REPORT NUMBER: 222SB-MGA-2011-003

SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 222
SCHOOL BUS PASSENGER SEATING AND CRASH PROTECTION

2012 BLUE BIRD ALL AMERICAN D3 RE SCHOOL BUS
NHTSA NO.: CC0901

PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105

TEST DATES: SEPTEMBER 12, 2011 – OCTOBER 26, 2011

FINAL REPORT DATE: JANUARY 3, 2012

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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Prepared by: ______________________________ Date: November 29, 2011
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FINAL REPORT ACCEPTED BY:

Edward E. Chan

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Compliance tests were conducted on the subject 2012 Blue Bird All American D3 RE School Bus, NHTSA No.: CC0901, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-222-04 for the determination of FMVSS 222 compliance.

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SECTION 1
PURPOSE OF COMPLIANCE TEST

All tests were conducted on a 2012 Blue Bird All American D3 RE School Bus, NHTSA No.: CC0901, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-222-04 to determine compliance to the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 222, “School Bus Passenger Seating and Crash Protection”.

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No.: DTNH22-08-D-00075.

SECTION 2
TEST DATA SUMMARY

The passenger seating and crash protection tests were conducted from September 12, 2011 through October 26, 2011. All tests were conducted by MGA Research Corporation at the Wisconsin Operations. The test vehicle, 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901, does not appear to meet all the requirements of FMVSS 222.

FAILURE

During the restraining barrier force deflection test for Barrier No. B13, the area within the force deflection curve did not meet the minimum requirement of 1,356 joules. The total area was 1,353 Joules.

SECTION 2 (CONTINUED)
TEST DATA SUMMARY

LINEAR AND AREA MEASUREMENTS

Seat to seat/barrier spacing was checked on all seats and found to be 571 mm or less as shown on Data Sheet No. 1.

The seat back height and front surface area of Seat Nos. S1, S15, S16 and S18 were measured in accordance with Section 12.1 of OVSC TP-222-04. As shown in Data Sheet No. 2 for S1, S15, S16 and S18, the seat back area is greater than ninety percent of the seat bench width multiplied by 610.

The restraining barrier position and projected rear surface area of Barrier Nos. B1, B6, B13, B16 and B18 were measured in accordance with OVSC TP-222-04. As shown in Data Sheet No. 3 for B1, B6, B13, B16 and B18, the projected perimeters of the seats fall completely within the perimeters of the restraining barriers.

SEAT CUSHION RETENTION

Seat No. S17 was tested in accordance with Section 12.3 of OVSC TP-222-04. Seat cushion weight was 5.35 kg for S17. The maximum force reached for S17 was 271.8 N, and the lower time limit boundary (t1) was approximately 4 seconds with approximate load duration of 11 seconds. As shown in Data Sheet No. 4, the seat cushion tested met all requirements.

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Seat Nos. S1 and S6 were tested in accordance with Section 12.4 of OVSC TP-222-04. Seat bench width was determined to be 990 mm for S1 and S6. “W” was calculated to be 3. The seating reference point (SRP) was 473 mm above the bus floor. The deflection of the seat back at conclusion of lower loading bar loading at 1,557 W N load was 60 mm for S1 and 61 mm for S6. The allowable maximum deflection without moving the seat back to within 102 mm of another seat or restraining barrier was 356 mm for both seats. The stroke rate of the upper loading bar was determined by the test engineer to be 12.7 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The tests were stopped when the maximum deflection of 356 mm was reached. The minimum required area under the force versus deflection curve of the upper loading bar was 452W or 1,356 joules for S1 and S6. As shown on Data Sheet No. 5, S1 and S6 met the force deflection forward requirements.

SECTION 2 (CONTINUED)
TEST DATA SUMMARY

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Seat No. S16 was tested in accordance with Section 12.4 of OVSC TP-222-04. Seat bench width was determined to be 750 mm. “W” was calculated to be 2. The seating reference point (SRP) was 473 mm above the bus floor. The deflection of the seat back at conclusion of lower loading bar loading at 1,557 W N load was 44 mm. The allowable maximum deflection without moving the seat back to within 102 mm of another seat or restraining barrier was 356 mm for both seats. The stroke rate of the upper loading bar was determined by the test engineer to be 12.7 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The test was stopped when the maximum deflection of 356 mm was reached. The minimum required area under the force versus deflection curve of the upper loading bar was 452W or 904 joules for S16. As shown on Data Sheet No. 5, S16 met the force deflection forward requirements.

RESTRAINING BARRIER FORCE/DEFLECTION TEST

The left hand restraining Barrier No. B1 was tested in accordance with Section 12.4 of OVSC TP-222-04. Seat bench width of the aft seat was determined to be 990 mm. “W” was calculated to be 3 for B1. The SRP was 473 mm above the bus floor. The deflection of the restraining barrier at the conclusion of the lower loading bar loading at 1,557W was 51 mm. The allowable maximum deflection without moving the restraining barrier to within interference of a seat or door was 356 mm. The stroke rate of the upper loading bar was determined by the test engineer from test data to be 12.7 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The test was stopped when the maximum deflection of 356 mm was reached. The area under the force versus deflection curve of the upper loading bar was 1,852 joules. The minimum required area under the force versus deflection curve of the upper loading bar was 452W or 1,356 joules. As shown on Data Sheet No. 6, B1 met the force deflection forward requirements.

SECTION 2 (CONTINUED)
TEST DATA SUMMARY

RESTRAINING BARRIER FORCE/DEFLECTION TEST

The right hand restraining Barrier No. B13 was tested in accordance with Section 12.4 of OVSC TP-222-04. Seat bench width of the aft seat was determined to be 990 mm. “W” was calculated to be 3 for B13. The SRP was 473 mm above the bus floor. The deflection of the restraining barrier at the conclusion of the lower loading bar loading at 1,557W was 57 mm. The allowable maximum deflection without moving the restraining barrier to within interference of a seat or door was 299 mm. The stroke rate of the upper loading bar was determined by the test engineer from test data to be 12.7 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The test was stopped when the maximum force of 10,676 N was reached. The area under the force versus deflection curve of the upper loading bar was 1,353 joules. The minimum required area under the force versus deflection curve of the upper loading bar was 452W or 1,356 joules. As shown on Data Sheet No. 6, B13 did not meet the force deflection requirements.

The right hand restraining Barrier No. B16 was tested in accordance with Section 12.4 of OVSC TP-222-04. Seat bench width of the aft seat was determined to be 750 mm. “W” was calculated to be 2 for B16. The SRP was 473 mm above the bus floor. The deflection of the restraining barrier at the conclusion of the lower loading bar loading at 1,557W was 53 mm. The allowable maximum deflection without moving the restraining barrier to within interference of a seat or door was 356 mm. The stroke rate of the upper loading bar was determined by the test engineer from test data to be 12.7 mm/sec. The location of the upper loading bar was 406 mm above the SRP. The test was stopped when the maximum deflection of 356 mm was reached. The area under the force versus deflection curve of the upper loading bar was 1,330 joules. The minimum required area under the force versus deflection curve of the upper loading bar was 452W or 904 joules. As shown on Data Sheet No. 6, B16 met the force deflection forward requirements.

SECTION 2 (CONTINUED)
TEST DATA SUMMARY

SEAT BACK FORCE/DEFLECTION TEST - REARWARD

Seat Nos. S8 and S11 were tested in accordance with Section 12.4 of OVSC TP-222-04. Seat bench width was determined to be 990 mm for both S8 and S11. “W” was calculated to be 3. The allowable maximum deflection without moving the seat back to within 102 mm of another seat or restraining barrier was 254 mm. The stroke rate of the upper loading bar was determined by the test engineer to be 8.8 mm/sec for S8 and S11. The location of the loading bar was 343 mm above the SRP. The tests were stopped when the maximum deflection of the seat back of 254 mm was achieved. The area under the force versus deflection curve of the loading bar was 1,143 joules for S8 and 1,092 joules for S11. The minimum required area under the force versus deflection curve of the loading bar was 316W or 948 joules. As shown in Data Sheet No. 7, S8 and S11 met the force deflection rearward requirements.

HEAD FORM IMPACT ZONE TESTS

Seat Nos. S2, S7, and S15 and Barrier Nos. B6 and B18 were tested in accordance with Section 12.6 of OVSC TP-222-04. The mass of the head form was 5.21 kg. All head form contact area, impact energy, and head injury criteria were met for Seat Nos. S2, S7, and S15 and Barrier Nos. B6 and B18. Data from these tests are presented in Data Sheet No. 8 and Data Sheet No.9.

KNEE FORM IMPACT ZONE TESTS

Seat Nos. S2, S7, and S15 and Barrier Nos. B6 and B18 were tested in accordance with Section 12.7 of OVSC TP-222-04. The mass of the knee form was 4.53 kg. All knee form contact area criteria and impact energy criteria were met for Seat Nos. S2, S7, and S15 and Barrier Nos. B6 and B18. Data from these tests are presented on Data Sheet No. 10.

WHEELCHAIR SECUREMENT ANCHORAGES AND DEVICES TESTS

Wheelchair anchorages and restraints for wheelchair location W4 were tested in accordance with Appendix A of OVSC TP-222-04. Seat belt anchorages and specially made high strength webbing straps were used to conduct the test. The LF and LR seat belt anchor points met the required load of 13,344 N. The RR seat belt anchor points met the required load of 26,688 N. The Upper torso seat belt anchor points met the required load of 6,672 N. Data from these tests are presented on Data Sheet No. C1.

ADMINISTRATIVE DATA SHEET

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

INCOMPLETE VEHICLE (IF APPLICABLE)

Manufacturer:	Blue Bird
Make/Model:	All American D3 RE
VIN:	1BABLBPA8CF283351
Certification Date:	12/10

COMPLETED VEHICLE (SCHOOL BUS)

Manufacturer:	Blue Bird
Year/Make/Model:	2012 Blue Bird All American D3 RE
VIN:	1BABLBPA8CF283351
NHTSA No.:	CC0901
Color:	Yellow
GVWR:	14,973 kg / 33,000 lb
Manufacture Date:	12/10

DATES

Vehicle Receipt:	12/28/10
Start of Compliance Test:	09/12/11
Completion of Compliance Test:	10/26/11

TEST VEHICLE DISPOSITION

Test: All tests were performed in accordance with the references outlined in FMVSS 222 as published in the Federal Register, Volume 41, No. 19, Jan 28, 1976, and as amended in 41FR28528, Jul 12, 1976; 41FR36027, Aug 26, 1976; 41FR54945, Dec 16, 1976; 42FR64120, Dec 23, 1977; 43FR9150, Mar 6, 1978; 44FR18675, Mar 29, 1979; and 48FR12386, Mar 24, 1983.

Compliance Test: All tests were performed in accordance with the references outlined in TP-222-04.

Recorded By: Eric Tenedero

Approved By: Michael Janovicz Date: 10/26/11

GENERAL TEST DATA SHEET

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

SCHOOL BUS IDENTIFICATION

Model Year/Mfr./Make/Model:	2012 / Blue Bird / All American D3 RE
Passenger Capacity:	1 Driver, 47 Passengers
NHTSA No.:	CC0901
VIN:	1BABLBPA8CF283351
Conventional or Forward Control:	Forward
Wheel Base:	6,229 mm
GAWR (Certification Label) FRONT:	5,603 kg / 12,350 lb
GAWR (Certification Label) REAR:	9,528 kg / 21,000 lb
GVWR (Certification Label) TOTAL:	14,973 kg / 33,000 lb

TEST CONDITIONS

Date(s) of Test:	09/12/11 – 10/26/11
Ambient Temperature (°C):	21°C
Required Temperature Range (°C):	0°C to 32°C

SEAT IDENTIFICATION

Seat Manufacturer:	Blue Bird
Model Name & Number:	
Description of Seats:	Seat frames are constructed of 25.4 mm square steel tubing. The seat back is a steel pan welded to the tubing. The front of the seat is covered with 15 mm of soft foam. The rear of the seat back is covered with 15 mm Styrofoam and 25 mm of thick soft foam. The seat back vertical frame members are covered in 45 mm Styrofoam. The seat cushion is constructed of 8 mm plywood; which is 120 mm tapering to 80 mm seat foam. The seats are covered in 0.6 mm of vinyl.

SECTION 3

COMPLIANCE TEST DATA

The following data sheets document the results of testing on the 2012 Blue Bird All American D3 RE School Bus, NHTSA No.: CC0901.

DATA SHEET 1

SEAT TO SEAT/BARRIER SPACING

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

Seat Number	Measurement of Spacing From SRP Forward to Seat/Barrier (mm)	Requirement ≤ 610 mm (≤ 24") Class 1 Buses Only
		PASS/FAIL
S1	**537**	**PASS**
S2	**489**	**PASS**
S3	**478**	**PASS**
S6	**486**	**PASS**
S7	**571**	**PASS**
S8	**538**	**PASS**
S9	**559**	**PASS**
S10	**535**	**PASS**
S11	**532**	**PASS**
S12	**533**	**PASS**
S13	**528**	**PASS**
S14	**499**	**PASS**
S15	**503**	**PASS**
S16	**486**	**PASS**
S17	**553**	**PASS**
S18	**514**	**PASS**

Comments: None

Recorded By: Eric Passarelli

Approved By: Michael Janovicz

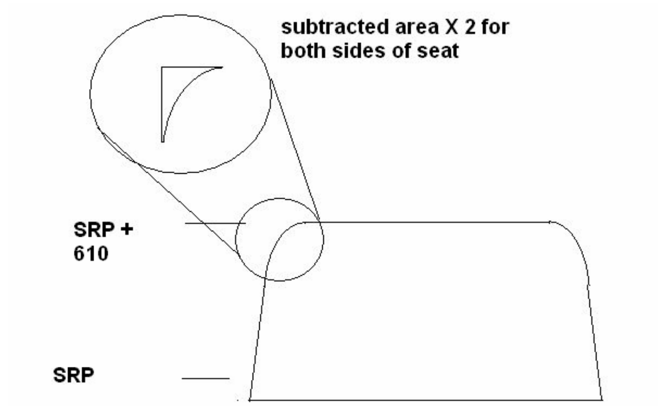
Date: 09/12/11

DATA SHEET 2

SEAT BACK HEIGHT AND FRONT SURFACE AREA TEST

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

SEAT NUMBER: S1



1. Maximum vertical height of the seat back above the SRP = 642 mm

		PASS/FAIL
2.	Is item 1 > 610 mm? (S5.1.2) Yes – Pass; No – Fail	**PASS**

3. Maximum transverse width of the seat cushion (W1) = 990 mm
4. Calculate the following: 0.75 x W1 = 742.5 mm
5. Calculate the following: 0.9 x W1 x 610 mm = 543,510 mm^2
6. Project the front surface of the seat back onto a vertical transverse plane. Measure the projected surface area that falls between:
   - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
   - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

6.1 Seat back width at 610 mm above the SRP height (A) = 875 mm

6.2 Seat back width at the SRP height (B) = 969 mm

6.3 Area = ½ (A+B) x 610 mm = 562,420 mm^2 – * 2,808 mm^2 = 559,612 mm^2

DATA SHEET 2 (CONTINUED)

SEAT BACK HEIGHT & FRONT SURFACE AREA TEST

		PASS/FAIL
7.	Is item 6.1 > item 4? (S5.1.2) Yes – Pass; No – Fail	**PASS**
8.	Is item 6.3 > item 5? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 6.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: ____________________

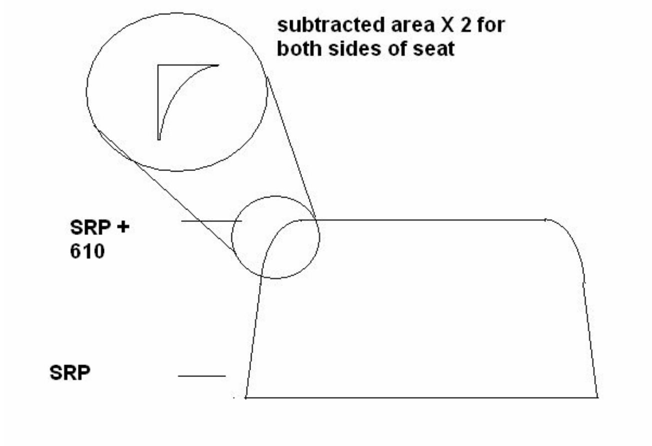
Approved By: ____________________ Date: 09/12/11

DATA SHEET 2

SEAT BACK HEIGHT AND FRONT SURFACE AREA TEST

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

SEAT NUMBER: S15



1. Maximum vertical height of the seat back above the SRP = 661 mm

		PASS/FAIL
2.	Is item 1 > 610 mm? (S5.1.2) Yes – Pass; No – Fail	**PASS**

3. Maximum transverse width of the seat cushion (W1) = 750 mm
4. Calculate the following: 0.75 x W1 = 562.5 mm
5. Calculate the following: 0.9 x W1 x 610 mm = 411,750 mm^2
6. Project the front surface of the seat back onto a vertical transverse plane. Measure the projected surface area that falls between:
   - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
   - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.
   2. Use the following for a typical trapezoidal shape:

6.1 Seat back width at 610 mm above the SRP height (A) = 700 mm

6.2 Seat back width at the SRP height (B) = 750 mm

6.3 Area = ½ (A+B) x 610 mm = 442,250 mm^2 – * 1,548 mm^2 = 440,702 mm^2

DATA SHEET 2 (CONTINUED)

SEAT BACK HEIGHT & FRONT SURFACE AREA TEST

		PASS/FAIL
7.	Is item 6.1 > item 4? (S5.1.2) Yes – Pass; No – Fail	**PASS**
8.	Is item 6.3 > item 5? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 6.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: Eric Pearlman

Approved By: Michael Janovicz

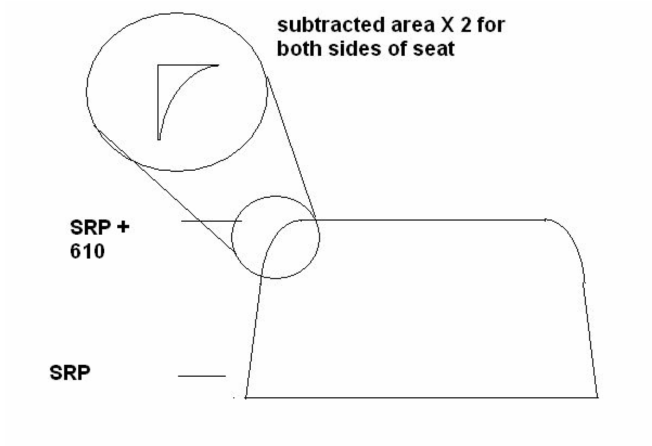
Date: 09/12/11

DATA SHEET 2

SEAT BACK HEIGHT AND FRONT SURFACE AREA TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S16



1. Maximum vertical height of the seat back above the SRP = 750 mm

		PASS/FAIL
2.	Is item 1 > 610 mm? (S5.1.2) Yes – Pass; No – Fail	**PASS**

3. Maximum transverse width of the seat cushion (W1) = 750 mm
4. Calculate the following: 0.75 x W1 = 562.5 mm
5. Calculate the following: 0.9 x W1 x 610 mm = 411,750 mm^2
6. Project the front surface of the seat back onto a vertical transverse plane. Measure the projected surface area that falls between:
   - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
   - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

6.1 Seat back width at 610 mm above the SRP height (A) = 690 mm

6.2 Seat back width at the SRP height (B) = 745 mm

6.3 Area = ½ (A+B) x 610 mm = 437,675 mm^2 – * 3,852 mm^2 = 433,823 mm^2

DATA SHEET 2 (CONTINUED)

SEAT BACK HEIGHT & FRONT SURFACE AREA TEST

		PASS/FAIL
7.	Is item 6.1 > item 4? (S5.1.2) Yes – Pass; No – Fail	**PASS**
8.	Is item 6.3 > item 5? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 6.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: Eric Peterson

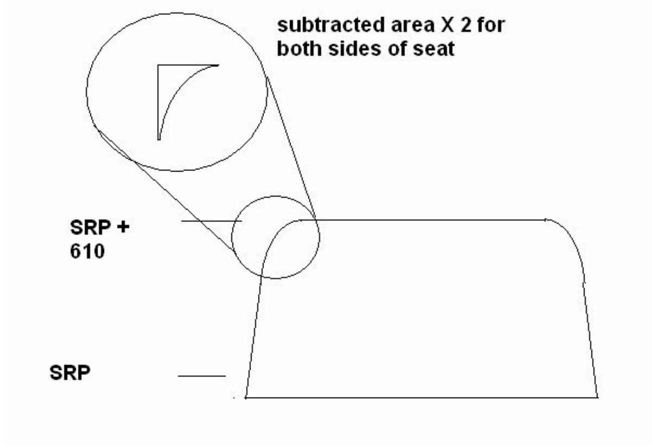
Approved By: Michael Janovicz   Date: 09/12/11

DATA SHEET 2

SEAT BACK HEIGHT AND FRONT SURFACE AREA TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S18



1. Maximum vertical height of the seat back above the SRP = 645 mm

		PASS/FAIL
2.	Is item 1 > 610 mm? (S5.1.2) Yes – Pass; No – Fail	**PASS**

3. Maximum transverse width of the seat cushion (W1) = 990 mm
4. Calculate the following: 0.75 x W1 = 742.5 mm
5. Calculate the following: 0.9 x W1 x 610 mm = 543,510 mm^2
6. Project the front surface of the seat back onto a vertical transverse plane. Measure the projected surface area that falls between:
   - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
   - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

6.1 Seat back width at 610 mm above the SRP height (A) = 875 mm

6.2 Seat back width at the SRP height (B) = 969 mm

6.3 Area = ½ (A+B) x 610 mm = 562,420 mm^2 – * 3,960 mm^2 = 558,460 mm^2

DATA SHEET 2 (CONTINUED)

SEAT BACK HEIGHT & FRONT SURFACE AREA TEST

		PASS/FAIL
7.	Is item 6.1 > item 4? (S5.1.2) Yes – Pass; No – Fail	**PASS**
8.	Is item 6.3 > item 5? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 6.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: ______________________

Approved By: ______________________ Date: 09/12/11

DATA SHEET 3

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

BARRIER NUMBER: B1/S1

1. Measure the distance (X) from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. X = 537 mm.

		PASS/FAIL
2.	Is distance X $\leq$ 610 mm? (S5.2) Yes – Pass; No – Fail	**PASS**

3. Measure distance U at inboard (i) and outboard (o) side of barrier.

   U_i = 358 mm U_o = 338 mm

4. Measure distance V at inboard (i) and outboard (o) sides of seat.

   V_i = 473 mm V_o = 473 mm

		PASS/FAIL
5.	Is $U_i \leq V_i$? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
6.	Is $U_o \leq V_o$? Yes – Pass; No – Fail	**PASS**

7. Maximum vertical height of the barrier above the SRP of the seat located immediately rearward of the barrier (S) = 660 mm

		PASS/FAIL
8.	Is item 7 $\geq$ 610 mm? (S5.2 & S5.1.2) Yes – Pass; No – Fail	**PASS**

9. Maximum transverse width of the seat cushion of the seat immediately rearward of the barrier (W1) = 990 mm
10. Calculate the following: Calculate the following: 0.75 x W1 = 742.5 mm
11. Calculate the following: 0.9 x W1 x 610 mm = 543,510 mm^2

DATA SHEET 3 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

12. Project the front surface of the barrier onto a vertical transverse plane. Measure the projected surface area ($\pm$ 2%) that falls between the following planes, which are determined relative to the seat located immediately rearward of the barrier:

- A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
- A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

12.1 Seat back width at 610 mm above the SRP height (A) = 908 mm

12.2 Seat back width at the SRP height (B) = 968 mm

12.3 Area = ½ (A+B) x 610 mm = 572,180 mm^2

Used this equation:

Area = ½ (A+B) x 610 mm = 572,180 mm^2 – * 1,260 mm^2 = 570,920 mm^2

		PASS/FAIL
13.	Is item 12.1 > item 10? (S5.1.2) Yes – Pass; No – Fail	**PASS**
14.	Is item 12.3 > item 11? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 12.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: Eric Lesseur

Approved By: Michael Janovicz

Date: 09/12/11

DATA SHEET 3

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B6/S6

1. Measure the distance (X) from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. X = 486 mm.

		PASS/FAIL
2.	Is distance X $\leq$ 610 mm? (S5.2) Yes – Pass; No – Fail	**PASS**

3. Measure distance U at inboard (i) and outboard (o) side of barrier.

   U_i = 355 mm U_o = 346 mm

4. Measure distance V at inboard (i) and outboard (o) sides of seat.

   V_i = 473 mm V_o = 473 mm

		PASS/FAIL
5.	Is $U_i \leq V_i$? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
6.	Is $U_o \leq V_o$? Yes – Pass; No – Fail	**PASS**

7. Maximum vertical height of the barrier above the SRP of the seat located immediately rearward of the barrier (S) = 664 mm

		PASS/FAIL
8.	Is item 7 $\geq$ 610 mm? (S5.2 & S5.1.2) Yes – Pass; No – Fail	**PASS**

9. Maximum transverse width of the seat cushion of the seat immediately rearward of the barrier (W1) = 990 mm

10. Calculate the following: Calculate the following: 0.75 x W1 = 742.5 mm

11. Calculate the following: 0.9 x W1 x 610 mm = 543,510 mm^2

DATA SHEET 3 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

12. Project the front surface of the barrier onto a vertical transverse plane. Measure the projected surface area (± 2%) that falls between the following planes, which are determined relative to the seat located immediately rearward of the barrier:
    - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
    - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

12.1 Seat back width at 610 mm above the SRP height (A) = 916 mm

12.2 Seat back width at the SRP height (B) = 977 mm

12.3 Area = ½ (A+B) x 610 mm = 577,365 mm^2

Used this equation:

Area = ½ (A+B) x 610 mm = 577,365 mm^2 – * 1,296 mm^2 = 576,069 mm^2

		PASS/FAIL
13.	Is item 12.1 > item 10? (S5.1.2) Yes – Pass; No – Fail	**PASS**
14.	Is item 12.3 > item 11? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 12.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: [signature]

Approved By: [signature] Date: 09/12/11

DATA SHEET 3

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

BARRIER NUMBER: B13/S13

1. Measure the distance (X) from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. X = 528 mm.

		PASS/FAIL
2.	Is distance X $\leq$ 610 mm? (S5.2) Yes – Pass; No – Fail	**PASS**

3. Measure distance U at inboard (i) and outboard (o) side of barrier.
   U_i = 335 mm U_o = 347 mm
4. Measure distance V at inboard (i) and outboard (o) sides of seat.
   V_i = 473 mm V_o = 473 mm

		PASS/FAIL
5.	Is $U_i \leq V_i$? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
6.	Is $U_o \leq V_o$? Yes – Pass; No – Fail	**PASS**

7. Maximum vertical height of the barrier above the SRP of the seat located immediately rearward of the barrier (S) = 640 mm

		PASS/FAIL
8.	Is item 7 $\geq$ 610 mm? (S5.2 & S5.1.2) Yes – Pass; No – Fail	**PASS**

9. Maximum transverse width of the seat cushion of the seat immediately rearward of the barrier (W1) = 990 mm
10. Calculate the following: Calculate the following: 0.75 x W1 = 742.5 mm
11. Calculate the following: 0.9 x W1 x 610 mm = 543,510 mm^2

DATA SHEET 3 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

12. Project the front surface of the barrier onto a vertical transverse plane. Measure the projected surface area ($\pm$ 2%) that falls between the following planes, which are determined relative to the seat located immediately rearward of the barrier:
    - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
    - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

12.1 Seat back width at 610 mm above the SRP height (A) = 905 mm

12.2 Seat back width at the SRP height (B) = 967 mm

12.3 Area = ½ (A+B) x 610 mm = 570,960 mm^2

Used this equation:

Area = ½ (A+B) x 610 mm = 570,960 mm^2 – * 2,880 mm^2 = 568,080 mm^2

		PASS/FAIL
13.	Is item 12.1 > item 10? (S5.1.2) Yes – Pass; No – Fail	**PASS**
14.	Is item 12.3 > item 11? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 12.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: Eric Lostetter [signature]

Approved By: Michael Janovicz [signature]   Date: 09/12/11

DATA SHEET 3

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

BARRIER NUMBER: B16/S16

1. Measure the distance (X) from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. X = 486 mm.

		PASS/FAIL
2.	Is distance X $\leq$ 610 mm? (S5.2) Yes – Pass; No – Fail	**PASS**

3. Measure distance U at inboard (i) and outboard (o) side of barrier.

   U_i = 327 mm U_o = 332 mm

4. Measure distance V at inboard (i) and outboard (o) sides of seat.

   V_i = 473 mm V_o = 473 mm

		PASS/FAIL
5.	Is $U_i \leq V_i$? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
6.	Is $U_o \leq V_o$? Yes – Pass; No – Fail	**PASS**

7. Maximum vertical height of the barrier above the SRP of the seat located immediately rearward of the barrier (S) = 636 mm

		PASS/FAIL
8.	Is item 7 $\geq$ 610 mm? (S5.2 & S5.1.2) Yes – Pass; No – Fail	**PASS**

9. Maximum transverse width of the seat cushion of the seat immediately rearward of the barrier (W1) = 750 mm

10. Calculate the following: Calculate the following: 0.75 x W1 = 562.5 mm

11. Calculate the following: 0.9 x W1 x 610 mm = 411,750 mm^2

DATA SHEET 3 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

12. Project the front surface of the barrier onto a vertical transverse plane. Measure the projected surface area ($\pm$ 2%) that falls between the following planes, which are determined relative to the seat located immediately rearward of the barrier:
    - A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
    - A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

12.1 Seat back width at 610 mm above the SRP height (A) = 676 mm

12.2 Seat back width at the SRP height (B) = 733 mm

12.3 Area = ½ (A+B) x 610 mm = 429,745 mm^2

Used this equation:

Area = ½ (A+B) x 610 mm = 429,745 mm^2 – * 2,700 mm^2 = 427,045 mm^2

		PASS/FAIL
13.	Is item 12.1 > item 10? (S5.1.2) Yes – Pass; No – Fail	**PASS**
14.	Is item 12.3 > item 11? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 12.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: Eric Pessarakos

Approved By: Michael Janovicz

Date: 09/12/11

DATA SHEET 3

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B18/S18

1. Measure the distance (X) from SRP of seat immediately aft of barrier in a horizontal longitudinal line forward to barrier. X = 514 mm.

		PASS/FAIL
2.	Is distance X $\leq$ 610 mm? (S5.2) Yes – Pass; No – Fail	**PASS**

3. Measure distance U at inboard (i) and outboard (o) side of barrier.

   U_i = 333 mm U_o = 345 mm

4. Measure distance V at inboard (i) and outboard (o) sides of seat.

   V_i = 473 mm V_o = 473 mm

		PASS/FAIL
5.	Is $U_i \leq V_i$? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
6.	Is $U_o \leq V_o$? Yes – Pass; No – Fail	**PASS**

7. Maximum vertical height of the barrier above the SRP of the seat located immediately rearward of the barrier (S) = 639 mm

		PASS/FAIL
8.	Is item 7 $\geq$ 610 mm? (S5.2 & S5.1.2) Yes – Pass; No – Fail	**PASS**

9. Maximum transverse width of the seat cushion of the seat immediately rearward of the barrier (W1) = 990 mm

10. Calculate the following: Calculate the following: 0.75 x W1 = 742.5 mm

11. Calculate the following: 0.9 x W1 x 610 mm = 543,510 mm^2

DATA SHEET 3 (CONTINUED)

RESTRAINING BARRIER POSITION AND PROJECTED REAR SURFACE AREA

12. Project the front surface of the barrier onto a vertical transverse plane. Measure the projected surface area ($\pm$ 2%) that falls between the following planes, which are determined relative to the seat located immediately rearward of the barrier:

- A horizontal plane that passes through the SRP and a horizontal plane 610 mm above the SRP; and
- A vertical longitudinal plane that passes through the inboard-most point of the seat cushion and a vertical longitudinal plane that passes through the outboard-most point of the seat cushion.

Use the following for a typical trapezoidal shape:

12.1 Seat back width at 610 mm above the SRP height (A) = 910 mm

12.2 Seat back width at the SRP height (B) = 968 mm

12.3 Area = ½ (A+B) x 610 mm = 572,790 mm^2

Used this equation:

Area = ½ (A+B) x 610 mm = 572,790 mm^2 – * 1,944 mm^2 = 570,846 mm^2

		PASS/FAIL
13.	Is item 12.1 > item 10? (S5.1.2) Yes – Pass; No – Fail	**PASS**
14.	Is item 12.3 > item 11? (S5.1.2) Yes – Pass; No – Fail	**PASS**

Note: For a seat back area that is not trapezoidal in shape or has a large radius at the corner(s), the above described measuring method (item 12.3) must be modified as required to obtain accurate area measurements.

Comments: * Denotes area of the trapezoid outside of radius.

Recorded By: Eric Pesce Lumen

Approved By: Michael Janovicz

Date: 09/12/11

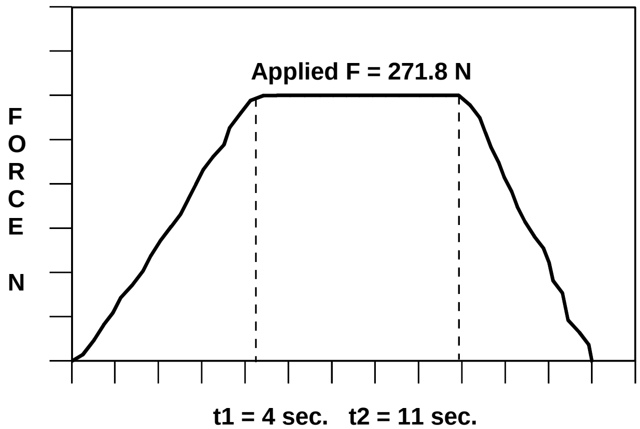
DATA SHEET 4

SEAT CUSHION LATCHING AND RETENTION TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S17

1. Cushion Weight = 52.5 N; 11.8 lb; 5.4 kg
2. Cushion Weight x 5 = F = 262.5 N (S5.1.5 (b))
3. Complete the following force/time graph:



F must be 5 x Cushion Weight; t1 and t2 must be according to the following expressions:

1 sec. < t1 < 5 sec. (+1.0 sec. and -0.0 sec.)

t2 = t1 + 5sec. (+1.0 sec. and -0.0 sec.)

		PASS/FAIL
4.	Did seat cushion separate from the seat structure at any attachment point? (S5.1.5 (b)) Yes – Fail; No – Pass	**PASS**

Describe Seat Cushion Attachments: The front and rear of the seat cushion is attached to the seat frame with metal brackets and screws.

Comments: None

Recorded By: [signature]

Approved By: [signature] Date: 10/19/11

DATA SHEET 5

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S1

1. Seat Bench Width = 990 mm

   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (3)

2. Seat Reference Point (SRP) location is: (Description of location as supplied by the COTR): 473 mm Above Floor, 0 mm from center

3. Location of lower loading bar is 0 mm above the SRP.

   (Requirement: Between 102 mm above and 102 mm below the SRP) (S5.1.3.1)

   Length of lower loading bar = 864 mm

   Seat Back width at SRP = 970 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

4. Include x-y plot of Force vs. Time for the lower loading bar.

5. Deflection of the seat back at conclusion of lower bar loading (1,557W position) = 60 mm.

6. Maximum deflection allowed without moving the seat back to within 102 mm of another seat or restraining barrier = 356 mm (must be 356 mm of less) (S5.1.3)

7. Seat back movement rate selected by the test engineer = 12.7 mm/sec

8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP. (Requirement: 406 mm) (S5.1.3.3).

   Upper Loading Bar Length = 800 mm

   Seat back width at 406 mm above the SRP height = 901 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

9. Reason for stopping seat back deflection:

   ___ Reached deflection determined in Item 5 above (if less than 356 mm)

   _X_ Reached 356 mm maximum allowed deflection (Actual deflection was 357 mm)

   ___ Force exceeded 10,676 N

   ___ Separation was about to occur

10. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222) superimposed.

		PASS/FAIL
11.	Is the seat in its final deflected position within 102 mm of the next seat or barrier? Yes – Fail; No – Pass	**PASS**

DATA SHEET 5 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – FORWARD

		PASS/FAIL
12.	Does the forward force vs. deflection trace of the seat back lie within the unshaded area? (S5.1.3) Yes – Pass; No – Fail	**PASS**

13. Include a deflection vs. time plot for the upper loading bar.
14. The area within the force vs. deflection curve = 1,707 Joules (N-m)
15. 452W =1,356 Joules (N-m) (S5.1.3.4)

		PASS/FAIL
16.	Is item 14 $\geq$ item 15? (S5.1.3.4) Yes – Pass; No – Fail	**PASS**

Comments: None

Recorded By: ____________

Approved By: ____________ Date: 09/14/11

DATA SHEET 5

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S6

1. Seat Bench Width = 990 mm

   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (3)

2. Seat Reference Point (SRP) location is: (Description of location as supplied by the COTR): 473 mm Above Floor, 0 mm from center

3. Location of lower loading bar is 0 mm above the SRP.

   (Requirement: Between 102 mm above and 102 mm below the SRP) (S5.1.3.1)

   Length of lower loading bar = 864 mm

   Seat Back width at SRP = 970 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

4. Include x-y plot of Force vs. Time for the lower loading bar.

5. Deflection of the seat back at conclusion of lower bar loading (1,557W position) = 61 mm.

6. Maximum deflection allowed without moving the seat back to within 102 mm of another seat or restraining barrier = 356 mm (must be 356 mm of less) (S5.1.3)

7. Seat back movement rate selected by the test engineer = 12.7 mm/sec

8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP.

   (Requirement: 406 mm) (S5.1.3.3).

   Upper Loading Bar Length = 825 mm

   Seat back width at 406 mm above the SRP height = 930 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

9. Reason for stopping seat back deflection:

   ___ Reached deflection determined in Item 5 above (if less than 356 mm)

   _X_ Reached 356 mm maximum allowed deflection (Actual deflection was 357 mm)

   ___ Force exceeded 10,676 N

   ___ Separation was about to occur

10. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222) superimposed.

		PASS/FAIL
11.	Is the seat in its final deflected position within 102 mm of the next seat or barrier? Yes – Fail; No – Pass	**PASS**

DATA SHEET 5 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – FORWARD

		PASS/FAIL
12.	Does the forward force vs. deflection trace of the seat back lie within the unshaded area? (S5.1.3) Yes – Pass; No – Fail	**PASS**

13. Include a deflection vs. time plot for the upper loading bar.

14. The area within the force vs. deflection curve = 1,800 Joules (N-m)

15. 452W =1,356 Joules (N-m) (S5.1.3.4)

		PASS/FAIL
16.	Is item 14 $\geq$ item 15? (S5.1.3.4) Yes – Pass; No – Fail	**PASS**

Comments: None

Recorded By: ____________________

Approved By: ____________________ Date: 09/14/11

DATA SHEET 5

SEAT BACK FORCE DEFLECTION TEST - FORWARD

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S16

1. Seat Bench Width = 750 mm

   W = (Seat Bench Width)/381 mm (round to nearest whole number) = (2)

2. Seat Reference Point (SRP) location is: (Description of location as supplied by the COTR): 473 mm Above Floor, 0 mm from center

3. Location of lower loading bar is 0 mm above the SRP.

   (Requirement: Between 102 mm above and 102 mm below the SRP) (S5.1.3.1)

   Length of lower loading bar = 635 mm

   Seat Back width at SRP = 732 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

4. Include x-y plot of Force vs. Time for the lower loading bar.

5. Deflection of the seat back at conclusion of lower bar loading (1,557W position) = 44 mm.

6. Maximum deflection allowed without moving the seat back to within 102 mm of another seat or restraining barrier = 356 mm (must be 356 mm of less) (S5.1.3)

7. Seat back movement rate selected by the test engineer = 12.7 mm/sec

8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP.

   (Requirement: 406 mm) (S5.1.3.3).

   Upper Loading Bar Length = 610 mm

   Seat back width at 406 mm above the SRP height = 710 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

9. Reason for stopping seat back deflection:

   ___ Reached deflection determined in Item 5 above (if less than 356 mm)

   _X_ Reached 356 mm maximum allowed deflection (Actual deflection was 357 mm)

   ___ Force exceeded 10,676 N

   ___ Separation was about to occur

10. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222) superimposed.

		PASS/FAIL
11.	Is the seat in its final deflected position within 102 mm of the next seat or barrier? Yes – Fail; No – Pass	**PASS**

DATA SHEET 5 (CONTINUED)

SEAT BACK FORCE DEFLECTION TEST – FORWARD

		PASS/FAIL
12.	Does the forward force vs. deflection trace of the seat back lie within the unshaded area? (S5.1.3) Yes – Pass; No – Fail	**PASS**

13. Include a deflection vs. time plot for the upper loading bar.

14. The area within the force vs. deflection curve = 1,679 Joules (N-m)

15. 452W = 904 Joules (N-m) (S5.1.3.4)

		PASS/FAIL
16.	Is item 14 $\geq$ item 15? (S5.1.3.4) Yes – Pass; No – Fail	**PASS**

Comments: None

Recorded By: ____________________

Approved By: ____________________ Date: 10/25/11

DATA SHEET 6

RESTRAINING BARRIER FORCE/DEFLECTION TEST

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

BARRIER NUMBER: B1

1. Seat cushion width of seat immediately rearward of restraining barrier = 990 mm
   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (3)
2. Location of SRP of seat rearward of restraining barrier is: (Description of location as supplied by the manufacturer): 473 mm Above Floor.
3. Location of lower loading bar is 0 mm above/below the SRP.
   (Requirement: between 102 mm above and 102 mm below the SRP) (S5.1.3.1)
   Length of loading bar = 864 mm
   Width of barrier at SRP = 970 mm
   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)
4. Include the x-y plot of force vs. time for the lower loading bar.
5. Deflection of the barrier at the conclusion of lower bar loading (1,557W position) = 51 mm.
6. Maximum deflection allowed without moving the restraining barrier to within interference of door operation = 356 mm (must be 356 mm or less).
7. Barrier movement rate selected by the test engineer = 12.7 mm/sec
8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP.
   (Requirement: 406 mm) (S5.1.3.3)
   Upper loading bar length = 825 mm
   Barrier width at 406 mm above the SRP height = 925 mm
   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)
9. Reason for stopping restraining barrier deflection:
   _X_ Reached 356 mm maximum
   ___ Force exceeded 10,676 N
   ___ Separation was about to occur
   ___ Interference with door operation
10. Maximum deflection of barrier 357 mm.
    (Requirement: maximum allowed is 356 mm) (S5.2.3 (b))

		PASS/FAIL
11.	Does the restraining barrier interfere with the normal operation of the door? (S5.2.3 (c)) Yes – Fail; No – Pass	**PASS**

DATA SHEET 6 (CONTINUED)

RESTRAINING BARRIER FORCE/DEFLECTION TEST

		PASS/FAIL
12.	Did any separation of barrier component or the separation of the barrier from the vehicle occur? (S5.1.3 (d) & (e)) Yes – Fail; No – Pass	**PASS**

13. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222) superimposed.

		PASS/FAIL
14.	Does the forward force vs. deflection trace of the barrier back lie within the unshaded area? (S5.2.3(a)) Yes – Pass; No – Fail	**PASS**

15. Include a deflection vs. time plot for the upper loading bar.

16. The area within the force vs. deflection curve = 1,852 Joules (N-m)

17. 452W = 1,356 Joules (N-m) (S5.2.3) (S5.1.3.4)

		PASS/FAIL
18.	Is item 16 > item 17? Yes – Pass; No – Fail	**PASS**

Comments: None.

Recorded By: Eric [signature]

Approved By: Michael Janovicz [signature]   Date: 10/25/11

DATA SHEET 6

RESTRAINING BARRIER FORCE/DEFLECTION TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B13

1. Seat cushion width of seat immediately rearward of restraining barrier = 990 mm

   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (3)

2. Location of SRP of seat rearward of restraining barrier is: (Description of location as supplied by the manufacturer): 473 mm Above Floor.

3. Location of lower loading bar is 0 mm above/below the SRP.

   (Requirement: between 102 mm above and 102 mm below the SRP) (S5.1.3.1)

   Length of loading bar = 864 mm

   Width of barrier at SRP = 970 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

4. Include the x-y plot of force vs. time for the lower loading bar.

5. Deflection of the barrier at the conclusion of lower bar loading (1,557W position) = 57 mm.

6. Maximum deflection allowed without moving the restraining barrier to within interference of door operation = 299 mm (must be 356 mm or less).

7. Barrier movement rate selected by the test engineer = 12.7 mm/sec

8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP.

   (Requirement: 406 mm) (S5.1.3.3)

   Upper loading bar length = 825 mm

   Barrier width at 406 mm above the SRP height = 930 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

9. Reason for stopping restraining barrier deflection:

   ___ Reached 356 mm maximum

   _X_ Force exceeded 10,676 N

   ___ Separation was about to occur

   ___ Interference with door operation

10. Maximum deflection of barrier 299 mm.

    (Requirement: maximum allowed is 356 mm) (S5.2.3 (b))

		PASS/FAIL
11.	Does the restraining barrier interfere with the normal operation of the door? (S5.2.3 (c)) Yes – Fail; No – Pass	**PASS**

DATA SHEET 6 (CONTINUED)

RESTRAINING BARRIER FORCE/DEFLECTION TEST

		PASS/FAIL
12.	Did any separation of barrier component or the separation of the barrier from the vehicle occur? (S5.1.3 (d) & (e)) Yes – Fail; No – Pass	**PASS**

13. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222) superimposed.

		PASS/FAIL
14.	Does the forward force vs. deflection trace of the barrier back lie within the unshaded area? (S5.2.3(a)) Yes – Pass; No – Fail	**FAIL**

15. Include a deflection vs. time plot for the upper loading bar.
16. The area within the force vs. deflection curve = 1,353 Joules (N-m)
17. 452W = 1,356 Joules (N-m) (S5.2.3) (S5.1.3.4)

		PASS/FAIL
18.	Is item 16 > item 17? Yes – Pass; No – Fail	**FAIL**

Comments: None.

Recorded By: ____________________

Approved By: ____________________ Date: 09/13/11

DATA SHEET 6

RESTRAINING BARRIER FORCE/DEFLECTION TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B16

1. Seat cushion width of seat immediately rearward of restraining barrier = 750 mm

   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (2)

2. Location of SRP of seat rearward of restraining barrier is: (Description of location as supplied by the manufacturer): 473 mm Above Floor.

3. Location of lower loading bar is 0 mm above/below the SRP.

   (Requirement: between 102 mm above and 102 mm below the SRP) (S5.1.3.1)

   Length of loading bar = 635 mm

   Width of barrier at SRP = 732 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

4. Include the x-y plot of force vs. time for the lower loading bar.

5. Deflection of the barrier at the conclusion of lower bar loading (1,557W position) = 53 mm.

6. Maximum deflection allowed without moving the restraining barrier to within interference of door operation = 356 mm (must be 356 mm or less).

7. Barrier movement rate selected by the test engineer = 12.7 mm/sec

8. Location of upper loading bar is in a horizontal plane 406 mm above the SRP. (Requirement: 406 mm) (S5.1.3.3)

   Upper loading bar length = 610 mm

   Barrier width at 406 mm above the SRP height = 710 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

9. Reason for stopping restraining barrier deflection:

   _X_ Reached 356 mm maximum

   ___ Force exceeded 10,676 N

   ___ Separation was about to occur

   ___ Interference with door operation

10. Maximum deflection of barrier 357 mm.

    (Requirement: maximum allowed is 356 mm) (S5.2.3 (b))

		PASS/FAIL
11.	Does the restraining barrier interfere with the normal operation of the door? (S5.2.3 (c)) Yes – Fail; No – Pass	**PASS**

DATA SHEET 6 (CONTINUED)

RESTRAINING BARRIER FORCE/DEFLECTION TEST

		PASS/FAIL
12.	Did any separation of barrier component or the separation of the barrier from the vehicle occur? (S5.1.3 (d) & (e)) Yes – Fail; No – Pass	**PASS**

13. Include the x-y plot of force vs. deflection for the upper loading bar with boundaries of Figure 14 (OVSC TP-222) superimposed.

		PASS/FAIL
14.	Does the forward force vs. deflection trace of the barrier back lie within the unshaded area? (S5.2.3(a)) Yes – Pass; No – Fail	**PASS**

15. Include a deflection vs. time plot for the upper loading bar.
16. The area within the force vs. deflection curve = 1,330 Joules (N-m)
17. 452W = 904 Joules (N-m) (S5.2.3) (S5.1.3.4)

		PASS/FAIL
18.	Is item 16 > item 17? Yes – Pass; No – Fail	**PASS**

Comments: The displacement transducer was not offset to zero prior to load application denoted by the upper curve line appearing below the red lower boundary line. However, the arch under the force vs. deflection curve satisfies the minimum energy requirement of the barrier. Therefore, the test is considered valid and the barrier compliant.

Recorded By: ____________________

Approved By: ____________________ Date: 10/24/11

DATA SHEET 7

SEAT BACK FORCE DEFLECTION TEST – REARWARD

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S8

1. Seat bench width = 990 mm

   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (3)

2. Location of the loading bar is in a horizontal plane 343 mm above the SRP of the test seat. (Requirement: 343 mm above SRP) (S5.1.4.1)

   Loading bar length = 825 mm

   Seat back width at 343 mm above the SRP height = 920 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

3. Deflection of the seat back at 222 N preload = 27.9 mm

4. Maximum deflection allowed without moving the seat back to within 102 mm of another seat = 254 mm (maximum allowed = 254 mm) (S5.1.4)

5. Seat back movement rate selected by the test engineer = 8.8 mm/sec

6. Reason for stopping deflection:

   ___ Reached deflection determined in item 3 above

   _X_ Reached 254 mm maximum allowed deflection

   ___ Force exceeded 9,786 N

   ___ Separation was about to occur

7. Include the x-y plot of force vs. deflection for the loading bar with the boundaries of Figure 18 (OVSC TP-222) superimposed.

		PASS/FAIL
8.	Does the force vs. deflection plot lie within the boundaries of Figure 18 (OVSC TP-222) Yes – Pass; No – Fail	**PASS**

9. Include a deflection vs. time plot for the loading bar.

10. 316W = 948 Joules (N-m)

11. The area within the force vs. deflection curve = 1,143 Joules (N-m)

		PASS/FAIL
12.	Is item 11 $\geq$ item 10? (S5.1.4.2) Yes – Pass; No – Fail	**PASS**

Comments: None.

Recorded By: Eric [signature]

Approved By: Michael Janoz [signature] Date: 09/14/11

DATA SHEET 7

SEAT BACK FORCE DEFLECTION TEST – REARWARD

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S11

1. Seat bench width = 990 mm

   W = (Seat Cushion Width)/381 mm (round to nearest whole number) = (3)

2. Location of the loading bar is in a horizontal plane 343 mm above the SRP of the test seat. (Requirement: 343 mm above SRP) (S5.1.4.1)

   Loading bar length = 825 mm

   Seat back width at 343 mm above the SRP height = 920 mm

   (Loading Bar Length = Seat Back Width – 102 mm, +13, -6.3)

3. Deflection of the seat back at 222 N preload = 31 mm

4. Maximum deflection allowed without moving the seat back to within 102 mm of another seat = 254 mm (maximum allowed = 254 mm) (S5.1.4)

5. Seat back movement rate selected by the test engineer = 8.8 mm/sec

6. Reason for stopping deflection:

   ___ Reached deflection determined in item 3 above

   _X_ Reached 254 mm maximum allowed deflection

   ___ Force exceeded 9,786 N

   ___ Separation was about to occur

7. Include the x-y plot of force vs. deflection for the loading bar with the boundaries of Figure 18 (OVSC TP-222) superimposed.

		PASS/FAIL
8.	Does the force vs. deflection plot lie within the boundaries of Figure 18 (OVSC TP-222) Yes – Pass; No – Fail	**PASS**

9. Include a deflection vs. time plot for the loading bar.

10. 316W = 948 Joules (N-m)

11. The area within the force vs. deflection curve = 1,092 Joules (N-m)

		PASS/FAIL
12.	Is item 11 $\geq$ item 10? (S5.1.4.2) Yes – Pass; No – Fail	**PASS**

Comments: None.

Recorded By: ______________________

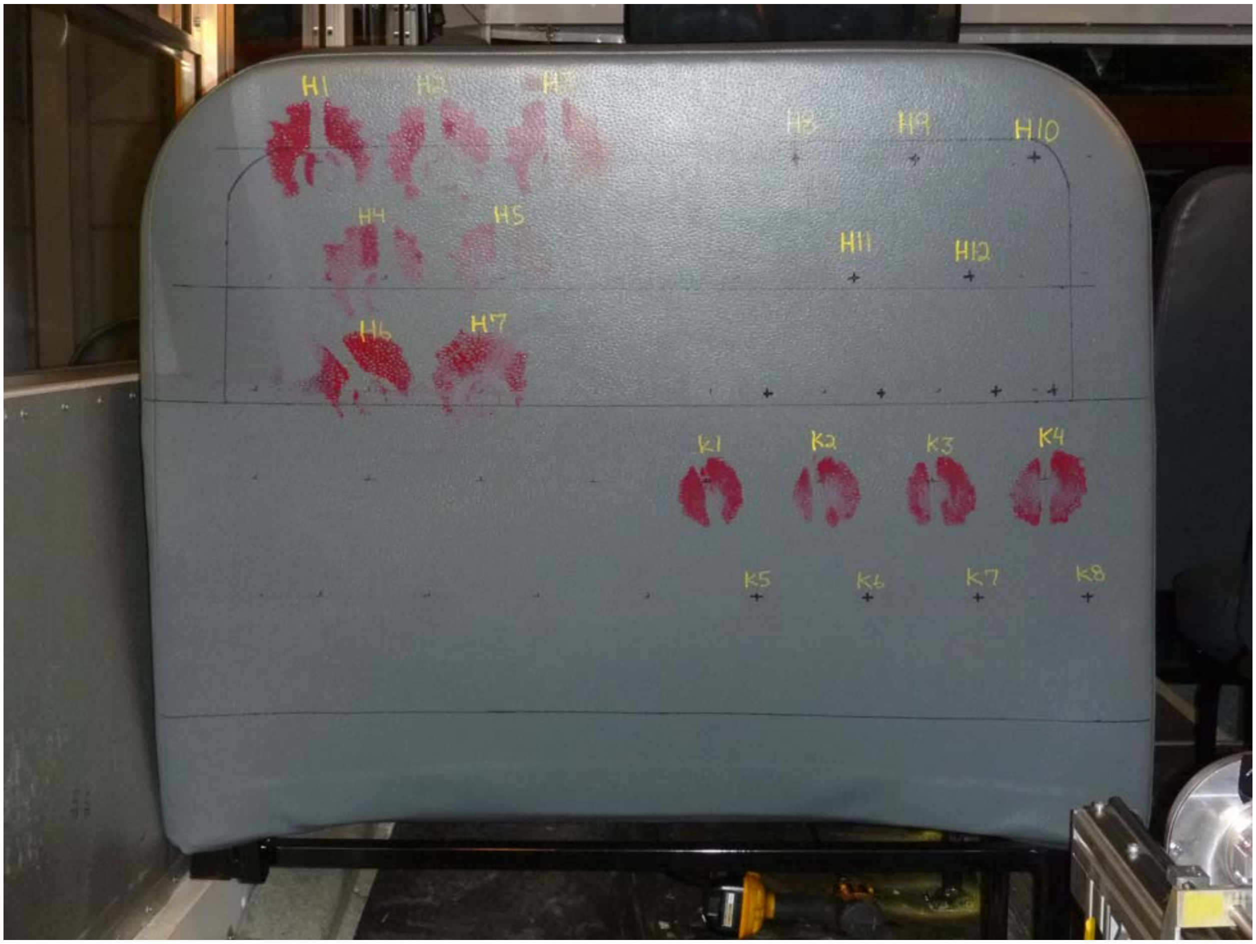
Approved By: ______________________ Date: 09/14/11

DATA SHEET 8

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S2



REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H1, H2, H3, H4, H5, H6, and H7 in the appropriate location.
3. Define the plane of reference for head form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of Seat

   Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)
Head Impact & Test #	Location			Speed Trap Impact Velocity** mps	Derived Velocity mps	Contact Area (CA) mm^2	CA ≥ 1935 mm^2	
	X	Y	Angle				Yes- PASS	No- FAIL
H1	-754	520	0º	1.54	1.57	5,820	**PASS**	
H2	-653	521	0º	1.53	1.94	6,420	**PASS**	
H3	-551	520	0º	1.53	1.17	5,490	**PASS**	
H4	-705	420	0º	1.58	2.07	6,220	**PASS**	
H5	-600	420	0º	1.57	2.06	5,280	**PASS**	
H6	-727	321	0º	1.58	1.44	5,280	**PASS**	
H7	-620	320	0º	1.59	1.62	5,550	**PASS**	

* Contact Velocity from Item 7 below

** Velocity Range = 1.52 mps, +0.08, -0 mps

5. Attach Contact Area Prints.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat. In the case of Seat No. S2, the inboard edge of the seat is on the right hand side of the seat as viewed from the rear.

Recorded By: ____________________

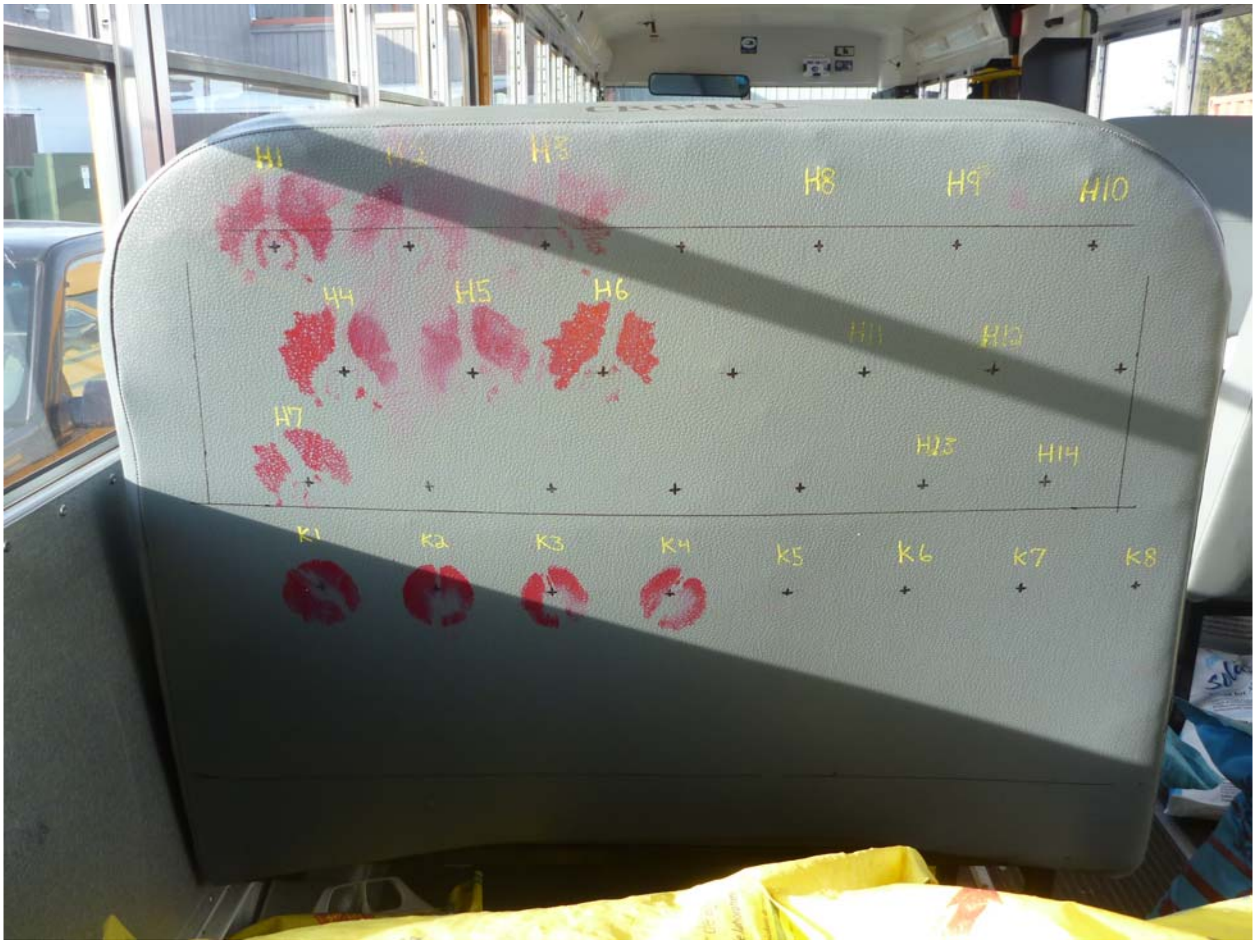
Approved By: ____________________ Date: 09/27/11

DATA SHEET 8

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S7



REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H1, H2, H3, H4, H5, H6, and H7 in the appropriate location.
3. Define the plane of reference for head form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of Seat

   Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)
Head Impact & Test #	Location			Speed Trap Impact Velocity** mps	Derived Velocity mps	Contact Area (CA) mm^2	CA $\geq$ 1935 mm^2	
	X	Y	Angle				Yes-PASS	No-FAIL
H1	-777	507	0º	1.57	1.59	6,480	**PASS**	
H2	-677	510	0º	1.52	1.65	5,610	**PASS**	
H3	-575	510	0º	1.53	1.88	5,530	**PASS**	
H4	-736	410	0º	1.58	2.07	6,380	**PASS**	
H5	-635	410	0º	1.55	1.43	5,300	**PASS**	
H6	-534	411	0º	1.58	1.59	4,930	**PASS**	
H7	-779	312	0º	1.54	1.26	5,580	**PASS**	

* Contact Velocity from Item 7 below

** Velocity Range = 1.52 mps, +0.08, -0 mps

5. Attach Contact Area Prints.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: ____________________

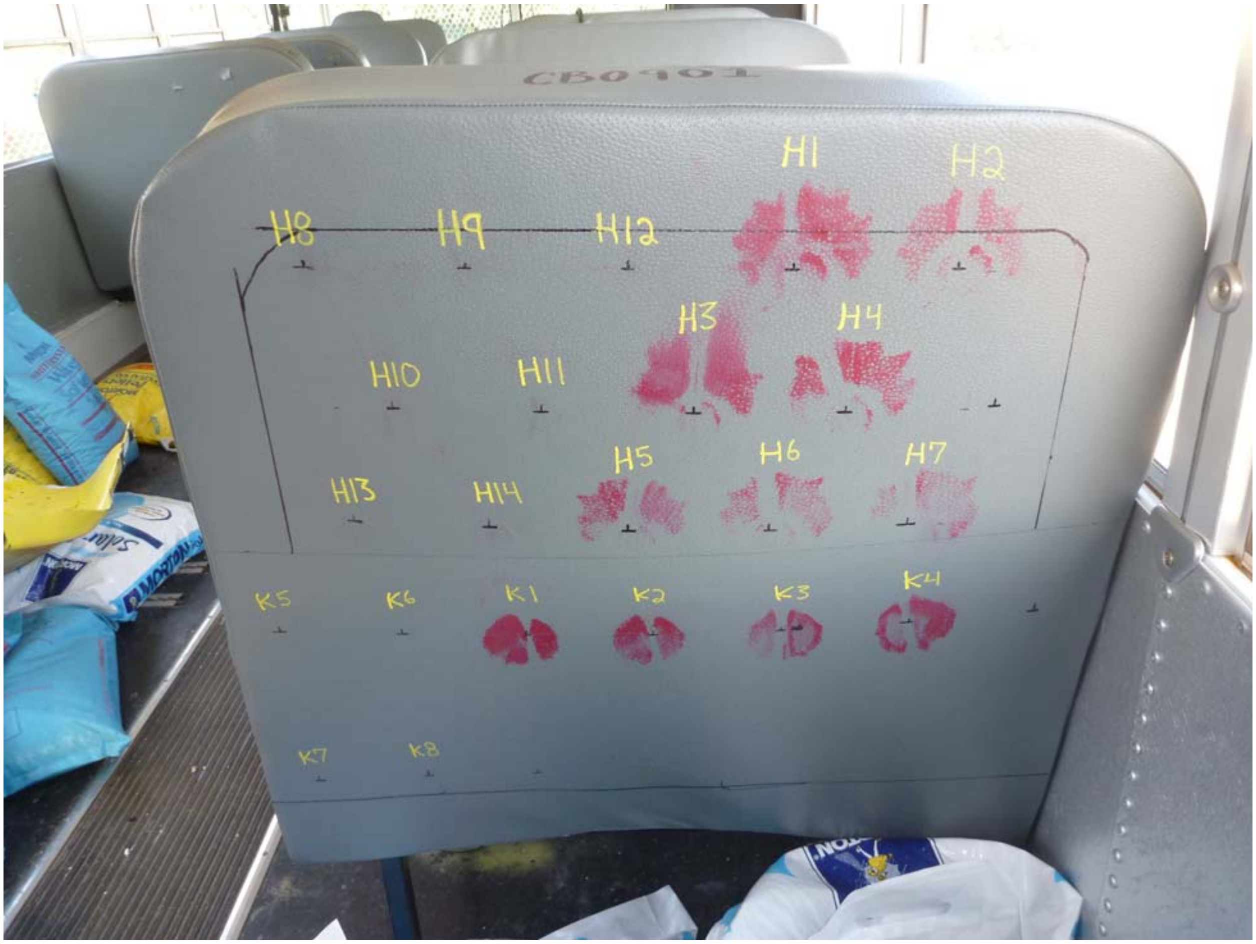
Approved By: ____________________ Date: 10/12/11

DATA SHEET 8

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S15



REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H1, H2, H3, H4, H5, H6, and H7 in the appropriate location.
3. Define the plane of reference for head form impact angle:

0° = Parallel with Floor, (+) is Up, (-) is Down

X = From Inboard Edge of Seat

Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)
Head Impact & Test #	Location			Speed Trap Impact Velocity** mps	Derived Velocity mps	Contact Area (CA) mm^2	CA $\geq$ 1935 mm^2	
	X	Y	Angle				Yes- PASS	No- FAIL
H1	499	511	0º	1.56	1.76	5,500	PASS	
H2	600	510	0º	1.56	1.92	4,660	PASS	
H3	437	416	0º	1.52	1.13	4,450	PASS	
H4	540	415	0º	1.52	1.26	5,000	PASS	
H5	385	320	0º	1.60	1.04	4,400	PASS	
H6	489	320	0º	1.57	1.52	4,720	PASS	
H7	590	320	0º	1.53	1.88	5,170	PASS	

* Contact Velocity from Item 7 below

** Velocity Range = 1.52 mps, +0.08, -0 mps

5. Attach Contact Area Prints.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: ______________

Approved By: ______________ Date: 10/19/11

DATA SHEET 8

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B6

REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H1, H2, H3, H4, H5, H6, and H7 in the appropriate location.
3. Define the plane of reference for head form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of Barrier

   Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)
Head Impact & Test #	Location			Speed Trap Impact Velocity** mps	Derived Velocity mps	Contact Area (CA) mm^2	CA $\geq$ 1935 mm^2	
	X	Y	Angle				Yes-PASS	No-FAIL
H1	-816	512	0º	1.59	1.44	6,560	**PASS**	
H2	-716	516	0º	1.60	1.68	5,340	**PASS**	
H3	-612	522	0º	1.60	1.91	5,330	**PASS**	
H4	-801	412	0º	1.57	1.32	5,260	**PASS**	
H5	-699	415	0º	1.54	1.39	4,730	**PASS**	
H6	-725	309	0º	1.52	1.43	5,110	**PASS**	
H7	-623	315	0º	1.53	1.38	4,230	**PASS**	

* Contact Velocity from Item 7 below

** Velocity Range = 1.52 mps, +0.08, -0 mps

5. Attach Contact Area Prints.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: Eric [signature]

Approved By: Michael Janovicz [signature]   Date: 09/20/11

DATA SHEET 8

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B18

REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H1, H2, H3, H4, H5, H6, and H7 in the appropriate location.
3. Define the plane of reference for head form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of Barrier

   Y = Measured Vertically from the SRP

DATA SHEET 8 (CONTINUED)

HEAD FORM IMPACT CONTACT AREA REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)
Head Impact & Test #	Location			Speed Trap Impact Velocity** mps	Derived Velocity mps	Contact Area (CA) mm^2	CA $\geq$ 1935 mm^2	
	X	Y	Angle				Yes-PASS	No-FAIL
H1	450	520	0º	1.60	1.29	5,230	**PASS**	
H2	551	520	0º	1.56	2.15	4,530	**PASS**	
H3	656	520	0º	1.55	2.16	4,540	**PASS**	
H4	489	420	0º	1.60	1.80	4,860	**PASS**	
H5	590	420	0º	1.58	1.79	4,760	**PASS**	
H6	522	321	0º	1.60	1.38	4,770	**PASS**	
H7	625	321	0º	1.57	2.00	4,340	**PASS**	

* Contact Velocity from Item 7 below

** Velocity Range = 1.52 mps, +0.08, -0 mps

5. Attach Contact Area Prints.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: ______________

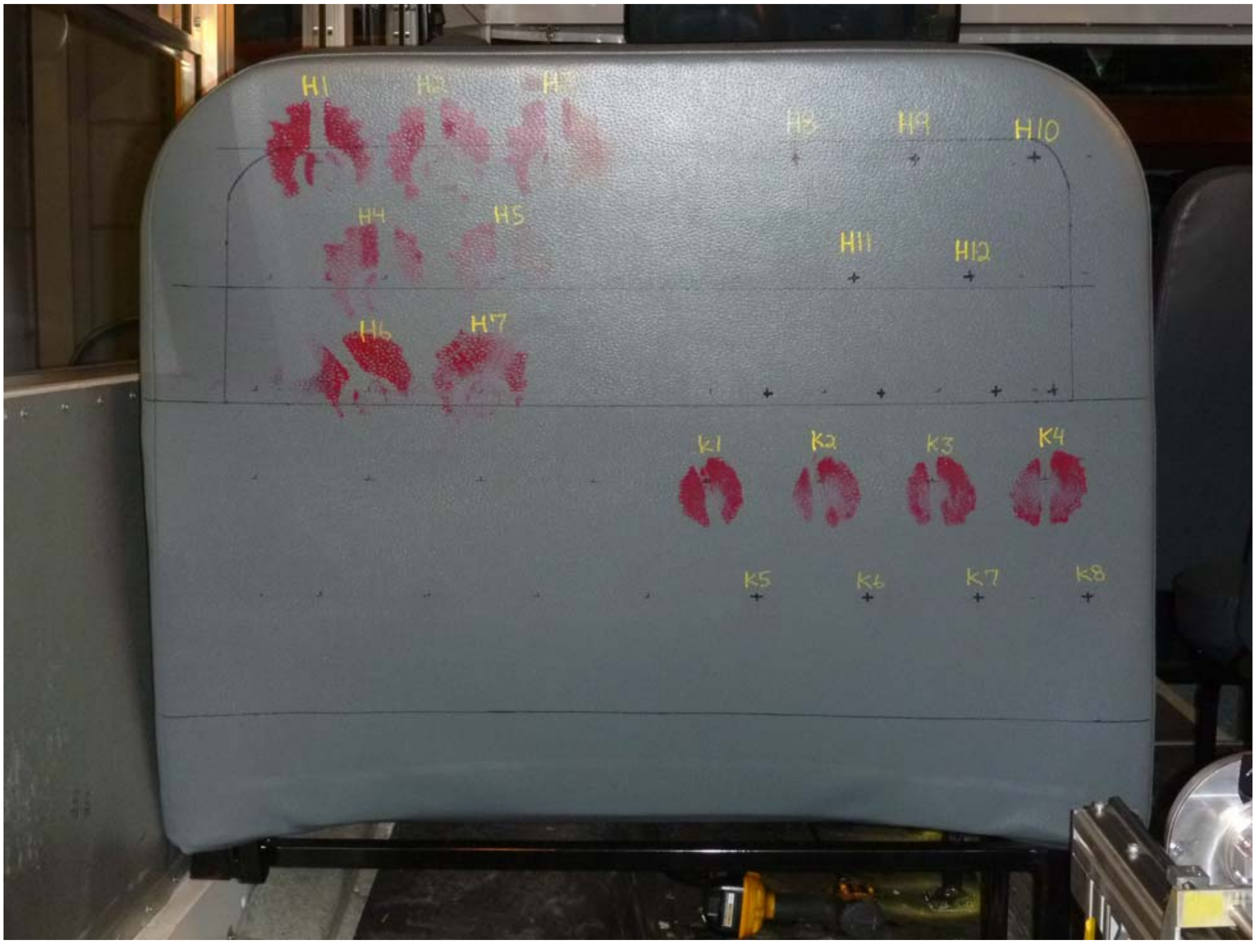
Approved By: ______________ Date: 10/20/11

DATA SHEET 9

HEAD FORM IMPACT ENERGY REQUIREMENT

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

SEAT NUMBER: S2



REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H8, H9, H10, H11, H12, H13, and H14 in the appropriate location.
3. Define the plane of reference for head form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of Seat

   Y = Measured Vertically from the SRP

DATA SHEET 9 (CONTINUED)

HEAD FORM IMPACT ENERGY REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Head impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Max HIC	Energy Req'd joules	Column 5 < 1000		Column 6 > 4.5 joules	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
H8	-349	520	0º	6.64	6.72	212	7.30	**PASS**		**PASS**	
H9	-246	520	0º	6.66	6.69	220	7.16	**PASS**		**PASS**	
H10	-145	520	0º	6.65	6.62	297	6.68	**PASS**		**PASS**	
H11	-296	420	0º	6.68	6.72	164	10.30	**PASS**		**PASS**	
H12	-196	420	0º	6.66	6.65	157	9.92	**PASS**		**PASS**	
H13	-270	320	0º	6.69	7.32	233	14.02	**PASS**		**PASS**	
H14	-169	320	0º	6.66	6.58	226	11.23	**PASS**		**PASS**	

* Impact velocity from item No. 6 below

** Impact velocity range = 6.69 mps, +0, -0.08 mps

5. Attach acceleration versus time plots for each impact.
6. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: ______________________

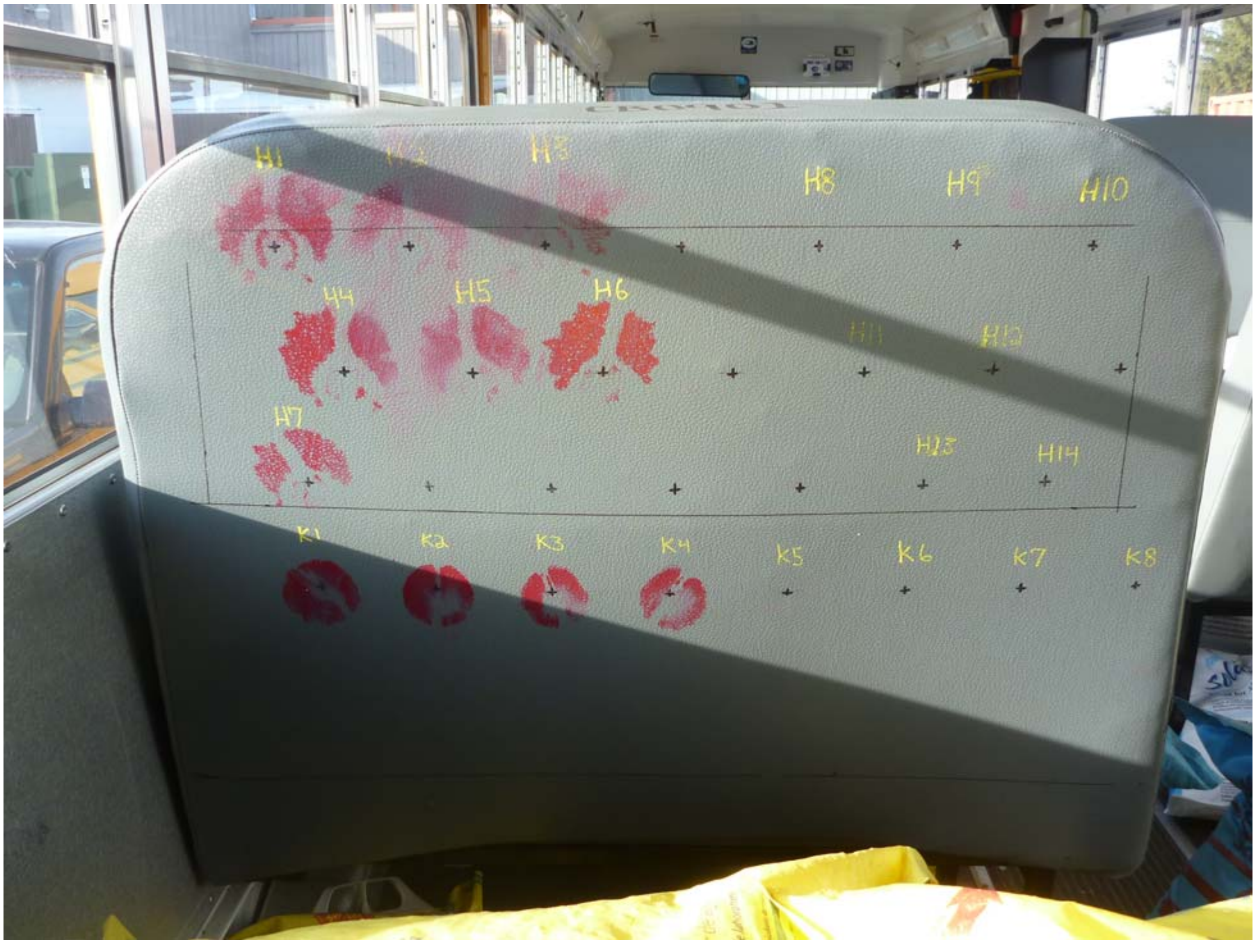
Approved By: ______________________ Date: 09/29/11

DATA SHEET 9

HEAD FORM IMPACT ENERGY REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S7



REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H8, H9, H10, H11, H12, H13, and H14 in the appropriate location.
3. Define the plane of reference for head form impact angle:

0° = Parallel with Floor, (+) is Up, (-) is Down

X = From Inboard Edge of Seat

Y = Measured Vertically from the SRP

DATA SHEET 9 (CONTINUED)

HEAD FORM IMPACT ENERGY REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Head impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Max HIC	Energy Req'd joules	Column 5 < 1000		Column 6 > 4.5 joules	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
H8	-371	512	0º	6.63	6.75	151	7.08	**PASS**		**PASS**	
H9	-270	512	0º	6.65	6.80	128	7.01	**PASS**		**PASS**	
H10	-169	512	0º	6.63	6.77	131	6.56	**PASS**		**PASS**	
H11	-329	415	0º	6.68	6.83	131	9.05	**PASS**		**PASS**	
H12	-229	416	0º	6.66	6.72	149	7.35	**PASS**		**PASS**	
H13	-272	322	0º	6.68	6.76	245	12.06	**PASS**		**PASS**	
H14	-170	322	0º	6.69	6.81	210	9.94	**PASS**		**PASS**	

* Impact velocity from item No. 6 below

** Impact velocity range = 6.69 mps, +0, -0.08 mps

5. Attach acceleration versus time plots for each impact.
6. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: ____________________

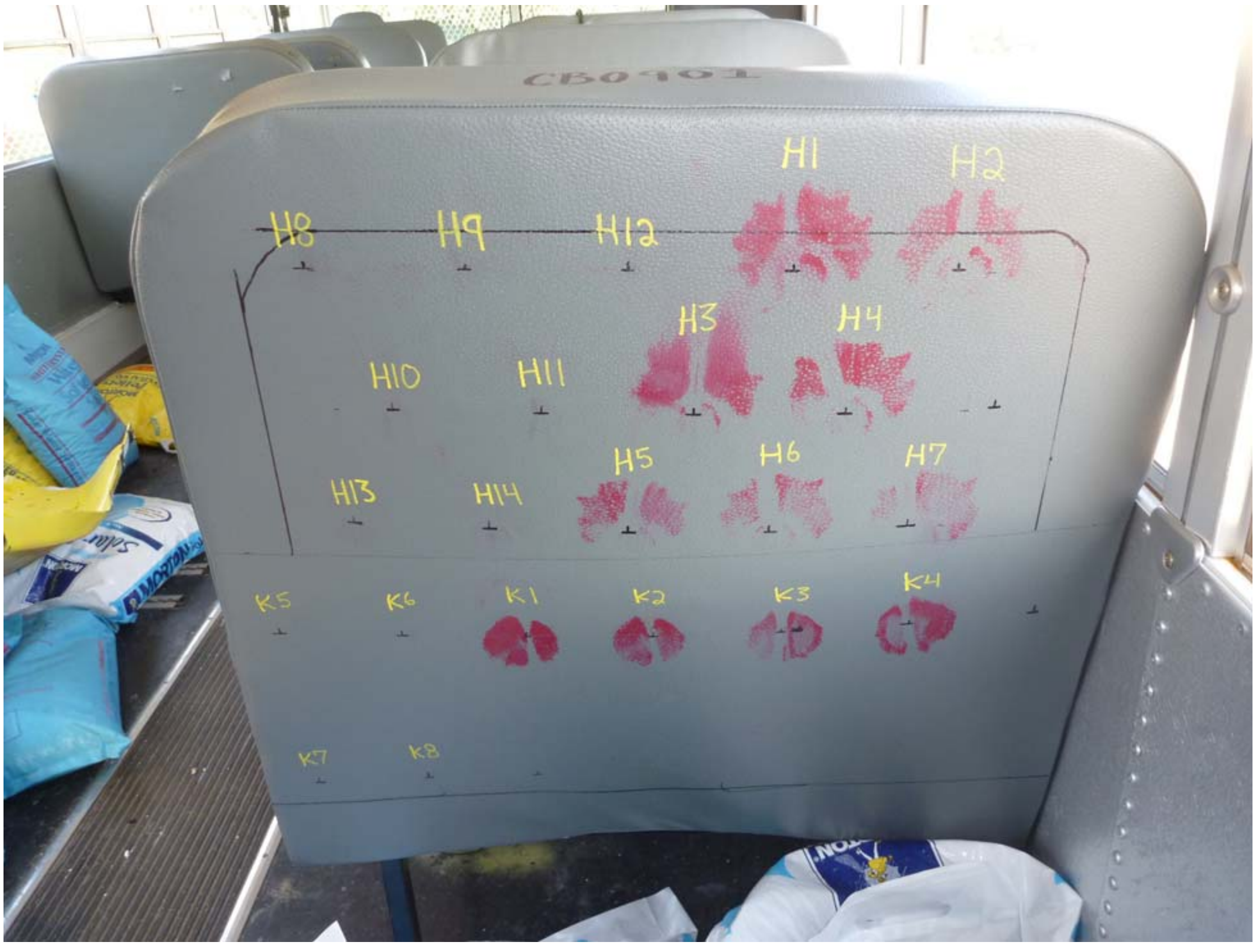
Approved By: ____________________ Date: 10/14/11

DATA SHEET 9

HEAD FORM IMPACT ENERGY REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S15



REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H8, H9, H10, H11, H12, H13, and H14 in the appropriate location.
3. Define the plane of reference for head form impact angle:

0° = Parallel with Floor, (+) is Up, (-) is Down

X = From Inboard Edge of Seat

Y = Measured Vertically from the SRP

DATA SHEET 9 (CONTINUED)

HEAD FORM IMPACT ENERGY REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Head impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Max HIC	Energy Req'd joules	Column 5 < 1000		Column 6 > 4.5 joules	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
H8	194	530	0º	6.66	7.00	136	7.86	**PASS**		**PASS**	
H9	296	525	0º	6.66	6.93	130	8.34	**PASS**		**PASS**	
H10	230	430	0º	6.64	6.93	125	8.42	**PASS**		**PASS**	
H11	333	425	0º	6.67	6.87	133	10.86	**PASS**		**PASS**	
H12	399	520	0º	6.62	6.63	129	12.51	**PASS**		**PASS**	
H13	182	334	0º	6.69	6.82	151	9.92	**PASS**		**PASS**	
H14	283	330	0º	6.69	6.86	169	14.74	**PASS**		**PASS**	

* Impact velocity from item No. 6 below

** Impact velocity range = 6.69 mps, +0, -0.08 mps

5. Attach acceleration versus time plots for each impact.
6. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: Eric Pendleton

Approved By: Michael Jarosz

Date: 10/19/11

DATA SHEET 9

HEAD FORM IMPACT ENERGY REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B6

REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H8, H9, H10, H11, H12, H13, H14, and H15 in the appropriate location.
3. Define the plane of reference for head form impact angle:

0° = Parallel with Floor, (+) is Up, (-) is Down

X = From Inboard Edge of Barrier

Y = Measured Vertically from the SRP

DATA SHEET 9 (CONTINUED)

HEAD FORM IMPACT ENERGY REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Head impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Max HIC	Energy Req'd joules	Column 5 < 1000		Column 6 > 4.5 joules	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
H8	-410	520	0º	6.66	6.77	191	7.70	**PASS**		**PASS**	
H9	-310	520	0º	6.66	6.70	155	7.53	**PASS**		**PASS**	
H10	-208	520	0º	6.69	6.74	101	7.60	**PASS**		**PASS**	
H11	-265	419	0º	6.66	6.79	178	9.41	**PASS**		**PASS**	
H12	-163	420	0º	6.69	6.71	126	7.79	**PASS**		**PASS**	
H13	-219	319	0º	6.65	6.78	378	9.58	**PASS**		**PASS**	
H14	-116	319	0º	6.65	6.64	221	8.62	**PASS**		**PASS**	
H15	-320	319	0º	6.67	6.66	204	6.75	**PASS**		**PASS**	

* Impact velocity from item No. 6 below

** Impact velocity range = 6.69 mps, +0, -0.08 mps

5. Attach acceleration versus time plots for each impact.
6. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: ______________________

Approved By: ______________________ Date: 09/21/11

DATA SHEET 9

HEAD FORM IMPACT ENERGY REQUIREMENT

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B18

REAR SURFACE

1. Locate x-y reference point on sketch above for head form impact locations. (Label the positive and negative directions, if applicable)
2. Identify head form impact location on sketch by placing H8, H9, H10, H11, H12, H13, H14, and H15 in the appropriate location.
3. Define the plane of reference for head form impact angle:

0° = Parallel with Floor, (+) is Up, (-) is Down

X = From Inboard Edge of Barrier

Y = Measured Vertically from the SRP

DATA SHEET 9 (CONTINUED)

HEAD FORM IMPACT ENERGY REQUIREMENT

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Head impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Max HIC	Energy Req'd joules	Column 5 < 1000		Column 6 > 4.5 joules	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
H8	141	530	0º	6.63	6.80	90	7.52	**PASS**		**PASS**	
H9	242	530	0º	6.61	6.76	113	7.98	**PASS**		**PASS**	
H10	344	525	0º	6.61	6.71	202	8.10	**PASS**		**PASS**	
H11	180	429	0º	6.61	7.02	129	8.70	**PASS**		**PASS**	
H12	281	427	0º	6.63	6.87	225	9.12	**PASS**		**PASS**	
H13	118	332	0º	6.61	6.75	200	7.51	**PASS**		**PASS**	
H14	219	330	0º	6.65	6.79	227	9.59	**PASS**		**PASS**	

* Impact velocity from item No. 6 below

** Impact velocity range = 6.69 mps, +0, -0.08 mps

5. Attach acceleration versus time plots for each impact.
6. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: ____________________

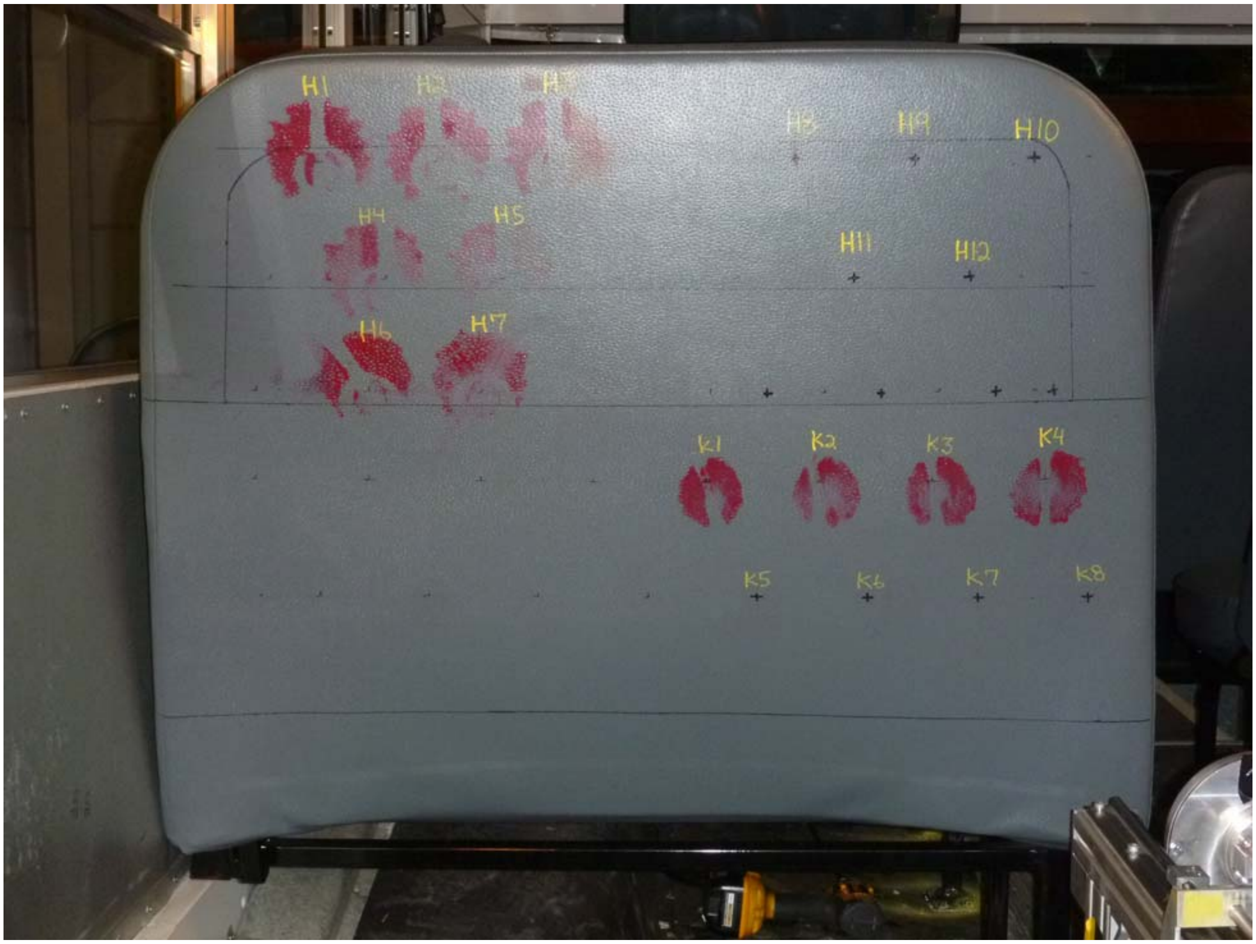
Approved By: ____________________ Date: 10/21/11

DATA SHEET 10

KNEE FORM IMPACT TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S2



REAR SURFACE

1. Locate x-y reference point on sketch above for knee form impact locations. (Label the positive and negative directions, if applicable)
2. Identify knee form impact location on sketch by placing K1, K2, K3, K4, K5, K6, K7, and K8 in the appropriate location.
3. Define the plane of reference for knee form impact angle:
   0° = Parallel with Floor, (+) is Up, (-) is Down
   X = From Inboard Edge of the Barrier
   Y = Measured Vertically from the SRP

DATA SHEET 10 (CONTINUED)

KNEE FORM IMPACT TEST

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Knee impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Cont. Area mm^2	Resist Force (N)	Column 5 > 1935 mm^2		Column 6 < 2669N	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
K1	-424	240	0º	4.88	5.09	3,180	1,712	**PASS**			
K2	-324	239	0º	4.89	5.12	3,390	1,767	**PASS**			
K3	-223	238	0º	4.86	5.01	3,700	1,886	**PASS**			
K4	-120	238	0º	4.89	4.93	4,100	2,200	**PASS**			
K5	-376	129	0º	4.81	4.95		1,892			**PASS**	
K6	-275	128	0º	4.81	4.96		2,100			**PASS**	
K7	-174	129	0º	4.80	4.92		2,077			**PASS**	
K8	-71	129	0º	4.80	4.92		2,483			**PASS**	

* Impact velocity from item No. 7 below

** Impact velocity range = 4.86 mps, +0.076, -0 mps for contact area (K1 through K4)

** Impact velocity range = 4.86 mps, +0, -0.076 mps for contact area (K5 through K8)

5. Attach Contact Area Prints for K1, K2, K3 and K4.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time for each plot K1 through K8.
8. Attach force vs. time plots for K5, K6, K7 and K8.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: ______________________

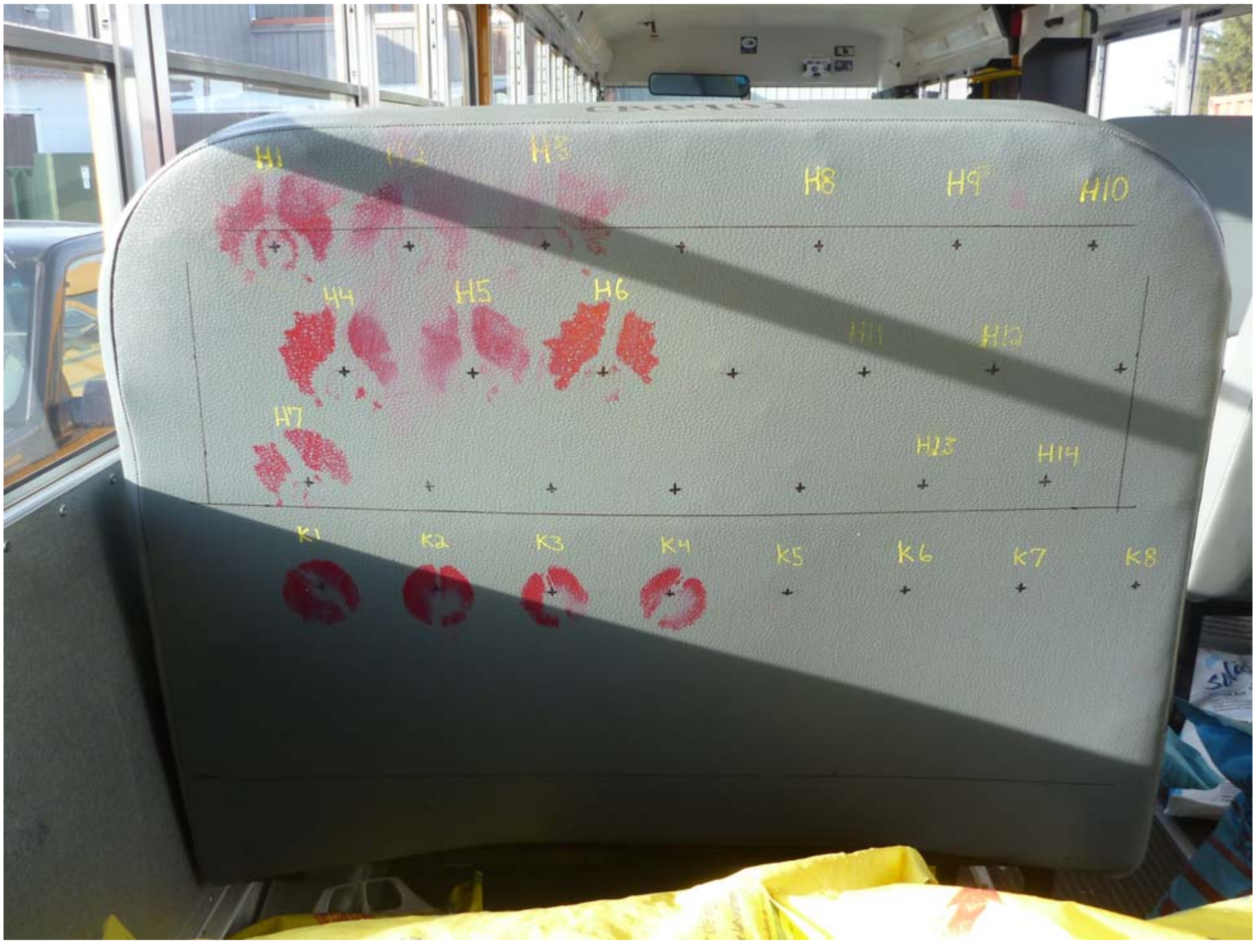
Approved By: ______________________ Date: 09/28/11

DATA SHEET 10

KNEE FORM IMPACT TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

SEAT NUMBER: S7



REAR SURFACE

1. Locate x-y reference point on sketch above for knee form impact locations. (Label the positive and negative directions, if applicable)
2. Identify knee form impact location on sketch by placing K1, K2, K3, K4, K5, K6, K7, and K8 in the appropriate location.
3. Define the plane of reference for knee form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of the Seat

   Y = Measured Vertically from the SRP

DATA SHEET 10 (CONTINUED)

KNEE FORM IMPACT TEST

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Knee impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Cont. Area mm^2	Resist Force (N)	Column 5 > 1935 mm^2		Column 6 < 2669N	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
K1	-782	220	0º	4.89	4.69	3,650	2,706	**PASS**			
K2	-680	220	0º	4.92	5.03	3,760	2,561	**PASS**			
K3	-579	220	0º	4.88	4.86	3,250	2,040	**PASS**			
K4	-478	220	0º	4.90	4.97	3,130	1,938	**PASS**			
K5	-377	220	0º	4.86	5.06		2,020			**PASS**	
K6	-276	220	0º	4.83	4.89		2,046			**PASS**	
K7	-174	220	0º	4.81	4.74		2,062			**PASS**	
K8	-72	220	0º	4.83	4.69		2,295			**PASS**	

* Impact velocity from item No. 7 below

** Impact velocity range = 4.86 mps, +0.076, -0 mps for contact area (K1 through K4)

** Impact velocity range = 4.86 mps, +0, -0.076 mps for contact area (K5 through K8)

5. Attach Contact Area Prints for K1, K2, K3 and K4.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time for each plot K1 through K8.
8. Attach force vs. time plots for K5, K6, K7 and K8.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: ____________________

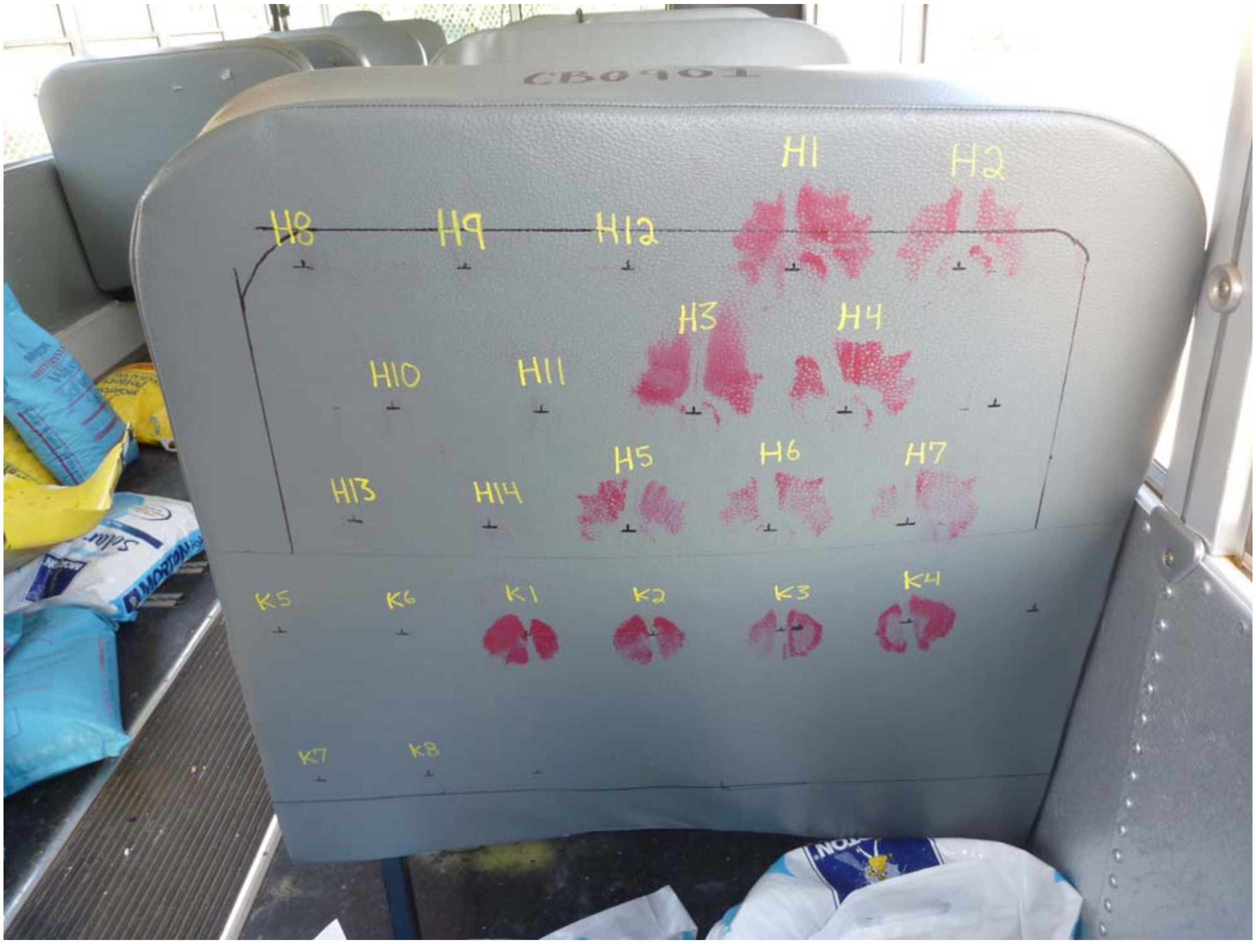
Approved By: ____________________ Date: 10/14/11

DATA SHEET 10

KNEE FORM IMPACT TEST

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

SEAT NUMBER: S15



REAR SURFACE

1. Locate x-y reference point on sketch above for knee form impact locations. (Label the positive and negative directions, if applicable)
2. Identify knee form impact location on sketch by placing K1, K2, K3, K4, K5, K6, K7, and K8 in the appropriate location.
3. Define the plane of reference for knee form impact angle:
   0° = Parallel with Floor, (+) is Up, (-) is Down
   X = From Inboard Edge of the Seat
   Y = Measured Vertically from the SRP

DATA SHEET 10 (CONTINUED)

KNEE FORM IMPACT TEST

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Knee impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Cont. Area mm^2	Resist Force (N)	Column 5 > 1935 mm^2		Column 6 < 2669N	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
K1	296	216	0º	4.91	5.03	3,450	2,100	**PASS**			
K2	399	215	0º	4.91	4.98	2,940	2,136	**PASS**			
K3	503	212	0º	4.93	5.04	2,930	2,135	**PASS**			
K4	503	209	0º	4.92	5.08	3,420	2,164	**PASS**			
K5	94	221	0º	4.84	4.94		2,058			**PASS**	
K6	195	219	0º	4.84	4.86		1,964			**PASS**	
K7	76	31	0º	4.81	4.88		2,264			**PASS**	
K8	180	30	0º	4.82	4.90		2,083			**PASS**	

* Impact velocity from item No. 7 below

** Impact velocity range = 4.86 mps, +0.076, -0 mps for contact area (K1 through K4)

** Impact velocity range = 4.86 mps, +0, -0.076 mps for contact area (K5 through K8)

5. Attach Contact Area Prints for K1, K2, K3 and K4.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time for each plot K1 through K8.
8. Attach force vs. time plots for K5, K6, K7 and K8.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the seat.

Recorded By: Eric [signature]

Approved By: Michael [signature] Date: 10/18/11

DATA SHEET 10

KNEE FORM IMPACT TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B6

REAR SURFACE

1. Locate x-y reference point on sketch above for knee form impact locations. (Label the positive and negative directions, if applicable)
2. Identify knee form impact location on sketch by placing K1, K2, K3, K4, K5, K6, K7, and K8 in the appropriate location.
3. Define the plane of reference for knee form impact angle:
   0° = Parallel with Floor, (+) is Up, (-) is Down
   X = From Inboard Edge of the Barrier
   Y = Measured Vertically from the SRP

DATA SHEET 10 (CONTINUED)

KNEE FORM IMPACT TEST

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Knee impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Cont. Area mm^2	Resist Force (N)	Column 5 > 1935 mm^2		Column 6 < 2669N	
	X	Y	Angle					Yes-PASS	No-FAIL	Yes-PASS	No-FAIL
K1	-79	120	0º	4.88	4.91	4,170	1,964	**PASS**			
K2	-96	220	0º	4.90	4.72	3,820	1,932	**PASS**			
K3	-196	220	0º	4.86	4.97	4,110	1,999	**PASS**			
K4	-298	220	0º	4.91	5.01	4,100	2,303	**PASS**			
K5	-653	120	0º	4.84	4.79		2,001			**PASS**	
K6	-550	120	0º	4.83	4.66		1,575			**PASS**	
K7	-449	120	0º	4.82	4.97		1,849			**PASS**	
K8	-346	120	0º	4.84	4.68		2,096			**PASS**	

* Impact velocity from item No. 7 below

** Impact velocity range = 4.86 mps, +0.076, -0 mps for contact area (K1 through K4)

** Impact velocity range = 4.86 mps, +0, -0.076 mps for contact area (K5 through K8)

5. Attach Contact Area Prints for K1, K2, K3 and K4.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time for each plot K1 through K8.
8. Attach force vs. time plots for K5, K6, K7 and K8.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: ____________

Approved By: ____________ Date: 09/20/11

DATA SHEET 10

KNEE FORM IMPACT TEST

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

BARRIER NUMBER: B18

REAR SURFACE

1. Locate x-y reference point on sketch above for knee form impact locations. (Label the positive and negative directions, if applicable)
2. Identify knee form impact location on sketch by placing K1, K2, K3, K4, K5, K6, K7, and K8 in the appropriate location.
3. Define the plane of reference for knee form impact angle:

   0° = Parallel with Floor, (+) is Up, (-) is Down

   X = From Inboard Edge of the Barrier

   Y = Measured Vertically from the SRP

DATA SHEET 10 (CONTINUED)
KNEE FORM IMPACT TEST

4. Complete the following table:

(1)	(2)			(3)	(4)*	(5)	(6)	(7)		(8)	
Knee impact & Test #	Location			Speed Trap Impact Velocity ** mps	Derived Velocity ** mps	Cont. Area mm^2	Resist Force (N)	Column 5 > 1935 mm^2		Column 6 < 2669N	
	X	Y	Angle					Yes- PASS	No- FAIL	Yes- PASS	No- FAIL
K1	266	215	0º	4.93	5.06	3,660	2,351	**PASS**			
K2	367	215	0º	4.90	5.03	3,660	2,037	**PASS**			
K3	467	212	0º	4.89	4.80	3,190	1,933	**PASS**			
K4	570	210	0º	4.88	5.35	3,430	1,844	**PASS**			
K5	62	218	0º	4.84	5.02		1,934			**PASS**	
K6	173	216	0º	4.85	4.87		2,062			**PASS**	
K7	103	116	0º	4.80	5.06		2,082			**PASS**	
K8	205	115	0º	4.79	4.70		2,322			**PASS**	

* Impact velocity from item No. 7 below

** Impact velocity range = 4.86 mps, +0.076, -0 mps for contact area (K1 through K4)

** Impact velocity range = 4.86 mps, +0, -0.076 mps for contact area (K5 through K8)

5. Attach Contact Area Prints for K1, K2, K3 and K4.
6. Attach acceleration versus time plots for each impact.
7. Integrate the acceleration versus time plots and attach plots of the results that show velocity versus time for each plot K1 through K8.
8. Attach force vs. time plots for K5, K6, K7 and K8.

Comments: All measurements are referenced to the point where the horizontal plane through the SRP intersects the vertical line tangent to the inboard edge at the barrier.

Recorded By: Eric Forsberg

Approved By: Michael Janosy   Date: 10/20/11

DATA SHEET C1

WHEELCHAIR SECUREMENT ANCHORAGES AND DEVICES

WHEELCHAIR OCCUPANT RESTRAINT ANCHORAGES AND RESTRAINTS

Test Vehicle: **2012 Blue Bird All American D3 RE School Bus** NHTSA No.: **CC0901**
Test Lab: **MGA Research Corporation** Test Dates: **09/12/11 – 10/26/11**

WHEELCHAIR LOCATION: W4

		PASS/FAIL
1.	Are all wheelchair securement and occupant restraint anchorages designed for forward wheelchair position? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
2.	Each wheelchair location shall have not less than four wheelchair securement anchorages (Type A or C) – two located in front of the wheelchair and two in the rear. Type C anchorage may be used in rear of the wheelchair only. Number of Type A anchorages in front of the wheelchair? 2 (≥2 Pass;<2 Fail)	**PASS**

		PASS/FAIL
3.	Number of anchorages behind the wheelchair? Type A _0_; Type C _2_; Total: 2 (≥2 Pass;<2 Fail)	**PASS**

		PASS/FAIL
4.	Each wheelchair location shall have not less than two wheelchair occupant pelvis and upper torso restraint anchorage (Type B, C, or combination). The pelvic belt must not terminate at the wheelchair. Number of anchorages? Type B _0_; Type C _2_; Total: 2 (≥2 Pass;<2 Fail)	**PASS**

		PASS/FAIL
5.	The wheelchair location has at least one Type D anchorage? Yes – Pass; No – Fail	**PASS**

		PASS/FAIL
6.	The wheelchair securement device has means to limit movement of the wheelchair? Yes – Pass; No – Fail	**PASS**

DATA SHEET C1 (CONTINUED)

WHEELCHAIR SECUREMENT ANCHORAGES AND DEVICES

WHEELCHAIR OCCUPANT RESTRAINT ANCHORAGES AND RESTRAINTS

Wheelchair Location	Anchorage Location	Anchorage Type	Required Load (Newtons)	Actual Max. Test Load (Newtons)	Pass/ Fail	Comment
W4	LF	A	13,344	13,448	**PASS**	Q11468
	RF					
	LR	B	13,344	13,391	**PASS**	Q11467
	RR	C	26,688	26,805	**PASS**	Q11466
	Upper Torso	D	6,672	6,741	**PASS**	Q11469

COMMENTS: None

Recorded By: Eric Perelman

Approved By: Michael Jarvis

Date: 10/26/11

SECTION 4

INSTRUMENTATION AND EQUIPMENT LIST

Equipment	Description	Model / Serial No.	Cal. Date	Cal. Due Date
Load Cell	Interface	1210AF-300 / 184552	06/14/11	12/14/11
Load Cell	PCB	1315-101-01A / 634-10k	04/07/11	10/07/11
Load Cell	PCB	1315-101-01A / 634-10k	10/07/11	04/07/12
Load Cell	PCB	1315-101-01A / 671	08/10/11	02/10/12
Load Cell	Key Transducer	1315-101-01 / 260	08/10/11	02/10/12
Load Cell	Key Transducer	1315-101-01 / 271	08/10/11	02/10/12
Load Cell	Interface	1210AF-25K-B / 137781	09/07/11	03/07/12
Load Cell	Interface	1010AF-5K-B / 258576	03/22/11	09/22/11
Load Cell	Interface	1010AF-5K-B / 258576	10/07/11	04/07/12
String Pot.	Ametek	P-25A / 1202-19367	08/25/11	02/25/12
String Pot.	Ametek	P-25A / 1202-19366	09/07/11	03/07/12
Inclinometer	Digital Protractor	Pro 360 / 001	Daily	Daily
Steel Tape	Stanley	Powerlock / 604	08/04/11	02/04/12
Impact Fixture	MGA	IF2003A	---	---
Camera	Sony	DSC-575	---	---
Planimeter	Sokkia Corp.	Planix5 / 007319	Daily	Daily

SECTION 5
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Left Side View of School Bus

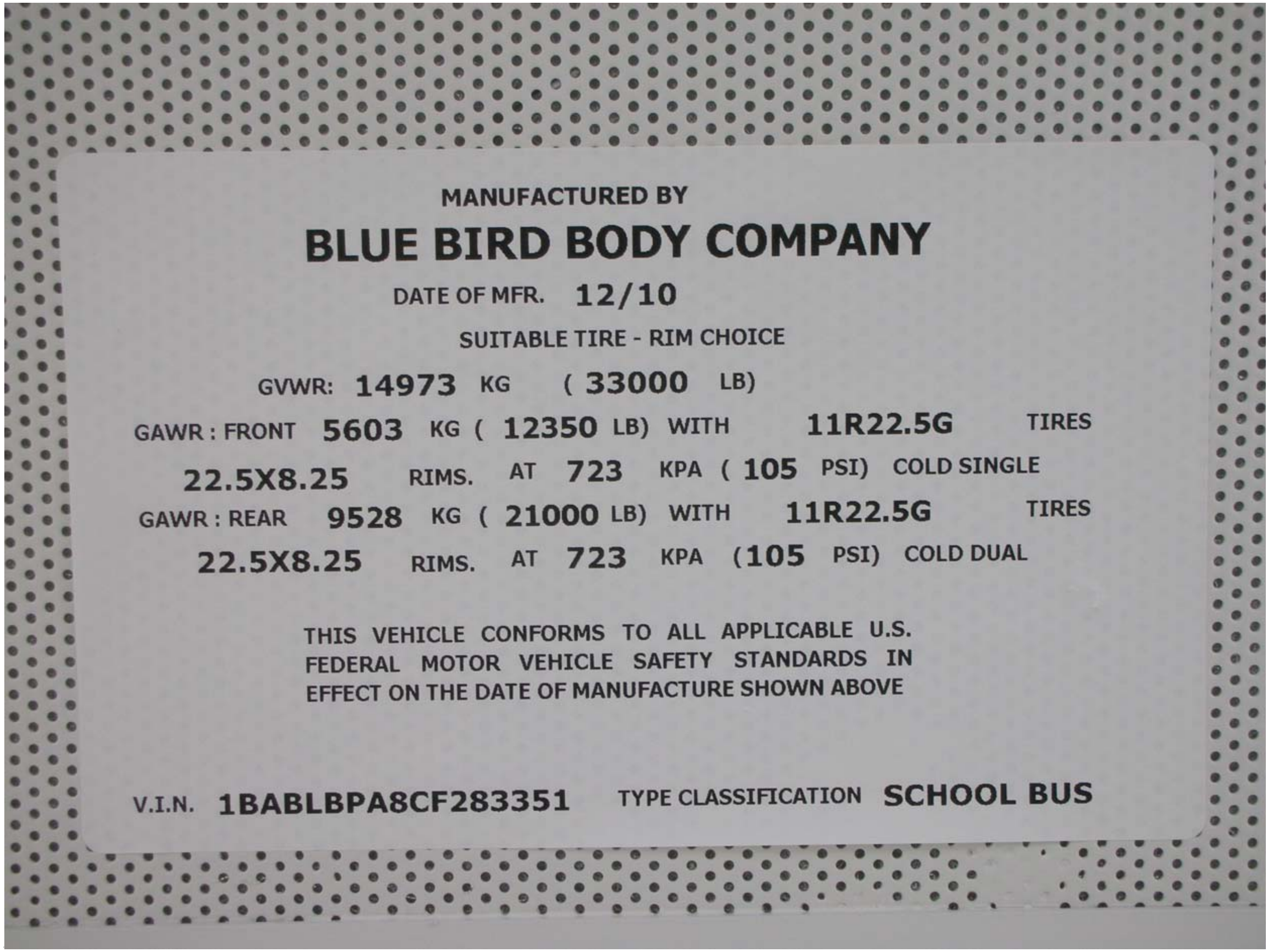
Right Side View of School Bus

¾ Front View From Left Side of School Bus

¾ Front View From Right Side of School Bus

¾ Rear View From Left Side of School Bus

¾ Rear View From Right Side of School Bus



Vehicle Certification Label

Vehicle Information Label

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

Vehicle Interior View From Front to Rear

Vehicle Interior View From Rear to Front

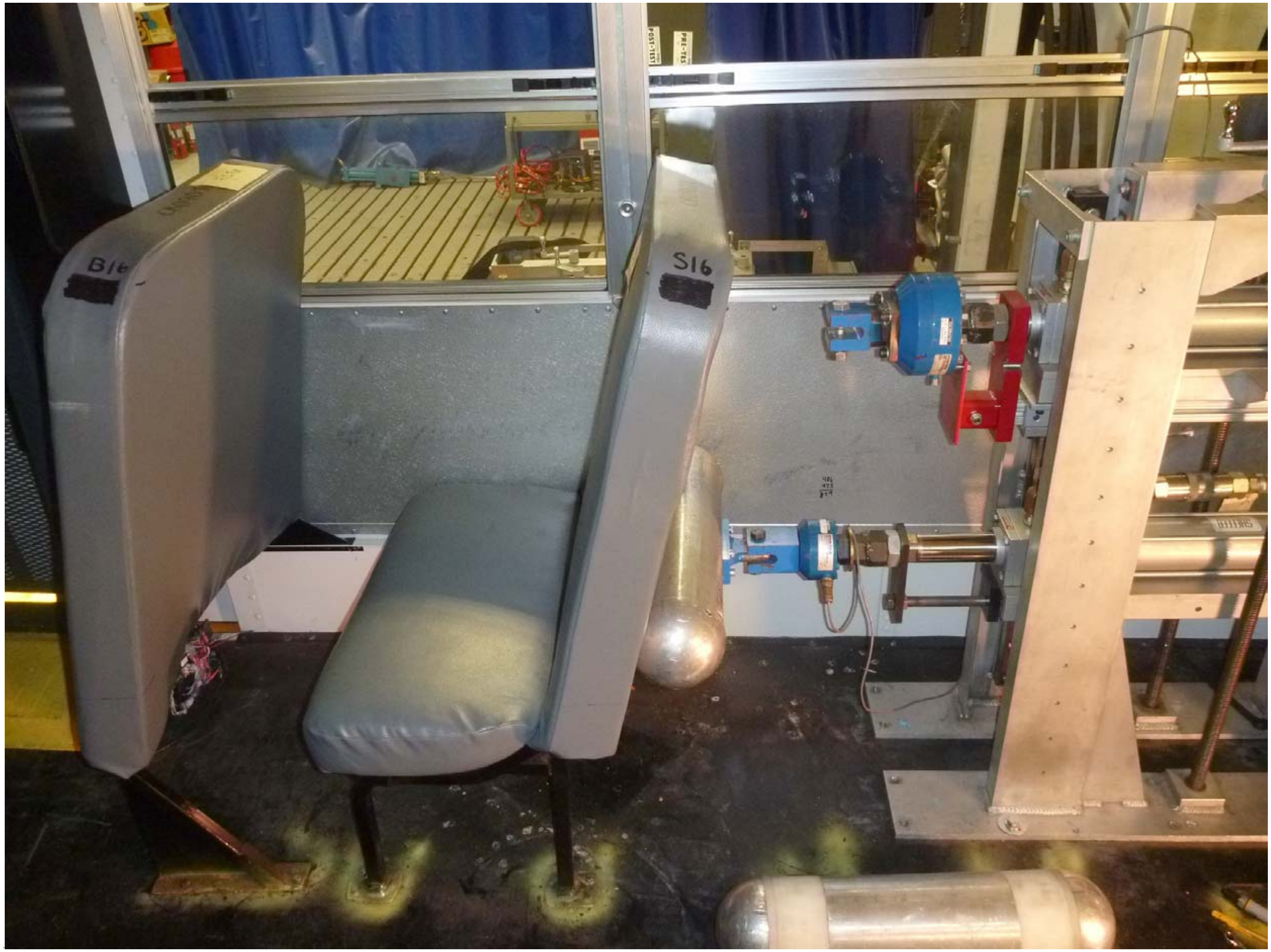
Seat Cushion Retention Set Up on Seat S17

Pre-Test of Seat S1 Force Deflection Forward Test

Post-Test of Seat S1 Force Deflection Forward Test

Pre-Test of Seat S6 Force Deflection Forward Test

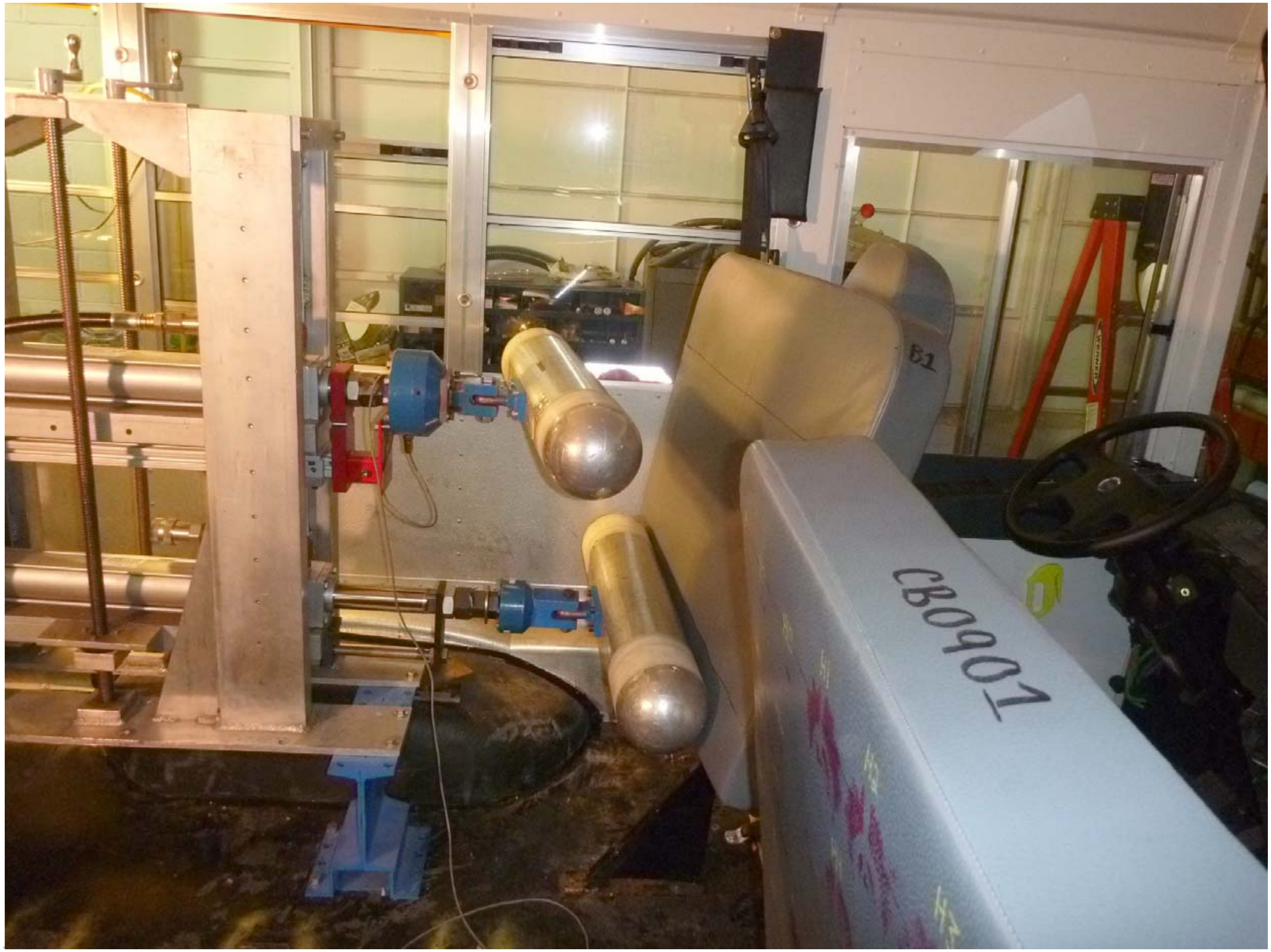
Post-Test of Seat S6 Force Deflection Forward Test



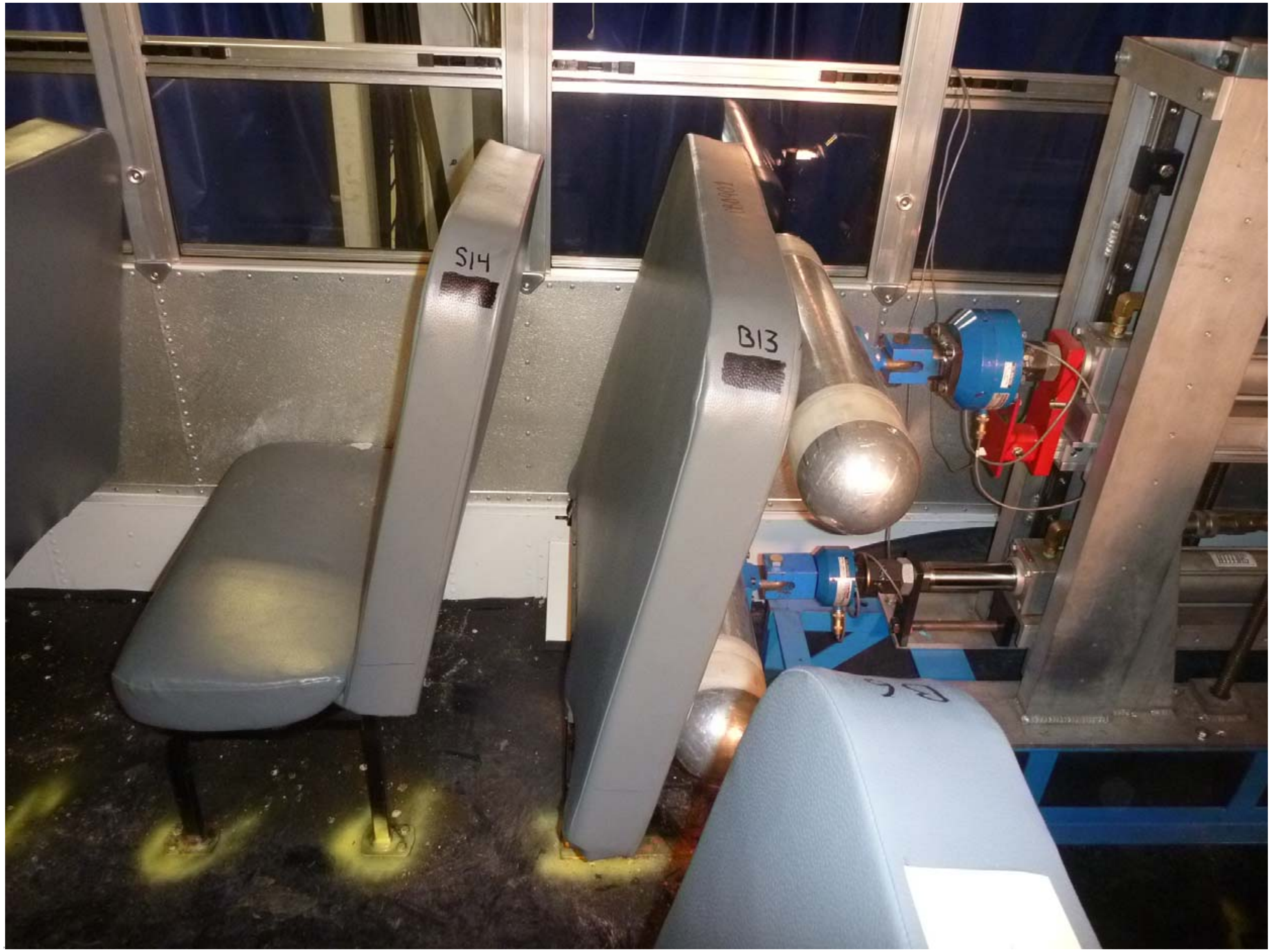
Pre-Test of Seat S16 Force Deflection Forward Test

Post-Test of Seat S16 Force Deflection Forward Test

Pre-Test of Barrier B1 Force Deflection Forward Test



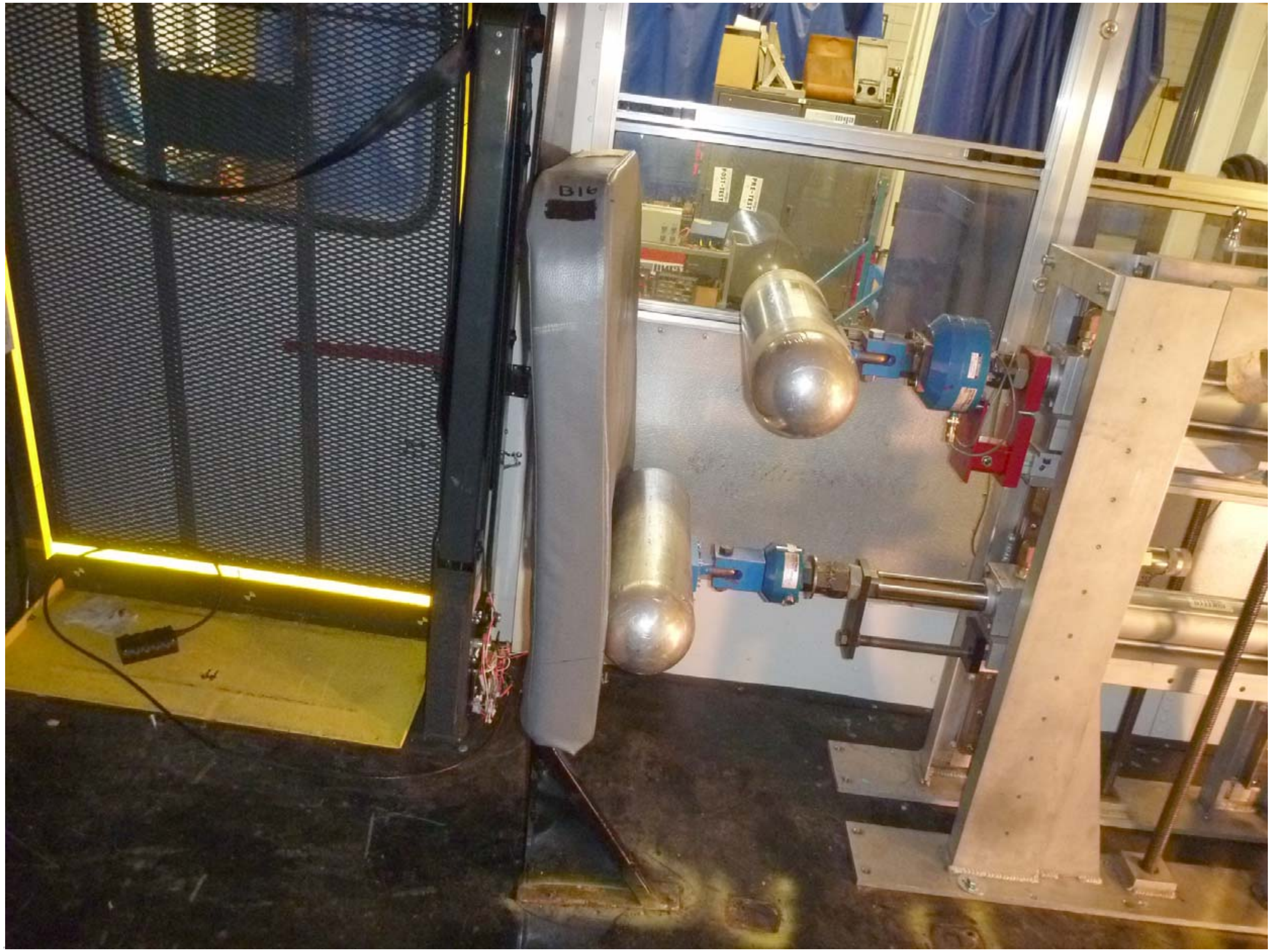
Post-Test of Barrier B1 Force Deflection Forward Test



