

REPORT NUMBER: 301-MGA-2007-001

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 301
FUEL SYSTEM INTEGRITY**

**LES ENTERPRISES MICHEL CORBEIL INC.
2006 CORBEIL SCHOOL BUS
NHTSA No. C60902**

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



Final Report Date: May 2, 2007

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE: NVS-220
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FINAL REPORT ACCEPTED BY:


May 2, 2007
Date of Acceptance

Technical Report Documentation Page

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16. Abstract A compliance test was conducted on the subject 2006 Corbeil School Bus, NHTSA No. C60902 in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-301-04 for the determination of FMVSS 301 compliance. Test failures were as follows: None					
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SECTION 1
PURPOSE OF COMPLIANCE TEST AND SUMMARY

A fuel system integrity test was performed on a MY2006 Corbeil School Bus, NHTSA No. C60902, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedure TP-301-04, to determine compliance to the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 301, "Fuel System Integrity".

Based on the test results, the MY2006 Corbeil School Bus, NHTSA No. C60902, appears to meet the requirements of FMVSS 301 testing.

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-02-D-01057.

SECTION 2
COMPLIANCE TEST DATA

The following data sheets document the results of testing on the MY2006 Corbeil School Bus, NHTSA No. C60902.

DATA SHEET 1
SCHOOL BUS DATA

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

GENERAL VEHICLE IDENTIFICATION

School Bus Manufacturer:	Les Enterprises Michel Corbeil Inc.	
School Bus Model:	Corbeil	
Build Date:	04/06	
Incomplete Vehicle Manufactured By:	Ford	
Build Date for Bus Chassis:	04/06	
School Bus GVWR (kg):	4,355 kg / 9,600 lbs	
School Bus GAWR Front (kg):	1,610 kg / 3,550 lbs	
School Bus GAWR Rear (kg):	2,760 kg / 6,084 lbs	
School Bus VIN:	1FDSE35L66DA60778	
No. of Designated Seating Positions (DSP) including Driver:	21	
School Bus NHTSA No.:	C60902	
Bus Body Color:	Yellow	
Engine Displacement	5.4L	
No. of Cylinders:	8	
Fuel Pump Actuation:	Electrical Pump "ON" with ignition	
School Bus Width (mm):	2094	
School Bus Length (mm):	5936	
Bus Unloaded Vehicle Weight (UVW) (kg):	3106	
Bus Occupant Load:	1080 kg - Passenger 68 kg - Driver 1148 kg - Total	
Target Bus Test Weight (SBTW) (kg):	3289	
Actual (SBTW) (kg):	3280	
School Bus Tire Manufacturer:	Hankook	
	Front	Rear
Rec. Cold Tire Inflation Pressure (kpa):	380	550
Tire Size:	LT245/75R16	LT245/75R16
Load Range:	E	E

DATA SHEET 1 (CONTINUED)

SCHOOL BUS DATA

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
 Test Date: **03/27/2007**

GENERAL VEHICLE IDENTIFICATION

SCHOOL BUS ATTITUDE

	Units	LF	RF	LR	RR
Pre-Test:	mm	902	915	855	862

Weight of Fuel:	0.744 kg/liter (6.2 lbs./gallon)
Fuel Tank Capacity (liters/kg):	140 liters/104.2 kg (37 gallons/229.4 lbs.)
Tank Test Volume (liters/kg):	130.6 liters/97.2 kg

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)*		
		Front	Rear	Total	Front	Rear	Total
Left	kg	640	914		696	970	
Right	kg	642	910		640	974	
Ratio	%	41.3	58.7		40.7	59.3	
Totals	kg	1282	1824	3106	1336	1944	3280

