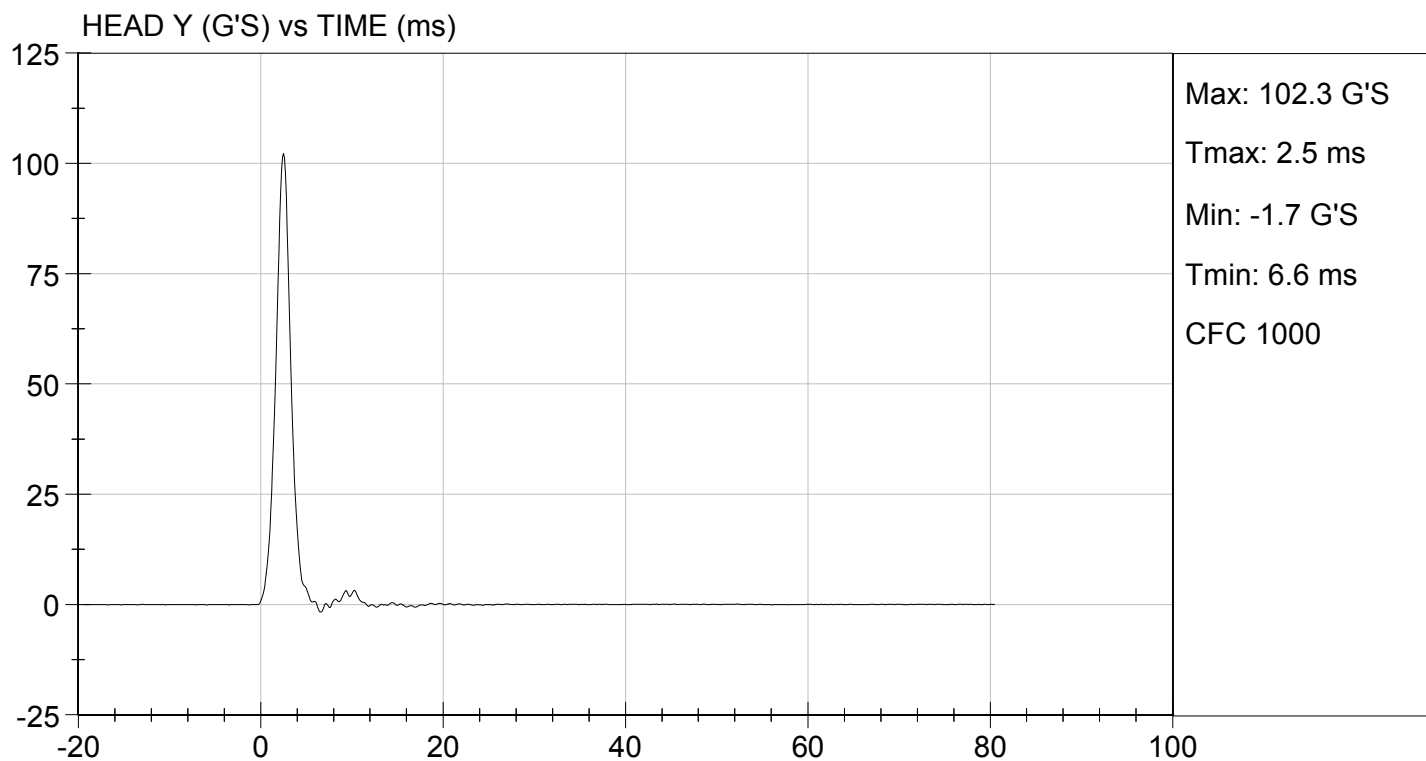
03/09/2016

Test Date



Approved By





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

**ATD Serial No:** 296

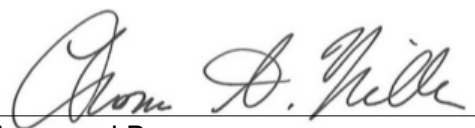
**Test I.D:** D16972

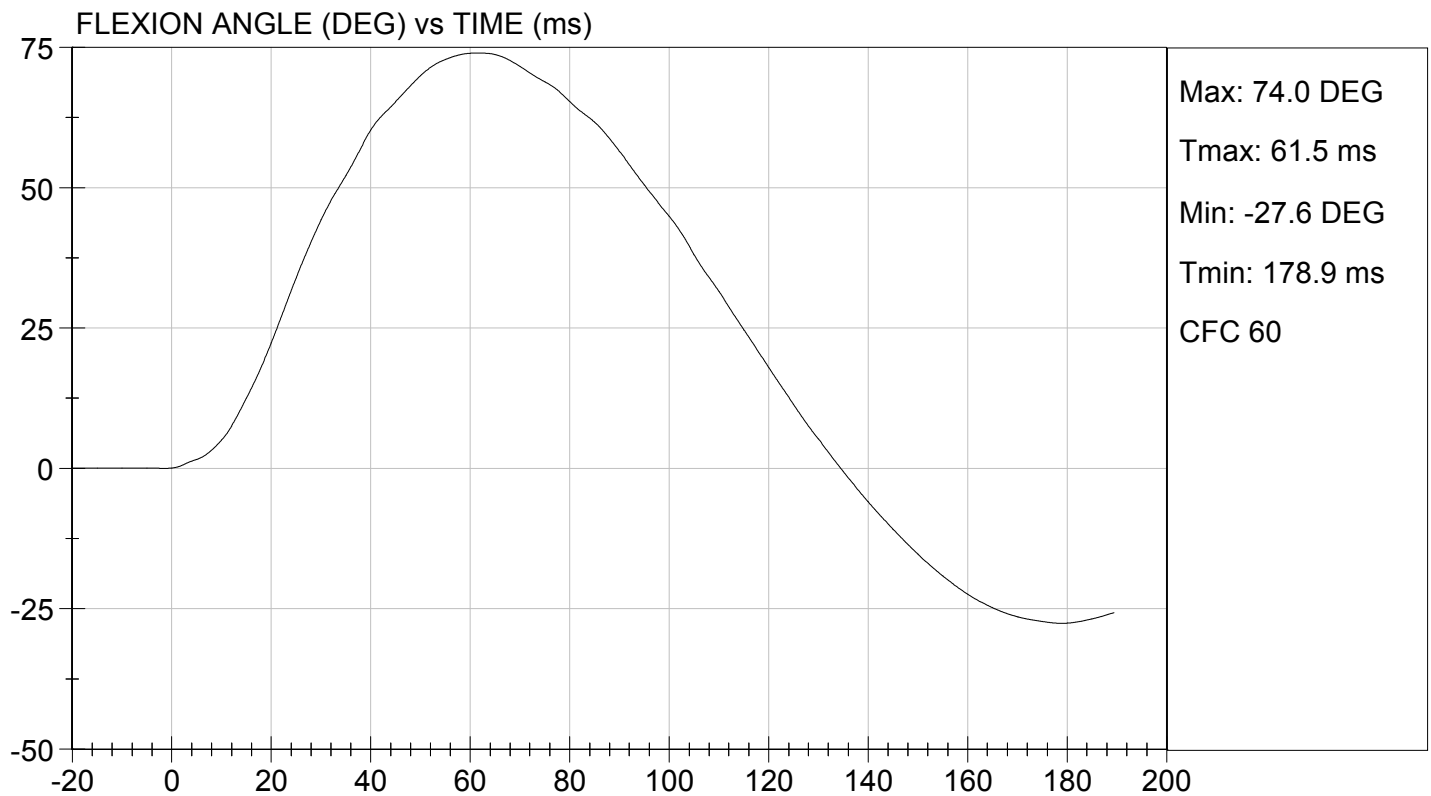
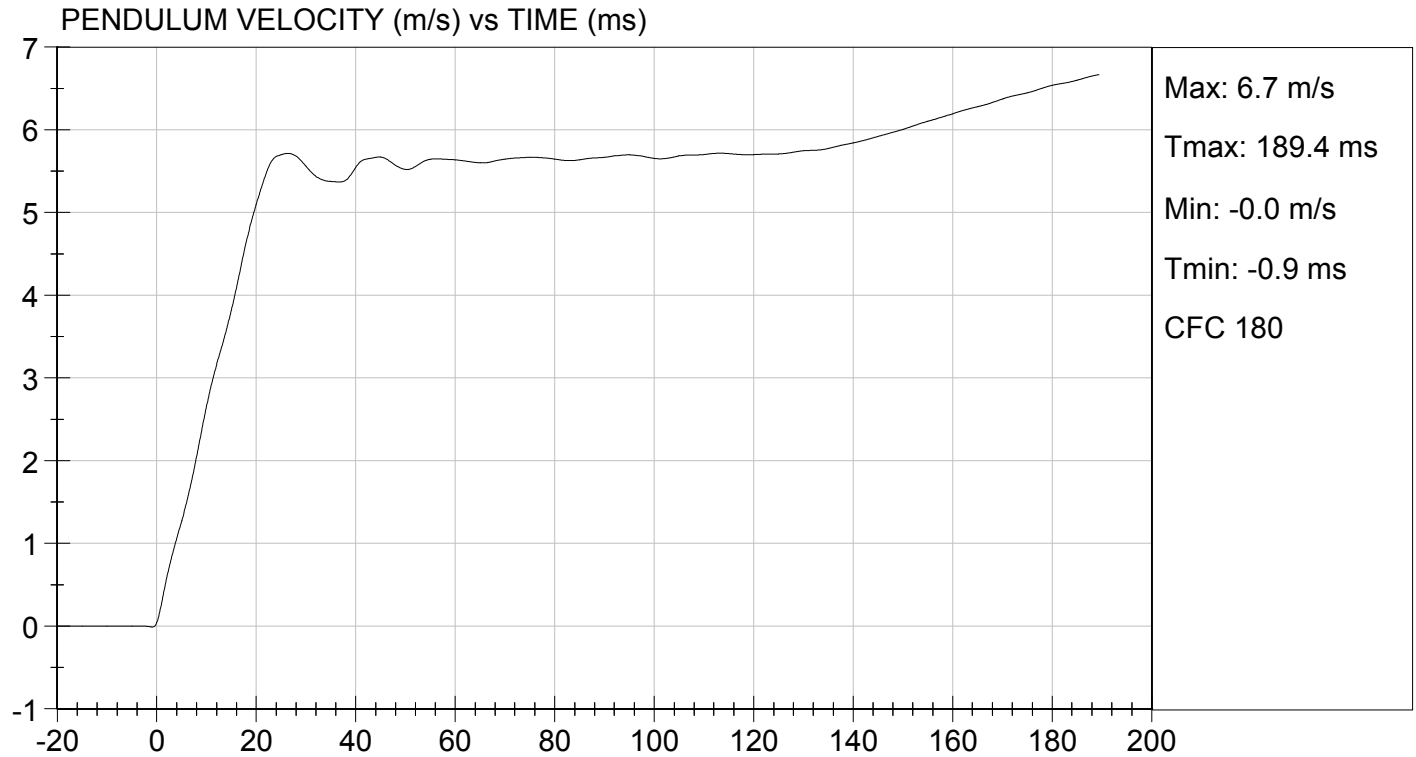
| Tested Parameter                 |           | Units | Specification | Result | Pass/Fail |
|----------------------------------|-----------|-------|---------------|--------|-----------|
| Temperature                      |           | deg C | 20.6 to 22.2  | 21.5   | Pass      |
| Humidity                         |           | %     | 10 to 70      | 50     | Pass      |
| Impact Velocity                  |           | m/s   | 5.51 to 5.63  | 5.58   | Pass      |
| Pendulum Velocity                | 10 ms     | m/s   | 2.20 to 2.80  | 2.66   | Pass      |
|                                  | 15 ms     | m/s   | 3.30 to 4.10  | 3.82   | Pass      |
|                                  | 20 ms     | m/s   | 4.40 to 5.40  | 5.10   | Pass      |
|                                  | 25 ms     | m/s   | 5.40 to 6.10  | 5.70   | Pass      |
|                                  | 25-100 ms | m/s   | 5.50 to 6.20  | 5.72   | Pass      |
| Maximum D-Plane Rotation         |           | deg   | 71 to 81      | 74     | Pass      |
| Time of Maximum D-Plane Rotation |           | ms    | 50 to 70      | 62     | Pass      |
| Maximum Occipital Condyle Moment |           | Nm    | -44 to -36    | -43    | Pass      |
| Time of Moment Decay to 0 Nm     |           | ms    | 102 to 126    | 118    | Pass      |
| Overall Test Results             |           |       |               | Pass   |           |

  
 Laboratory Technician

03/09/2016

Test Date

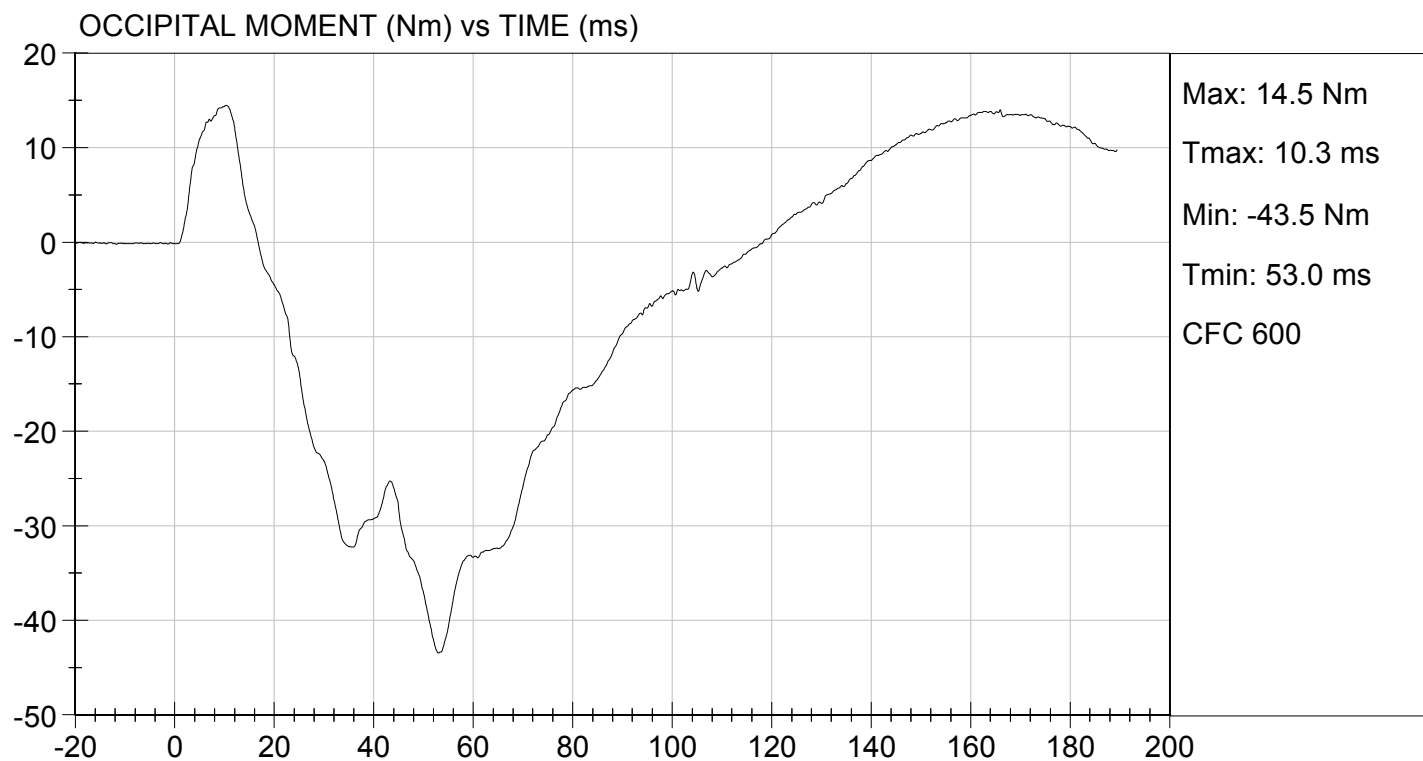
  
 Approved By





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

TEST DATE: 03/09/2016  
TEST #: D16972

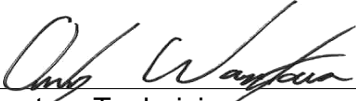


**MGA RESEARCH CORPORATION**  
**SHOULDER IMPACT TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

**Test ID:** D16973

| 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      | 47     | Pass      |
| Impact Velocity                 | m/s   | 4.20 to 4.40  | 4.27   | Pass      |
| Maximum Probe Acceleration      | G's   | 13 to 18      | 15     | Pass      |
| Shoulder Displacement           | mm    | 28 to 37      | 33     | Pass      |
| Upper Spine (T1) Y Acceleration | G's   | 17 to 22      | 17     | Pass      |
| Overall Test Results            |       |               |        | Pass      |

