

**REPORT NUMBER: 301SB-MGA-2009-001**

**SAFETY COMPLIANCE TESTING FOR  
FMVSS NO. 301S  
FUEL SYSTEM INTEGRITY - SCHOOL BUSES**

**IC CORPORATION  
2009 IC CORPORATION RE300 SCHOOL BUS  
NHTSA NO.: C90900**

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




**TEST DATE: DECEMBER 18, 2008**

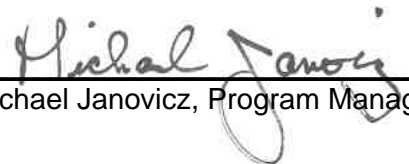
**FINAL REPORT DATE: JANUARY 5, 2009**

**FINAL REPORT**

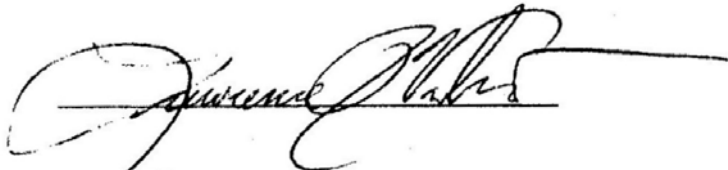
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Prepared by:  Date: January 5, 2009  
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**Technical Report Documentation Page**

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<p>15. Supplementary Notes</p>			
<p>16. Abstract A compliance test was conducted on the subject 2009 IC Corporation RE300 School Bus, NHTSA No.: C90900 in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-301S-02 for the determination of FMVSS 301S compliance.  Test failures identified 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 MY 2009 IC Corporation RE300 School Bus, NHTSA No.: C90900, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-301S-02 to determine compliance to the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 301S, "Fuel System Integrity - School Buses".

Based on the test results, the MY 2009 IC Corporation RE300 School Bus, NHTSA No.: C90900 appears to meet the requirements of FMVSS 301S 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 MY 2009 IC Corporation RE300 School Bus, NHTSA No.: C90900.

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

Test Vehicle: **2009 IC CORPORATION RE300 SCHOOL BUS**  
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**  
Test Date: **12/18/08**

**GENERAL VEHICLE IDENTIFICATION**

School Bus Manufacturer:	IC Corporation	
School Bus Model:	RE300	
Build Date:	04/08	
Incomplete Vehicle Manufactured By:		
Build Date for Bus Chassis:	04/08	
School Bus GVWR (kg):	14,424	
School Bus GAWR Front (kg):	5,443	
School Bus GAWR Rear (kg):	8,981	
School Bus VIN:	4DRBWAAN29A083456	
No. of Designated Seating Positions (DSP) including Driver:	73	
School Bus NHTSA No.:	C90900	
Bus Body Color:	Yellow	
No. of Cylinders:	8	
Fuel Pump Actuation:	Electrical Pump "ON" with ignition	
School Bus Width (mm):	2,407	
School Bus Length (mm):	10,668	
Bus Unloaded Vehicle Weight (UVW) (kg):	8,867	
Bus Occupant Load:	3,917 kg - Passenger 54 kg - Driver 3,971 kg - Total	
Target Bus Test Weight (SBTW) (kg):	12,838	
Actual (SBTW) (kg):	12,832	
School Bus Tire Manufacturer:	Hankook	
	Front	Rear
Rec. Cold Tire Inflation Pressure (KPa):	720	720
Tire Size:	11R22.5	11R22.5
Load Range:	N/A	N/A

**DATA SHEET 1 (CONTINUED)**  
**SCHOOL BUS DATA**

**GENERAL VEHICLE IDENTIFICATION**

**SCHOOL BUS ATTITUDE**

	Units	LF	RF	LR	RR
Post Test:	mm	1119	1124	1131	1130

**FUEL TANK CAPACITY INFORMATION**

Fuel Tank Capacity (liters):	246.1
Tank Test Volume (liters):	223.7

**TEST VEHICLE WEIGHTS**

	Units	As Delivered			As Tested		
		Front	Rear	Total	Front	Rear	Total
Left	kg	1,275	3,009		2,038	4,179	
Right	kg	1,218	3,365		1,942	4,673	
Ratio	%	28.1	71.9		31.0	69.0	
Totals	kg	2,493	6,374	8,867	3,980	8,852	12,832