Pre-Test of Barrier B13 Force Deflection Forward Test

Post-Test of Barrier B13 Force Deflection Forward Test

Pre-Test of Barrier B16 Force Deflection Forward Test



Post-Test of Barrier B16 Force Deflection Forward Test

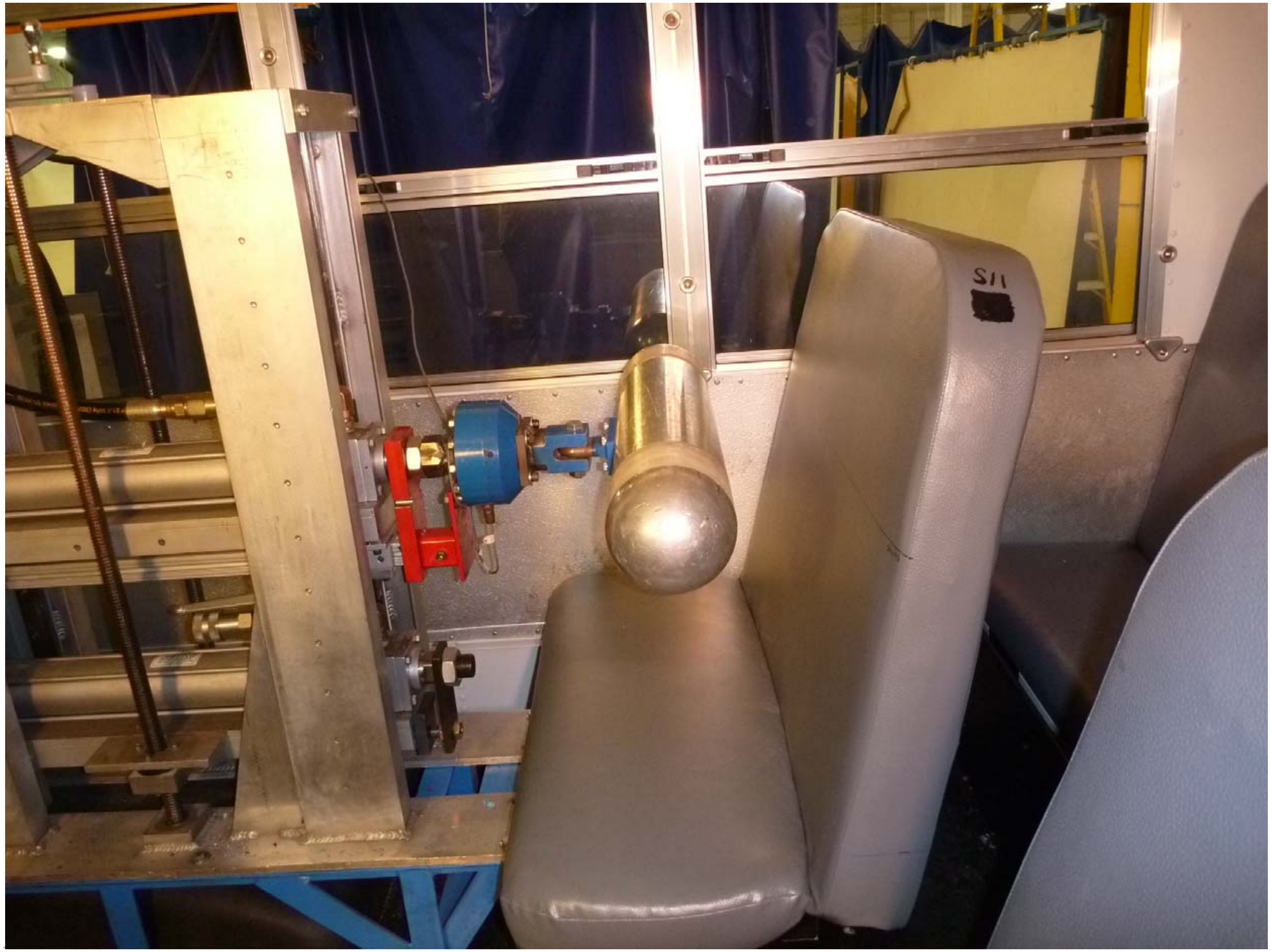
Post-Test of Barrier B16 Force Deflection Forward Test - Damage View 1

Post-Test of Barrier B16 Force Deflection Forward Test - Damage View 2

Test Vehicle:	**2012 Blue Bird All American D3 RE School Bus**	NHTSA No.:	**CC0901**
Test Lab:	**MGA Research Corporation**	Test Dates:	**09/12/11 – 10/26/11**

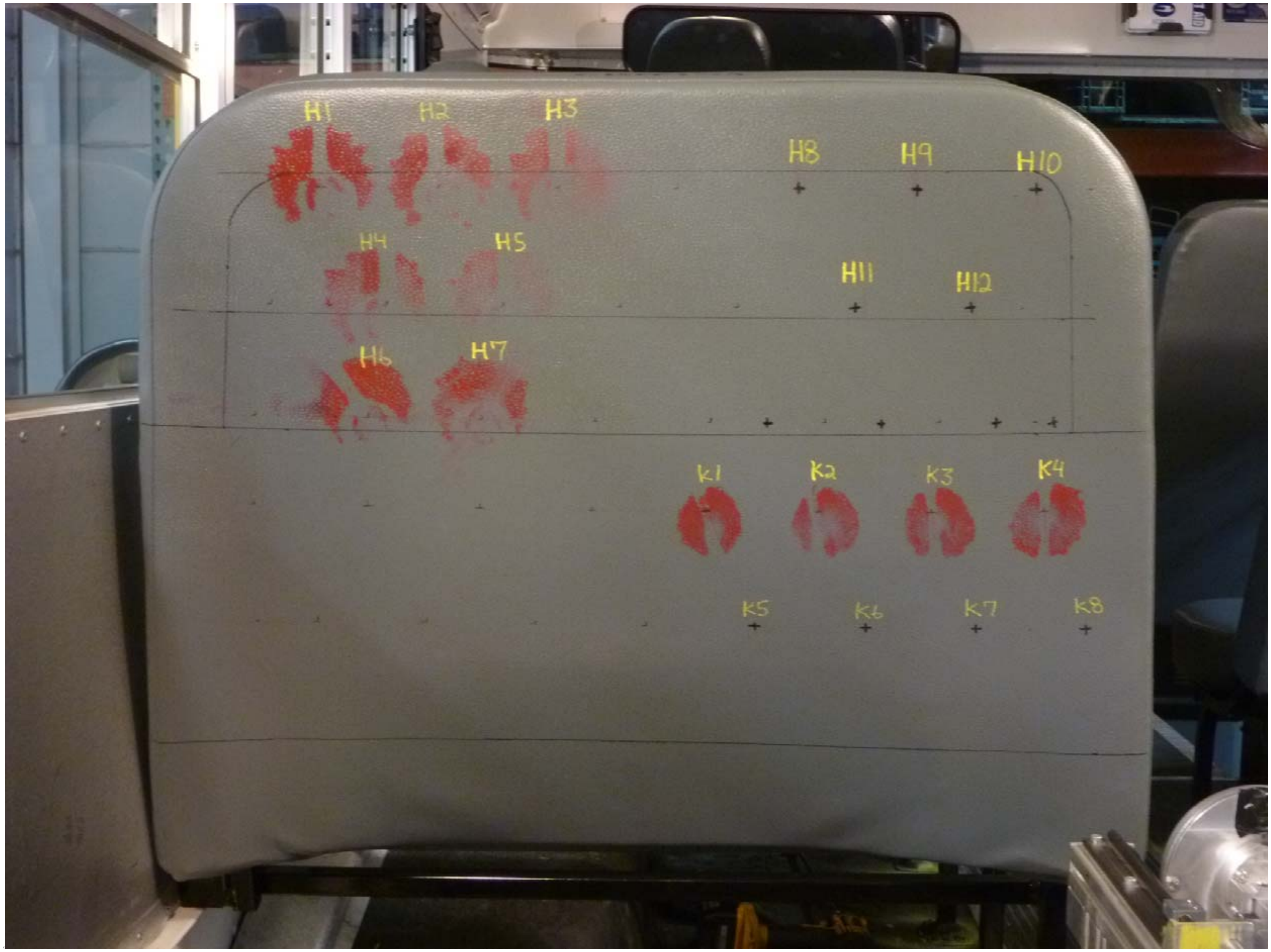
Pre-Test of Seat S8 Force Deflection Rearward Test

Post-Test of Seat S8 Force Deflection Rearward Test

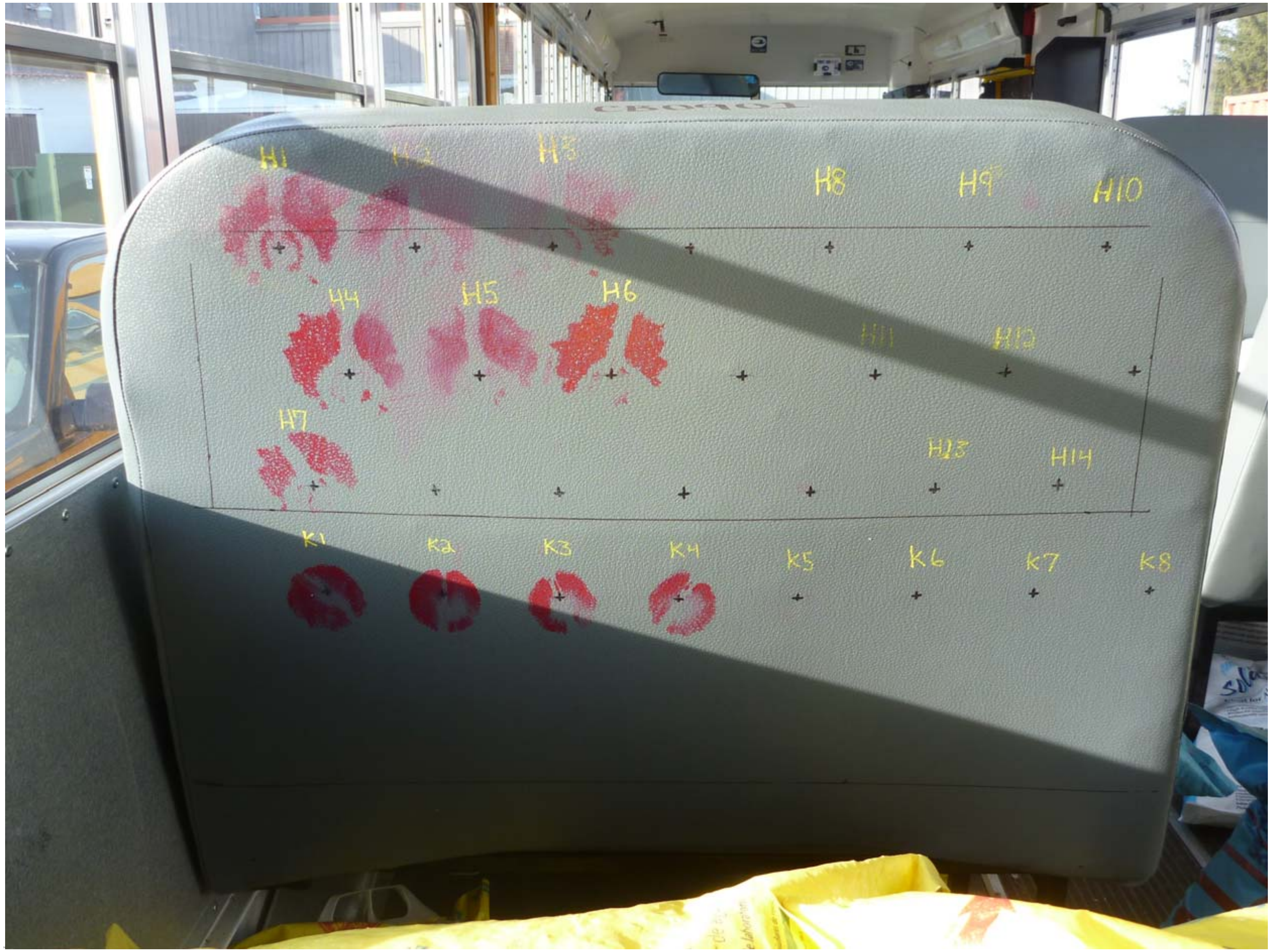


Pre-Test of Seat S11 Force Deflection Rearward Test

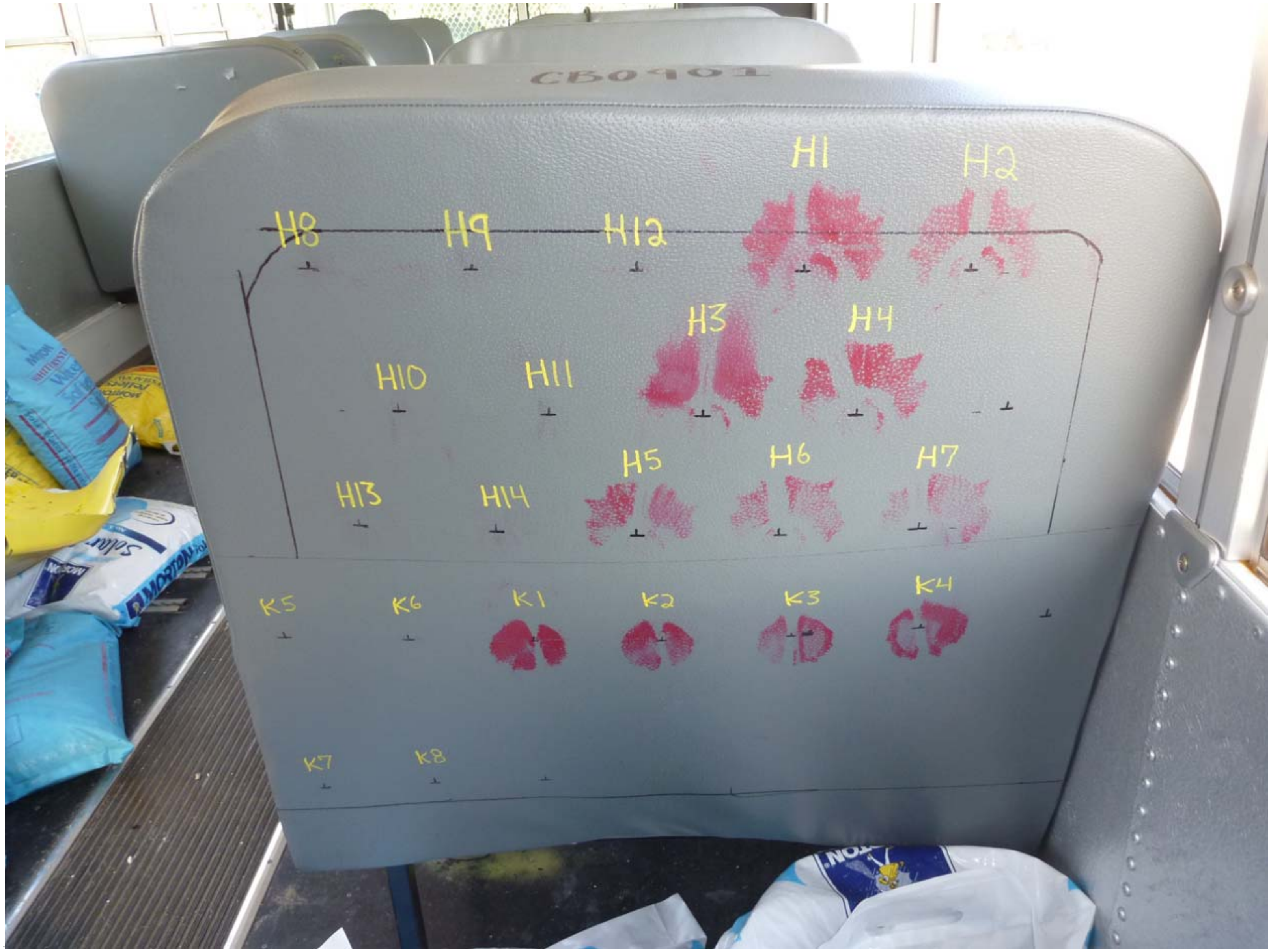
Post-Test of Seat S11 Force Deflection Rearward Test



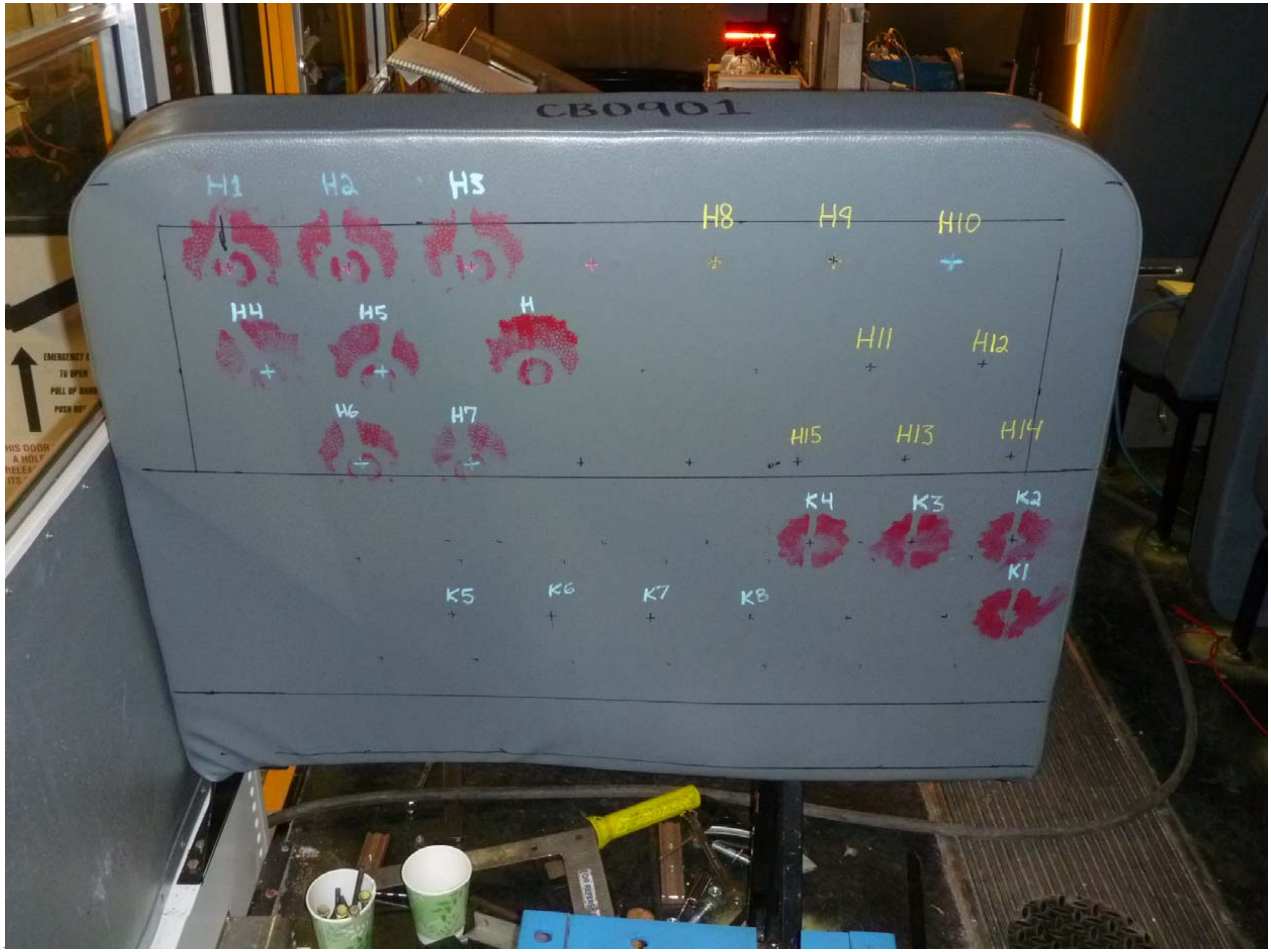
Post-Test of Head and Knee Impact Locations on Seat S2



Post-Test of Head and Knee Impact Locations on Seat S7

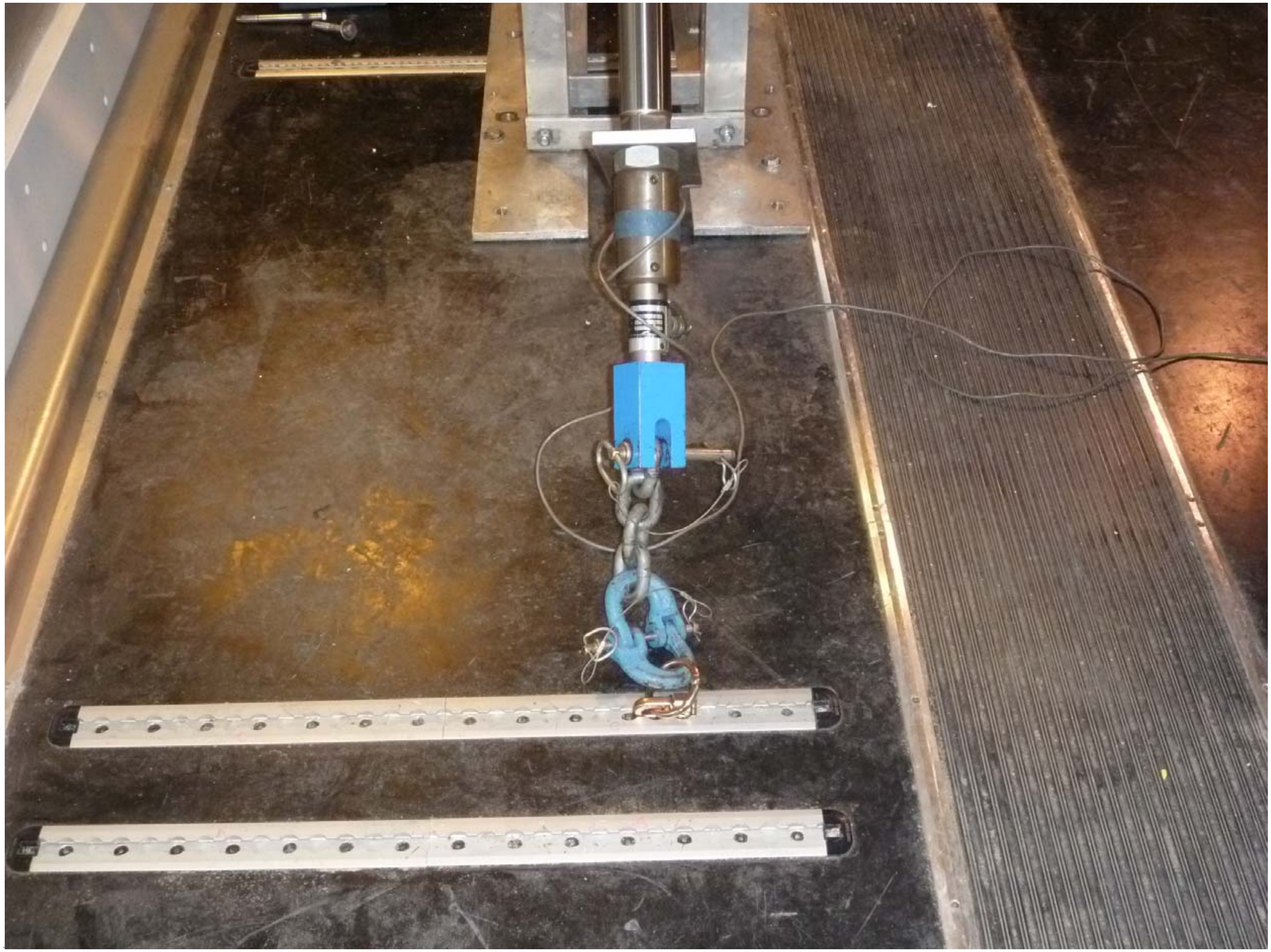


Post-Test of Head and Knee Impact Locations on Seat S15



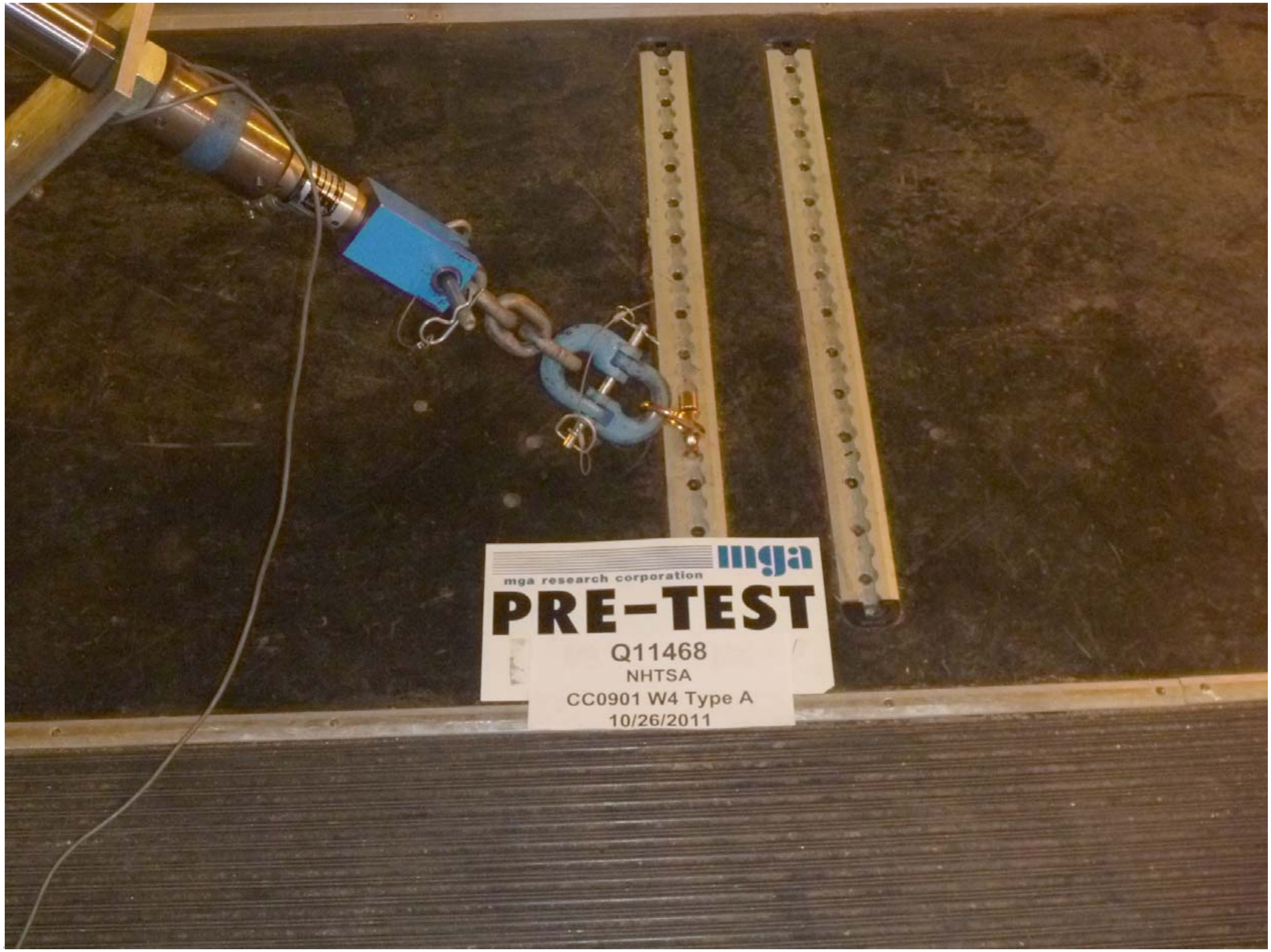
Post-Test of Head and Knee Impact Locations on Barrier B6

Post-Test of Head and Knee Impact Locations on Barrier B18



W4 Wheelchair Anchorage (LF) Location

W4 Wheelchair Anchorage (LR) Location



W4 Wheelchair Anchorage (RR) Location

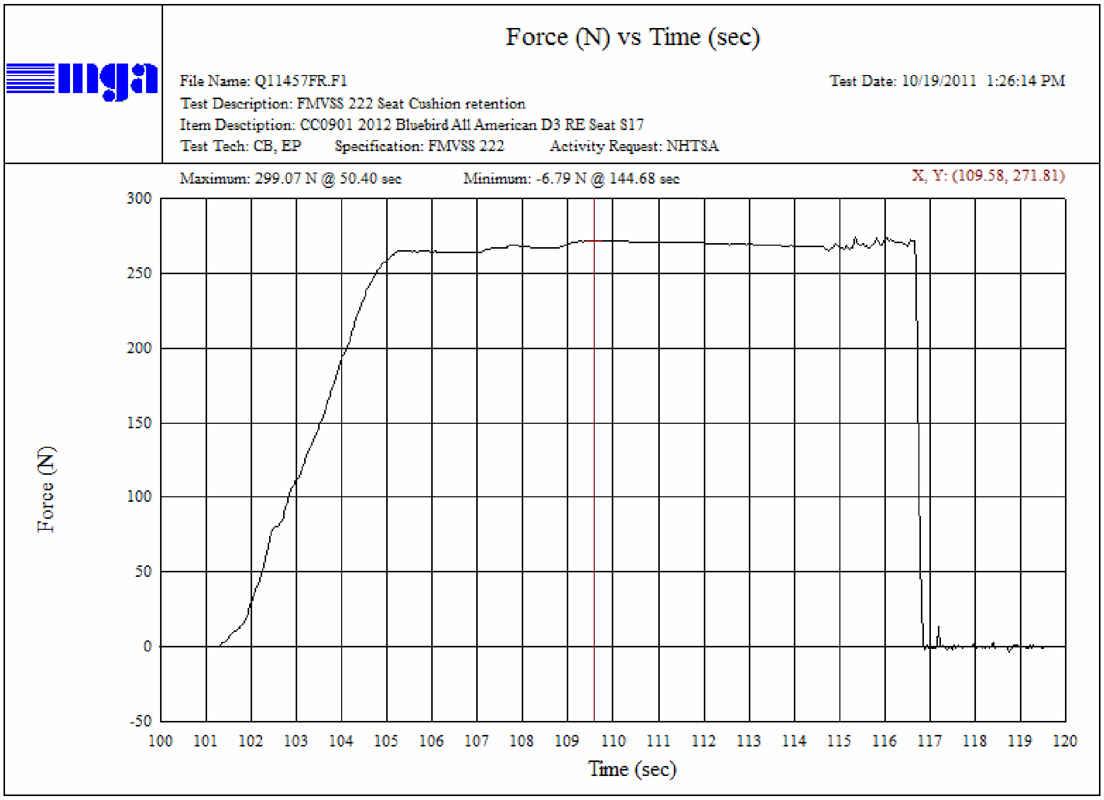
W4 Wheelchair Anchorage (Upper Torso) Location

SECTION 6

TEST PLOTS

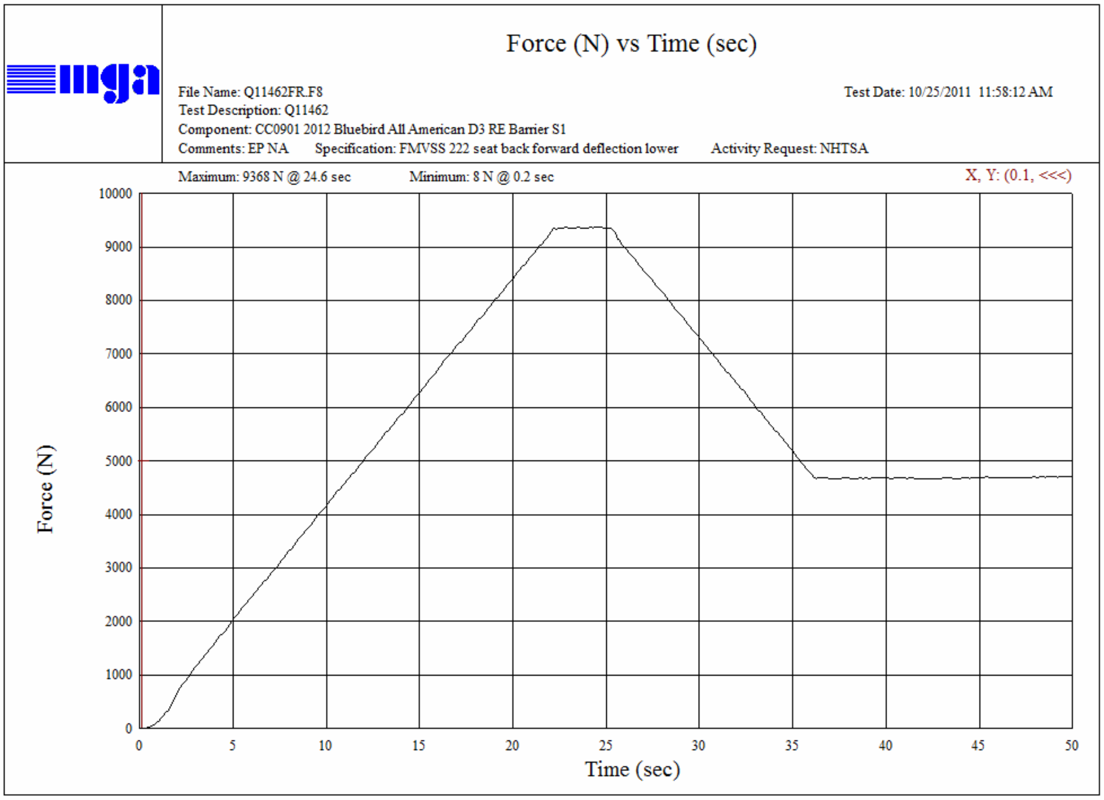
TABLE OF TEST PLOTS

TEST PLOTS

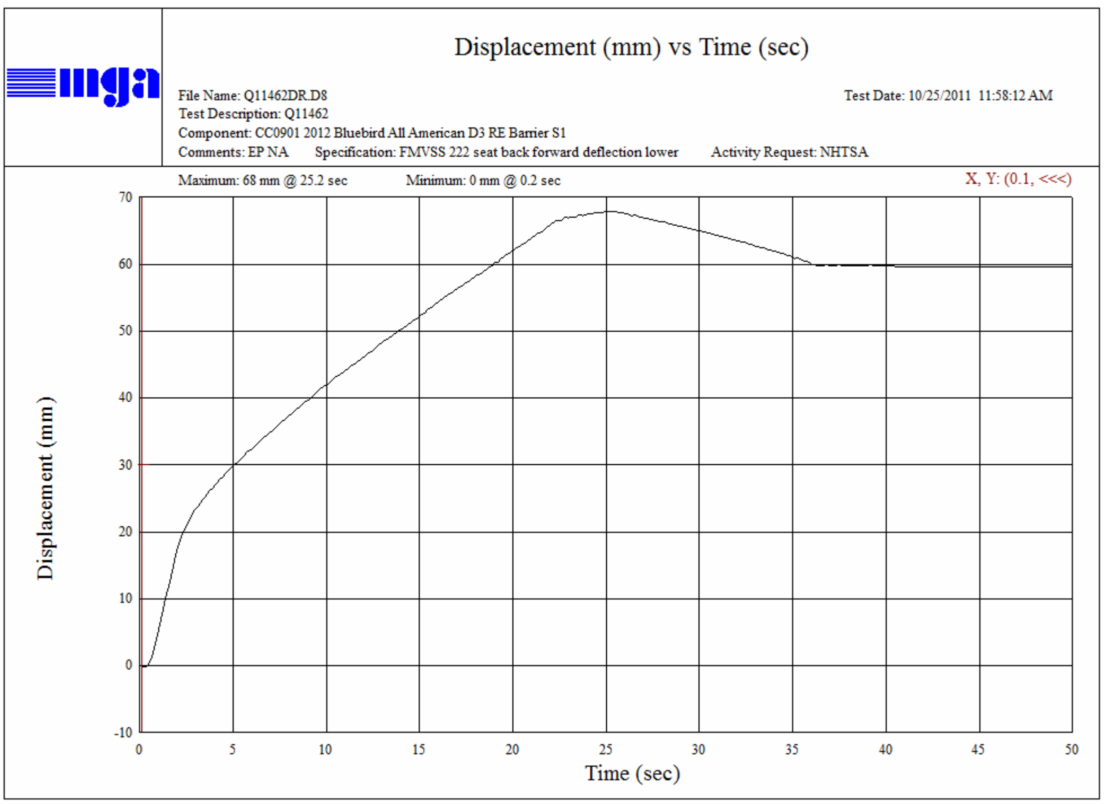


Seat Cushion Retention Seat S17 Force vs. Time

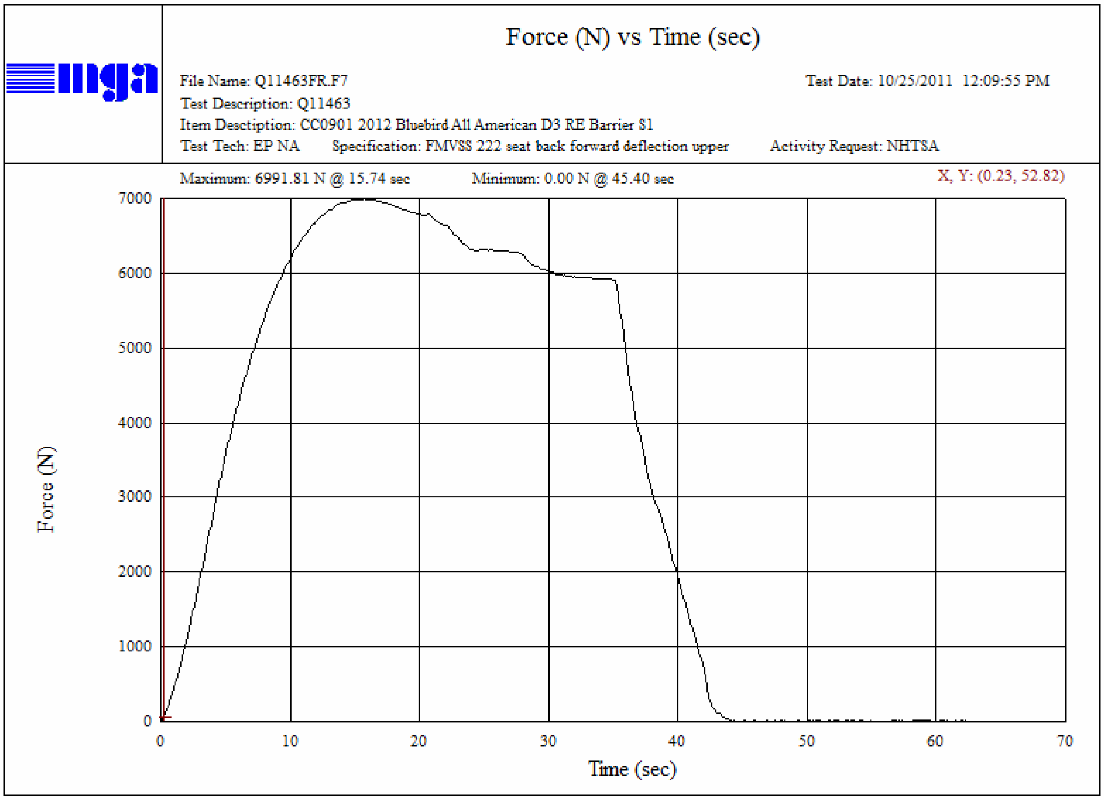
TEST PLOTS



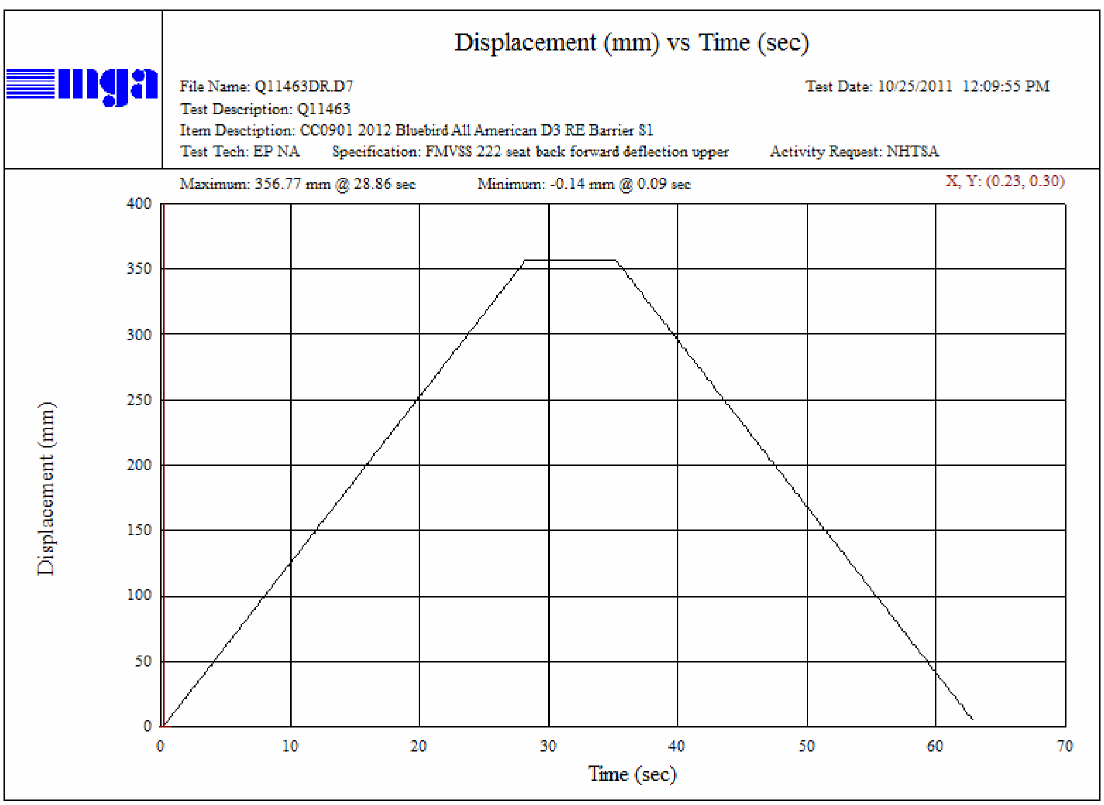
Seat Back Forward Deflection Seat S1 (Lower) Force vs. Time



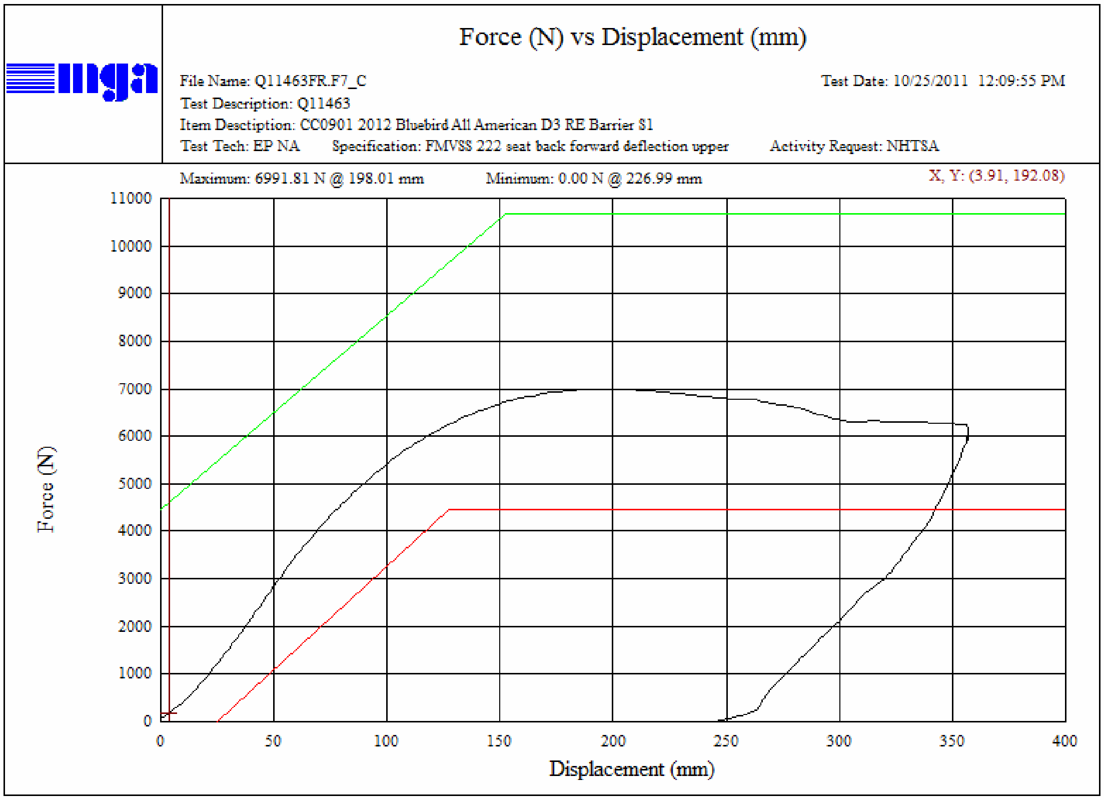
Seat Back Forward Deflection Seat S1 (Lower) Displacement vs. Time



Seat Back Forward Deflection Seat S1 (Upper) Force vs. Time

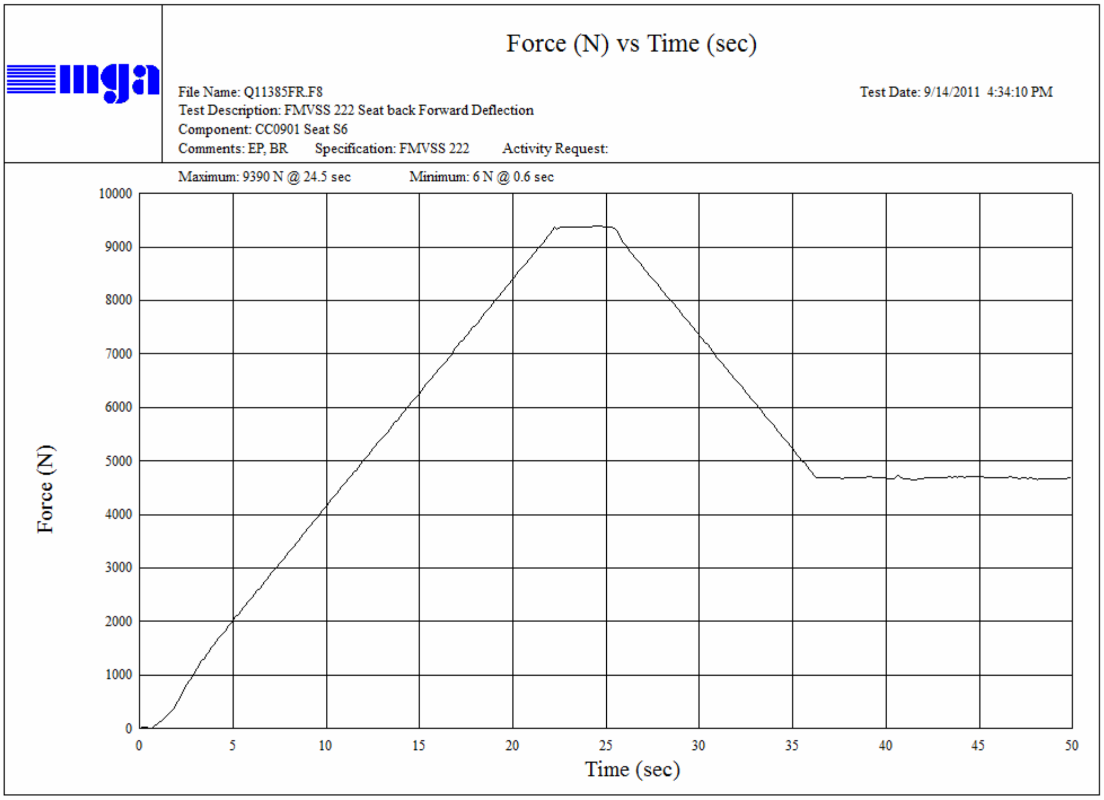


Seat Back Forward Deflection Seat S1 (Upper) Displacement vs. Time

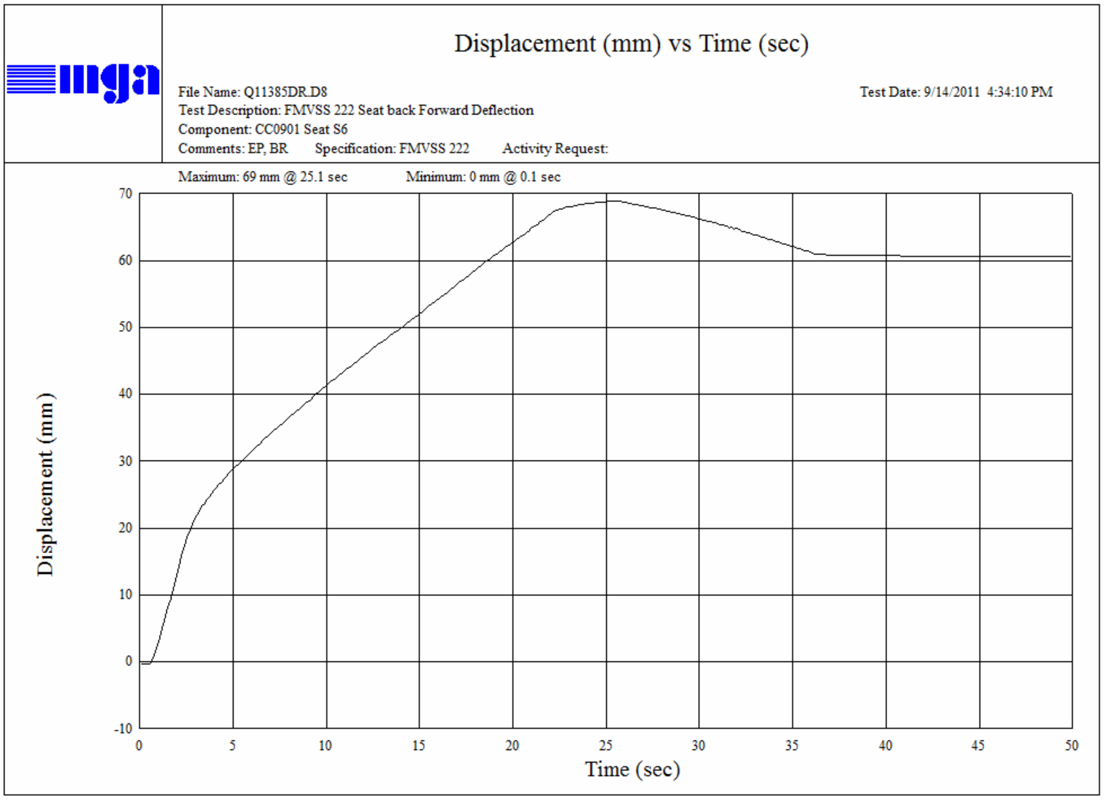


Seat Back Forward Deflection Seat S1 (Upper) Force vs. Displacement

TEST PLOTS

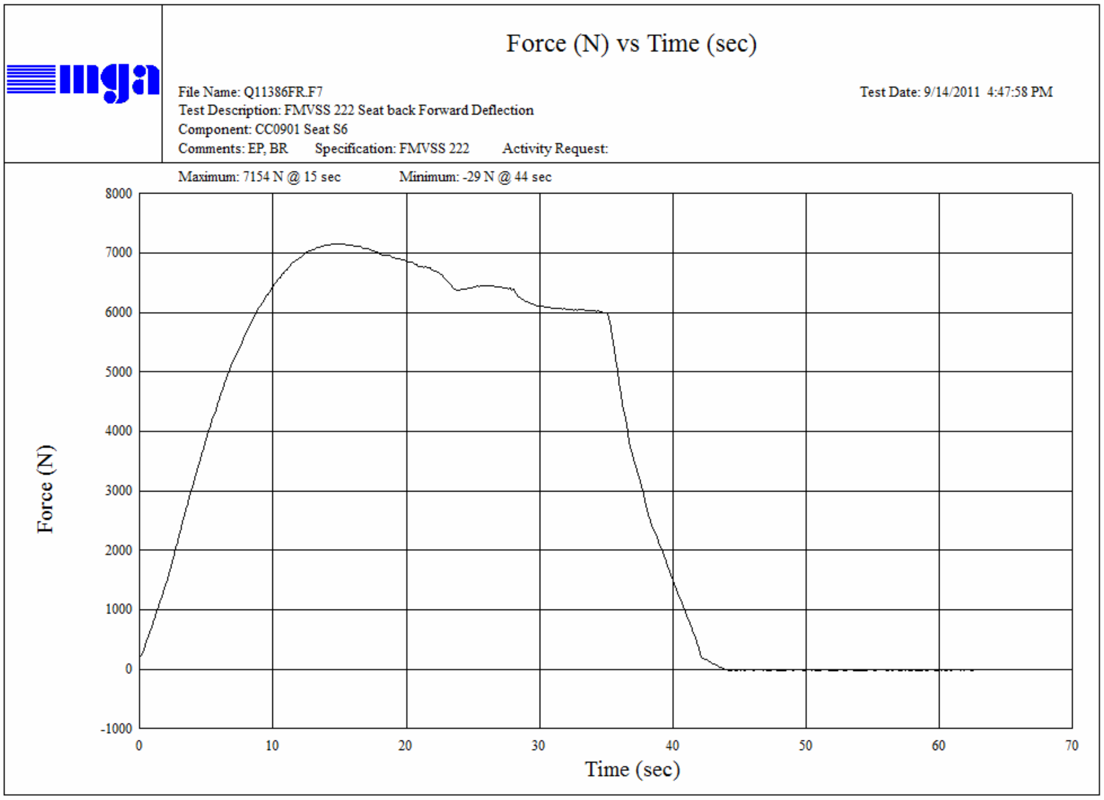


Seat Back Forward Deflection Seat S6 (Lower) Force vs. Time

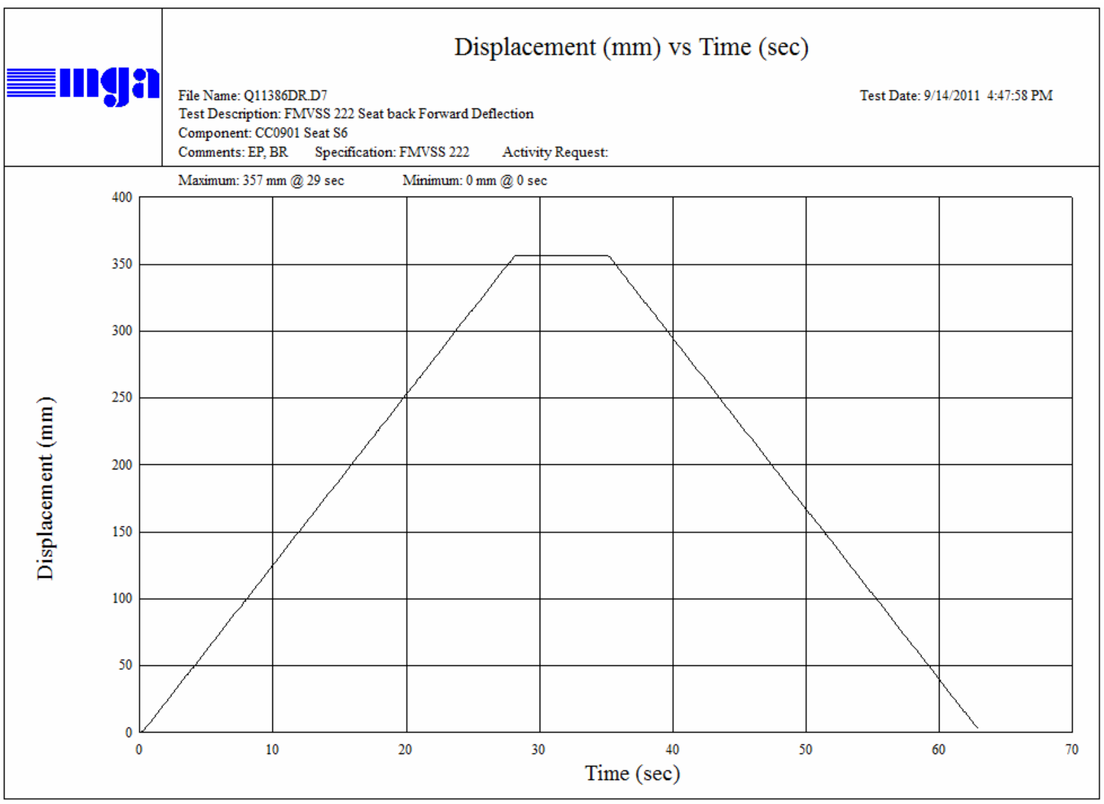


Seat Back Forward Deflection Seat S6 (Lower) Displacement vs. Time

TEST PLOTS

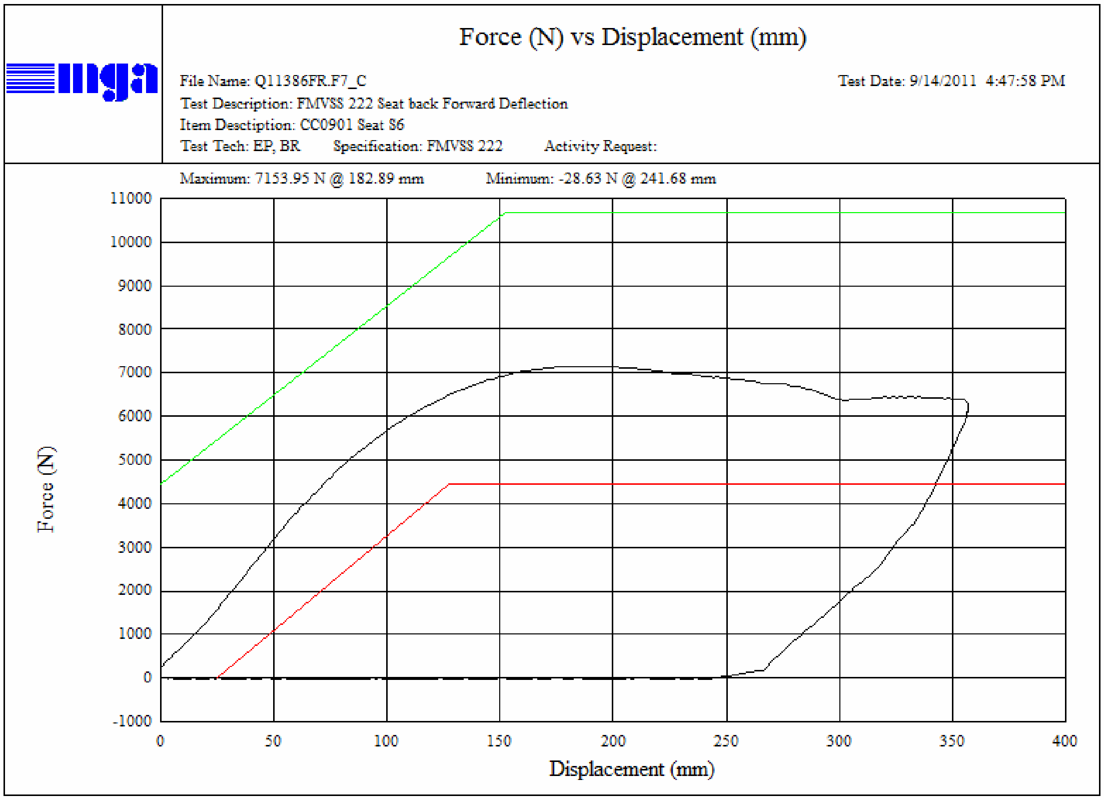


Seat Back Forward Deflection Seat S6 (Upper) Force vs. Time



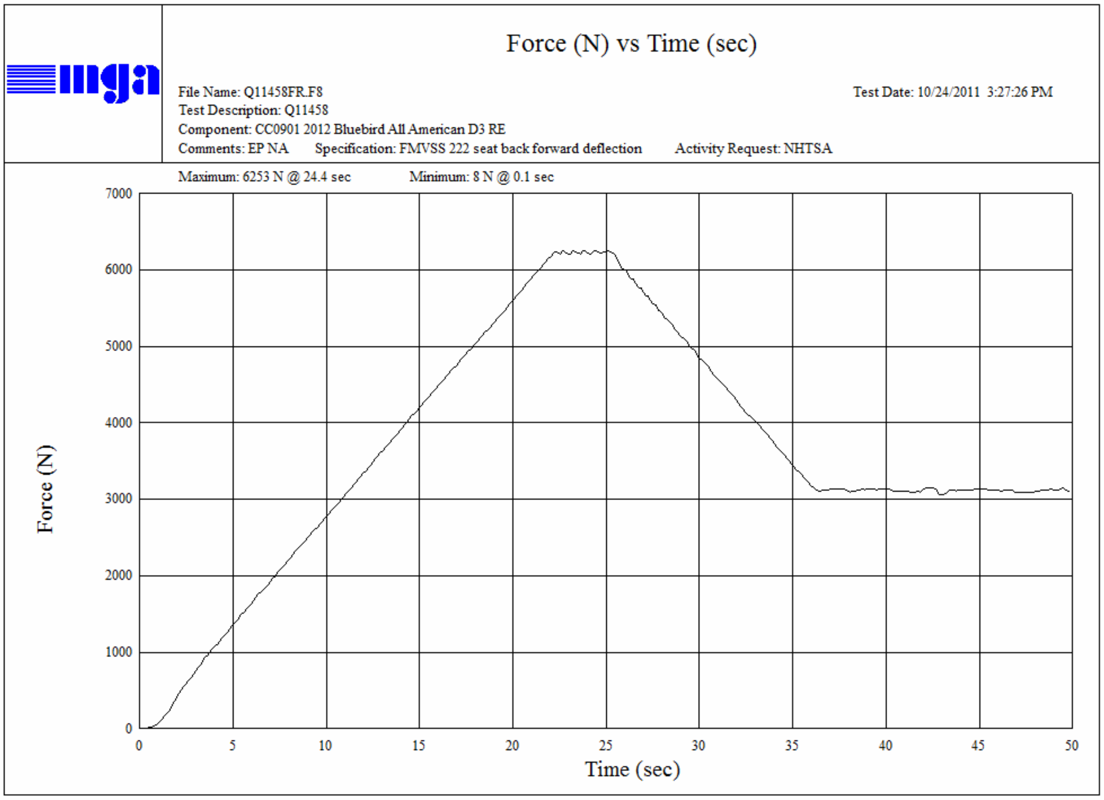
Seat Back Forward Deflection Seat S6 (Upper) Displacement vs. Time

TEST PLOTS

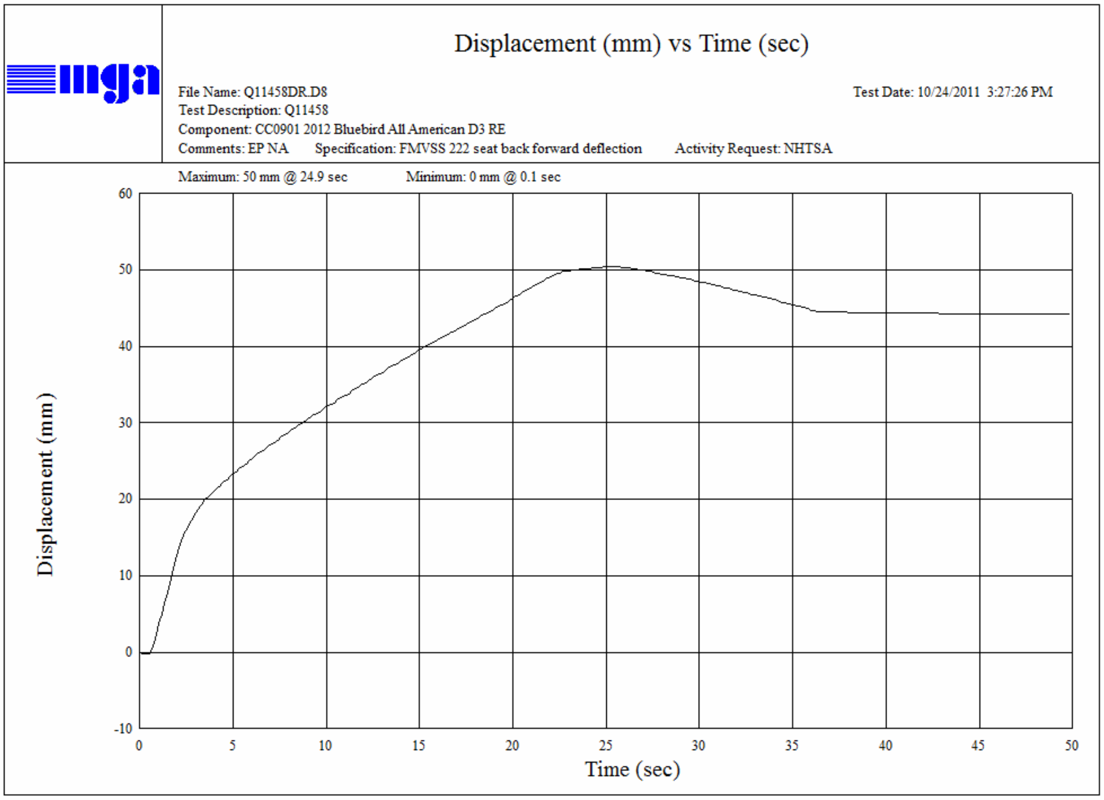


Seat Back Forward Deflection Seat S6 (Upper) Force vs. Displacement

TEST PLOTS

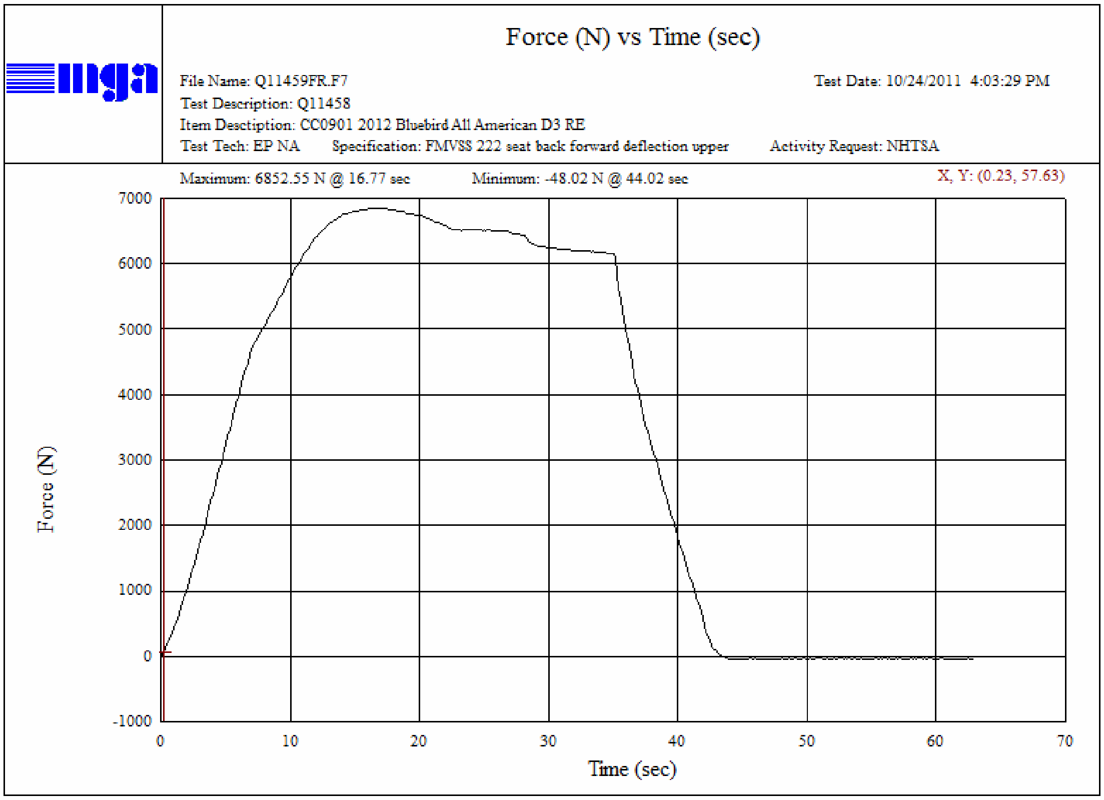


Seat Back Forward Deflection Seat S16 (Lower) Force vs. Time

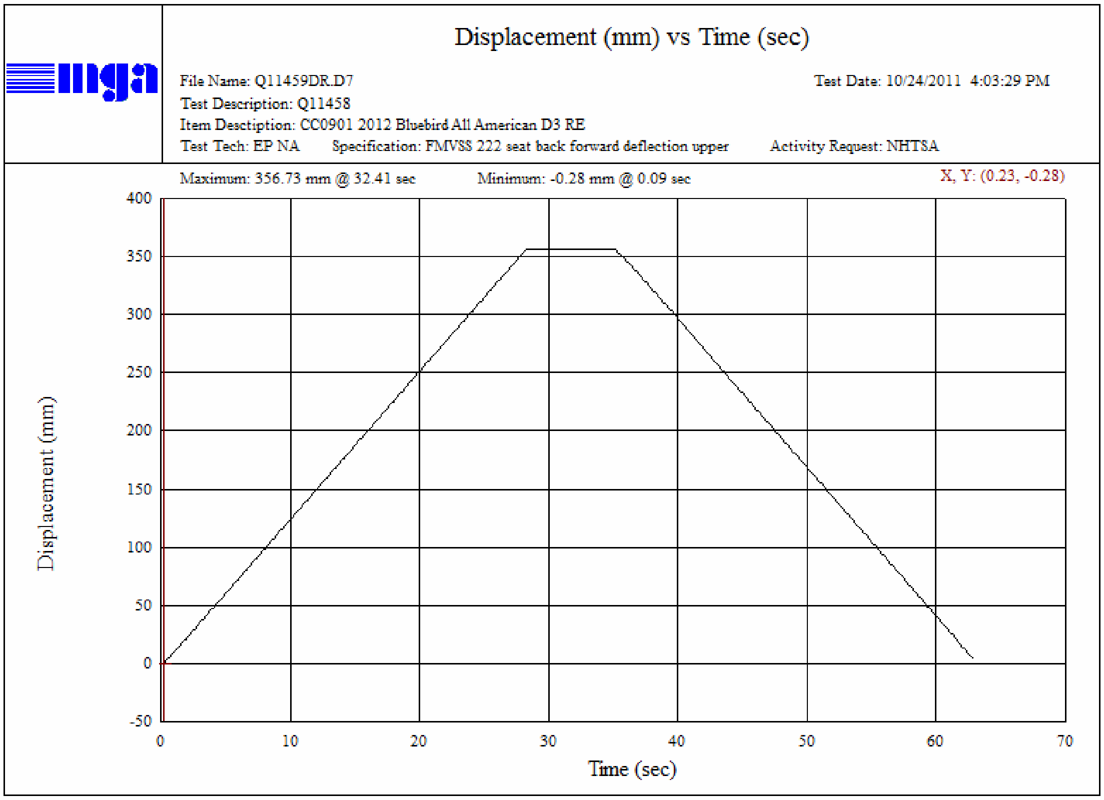


Seat Back Forward Deflection Seat S16 (Lower) Displacement vs. Time

TEST PLOTS

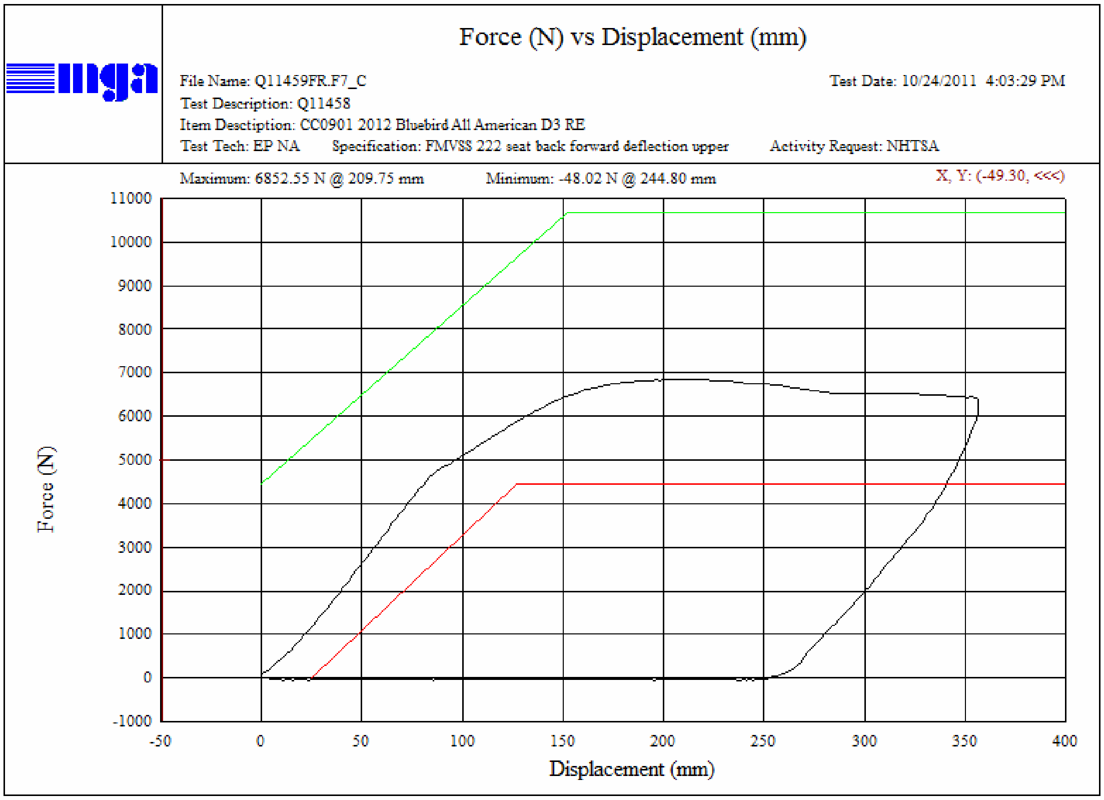


Seat Back Forward Deflection Seat S16 (Upper) Force vs. Time



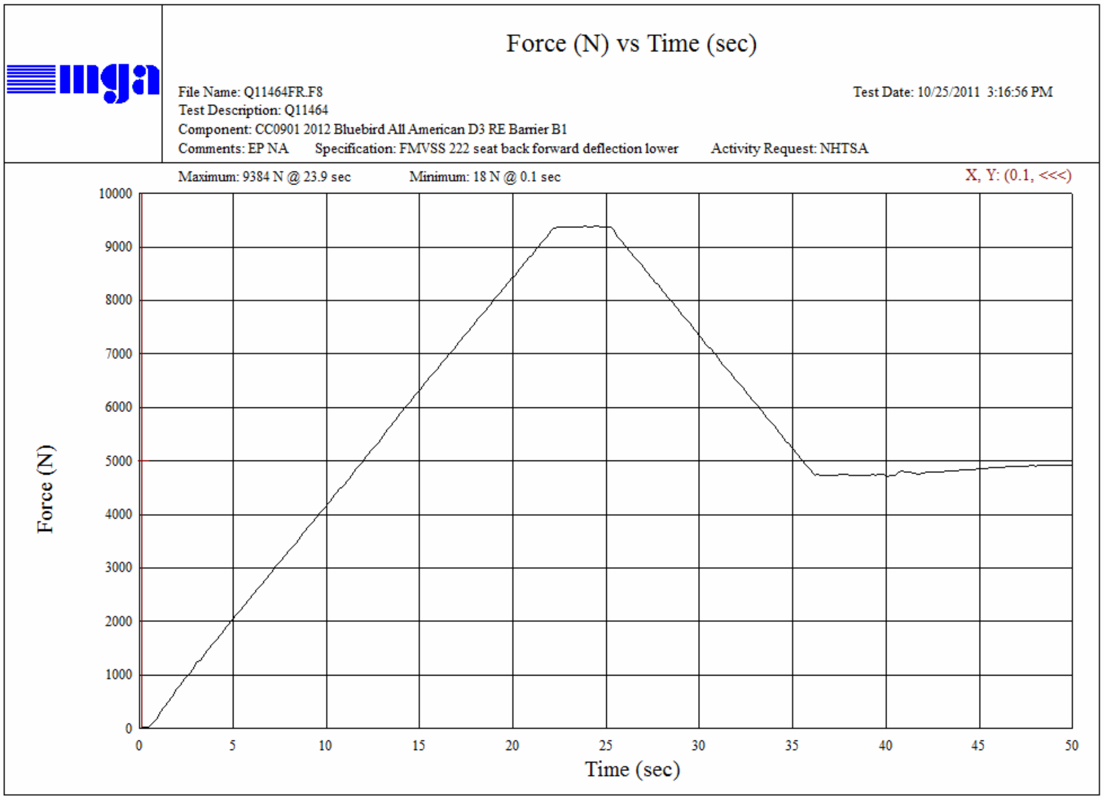
Seat Back Forward Deflection Seat S16 (Upper) Displacement vs. Time

TEST PLOTS

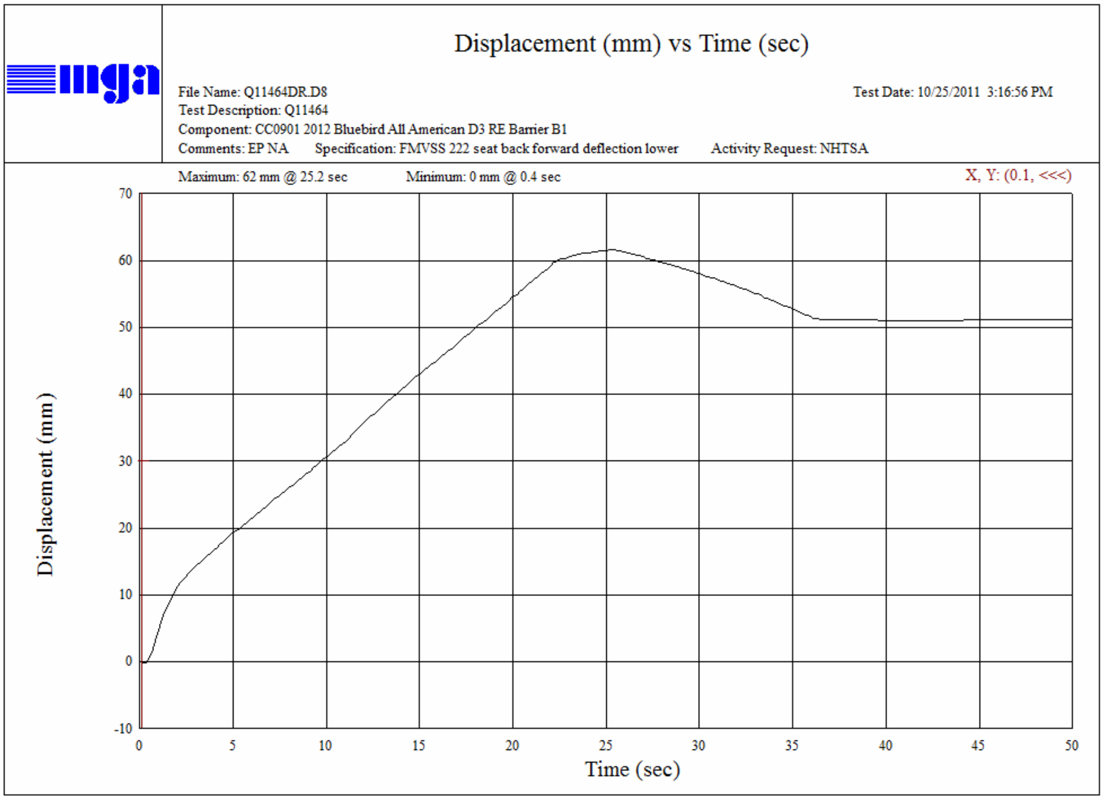


Seat Back Forward Deflection Seat S16 (Upper) Force vs. Displacement

TEST PLOTS

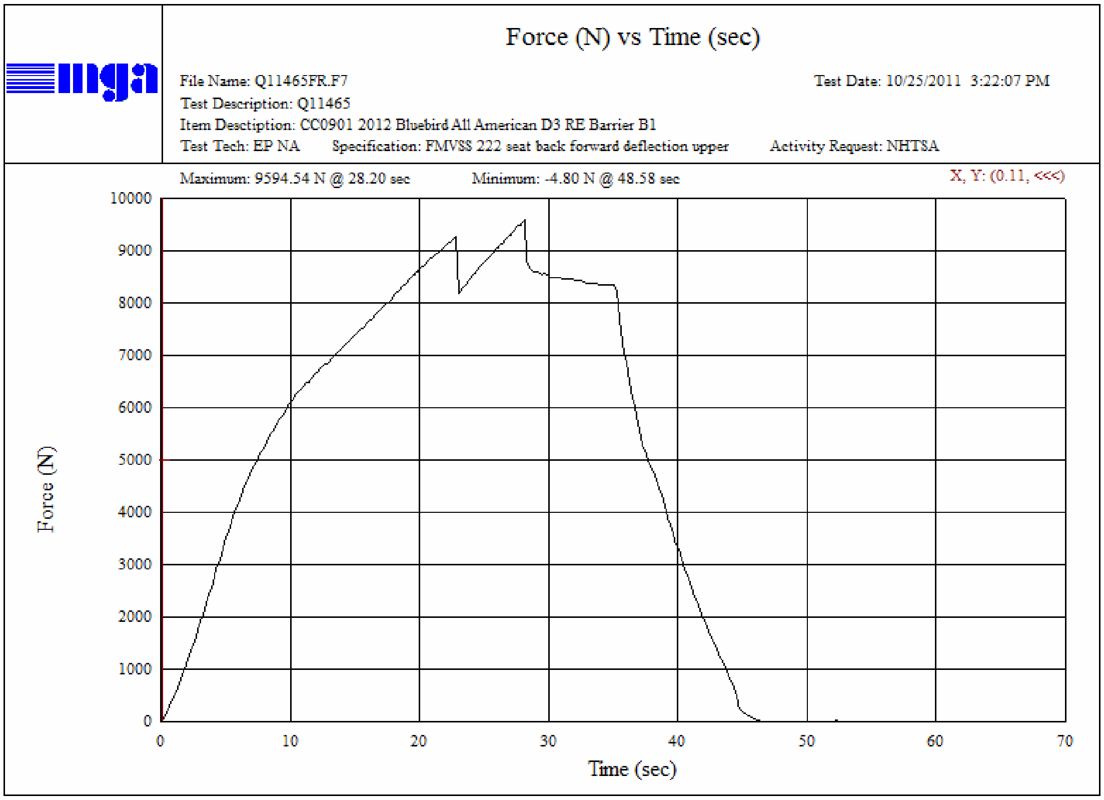


Barrier Forward Deflection Barrier B1 (Lower) Force vs. Time

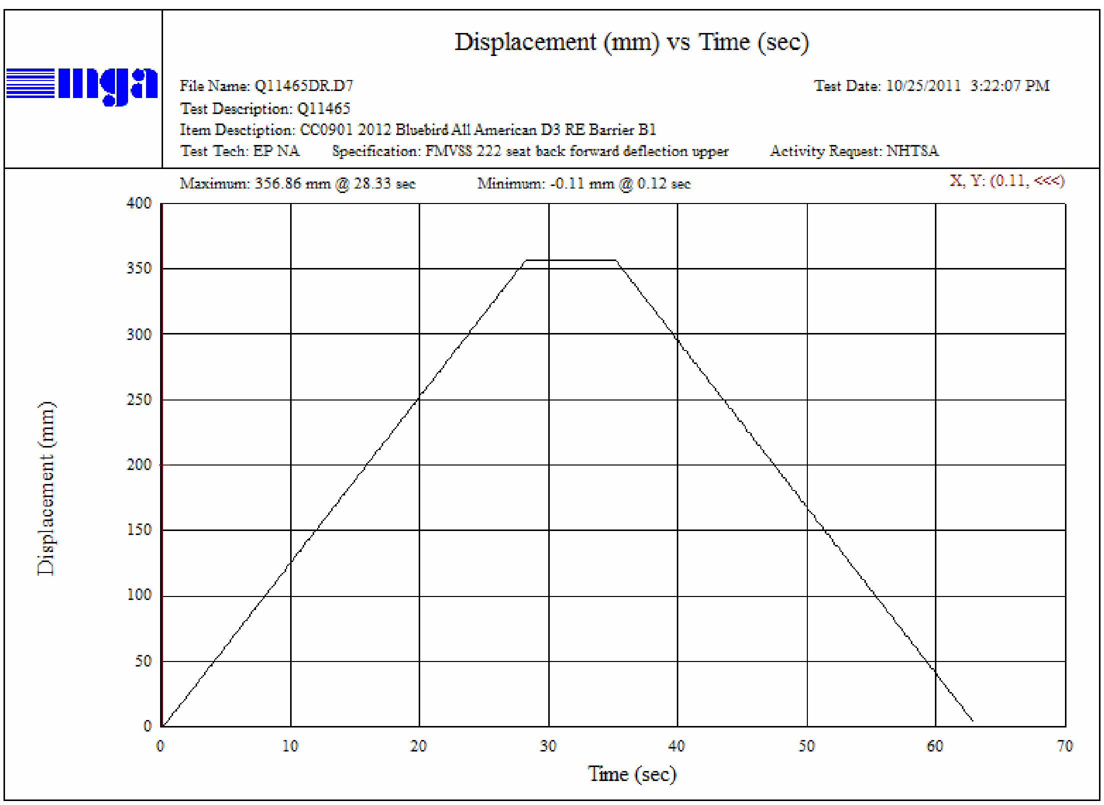


Barrier Forward Deflection Barrier B1 (Lower) Displacement vs. Time

TEST PLOTS

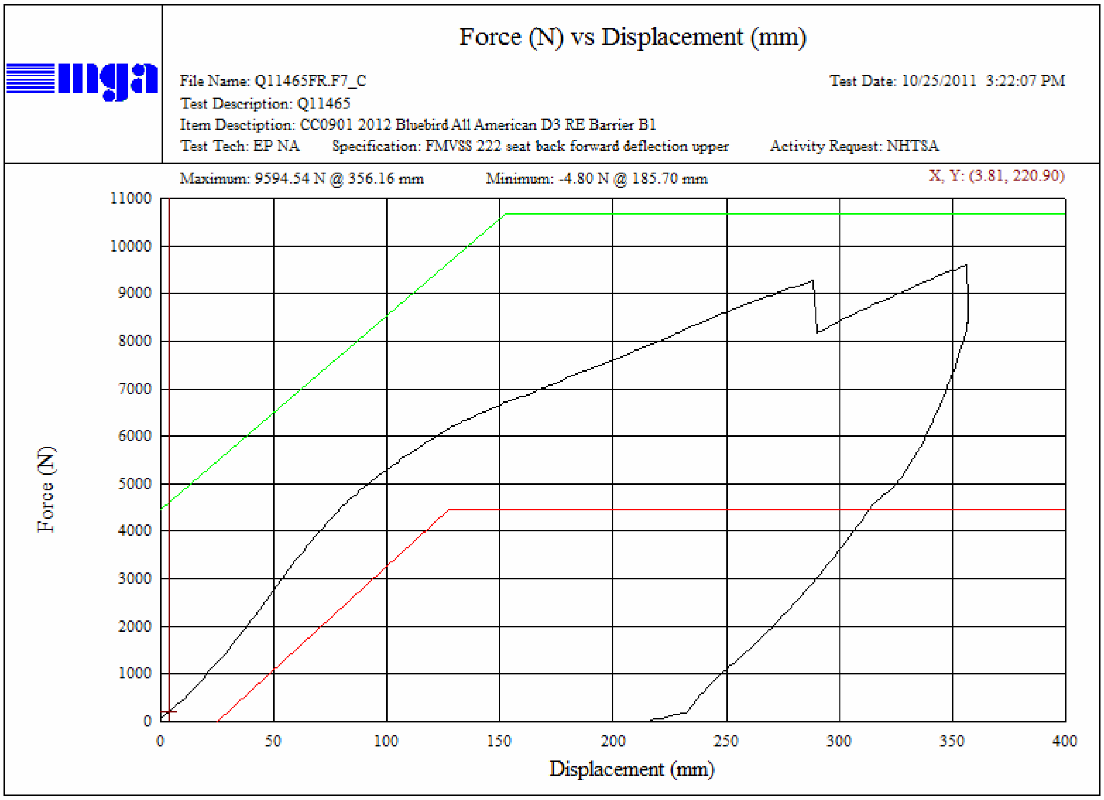


Barrier Forward Deflection Barrier B1 (Upper) Force vs. Time



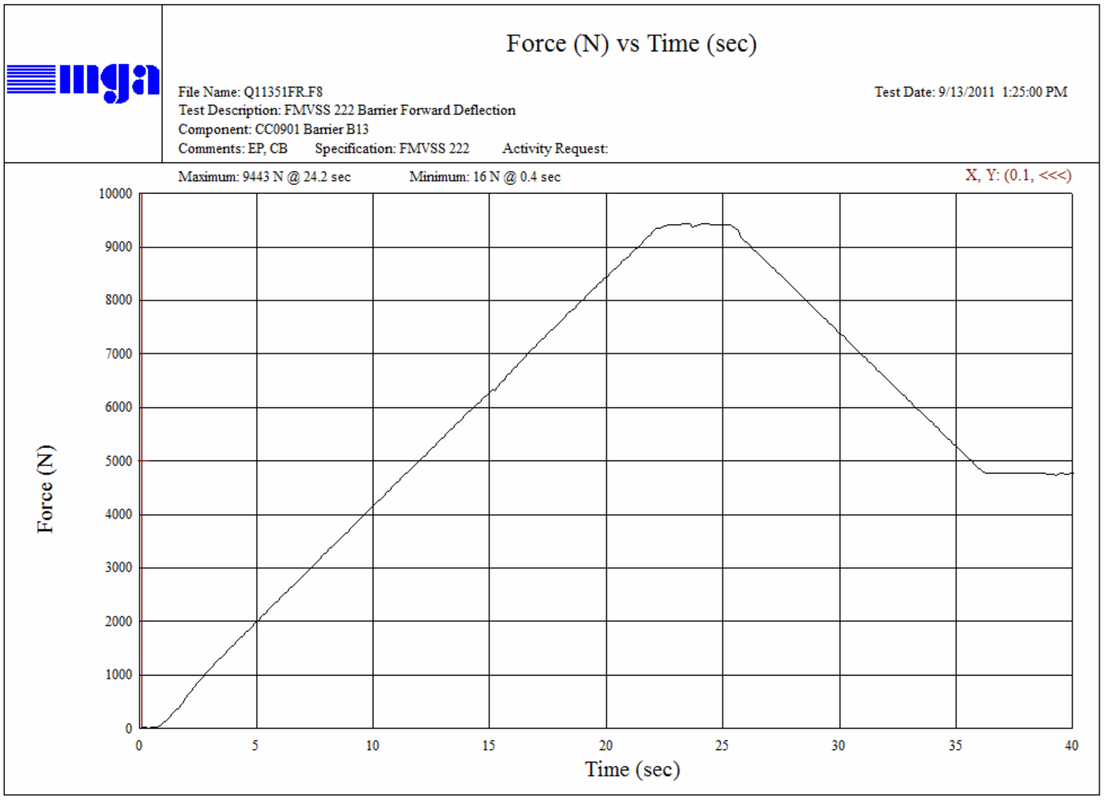
Barrier Forward Deflection Barrier B1 (Upper) Displacement vs. Time

TEST PLOTS

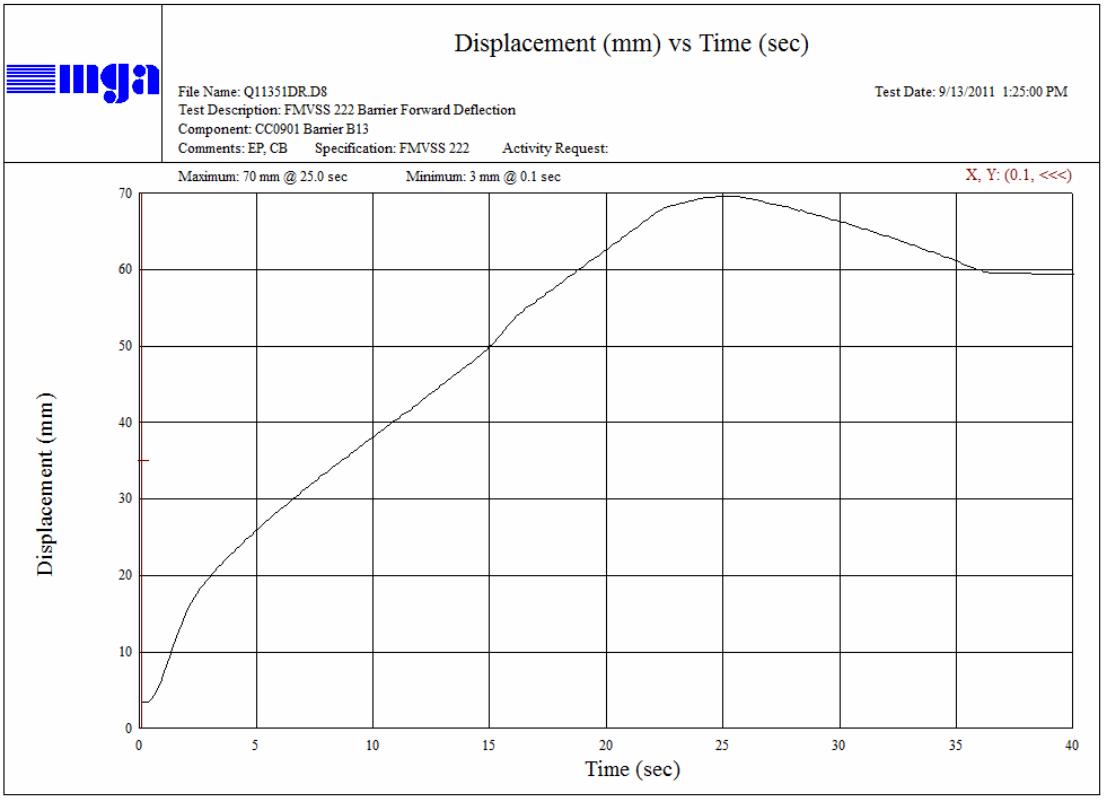


Barrier Forward Deflection Barrier B1 (Upper) Force vs. Displacement

TEST PLOTS

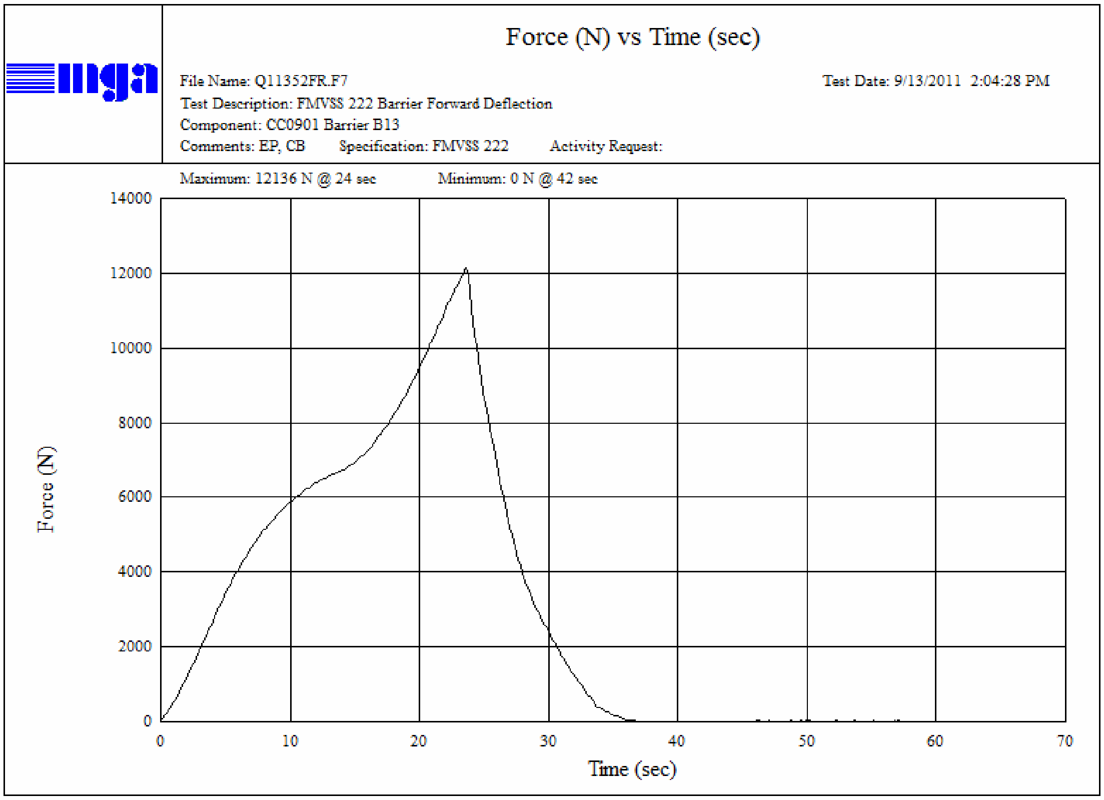


Barrier Forward Deflection Barrier B13 (Lower) Force vs. Time

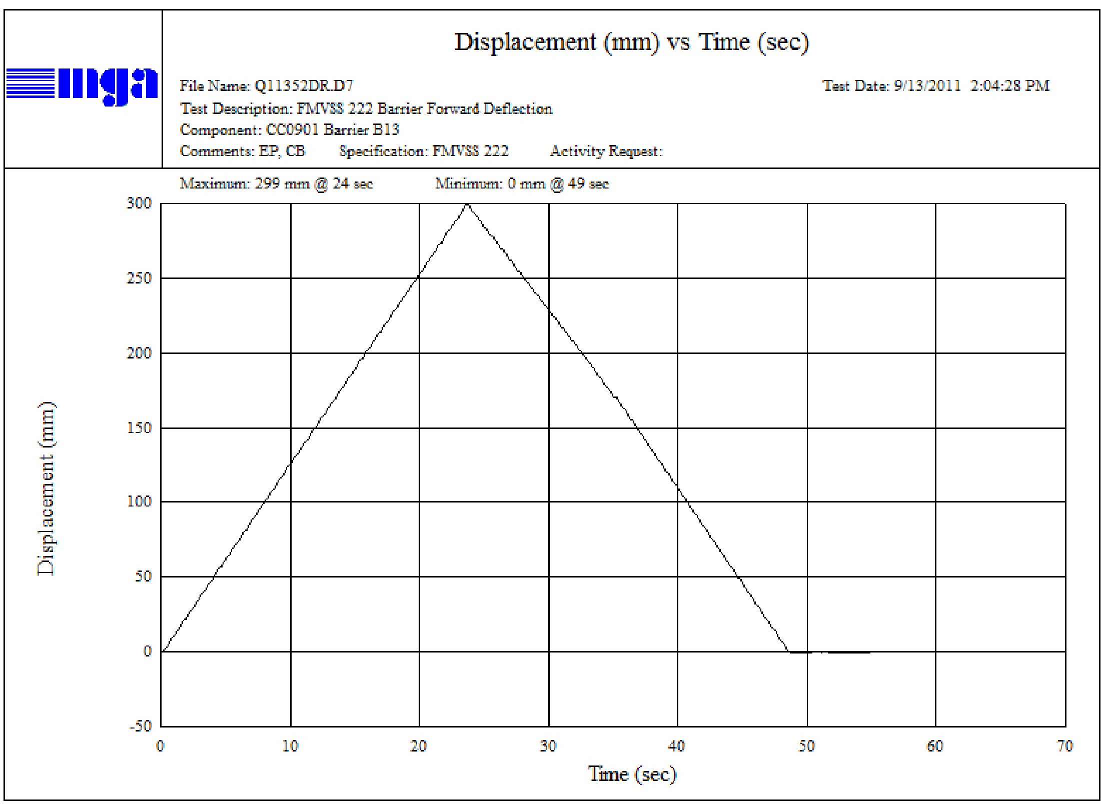


Barrier Forward Deflection Barrier B13 (Lower) Displacement vs. Time

TEST PLOTS



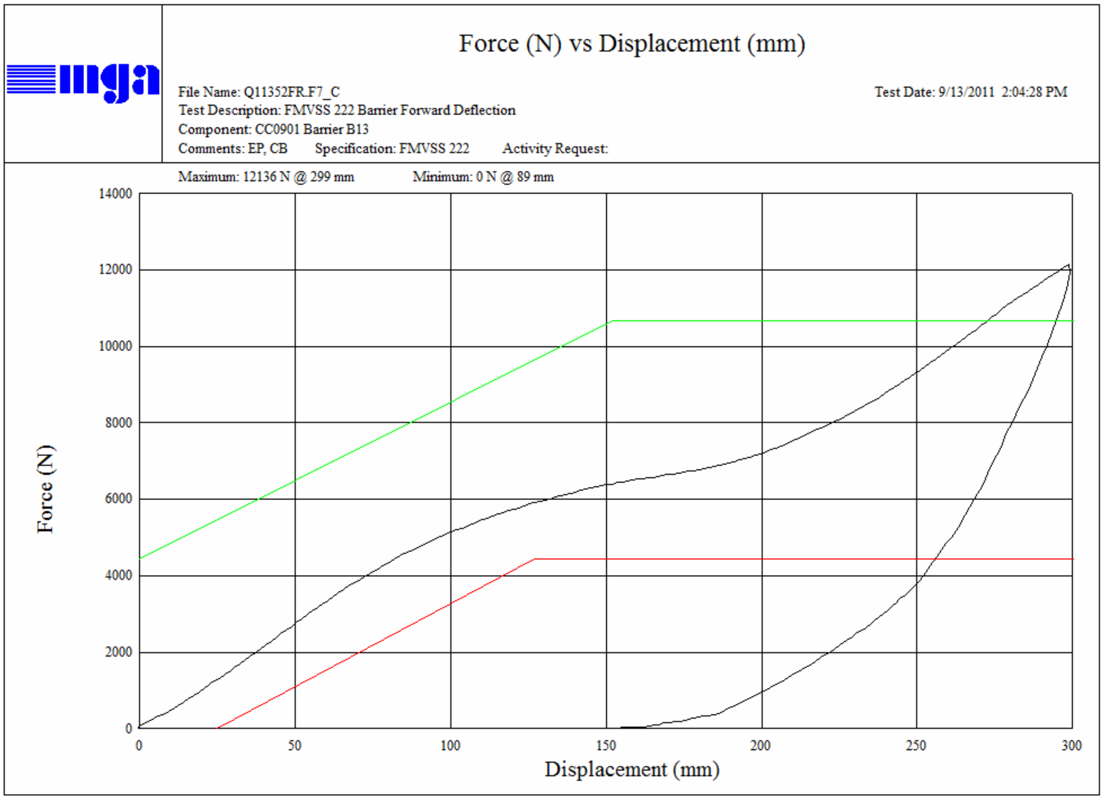
Barrier Forward Deflection Barrier B13 (Upper) Force vs. Time



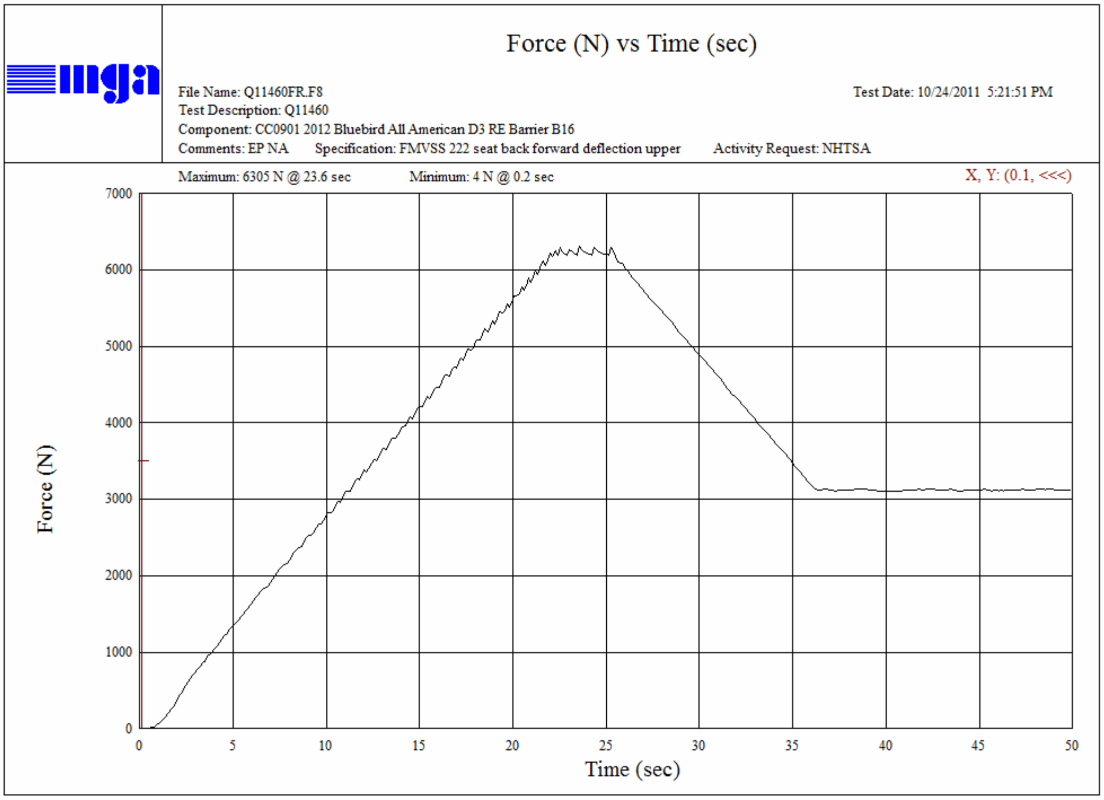
Barrier Forward Deflection Barrier B13 (Upper) Displacement vs. Time

SECTION 6 (CONTINUED)

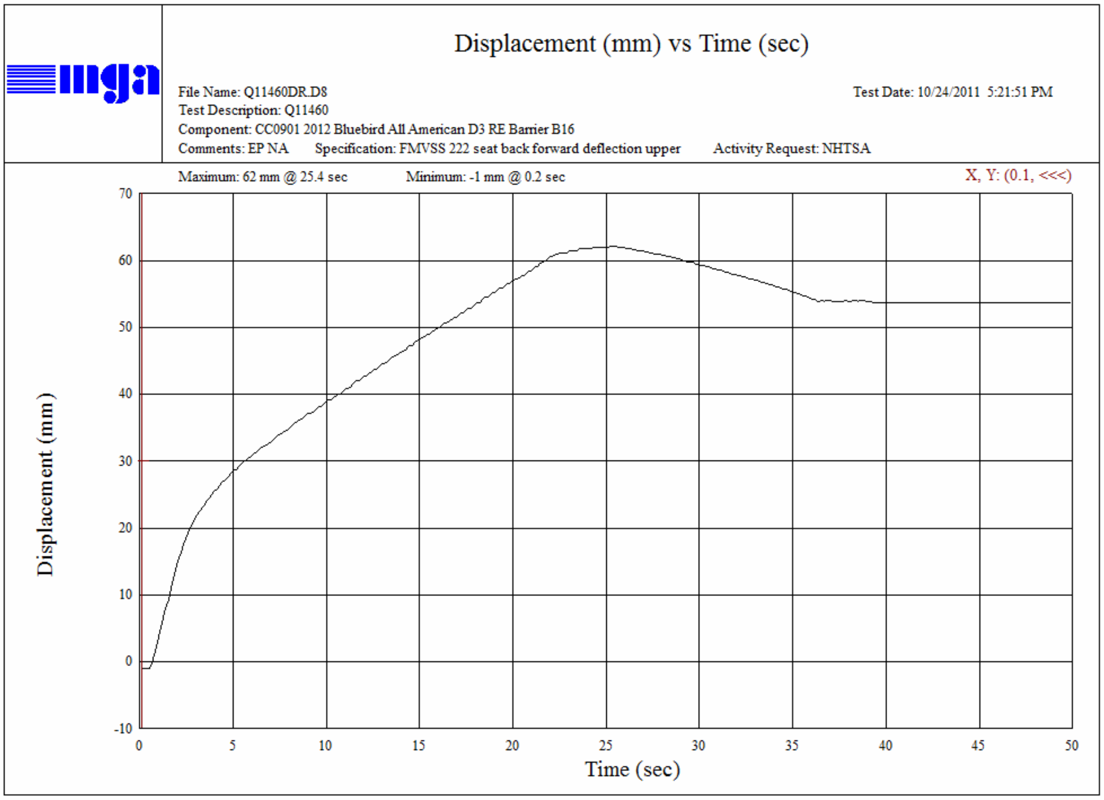
TEST PLOTS



Barrier Forward Deflection Barrier B13 (Upper) Force vs. Displacement

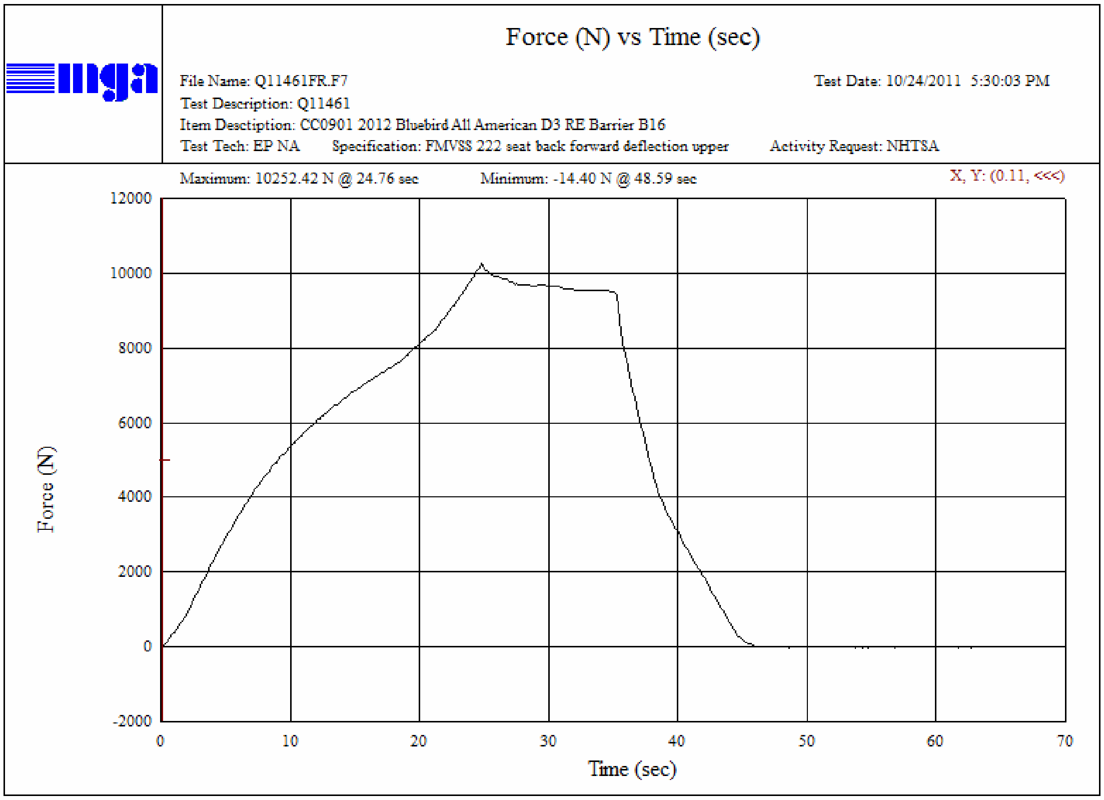


Barrier Forward Deflection Barrier B16 (Lower) Force vs. Time

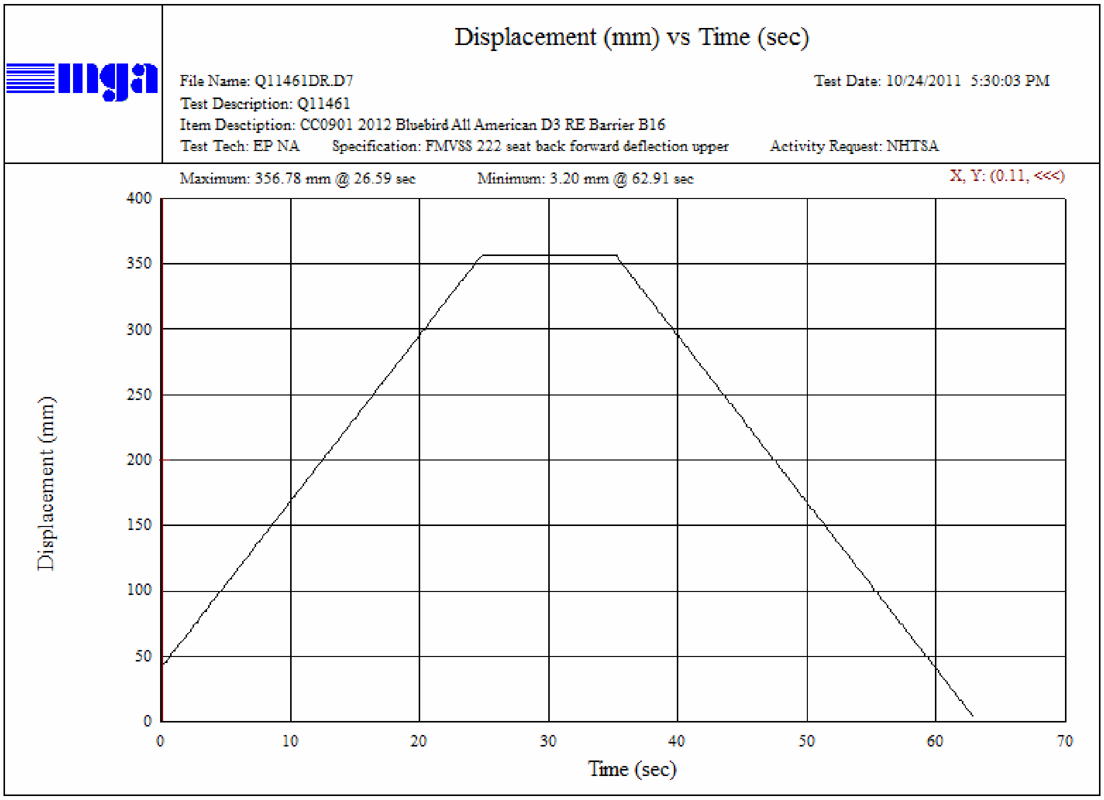


Barrier Forward Deflection Barrier B16 (Lower) Displacement vs. Time

TEST PLOTS



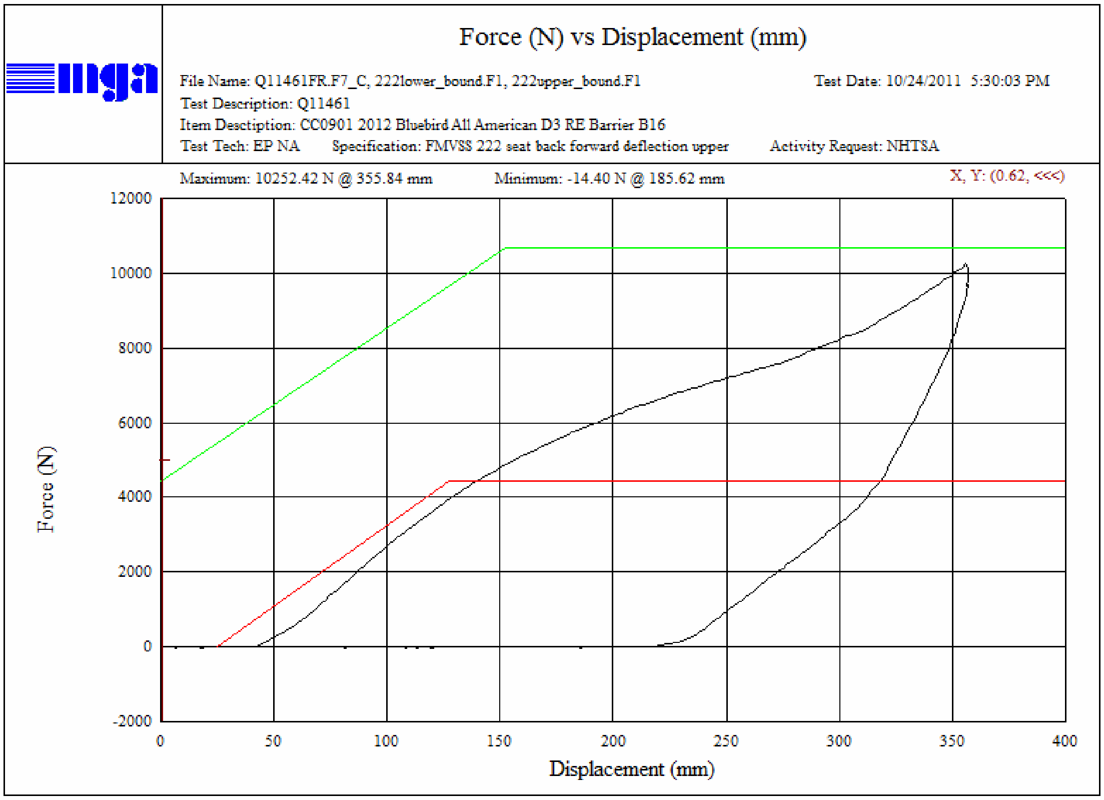
Barrier Forward Deflection Barrier B16 (Upper) Force vs. Time



Barrier Forward Deflection Barrier B16 (Upper) Displacement vs. Time

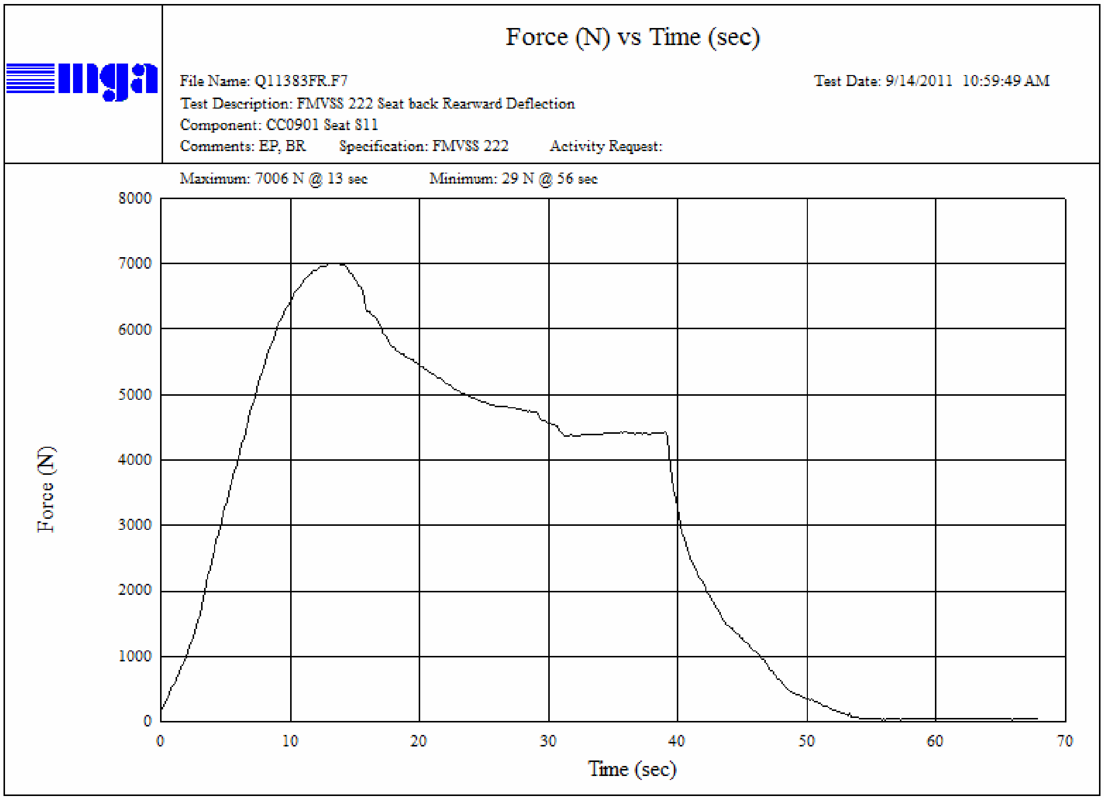
SECTION 6 (CONTINUED)

TEST PLOTS

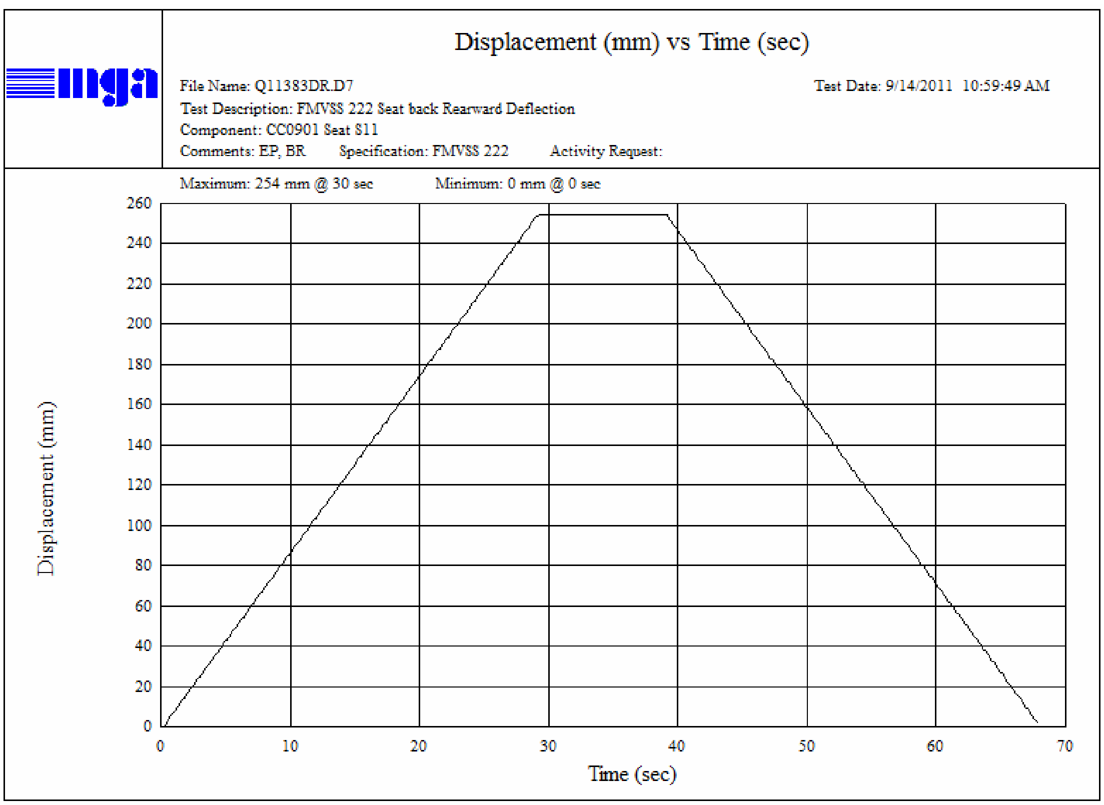


Barrier Forward Deflection Barrier B16 (Upper) Force vs. Displacement

TEST PLOTS



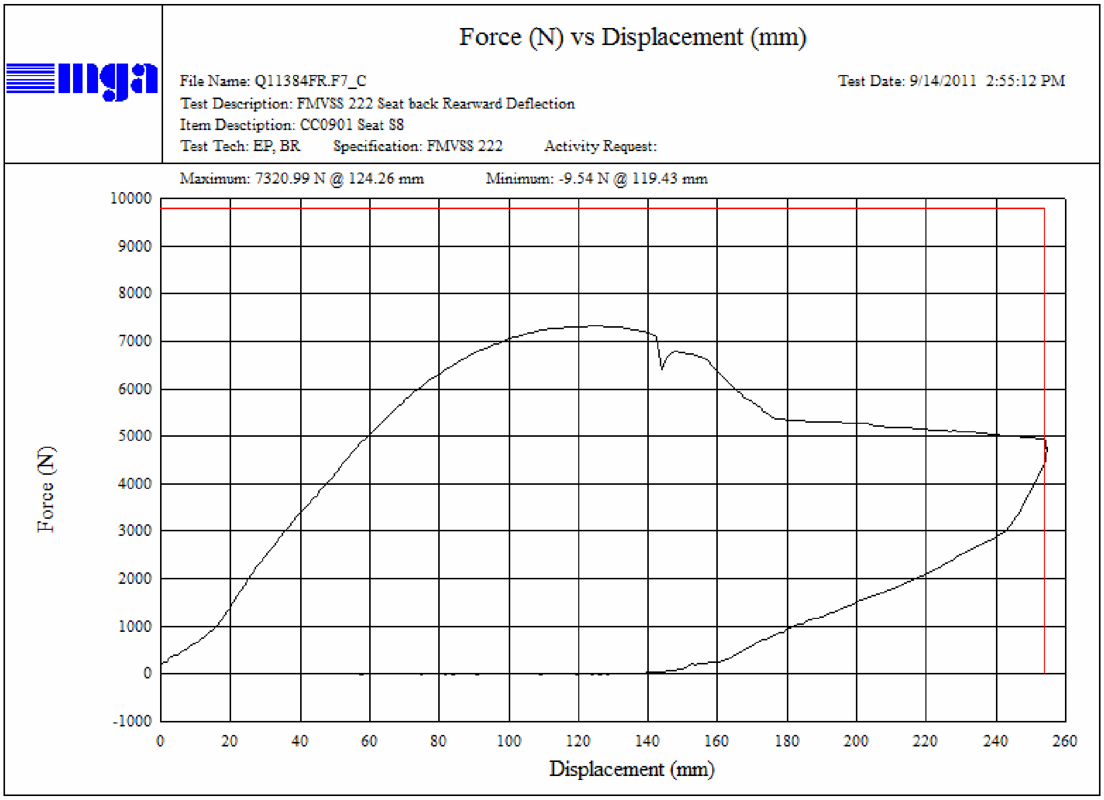
Seat Back Rearward Deflection Seat S8 (Lower) Force vs. Time



Seat Back Rearward Deflection Seat S8 (Lower) Displacement vs. Time

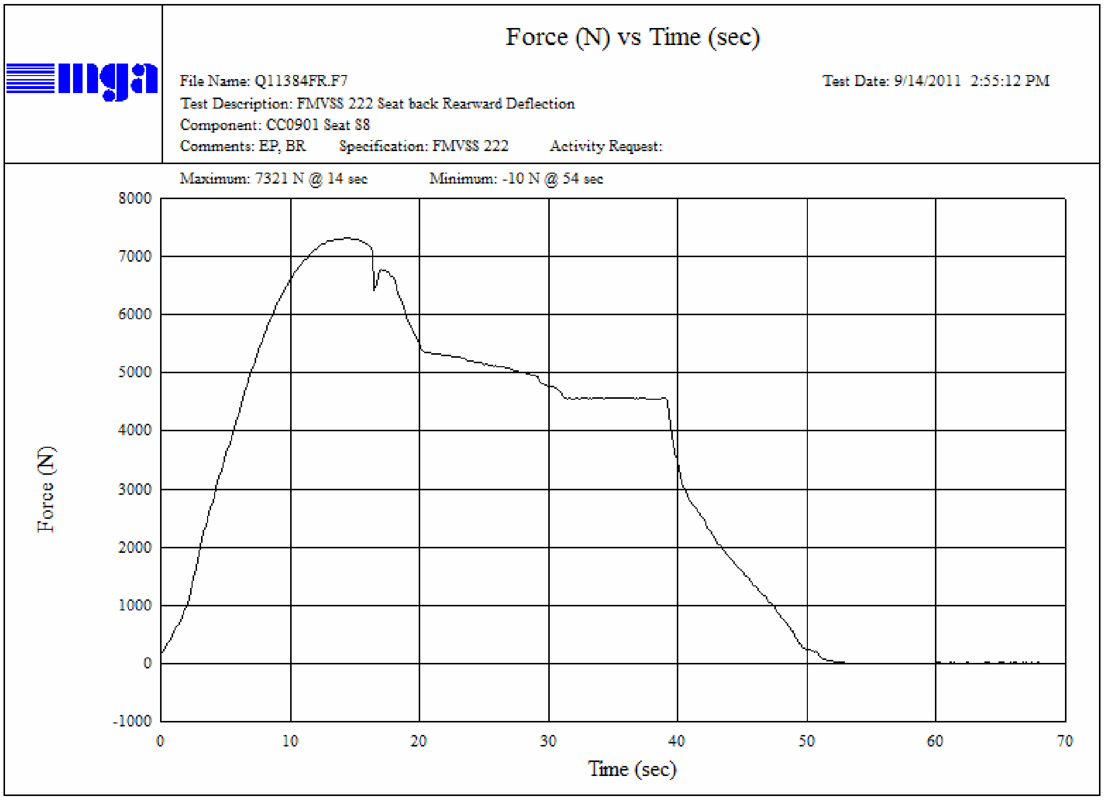
SECTION 6 (CONTINUED)