  
Laboratory Technician

03/09/2016

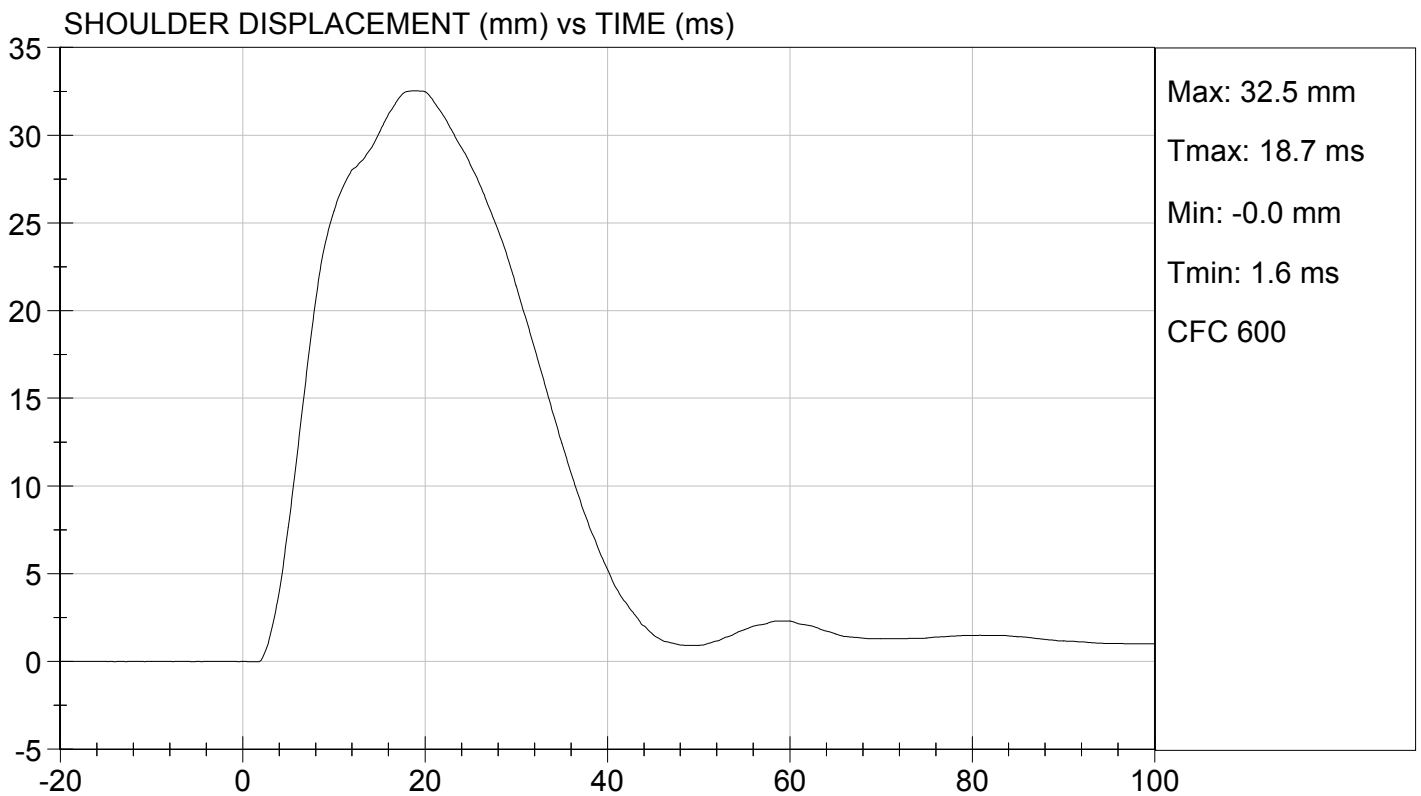
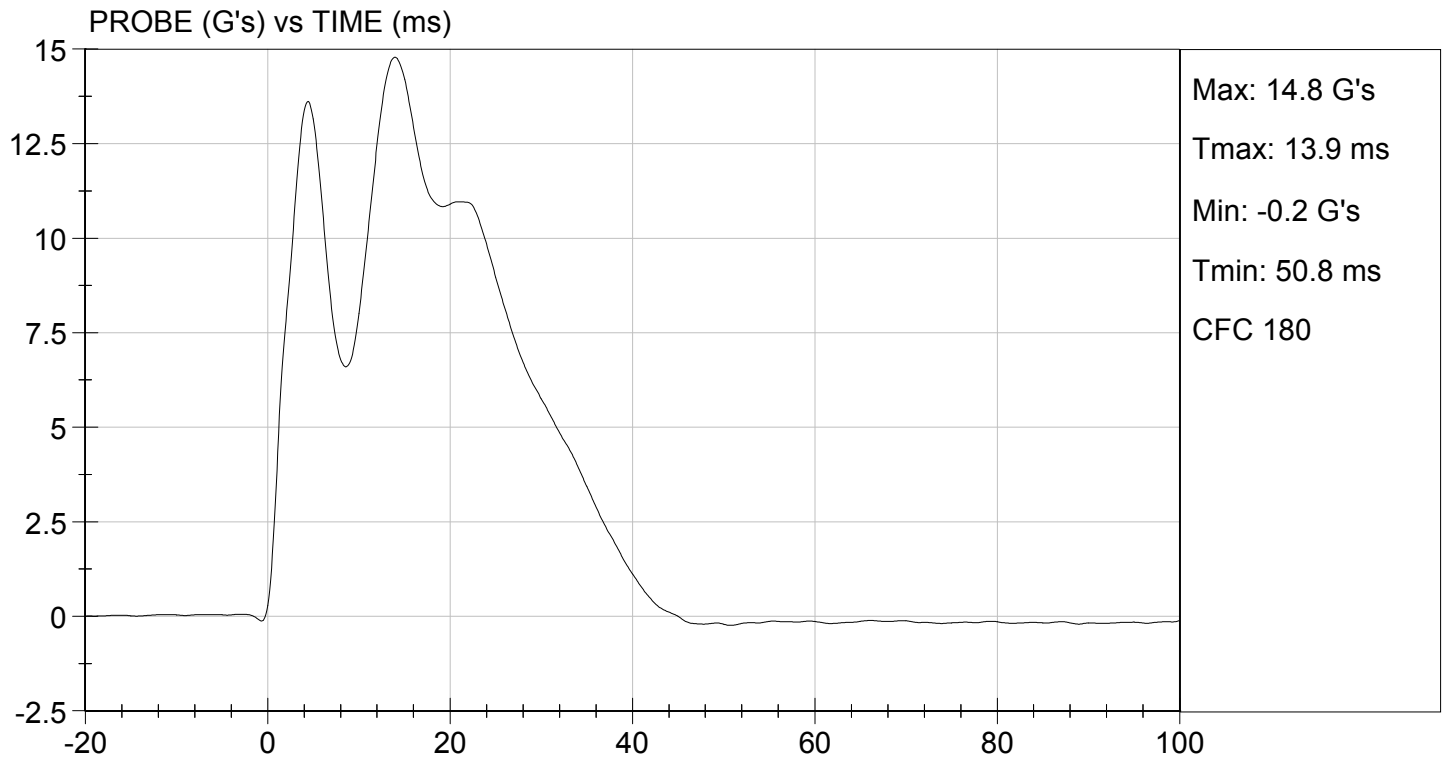
Test Date

  
Approved By



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

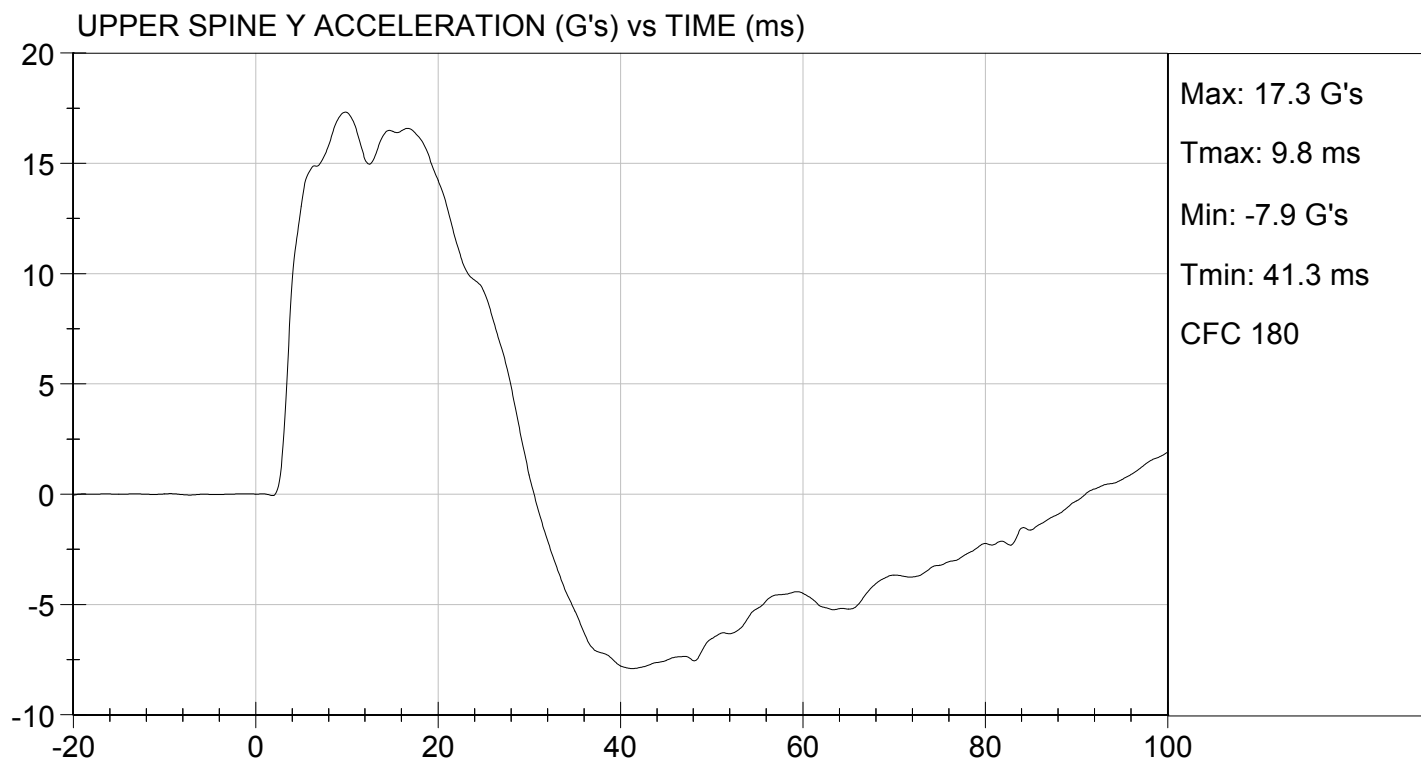
TEST DATE: 03/09/2016  
TEST #: D16973





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

TEST DATE: 03/09/2016  
TEST #: D16973



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

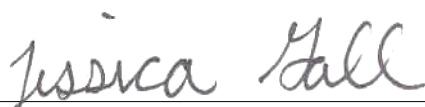
**ATD Serial No:** 296

**Test I.D:** D16974

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.4   | Pass      |
| Humidity                         | %     | 10 to 70      | 47     | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.68   | Pass      |
| Maximum Probe Acceleration       | G's   | 30 to 36      | 30     | Pass      |
| Shoulder Displacement            | mm    | 31 to 40      | 39     | Pass      |
| Upper Rib Displacement           | mm    | 25 to 32      | 29     | Pass      |
| Middle Rib Displacement          | mm    | 30 to 36      | 31     | Pass      |
| Lower Rib Displacement           | mm    | 32 to 38      | 32     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 34 to 43      | 37     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 29 to 37      | 29     | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
Laboratory Technician