COMMENTS: NONE

Recorded By: *Evo Leebman*

Approved By: *Michael Janoy*

DATE: 03/27/2007

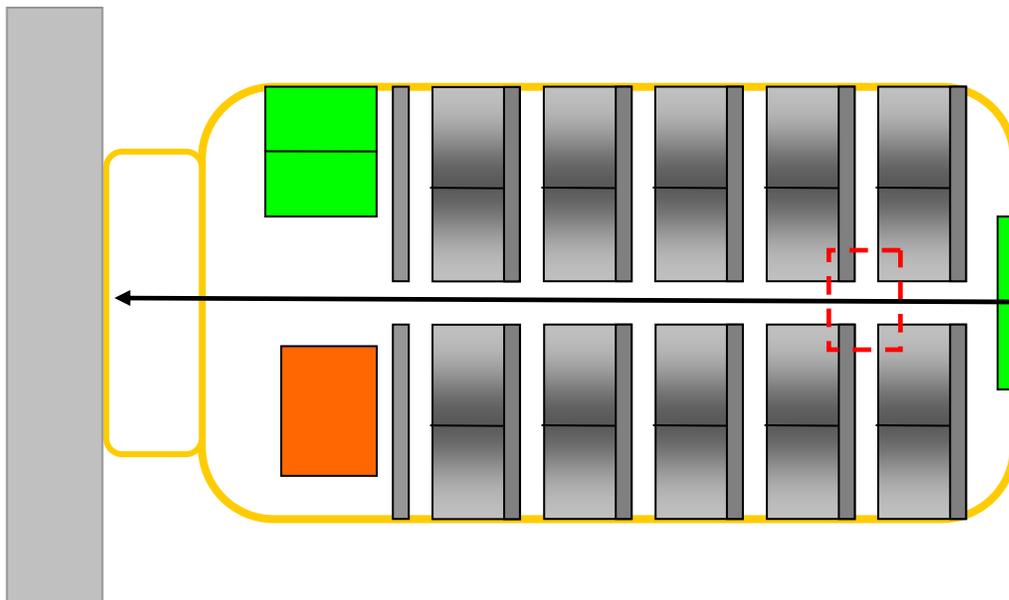
DATA SHEET 2
SCHOOL BUS IMPACT DATA

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

Time of Impact:	9:35 AM
Ambient Temperature (°C)	21
Barrier Velocity – Speed Trap 1 (kph):	29.5
Barrier Velocity – Speed Trap 2 (kph):	29.5

INDICATE IMPACT POINT BELOW:



LEGEND: Red dotted line indicates location of fuel tank
Arrow indicates point and angle of barrier impact (C_L of arrow coincides with C_L of monorail).

DATA SHEET 2 (CONTINUED)
SCHOOL BUS IMPACT DATA

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
 Test Date: **03/27/2007**

Fuel Spillage Noted:	No
Failure, if applicable:	None

Stoddard Solvent Spillage Measurements

Timeframe	Description	Allowable Spillage (ounce)	Measured Spilled (ounce)	Results
T ₀ – T ₁	Time Zero to Cessation of Motion	31 grams (1 ounce)	0	PASS
T ₁ – T ₂	Cessation of Motion to 5 minutes after Cessation of Motion	156 grams (5 ounces)	0	PASS
T ₂ – T ₃	5 Minutes after Cessation of Motion to 30 minutes after Cessation of Motion	31 grams (1 ounce) per minute 933 grams (30 ounces) Total Allowed	0	PASS

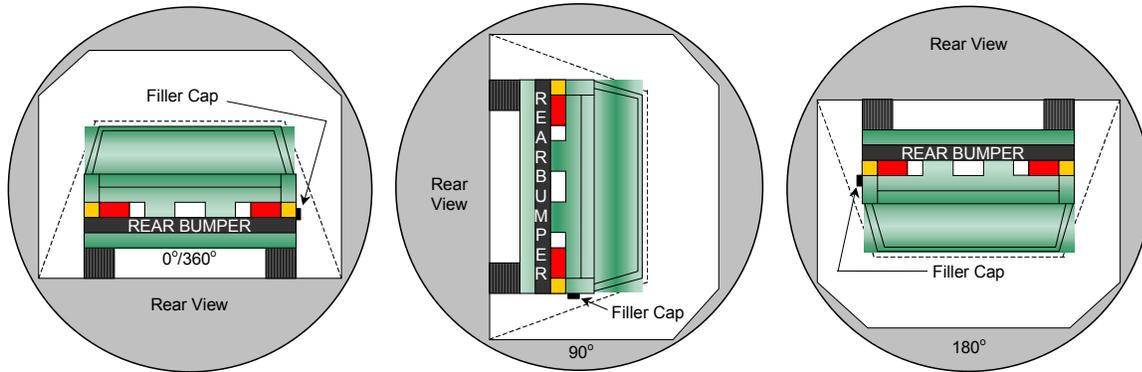
COMMENTS: None

Recorded By: 

Approved By: 

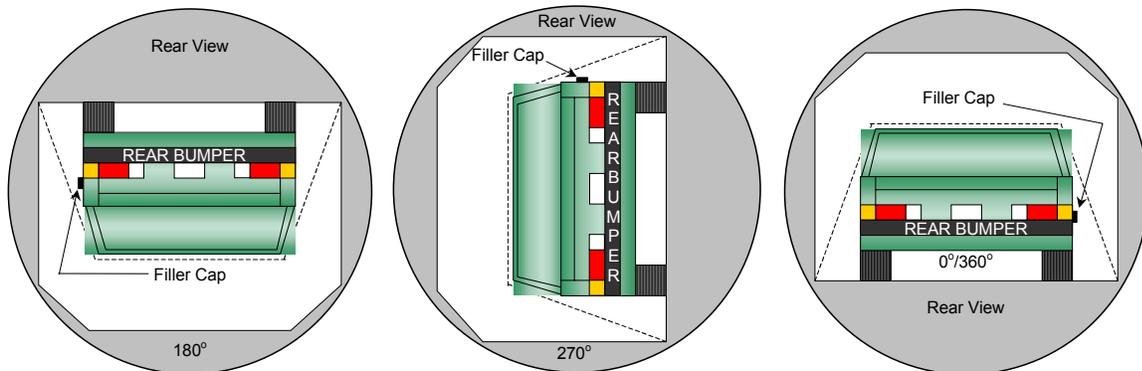
DATE: 03/27/2007

DATA SHEET 3
FMVSS 301 STATIC ROLLOVER DATA



0° TO 90°

90° TO 180°



180° TO 270°

270° TO 360°

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations:

Test Phase	Rotation Time (sec)	Hold Time (sec)	Spillage (oz)
0° TO 90°	158	300	0
90° TO 180°	140	300	0
180° TO 270°	145	300	0
270° TO 360°	165	300	0

SECTION 3

INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

Equipment	Description	Serial No.	Cal. Date	Next Cal. Date
Counter/Timer	Newport	4420534	12/12/06	12/12/07
Counter/Timer	Newport	4420532	12/12/06	12/12/07
Vehicle Scales	GSE	004804	09/11/06	09/11/07
Tape Measure	Stanley Powerlock 8M	278	3/26/07	9/26/07

**SECTION 4
PHOTOGRAPHS**

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Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

MFD.BY
Les Enterprises Michel Corbeil Inc.