TEST PLOTS

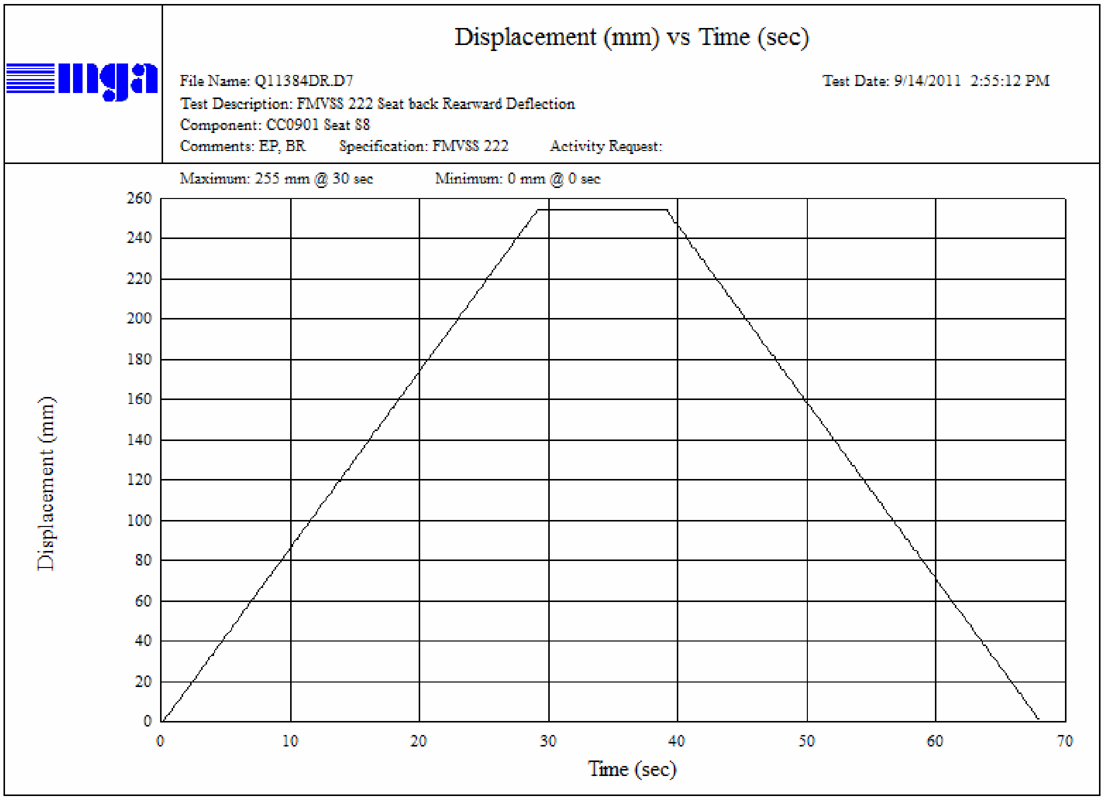


Seat Back Rearward Deflection Seat S8 (Lower) Force vs. Displacement

TEST PLOTS

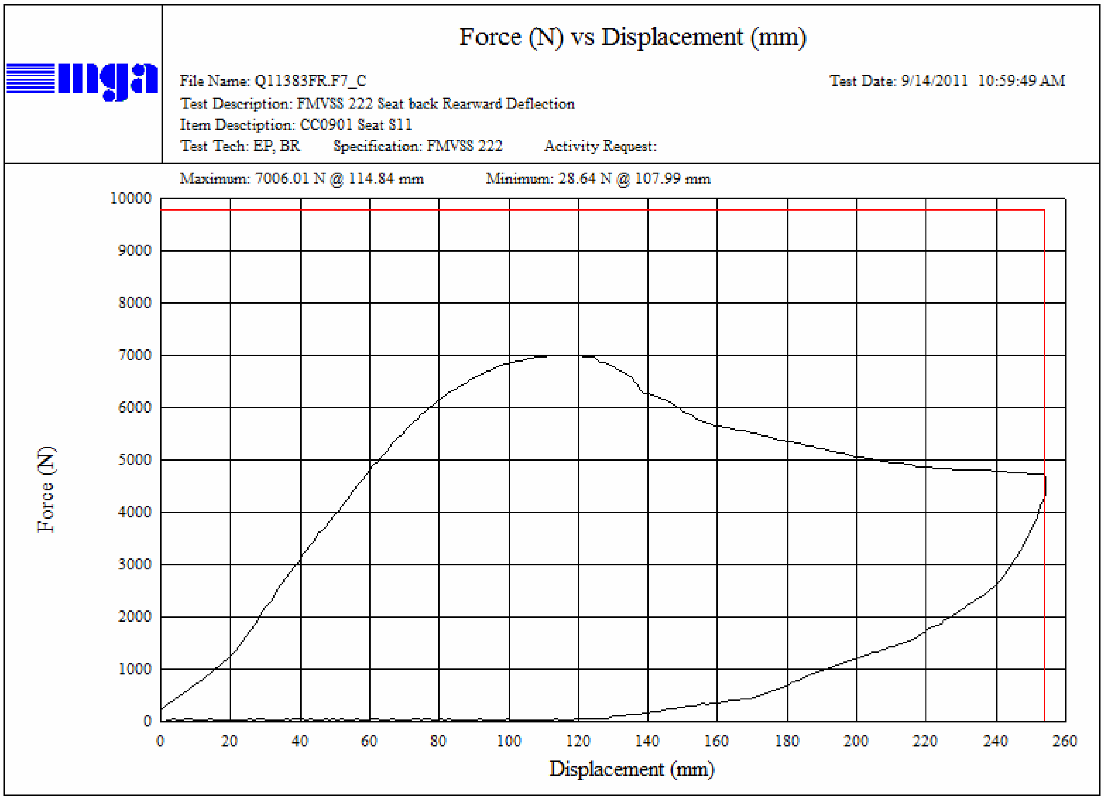


Seat Back Rearward Deflection Seat S11 (Lower) Force vs. Time



Seat Back Rearward Deflection Seat S11 (Lower) Displacement vs. Time

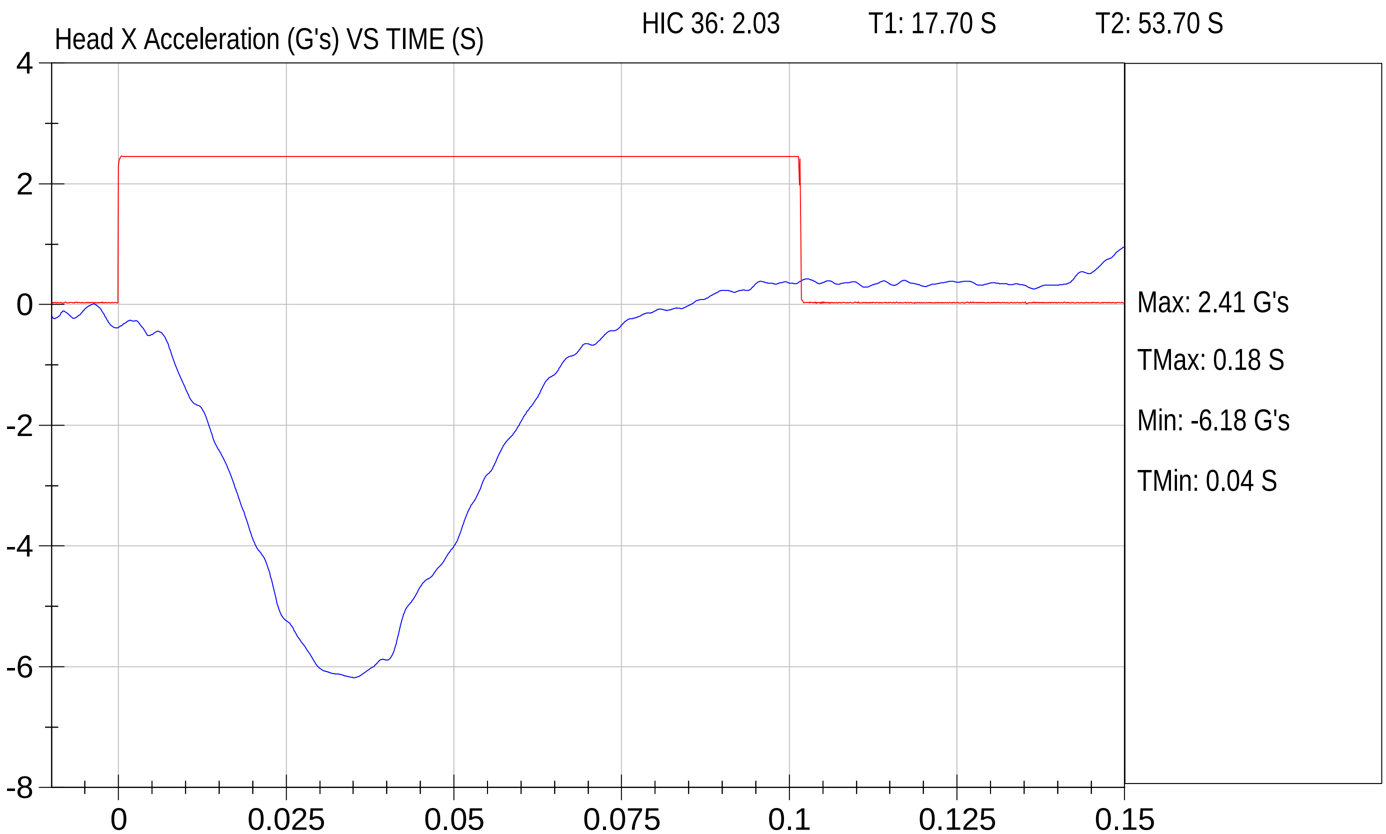
TEST PLOTS

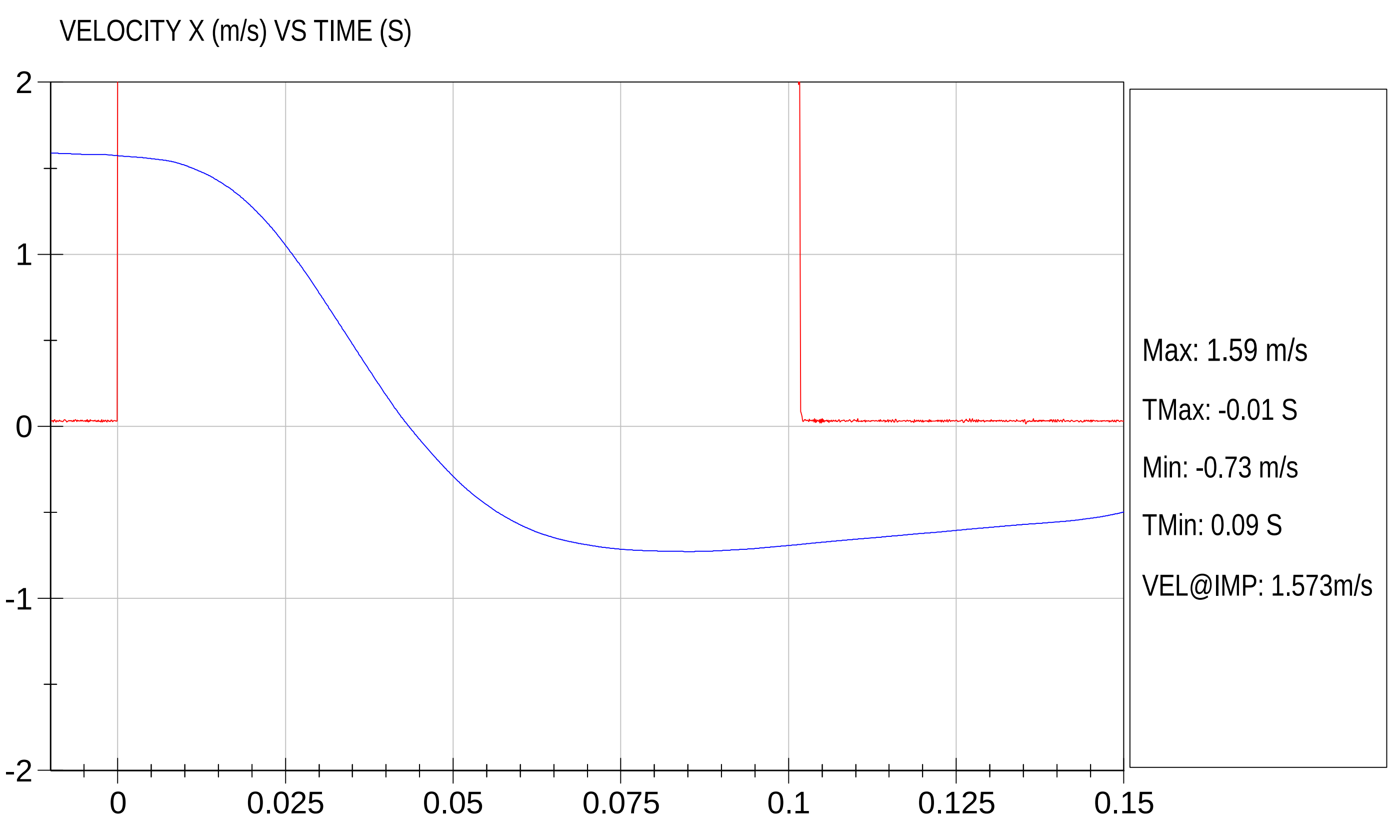


Seat Back Rearward Deflection Seat S11 (Lower) Force vs. Displacement

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.54 m/s

Test Date: 9-27-2011
Location: S2H1

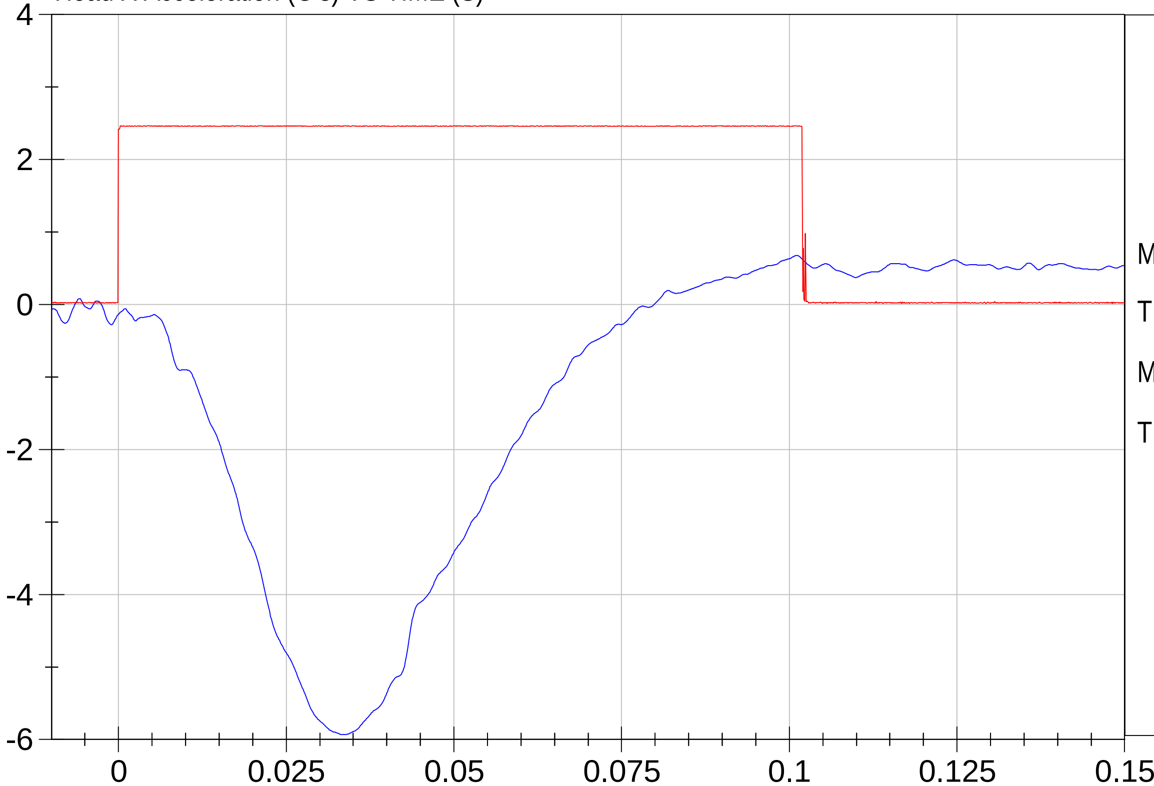




FMVSS 222 HEAD FORM IMPACTS (1.5 m/s) Test Date: 9-27-2011
Vehicle: 2012 Bluebird All American D3 RE Location: S2H2
NHTSA #: CC0901 speed trap: 1.53 m/s

HIC 36: 1.66 T1: 18.00 S T2: 54.00 S

Head X Acceleration (G's) VS TIME (S)



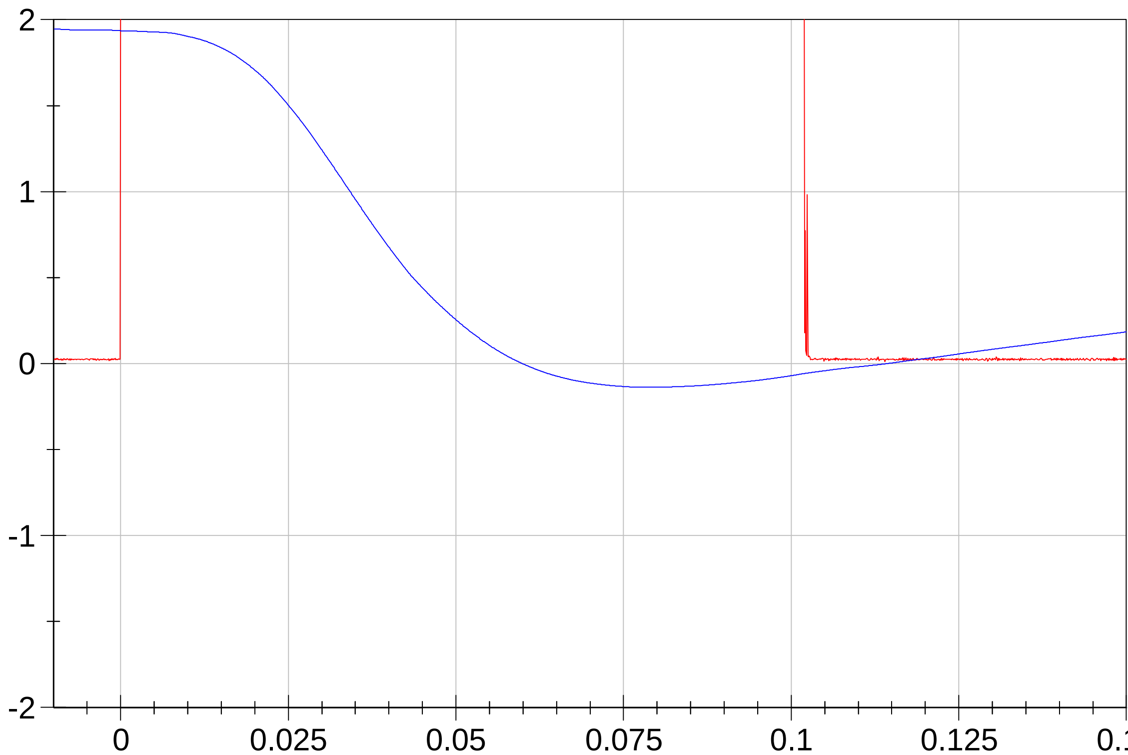
Max: 2.31 G's

TMax: 0.18 S

Min: -5.93 G's

TMin: 0.03 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.94 m/s

TMax: -0.01 S

Min: -0.14 m/s

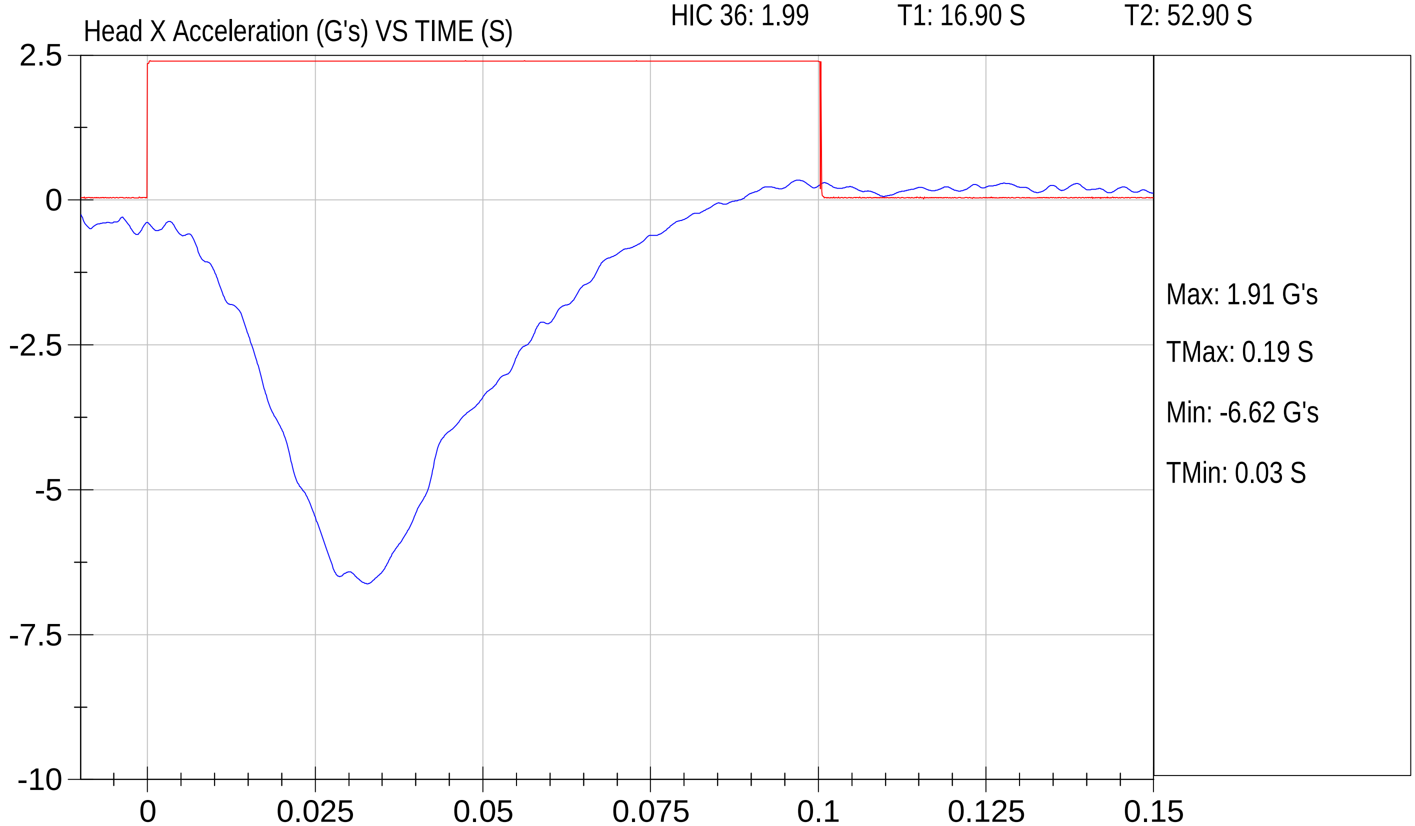
TMin: 0.08 S

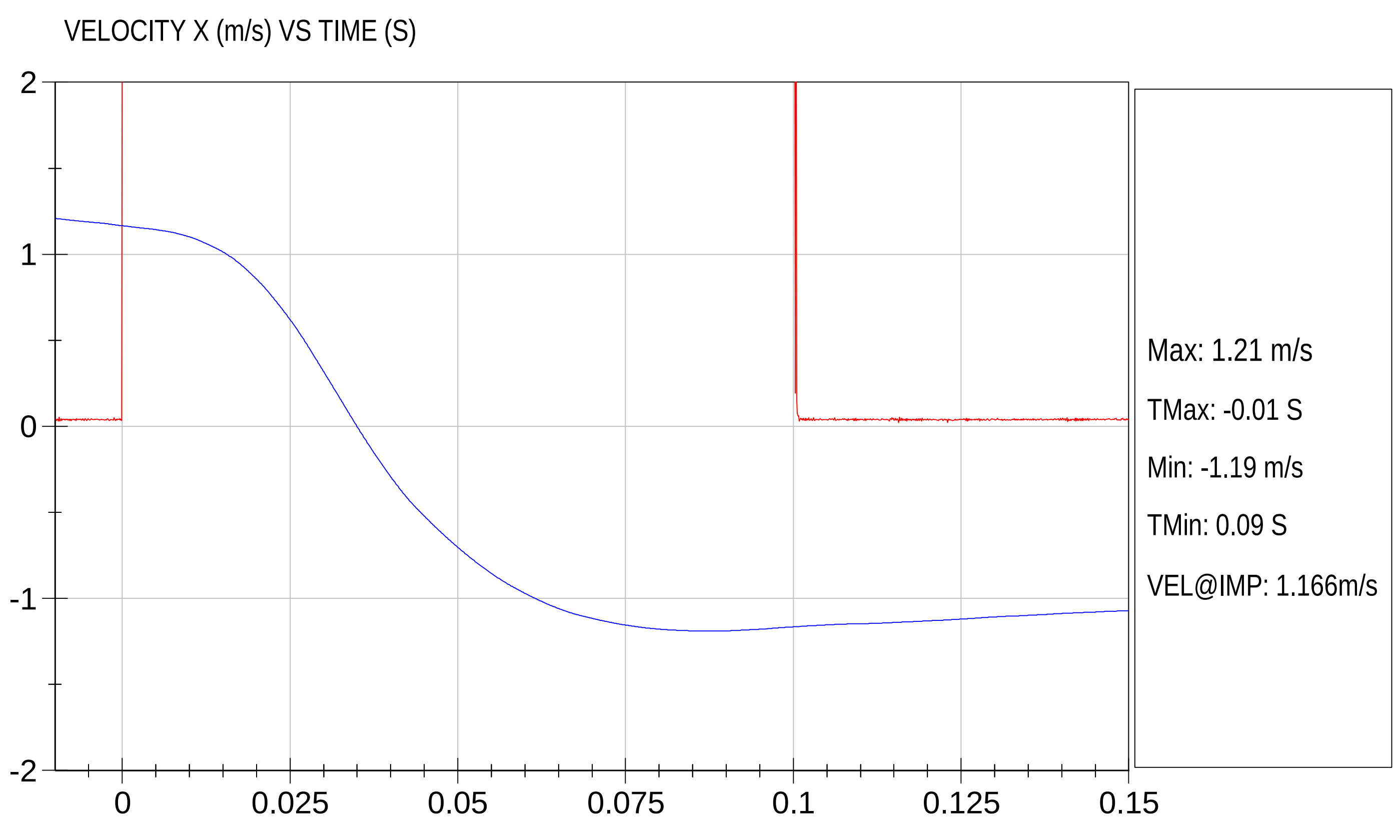
VEL@IMP: 1.936m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.53 m/s

Test Date: 9-27-2011
Location: S2H3

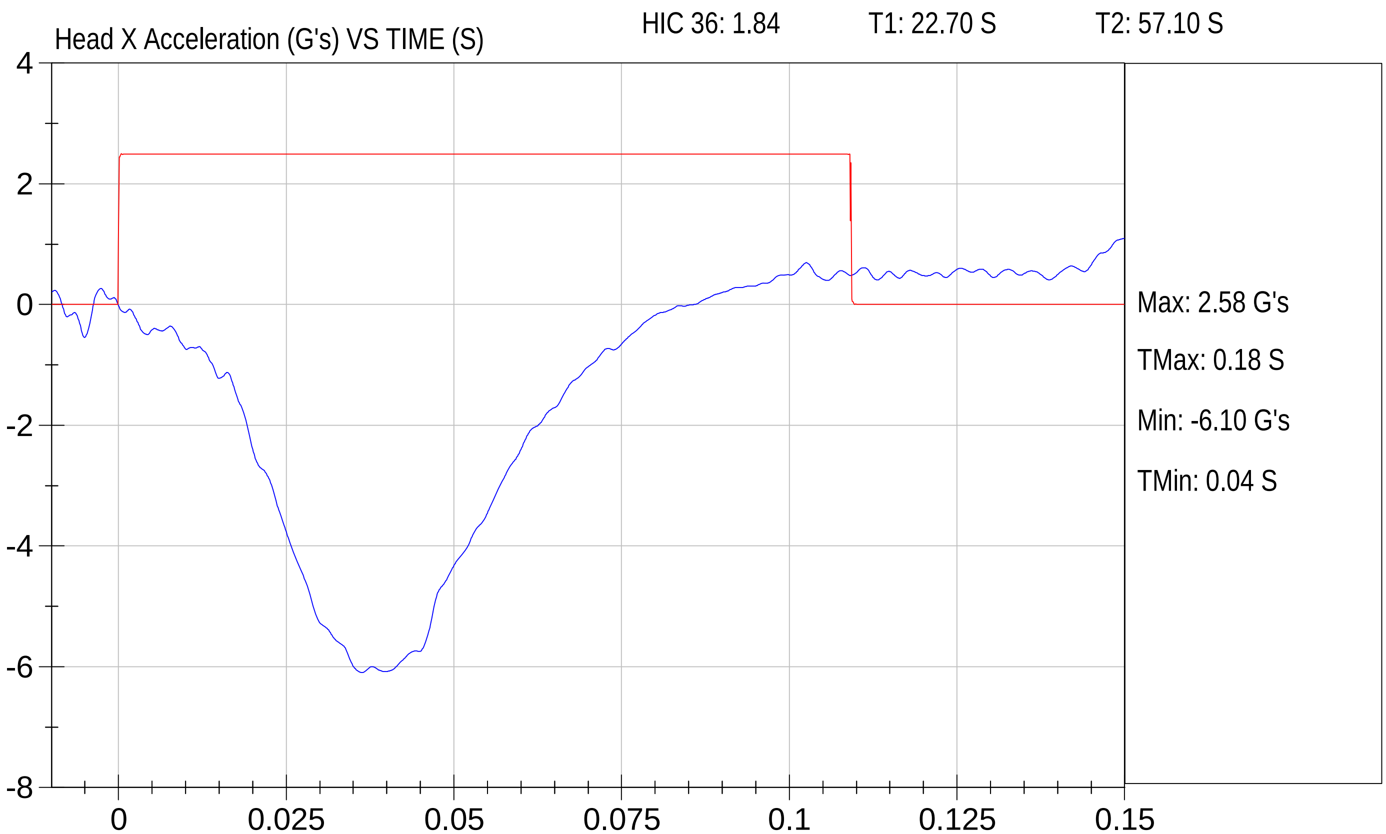
HIC 36: 1.99 T1: 16.90 S T2: 52.90 S

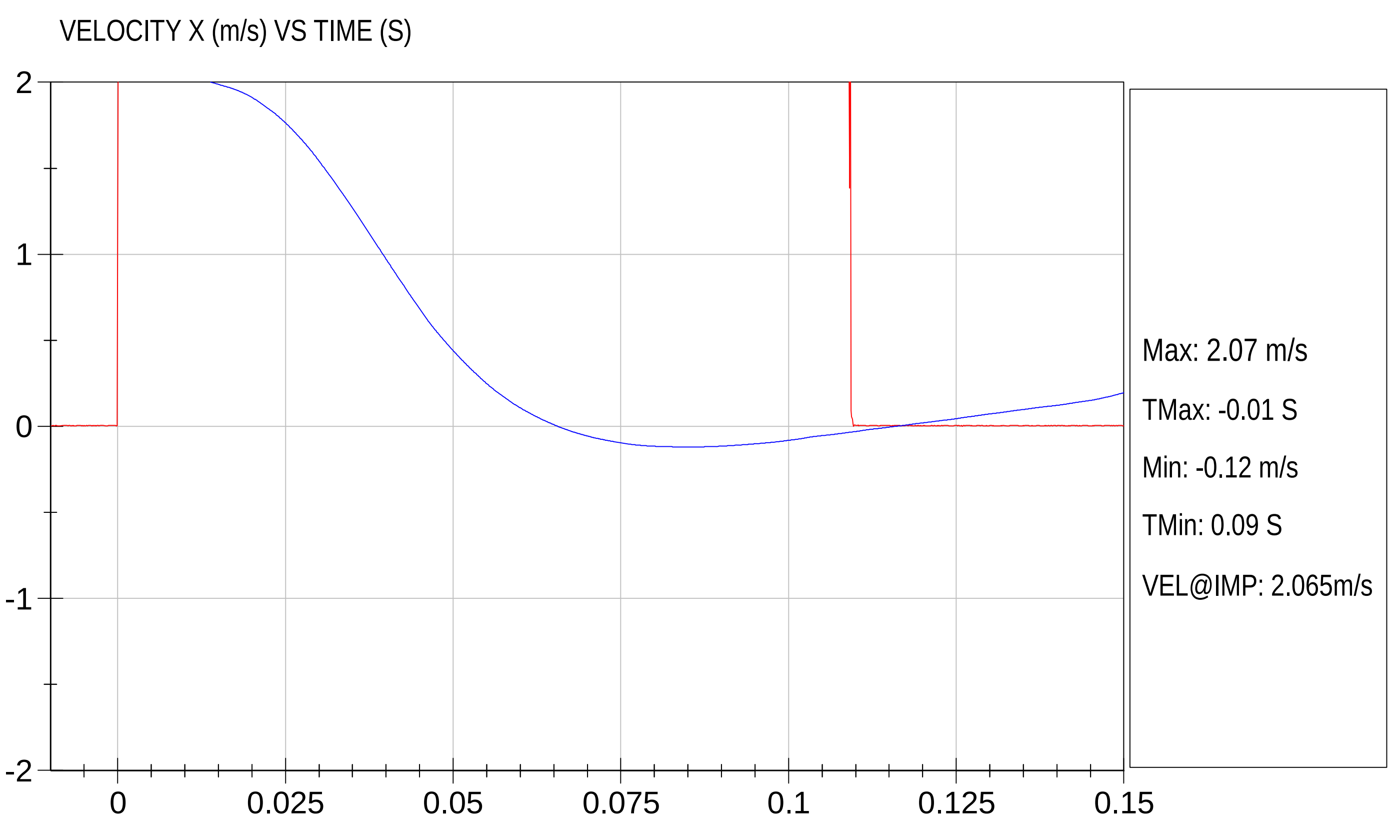




FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.58 m/s

Test Date: 9-27-2011
Location: S2H4



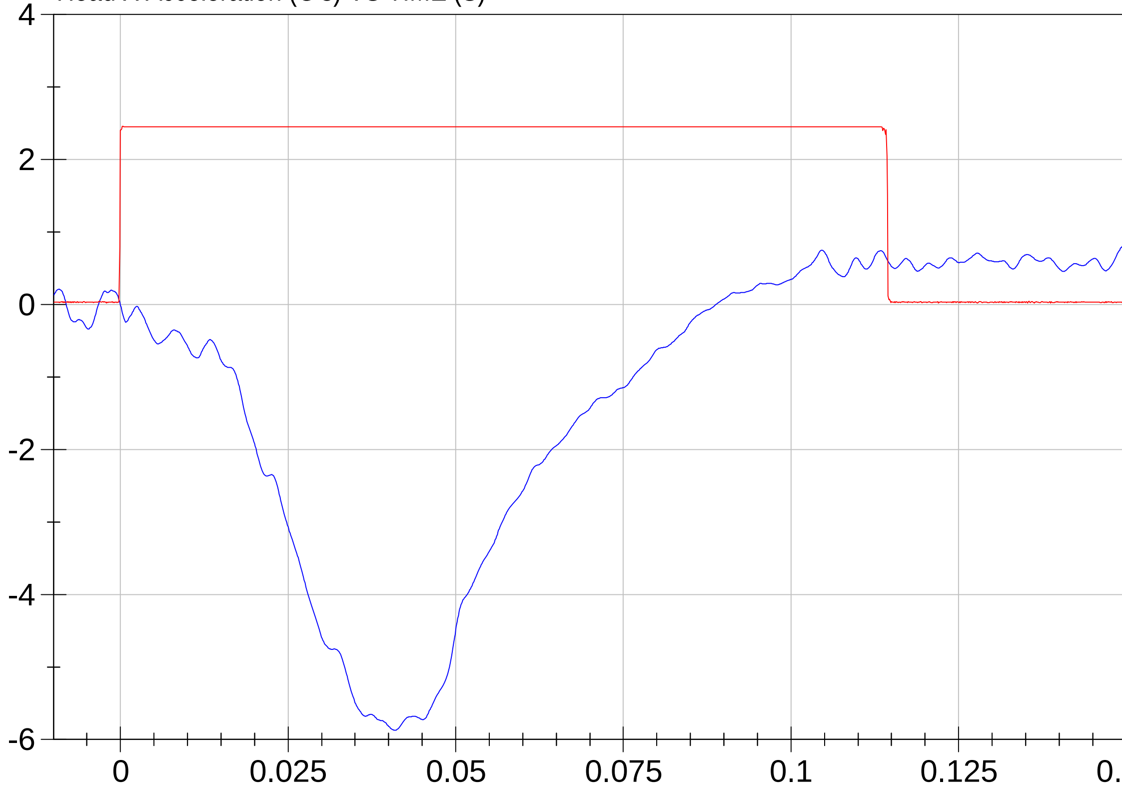


FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.57 m/s

Test Date: 9-27-2011
Location: S2H5

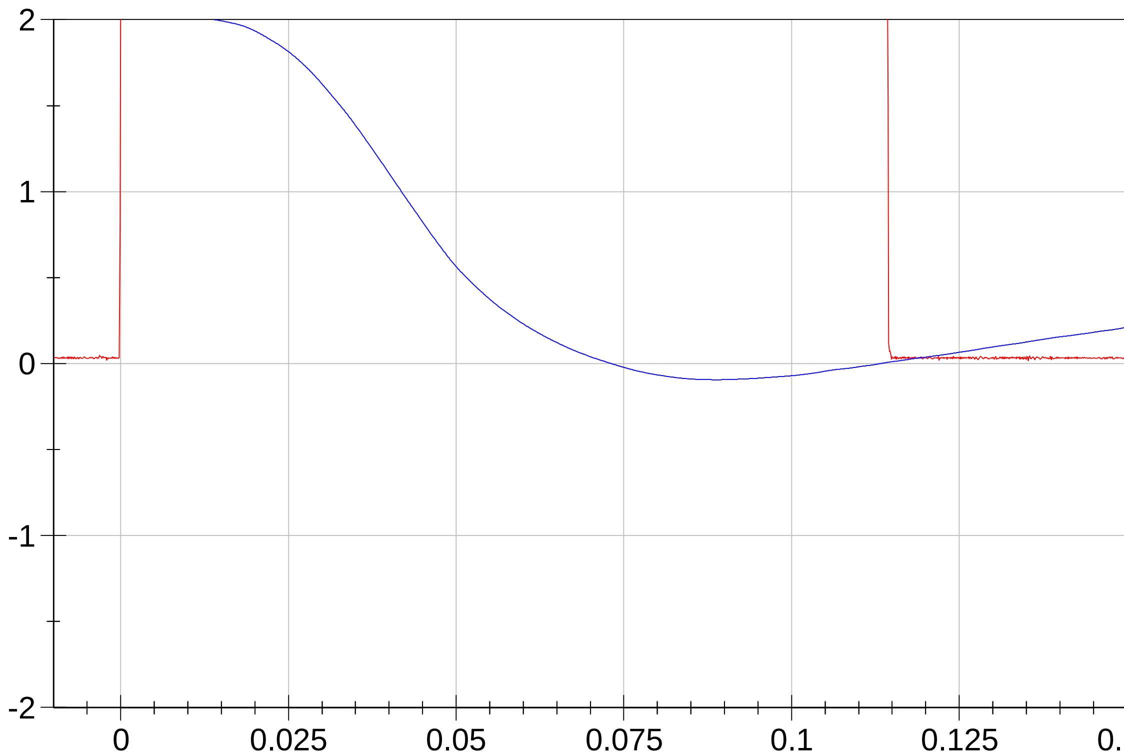
Head X Acceleration (G's) VS TIME (S)

HIC 36: 1.61 T1: 24.20 S T2: 58.00 S



Max: 2.57 G's
TMax: 0.18 S
Min: -5.87 G's
TMin: 0.04 S

VELOCITY X (m/s) VS TIME (S)



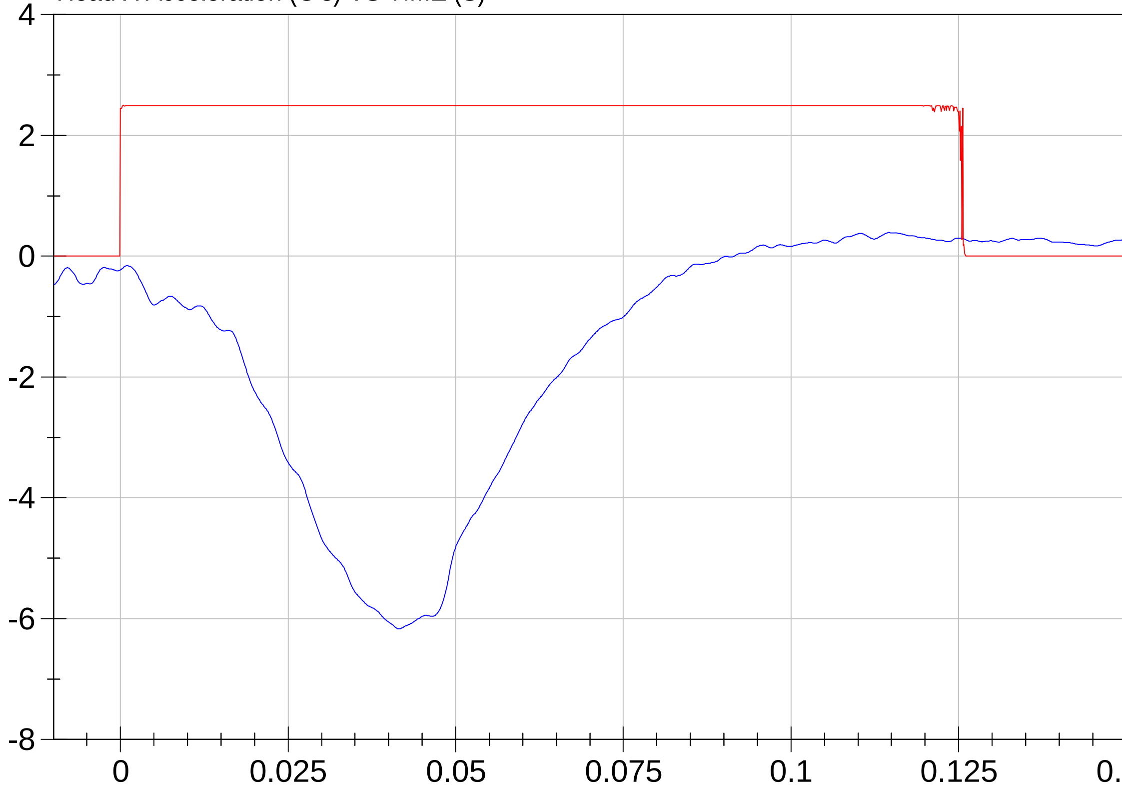
Max: 2.06 m/s
TMax: -0.01 S
Min: -0.09 m/s
TMin: 0.09 S
VEL@IMP: 2.056m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.58 m/s

Test Date: 9-27-2011
Location: S2H6

HIC 36: 1.87 T1: 23.30 S T2: 59.30 S

Head X Acceleration (G's) VS TIME (S)



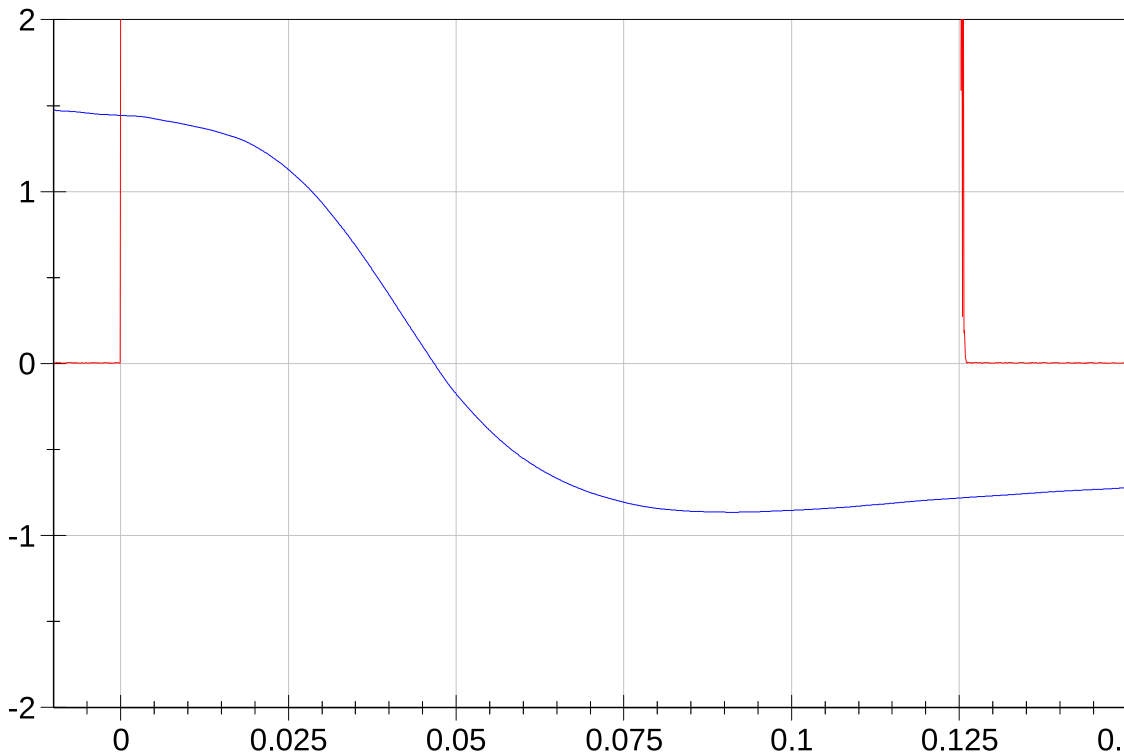
Max: 1.63 G's

TMax: 0.24 S

Min: -6.17 G's

TMin: 0.04 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.47 m/s

TMax: -0.01 S

Min: -0.86 m/s

TMin: 0.09 S

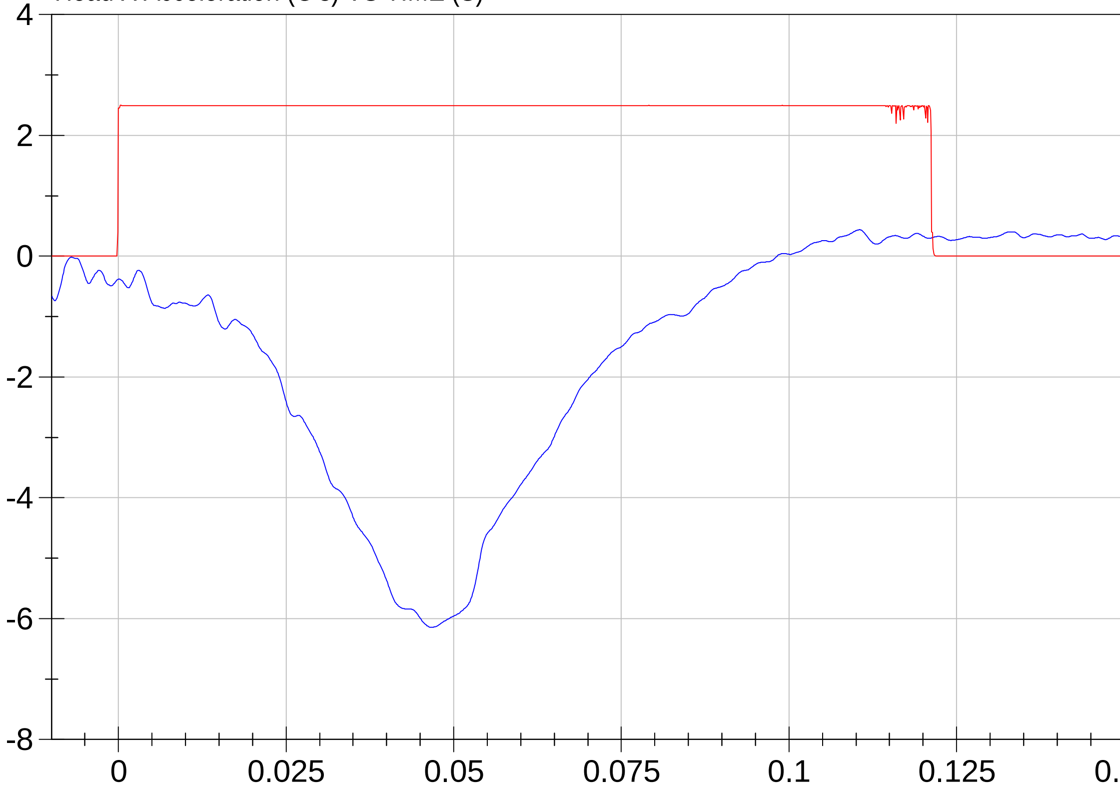
VEL@IMP: 1.443m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.59 m/s

Test Date: 9-28-2011
Location: S2H7

Head X Acceleration (G's) VS TIME (S)

HIC 36: 1.76 T1: 29.00 S T2: 65.00 S



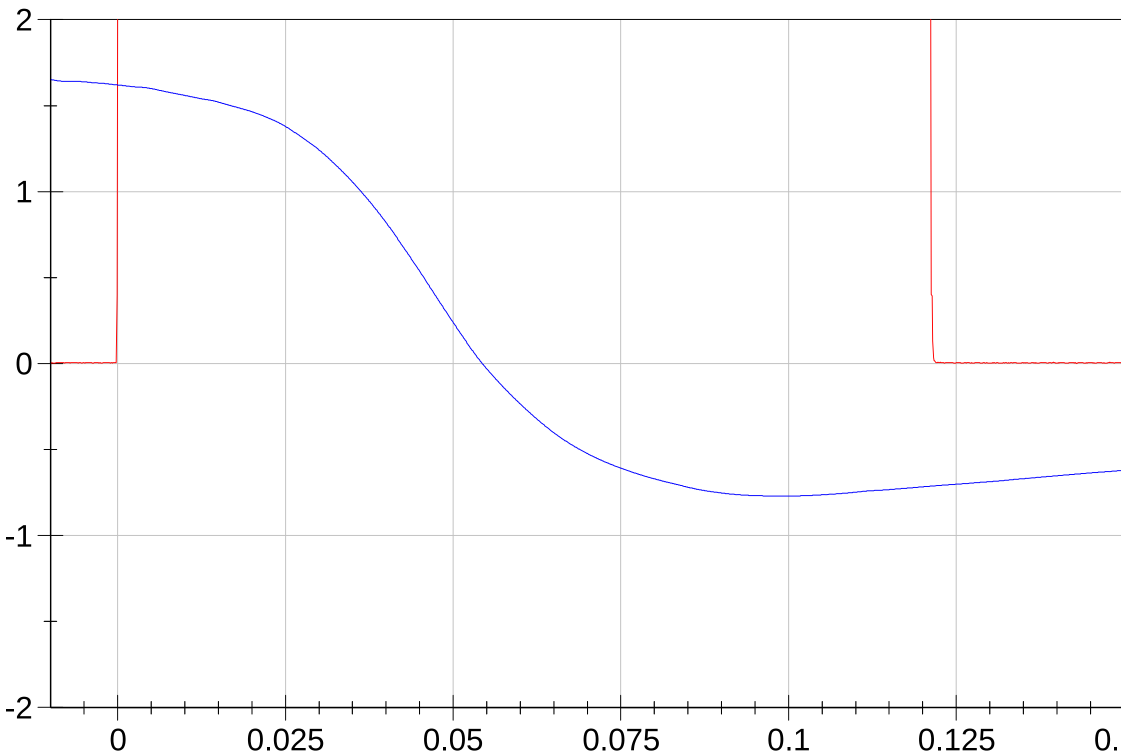
Max: 2.20 G's

TMax: 0.20 S

Min: -6.14 G's

TMin: 0.05 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.65 m/s

TMax: -0.01 S

Min: -0.77 m/s

TMin: 0.10 S

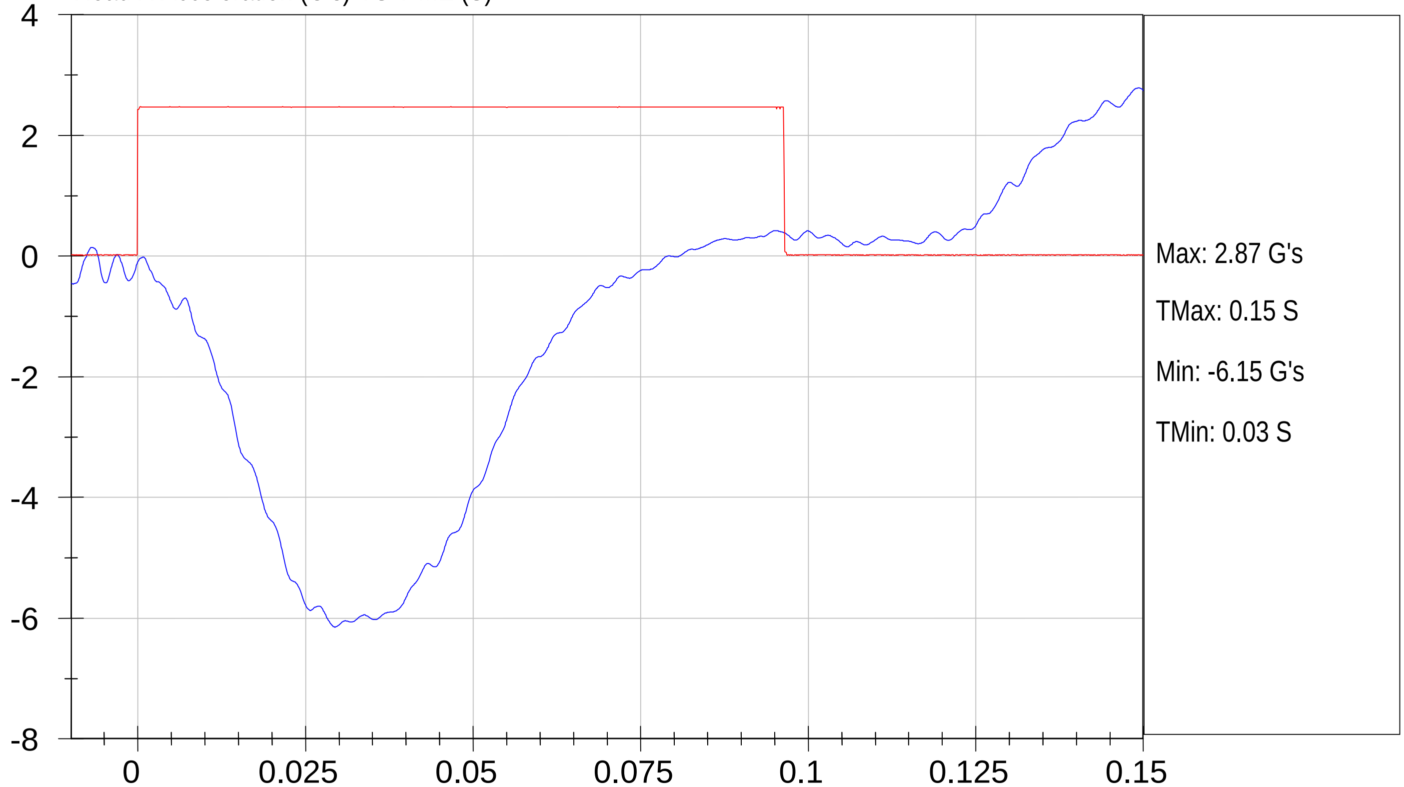
VEL@IMP: 1.62m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.57 m/s

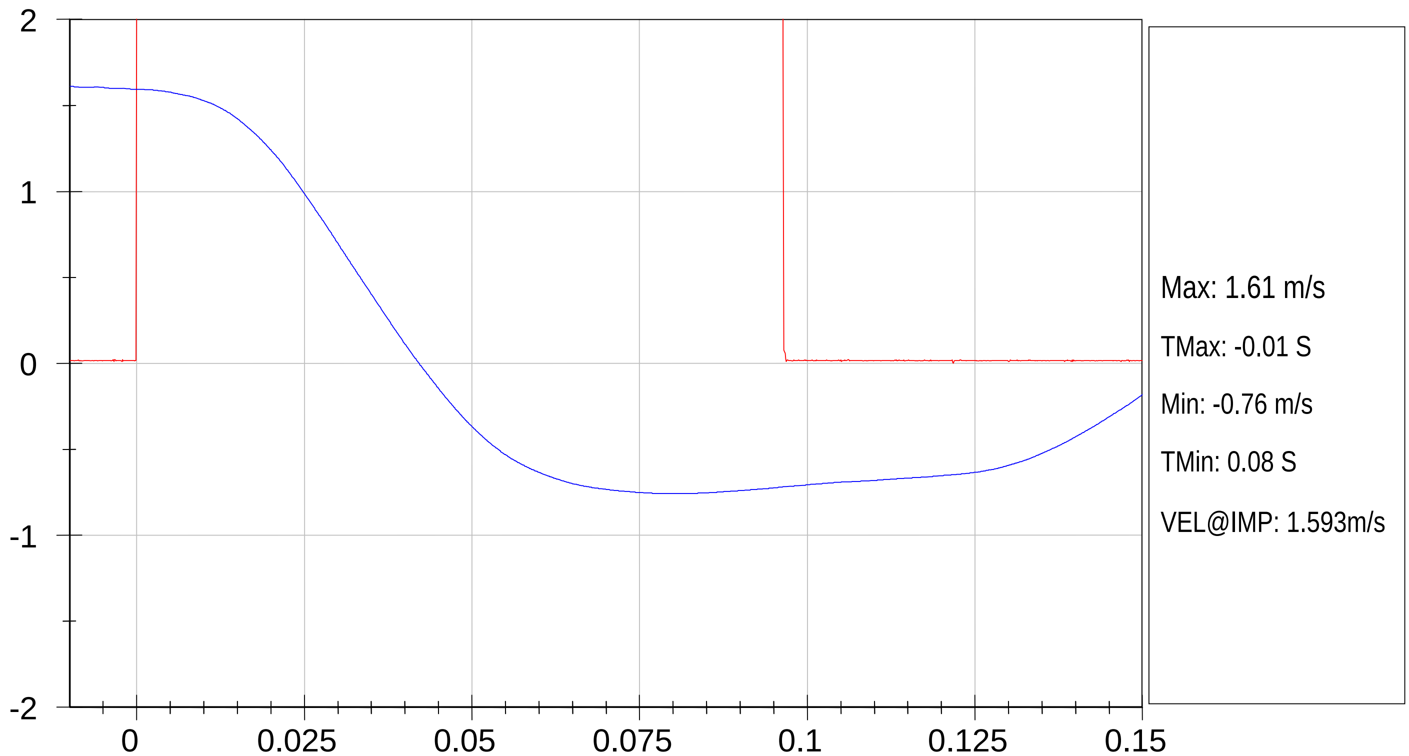
Test Date: 10-12-2011
Location: S7H1

HIC 36: 2.21 T1: 16.40 S T2: 52.40 S

Head X Acceleration (G's) VS TIME (S)



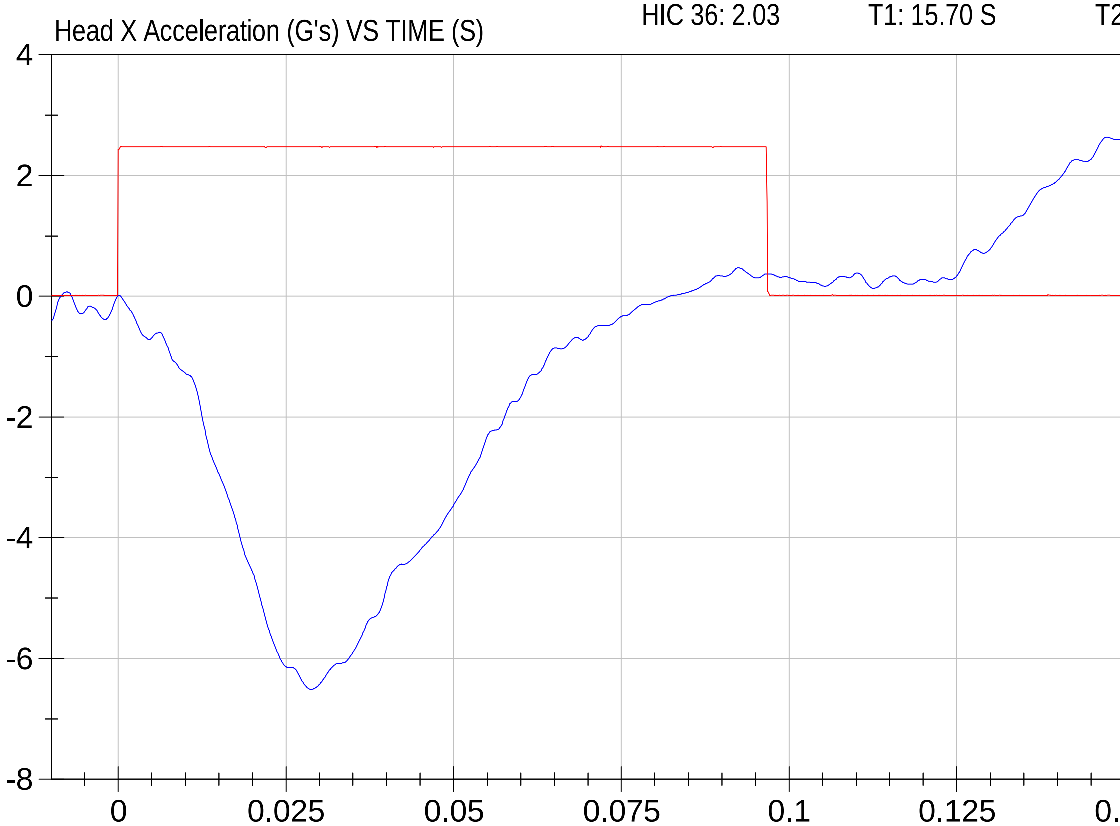
VELOCITY X (m/s) VS TIME (S)



FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.52 m/s

Test Date: 10-12-2011
Location: S7H2

HIC 36: 2.03 T1: 15.70 S T2: 51.70 S

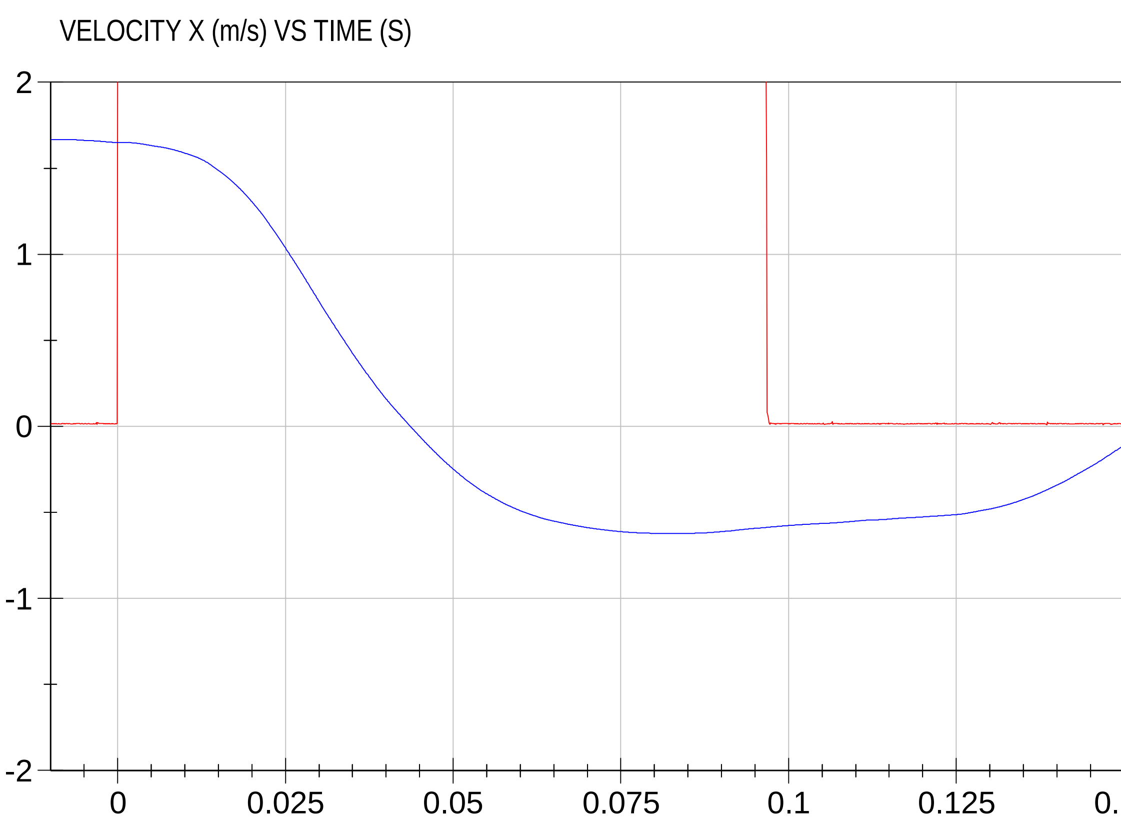


Max: 2.90 G's

TMax: 0.16 S

Min: -6.51 G's

TMin: 0.03 S



Max: 1.67 m/s

TMax: -0.01 S

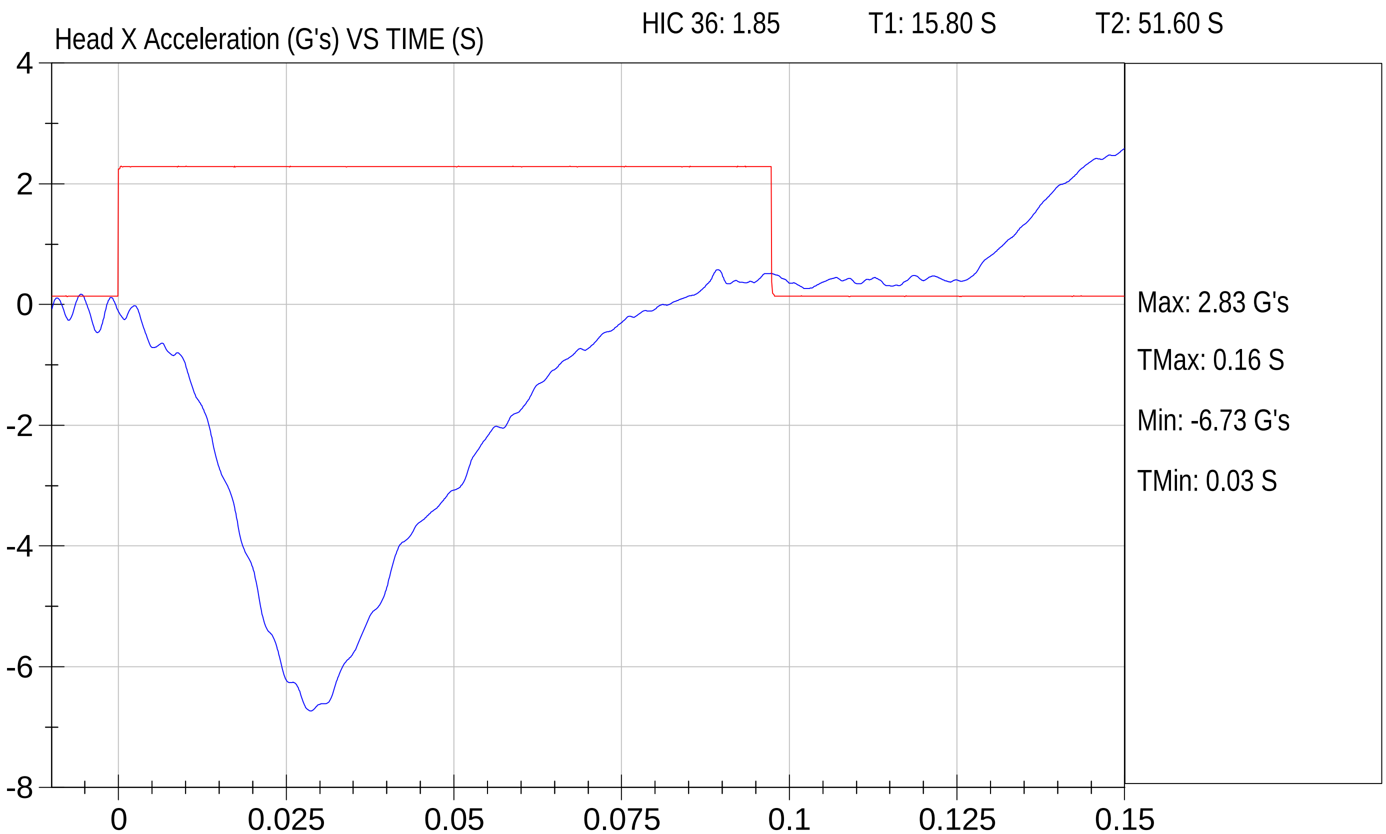
Min: -0.62 m/s

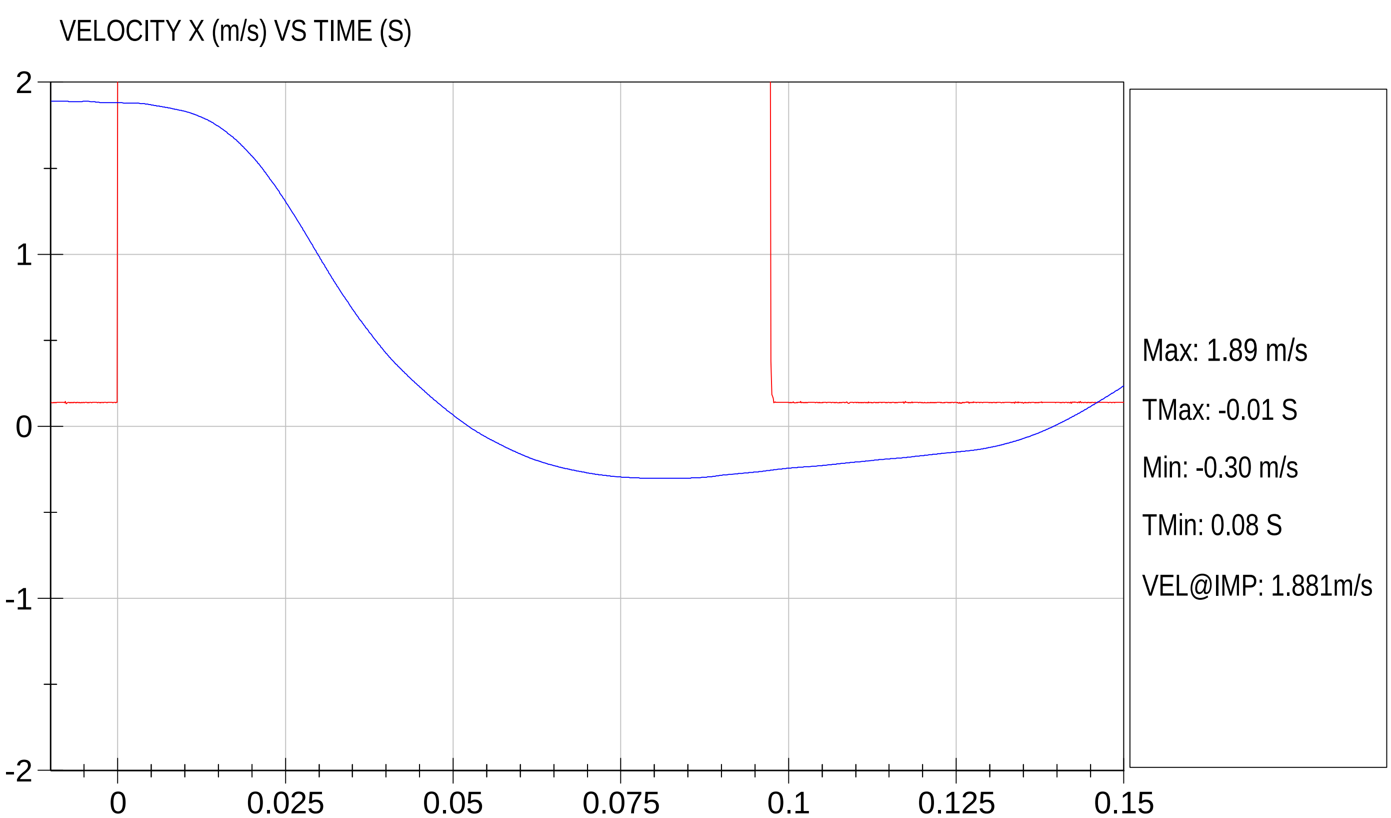
TMin: 0.08 S

VEL@IMP: 1.651m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.53 m/s

Test Date: 10-12-2011
Location: S7H3



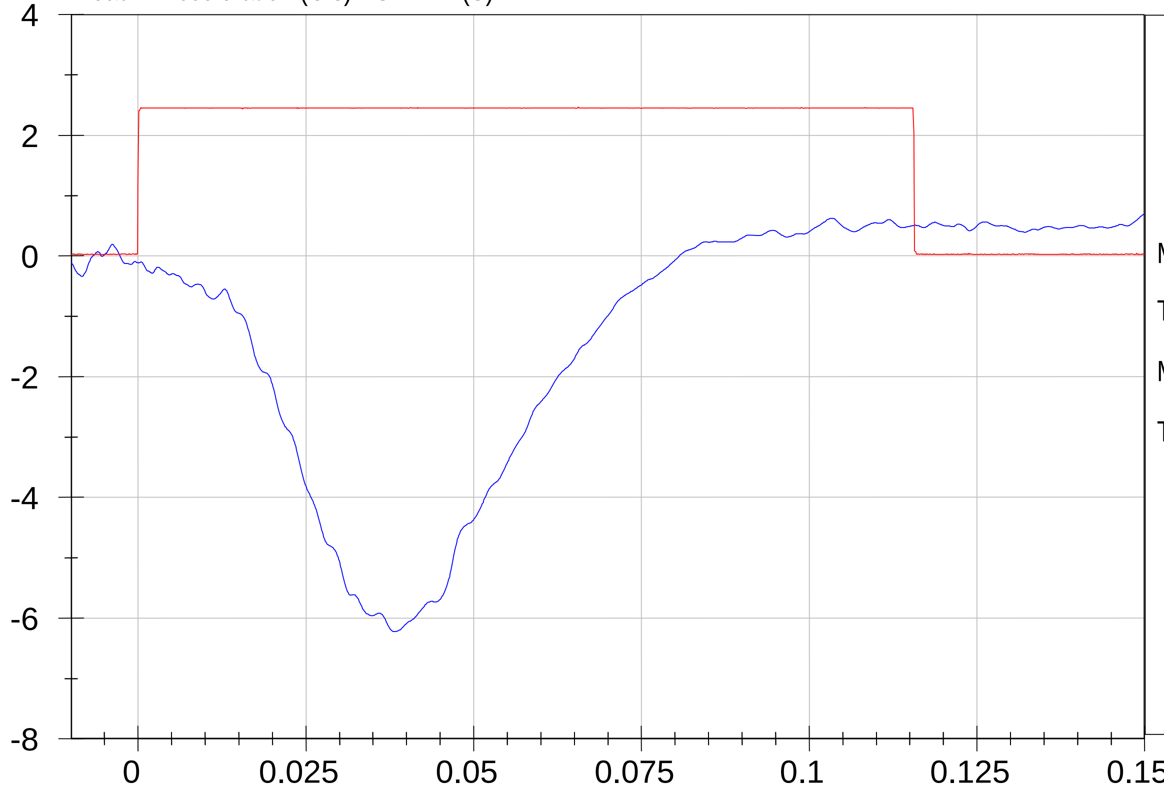


FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.58 m/s

Test Date: 10-12-2011
Location: S7H4

Head X Acceleration (G's) VS TIME (S)

HIC 36: 1.84 T1: 22.70 S T2: 57.60 S



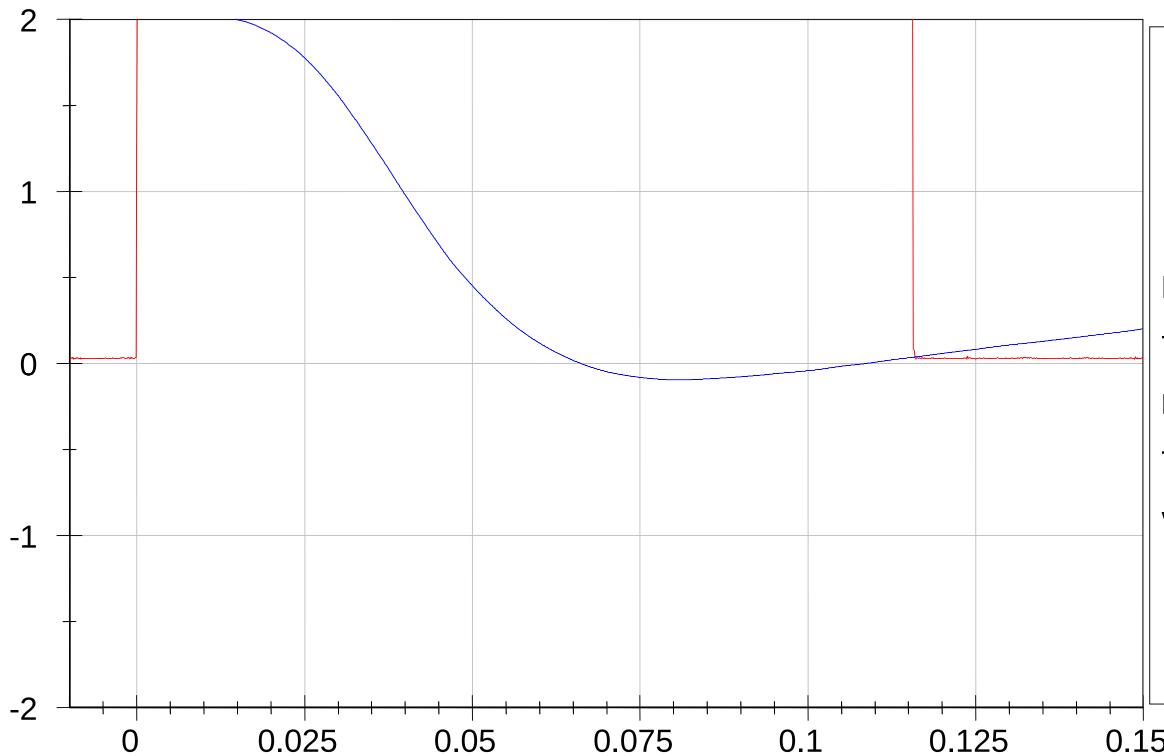
Max: 2.67

TMax: 0.18 S

Min: -6.23

TMin: 0.04 S

VELOCITY X (m/s) VS TIME (S)



Max: 2.07 m/s

TMax: -0.01 S

Min: -0.10 m/s

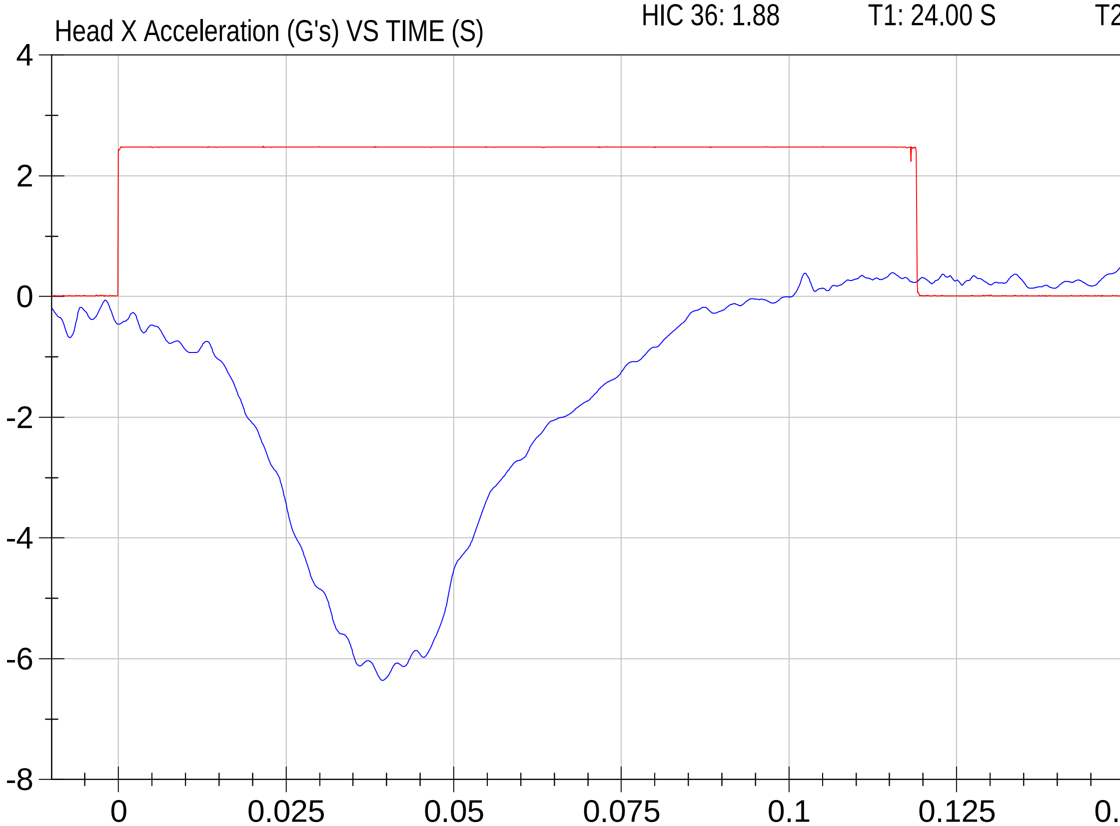
TMin: 0.08 S

VEL@IMP: 2.065m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.55 m/s

Test Date: 10-12-2011
Location: S7H5

HIC 36: 1.88 T1: 24.00 S T2: 57.20 S

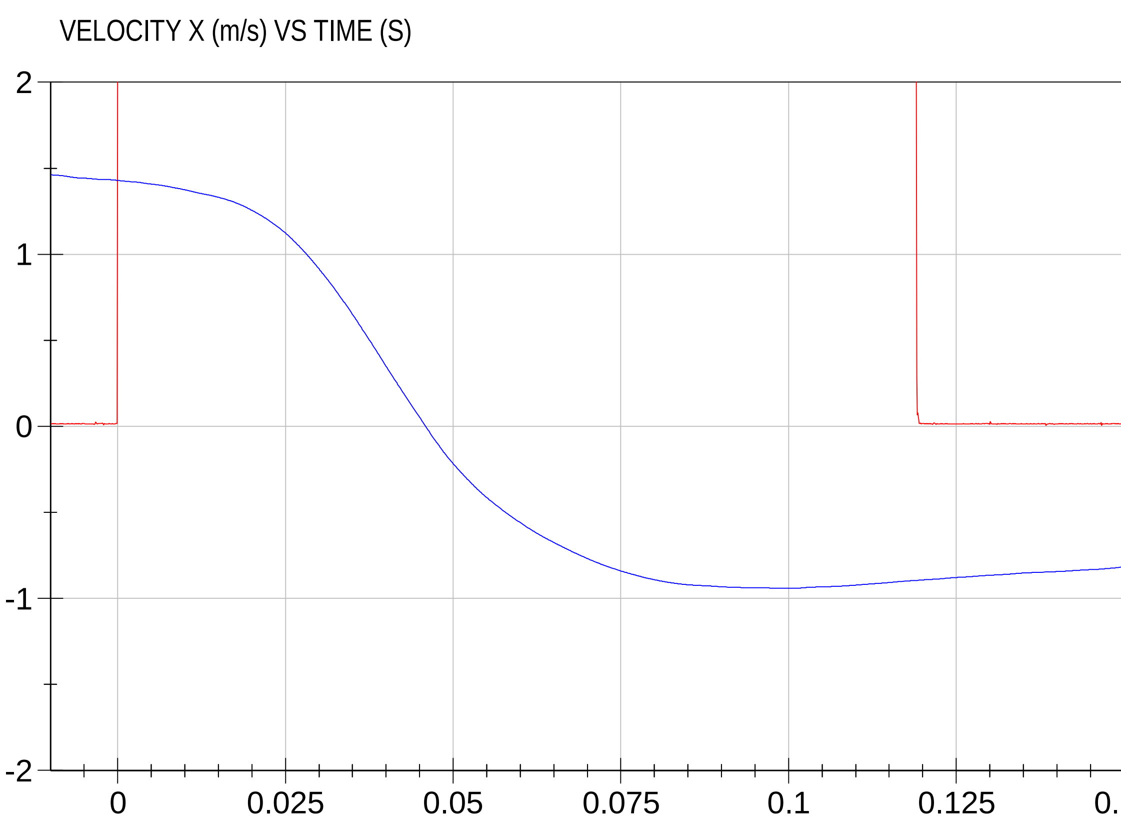


Max: 2.39 G's

TMax: 0.17 S

Min: -6.36 G's

TMin: 0.04 S



Max: 1.46 m/s

TMax: -0.01 S

Min: -0.94 m/s

TMin: 0.10 S

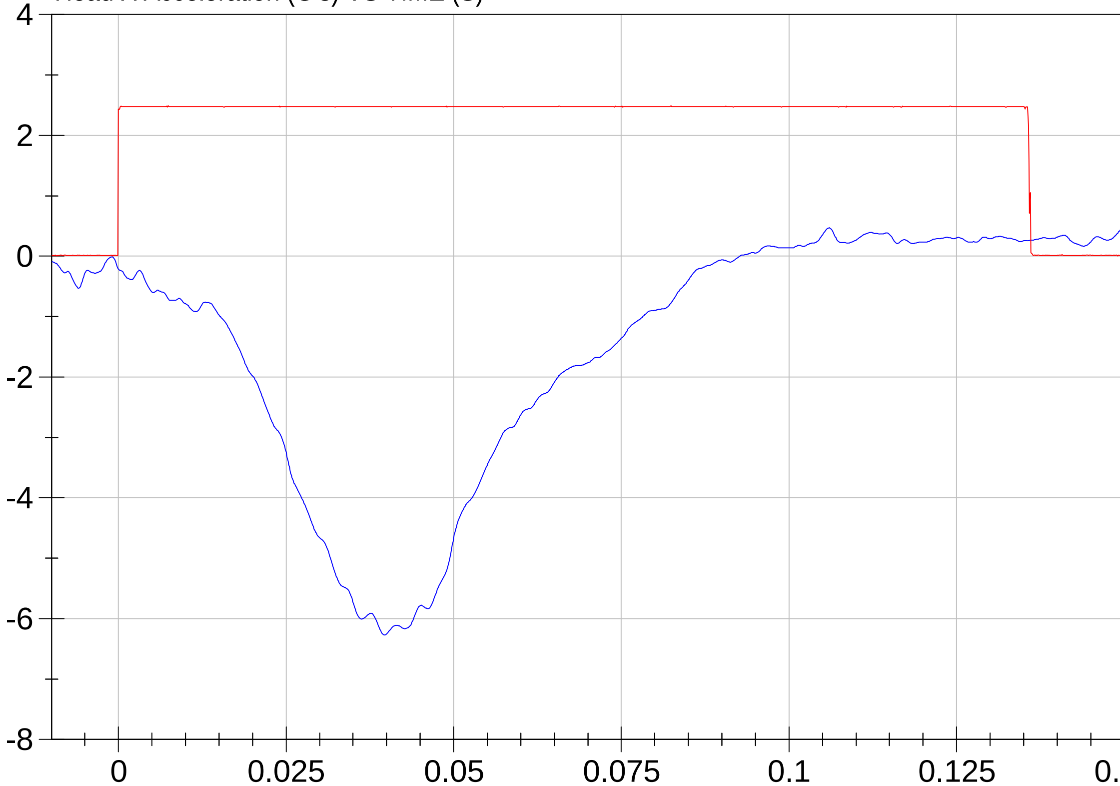
VEL@IMP: 1.429m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.58 m/s

Test Date: 10-12-2011
Location: S7H6

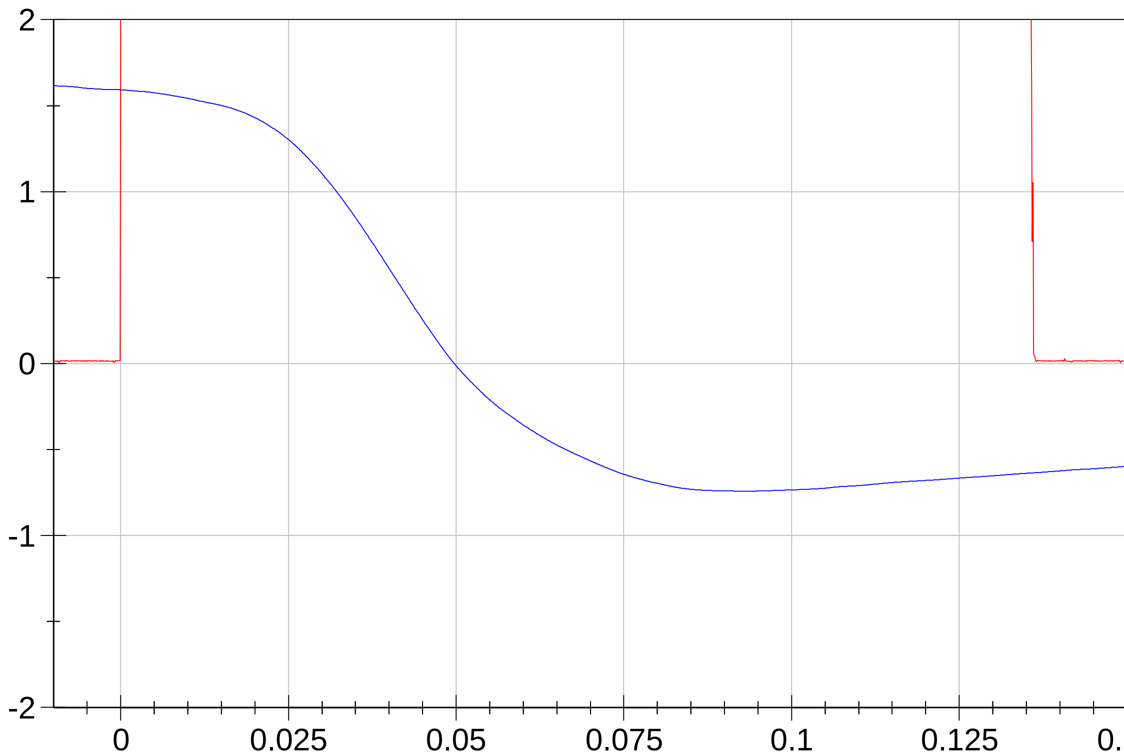
HIC 36: 1.81 T1: 24.30 S T2: 57.10 S

Head X Acceleration (G's) VS TIME (S)



Max: 2.44 G's
TMax: 0.18 S
Min: -6.27 G's
TMin: 0.04 S

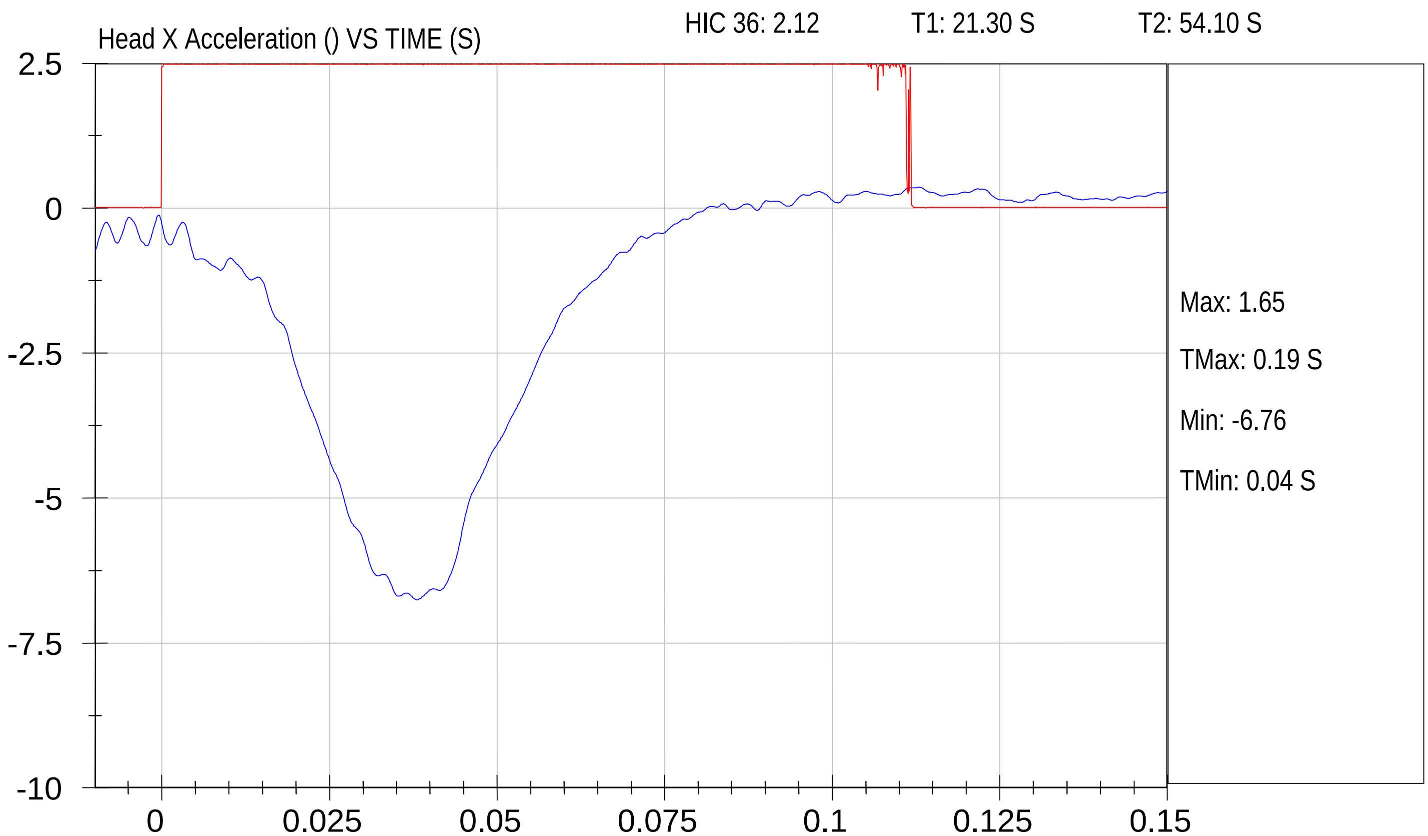
VELOCITY X (m/s) VS TIME (S)

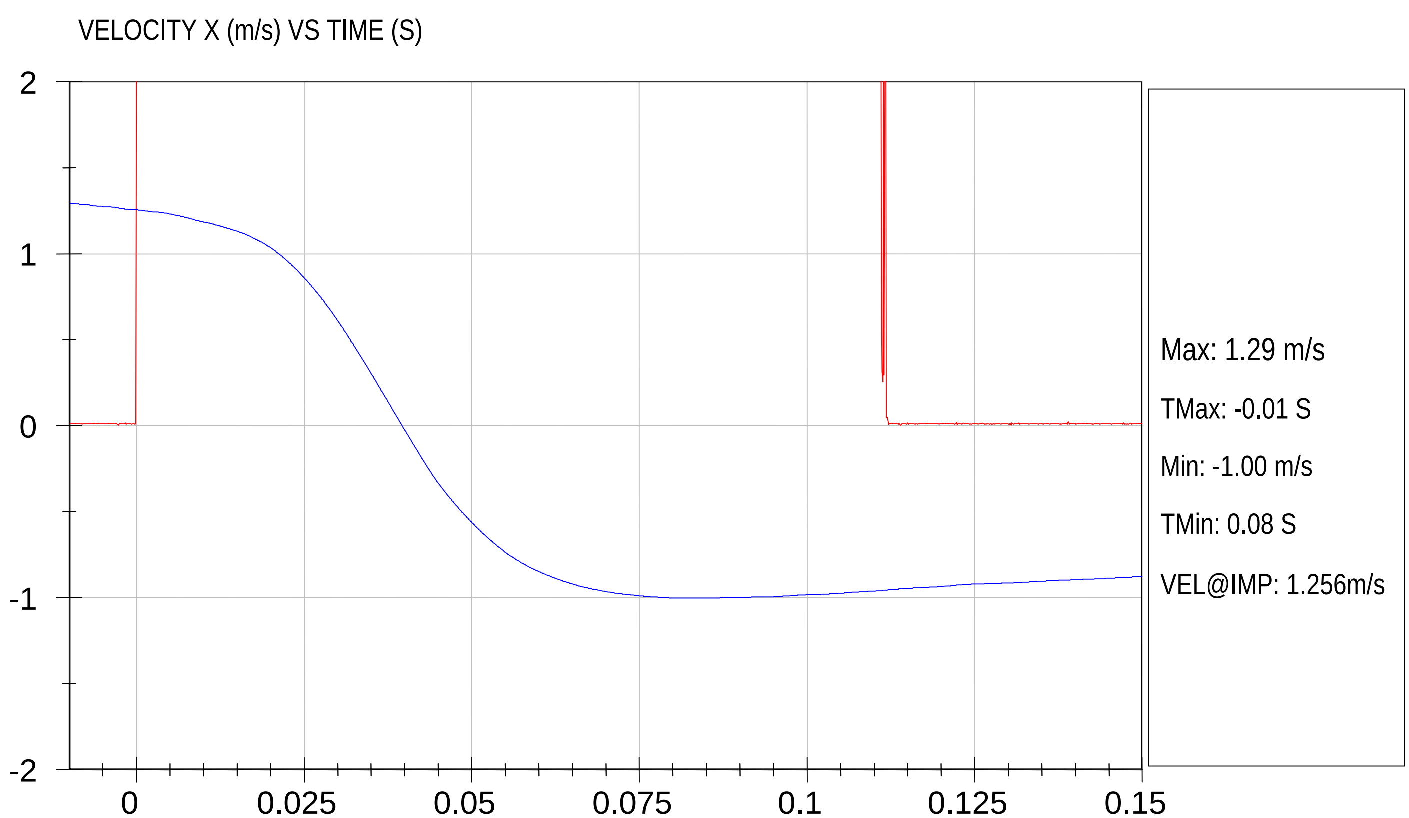


Max: 1.62 m/s
TMax: -0.01 S
Min: -0.74 m/s
TMin: 0.09 S
VEL@IMP: 1.592m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.54 m/s

Test Date: 10-13-2011
Location: S7H7

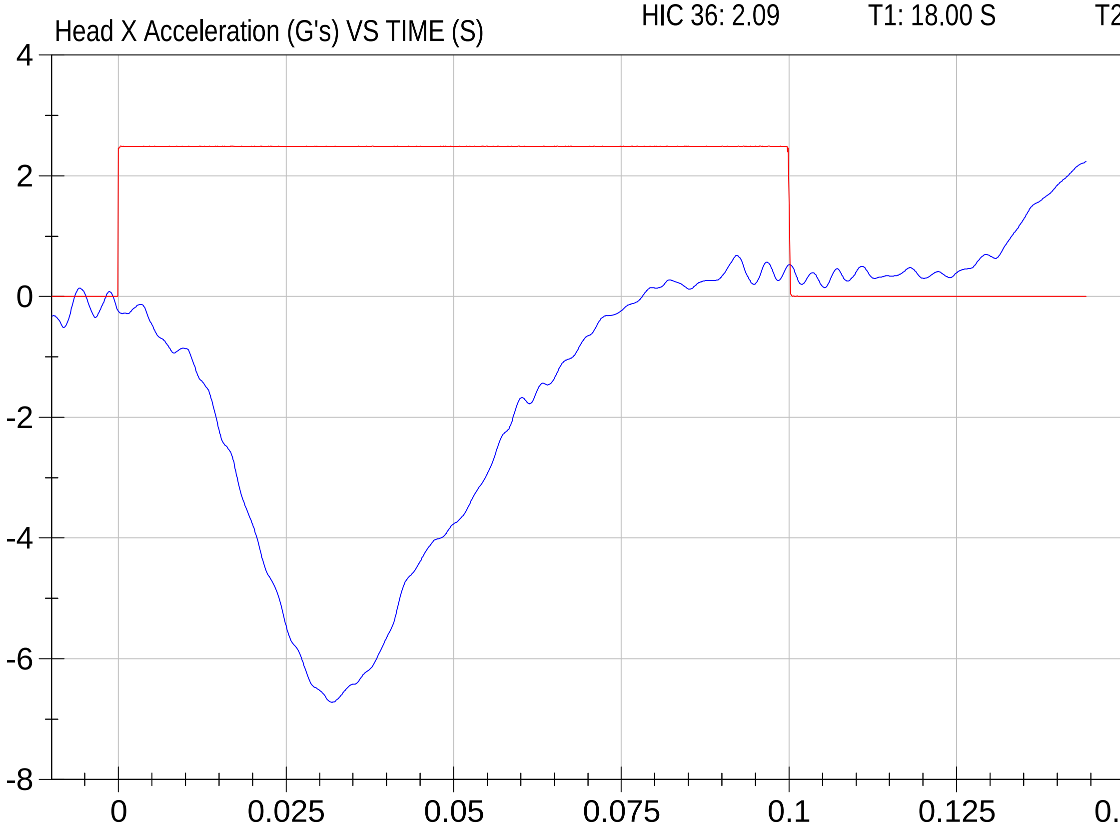




FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.56 m/s

Test Date: 10-19-2011
Location: S15H1

HIC 36: 2.09 T1: 18.00 S T2: 54.00 S

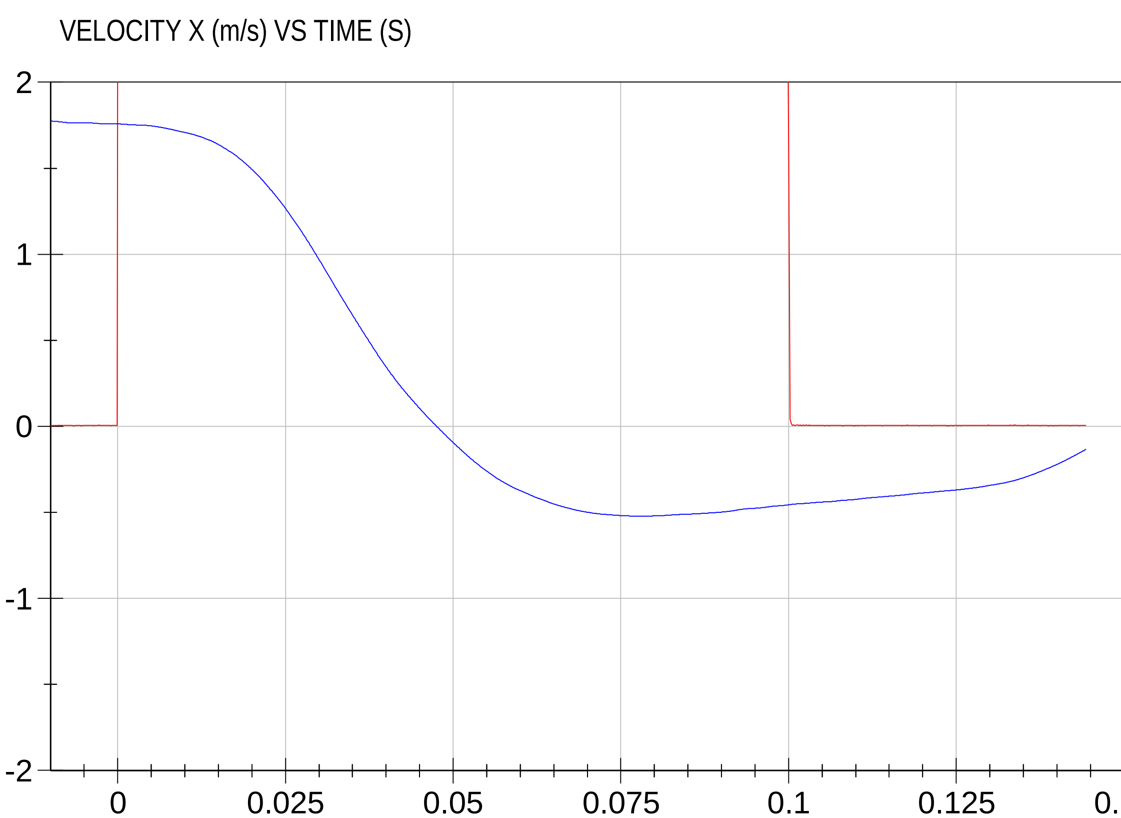


Max: 2.24 G's

TMax: 0.14 S

Min: -6.72 G's

TMin: 0.03 S



Max: 1.77 m/s

TMax: -0.01 S

Min: -0.52 m/s

TMin: 0.08 S

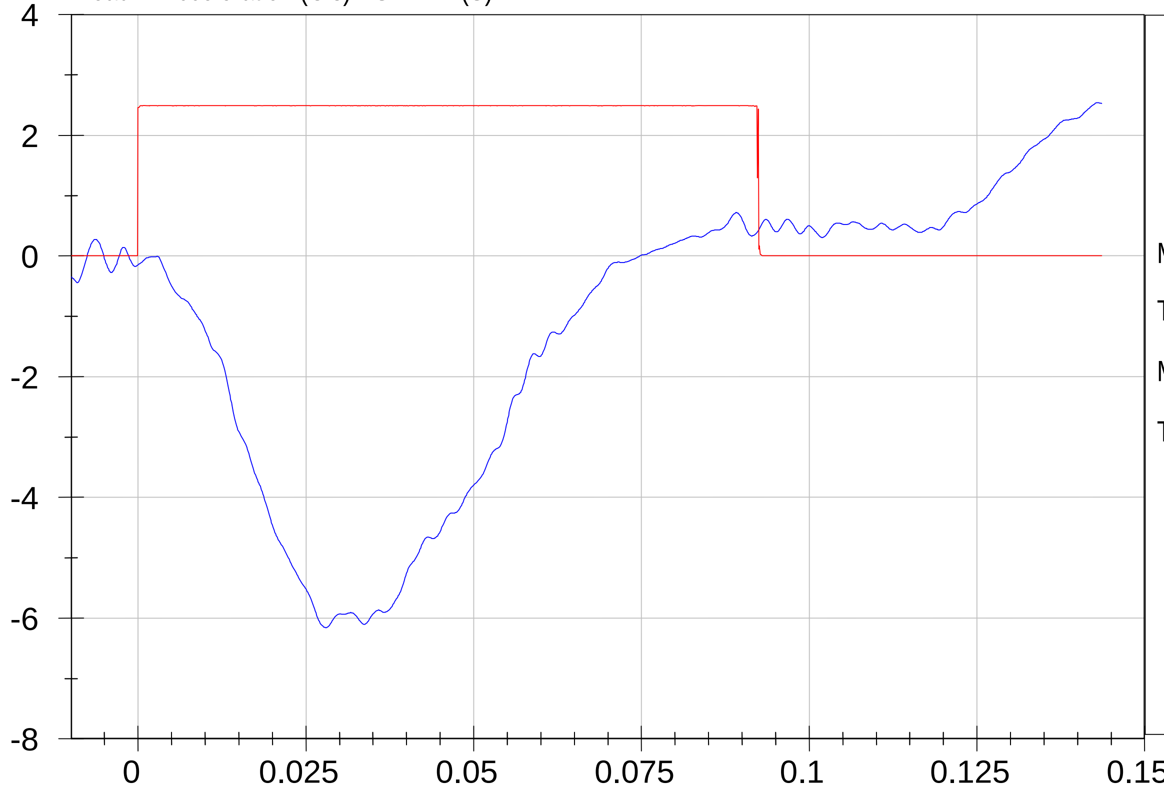
VEL@IMP: 1.758m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.56 m/s

Test Date: 10-19-2011
Location: S15H2

Head X Acceleration (G's) VS TIME (S)

HIC 36: 2.04 T1: 16.60 S T2: 52.60 S



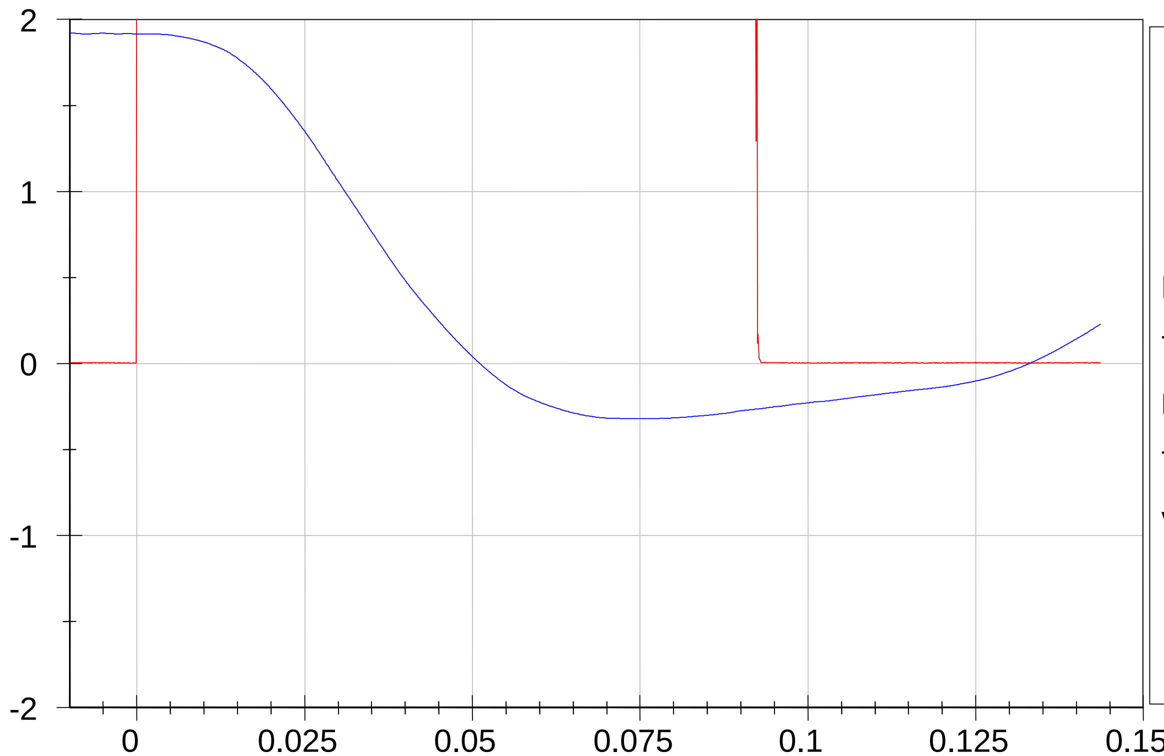
Max: 2.54 G's

TMax: 0.14 S

Min: -6.16 G's

TMin: 0.03 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.92 m/s

TMax: -0.01 S

Min: -0.32 m/s

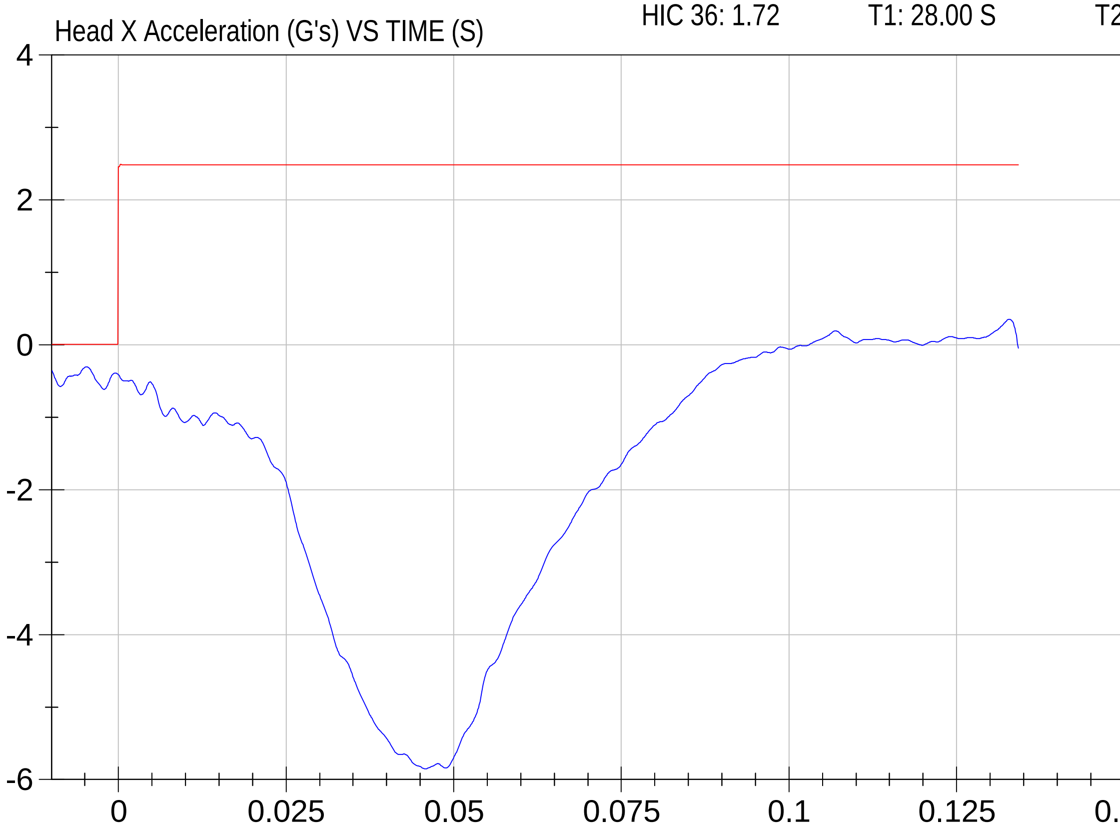
TMin: 0.07 S

VEL@IMP: 1.915m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.52 m/s

Test Date: 10-19-2011
Location: S15H3

HIC 36: 1.72 T1: 28.00 S T2: 64.00 S

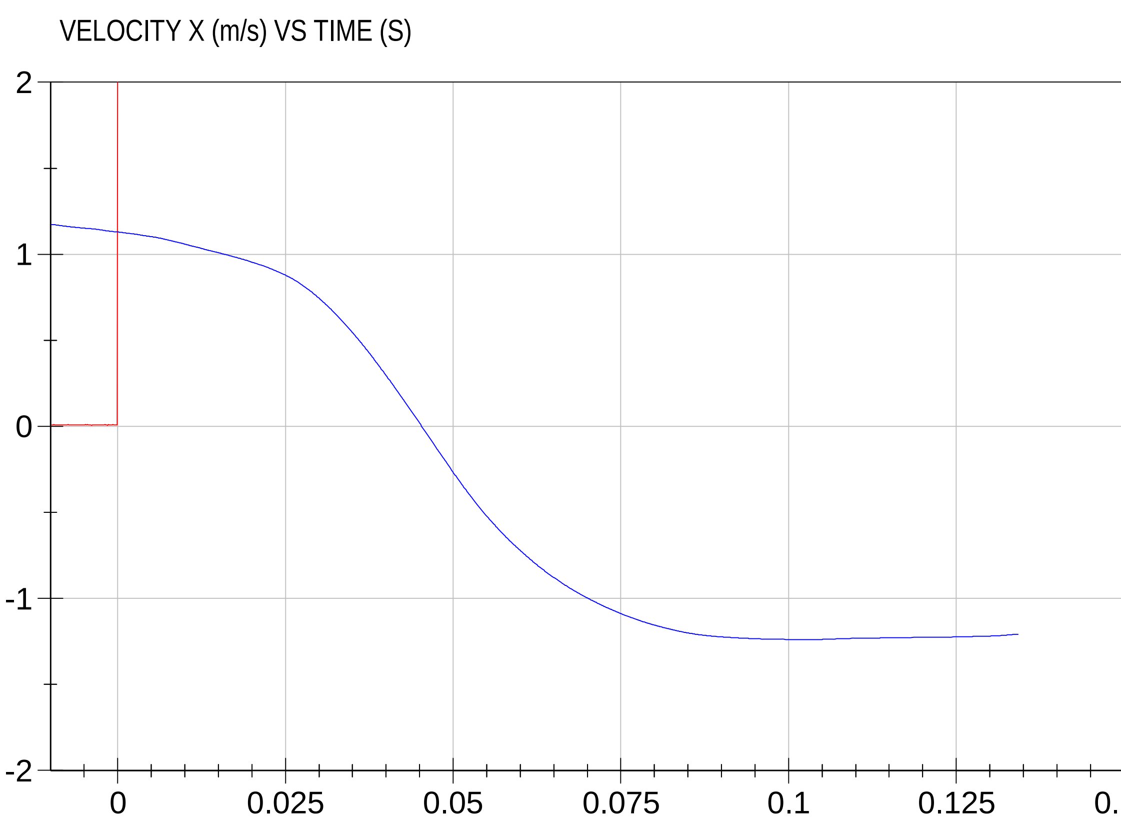


Max: 0.35 G's

TMax: 0.13 S

Min: -5.85 G's

TMin: 0.05 S



Max: 1.17 m/s

TMax: -0.01 S

Min: -1.24 m/s

TMin: 0.10 S

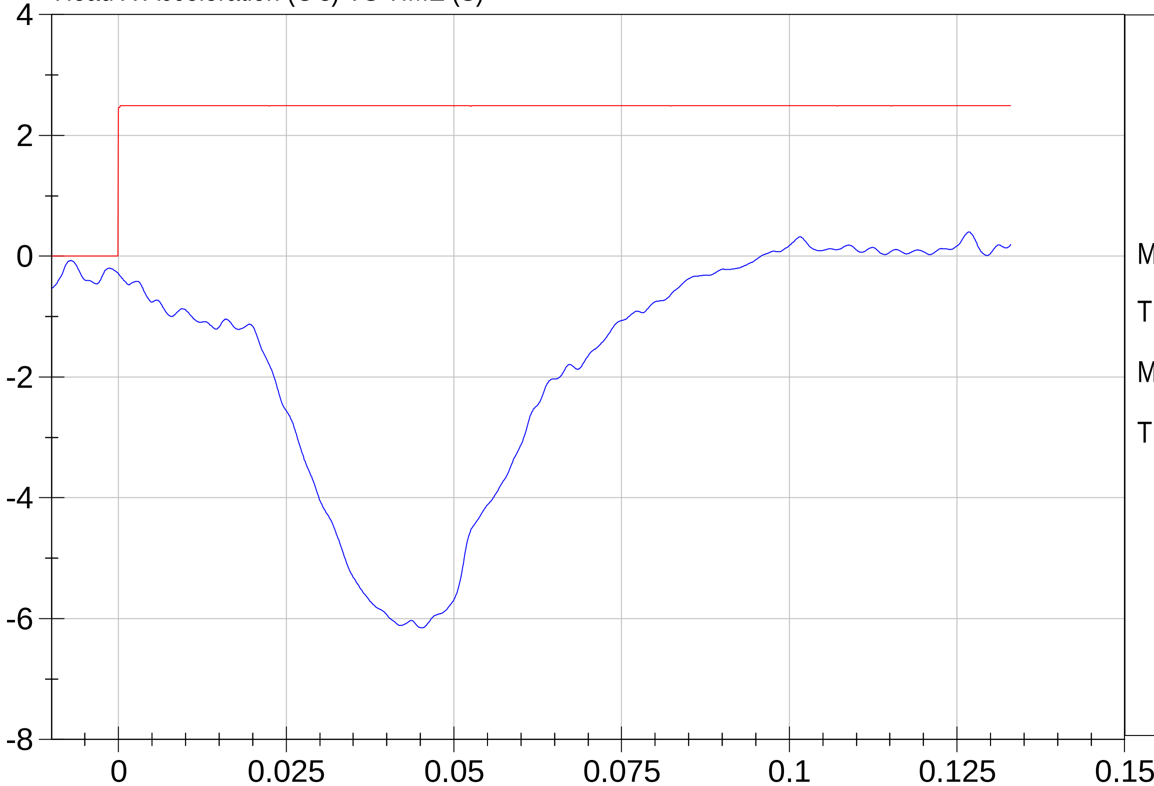
VEL@IMP: 1.13m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.52 m/s

Test Date: 10-19-2011
Location: S15H4

Head X Acceleration (G's) VS TIME (S)

HIC 36: 1.83 T1: 26.50 S T2: 60.60 S



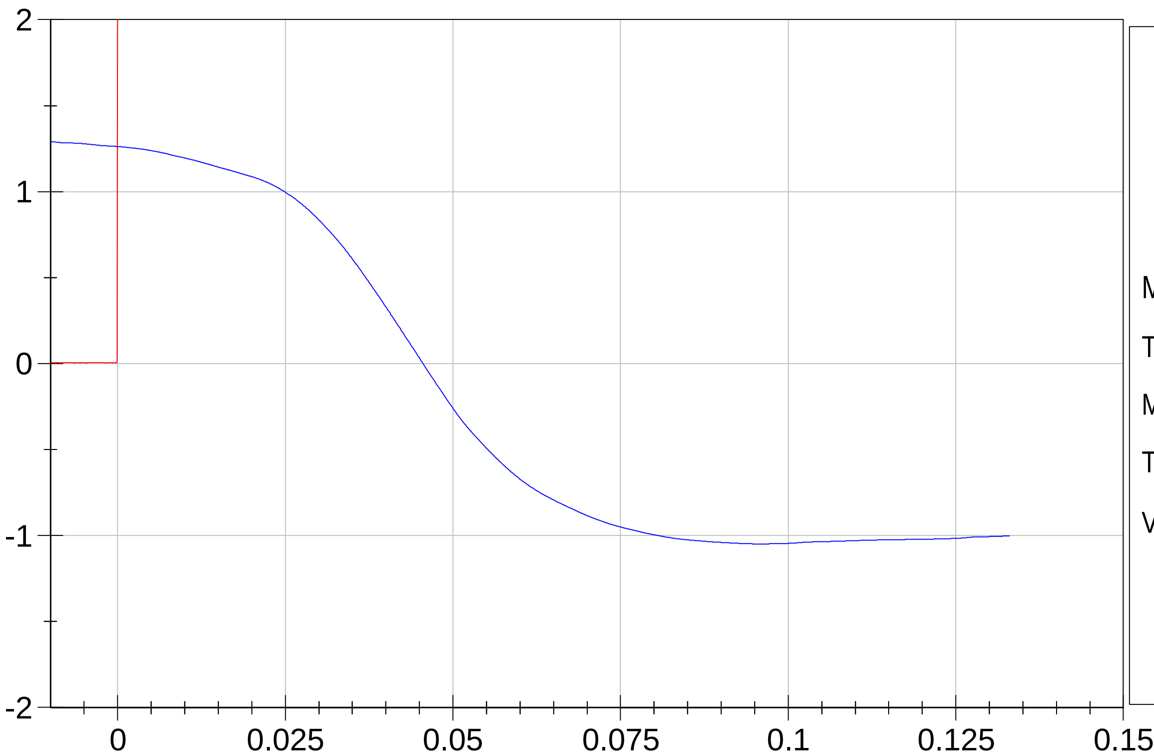
Max: 0.40 G's

TMax: 0.13 S

Min: -6.15 G's

TMin: 0.05 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.29 m/s

TMax: -0.01 S

Min: -1.05 m/s

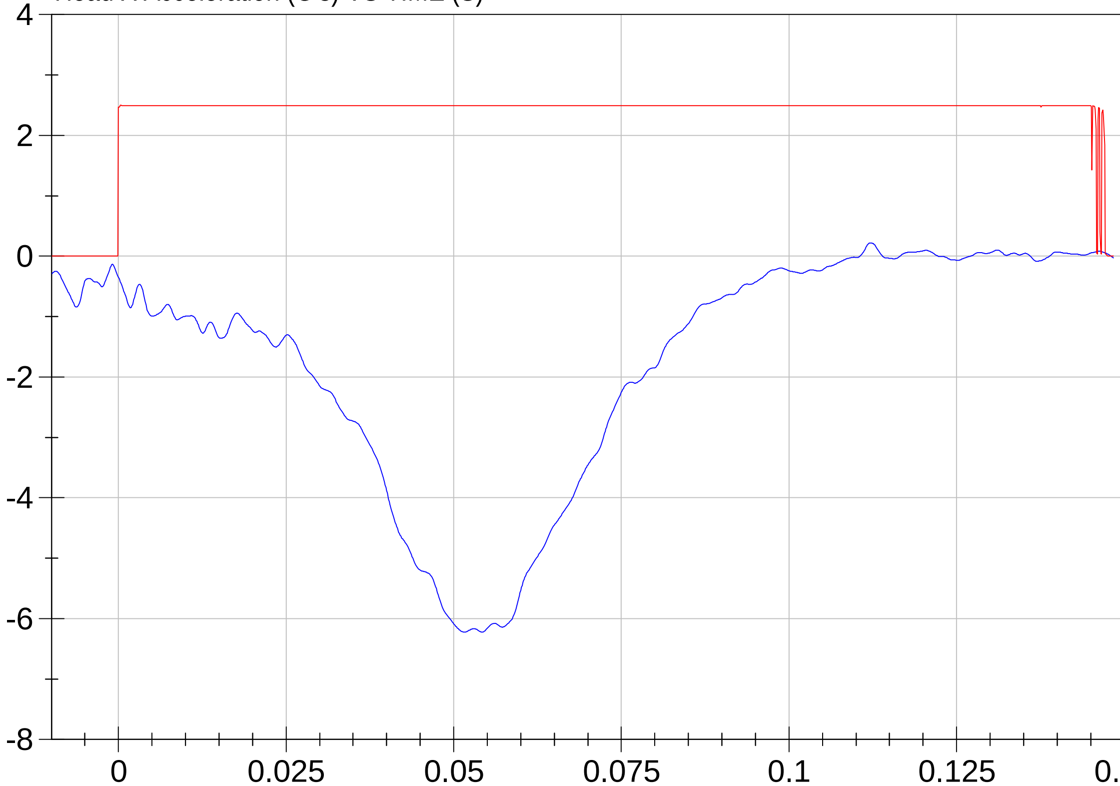
TMin: 0.10 S

VEL@IMP: 1.262m/s

mga	FMVSS 222 HEAD FORM IMPACTS (1.5 m/s) Vehicle: 2012 Bluebird All American D3 RE NHTSA #: CC0901 speed trap: 1.60 m/s	Test Date: 10-19-2011 Location: S15H5

HIC 36: 1.92 T1: 36.60 S T2: 72.50 S

Head X Acceleration (G's) VS TIME (S)



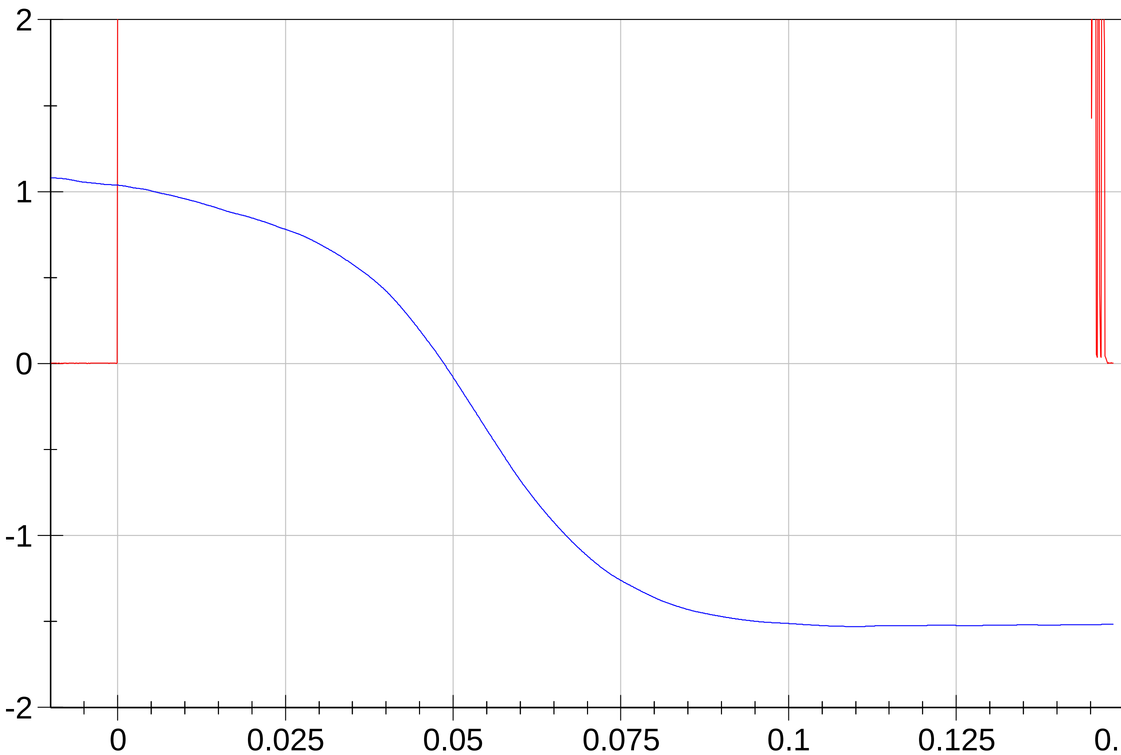
Max: 0.22 G's

TMax: 0.11 S

Min: -6.22 G's

TMin: 0.05 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.08 m/s

TMax: -0.01 S

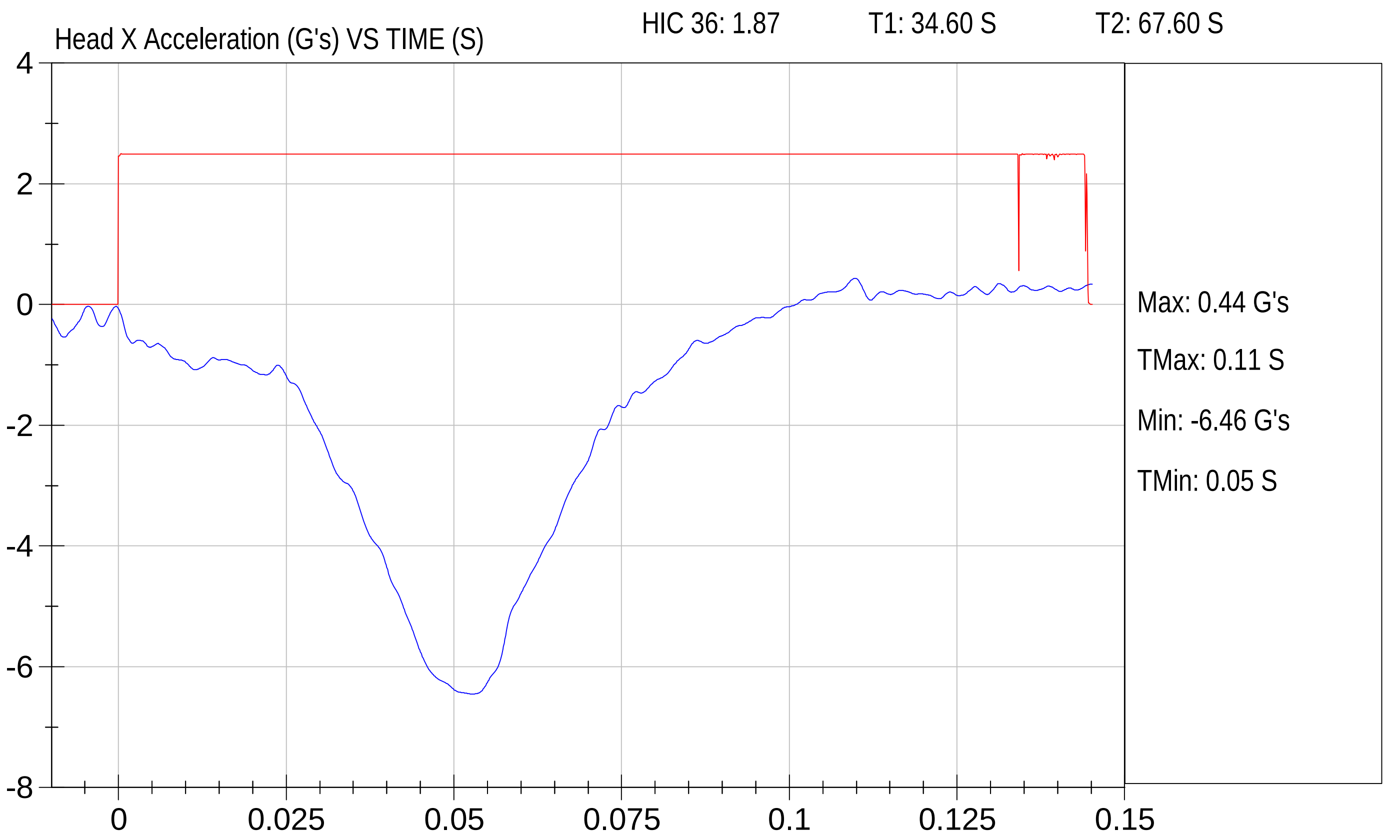
Min: -1.53 m/s

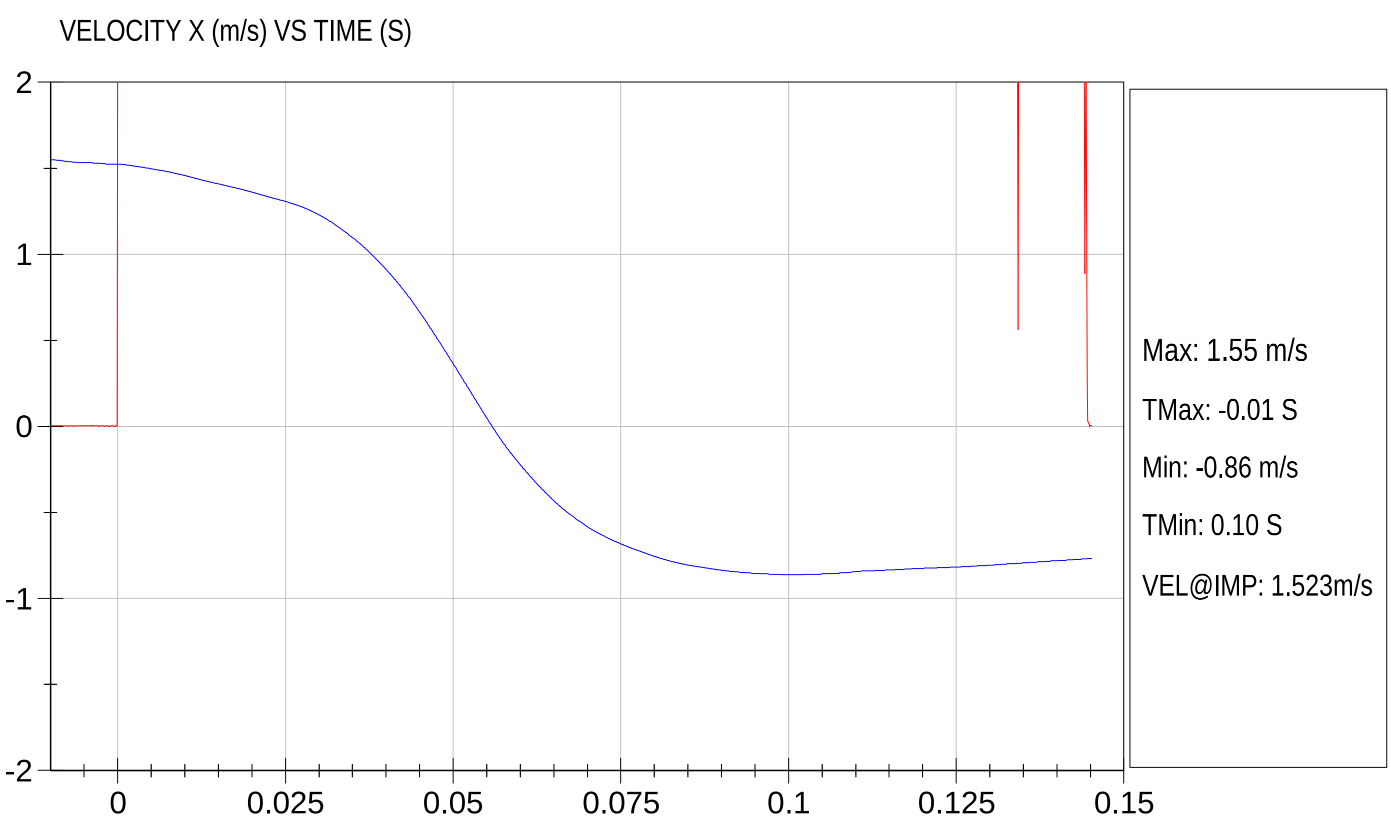
TMin: 0.11 S

VEL@IMP: 1.038m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.57 m/s

Test Date: 10-19-2011
Location: S15H6

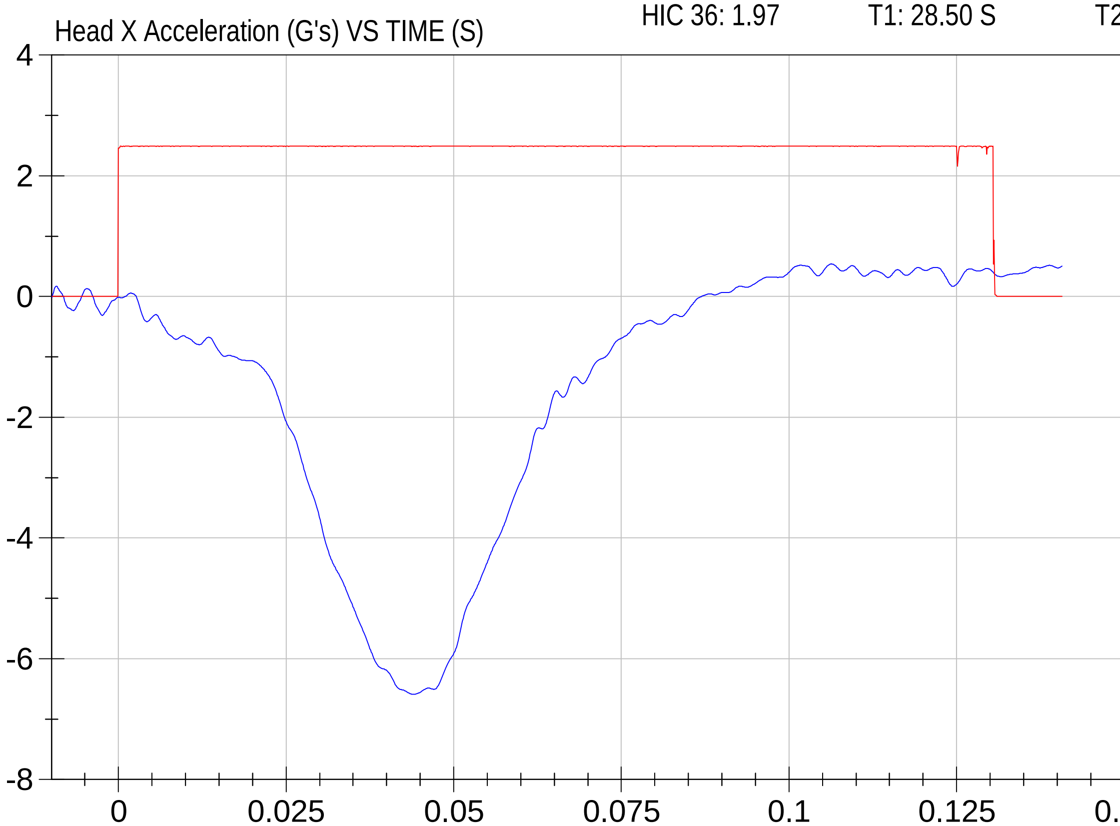




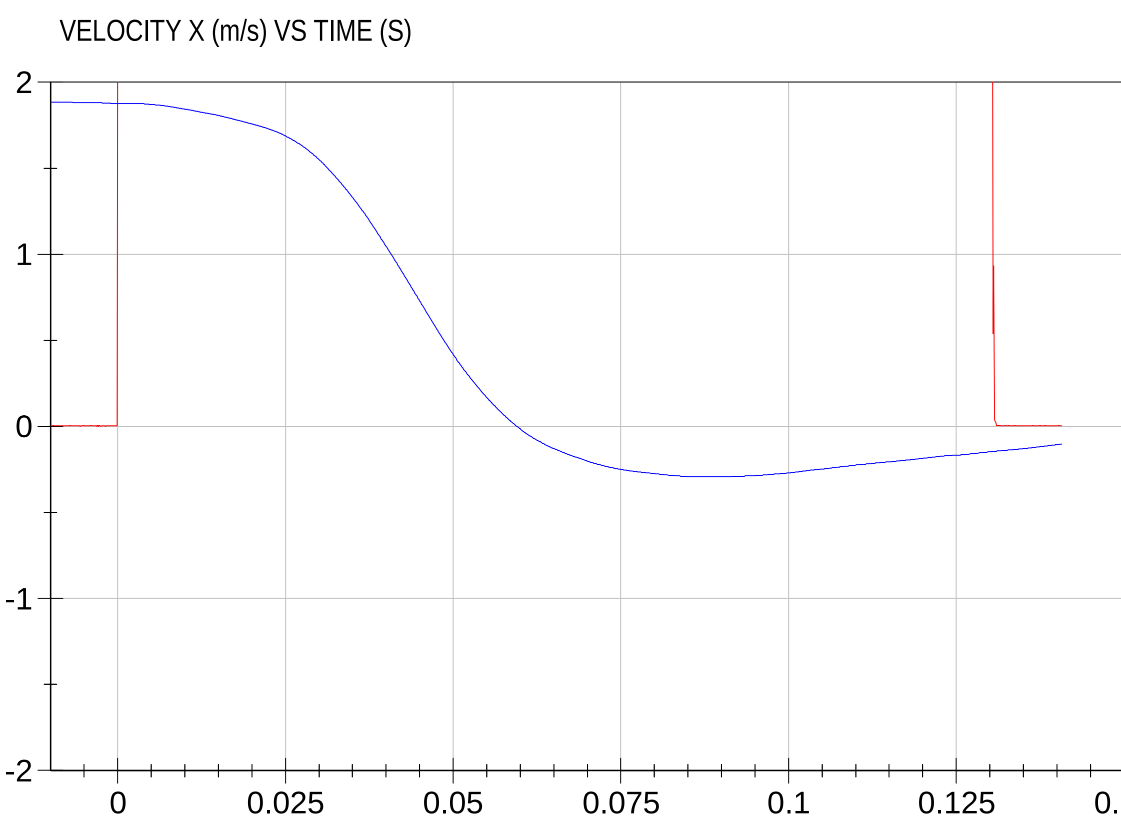
FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.53 m/s