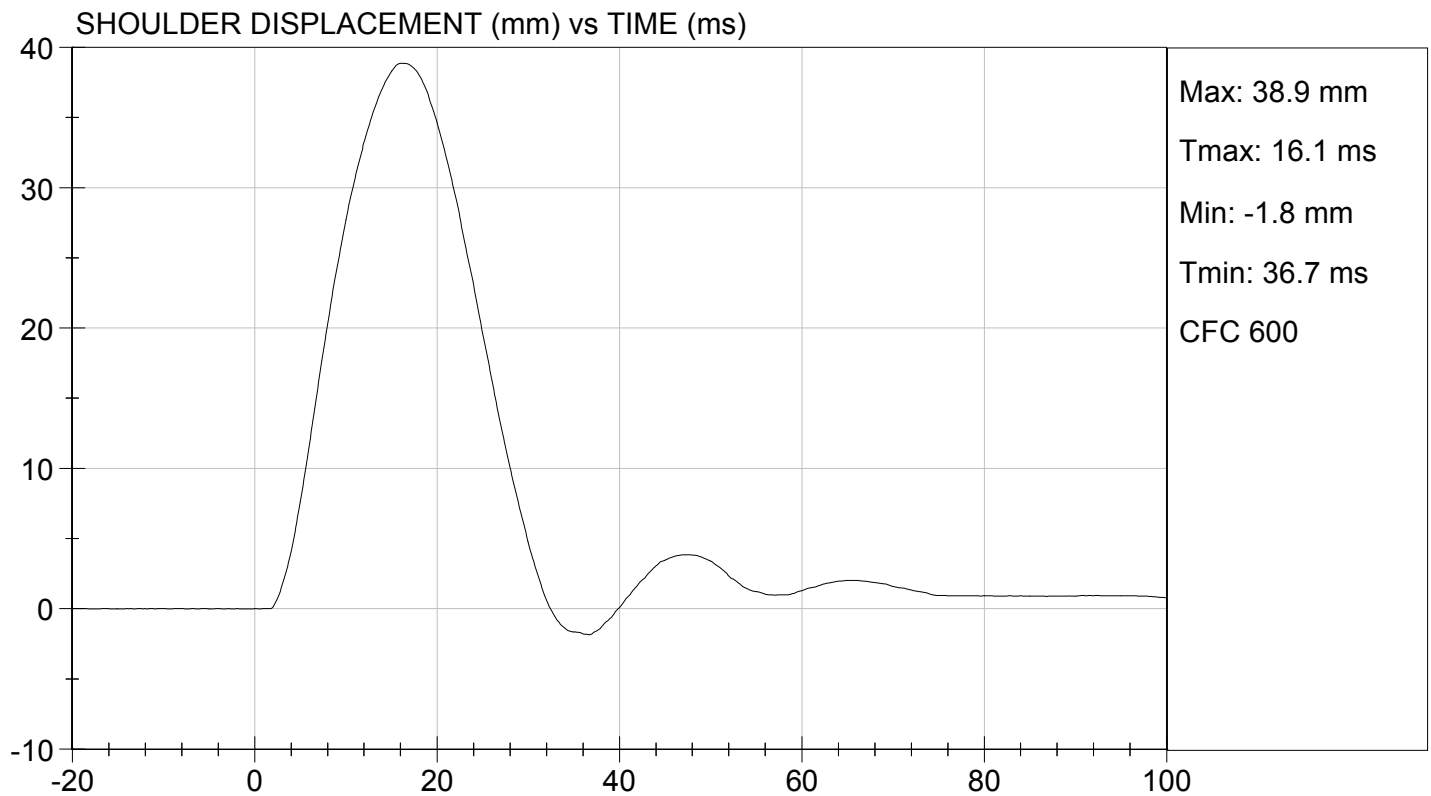
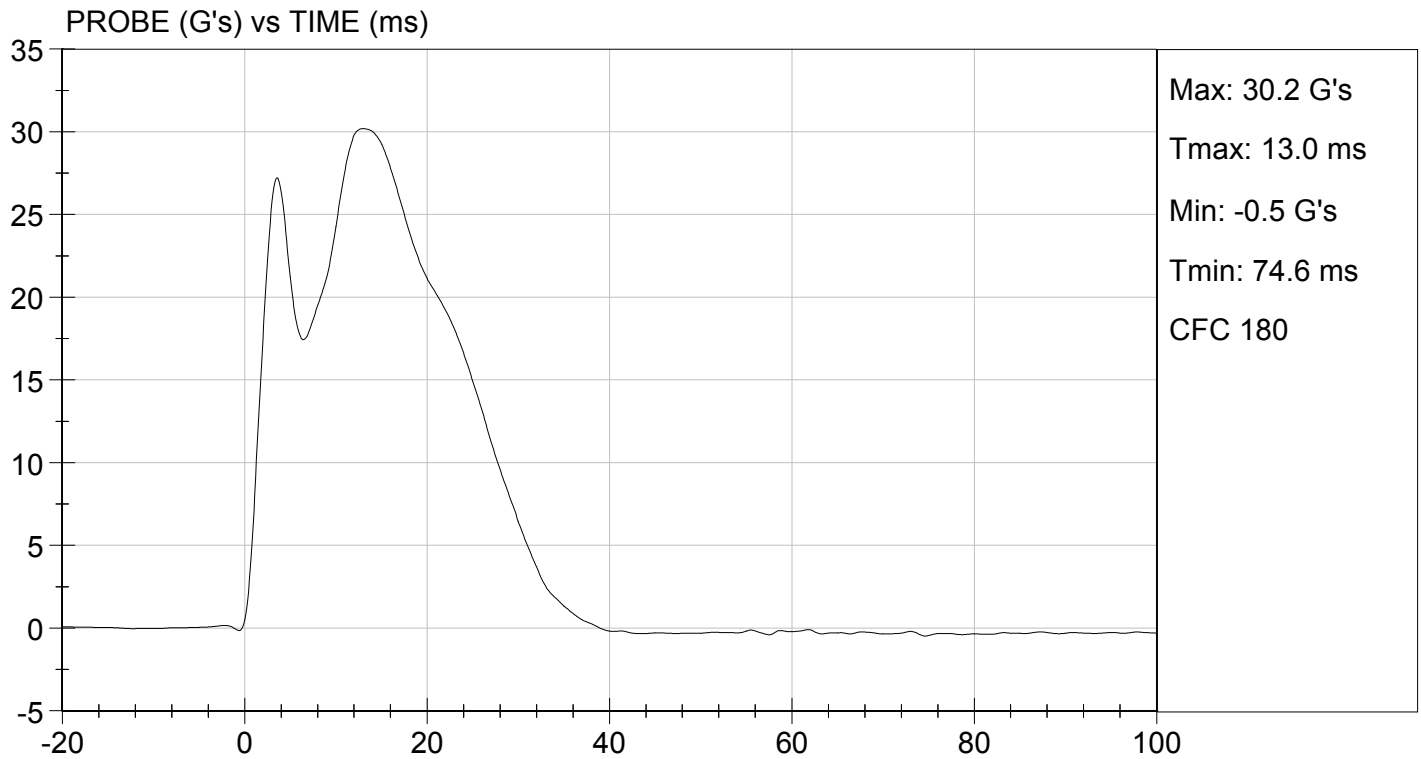
03/09/2016  
Test Date

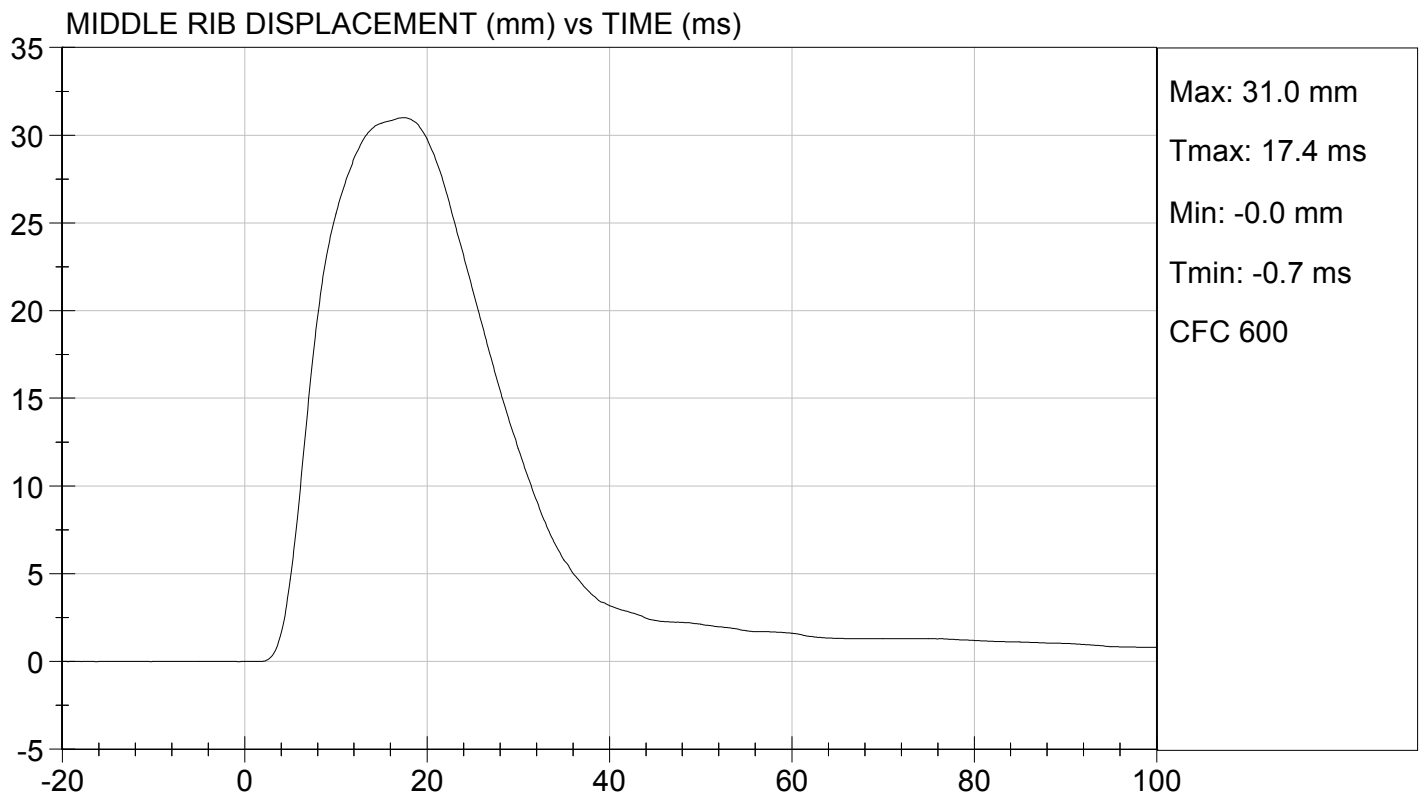
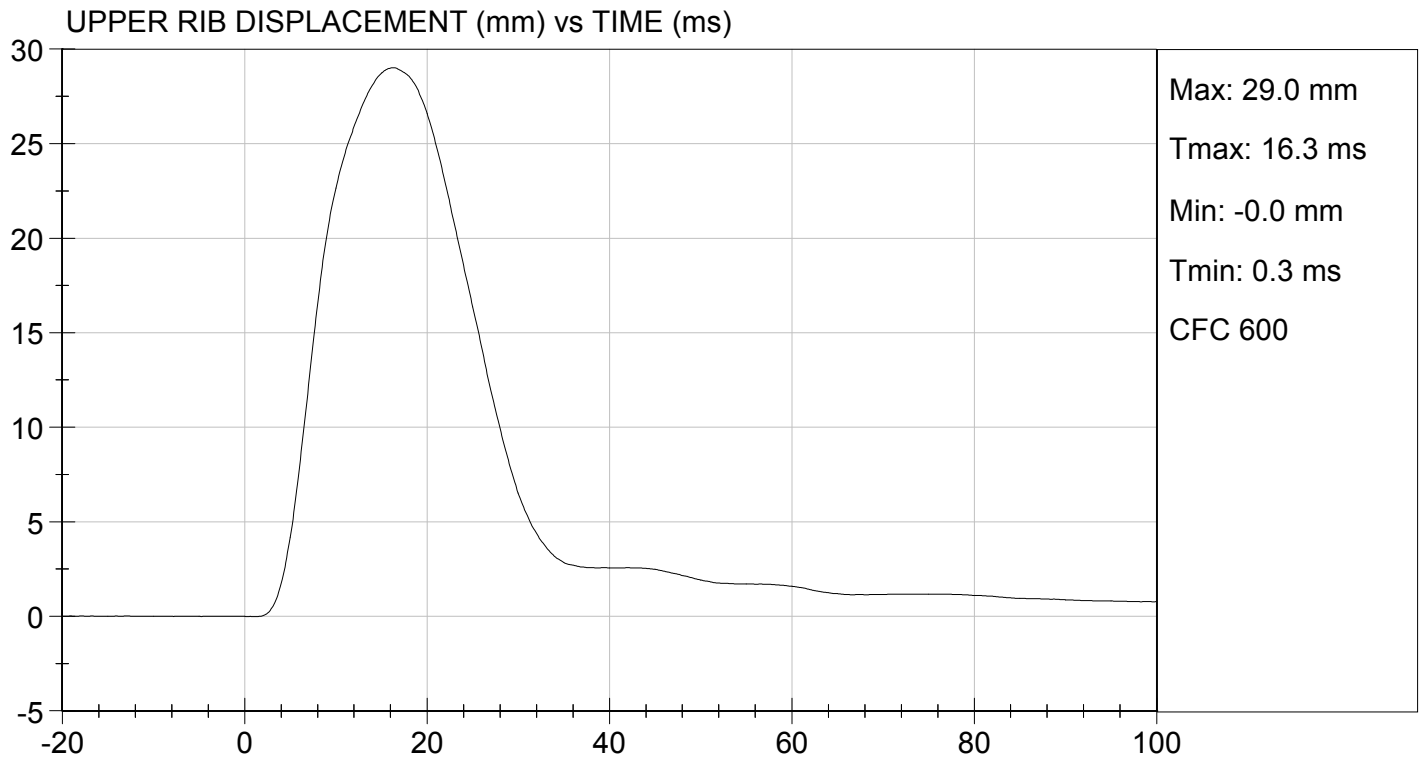
  