DATE OF MANUFACTURE 06/29/2006

INCOMPLETE VEHICLE MANUFACTURED BY:
FORD

DATE INC. VEH. MFD. 04/01/2006

GVWR 9,600.00

GVWR FRONT 3,550.00Lbs WITH RIMS

LT245/75R16E TIRES, 16 X 7.0K

@ 55.00 PSI COLD

GVWR REAR 6,084.00Lbs WITH RIMS

LT245/75R16E TIRES, 16 X 7.0K

@ 80.00 PSI COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S
FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN
EFFECT IN 06/29/2006

VEHICLE IDENTIFICATION NUMBER:
1FDSE35L66DA60778

VEHICLE TYPE SCHOOL BUS

MODEL 754-NY-20-00WC-EMC

SERIAL GO-63959

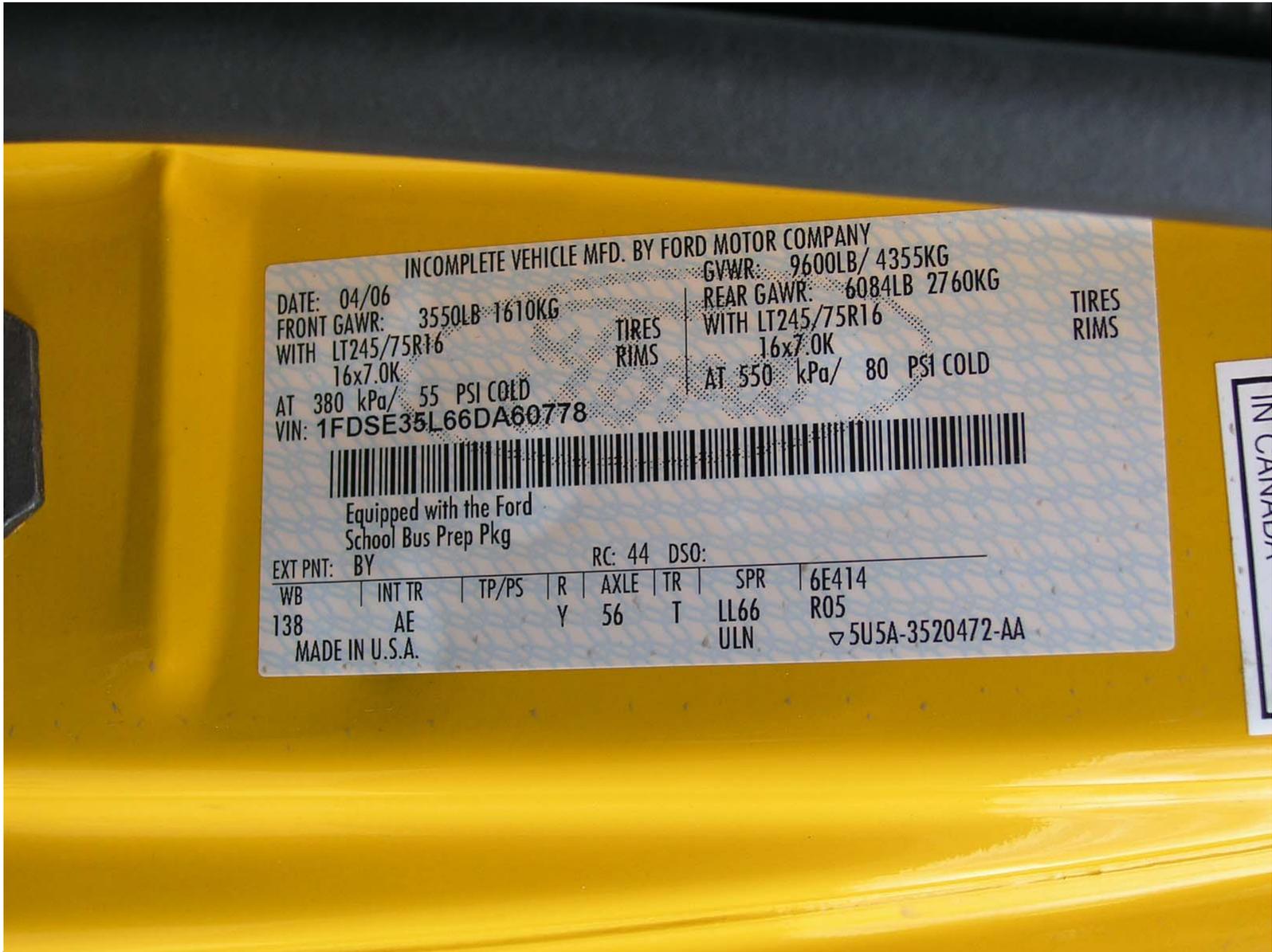


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Certification Label

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Incomplete Vehicle Label

Test Vehicle: 2006 CORBEIL SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C60902
Test Date: 03/27/2007