COMMENTS: NONE

Recorded By: *Eva Leebman*

Approved By: *Michael Janoy*

Date: 12/18/2008



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

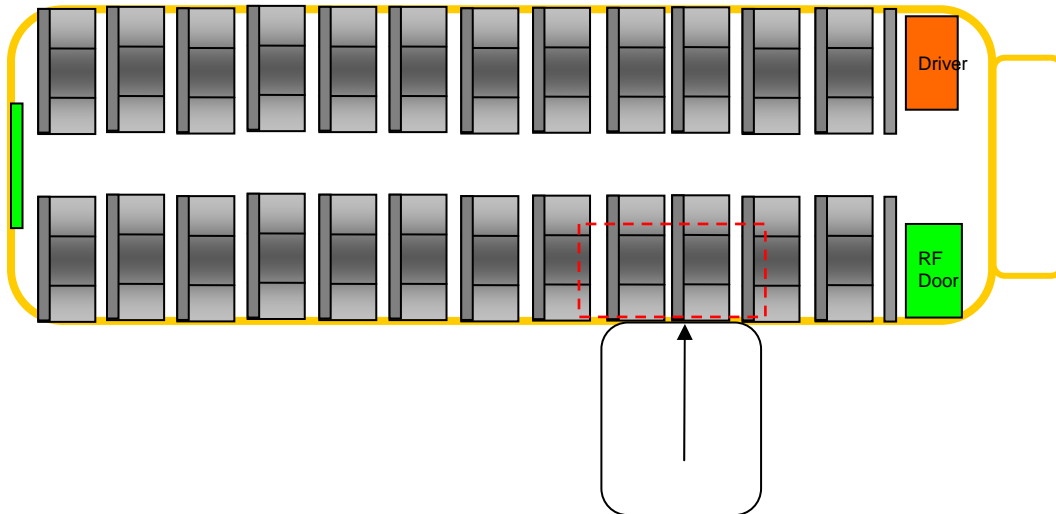
Test Vehicle: **2009 IC CORPORATION RE300 SCHOOL BUS**  
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**  
Test Date: **12/18/08**

**IMPACT INFORMATION**

Time of Impact:	3:45 PM
Ambient Temperature (°C)	21.0
Barrier Velocity – Speed Trap 1 (kph):	29.8
Barrier Velocity – Speed Trap 2 (kph):	29.7
Barrier Penetration:	378 mm

**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).

**DESCRIPTION:** Fuel tank is located just behind the stairwell on the right side of the vehicle.

**DATA SHEET 2 (CONTINUED)**  
**SCHOOL BUS IMPACT DATA**


Fuel Spillage Noted:	No
Failure, if applicable:	None

**STODDARD SOLVENT SPILLAGE MEASUREMENTS**

Timeframe	Description	Allowable Spillage	Measured Spilled	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	31 grams (1 ounce) per minute 933 grams (30 ounces) Total Allowed	0	<b>PASS</b>

COMMENTS: None

Recorded By: 

Approved By: 

Date: 12/18/2008

**SECTION 3**  
**INSTRUMENTATION AND EQUIPMENT LIST**

<b>Equipment</b>	<b>Description</b>	<b>Serial No.</b>	<b>Cal. Date</b>	<b>Next Cal. Date</b>
Counter/Timer	Newport	126811001	10/13/08	04/13/09
Counter/Timer	Newport	126811002	10/13/08	04/13/09
Vehicle Scales	GSE	004804	09/09/08	12/09/08
Tape Measure	Stanley Powerlock 8M	287	11/21/08	05/21/09

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PHOTOGRAPHS**

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Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
 Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



**MANUFACTURED BY**  
 IC CORPORATION

DATE OF MANUFACTURE 04 MO. 08 YR.

