

**REPORT NUMBER: 301SB-MGA-2009-006**

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

**TRANS TECH BUS  
2009 TRANS TECH RONDAK BUS  
NHTSA NO.: C90903**

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




**TEST DATE: JANUARY 11, 2011**

**FINAL REPORT DATE: JANUARY 31, 2011**

**FINAL REPORT**

**PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
ENFORCEMENT  
OFFICE OF VEHICLE SAFETY COMPLIANCE  
MAILCODE: NVS-220  
1200 NEW JERSEY AVENUE, S.E.  
WASHINGTON, D.C. 20590**

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<p>15. Supplementary Notes</p>			
<p>16. Abstract A compliance test was conducted on the subject 2009 Trans Tech Rondak Bus, NHTSA No.: C90903 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.</p> <p>Test failures were as follows: None</p>			
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**SECTION 1**  
**PURPOSE OF COMPLIANCE TEST AND SUMMARY**

A fuel system integrity test was performed on a 2009 Trans Tech Rondak Bus, NHTSA No.: C90903, 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 2009 Trans Tech Rondak Bus, NHTSA No.: C90903, appears to meet the requirements of FMVSS 301 testing.

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

**SECTION 2**  
**COMPLIANCE TEST DATA**

The following data sheets document the results of testing on the 2009 Trans Tech Rondak Bus,  
NHTSA No.: C90903.

**DATA SHEET 1**  
**SCHOOL BUS DATA**

Test Vehicle: **2009 Trans Tech Rondak Bus**  
Test Lab: **MGA Research Corporation**

NHTSA No.: **C90903**  
Test Date: **01/11/11**

**GENERAL VEHICLE IDENTIFICATION**

School Bus Manufacturer	Trans Tech Bus	
School Bus Model	Trans Tech Rondak	
Build Date	08/09	
Incomplete Vehicle Manufactured By	Ford Motor Company	
Build Date for Bus Chassis	05/08	
School Bus GVWR (kg)	4,355 kg / 9,600 lb	
School Bus GAWR Front (kg)	1,837 kg / 4,050 lb	
School Bus GAWR Rear (kg)	2,760 kg / 6,084 lb	
School Bus VIN	1FD2E35L88DB33670	
No. of Designated Seating Positions (DSP) including Driver	15	
School Bus NHTSA No.	C90903	
Bus Body Color	White	
Engine Displacement	5.7L	
No. of Cylinders	8	
Fuel Pump Actuation	Electrical Pump "ON" with ignition	
School Bus Width (mm)	2,156	
School Bus Length (mm)	6,203	
Bus Unloaded Vehicle Weight (UVW) (kg)	3,366	
Bus Occupant Load	824 kg - Passenger 68 kg - Driver 1,281 kg - Total	
Target Bus Test Weight (SBTW) (kg)	3,526.7	
Actual (SBTW) (kg)	3,526.7	
School Bus Tire Manufacturer	Bridgestone	
	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: **2009 Trans Tech Rondak Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **C90903**  
 Test Date: **01/11/11**

**GENERAL VEHICLE IDENTIFICATION**

**SCHOOL BUS ATTITUDE**

	Units	LF	RF	LR	RR
Pre-Test	mm	908	909	799	794

**FUEL TANK CAPACITY INFORMATION**

Fuel Tank Capacity (liters)	124.9
Tank Test Volume (liters)	115.8

**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW)			As Tested (ATW)*		
		Front	Rear	Total	Front	Rear	Total
Right	kg	679.9	1,001.1		707.2	1075.0	
Left	kg	661.3	1,024.2		685.8	1058.7	
Ratio	%	39.8	60.2		39.5	60.5	
Totals	kg	1,341.2	2,025.3	3,366.5	1,393.0	2,133.7	3,526.7

COMMENTS: NONE

Recorded By: *Eric Leachman*

Approved By: *Michael Janoy*

DATE: 01/11/11



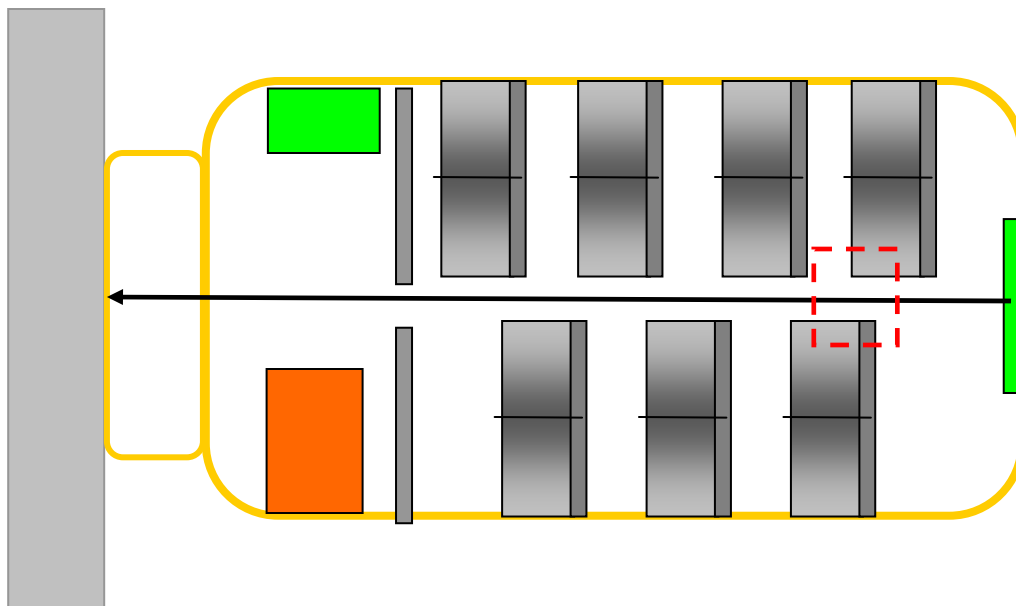
**DATA SHEET 2**  
**SCHOOL BUS IMPACT DATA**