Tire Placard

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Front View of School Bus

Test Vehicle: 2006 CORBEIL SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C60902
Test Date: 03/27/2007



Post-Test Front View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Left Side View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Left Side View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Right Side View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Right Side View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Rear View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Rear View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Right Front 3/4 View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Right Front $\frac{3}{4}$ View of School Bus

Test Vehicle: 2006 CORBEIL SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C60902
Test Date: 03/27/2007



Pre-Test Left Front $\frac{3}{4}$ View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Left Front 3/4 View of School Bus

Test Vehicle: 2006 CORBEIL SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C60902
Test Date: 03/27/2007



Pre-Test Right Rear ¼ View of School Bus

Test Vehicle: 2006 CORBEIL SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C60902
Test Date: 03/27/2007



Post-Test Right Rear 3/4 View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Left Rear $\frac{3}{4}$ View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Left Rear $\frac{3}{4}$ View of School Bus

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Fuel Filler Cap

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Fuel Filler Cap

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Driver Dummy Left Side View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Driver Dummy Left Side View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

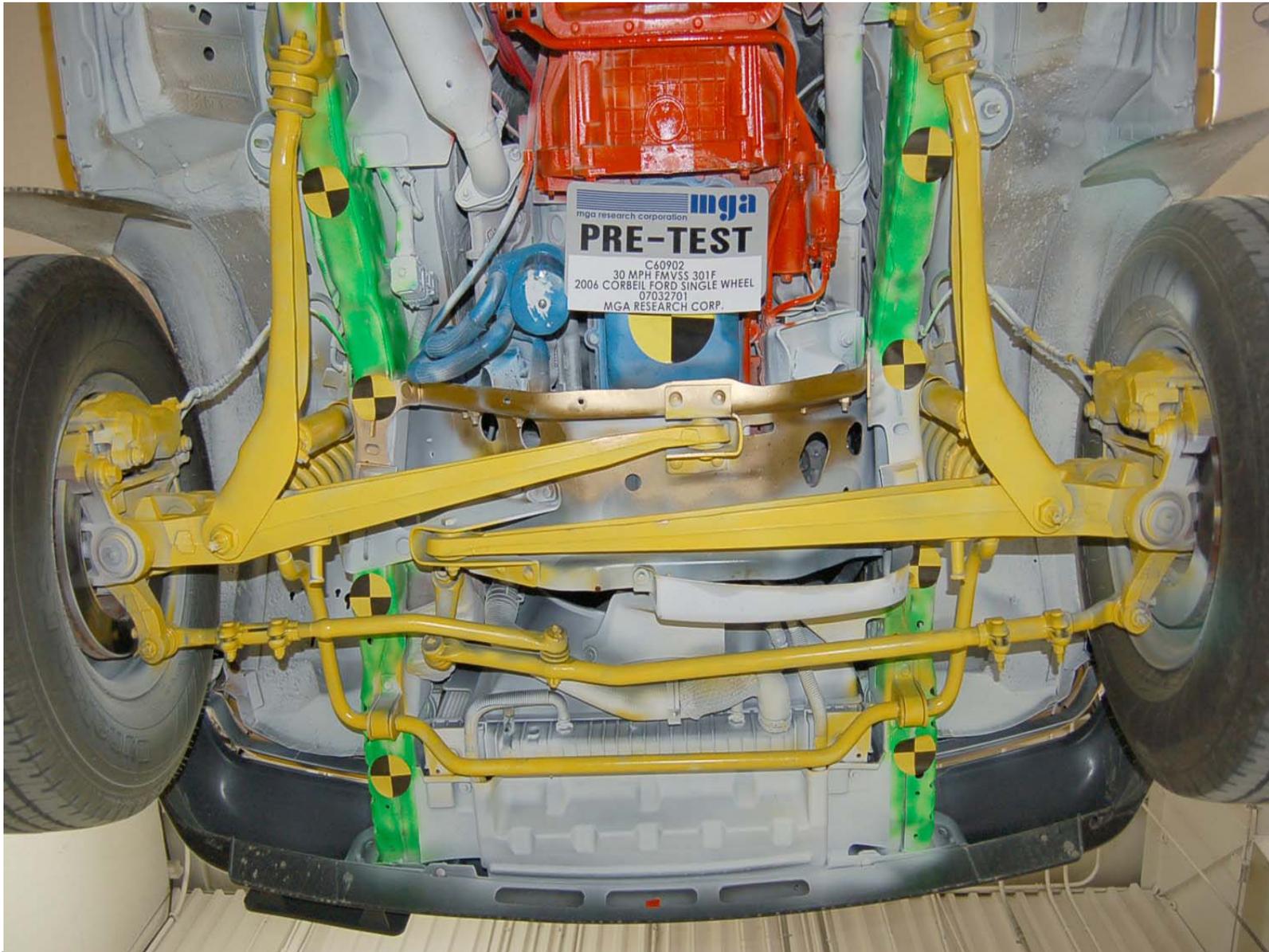
NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Driver Dummy Left Side View (door open)