Approved By



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

TEST DATE: 03/09/2016  
TEST #: D16974



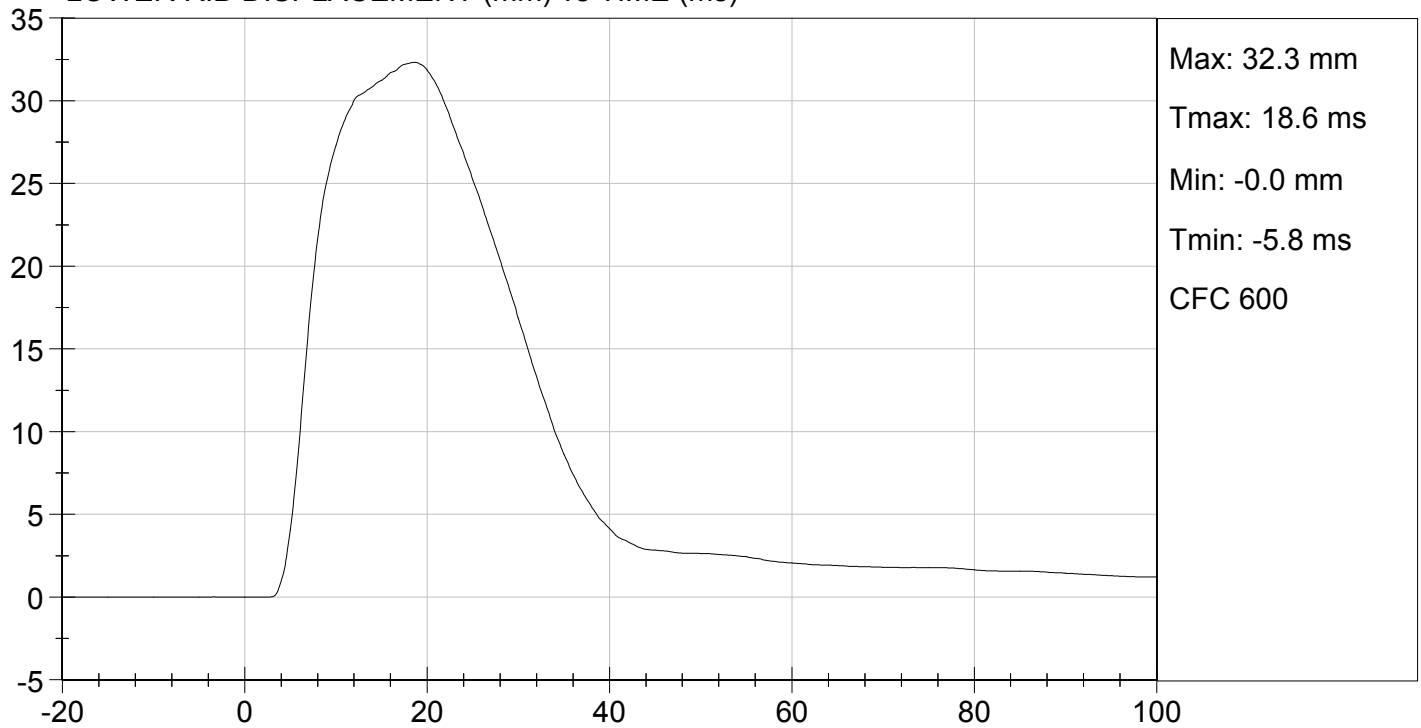




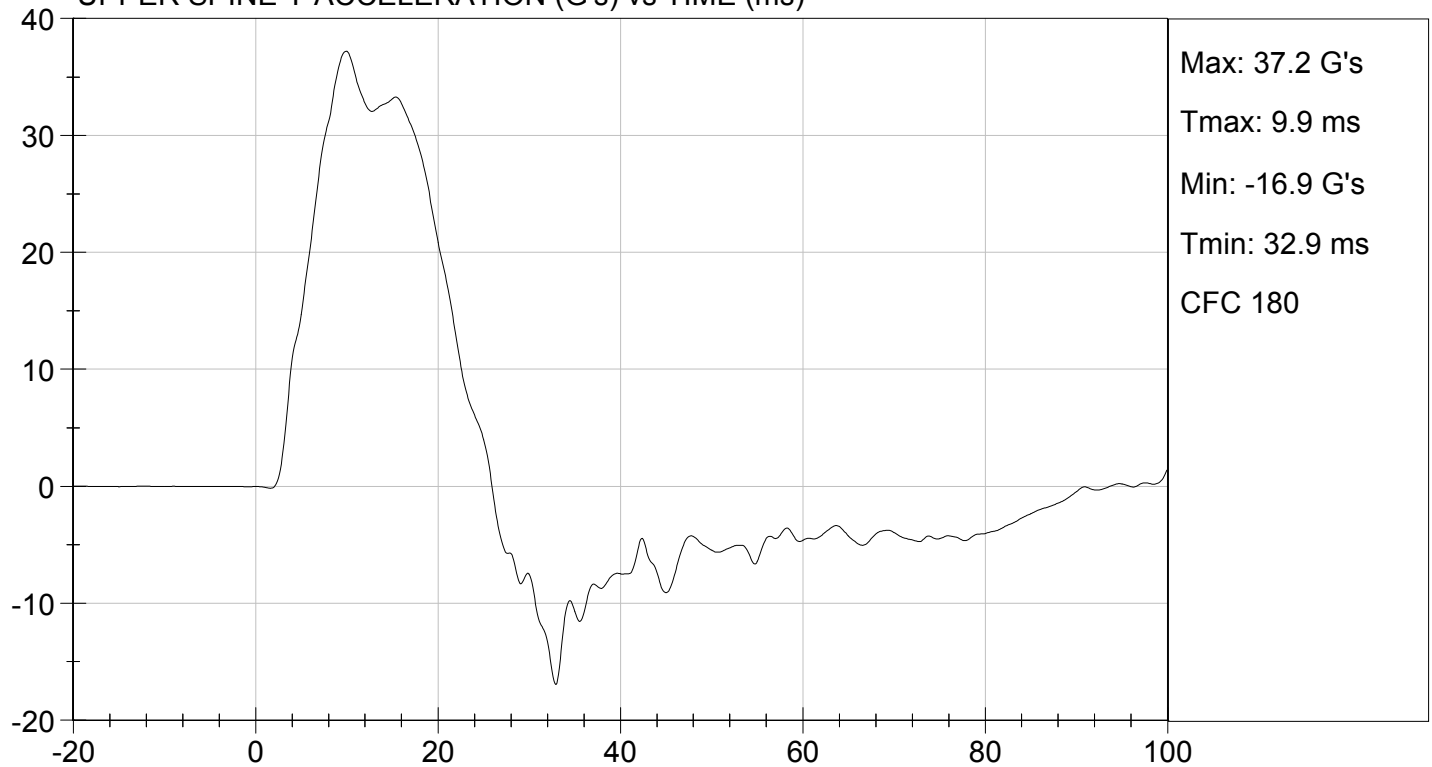
TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 03/09/2016  
TEST #: D16974

LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



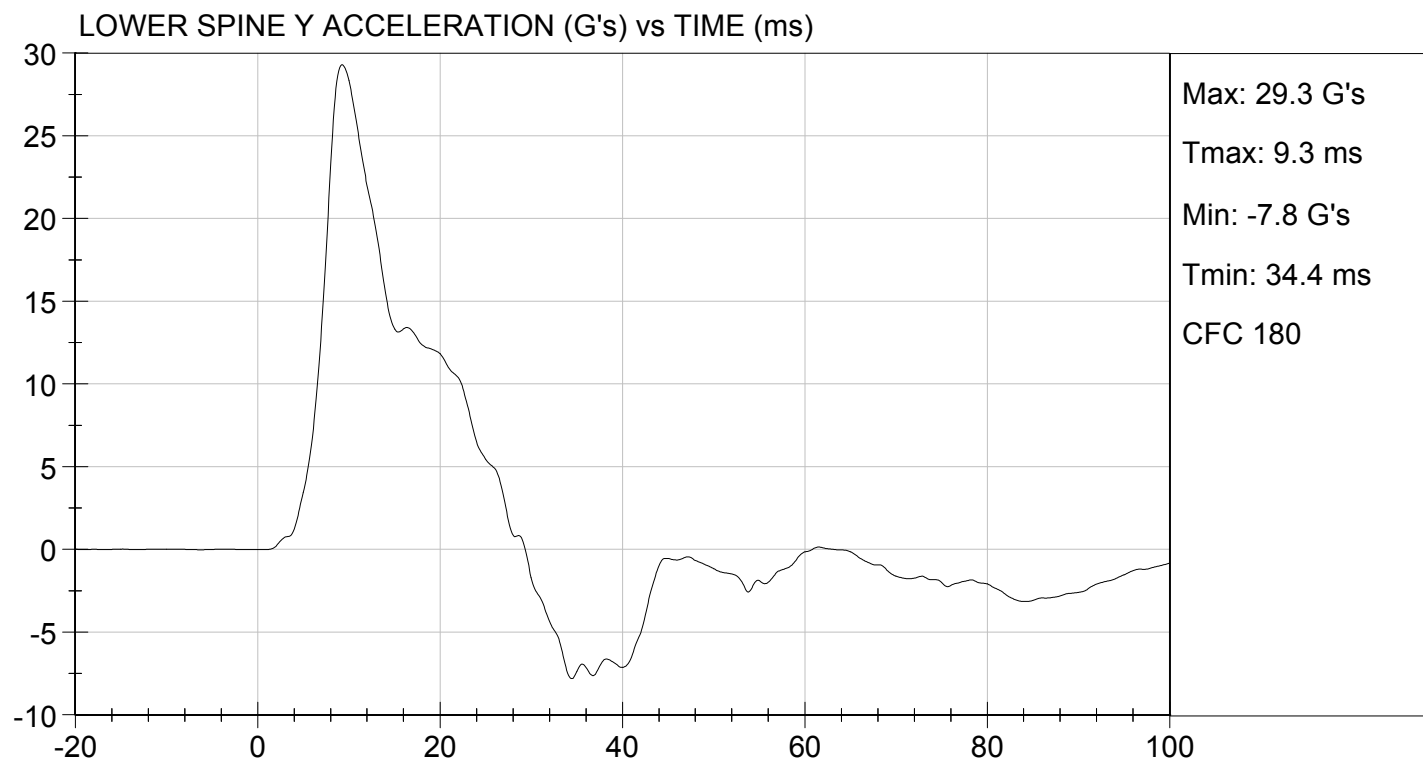
UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)





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

TEST DATE: 03/09/2016  
TEST #: D16974



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

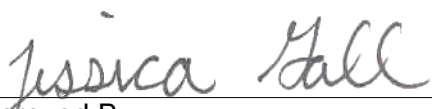
**ATD Serial No:** 296

**Test I.D:** D16975

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.4   | Pass      |
| Humidity                         | %     | 10 to 70      | 47     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.20   | Pass      |
| Maximum Probe Acceleration       | G's   | 14 to 18      | 15     | Pass      |
| Upper Rib Displacement           | mm    | 32 to 40      | 37     | Pass      |
| Middle Rib Displacement          | mm    | 39 to 45      | 40     | Pass      |
| Lower Rib Displacement           | mm    | 35 to 43      | 37     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 13 to 17      | 14     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 7 to 11       | 9      | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
 Laboratory Technician

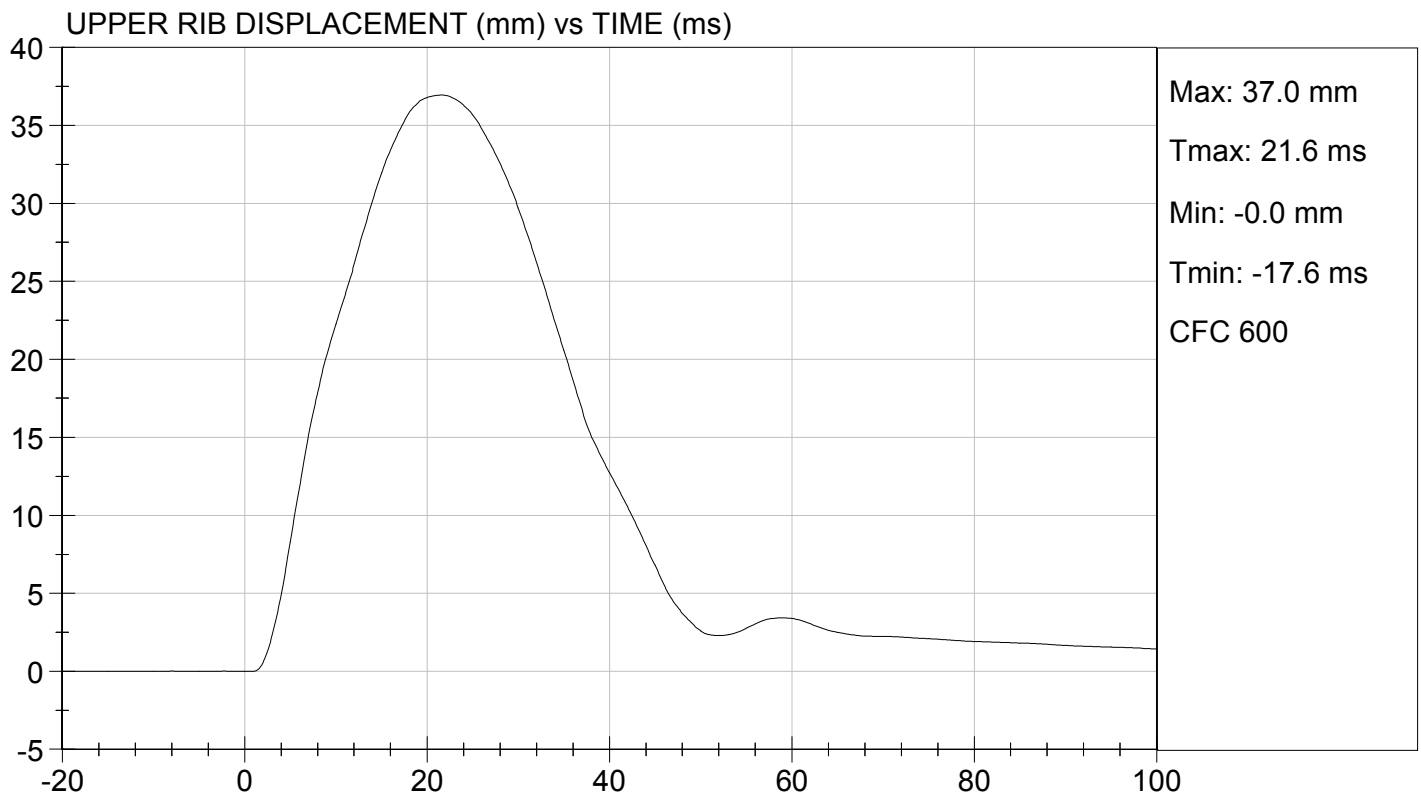
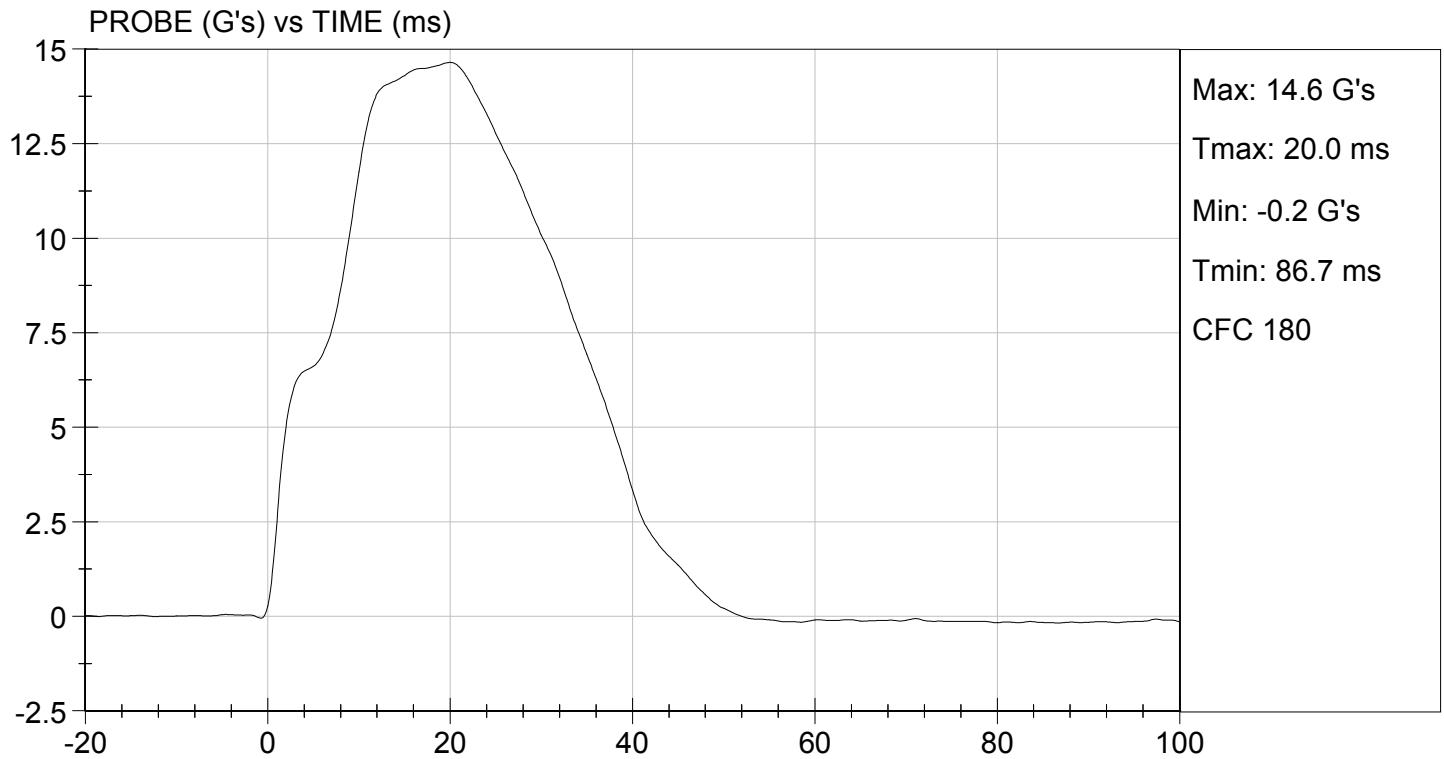
03/09/2016  
 Test Date

