

**FINAL REPORT NUMBER: SPNCAP-TRC-17-003**

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

**Ford Motor Co.  
2017 Ford F-250 Crew Cab 4-DR Pickup  
NHTSA NUMBER: M20170205**

**PREPARED BY:  
Transportation Research Center Inc.  
10820 State Route 347  
P. O. Box B-67  
East Liberty, OH 43319**



**Report Date: February 2, 2017**

**FINAL REPORT**

**PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Office of Crashworthiness Standards  
Mail Code: NRM-110  
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Room W43-410  
Washington, D.C. 20590**

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Report Prepared By: ILO Project Operations Group

Report Approved By: \_\_\_\_\_



John Shultz

Approval Date: February 2, 2017

FINAL REPORT ACCEPTANCE BY OCWS:

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Division Chief, New Car Assessment Program  
NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_

FINAL REPORT ACCEPTANCE BY OCWS:

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COTR, New Car Assessment Program  
NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_

Technical Report Documentation Page

| 1. Report No.<br>SPNCAP-TRC-17-003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2. Government Accession<br>No.                                | 3. Recipient's Catalog No.                                                                                                                                                                                                                                                                                            |               |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
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| 4. Title and Subtitle<br>Final Report of New Car Assessment Program<br>Side Impact Pole Testing of<br>2017 Ford F-250 Crew Cab 4-DR Pickup<br>NHTSA No.: M20170205                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                               | 5. Report Date<br>February 2, 2017                                                                                                                                                                                                                                                                                    |               |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
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| 9. Performing Organization Name and Address<br>Transportation Research Center Inc.<br>10820 State Route 347<br>East Liberty, OH 43319                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                               | 10. Work Unit No.                                                                                                                                                                                                                                                                                                     |               |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
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| 15. Supplemental Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                               |                                                                                                                                                                                                                                                                                                                       |               |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| <p>16. Abstract</p> <p>A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject vehicle, a 2017 Ford F-250 Crew Cab 4-DR Pickup, 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. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on November 9, 2016.</p> <p>The impact velocity was 31.97 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 21° C. The test vehicle's post-test maximum crush was 326 mm at Level 2.</p> <p>The test or target vehicle's performance is given below:</p> <table border="1"> <thead> <tr> <th></th><th>Unit</th><th>Threshold</th><th>Front SID-IIs</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>):</td><td>NA</td><td>1000</td><td>275</td></tr> <tr> <td>Resultant Lower Spine Acceleration:</td><td>g's</td><td>82</td><td>36.5</td></tr> <tr> <td>Total Pelvic Force:</td><td>N</td><td>5525</td><td>2539.6</td></tr> <tr> <td>(sum of acetabular and iliac forces)</td><td></td><td></td><td></td></tr> <tr> <td>Maximum Thoracic Rib Deflection</td><td>mm</td><td>38*</td><td>23.8</td></tr> <tr> <td>Maximum Abdomen Rib Deflection</td><td>mm</td><td>45*</td><td>22.1</td></tr> </tbody> </table> <p>* Proposed IARV</p> <p>The doors on the struck side did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p> |                                                               |                                                                                                                                                                                                                                                                                                                       |               |  | Unit | Threshold | Front SID-IIs | Head Injury Criteria (HIC <sub>36</sub> ): | NA | 1000 | 275 | Resultant Lower Spine Acceleration: | g's | 82 | 36.5 | Total Pelvic Force: | N | 5525 | 2539.6 | (sum of acetabular and iliac forces) |  |  |  | Maximum Thoracic Rib Deflection | mm | 38* | 23.8 | Maximum Abdomen Rib Deflection | mm | 45* | 22.1 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Unit                                                          | Threshold                                                                                                                                                                                                                                                                                                             | Front SID-IIs |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| Head Injury Criteria (HIC <sub>36</sub> ):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NA                                                            | 1000                                                                                                                                                                                                                                                                                                                  | 275           |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| Resultant Lower Spine Acceleration:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | g's                                                           | 82                                                                                                                                                                                                                                                                                                                    | 36.5          |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| Total Pelvic Force:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N                                                             | 5525                                                                                                                                                                                                                                                                                                                  | 2539.6        |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| (sum of acetabular and iliac forces)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                               |                                                                                                                                                                                                                                                                                                                       |               |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| Maximum Thoracic Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | mm                                                            | 38*                                                                                                                                                                                                                                                                                                                   | 23.8          |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| Maximum Abdomen Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mm                                                            | 45*                                                                                                                                                                                                                                                                                                                   | 22.1          |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| 17. Key Words<br>New Car Assessment Program (NCAP)<br>Side Impact<br>Pole<br>Part 572V<br>SID-IIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                               | 18. Distribution Statement<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<br>Washington, DC 20590<br>e-mail: <a href="mailto:tis@nhtsa.dot.gov">tis@nhtsa.dot.gov</a><br>FAX: 202-493-2833 |               |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |
| 19. Security Classification<br>(of this report)<br>Unclassified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20. Security Classification<br>(of this page)<br>Unclassified | 21. Number of Pages<br>124                                                                                                                                                                                                                                                                                            | 22. Price     |  |      |           |               |                                            |    |      |     |                                     |     |    |      |                     |   |      |        |                                      |  |  |  |                                 |    |     |      |                                |    |     |      |

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## **SECTION 1**

### **TEST PURPOSE AND PROCEDURE**

#### **TEST PURPOSE AND PROCEDURE**

This side impact test was conducted as part of the MY 17 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00354. The purpose of this test is to generate comparative side impact performance in a 2017 Ford F-250 Crew Cab 4-DR Pickup manufactured by Ford Motor Co.. 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 model year 2017 Ford F-250 Crew Cab 4-DR Pickup. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 31.97 km/h. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on November 9, 2016. Pre-test and post-test photographs of the test vehicle and the 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 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                | IARV | Result |
| Head Injury Criteria (HIC <sub>36</sub> )                  | NA                   | 1000 | 275    |
| Lower Spine Acceleration Resultant                         | G                    | 82   | 36.5   |
| Total Pelvic Force<br>(sum of acetabular and iliac forces) | N                    | 5525 | 2539.6 |
| Maximum Thoracic Rib Deflection                            | mm                   | 38*  | 23.8   |
| Maximum Abdominal Rib Deflection                           | mm                   | 45*  | 22.1   |

\* Proposed IARV

Supplemental restraint information is given below:

| Restraint Type           | Left Front (Driver)<br>Occupant Location 1 |          | Left Rear (Passenger)<br>Occupant Location 4 |          |
|--------------------------|--------------------------------------------|----------|----------------------------------------------|----------|
|                          | Mounted                                    | Deployed | Mounted                                      | Deployed |
| Frontal Airbag           | Yes                                        | No       |                                              |          |
| Knee Airbag              | No                                         | N/A      |                                              |          |
| Side Curtain Airbag      | Yes                                        | Yes      | Yes                                          | Yes      |
| Side Torso/Pelvis Airbag | Yes                                        | Yes      | No                                           | N/A      |
| Side Torso Airbag        | No                                         | N/A      | No                                           | N/A      |
| Seat Belt Pretensioner   | Yes                                        | Yes      | No                                           | N/A      |
| Seat Belt Load Limiter   | Yes                                        | Unknown  | No                                           | N/A      |
| Other                    | N/A                                        | N/A      | N/A                                          | N/A      |

#### GENERAL COMMENTS

Placard Titles say SuperCrew and should be Crew Cab.

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

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup      NHTSA No.: M20170205  
 Test Program: SPNCAP Side Impact      Test Date: 11/9/16

**TEST VEHICLE INFORMATION AND OPTIONS**

|                          |                   |                                   |     |
|--------------------------|-------------------|-----------------------------------|-----|
| NHTSA No.                | 20170205          | Traction Control System (TCS)     | Yes |
| Model Year               | 2017              | Auto-Leveling System              | No  |
| Make                     | Ford              | Automatic Door Locks (ADL)        | No  |
| Model                    | F-250             | Power Window Auto-Reverse         | No  |
| Body Style               | Crew Cab          | Other Optional Feature            | No  |
| VIN                      | 1FT7W2A61HEB24675 | Driver Front Airbag               | Yes |
| Body Color               | Magnetic          | Driver Curtain Airbag             | Yes |
| Odometer Reading (km/mi) | 7                 | Driver Head/Torso Airbag          | No  |
| Engine Displacement (L)  | 6.2               | Driver Torso Airbag               | No  |
| Type/No. Cylinders       | Inline/8          | Driver Torso/Pelvis Airbag        | Yes |
| Engine Placement         | Longitudinal      | Driver Pelvis Airbag              | No  |
| Transmission Type        | Automatic         | Driver Knee Airbag                | No  |
| Transmission Speeds      | 6                 | Rear Pass. Curtain Airbag         | Yes |
| Overdrive                | Yes               | Rear Pass. Head/Torso Airbag      | No  |
| Final Drive              | RWD               | Rear Pass. Torso Airbag           | No  |
| Roof Rack                | No                | Rear Pass. Torso/Pelvis Airbag    | No  |
| Sunroof/T-Top            | No                | Rear Pass. Pelvis Airbag          | No  |
| Running Boards           | No                | Driver Seat Belt Pretensioner     | Yes |
| Tilt Steering Wheel      | Yes               | Rear Pass. Seat Belt Pretensioner | No  |
| Power Seats              | No                | Driver Load Limiter               | Yes |
| Anti-Lock Brakes (ABS)   | Yes               | Rear Pass. Load Limiter           | No  |
|                          |                   | Other Safety Restraint            | No  |

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

No

**DATA FROM CERTIFICATION LABEL**

|                      |                |                 |      |
|----------------------|----------------|-----------------|------|
| Manufactured By      | Ford Motor Co. | GWR (kg)        | 4536 |
| Date of Manufacturer | 08/16          | GAWR Front (kg) | 1792 |
| Vehicle Type         | Truck          | GAWR Rear (kg)  | 2876 |

**VEHICLE SEATING AND WEIGHT CAPACITY DATA**

|                                            | Front | Rear | Third | Total  |
|--------------------------------------------|-------|------|-------|--------|
| Designated Seating Capacity (DSC)          | 3     | 3    | N/A   | 6      |
| Vehicle Capacity Weight (VCW) (kg)         |       |      |       | 1756   |
| DSC X 68.04 kg                             |       |      |       | 408.24 |
| Rated Cargo and Luggage Weight (RCLW) (kg) |       |      |       | 1348.8 |

**VEHICLE SEAT TYPE**

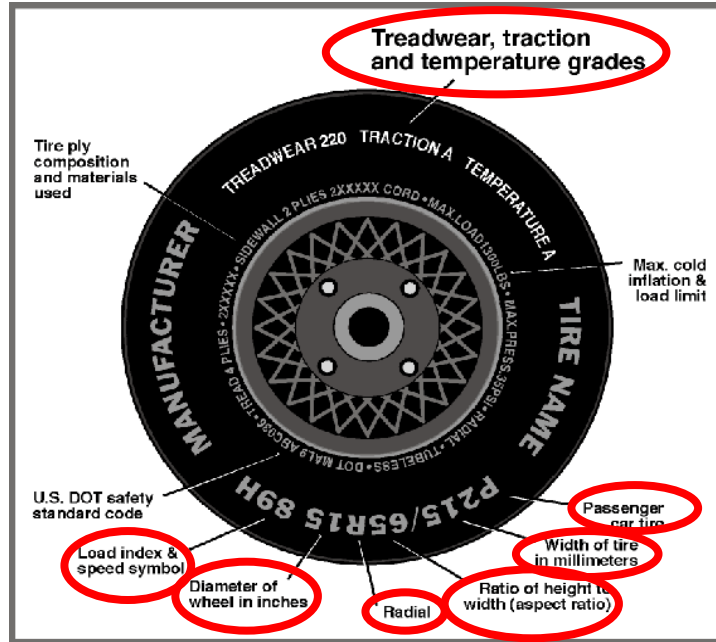
| Seating Location        | Type of Seat Pan |       |             |           | Type of Seat Back |            |         |
|-------------------------|------------------|-------|-------------|-----------|-------------------|------------|---------|
|                         | Bucket           | Bench | Split Bench | Contoured | Fixed             | Adjustable |         |
|                         |                  |       |             |           |                   | W/ Lever   | W/ Knob |
| Front Seat              | Yes              | N/A   | N/A         |           | N/A               | Yes        | N/A     |
| Rear or Second Row Seat | N/A              | N/A   | Yes         | Yes       | Yes               | N/A        | N/A     |
| Third row seat          | N/A              | N/A   | N/A         | N/A       | N/A               | N/A        | N/A     |

# DATA SHEET NO. 1 (CONTINUED)

## GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
Test Date: 11/9/16



## DATA FROM TIRE PLACARD

| Measured Parameter          | Front                        | Rear                         |
|-----------------------------|------------------------------|------------------------------|
| Maximum Tire Pressure (kPa) | 550                          | 550                          |
| Cold Pressure (kPa)         | 450                          | 550                          |
| Recommended Tire Size       | LT245/75R17                  | LT245/75R17                  |
| Tire Size on Vehicle        | LT245/75R17                  | LT245/75R17                  |
| Tire Manufacturer           | MICHELIN                     | MICHELIN                     |
| Tire Model                  | LTX M/S <sup>2</sup>         | LTX M/S <sup>2</sup>         |
| Treadwear                   | N/A                          | N/A                          |
| Traction                    | N/A                          | N/A                          |
| Temperature Grades          | N/A                          | N/A                          |
| Tire Plies Sidewall         | 2                            | 2                            |
| Tire Plies Body             | 5                            | 5                            |
| Load Index/Speed Symbol     | 121/118R E                   | 121/118R E                   |
| Tire Material               | Polyester, Polyamide & Steel | Polyester, Polyamide & Steel |
| DOT Safety Code Left        | DOT M3 43 007X 3116          | DOT M3 43 007X 3116          |
| DOT Safety Code Right       | DOT M3 43 007X 3116          | DOT M3 43 007X 3116          |

# DATA SHEET NO. 1 (CONTINUED)

## GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup NHTSA No.: M20170205  
 Test Program: SPNCAP Side Impact Test Date: 11/9/16

### TIRE PRESSURES

|                | Units | LF  | RF  | LR  | RR  |
|----------------|-------|-----|-----|-----|-----|
| As Delivered   | kPa   | 455 | 455 | 455 | 455 |
| Tire Placard   | kPa   | 450 | 450 | 450 | 450 |
| Owner's Manual | kPa   | N/A | N/A | N/A | N/A |
| As Tested      | kPa   | 450 | 450 | 550 | 550 |

### TEST VEHICLE AXLE WEIGHTS

|        | Units | As Delivered (UVW) |           |        | As Tested (ATW) |           |        | Fully Loaded |           |        |
|--------|-------|--------------------|-----------|--------|-----------------|-----------|--------|--------------|-----------|--------|
|        |       | Front Axle         | Rear Axle | Total  | Front Axle      | Rear Axle | Total  | Front Axle   | Rear Axle | Total  |
| Left   | kg    | 775.2              | 603.6     |        | 809.2           | 662.0     |        | 799.4        | 686.4     |        |
| Right  | kg    | 790.0              | 584.6     |        | 790.4           | 670.0     |        | 797.4        | 655.2     |        |
| Ratio  | %     | 56.8               | 43.2      |        | 54.6            | 45.4      |        | 54.3         | 45.7      |        |
| Totals | kg    | 1565.2             | 1188.2    | 2753.4 | 1599.6          | 1332.0    | 2931.6 | 1596.8       | 1341.6    | 2938.4 |

### TARGET TEST WEIGHT CALCULATION

| Measured Parameter                                | Units | Value  |         |
|---------------------------------------------------|-------|--------|---------|
| Total As Delivered Weight (UVW)                   | kg    | 2753.4 | (A)     |
| Actual Weight of 1 P572V ATD (SID-IIs) Dummy Used | kg    | 49.0   | (B)     |
| Rated Cargo/Luggage Weight (RCLW) <sup>1</sup>    | kg    | 136.0  | (C)     |
| Calculated Vehicle Target Weight (TVTW)           | kg    | 2938.4 | (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 ☐ NO

### TEST VEHICLE ATTITUDES AND CG

|                                                                | Units | As Delivered | As Tested | Fully Loaded | Meets Requirement*** |
|----------------------------------------------------------------|-------|--------------|-----------|--------------|----------------------|
| Driver Door Sill Angle (front-to-rear)*                        | Deg.  | -1.5         | -1.4      | -0.9         | Yes                  |
| Front Passenger Sill Angle (front-to-rear)*                    | Deg.  | -1.4         | -1.2      | -1.0         | Yes                  |
| Front Bumper-Line Angle (left-to-right)**                      | Deg.  | 0.0          | 0.0       | -0.4         | Yes                  |
| Rear Bumper-Line Angle (left-to-right)**                       | Deg.  | 0.3          | -0.1      | -.4          | Yes                  |
| Vehicle CG (Aft of Front Axle)                                 | mm    | 1753         | 1844      | 1855         |                      |
| Vehicle CG (Left (+) / Right (-) from longitudinal Centerline) | mm    | +1           | +3        | +10          |                      |

\*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. Indicate "Yes" or "No" for "Meets Requirements".

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

| Component Description                      | Weight (kg) |
|--------------------------------------------|-------------|
| Ballast: Steel plate mounted in truck bed. | 66.0        |
| Components removed: None                   | 0.0         |

Test height adjustable suspension setting, if applicable:

N/A

<sup>1</sup> Rated cargo and luggage weight limited to 136 kg or 300 lbs.

## DATA SHEET NO. 2

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup

NHTSA No.: M20170205

Test Program: SPNCAP Side Impact

Test Date: 11/9/16

#### SEAT POSITIONING

The driver 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               | N/A     | N/A  | 11.8 |
| Front Passenger Seat      | N/A     | N/A  | 11.2 |
| Front Center Seat*        | N/A     | N/A  | 6.9  |
| Struck Side Rear Seat     | N/A     | N/A  | 12.2 |
| Non-Struck Side Rear Seat | N/A     | N/A  | 13.6 |
| Rear Center Seat*         | N/A     | N/A  | 12.5 |

\* If applicable.

#### SEAT HEIGHT AND ANGLE

| Seat                      | As Tested SCRL Angle (Mid) (°) | As Tested SCRP Height (mm) | SCRP Height Position | SCRP Height (mm) |              |              |
|---------------------------|--------------------------------|----------------------------|----------------------|------------------|--------------|--------------|
|                           |                                |                            |                      | Rearmost         | Mid-Fore/Aft | Forward-Most |
| Driver Seat               | 11.8                           | 343                        | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | 336              | 339          | 343          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Front Passenger Seat      | 11.2                           | 346                        | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | 339              | 341          | 346          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Front Center Seat*        | 6.9                            | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Struck Side Rear Seat     | 12.2                           | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Non-Struck Side Rear Seat | 13.6                           | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Rear Center Seat*         | 12.5                           | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |

\* If applicable.



## DATA SHEET NO. 2 (CONTINUED)

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup

NHTSA No.: M20170205

Test Program: SPNCAP Side Impact

Test Date: 11/9/16

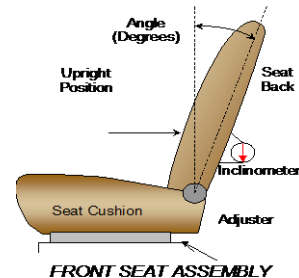
#### SEAT FORE/AFT POSITION

| Seat                      | Total Fore/Aft Travel |          | Test Position from Forwardmost Position |         |
|---------------------------|-----------------------|----------|-----------------------------------------|---------|
|                           | mm                    | Detents* | mm                                      | Detent* |
| Driver Seat               | 259                   | 38       | 0                                       | 1       |
| Front Passenger Seat      | 259                   | 38       | 0                                       | 1       |
| Front Center Seat*        | Fixed                 | N/A      | Fixed                                   | N/A     |
| Struck Side Rear Seat     | Fixed                 | N/A      | Fixed                                   | N/A     |
| Non-Struck Side Rear Seat | Fixed                 | N/A      | Fixed                                   | N/A     |
| Rear Center Seat*         | Fixed                 | N/A      | Fixed                                   | N/A     |

\* If applicable.

#### 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 Most Upright |         |
|-----------------------------|-----------------------------|----------|---------------------------------|---------|
|                             | Degrees                     | Detents* | Degrees                         | Detent* |
| Driver Seat w/ Seated Dummy | 50.7                        | 26       | 7.9                             | 3       |
| Front Passenger Seat        | 50.3                        | 26       | 7.9                             | 3       |
| Front Center Seat*          | Fixed                       | N/A      | Fixed                           | N/A     |
| Struck Side Rear Seat       | Fixed                       | N/A      | Fixed                           | N/A     |
| Non-Struck Side Rear Seat   | Fixed                       | N/A      | Fixed                           | N/A     |
| Rear Center Seat*           | Fixed                       | N/A      | Fixed                           | N/A     |

\* If applicable.

#### SEAT BELT ANCHORAGE ADJUSTMENT

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

|             | Total # of Positions    | Placed in Position # |
|-------------|-------------------------|----------------------|
| Driver Seat | 4, numbered from 0 to 3 | 3, Uppermost         |

#### HEAD RESTRAINT ADJUSTMENT

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

|             | Total # of Positions    | Placed in Position # |
|-------------|-------------------------|----------------------|
| Driver Seat | 3, numbered from 0 to 2 | 0, Lowermost         |

## DATA SHEET NO. 2 (CONTINUED)

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup

NHTSA No.: M20170205

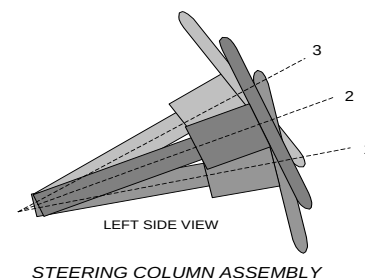
Test Program: SPNCAP Side Impact

Test Date: 11/9/16

#### STEERING COLUMN ADJUSTMENT

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

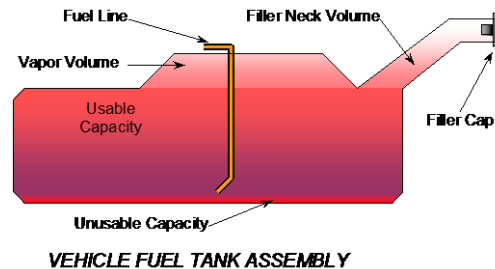
|                                   | Degrees | Fore/Aft Position, mm |
|-----------------------------------|---------|-----------------------|
| Lowermost, Position No. 1         | 21.8    | N/A                   |
| Geometric Center, Position No. 2  | 23.6    | N/A                   |
| Uppermost, Position No. 3         | 25.3    | N/A                   |
| Telescoping Steering Wheel Travel |         | 40                    |
| Test Position                     | 23.6    | 20                    |



#### FUEL PUMP

Describe the fuel pump type, details about how it operates and the location of the fuel filler neck:

The electric fuel pump operates for 3 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 3 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls the fuel pump is deactivated. Also, the fuel pump is shut-off by the restraint control module to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.



#### FUEL TANK CAPACITY

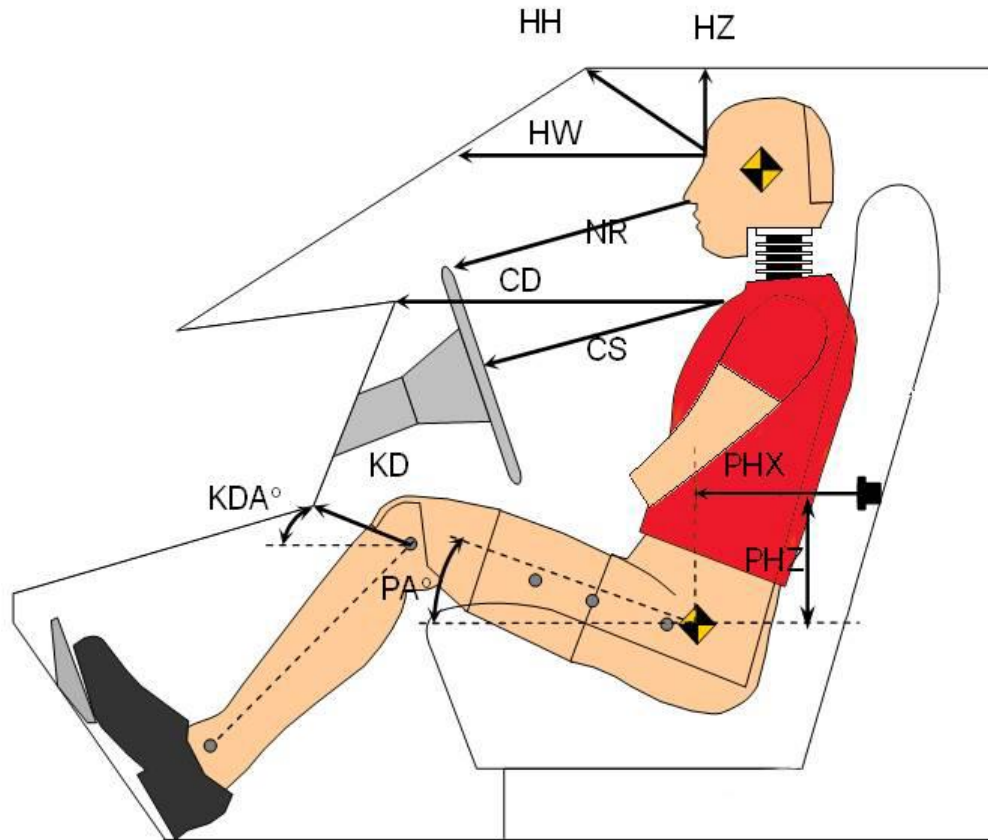
|                                                       | Liters |
|-------------------------------------------------------|--------|
| Usable Capacity of "Standard Tank" (see Form No. 1)   | 128.7  |
| Usable Capacity of "Optional" Tank (see Form No. 1)   | N/A    |
| Usable Capacity of Standard Tank (see Owner's Manual) | 128.7  |
| Usable Capacity of Optional Tank (see Owner's Manual) | N/A    |
| 93% of Usable Capacity                                | 119.7  |
| Actual Amount of Solvent Used in Test                 | 119.7  |
| 1/3 of Usable Capacity                                | 42.9   |

Is the Actual Amount of Solvent Used in the test equal to 93% +/- 1% of the Usable Capacity stated on Form No. 1?      ☒ YES      ☐ NO

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16

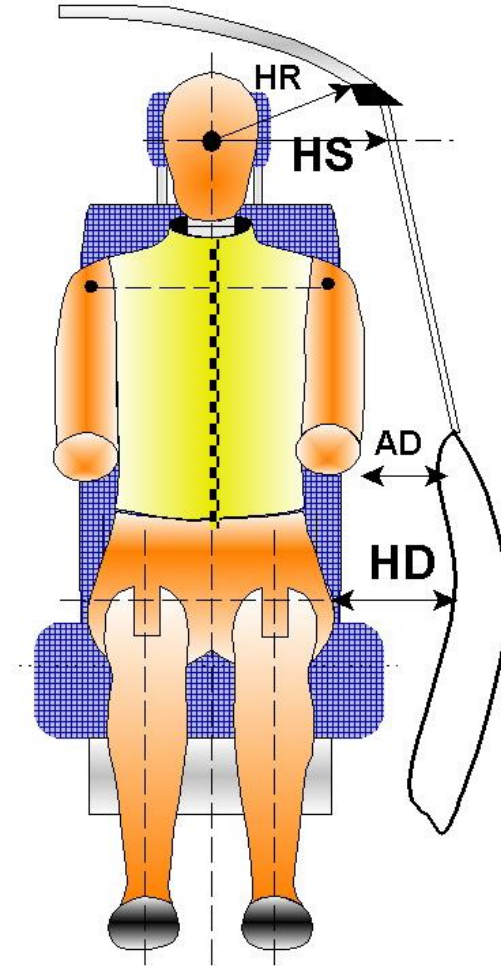


| Code      | Measurement Description       | Driver      |           |
|-----------|-------------------------------|-------------|-----------|
|           |                               | Length (mm) | Angle (°) |
| HH        | Head to Header                | 369         |           |
| HW        | Head to Windshield            | 657         |           |
| HZ        | Head to Visor                 | 250         |           |
| NR        | Nose to Rim                   | 239         |           |
| CD        | Chest to Dashboard            | 453         |           |
| CS        | Chest to Steering Wheel       | 178         |           |
| KDL/KDLA° | Left Knee to Dash             | 115         | 31.2      |
| KDR/KDRA° | Right Knee to Dash            | 96          | 30.0      |
| PAX°      | Pelvic Tilt Angle (X-axis)    |             | 0.8       |
| PAY°      | Pelvic Tilt Angle (Y-axis)    |             | 20.8      |
| PHX       | Hip Point to Striker (X-Axis) | 454         |           |
| PHZ       | Hip Point to Striker (Z-Axis) | 63          |           |

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
Test Date: 11/9/16

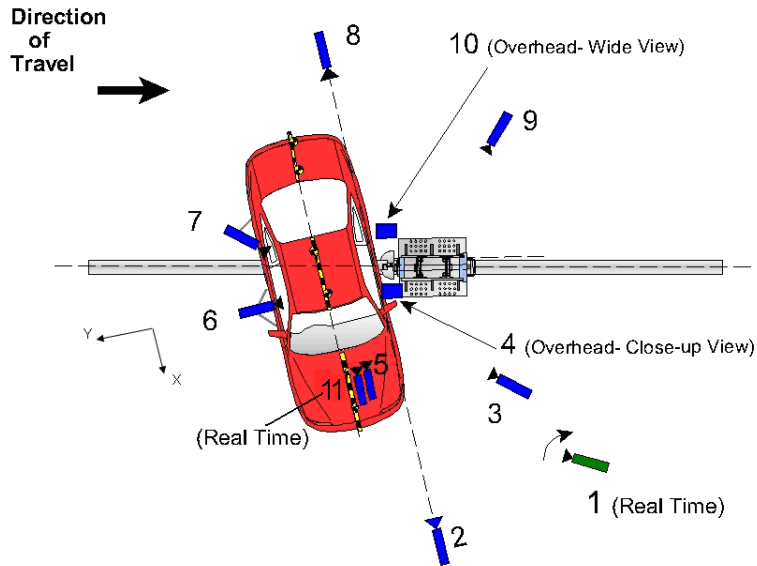


| Code | Measurement Description | Length (mm) |
|------|-------------------------|-------------|
| HR   | Head to Side Header     | 283         |
| HS   | Head to Side Window     | 387         |
| AD   | Arm to Door             | 164         |
| HD   | Hip Point to Door       | 181         |

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16



REFERENCE: (from point of impact for X and Y; from ground for Z)  
 + X = Forward of vehicle, + Y = Right of vehicle, + Z = Down

| Camera No. | View                                     | Coordinates (mm) |       |      | Lens Length (mm) | Operating Frame Rate (fps) |
|------------|------------------------------------------|------------------|-------|------|------------------|----------------------------|
|            |                                          | X                | Y     | Z    |                  |                            |
| 1          | Real time (24-30 fps) pan view of impact |                  |       |      | Zoom             | 30                         |
| 2          | Front ground level – impact view         | 0                | 5377  | 1330 | 20               | 1000                       |
| 3          | Impact side 45° – forward pole view      | -1470            | 3565  | 1420 | 20               | 1000                       |
| 4          | Overhead Close-up view of impact         | 0                | 0     | 5700 | 50               | 1000                       |
| 5          | Onboard – dummy front view               |                  |       |      | 25               | 1000                       |
| 6          | Onboard – dummy side view                |                  |       |      | 12.5             | 1000                       |
| 7          | Onboard – dummy rear oblique view        |                  |       |      | 12.5             | 1000                       |
| 8          | Rear ground level – impact view          | 0                | 7056  | 1490 | 20               | 1000                       |
| 9          | Impact side 45° – rearward pole view     | -2734            | -4855 | 1440 | 20               | 1000                       |
| 10         | Overhead wide view of impact             | -150             | 410   | 5703 | 8.5              | 1000                       |
| 11         | Real time dummy front view               |                  |       |      | Zoom             | 30                         |

All measurements accurate to +/- 6 mm.