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Front Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Front Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

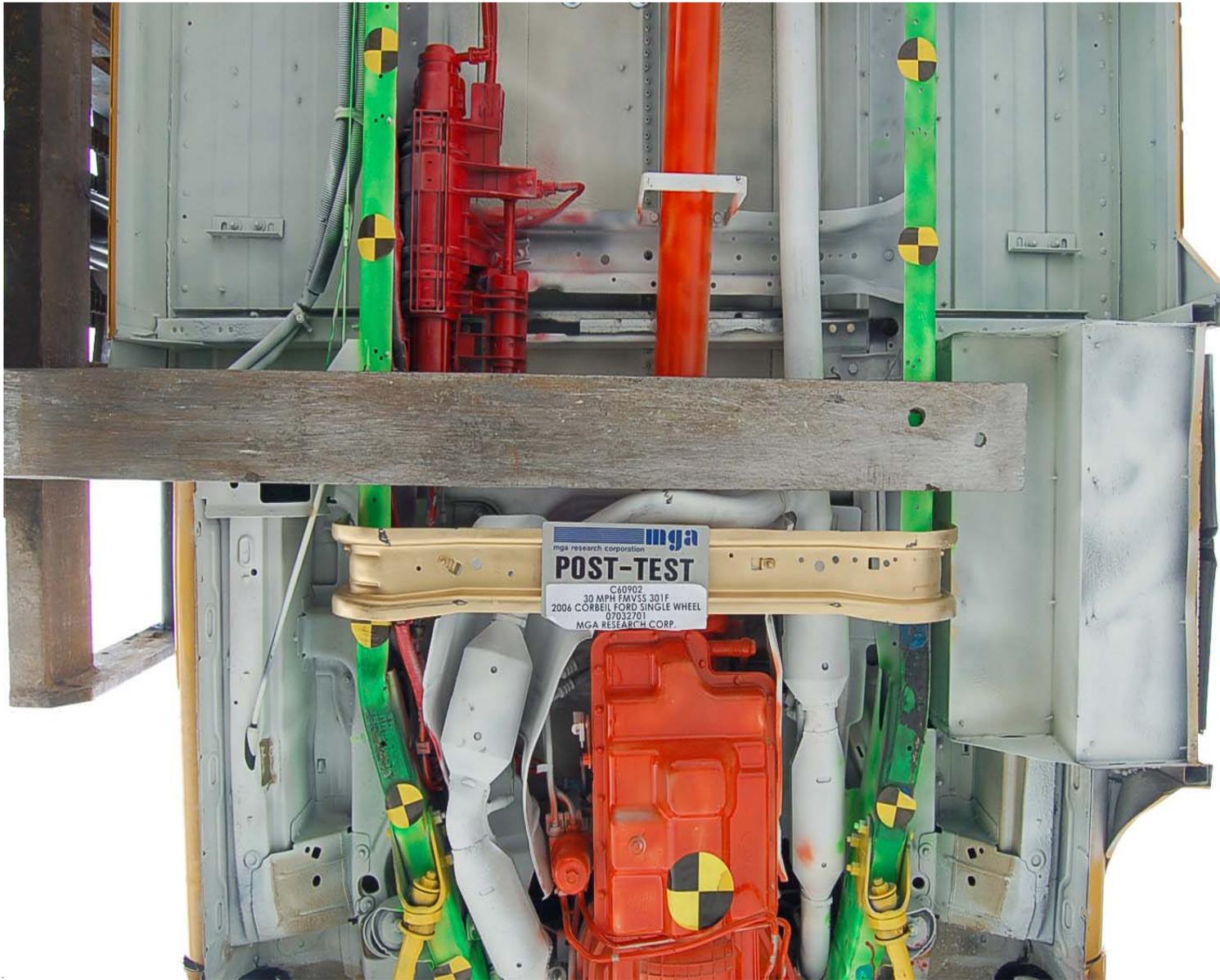
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Pre-Test Front Mid Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Front Mid Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