Test Vehicle: **2009 Trans Tech Rondak Bus**  
Test Lab: **MGA Research Corporation**

NHTSA No.: **C90903**  
Test Date: **01/11/11**

Time of Impact	9:39 AM
Ambient Temperature (°C)	21
Barrier Velocity – Speed Trap 1 (kph)	47.6
Barrier Velocity – Speed Trap 2 (kph)	47.5

**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: **2009 Trans Tech Rondak Bus**  
 Test Lab: **MGA Research Corporation**


NHTSA No.: **C90903**  
 Test Date: **01/11/11**


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	<b>PASS</b>
$T_1 - T_2$	Cessation of Motion to 5 minutes after Cessation of Motion	156 grams (5 ounces)	0	<b>PASS</b>
$T_2 - T_3$	5 Minutes after Cessation of Motion to 30 minutes after Cessation of Motion	28 grams (1 ounce) per minute 775 grams (25 ounces) Total Allowed	0	<b>PASS</b>

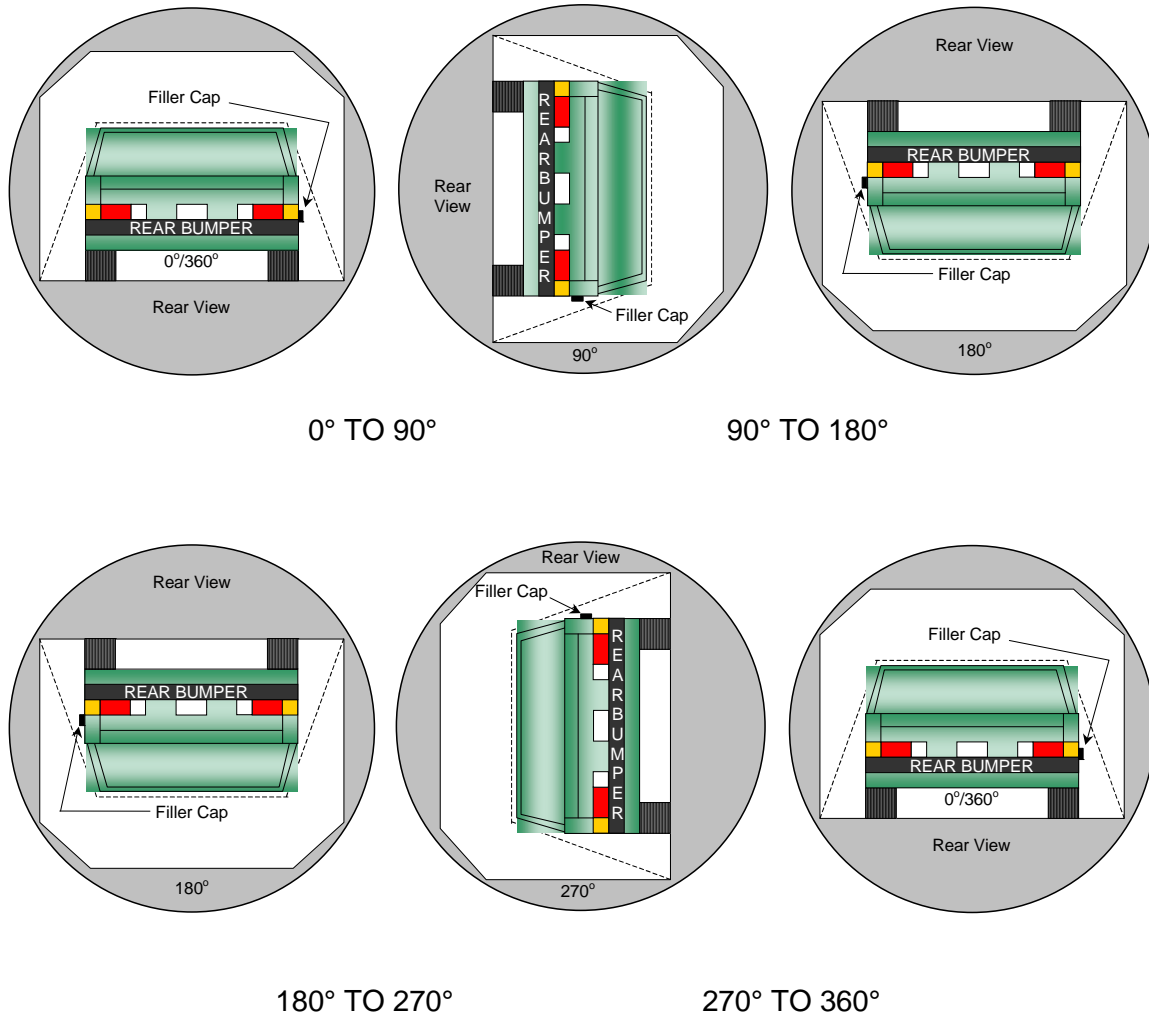
COMMENTS: None

Recorded By: 