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

If applicable, explain why camera(s) did not run: Not Applicable

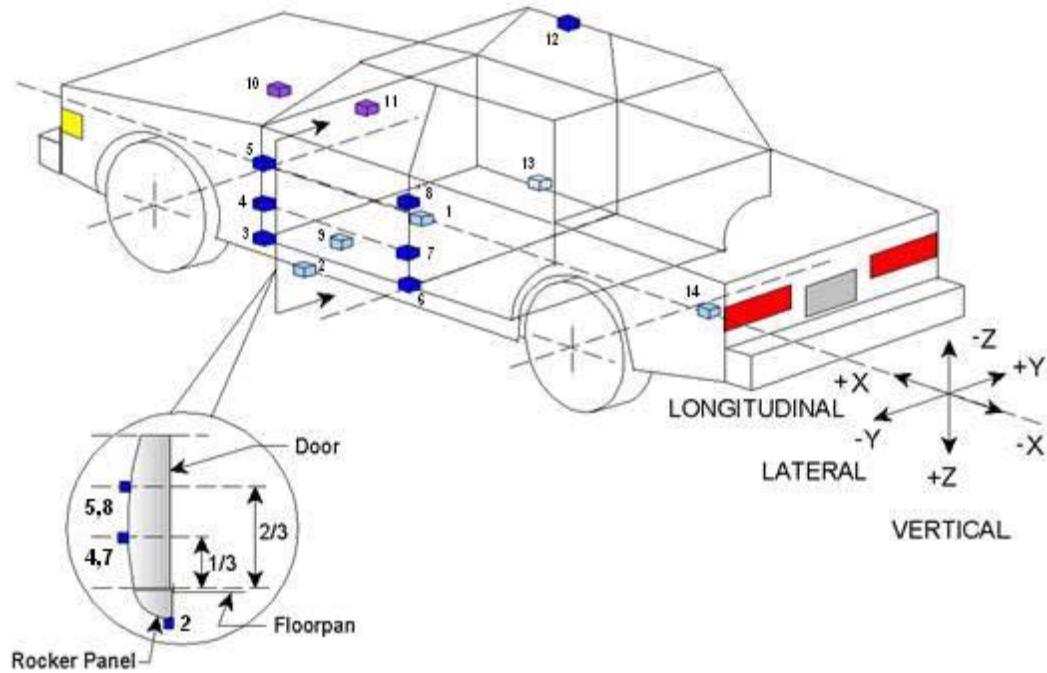
**INSTRUMENTATION**

|                   | Number of Channels |
|-------------------|--------------------|
| Driver Dummy      | 16                 |
| Vehicle Structure | 18                 |
| Pole Load Cells   | 8                  |
| <b>TOTAL</b>      | <b>42</b>          |

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16



| Accelerometer/Sensor Location |                   |                  |      |       |
|-------------------------------|-------------------|------------------|------|-------|
|                               | ID                | Coordinates (mm) |      |       |
|                               |                   | X                | Y    | Z     |
| 1                             | Vehicle CG        | 4290             | 30   | -766  |
| 2                             | Left Floor Sill   | 4290             | -730 | -625  |
| 3                             | A-Pillar Sill     | 4640             | -810 | -604  |
| 4                             | A-Pillar Low      | 4700             | -920 | -695  |
| 5                             | A-Pillar Mid      | 4710             | -910 | -1200 |
| 6                             | B-Pillar Sill     | 3270             | -770 | -626  |
| 7                             | B-Pillar Low      | 3500             | 910  | -820  |
| 8                             | B-Pillar Mid      | 3495             | 910  | -1282 |
| 9                             | Driver Seat Track | 3988             | -650 | -733  |
| 10                            | Engine Top        | 5296             | -180 | -1073 |
| 11                            | Firewall          | 5156             | 0    | -1320 |
| 12                            | Right Roof        | 3550             | 740  | -192  |
| 13                            | Right Floor Sill  | 4110             | 760  | -634  |
| 14                            | Rear Floorpan     | 735              | 0    | -842  |

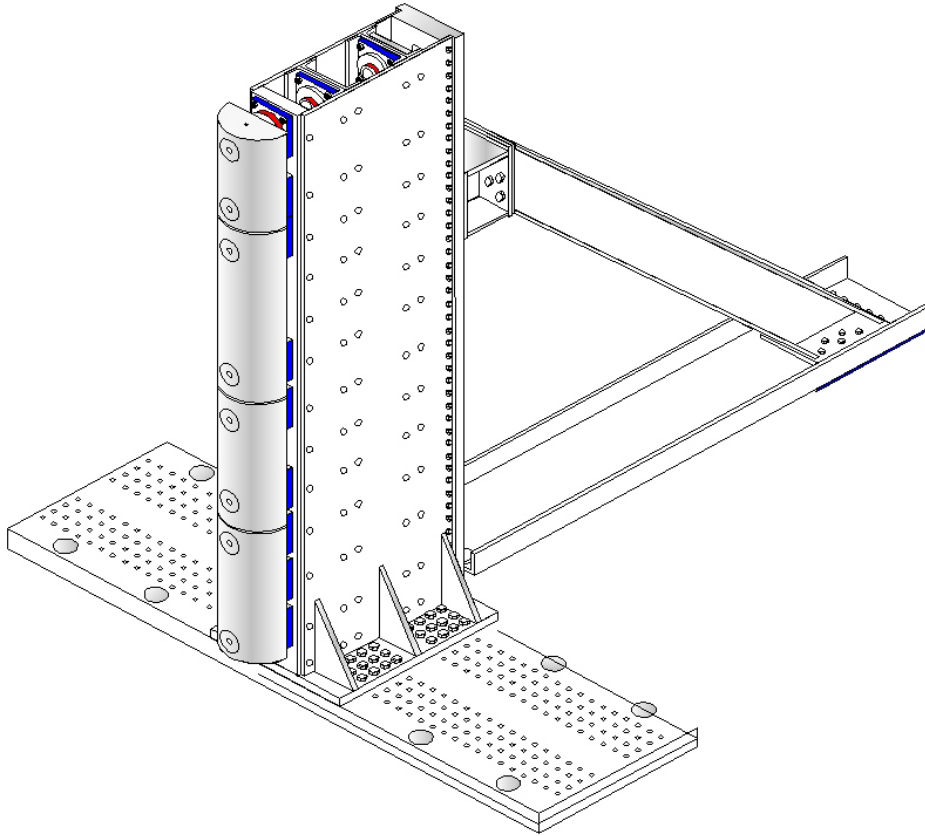
Reference: X - Test Vehicle Rear Bumper (+ forward)  
 Y - Test Vehicle Centerline (+ to right)  
 Z - Ground Plane (+ down)

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
Test Date: 11/9/16

**FOIL 300K RIGID POLE**



| Load Cell Locations |                                    |
|---------------------|------------------------------------|
| ID                  | Height From Top of Carrier<br>(mm) |
| 1                   | 87                                 |
| 2                   | 468                                |
| 3                   | 648                                |
| 4                   | 978                                |
| 5                   | 1168                               |
| 6                   | 1651                               |
| 7                   | 1816                               |
| 8                   | 2057                               |

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup NHTSA No.: M20170205  
Test Program: SPNCAP Side Impact Test Date: 11/9/16

**TEST DUMMY INFORMATION AND CONTACT POINTS**

| Dummy Body Part   | Driver SID-IIs Dummy      |
|-------------------|---------------------------|
| Face              | SCAB                      |
| Top of Head       | SCAB                      |
| Left Side of Head | SCAB                      |
| Back of Head      | SCAB                      |
| Left Shoulder     | SAB                       |
| Upper Torso       | Seat back bolster. SAB    |
| Lower Torso       | Seat back bolster         |
| Left Hip          | Seat cushion bolster, SAB |
| 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                       |

\* Indicate "Yes", "No", or "NA".

**POST-TEST SEAT PERFORMANCE**

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

\* Indicate "Yes", "No", or "NA".

**POST-TEST STRUCTURAL OBSERVATIONS**

| Critical Areas of Performance | Observations and Conclusions             |
|-------------------------------|------------------------------------------|
| Pillar Performance            | Moderate Deformation                     |
| Sill Separation               | None                                     |
| Windshield Damage             | Broken                                   |
| Side Window Damage            | Driver window cracked, remained in place |
| Other Notable Effects         | None                                     |



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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup      NHTSA No.: M20170205  
 Test Program: SPNCAP Side Impact      Test Date: 11/9/16

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

| Restraint Type           | Struck Side (Driver) |          | Struck Side (Rear Passenger) |          |
|--------------------------|----------------------|----------|------------------------------|----------|
|                          | Mounted              | Deployed | Mounted                      | Deployed |
| Front Airbag             | Yes                  | No       |                              |          |
| Knee Airbag              | No                   | N/A      |                              |          |
| Side Curtain Airbag      | Yes                  | Yes      | Yes                          | Yes      |
| Side Torso/Pelvis Airbag | Yes                  | Yes      | No                           | N/A      |
| Side Torso Airbag        | No                   | N/A      | No                           | N/A      |
| Seat Belt Pretensioner   | Yes                  | Yes      | No                           | N/A      |
| Seat Belt Load Limiter   | Yes                  | Unknown  | No                           | N/A      |
| Other                    | No                   | N/A      | No                           | N/A      |

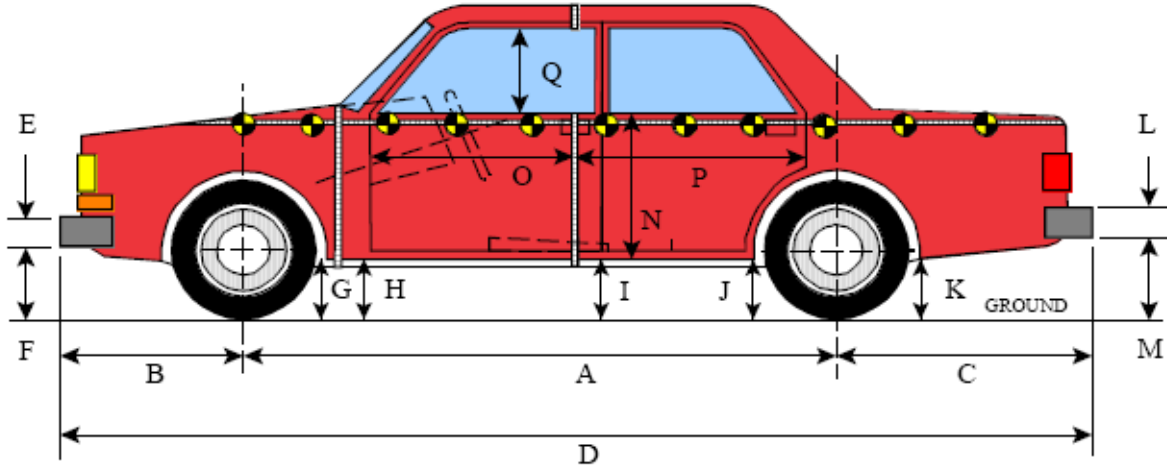
**VEHICLE SPEED, VEHICLE ANGLE AT IMPACT AND IMPACT POINT LOCATION DATA**

| Measured Parameter                                                         | Units   | Tolerance                       | Value |
|----------------------------------------------------------------------------|---------|---------------------------------|-------|
| Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point) | mm      |                                 | 1300  |
| Actual Impact Point (Aft of Front Axle)                                    | mm      |                                 | 1304  |
| Horizontal Offset ( + forward / - rearward)                                | mm      | +/- 38 of Intended Impact point | -4    |
| Angle Between Vehicle's Longitudinal Centerline and Line of Motion         | degrees | 75 +/- 3                        | 75    |
| Trap No. 1 Velocity (Primary)                                              | km/h    | 31.4 to 33.0                    | 31.97 |
| Trap No. 2 Velocity (Redundant)                                            | km/h    | 31.4 to 33.0                    | 31.94 |

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16



**LEFT SIDE VIEW**

All MEASUREMENTS IN (mm) WITH TOLERANCE OF  $\pm 3$ mm

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

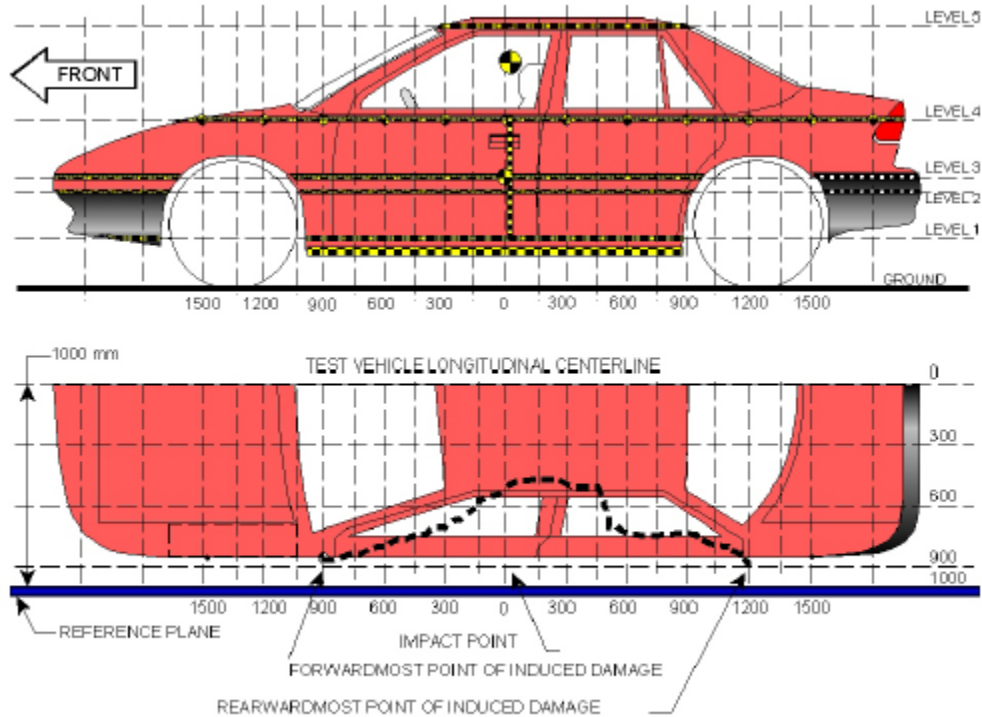
| Code           | Measurement Description                    | Pre-Test | Post-Test | Difference |
|----------------|--------------------------------------------|----------|-----------|------------|
| A              | Wheelbase                                  | 4058     | 4030      | 28         |
| B              | Front Axle to Front Surface of Vehicle     | 1038     | 978       | 60         |
| C              | Rear Axle to Rear Surface of Vehicle       | 1250     | 1235      | 15         |
| D              | Total Length at Centerline                 | 6346     | 6346      | 0          |
| E              | Front Bumper Thickness                     | 267      | 267       | 0          |
| F              | Front Bumper Bottom to Ground              | 384      | 398       | -14        |
| G              | Sill Height at Front Wheel Well            | 464      | 475       | -11        |
| H              | Sill Height at Front Door Leading Edge     | 484      | 494       | -10        |
| I              | Sill Height at B-Pillar                    | 511      | 525       | -14        |
| J1             | Sill Height at Rear Wheel Well             | 530      | 563       | -33        |
| J2             | Pinch Weld Height at Rear Wheel Well       | 485      | 518       | -33        |
| K              | Sill Height Aft of Rear Wheel Well         | 584      | 630       | -46        |
| L              | Rear Bumper Thickness                      | 223      | 223       | 0          |
| M              | Rear Bumper Bottom to Ground               | 529      | 560       | -31        |
| N              | Sill Height to Bottom of Front Window Sill | 953      | 908       | 45         |
| O              | Front Door Leading Edge to Impact CL       | 634      | 505       | 129        |
| P              | Rear Door Trailing Edge to Impact CL       | 1595     | 1490      | 105        |
| Q              | Front Window Opening                       | 522      | 495       | 27         |
| R              | Right Side Length                          | 6166     | 6170      | -4         |
| S              | Left Side Length                           | 6166     | 6150      | 16         |
| T <sup>1</sup> | Vehicle Width at B-Pillars                 | 2015     | 1940      | 75         |

<sup>1</sup> maximum width not at B-Pillars; maximum width = 2022 mm

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16



**NOTE:** All measurements are in millimeters (mm)

**MAXIMUM EXTERIOR CRUSH MEASUREMENTS**

| Level | Measurement Description | Height Above Ground | Maximum Exterior Static Crush | Distance from Impact |
|-------|-------------------------|---------------------|-------------------------------|----------------------|
| 1     | Sill Top                | 638                 | 321                           | 0                    |
| 2     | Occupant H-Point        | 1021                | 326                           | 0                    |
| 3     | Mid-Door                | 860                 | 322                           | 0                    |
| 4     | Window Sill             | 1227                | 304                           | 0                    |
| 5     | Window Top              | 1889                | 70                            | 150                  |

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

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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16

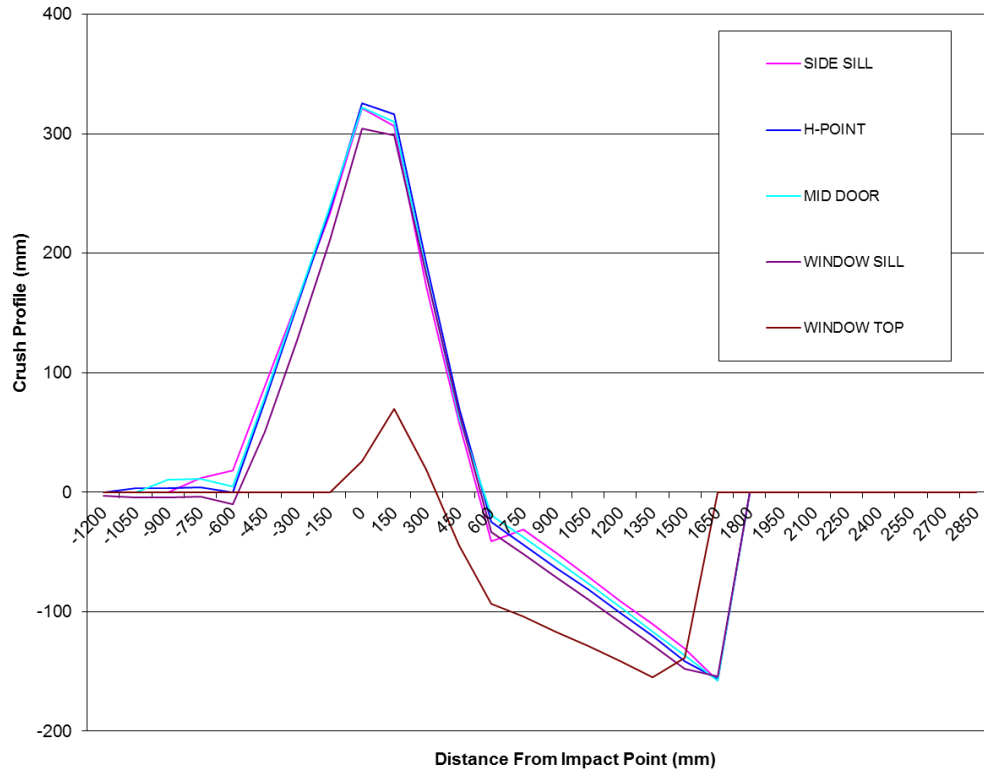
|       | Pre-Test |      |      |     |     | Post-Test |      |      |      |     | Difference |      |      |      |      |
|-------|----------|------|------|-----|-----|-----------|------|------|------|-----|------------|------|------|------|------|
|       | 1        | 2    | 3    | 4   | 5   | 1         | 2    | 3    | 4    | 5   | 1          | 2    | 3    | 4    | 5    |
| -1200 | 0        | 1008 | 0    | 944 | 0   | 0         | 1005 | 0    | 947  | 0   | 0          | 3    | 0    | -3   | 0    |
| -1050 | 0        | 1003 | 0    | 953 | 0   | 0         | 1000 | 0    | 957  | 0   | 0          | 3    | 0    | -4   | 0    |
| -900  | 0        | 991  | 1009 | 961 | 0   | 0         | 988  | 999  | 965  | 0   | 0          | 3    | 10   | -4   | 0    |
| -750  | 997      | 997  | 994  | 968 | 0   | 985       | 993  | 983  | 972  | 0   | 12         | 4    | 11   | -4   | 0    |
| -600  | 987      | 995  | 991  | 971 | 0   | 969       | 995  | 986  | 981  | 0   | 18         | 0    | 5    | -10  | 0    |
| -450  | 987      | 997  | 992  | 975 | 0   | 899       | 921  | 913  | 924  | 0   | 88         | 76   | 79   | 51   | 0    |
| -300  | 988      | 999  | 993  | 980 | 0   | 829       | 843  | 835  | 853  | 0   | 159        | 156  | 158  | 127  | 0    |
| -150  | 989      | 1000 | 994  | 983 | 0   | 756       | 764  | 755  | 772  | 0   | 233        | 236  | 239  | 211  | 0    |
| 0     | 990      | 1002 | 996  | 986 | 704 | 669       | 676  | 674  | 682  | 678 | 321        | 326  | 322  | 304  | 26   |
| 150   | 990      | 1003 | 997  | 989 | 723 | 684       | 687  | 688  | 691  | 653 | 306        | 316  | 309  | 298  | 70   |
| 300   | 990      | 1005 | 998  | 991 | 729 | 818       | 813  | 814  | 809  | 710 | 172        | 192  | 184  | 182  | 19   |
| 450   | 990      | 1005 | 998  | 993 | 731 | 932       | 935  | 936  | 927  | 776 | 58         | 70   | 62   | 66   | -45  |
| 600   | 989      | 1005 | 997  | 996 | 735 | 1030      | 1030 | 1016 | 1029 | 829 | -41        | -25  | -19  | -33  | -94  |
| 750   | 988      | 1005 | 996  | 997 | 738 | 1018      | 1048 | 1034 | 1048 | 842 | -30        | -43  | -38  | -51  | -104 |
| 900   | 987      | 1005 | 996  | 997 | 740 | 1038      | 1068 | 1053 | 1068 | 857 | -51        | -63  | -57  | -71  | -117 |
| 1050  | 987      | 1004 | 996  | 997 | 743 | 1058      | 1086 | 1073 | 1087 | 872 | -71        | -82  | -77  | -90  | -129 |
| 1200  | 986      | 1004 | 996  | 997 | 746 | 1077      | 1105 | 1093 | 1106 | 887 | -91        | -101 | -97  | -109 | -141 |
| 1350  | 985      | 1004 | 996  | 985 | 748 | 1095      | 1124 | 1113 | 1113 | 902 | -110       | -120 | -117 | -128 | -154 |
| 1500  | 983      | 1003 | 996  | 993 | 751 | 1114      | 1144 | 1132 | 1141 | 889 | -131       | -141 | -136 | -148 | -138 |
| 1650  | 964      | 986  | 978  | 980 | 0   | 1122      | 1142 | 1136 | 1135 | 0   | -158       | -156 | -158 | -155 | 0    |
| 1800  | 0        | 0    | 0    | 0   | 0   | 0         | 0    | 0    | 0    | 0   | 0          | 0    | 0    | 0    | 0    |
| 1950  | 0        | 0    | 0    | 0   | 0   | 0         | 0    | 0    | 0    | 0   | 0          | 0    | 0    | 0    | 0    |
| 2100  | 0        | 0    | 0    | 0   | 0   | 0         | 0    | 0    | 0    | 0   | 0          | 0    | 0    | 0    | 0    |
| 2250  | 0        | 0    | 0    | 0   | 0   | 0         | 0    | 0    | 0    | 0   | 0          | 0    | 0    | 0    | 0    |

**NOTE:** Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point. 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: 2017 Ford F-250 Crew Cab 4-DR Pickup  
Test Program: SPNCAP Side Impact

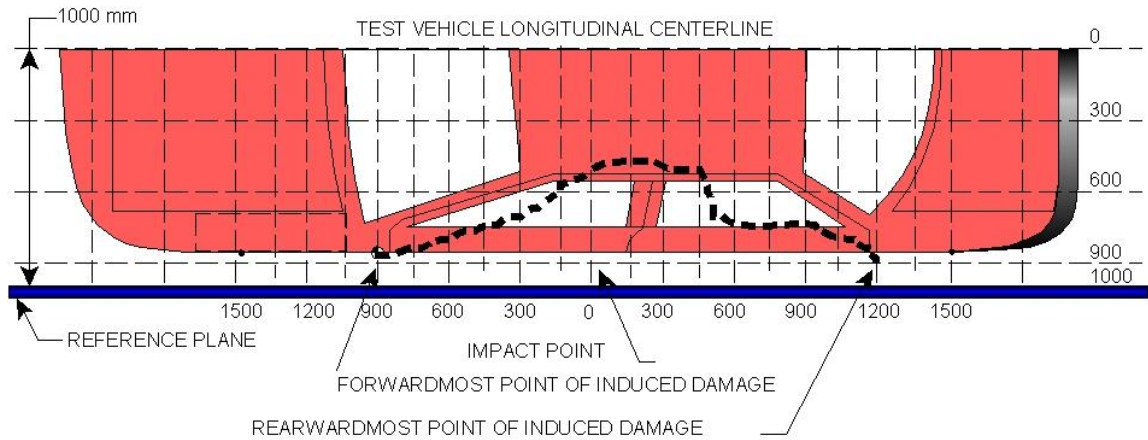
NHTSA No.: M20170205  
Test Date: 11/9/16



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

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
 Test Date: 11/9/16



**VEHICLE DAMAGE PROFILE DISTANCES<sup>1</sup>**

| DPD | Distance From Impact Point (mm) | Level | Post-Test (mm) | Pre-Test (mm) | Crush (mm) |
|-----|---------------------------------|-------|----------------|---------------|------------|
| 1   | 450                             | 2     | 935            | 1005          | 0          |
| 2   | 150                             | 2     | 687            | 1003          | 316        |
| 3   | -150                            | 3     | 755            | 994           | 239        |
| 4   | -600                            | 1     | 969            | 987           | 18         |
| 5   | -900                            | 3     | 99             | 1009          | 10         |
| 6   | -1200                           | 2     | 1005           | 1008          | 3          |

<sup>1</sup> DPD 1 defined as zero crush since the crush does not extend to the end of the vehicle.