  
 Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 13.77 ft/s, 4.20 m/s

TEST DATE: 03/09/2016  
TEST #: D16975

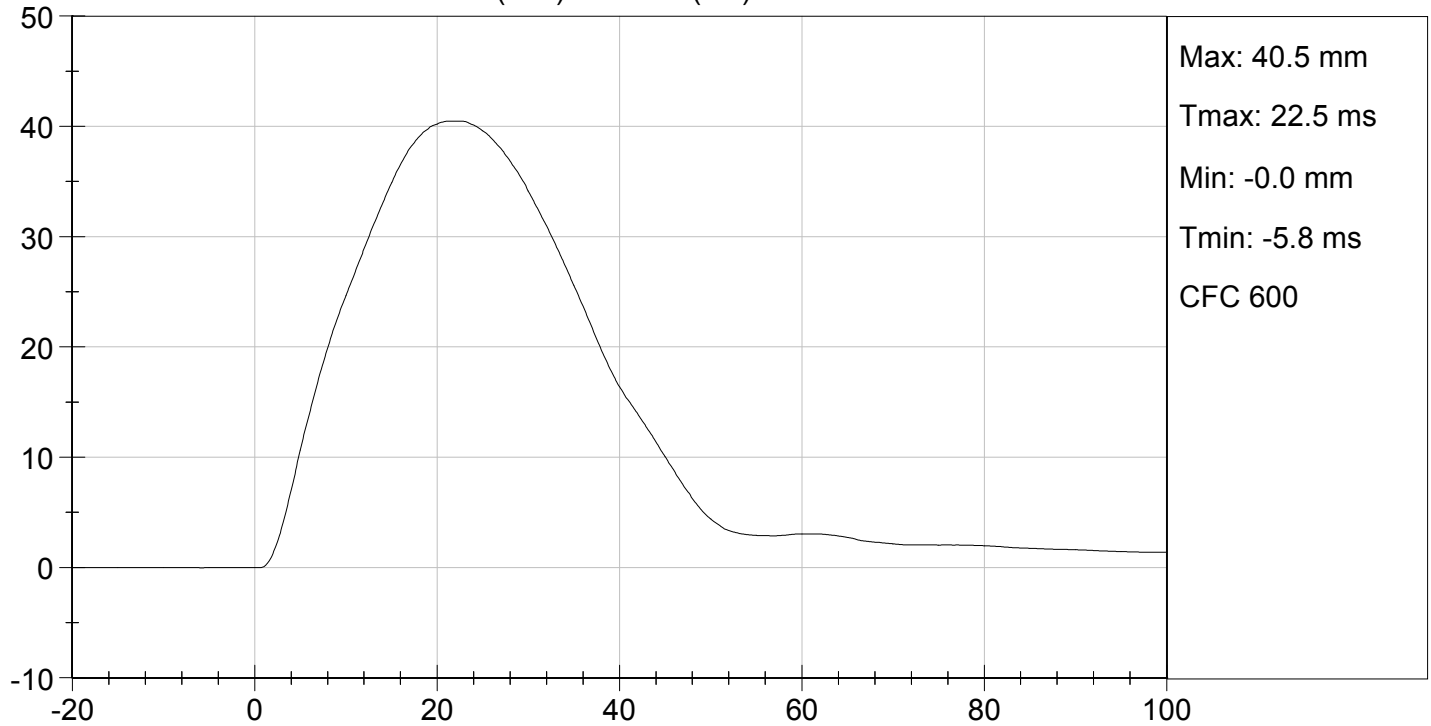




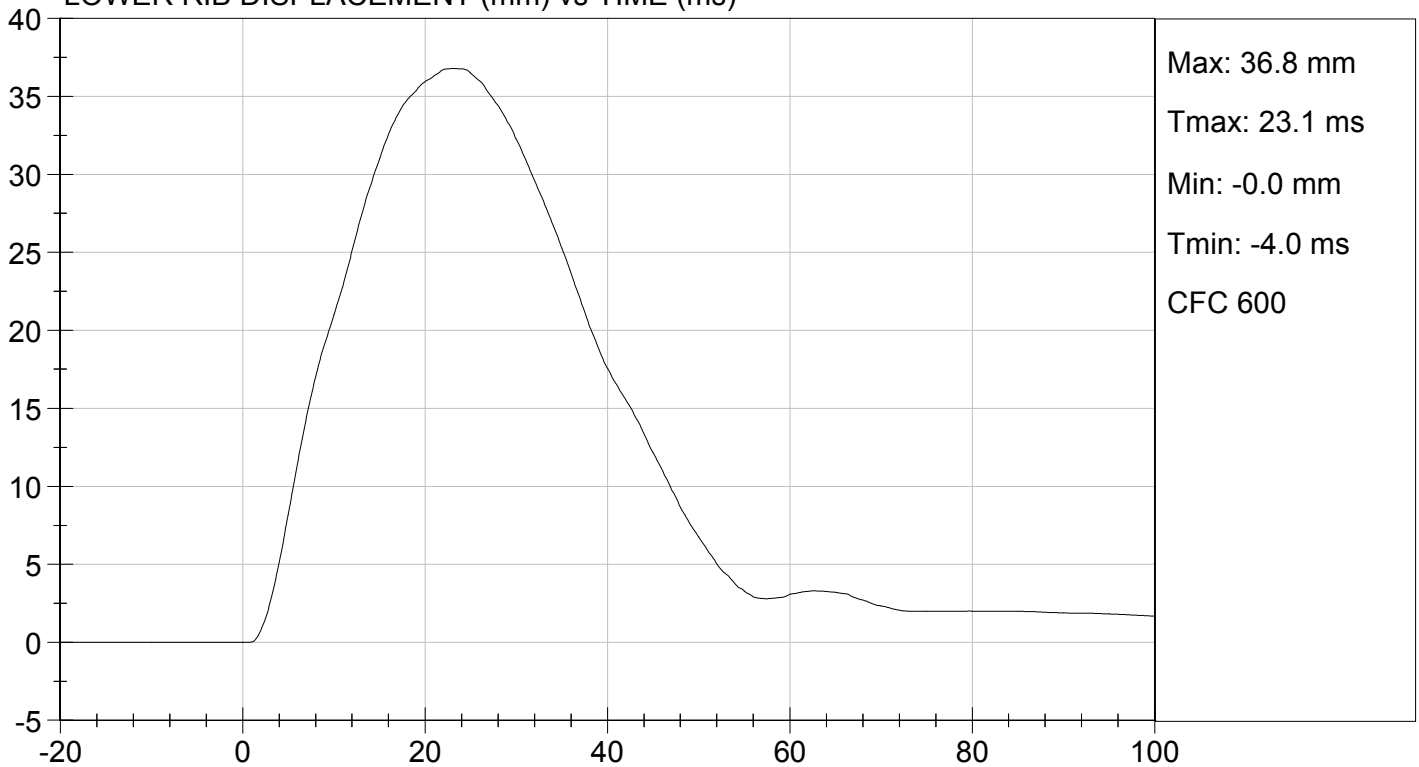
TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 13.77 ft/s, 4.20 m/s

TEST DATE: 03/09/2016  
TEST #: D16975

MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)

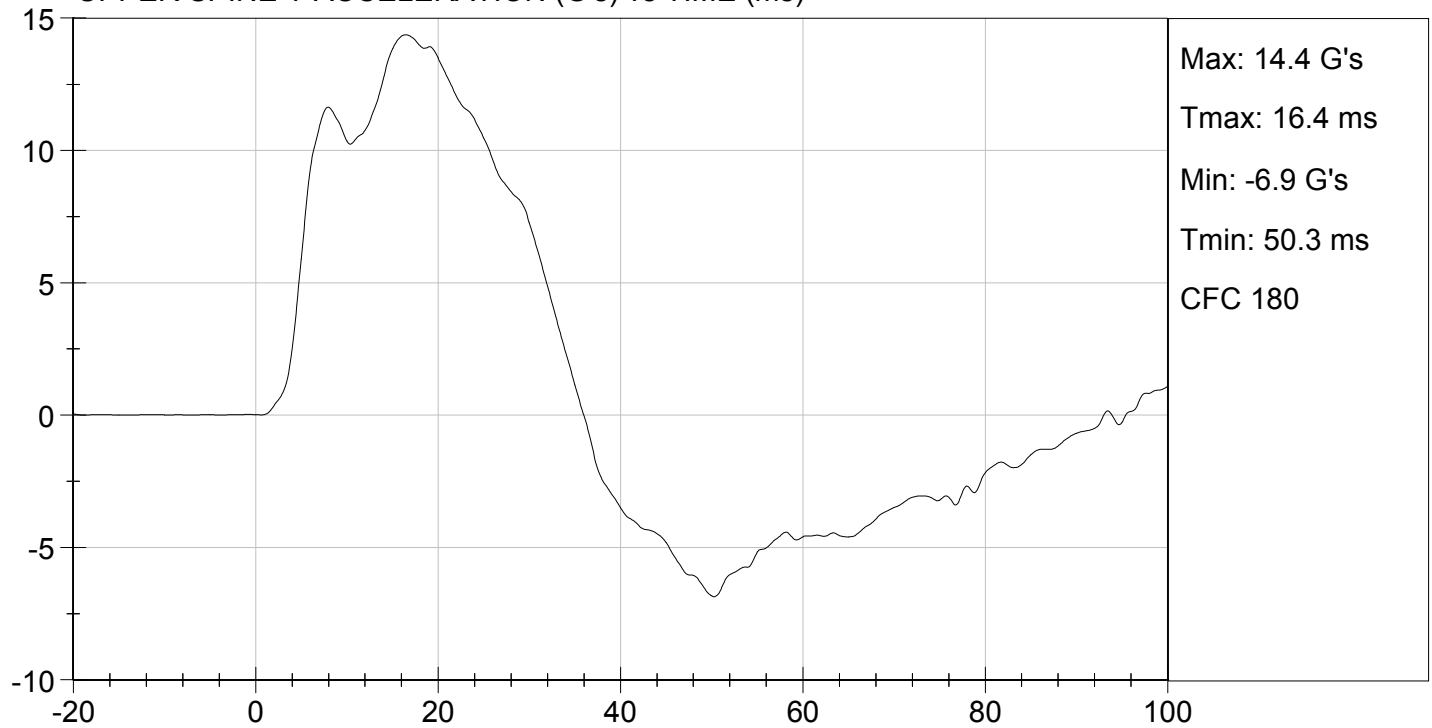




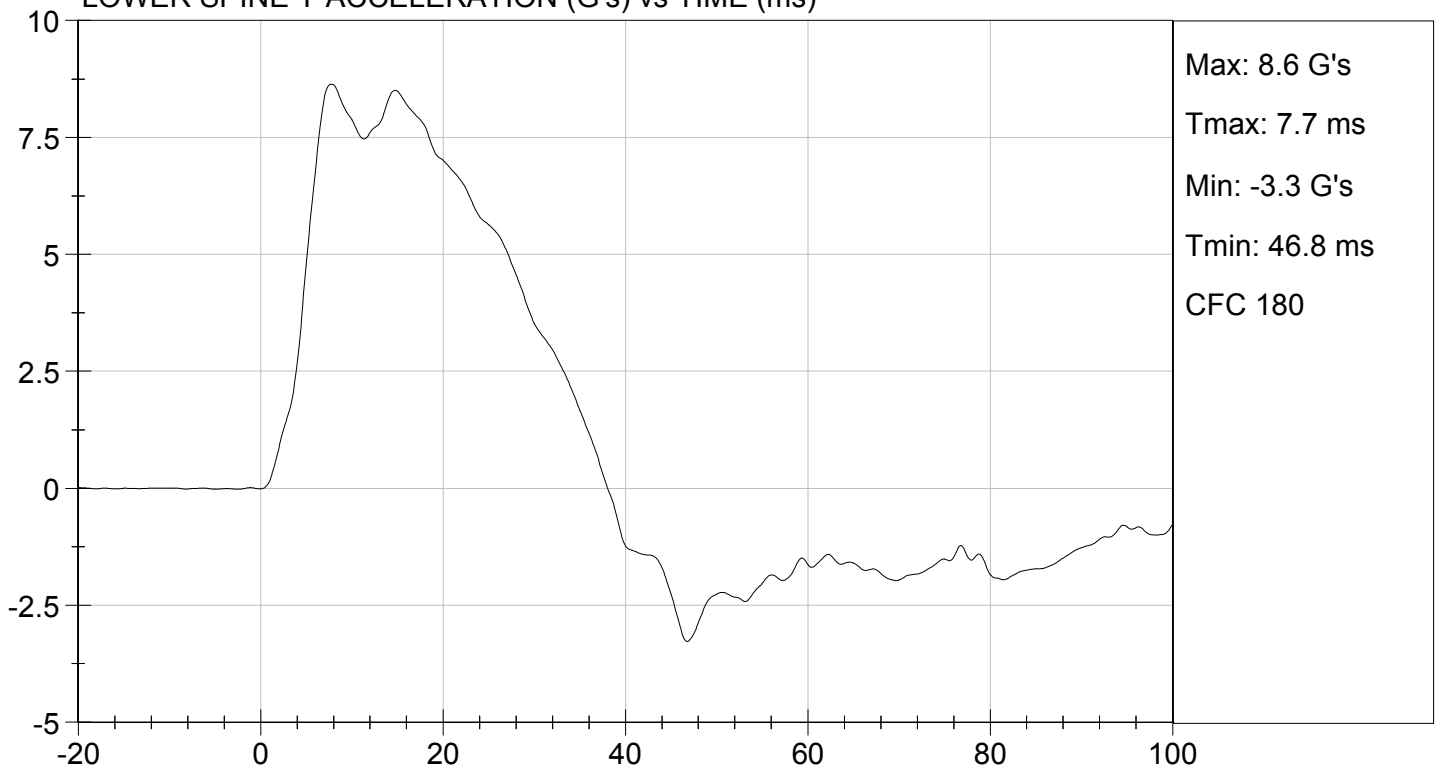
TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 13.77 ft/s, 4.20 m/s

TEST DATE: 03/09/2016  
TEST #: D16975

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

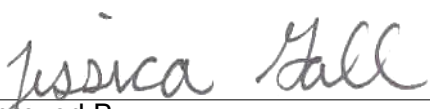
**Test I.D:** D16976

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.4   | 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      | 13     | Pass      |
| Upper Abdomen Rib Displacement   | mm    | 36 to 47      | 39     | 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      |