Approved By: 

DATE: 01/11/11

**DATA SHEET 3**  
**FMVSS 301 STATIC ROLLOVER DATA**



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°	122	300	0
90° TO 180°	130	300	0
180° TO 270°	127	300	0
270° TO 360°	125	300	0

**SECTION 3**

**INSTRUMENTATION AND EQUIPMENT LIST**

Test Vehicle: **2009 Trans Tech Rondak Bus**  
Test Lab: **MGA Research Corporation**

NHTSA No.: **C90903**  
Test Date: **01/11/11**

<b>Equipment</b>	<b>Description</b>	<b>Serial No.</b>	<b>Cal. Date</b>	<b>Next Cal. Date</b>
Counter/Timer	Newport	5140023	08/23/10	02/23/11
Counter/Timer	Newport	5270452	08/23/10	02/23/11
Vehicle Scales	GSE	004804	10/01/10	04/01/11
Tape Measure	Stanley	Powerlock / 184	09/23/10	03/23/11

**SECTION 4  
PHOTOGRAPHS**

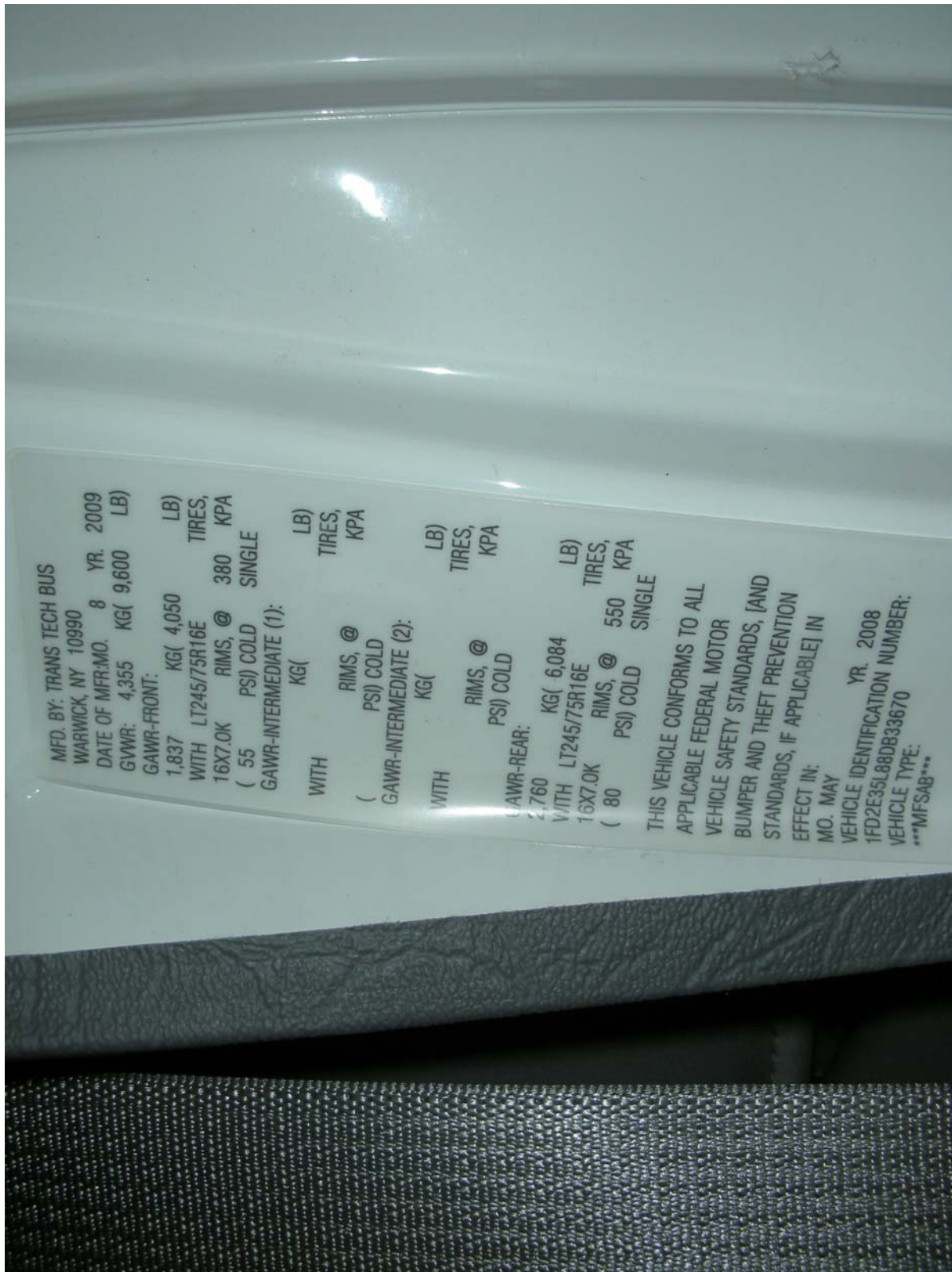
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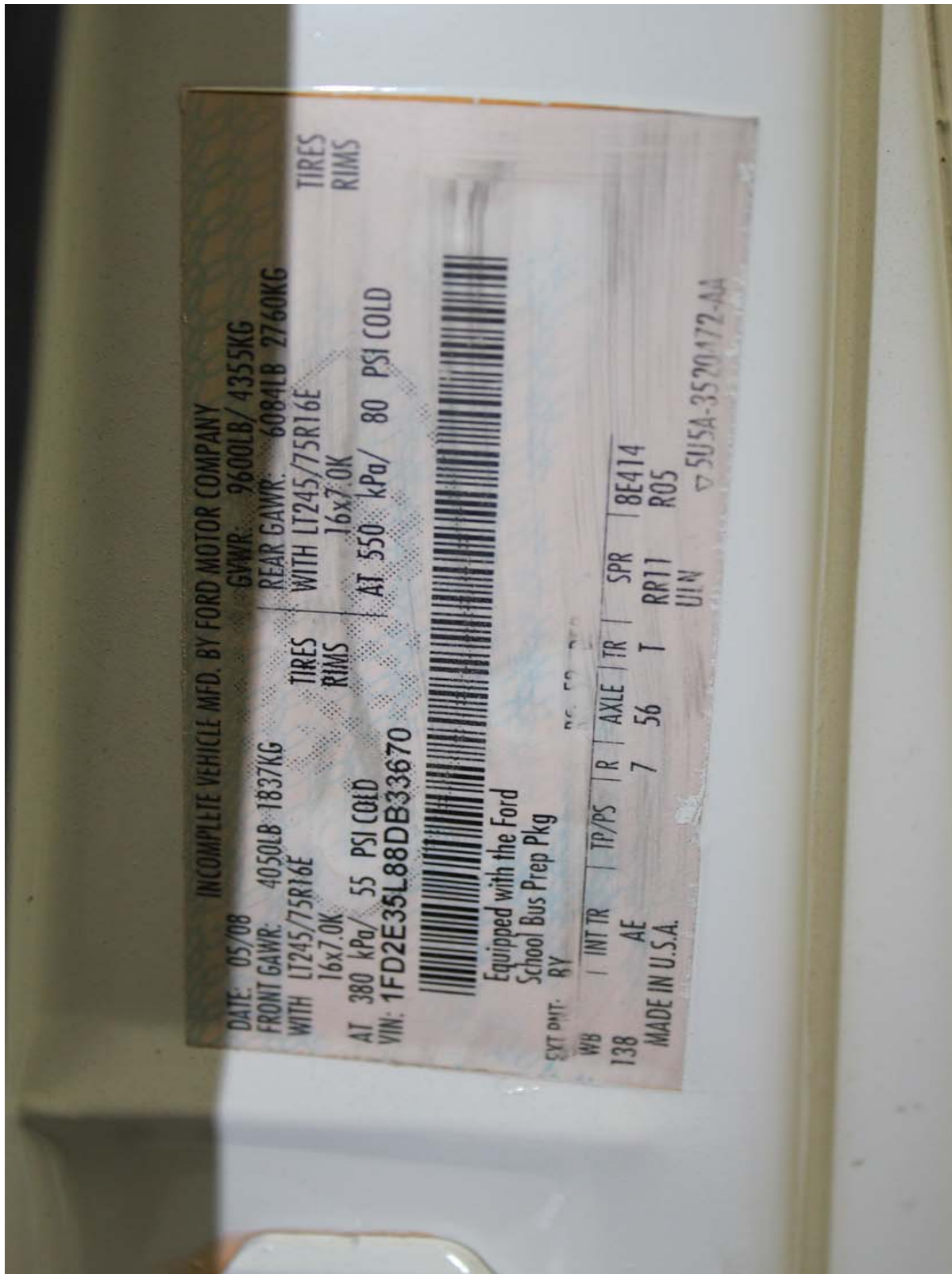
Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11





Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11

# TIRE AND LOADING INFORMATION



SEATING CAPACITY | TOTAL 15 | FRONT 1 | REAR 14

The combined weight of occupants and cargo should never exceed 1 28 Kg or 2 8 2 5 lbs.