## DATA SHEET NO. 12

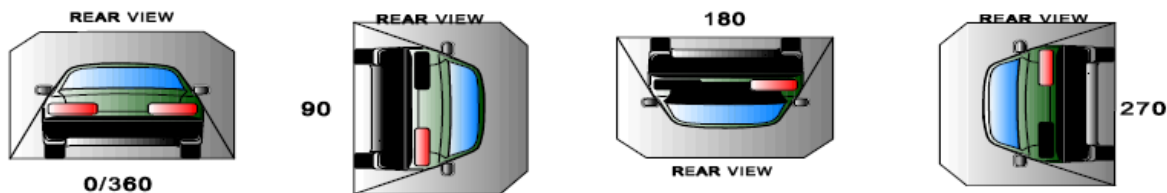
### FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup NHTSA No.: M20170205  
 Test Program: SPNCAP Side Impact Test Date: 11/9/16

Test Time: 14:00 Temperature: 21.1°C

- A. From impact until vehicle motion ceases: 0 oz.  
 (Maximum allowable is 1 ounce)
- B. For the 5 minute period after motion ceases: 0  
 (Maximum allowable is 5 ounces)
- C. For the following 25 minutes: 0  
 (Maximum allowable is 1 ounce/minute)
- D. Spillage Data1LS: None

### FMVSS 301 STATIC ROLLOVER DATA



### ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

| Test Phase | Rotation Time | Hold Time | Total Time |
|------------|---------------|-----------|------------|
| 0 to 90    | 90            | 330       | 420        |
| 90 to 180  | 90            | 330       | 840        |
| 180 to 270 | 90            | 330       | 1260       |
| 270 to 360 | 90            | 330       | 1680       |

### FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

| Test Phase | First 5 Minutes | Sixth Minute | Seventh Minute | Eighth 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

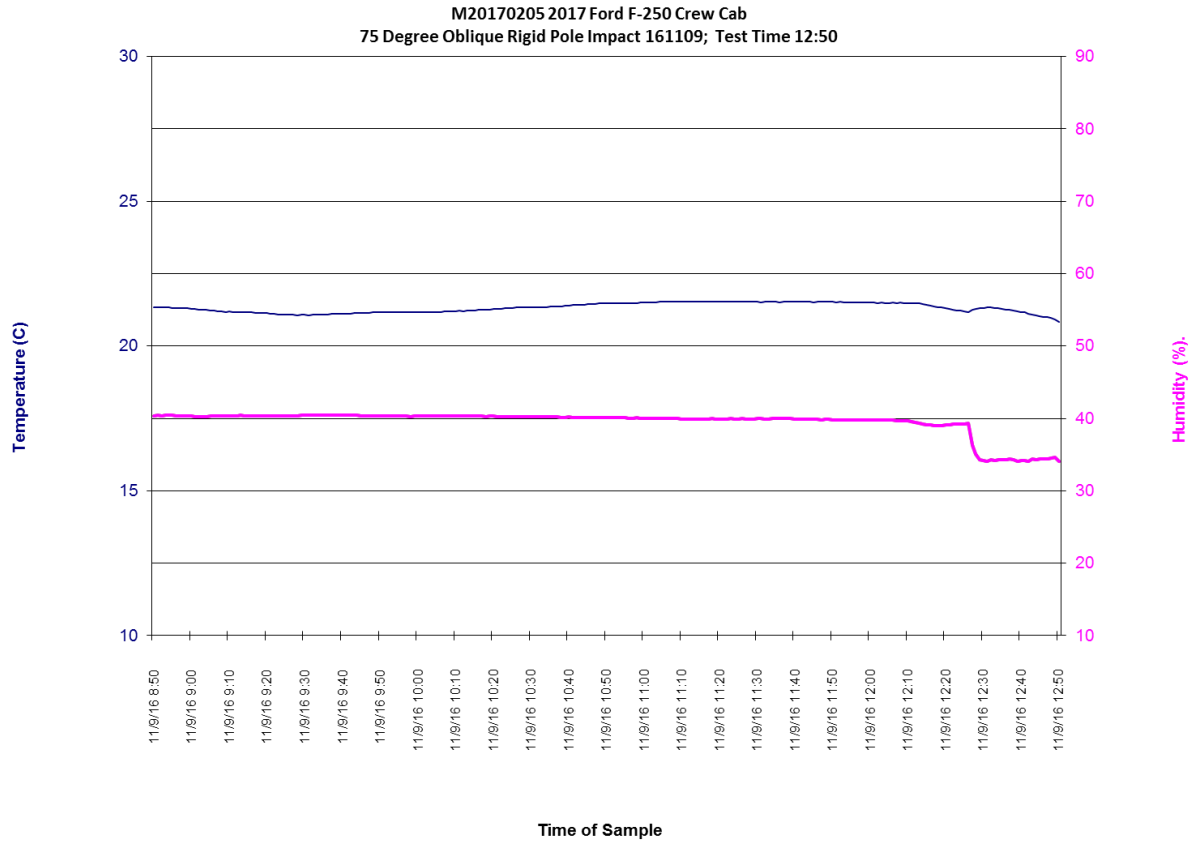
| Test Phase | Spillage Location |
|------------|-------------------|
| 0 to 90    | None              |
| 90 to 180  | None              |
| 180 to 270 | None              |
| 270 to 360 | None              |

### DATA SHEET NO. 13

#### DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2017 Ford F-250 Crew Cab 4-DR Pickup  
Test Program: SPNCAP Side Impact

NHTSA No.: M20170205  
Test Date: 11/9/16





**APPENDIX A<sup>1</sup>**  
**PHOTOGRAPHS**

<sup>1</sup>Placard Titles say SuperCrew and should be Crew Cab throughout Appendix A.

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| 20  | Post-Test Close-Up View of Impact Point Target Showing Impact Location                 | A-13 |
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| 29  | Pre-Test Overhead View of Dummy Thighs on Seat Pan                                     | A-18 |
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| 32  | Pre-Test Placement of Dummy's Feet                                                     | A-20 |
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| 48  | Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View         | A-28 |
| 49  | Post-Test Dummy Close-Up Torso Contact with Side Airbag View              | A-29 |
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| 51  | Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View             | A-30 |
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**No. 001 As Delivered Right Front  $\frac{3}{4}$  View of Test Vehicle**

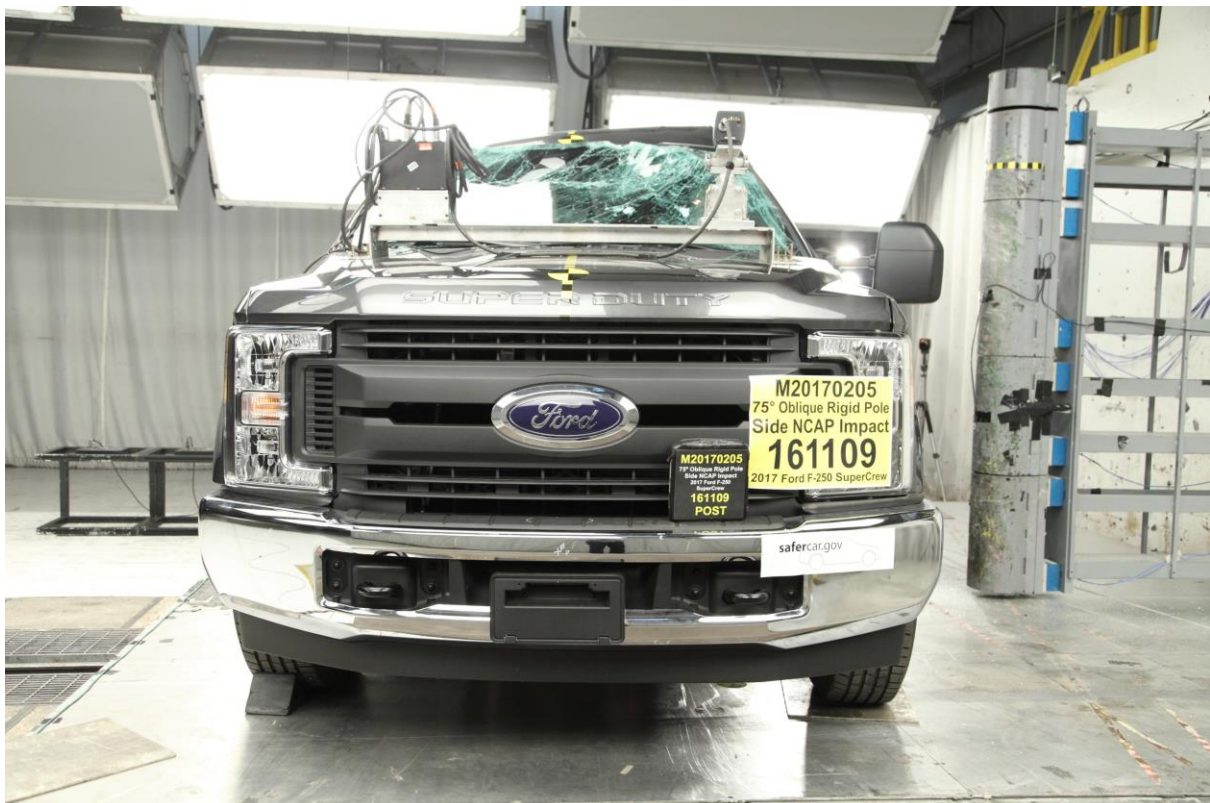


**No. 002 As Delivered Left Rear  $\frac{3}{4}$  View of Test Vehicle**





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



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





No. 005 Pre-Test Left Front  $\frac{3}{4}$  View of Test Vehicle



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





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



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



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



**No. 010 Post-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle**





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



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

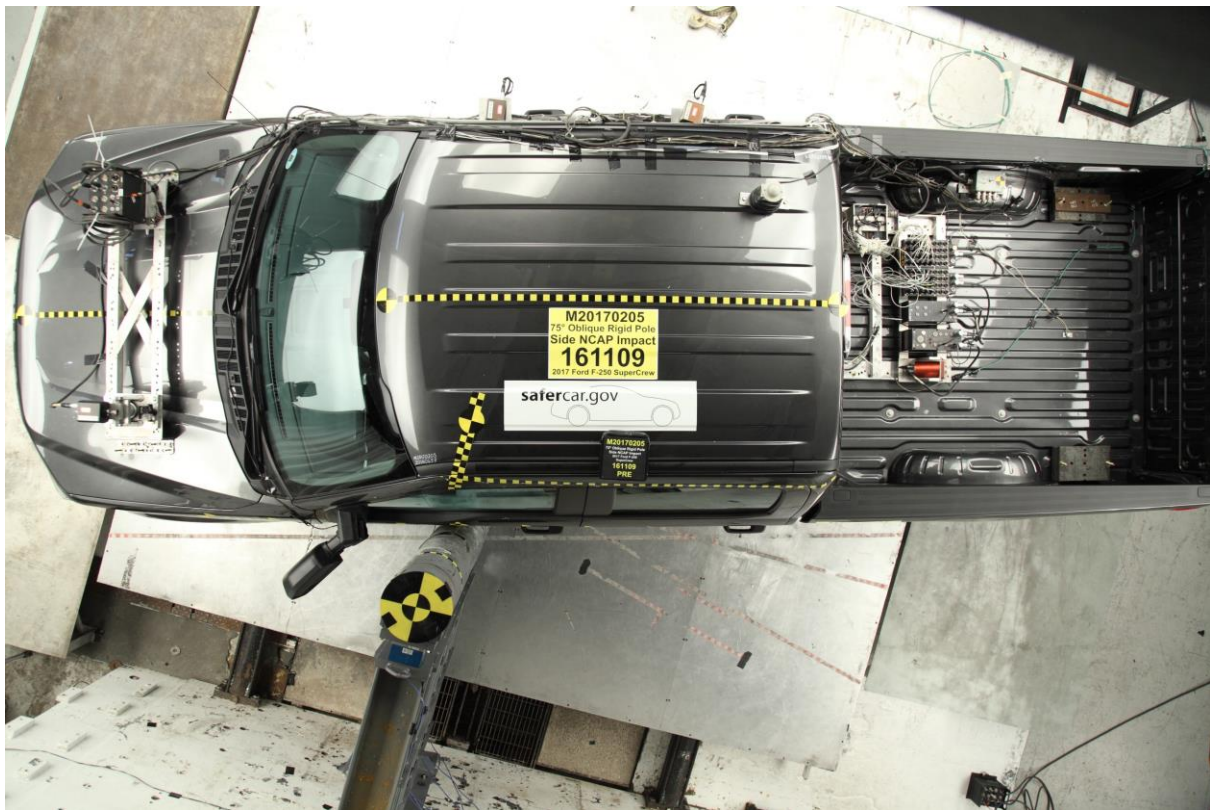


**No. 013 Pre-Test Right Side View of Test Vehicle**



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





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



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





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



**No. 018 Pre-Test Right Side View of Pole Positioned Against Side of Vehicle**



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



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





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



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





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

**Intentionally Left Blank**



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



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





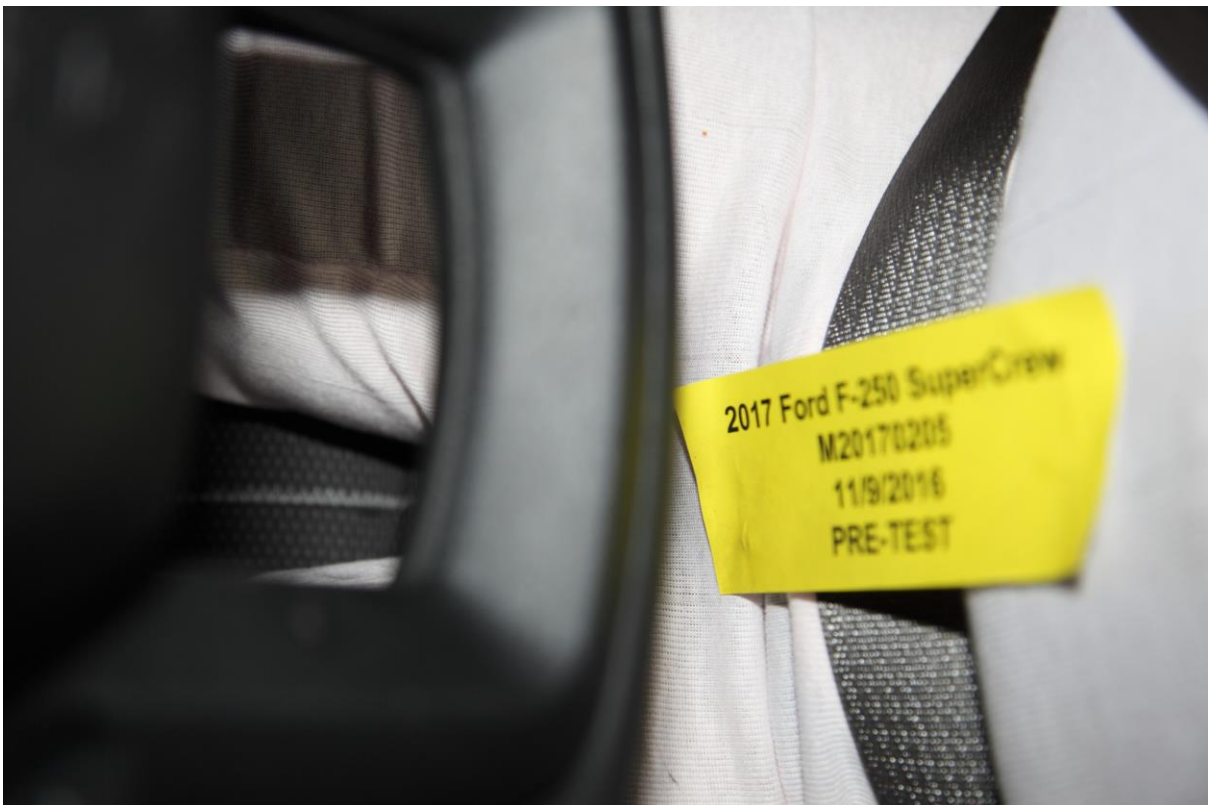
**No. 026 Pre-Test Front View of Seat Back Prior to Dummy Positioning**



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



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



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





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



**No. 031 Pre-Test Left Side View of Dummy Head Showing Dummy Head is Level**





**No. 032 Pre-Test Placement of Dummy Feet**



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



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



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





No. 036 Pre-Test View of Parking Brake



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



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

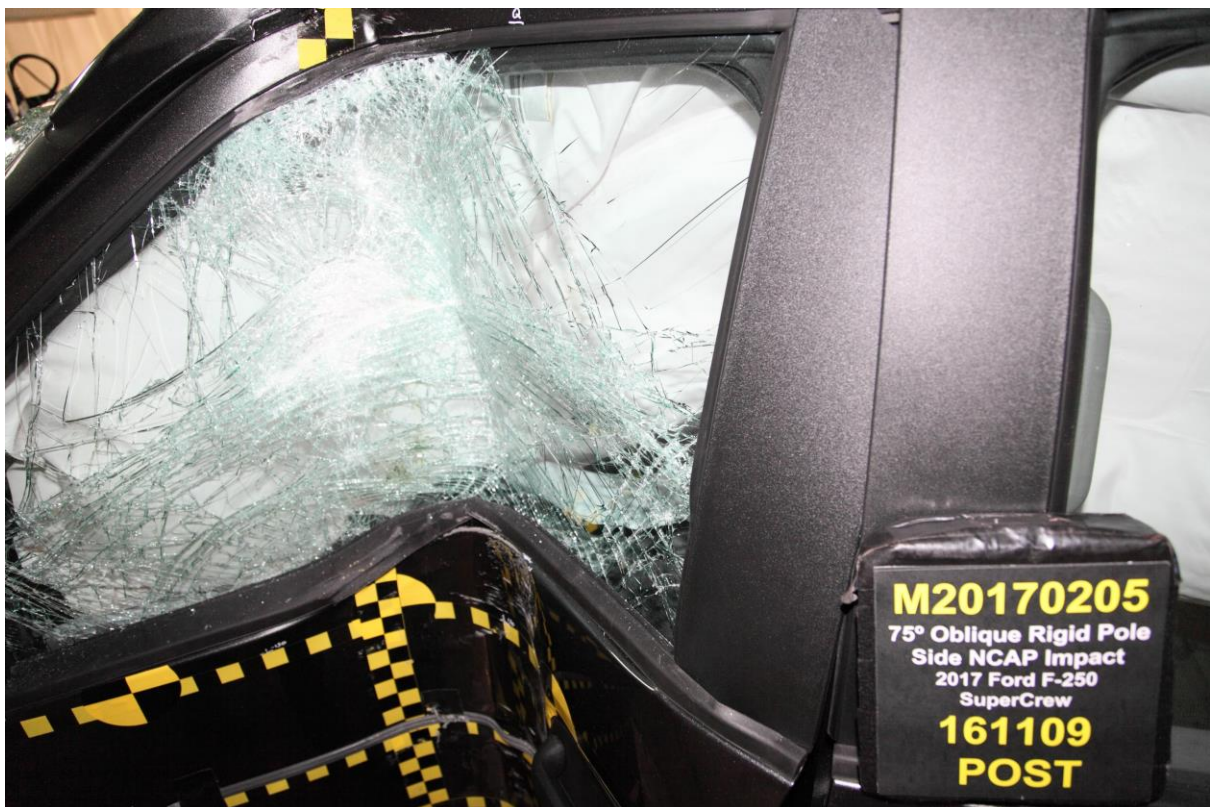


No. 039 Pre-Test Close-Up View of Driver Seat Back or Head Restraint





No. 040 Pre-Test Dummy and Door Clearance View



No. 041 Post-Test Dummy and Door Clearance View





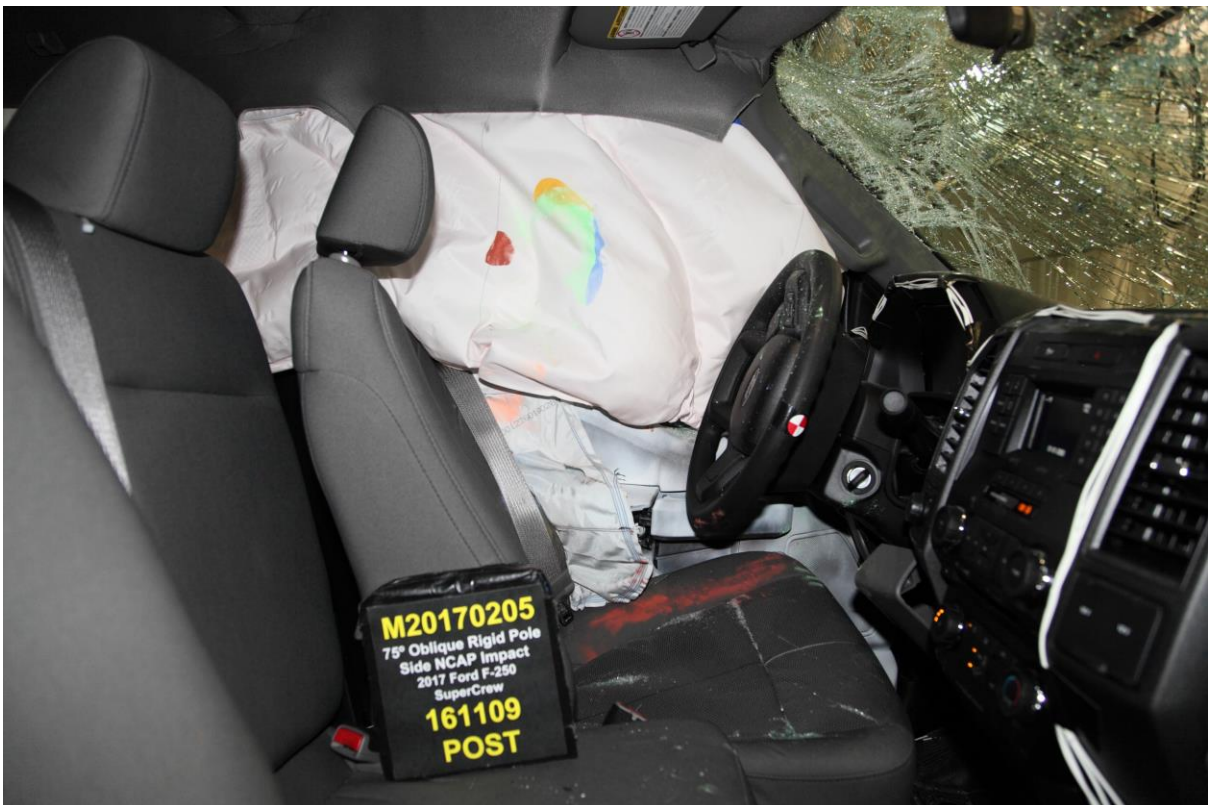
**No. 042 Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment**



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



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



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

**PHOTO NOT APPLICABLE**

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

**Intentionally Left Blank**





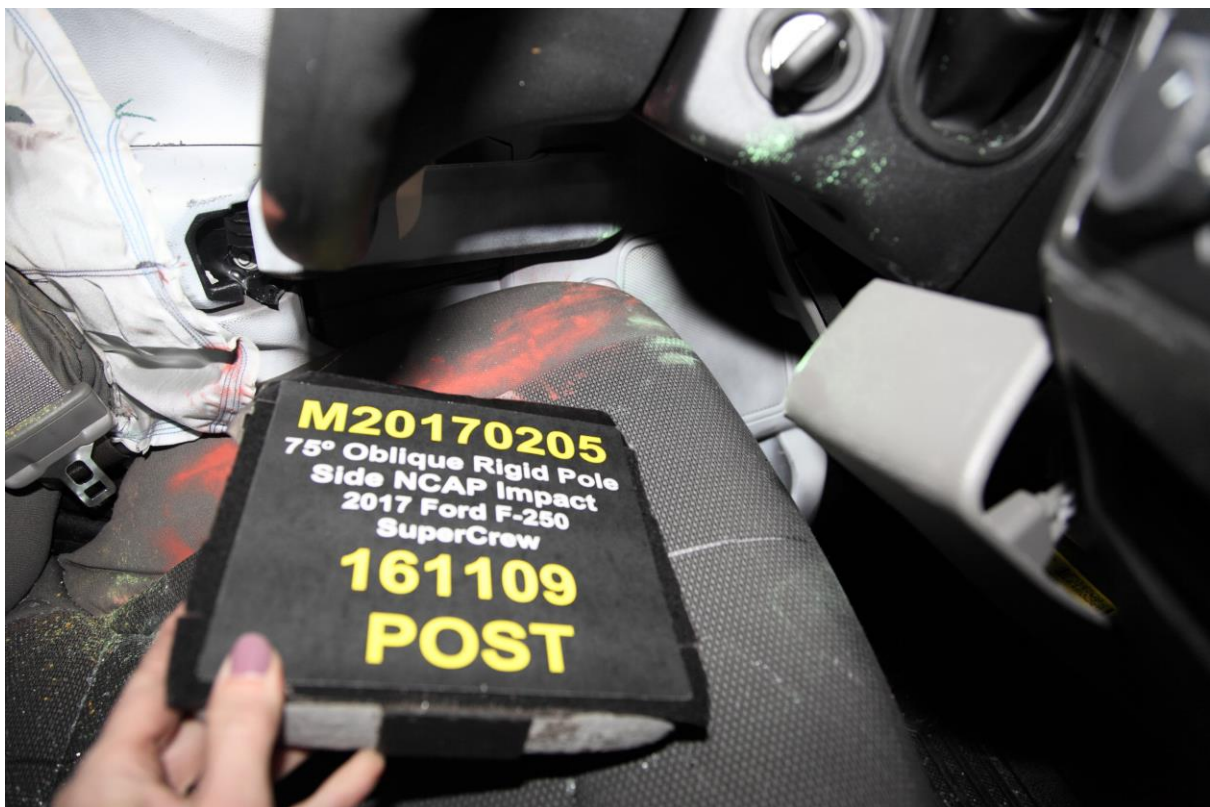
**No. 047 Post-Test Dummy Close-Up Head Contact with Side Airbag View**