  
Laboratory Technician

03/09/2016

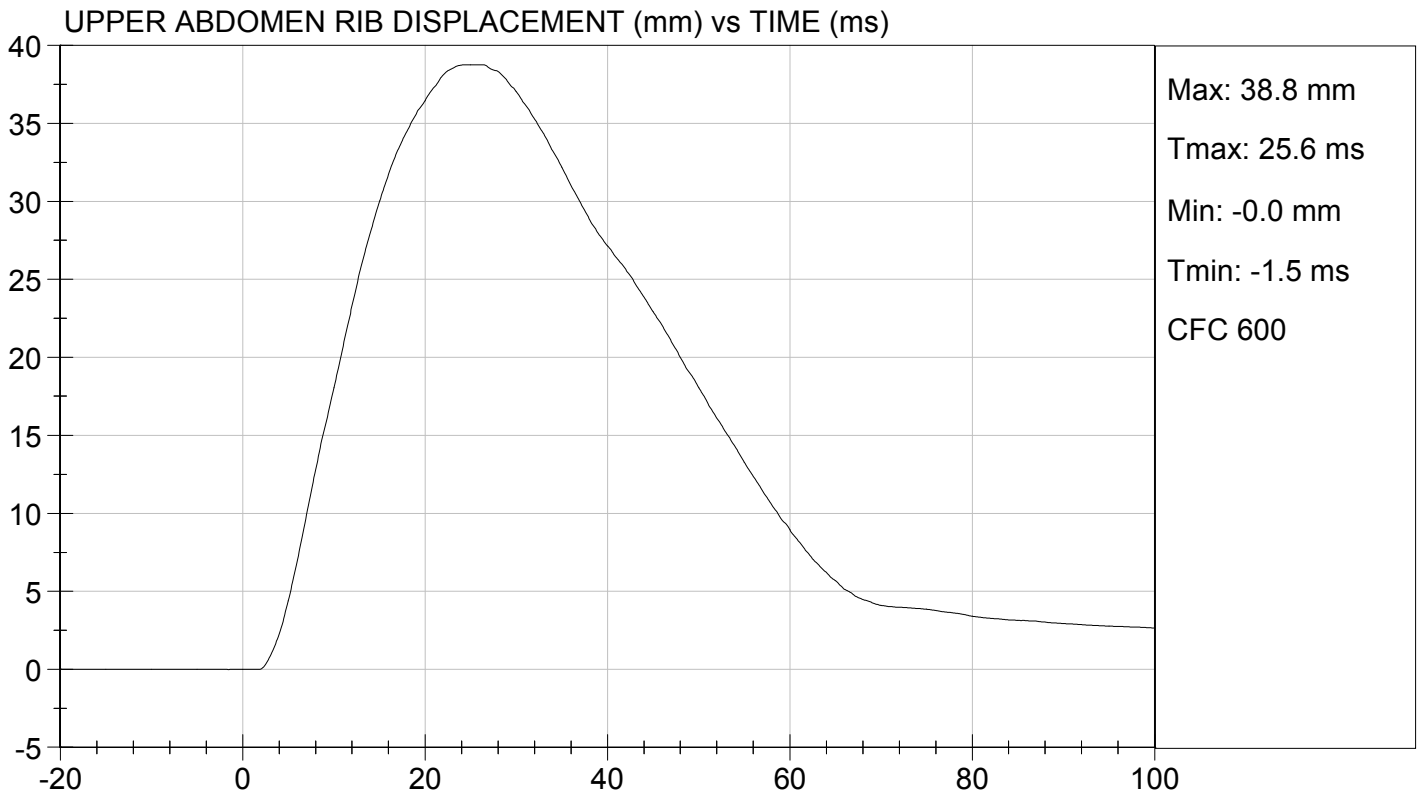
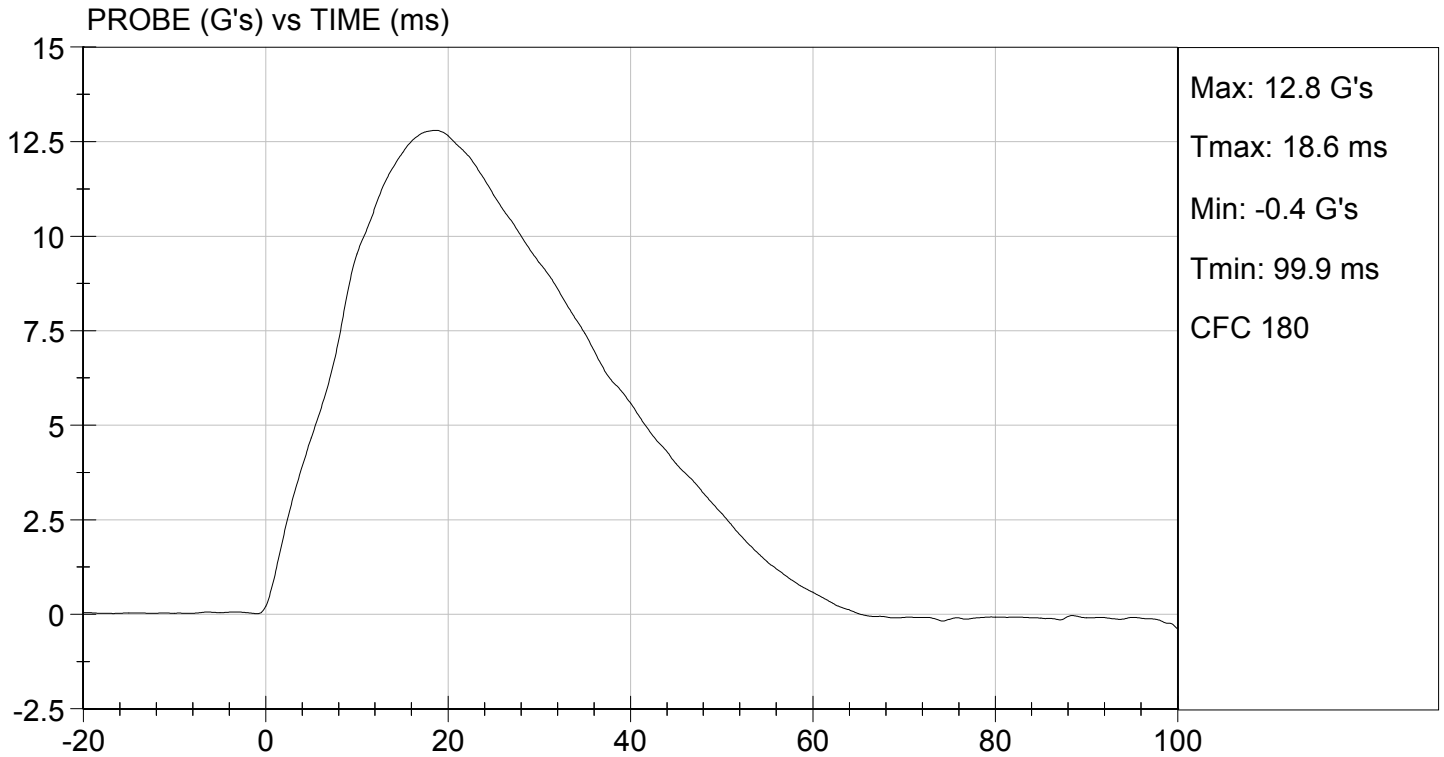
Test Date

  
Approved By



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

TEST DATE: 03/09/2016  
TEST #: D16976

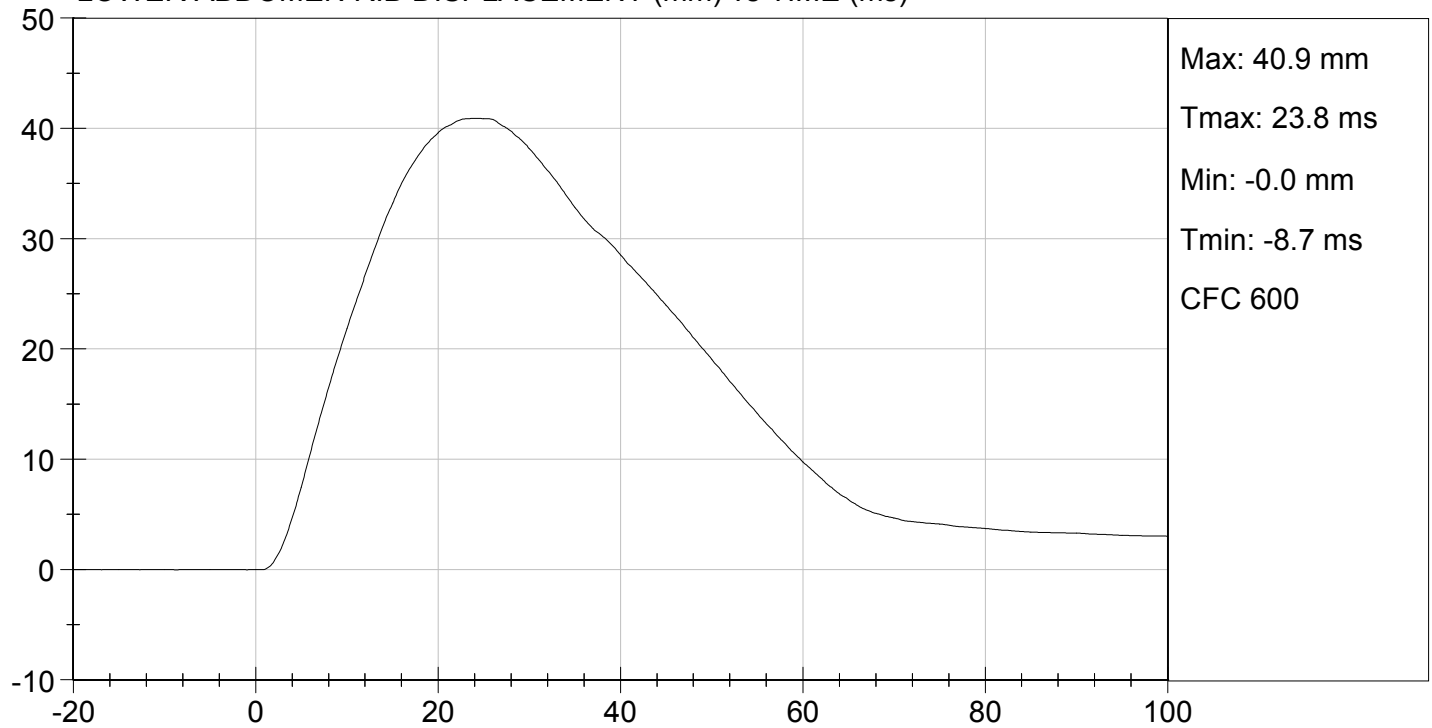




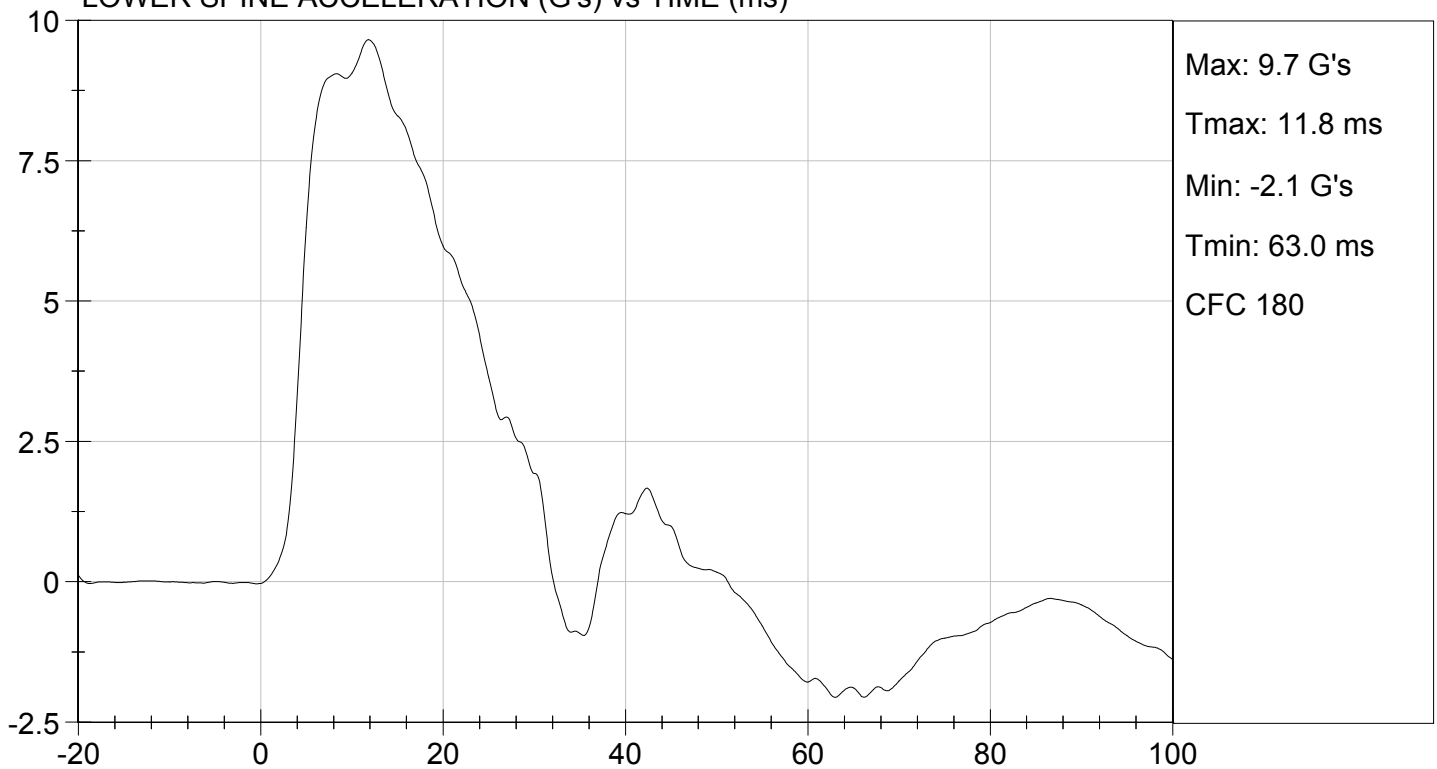
TEST DESC: ABDOMEN IMPACT  
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 03/09/2016  
TEST #: D16976

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:** D16977

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 20.8   | Pass      |
| Humidity                         | %     | 10 to 70      | 39     | 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      | 42     | Pass      |
| Peak Acetabulum Force            | N     | 3600 to 4300  | 4,142  | Pass      |
| Overall Test Results             |       |               |        | Pass      |

Jessica Hall  
Laboratory Technician

03/10/2016

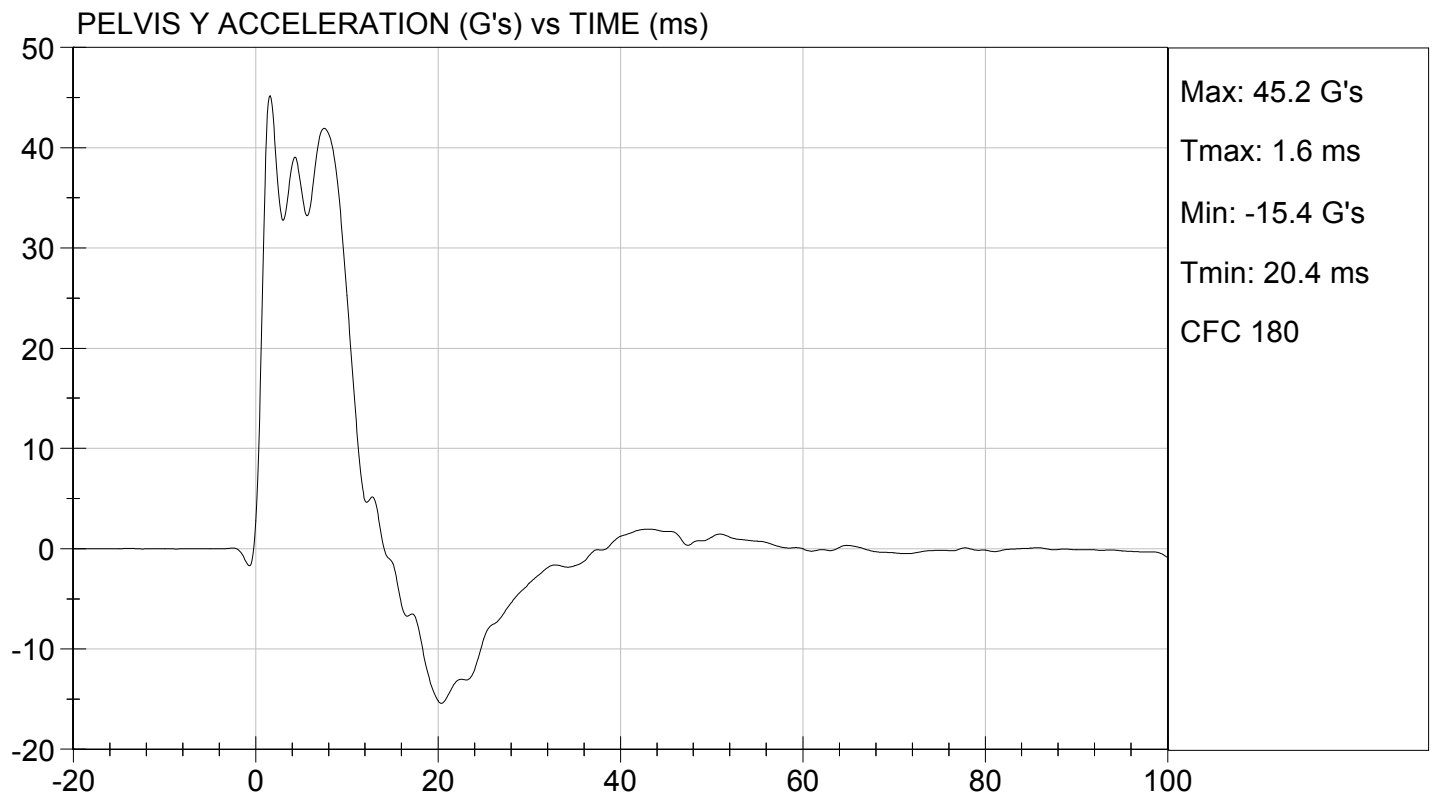
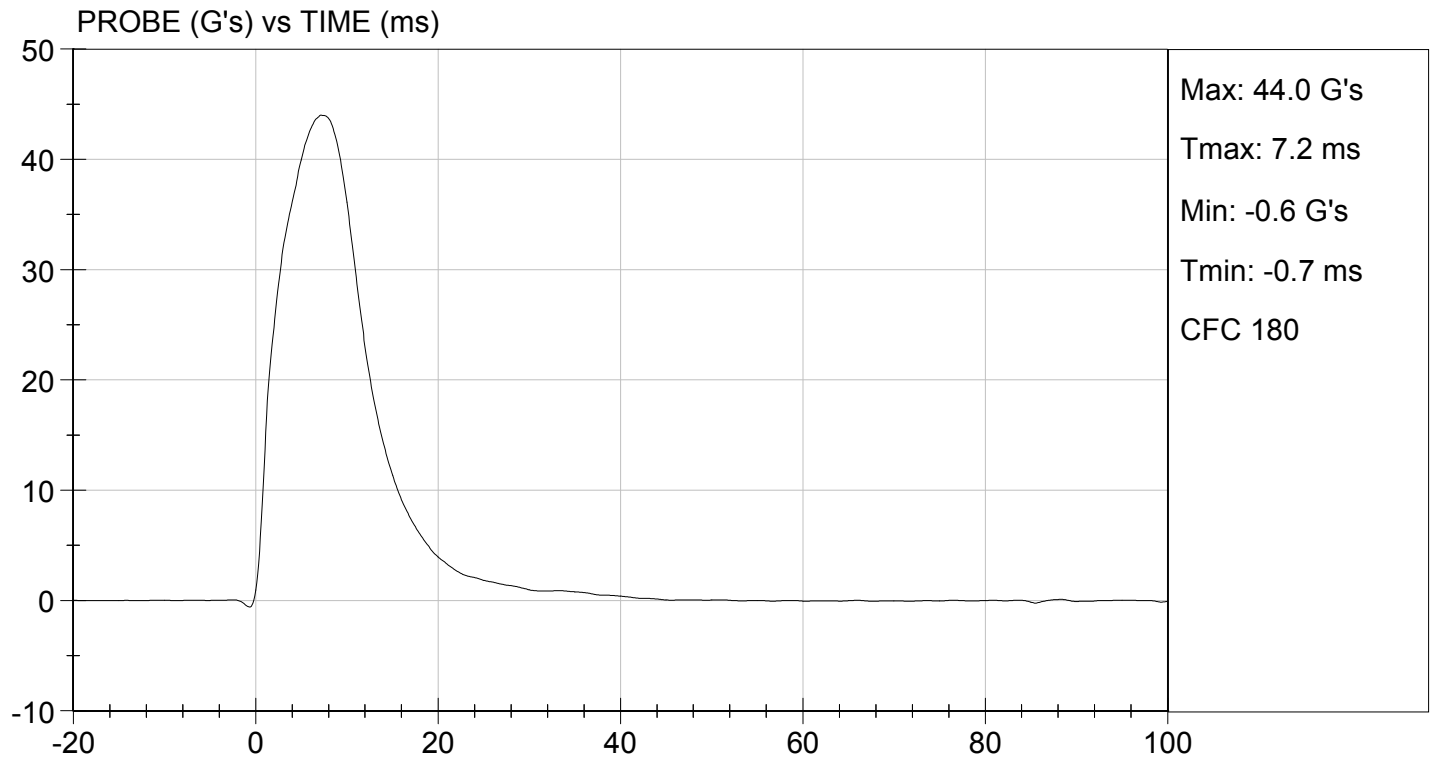
Test Date