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	LT245/75R16E	380KPA(55PSI)
REAR	LT245/75R16E	550KPA(80PSI)
SPARE		

SEE OWNER'S  
MANUAL FOR  
ADDITIONAL  
INFORMATION

Tire Placard

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation  
NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Front View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation  
NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Front View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Left Side View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Left Side View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Right Side View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Right Side View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Rear View of School Bus



Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Rear View of School Bus

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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



Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



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

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation  
NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Fuel Filler Cap

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Fuel Filler Cap

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Driver Dummy Left Side View

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Driver Dummy Left Side View

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation  
NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Driver Dummy Left Side View (Door Open)

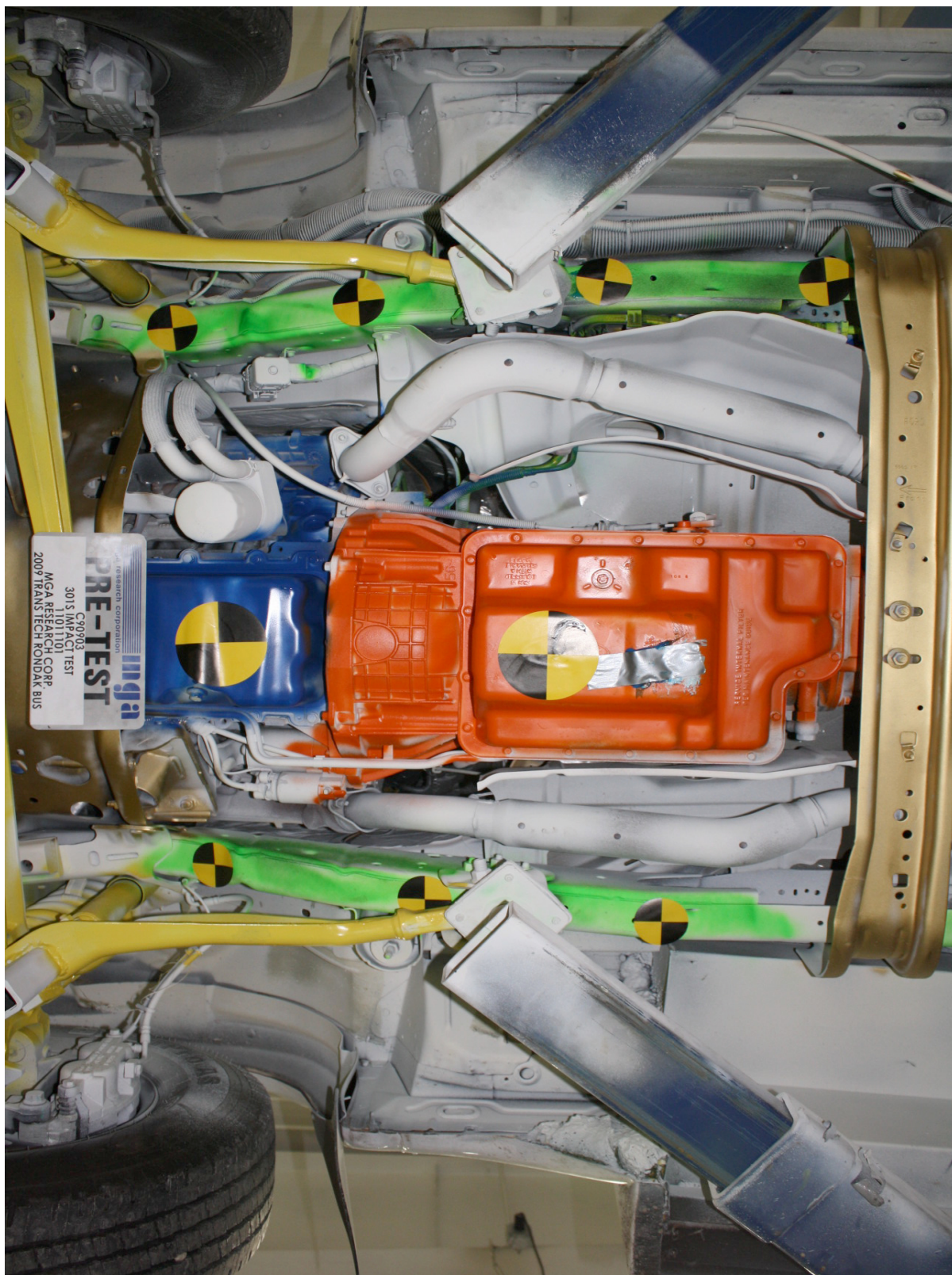
Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation  
NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Driver Dummy Left Side View (Door Open)

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Pre-Test Front Underbody View