GVWR 14,424 KGS ( 31,800 LBS )

GAWR FRONT 5,443 KGS ( 12,000 LBS ) WITH  
 295/75R22.5G TIRES 14 PLY AT  
 750 KPa ( 110 PSI) COLD  
 RIMS 22.5X8.25 AXLE SINGLE

GAWR REAR 8,981 KGS ( 19,800 LBS ) WITH  
 10R22.5G TIRES 14 PLY AT  
 723 KPa ( 105 PSI) COLD  
 RIMS 22.5X7.50 AXLE DUAL

**THIS VEHICLE CONFORMS TO ALL  
 APPLICABLE FEDERAL MOTOR  
 VEHICLE SAFETY STANDARDS IN  
 EFFECT ON THE DATE OF  
 MANUFACTURE SHOWN ABOVE.**

VEHICLE IDENTIFICATION NO.  
 4DRBWAA129A083456  
 VEHICLE TYPE  
 SCHOOL BUS # 083456

**ATTENTION DRIVER!**

USE CROSS VIEW MIRRORS TO VIEW PEDESTRIANS  
 WHILE BUS IS STOPPED DO NOT USE THESE  
 MIRRORS TO VIEW TRAFFIC WHILE BUS IS MOVING.  
 IMAGES IN SUCH MIRRORS DO NOT ACCURATELY  
 SHOW ANOTHER VEHICLE'S LOCATION

THE MARK EYE™ CROSS VIEW MIRROR SYSTEM BY  
 HISSCO INC. JAMAICA, NY 11435 TEL: (718) 526-2601

Vehicle Certification Label

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Front View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Left Front Three-Quarter View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Right Front Three-Quarter View of School Bus (receiving photograph)



Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Left Side View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Right Side View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Rear View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Left Rear Three-Quarter View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Right Rear Three-Quarter View of School Bus (receiving photograph)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Cart Positioned by School Bus (frontal view)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Post-Test Cart and School Bus (frontal view)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Pre-Test Cart Positioned by School Bus (side view)



Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Post-Test Cart and School Bus (side view)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C90900  
Test Date: 12/18/08



Pre-Test Cart Positioned by School Bus (overhead view)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Post-Test Cart and School Bus (overhead view)

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Post-Test Impact View 1

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS      NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION                      Test Date: 12/18/08



Post-Test Impact View 2

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Post-Test Right Front Three-Quarter View of School Bus w/out Cart

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION Test Date: 12/18/08



Post-Test Right Rear Three-Quarter View of School Bus w/out Cart

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS      NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION      Test Date: 12/18/08



Pre-Test Fuel Filler Cap



Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS      NHTSA No.: C90900  
Test Lab: MGA RESEARCH CORPORATION                      Test Date: 12/18/08



Post-Test Fuel Filler Cap

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C90900  
Test Date: 12/18/08



Pre-Test Fuel Tank

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C90900  
Test Date: 12/18/08



Post-Test Fuel Tank

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C90900  
Test Date: 12/18/08



Post-Test Damage Underbody View 1

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C90900  
Test Date: 12/18/08



Post-Test Damage Underbody View 2

Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C90900  
Test Date: 12/18/08