Test Date: 10-19-2011
Location: S15H7

HIC 36: 1.97 T1: 28.50 S T2: 59.60 S



Max: 0.54 G's
TMax: 0.11 S
Min: -6.59 G's
TMin: 0.04 S

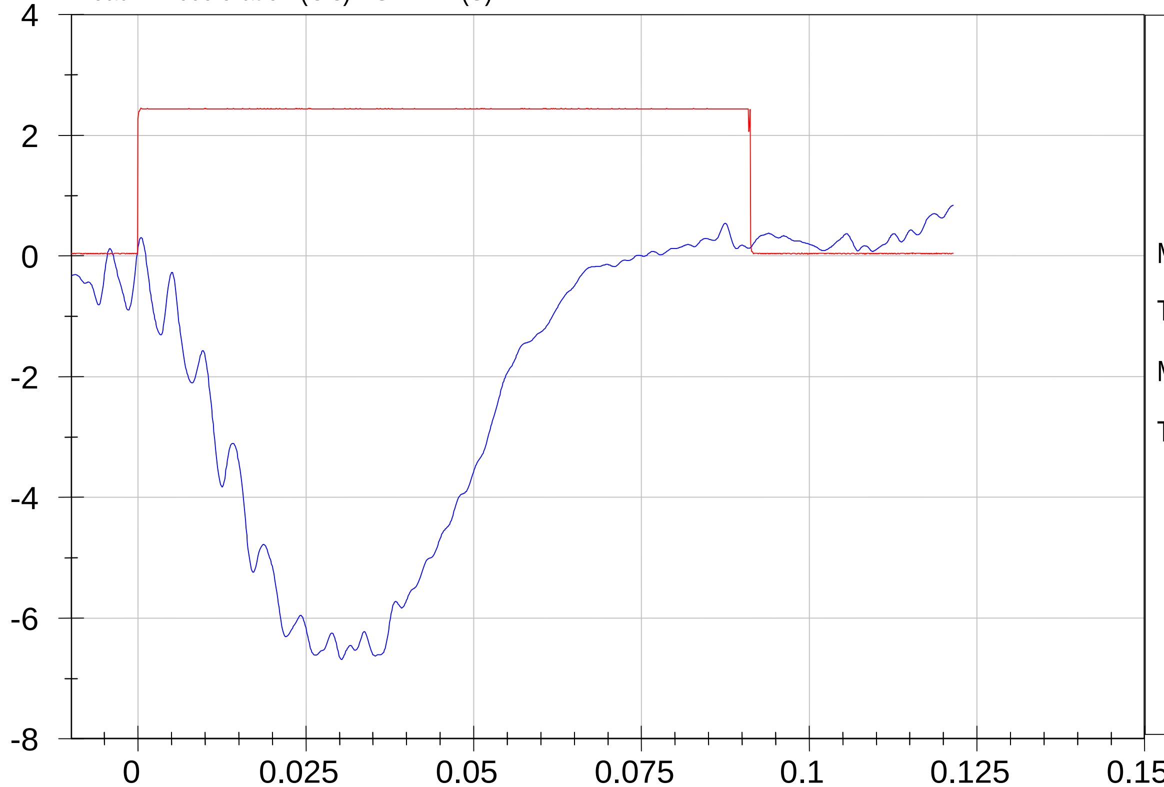


Max: 1.89 m/s
TMax: -0.01 S
Min: -0.29 m/s
TMin: 0.09 S
VEL@IMP: 1.877m/s

	FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)	Test Date: 9-20-11
	Vehicle: 2012 Blue Bird All American D3 RE	Location: B6H1
	NHTSA #: CC0901 speed trap: 1.59 m/s	

Head X Acceleration (G's) VS TIME (S)

HIC 36: 2.59 T1: 14.90 S T2: 50.90 S



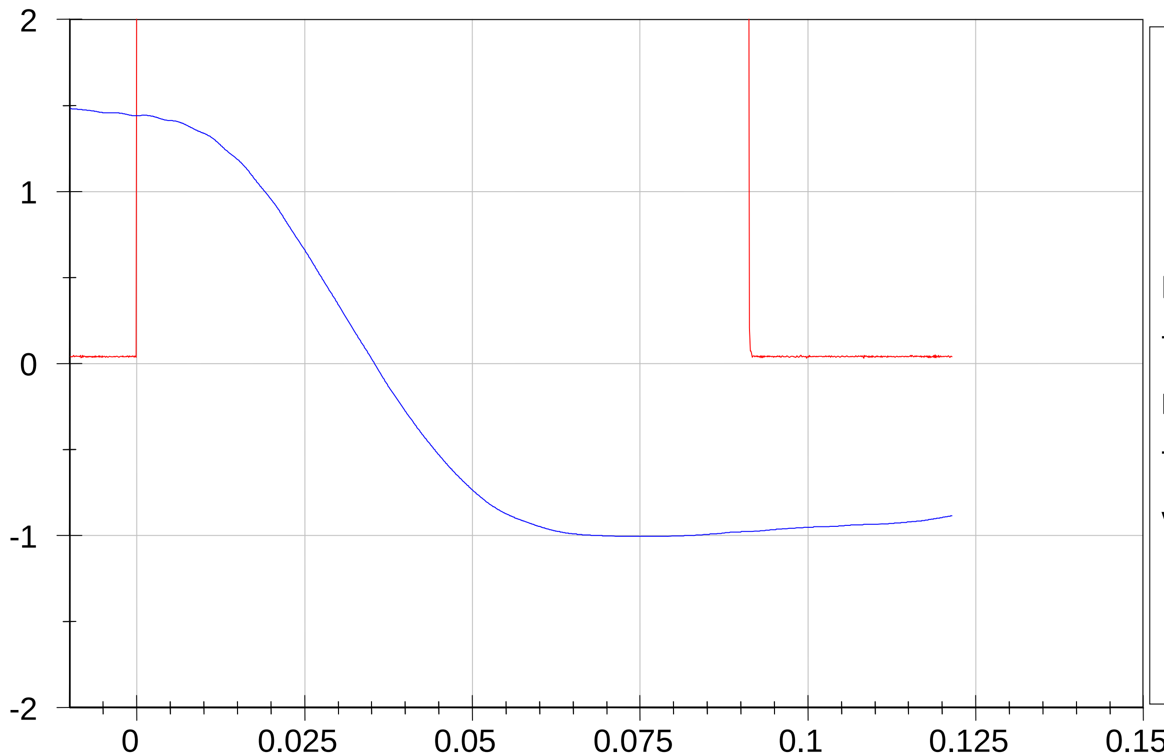
Max: 0.84 G's

TMax: 0.12 S

Min: -6.69 G's

TMin: 0.03 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.48 m/s

TMax: -0.01 S

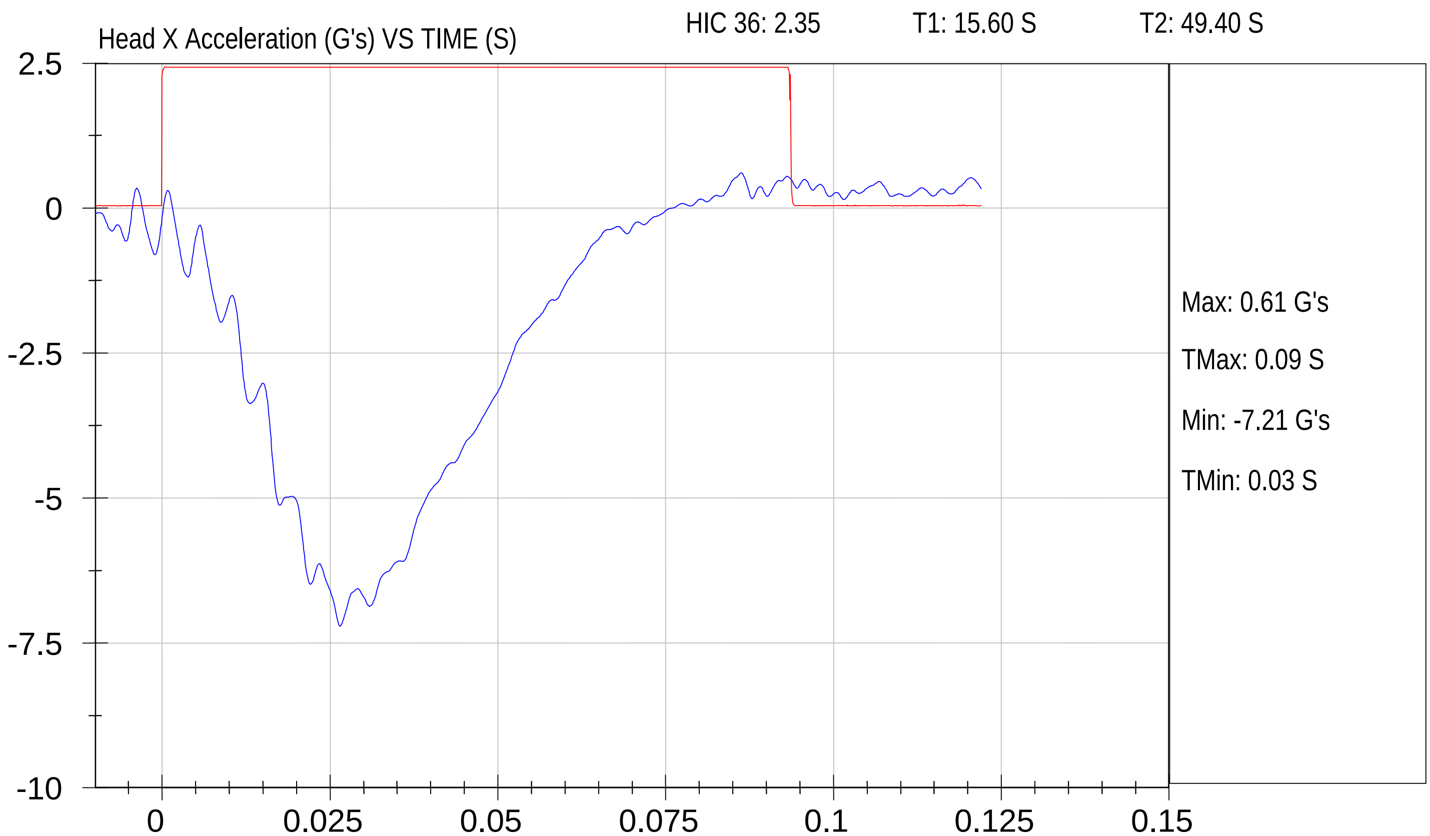
Min: -1.01 m/s

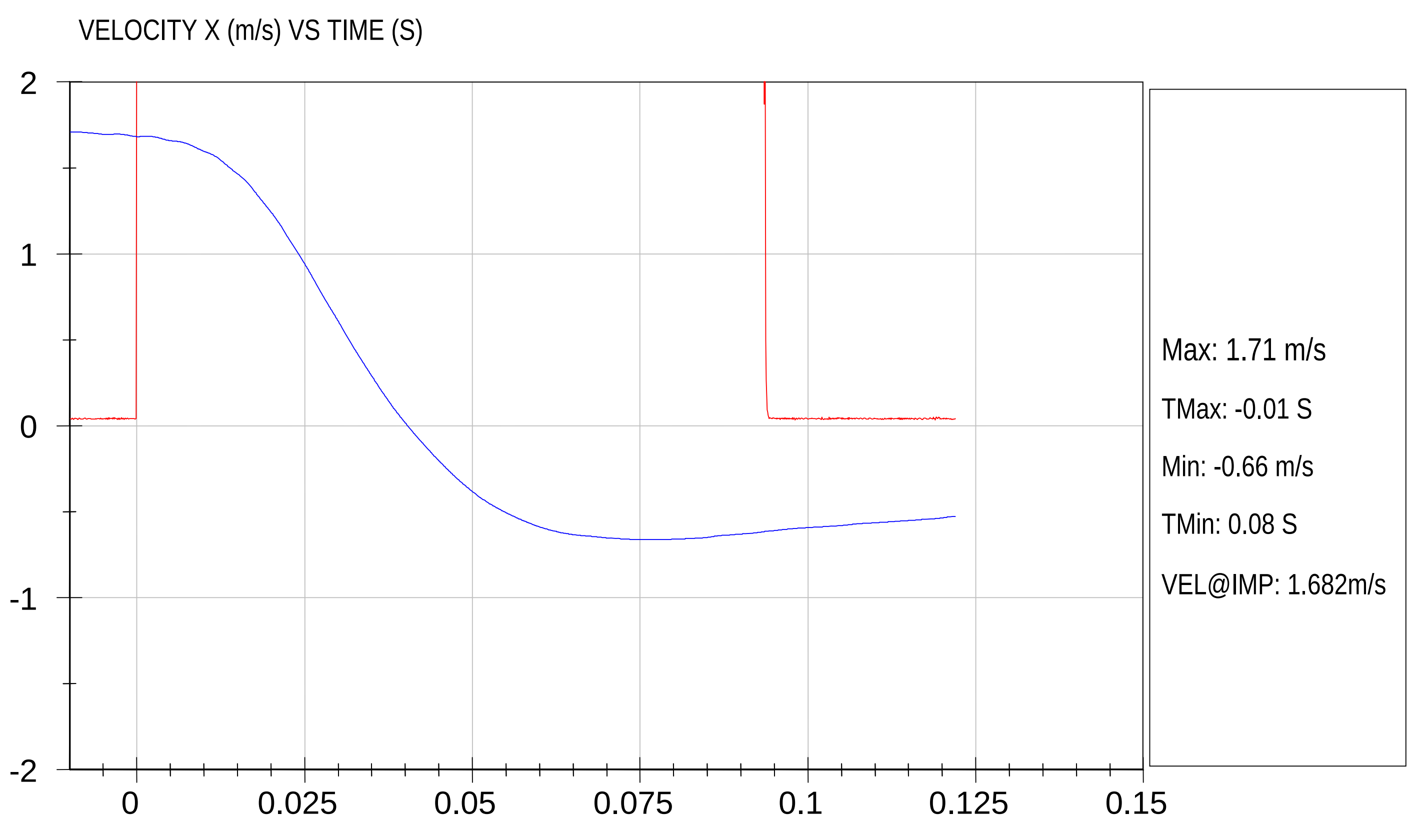
TMin: 0.07 S

VEL@IMP: 1.44m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 Speed Trap: 1.60 m/s

Test Date: 9-20-11
Location: B6H2



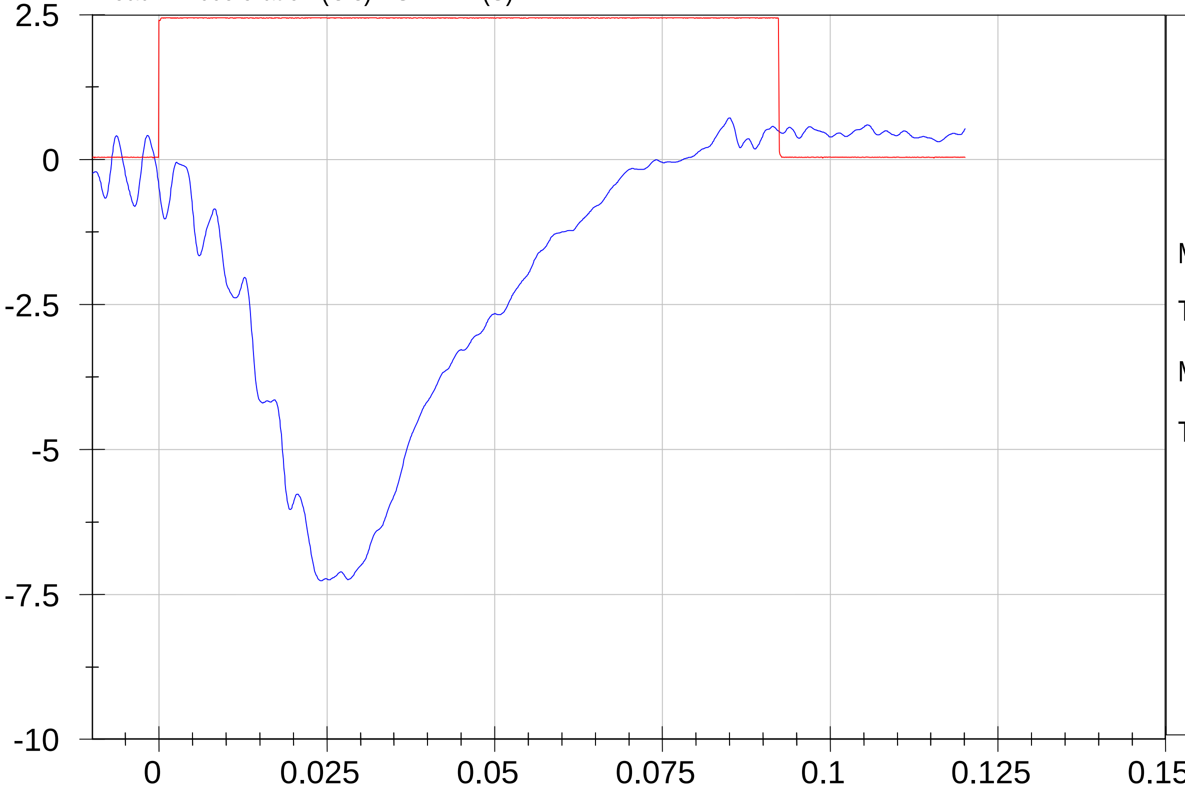


FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Blue Bird All American D3 RE
NHTSA #: CC0901 Speed trap: 1.60 m/s

Test Date: 9-20-11
Location: B6H3

HIC 36: 2.23 T1: 14.10 S T2: 44.30 S

Head X Acceleration (G's) VS TIME (S)



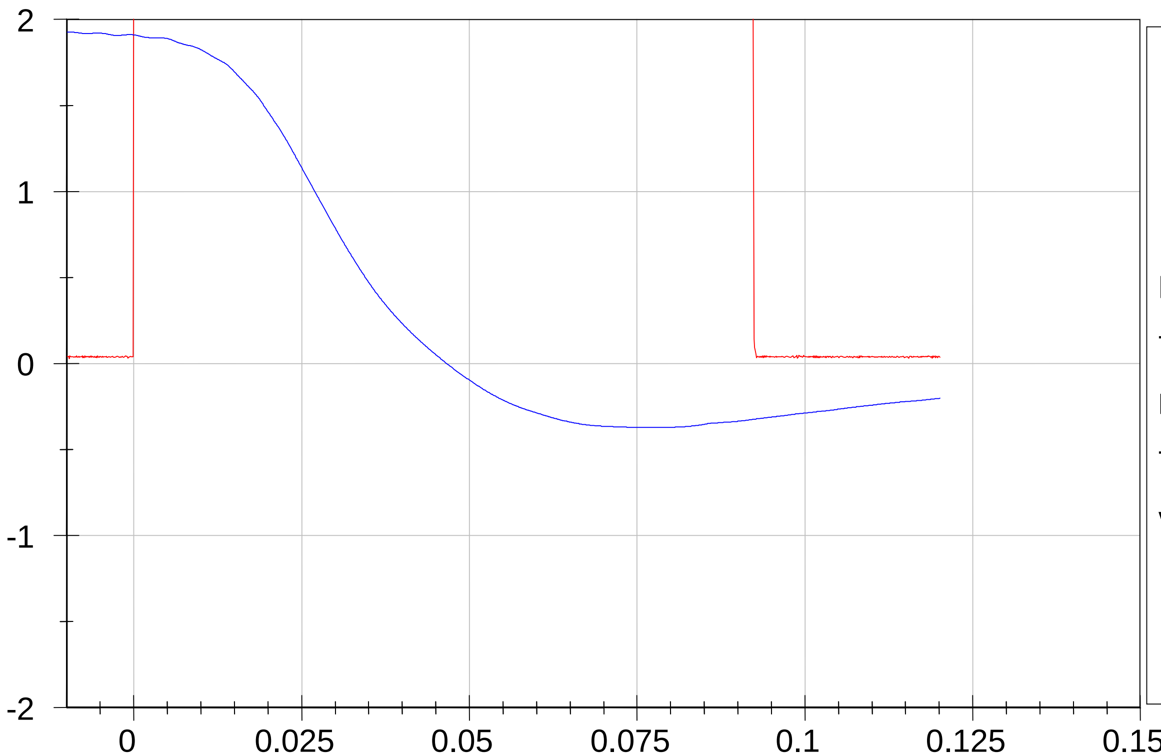
Max: 0.72 G's

TMax: 0.09 S

Min: -7.27 G's

TMin: 0.02 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.93 m/s

TMax: -0.01 S

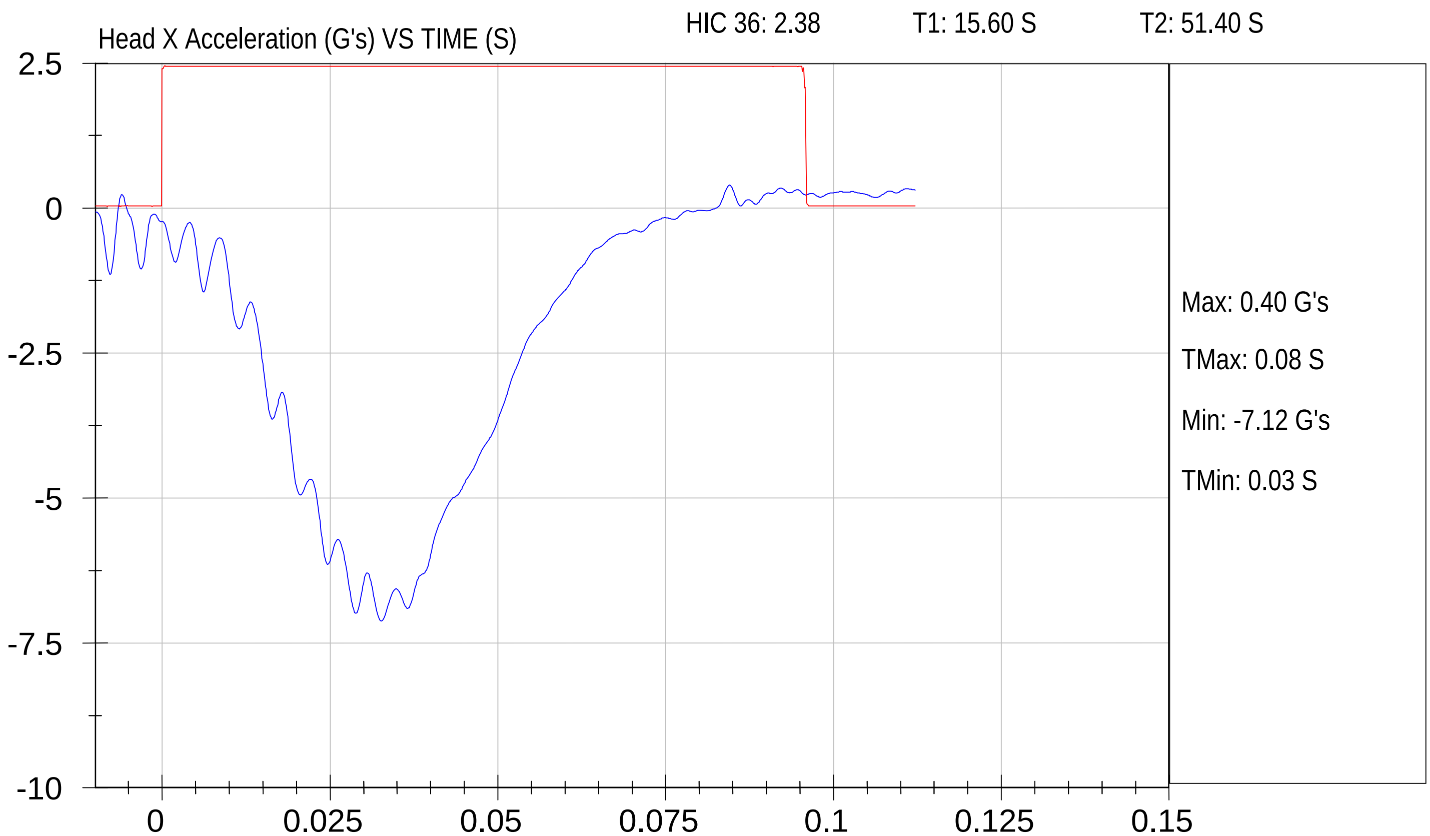
Min: -0.37 m/s

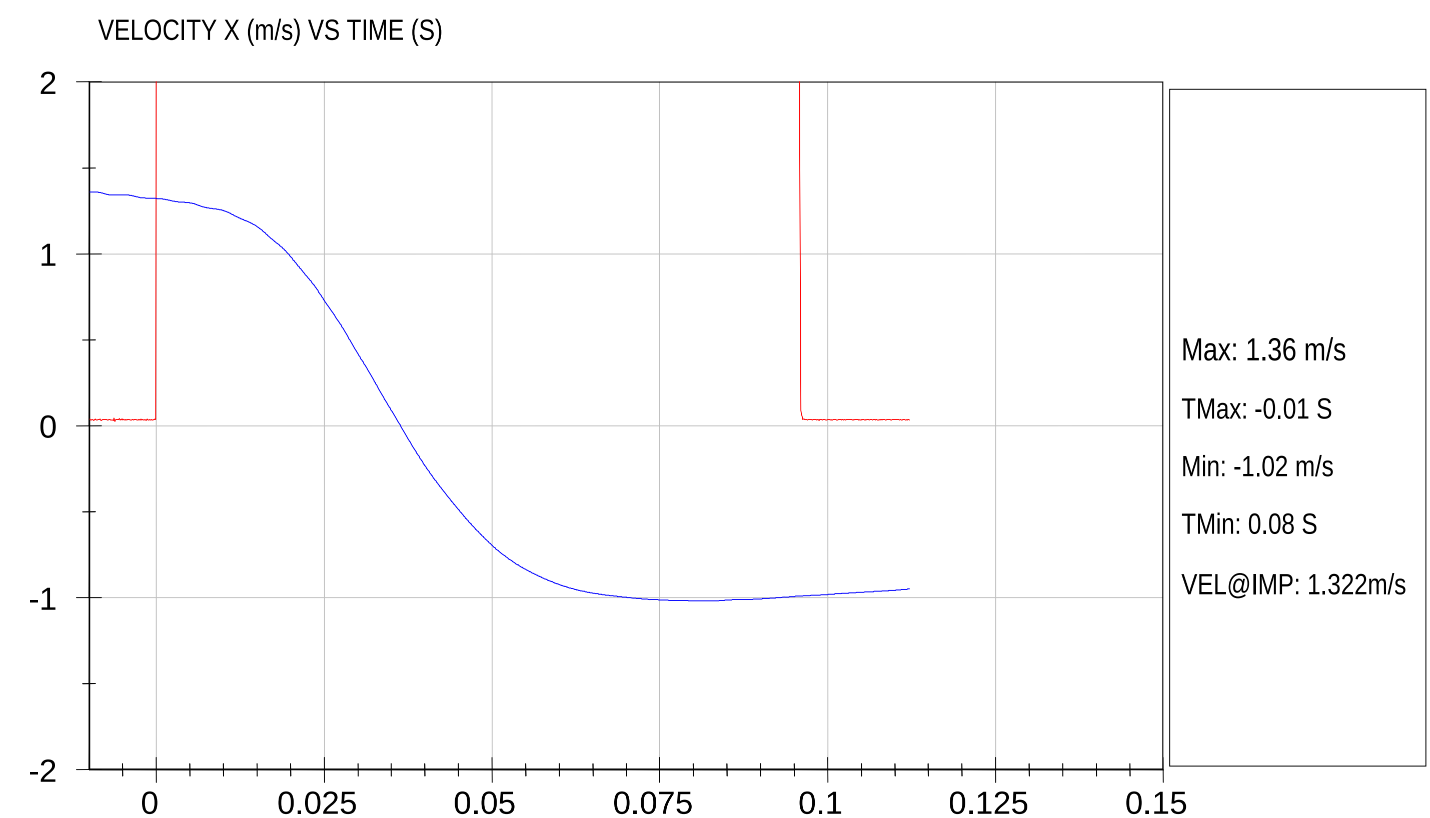
TMin: 0.08 S

VEL@IMP: 1.91m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Blue Bird All American D3 RE
NHTSA #: CC0901 speed trap: 1.57 m/s

Test Date: 9-20-11
Location: B6H4



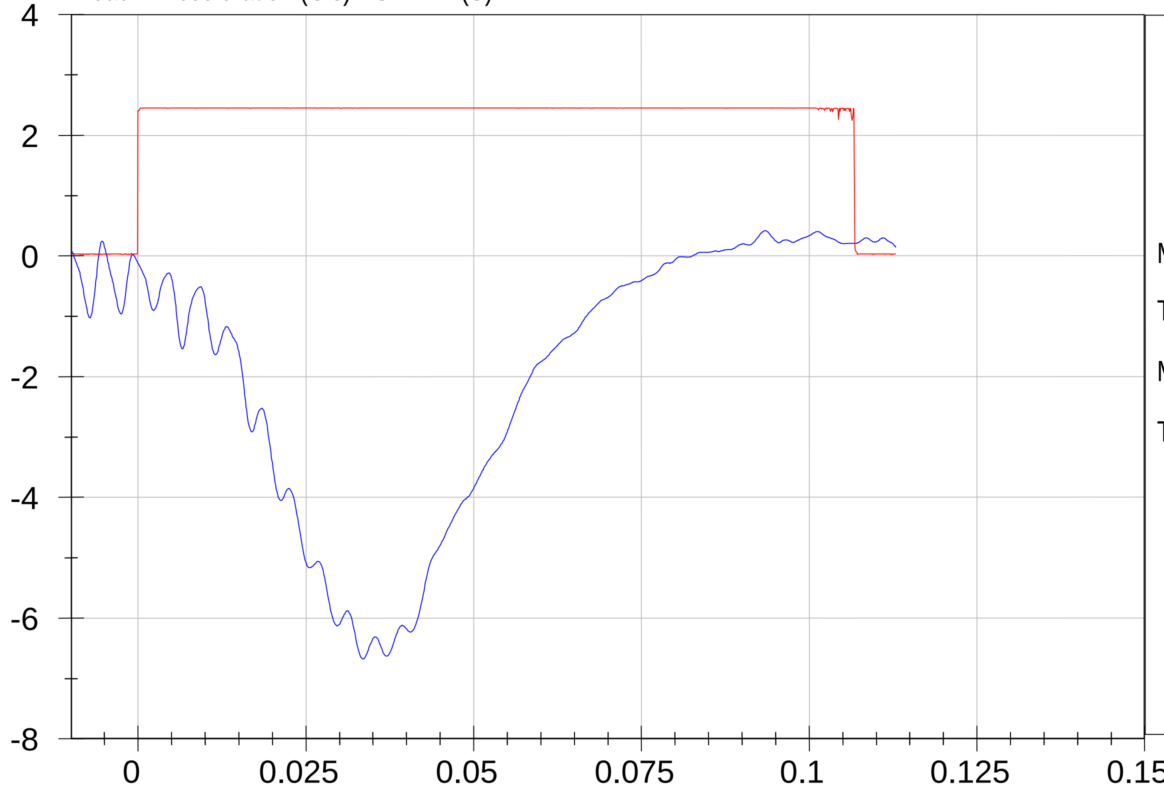


FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Blue Bird All American D3 RE
NHTSA #: CC0901 speed trap: 1.54 m/s

Test Date: 9-20-11
Location: B6H5

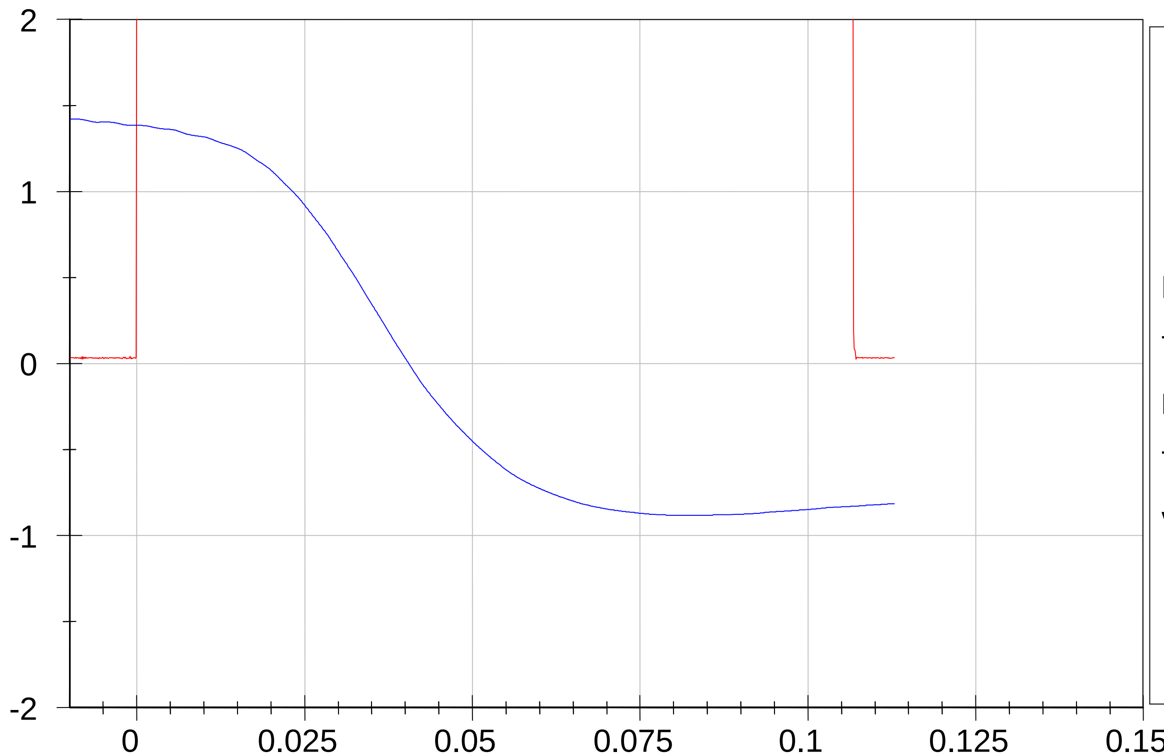
Head X Acceleration (G's) VS TIME (S)

HIC 36: 2.03 T1: 19.50 S T2: 54.50 S



Max: 0.42 G's
TMax: 0.09 S
Min: -6.68 G's
TMin: 0.03 S

VELOCITY X (m/s) VS TIME (S)



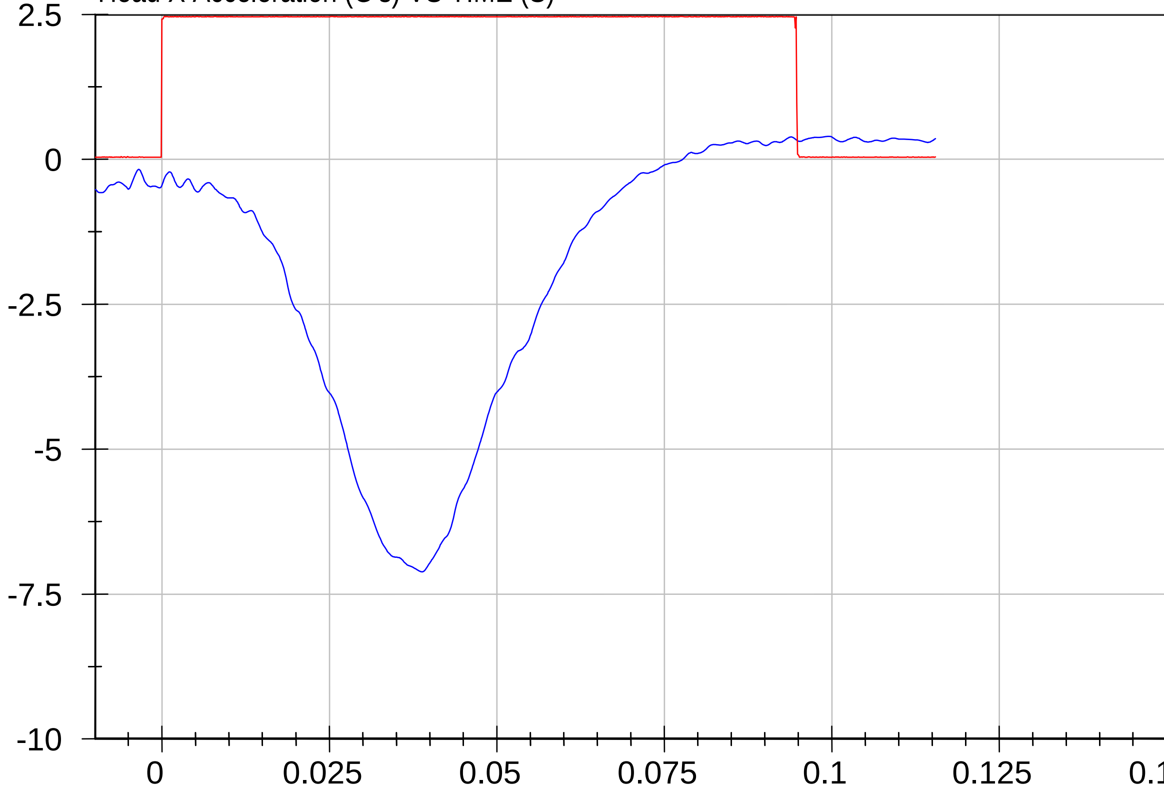
Max: 1.42 m/s
TMax: -0.01 S
Min: -0.88 m/s
TMin: 0.08 S
VEL@IMP: 1.385m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.52 m/s

Test Date: 9-20-2011
Location: B6H6

HIC 36: 2.19 T1: 22.90 S T2: 53.00 S

Head X Acceleration (G's) VS TIME (S)



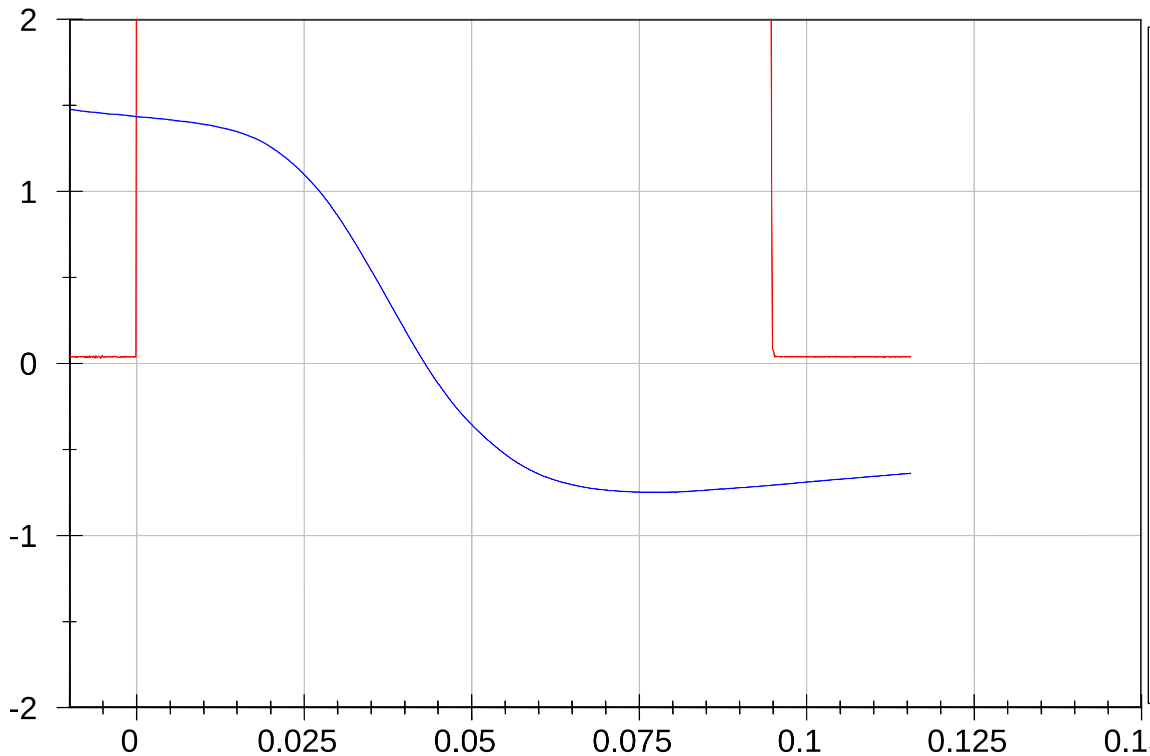
Max: 0.40 G's

TMax: 0.10 S

Min: -7.12 G's

TMin: 0.04 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.48 m/s

TMax: -0.01 S

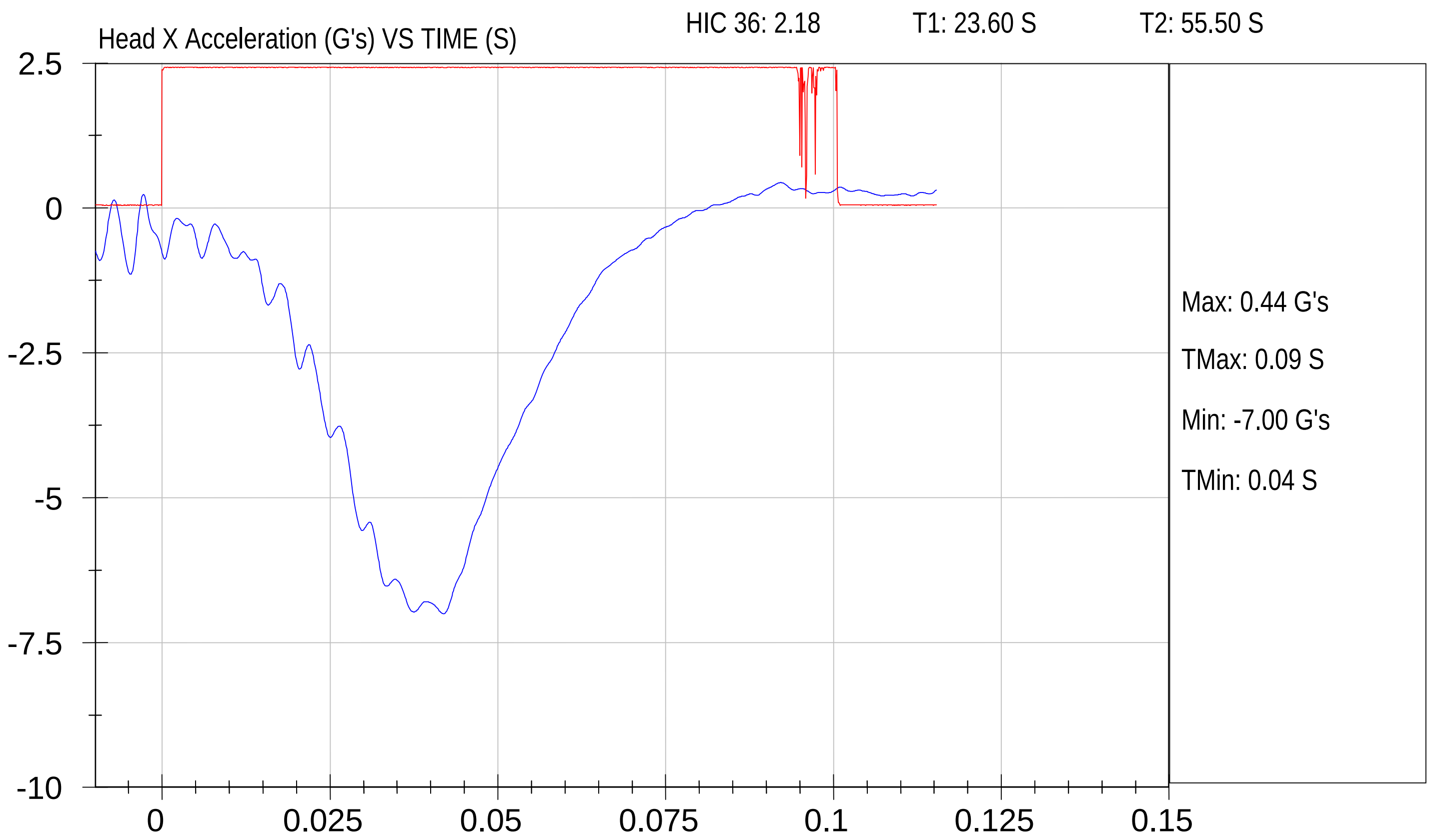
Min: -0.75 m/s

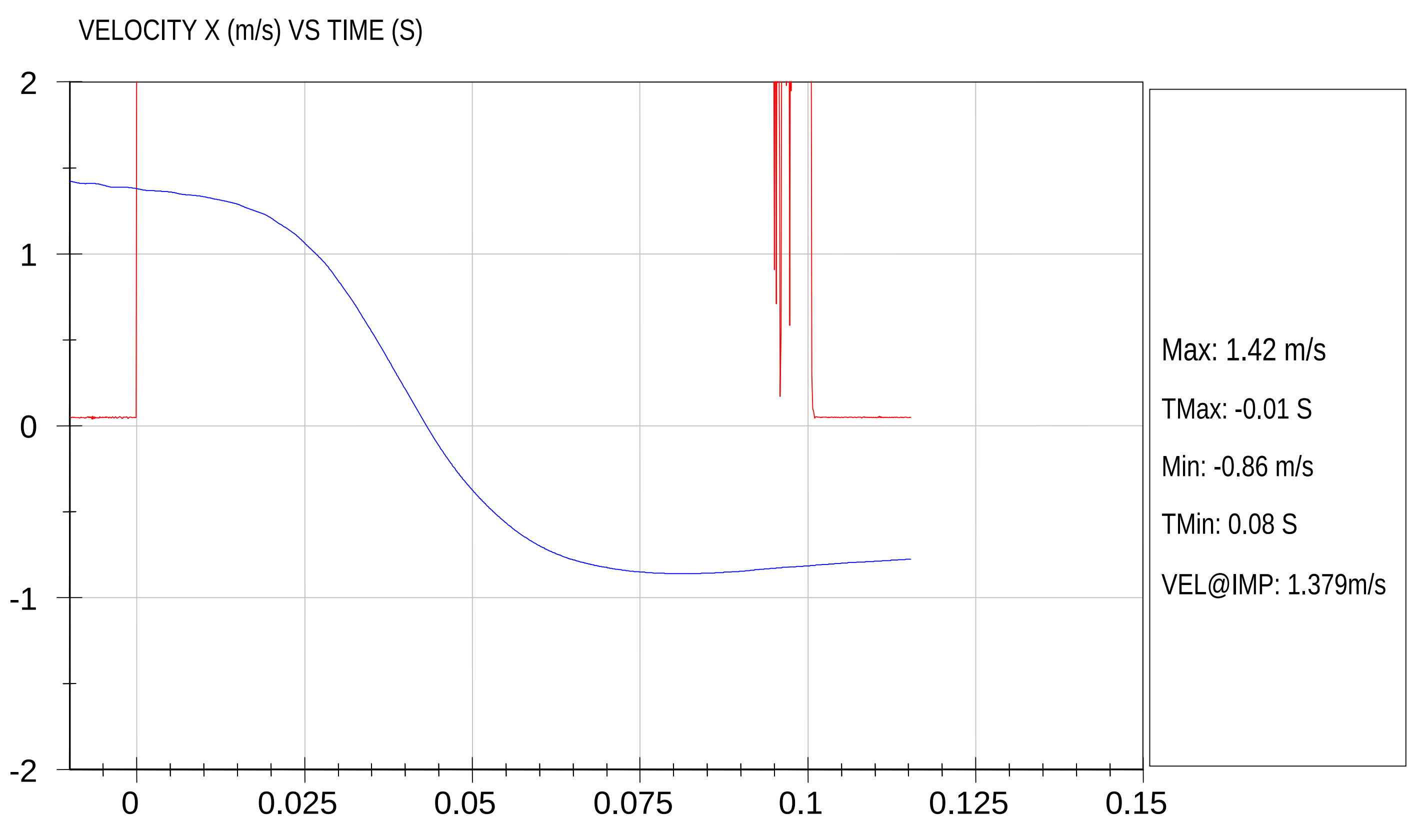
TMin: 0.08 S

VEL@IMP: 1.434m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Blue Bird All American D3 RE
NHTSA #: CC0901 speed trap: 1.53 m/s

Test Date: 9-20-11
Location: B6H7

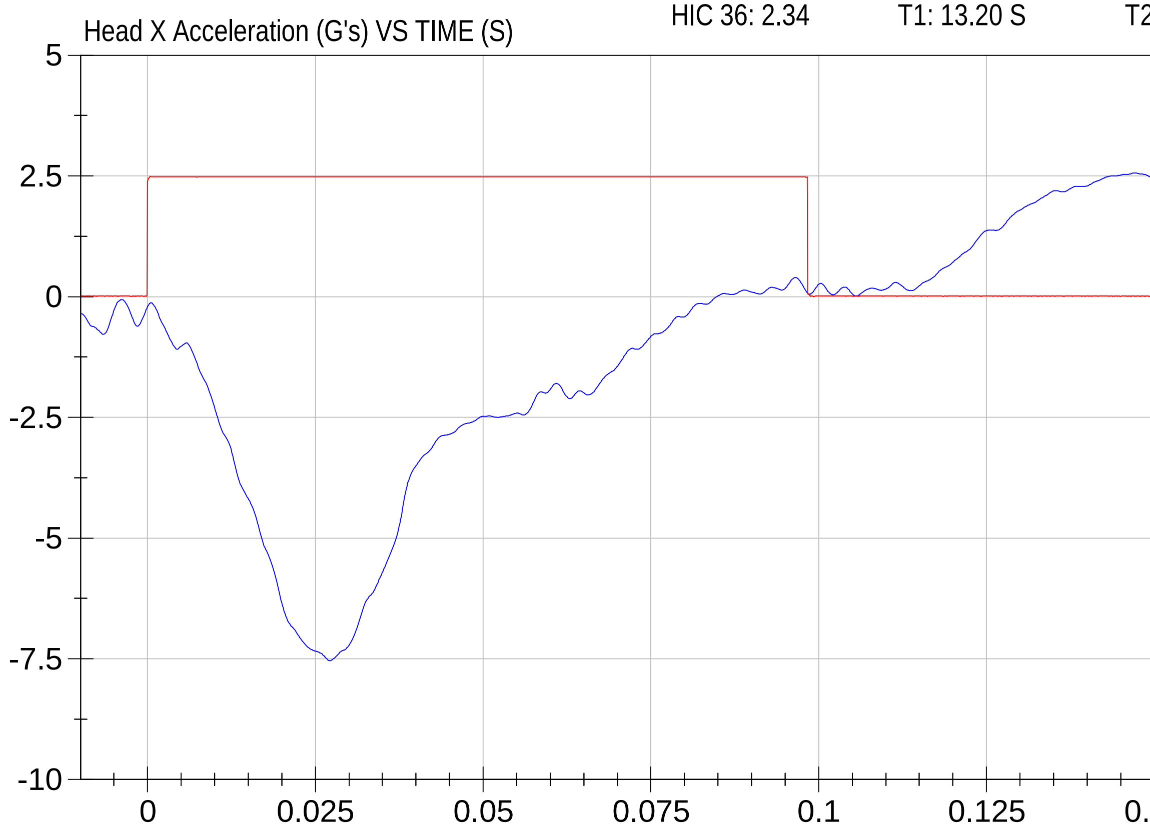




FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.60 m/s

Test Date: 10-20-2011
Location: B18H1

HIC 36: 2.34 T1: 13.20 S T2: 39.50 S

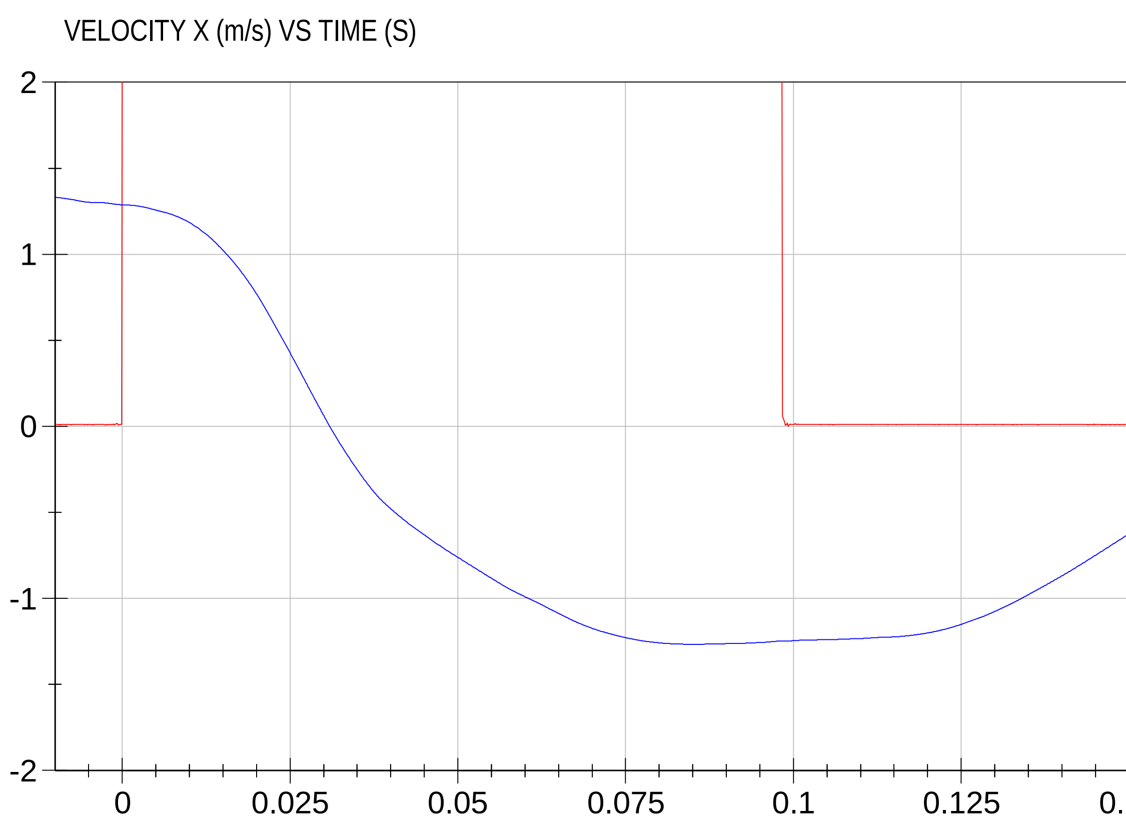


Max: 2.56 G's

TMax: 0.15 S

Min: -7.54 G's

TMin: 0.03 S



Max: 1.33 m/s

TMax: -0.01 S

Min: -1.27 m/s

TMin: 0.08 S

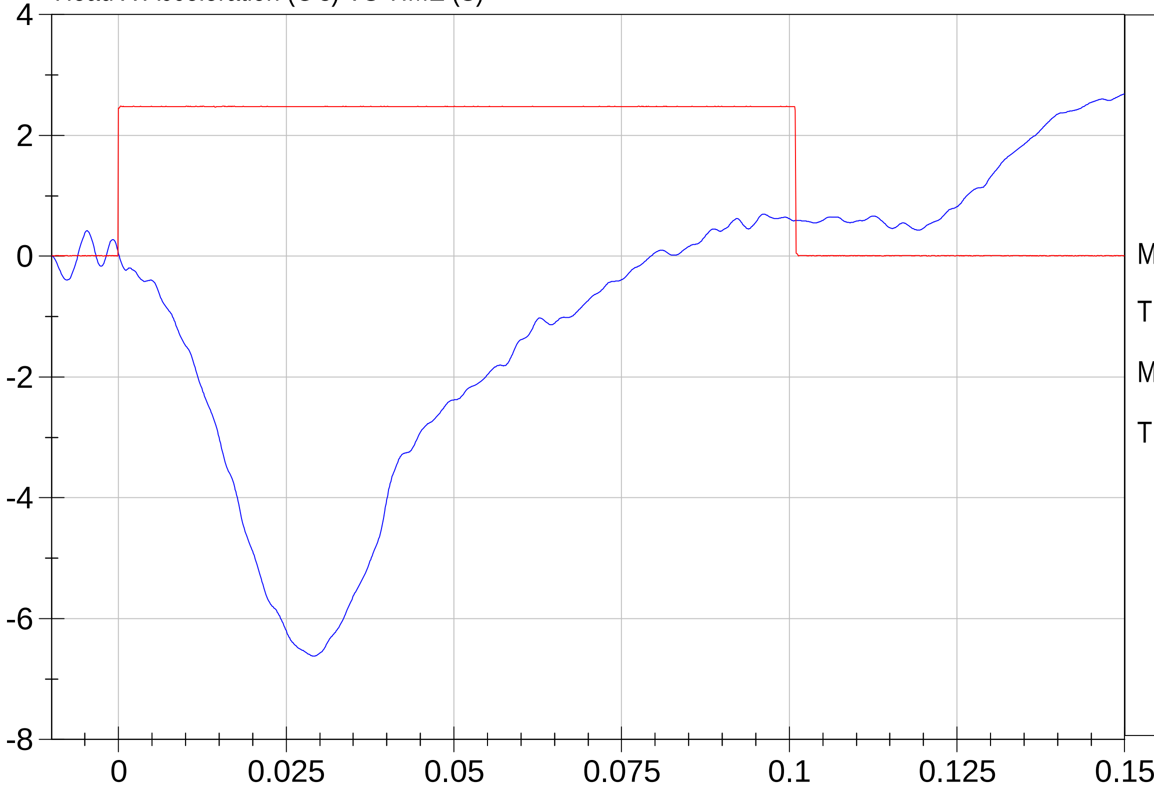
VEL@IMP: 1.287m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.56 m/s

Test Date: 10-20-2011
Location: B18H2

Head X Acceleration (G's) VS TIME (S)

HIC 36: 1.77 T1: 15.20 S T2: 44.20 S



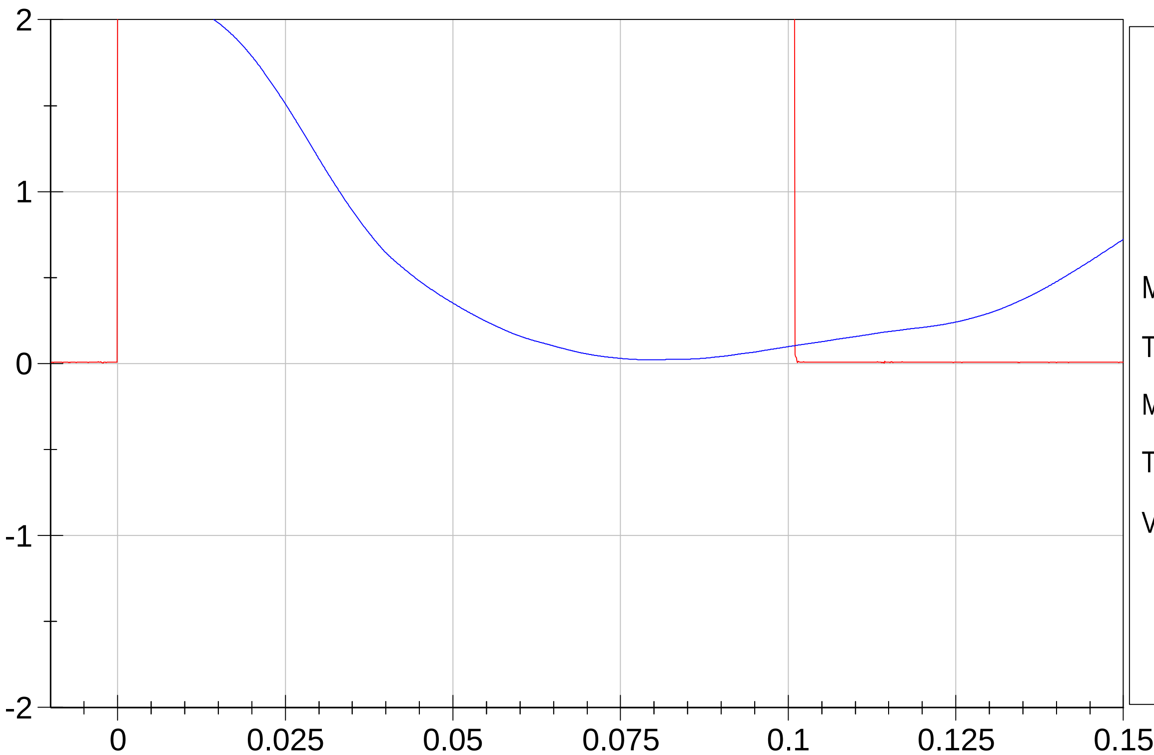
Max: 2.72 G's

TMax: 0.15 S

Min: -6.62 G's

TMin: 0.03 S

VELOCITY X (m/s) VS TIME (S)



Max: 2.15 m/s

TMax: 0.00 S

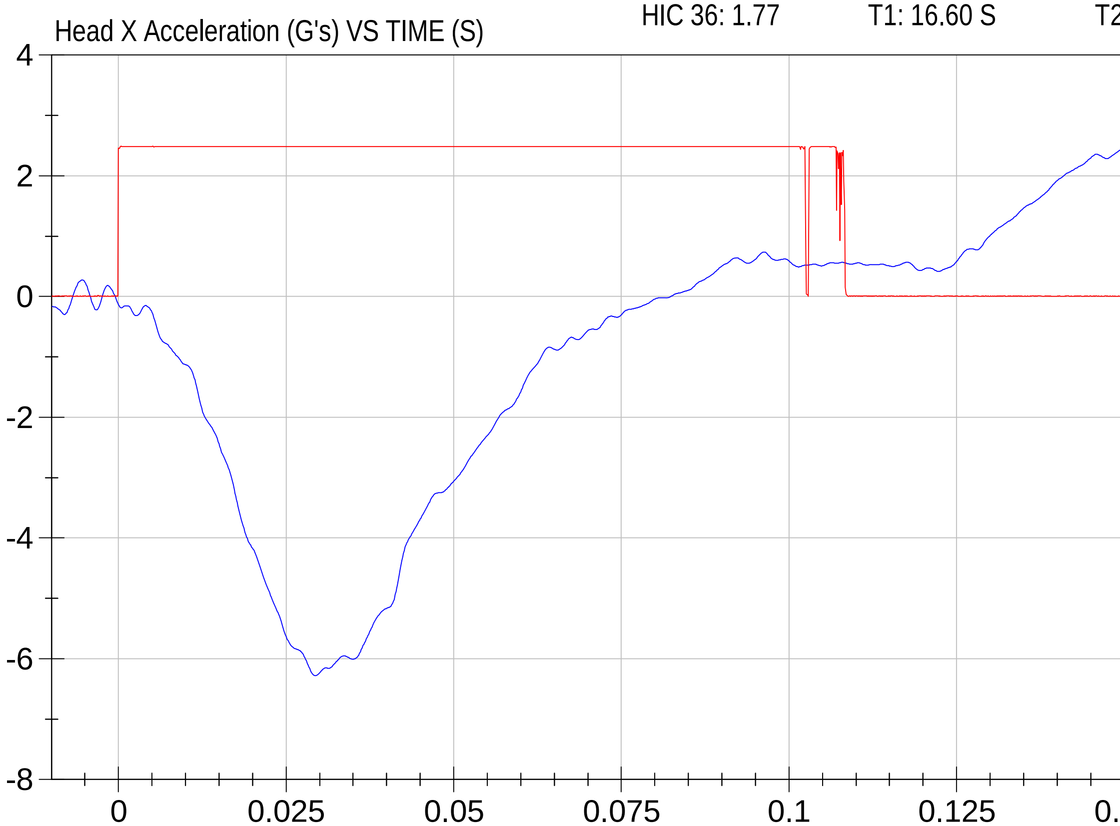
Min: 0.02 m/s

TMin: 0.08 S

VEL@IMP: 2.148m/s

mga	FMVSS 222 HEAD FORM IMPACTS (1.5 m/s) Vehicle: 2012 Bluebird All American D3 RE NHTSA #: CC0901 speed trap: 1.55 m/s	Test Date: 10-20-2011 Location: B18H3

HIC 36: 1.77 T1: 16.60 S T2: 51.30 S

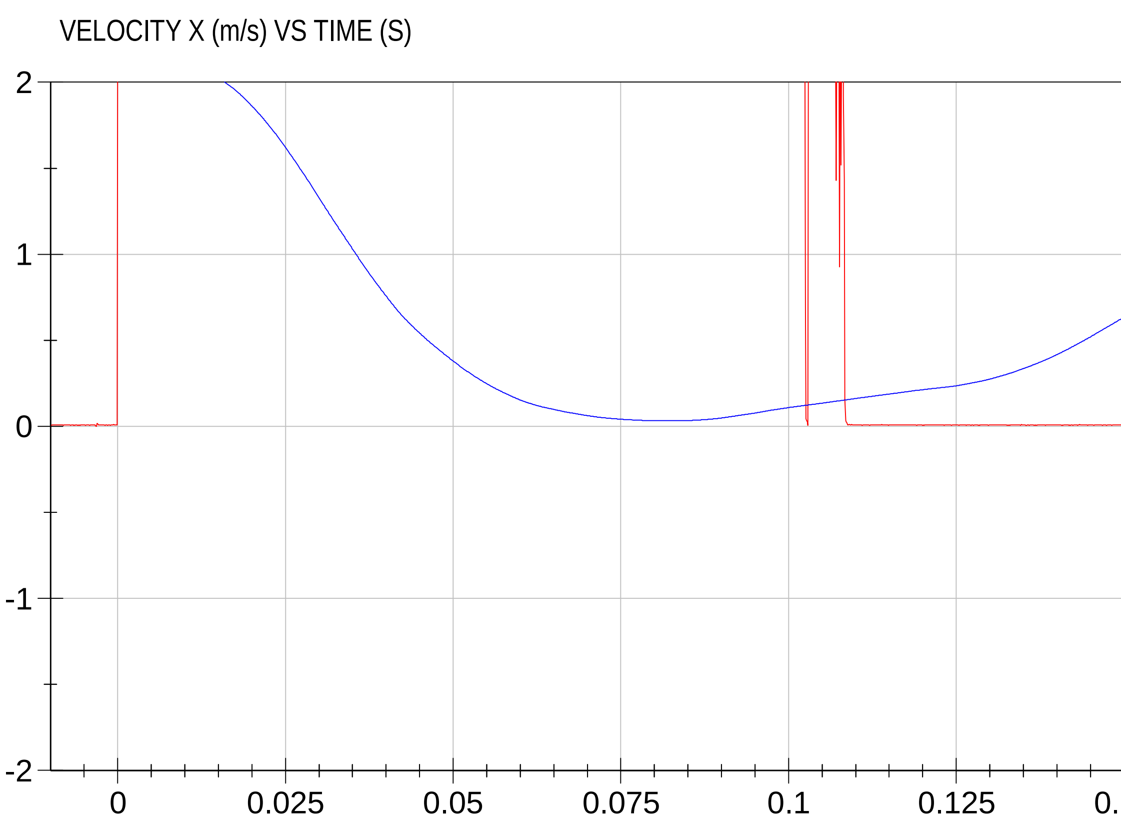


Max: 2.70 G's

TMax: 0.16 S

Min: -6.28 G's

TMin: 0.03 S



Max: 2.16 m/s

TMax: -0.01 S

Min: 0.03 m/s

TMin: 0.08 S

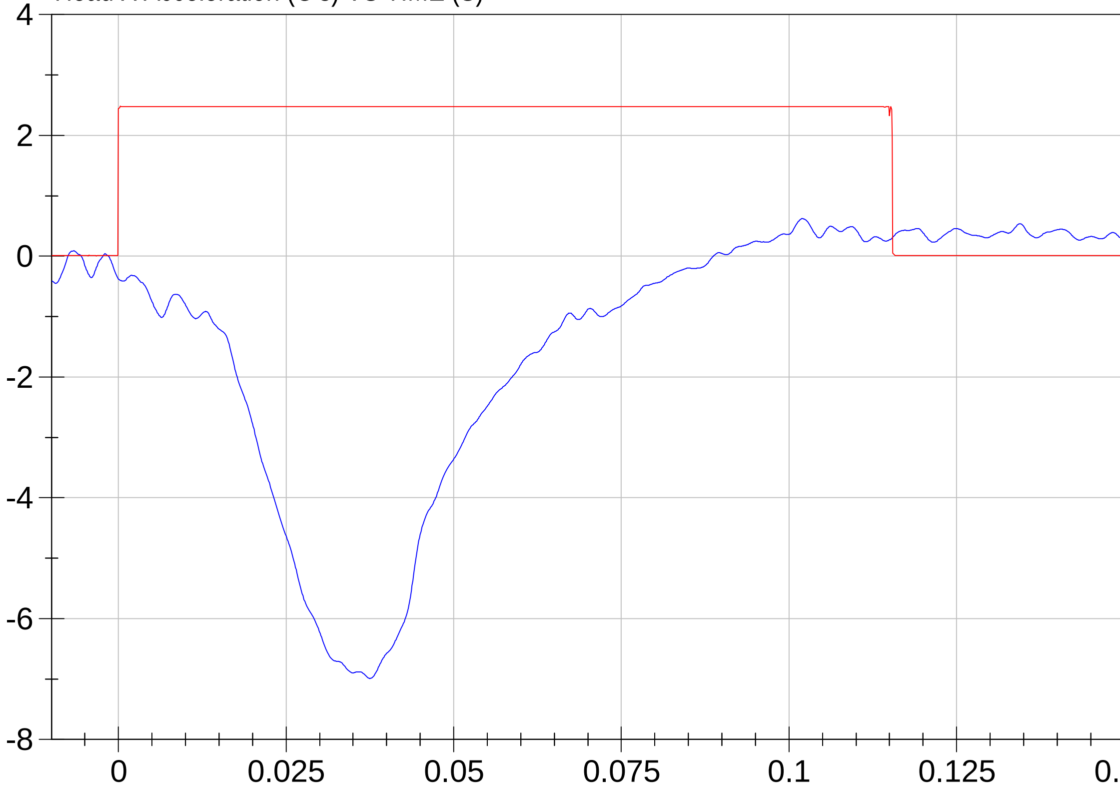
VEL@IMP: 2.161m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.60 m/s

Test Date: 10-20-2011
Location: B18H4

Head X Acceleration (G's) VS TIME (S)

HIC 36: 2.07 T1: 21.20 S T2: 50.30 S



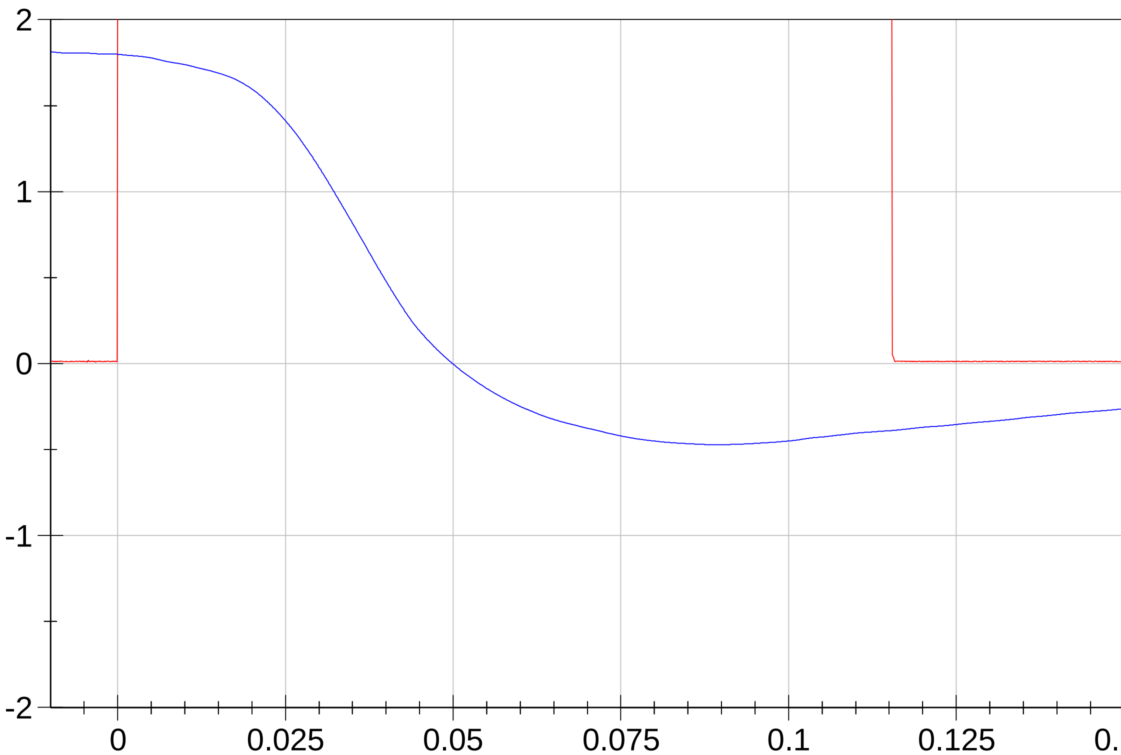
Max: 2.39 G's

TMax: 0.18 S

Min: -6.99 G's

TMin: 0.04 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.81 m/s

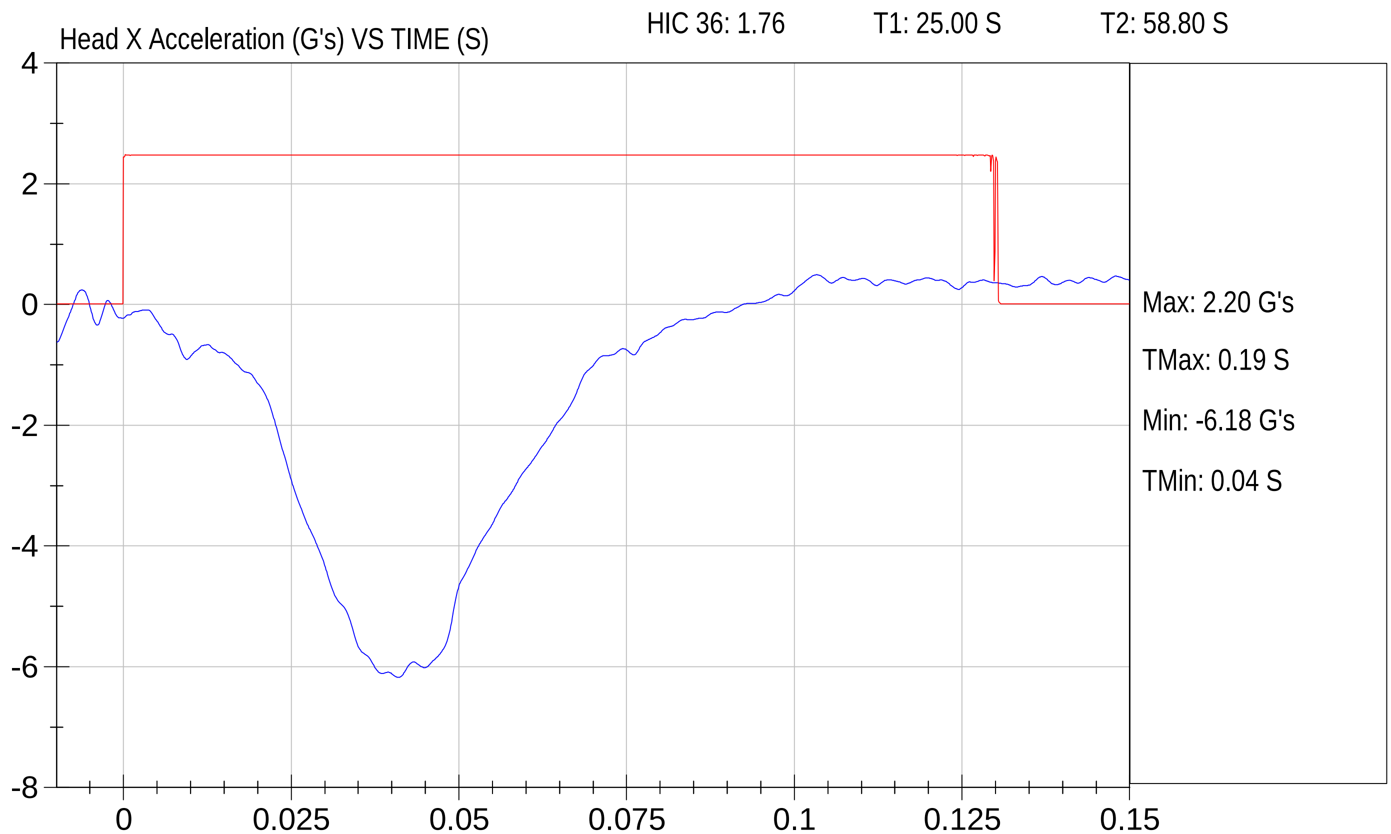
TMax: -0.01 S

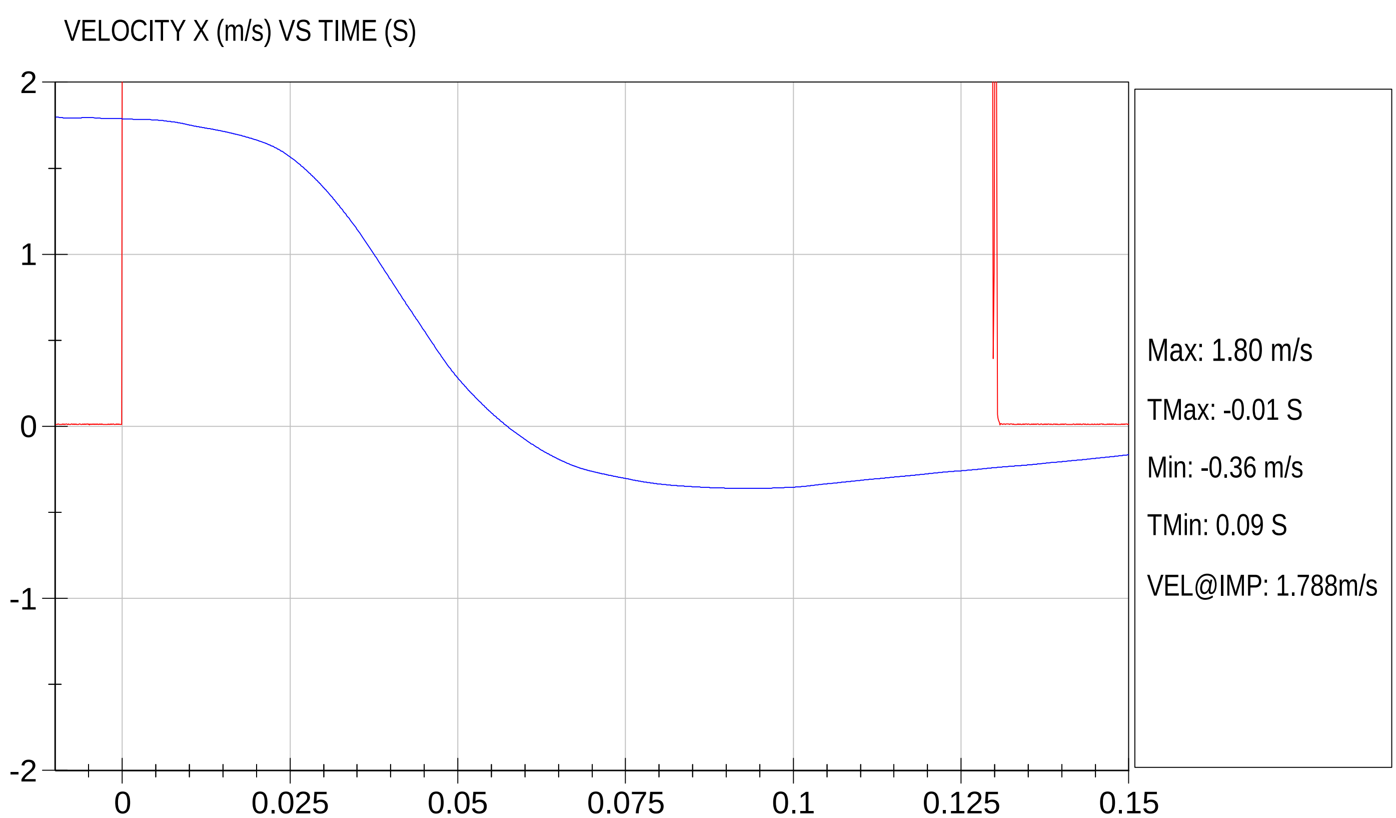
Min: -0.47 m/s

TMin: 0.09 S

VEL@IMP: 1.799m/s

mga	FMVSS 222 HEAD FORM IMPACTS (1.5 m/s) Vehicle: 2012 Bluebird All American D3 RE NHTSA #: CC0901 speed trap: 1.58 m/s	Test Date: 10-20-2011 Location: B18H5



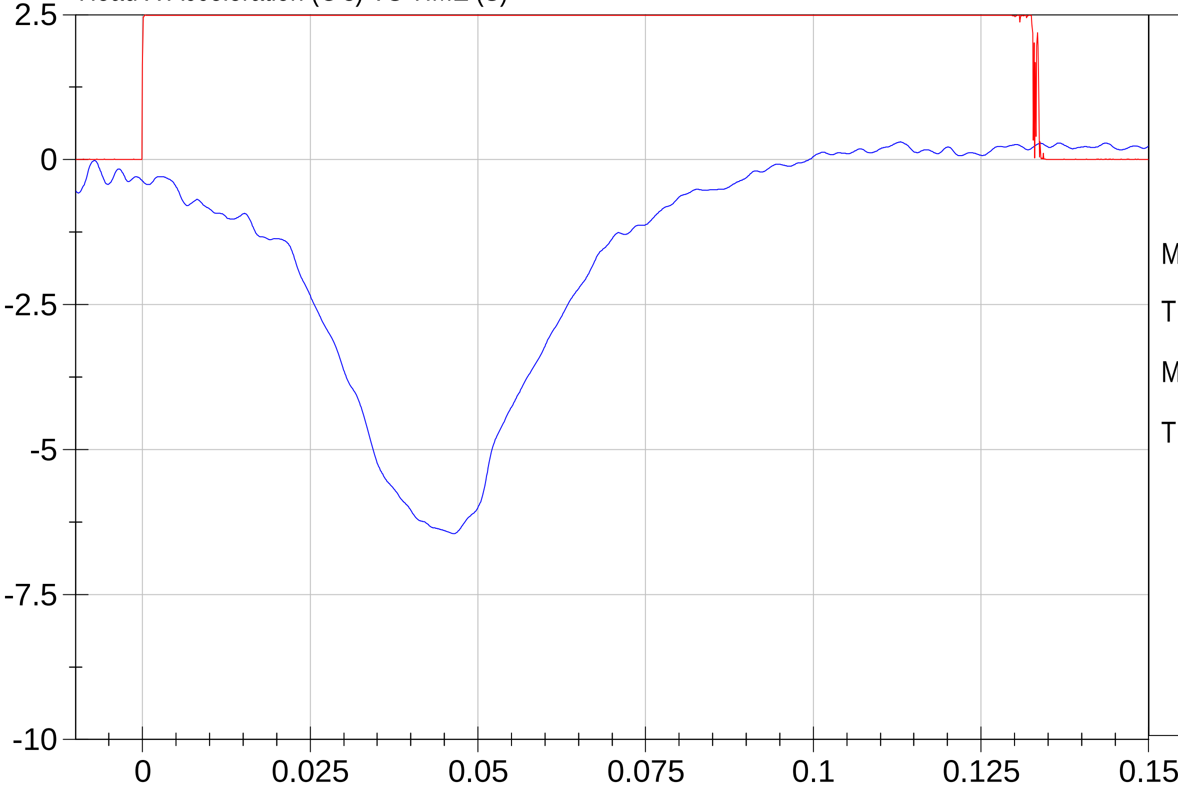


FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.60 m/s

Test Date: 10-20-2011
Location: B18H6

Head X Acceleration (G's) VS TIME (S)

HIC 36: 1.88 T1: 28.00 S T2: 60.80 S



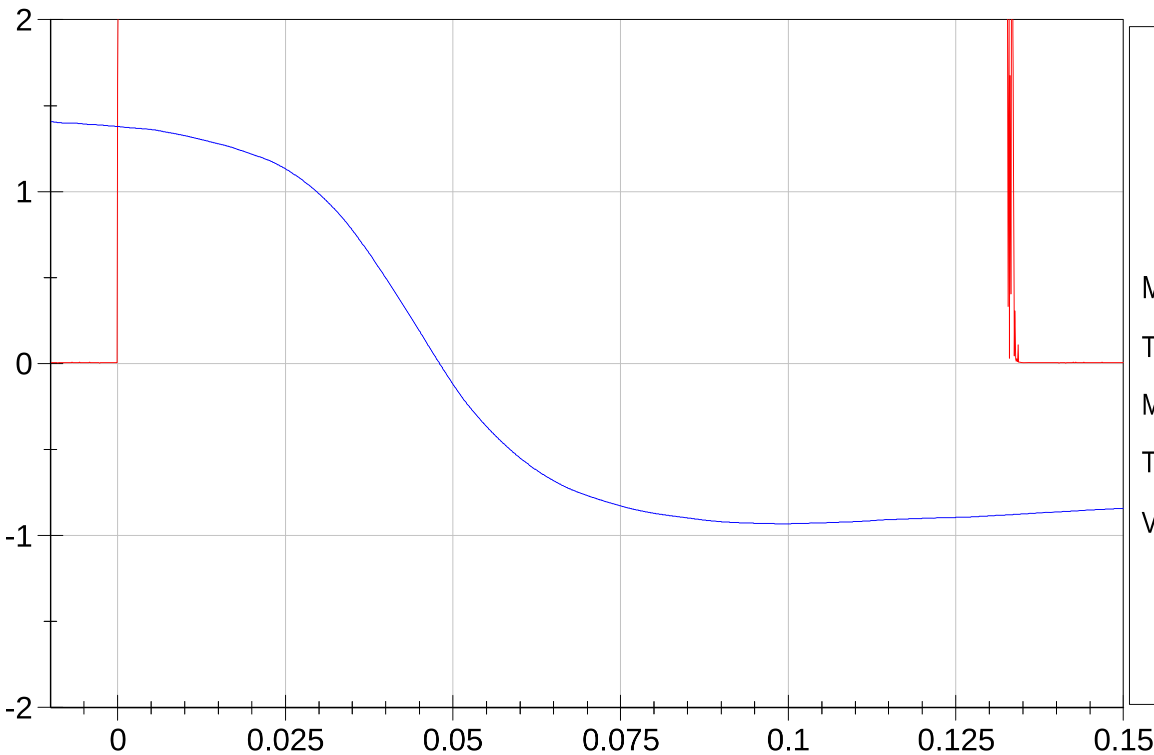
Max: 1.91 G's

TMax: 0.21 S

Min: -6.45 G's

TMin: 0.05 S

VELOCITY X (m/s) VS TIME (S)



Max: 1.41 m/s

TMax: -0.01 S

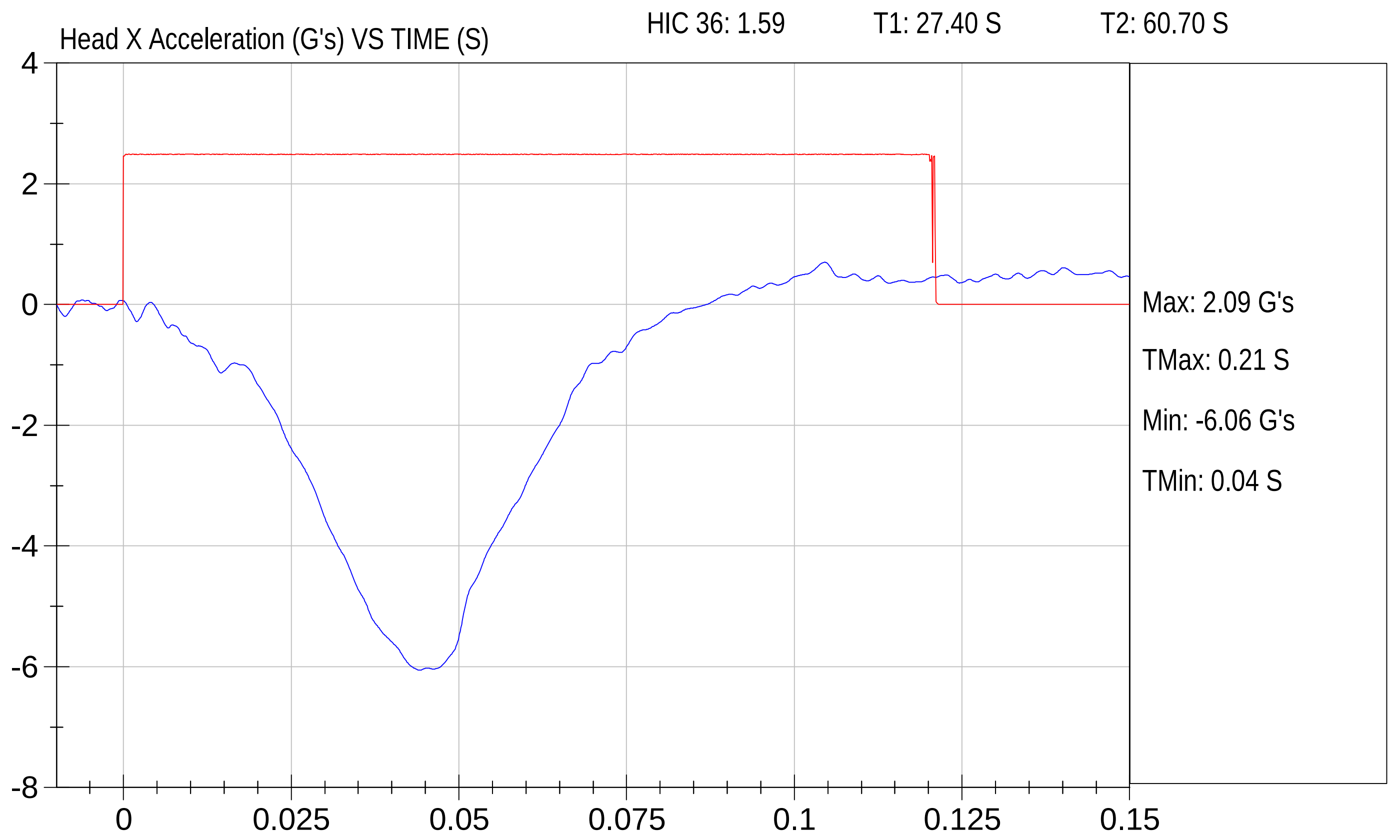
Min: -0.93 m/s

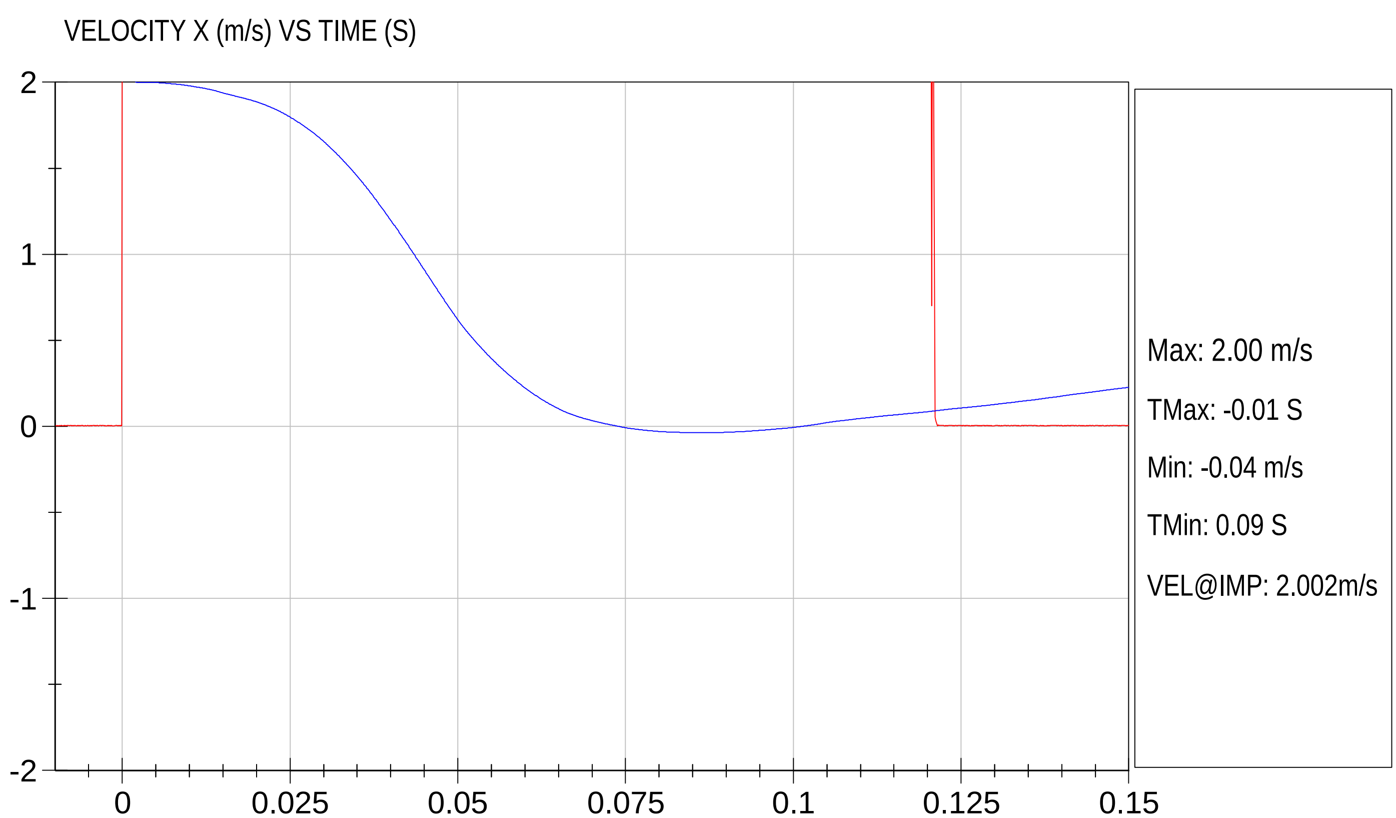
TMin: 0.10 S

VEL@IMP: 1.379m/s

FMVSS 222 HEAD FORM IMPACTS (1.5 m/s)
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 1.57 m/s

Test Date: 10-20-2011
Location: B18H7





HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-29-2011

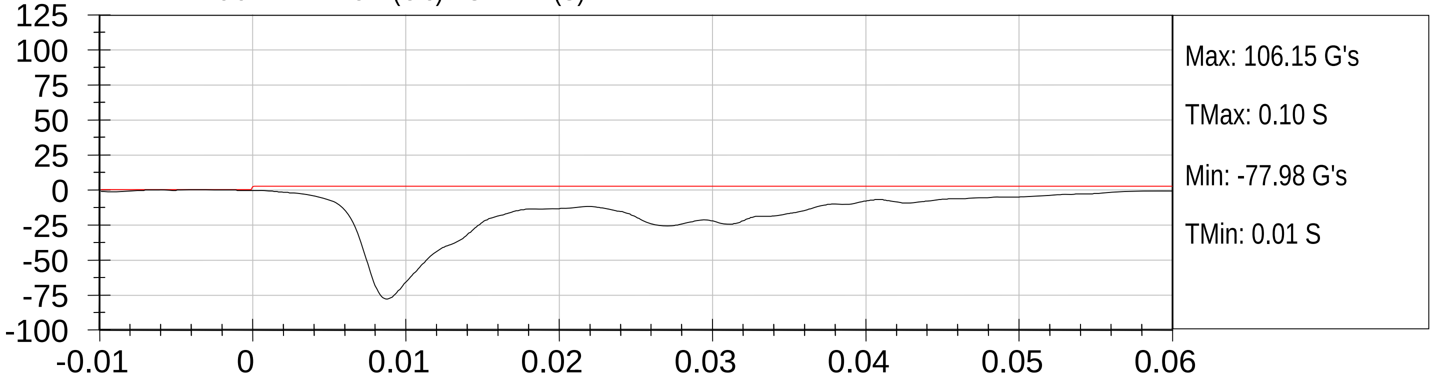
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.64 m/s

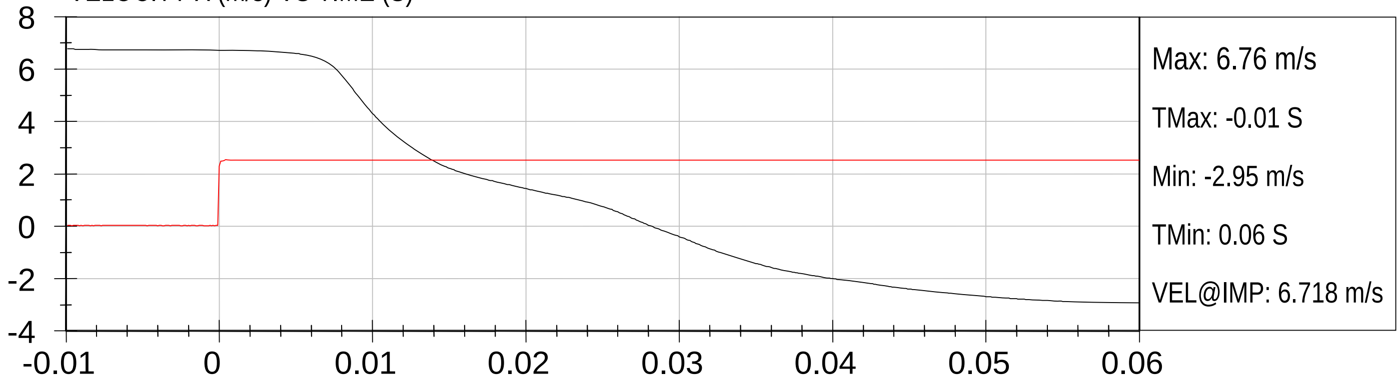
Location: S2H8

Hic: 211.84 T1: 97.20 ms T2: 100.60 ms

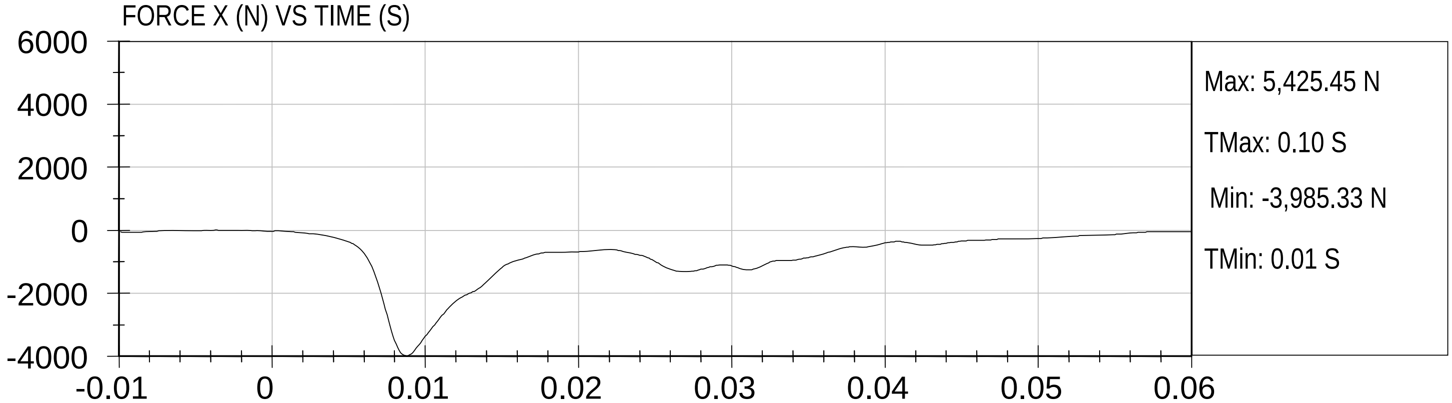
HEAD X ACCELERATION (G's) VS TIME (S)



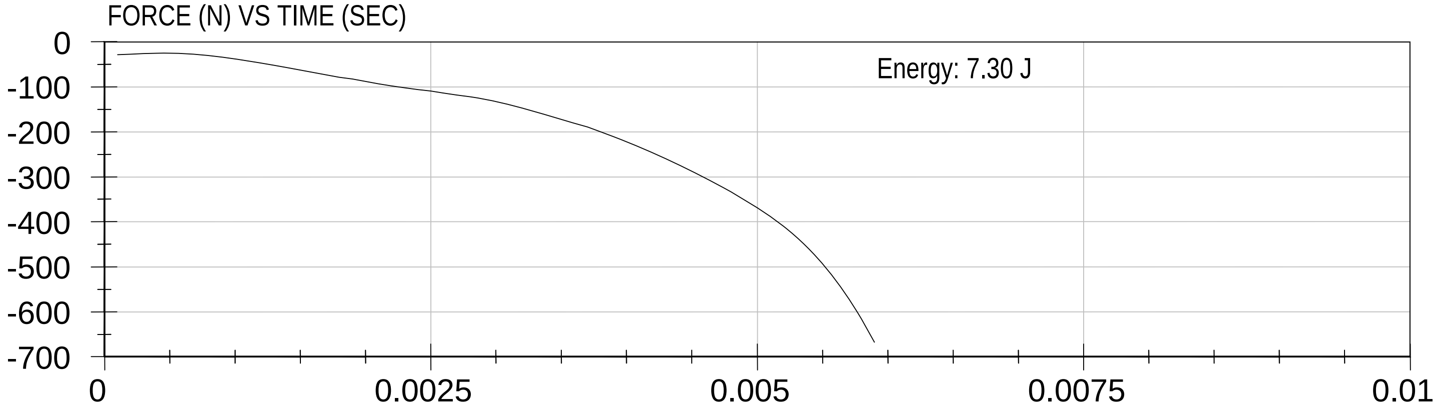
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



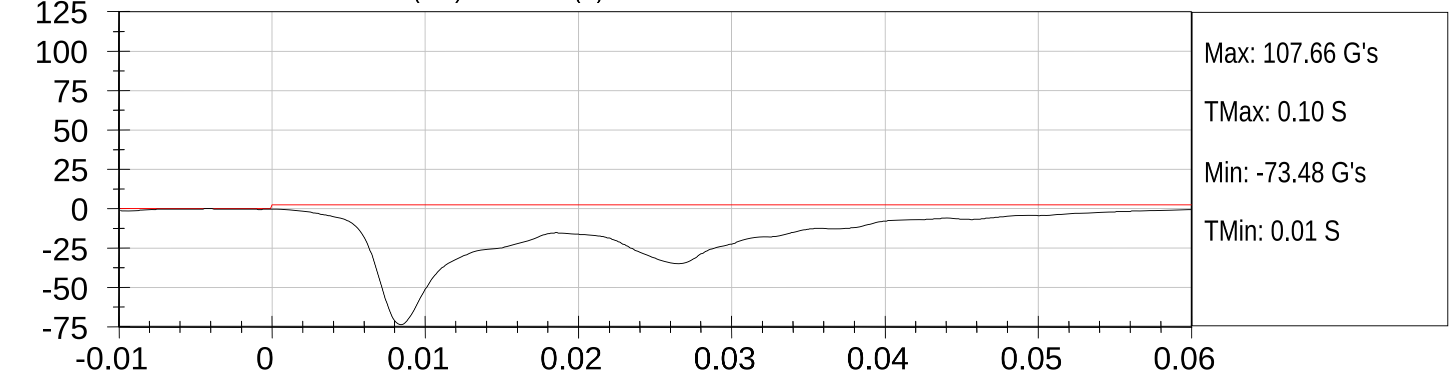
FORCE (N) VS TIME (SEC)



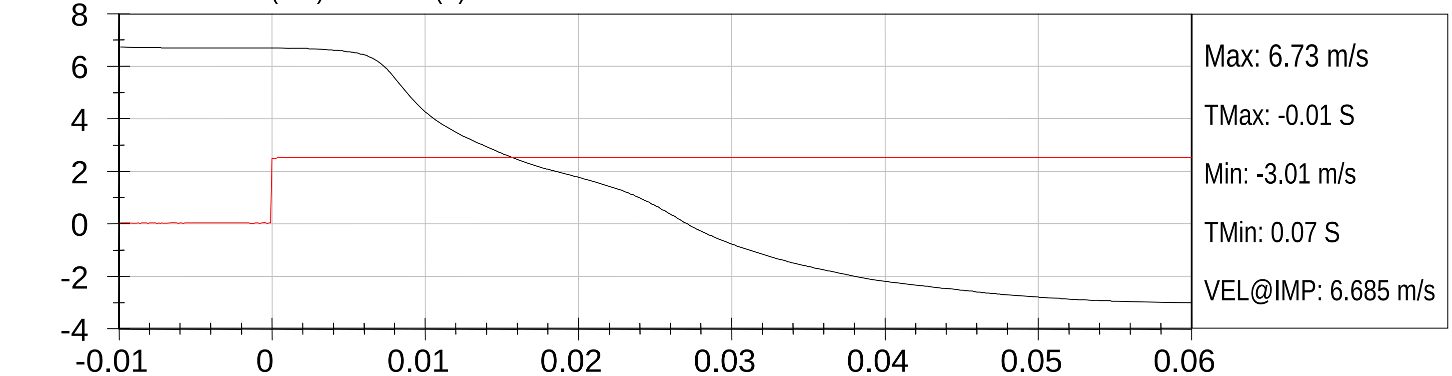
	HEAD FORM IMPACT (6.69 m/s)	Test Date: 9-29-2011
	Vehicle: 2012 Bluebird All American D3 RE	Location: S2H9
	NHTSA #: CC0901 speed trap: 6.66 m/s	

HEAD X ACCELERATION (G's) VS TIME (S)

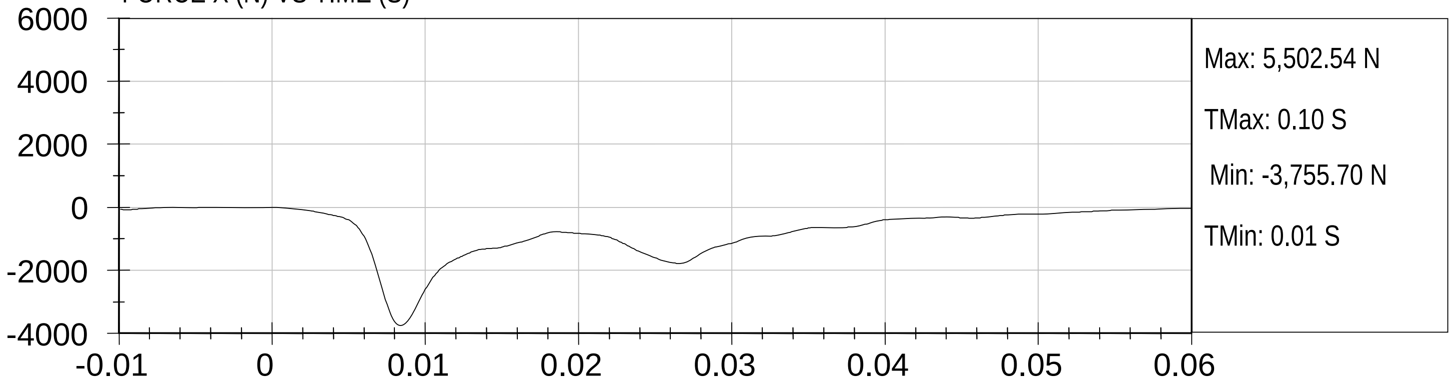
Hic: 219.52 T1: 98.80 ms T2: 102.10 ms



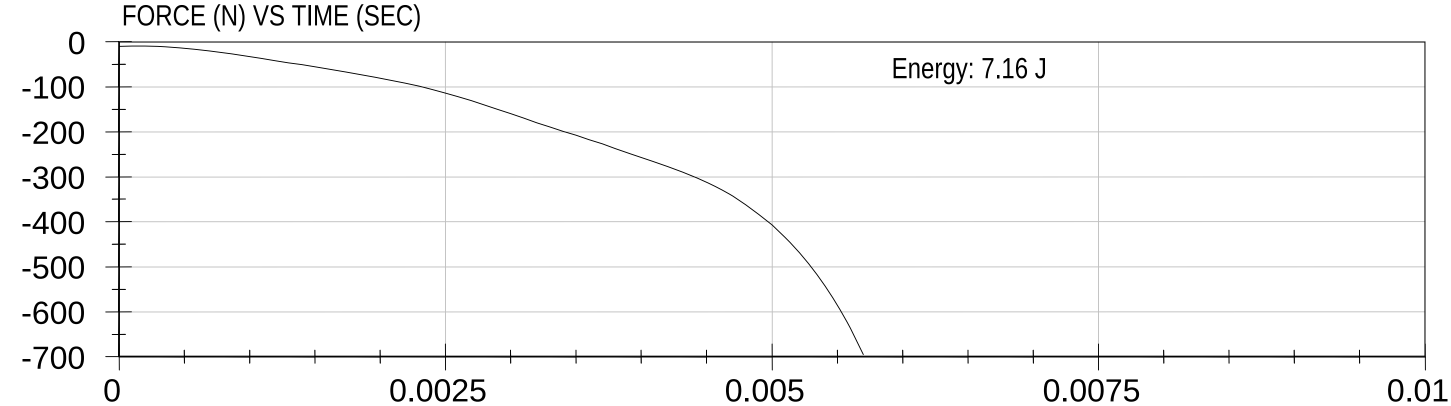
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-29-2011

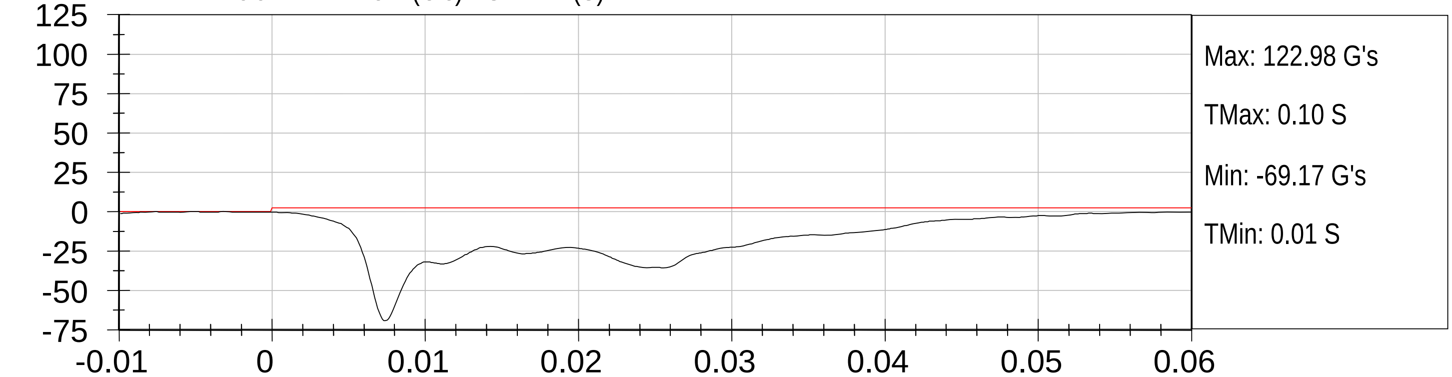
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.66 m/s

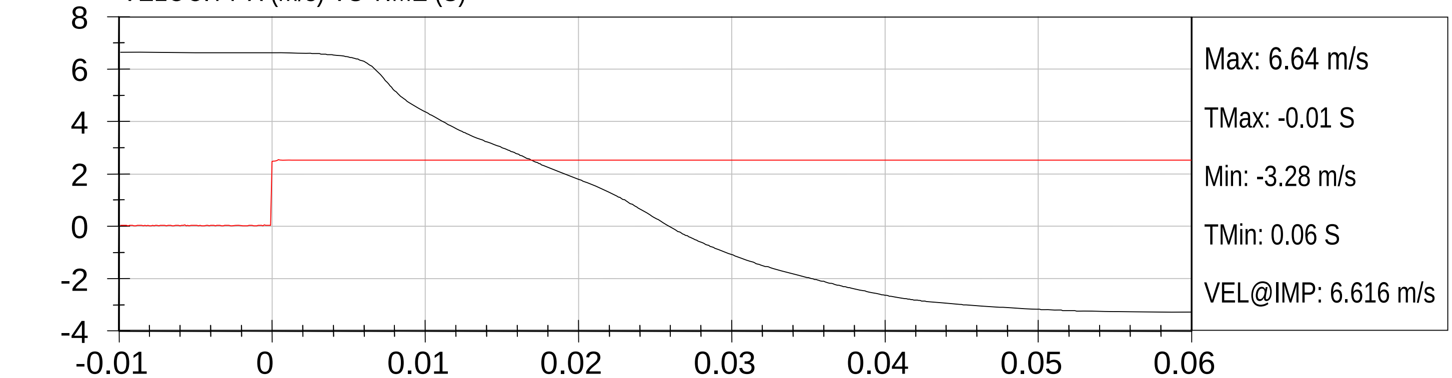
Location: S2H10

HEAD X ACCELERATION (G's) VS TIME (S)

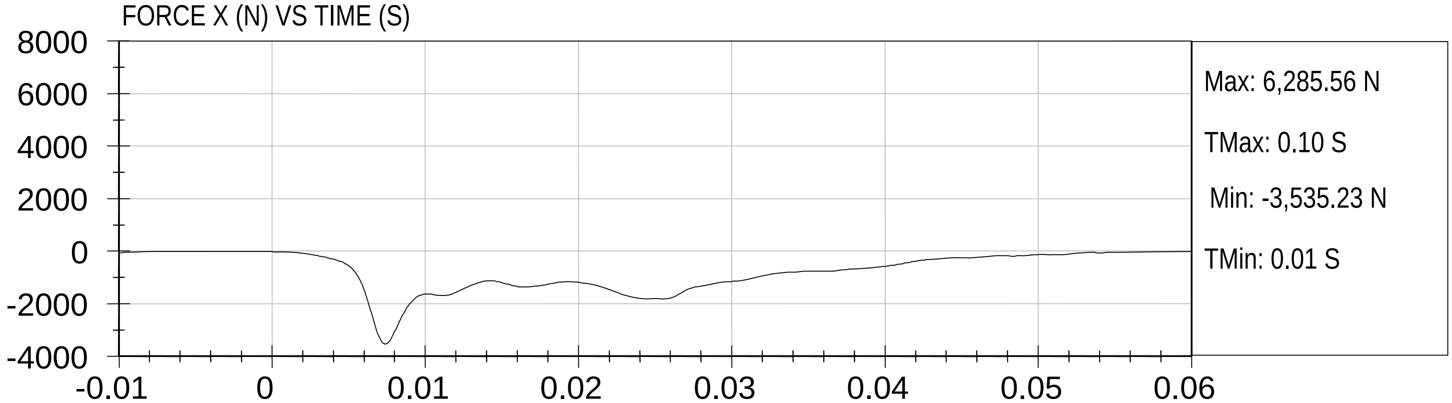
Hic: 297.31 T1: 95.50 ms T2: 98.70 ms



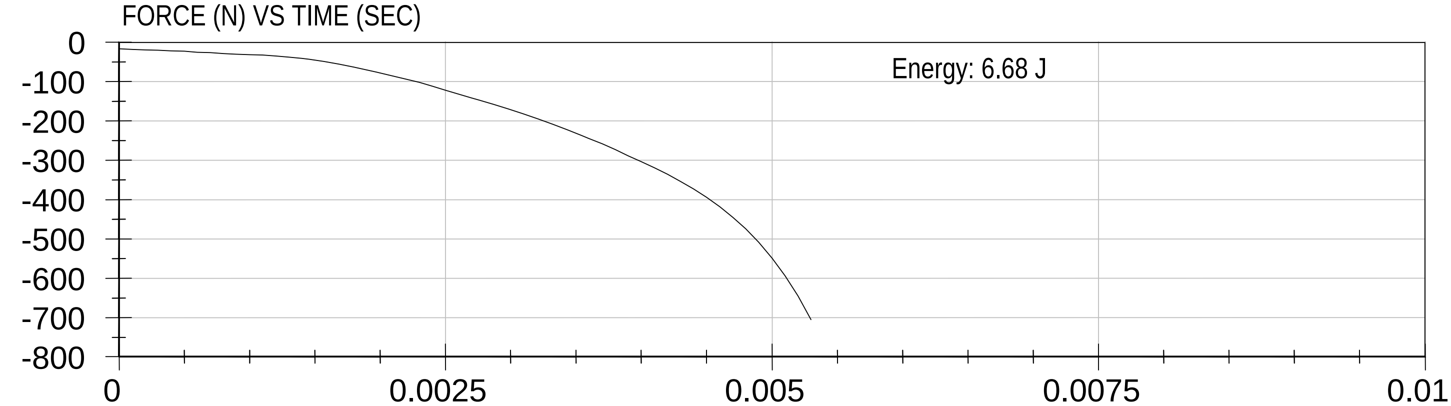
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-29-2011

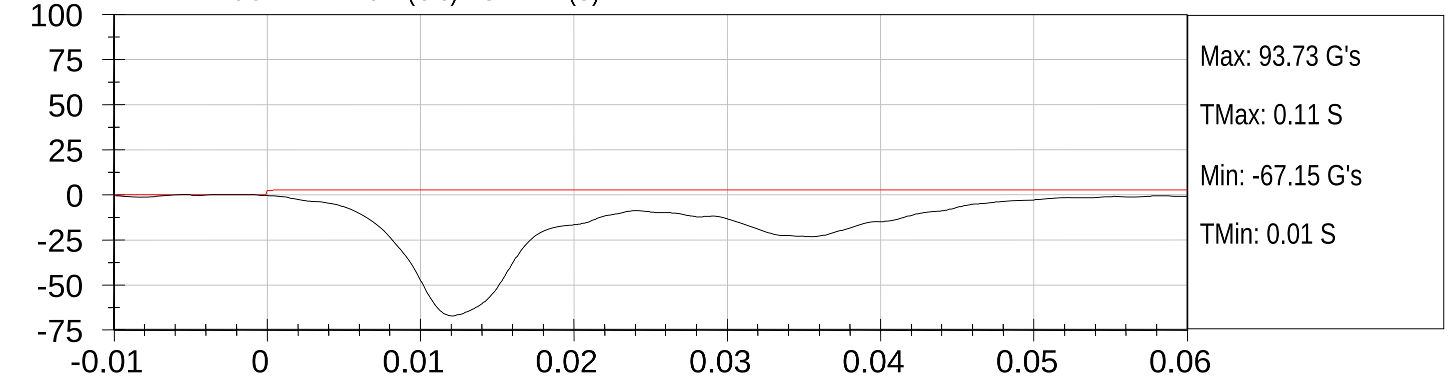
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.68 m/s

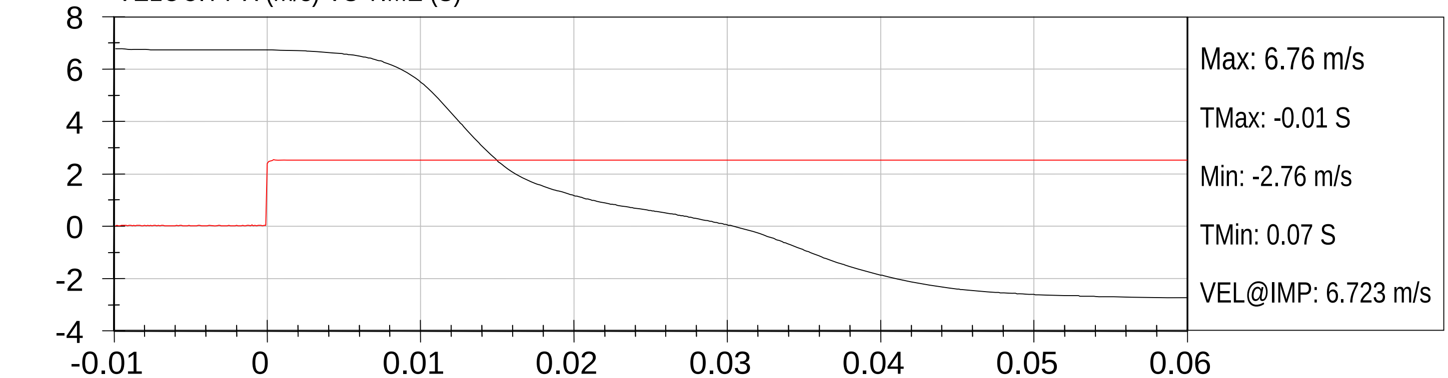
Location: S2H11

HEAD X ACCELERATION (G's) VS TIME (S)

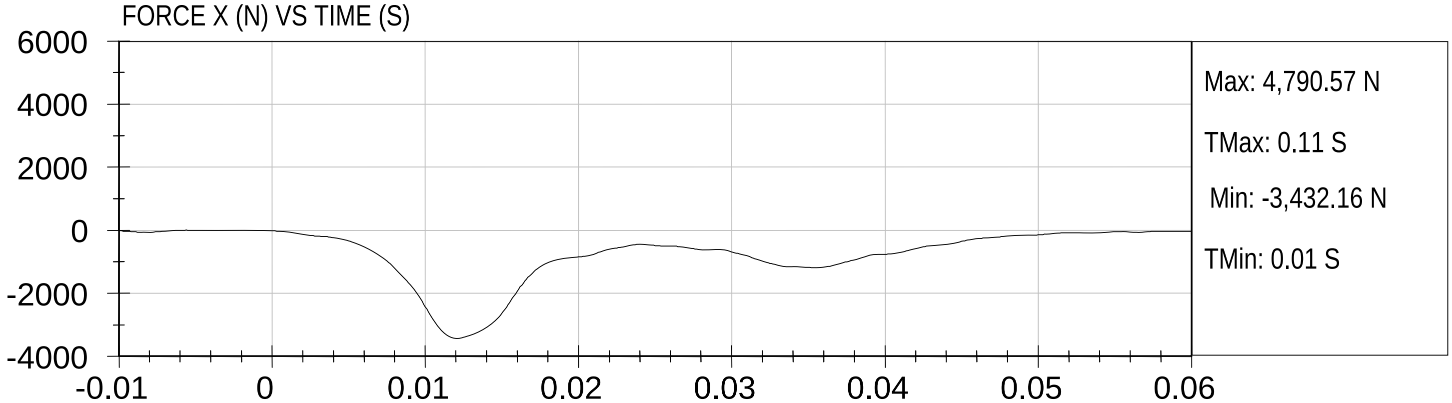
Hic: 164.07 T1: 8.90 ms T2: 16.40 ms



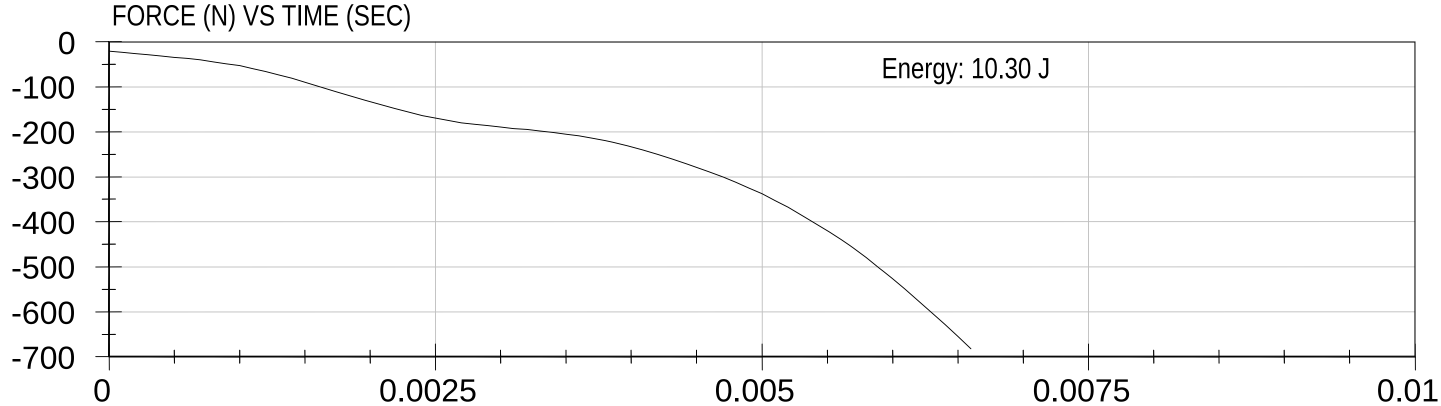
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



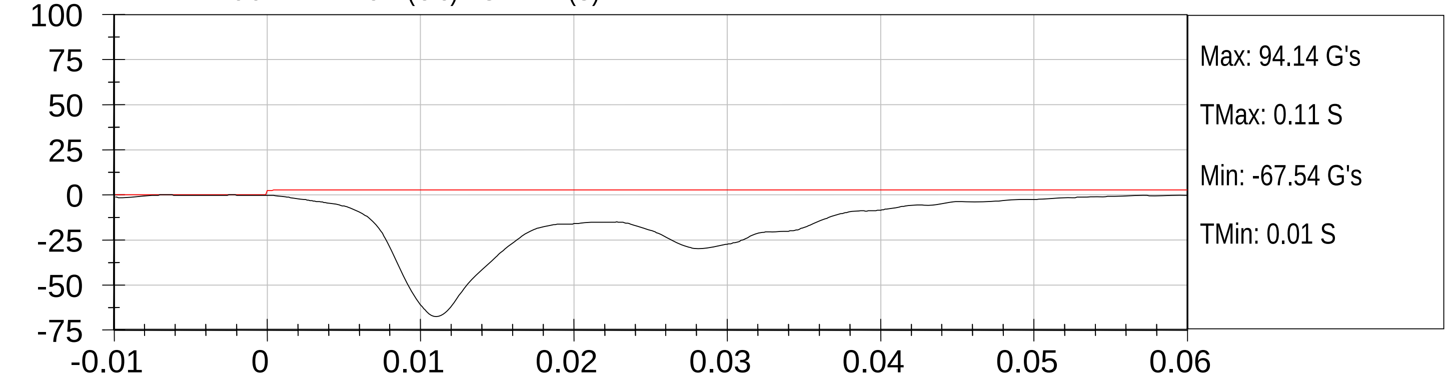
HEAD FORM IMPACT (6.69 m/s) | Test Date: 9-29-2011