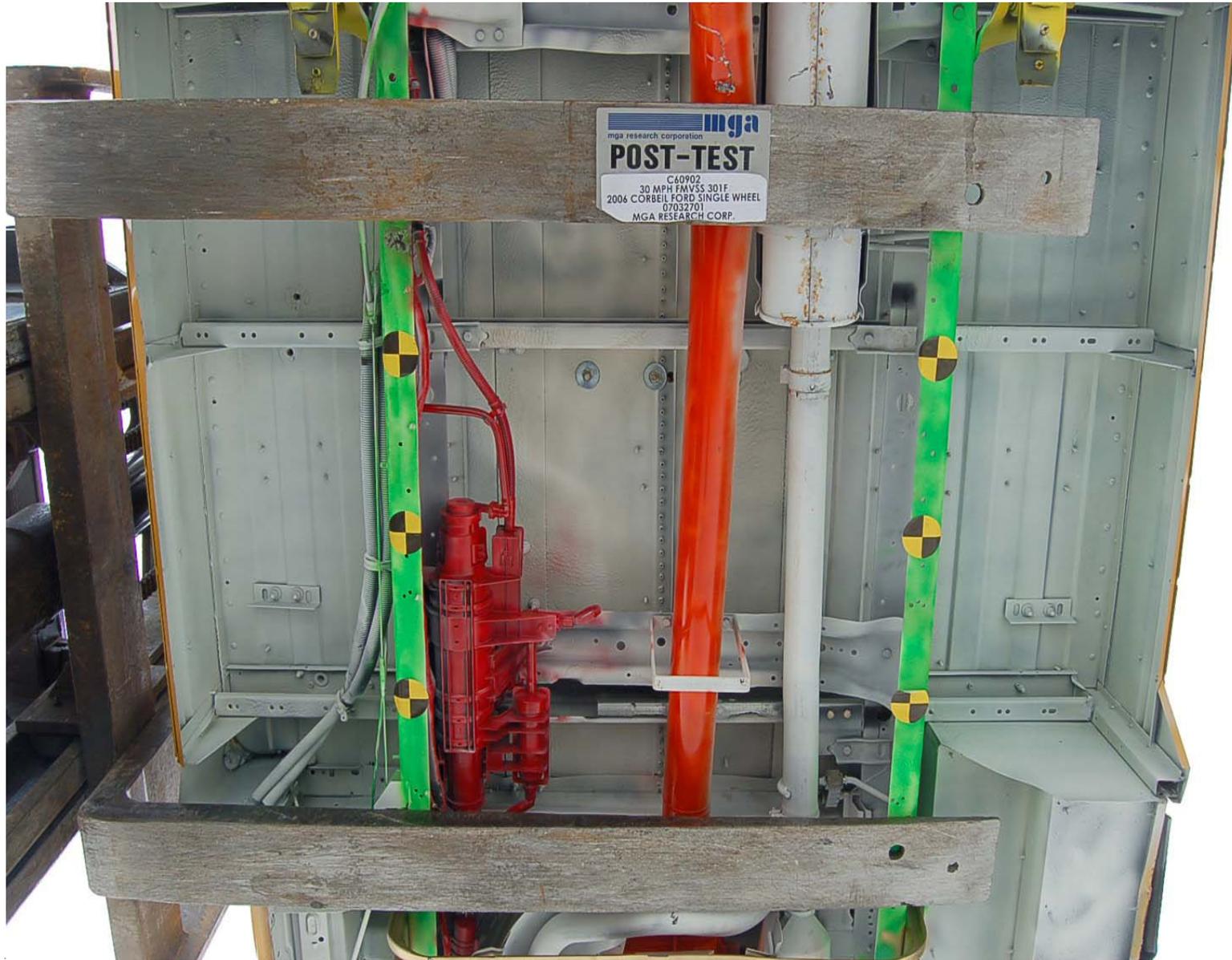
NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Mid Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

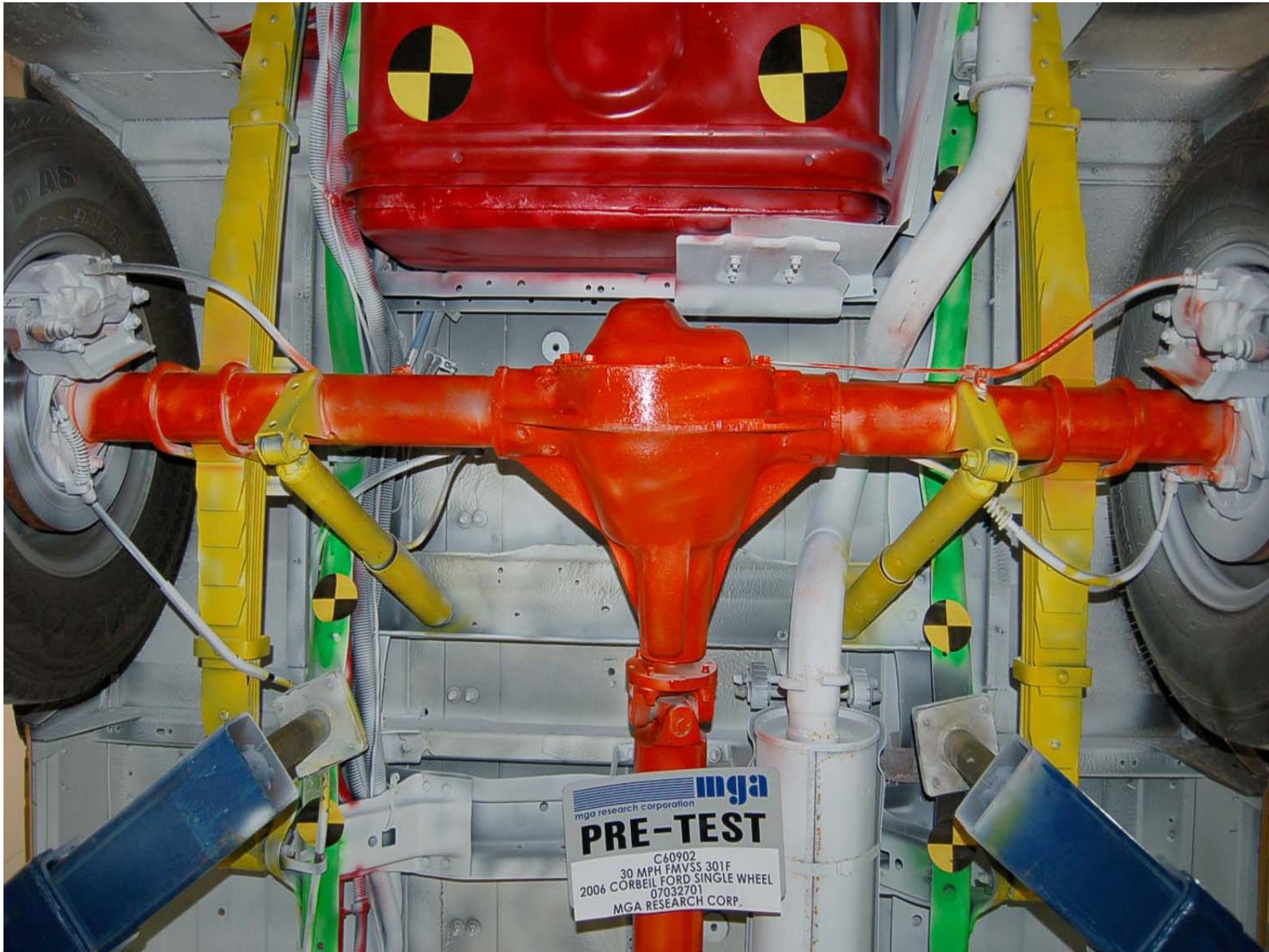
NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Mid Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Mid Rear Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Mid Rear Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Pre-Test Rear Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Rear Underbody View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