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



No. 049 Post-Test Dummy Close-Up Torso Contact with Side Airbag View

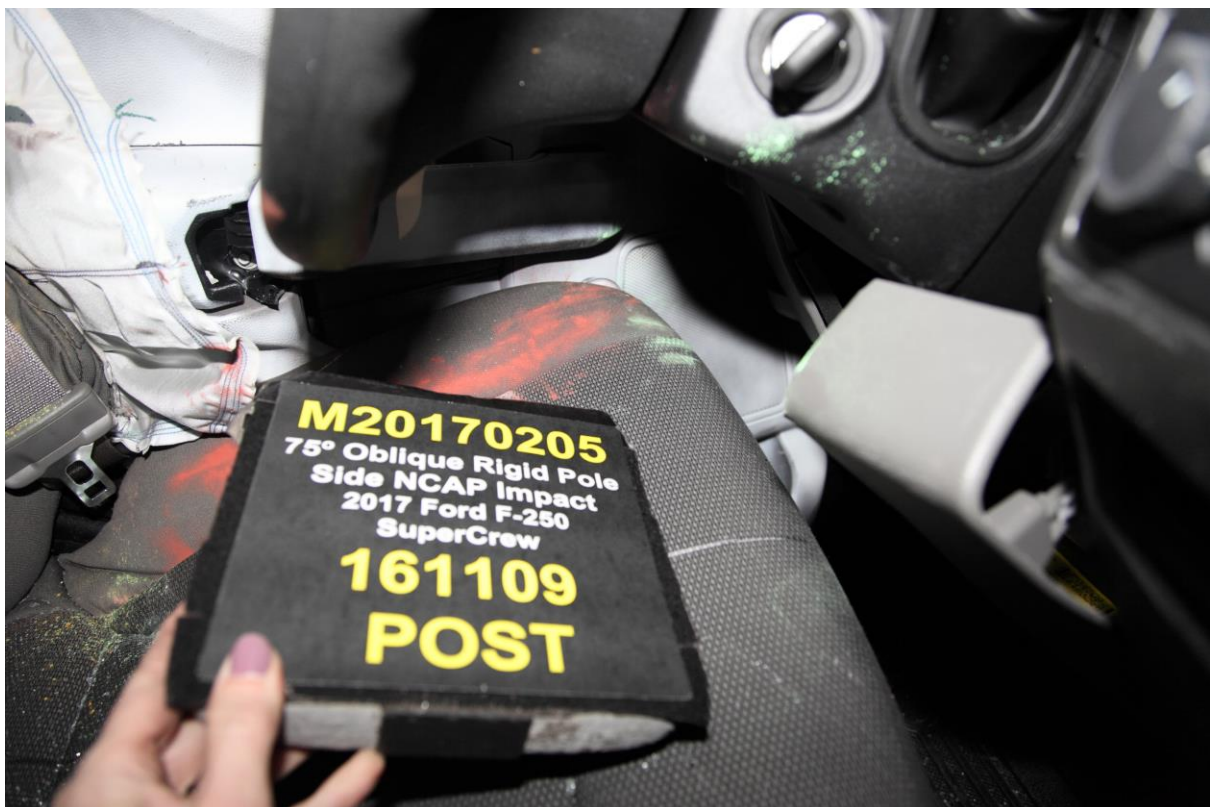


No. 050 Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View





No. 051 Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



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



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



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

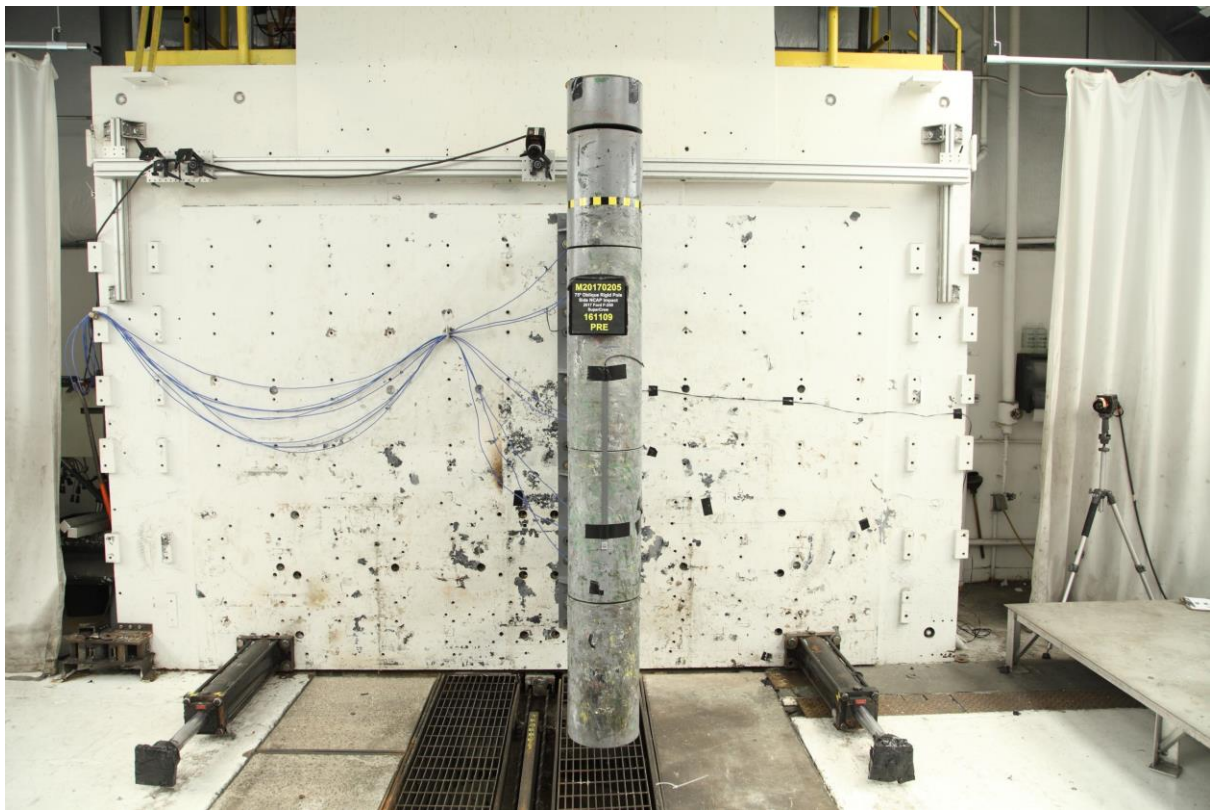




No. 055 Close-Up View of Vehicle Certification Label



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

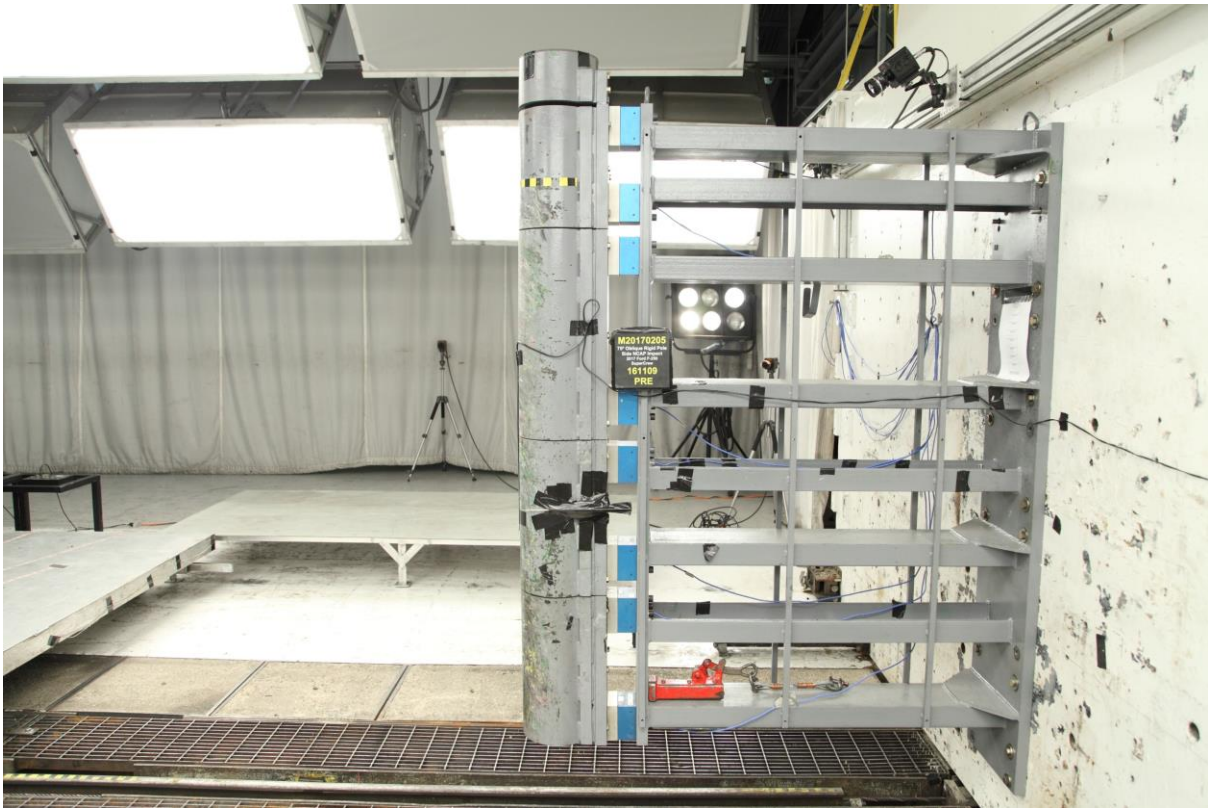


**No. 057 Pre-Test Pole Barrier Front View**

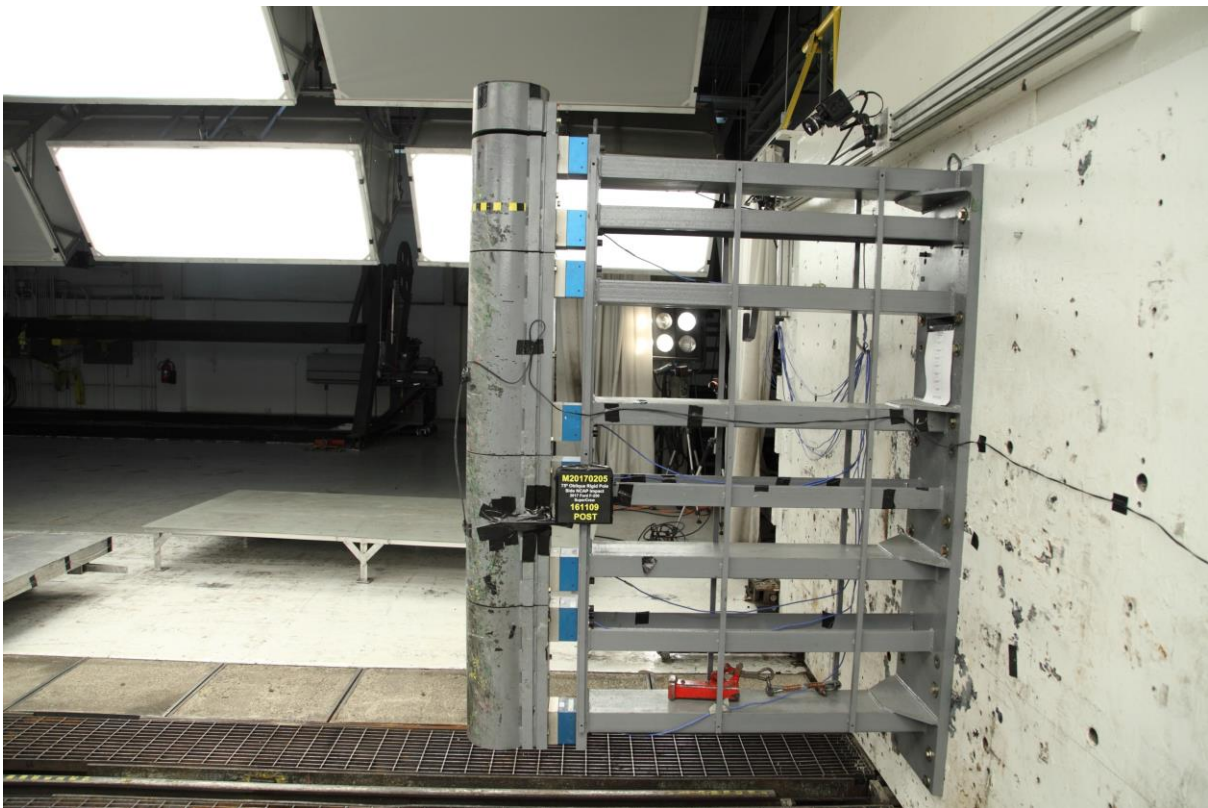


**No. 058 Post-Test Pole Barrier Front View**



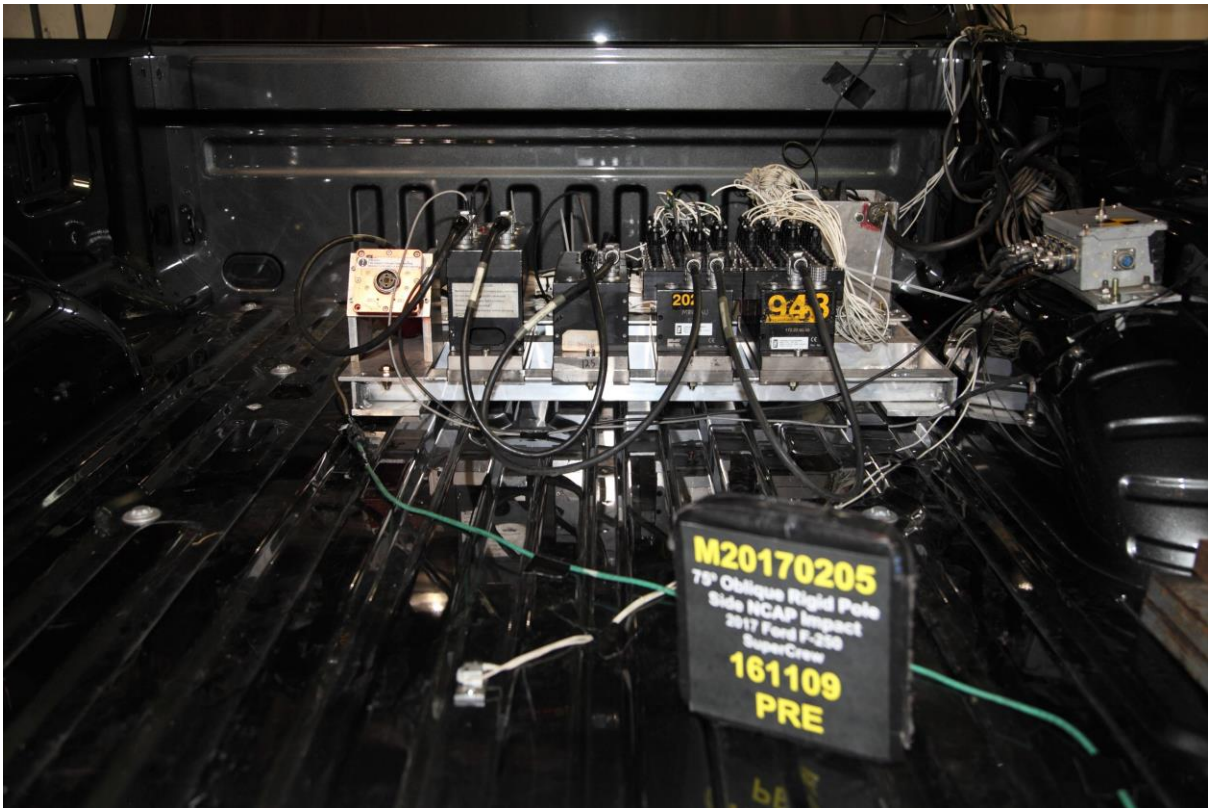


**No. 059 Pre-Test Pole Barrier Side View**



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





No. 061 Pre-Test Ballast View 1



No. 061a Pre-Test Ballast View 2



No. 061b Pre-Test Ballast View 3



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





**No. 063 FMVSS No. 301 Static Rollover 0 Degrees**



**No. 064 FMVSS No. 301 Static Rollover 90 Degrees**



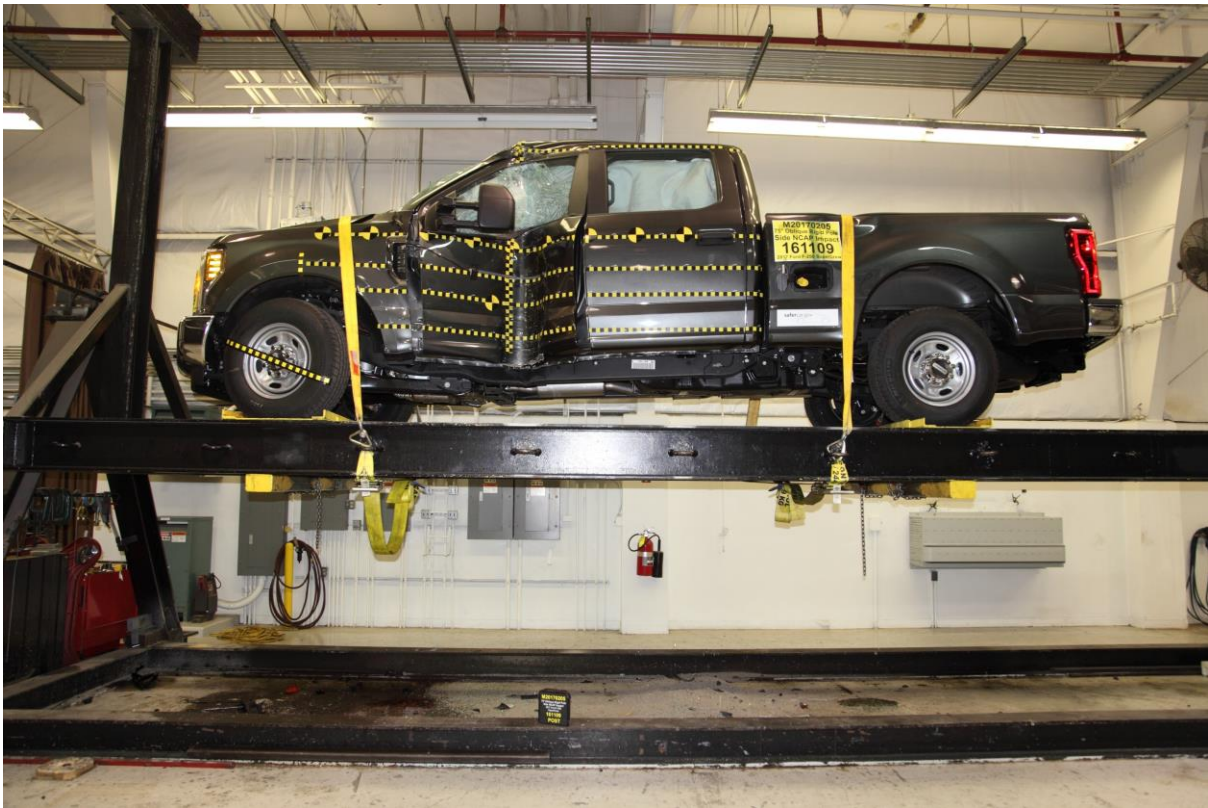


**No. 065 FMVSS No. 301 Static Rollover 180 Degrees**

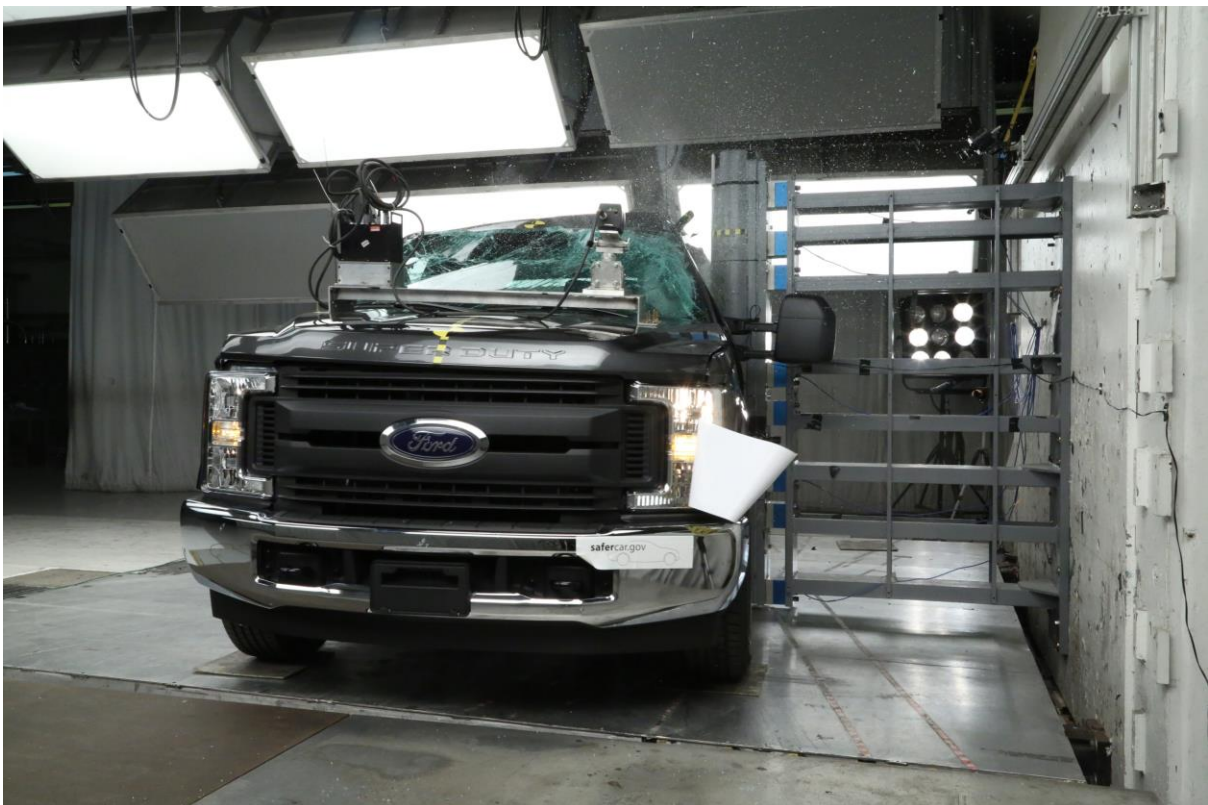


**No. 066 FMVSS No. 301 Static Rollover 270 Degrees**





**No. 067 FMVSS No. 301 Static Rollover 360 Degrees**



**No. 068 Impact Event**



Go Further  
ford.com

**VEHICLE DESCRIPTION**

**SUPER DUTY**

2017 F250 SRW 4X2 CREW CAB  
XL 160" WB STYLE SIDE  
6.2L EFI V-8 ENGINE  
6 SPEED AUTOMATIC TRANS G

**EXTERIOR** MAGNETIC  
**INTERIOR** MEDIUM EARTH GRAY CLOTH

**HE B24675**

**EPA DOT Fuel Economy and Environment**

**FUEL ECONOMY RATINGS NOT REQUIRED ON THIS VEHICLE**

**STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE**

|                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>EXTERIOR</b></p> <ul style="list-style-type: none"> <li>• BOX RAIL/TAILGATE MOLDINGS</li> <li>• DOOR HANDLES - BLACK</li> <li>• HEADLAMPS - WIPER ACTIVATED</li> <li>• LOCKING REMOVABLE TAILGATE</li> <li>• W/LIFT ASST-NA W/BOX DLT</li> <li>• PICKUP BOX, TIE DOWN HOOKS</li> <li>• -NA W/BOX DLT</li> <li>• SPARE TIRE AND WHEEL LOCK</li> <li>• -NA W/BOX DLT</li> <li>• TOW HOOKS</li> <li>• TRAILER SWAY CONTROL</li> </ul> | <p><b>INTERIOR</b></p> <ul style="list-style-type: none"> <li>• 60/40 REAR BENCH W/FUP-LIP</li> <li>• FUP-DOWN W/ HEAD RSTNTR</li> <li>• AIR COND. MANUAL FRONT</li> <li>• DRIVER SEAT-MANUAL LUMBAR</li> <li>• OUTSIDE TEMP DISPLAY</li> <li>• PARTICULATE AIR FILTER</li> <li>• TILT/TELESCOPE STR COLUMN</li> <li>• VINYL SUN VISORS</li> </ul> | <p><b>FUNCTIONAL</b></p> <ul style="list-style-type: none"> <li>• 4 WHEEL ANTI-LOCK DISC BRAKING SYSTEM</li> <li>• HILL START ASSIST</li> <li>• JEWEL EFFECT HEADLAMPS</li> <li>• MYKEY</li> <li>• TWIN I-BEAM INDEPENDENT FRT SUSPENSION W/STAB BAR</li> </ul> | <p><b>SAFETY/SECURITY</b></p> <ul style="list-style-type: none"> <li>• ADVANCETRAC WITH RSC</li> <li>• AIRBAGS - SAFETY CANOPY</li> <li>• BELT-MINDER CHIME</li> <li>• DRIVER/PASSENGER AIR BAGS</li> <li>• SECURELOCK PASS ANTI THEFT</li> <li>• SOS POST CRASH ALERT SYS</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**WARRANTY**

- 3YR/36,000 BUMPER / BUMPER
- 5YR/60,000 POWERTRAIN
- 5YR/60,000 ROADSIDE ASSIST

**INCLUDED ON THIS VEHICLE**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>OPTIONAL EQUIPMENT/OTHER</b></p> <ul style="list-style-type: none"> <li>PREFERRED EQUIPMENT PKG.600A</li> <li>6 SPEED AUTOMATIC TRANS G</li> <li>3.73 ELECTRONIC LOCKING AXLE</li> <li>XL DECOR PACKAGE</li> <li>1000W GWR PACKAGE</li> <li>ENGINE BLOCK HEATER</li> <li>90 STATE EMISSIONS</li> <li>SPARE TIRE AND WHEEL JACK</li> <li>CLOTH 40/20/40 SEAT</li> <li>XL VALUE PACKAGE</li> <li>CRUISE CONTROL</li> <li>AM/FM STEREO CD/CLK</li> </ul> | <p><b>(MSRP)</b></p> <ul style="list-style-type: none"> <li>NO CHARGE</li> <li>390.00</li> <li>NO CHARGE</li> <li>NO CHARGE</li> <li>1000.00</li> <li>NO CHARGE</li> <li>NO CHARGE</li> <li>NO CHARGE</li> <li>315.00</li> <li>720.00</li> <li></li> <li></li> </ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**PRICE INFORMATION**

|                                                                                                                                                                                                                                       |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <p><b>(MSRP)</b></p> <ul style="list-style-type: none"> <li>BASE PRICE \$36,130.00</li> <li>TOTAL OPTIONS/OTHER 1,425.00</li> <li>TOTAL VEHICLE &amp; OPTIONS/OTHER DESTINATION &amp; DELIVERY 37,555.00</li> <li>1,195.00</li> </ul> | <p><b>TOTAL MSRP \$38,750.00</b></p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|

**SOLD TO:** Ferraro Ford-Lincoln  
2477 Corning Road  
Elmira NY 14903

**SHIP TO (IF OTHER THAN SOLD TO):**

**SHIP THROUGH:**

**RAMP ONE:** 13V 529

**RAMP TWO:** 13V 529

**METHOD OF TRANSFER:** RAIL

**ITEM #:** 13-0008 OT VN

**DEALER NO.:** 13V 529

**FINAL ASSEMBLY PLANT:** KENTUCKY

**GH231 N RB 2X 725 001636 08 23 16**

**SPECIAL ORDER**

This label is affixed pursuant to the Federal Automobile Information Disclosure Act. Gasoline, License, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless listed above.

**FORD PROTECT**

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**GOVERNMENT 5-STAR SAFETY RATINGS**

**Overall Vehicle Score** Not Rated

Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.

|                                                                                                                                                           |                                                 |                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------|
| <p><b>Frontal Crash</b></p> <p>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</p> | <p><b>Driver Passenger</b></p> <p>Not Rated</p> | <p><b>Not Rated</b></p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------|

**Side Crash**

Based on the risk of injury in a side impact.

|                                           |                                          |
|-------------------------------------------|------------------------------------------|
| <p><b>Front seat</b></p> <p>Not Rated</p> | <p><b>Rear seat</b></p> <p>Not Rated</p> |
|-------------------------------------------|------------------------------------------|

**Rollover**

Based on the risk of rollover in a single-vehicle crash.

Not Rated

Star 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

**39 YEARS**

**FORD F-SERIES**

**AMERICA'S BEST SELLING TRUCKS**

**BUILT FORD TOUGH**

**QR CODE**

Scan this code to experience this vehicle or test 1FHEB24675 to 48028 or Visit [ford.com/windowsticker](http://ford.com/windowsticker)

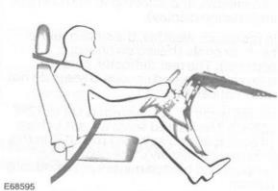
## No. 069 Monroney Label

**Seats**

**SITTING IN THE CORRECT POSITION**

**WARNINGS**

- ⚠️ Sitting improperly, out of position or with the seatback reclined too far can take weight off the seat cushion and affect the decision of the passenger sensing system, resulting in serious injury or death in the event of a crash. Always sit upright against your seat back, with your feet on the floor.
- ⚠️ Do not recline the seatback as this can cause the occupant to slide under the safety belt, resulting in serious injury in the event of a crash.
- ⚠️ Do not place objects higher than the seatback to reduce the risk of serious injury in the event of a crash or during heavy braking.



When you use them properly, the seat, head restraint, safety belt and airbags will provide optimum protection in the event of a crash.

We recommend that you follow these guidelines:

- Sit in an upright position with the base of your spine as far back as possible.
- Do not recline the seatback more than 30 degrees.
- Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible. Make sure that you remain comfortable.
- Keep sufficient distance between yourself and the steering wheel. We recommend a minimum of 10 in (25 cm) between your breastbone and the airbag cover.
- Hold the steering wheel with your arms slightly bent.
- Bend your legs slightly so that you can press the pedals fully.
- Position the shoulder strap of the safety belt over the center of your shoulder and position the lap strap tightly across your hips.

Make sure that your driving position is comfortable and that you can maintain full control of your vehicle.

**HEAD RESTRAINTS**

**WARNINGS**

- ⚠️ Fully adjust the head restraint before you sit in or operate your vehicle. This will help minimize the risk of neck injury in the event of a crash. Do not adjust the head restraint when your vehicle is moving.
- ⚠️ The head restraint is a safety device. Whenever possible it should be installed and properly adjusted when the seat is occupied. An improperly adjusted head restraint may not adequately protect an occupant during an impact from the rear.

**Seats**

**WARNINGS**

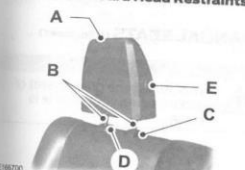
- ⚠️ Install the head restraint properly to help minimize the risk of neck injury in the event of a crash.

**Note:** Adjust the seatback to an upright driving position before adjusting the head restraint. Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible. Make sure that you remain comfortable. If you are extremely tall, adjust the head restraint to its highest position.

**Front Seat Head Restraint**



**Rear Seat Outboard Head Restraints**



The head restraints may consist of:

- A An energy absorbing head restraint.
- B Two steel stems.
- C Guide sleeve adjust and release button.
- D Guide sleeve unlock and remove button.
- E Fold button.

**Adjusting the Head Restraint**

**Raising the Head Restraint**

Pull the head restraint up.

**Lowering the Head Restraint**

1. Press and hold button C.
2. Push the head restraint down.

**Removing the Head Restraint**

1. Press and hold buttons C and D.
2. Pull the head restraint up.

**Installing the Head Restraint**

Align the steel stems into the guide sleeves and push the head restraint down until it locks.