Jessica Hall  
Approved By



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

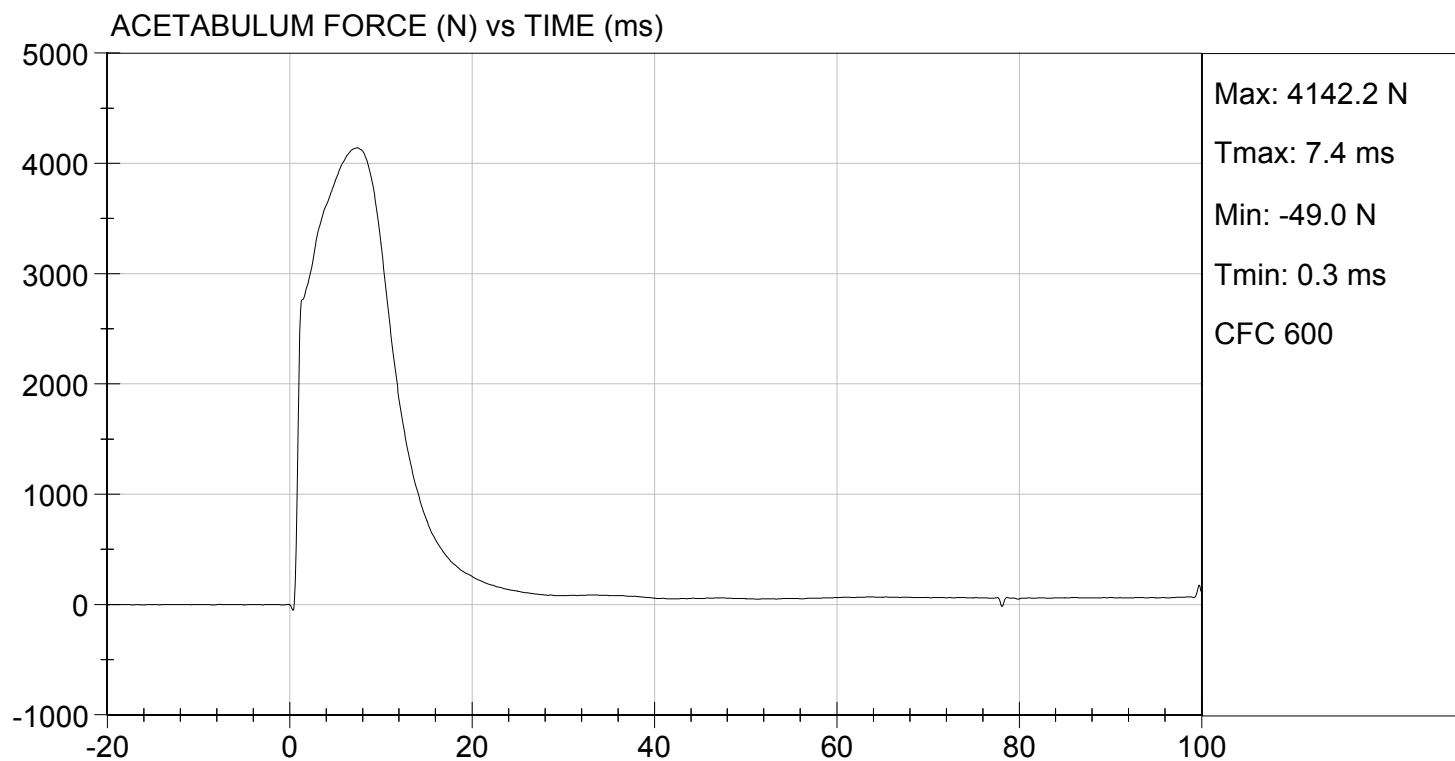
TEST DATE: 03/10/2016  
TEST #: D16977





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

TEST DATE: 03/10/2016  
TEST #: D16977



**MGA RESEARCH CORPORATION**

**ILIAC IMPACT TEST**

**SID-IIs BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

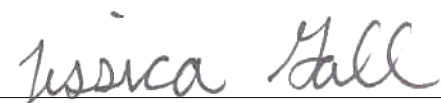
**Test I.D:** D16978

| Tested Parameter           | Units | Specification | Result | Pass/Fail |
|----------------------------|-------|---------------|--------|-----------|
| Temperature                | deg C | 20.6 to 22.2  | 21.4   | 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      | 39     | Pass      |
| Pelvis Y Acceleration      | G's   | 28 to 39      | 32     | Pass      |
| Peak Pelvis Iliac Force    | N     | 4100 to 5100  | 4,545  | Pass      |
| Overall Test Results       |       |               |        | Pass      |

  
Laboratory Technician

03/09/2016

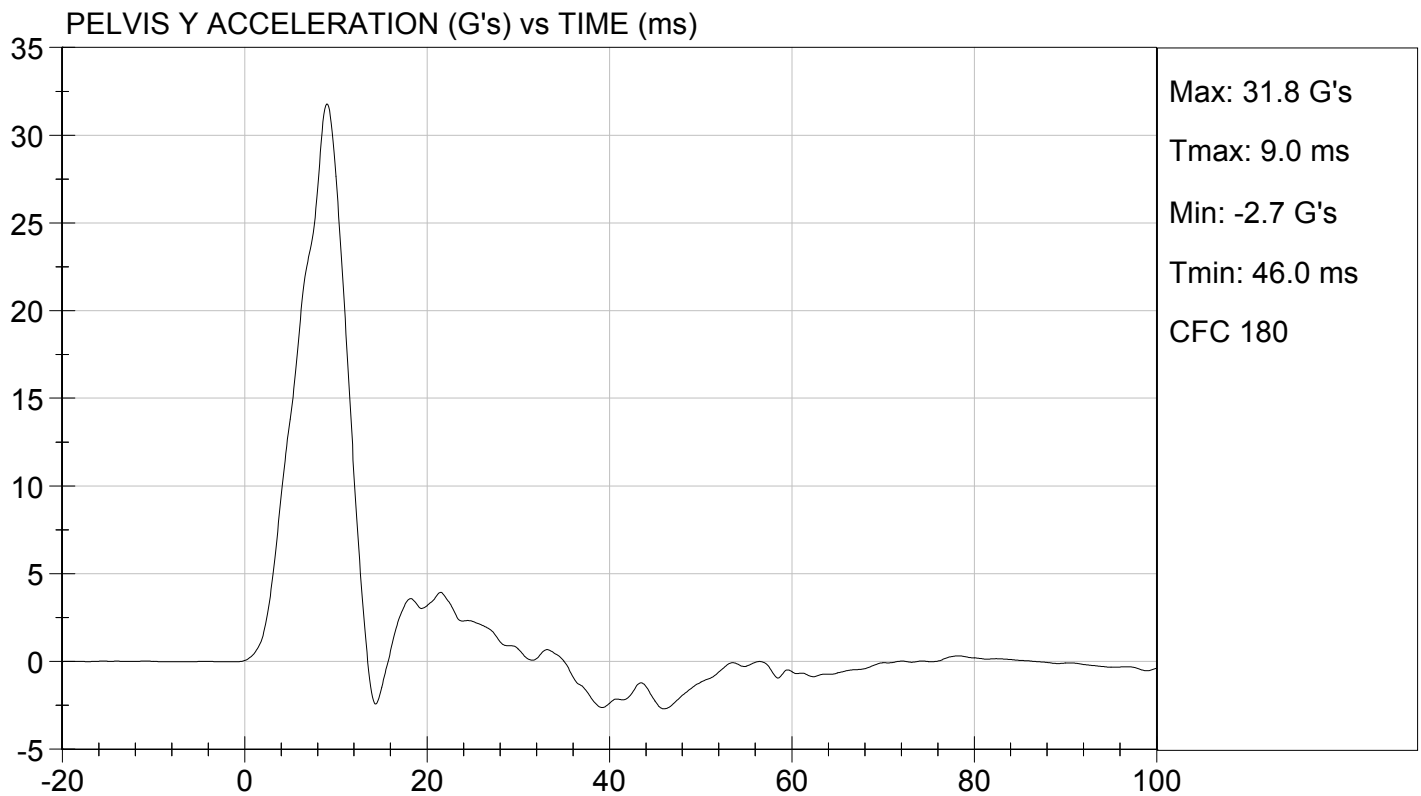
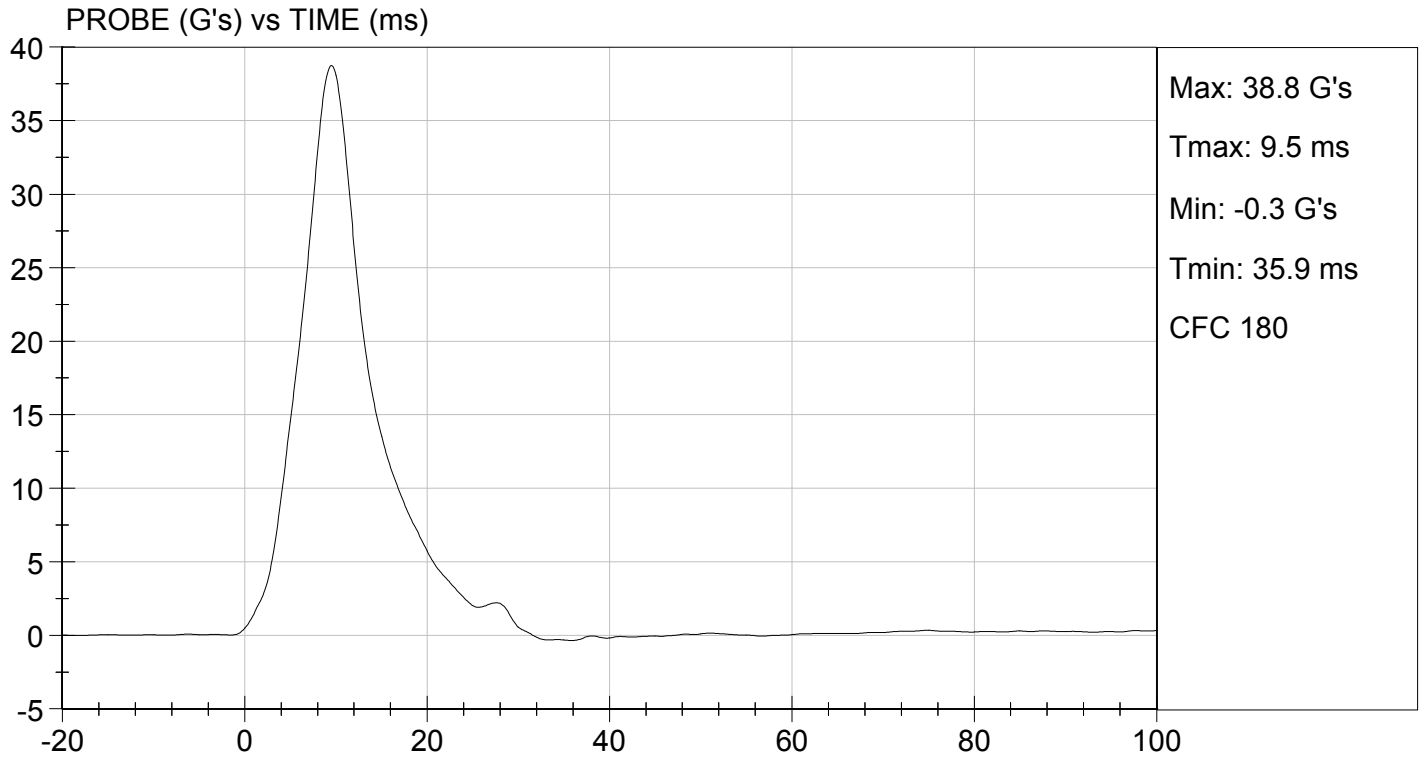
Test Date