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Pre-Test Fuel Tank View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

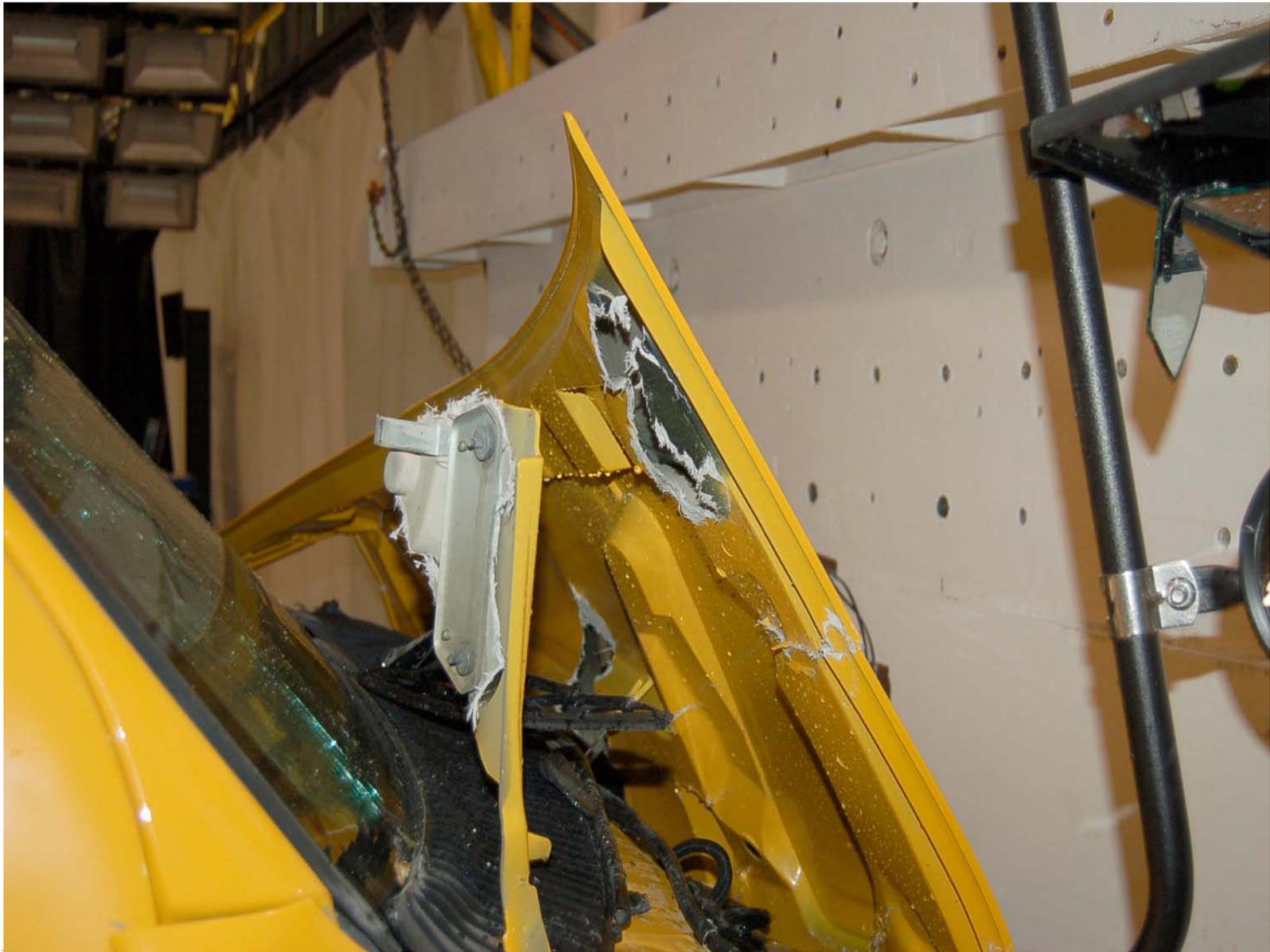
NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Fuel Tank View