Vehicle: 2012 Bluebird All American D3 RE

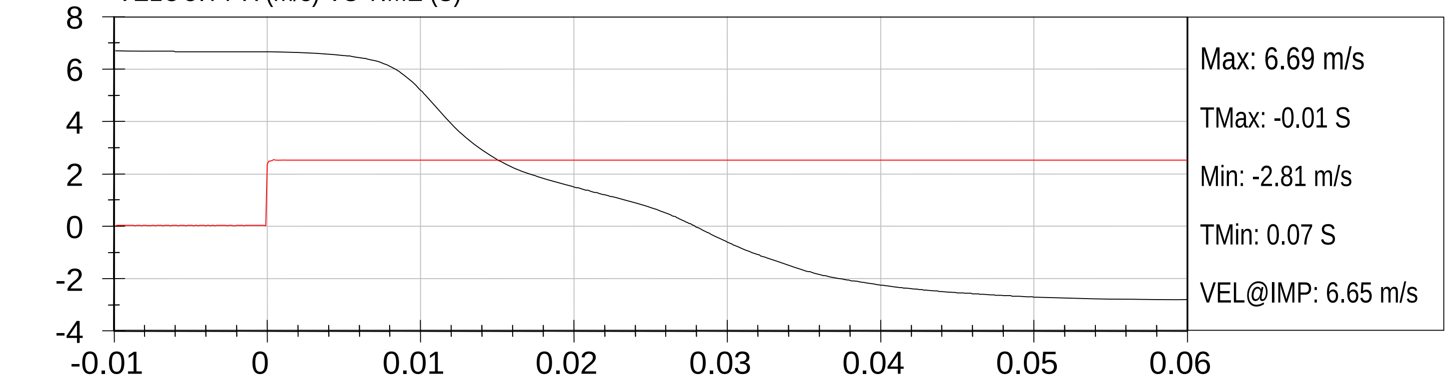
NHTSA #: CC0901 | speed trap: 6.66 m/s | Location: S2H12

Hic: 156.56 | T1: 103.40 ms | T2: 106.70 ms

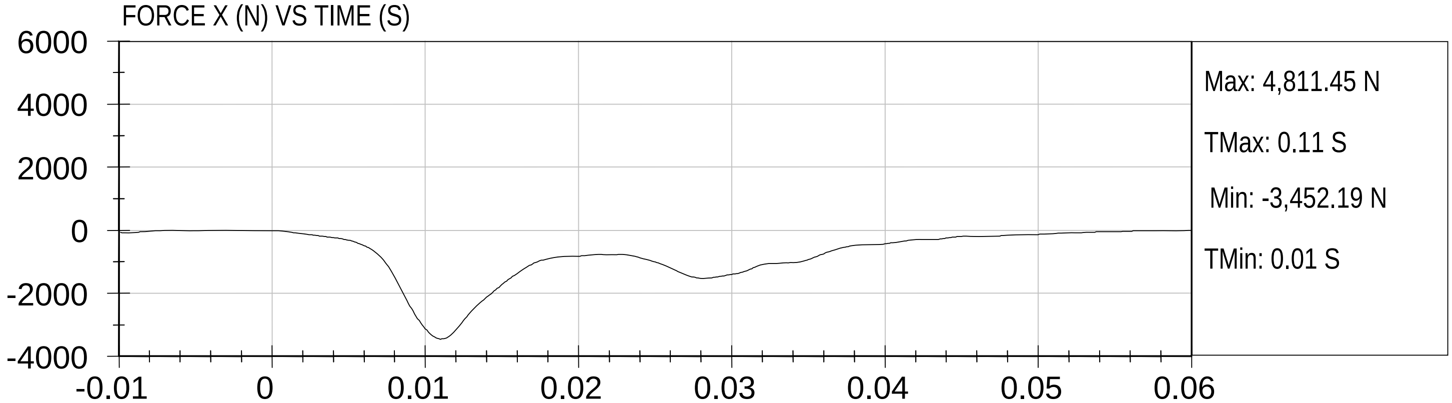
HEAD X ACCELERATION (G's) VS TIME (S)



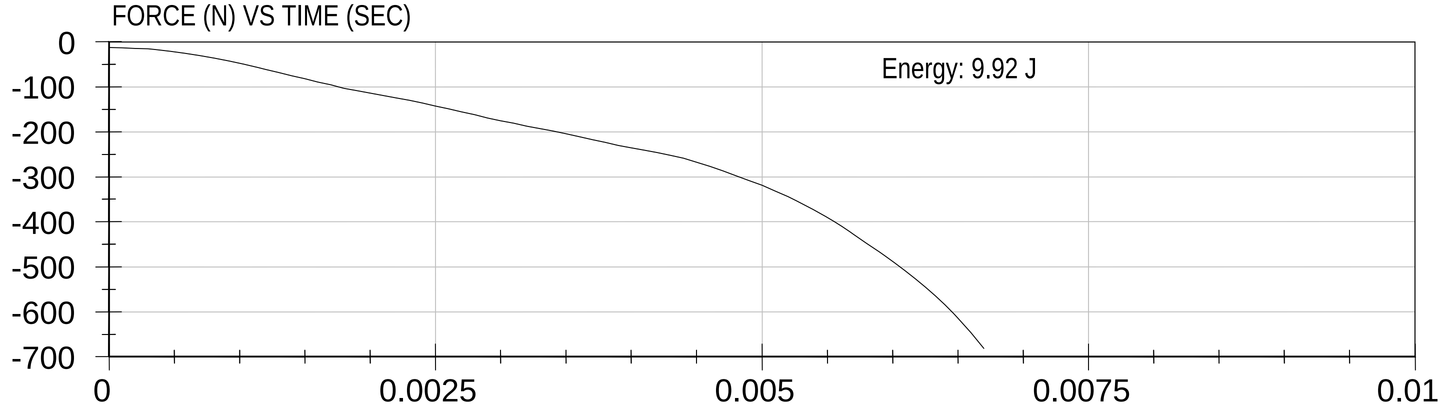
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



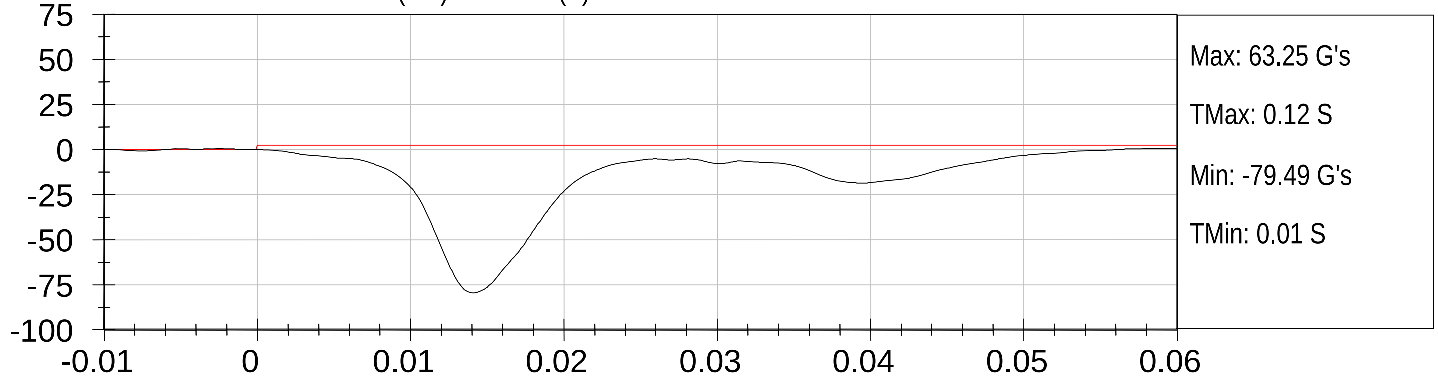
FORCE (N) VS TIME (SEC)



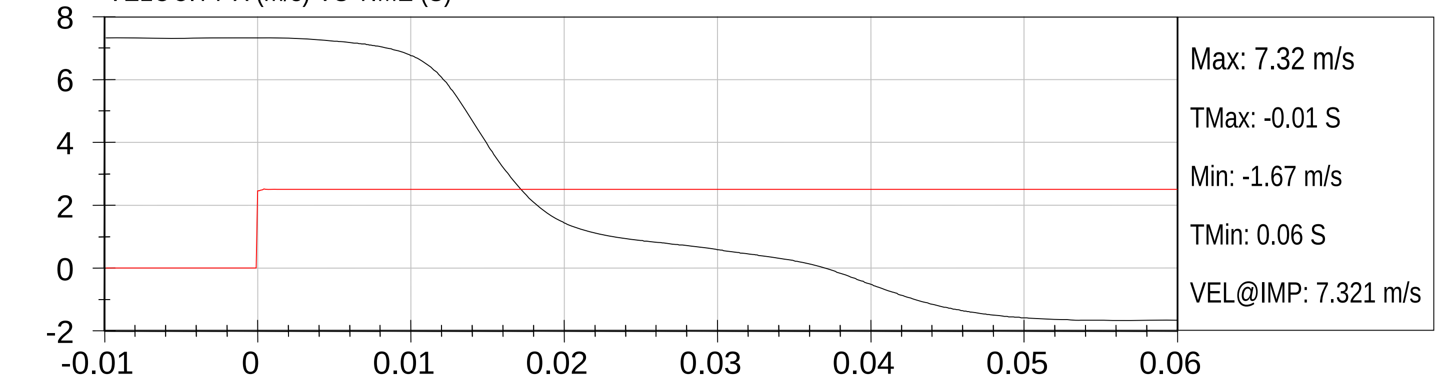
HEAD FORM IMPACT (6.69 m/s)
Test Date: 9-29-2011
Vehicle: 2012 Bluebird All American D3 RE
Location: S2H13
NHTSA #: CC0901 speed trap: 6.69 m/s

Hic: 233.18 T1: 11.20 ms T2: 18.60 ms

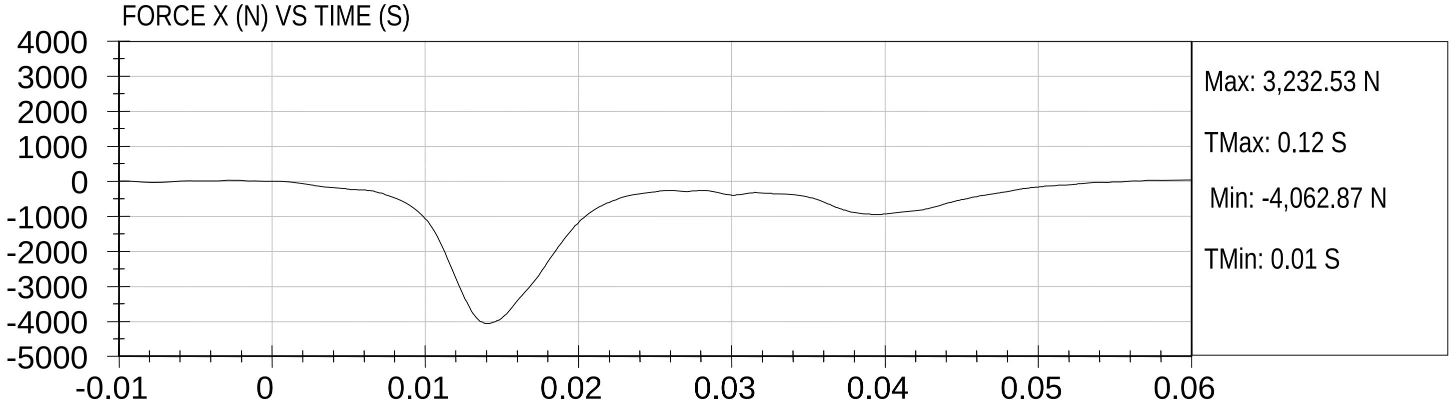
HEAD X ACCELERATION (G's) VS TIME (S)



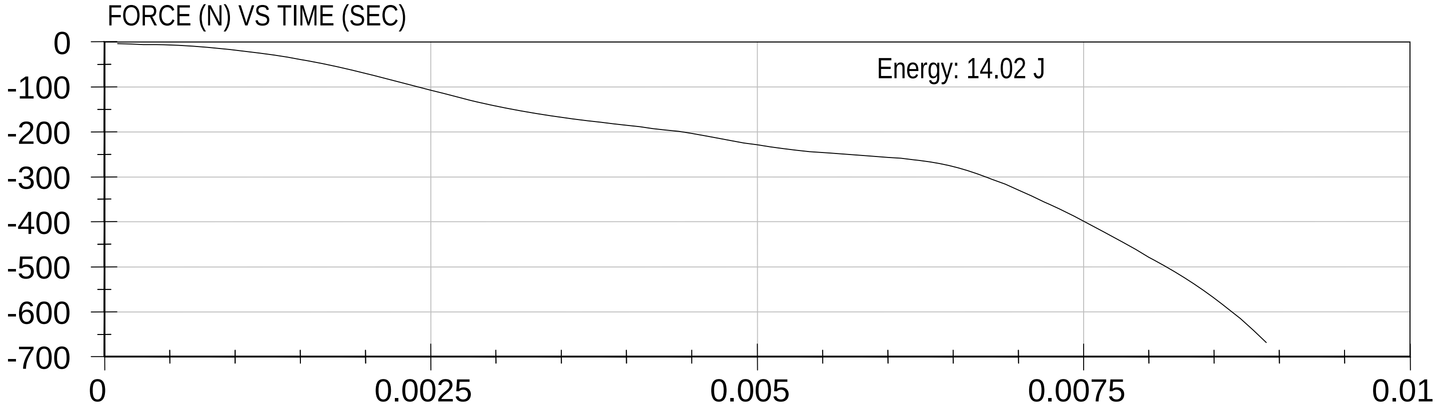
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



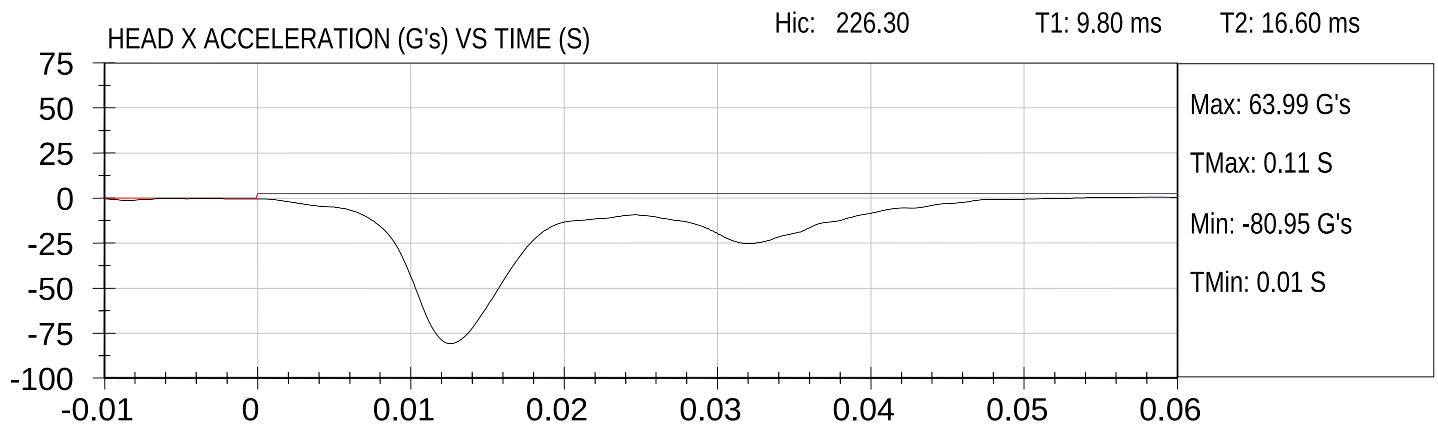
HEAD FORM IMPACT (6.69 m/s)

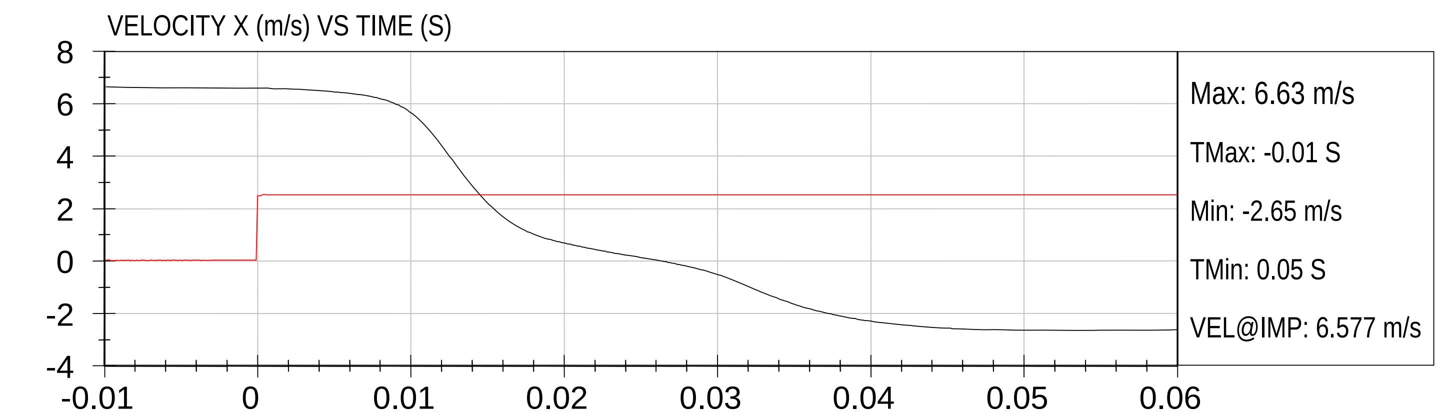
Test Date: 9-29-2011

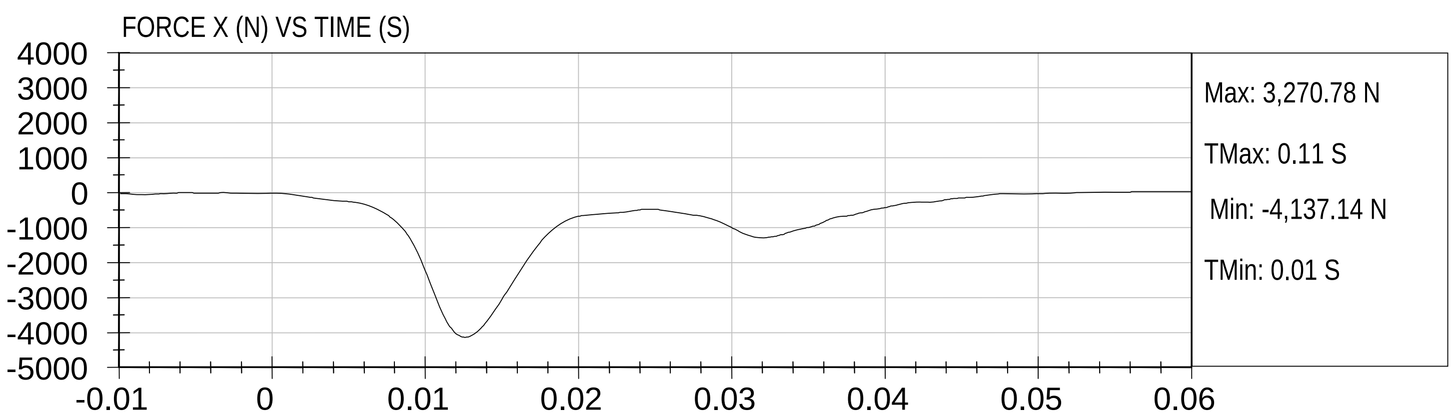
Vehicle: 2012 Bluebird All American D3 RE

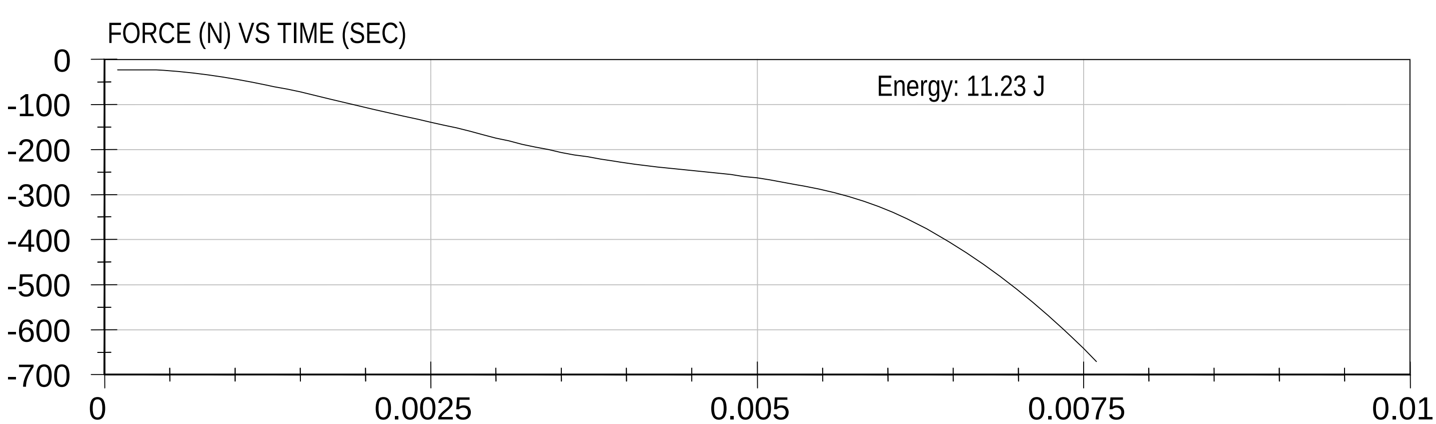
Location: S2H14

NHTSA #: CC0901 speed trap: 6.66 m/s









HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-14-2011

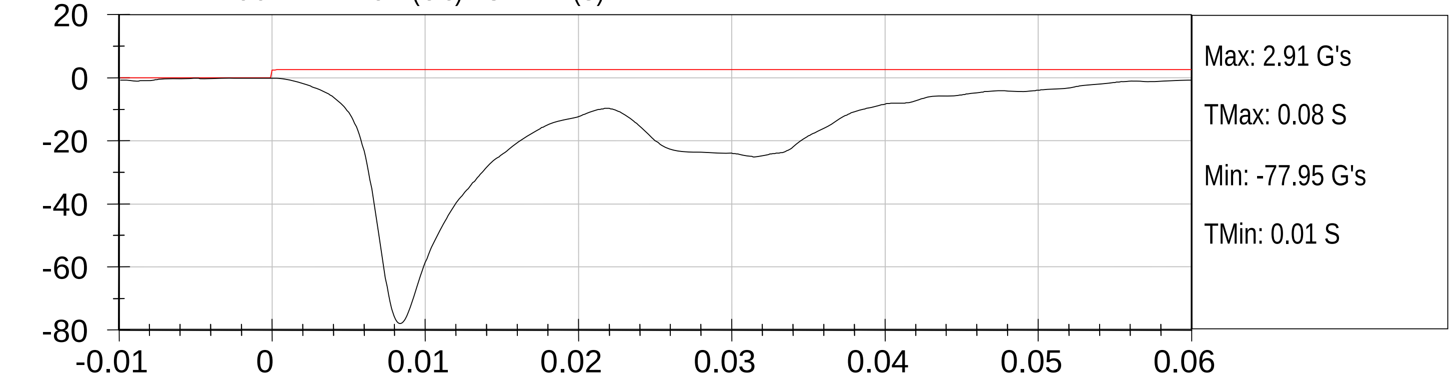
Vehicle: 2012 Bluebird All American D3 RE

Location: S7H8

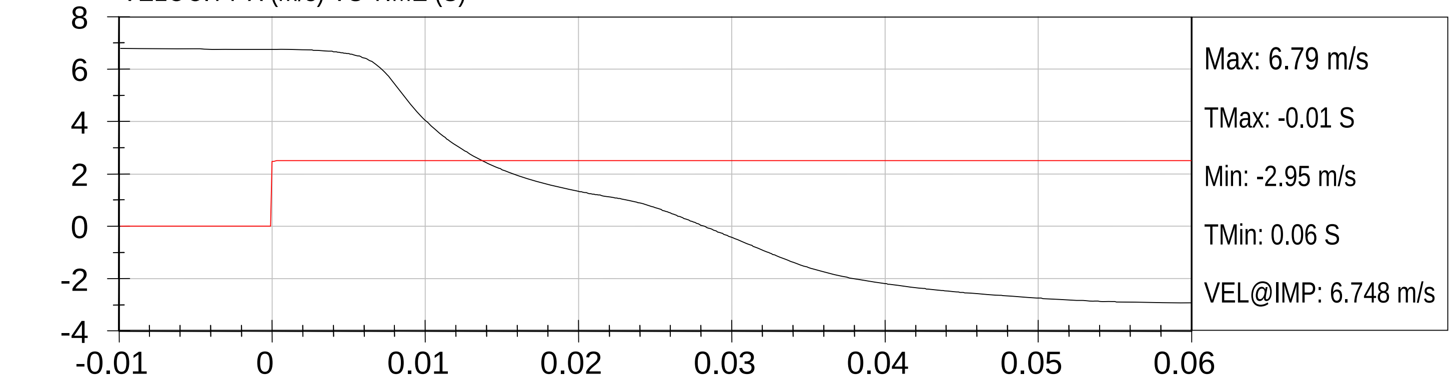
NHTSA#: CC0901 speed trap: 6.63 m/s

HEAD X ACCELERATION (G's) VS TIME (S)

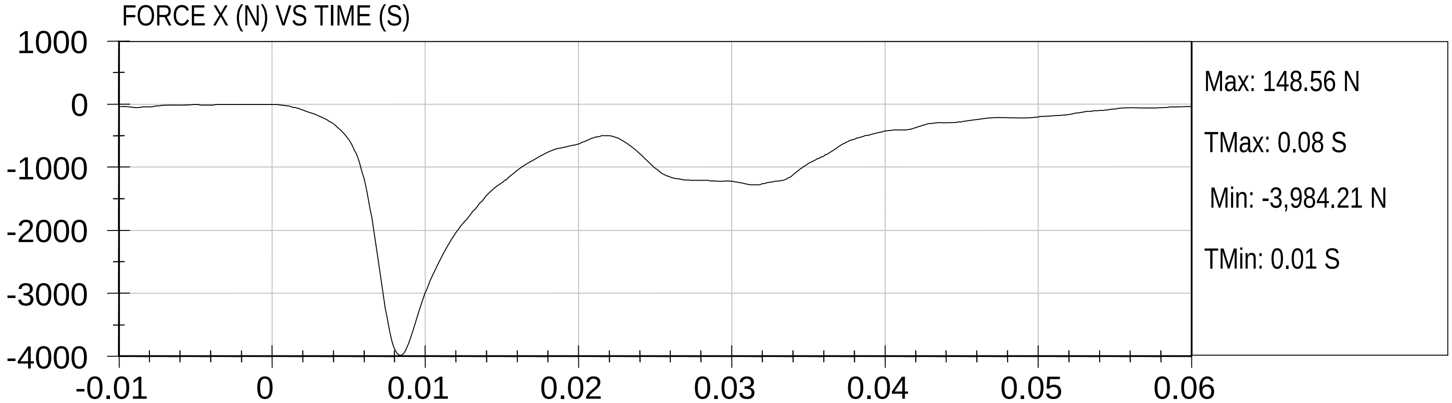
Hic: 151.23 T1: 6.40 ms T2: 13.20 ms



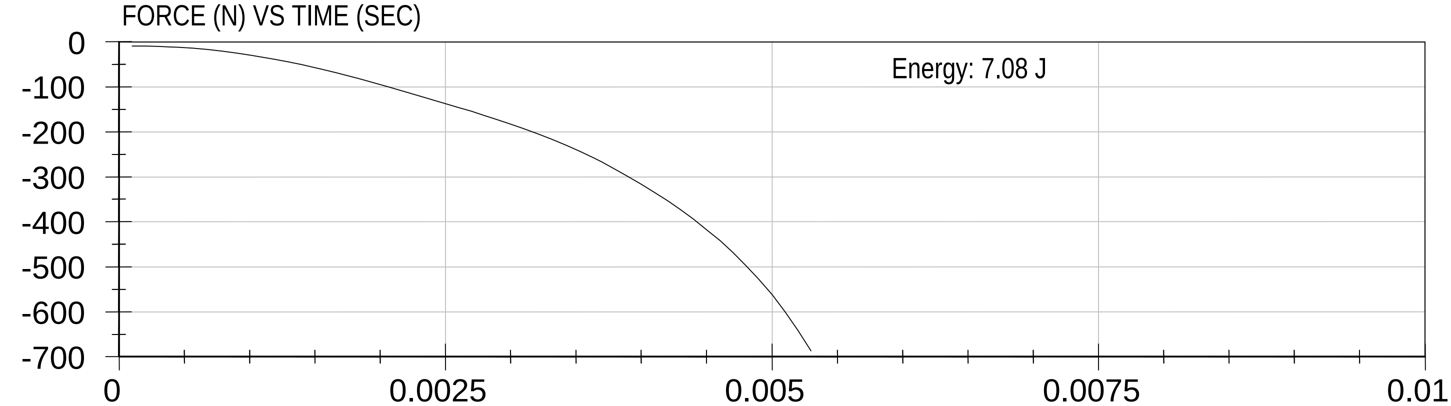
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



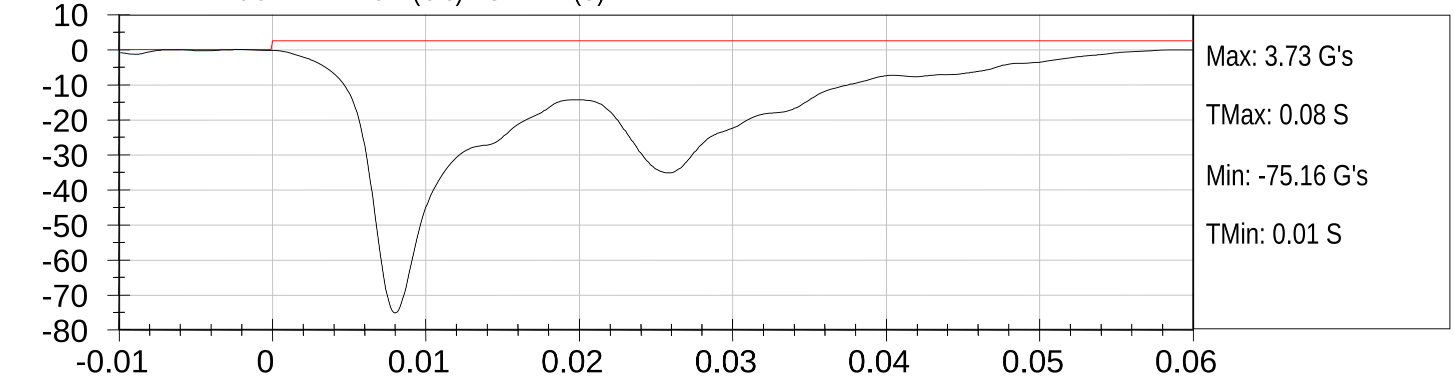
FORCE (N) VS TIME (SEC)



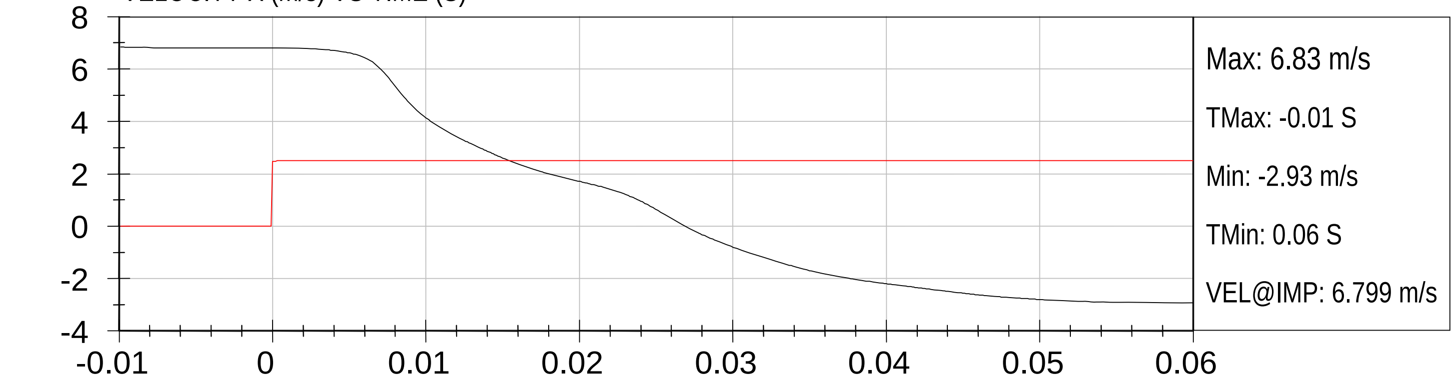
	HEAD FORM IMPACT (6.69 m/s)	Test Date: 10-14-2011
	Vehicle: 2012 Bluebird All American D3 RE	Location: S7H9
	NHTSA #: CC0901 speed trap: 6.65 m/s	

Hic: 128.11 T1: 5.50 ms T2: 33.60 ms

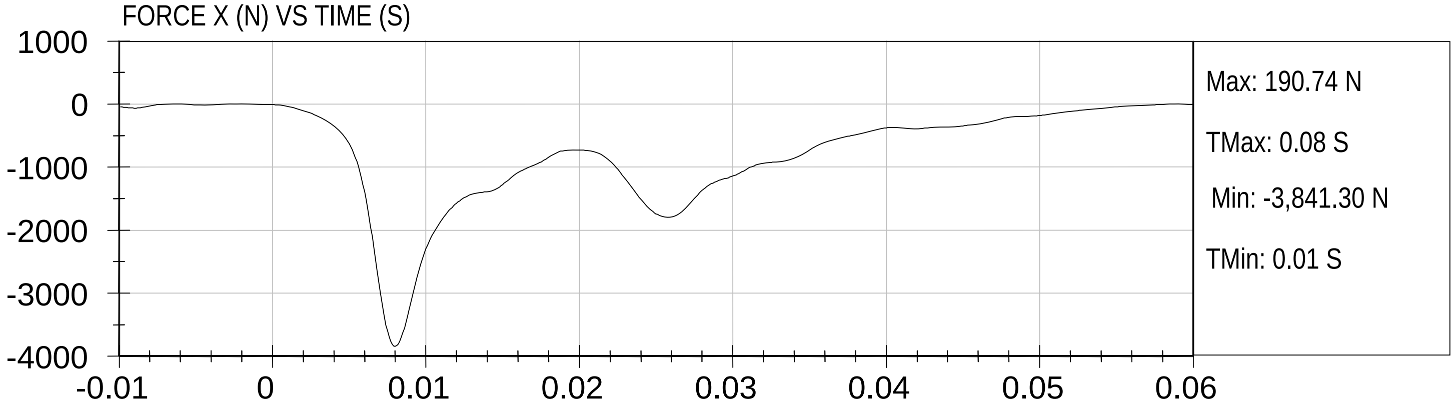
HEAD X ACCELERATION (G's) VS TIME (S)



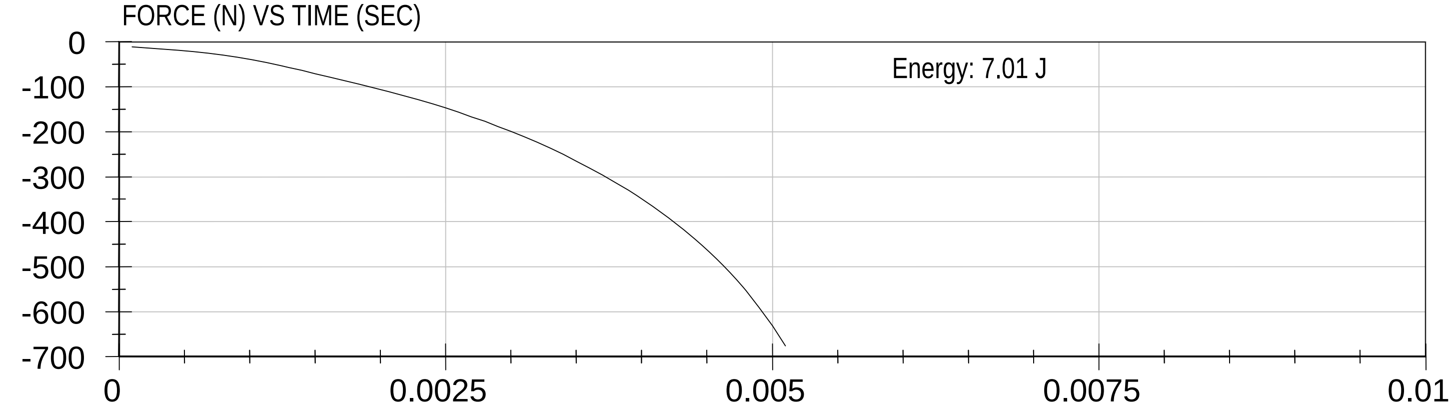
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



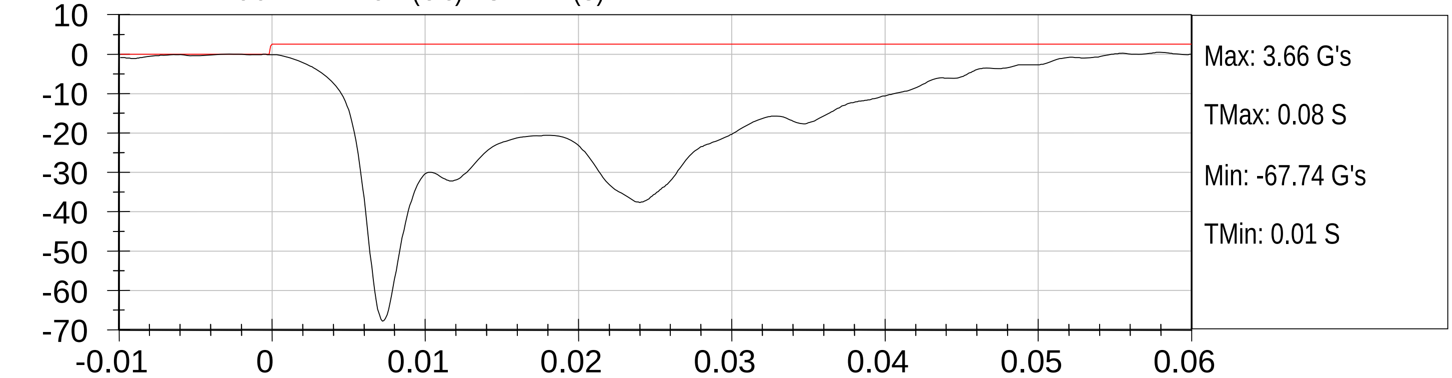
HEAD FORM IMPACT (6.69 m/s) Test Date: 10-14-2011

Vehicle: 2012 Bluebird All American D3 RE

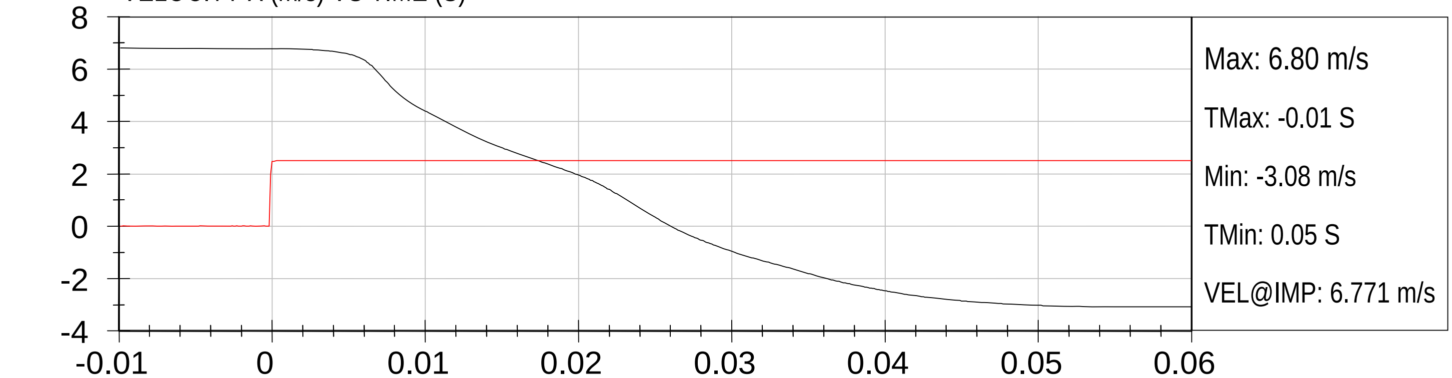
NHTSA#: CC0901 speed trap: 6.63 m/s Location: S7H10

HEAD X ACCELERATION (G's) VS TIME (S)

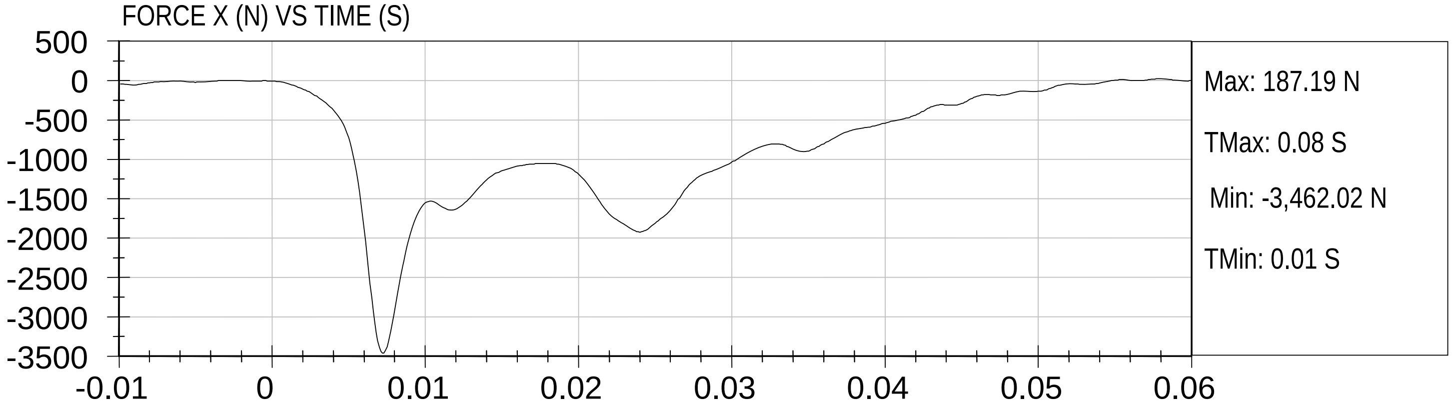
Hic: 131.22 T1: 5.30 ms T2: 30.90 ms



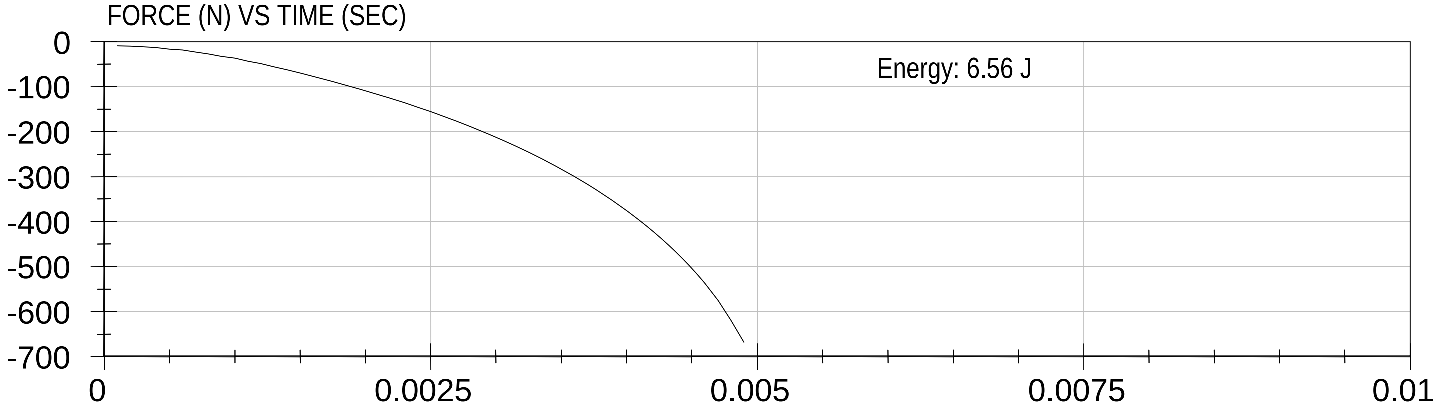
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-14-2011

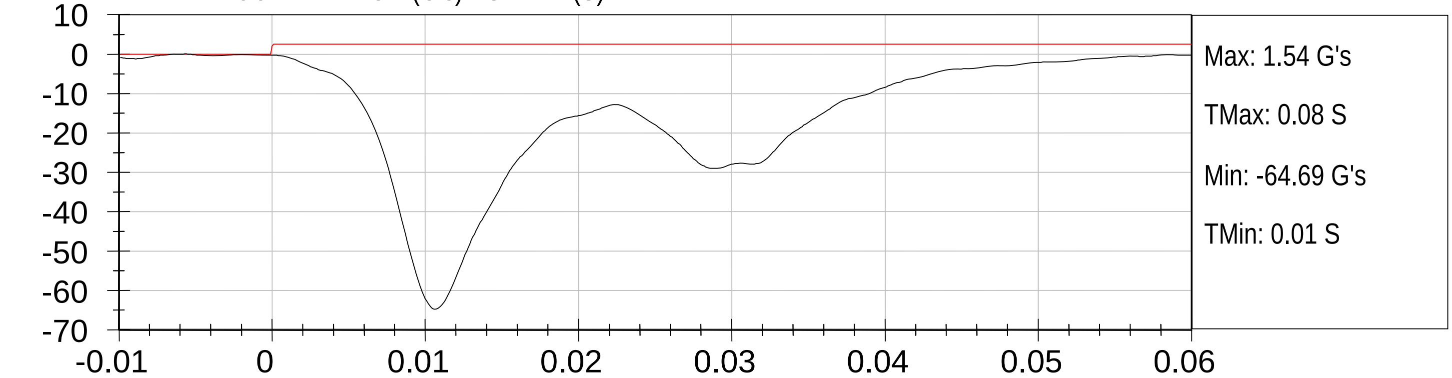
Vehicle: 2012 Bluebird All American D3 RE

NHTSA#: CC0901 speed trap: 6.68 m/s

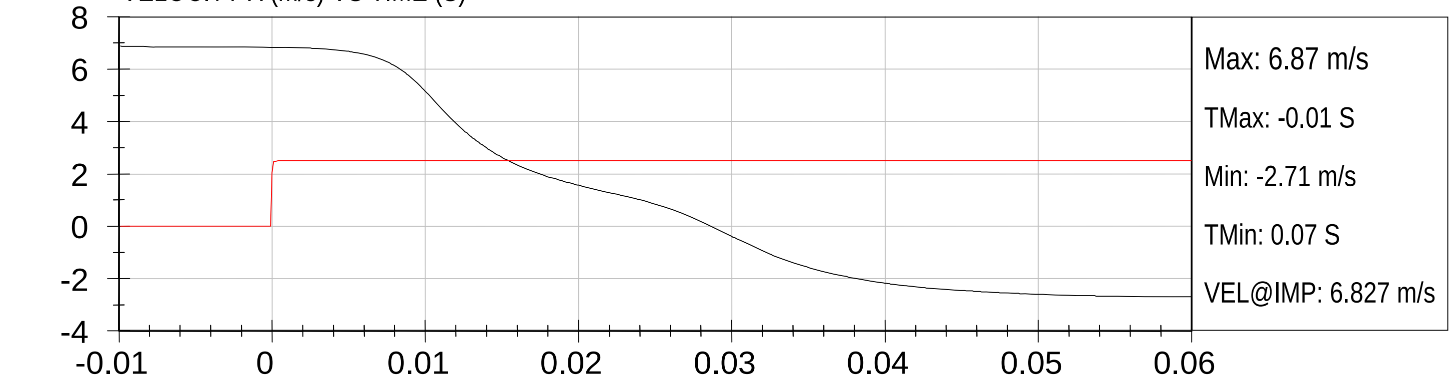
Location: S7H11

HEAD X ACCELERATION (G's) VS TIME (S)

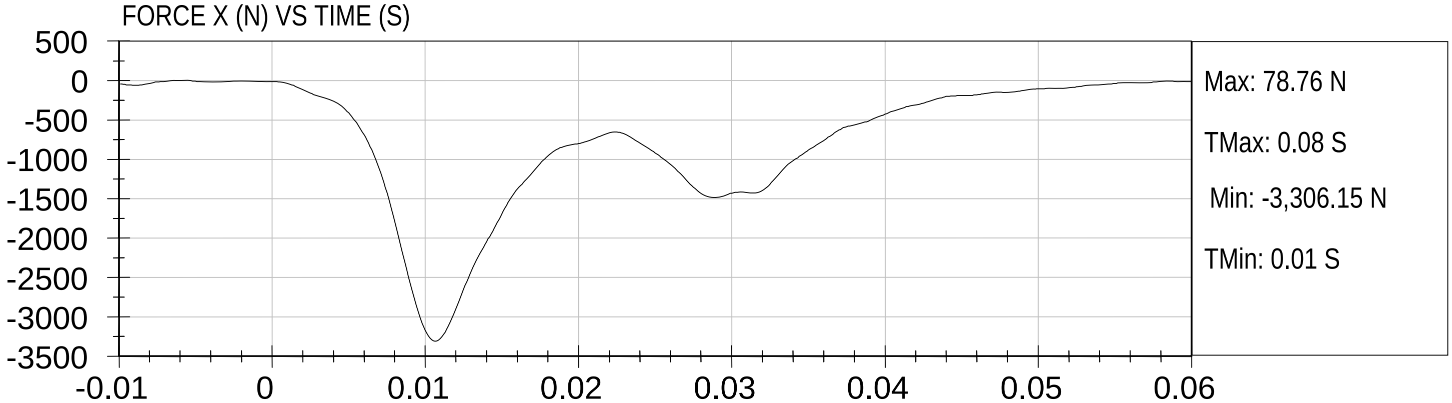
Hic: 130.67 T1: 7.60 ms T2: 15.60 ms



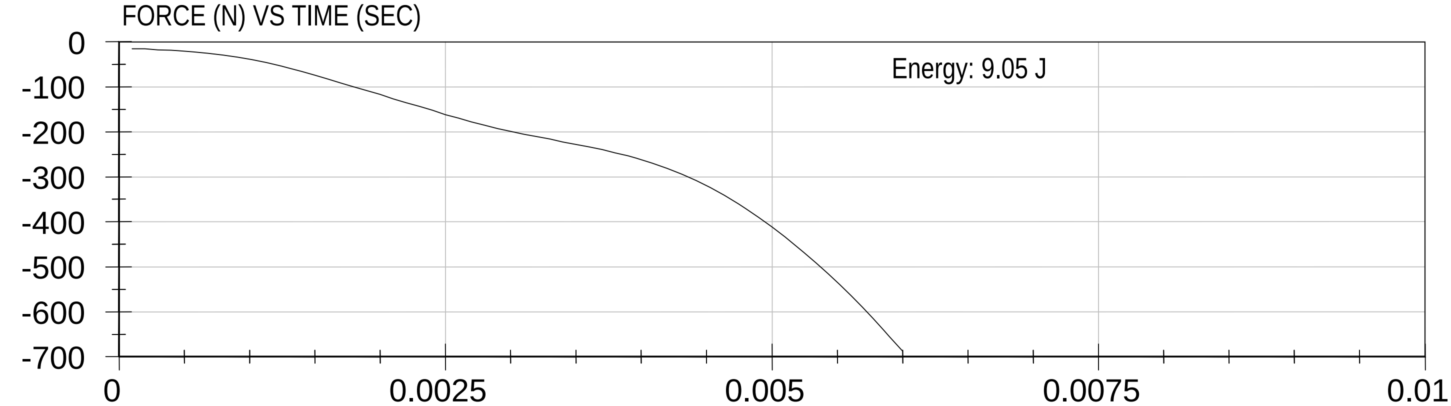
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)

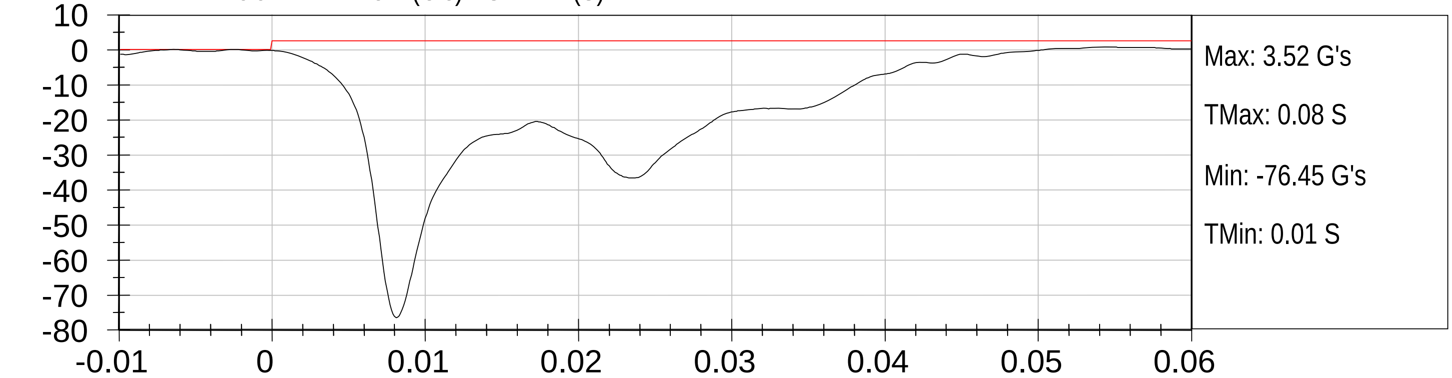


HEAD FORM IMPACT (6.69 m/s)
Test Date: 10-14-2011

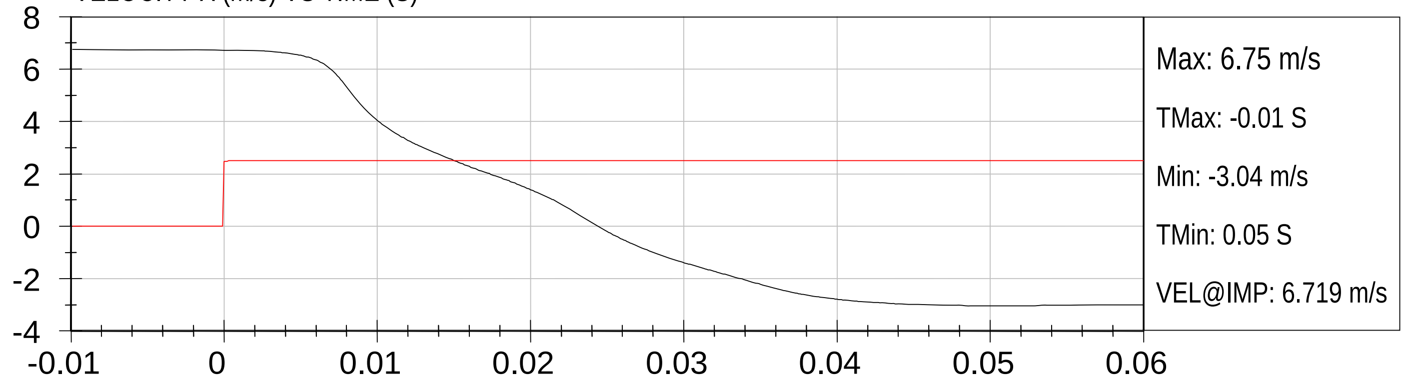
Vehicle: 2012 Bluebird All American D3 RE
NHTSA#: CC0901 speed trap: 6.66 m/s
Location: S7H12

HEAD X ACCELERATION (G's) VS TIME (S)

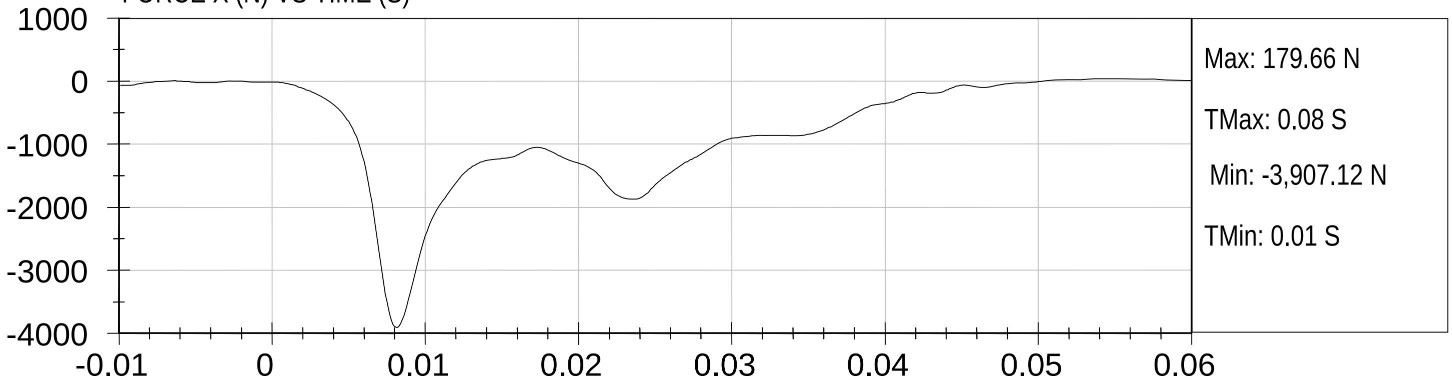
Hic: 149.30 T1: 5.70 ms T2: 28.90 ms



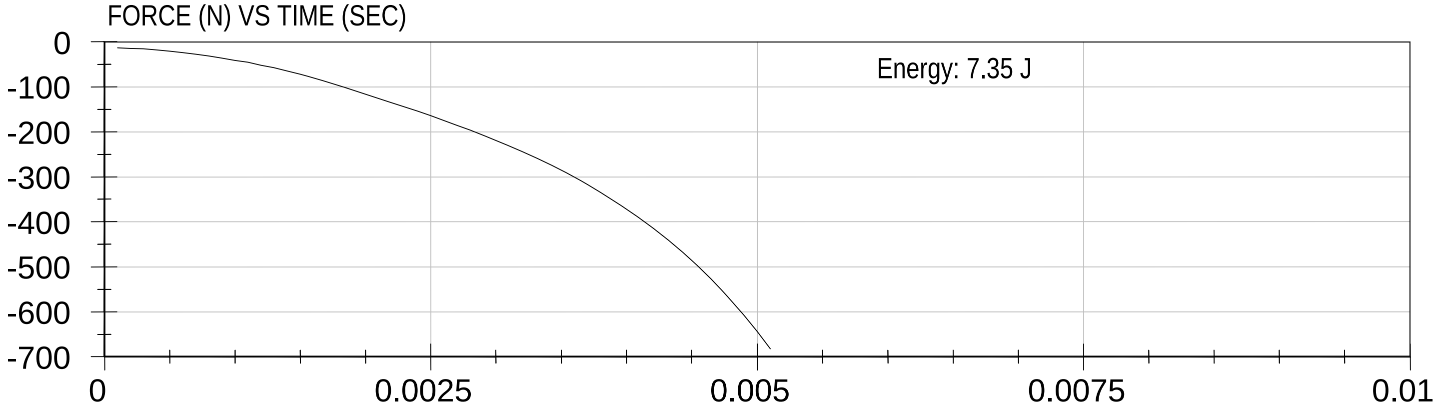
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



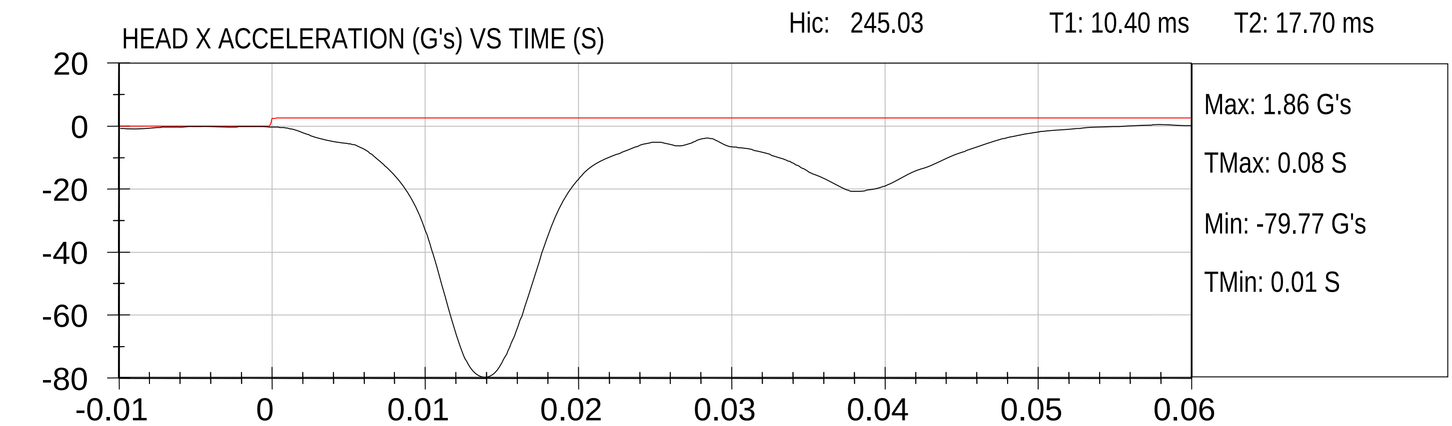
HEAD FORM IMPACT (6.69 m/s)

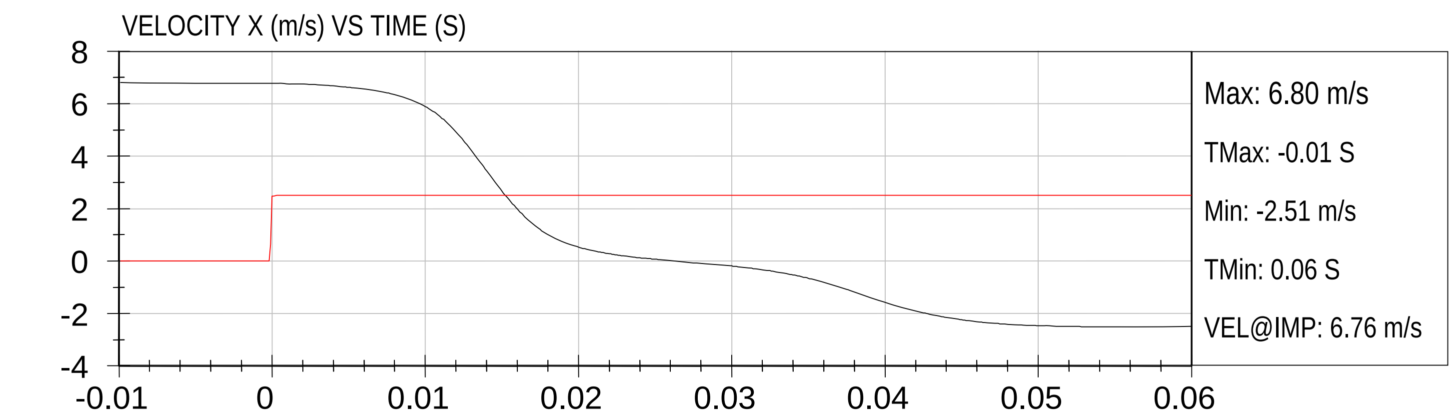
Test Date: 10-14-2011

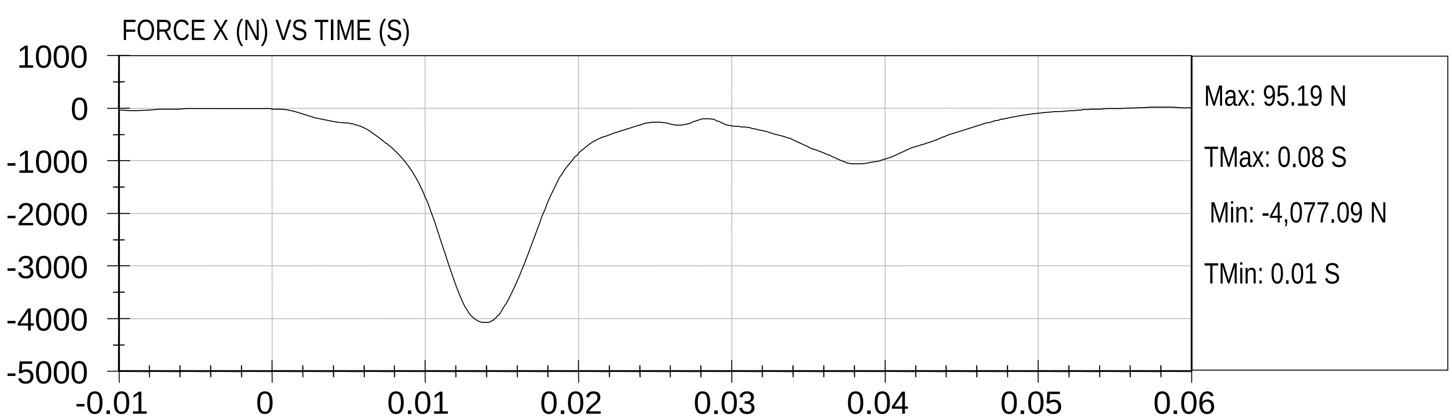
Vehicle: 2012 Bluebird All American D3 RE

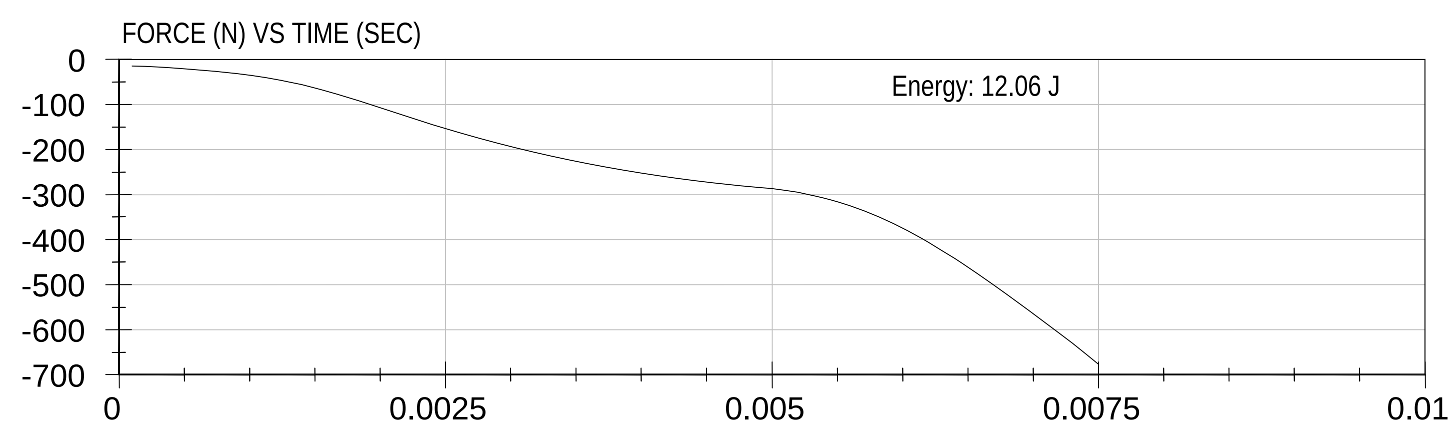
NHTSA#: CC0901 speed trap: 6.68 m/s

Location: S7H13









HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-14-2011

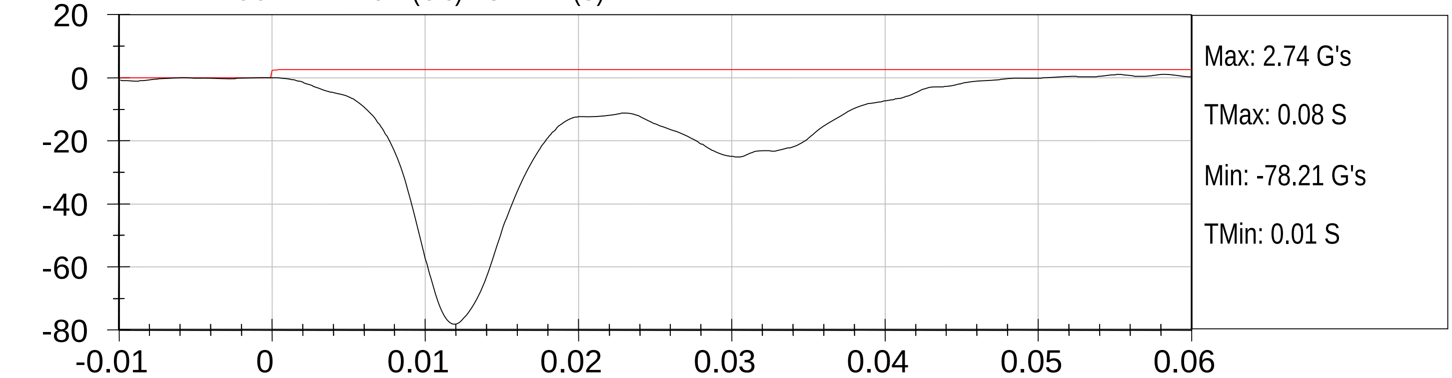
Vehicle: 2012 Bluebird All American D3 RE

NHTSA#: CC0901 speed trap: 6.70 m/s

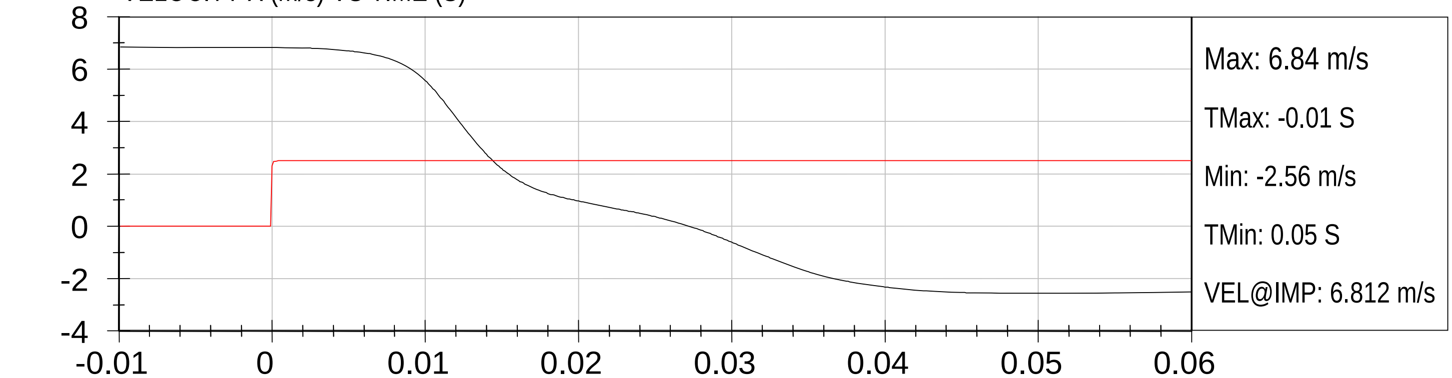
Location: S7H14

Hic: 210.35 T1: 9.00 ms T2: 15.90 ms

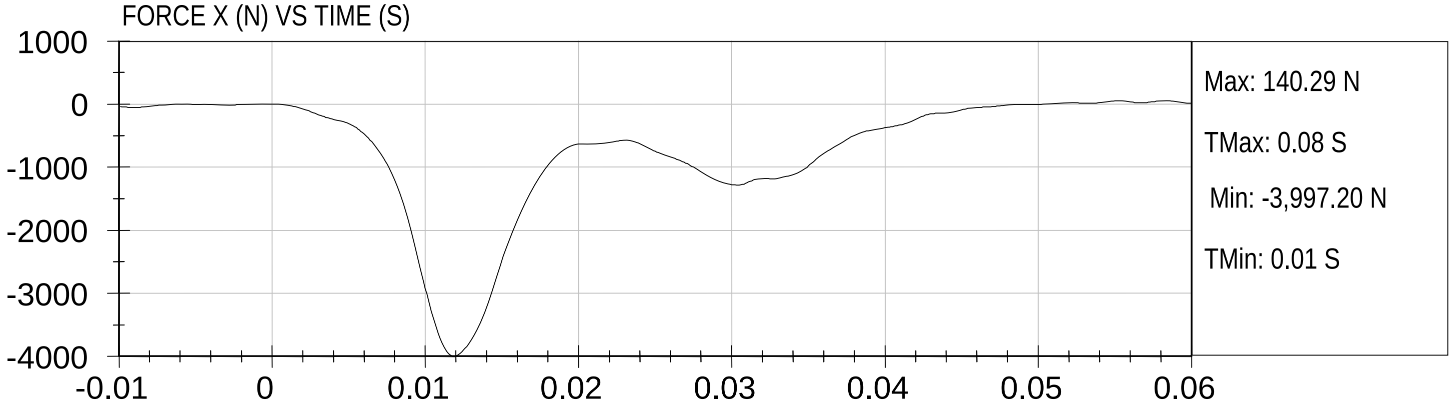
HEAD X ACCELERATION (G's) VS TIME (S)



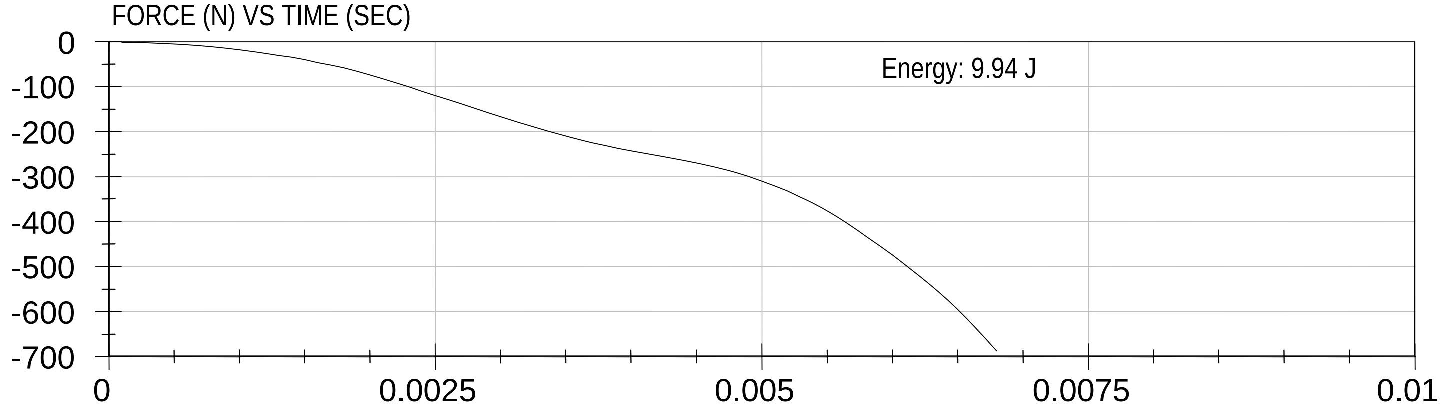
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-19-2011

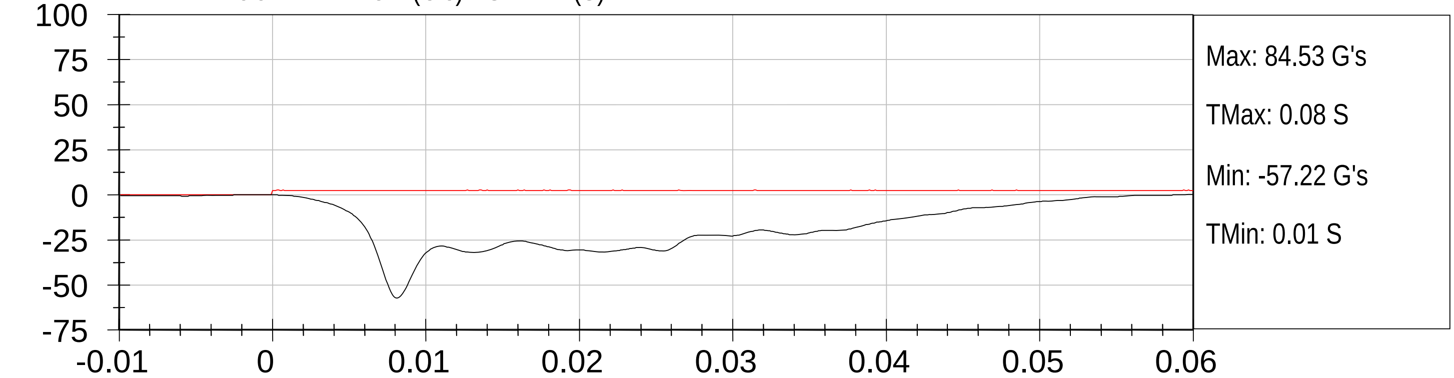
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.66 m/s

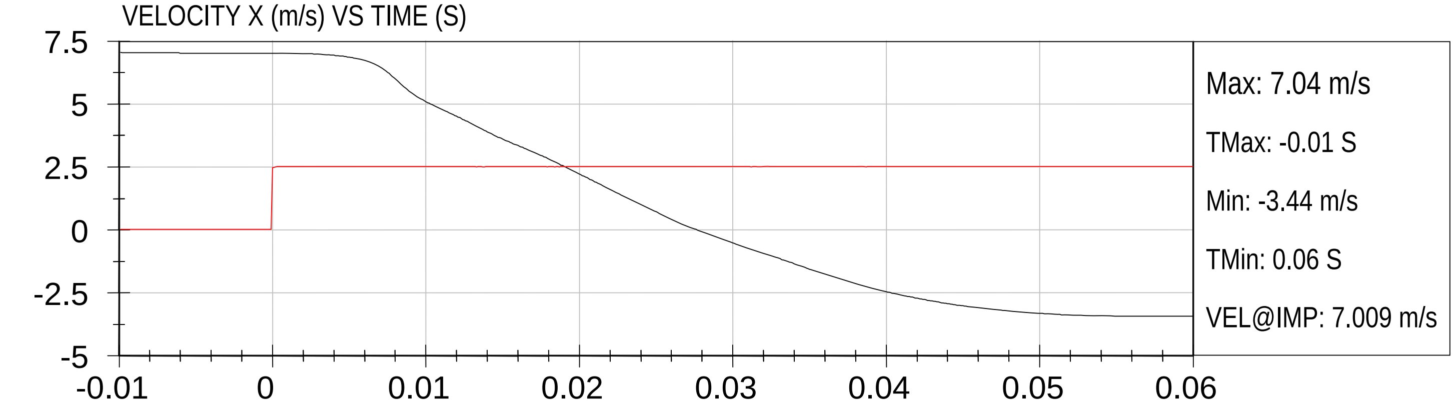
Location: S15H8

Hic: 135.81 T1: 5.90 ms T2: 38.60 ms

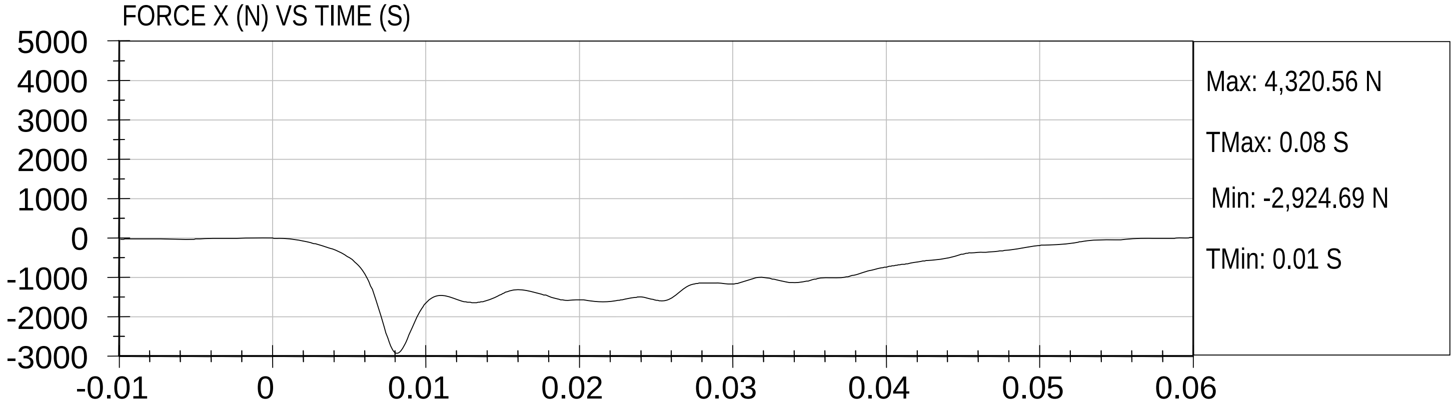
HEAD X ACCELERATION (G's) VS TIME (S)



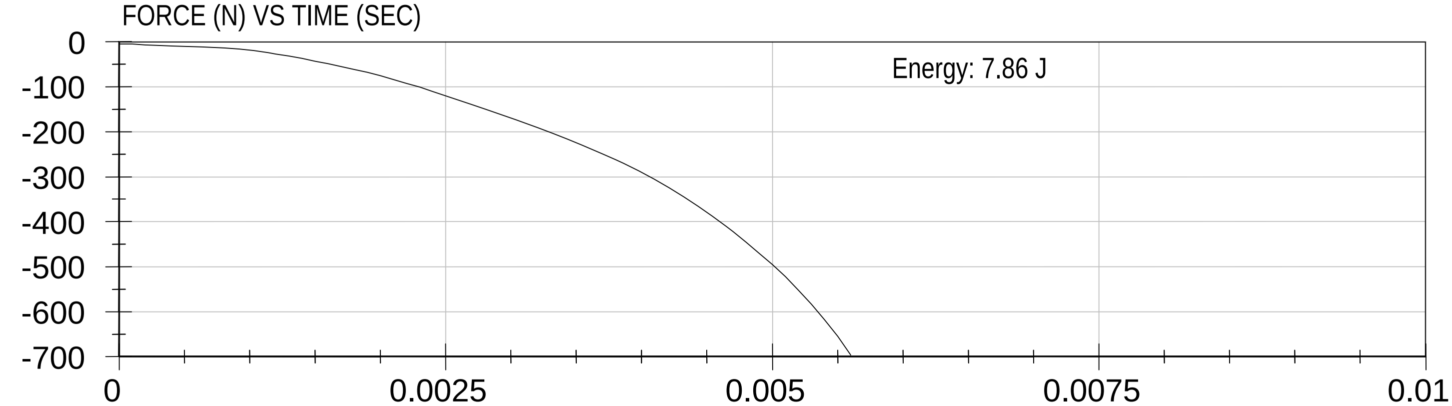
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-19-2011

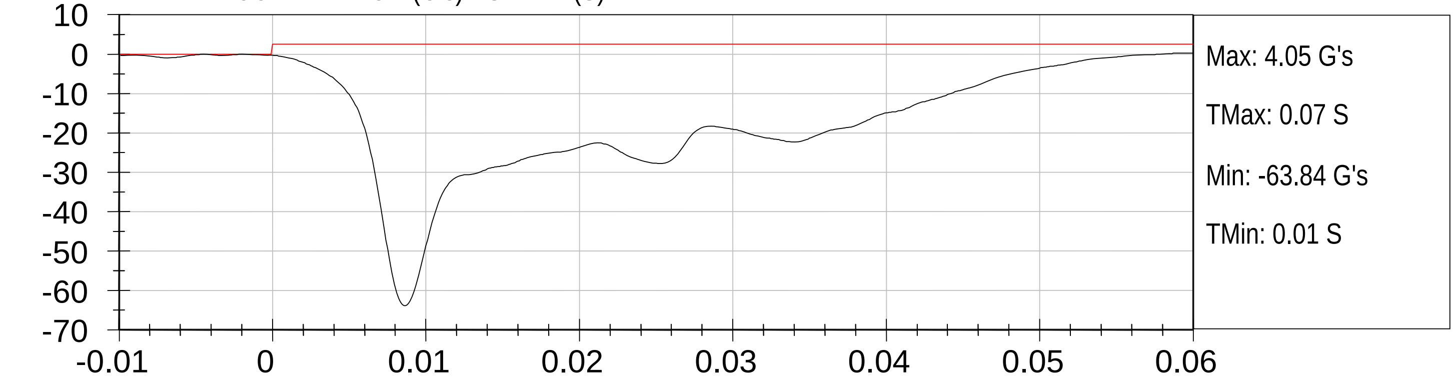
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.66 m/s

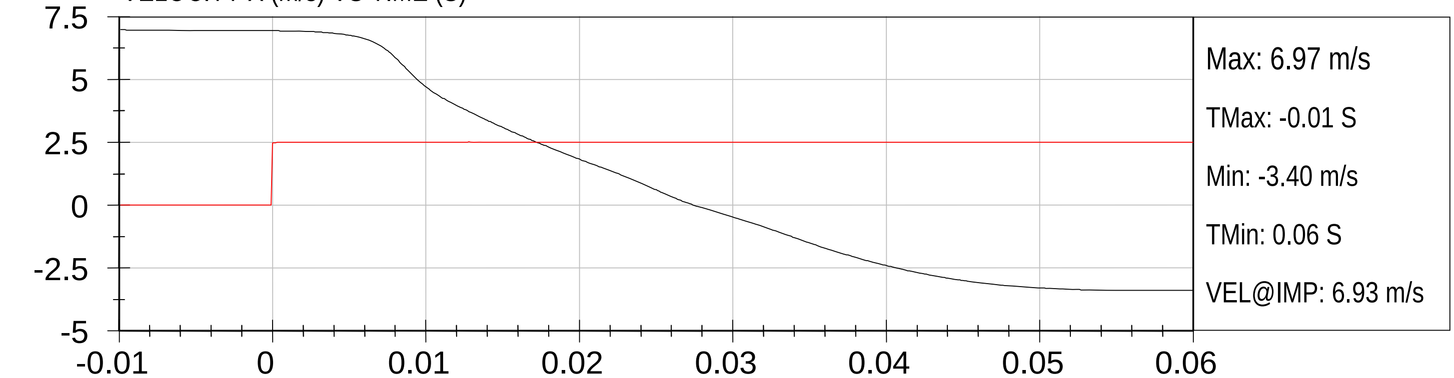
Location: S15H9

Hic: 129.62 T1: 5.80 ms T2: 39.00 ms

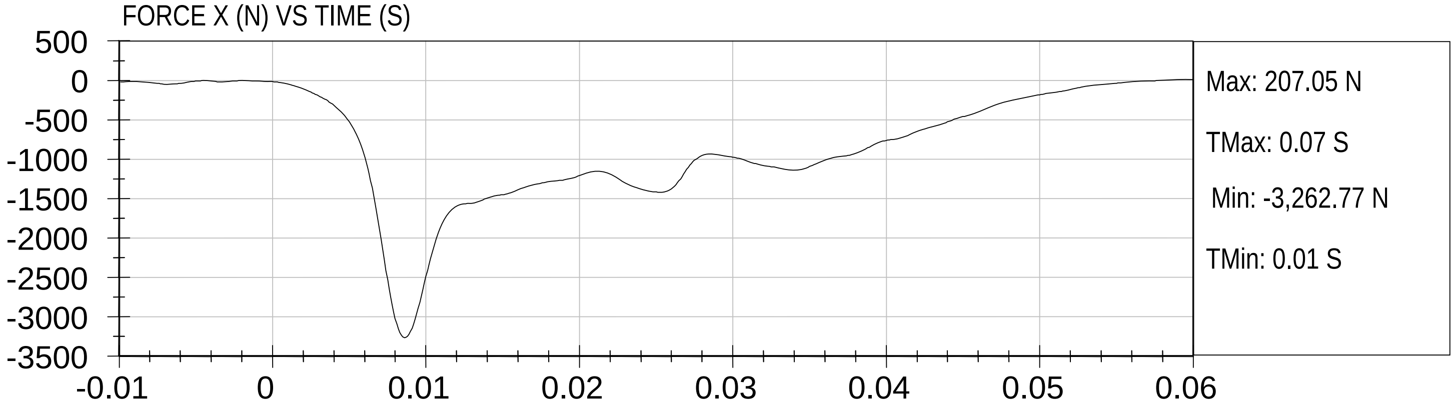
HEAD X ACCELERATION (G's) VS TIME (S)



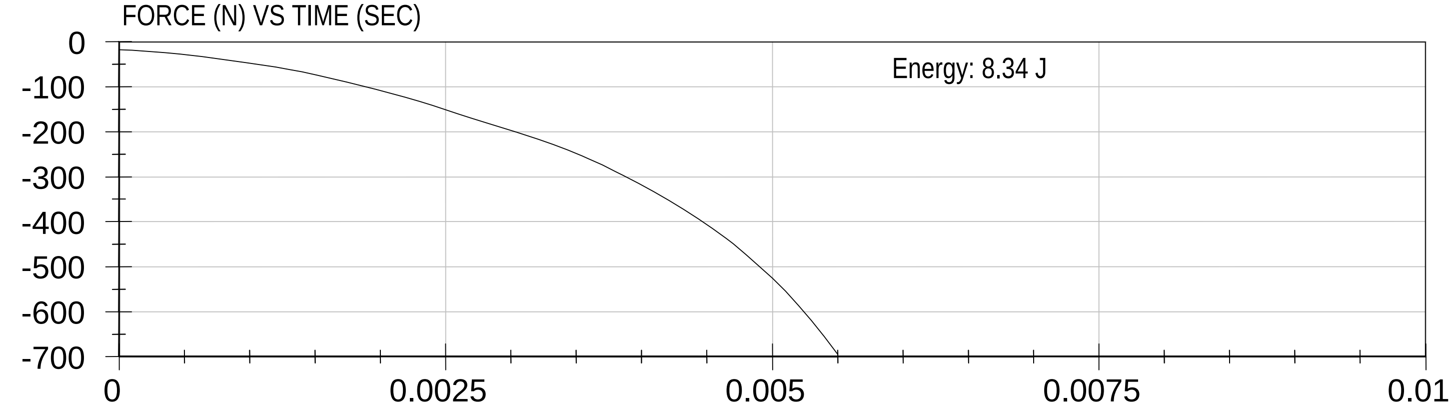
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Vehicle: 2012 Bluebird All American D3 RE

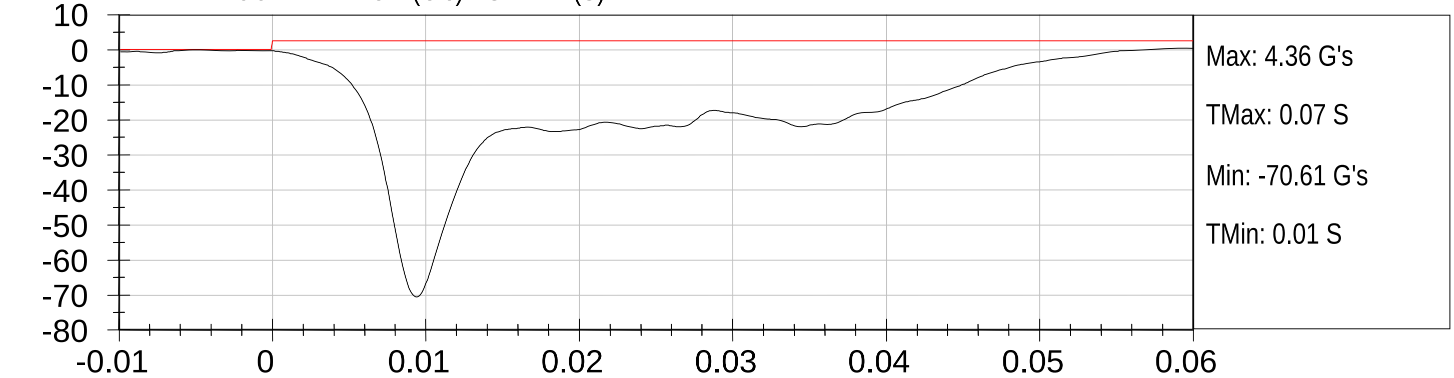
NHTSA #: CC0901 speed trap: 6.64 m/s

Test Date: 10-19-2011

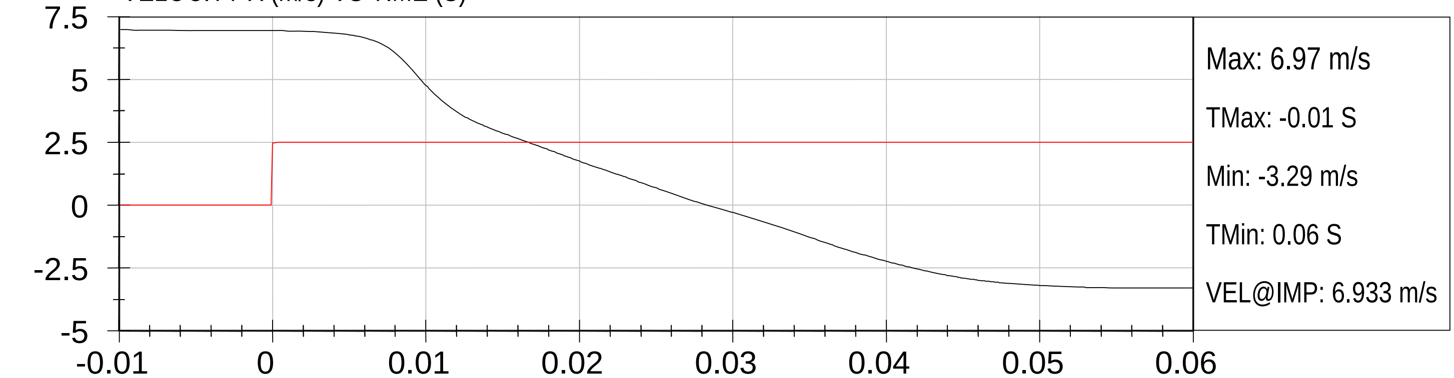
Location: S15H10

Hic: 124.61 T1: 6.00 ms T2: 40.60 ms

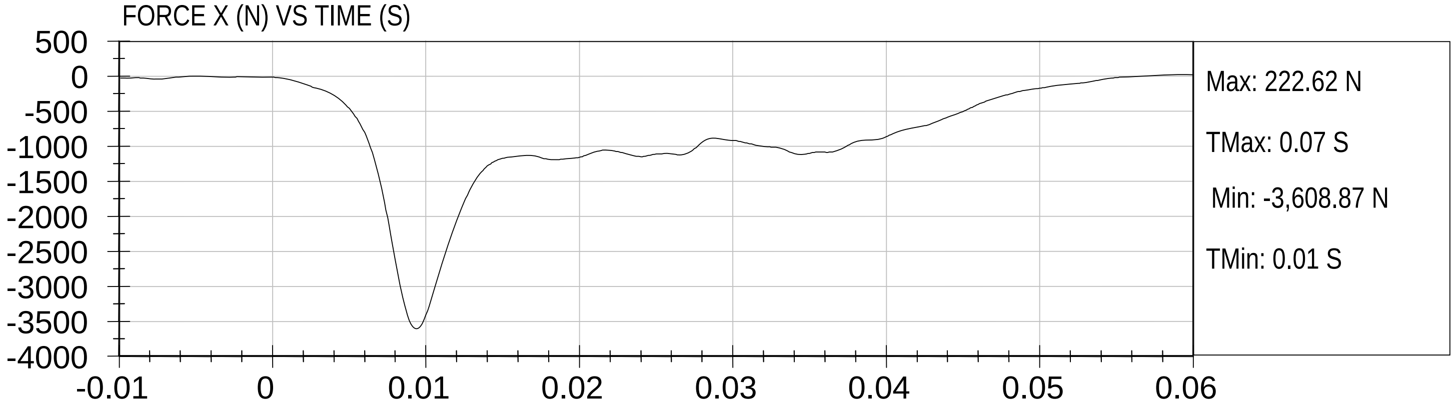
HEAD X ACCELERATION (G's) VS TIME (S)



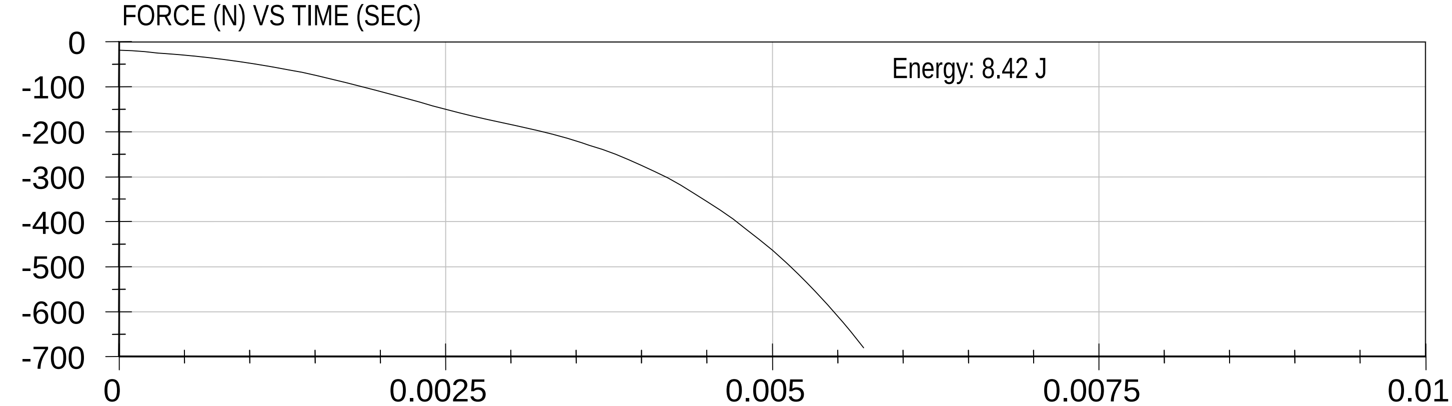
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-19-2011

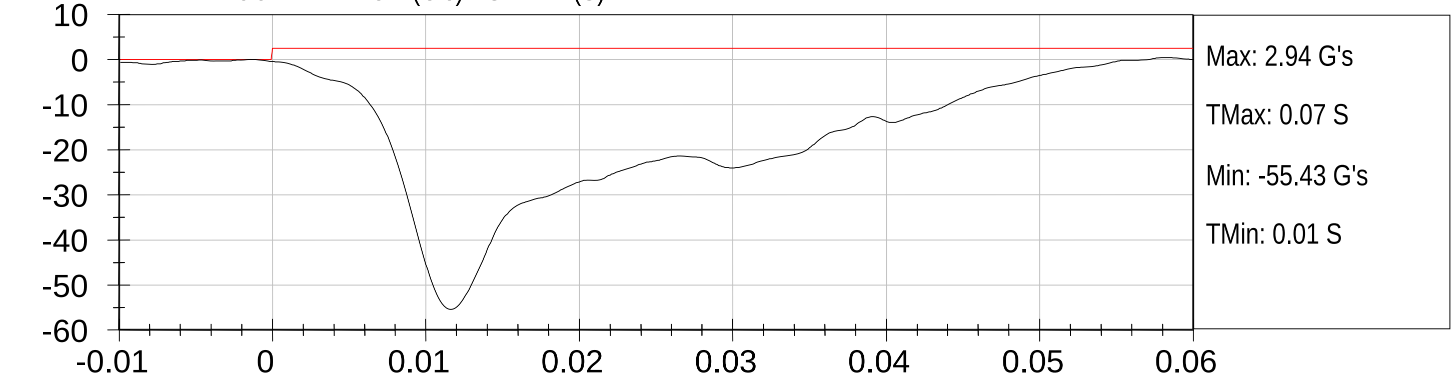
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.67 m/s

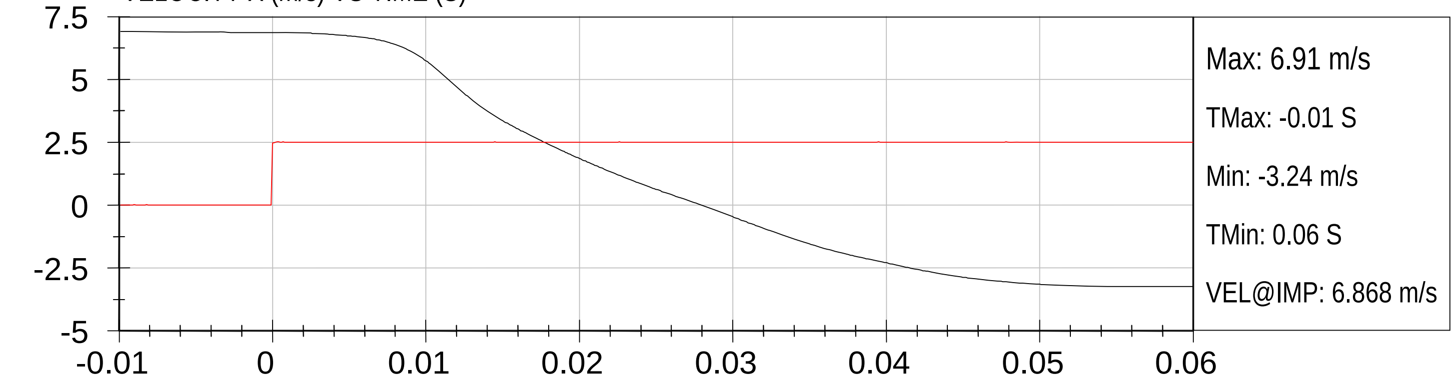
Location: S15H11

Hic: 133.17 T1: 7.60 ms T2: 35.70 ms

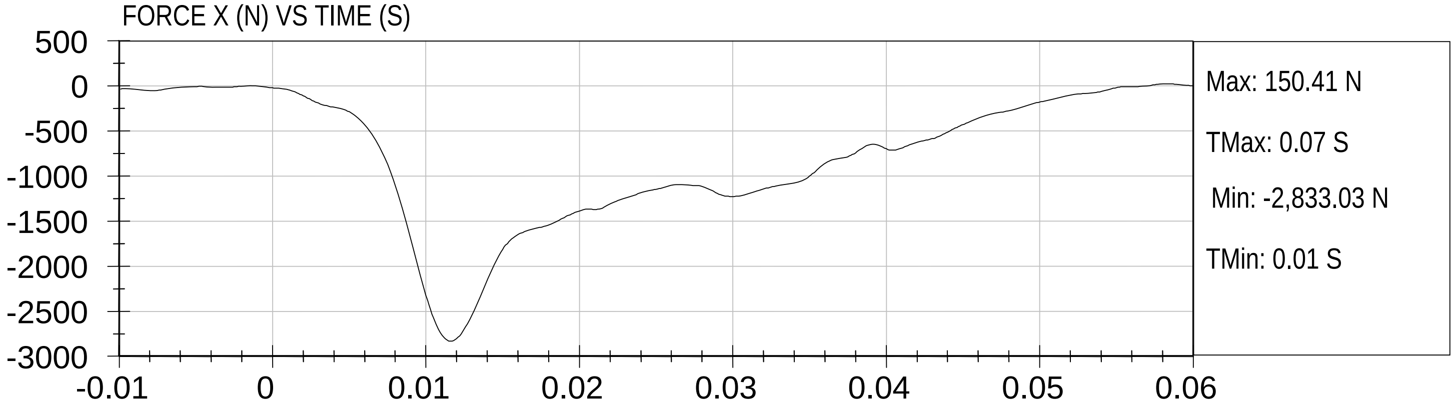
HEAD X ACCELERATION (G's) VS TIME (S)



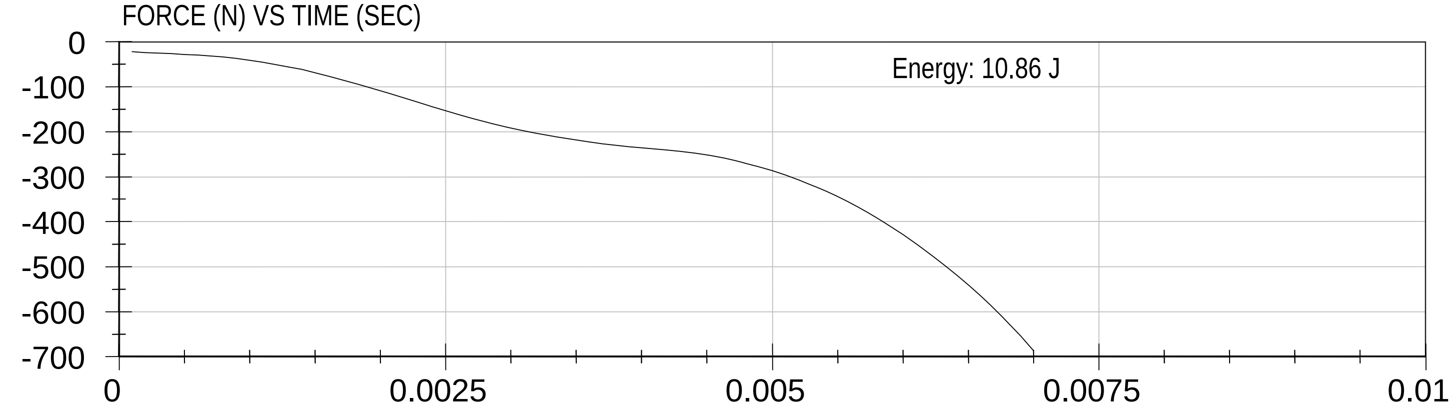
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-19-2011

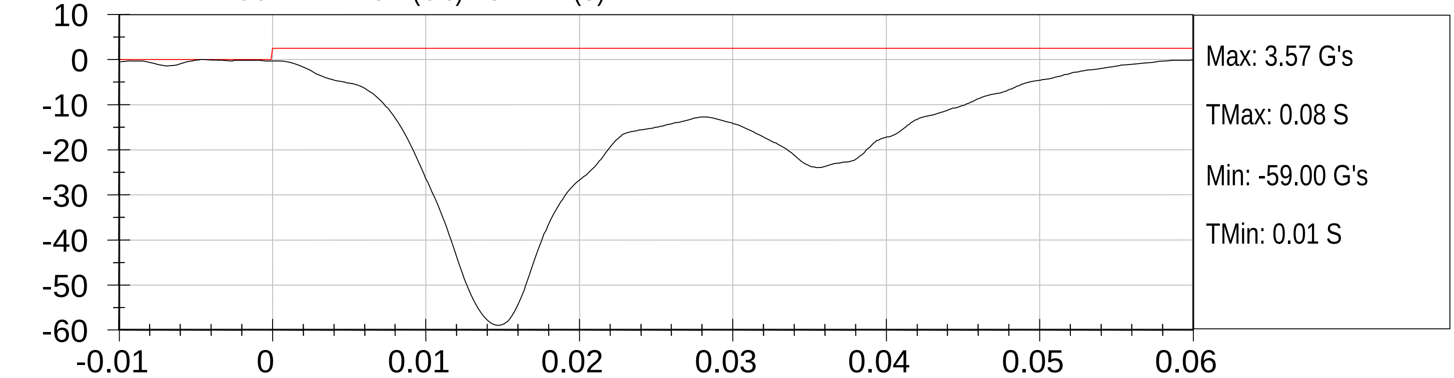
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.62 m/s

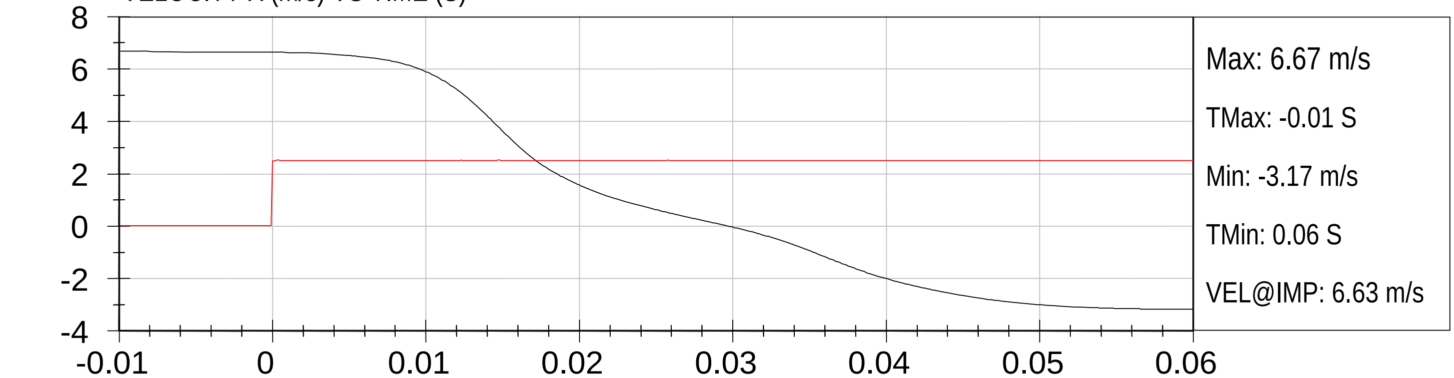
Location: S15H12

Hic: 129.19 T1: 10.00 ms T2: 20.20 ms

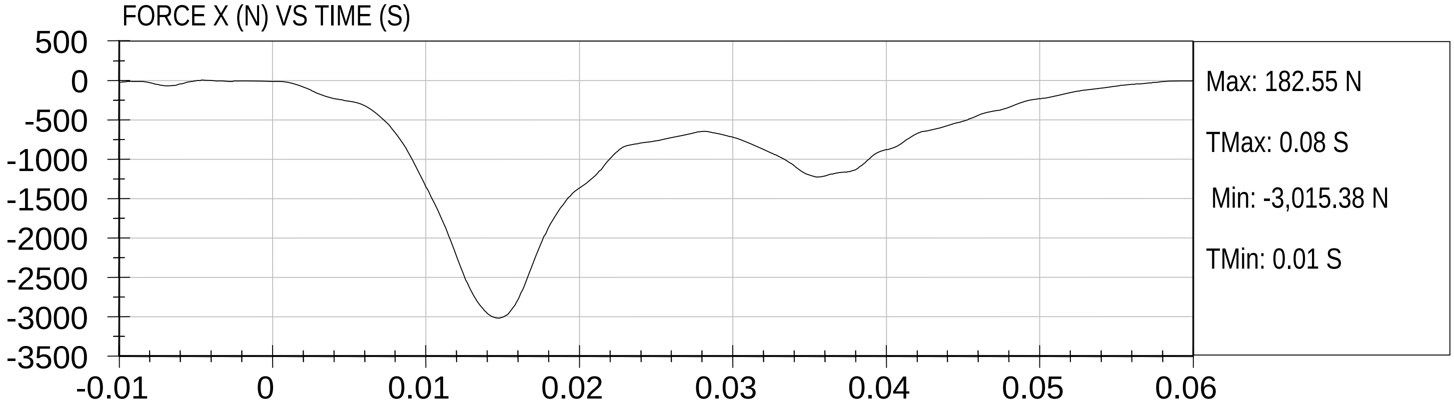
HEAD X ACCELERATION (G's) VS TIME (S)



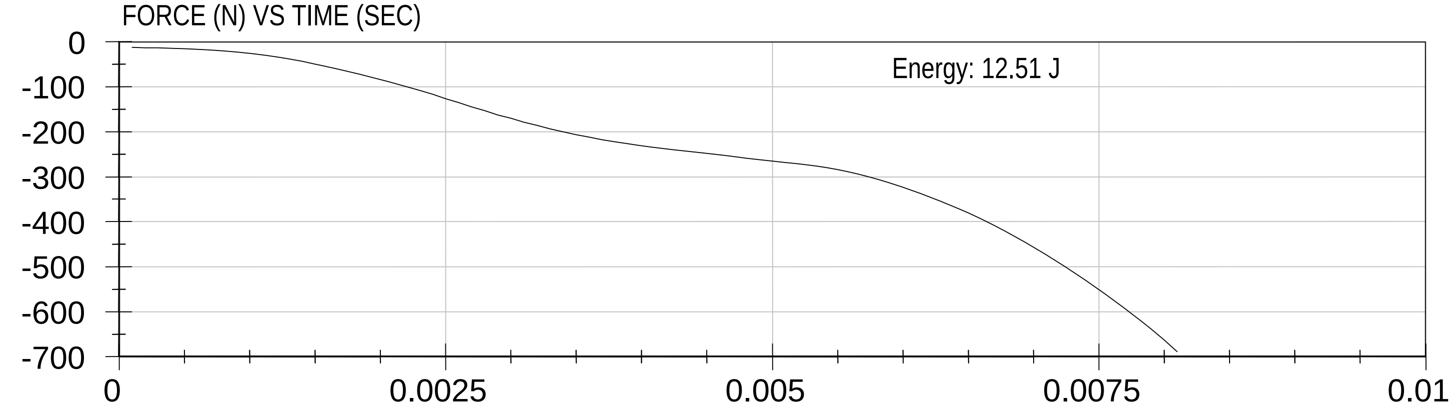
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)

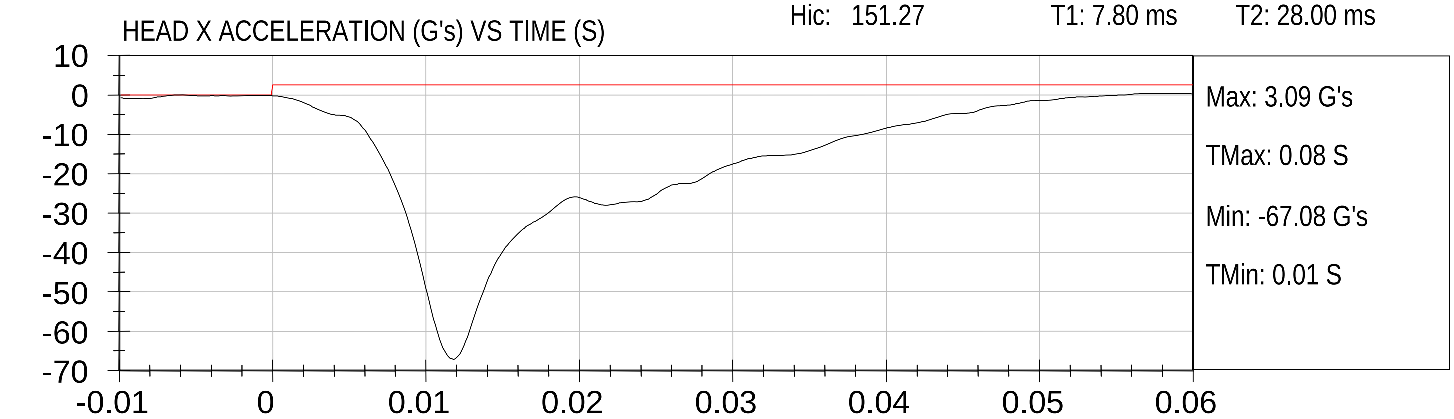


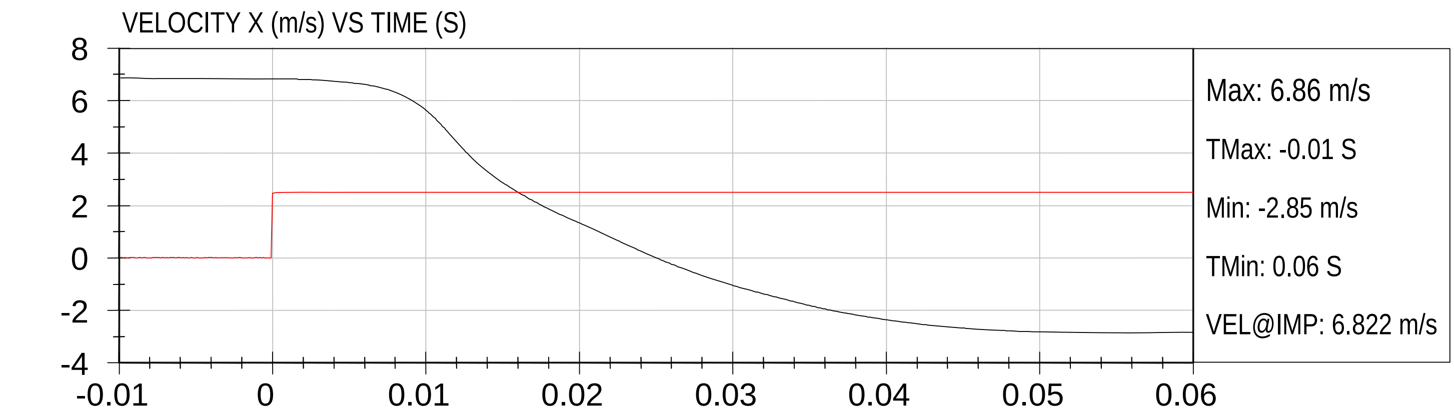
HEAD FORM IMPACT (6.69 m/s) | Test Date: 10-19-2011

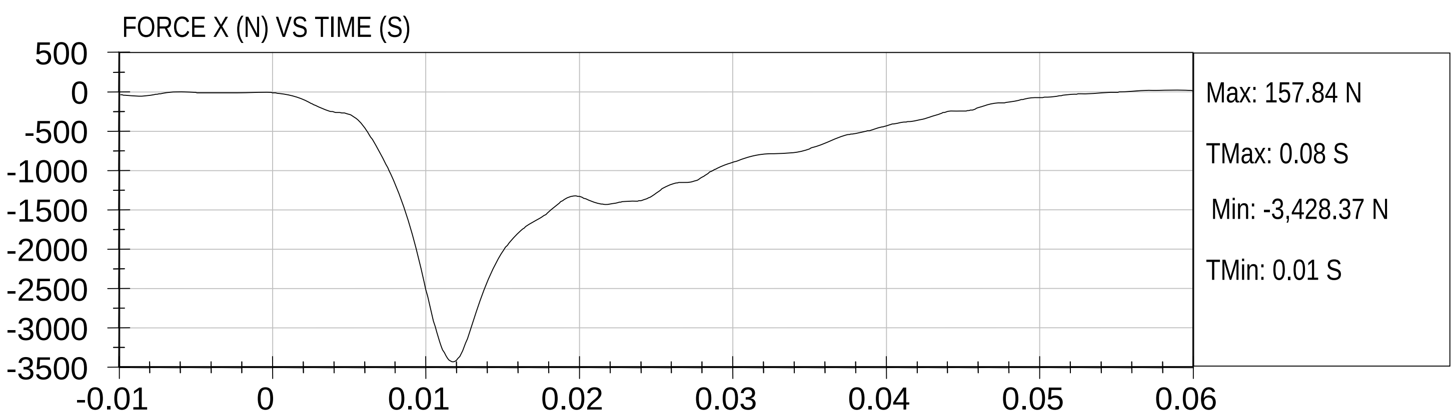
Vehicle: 2012 Bluebird All American D3 RE

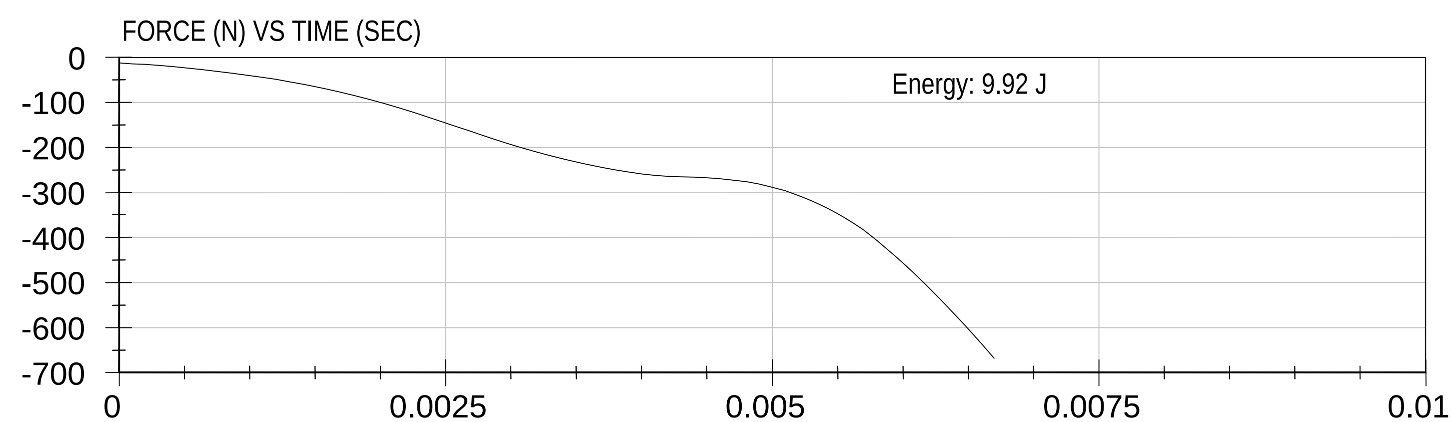
NHTSA #: CC0901 speed trap: 6.69 m/s | Location: S15H13

Hic: 151.27 T1: 7.80 ms T2: 28.00 ms









HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-19-2011

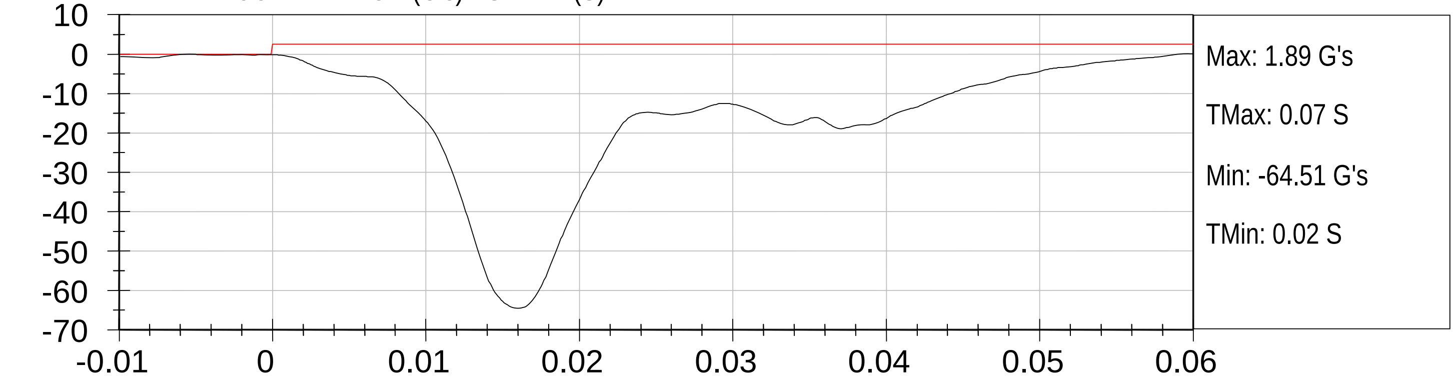
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.69 m/s

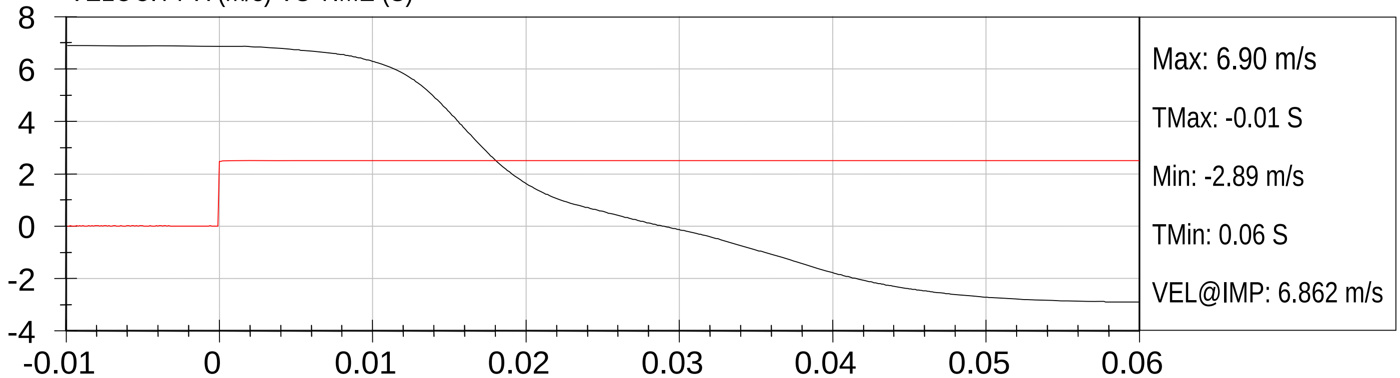
Location: S15H14

Hic: 168.89 T1: 11.80 ms T2: 20.80 ms

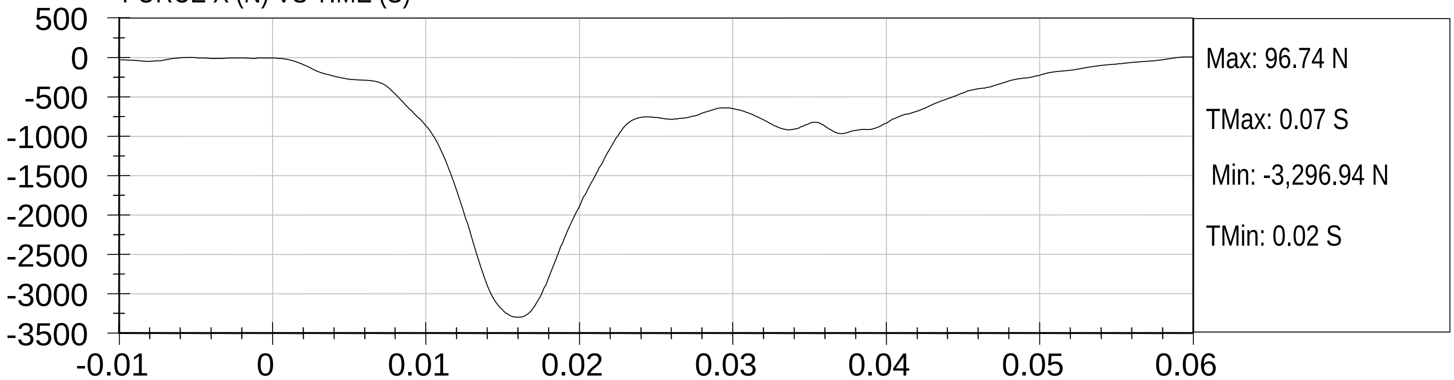
HEAD X ACCELERATION (G's) VS TIME (S)



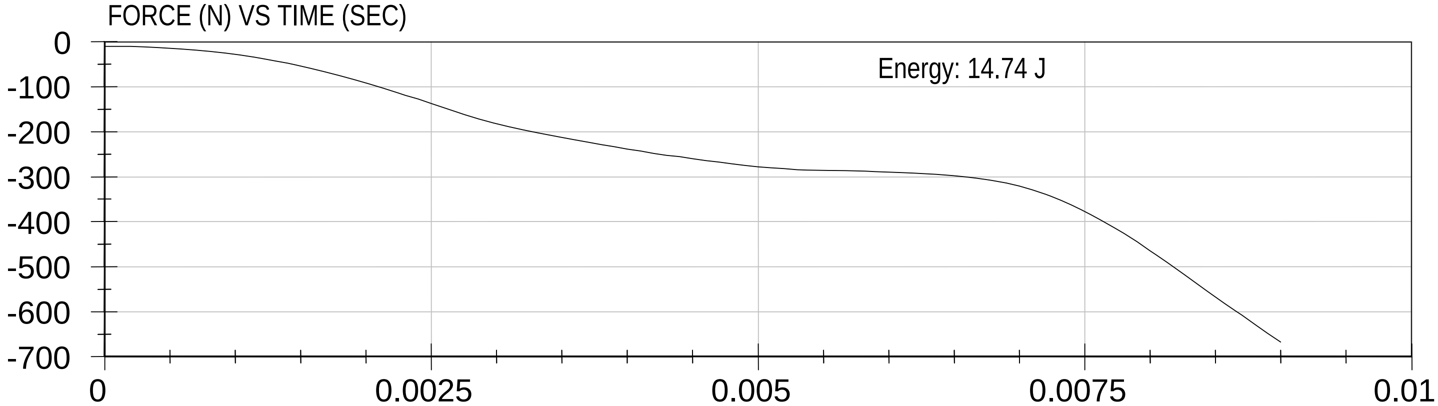
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



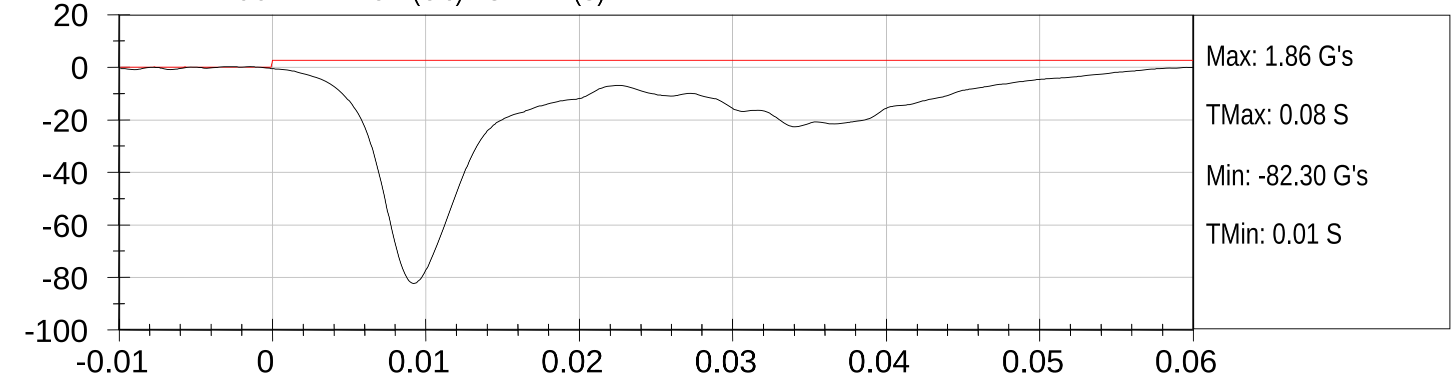
HEAD FORM IMPACT (6.69 m/s)
Test Date: 9-21-11

Vehicle: 2012 Bluebird All American D3 RE
Location: B6H8

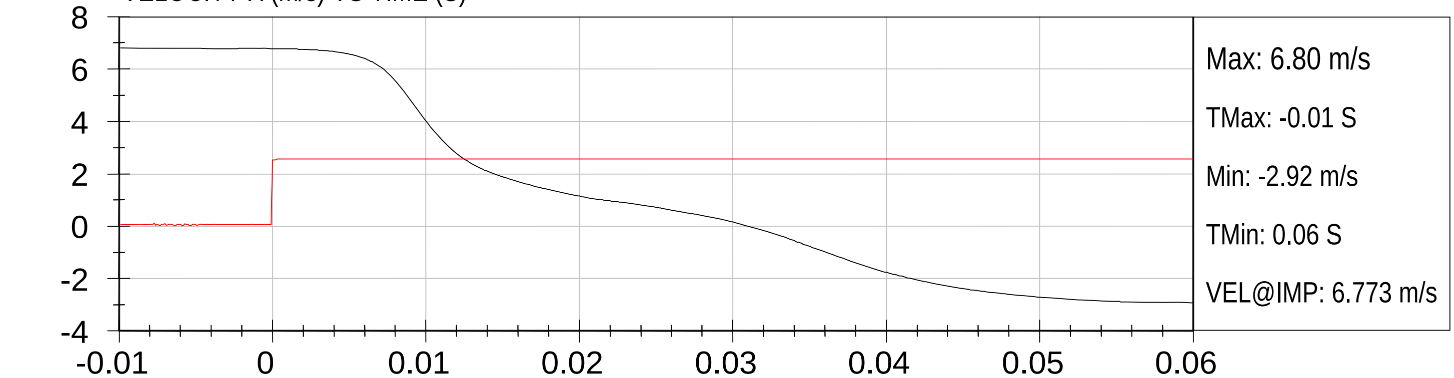
NHTSA #: CC0901
Speed Trap: 6.66 m/s

Hic: 190.76 T1: 6.90 ms T2: 12.60 ms

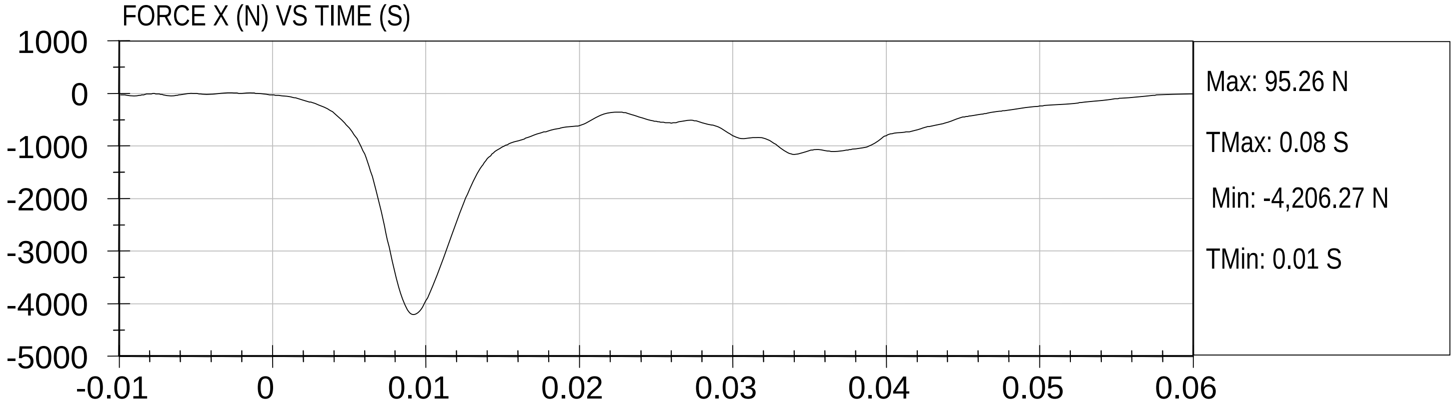
HEAD X ACCELERATION (G's) VS TIME (S)