  
Approved By



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

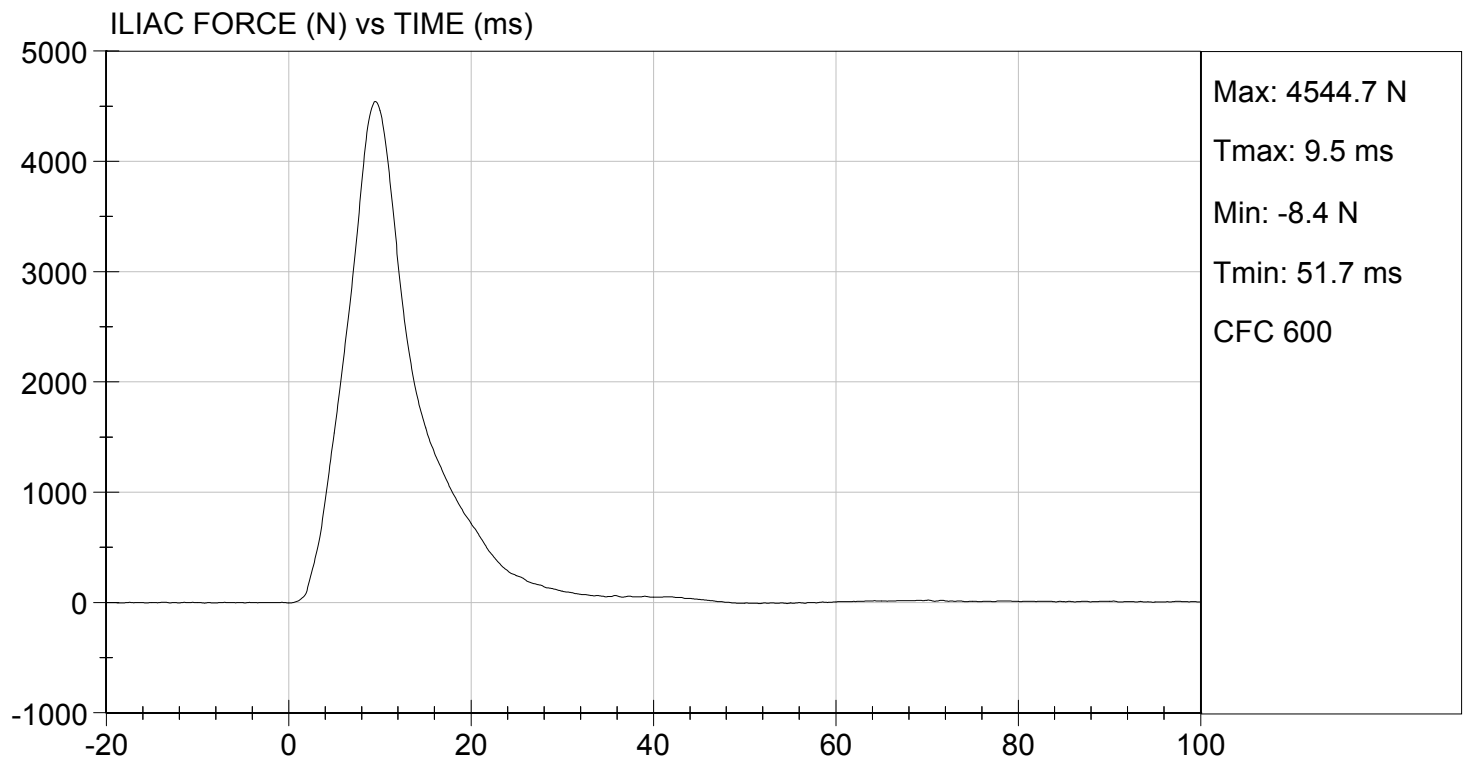
TEST DATE: 03/09/2016  
TEST #: D16978



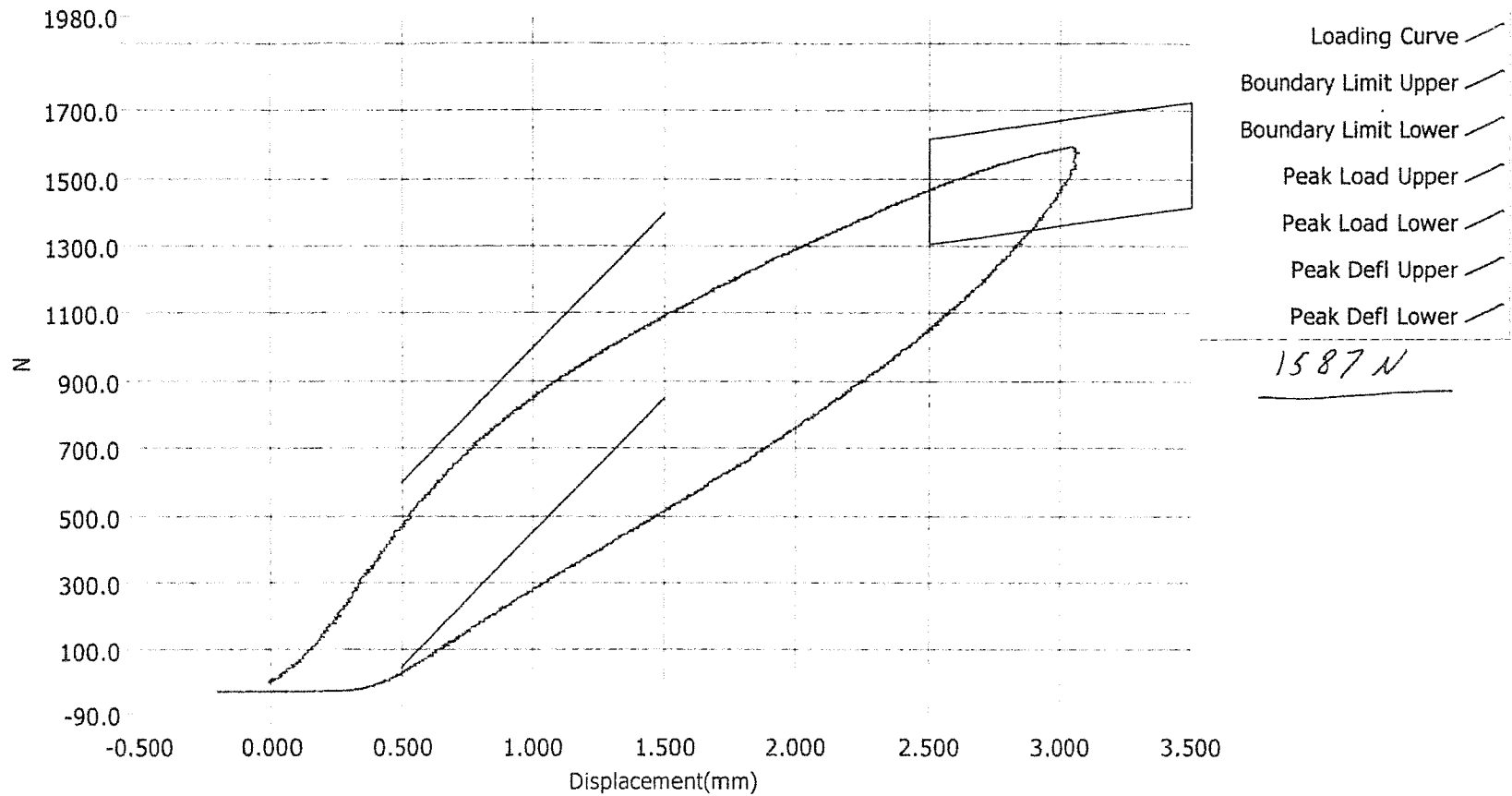


TEST DESC: ILLIAC  
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 03/09/2016  
TEST #: D16978



## Resultant Data - SIDIIs Plug Compression



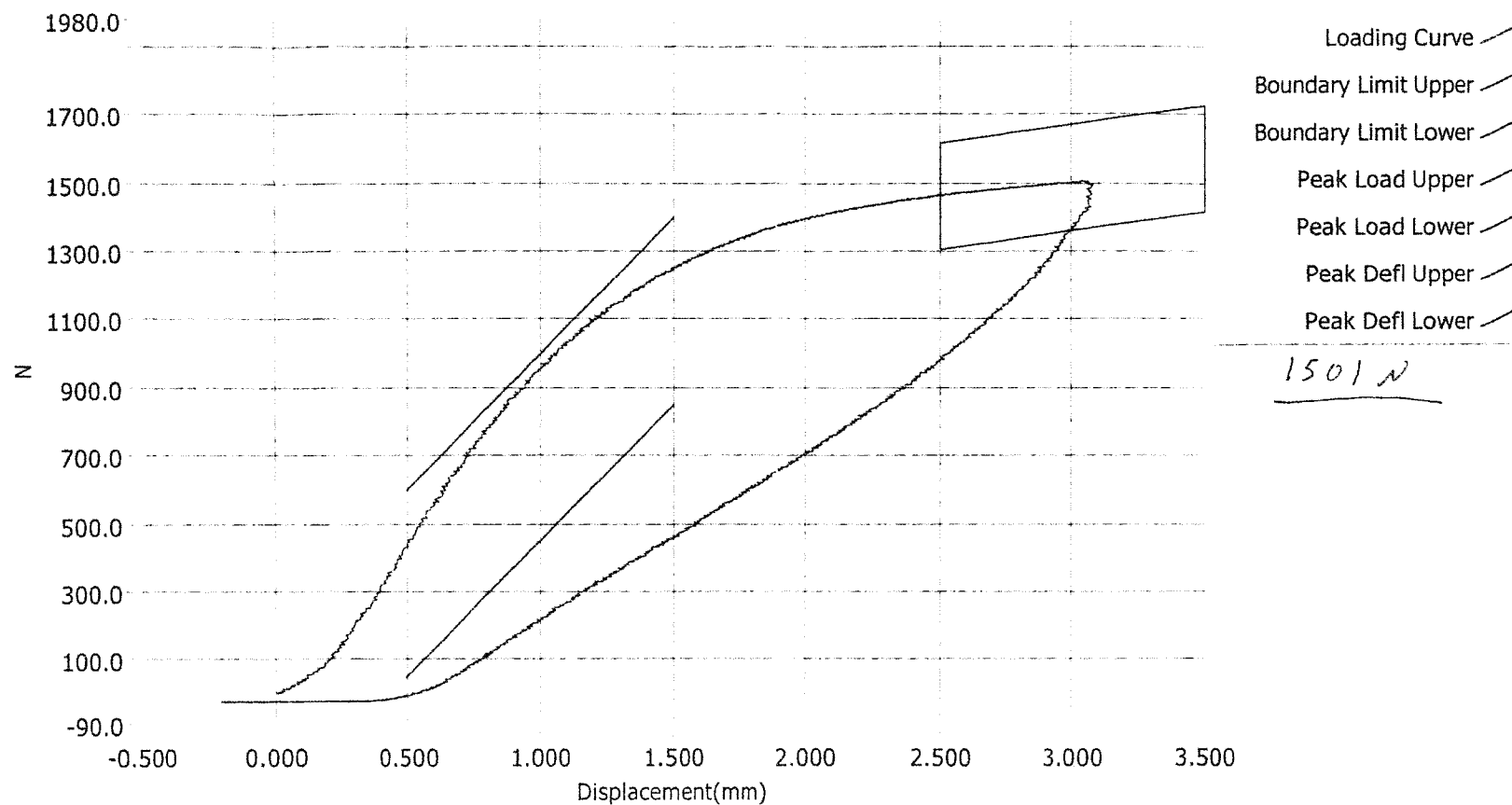
ATD Calibration Lab

|                |                           |                  |                  |
|----------------|---------------------------|------------------|------------------|
| <u>Test ID</u> | <u>Part Serial Number</u> | <u>Test Date</u> | <u>Test Time</u> |
|                | 71092                     | 12/18/2013       | 8:20 PM          |
| <u>Cert ID</u> | <u>ATD Serial Number</u>  | <u>ATD Type</u>  |                  |
|                | N/A                       | SIDIIs           |                  |

Current Date : 12/18/2013

Current Time : 20:20:53

## Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

|                |                           |                  |                  |
|----------------|---------------------------|------------------|------------------|
| <u>Test ID</u> | <u>Part Serial Number</u> | <u>Test Date</u> | <u>Test Time</u> |
|                | 71108                     | 12/18/2013       | 8:51 PM          |
| <u>Cert ID</u> | <u>ATD Serial Number</u>  | <u>ATD Type</u>  |                  |
|                | N/A                       | SIDIIs           |                  |

Current Date : 12/18/2013

Current Time : 20:52:24

**APPENDIX D**  
**TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA**

**Table 1 – Dummy Instrumentation**

|                                  |               |        |   | SID-IIs S/N 296 |              |                  |          |
|----------------------------------|---------------|--------|---|-----------------|--------------|------------------|----------|
|                                  |               |        |   | Serial Number   | Manufacturer | Calibration Date |          |
| Head CG Accelerometers           |               |        |   | X               | P79708       | Endevco          | 01/07/16 |
|                                  |               |        |   | Y               | P79709       | Endevco          | 01/06/16 |
|                                  |               |        |   | Z               | P79711       | Endevco          | 01/06/16 |
|                                  |               |        |   | Xr              | P79712       | Endevco          | 01/06/16 |
|                                  |               |        |   | Yr              | P79775       | Endevco          | 01/06/16 |
|                                  |               |        |   | Zr              | P88170       | Endevco          | 01/06/16 |
| 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            | FTSS         | 01/07/16         |          |
|                                  |               | Middle | Y | G1163           | FTSS         | 01/07/16         |          |
|                                  |               | Lower  | Y | G1158           | FTSS         | 01/07/16         |          |
|                                  | Abdominal Rib | Upper  | Y | G1146           | FTSS         | 01/07/16         |          |
|                                  |               | Lower  | Y | G1126           | FTSS         | 01/07/16         |          |
| Lower Spine Accelerometers (T12) |               |        |   | X               | P82080       | Endevco          | 12/02/15 |
|                                  |               |        |   | Y               | P79582       | Endevco          | 01/06/16 |
|                                  |               |        |   | Z               | P88718       | Endevco          | 01/06/16 |
| Acetabulum Load Cell             |               |        |   | Y               | ACG4285      | FTSS             | 12/22/15 |
| Iliac Wing Load Cell             |               |        |   | Y               | IWG3023      | FTSS             | 12/22/15 |
| Pelvis Plug (struck side)        |               |        |   |                 | 71092        | FTSS             | 12/18/13 |
| Pelvis Plug (non-struck side)    |               |        |   |                 | 71108        | FTSS             | 12/18/13 |

**Table 2 – Vehicle Instrumentation**

|                           |   | Serial Number | Manufacturer | Calibration Date |
|---------------------------|---|---------------|--------------|------------------|
| Vehicle Center of Gravity | X | PCB320        | PCB          | 03/04/16         |
| Vehicle Center of Gravity | Y | PCB318        | PCB          | 03/04/16         |
| Vehicle Center of Gravity | Z | PCB319        | PCB          | 03/04/16         |
| Left Floor Sill           | Y | P90622        | Endevco      | 10/07/15         |
| A-Pillar Sill             | Y | P82315        | Endevco      | 02/23/16         |
| A-Pillar Low              | Y | P90695        | Endevco      | 10/22/15         |
| A-Pillar Mid              | Y | P88758        | Endevco      | 02/26/16         |
| B-Pillar Sill             | Y | P79746        | Endevco      | 10/21/15         |
| B-Pillar Low              | Y | P85129        | Endevco      | 10/19/15         |
| B-Pillar Mid              | Y | P90673        | Endevco      | 10/06/15         |
| Driver Seat               | Y | P77647        | Endevco      | 02/22/16         |
| Engine Top                | X | PCB177        | PCB          | 12/15/15         |
| Engine Top                | Y | P82294        | Endevco      | 12/03/15         |
| Firewall                  | Y | P90679        | Endevco      | 10/05/15         |
| Right Roof                | Y | P82291        | Endevco      | 02/26/16         |
| Right Floor Sill          | Y | P78700        | Endevco      | 02/15/16         |
| Rear Floorpan             | X | P88771        | Endevco      | 01/20/16         |
| Rear Floorpan             | Y | P79808        | Endevco      | 10/19/15         |

**Table 3 – Pole Instrumentation**

|             | Serial Number | Manufacturer | Calibration Date |
|-------------|---------------|--------------|------------------|
| Load Cell 1 | DG6277        | FTSS         | 07/22/15         |
| Load Cell 2 | DG6278        | FTSS         | 07/22/15         |
| Load Cell 3 | DG6279        | FTSS         | 07/22/15         |
| Load Cell 4 | DG6280        | FTSS         | 07/22/15         |
| Load Cell 5 | DG6281        | FTSS         | 07/22/15         |
| Load Cell 6 | DG6283        | FTSS         | 07/22/15         |
| Load Cell 7 | DG6284        | FTSS         | 07/22/15         |
| Load Cell 8 | DG6582        | FTSS         | 07/22/15         |