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Vehicle Damage Right Side View of Hood

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Vehicle Damage Left Side View of Hood

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Post-Test Vehicle Damage Right Rear Bumper

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

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Rollover 90 Degrees

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

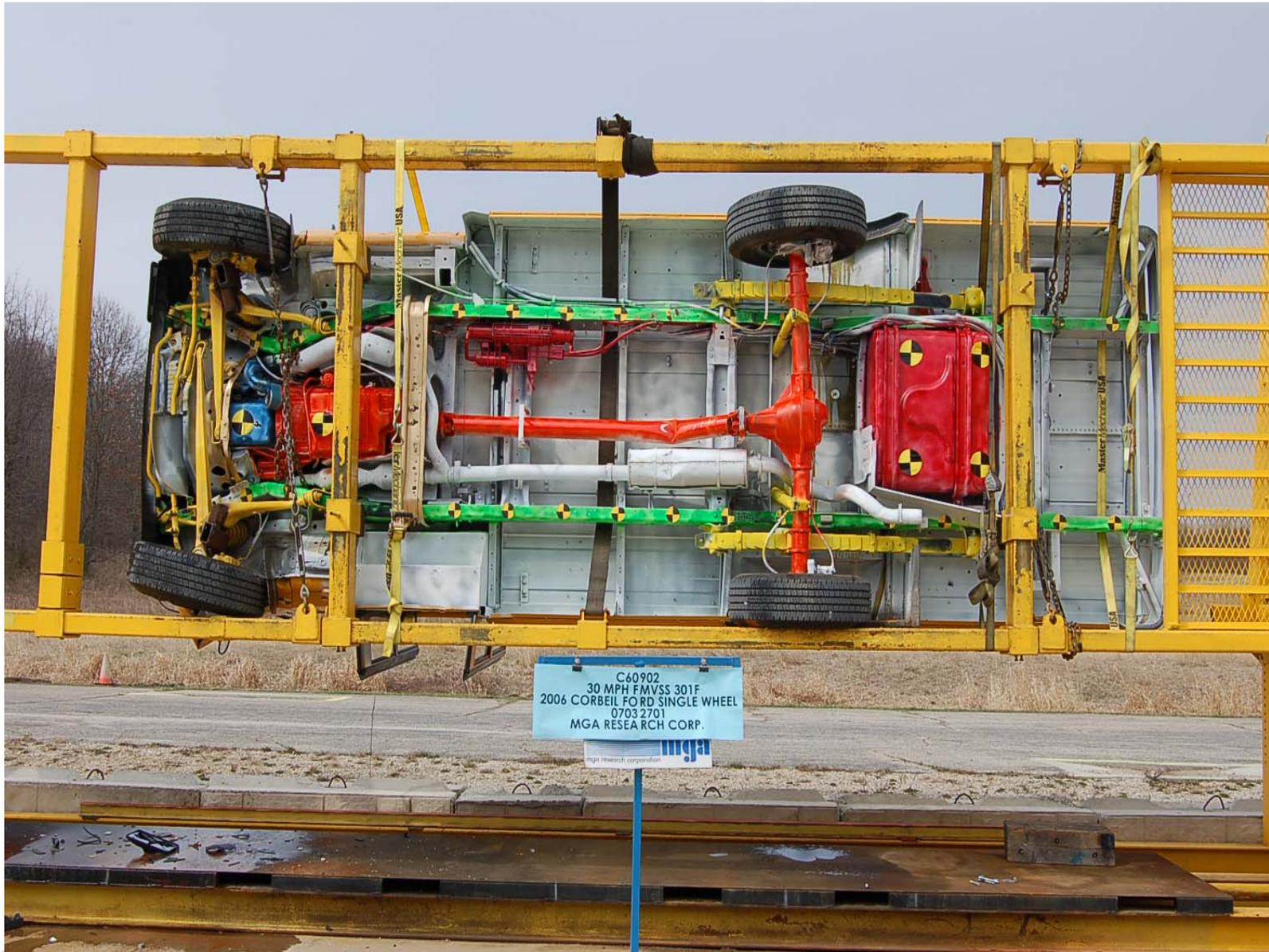


Rollover 180 Degrees

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

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Rollover 270 Degrees

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**

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Rollover 360 Degrees

Test Vehicle: **2006 CORBEIL SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C60902**
Test Date: **03/27/2007**



Ballast Weight