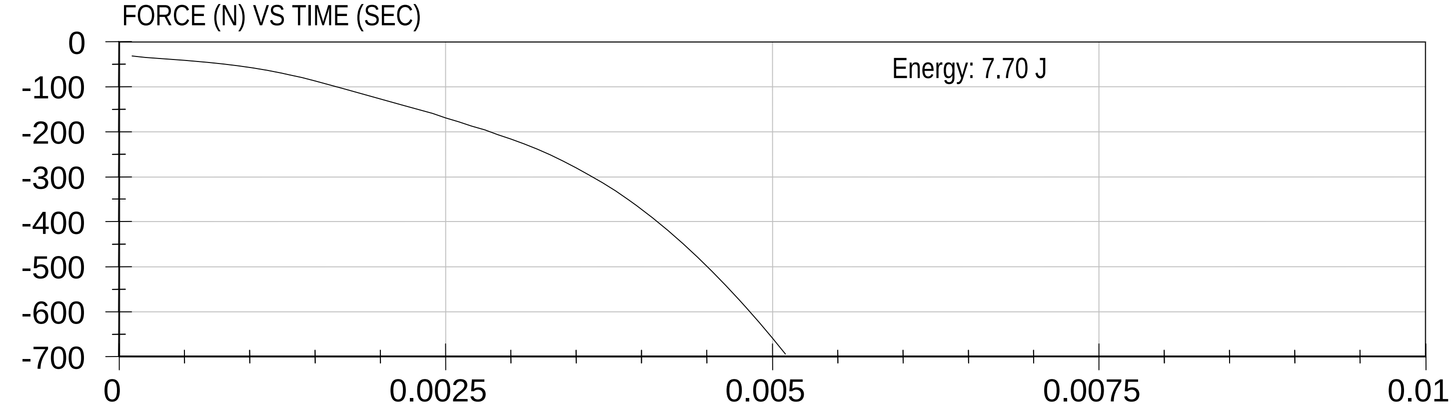
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-11

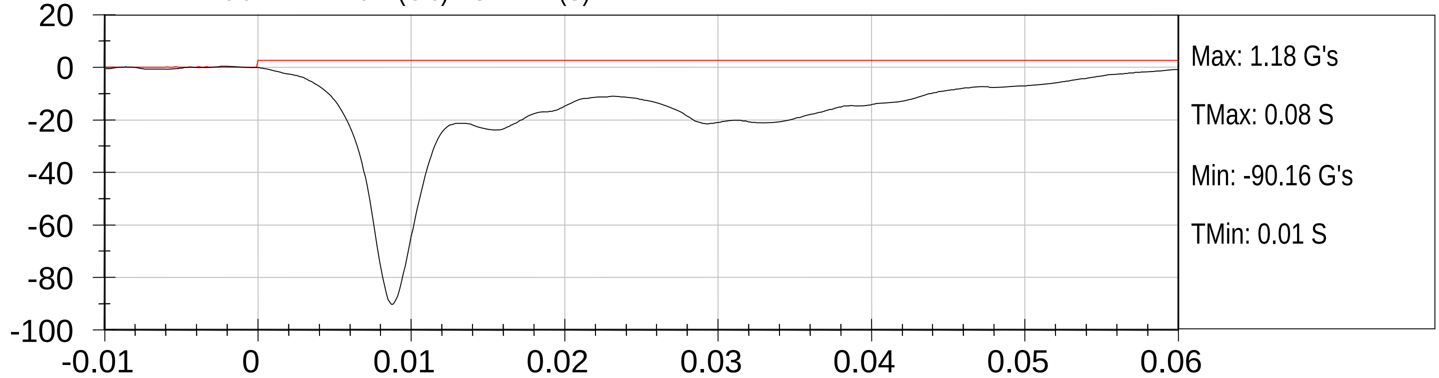
Vehicle: 2012 Bluebird All American D3 RE

Location: B6H9

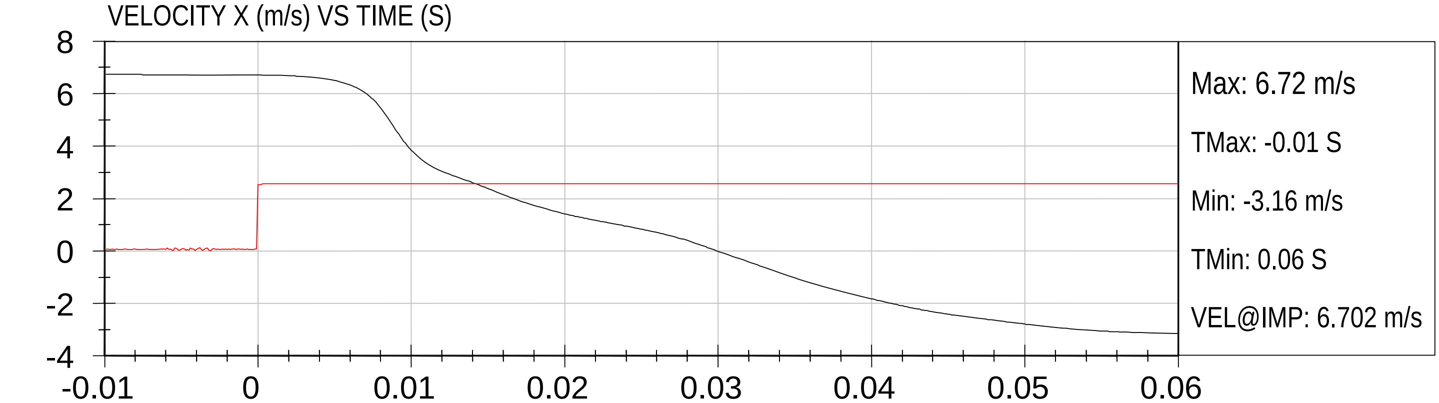
NHTSA #: CC0901 Speed Trap: 6.66 m/s

Hic: 154.91 T1: 7.00 ms T2: 10.90 ms

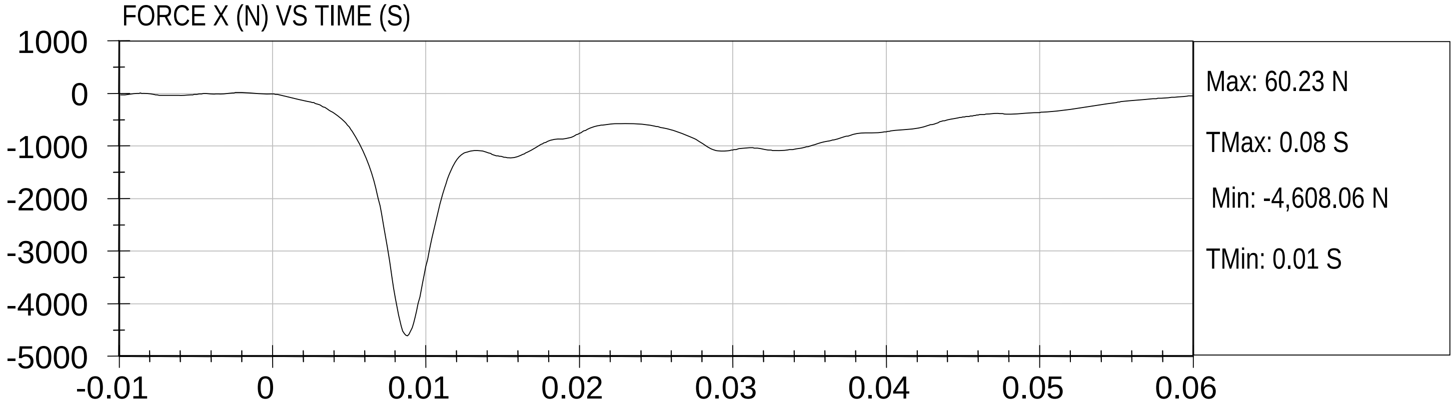
HEAD X ACCELERATION (G's) VS TIME (S)



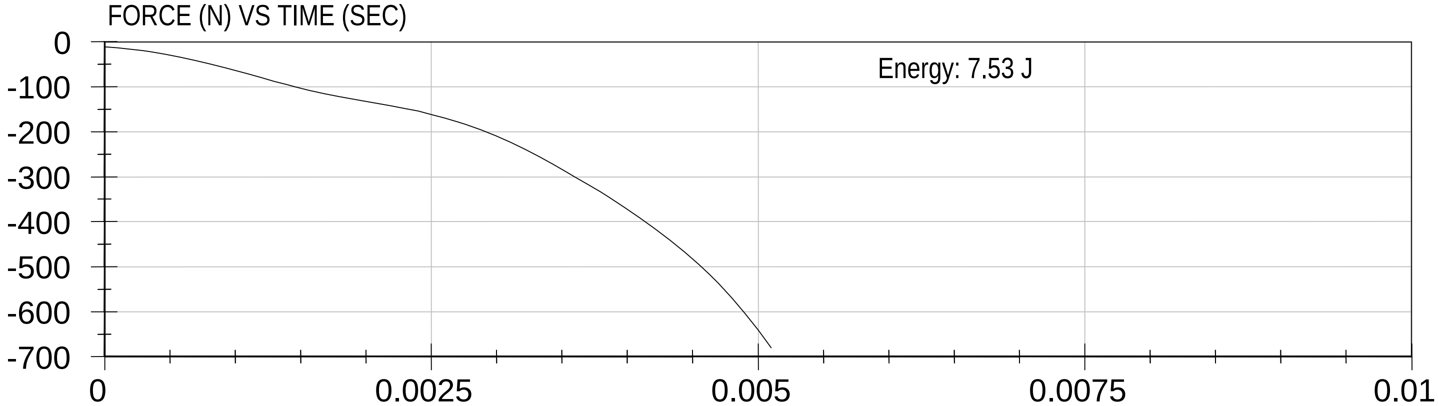
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-11

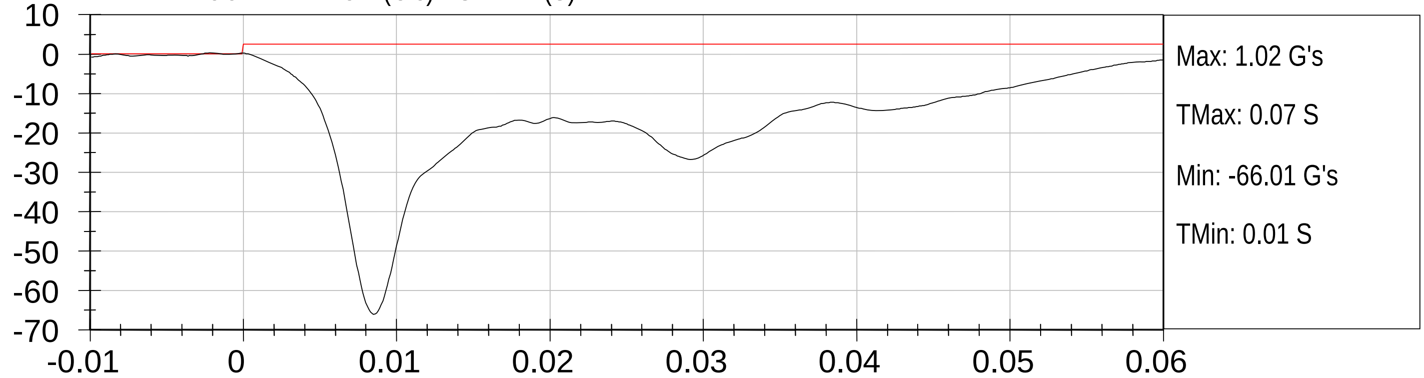
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.69 m/s

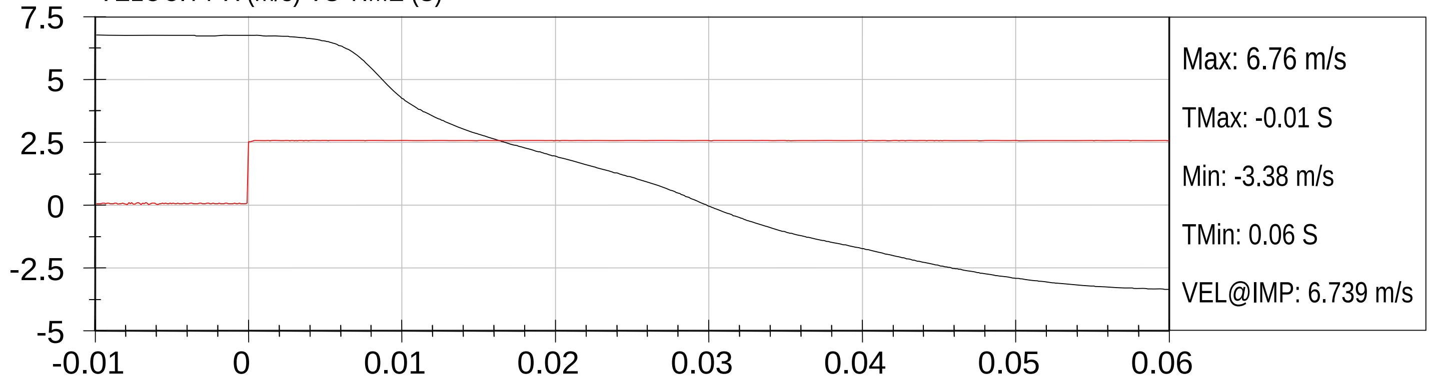
Location: B6H10

Hic: 101.28 T1: 5.20 ms T2: 35.00 ms

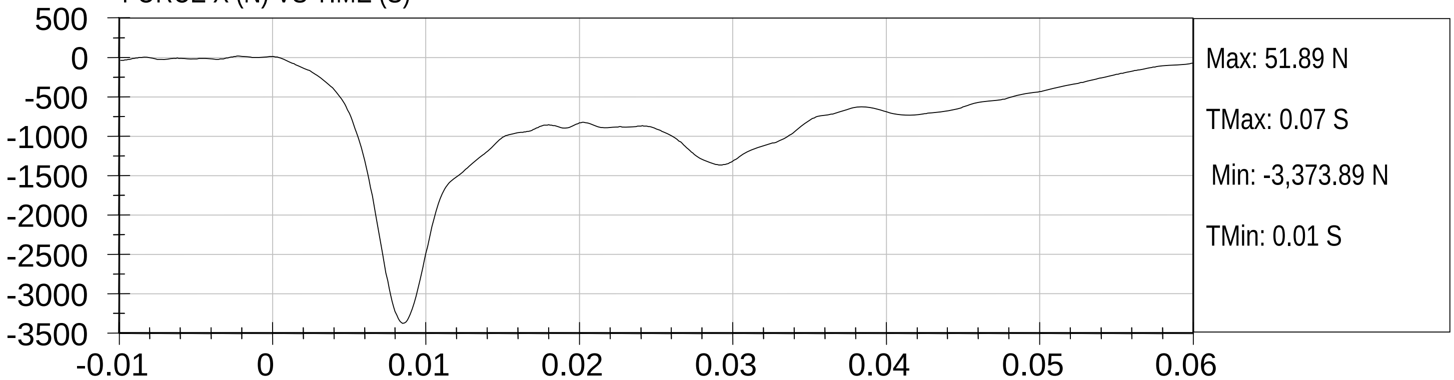
HEAD X ACCELERATION (G's) VS TIME (S)



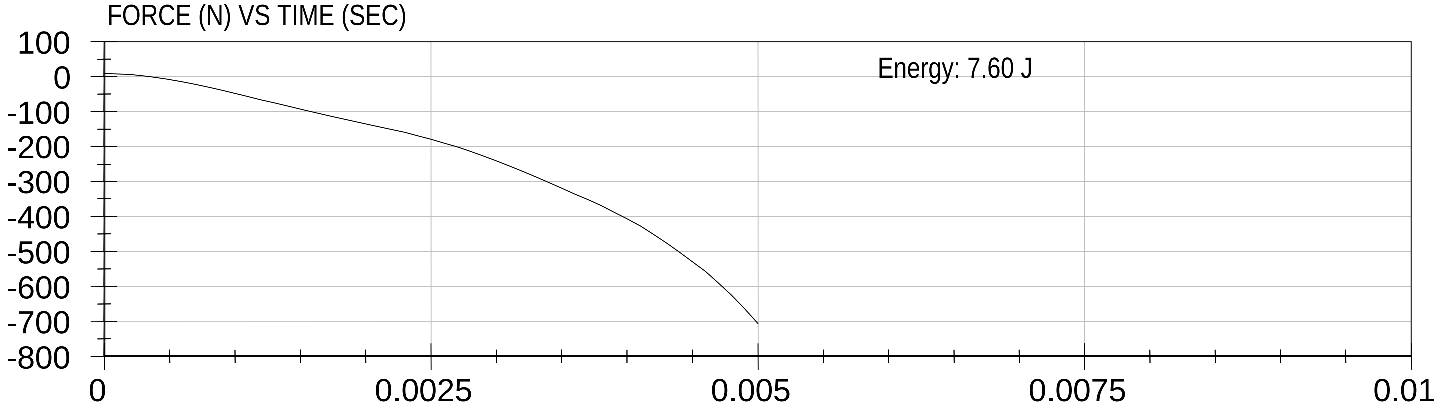
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-11

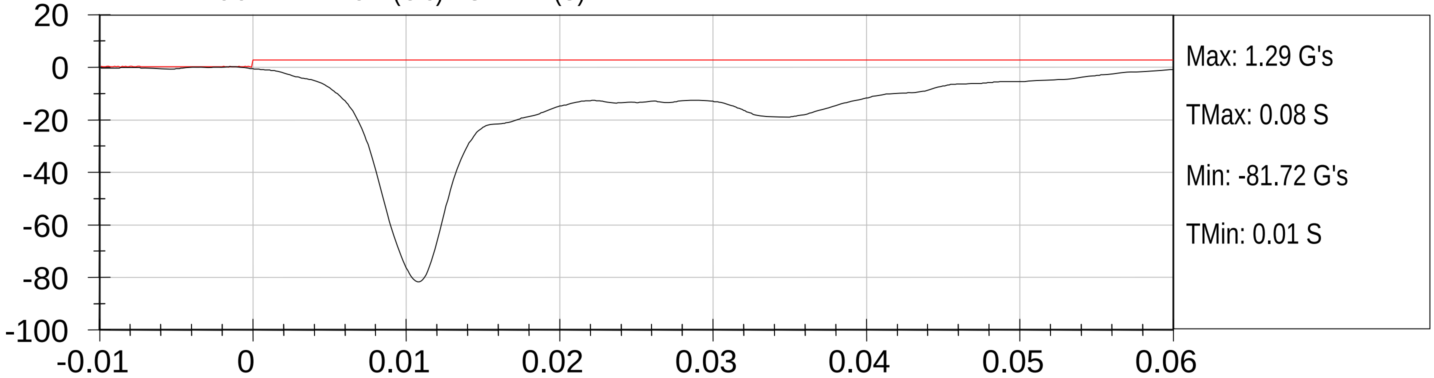
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.66 m/s

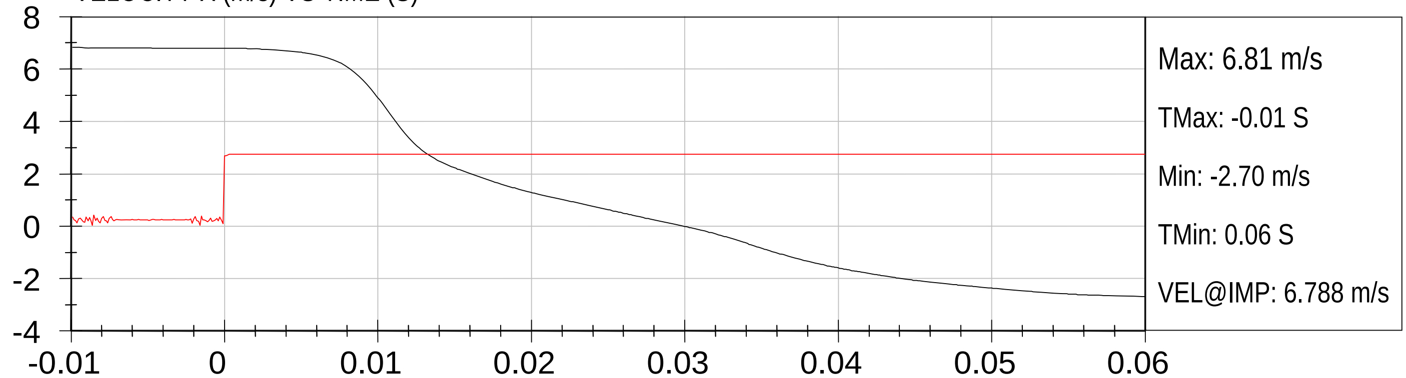
Location: B6H11

Hic: 177.51 T1: 8.00 ms T2: 13.30 ms

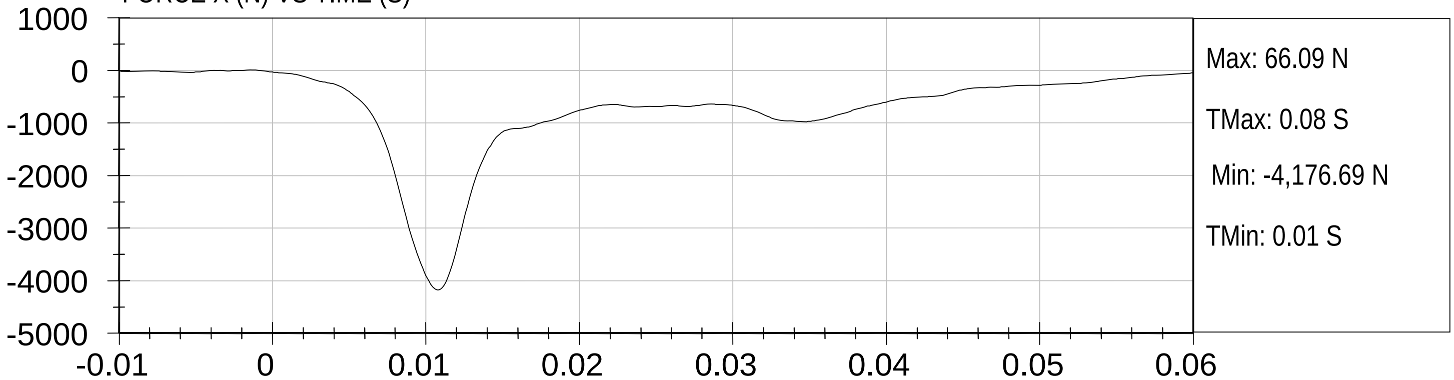
HEAD X ACCELERATION (G's) VS TIME (S)



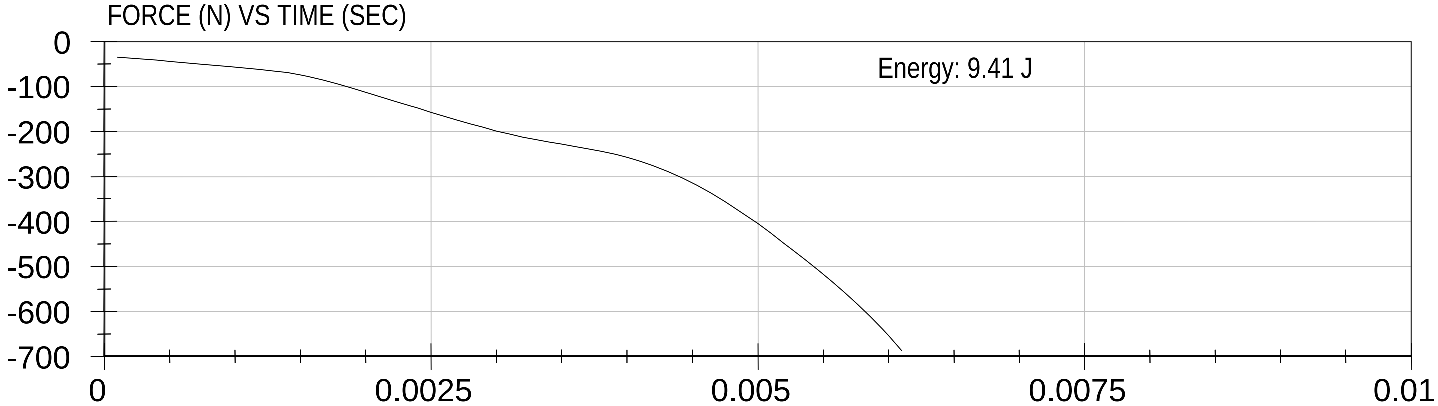
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-2011

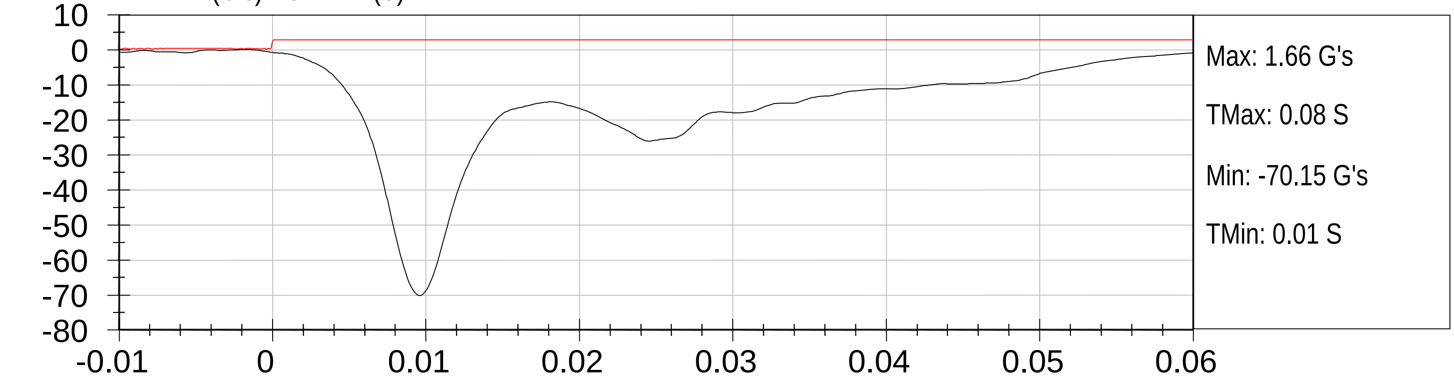
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 Speed Trap: 6.69

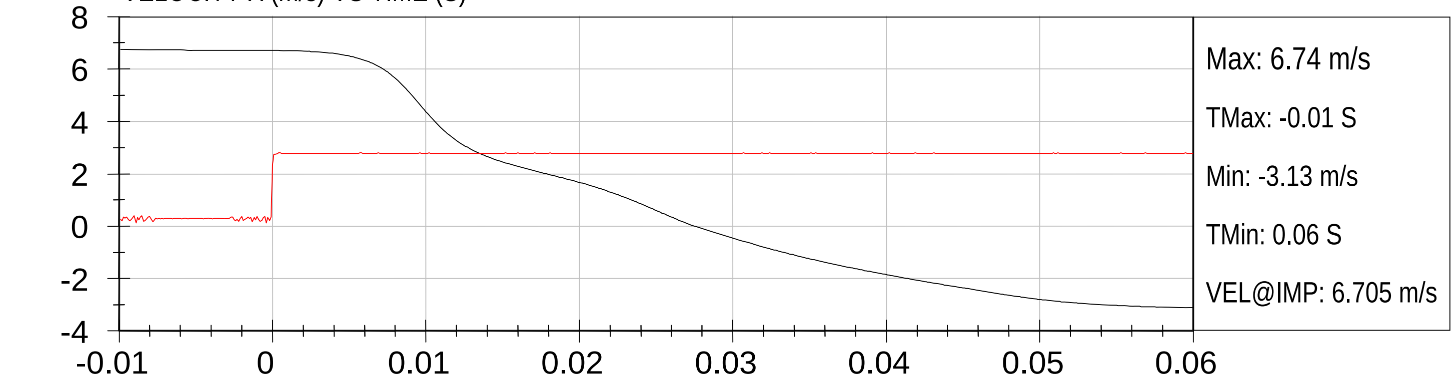
Location: B6H12

Hic: 126.32 T1: 6.90 ms T2: 12.80 ms

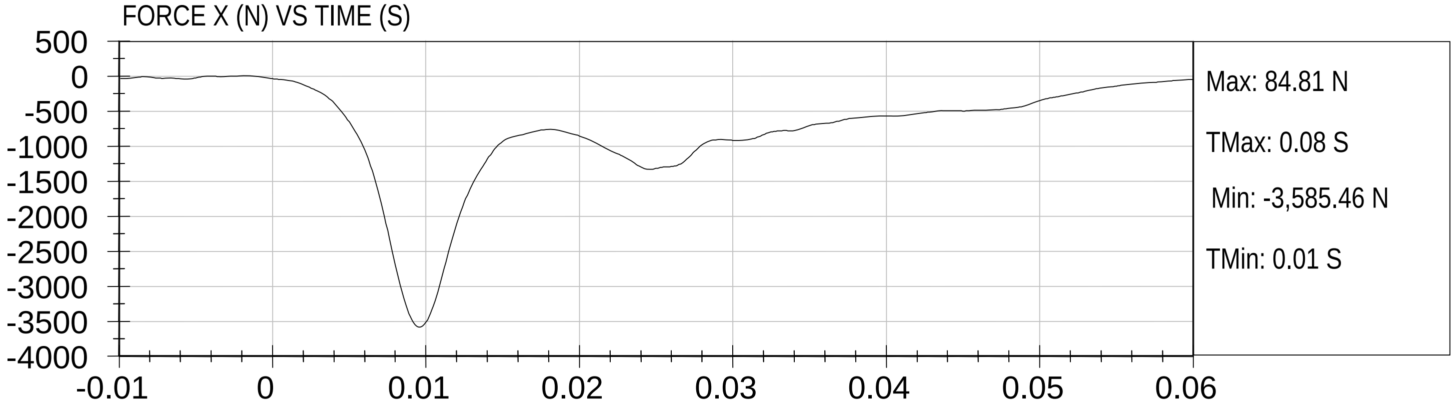
HEADX (G's) VS TIME (S)



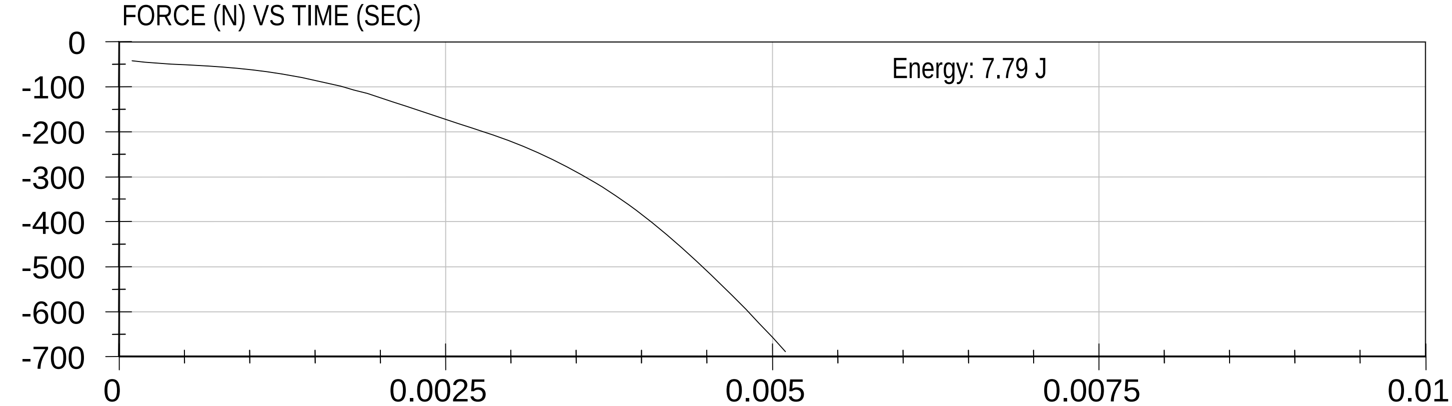
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-11

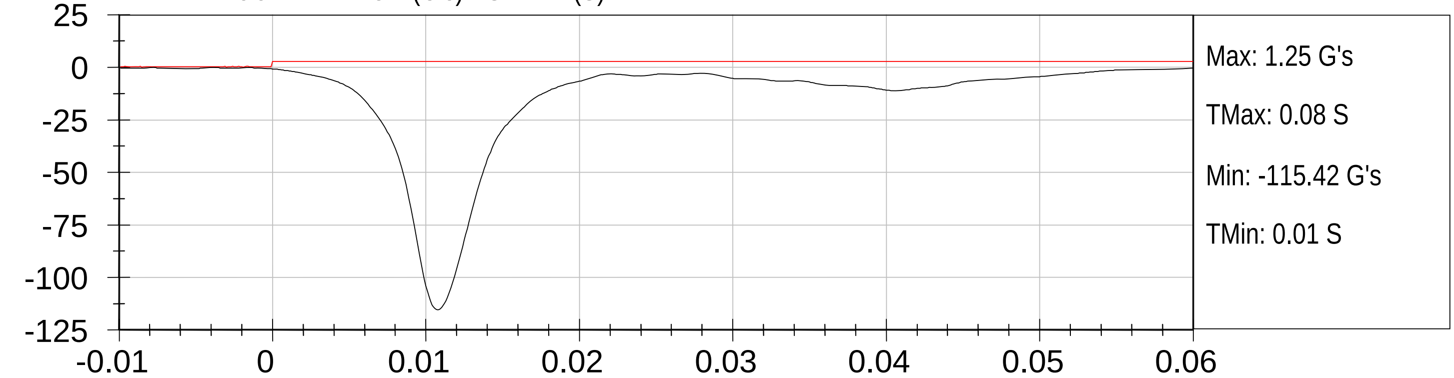
Vehicle: 2012 Bluebird All American D3 RE

Location: B6H13

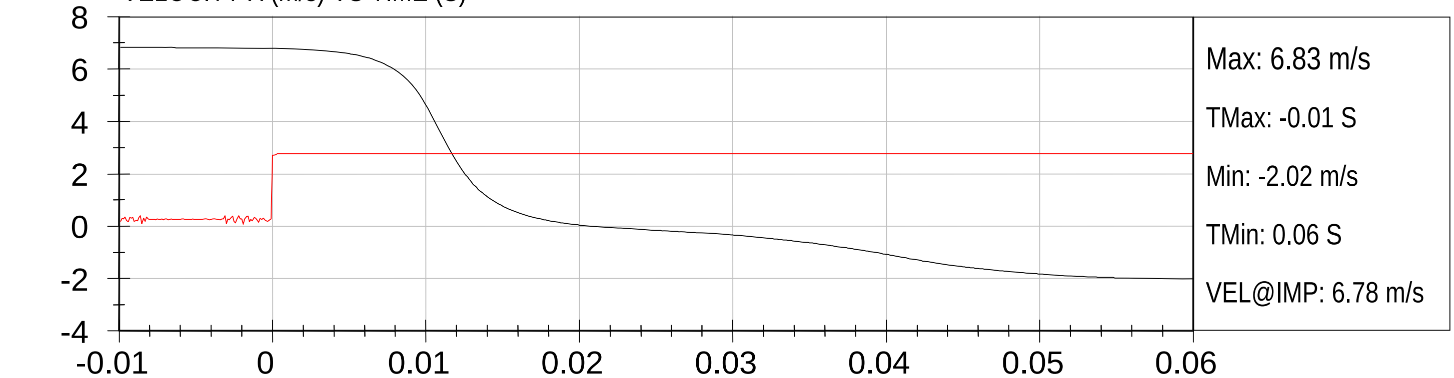
NHTSA #: CC0901 Speed Trap: 6.65 m/s

Hic: 378.17 T1: 8.60 ms T2: 13.60 ms

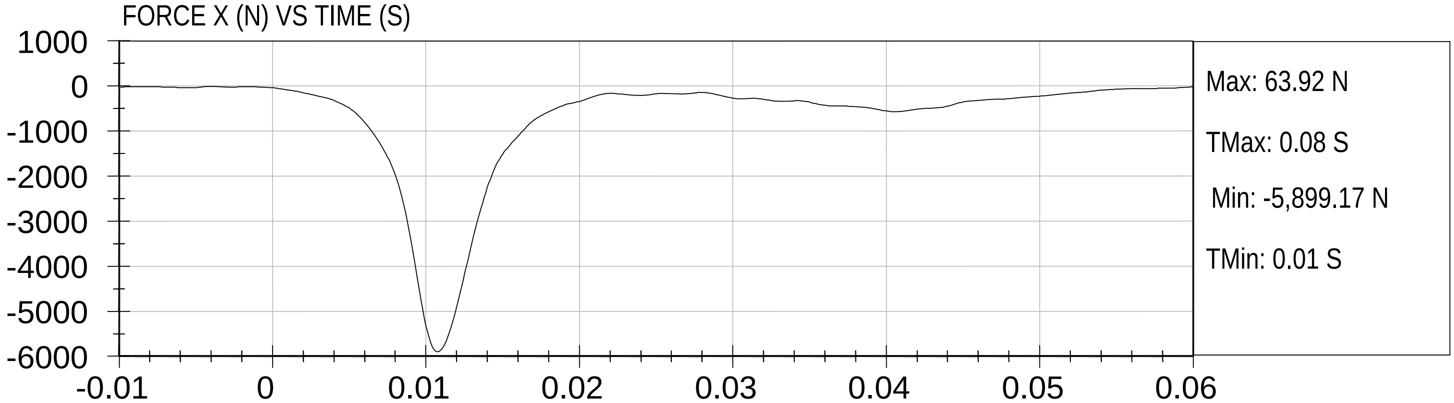
HEAD X ACCELERATION (G's) VS TIME (S)



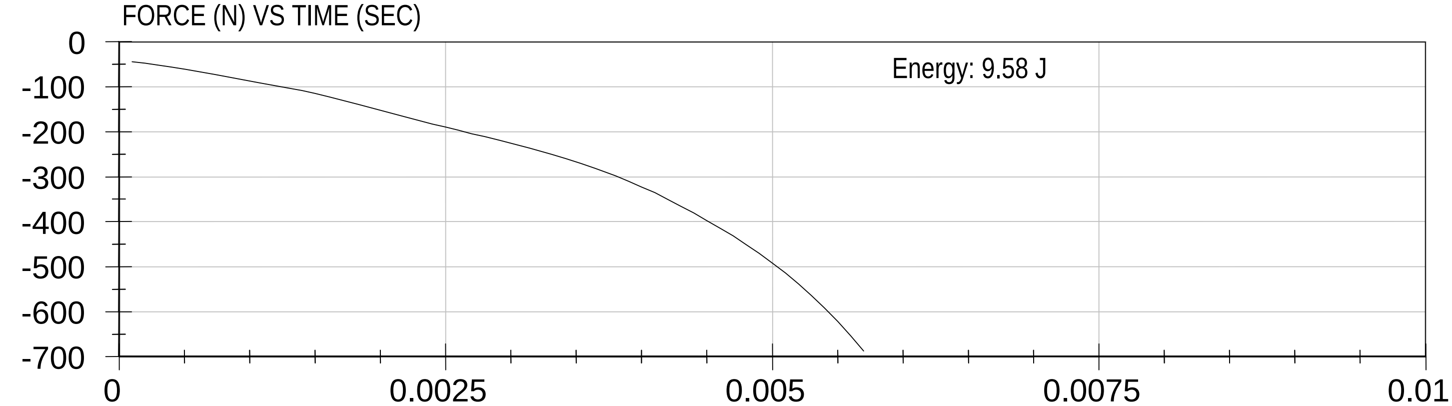
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-2011

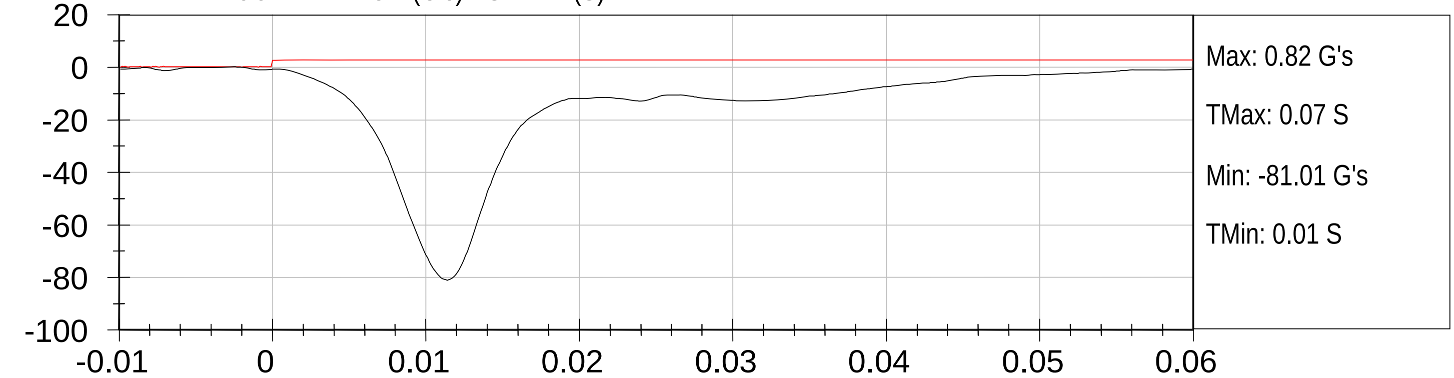
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 Speed Trap: 6.65 m/s

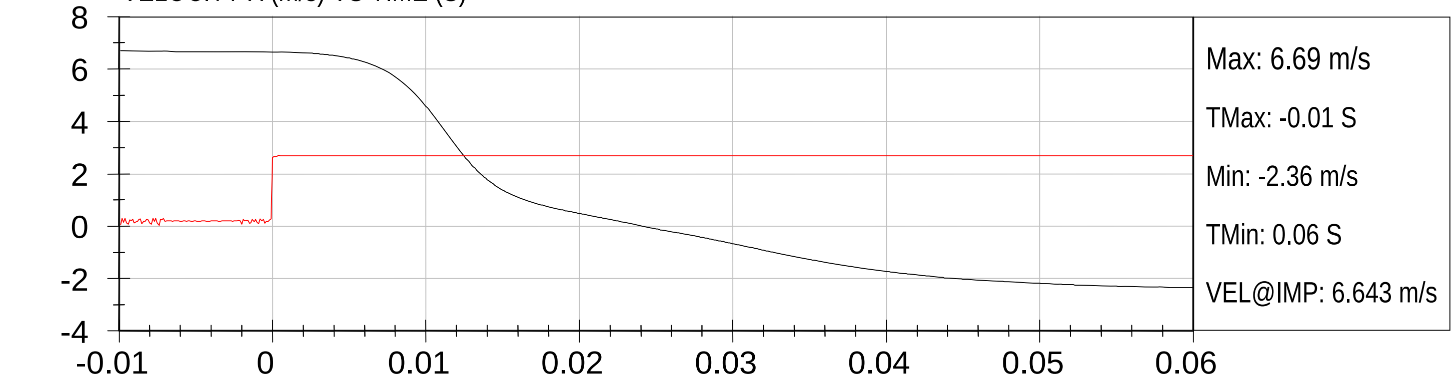
Location: B6H14

Hic: 221.15 T1: 7.80 ms T2: 14.70 ms

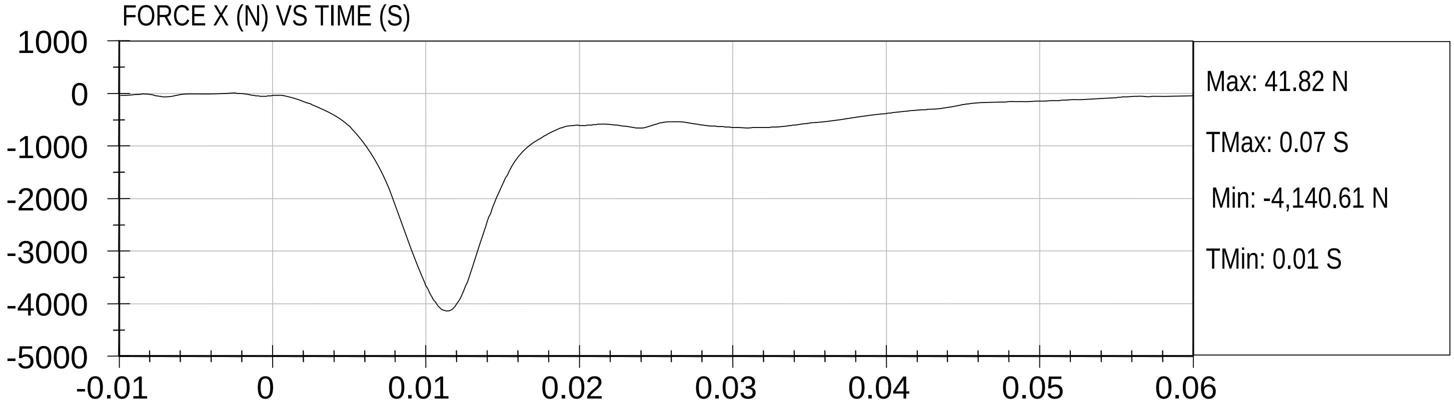
HEAD X ACCELERATION (G's) VS TIME (S)



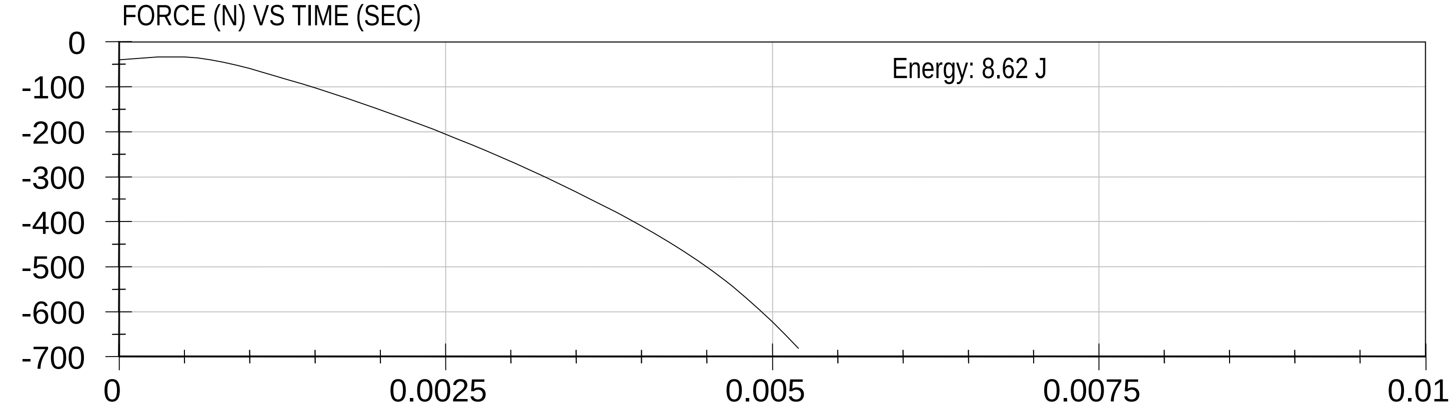
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 9-21-11

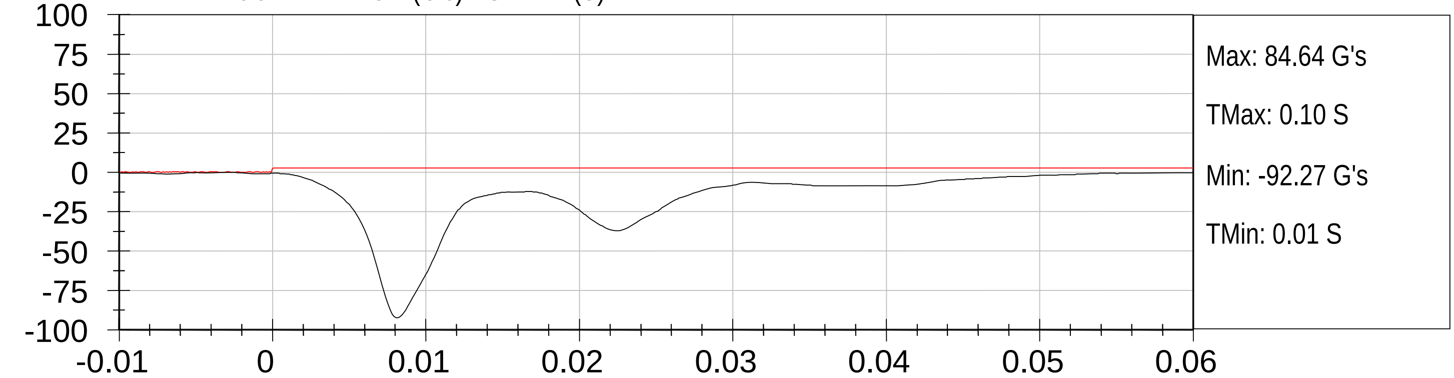
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 Speed Trap: 6.67 m/s

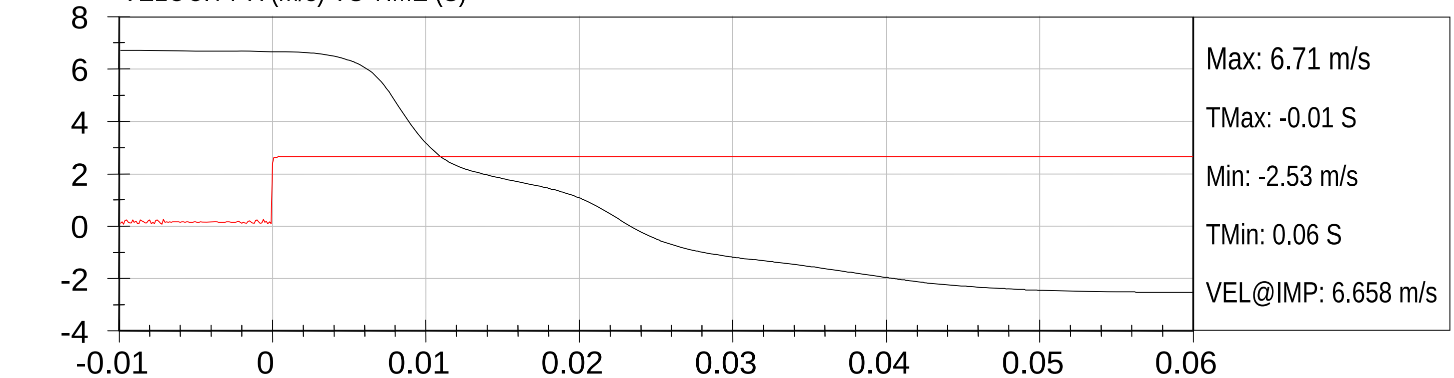
Location: B6H15

Hic: 204.42 T1: 6.30 ms T2: 11.00 ms

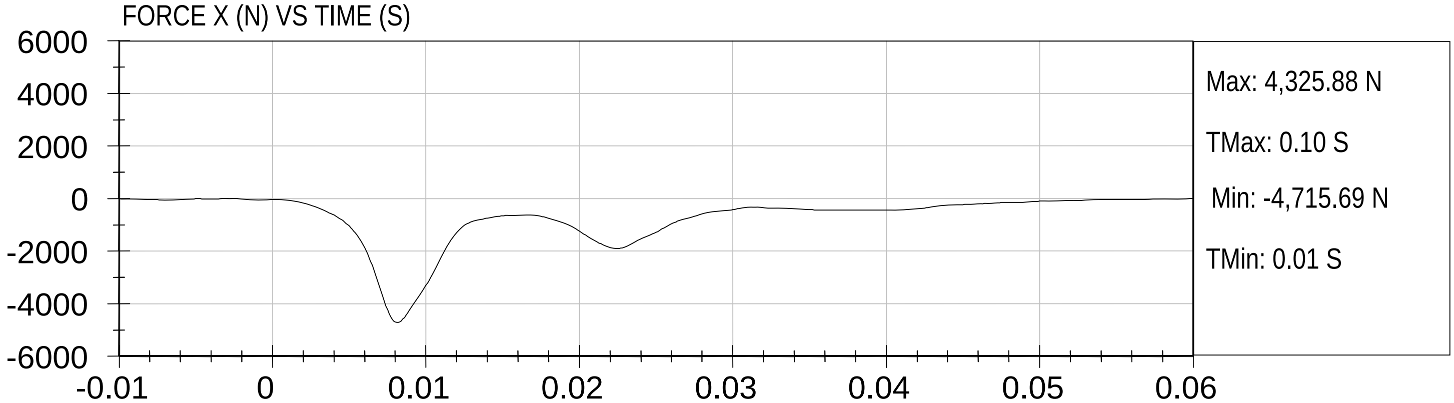
HEAD X ACCELERATION (G's) VS TIME (S)



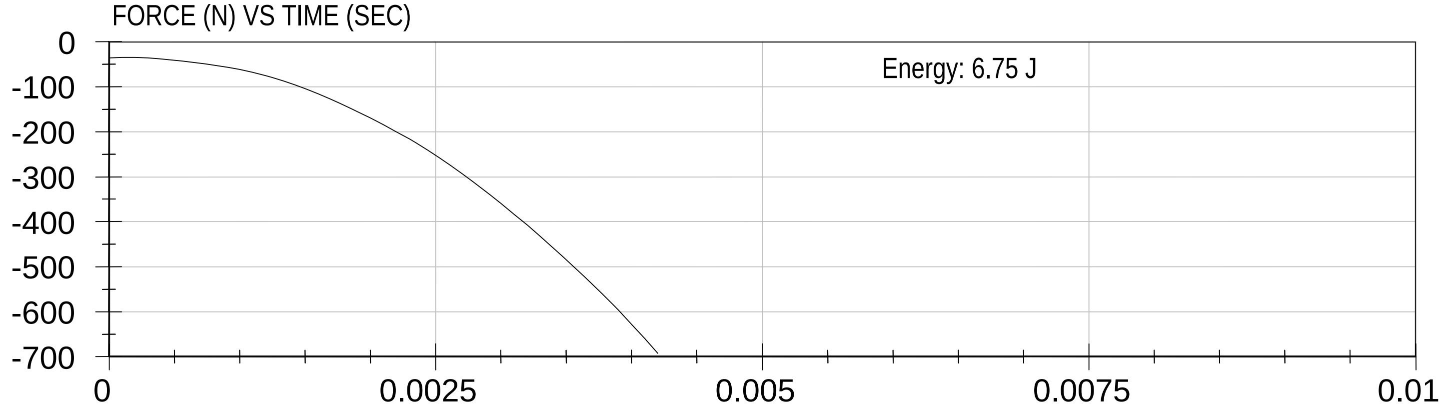
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



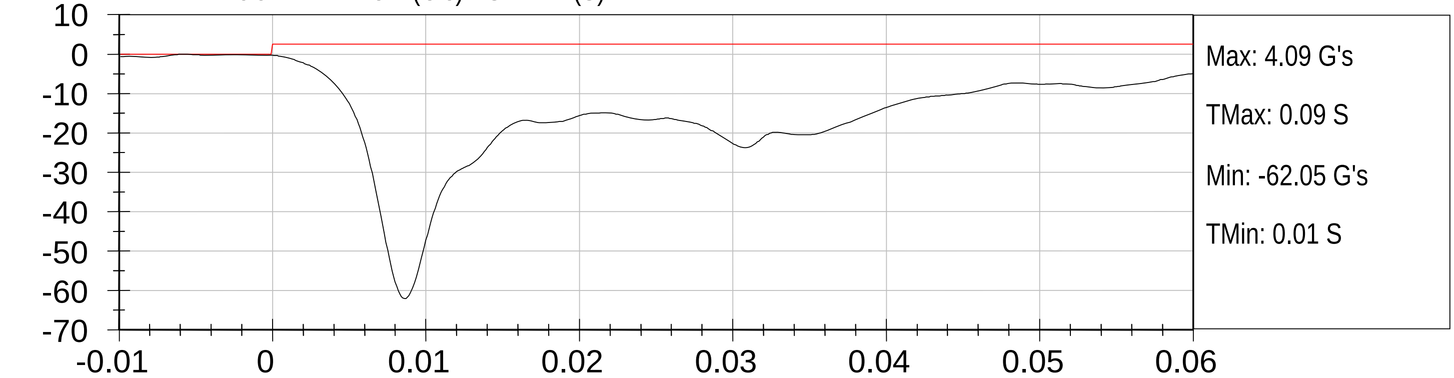
FORCE (N) VS TIME (SEC)



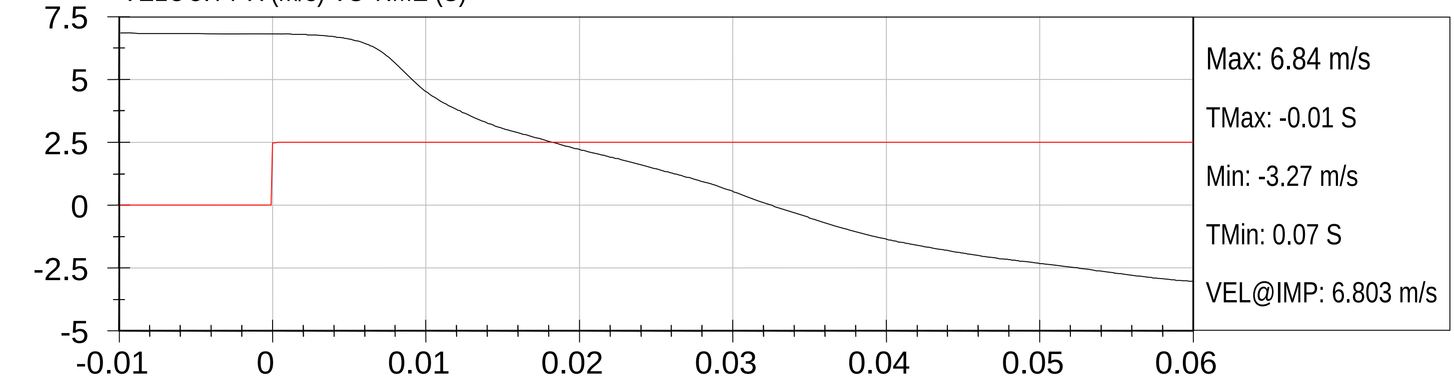
	HEAD FORM IMPACT (6.69 m/s)	Test Date: 10-20-2011
	Vehicle: 2012 Bluebird All American D3 RE	Location: B18H8
	NHTSA #: CC0901 speed trap: 6.63 m/s	

Hic: 90.45 T1: 5.20 ms T2: 39.70 ms

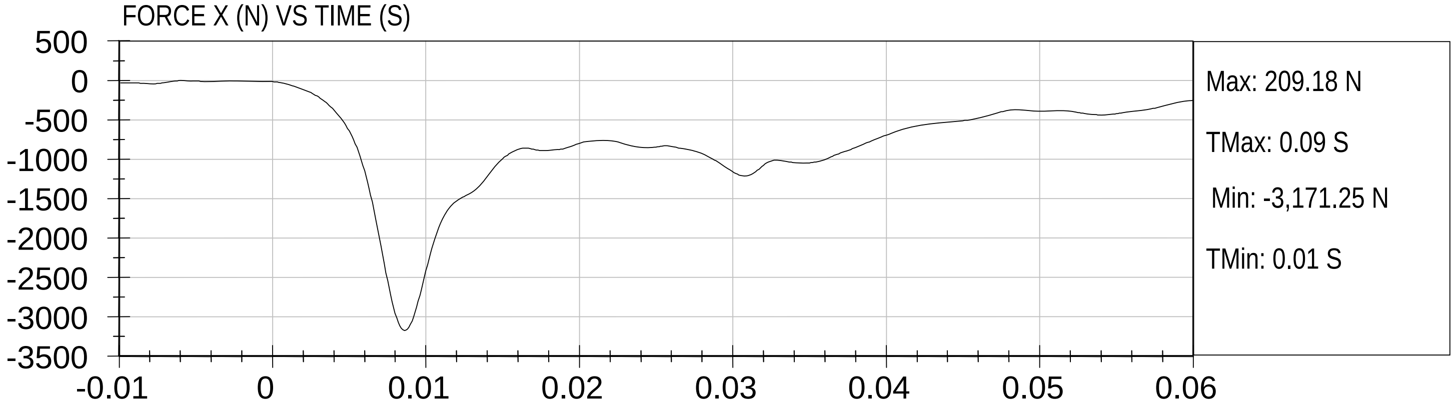
HEAD X ACCELERATION (G's) VS TIME (S)



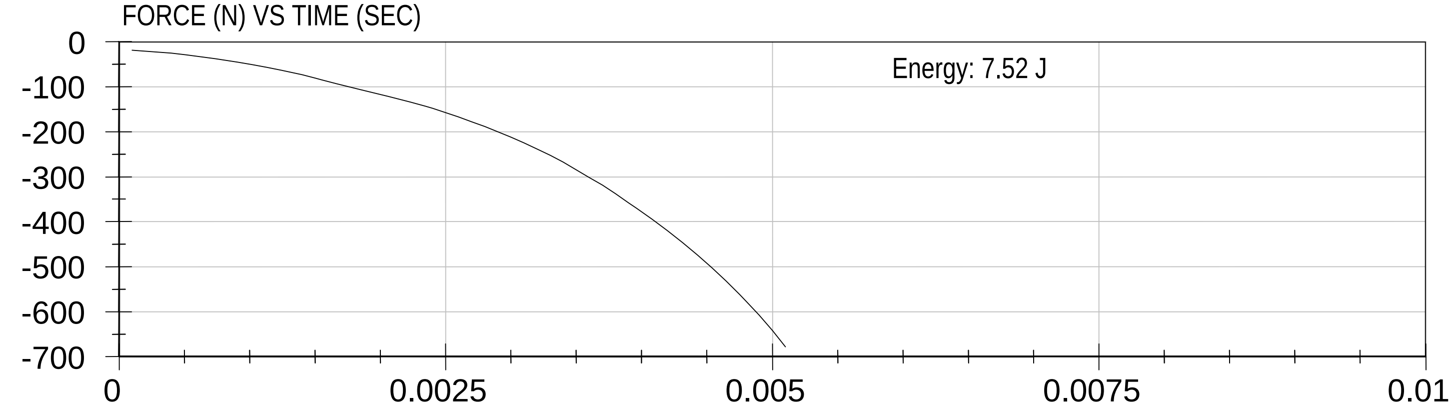
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-21-2011

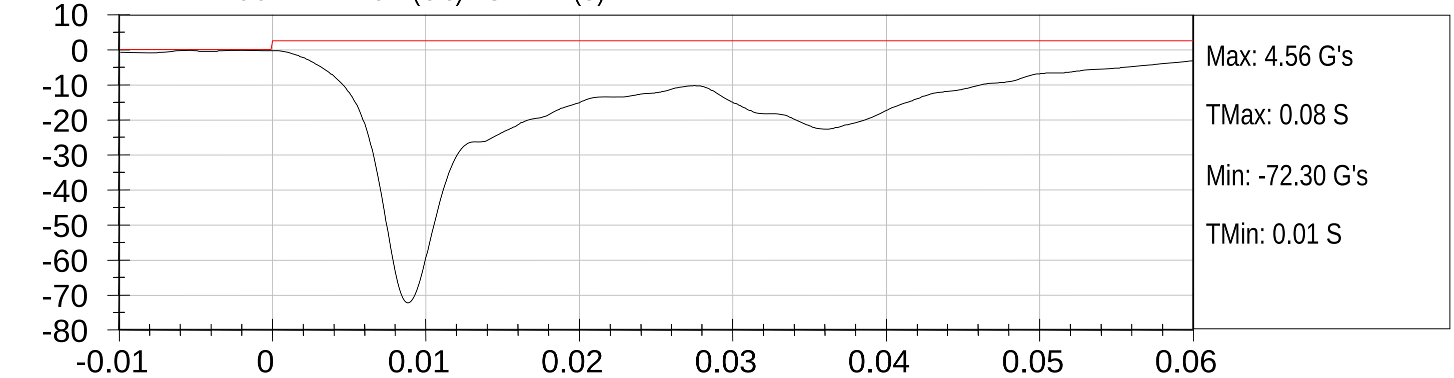
Vehicle: 2012 Bluebird All American D3 RE

Location: B18H9

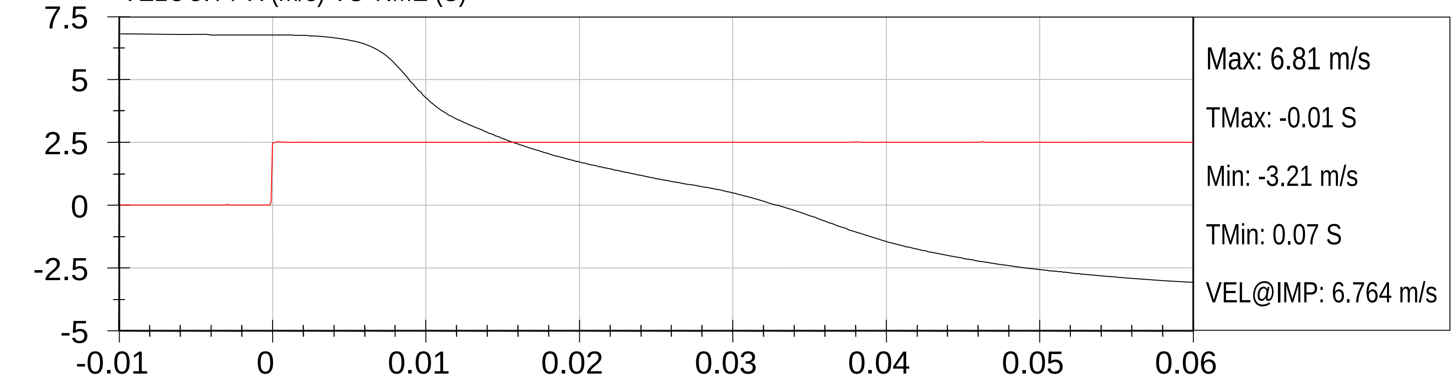
NHTSA #: CC0901 speed trap: 6.61 m/s

Hic: 112.55 T1: 6.70 ms T2: 11.70 ms

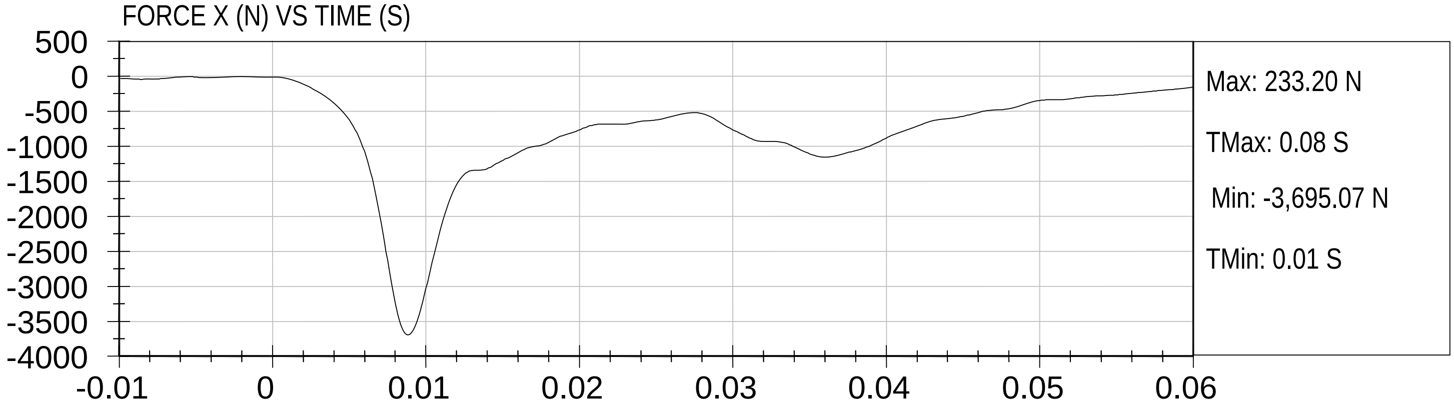
HEAD X ACCELERATION (G's) VS TIME (S)



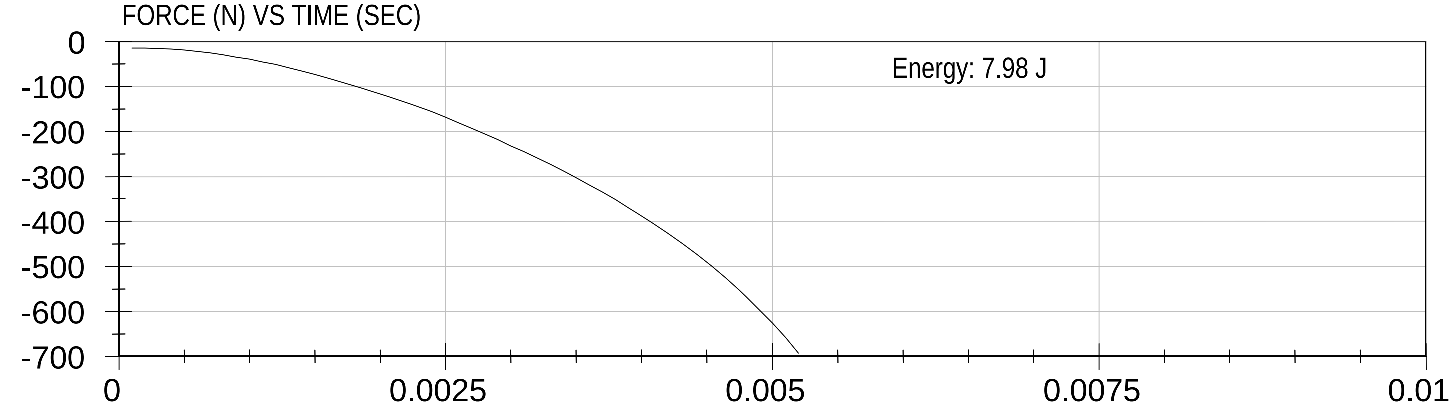
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-21-2011

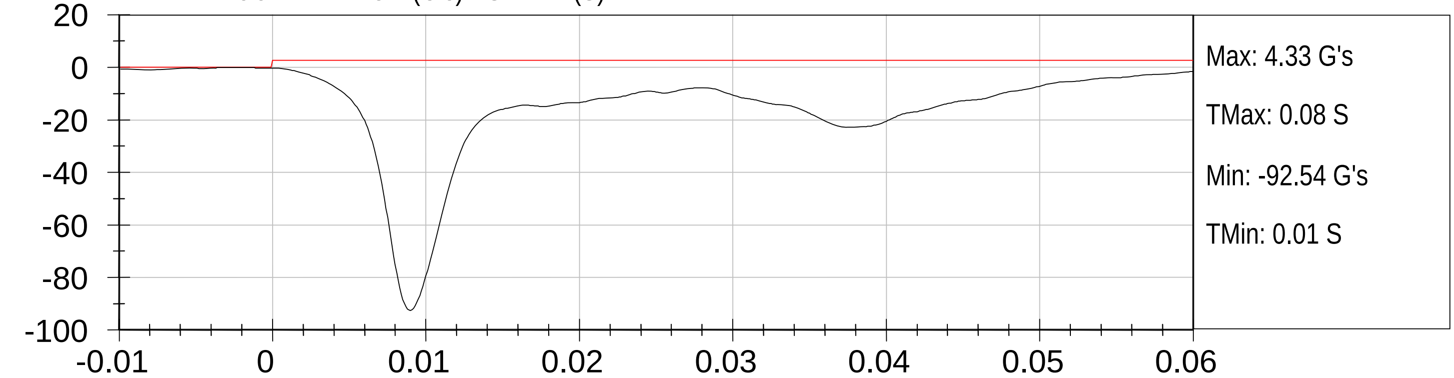
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.61 m/s

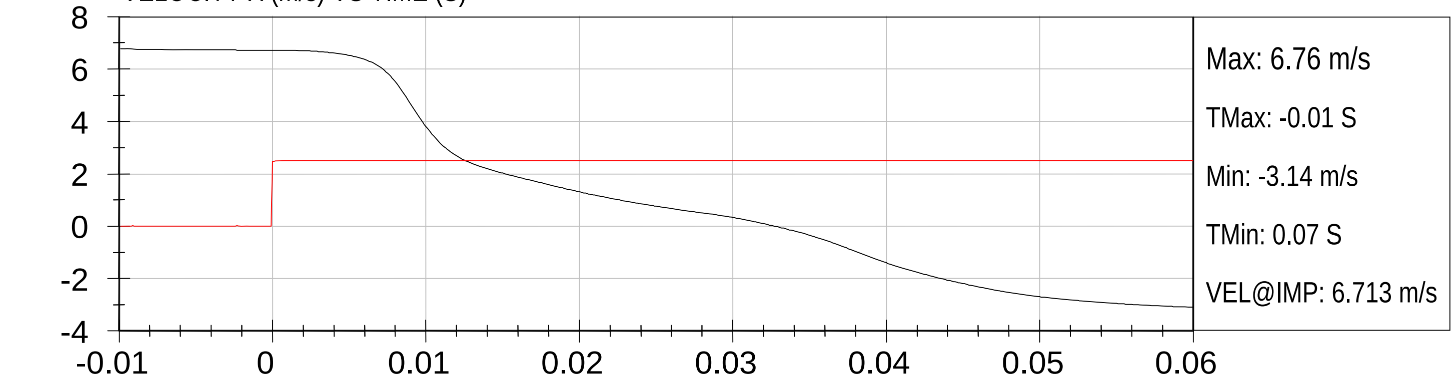
Location: B18H10

Hic: 201.63 T1: 7.10 ms T2: 11.60 ms

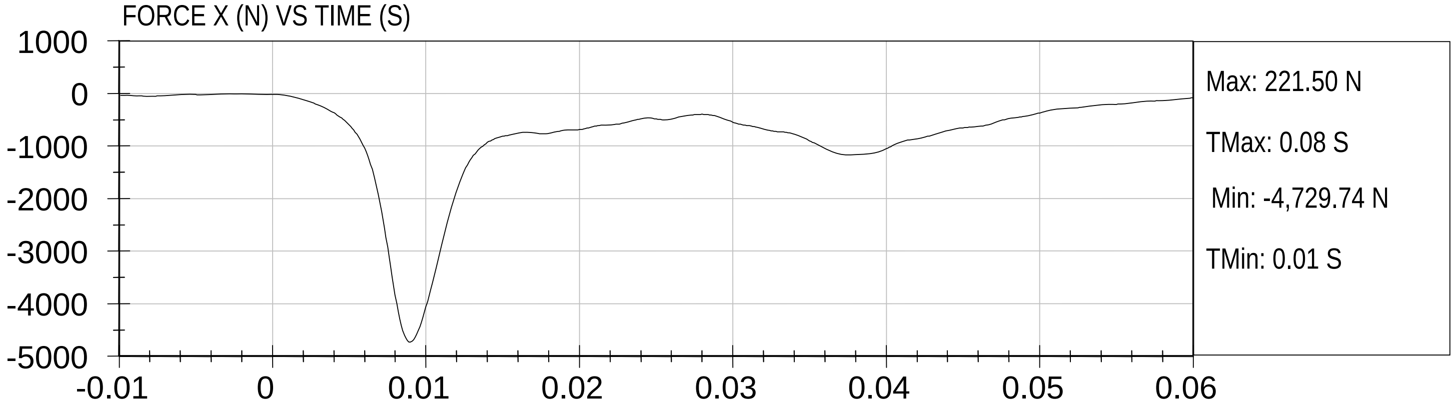
HEAD X ACCELERATION (G's) VS TIME (S)



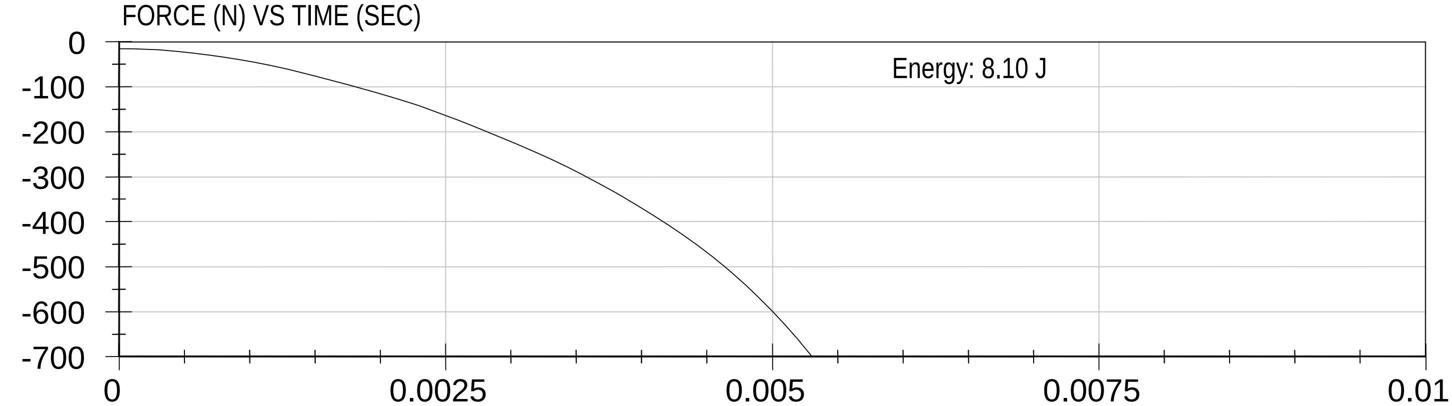
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



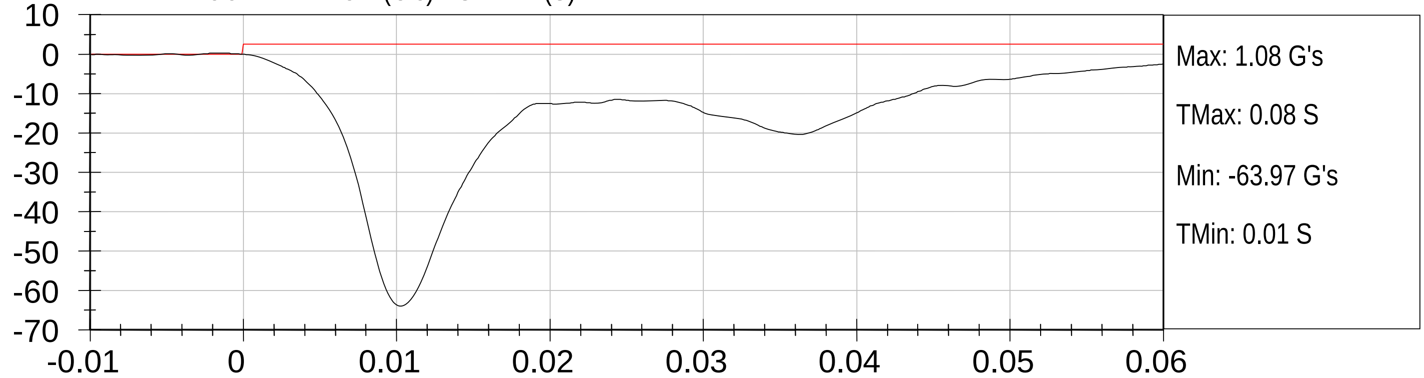
HEAD FORM IMPACT (6.69 m/s) | Test Date: 10-21-2011

Vehicle: 2012 Bluebird All American D3 RE | Location: B18H11

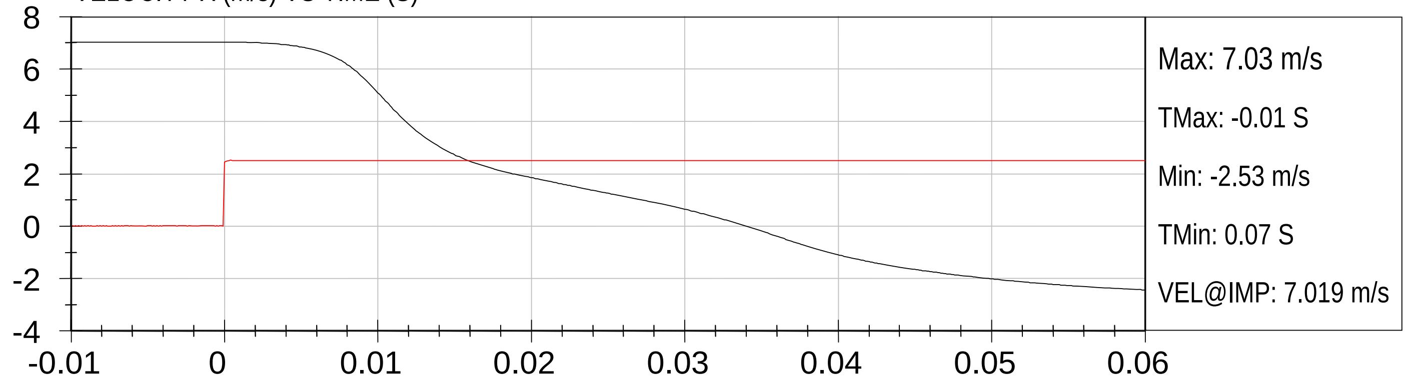
NHTSA #: CC0901 | speed trap: 6.61 m/s

Hic: 128.66 | T1: 7.20 ms | T2: 14.80 ms

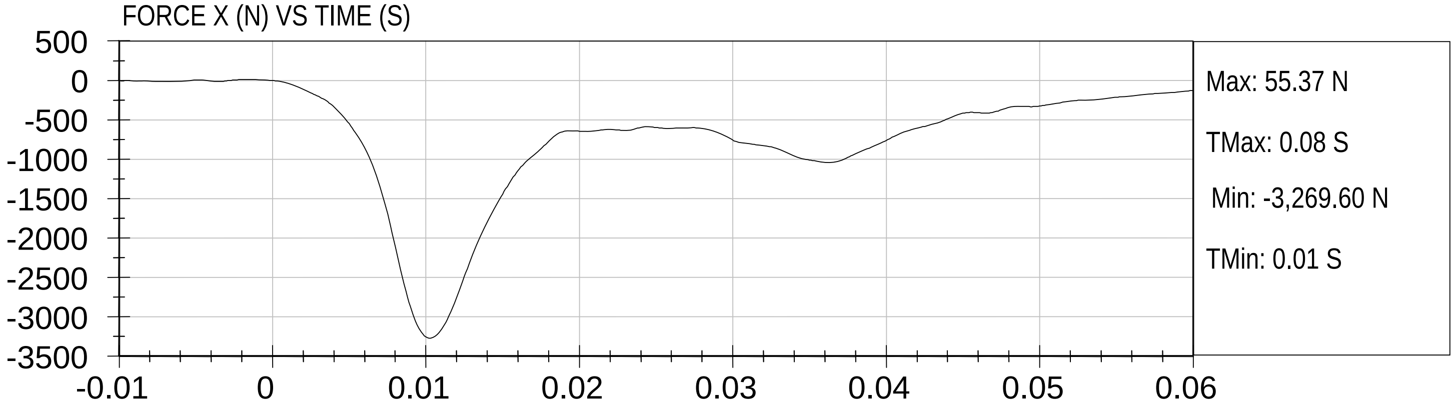
HEAD X ACCELERATION (G's) VS TIME (S)



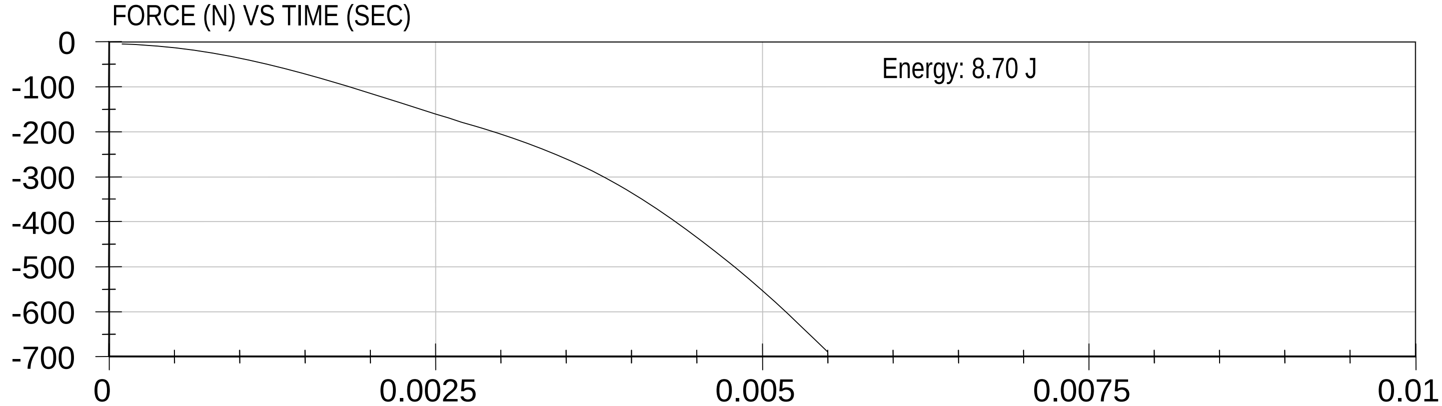
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



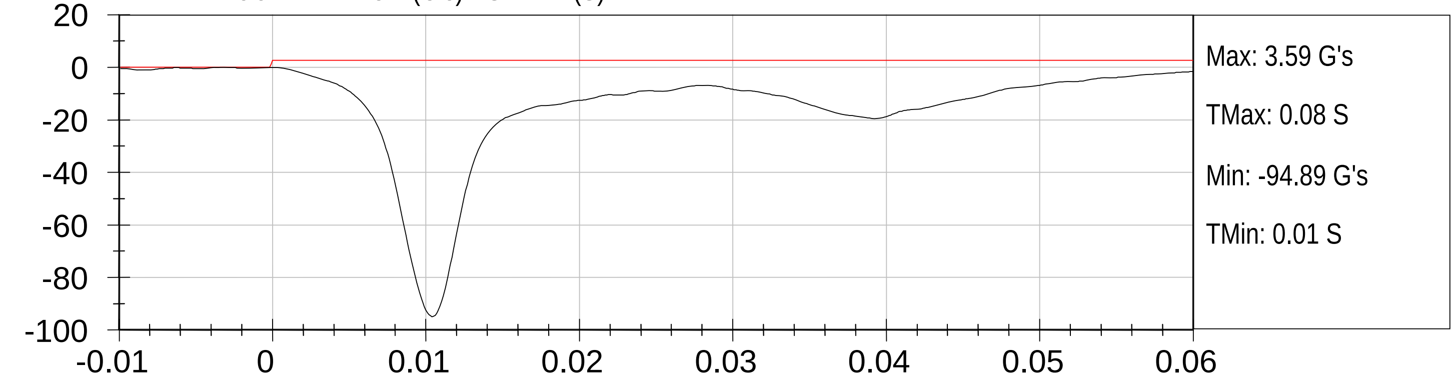
HEAD FORM IMPACT (6.69 m/s) Test Date: 10-21-2011

Vehicle: 2012 Bluebird All American D3 RE

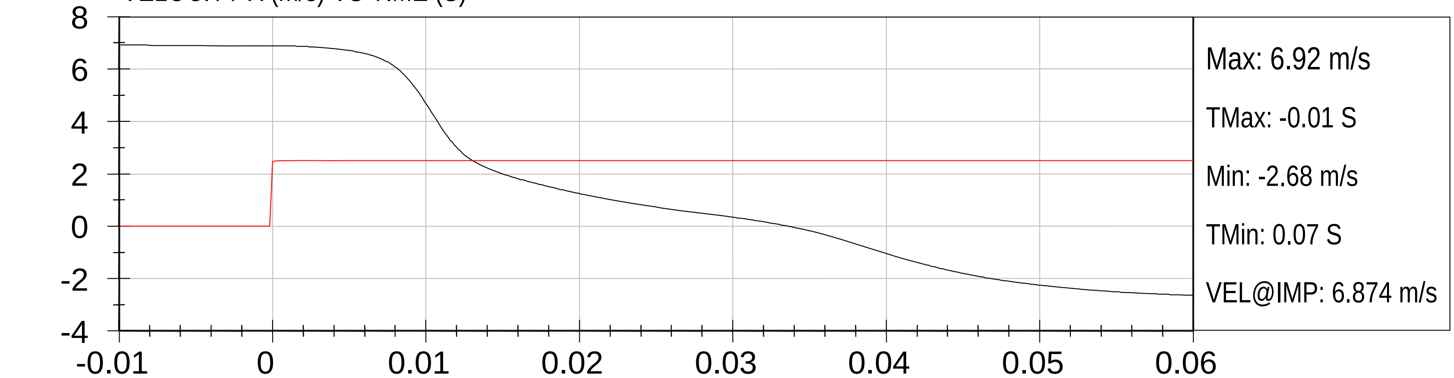
NHTSA #: CC0901 speed trap: 6.63 m/s Location: B18H12

Hic: 225.40 T1: 8.00 ms T2: 12.70 ms

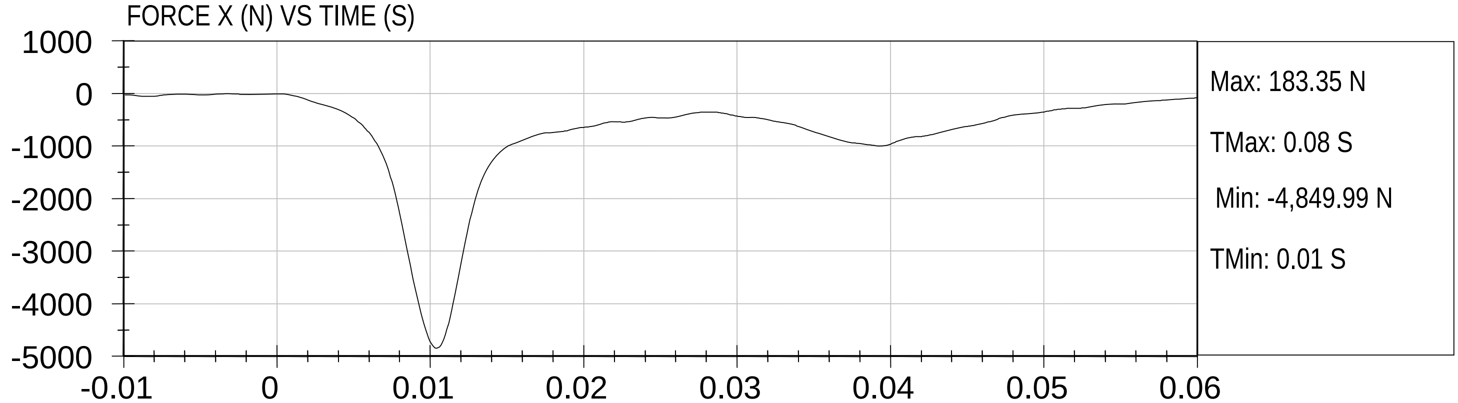
HEAD X ACCELERATION (G's) VS TIME (S)



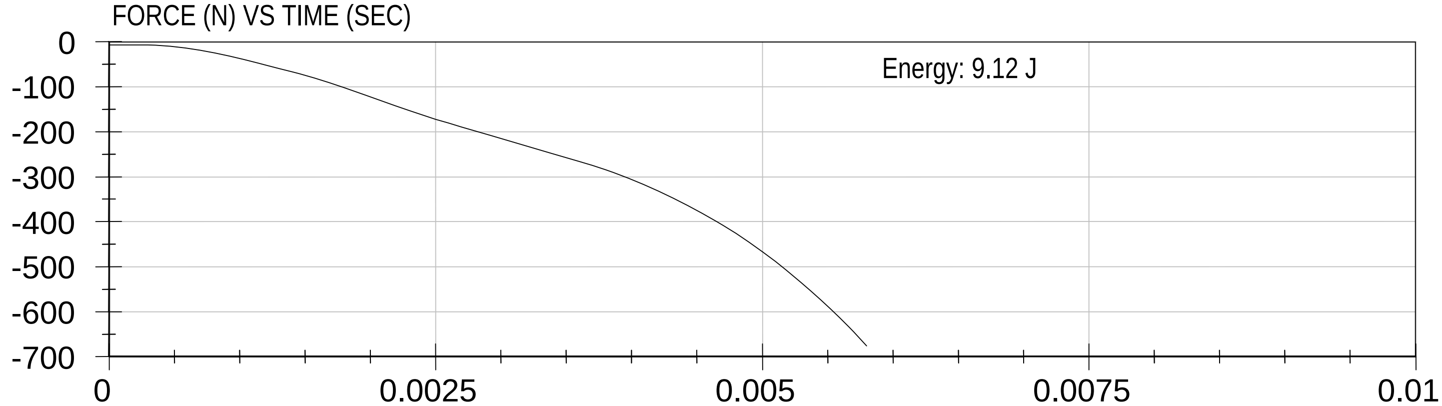
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-21-2011

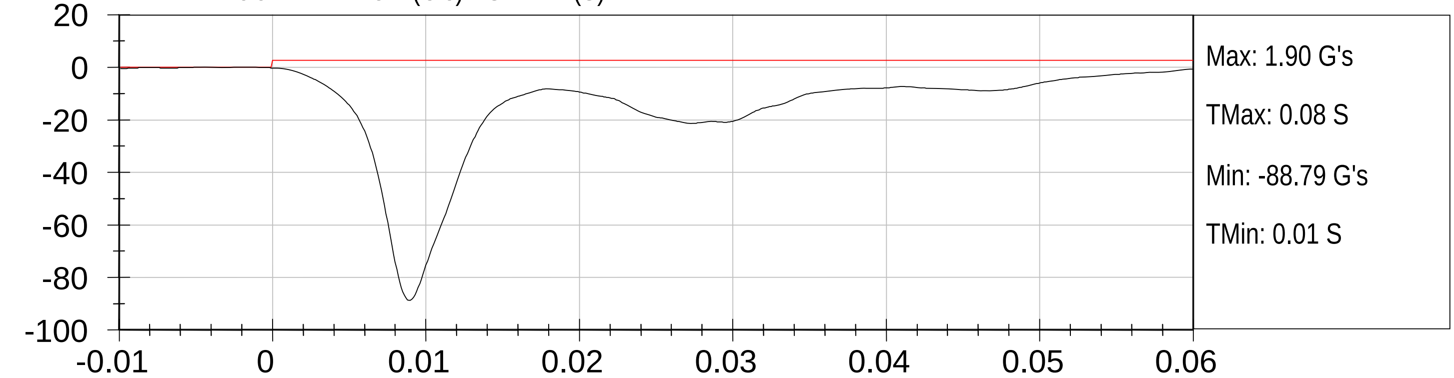
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.61 m/s

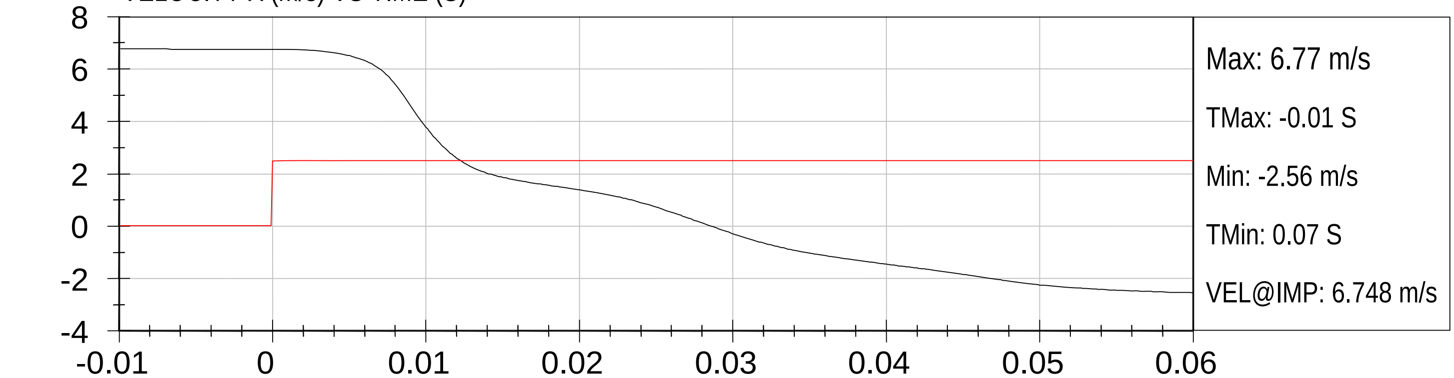
Location: B18H13

HEAD X ACCELERATION (G's) VS TIME (S)

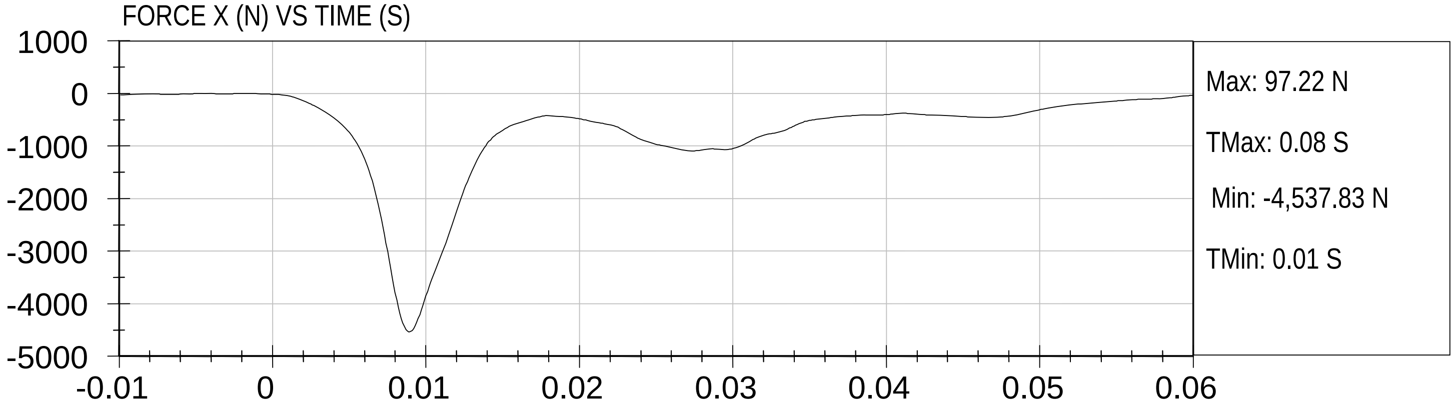
Hic: 199.96 T1: 6.90 ms T2: 12.20 ms



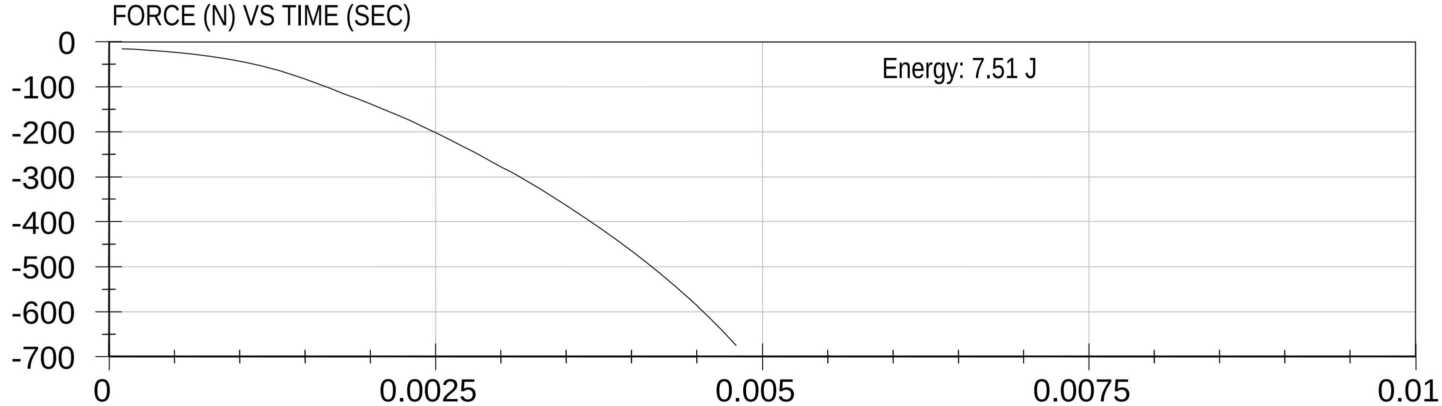
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)



FORCE (N) VS TIME (SEC)



HEAD FORM IMPACT (6.69 m/s)

Test Date: 10-21-2011

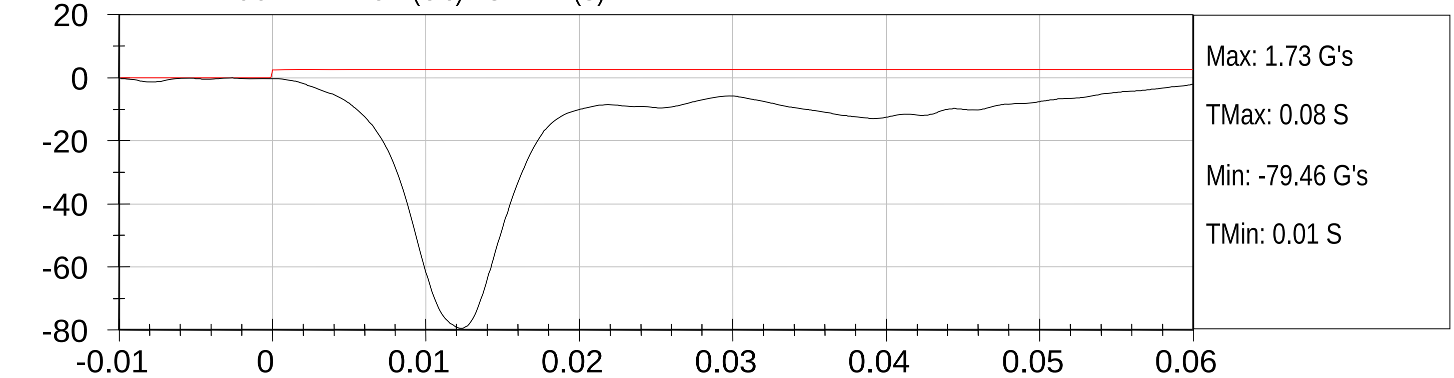
Vehicle: 2012 Bluebird All American D3 RE

NHTSA #: CC0901 speed trap: 6.65 m/s

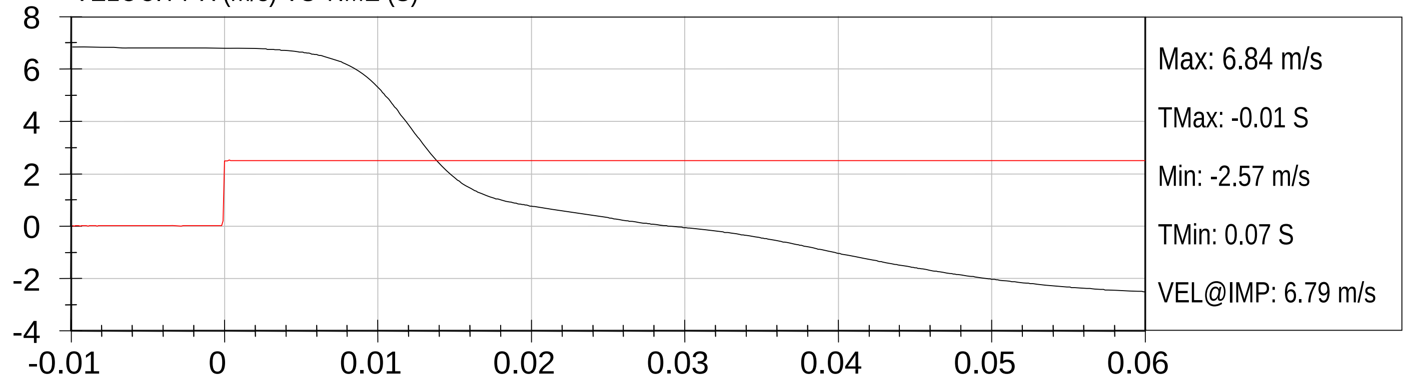
Location: B18H14

Hic: 227.46 T1: 8.70 ms T2: 15.60 ms

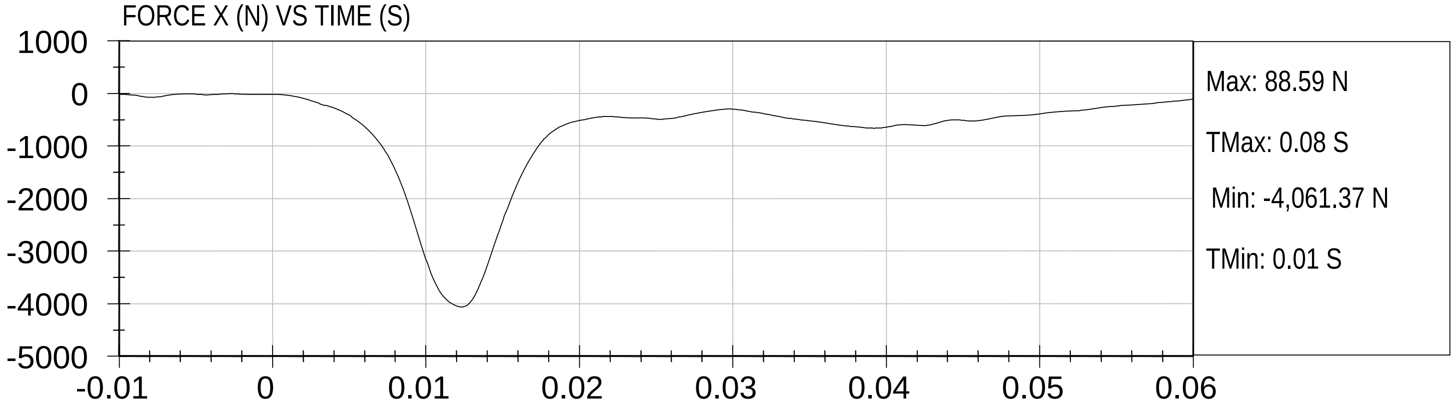
HEAD X ACCELERATION (G's) VS TIME (S)



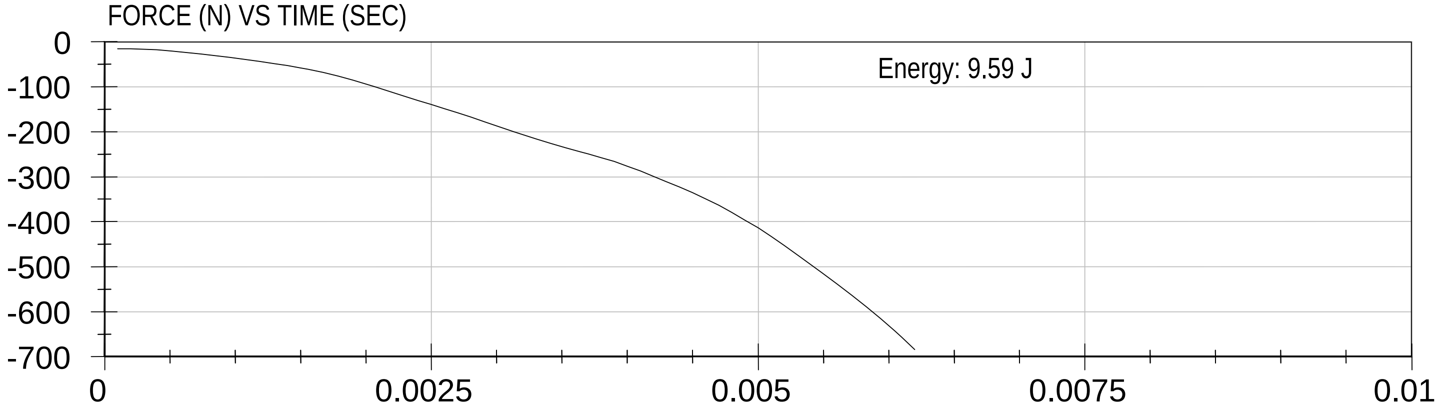
VELOCITY X (m/s) VS TIME (S)



FORCE X (N) VS TIME (S)

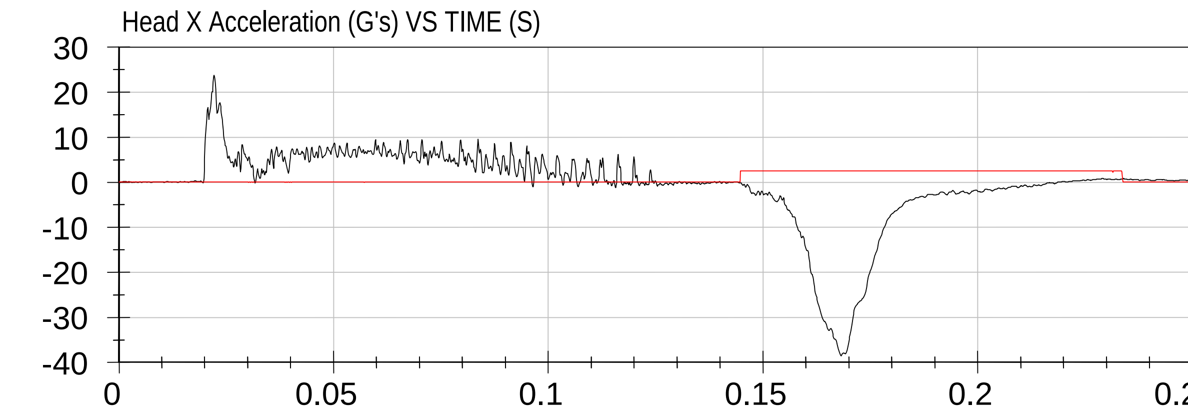


FORCE (N) VS TIME (SEC)

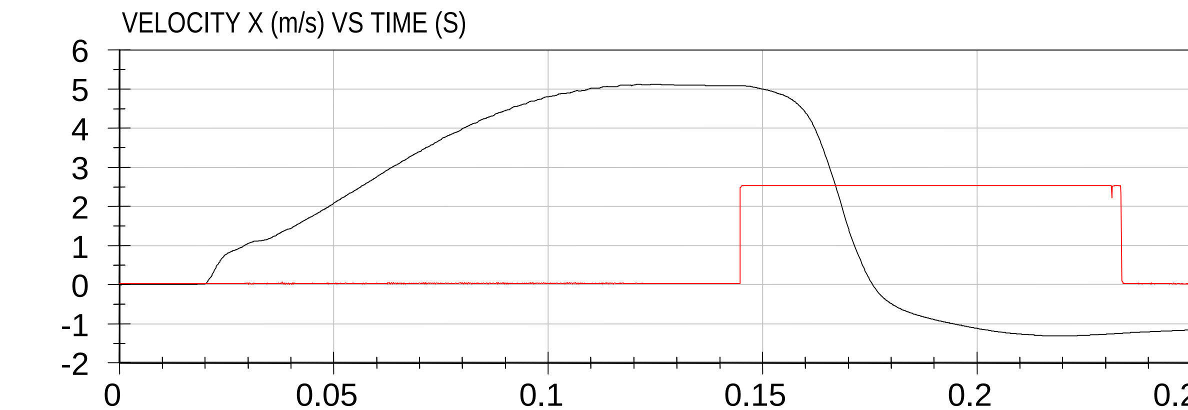


FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.88 m/s

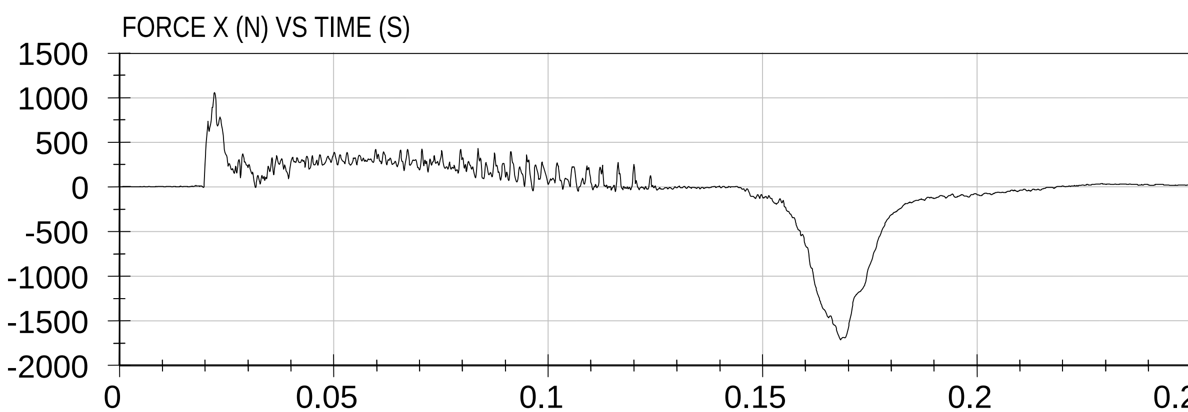
Test Date: 9-28-2011
Location: S2K1



Max: 23.80 G's
TMax: 0.02 s
Min: -38.52 G's
TMin: 0.17 s



Max: 5.12 m/s
TMax: 0.13 s
Min: -1.31 m/s
TMin: 0.22 s
VEL@IMP: 5.09 m/s

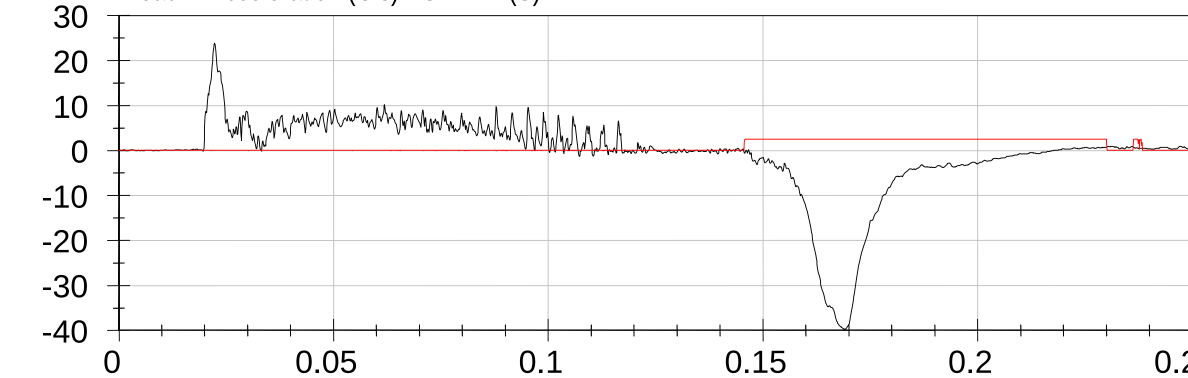


Max: 1,057.54 N
TMax: 0.02 s
Min: -1,711.98 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.89 m/s

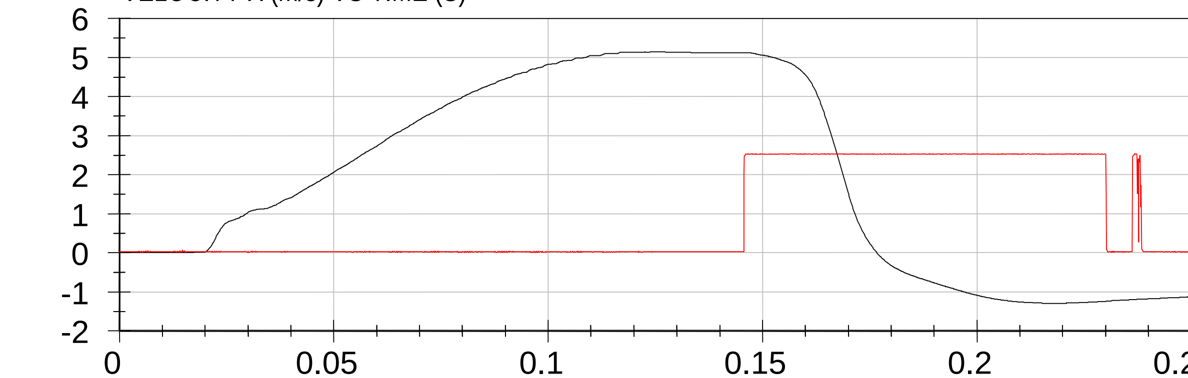
Test Date: 9-28-2011
Location: S2K2

Head X Acceleration (G's) VS TIME (S)



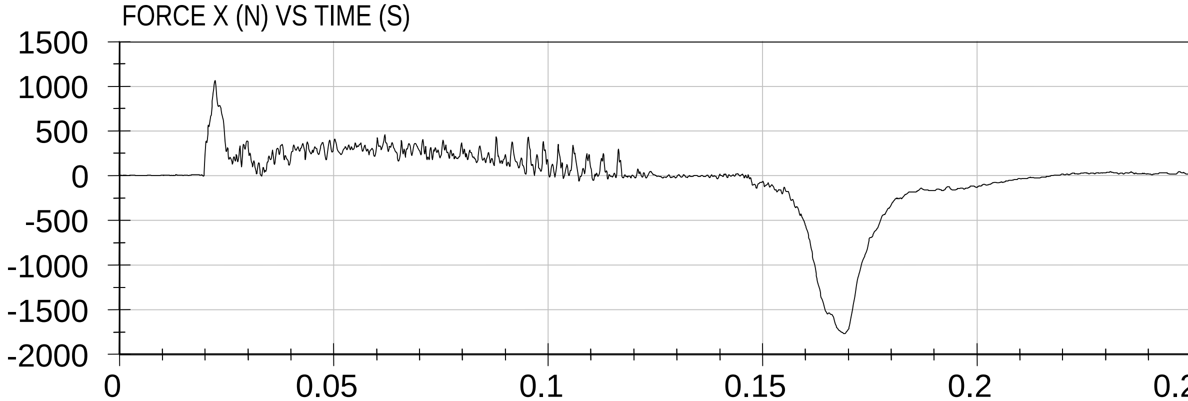
Max: 23.89 G's
TMax: 0.02 s
Min: -39.77 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.15 m/s
TMax: 0.13 s
Min: -1.29 m/s
TMin: 0.22 s
VEL@IMP: 5.12 m/s

FORCE X (N) VS TIME (S)

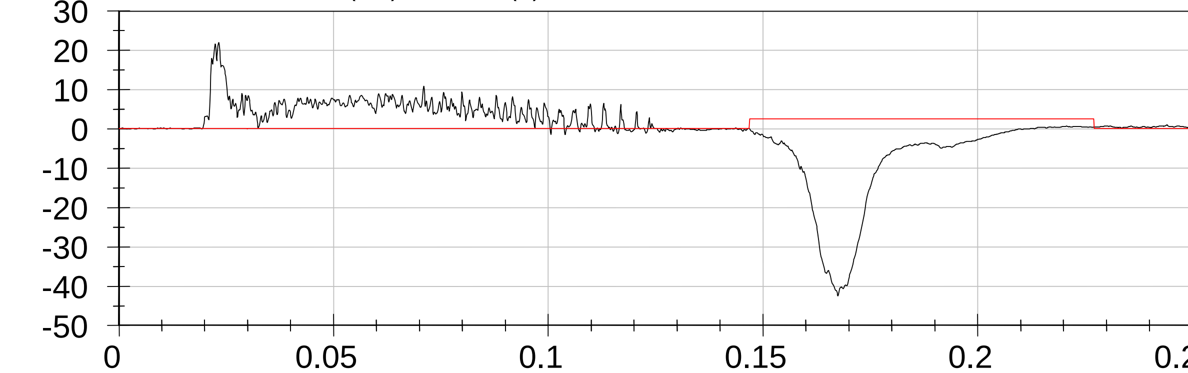


Max: 1,061.46 N
TMax: 0.02 s
Min: -1,767.35 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.86 m/s

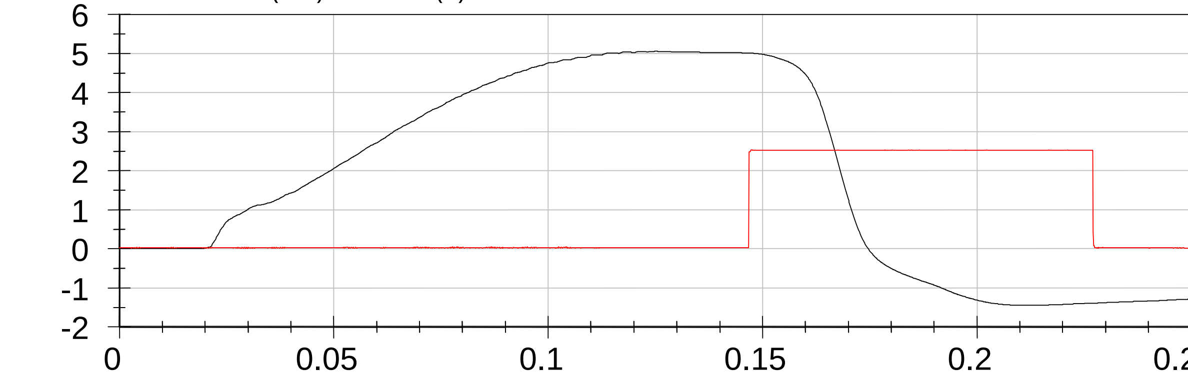
Test Date: 9-28-2011
Location S2K3

Head X Acceleration (G's) VS TIME (S)



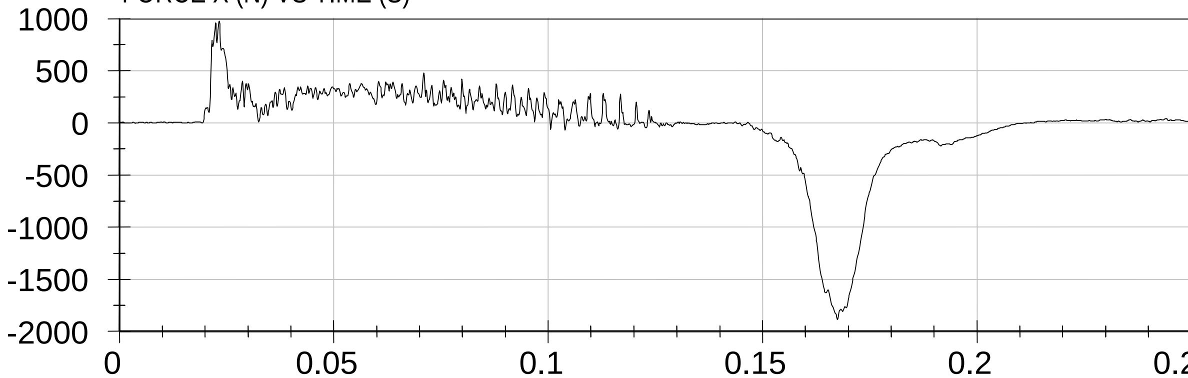
Max: 21.95 G's
TMax: 0.02 s
Min: -42.45 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.06 m/s
TMax: 0.13 s
Min: -1.44 m/s
TMin: 0.21 s
VEL@IMP: 5.01 m/s

FORCE X (N) VS TIME (S)

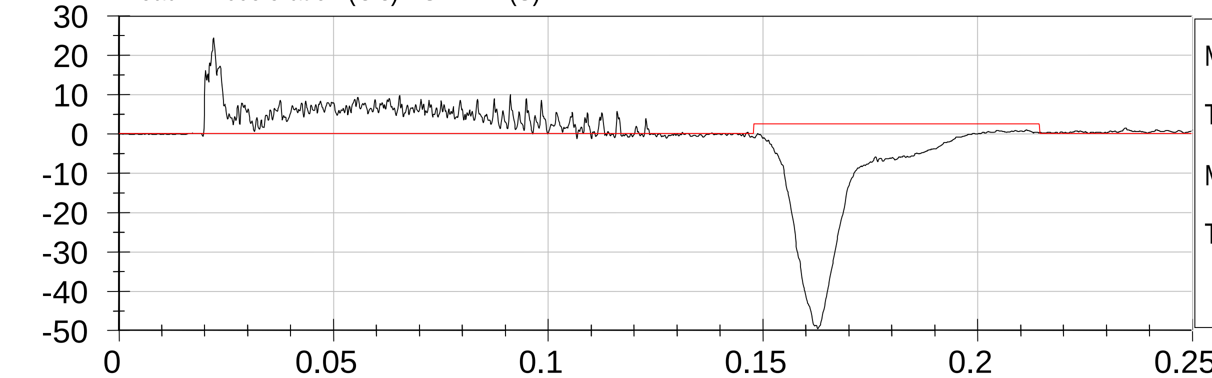


Max: 975.49 N
TMax: 0.02 s
Min: -1,886.24 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.89 m/s

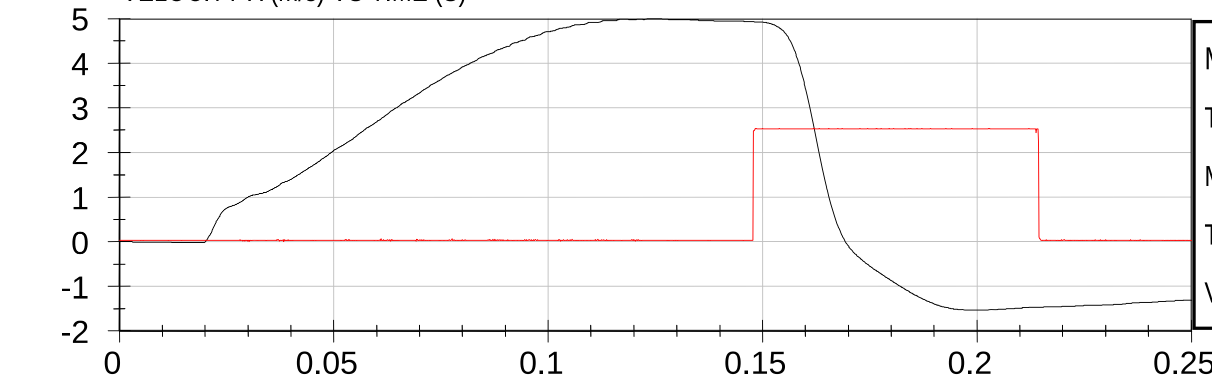
Test Date: 9-28-2011
Location: S2K4

Head X Acceleration (G's) VS TIME (S)



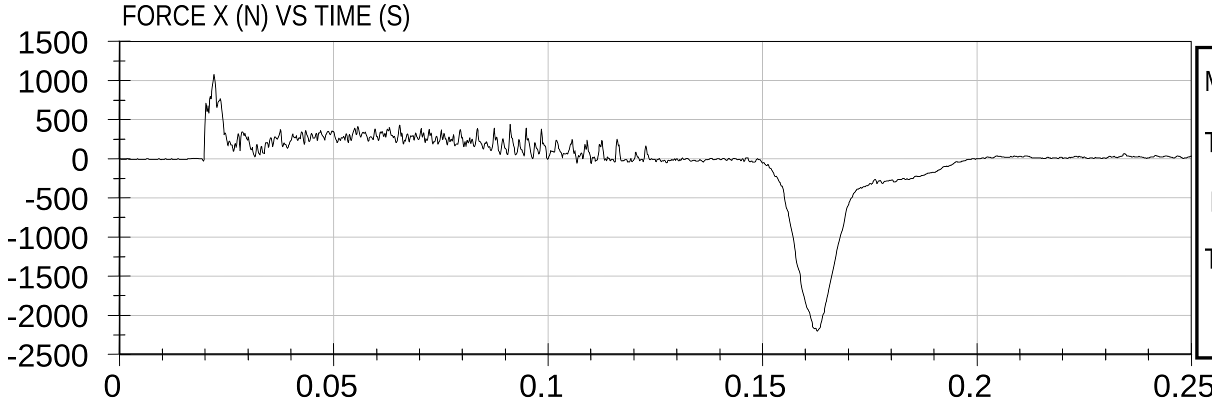
Max: 24.36 G's
TMax: 0.02 s
Min: -49.51 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.00 m/s
TMax: 0.12 s
Min: -1.53 m/s
TMin: 0.20 s
VEL@IMP: 4.93 m/s

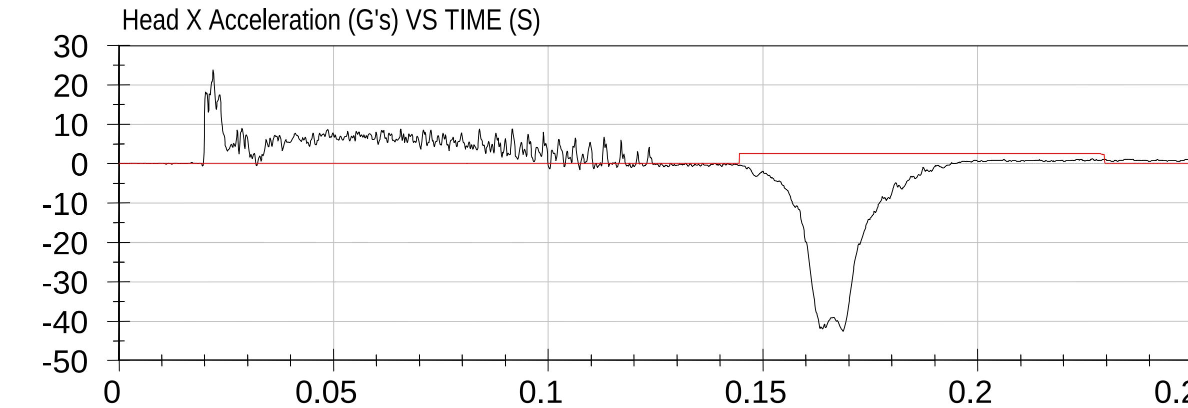
FORCE X (N) VS TIME (S)



Max: 1,082.51 N
TMax: 0.02 s
Min: -2,200.31 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.81 m/s