**Folding the Head Restraint**

**Note:** The rear seat outboard head restraints may fold forward for improved visibility.

1. Press and hold button E.
2. Pull it back up to reset.

**Front Row Center and Rear Seat Center (Crew Cab) Head Restraints**

**Note:** The SuperCab has rear outboard head restraints that are not removable and are bolted to the back wall.

## No. 070 Head Restraint Use and Adjustment Information from Vehicle Owner Manual



PHOTO NOT APPLICABLE

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

**APPENDIX B**  
**VEHICLE AND DUMMY RESPONSE DATA PLOTS**

## TABLE OF DATA PLOTS

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

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



### **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 (X)  
Load Cell Pole Barrier #2 Force (X)  
Load Cell Pole Barrier #3 Force (X)  
Load Cell Pole Barrier #4 Force (X)  
Load Cell Pole Barrier #5 Force (X)  
Load Cell Pole Barrier #6 Force (X)  
Load Cell Pole Barrier #7 Force (X)  
Load Cell Pole Barrier #8 Force (X)

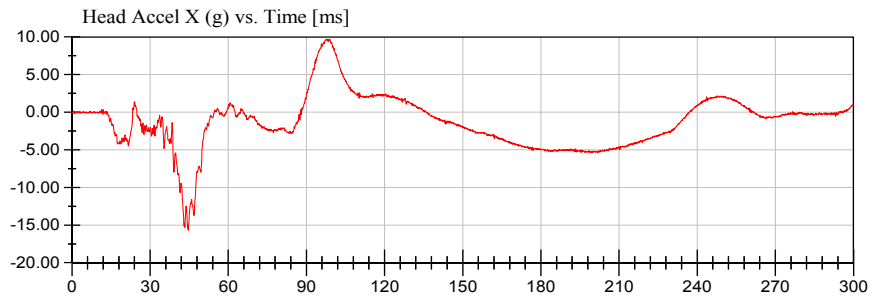
# NHTSA

Test Lab: CTF

Test Number: 161109 (M20170205)

Position #1 SID IIs Dummy (297)

Test Date: 11/09/2016

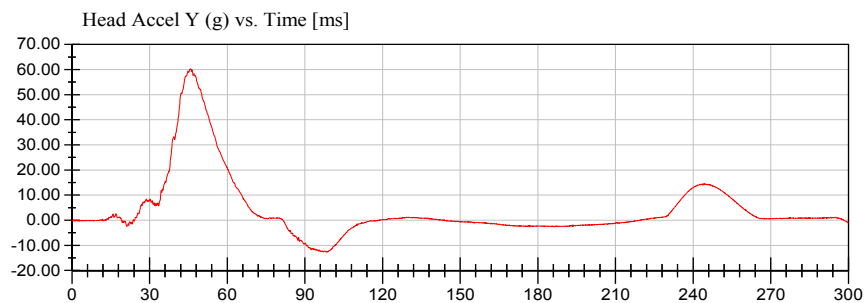


<Max>

9.70 g at 98.00 ms

<Min>

-15.70 g at 44.64 ms

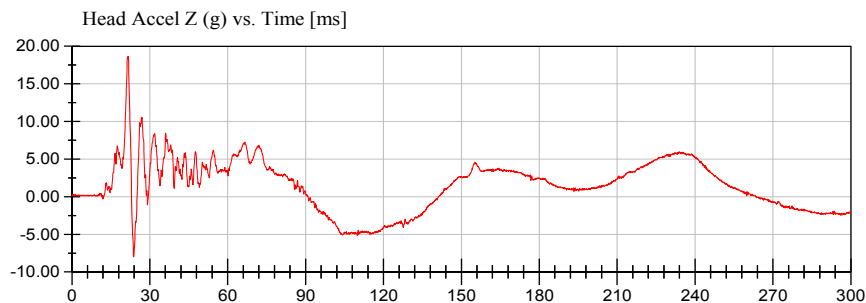


<Max>

60.30 g at 45.68 ms

<Min>

-12.78 g at 98.24 ms

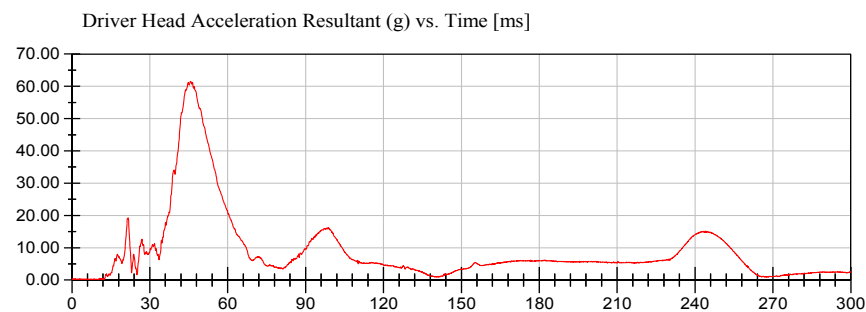


<Max>

18.68 g at 21.68 ms

<Min>

-7.97 g at 23.76 ms



<Max>

61.54 g at 45.68 ms

<Min>

0.10 g at 9.84 ms



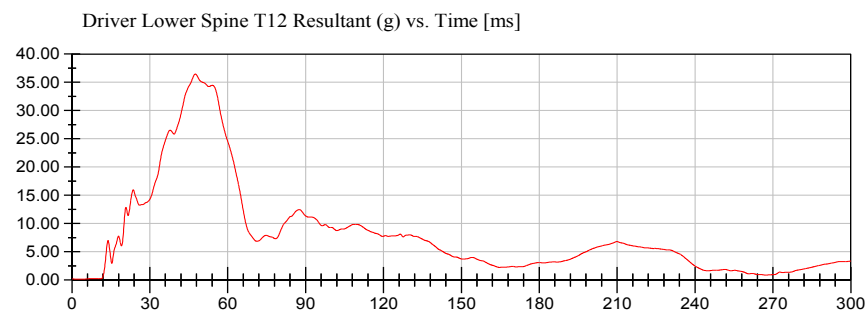
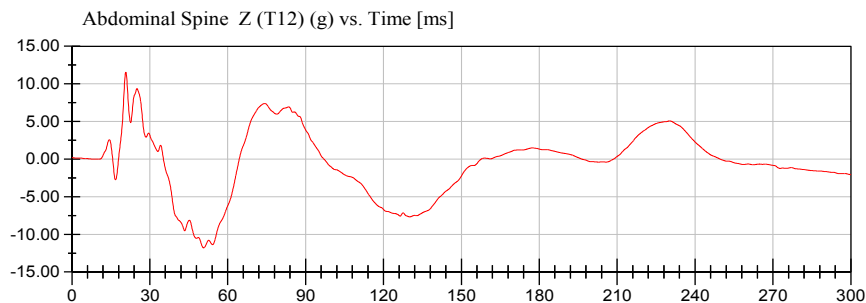
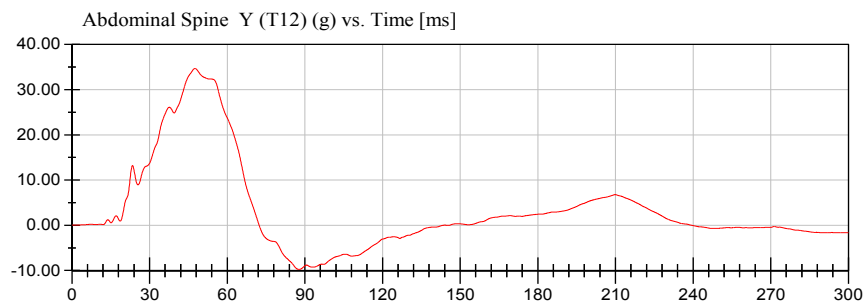
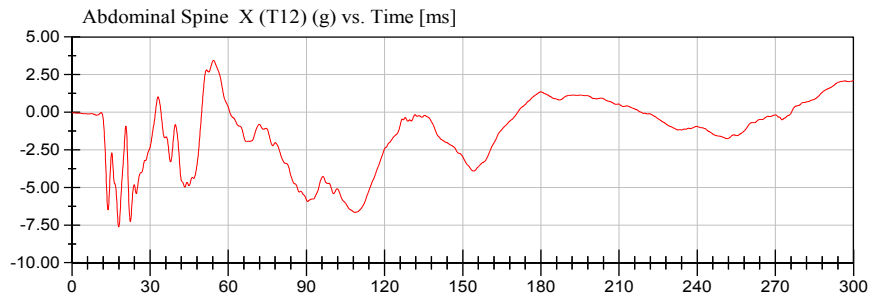
# NHTSA

Position #1 SID IIs Dummy (297)

Test Date: 11/09/2016

Test Lab: CTF

Test Number: 161109 (M20170205)





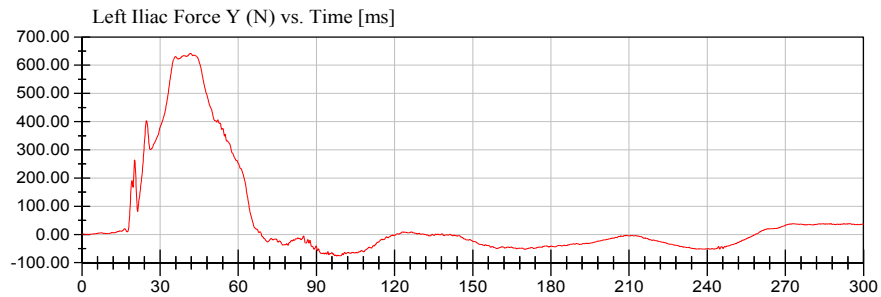
# NHTSA

Test Lab: CTF

Test Number: 161109 (M20170205)

Position #1 SID IIs Dummy (297)

Test Date: 11/09/2016



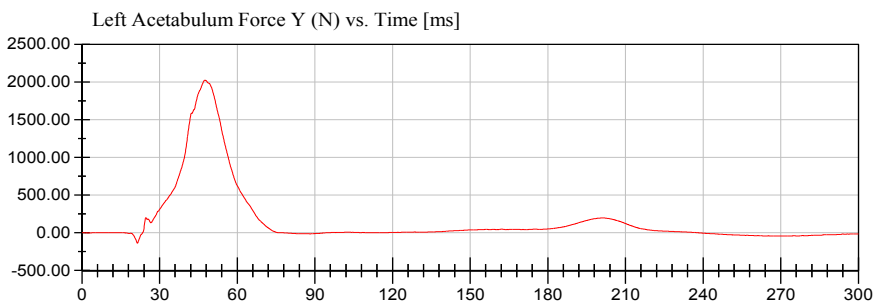
**<Max>**

641.85 N at 41.76 ms

**<Min>**

-76.04 N at 97.76 ms

CFC\_600



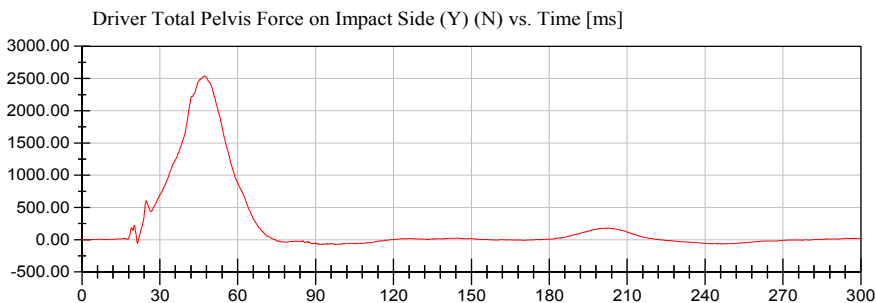
**<Max>**

2,026.37 N at 47.52 ms

**<Min>**

-137.80 N at 21.44 ms

CFC\_600



**<Max>**

2,539.56 N at 47.28 ms

**<Min>**

-74.16 N at 91.76 ms

CFC\_600



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

**TABLE OF CALIBRATION MEASUREMENTS AND PLOTS**  
**SID-IIs (Driver) Dummy**  
**Description**

**Table 1.** External Measurements

**Table 2.** Head Drop Test

Resultant Head Acceleration (G's) vs. Time (ms)  
Head (X) Acceleration (G's) vs. Time (ms)  
Head (Y) Acceleration (G's) vs. Time (ms)  
Head (Z) Acceleration (G's) vs. Time (ms)

**Table 3.** Lateral Neck Pendulum Test

Pendulum Velocity (m/s) vs. Time (ms)  
Flexion Angle (°) vs. Time (ms)  
Moment About Occipital Condyle (Nm) vs. Time (ms)

**Table 4.** Shoulder Impact Test

Impactor Acceleration (G's) vs. Time (ms)  
Shoulder Displacement (mm) vs. Time (ms)  
Upper Spine Acceleration (G's) vs. Time (ms)

**Table 5.** Thorax (With Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)  
Shoulder Displacement (mm) vs. Time (ms)  
Upper Rib Displacement (mm) vs. Time (ms)  
Middle Rib Displacement (mm) vs. Time (ms)  
Lower Rib Displacement (mm) vs. Time (ms)  
Upper Spine Acceleration (G's) vs. Time (ms)  
Lower Spine Acceleration (G's) vs. Time (ms)

**Table 6.** Thorax (Without Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)  
Upper Rib Displacement (mm) vs. Time (ms)  
Middle Rib Displacement (mm) vs. Time (ms)  
Lower Rib Displacement (mm) vs. Time (ms)  
Upper Spine Acceleration (G's) vs. Time (ms)  
Lower Spine Acceleration (G's) vs. Time (ms)

**Table 7.** Abdomen Impact Test

Impactor Acceleration (G's) vs. Time (ms)  
Upper Abdominal Rib Displacement (mm) vs. Time (ms)  
Lower Abdominal Rib Displacement (mm) vs. Time (ms)  
Lower Spine Acceleration (G's) vs. Time (ms)

**Table 8.** Pelvis Plug Quasi-Static Test (Optional\*)

**Table 9.** Pelvis Acetabulum Impact Test

Impactor Acceleration (G's) vs. Time (ms)  
Pelvis (Y) Acceleration (G's) vs. Time (ms)  
Acetabulum Force (N) vs. Time (ms)

**Table 10.** Pelvis Iliac Impact Test

Impactor Acceleration (G's) vs. Time (ms)  
Pelvis (Y) Acceleration (G's) vs. Time (ms)  
Iliac Force (N) vs. Time (ms)



**Pre-Test Calibration Sheets**  
**Driver S/N 297**

**Transportation Research Center Inc.**  
**SIDIIs Dummy - Level D**  
**External Dimensions**  
**Serial No. 297 Calibration No.11**

| Symbol | Description                             | Specification | Results | Pass |
|--------|-----------------------------------------|---------------|---------|------|
|        |                                         | mm            | mm      |      |
| A      | Sitting Height                          | 772.0 - 788.0 | 781     | Yes  |
| B      | Shoulder Pivot Height                   | 437.0 - 453.0 | 448     | Yes  |
| C      | H-Point Height                          | 79.0 - 89.0   | 85      | Yes  |
| D      | H-Point from Seat Back                  | 141.0 - 151.0 | 146     | Yes  |
| E      | Shoulder Pivot from Backline            | 97.0 - 107.0  | 102     | Yes  |
| F      | Thigh Clearance                         | 119.0 - 135.0 | 128     | Yes  |
| G      | Head Breadth                            | 140.0 - 148.0 | 145     | Yes  |
| H      | Head Back from Backline                 | 40.0 - 46.0   | 44      | Yes  |
| I      | Head Depth                              | 178.0 - 188.0 | 182     | Yes  |
| J      | Head Circumference                      | 541.0 - 551.0 | 545     | Yes  |
| K      | Buttock to Knee Length                  | 514.0 - 540.0 | 528     | Yes  |
| L      | Popliteal Height                        | 343.0 - 369.0 | 355     | Yes  |
| M      | Knee Pivot to Floor Height              | 393.0 - 409.0 | 400     | Yes  |
| N      | Buttock Popliteal Length                | 416.0 - 442.0 | 430     | Yes  |
| O      | Chest Depth without Jacket              | 195.0 - 211.0 | 203     | Yes  |
| P      | Foot Length (right)                     | 216.0 - 232.0 | 221     | Yes  |
| P      | Foot Length (left)                      | 216.0 - 232.0 | 221     | Yes  |
| Q      | Hip Breadth                             | 313.0 - 323.0 | 319     | Yes  |
| R      | Arm Length                              | 249.0 - 259.0 | 254     | Yes  |
| S      | Knee Joint to seat Back                 | 478.0 - 493.0 | 487     | Yes  |
| V      | Shoulder Width (only one arm installed) | 341.0 - 357.0 | 347     | Yes  |
| W      | Foot Width (right)                      | 78.0 - 94.0   | 84      | Yes  |
| W      | Foot Width (left)                       | 78.0 - 94.0   | 84      | Yes  |
| Y      | Chest Circumference with Jacket         | 851.0 - 881.0 | 869     | Yes  |
| Z      | Waist Circumference                     | 761.0 - 791.0 | 778     | Yes  |

## Transportation Research Center Inc.

Left Lateral Head Drop  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016

| Test Parameter                                                       | Specification  | Test Results | Pass |
|----------------------------------------------------------------------|----------------|--------------|------|
| Temperature                                                          | 18.9 - 25.6 °C | 21.4 °C      | Yes  |
| Relative Humidity                                                    | 10 - 70 %      | 52 %         | Yes  |
| Peak Head Resultant Acceleration                                     | 115 - 137 g    | 124.8 g      | Yes  |
| Peak Head Longitudinal Acceleration                                  | (-15) - 15 g   | 4.1 g        | Yes  |
| Is Head Resultant Acceleration Curve<br>Unimodal within 15% of Peak? | Yes            | Yes          | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 11:32:37 232



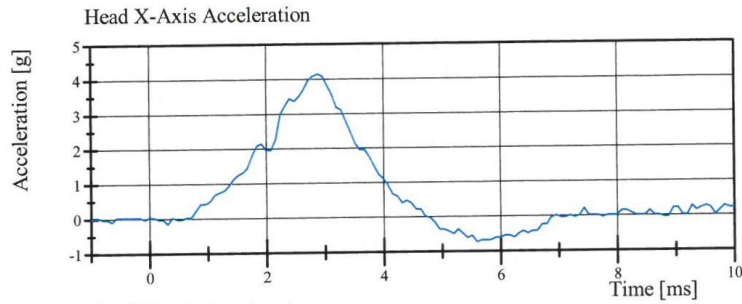


## Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. 297 Certification No. 11-1

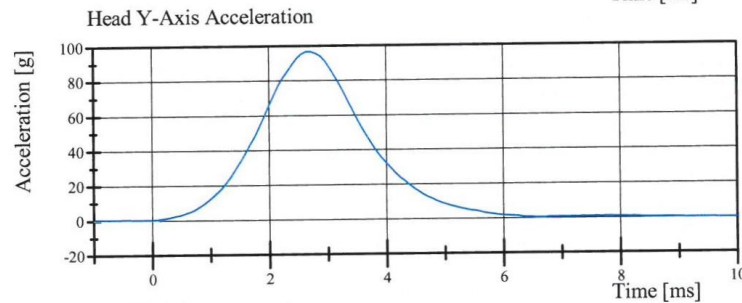
Test Date: 10/6/2016



Filter Class: CFC\_1000

Max: 4.1 g at 2.9 ms

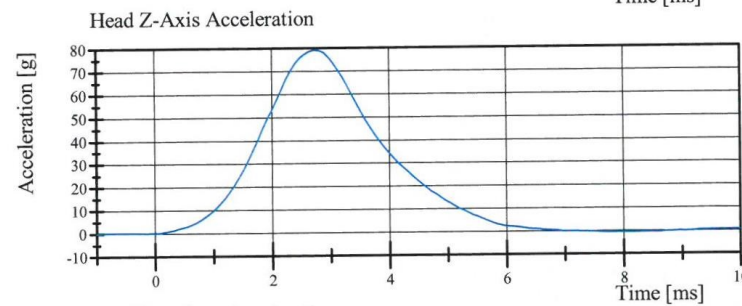
Min: -0.8 g at 5.6 ms



Filter Class: CFC\_1000

Max: 96.7 g at 2.6 ms

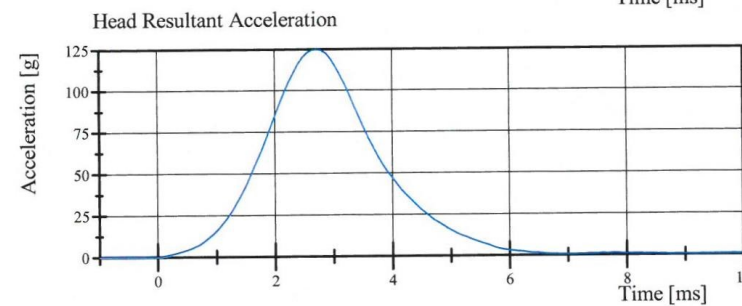
Min: -0.2 g at 9.8 ms



Filter Class: CFC\_1000

Max: 78.9 g at 2.7 ms

Min: -0.6 g at 8.0 ms



Filter Class: CFC\_1000

Max: 124.8 g at 2.7 ms

Min: 0.0 g at 9.2 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 11:32:47 232



## Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 11-3

Test Date: 10/6/2016

| Test Parameter                                               | Specification         | Test Results | Pass |
|--------------------------------------------------------------|-----------------------|--------------|------|
| Temperature                                                  | 20.6 - 22.2 °C        | 21.4 °C      | Yes  |
| Relative Humidity                                            | 10 - 70 %             | 52 %         | Yes  |
| Pendulum Velocity                                            | (-5.51) - (-5.63) m/s | -5.597 m/s   | Yes  |
| Pendulum Integrated Velocity                                 |                       |              |      |
| Change at 10 ms                                              | 2.20 - 2.80 m/s       | 2.573 m/s    | Yes  |
| Change at 15 ms                                              | 3.30 - 4.10 m/s       | 3.894 m/s    | Yes  |
| Change at 20 ms                                              | 4.40 - 5.40 m/s       | 5.199 m/s    | Yes  |
| Change at 25 ms                                              | 5.40 - 6.10 m/s       | 5.720 m/s    | Yes  |
| Change at 25 to 100 ms                                       | 5.50 - 6.20 m/s       | 5.748 m/s    | Yes  |
| Maximum Headform Flexion<br>occurring between 50ms and 70ms. |                       |              |      |
| Peak                                                         | (-71) - (-81) deg     | -73.7 deg    | Yes  |
| Time of Peak                                                 | 50 - 70 ms            | 58.0 ms      | Yes  |
| Total Neck Occipital Condyles Moment                         | 36 - 44 N·m           | 40.1 N·m     | Yes  |
| Total Neck Occipital Condyles Moment                         |                       |              |      |
| Decay Time to 0 N·m                                          | 102 - 126 ms          | 111.4 ms     | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 14:21:12 659



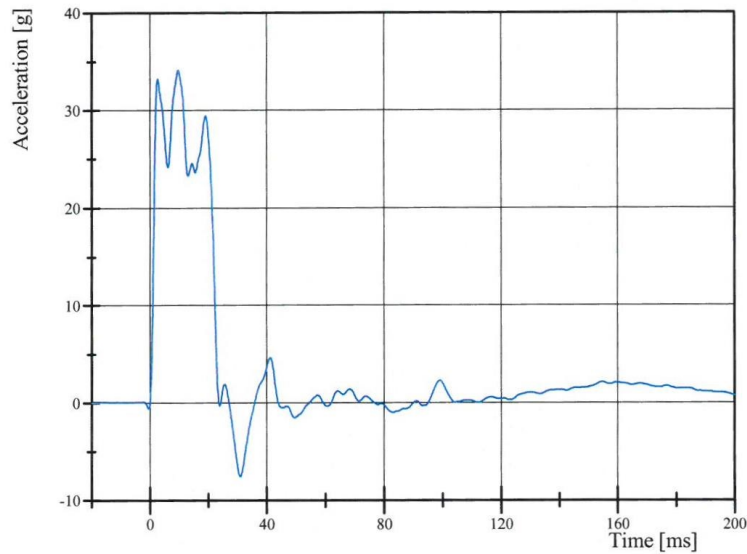
## Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 11-3

Test Date: 10/6/2016

Pendulum Acceleration

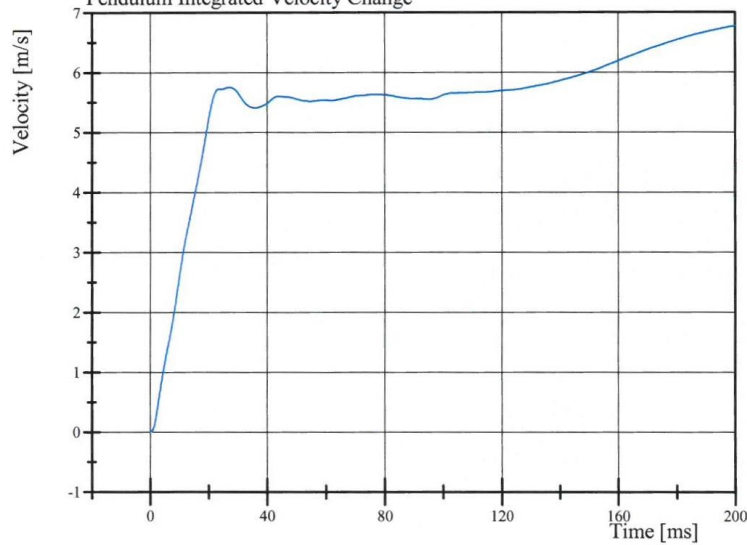


Filter Class: CFC\_180

Max: 34.0 g at 9.7 ms

Min: -7.6 g at 31.0 ms

Pendulum Integrated Velocity Change



Filter Class: CFC\_180

Max: 6.8 m/s at 200.0 ms

Min: -0.0 m/s at 0.1 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 14:21:26 659



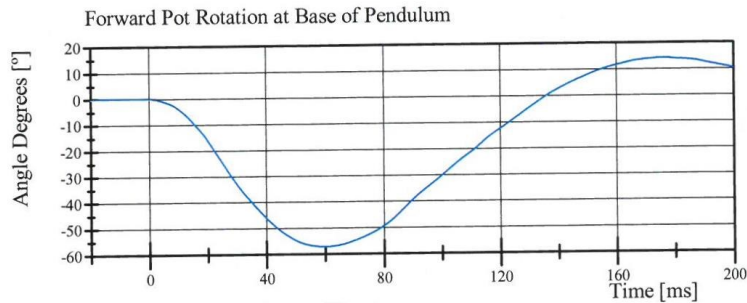


## Transportation Research Center Inc.

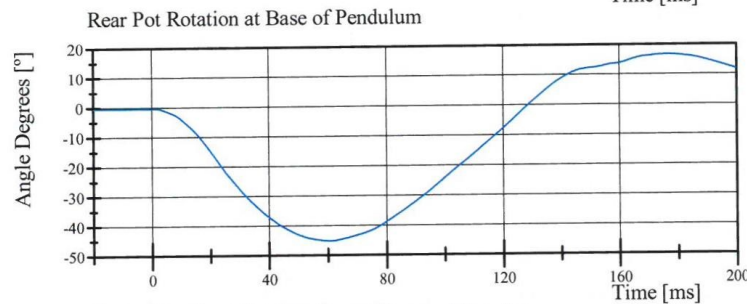
Left Lateral Neck

SID IIs Serial No. 297 Certification No. 11-3

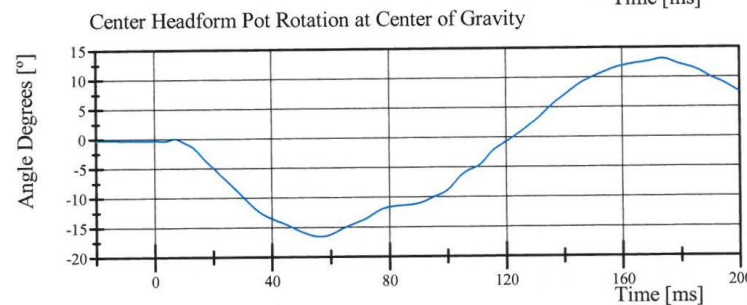
Test Date: 10/6/2016



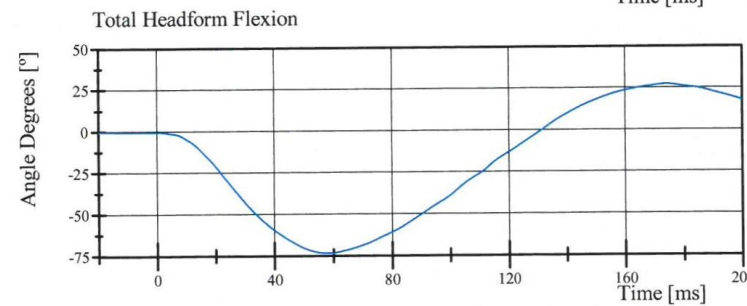
Filter Class: CFC\_60  
Max: 14.2 ° at 176.1 ms  
Min: -57.2 ° at 59.8 ms



Filter Class: CFC\_60  
Max: 16.7 ° at 176.3 ms  
Min: -45.2 ° at 60.8 ms



Filter Class: CFC\_60  
Max: 13.1 ° at 173.6 ms  
Min: -16.6 ° at 56.6 ms



Filter Class: CFC\_60  
Max: 27.2 ° at 174.3 ms  
Min: -73.7 ° at 58.0 ms

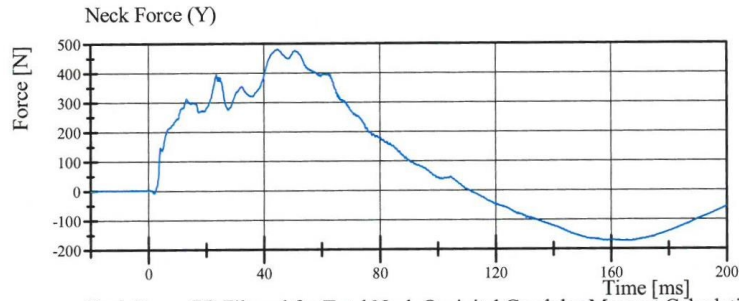
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 14:21:28 659