**Test Vehicle:** 2009 Trans Tech Rondak Bus  
**Test Lab:** MGA Research Corporation

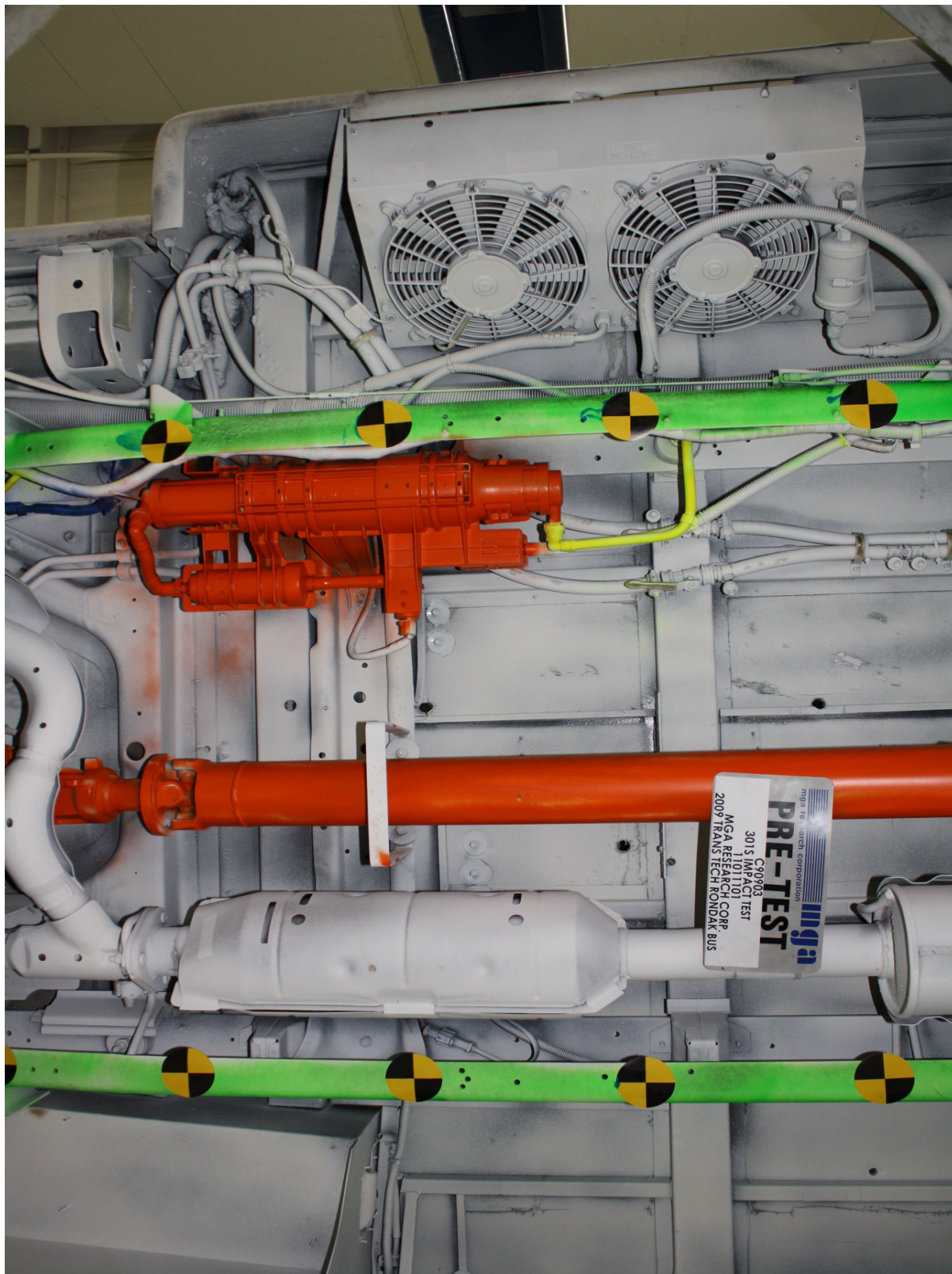
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**Test Date:** 01/11/11



Post-Test Front Underbody View

**Test Vehicle:** 2009 Trans Tech Rondak Bus  
**Test Lab:** MGA Research Corporation

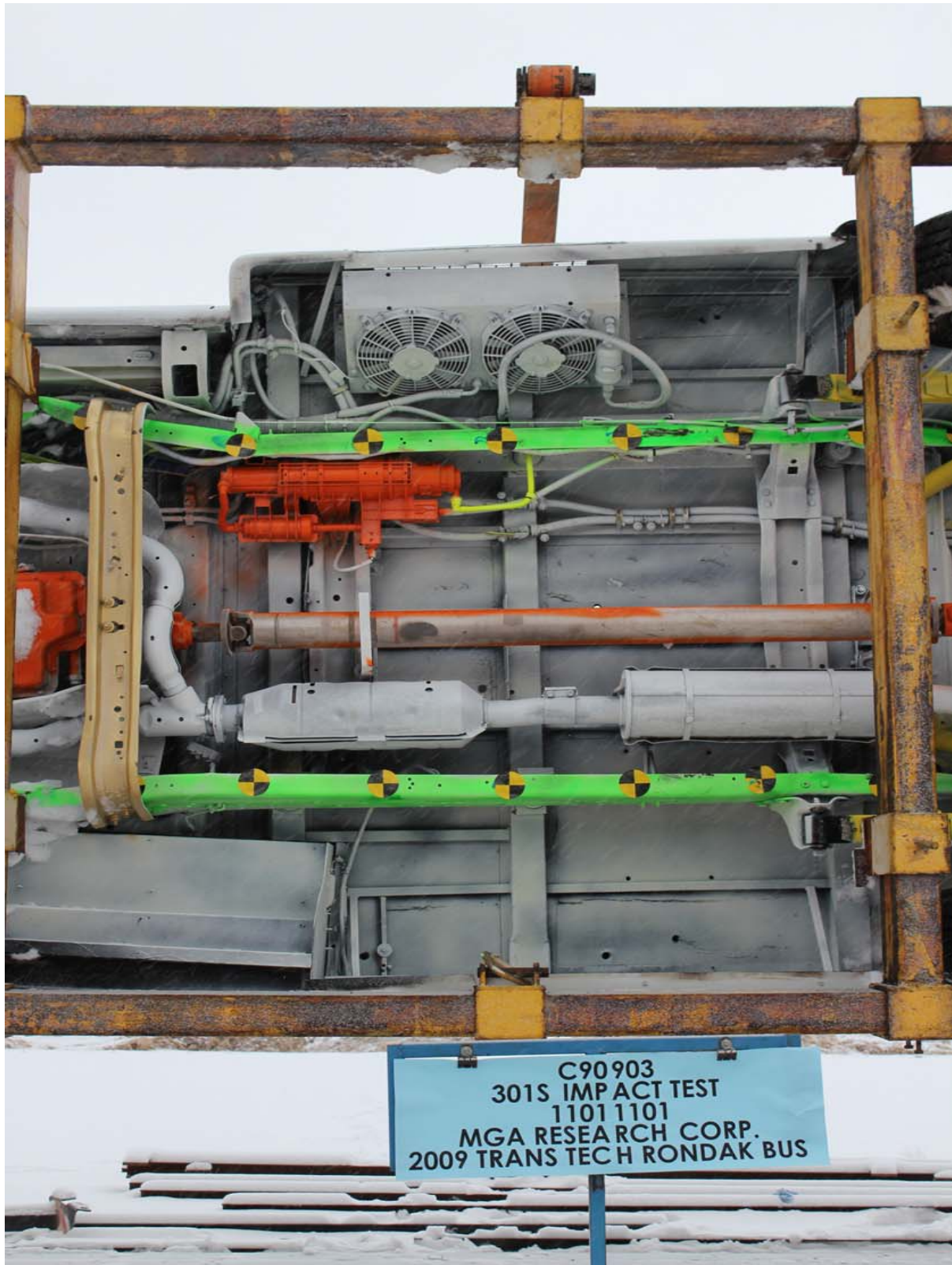
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**Test Date:** 01/11/11