Test Date: 9-28-2011
Location: S2K5

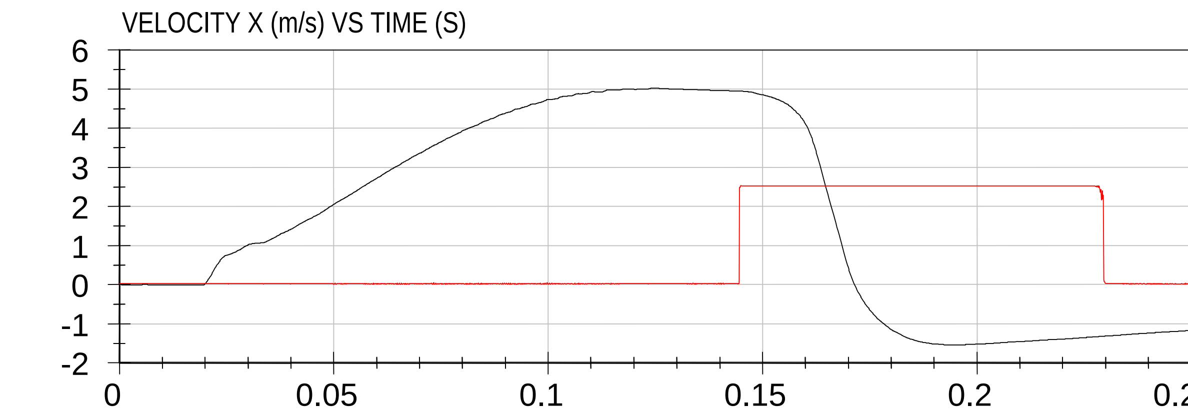


Max: 23.71 G's

TMax: 0.02 s

Min: -42.57 G's

TMin: 0.17 s



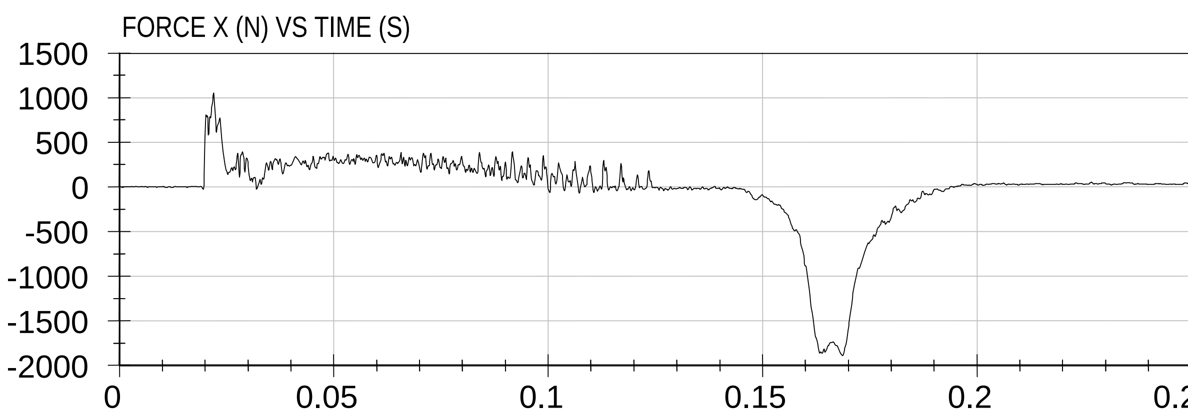
Max: 5.02 m/s

TMax: 0.12 s

Min: -1.54 m/s

TMin: 0.19 s

VEL@IMP: 4.95 m/s



Max: 1,053.57 N

TMax: 0.02 s

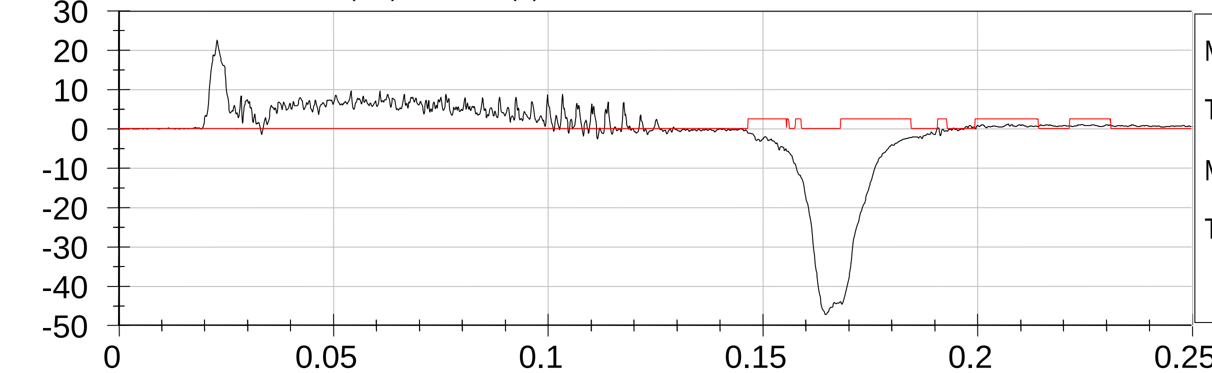
Min: -1,891.57 N

TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.81 m/s

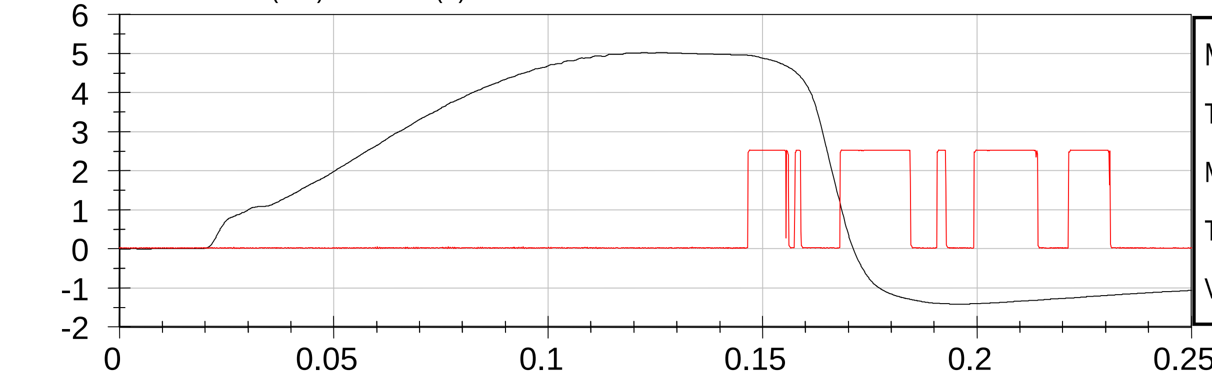
Test Date: 9-28-2011
Location: S2K6

Head X Acceleration (G's) VS TIME (S)



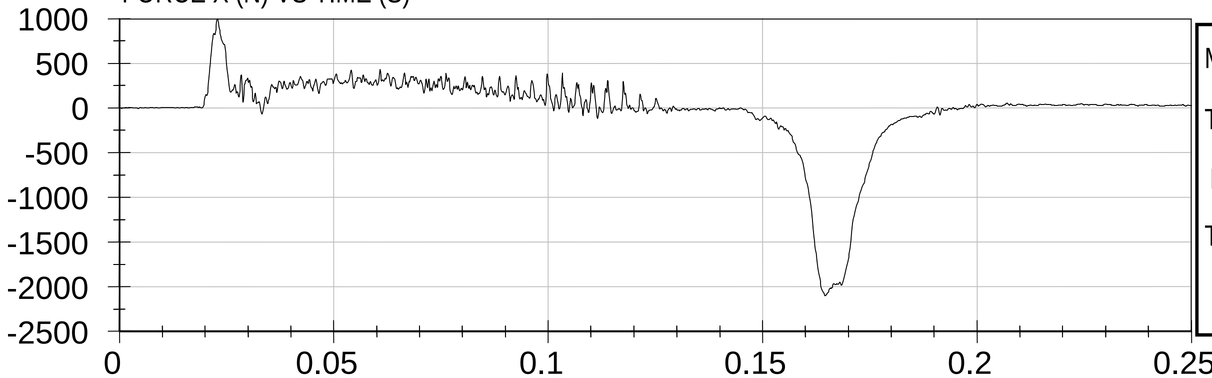
Max: 22.46 G's
TMax: 0.02 s
Min: -47.25 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.03 m/s
TMax: 0.13 s
Min: -1.42 m/s
TMin: 0.20 s
VEL@IMP: 4.96 m/s

FORCE X (N) VS TIME (S)

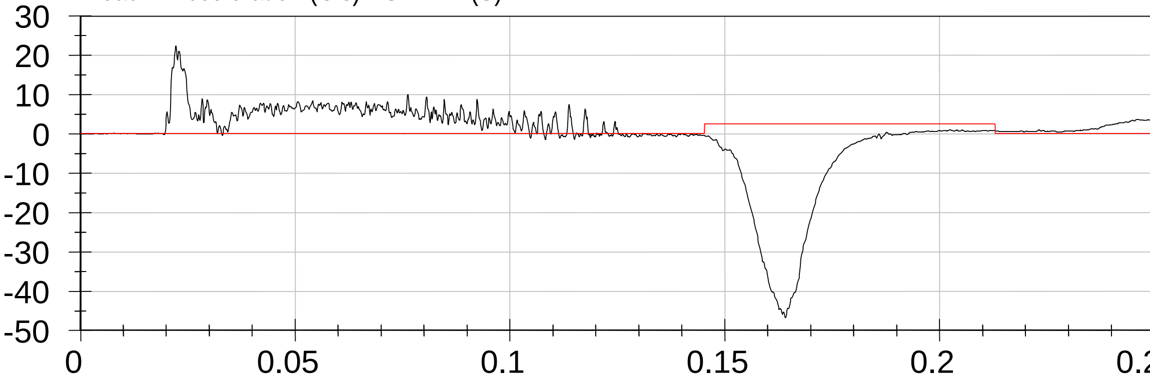


Max: 998.11 N
TMax: 0.02 s
Min: -2,099.63 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.80 m/s

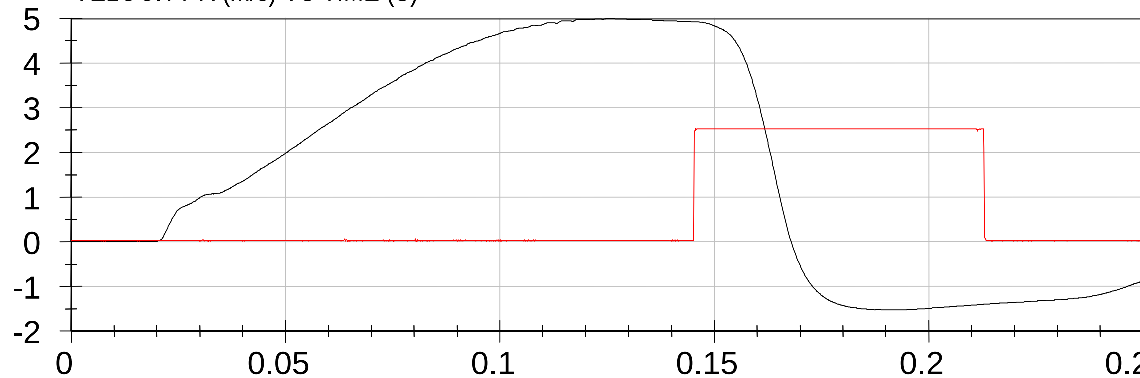
Test Date: 9-29-2011
Location: S2K7

Head X Acceleration (G's) VS TIME (S)



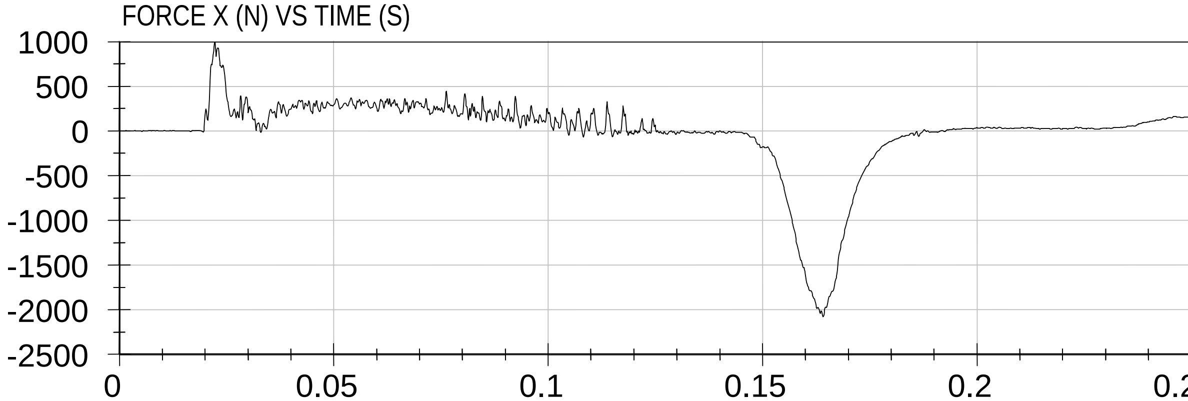
Max: 22.25 G's
TMax: 0.02 s
Min: -46.73 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.99 m/s
TMax: 0.13 s
Min: -1.52 m/s
TMin: 0.19 s
VEL@IMP: 4.92 m/s

FORCE X (N) VS TIME (S)

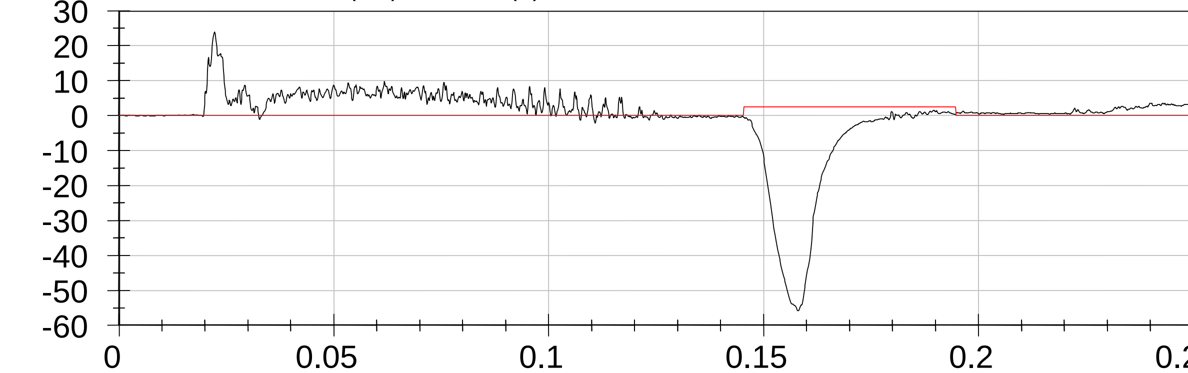


Max: 988.90 N
TMax: 0.02 s
Min: -2,076.55 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.80 m/s

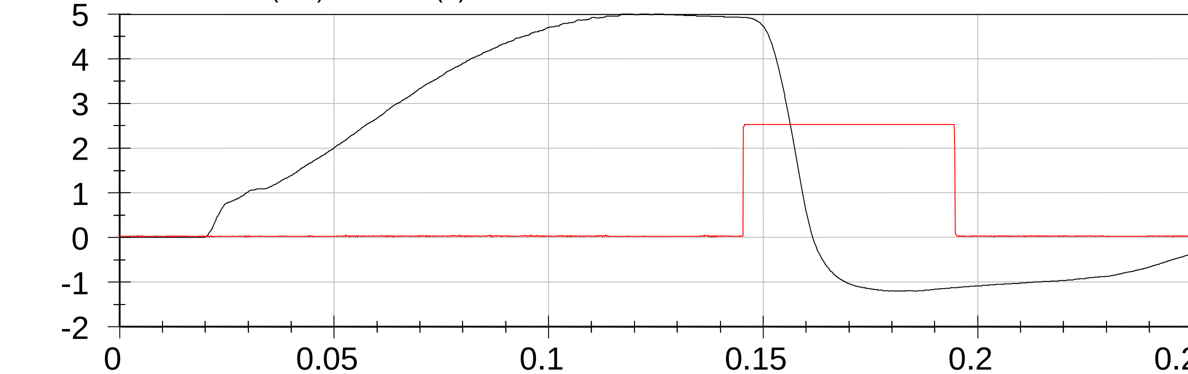
Test Date: 9-29-2011
Location: S2K8

Head X Acceleration (G's) VS TIME (S)



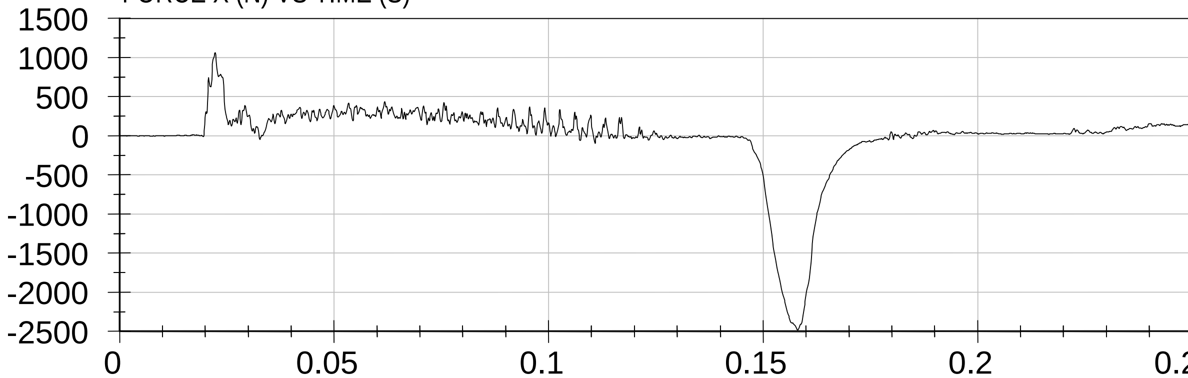
Max: 23.93 G's
TMax: 0.02 s
Min: -55.88 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.00 m/s
TMax: 0.12 s
Min: -1.20 m/s
TMin: 0.18 s
VEL@IMP: 4.92 m/s

FORCE X (N) VS TIME (S)

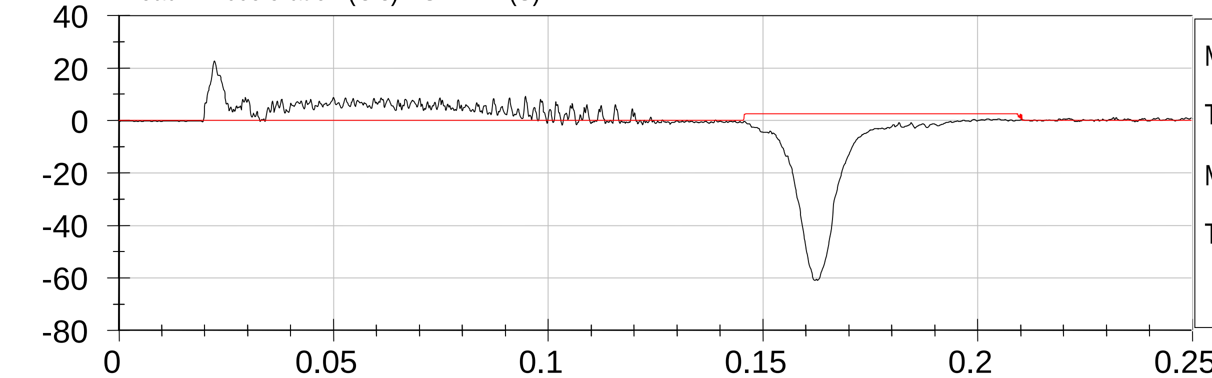


Max: 1,063.26 N
TMax: 0.02 s
Min: -2,483.20 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.89 m/s

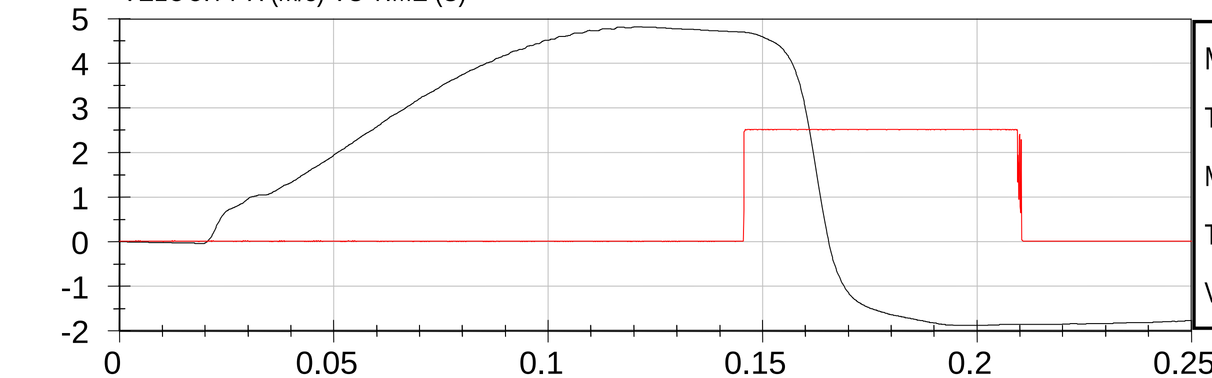
Test Date: 10-13-2011
Location: S7K1

Head X Acceleration (G's) VS TIME (S)



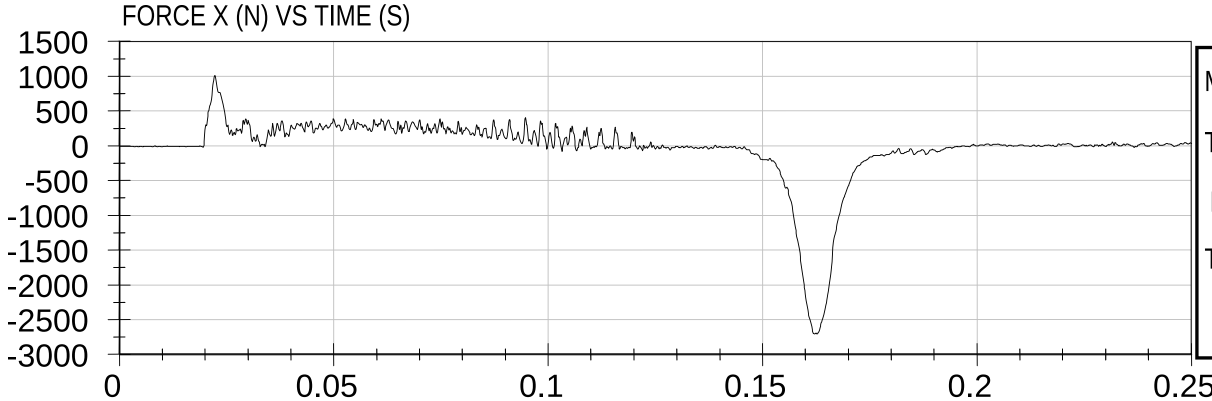
Max: 22.66 G's
TMax: 0.02 s
Min: -60.90 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.82 m/s
TMax: 0.12 s
Min: -1.88 m/s
TMin: 0.20 s
VEL@IMP: 4.69 m/s

FORCE X (N) VS TIME (S)

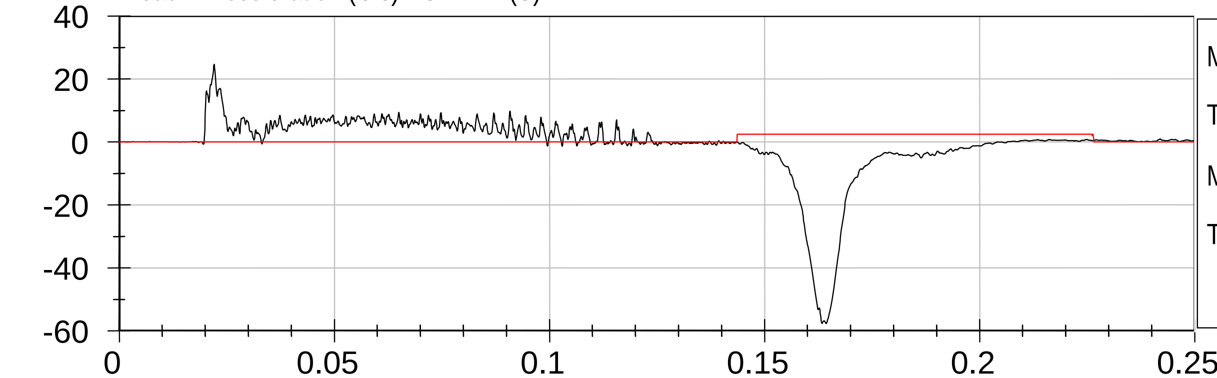


Max: 1,007.18 N
TMax: 0.02 s
Min: -2,706.24 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 Speed Trap: 4.92 m/s

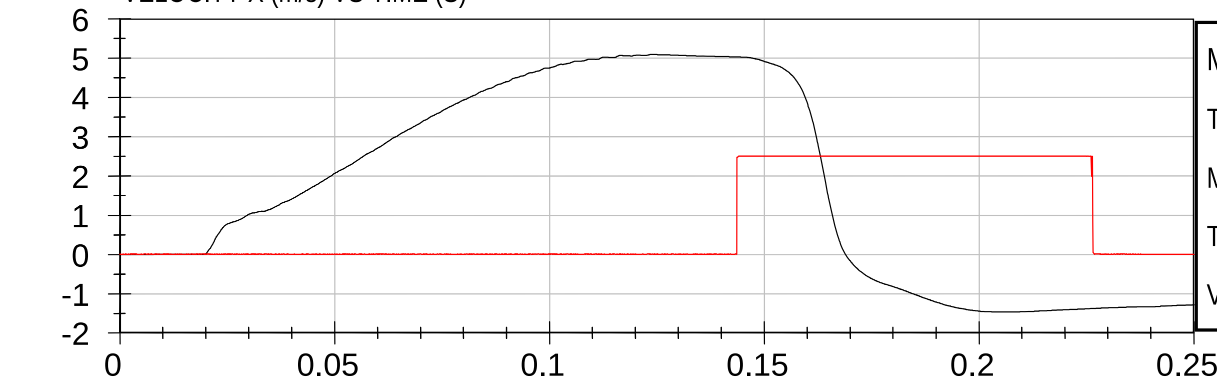
Test Date: 10-13-2011
Location: S7K2

Head X Acceleration (G's) VS TIME (S)



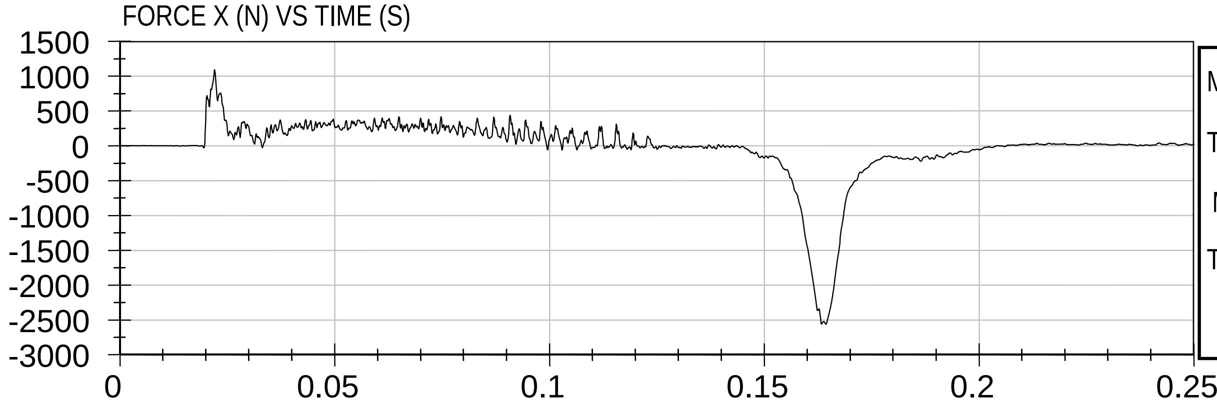
Max: 24.67 G's
TMax: 0.02 s
Min: -57.63 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.09 m/s
TMax: 0.12 s
Min: -1.47 m/s
TMin: 0.21 s
VEL@IMP: 5.03 m/s

FORCE X (N) VS TIME (S)

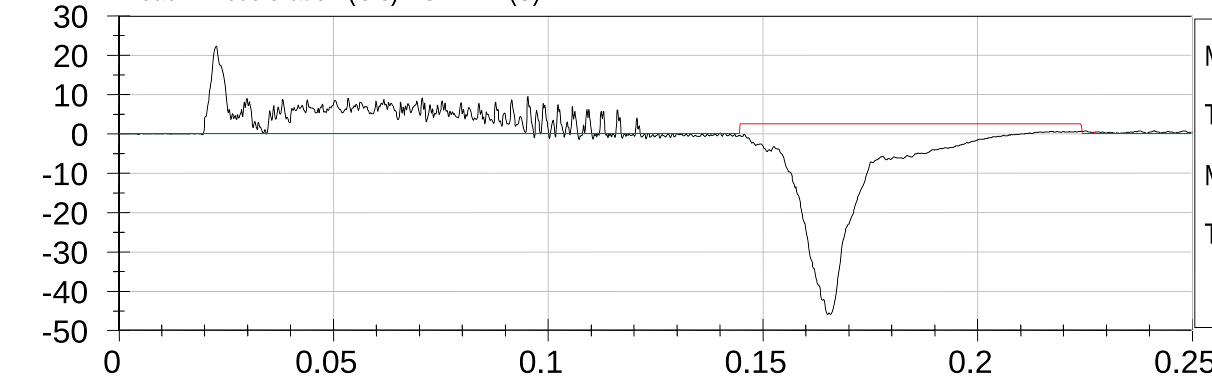


Max: 1,096.12 N
TMax: 0.02 s
Min: -2,561.08 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.88 m/s

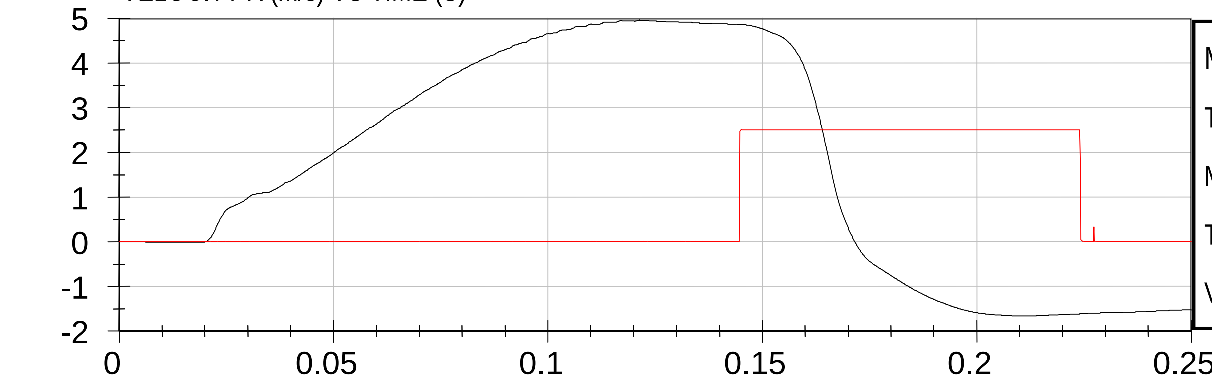
Test Date: 10-14-2011
Location: S7K3

Head X Acceleration (G's) VS TIME (S)



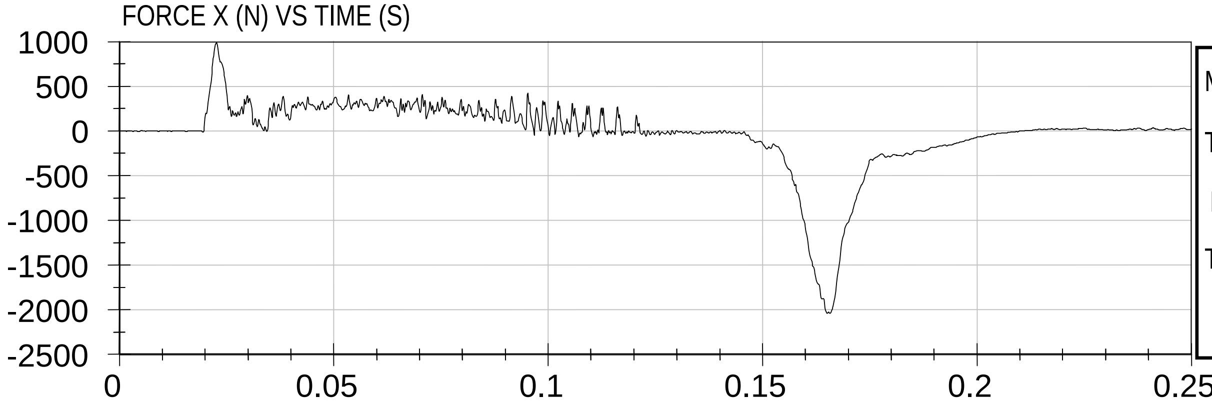
Max: 22.25 G's
TMax: 0.02 s
Min: -45.92 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.96 m/s
TMax: 0.12 s
Min: -1.66 m/s
TMin: 0.21 s
VEL@IMP: 4.86 m/s

FORCE X (N) VS TIME (S)

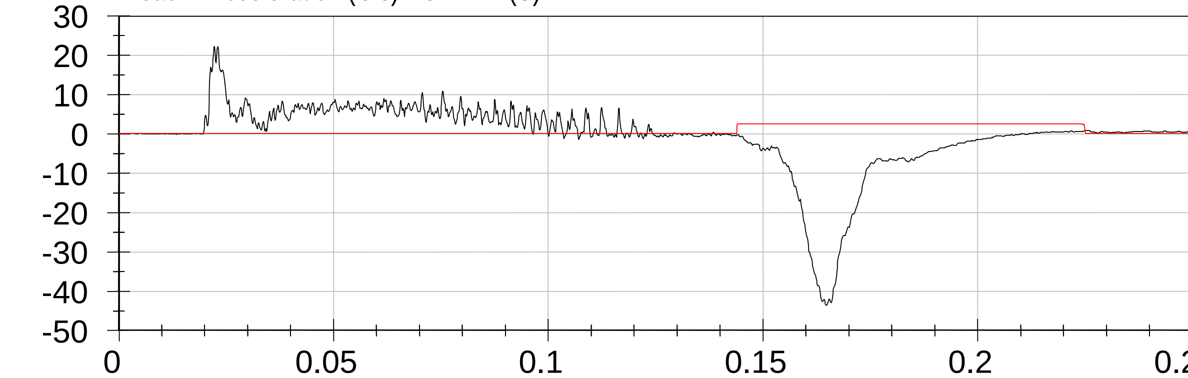


Max: 988.62 N
TMax: 0.02 s
Min: -2,040.49 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.90 m/s

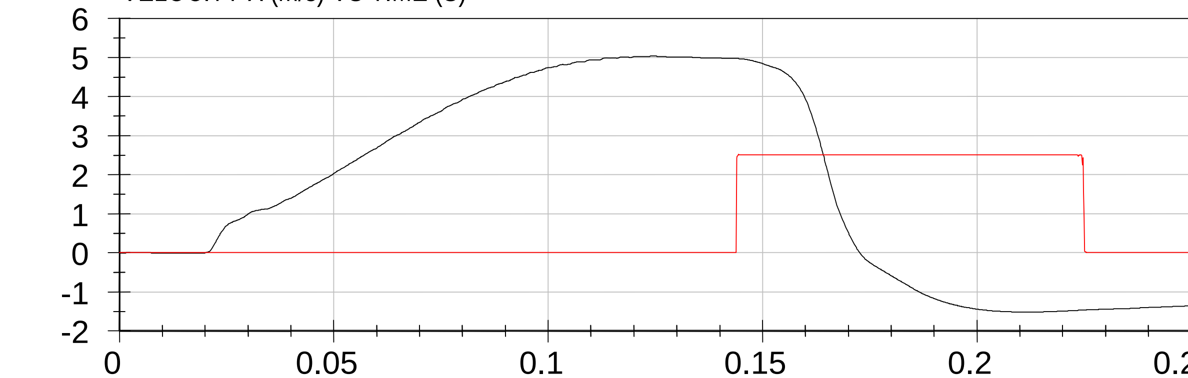
Test Date: 10-14-2011
Location: S7K4

Head X Acceleration (G's) VS TIME (S)



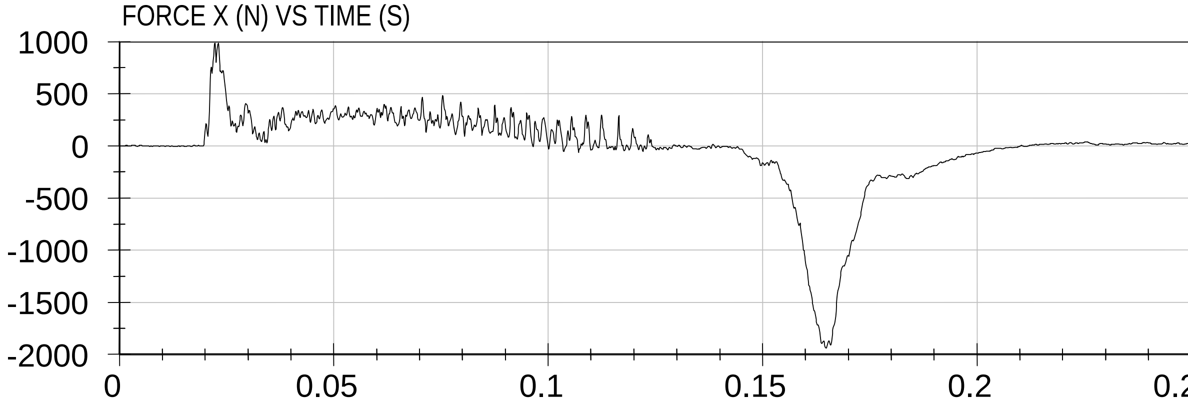
Max: 22.19 G's
TMax: 0.02 s
Min: -43.61 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.04 m/s
TMax: 0.12 s
Min: -1.52 m/s
TMin: 0.21 s
VEL@IMP: 4.97 m/s

FORCE X (N) VS TIME (S)

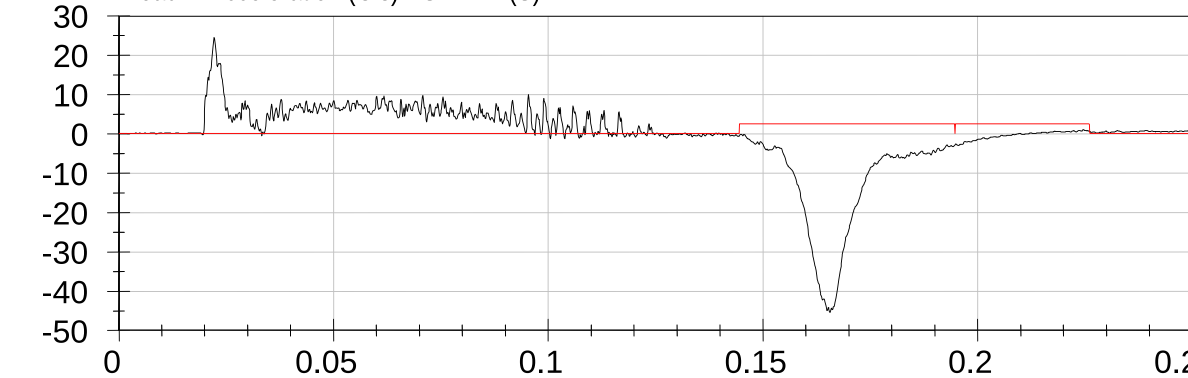


Max: 986.00 N
TMax: 0.02 s
Min: -1,938.10 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.86 m/s

Test Date: 10-14-2011
Location: S7K5

Head X Acceleration (G's) VS TIME (S)



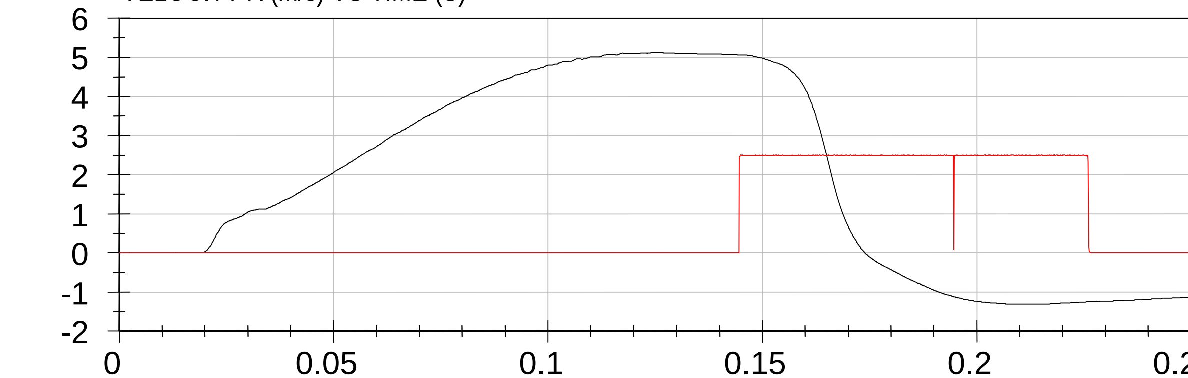
Max: 24.41 G's

TMax: 0.02 s

Min: -45.46 G's

TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.12 m/s

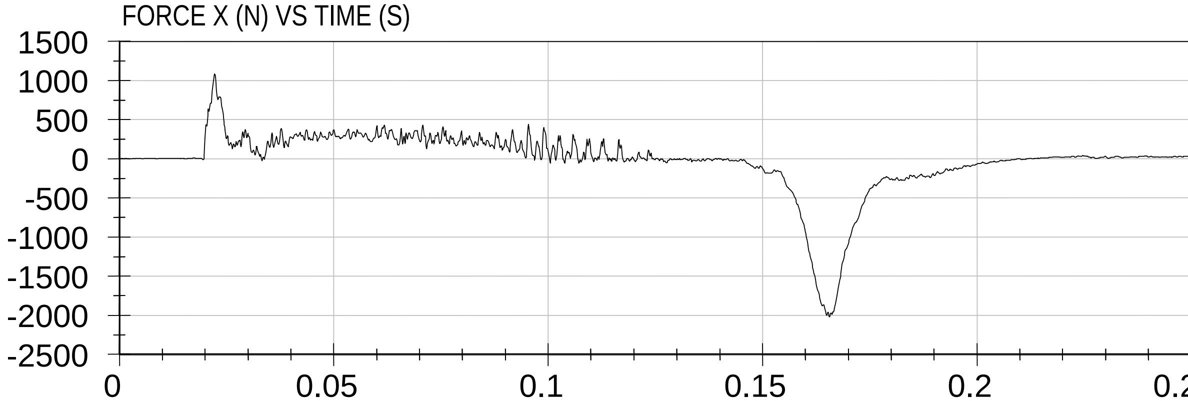
TMax: 0.12 s

Min: -1.31 m/s

TMin: 0.21 s

VEL@IMP: 5.06 m/s

FORCE X (N) VS TIME (S)



Max: 1,084.65 N

TMax: 0.02 s

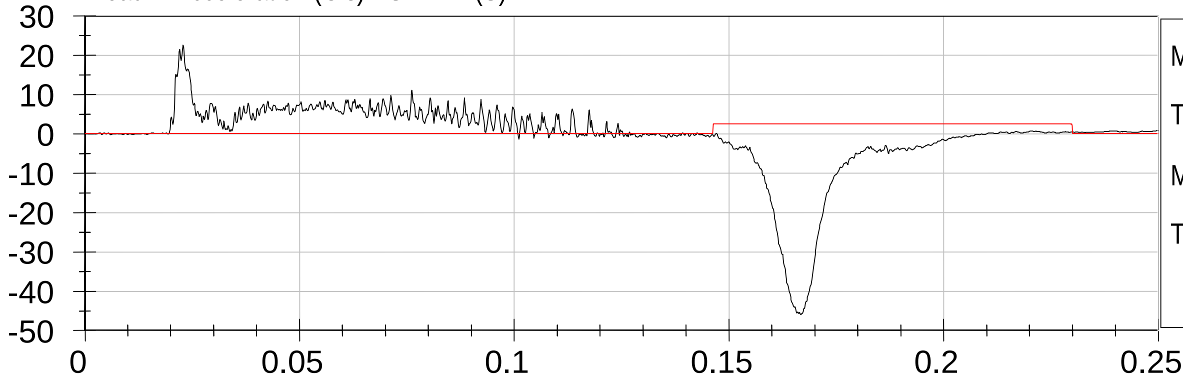
Min: -2,020.00 N

TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.83 m/s

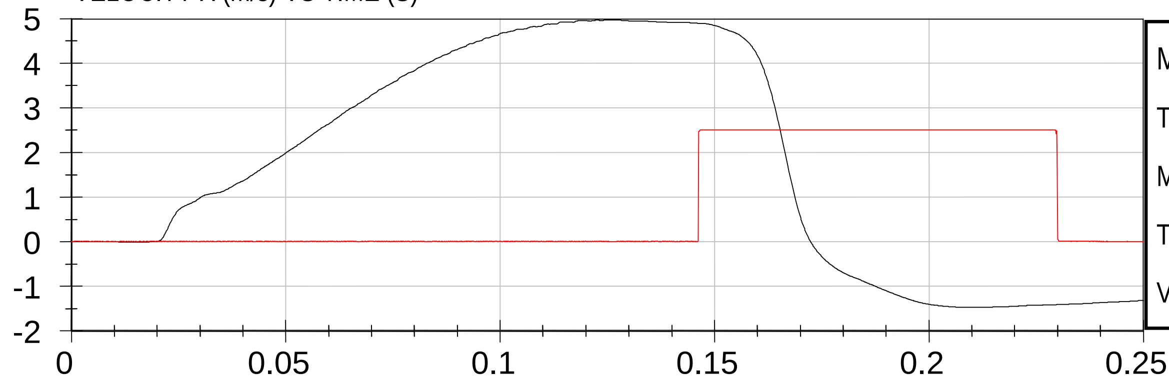
Test Date: 10-14-2011
Location: S7K6

Head X Acceleration (G's) VS TIME (S)



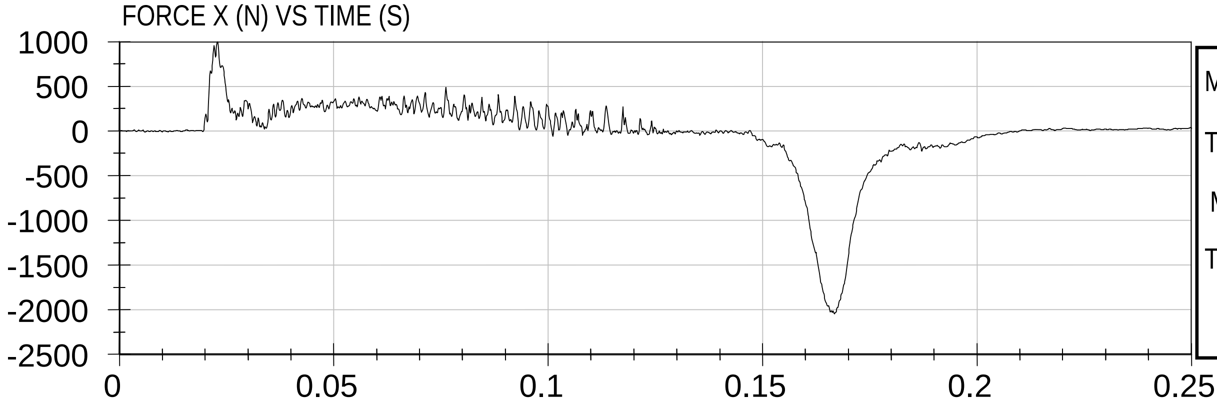
Max: 22.51 G's
TMax: 0.02 s
Min: -46.04 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.97 m/s
TMax: 0.13 s
Min: -1.47 m/s
TMin: 0.21 s
VEL@IMP: 4.89 m/s

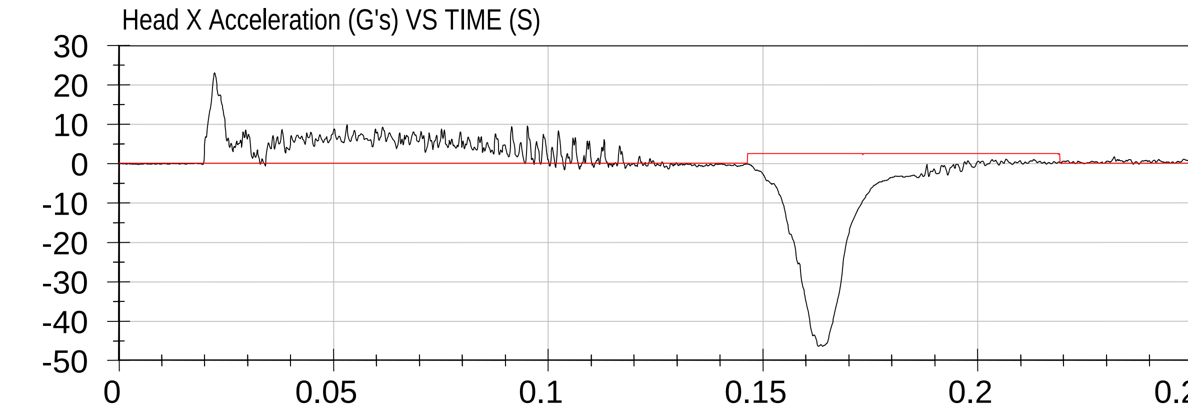
FORCE X (N) VS TIME (S)



Max: 1,000.31 N
TMax: 0.02 s
Min: -2,045.91 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.81 m/s

Test Date: 10-14-2011
Location: S7K7

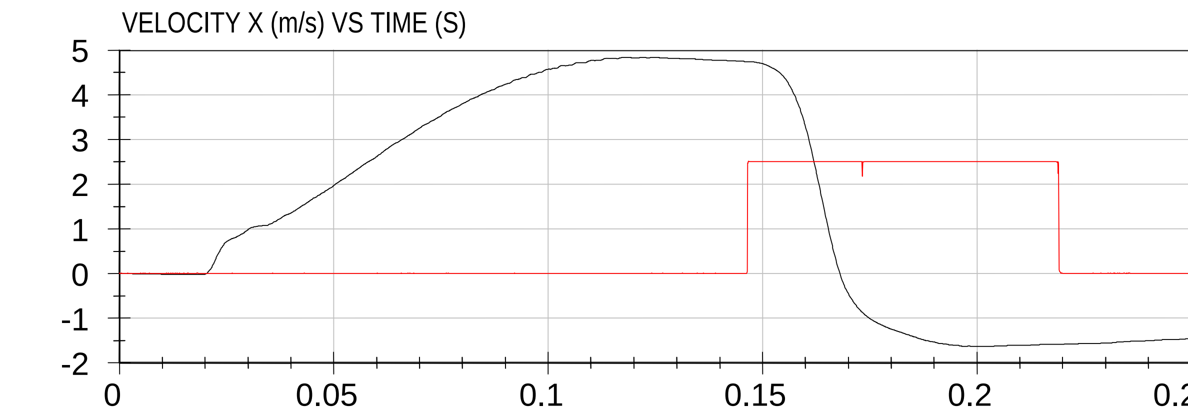


Max: 23.02 G's

TMax: 0.02 s

Min: -46.39 G's

TMin: 0.16 s



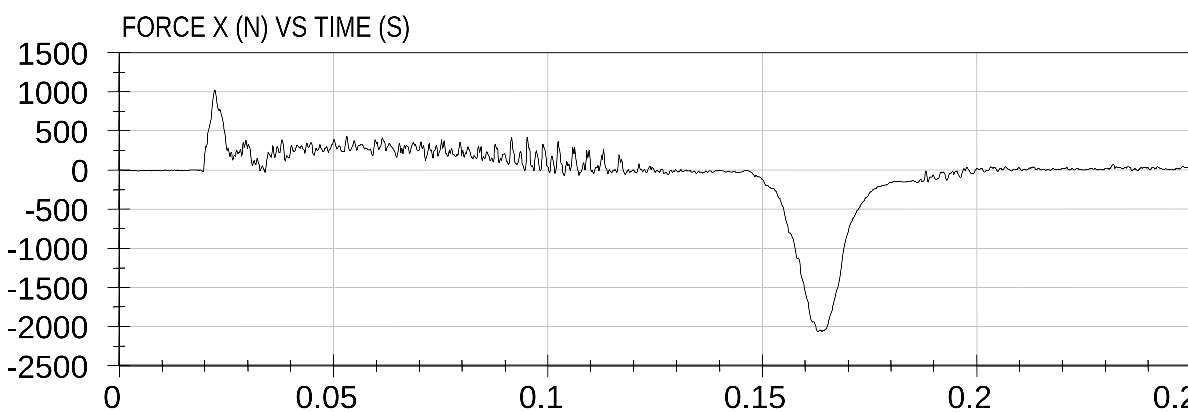
Max: 4.84 m/s

TMax: 0.12 s

Min: -1.63 m/s

TMin: 0.20 s

VEL@IMP: 4.74 m/s



Max: 1,023.12 N

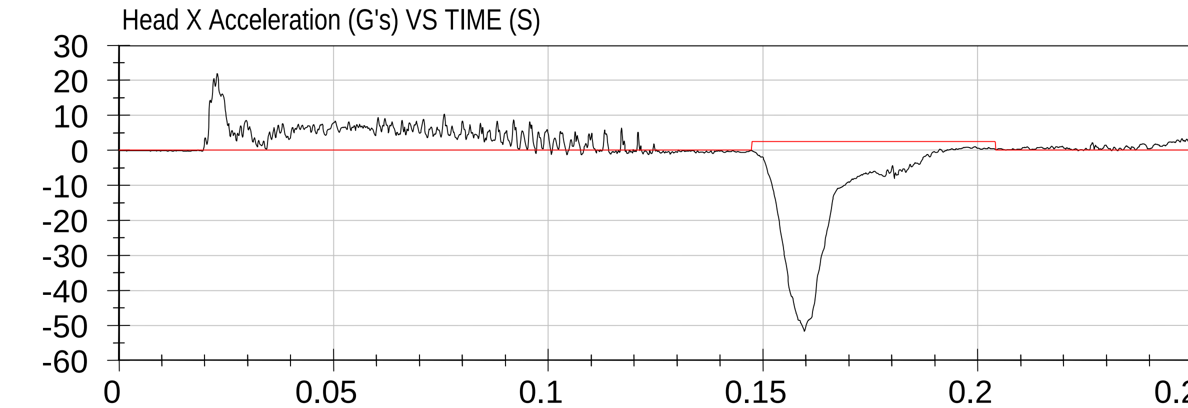
TMax: 0.02 s

Min: -2,061.75 N

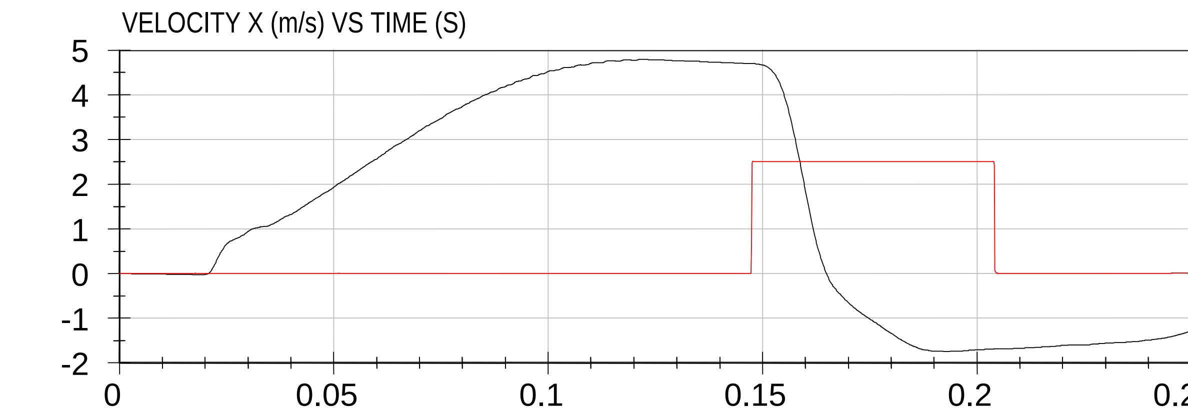
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.83 m/s

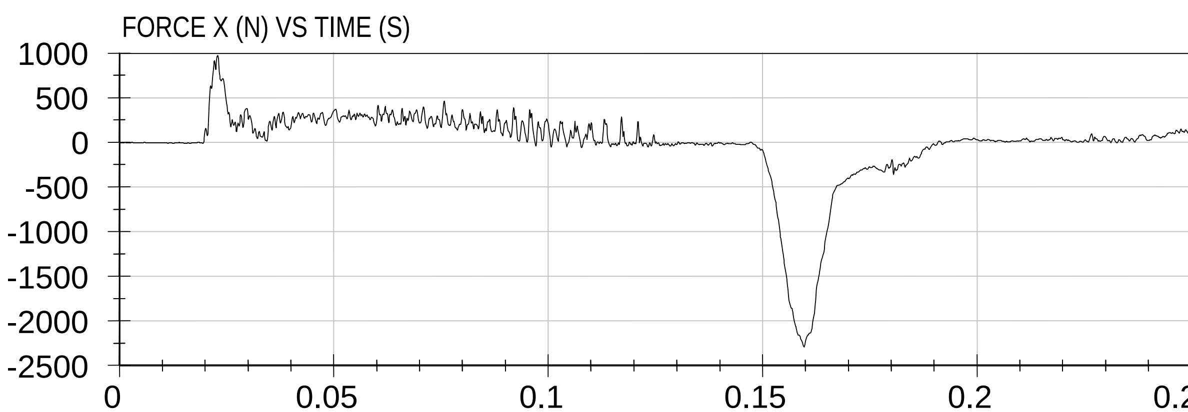
Test Date: 10-14-2011
Location: S7K8



Max: 21.85 G's
TMax: 0.02 s
Min: -51.64 G's
TMin: 0.16 s



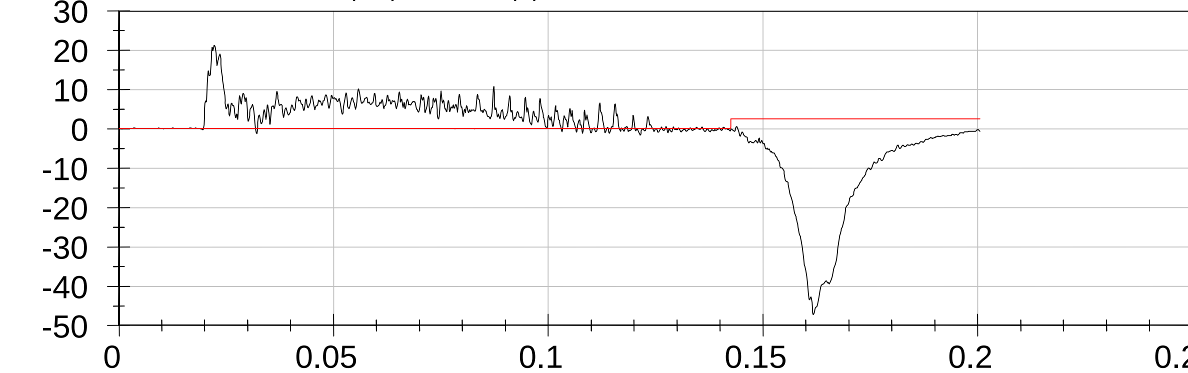
Max: 4.79 m/s
TMax: 0.12 s
Min: -1.74 m/s
TMin: 0.19 s
VEL@IMP: 4.69 m/s



Max: 971.22 N
TMax: 0.02 s
Min: -2,294.81 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS	Test Date: 10-18-2011
Vehicle: 2012 Bluebird All American D3 RE	Location: S15K1
NHTSA #: CC0901 speed trap: 4.91 m/s	

Head X Acceleration (G's) VS TIME (S)



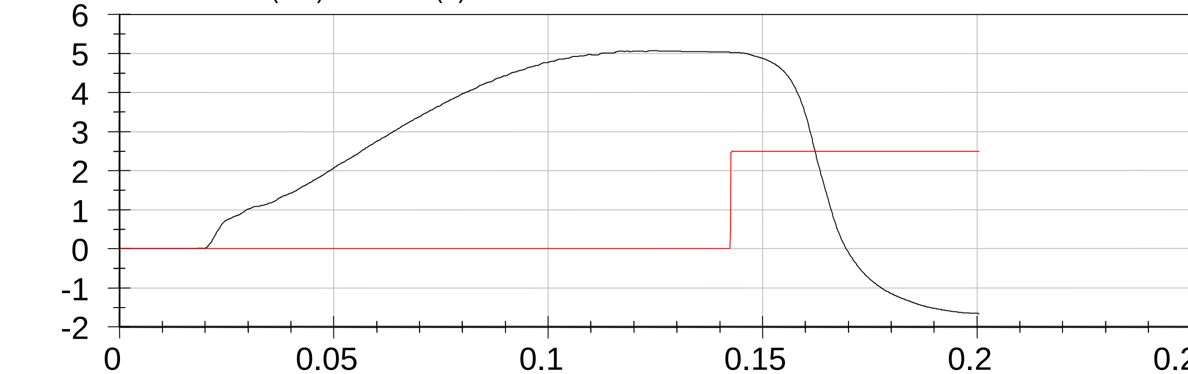
Max: 21.21 G's

TMax: 0.02 s

Min: -47.26 G's

TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.07 m/s

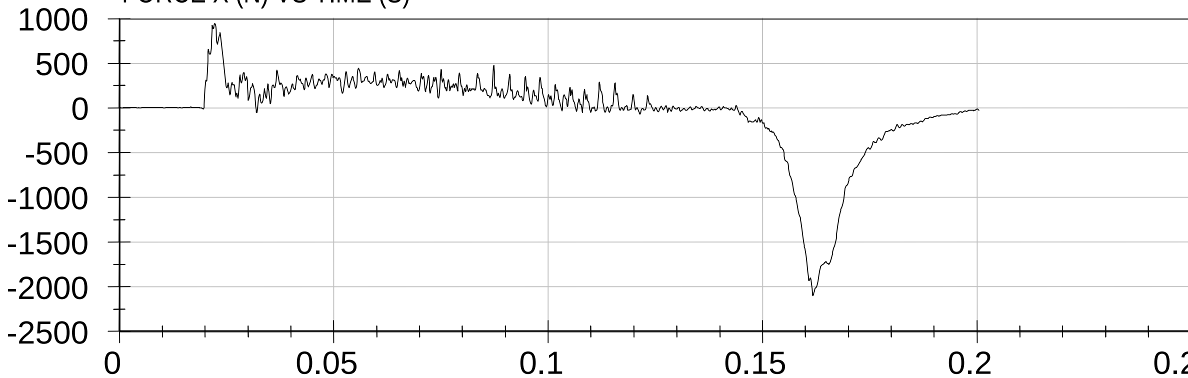
TMax: 0.12 s

Min: -1.66 m/s

TMin: 0.20 s

VEL@IMP: 5.03 m/s

FORCE X (N) VS TIME (S)



Max: 942.46 N

TMax: 0.02 s

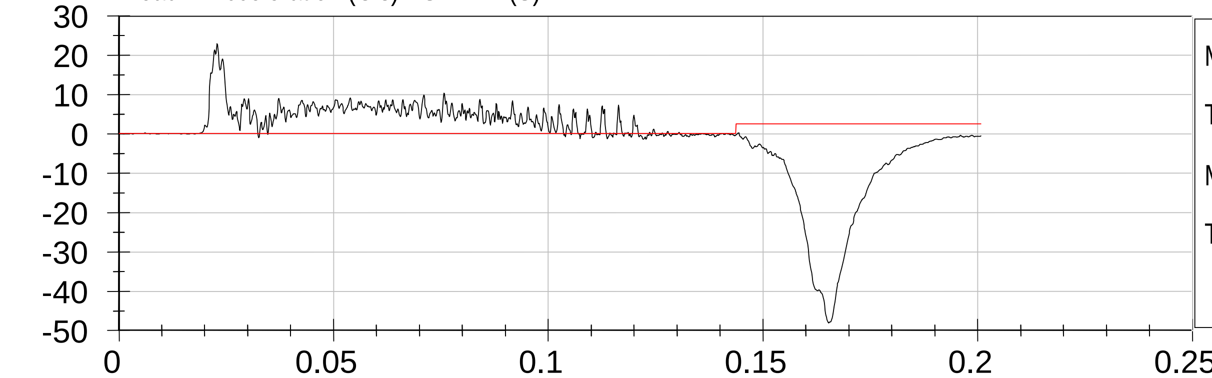
Min: -2,100.16 N

TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.91 m/s

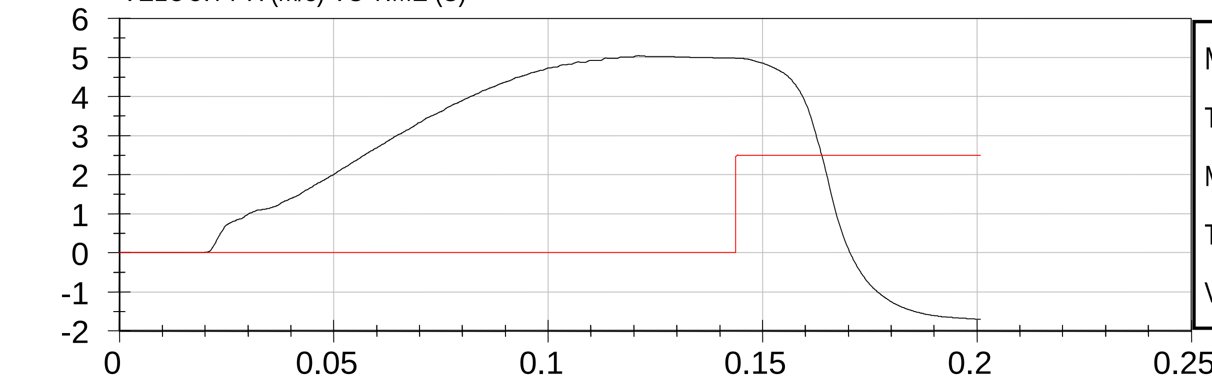
Test Date: 10-19-2011
Location: S15K2

Head X Acceleration (G's) VS TIME (S)



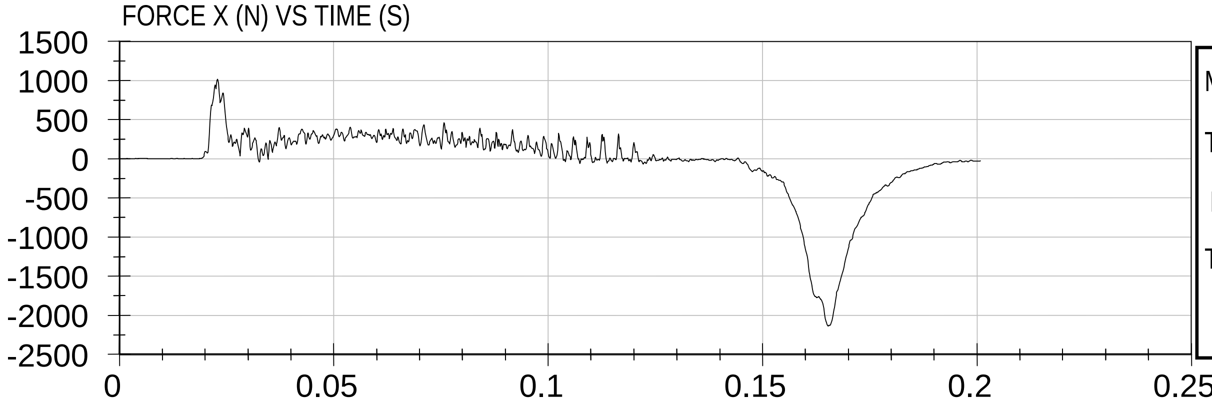
Max: 22.90 G's
TMax: 0.02 s
Min: -48.07 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.04 m/s
TMax: 0.12 s
Min: -1.70 m/s
TMin: 0.20 s
VEL@IMP: 4.98 m/s

FORCE X (N) VS TIME (S)

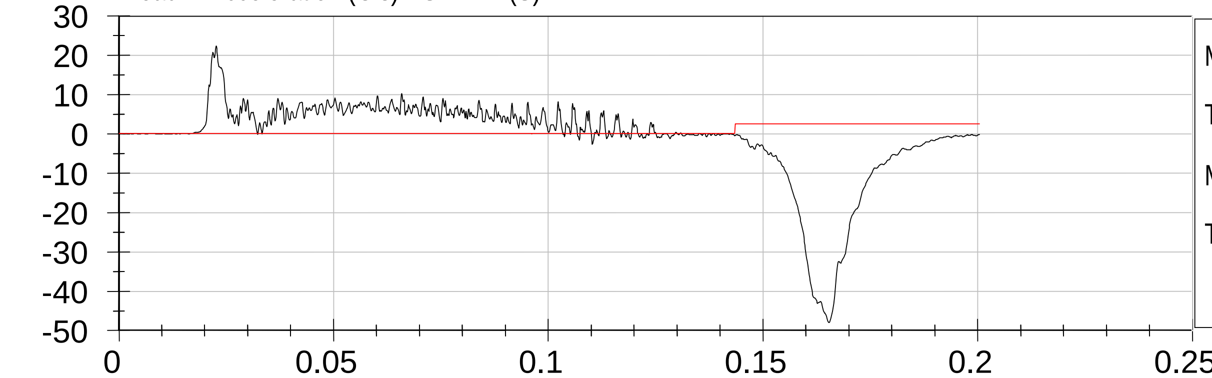


Max: 1,017.78 N
TMax: 0.02 s
Min: -2,136.15 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.93 m/s

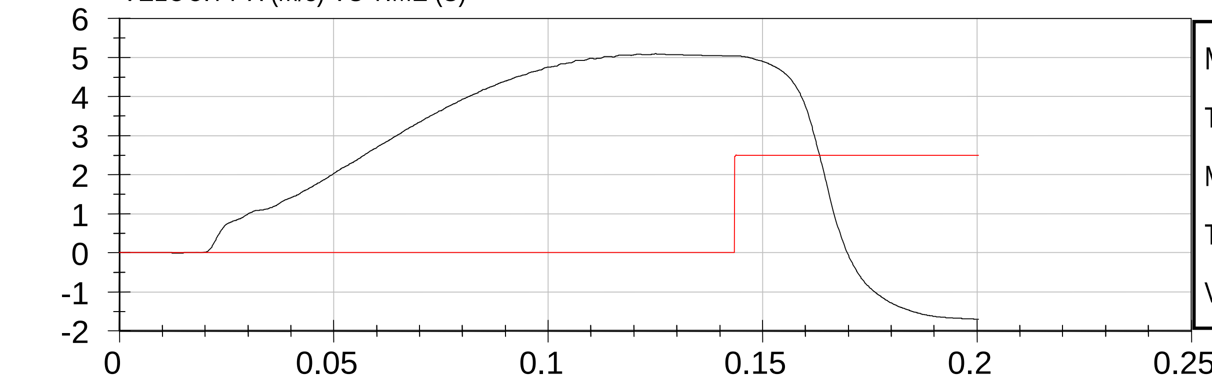
Test Date: 10-19-2011
Location: S15K3

Head X Acceleration (G's) VS TIME (S)



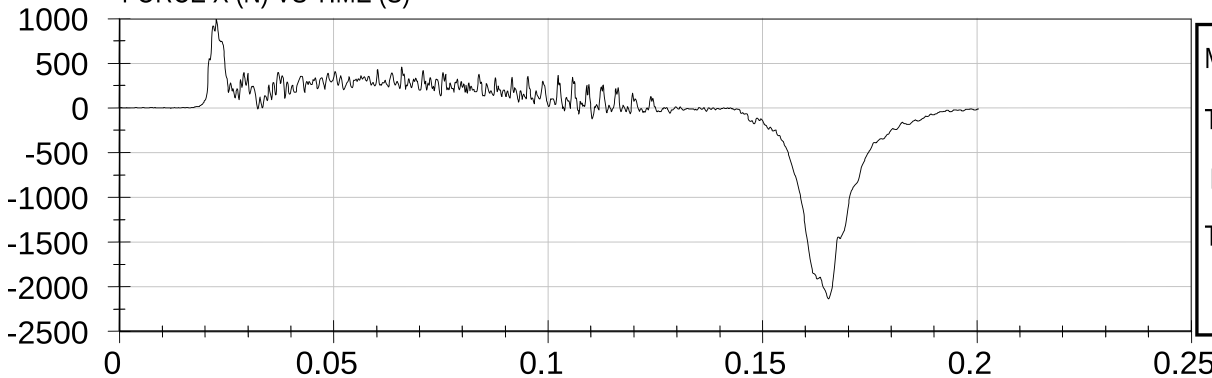
Max: 22.23 G's
TMax: 0.02 s
Min: -48.05 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.09 m/s
TMax: 0.13 s
Min: -1.70 m/s
TMin: 0.20 s
VEL@IMP: 5.04 m/s

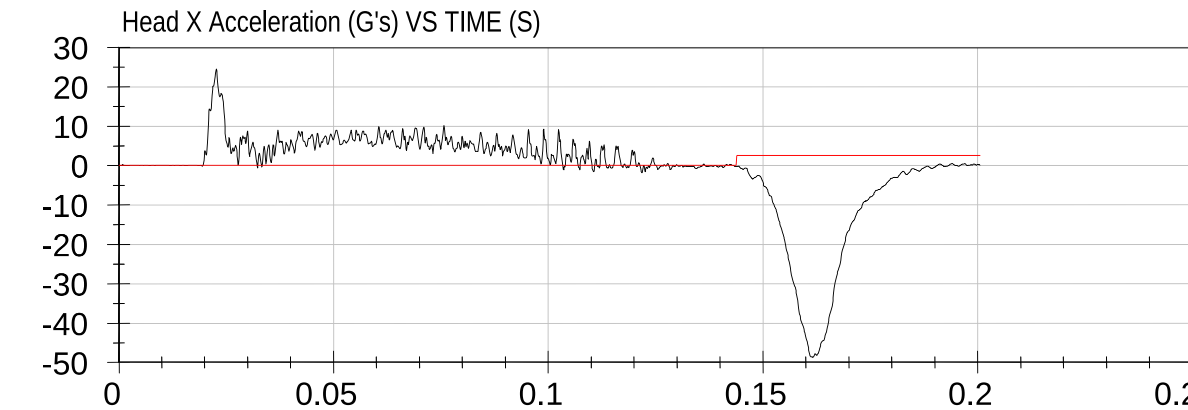
FORCE X (N) VS TIME (S)



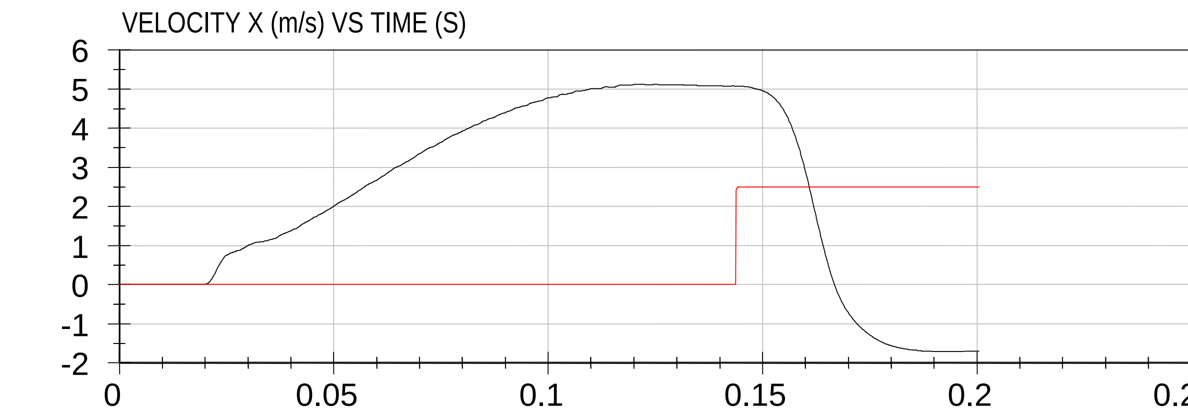
Max: 987.98 N
TMax: 0.02 s
Min: -2,135.14 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.92 m/s

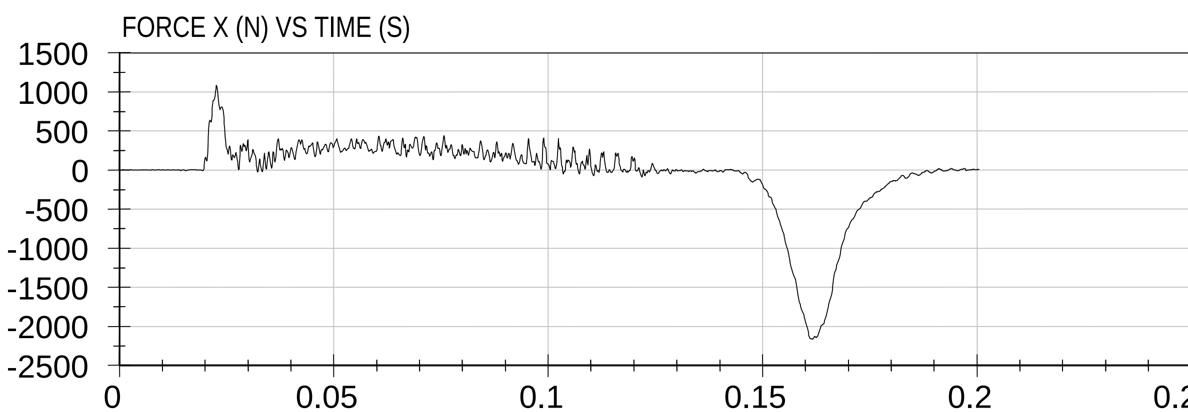
Test Date: 10-19-2011
Location: S15K4



Max: 24.44 G's
TMax: 0.02 s
Min: -48.70 G's
TMin: 0.16 s



Max: 5.13 m/s
TMax: 0.12 s
Min: -1.71 m/s
TMin: 0.19 s
VEL@IMP: 5.08 m/s

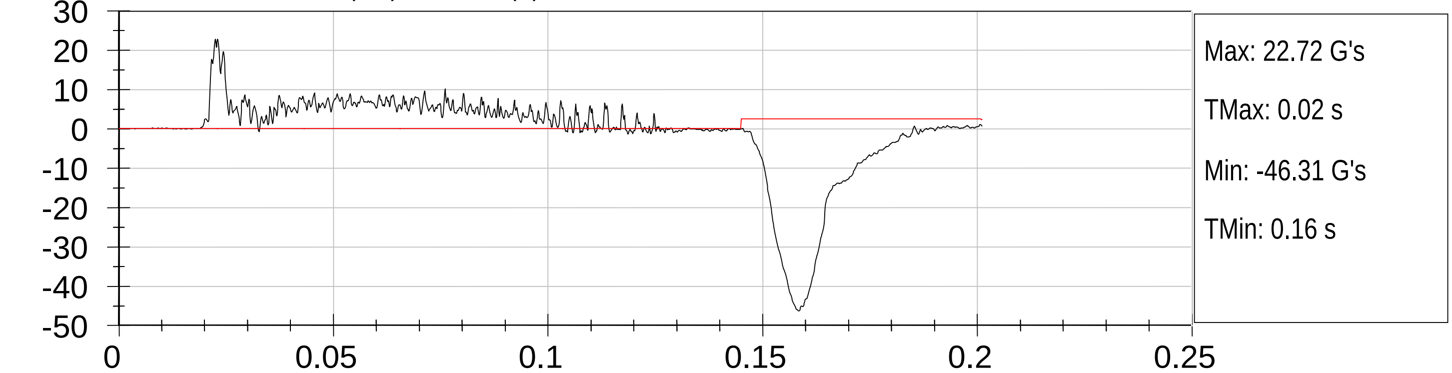


Max: 1,086.13 N
TMax: 0.02 s
Min: -2,164.03 N
TMin: 0.16 s

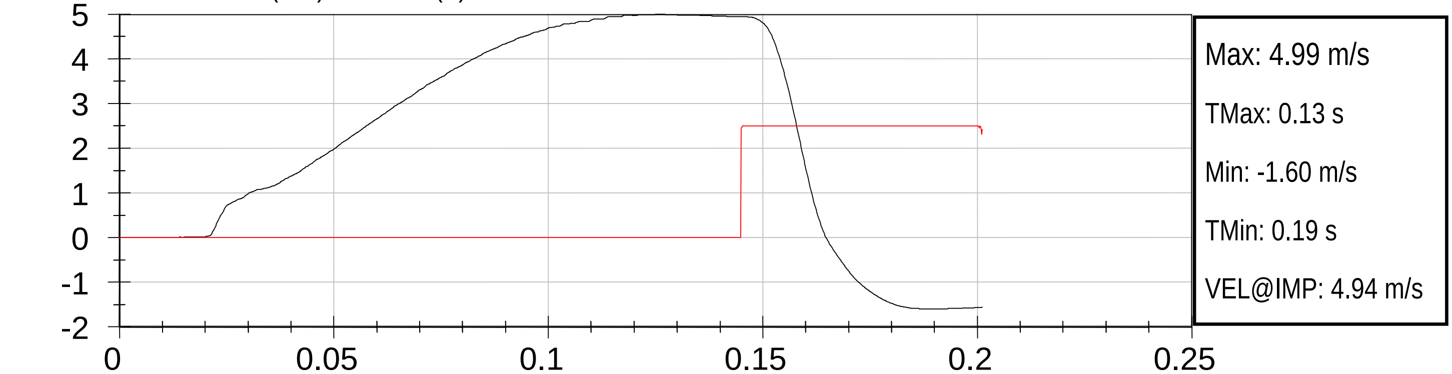
FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.84 m/s

Test Date: 10-18-2011
Location: S15K5

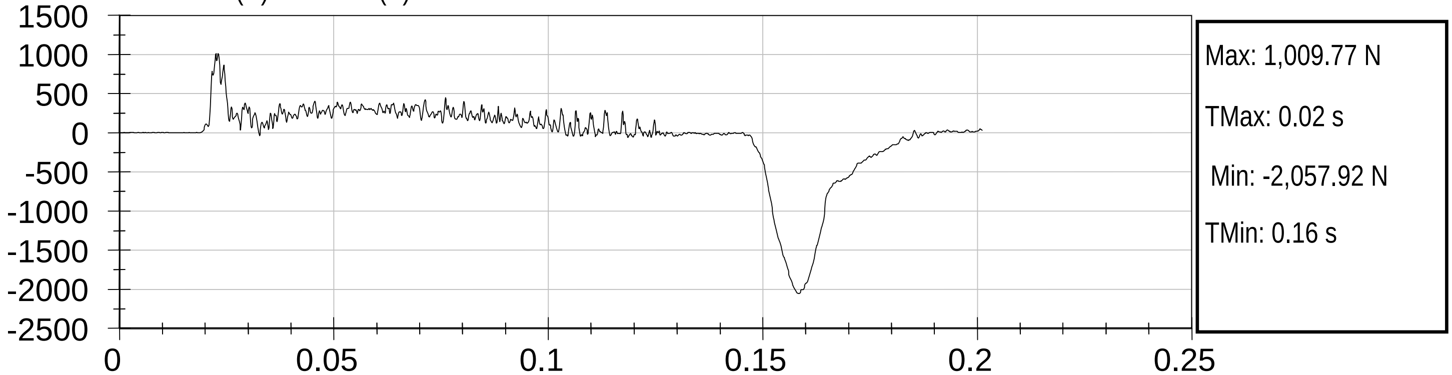
Head X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)



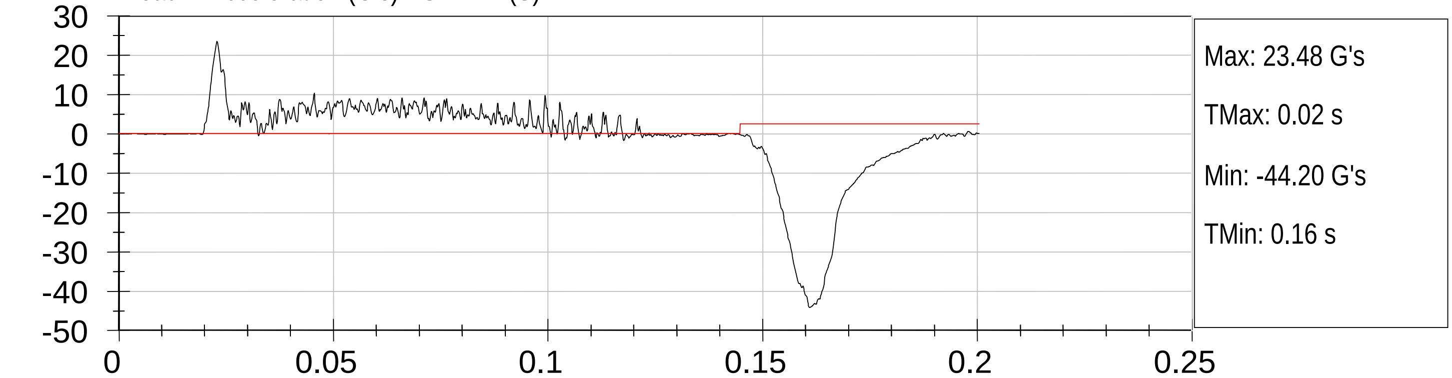
FORCE X (N) VS TIME (S)



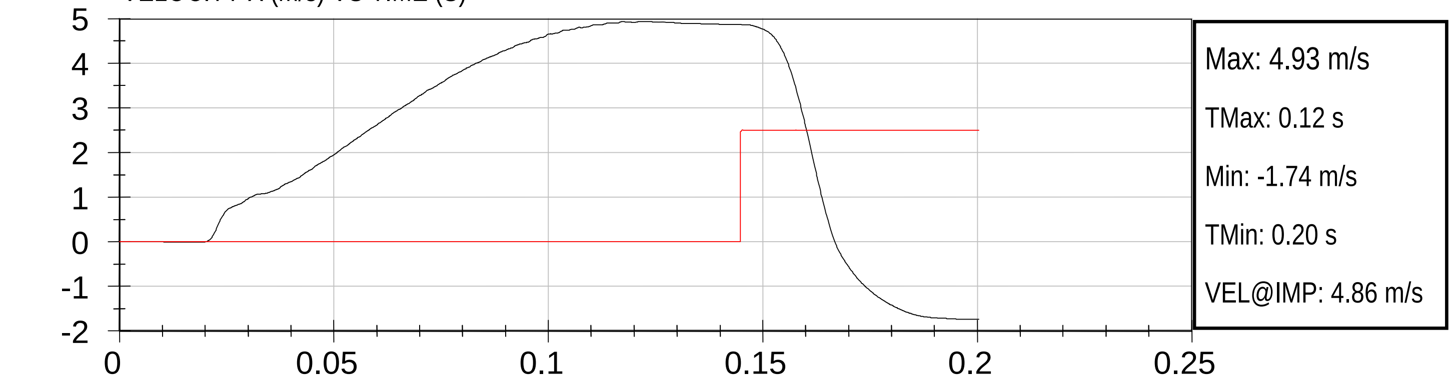
FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.84 m/s

Test Date: 10-18-2011
Location: S15K6

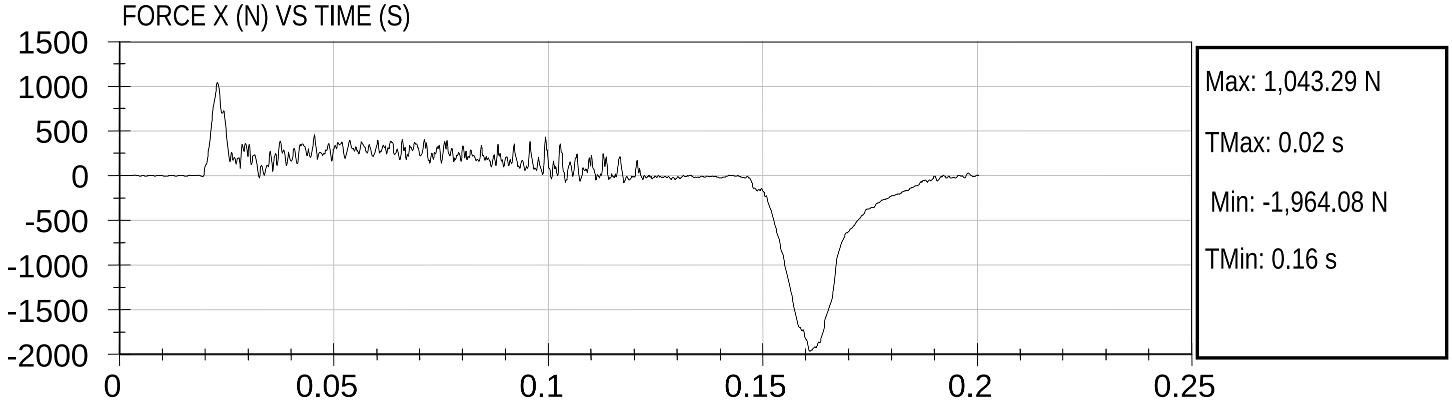
Head X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)

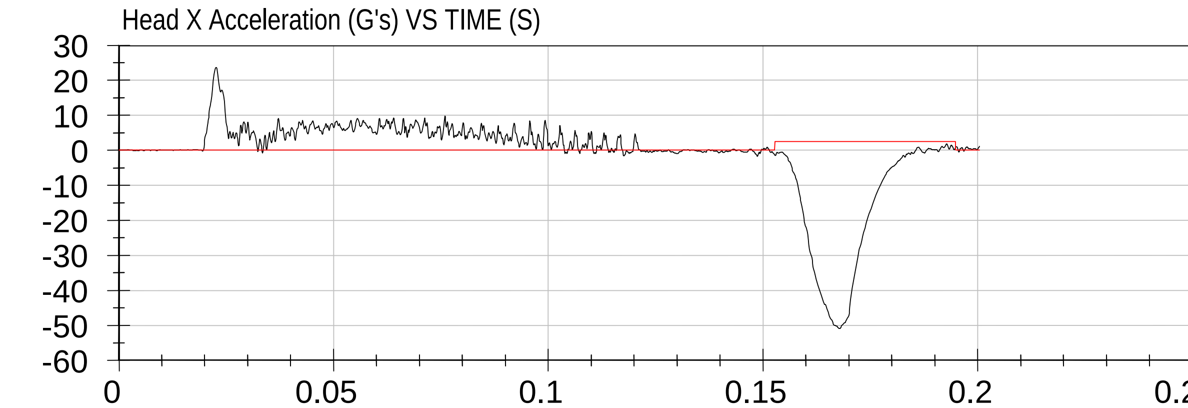


FORCE X (N) VS TIME (S)

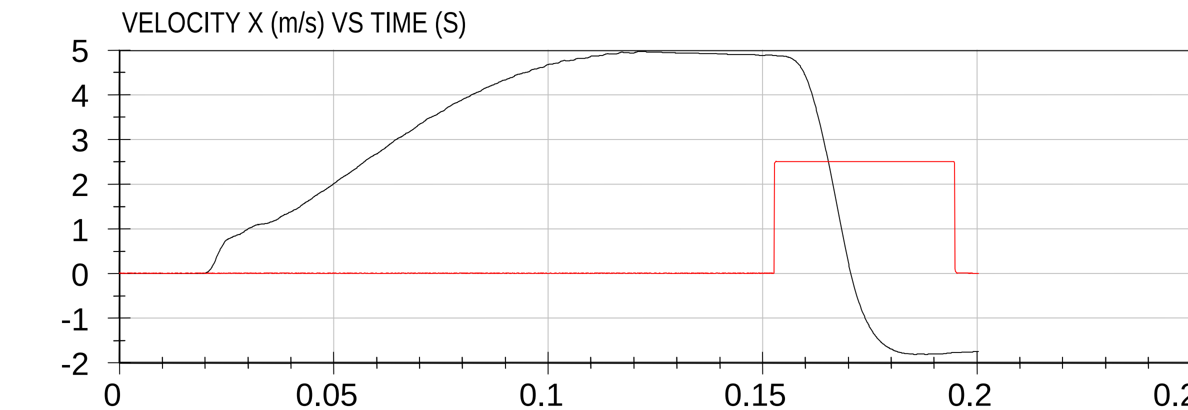


FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.81 m/s

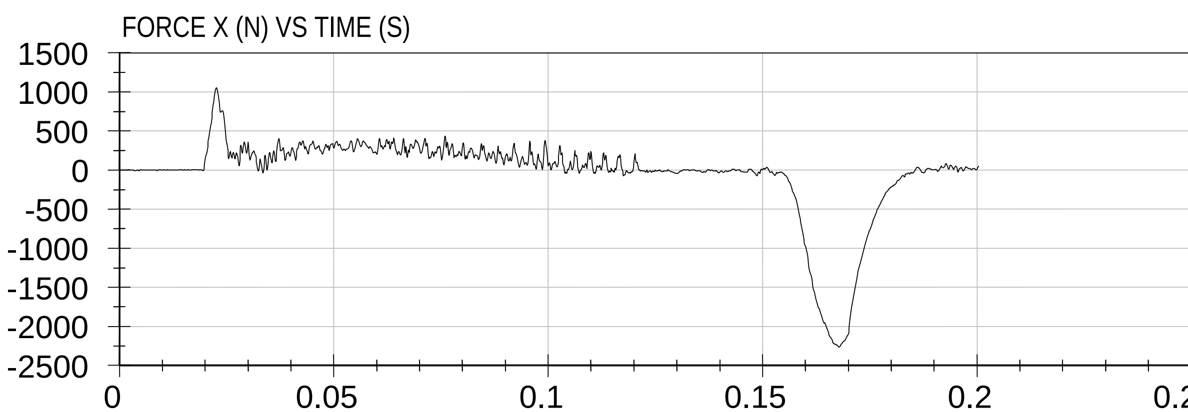
Test Date: 10-19-2011
Location: S15K7



Max: 23.69 G's
TMax: 0.02 s
Min: -50.94 G's
TMin: 0.17 s



Max: 4.96 m/s
TMax: 0.12 s
Min: -1.81 m/s
TMin: 0.19 s
VEL@IMP: 4.88 m/s

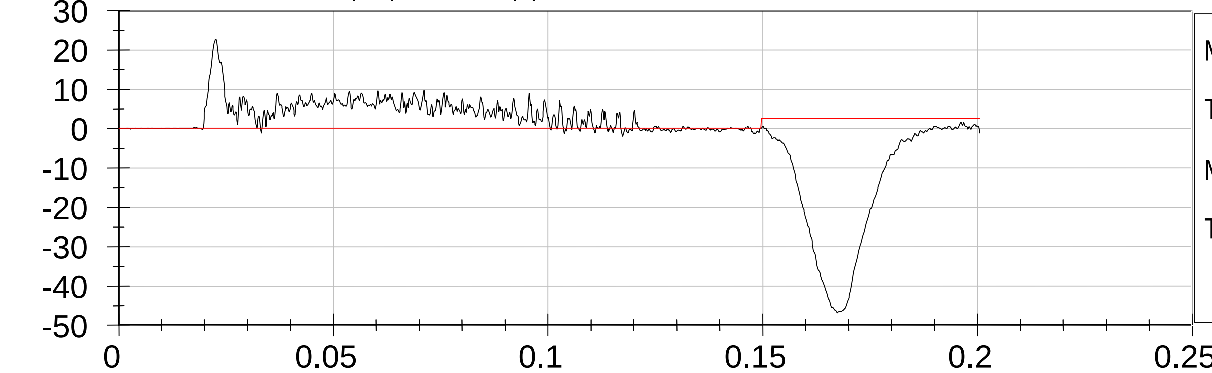


Max: 1,052.63 N
TMax: 0.02 s
Min: -2,263.82 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.82 m/s

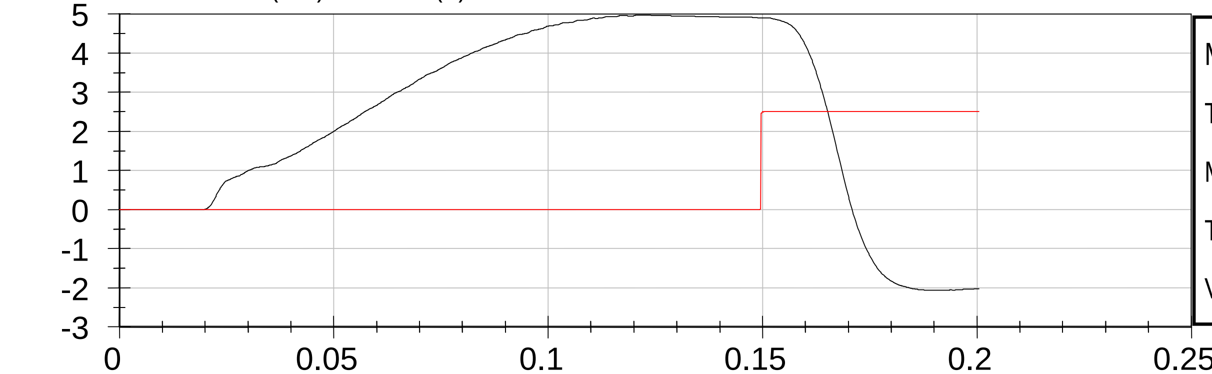
Test Date: 10-19-2011
Location: S15K8

Head X Acceleration (G's) VS TIME (S)



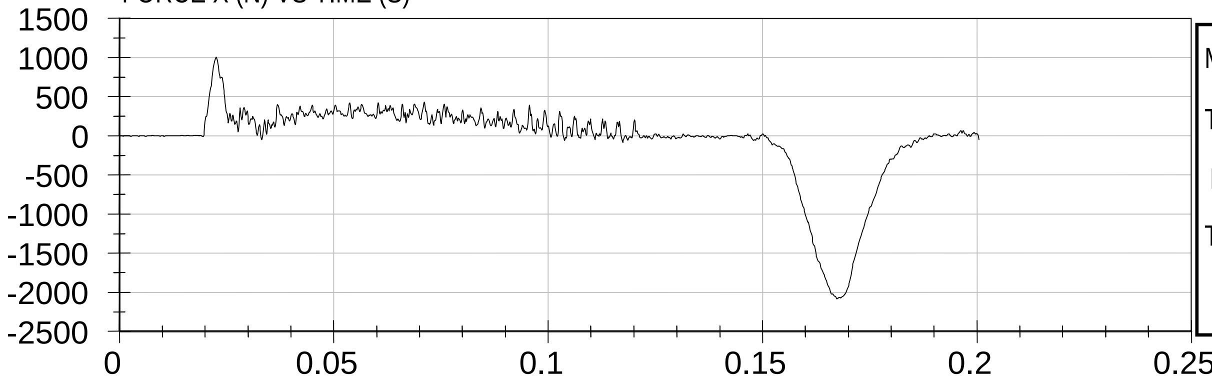
Max: 22.64 G's
TMax: 0.02 s
Min: -46.87 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.97 m/s
TMax: 0.12 s
Min: -2.06 m/s
TMin: 0.19 s
VEL@IMP: 4.9 m/s

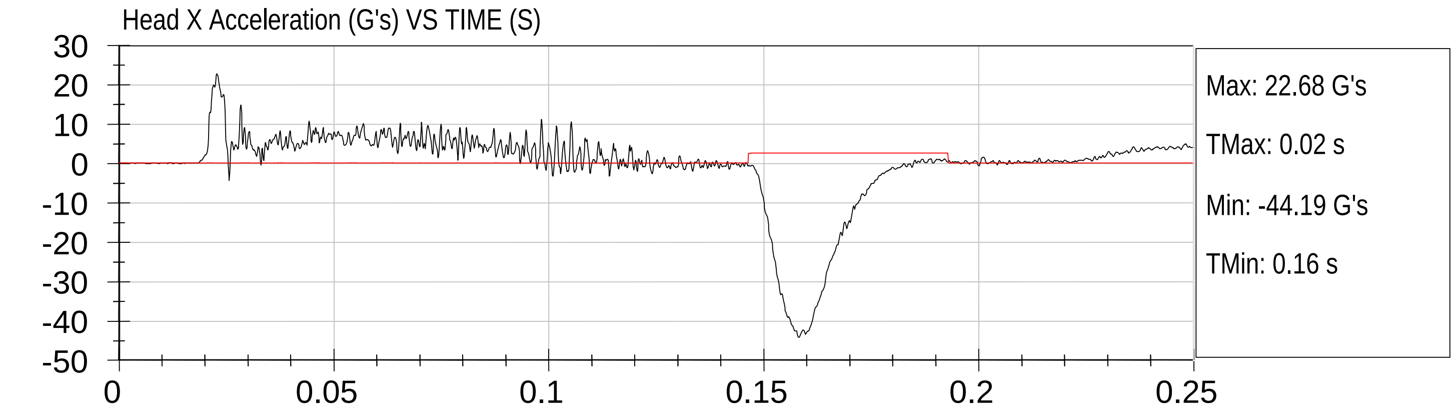
FORCE X (N) VS TIME (S)

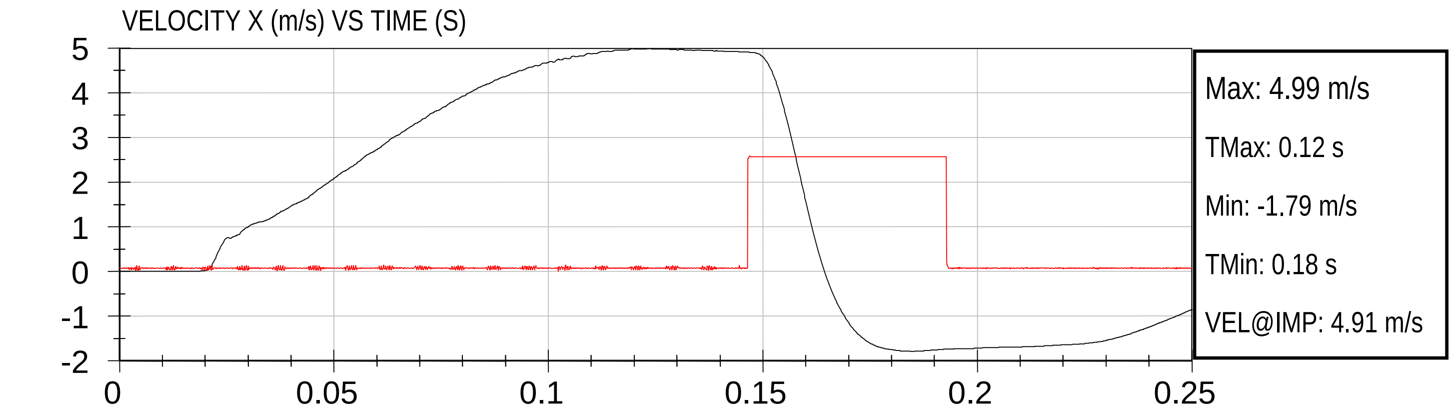


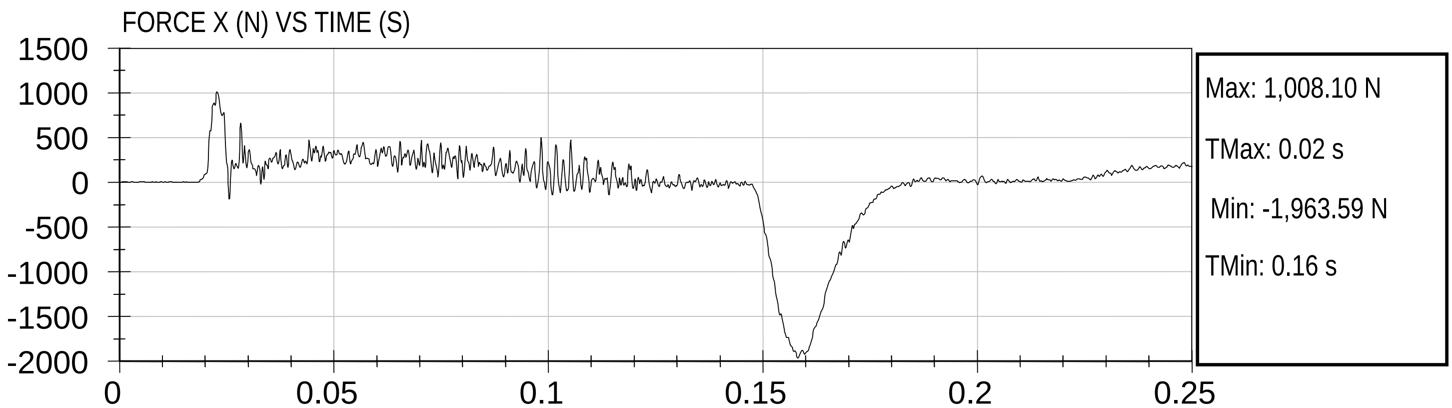
Max: 1,006.11 N
TMax: 0.02 s
Min: -2,083.08 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.88 m/s

Test Date: 9-20-11
Location: B6K1



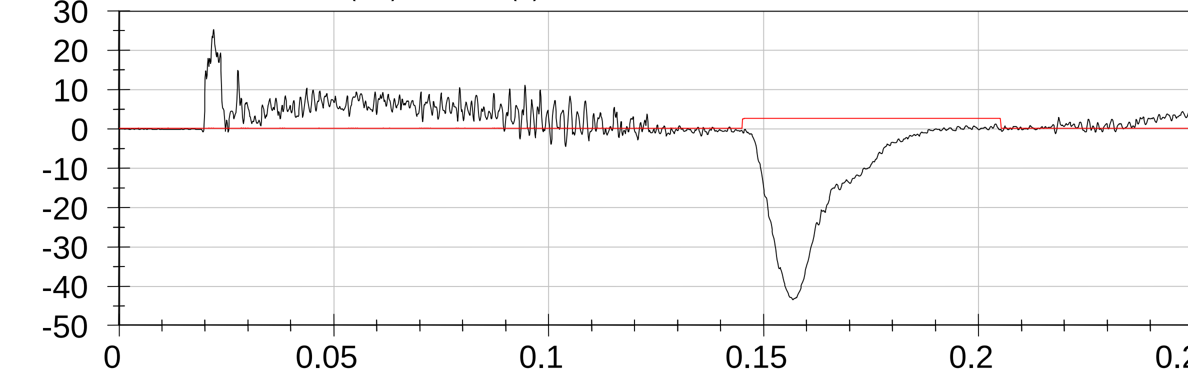




FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.90 m/s

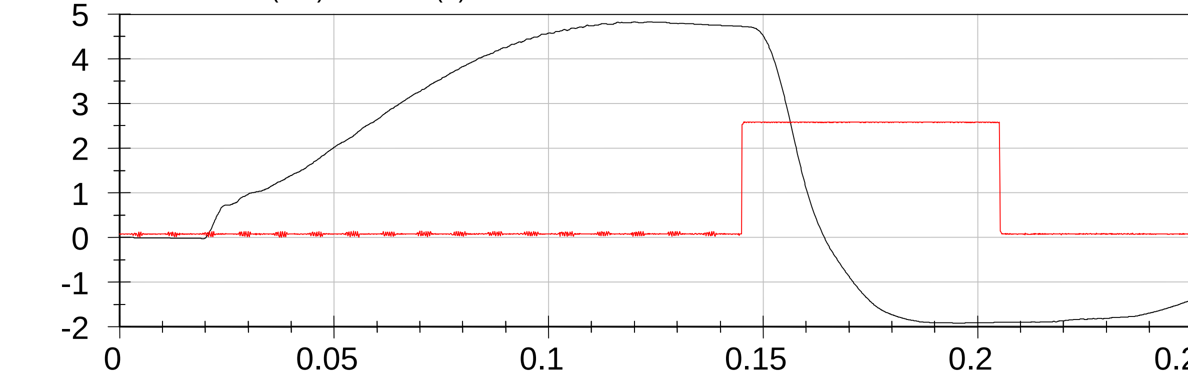
Test Date: 9-20-11
Location: B6K2

Head X Acceleration (G's) VS TIME (S)



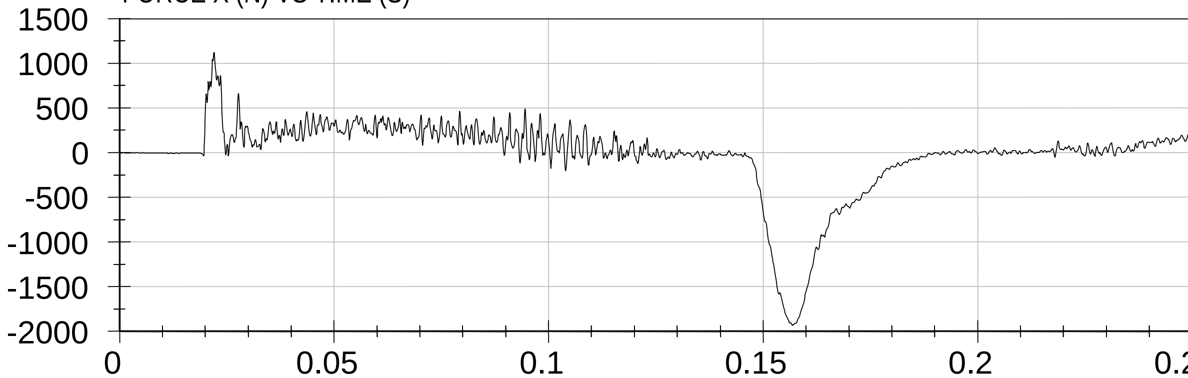
Max: 25.17 G's
TMax: 0.02 s
Min: -43.48 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.83 m/s
TMax: 0.12 s
Min: -1.92 m/s
TMin: 0.19 s
VEL@IMP: 4.72 m/s

FORCE X (N) VS TIME (S)

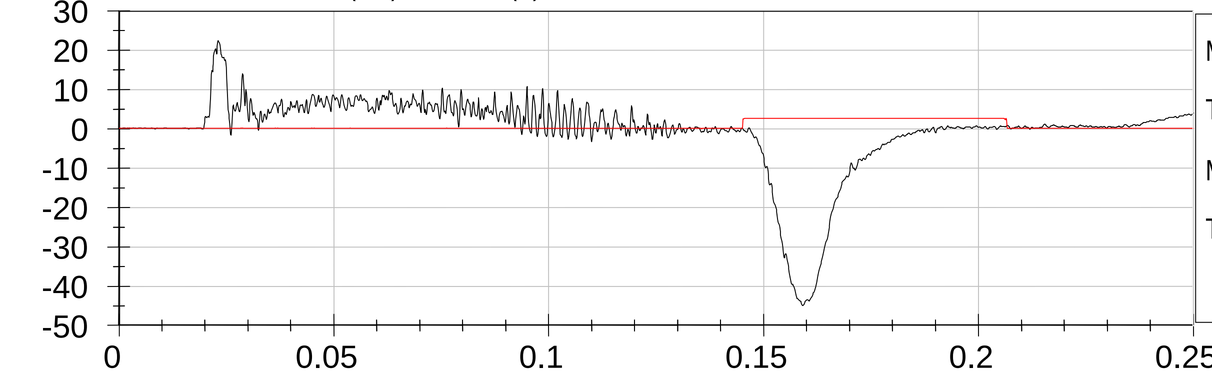


Max: 1,118.44 N
TMax: 0.02 s
Min: -1,932.11 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.86 m/s

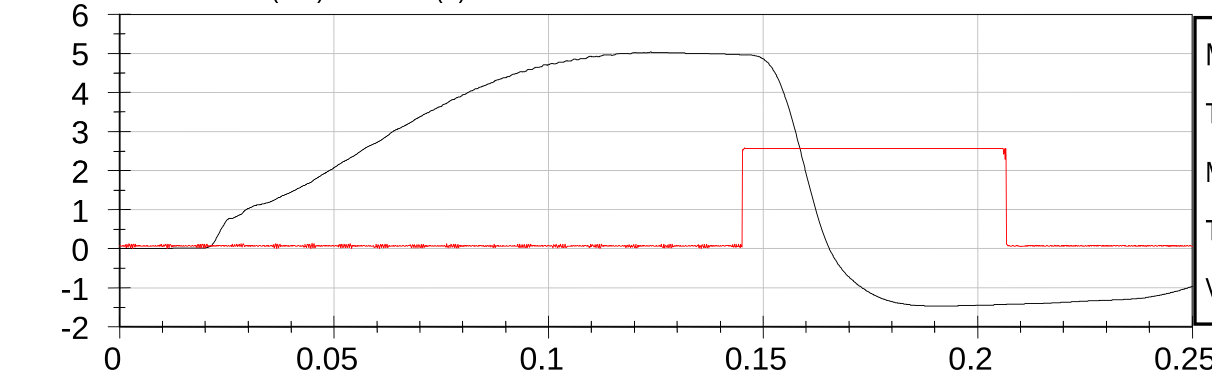
Test Date: 9-20-11
Location: B6K3

Head X Acceleration (G's) VS TIME (S)



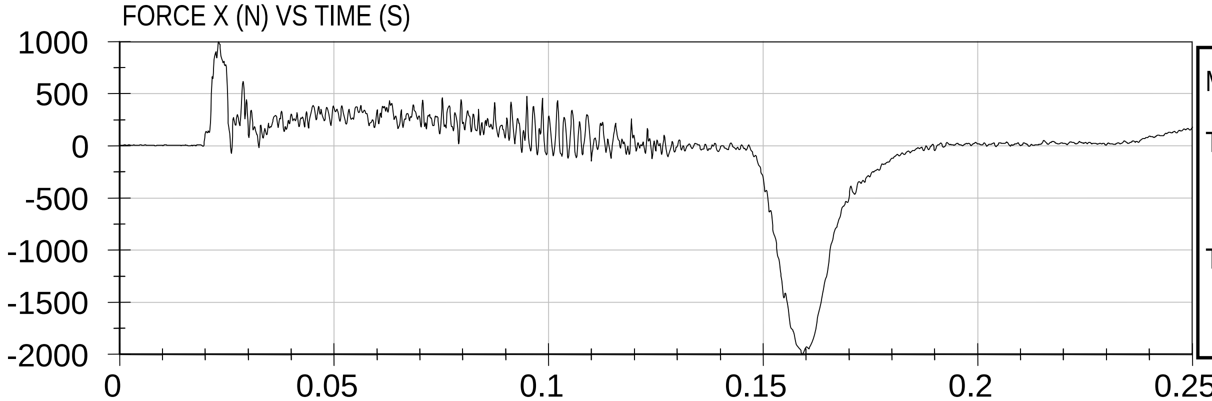
Max: 22.42 G's
TMax: 0.02 s
Min: -44.98 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.03 m/s
TMax: 0.12 s
Min: -1.47 m/s
TMin: 0.19 s
VEL@IMP: 4.97 m/s

FORCE X (N) VS TIME (S)

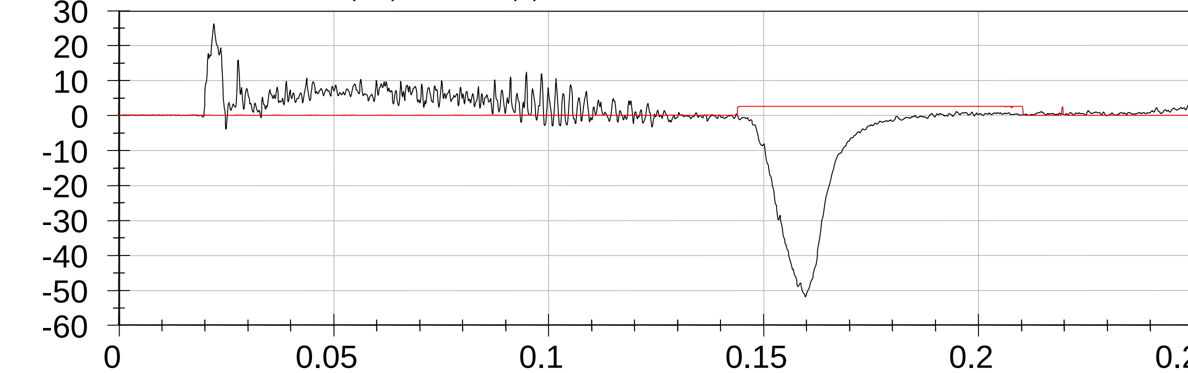


Max: 996.14 N
TMax: 0.02 s
Min: -1,998.76 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.91 m/s

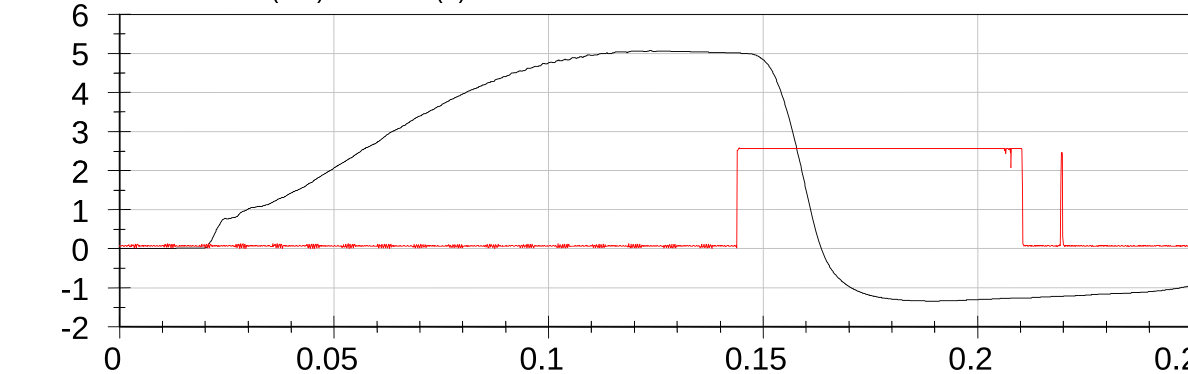
Test Date: 9-20-11
Location: B6K4

Head X Acceleration (G's) VS TIME (S)



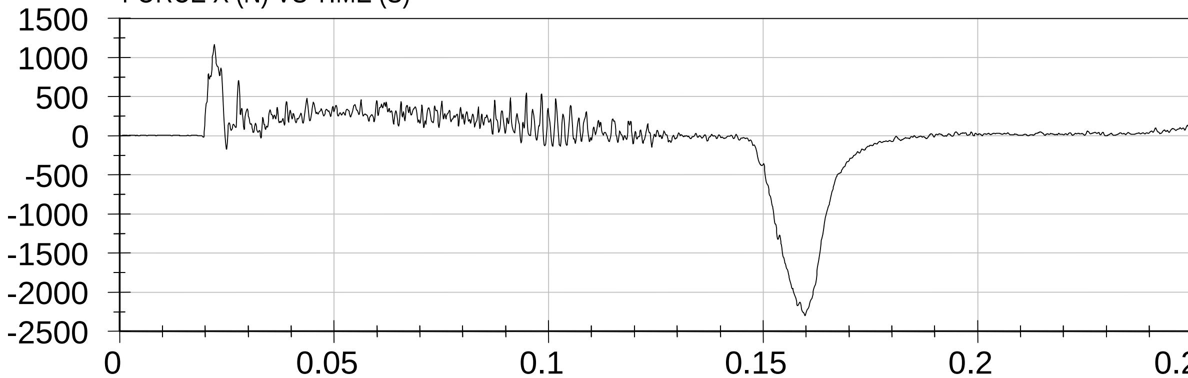
Max: 26.23 G's
TMax: 0.02 s
Min: -51.82 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.07 m/s
TMax: 0.12 s
Min: -1.34 m/s
TMin: 0.19 s
VEL@IMP: 5.01 m/s

FORCE X (N) VS TIME (S)

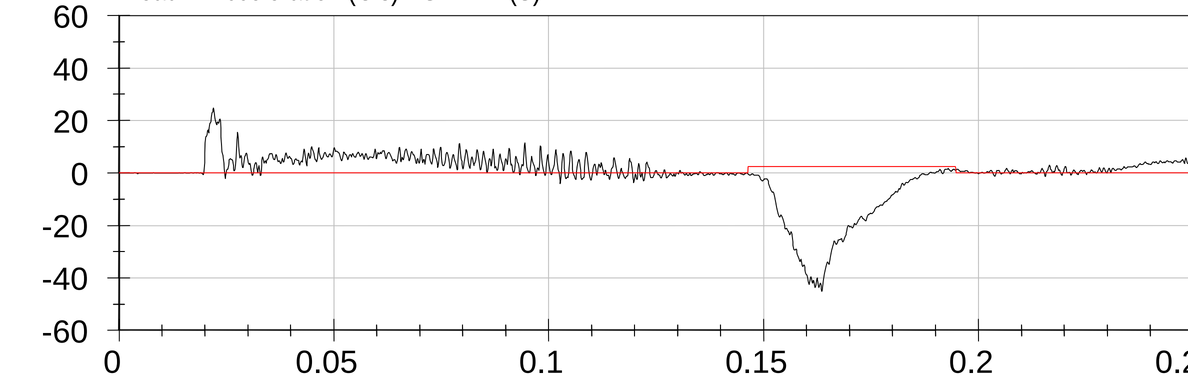


Max: 1,165.64 N
TMax: 0.02 s
Min: -2,302.66 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.84 m/s

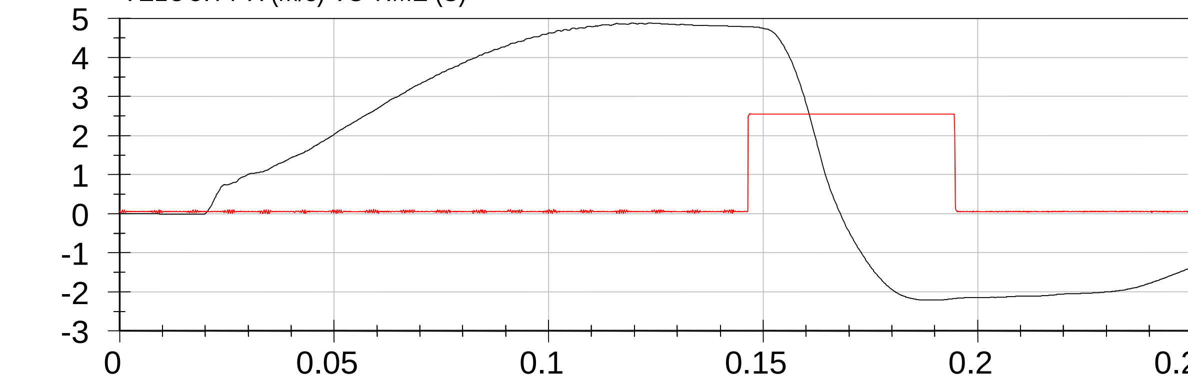
Test Date: 9-20-11
Location: B6K5

Head X Acceleration (G's) VS TIME (S)



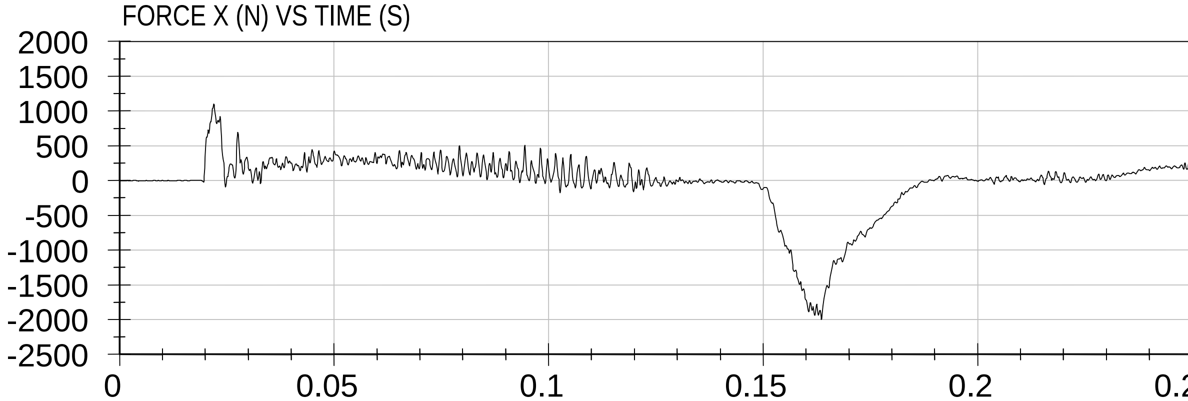
Max: 41.95 G's
TMax: 0.26 s
Min: -45.03 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.88 m/s
TMax: 0.12 s
Min: -2.21 m/s
TMin: 0.19 s
VEL@IMP: 4.79 m/s

FORCE X (N) VS TIME (S)

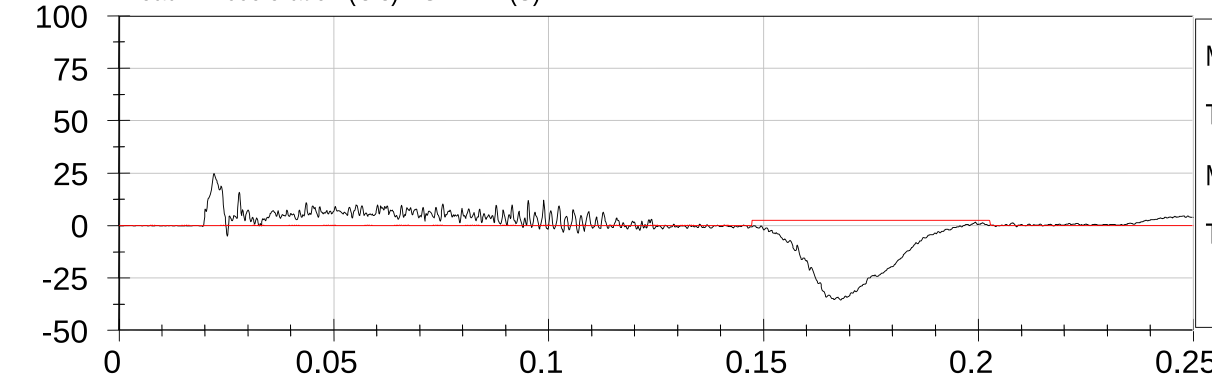


Max: 1,864.40 N
TMax: 0.26 s
Min: -2,001.30 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.83 m/s

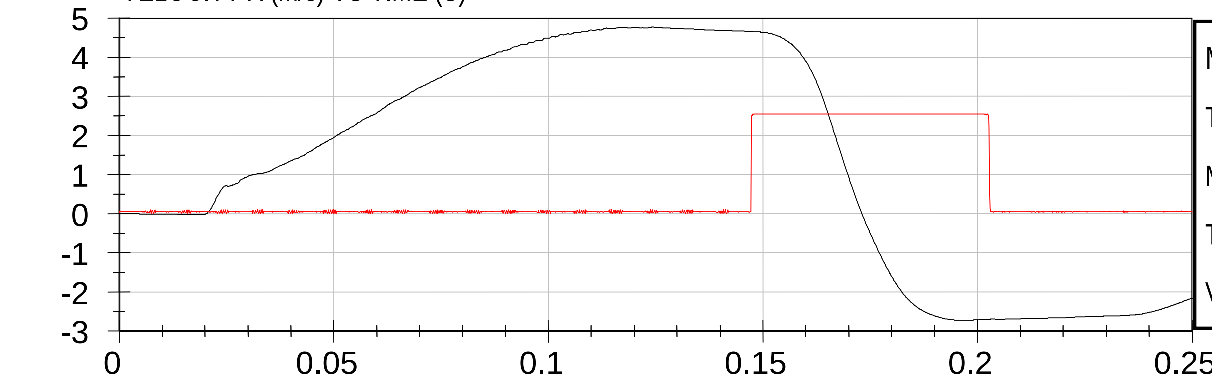
Test Date: 9-20-11
Location: B6K6

Head X Acceleration (G's) VS TIME (S)



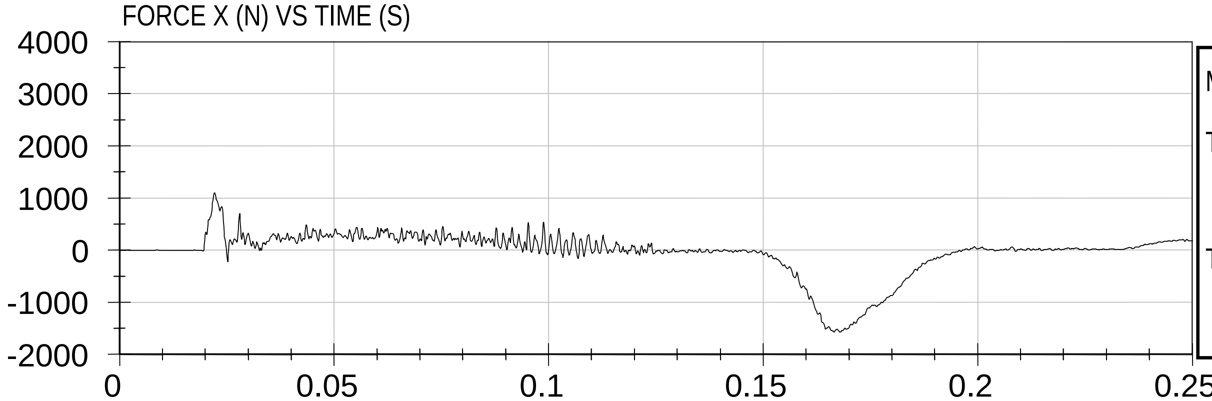
Max: 85.72 G's
TMax: 0.26 s
Min: -35.45 G's
TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.77 m/s
TMax: 0.12 s
Min: -2.73 m/s
TMin: 0.20 s
VEL@IMP: 4.66 m/s

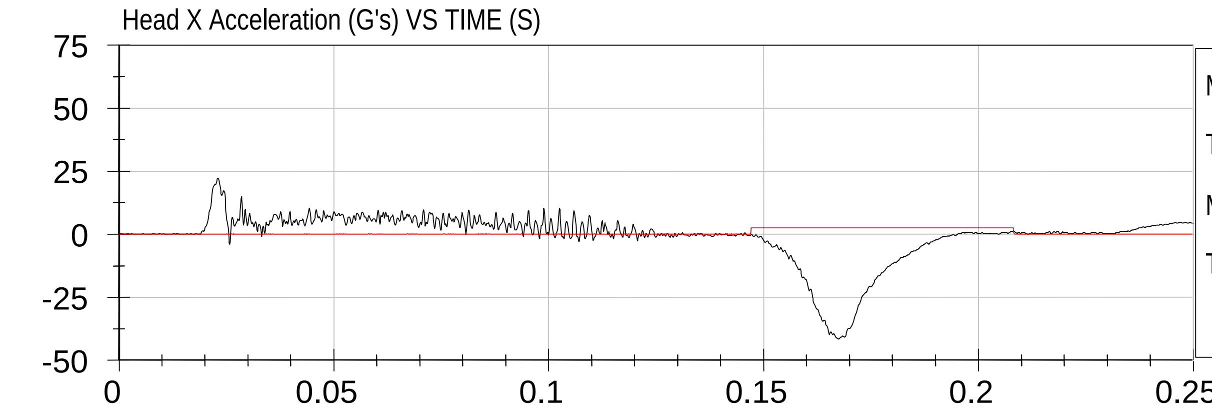
FORCE X (N) VS TIME (S)



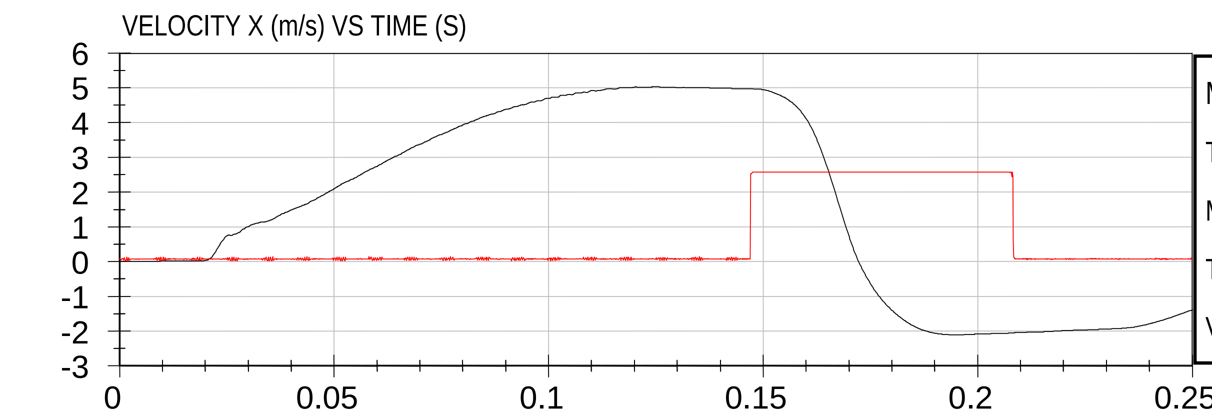
Max: 3,809.26 N
TMax: 0.26 s
Min: -1,575.23 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.82 m/s