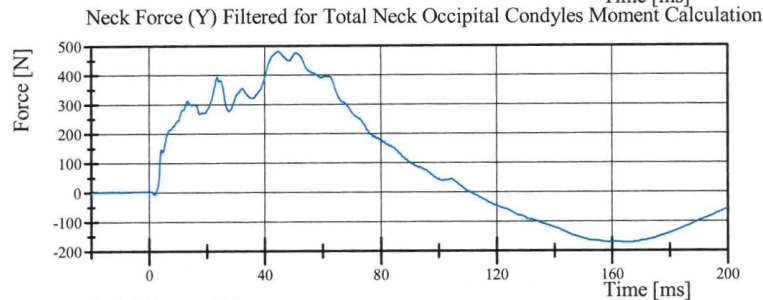


## Transportation Research Center Inc.

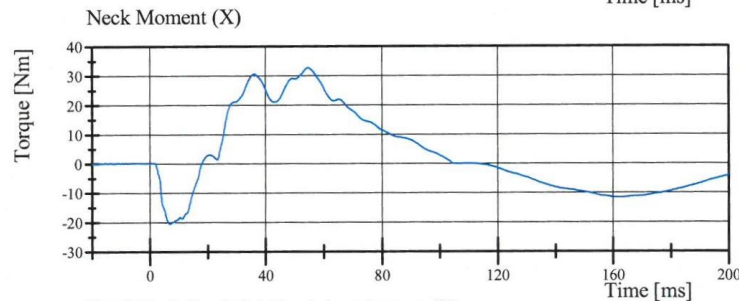
Left Lateral Neck  
SID IIs Serial No. 297 Certification No. 11-3  
Test Date: 10/6/2016



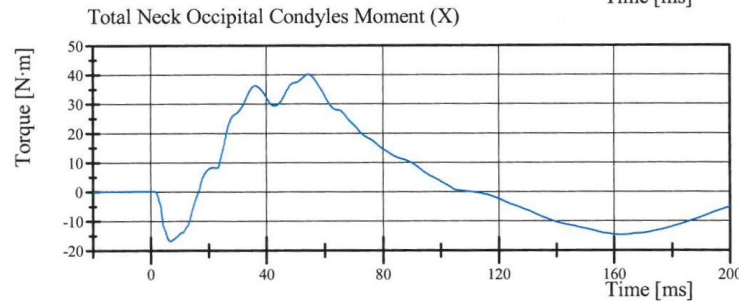
Filter Class: CFC\_1000  
Max: 480.2 N at 44.9 ms  
Min: -172.7 N at 167.0 ms



Filter Class: CFC\_600  
Max: 479.6 N at 44.9 ms  
Min: -172.2 N at 167.0 ms



Filter Class: CFC\_600  
Max: 32.6 Nm at 54.7 ms  
Min: -20.7 Nm at 6.9 ms



Filter Class: Without\_(Consta  
Max: 40.1 N·m at 54.5 ms  
Min: -17.0 N·m at 6.8 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 14:21:29 659



## Transportation Research Center Inc.

Left Lateral Shoulder  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.6 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 52 %         | Yes  |
| Impactor Velocity                | 4.2 - 4.4 m/s   | 4.36 m/s     | Yes  |
| Impactor Acceleration            | (-13) - (-18) g | -15.8 g      | Yes  |
| Shoulder Displacement            | 28 - 37 mm      | 31.3 mm      | Yes  |
| Upper Spine Lateral Acceleration | 17 - 22 g       | 19.7 g       | Yes  |

**Test meets specifications.**

**Comments:**

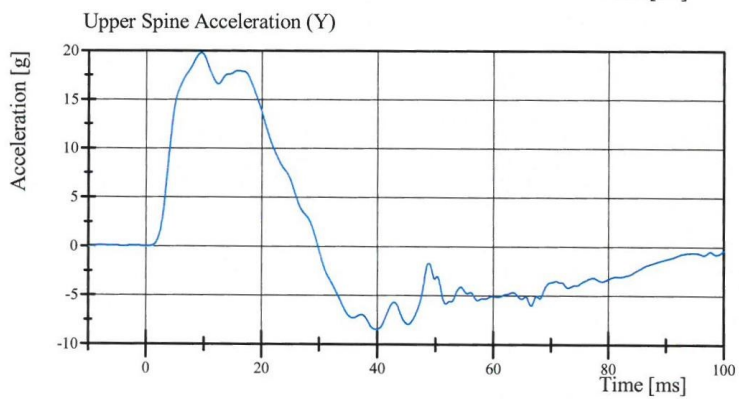
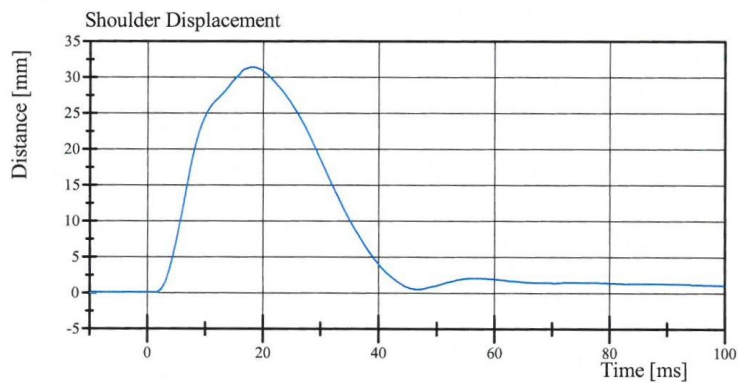
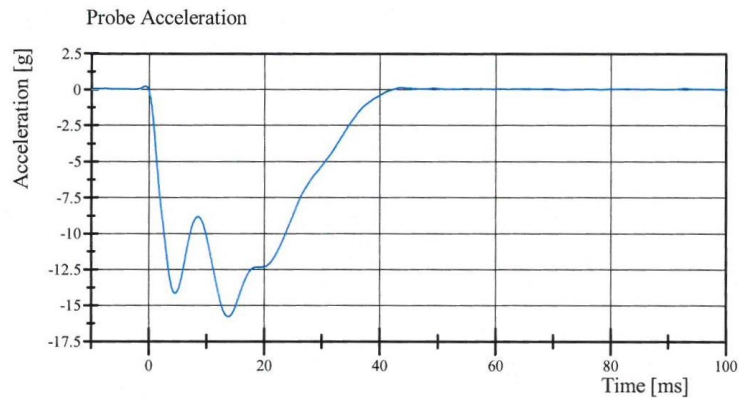
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 08:03:59 806



## Transportation Research Center Inc.

Left Lateral Shoulder  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 08:04:10 806





## Transportation Research Center Inc.

Left Lateral Thorax with Arm  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 20.9 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 53 %         | Yes  |
| Impactor Velocity                | 6.60 - 6.80 m/s | 6.735 m/s    | Yes  |
| Impactor Acceleration            | (-30) - (-36) g | -33.8 g      | Yes  |
| Shoulder Displacement            | 31 - 40 mm      | 34.6 mm      | Yes  |
| Upper Thorax Rib Displacement    | 25 - 32 mm      | 27.0 mm      | Yes  |
| Center Thorax Rib Displacement   | 30 - 36 mm      | 31.5 mm      | Yes  |
| Lower Thorax Rib Displacement    | 32 - 38 mm      | 34.4 mm      | Yes  |
| Upper Spine Lateral Acceleration | 34 - 43 g       | 36.7 g       | Yes  |
| Lower Spine Lateral Acceleration | 29 - 37 g       | 35.5 g       | Yes  |

**Test meets specifications.**

**Comments:**

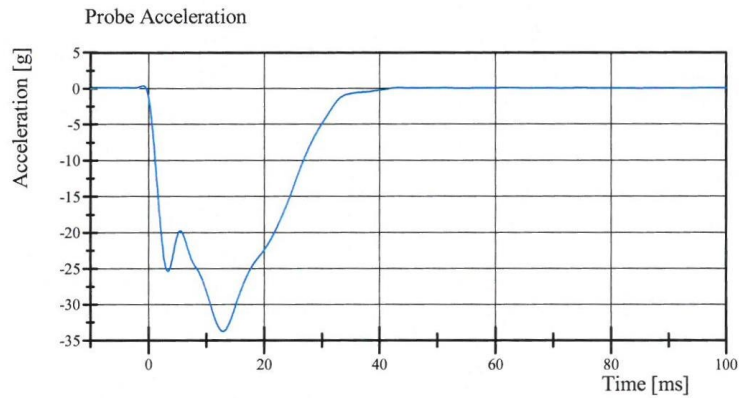
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 09:25:58 630

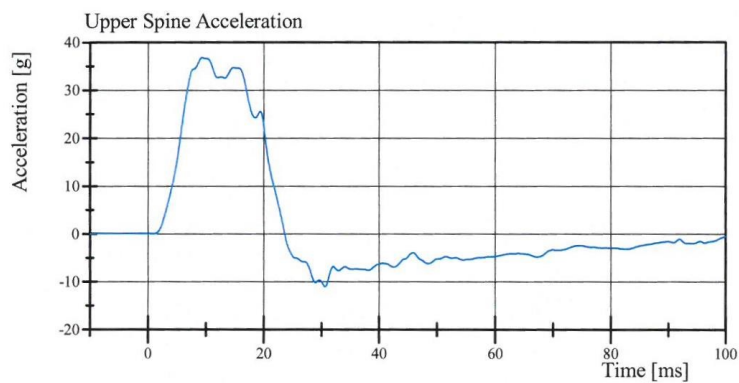


## Transportation Research Center Inc.

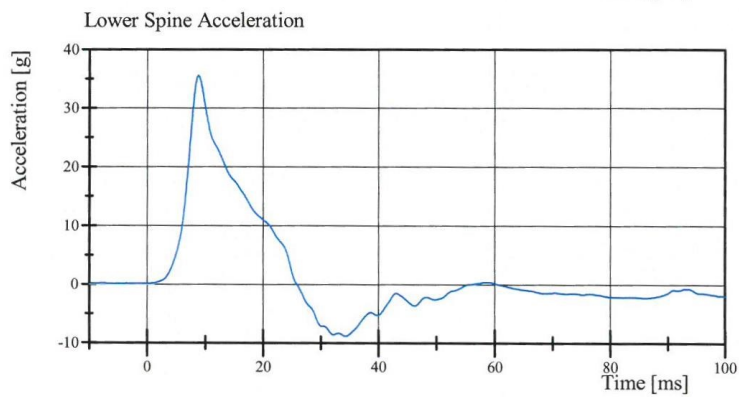
Left Lateral Thorax with Arm  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



Filter Class: CFC\_180  
Max: 0.2 g at -0.9 ms  
Min: -33.8 g at 12.9 ms



Filter Class: CFC\_180  
Max: 36.7 g at 9.4 ms  
Min: -11.1 g at 30.6 ms



Filter Class: CFC\_180  
Max: 35.5 g at 8.9 ms  
Min: -8.9 g at 34.3 ms

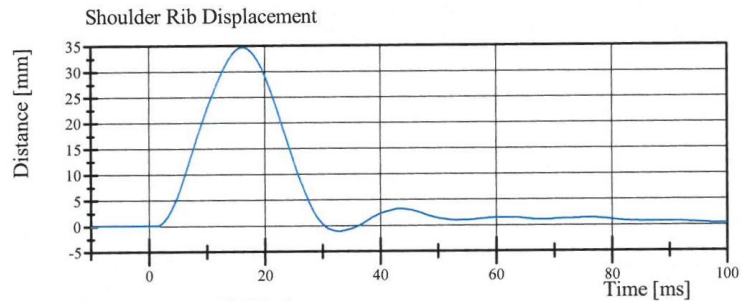
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 09:26:11 630

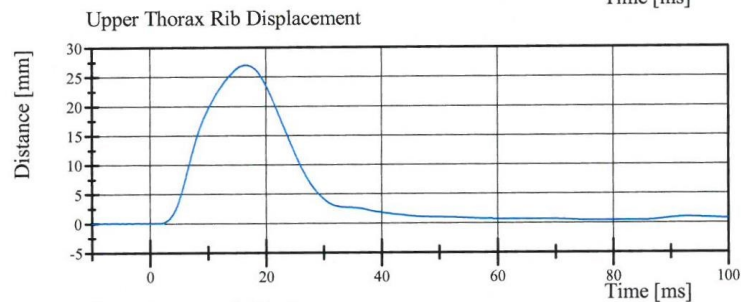


## Transportation Research Center Inc.

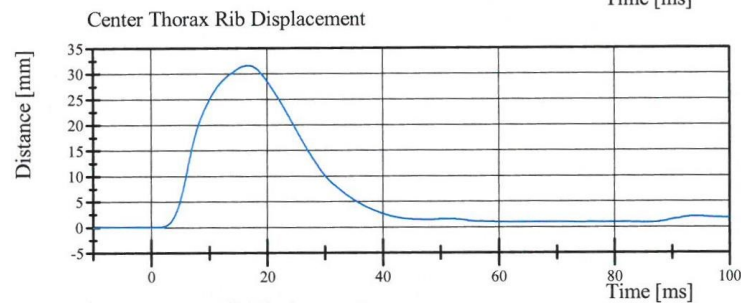
Left Lateral Thorax with Arm  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



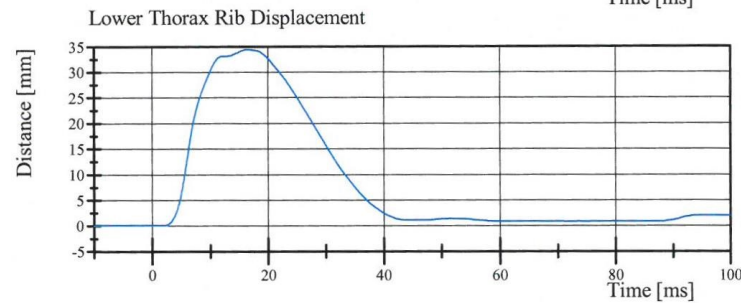
Filter Class: CFC\_600  
Max: 34.6 mm at 16.2 ms  
Min: -1.1 mm at 33.0 ms



Filter Class: CFC\_600  
Max: 27.0 mm at 16.6 ms  
Min: -0.0 mm at -7.1 ms



Filter Class: CFC\_600  
Max: 31.5 mm at 16.7 ms  
Min: -0.0 mm at -0.6 ms



Filter Class: CFC\_600  
Max: 34.4 mm at 16.4 ms  
Min: -0.0 mm at 2.1 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 09:26:12 630



## Transportation Research Center Inc.

Left Lateral Thorax without Arm  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.2 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 52 %         | Yes  |
| Impactor Velocity                | 4.20 - 4.40 m/s | 4.357 m/s    | Yes  |
| Impactor Acceleration            | (-14) - (-18) g | -16.3 g      | Yes  |
| Upper Thorax Rib Displacement    | 32 - 40 mm      | 34.8 mm      | Yes  |
| Center Thorax Rib Displacement   | 39 - 45 mm      | 41.0 mm      | Yes  |
| Lower Thorax Rib Displacement    | 35 - 43 mm      | 39.8 mm      | Yes  |
| Upper Spine Lateral Acceleration | 13 - 17 g       | 15.1 g       | Yes  |
| Lower Spine Lateral Acceleration | 7 - 11 g        | 10.3 g       | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

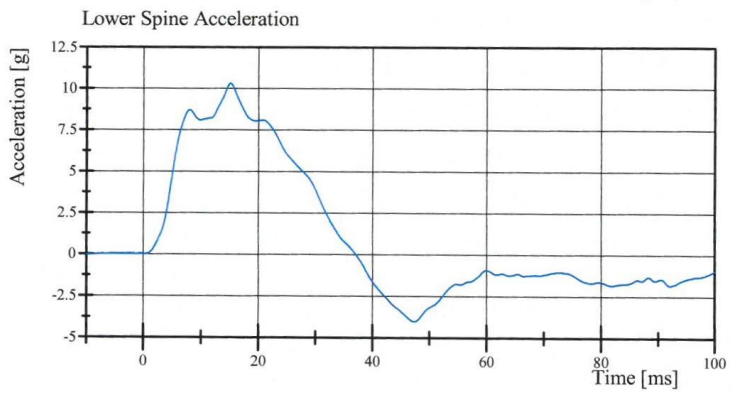
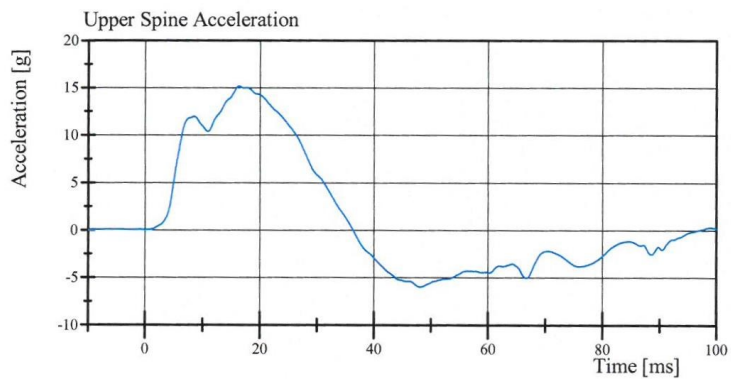
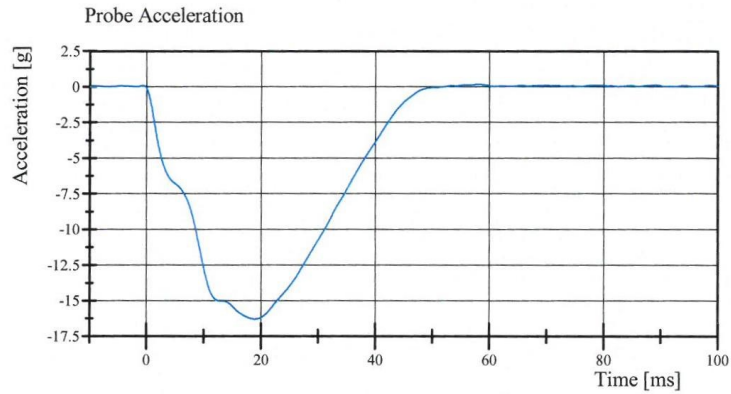
10.06.2016 08:49:12 854





## Transportation Research Center Inc.

Left Lateral Thorax without Arm  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



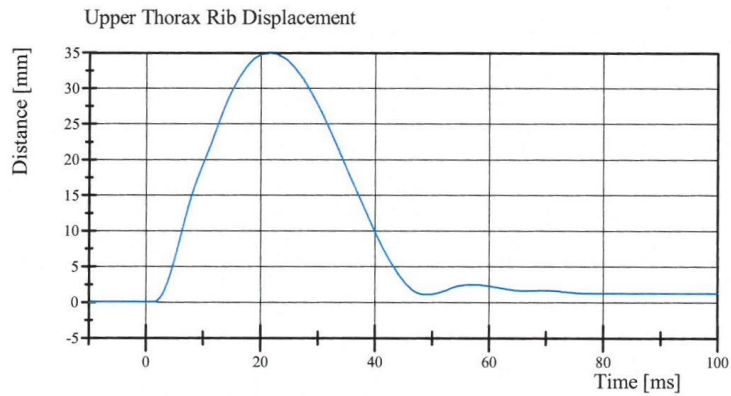
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 08:49:37 854

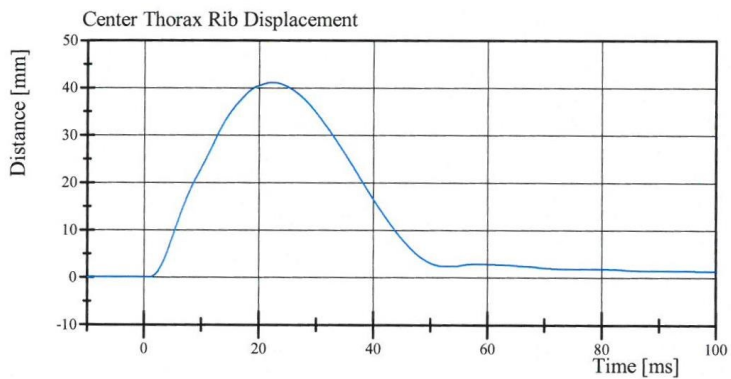


## Transportation Research Center Inc.

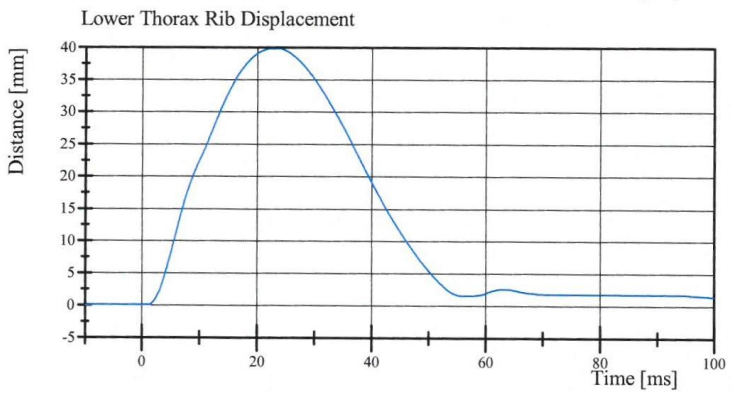
Left Lateral Thorax without Arm  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



Filter Class: CFC\_600  
Max: 34.8 mm at 21.7 ms  
Min: -0.0 mm at -6.9 ms



Filter Class: CFC\_600  
Max: 41.0 mm at 22.3 ms  
Min: -0.0 mm at 1.0 ms



Filter Class: CFC\_600  
Max: 39.8 mm at 22.9 ms  
Min: -0.0 mm at 1.2 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 08:49:38 854



## Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. 297 Certification No. 11-1

Test Date: 10/6/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.0 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 51 %         | Yes  |
| Impactor Velocity                | 4.2 - 4.4 m/s   | 4.35 m/s     | Yes  |
| Impactor Acceleration            | (-12) - (-16) g | -14.1 g      | Yes  |
| Upper Abdominal Rib Displacement | 36 - 47 mm      | 41.9 mm      | Yes  |
| Lower Abdominal Rib Displacement | 33 - 44 mm      | 39.5 mm      | Yes  |
| Lower Spine Lateral Acceleration | 9 - 14.0 g      | 10.57 g      | Yes  |

**Test meets specifications.**

**Comments:**

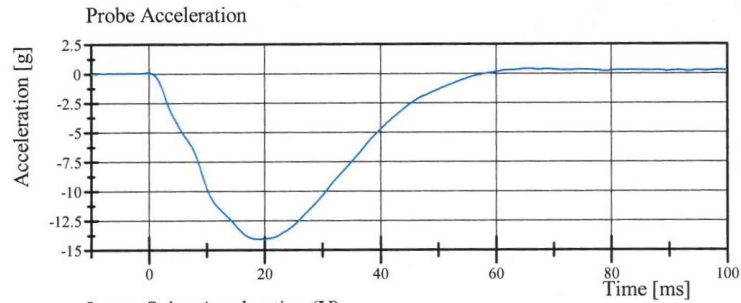
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 08:29:29 745

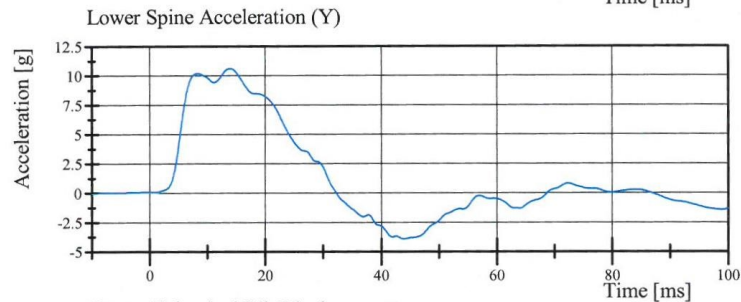


## Transportation Research Center Inc.

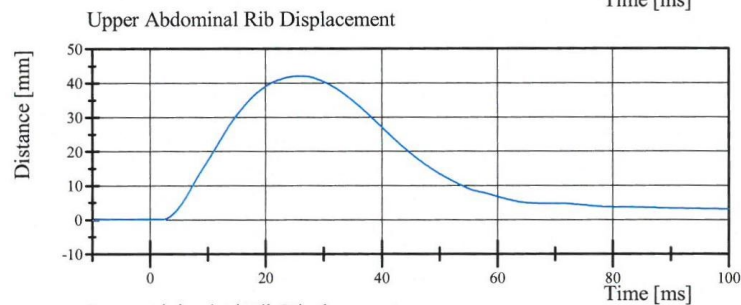
Left Lateral Abdomen  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



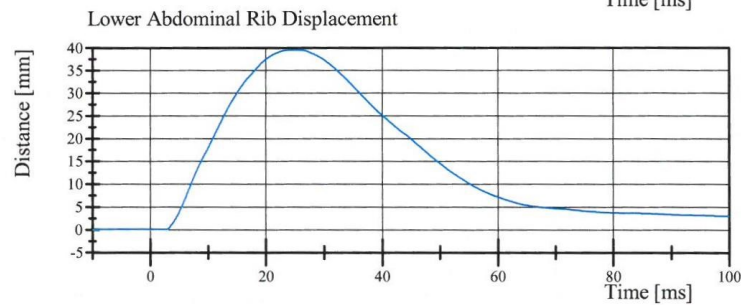
Filter Class: CFC\_180  
Max: 0.4 g at 65.5 ms  
Min: -14.1 g at 19.0 ms



Filter Class: CFC\_180  
Max: 10.6 g at 14.0 ms  
Min: -3.9 g at 43.9 ms



Filter Class: CFC\_600  
Max: 41.9 mm at 25.8 ms  
Min: -0.0 mm at -5.3 ms



Filter Class: CFC\_600  
Max: 39.5 mm at 24.3 ms  
Min: -0.0 mm at 2.8 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 08:29:40 745





## Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. 297 Certification No. 11-4

Test Date: 10/6/2016

| Test Parameter                                | Specification       | Test Results | Pass |
|-----------------------------------------------|---------------------|--------------|------|
| Temperature                                   | 20.6 - 22.2 °C      | 21.6 °C      | Yes  |
| Relative Humidity                             | 10 - 70 %           | 52 %         | Yes  |
| Pendulum Velocity                             | 6.6 - 6.8 m/s       | 6.64 m/s     | Yes  |
| Impactor Acceleration                         | (-38.0) - (-47.0) g | -45.83 g     | Yes  |
| Peak Pelvis Lateral Acceleration<br>after 6ms | 34 - 42 g           | 40.9 g       | Yes  |
| Acetabulum Force                              | 3,600 - 4,300 N     | 4,229.2 N    | Yes  |

**Test meets specifications.**

**Comments:**

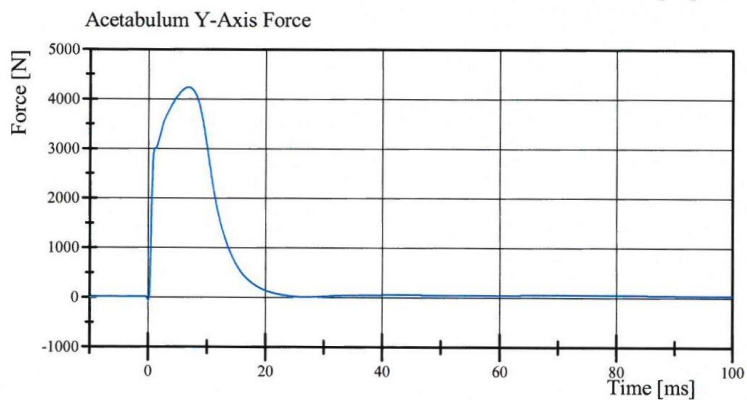
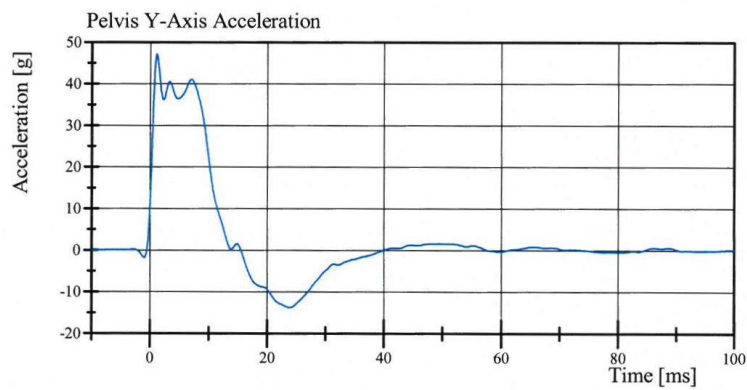
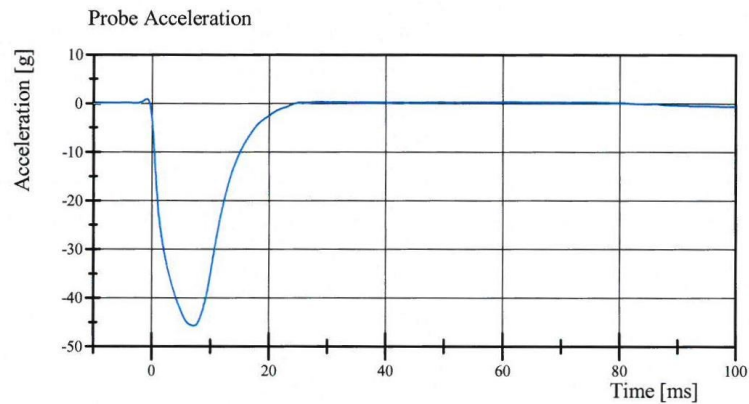
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 17:55:06 470



## Transportation Research Center Inc.

Left Lateral Pelvis  
SID IIs Serial No. 297 Certification No. 11-4  
Test Date: 10/6/2016



Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 17:56:17 470



## Transportation Research Center Inc.

Left Lateral Iliac  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.1 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 54 %         | Yes  |
| Pendulum Velocity                | 4.2 - 4.4 m/s   | 4.33 m/s     | Yes  |
| Impactor Acceleration            | (-36) - (-45) g | -43.0 g      | Yes  |
| Peak Pelvis Lateral Acceleration | 28 - 39 g       | 32.1 g       | Yes  |
| Iliac Force                      | 4,100 - 5,100 N | 4,787.9 N    | Yes  |