Pre-Test Mid Underbody View

**Test Vehicle:** 2009 Trans Tech Rondak Bus  
**Test Lab:** MGA Research Corporation

**NHTSA No.:** C90903  
**Test Date:** 01/11/11



Post-Test Mid Underbody View

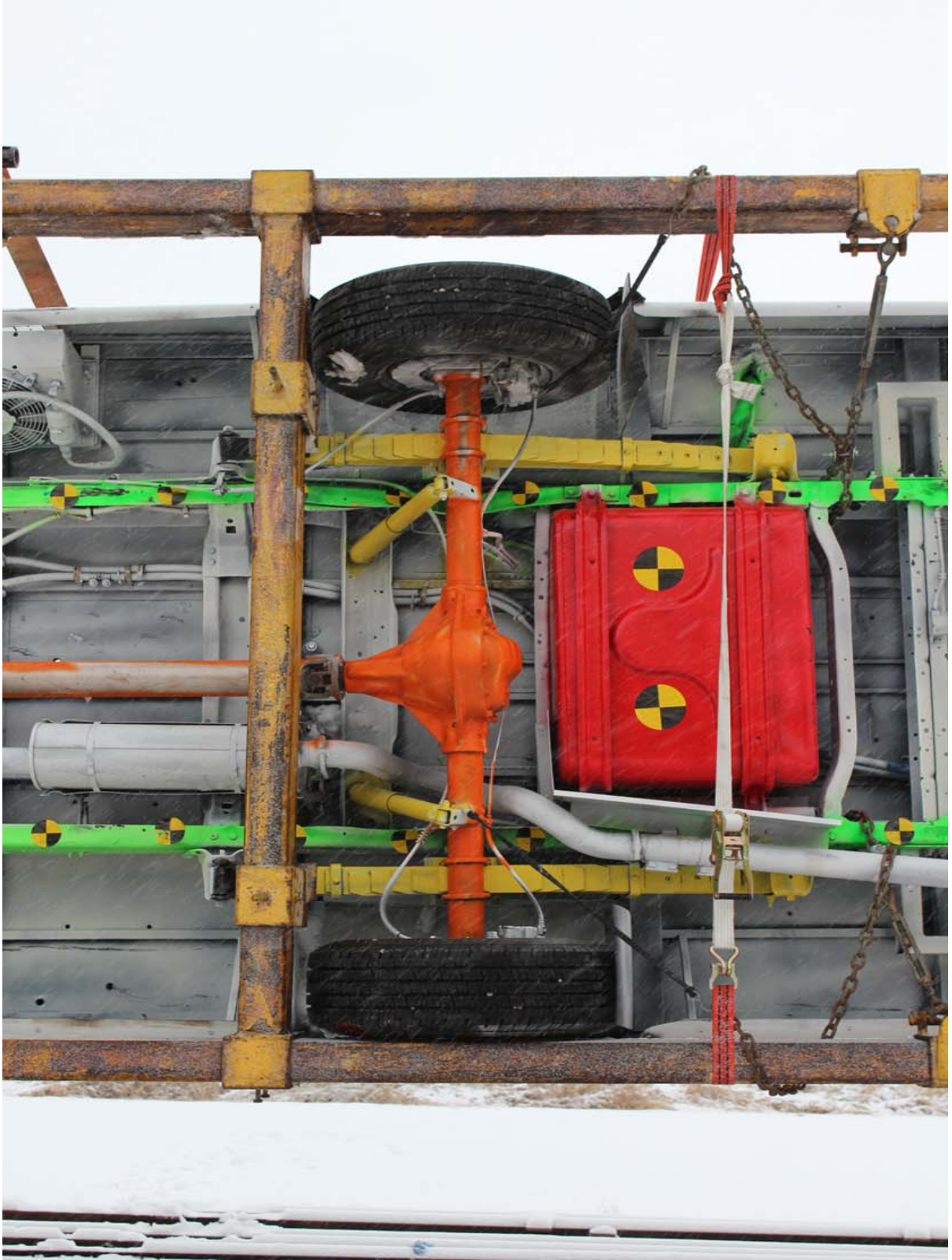
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Test Lab: MGA Research Corporation