Pre-Test View of Ballast Weight View 1

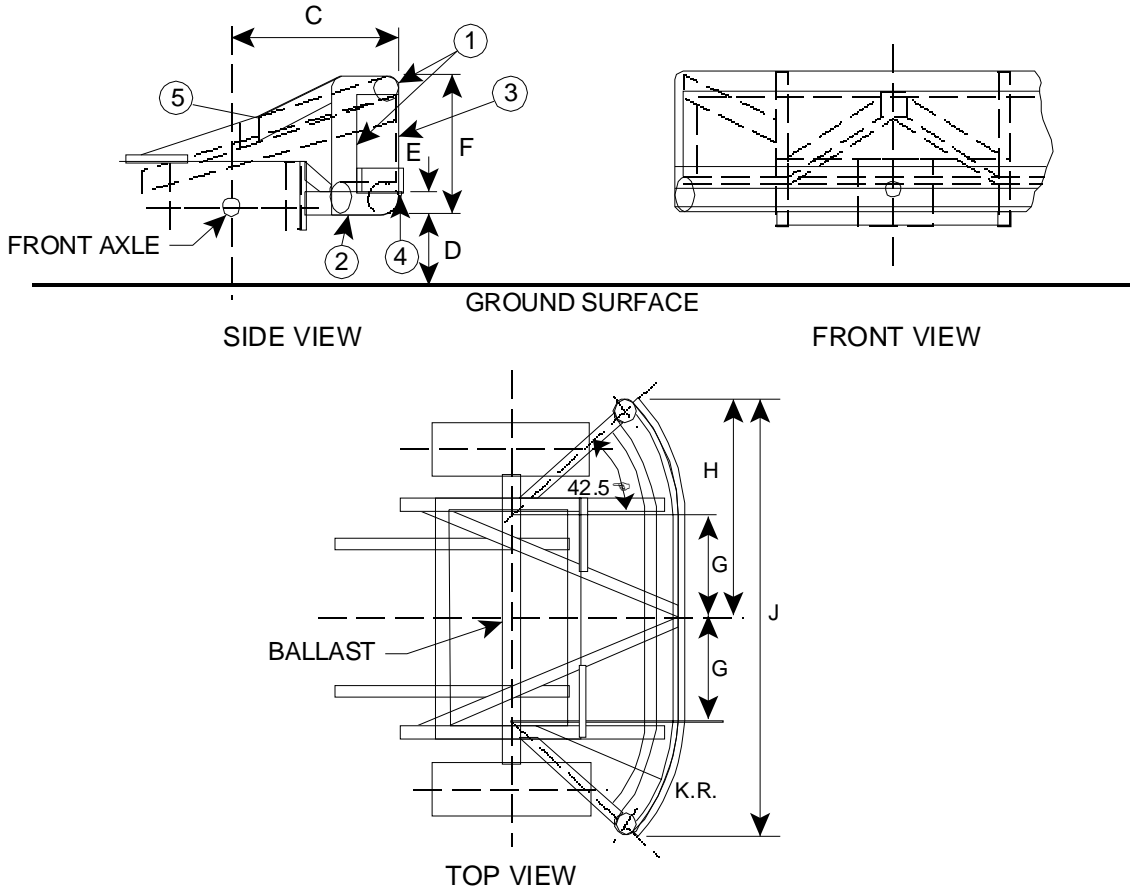
Test Vehicle: 2009 IC CORPORATION RE300 SCHOOL BUS  
Test Lab: MGA RESEARCH CORPORATION  
NHTSA No.: C909000  
Test Date: 12/18/08



Pre-Test View of Ballast Weight View 2

**SECTION 5**  
**BARRIER INFORMATION**

**CONTOURED IMPACT SURFACE FOR COMMON CARRIAGE**



DIMENSIONS SHOWN IN TABLE ON NEXT PAGE

**NOTES:**

1. Upper Frame 4.0 in. dia x 0.25 in. wall (102 mm dia x 6 mm wall)  
Steel Tubing (3 Sides)
2. Lower Frame 6.0 in. dia x 0.50 in. wall (152 mm dia x 13 mm wall)  
Steel Tubing
3. Face Plate 0.75 in. (19 mm) thick cold rolled steel
4. Leading Edge 1.0 s 4.0 in. (25 x 102 mm) steel band, sharp  
edges broken
5. All Inner Reinforcements 4.0 x 2.0 x 0.19 in. (102 x 51 x 5 mm)  
steel tubing

Total Weight = 4,000 ± 50 lbs (1,814.1 ± 22.7 kg)

Weight at each Rear Wheel =  
900 ± 25 lbs (408.2 ± 11.3 kg)

Weight at each Front Wheel =  
1,100 ± 25 lbs (499.0 ± 11.3 kg)

Moments of Inertia:

$I_x = 271 \pm 13.6 \text{ slug-ft}^2 \text{ (} 367 \pm 18.4 \text{ kg-m}^2\text{)}$

$I_z = 3,475 \pm 174 \text{ slug-ft}^2 \text{ (} 4,711 \pm 236 \text{ kg-m}^2\text{)}$



## DIMENSIONS FOR CONTOURED IMPACT SURFACE

LETTER	INCHES	MILLIMETERS
A	54.0	1372
B	15.8	401
C	30.0	762
D	5.25	133
E	3.75	95
F	24.75	629
G	18.0	457
H	39.0	991
J	78.0	1981
K	30.0	762