**Test meets specifications.**

**Comments:**

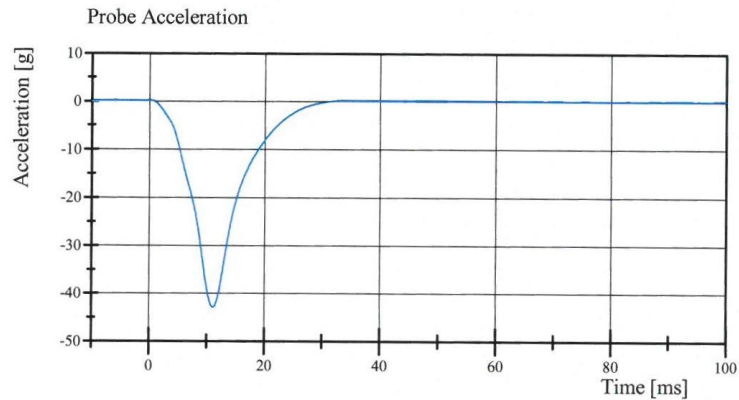
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 07:49:16 608

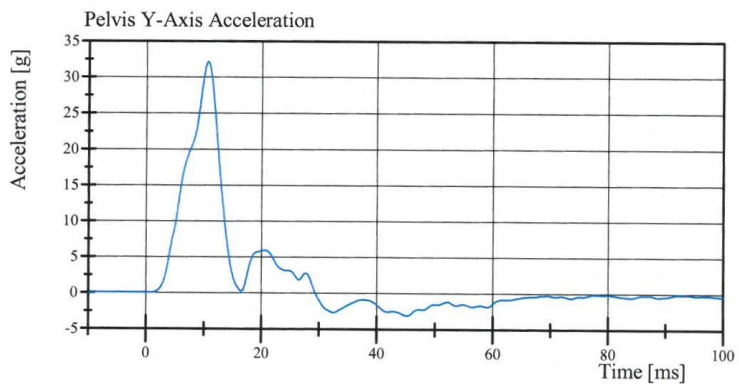


## Transportation Research Center Inc.

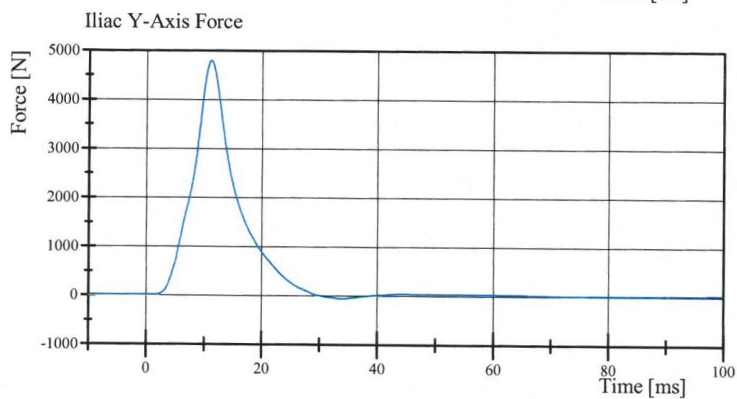
Left Lateral Iliac  
SID IIs Serial No. 297 Certification No. 11-1  
Test Date: 10/6/2016



Filter Class: CFC\_180  
Max: 0.1 g at 47.0 ms  
Min: -43.0 g at 11.1 ms



Filter Class: CFC\_180  
Max: 32.1 g at 10.6 ms  
Min: -3.1 g at 45.2 ms



Filter Class: CFC\_600  
Max: 4,787.9 N at 11.1 ms  
Min: -61.6 N at 33.9 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

10.06.2016 07:49:26 608





**Post-Test Calibration Sheets**  
**Driver S/N 297**

**Transportation Research Center Inc.**  
**SIDIIs Dummy - Level D**  
**External Dimensions**  
**Serial No. 297 Calibration No.12**

| Symbol | Description                             | Specification | Results | Pass |
|--------|-----------------------------------------|---------------|---------|------|
|        |                                         | mm            | mm      |      |
| A      | Sitting Height                          | 772.0 - 788.0 | 781     | Yes  |
| B      | Shoulder Pivot Height                   | 437.0 - 453.0 | 448     | Yes  |
| C      | H-Point Height                          | 79.0 - 89.0   | 85      | Yes  |
| D      | H-Point from Seat Back                  | 141.0 - 151.0 | 146     | Yes  |
| E      | Shoulder Pivot from Backline            | 97.0 - 107.0  | 102     | Yes  |
| F      | Thigh Clearance                         | 119.0 - 135.0 | 128     | Yes  |
| G      | Head Breadth                            | 140.0 - 148.0 | 145     | Yes  |
| H      | Head Back from Backline                 | 40.0 - 46.0   | 44      | Yes  |
| I      | Head Depth                              | 178.0 - 188.0 | 182     | Yes  |
| J      | Head Circumference                      | 541.0 - 551.0 | 545     | Yes  |
| K      | Buttock to Knee Length                  | 514.0 - 540.0 | 528     | Yes  |
| L      | Popliteal Height                        | 343.0 - 369.0 | 355     | Yes  |
| M      | Knee Pivot to Floor Height              | 393.0 - 409.0 | 400     | Yes  |
| N      | Buttock Popliteal Length                | 416.0 - 442.0 | 430     | Yes  |
| O      | Chest Depth without Jacket              | 195.0 - 211.0 | 203     | Yes  |
| P      | Foot Length (right)                     | 216.0 - 232.0 | 221     | Yes  |
| P      | Foot Length (left)                      | 216.0 - 232.0 | 221     | Yes  |
| Q      | Hip Breadth                             | 313.0 - 323.0 | 319     | Yes  |
| R      | Arm Length                              | 249.0 - 259.0 | 254     | Yes  |
| S      | Knee Joint to seat Back                 | 478.0 - 493.0 | 487     | Yes  |
| V      | Shoulder Width (only one arm installed) | 341.0 - 357.0 | 347     | Yes  |
| W      | Foot Width (right)                      | 78.0 - 94.0   | 84      | Yes  |
| W      | Foot Width (left)                       | 78.0 - 94.0   | 84      | Yes  |
| Y      | Chest Circumference with Jacket         | 851.0 - 881.0 | 869     | Yes  |
| Z      | Waist Circumference                     | 761.0 - 791.0 | 778     | Yes  |

## Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016

| Test Parameter                                                       | Specification  | Test Results | Pass |
|----------------------------------------------------------------------|----------------|--------------|------|
| Temperature                                                          | 18.9 - 25.6 °C | 21.2 °C      | Yes  |
| Relative Humidity                                                    | 10 - 70 %      | 40 %         | Yes  |
| Peak Head Resultant Acceleration                                     | 115 - 137 g    | 131.8 g      | Yes  |
| Peak Head Longitudinal Acceleration                                  | (-15) - 15 g   | 3.8 g        | Yes  |
| Is Head Resultant Acceleration Curve<br>Unimodal within 15% of Peak? | Yes            | Yes          | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 17:26:26 232

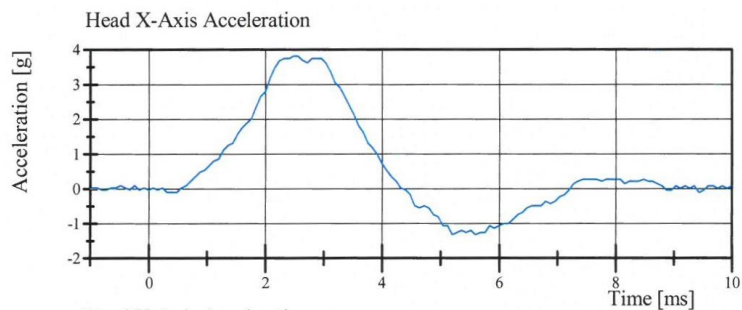


## Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. 297 Certification No. 12-1

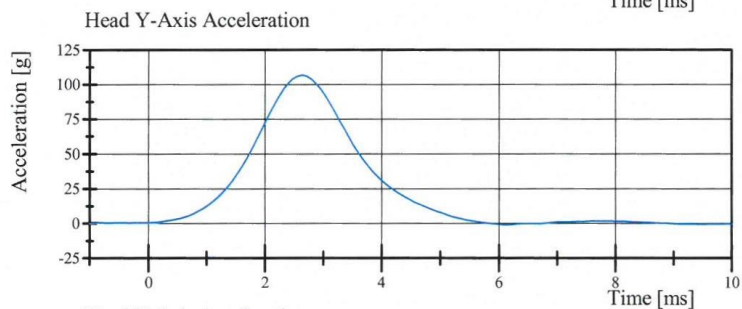
Test Date: 11/9/2016



Filter Class: CFC\_1000

Max: 3.8 g at 2.5 ms

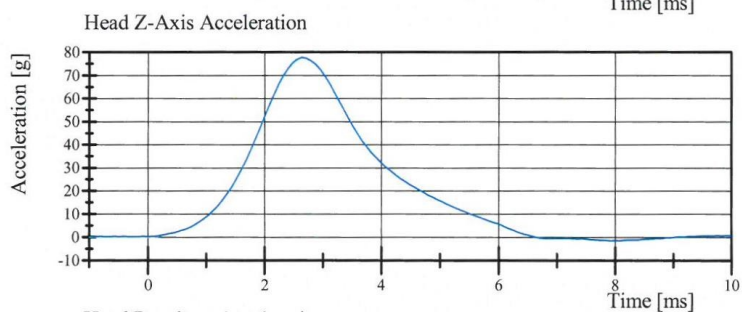
Min: -1.3 g at 5.2 ms



Filter Class: CFC\_1000

Max: 106.5 g at 2.6 ms

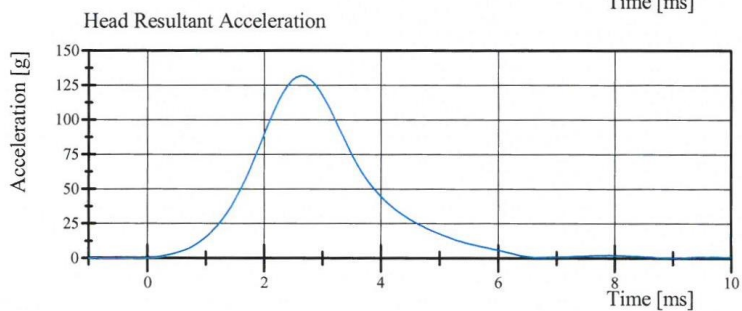
Min: -1.1 g at 6.1 ms



Filter Class: CFC\_1000

Max: 77.7 g at 2.6 ms

Min: -1.4 g at 7.9 ms



Filter Class: CFC\_1000

Max: 131.8 g at 2.6 ms

Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 17:26:39 232





## Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016

| Test Parameter                                               | Specification         | Test Results | Pass |
|--------------------------------------------------------------|-----------------------|--------------|------|
| Temperature                                                  | 20.6 - 22.2 °C        | 21.9 °C      | Yes  |
| Relative Humidity                                            | 10 - 70 %             | 35 %         | Yes  |
| Pendulum Velocity                                            | (-5.51) - (-5.63) m/s | -5.613 m/s   | Yes  |
| Pendulum Integrated Velocity                                 |                       |              |      |
| Change at 10 ms                                              | 2.20 - 2.80 m/s       | 2.659 m/s    | Yes  |
| Change at 15 ms                                              | 3.30 - 4.10 m/s       | 3.945 m/s    | Yes  |
| Change at 20 ms                                              | 4.40 - 5.40 m/s       | 5.342 m/s    | Yes  |
| Change at 25 ms                                              | 5.40 - 6.10 m/s       | 5.759 m/s    | Yes  |
| Change at 25 to 100 ms                                       | 5.50 - 6.20 m/s       | 5.760 m/s    | Yes  |
| Maximum Headform Flexion<br>occurring between 50ms and 70ms. |                       |              |      |
| Peak                                                         | (-71) - (-81) deg     | -75.2 deg    | Yes  |
| Time of Peak                                                 | 50 - 70 ms            | 57.3 ms      | Yes  |
| Total Neck Occipital Condyles Moment                         | 36 - 44 N·m           | 42.5 N·m     | Yes  |
| Total Neck Occipital Condyles Moment                         |                       |              |      |
| Decay Time to 0 N·m                                          | 102 - 126 ms          | 108.1 ms     | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 17:55:41 711

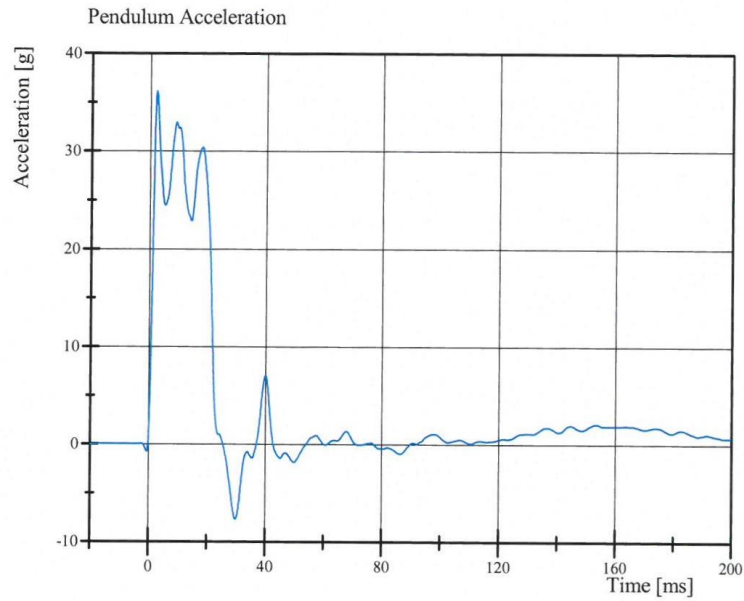


## Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 12-1

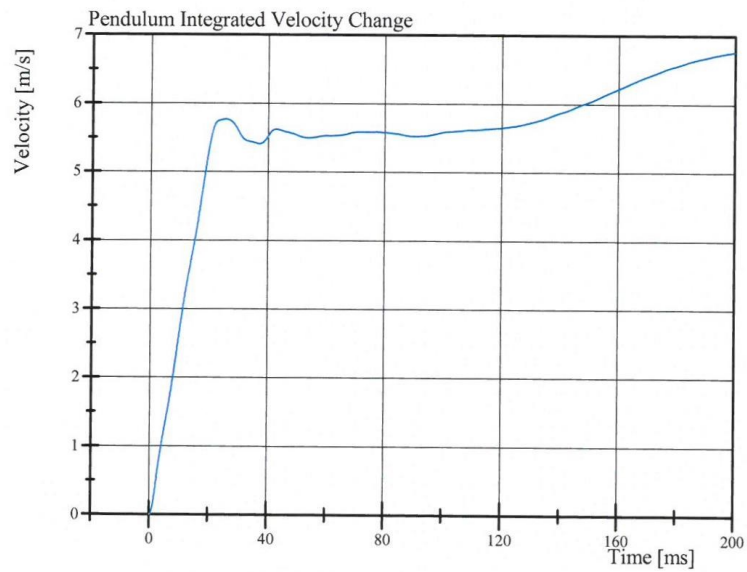
Test Date: 11/9/2016



Filter Class: CFC\_180

Max: 36.1 g at 2.2 ms

Min: -7.7 g at 29.9 ms



Filter Class: CFC\_180

Max: 6.8 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 17:55:52 711

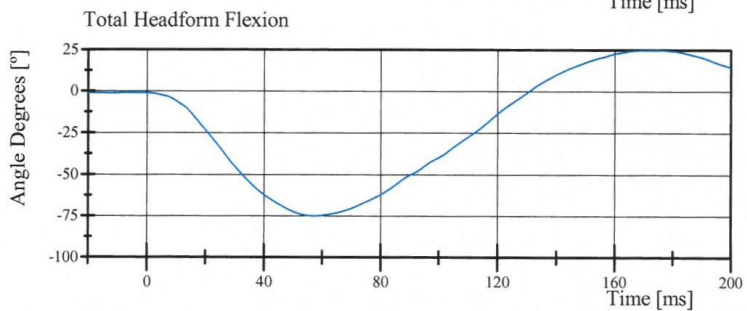
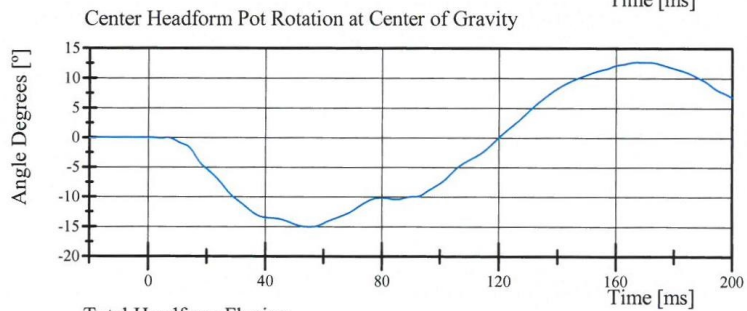
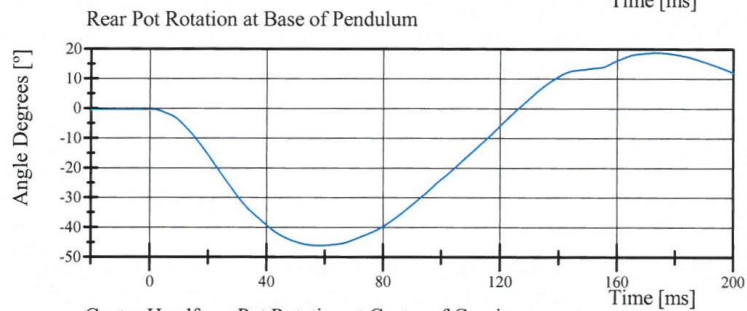
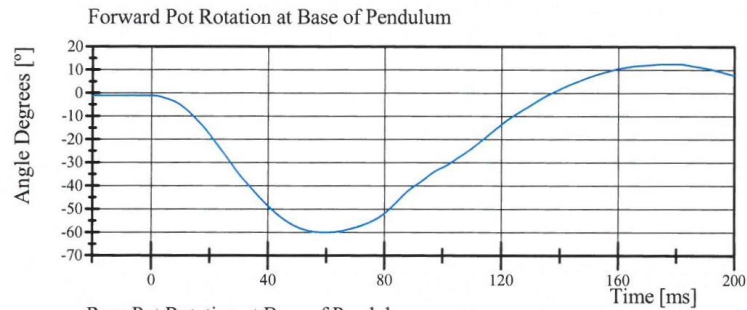


## Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016



Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 17:55:52 711

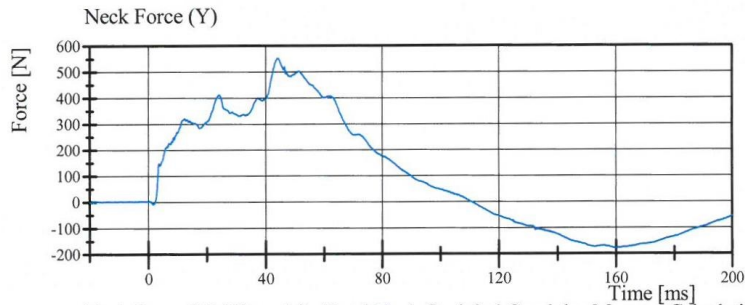


## Transportation Research Center Inc.

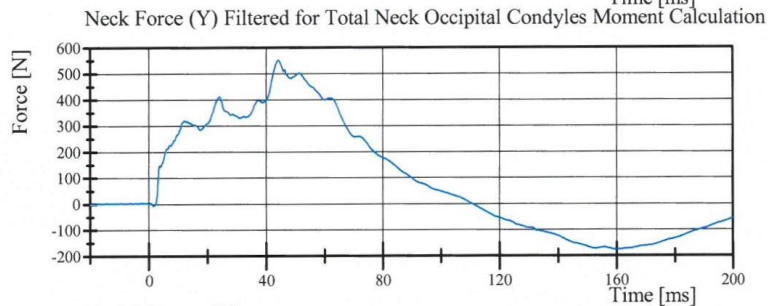
Left Lateral Neck

SID IIs Serial No. 297 Certification No. 12-1

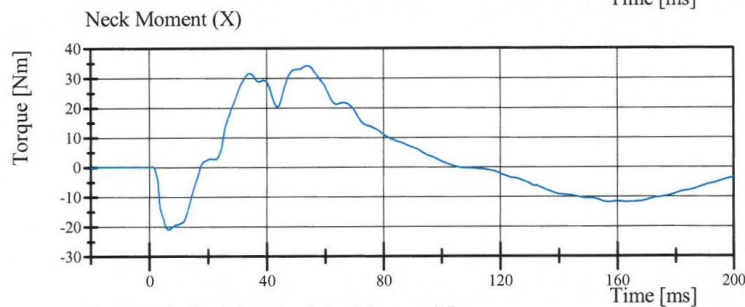
Test Date: 11/9/2016



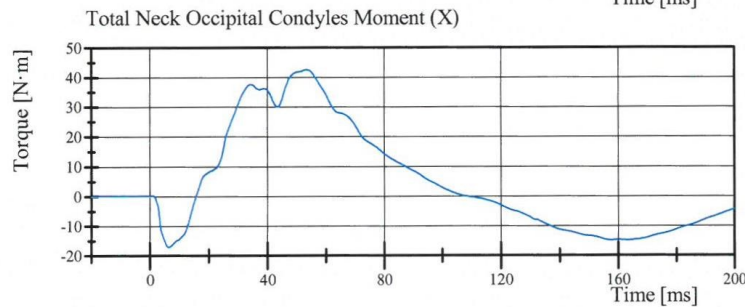
Filter Class: CFC\_1000  
Max: 550.1 N at 44.3 ms  
Min: -177.1 N at 159.3 ms



Filter Class: CFC\_600  
Max: 550.1 N at 44.3 ms  
Min: -176.9 N at 159.4 ms



Filter Class: CFC\_600  
Max: 34.0 Nm at 53.6 ms  
Min: -21.0 Nm at 7.0 ms



Filter Class: Without\_(Constar  
Max: 42.5 N·m at 53.4 ms  
Min: -17.2 N·m at 6.4 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 17:55:53 711





## Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.9 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 38 %         | Yes  |
| Impactor Velocity                | 4.2 - 4.4 m/s   | 4.35 m/s     | Yes  |
| Impactor Acceleration            | (-13) - (-18) g | -15.5 g      | Yes  |
| Shoulder Displacement            | 28 - 37 mm      | 31.1 mm      | Yes  |
| Upper Spine Lateral Acceleration | 17 - 22 g       | 19.5 g       | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 15:03:55 825

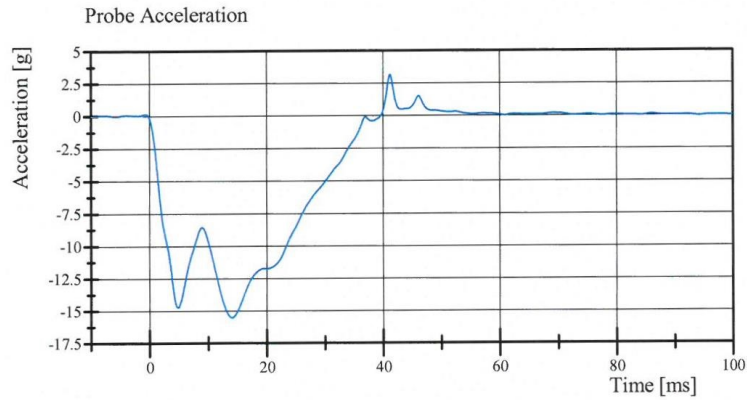


## Transportation Research Center Inc.

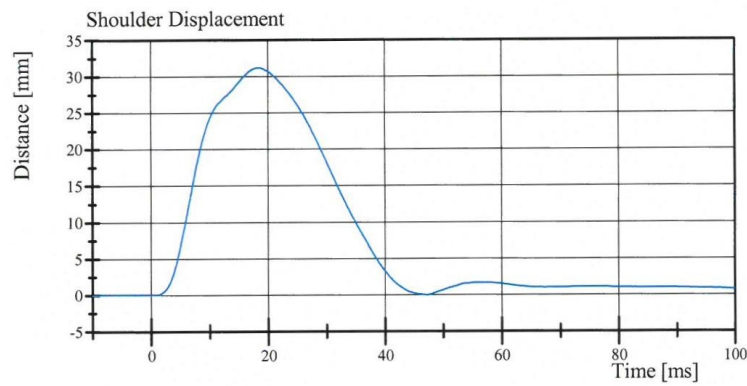
Left Lateral Shoulder

SID IIs Serial No. 297 Certification No. 12-1

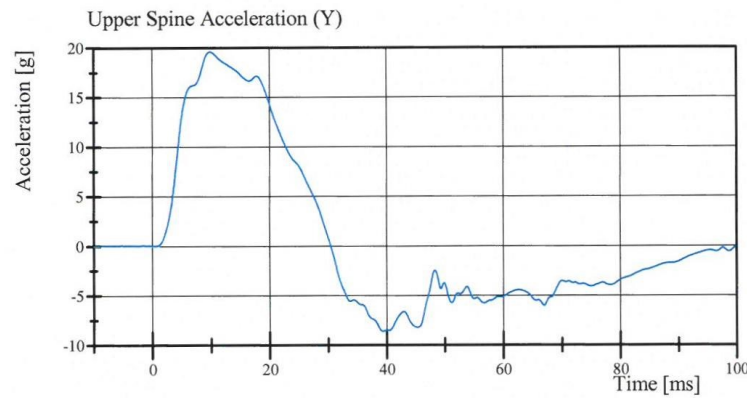
Test Date: 11/9/2016



Filter Class: CFC\_180  
Max: 3.1 g at 41.3 ms  
Min: -15.5 g at 14.1 ms



Filter Class: CFC\_600  
Max: 31.1 mm at 18.3 ms  
Min: -0.0 mm at 47.2 ms



Filter Class: CFC\_180  
Max: 19.5 g at 9.8 ms  
Min: -8.6 g at 39.4 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 15:04:10 825



## Transportation Research Center Inc.

Left Lateral Thorax with Arm  
SID IIs Serial No. 297 Certification No. 12-1  
Test Date: 11/9/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.9 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 38 %         | Yes  |
| Impactor Velocity                | 6.60 - 6.80 m/s | 6.726 m/s    | Yes  |
| Impactor Acceleration            | (-30) - (-36) g | -33.6 g      | Yes  |
| Shoulder Displacement            | 31 - 40 mm      | 34.6 mm      | Yes  |
| Upper Thorax Rib Displacement    | 25 - 32 mm      | 27.0 mm      | Yes  |
| Center Thorax Rib Displacement   | 30 - 36 mm      | 31.3 mm      | Yes  |
| Lower Thorax Rib Displacement    | 32 - 38 mm      | 33.9 mm      | Yes  |
| Upper Spine Lateral Acceleration | 34 - 43 g       | 34.9 g       | Yes  |
| Lower Spine Lateral Acceleration | 29 - 37 g       | 35.4 g       | Yes  |

**Test meets specifications.**

**Comments:**

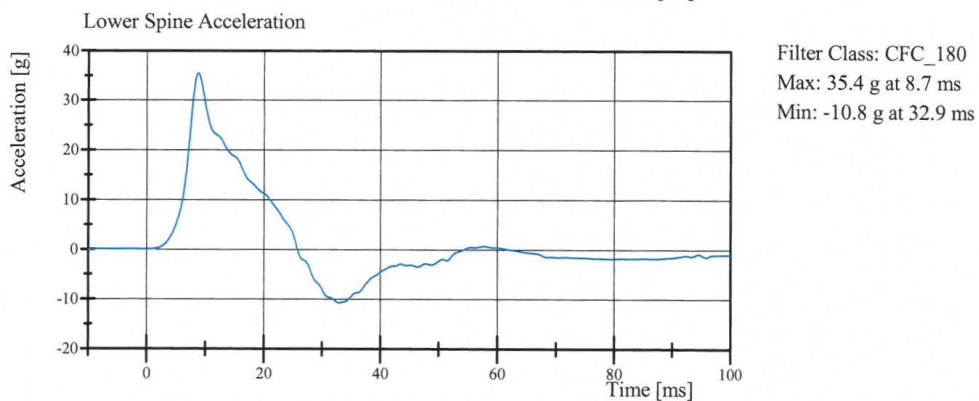
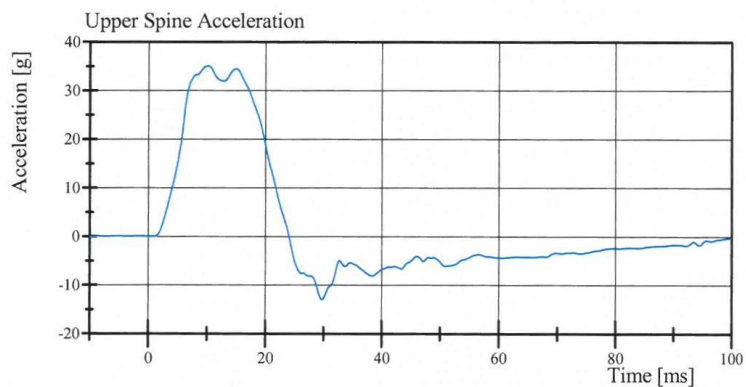
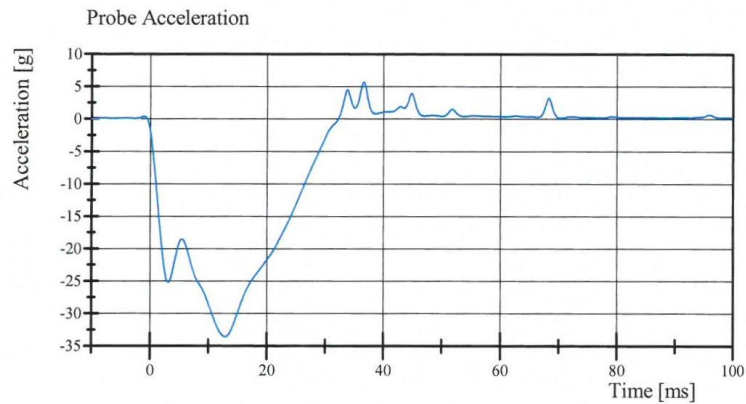
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 16:41:03 604