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Test Date: 01/11/11



Pre-Test Rear Underbody View

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation  
NHTSA No.: C90903  
Test Date: 01/11/11



Post-Test Rear Underbody View

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Rollover 90 Degrees

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

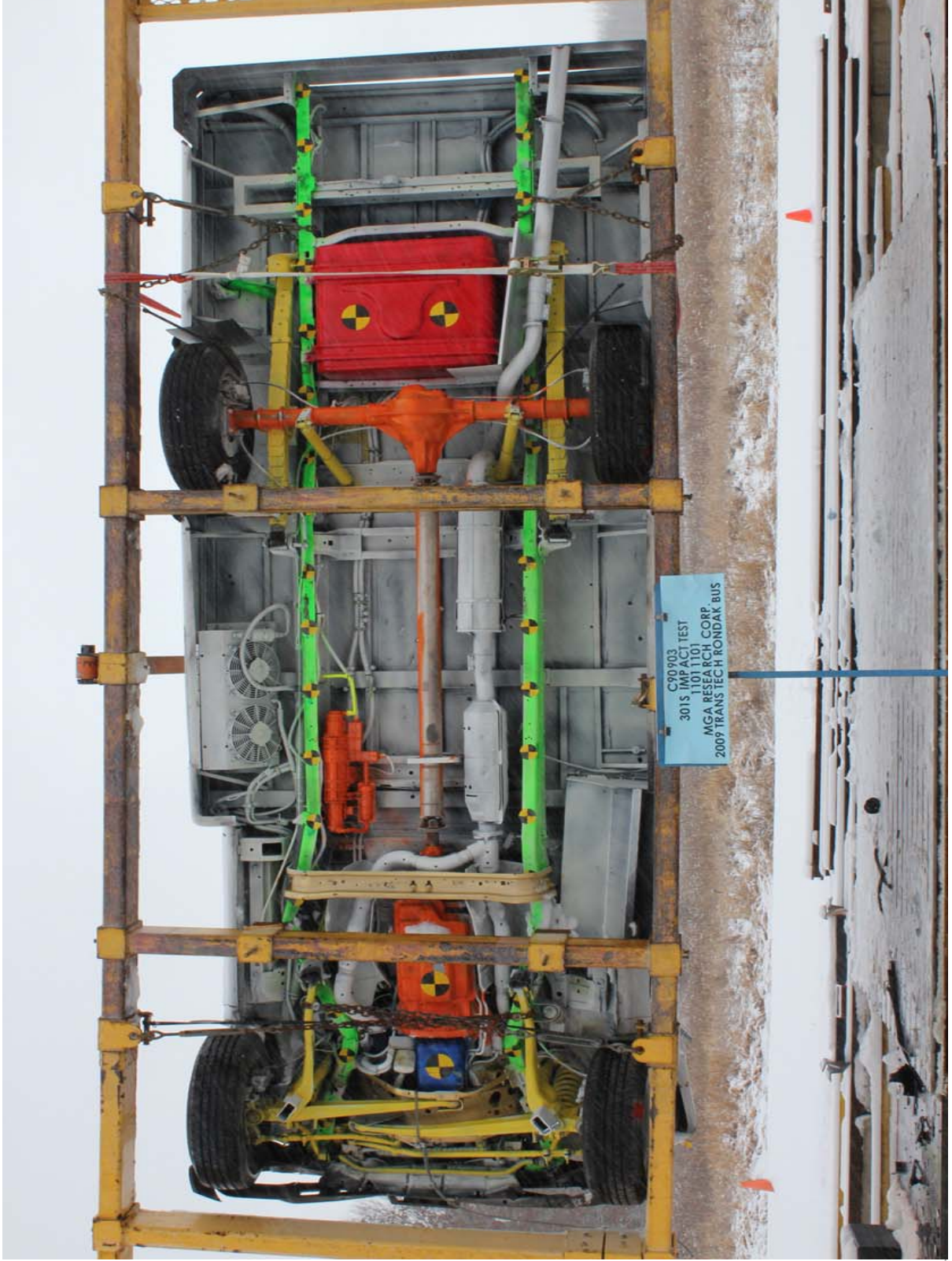
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Test Date: 01/11/11



Rollover 180 Degrees

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Rollover 270 Degrees



Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Rollover 360 Degrees

Test Vehicle: 2009 Trans Tech Rondak Bus  
Test Lab: MGA Research Corporation

NHTSA No.: C90903  
Test Date: 01/11/11



Ballast Weight