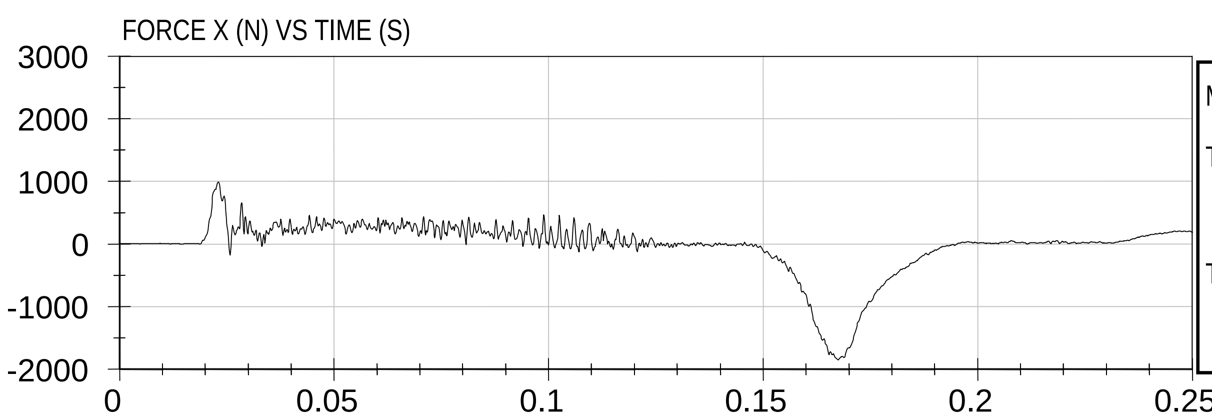
Test Date: 9-20-11
Location: B6K7



Max: 67.12 G's
TMax: 0.26 s
Min: -41.61 G's
TMin: 0.17 s



Max: 5.03 m/s
TMax: 0.12 s
Min: -2.11 m/s
TMin: 0.20 s
VEL@IMP: 4.97 m/s

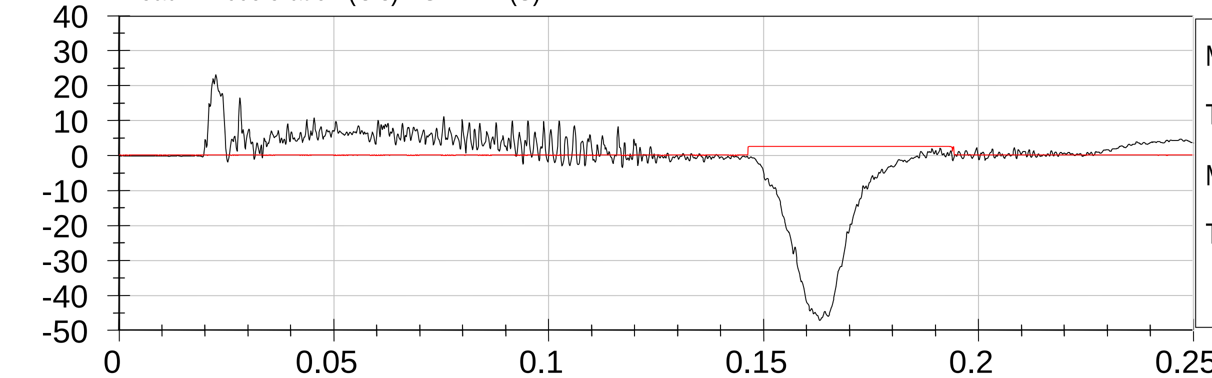


Max: 2,982.91 N
TMax: 0.26 s
Min: -1,849.05 N
TMin: 0.17 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.84 m/s

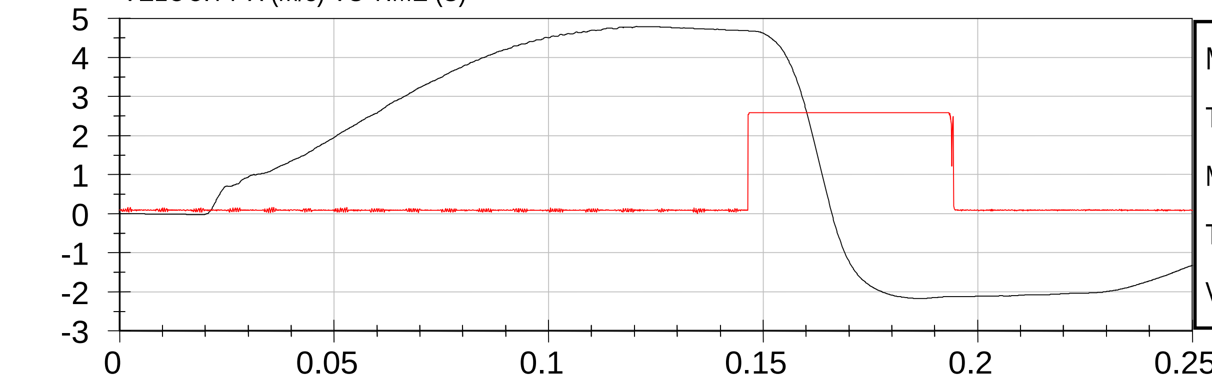
Test Date: 9-20-11
Location: B6K8

Head X Acceleration (G's) VS TIME (S)



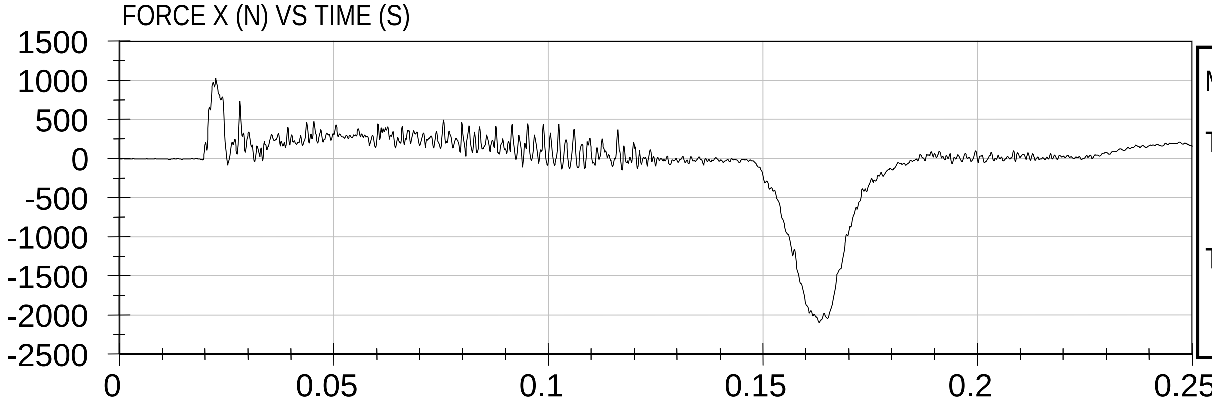
Max: 31.65 G's
TMax: 0.26 s
Min: -47.17 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.79 m/s
TMax: 0.12 s
Min: -2.17 m/s
TMin: 0.19 s
VEL@IMP: 4.68 m/s

FORCE X (N) VS TIME (S)

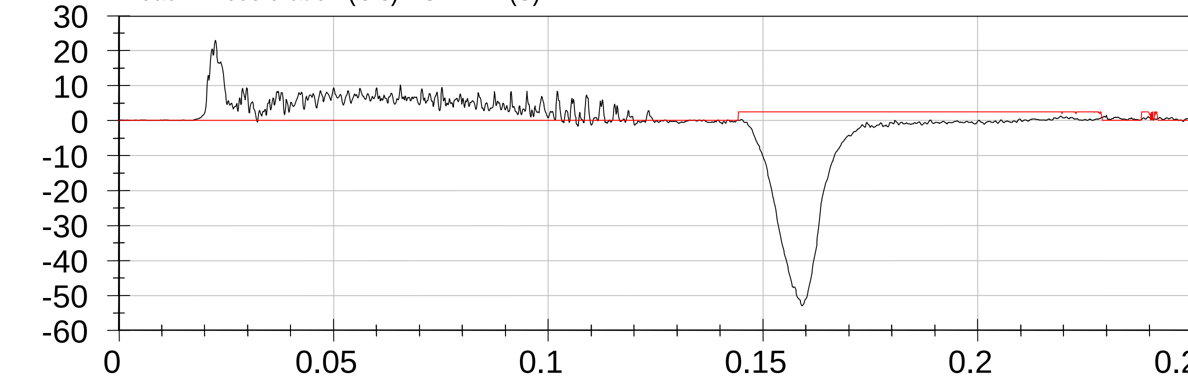


Max: 1,406.50 N
TMax: 0.26 s
Min: -2,096.11 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.93 m/s

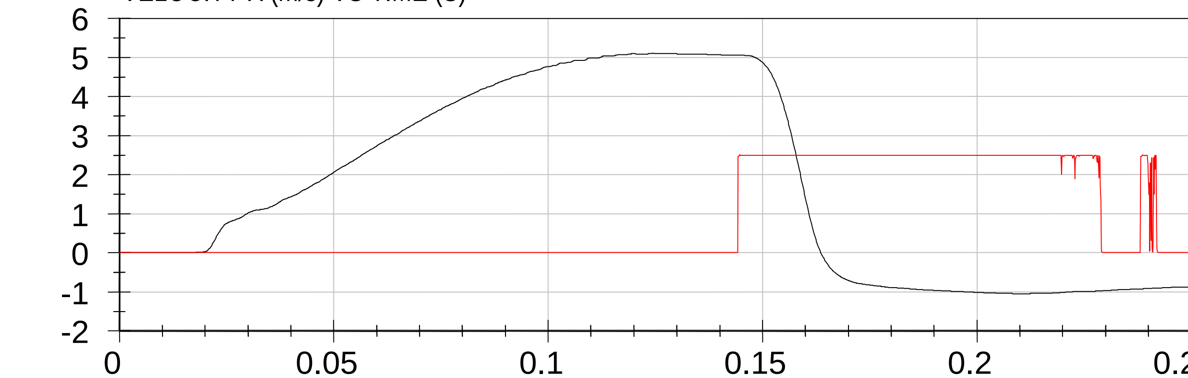
Test Date: 10-20-2011
Location: B18K1

Head X Acceleration (G's) VS TIME (S)



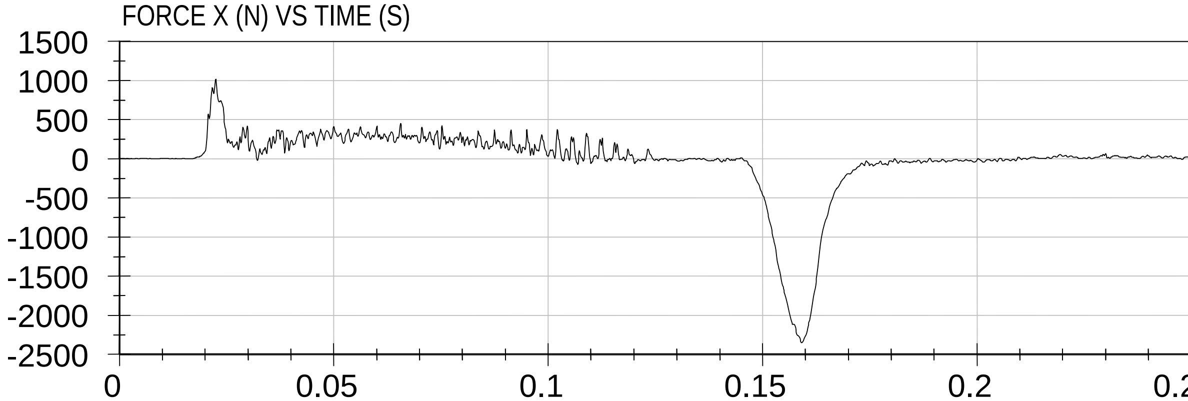
Max: 22.92 G's
TMax: 0.02 s
Min: -52.91 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.10 m/s
TMax: 0.12 s
Min: -1.05 m/s
TMin: 0.21 s
VEL@IMP: 5.06 m/s

FORCE X (N) VS TIME (S)

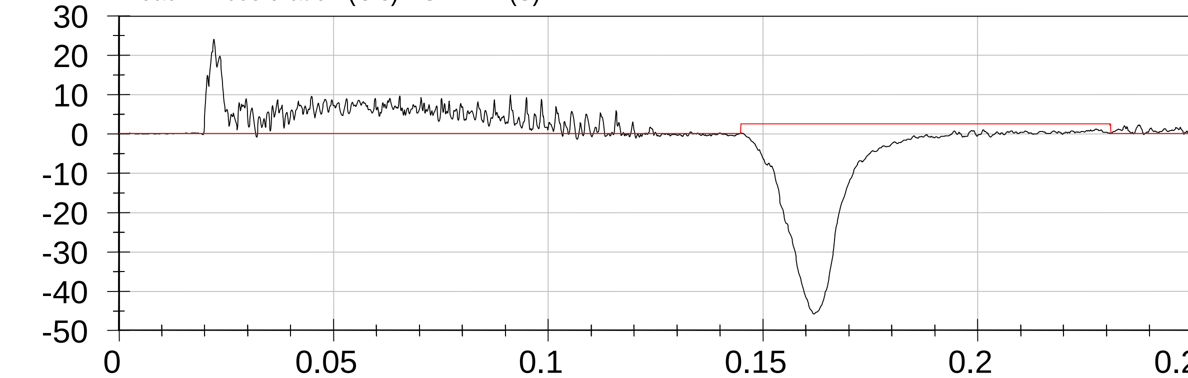


Max: 1,018.48 N
TMax: 0.02 s
Min: -2,351.35 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.90 m/s

Test Date: 10-20-2011
Location: B18K2

Head X Acceleration (G's) VS TIME (S)



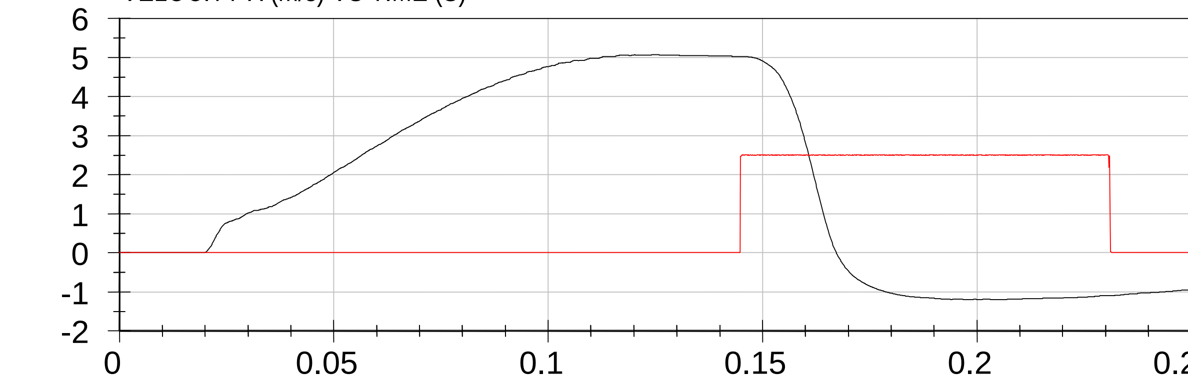
Max: 23.98 G's

TMax: 0.02 s

Min: -45.83 G's

TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.07 m/s

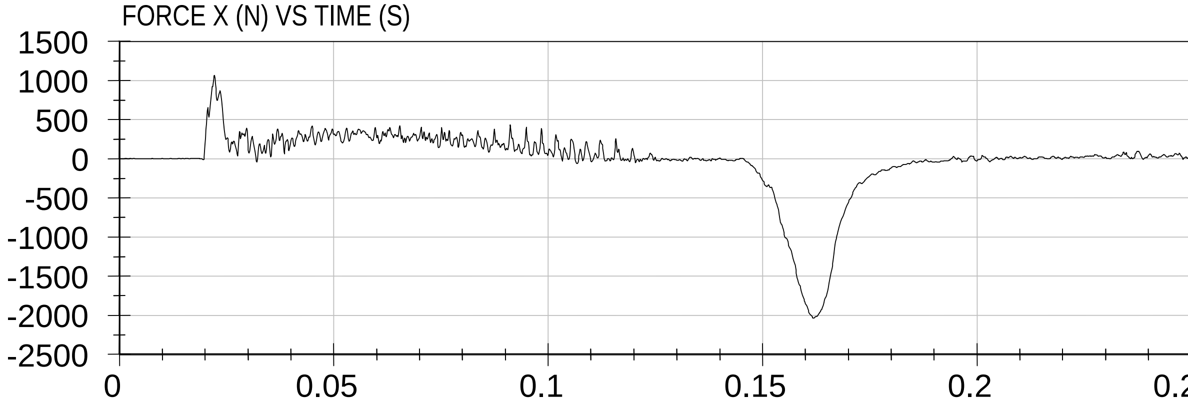
TMax: 0.13 s

Min: -1.20 m/s

TMin: 0.20 s

VEL@IMP: 5.03 m/s

FORCE X (N) VS TIME (S)



Max: 1,065.67 N

TMax: 0.02 s

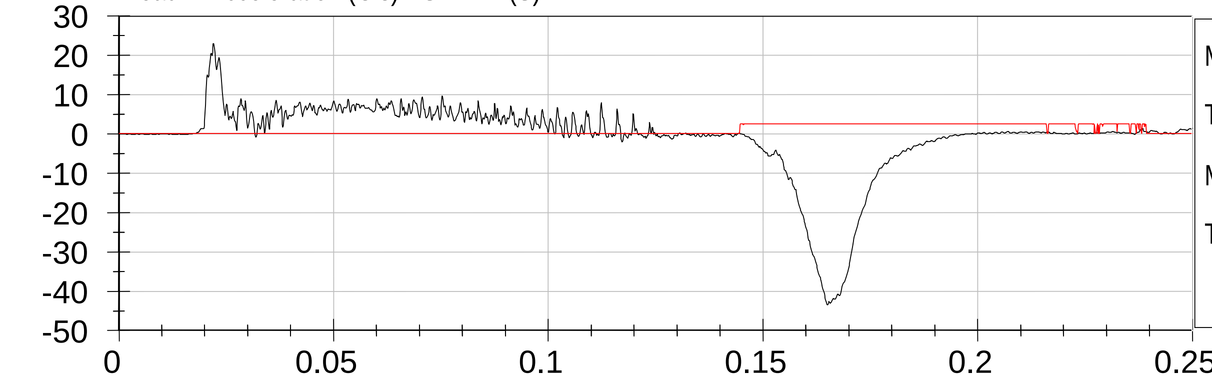
Min: -2,036.60 N

TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.89 m/s

Test Date: 10-20-2011
Location: B18K3

Head X Acceleration (G's) VS TIME (S)



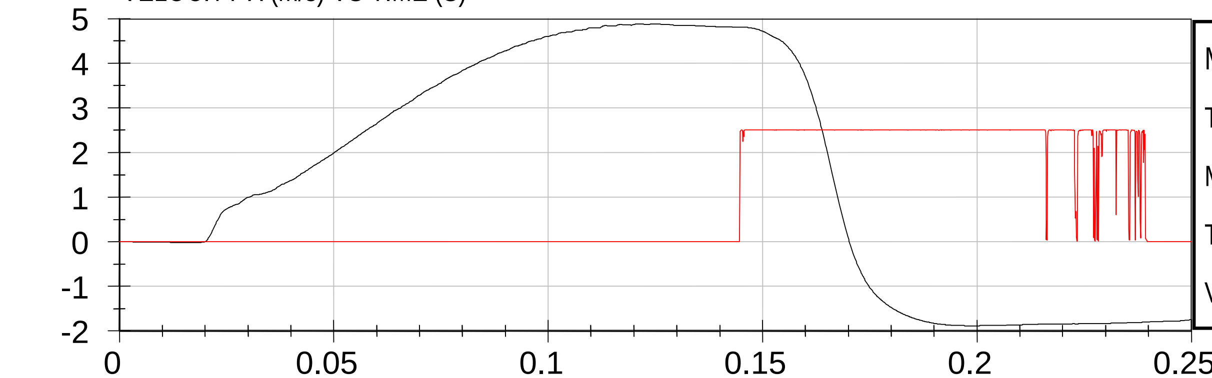
Max: 22.91 G's

TMax: 0.02 s

Min: -43.49 G's

TMin: 0.17 s

VELOCITY X (m/s) VS TIME (S)



Max: 4.88 m/s

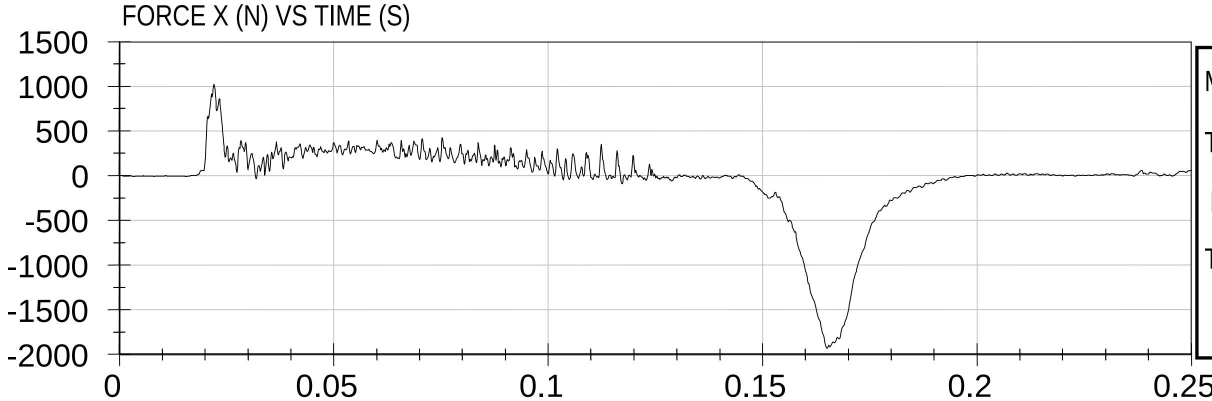
TMax: 0.12 s

Min: -1.88 m/s

TMin: 0.20 s

VEL@IMP: 4.8 m/s

FORCE X (N) VS TIME (S)



Max: 1,018.27 N

TMax: 0.02 s

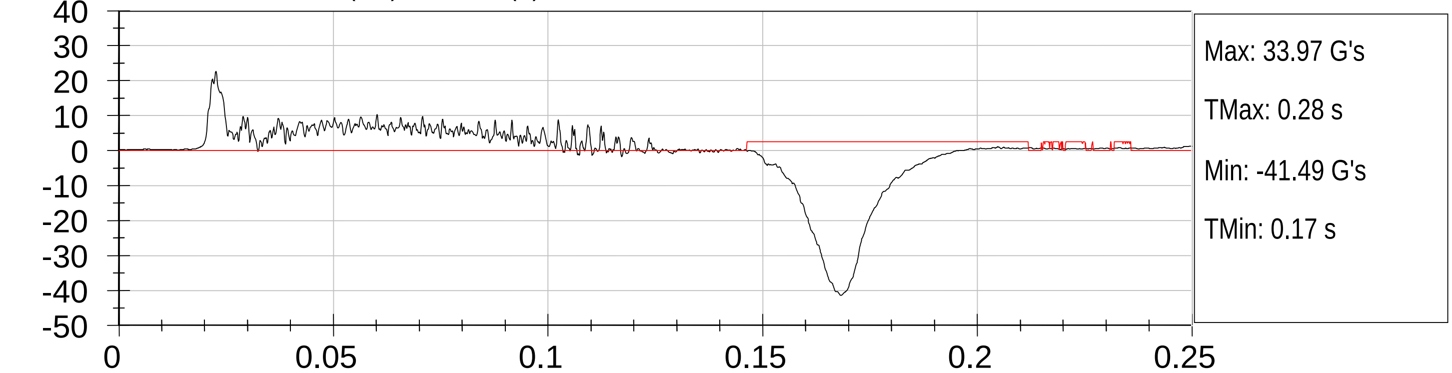
Min: -1,932.51 N

TMin: 0.17 s

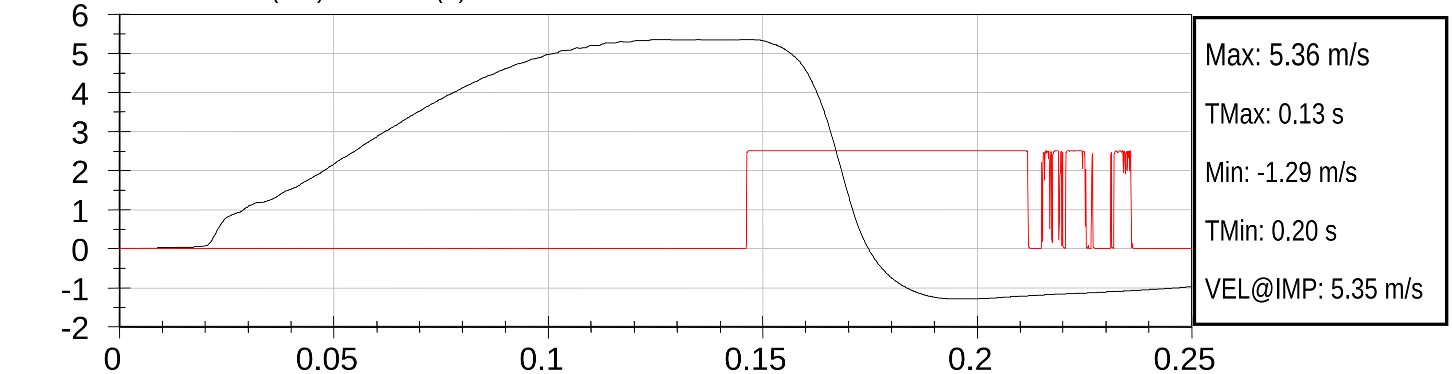
FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.88 m/s

Test Date: 10-20-2011
Location: B18K4

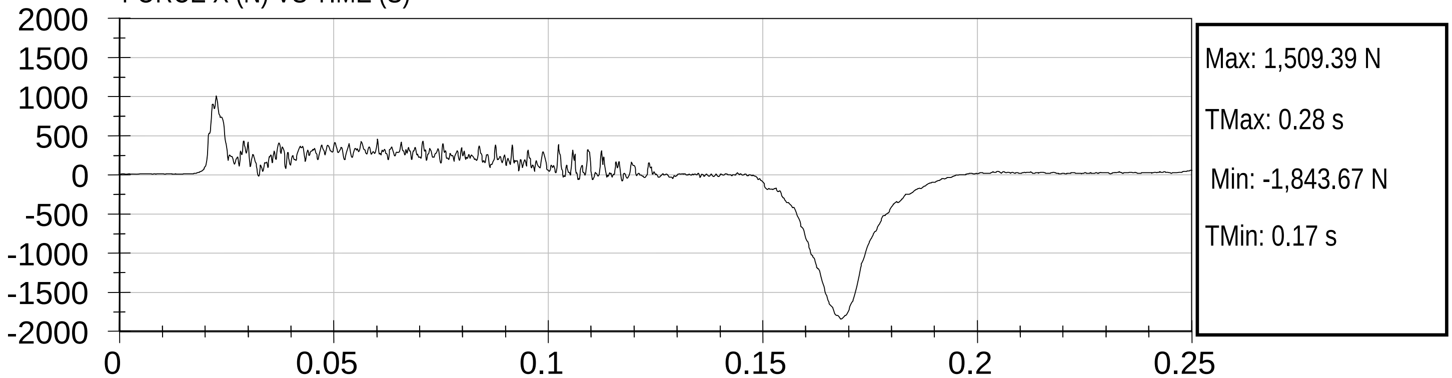
Head X Acceleration (G's) VS TIME (S)



VELOCITY X (m/s) VS TIME (S)



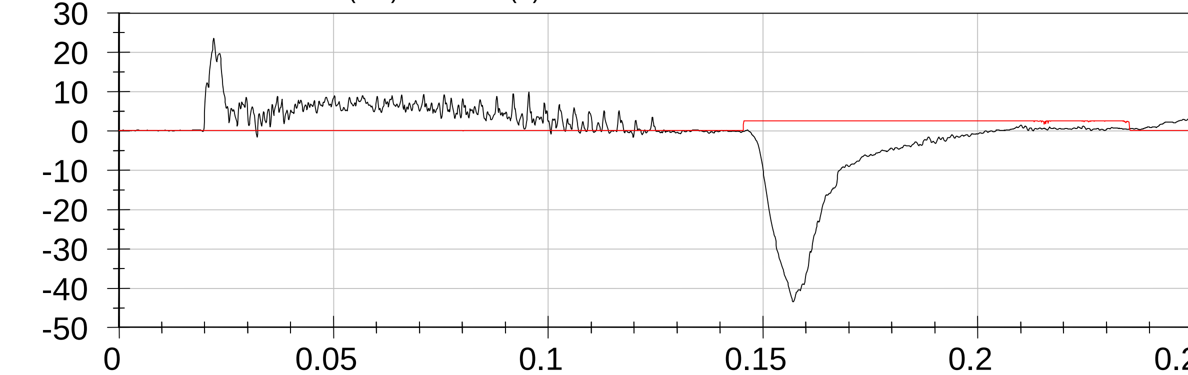
FORCE X (N) VS TIME (S)



FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.84 m/s

Test Date: 10-20-2011
Location: B18K5

Head X Acceleration (G's) VS TIME (S)



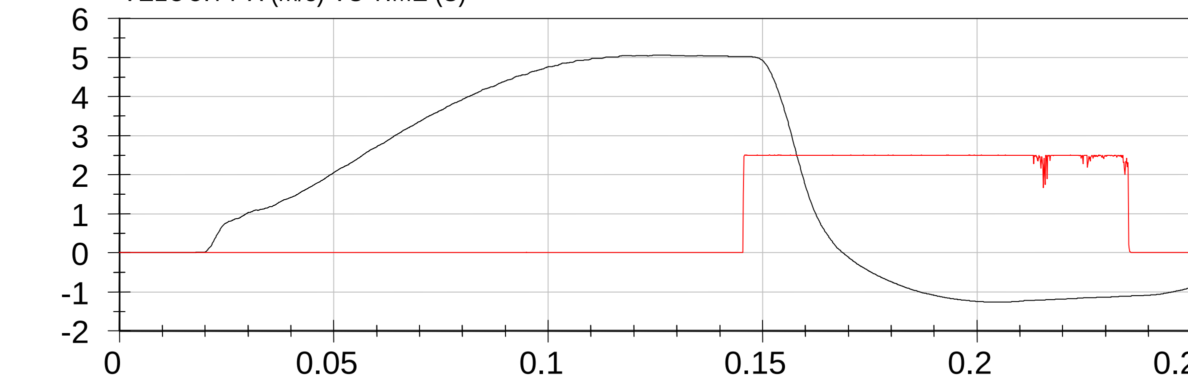
Max: 23.50 G's

TMax: 0.02 s

Min: -43.51 G's

TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.06 m/s

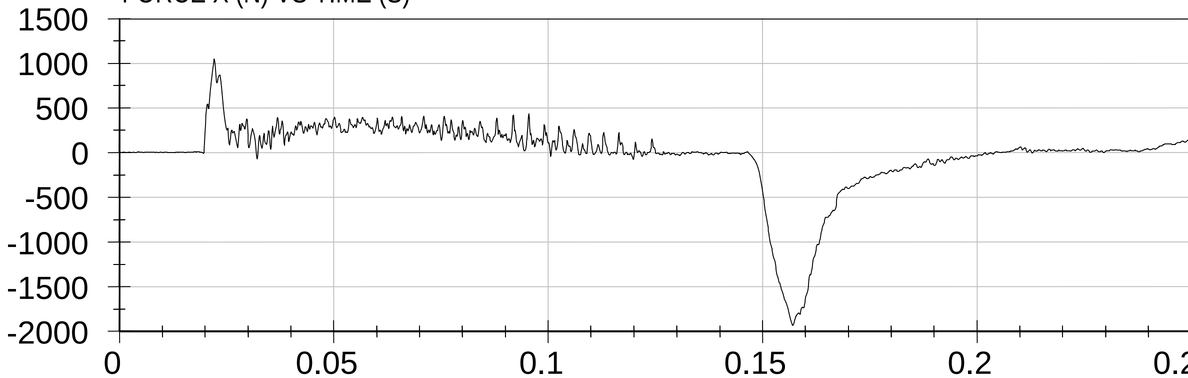
TMax: 0.13 s

Min: -1.26 m/s

TMin: 0.20 s

VEL@IMP: 5.02 m/s

FORCE X (N) VS TIME (S)



Max: 1,044.47 N

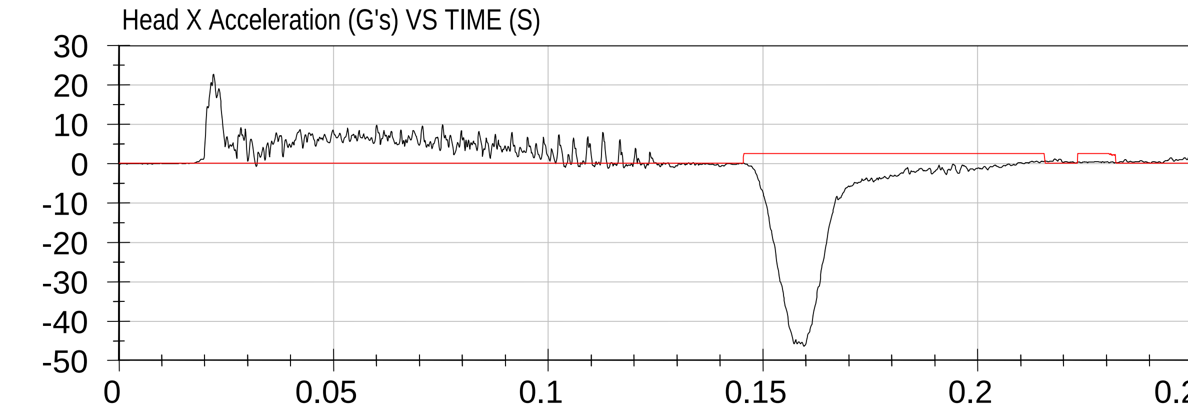
TMax: 0.02 s

Min: -1,933.63 N

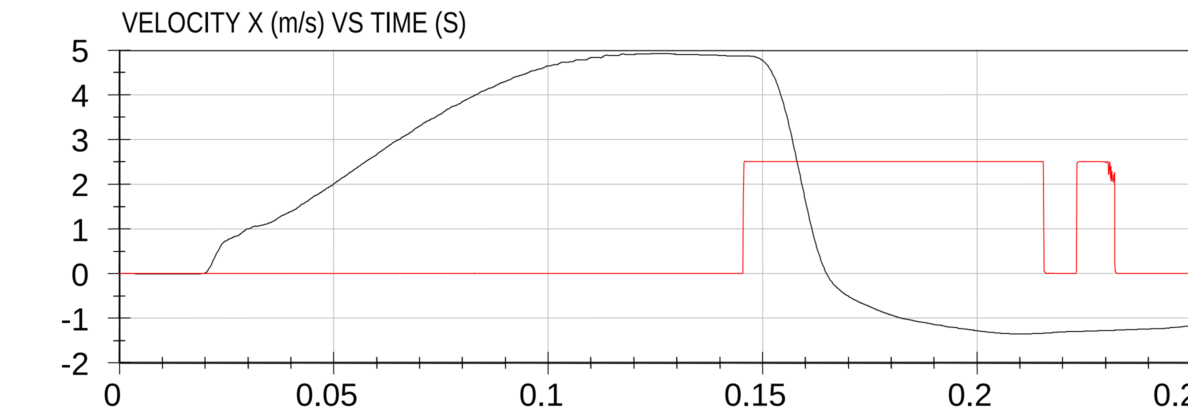
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.85 m/s

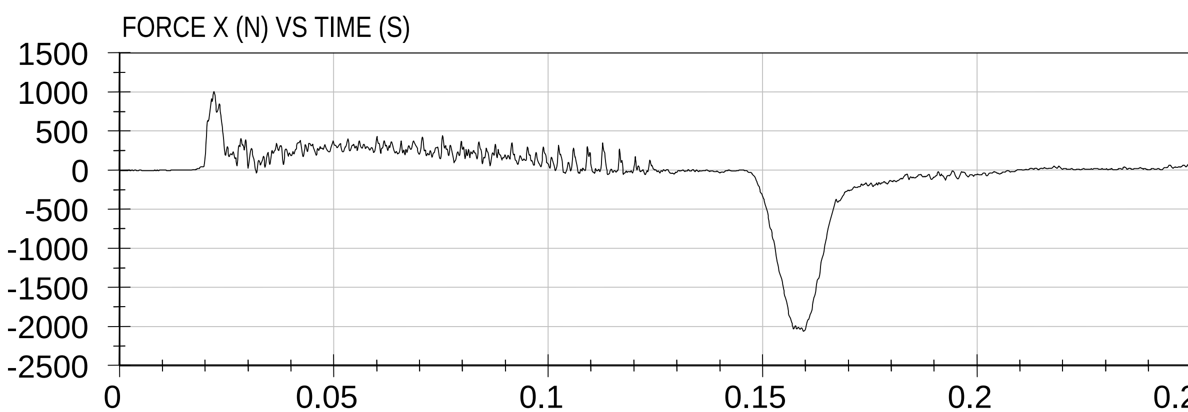
Test Date: 10-20-2011
Location: B18K6



Max: 22.58 G's
TMax: 0.02 s
Min: -46.41 G's
TMin: 0.16 s



Max: 4.92 m/s
TMax: 0.13 s
Min: -1.35 m/s
TMin: 0.21 s
VEL@IMP: 4.87 m/s

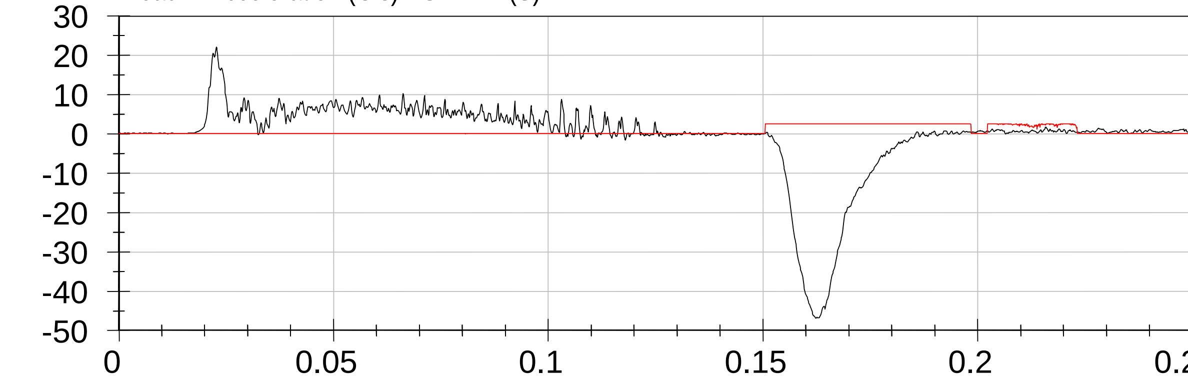


Max: 1,003.51 N
TMax: 0.02 s
Min: -2,062.42 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.80 m/s

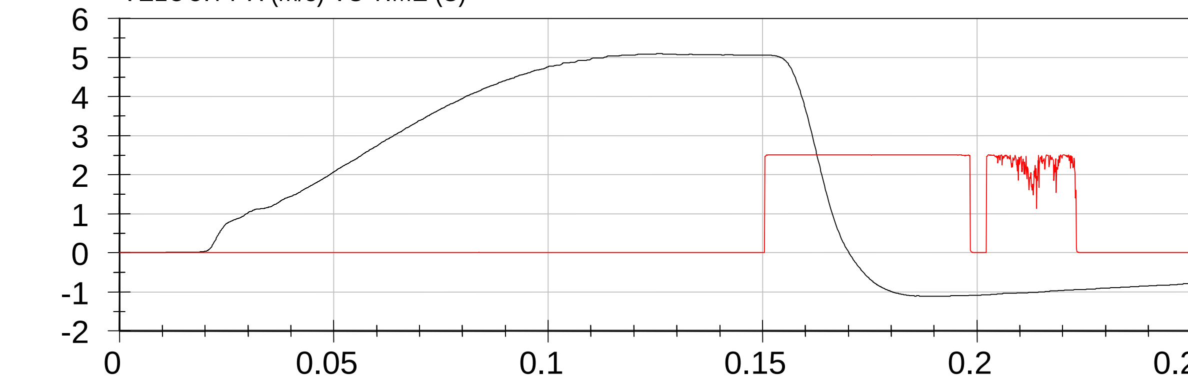
Test Date: 10-20-2011
Location: B18K7

Head X Acceleration (G's) VS TIME (S)



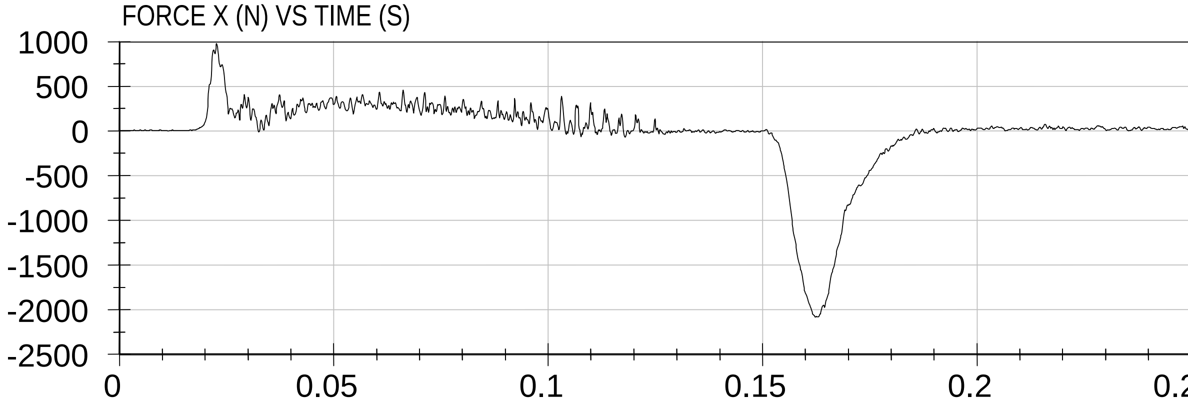
Max: 21.96 G's
TMax: 0.02 s
Min: -46.84 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



Max: 5.09 m/s
TMax: 0.13 s
Min: -1.11 m/s
TMin: 0.19 s
VEL@IMP: 5.06 m/s

FORCE X (N) VS TIME (S)

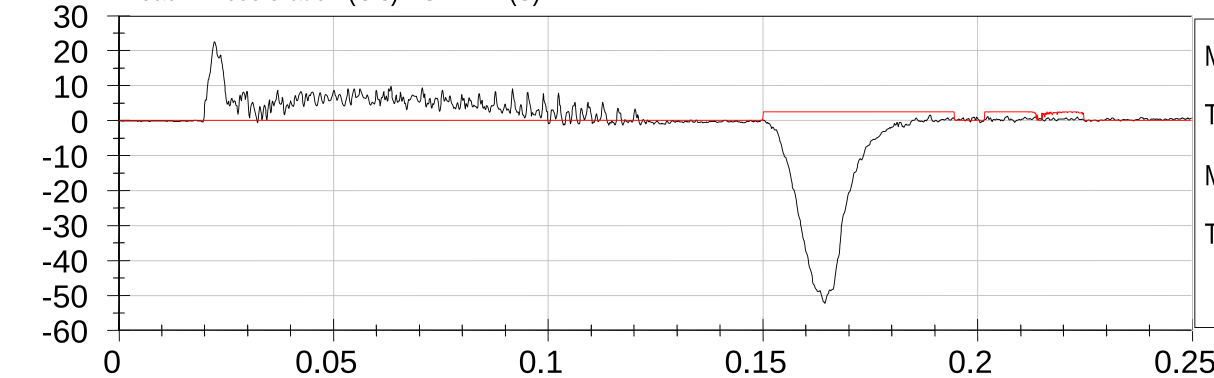


Max: 976.01 N
TMax: 0.02 s
Min: -2,081.75 N
TMin: 0.16 s

FMVSS 222 KNEE FORM IMPACTS
Vehicle: 2012 Bluebird All American D3 RE
NHTSA #: CC0901 speed trap: 4.79 m/s

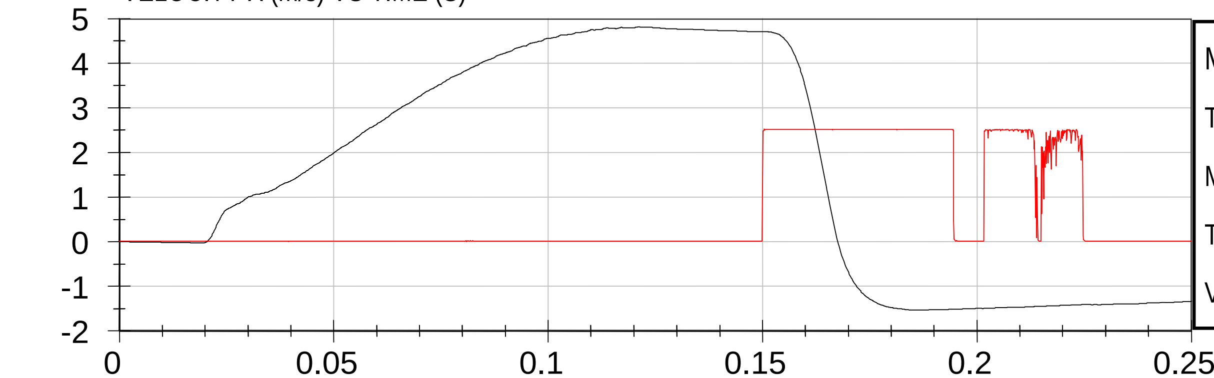
Test Date: 10-20-2011
Location: B18K8

Head X Acceleration (G's) VS TIME (S)



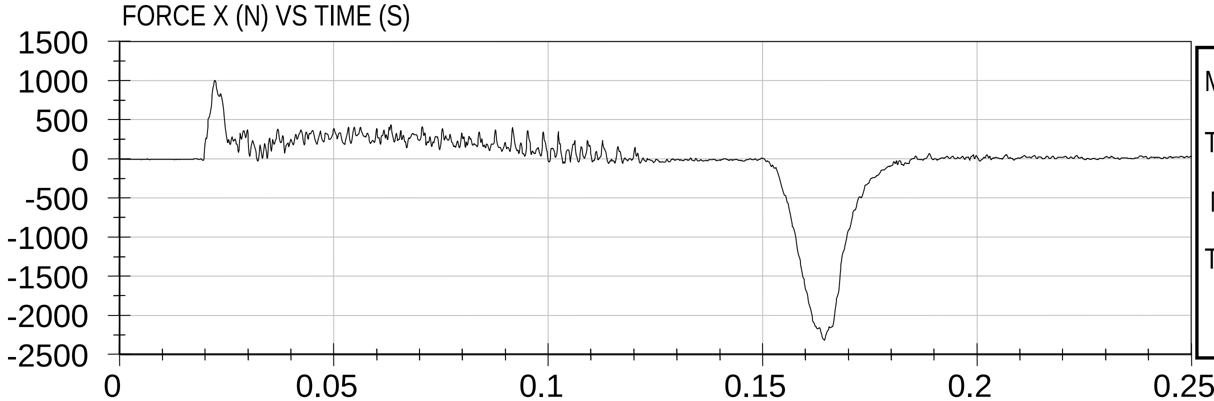
Max: 22.52 G's
TMax: 0.02 s
Min: -52.24 G's
TMin: 0.16 s

VELOCITY X (m/s) VS TIME (S)



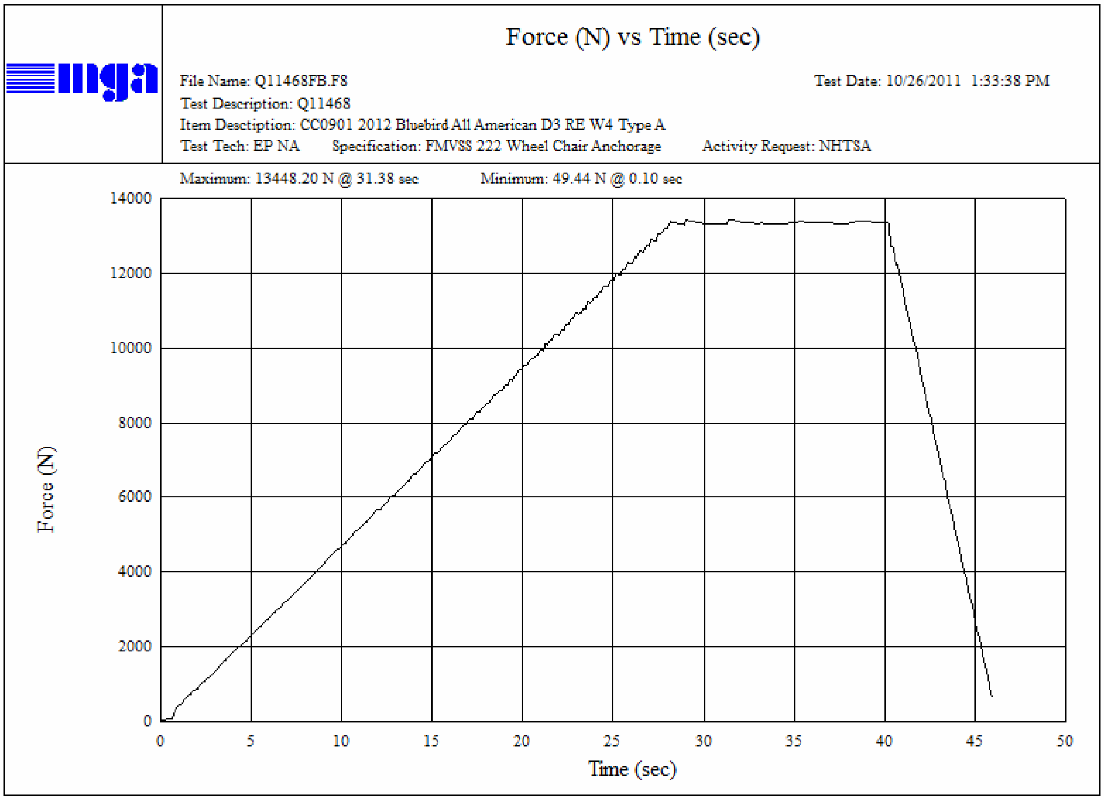
Max: 4.81 m/s
TMax: 0.12 s
Min: -1.53 m/s
TMin: 0.18 s
VEL@IMP: 4.7 m/s

FORCE X (N) VS TIME (S)

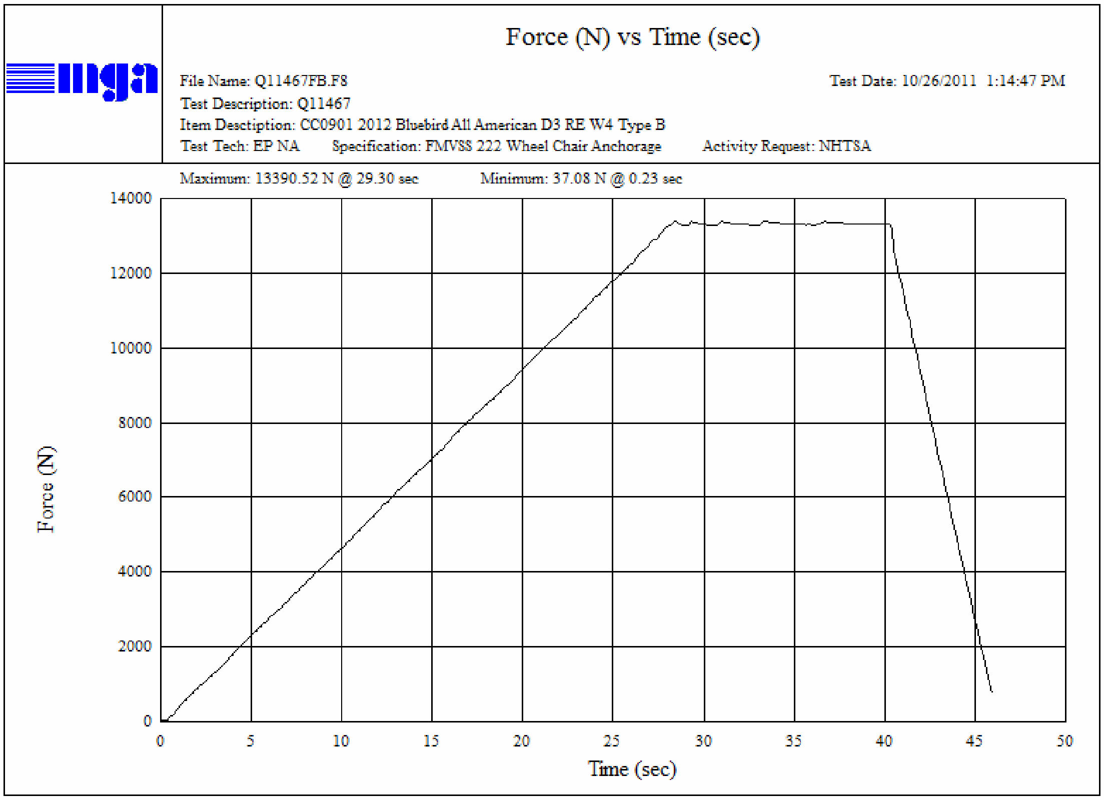


Max: 1,000.74 N
TMax: 0.02 s
Min: -2,321.58 N
TMin: 0.16 s

TEST PLOTS

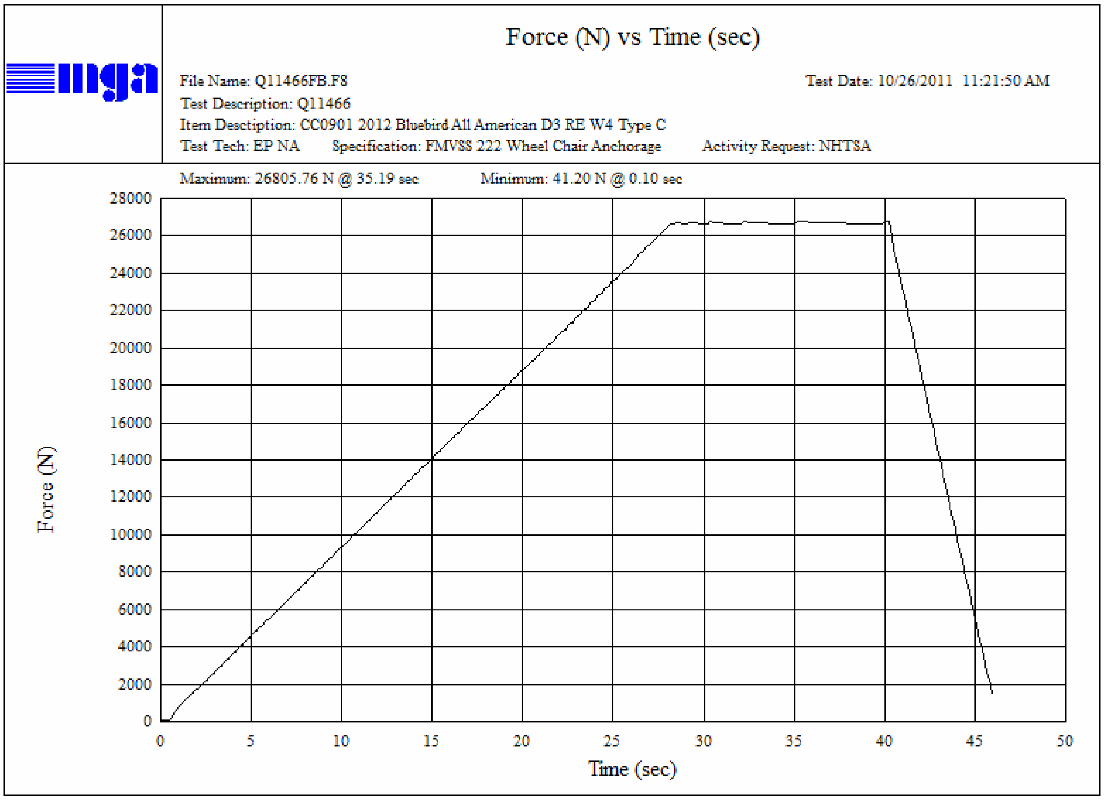


W4 Wheelchair Anchorage (LF) Force vs. Time

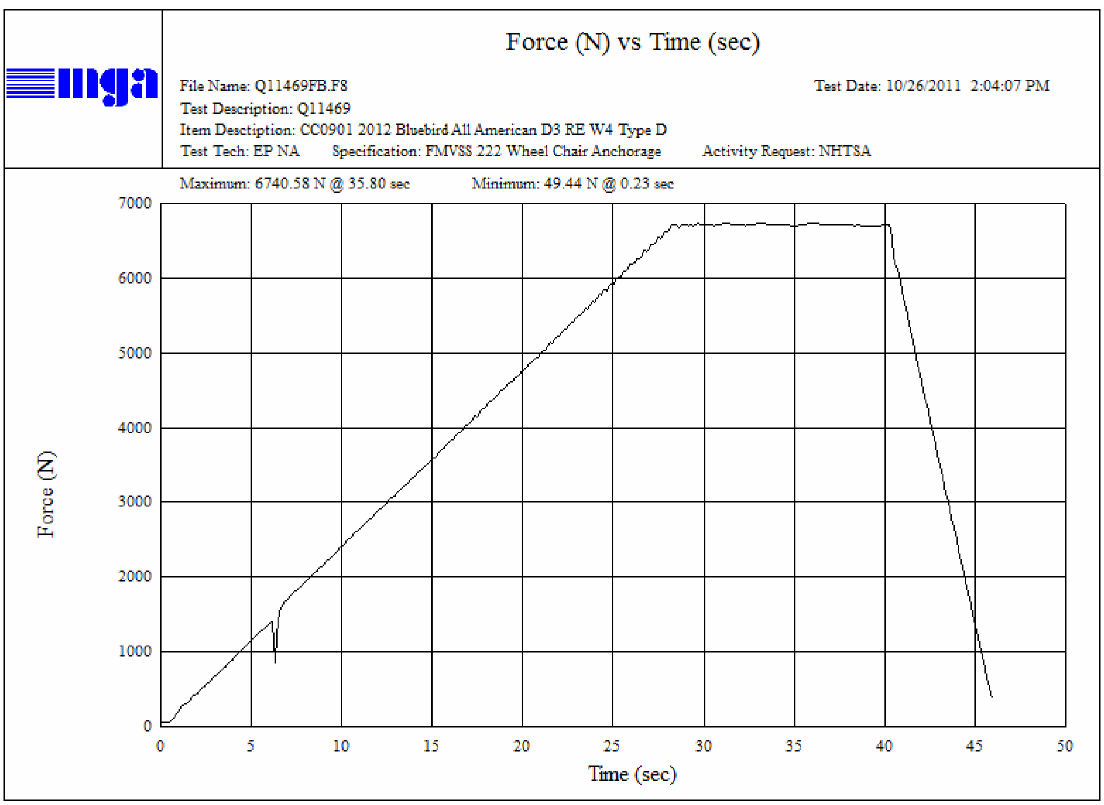


W4 Wheelchair Anchorage (LR) Force vs. Time

TEST PLOTS



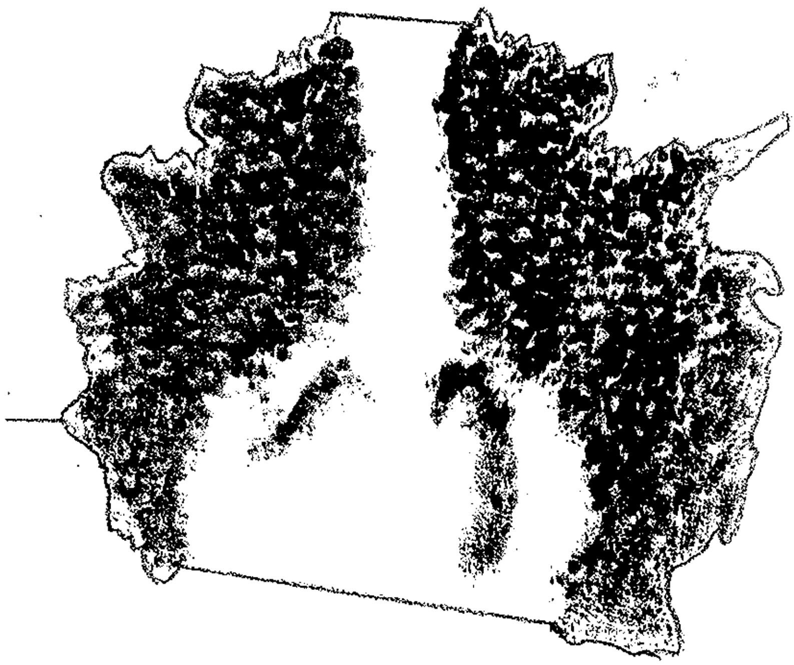
W4 Wheelchair Anchorage (RR) Force vs. Time



W4 Wheelchair Anchorage (Upper Torso) Force vs. Time

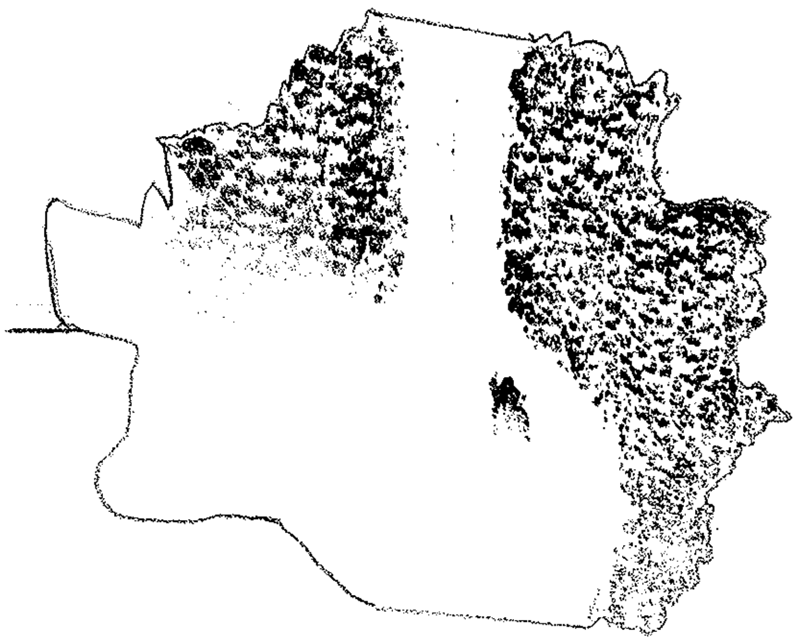
SECTION 7

WELT CONTACT POINTS



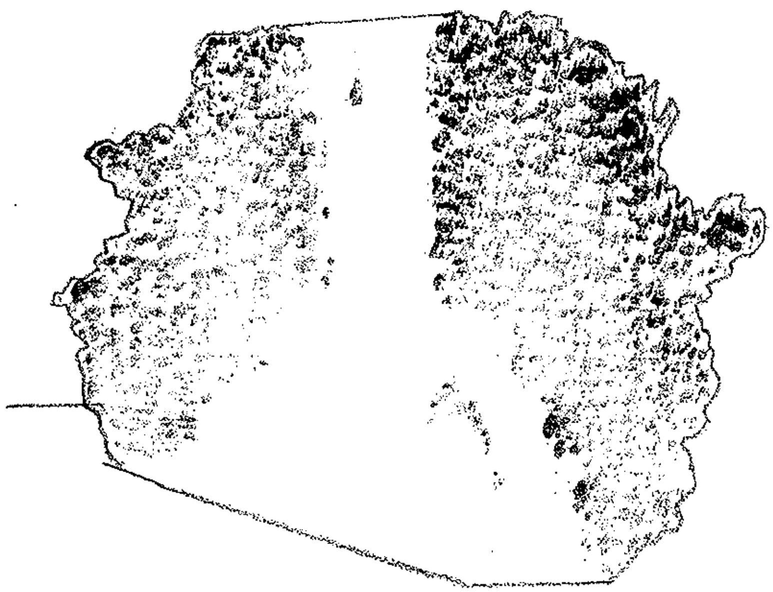
CC0901
5'2H1
9-27-2011
5820 mm²

CC0901
S2H2
9-27-2011
6420 mm²



CC0901
52H3
9-27-2011
5490 MM2

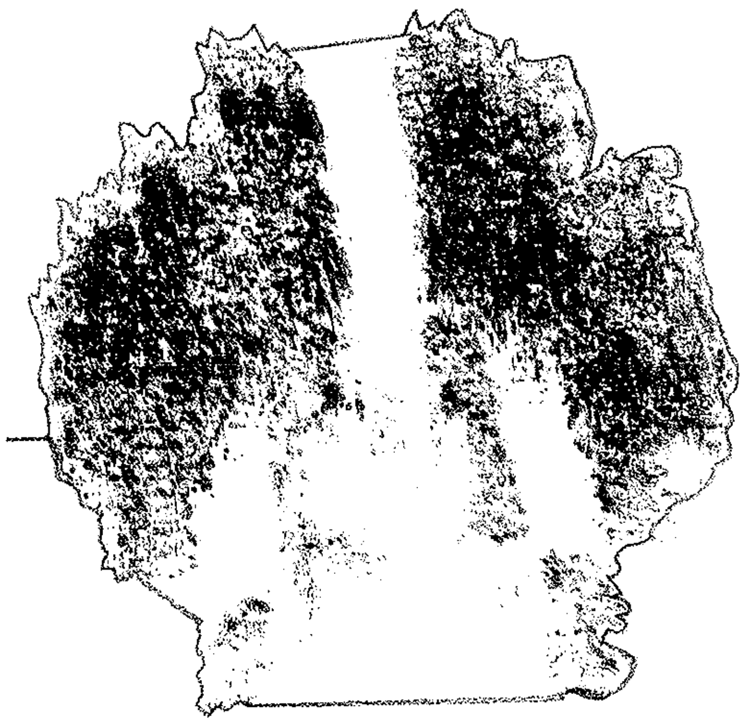
CC0901
52H4
9-27-2011
6220 mm²



CC0901
S2H5
9-27-2011
5280 mm^2

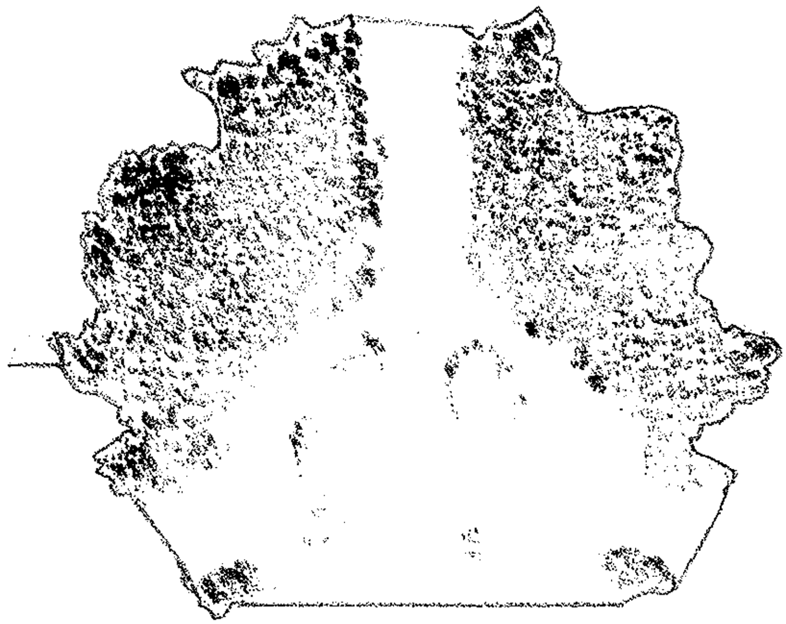
CC0901
52H6
9-27-2011
5280 mm2

CC0901
S2H7
9-27-2011
5550 MM²

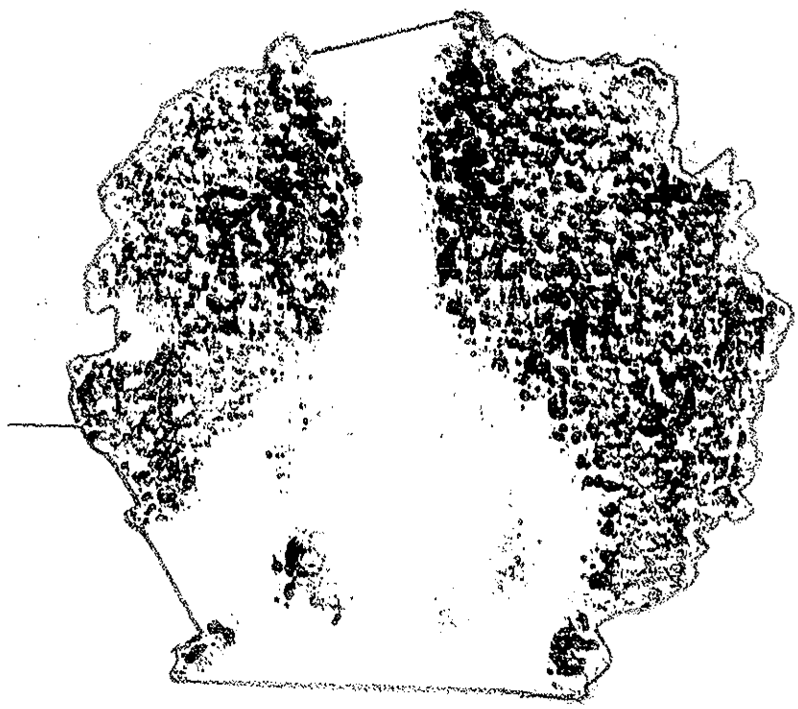


CC0901
S7H1
10-12-2011
6480 MM²

CC0901
57 H2
10-12-2011
5610 mmd



CC0901
S7H3
10-12-2011
5530 mm²

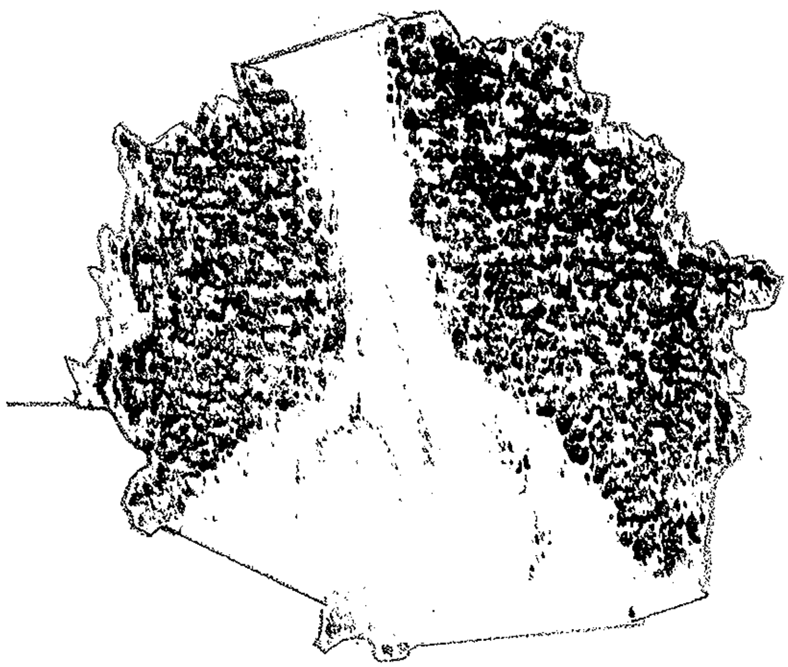


CC0901
57H4
10-12-2011
6380 NAIP

CC8901
57H5
10-12-2011
5300 mm²

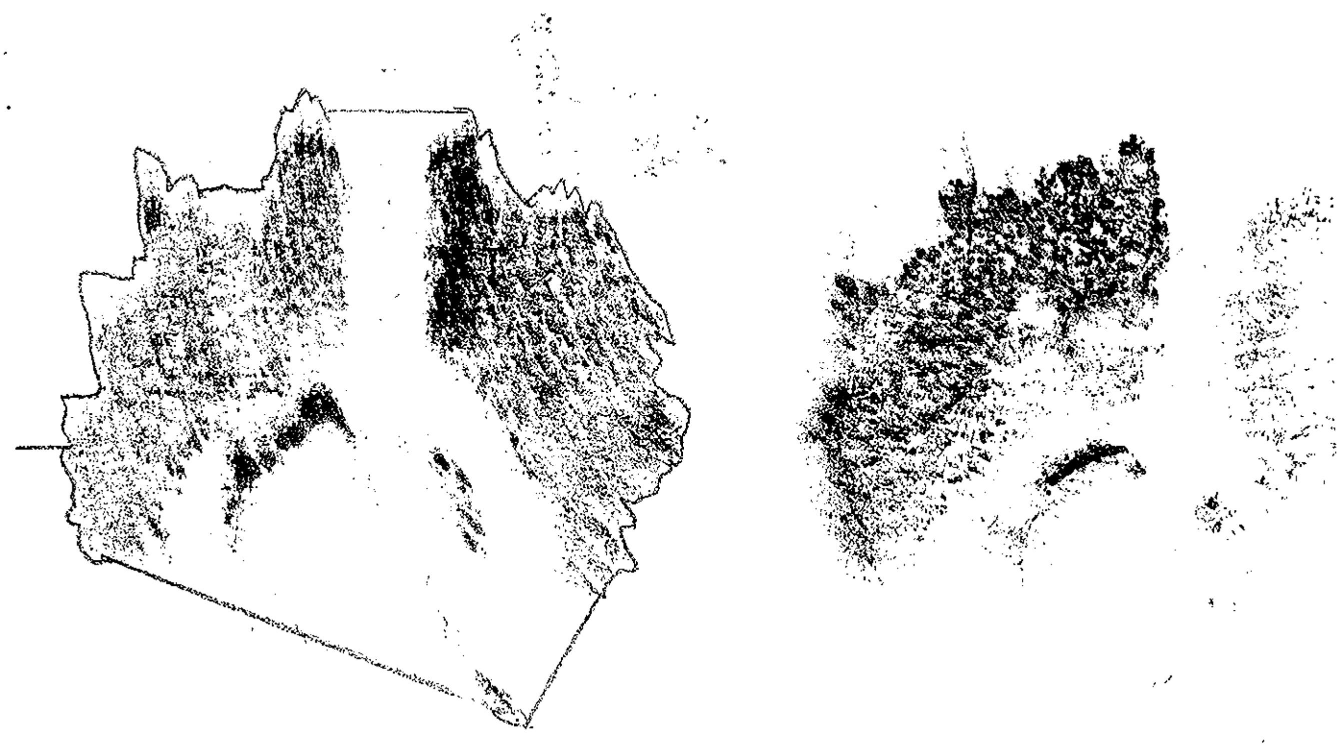
CC0901
~~S7H7~~ S7H6
10-13-2011

4930 MM^2

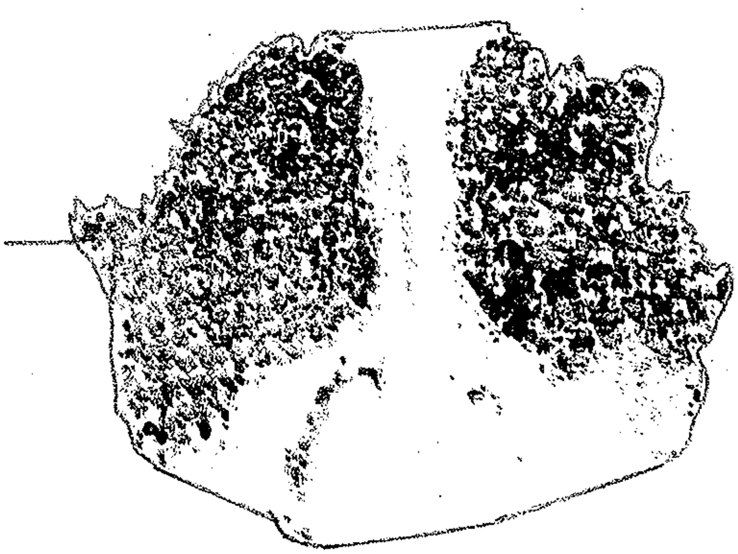


CC0901
8747
10-13-2011
5580 MM²

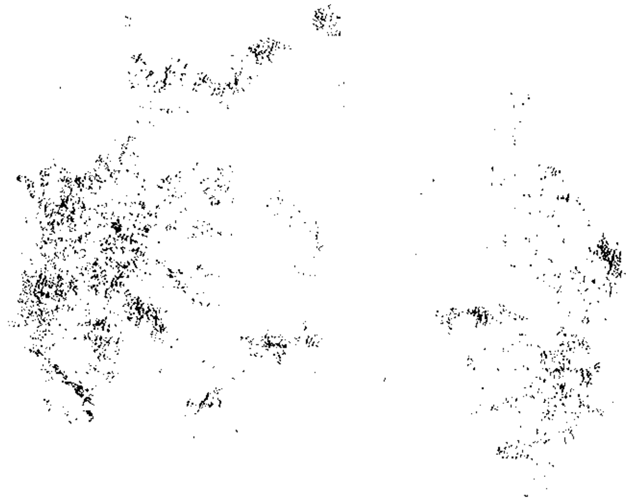
CC0901
S15H1
10-19-2011
5500 mm²

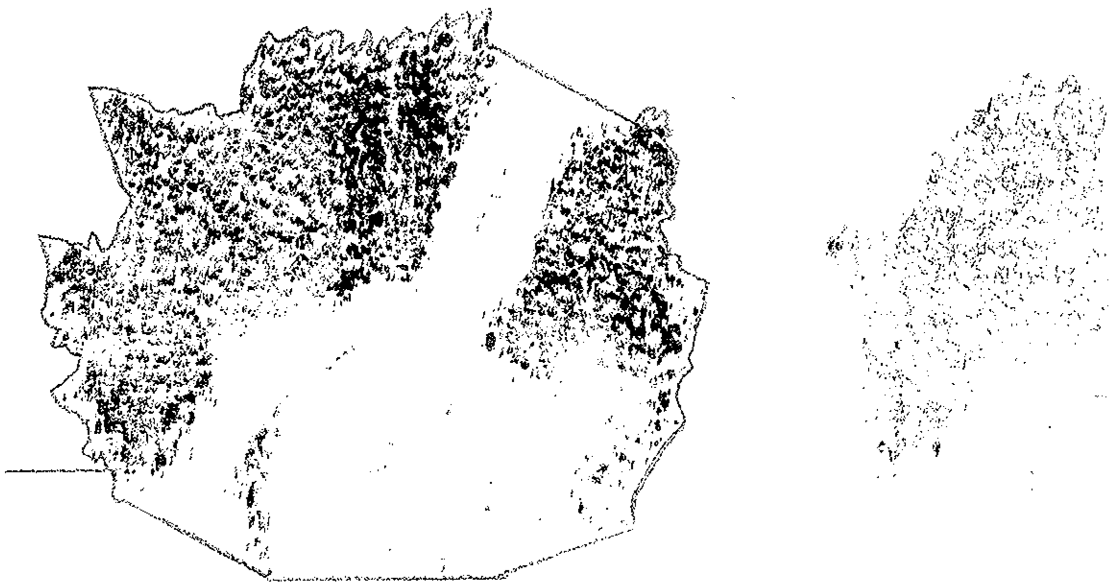


CC0901
S15H2
10-19-2011
4060 mm²

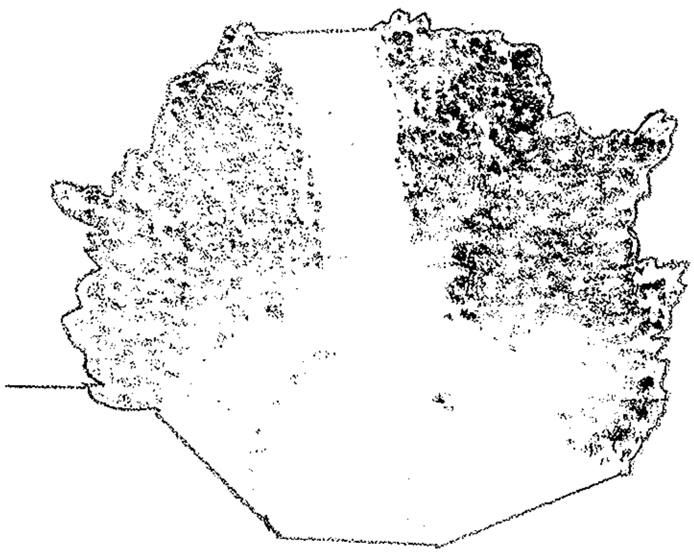


CC0901
515H3
10-19-2011
4450 MM2

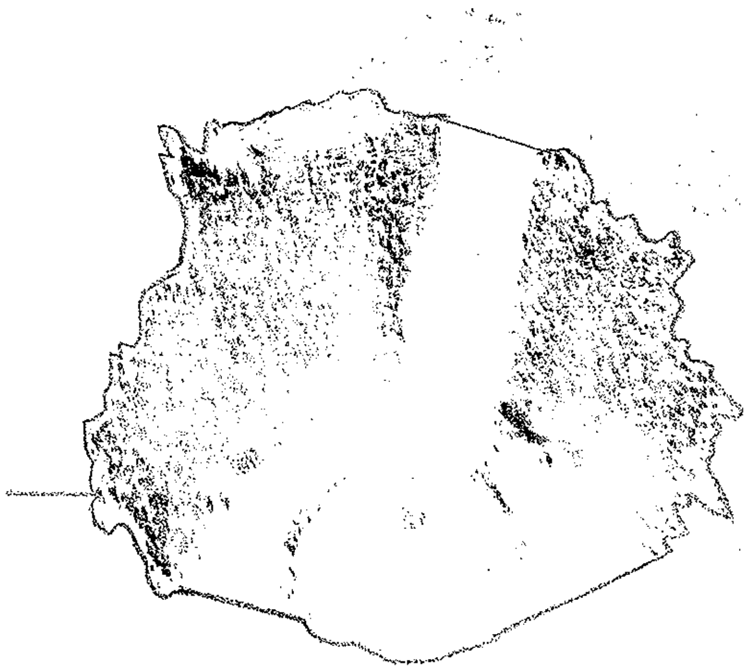




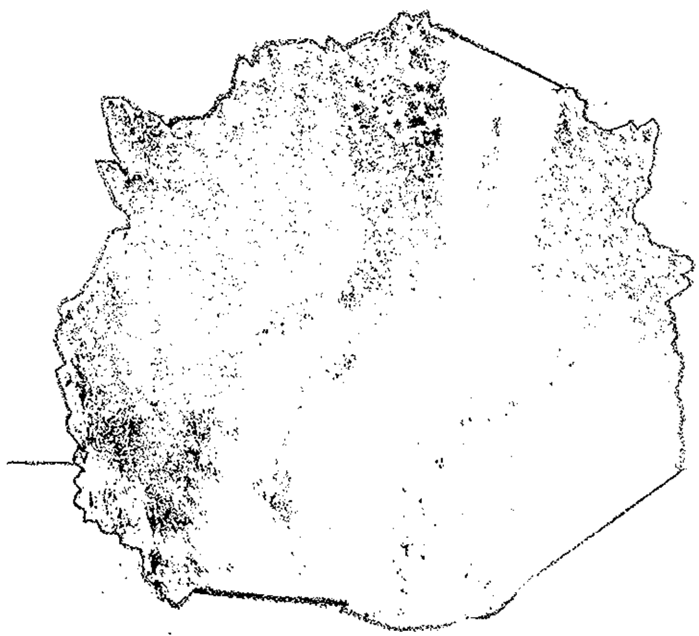
CC0901
515H4
10-19-2011
5000 mm^2



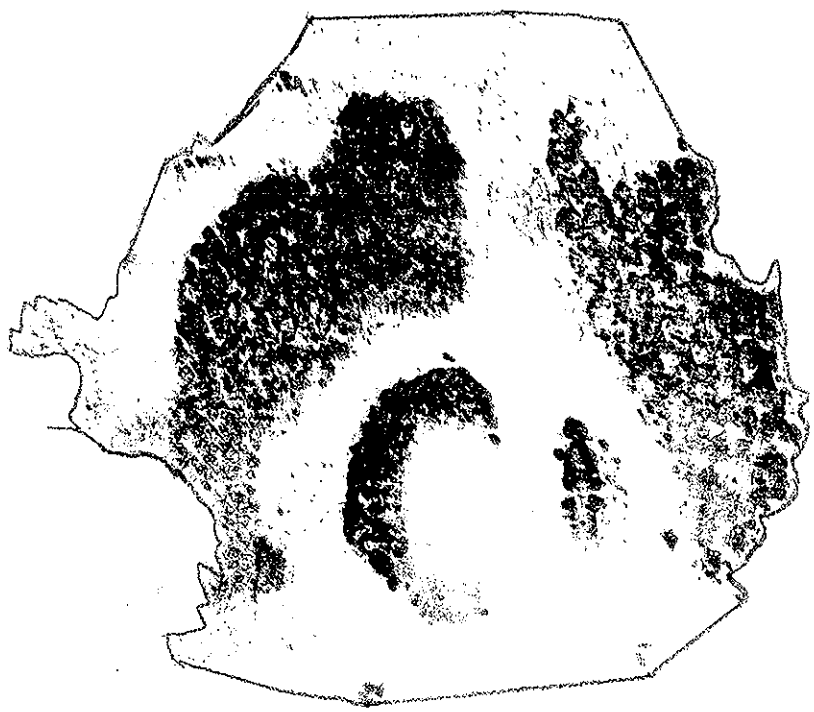
CC8901
5'15H5
10-19-2Ø11
4400 mm^2



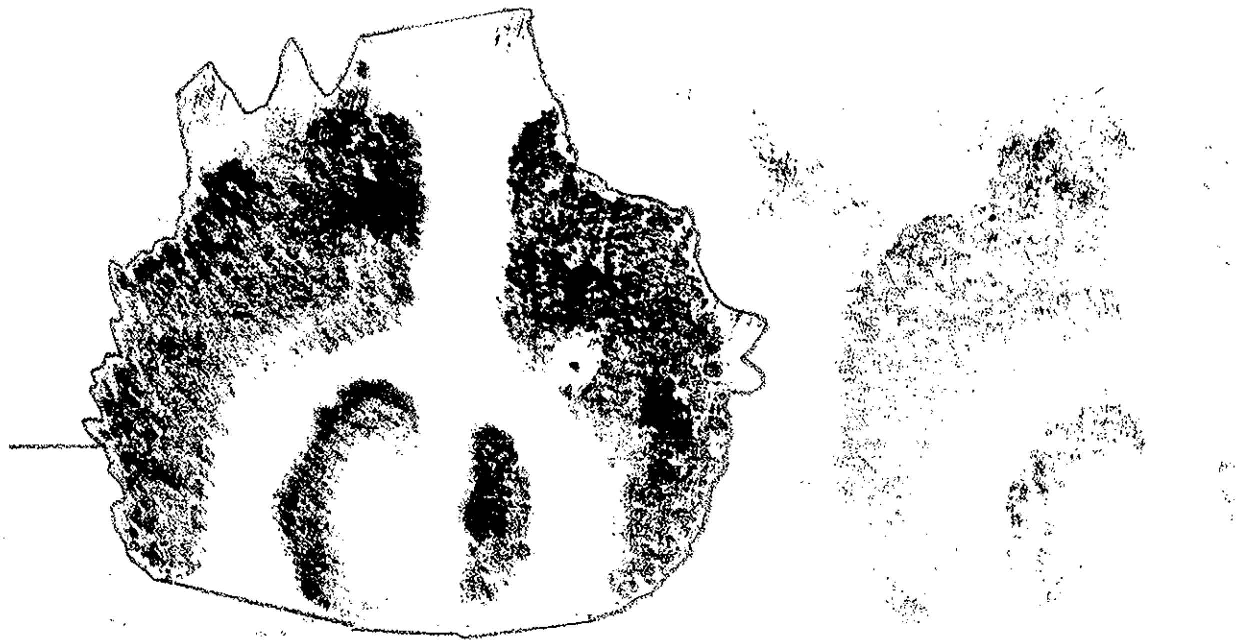
CC0901
5151H6
10-19-2011
4720 MM2



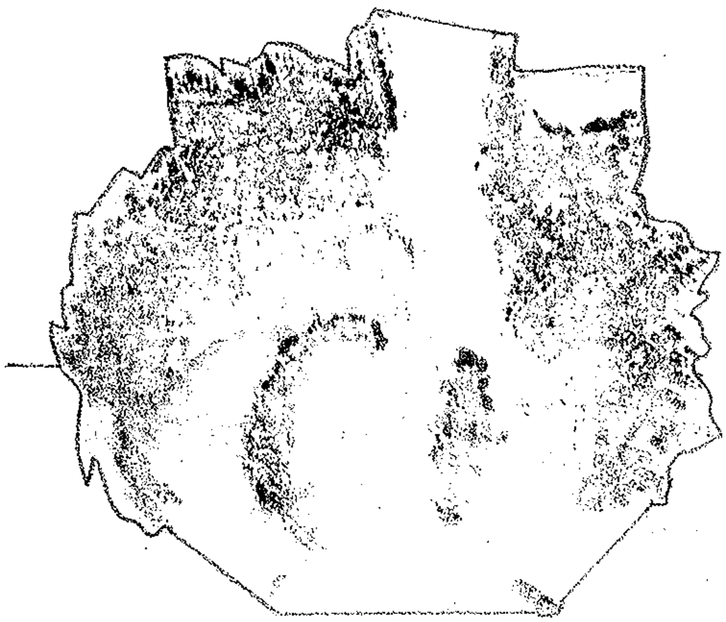
CC0901
S15H7
10-19-2011
5170 mm^2



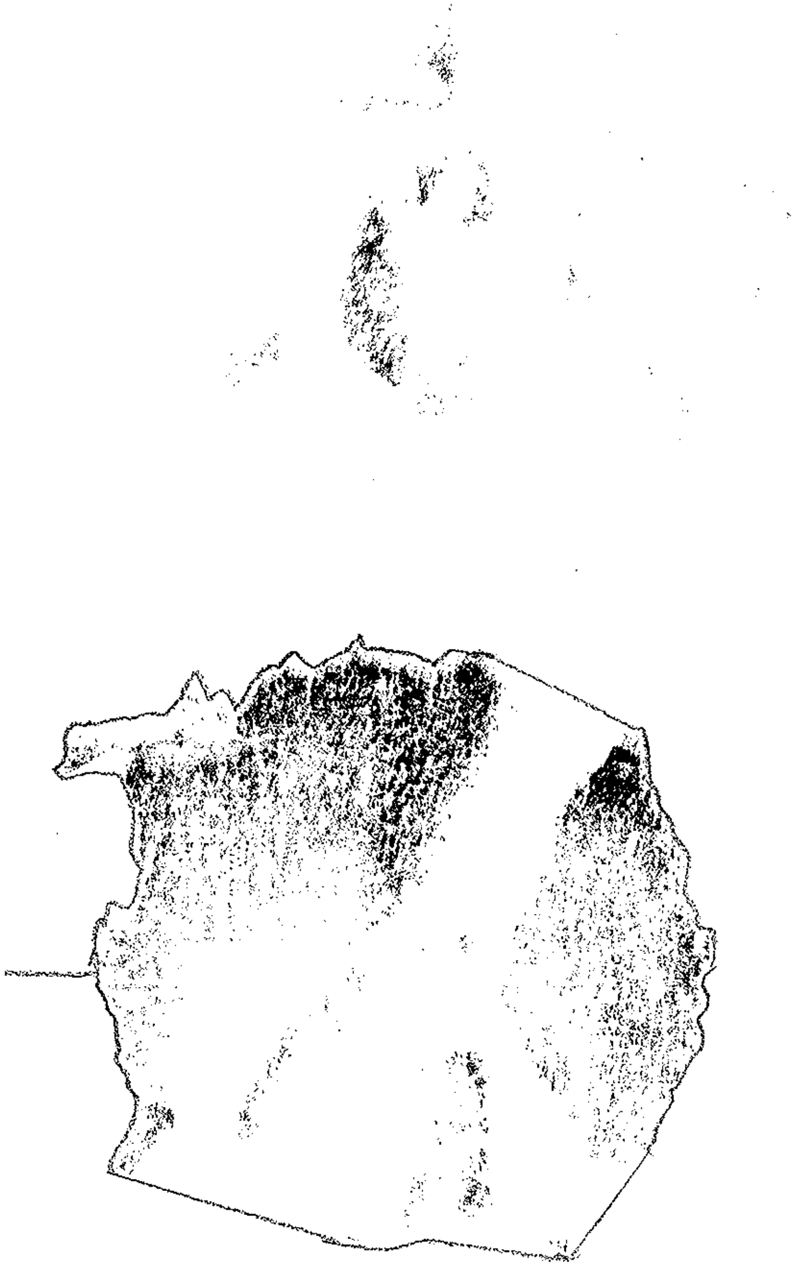
CE0901
B6H1
9-20-2011
6560 mm2



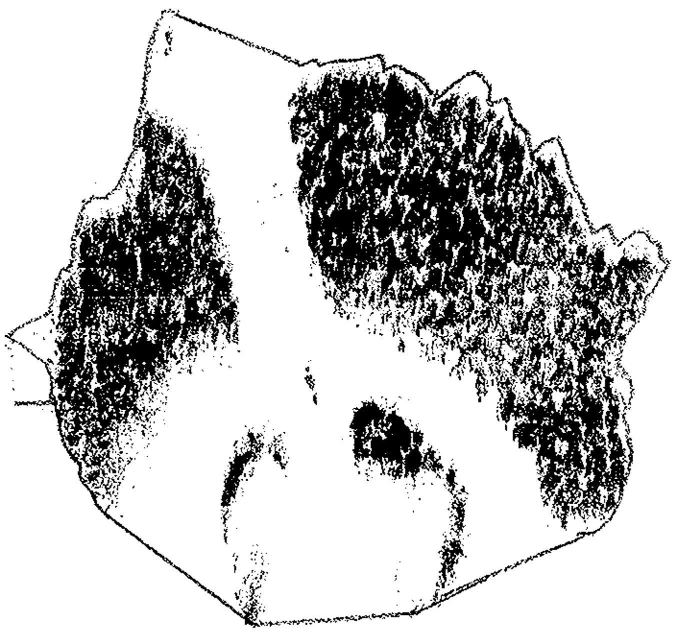
CCØ9Ø1
B6H2
9-20-2011
5340 MAP



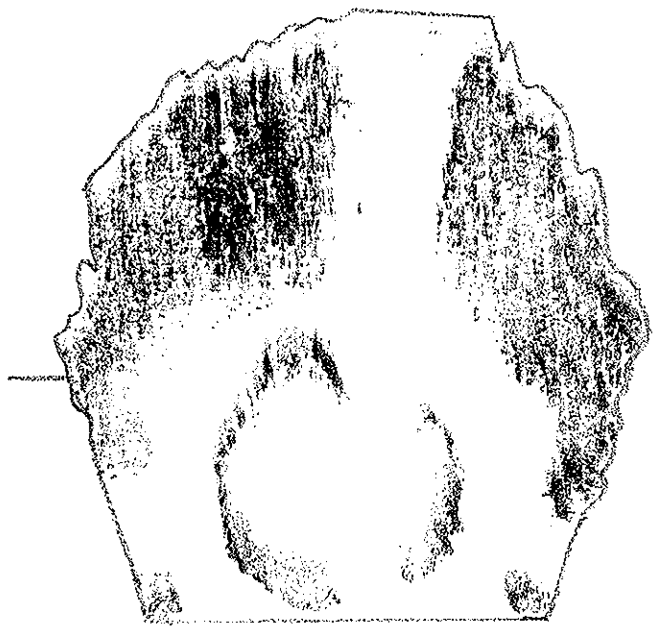
CC09Ø1
B6H3
9-20-2011
5330 mm²



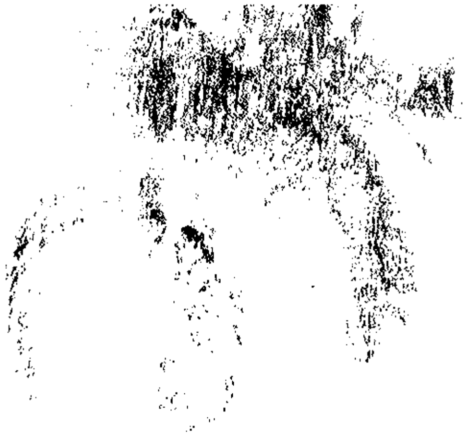
CC0901
B6H4
9-20-2011
5200 mm^2



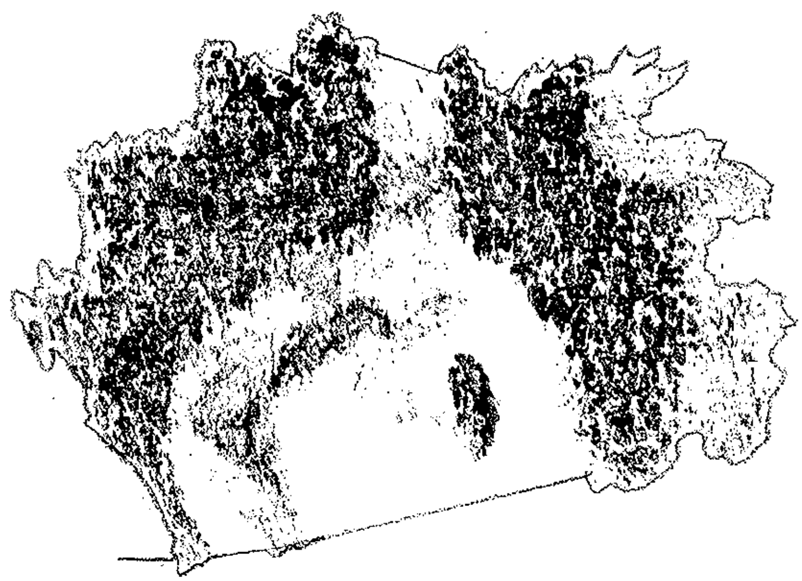
CC0901
B6HS
9-20-2011
4730 MM^2



CC0902
B6H6
9-20-2011
5110 MMa

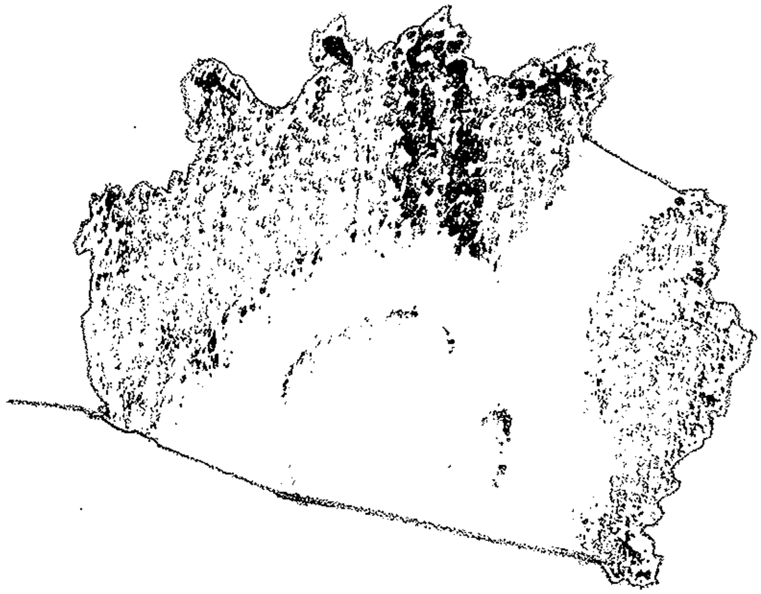


CC0901
B6H7
9-20-2011
4230 mm²

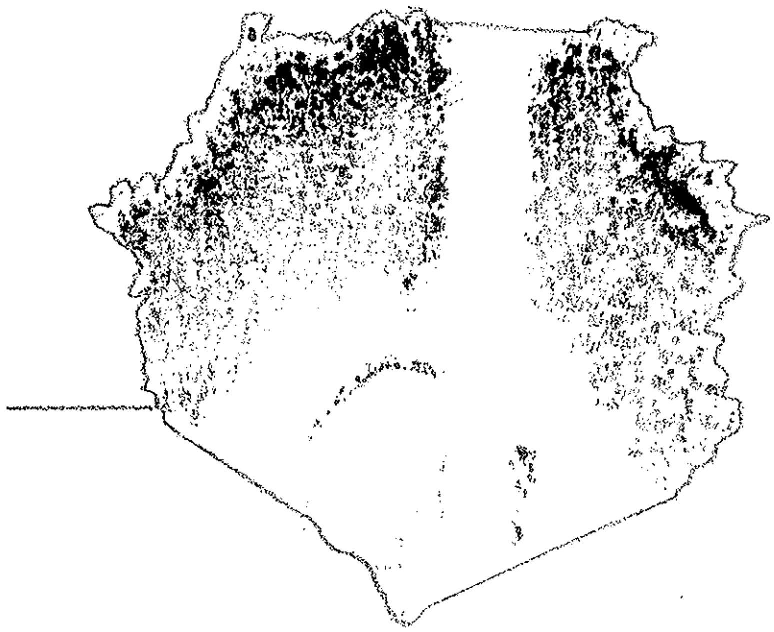


CC0901
B18H1
10-20-2011
5230 mm²

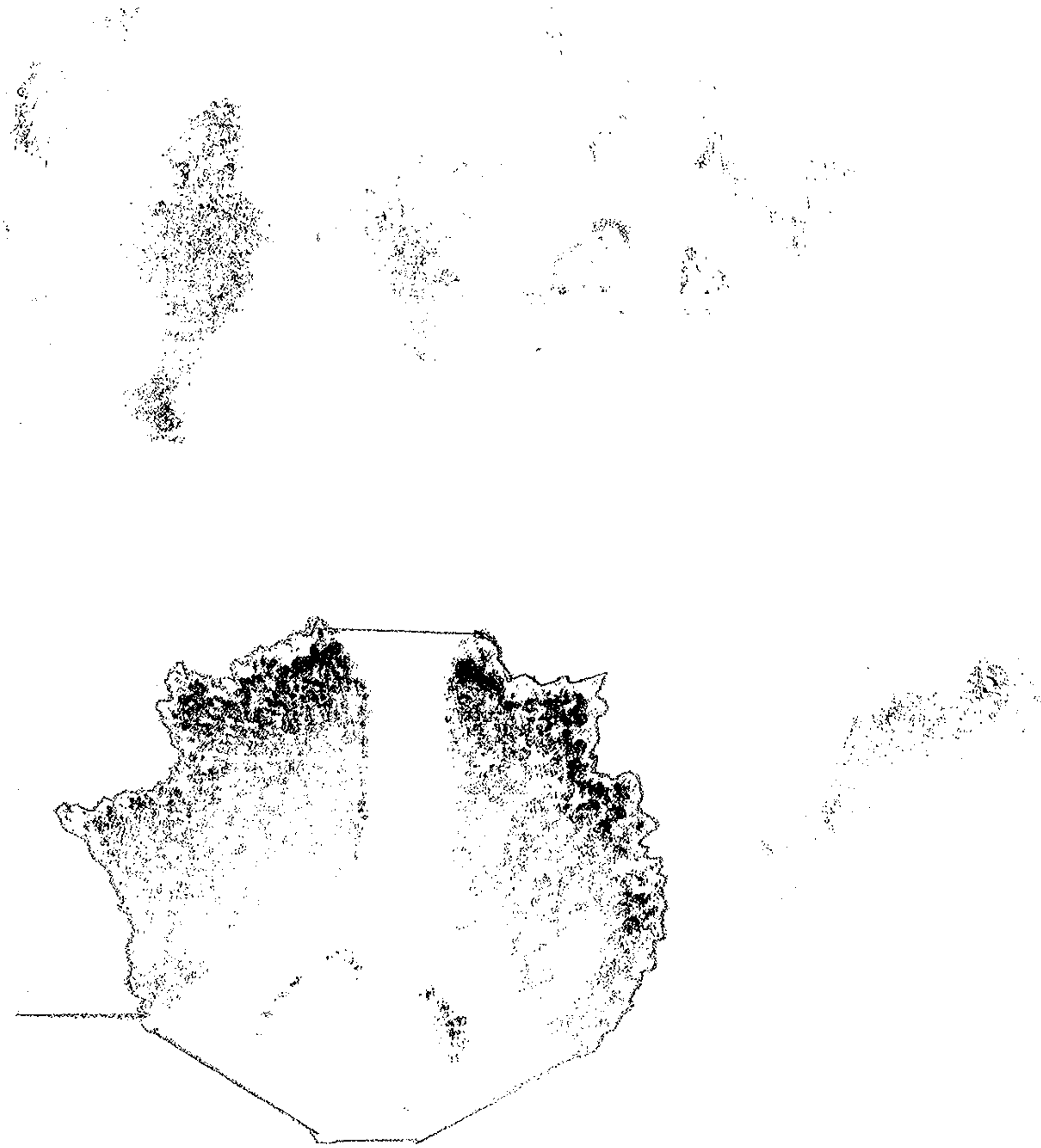
CC0901
B18H2
10-20-2011
4530 mm2



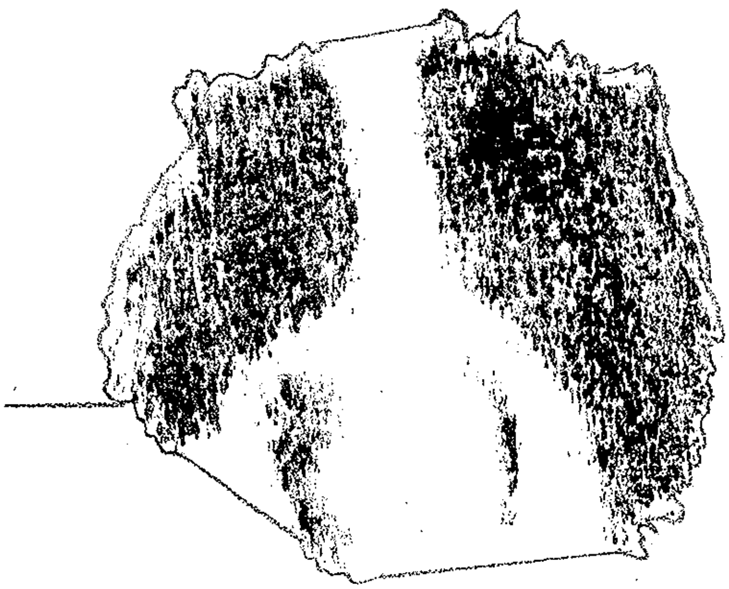
CC0901
B18H3
10-20-2011
4540 MMD



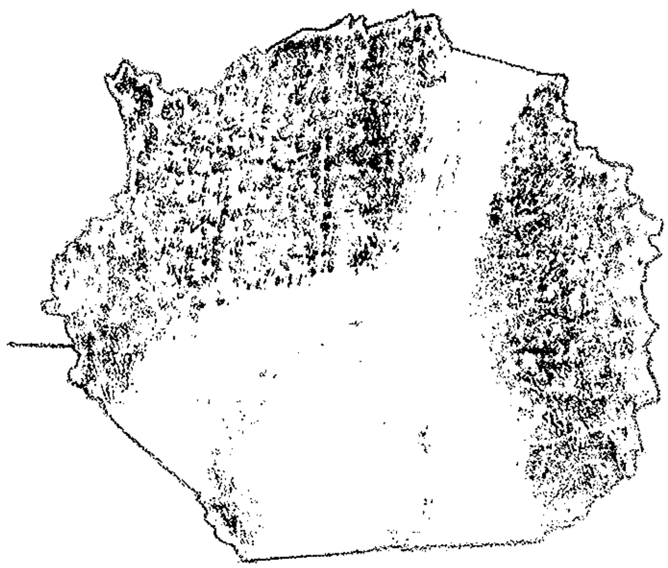
CC0901
B18H4
10-20-2011
4860 mm²



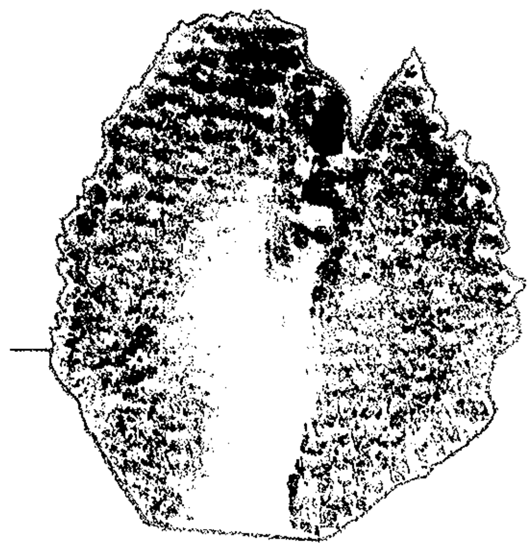
CC0901
B18H5
10-20-2011
4760 MM^2



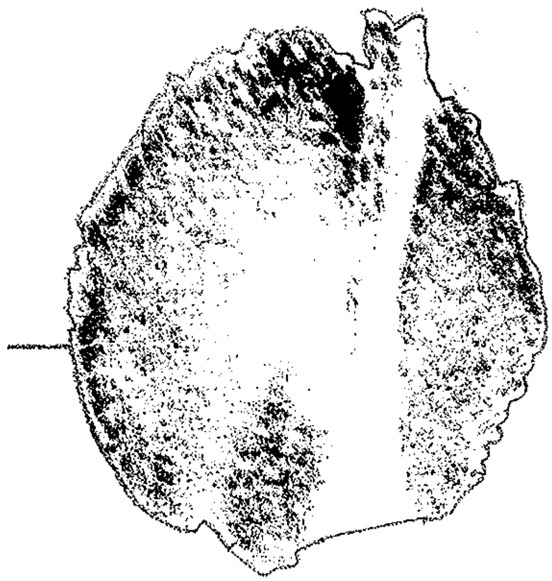
CC 0901
B18H6
10-20-2011
4770 mm²



CC09Ø1
1318 H 7
10-20-2011
4340 mm²



CC0901
S2K1
9-28-2011
3180 MM^2



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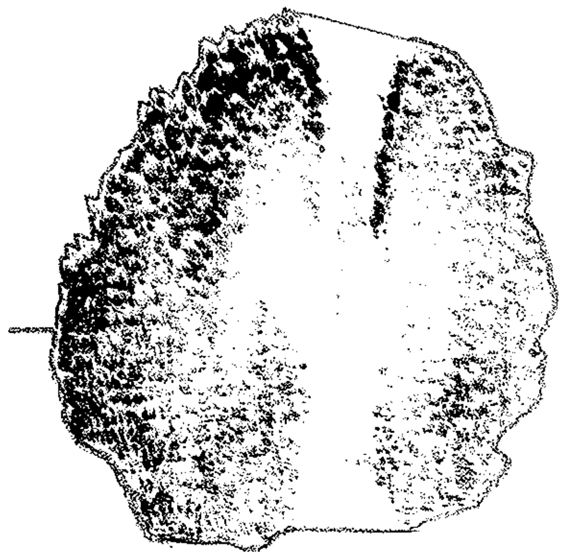
S2K2
9-28-2011
3390 mm^2



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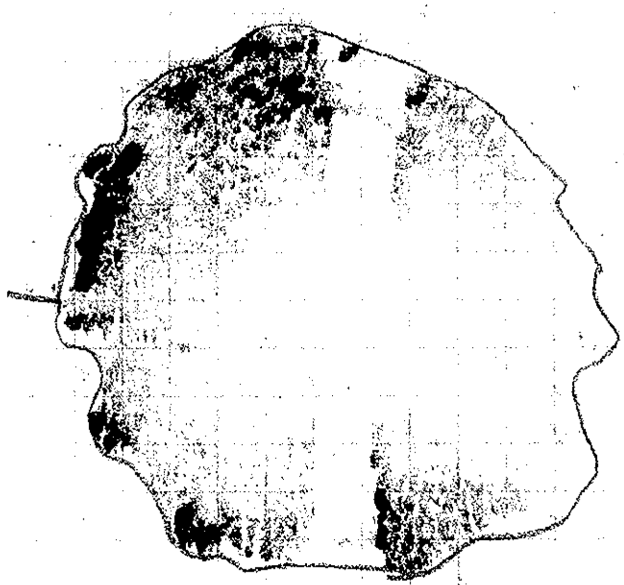
S2K3
9-28-2011
3700 MM 2

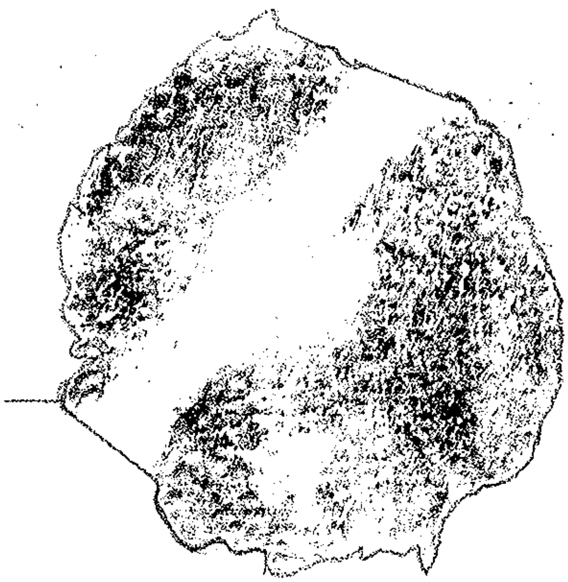


CC∅9∅1

9-28-2∅11

S2K4

4100 mm²



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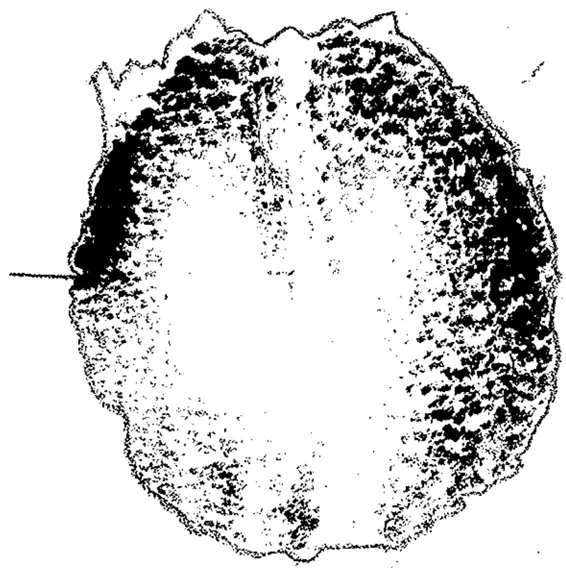
57K1
10-13-2011
3650 mm^2



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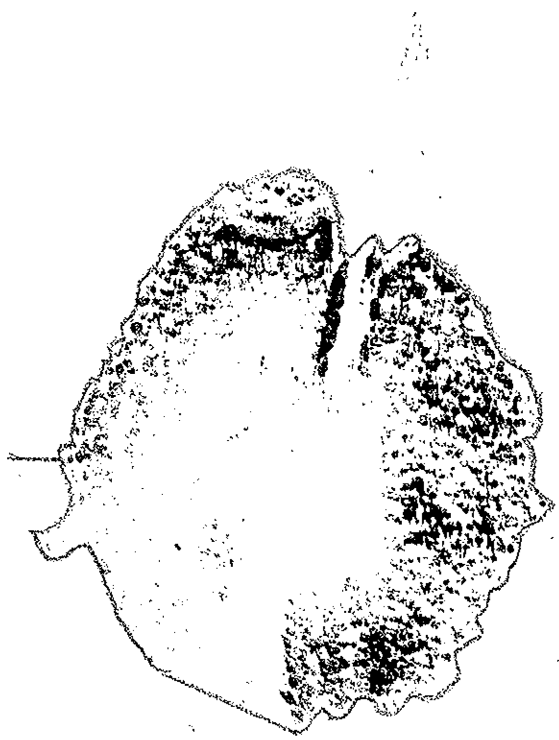
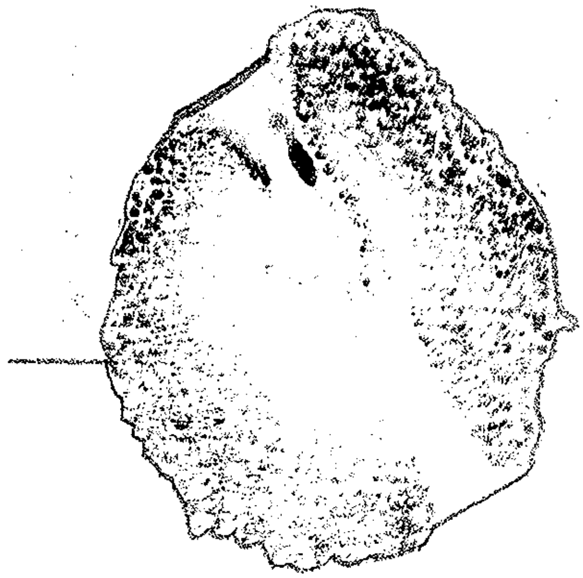
57K2
10-13-2011
3760 MWd

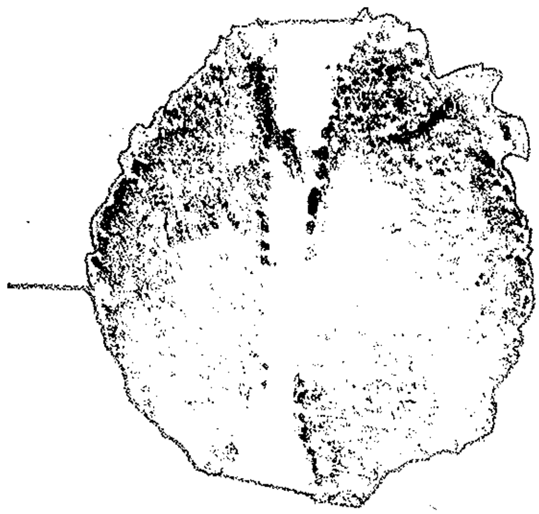


CC0901
S7K3
10-14-2011
3050 mm

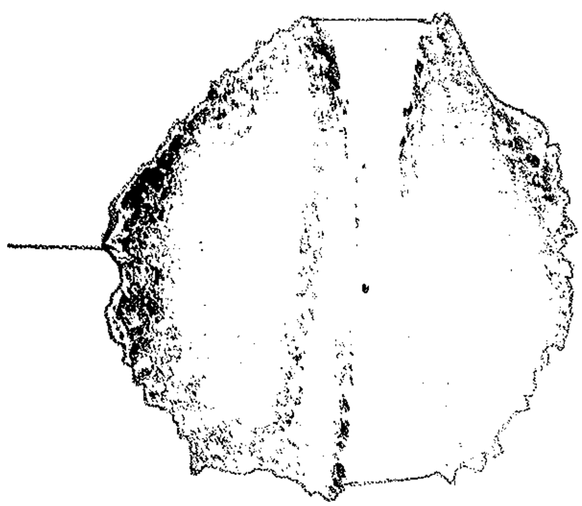


CC0901
S7K4
10-14-2011
3130 Mar

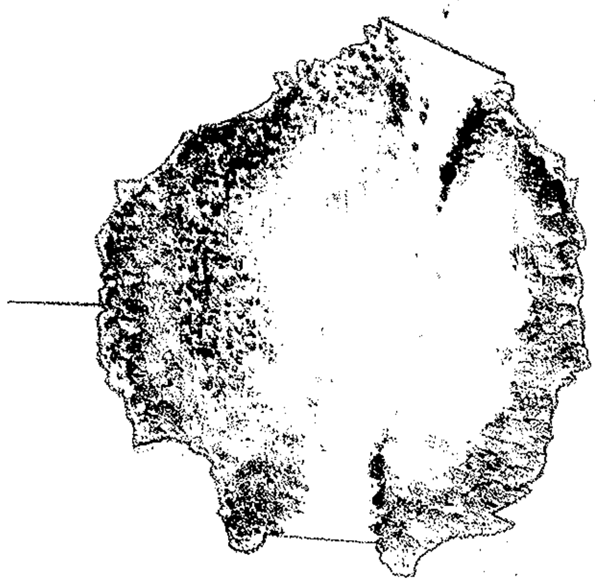
CC09Ø1
S15K1
10-18-2011
3450 MM^2



CCØ9Ø1
515K2
10-19-2011
2940 MM²



CC0901
515 K3
10-19-2011
2930 mm²



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515K4
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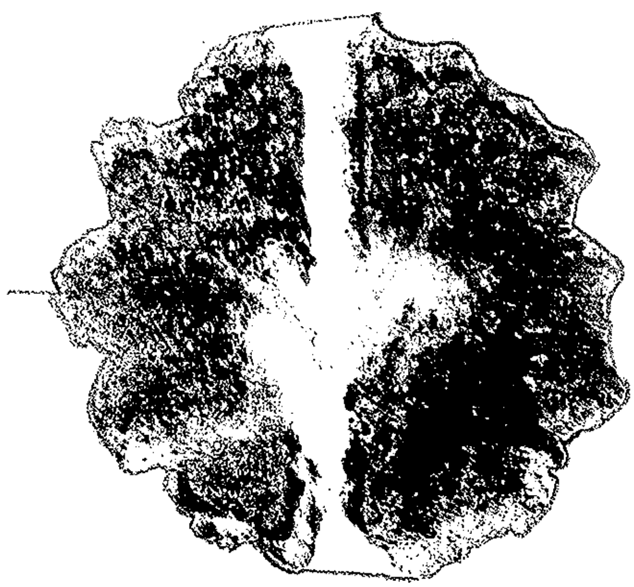
3420mm²



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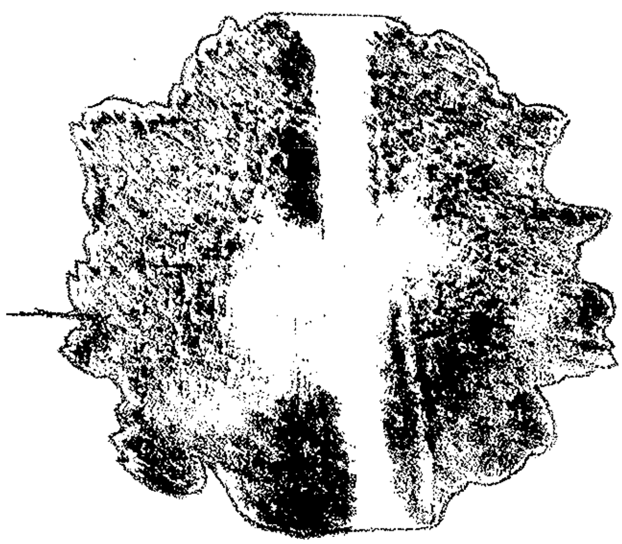
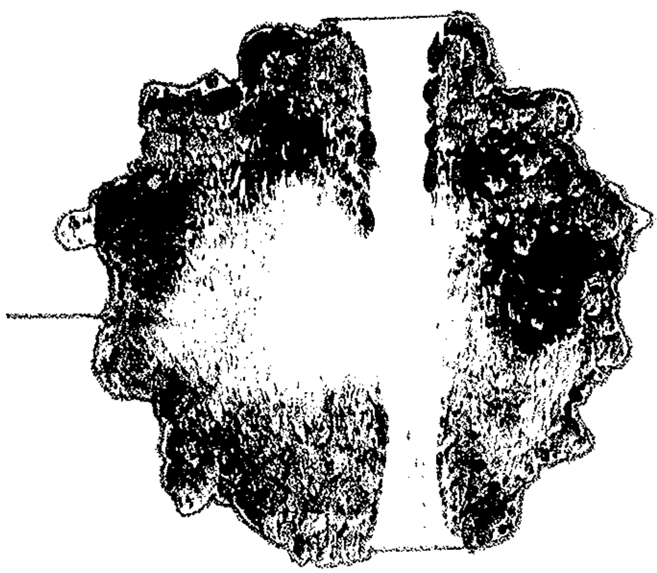
B6K1
9-20-2011
4170 mm²



CC09Ø1
B6K2
9-20-2011
3820 mm²



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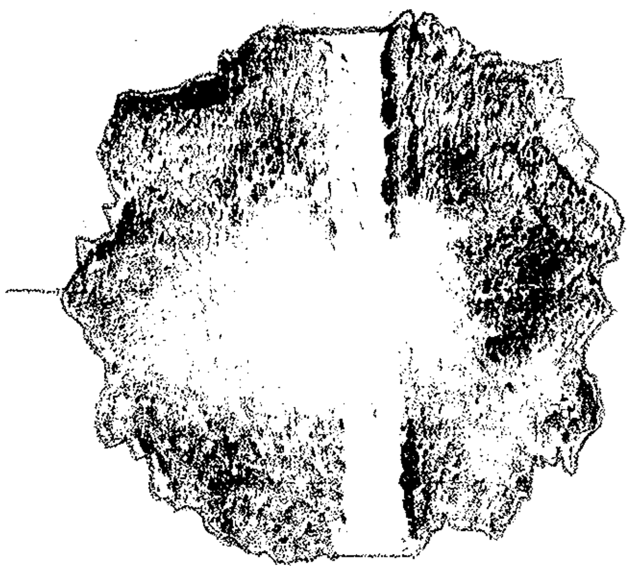
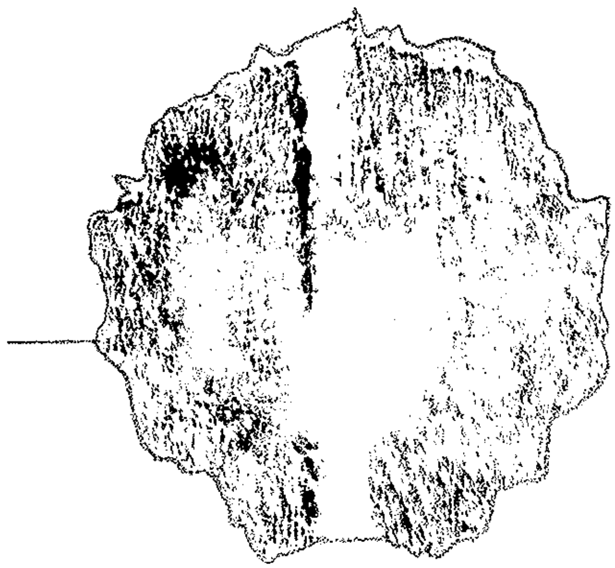
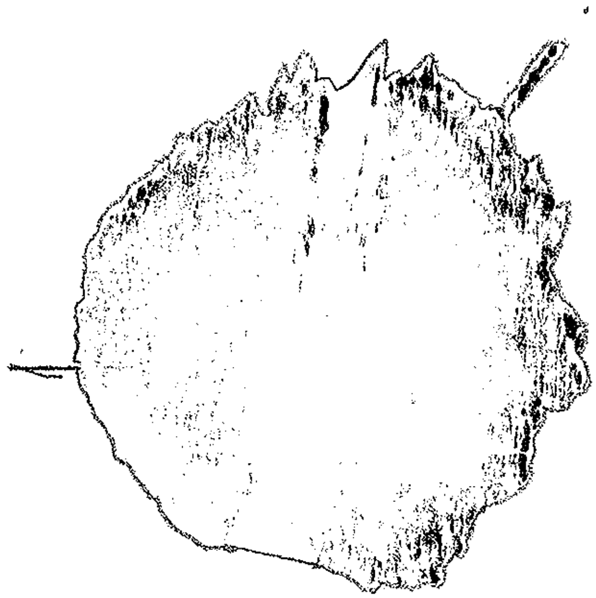
B6K3
9-20-2011
4110 mm²



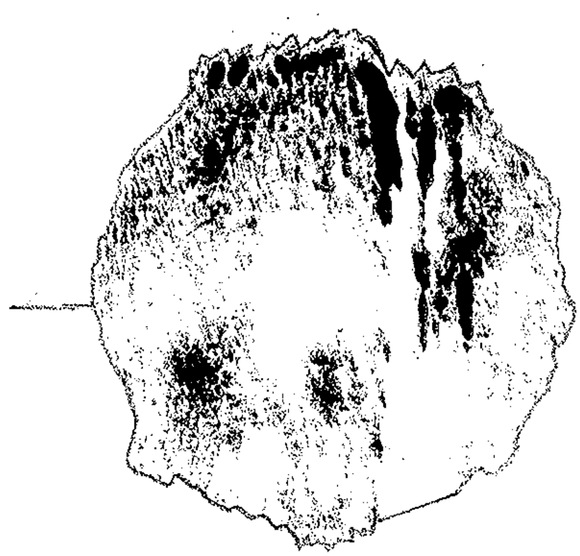
CC0901
B6K4
9-20-2011
4100 mm²



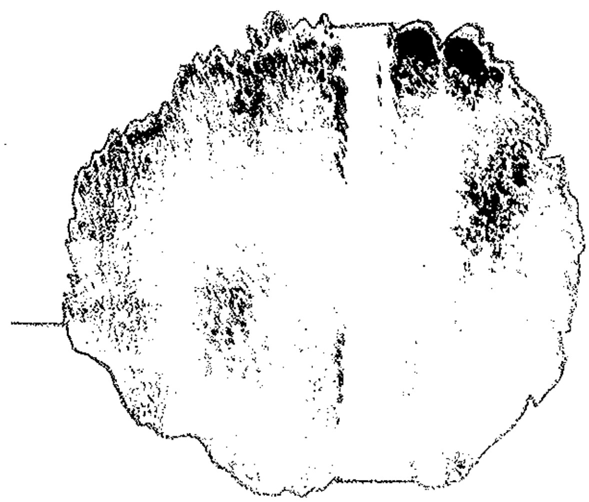
CC0921
B12K1
10-20-2011
3660 mm2



CC0901
B18K2
10-20-2011
3660 MM 2



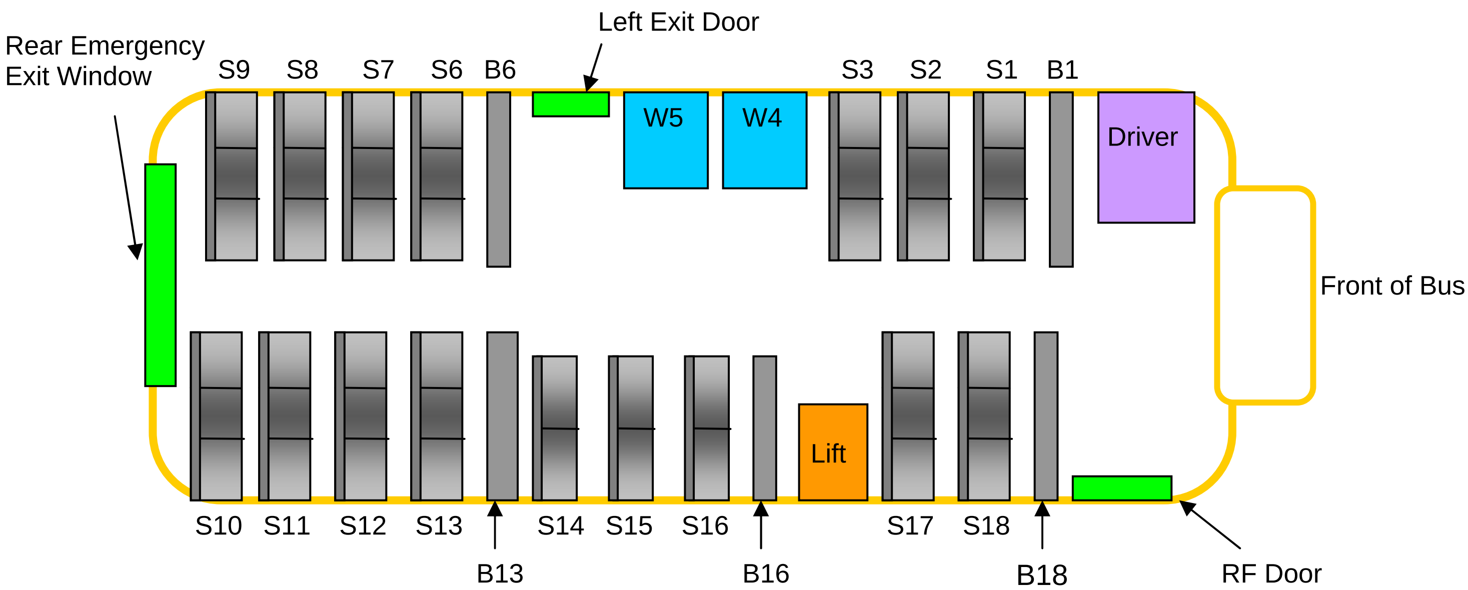
CC0901
B18 K3
10-29-2011
3190 mm^2



CC0901
B18K4
10-20-2011
3430 mm^2

SECTION 8

BUS FLOOR PLAN



SECTION 9

LABORATORY NOTICE OF TEST FAILURE TO OVSC

mga research corporation

LABORATORY NOTICE OF TEST FAILURE TO OVSC

Test Procedure:	FMVSS 222	Test Date:	09/14/11
Test Vehicle:	2012 Blue Bird All American D3 RE	Test Lab:	MGA Research Corp.
NHTSA No.:	CC0901	Project Engineer:	Eric Peschman
Contract No.:	DTNH22-08-D-00075	Delivery Order No.:	3
MFR.:	Blue Bird	VIN:	1BABLBPA8CF283351
Build Date:	12-2010		

TEST FAILURE DESCRIPTION

During the restraining barrier force deflection test for Barrier No. B13, the area within the force deflection curve of the upper loading bar failed to meet the minimum requirement of 1,356 joules. The total area was 1,353 Joules. When the force vs. deflection data was plotted, it fell out of the specified corridor listed in 49 CFR 571.222 Figure 1.

FMVSS REQUIREMENTS DESCRIPTION

S5.1.3.4 Apply additional force horizontally in the forward direction through the upper bar until 452W joules of energy have been absorbed in deflecting the seat back (or restraining barrier).

Remarks: No remarks.

Notification to NHTSA (COTR): Lawrence Valvo

Date: 09/14/11

By: Eric Peschman