## Transportation Research Center Inc.

Left Lateral Thorax with Arm  
SID IIs Serial No. 297 Certification No. 12-1  
Test Date: 11/9/2016



Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

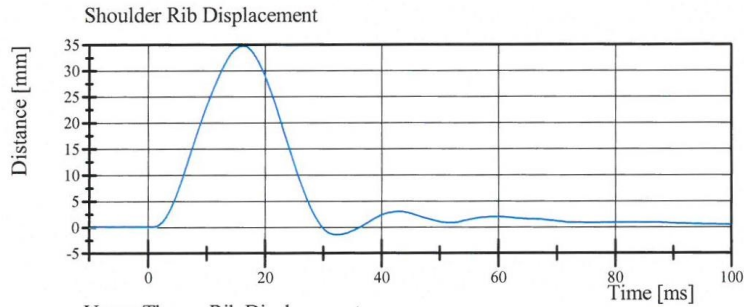
11.09.2016 16:41:14 604



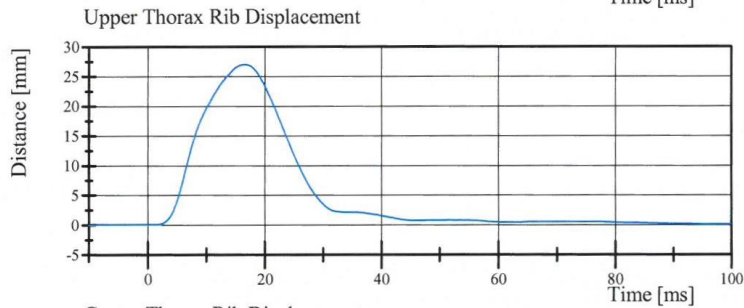


## Transportation Research Center Inc.

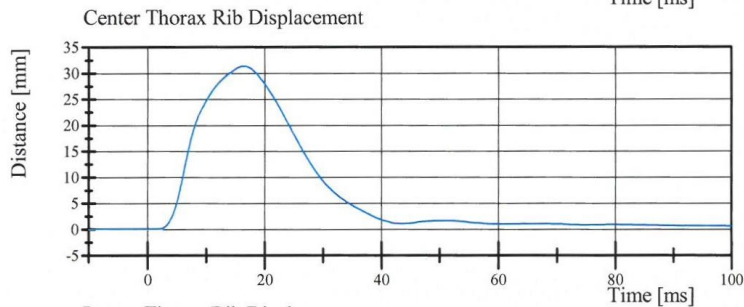
Left Lateral Thorax with Arm  
SID IIs Serial No. 297 Certification No. 12-1  
Test Date: 11/9/2016



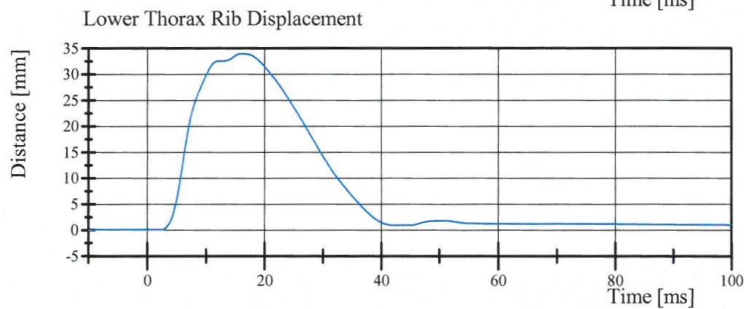
Filter Class: CFC\_600  
Max: 34.6 mm at 16.2 ms  
Min: -1.5 mm at 32.4 ms



Filter Class: CFC\_600  
Max: 27.0 mm at 16.4 ms  
Min: -0.0 mm at 1.3 ms



Filter Class: CFC\_600  
Max: 31.3 mm at 16.4 ms  
Min: -0.0 mm at 1.5 ms



Filter Class: CFC\_600  
Max: 33.9 mm at 16.2 ms  
Min: -0.0 mm at 2.5 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 16:41:15 604



## Transportation Research Center Inc.

Left Lateral Thorax without Arm  
SID IIs Serial No. 297 Certification No. 12-1  
Test Date: 11/9/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.9 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 37 %         | Yes  |
| Impactor Velocity                | 4.20 - 4.40 m/s | 4.348 m/s    | Yes  |
| Impactor Acceleration            | (-14) - (-18) g | -16.3 g      | Yes  |
| Upper Thorax Rib Displacement    | 32 - 40 mm      | 35.3 mm      | Yes  |
| Center Thorax Rib Displacement   | 39 - 45 mm      | 40.3 mm      | Yes  |
| Lower Thorax Rib Displacement    | 35 - 43 mm      | 38.1 mm      | Yes  |
| Upper Spine Lateral Acceleration | 13 - 17 g       | 15.3 g       | Yes  |
| Lower Spine Lateral Acceleration | 7 - 11 g        | 9.3 g        | Yes  |

**Test meets specifications.**

**Comments:**

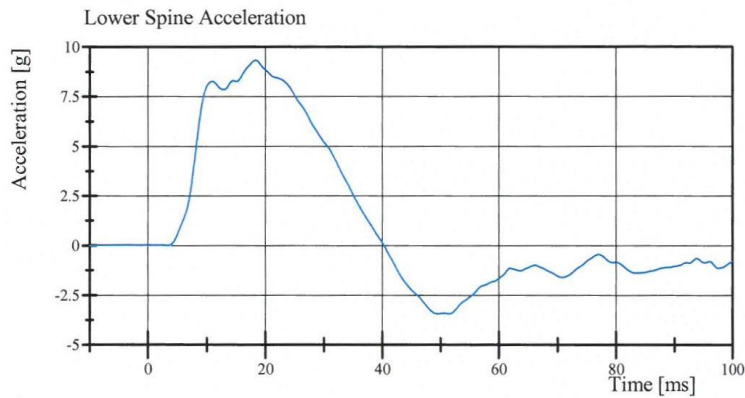
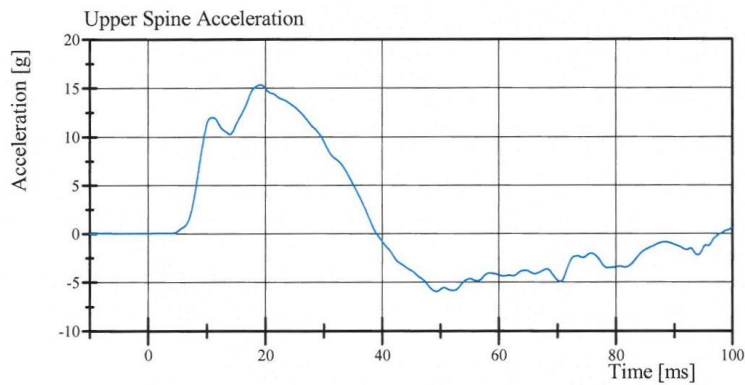
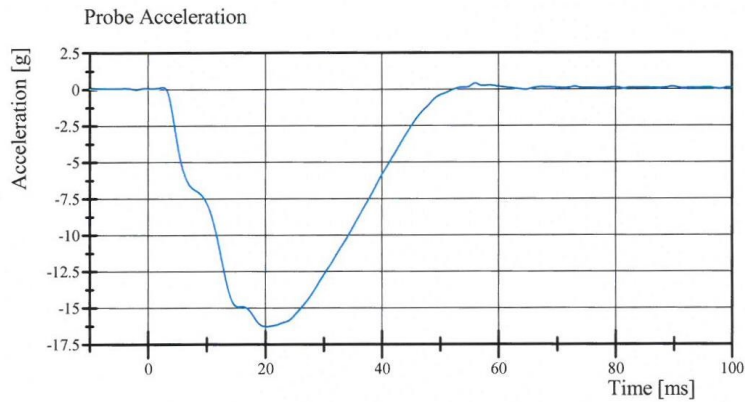
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 16:11:25 796



## Transportation Research Center Inc.

Left Lateral Thorax without Arm  
SID IIa Serial No. 297 Certification No. 12-1  
Test Date: 11/9/2016



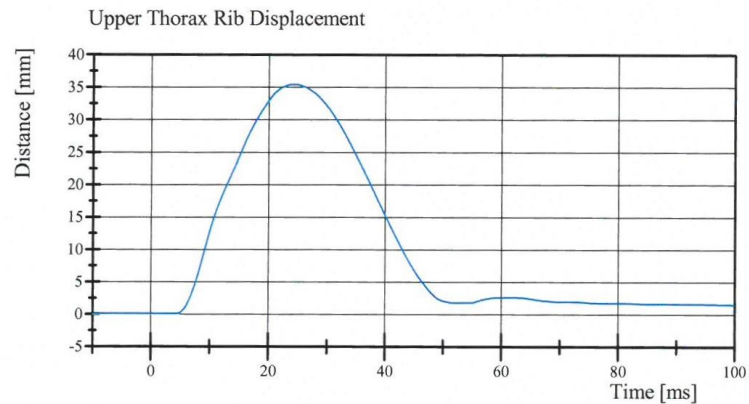
Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 16:11:40 796

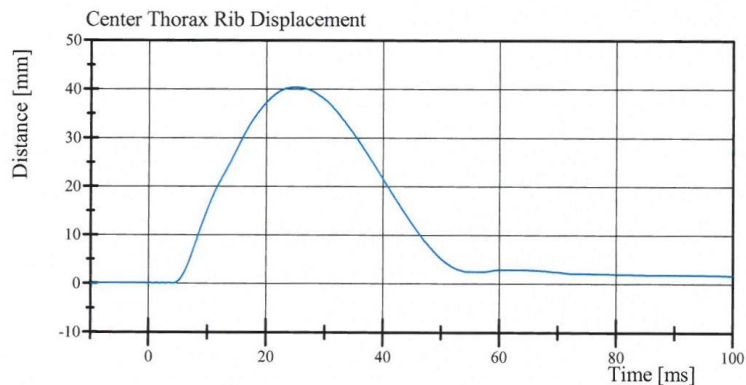


## Transportation Research Center Inc.

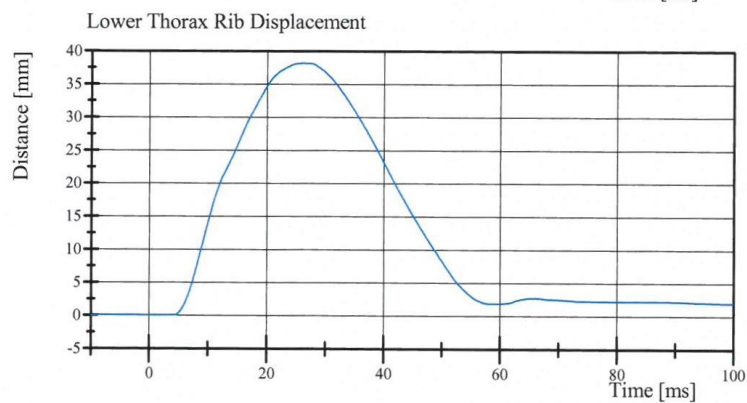
Left Lateral Thorax without Arm  
SID IIs Serial No. 297 Certification No. 12-1  
Test Date: 11/9/2016



Filter Class: CFC\_600  
Max: 35.3 mm at 24.2 ms  
Min: -0.0 mm at 4.2 ms



Filter Class: CFC\_600  
Max: 40.3 mm at 25.1 ms  
Min: -0.0 mm at 4.1 ms



Filter Class: CFC\_600  
Max: 38.1 mm at 26.0 ms  
Min: -0.0 mm at 4.3 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 16:11:40 796





## Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.1 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 37 %         | Yes  |
| Impactor Velocity                | 4.2 - 4.4 m/s   | 4.35 m/s     | Yes  |
| Impactor Acceleration            | (-12) - (-16) g | -14.4 g      | Yes  |
| Upper Abdominal Rib Displacement | 36 - 47 mm      | 41.5 mm      | Yes  |
| Lower Abdominal Rib Displacement | 33 - 44 mm      | 39.2 mm      | Yes  |
| Lower Spine Lateral Acceleration | 9 - 14.0 g      | 11.02 g      | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 15:35:21 653

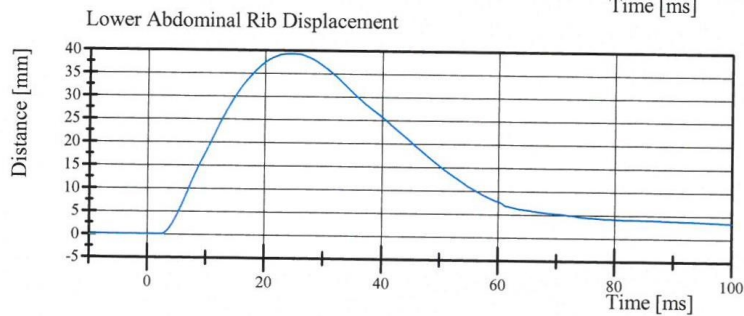
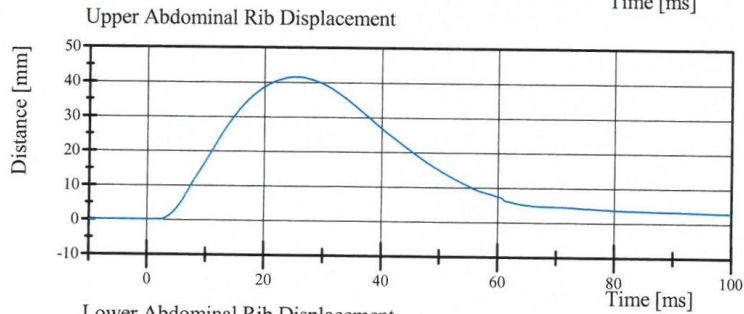
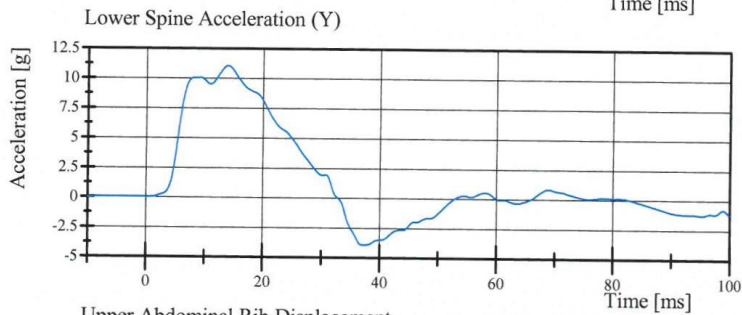
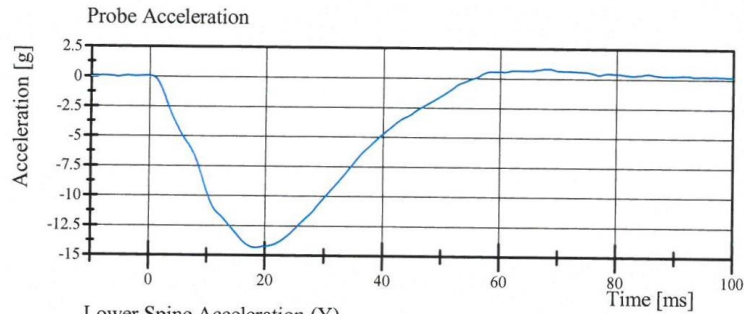


## Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016



Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 15:35:33 653



## Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. 297 Certification No. 12-3

Test Date: 11/9/2016

| Test Parameter                                | Specification       | Test Results | Pass |
|-----------------------------------------------|---------------------|--------------|------|
| Temperature                                   | 20.6 - 22.2 °C      | 21.7 °C      | Yes  |
| Relative Humidity                             | 10 - 70 %           | 37 %         | Yes  |
| Pendulum Velocity                             | 6.6 - 6.8 m/s       | 6.68 m/s     | Yes  |
| Impactor Acceleration                         | (-38.0) - (-47.0) g | -46.01 g     | Yes  |
| Peak Pelvis Lateral Acceleration<br>after 6ms | 34 - 42 g           | 41.8 g       | Yes  |
| Acetabulum Force                              | 3,600 - 4,300 N     | 3,967.4 N    | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 21:01:42 429

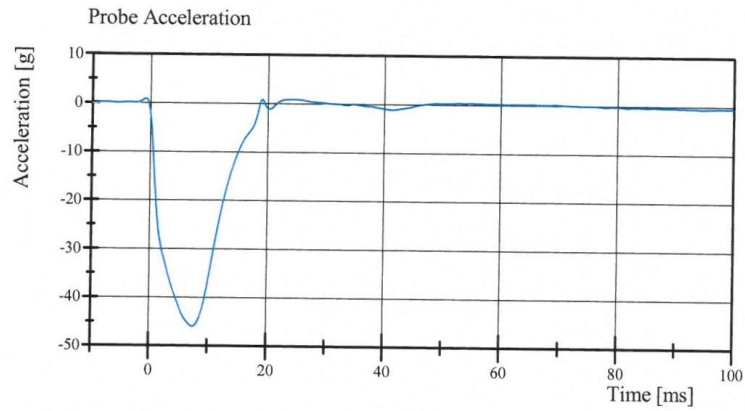


## Transportation Research Center Inc.

Left Lateral Pelvis

SID IIa Serial No. 297 Certification No. 12-3

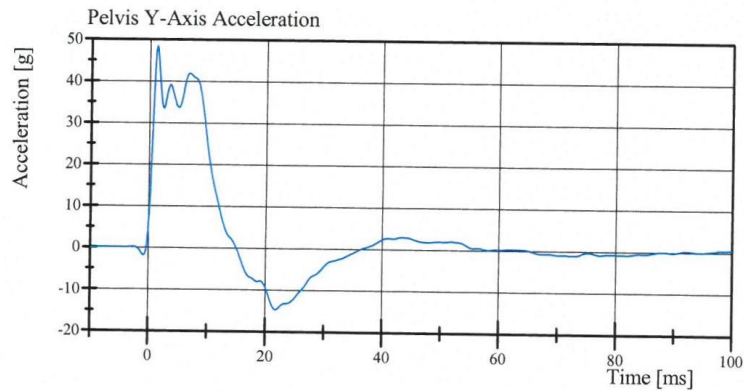
Test Date: 11/9/2016



Filter Class: CFC\_180

Max: 0.8 g at 24.2 ms

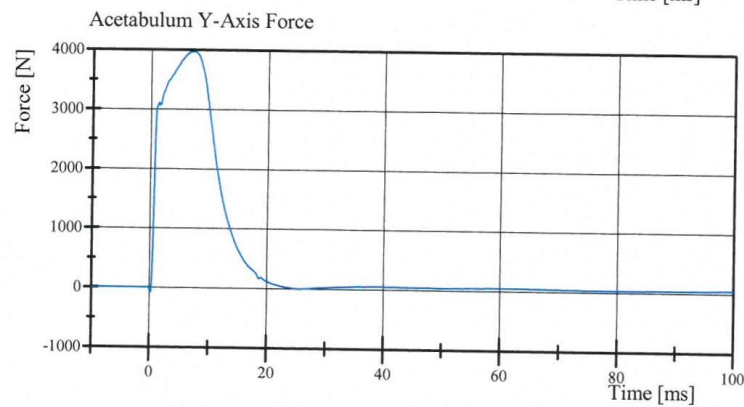
Min: -46.0 g at 7.4 ms



Filter Class: CFC\_180

Max: 48.3 g at 1.3 ms

Min: -14.7 g at 21.8 ms



Filter Class: CFC\_600

Max: 3,967.4 N at 7.2 ms

Min: -81.3 N at 0.2 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 21:01:58 429





## Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. 297 Certification No. 12-1

Test Date: 11/9/2016

| Test Parameter                   | Specification   | Test Results | Pass |
|----------------------------------|-----------------|--------------|------|
| Temperature                      | 20.6 - 22.2 °C  | 21.3 °C      | Yes  |
| Relative Humidity                | 10 - 70 %       | 36 %         | Yes  |
| Pendulum Velocity                | 4.2 - 4.4 m/s   | 4.35 m/s     | Yes  |
| Impactor Acceleration            | (-36) - (-45) g | -43.4 g      | Yes  |
| Peak Pelvis Lateral Acceleration | 28 - 39 g       | 32.5 g       | Yes  |
| Iliac Force                      | 4,100 - 5,100 N | 4,892.7 N    | Yes  |

**Test meets specifications.**

**Comments:**

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 14:43:23 637

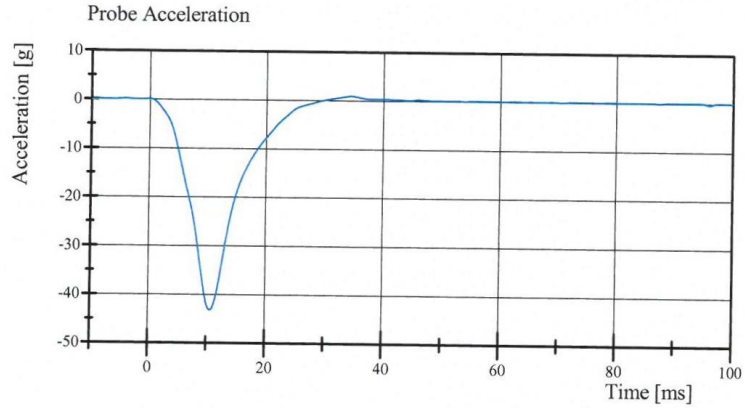


## Transportation Research Center Inc.

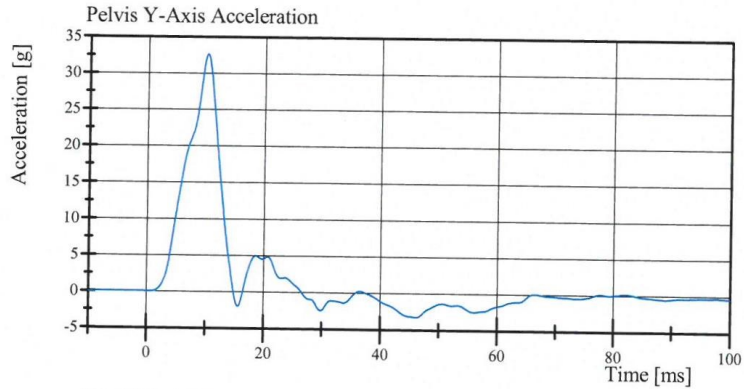
Left Lateral Iliac

SID IIs Serial No. 297 Certification No. 12-1

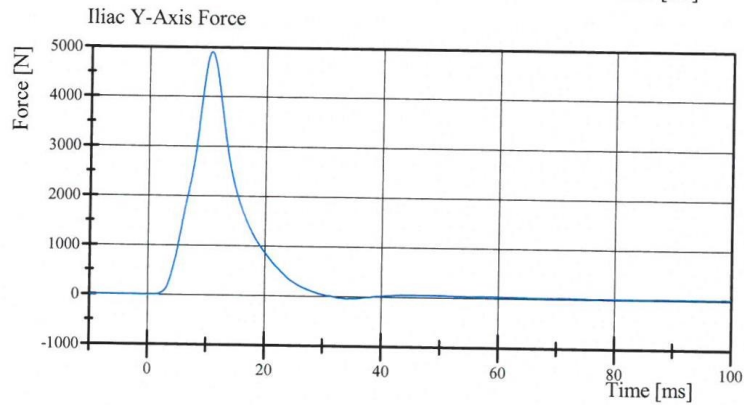
Test Date: 11/9/2016



Filter Class: CFC\_180  
Max: 0.9 g at 34.5 ms  
Min: -43.4 g at 10.6 ms



Filter Class: CFC\_180  
Max: 32.5 g at 10.2 ms  
Min: -3.3 g at 46.2 ms



Filter Class: CFC\_600  
Max: 4,892.7 N at 10.6 ms  
Min: -43.0 N at 34.1 ms

Specification Source: CFR49 Part 572 Subpart V  
with Polarity in accordance with J211

11.09.2016 14:43:38 637



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

**TABLE 1 – Dummy Instrumentation (SID-IIs)**

|                                  |               |        |   | SID-IIs S/N 297 |              |                  |             |
|----------------------------------|---------------|--------|---|-----------------|--------------|------------------|-------------|
|                                  |               |        |   | Serial Number   | Manufacturer | Calibration Date |             |
| Head Accelerometers              |               |        |   | X               | P93539       | Endevco          | 29-Sep-2016 |
|                                  |               |        |   | Y               | P93549       | Endevco          | 29-Sep-2016 |
|                                  |               |        |   | Z               | P93776       | Endevco          | 29-Sep-2016 |
| Displacement Potentiometers      | Shoulder      |        | Y | N/A             | N/A          | N/A              |             |
|                                  | Thoracic Rib  | Upper  | Y | 047             | Servo        | 29-Sep-2016      |             |
|                                  |               | Middle | Y | 01815           | Servo        | 29-Sep-2016      |             |
|                                  |               | Lower  | Y | 043             | Servo        | 29-Sep-2016      |             |
|                                  | Abdominal Rib | Upper  | Y | 01811           | Servo        | 29-Sep-2016      |             |
|                                  |               | Lower  | Y | 051             | Servo        | 29-Sep-2016      |             |
| Lower Spine Accelerometers (T12) |               |        |   | X               | P94425       | Endevco          | 23-Aug-2016 |
|                                  |               |        |   | Y               | P91522       | Endevco          | 22-Aug-2016 |
|                                  |               |        |   | Z               | P91511       | Endevco          | 21-Sep-2016 |
| Acetabulum Load Cell             |               |        |   | Y               | 235-FY       | FTSS             | 28-Oct-2016 |
| Iliac Wing Load Cell             |               |        |   | Y               | 113-FY       | FTSS             | 27-Oct-2016 |
| Pelvis Plug (struck side)        |               |        |   |                 | 11004        | SACO             | 6-Apr-2016  |
| Pelvis Plug (non-struck side)    |               |        |   |                 | 36505        | FTSS             | 24-Sep-2010 |



**TABLE 2 – Vehicle Instrumentation**

| Vehicle Instrumentation   |   | Serial Number | Manufacturer | Calibration Date |
|---------------------------|---|---------------|--------------|------------------|
| Vehicle Center of Gravity | X | P88004        | Endevco      | 15-Aug-2016      |
| Vehicle Center of Gravity | Y | P91482        | Endevco      | 28-Sep-2016      |
| Vehicle Center of Gravity | Z | P93550        | Endevco      | 25-Jul-2016      |
| Left Floor Sill           | Y | P94521        | Endevco      | 27-Oct-2016      |
| A-Pillar Sill             | Y | P94424        | Endevco      | 31-Oct-2016      |
| A-Pillar Low              | Y | P94559        | Endevco      | 2-Nov-2016       |
| A-Pillar Mid              | Y | P94562        | Endevco      | 2-Nov-2016       |
| B-Pillar Sill             | Y | P94504        | Endevco      | 27-Oct-2016      |
| B-Pillar Low              | Y | P66749        | Endevco      | 28-Sep-2016      |
| B-Pillar Mid              | Y | P94512        | Endevco      | 2-Nov-2016       |
| Driver Seat               | Y | P94541        | Endevco      | 26-Jul-2016      |
| Engine Top                | X | P94550        | Endevco      | 26-Jul-2016      |
| Engine Top                | Y | P94426        | Endevco      | 26-Jul-2016      |
| Firewall                  | Y | P94489        | Endevco      | 31-Oct-2016      |
| Right Roof                | Y | P50430        | Endevco      | 12-Oct-2016      |
| Right Floor Sill          | Y | P91492        | Endevco      | 27-Oct-2016      |
| Rear Floor Pan            | X | P63151        | Endevco      | 25-Jul-2016      |
| Rear Floor Pan            | Y | P88468        | Endevco      | 25-Jul-2016      |

**TABLE 3 – Pole Instrumentation**

| Pole Instrumentation | Serial Number | Manufacturer | Calibration Date |
|----------------------|---------------|--------------|------------------|
| Load Cell 1          | 92-FX         | Denton       | 29-Apr-2016      |
| Load Cell 2          | 84-FX         | Denton       | 29-Apr-2016      |
| Load Cell 3          | 103-FX        | Denton       | 28-Apr-2016      |
| Load Cell 4          | 101-FX        | Denton       | 28-Apr-2016      |
| Load Cell 5          | 87-FX         | Denton       | 29-Apr-2016      |
| Load Cell 6          | 83-FX         | Denton       | 5-Aug-2016       |
| Load Cell 7          | 97-FX         | Denton       | 29-Apr-2016      |
| Load Cell 8          | 95-FX         | Denton       | 26-Jul-2016      |