REPORT NUMBER: 301S-MGA-2007-004

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

IC CORPORATION
2007 IC BE 200 SCHOOL BUS
NHTSA NO. C70901

PREPARED BY:
MGA RESEARCH CORPORATION
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BURLINGTON, WI 53105

FINAL REPORT DATE: OCTOBER 18, 2007

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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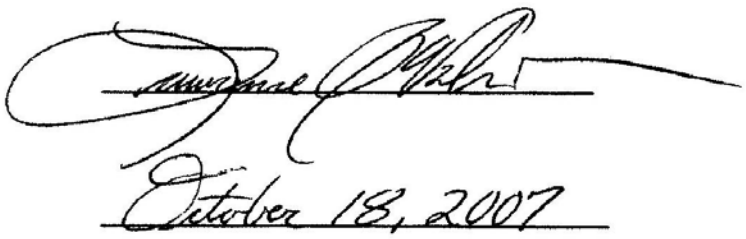

Technical Report Documentation Page

1. Report No. 301S-MGA-2007-004	*2. Government Accession No.*	*3. Recipient's Catalog No.*	
4. Title and Subtitle Final Report of FMVSS 301S School Bus Compliance Testing of 2007 IC BE 200 School Bus NHTSA No.:C70901		*5. Report Date* October 18, 2007 *6. Performing Organization Code* MGA	
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12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance Mail Code: (NVS-220) 1200 New Jersey Avenue, S.E. Washington, D.C. 20590		*13. Type of Report and Period Covered* Final Report 10/4/07 – 10/18/07 *14. Sponsoring Agency Code* NVS-220	
15. Supplementary Notes			
16. Abstract A compliance test was conducted on the subject 2007 IC BE 200 School Bus, NHTSA No. C70901 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 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 MY 2007 IC BE 200 School Bus, NHTSA No. C70901, 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 2007 IC BE 200 School Bus, NHTSA No. C70901 appears to meet the requirements of FMVSS 301S testing.

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

SECTION 2
COMPLIANCE TEST DATA

The following data sheets document the results of testing on the MY 2007 IC BE 200 School Bus, NHTSA No. C70901.

DATA SHEET 1

SCHOOL BUS DATA

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/4/07**

GENERAL VEHICLE IDENTIFICATION

School Bus Manufacturer:	IC Corporation	
School Bus Model:	IC BE 200 School Bus	
Build Date:	04/06	
Incomplete Vehicle Manufactured By:	IC Corporation	
Build Date for Bus Chassis:	04/06	
School Bus GVWR (kg):	7,938	
School Bus GAWR Front (kg):	3,175	
School Bus GAWR Rear (kg):	4,762	
School Bus VIN:	4DRAPAFK07A407251	
No. of Designated Seating Positions (DSP) including Driver:	20	
School Bus NHTSA No.:	C70901	
Bus Body Color:	Yellow	
Engine Displacement	6.0L	
No. of Cylinders:	8	
Fuel Pump Actuation:	Electrical Pump “ON” with ignition	
School Bus Width (mm):	2370	
School Bus Length (mm):	7315	
Bus Unloaded Vehicle Weight (UVW) (kg):	5,708	
Bus Occupant Load:	1,026 kg - Passenger 54 kg - Driver 1,080 kg - Total	
Target Bus Test Weight (SBTW) (kg):	6,788	
Actual (SBTW) (kg):	6,782	
School Bus Tire Manufacturer:	Hankook	
	Front	Rear
Rec. Cold Tire Inflation Pressure (KPa):	655	655
Tire Size:	LT225/70R19.5	LT225/70R19.5
Load Range:	F	F

DATA SHEET 1 (CONTINUED)

SCHOOL BUS DATA

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/4/07**

GENERAL VEHICLE IDENTIFICATION

SCHOOL BUS ATTITUDE

	Units	LF	RF	LR	RR
As Delivered:	mm	959	903	888	853
As Tested:	mm	943	899	868	838

Fuel Tank Capacity (liters):	132.5
Tank Test Volume (liters):	119.2

TEST VEHICLE WEIGHTS

	Units	As Delivered			As Tested		
		Front	Rear	Total	Front	Rear	Total
Left	kg	1162	1584		1264	2056	
Right	kg	1234	1728		1336	2126	
Ratio	%	42.0	58.0		38.3	61.7	
Totals	kg	2396	3312	5708	2600	4182	6782

COMMENTS: NONE

Recorded By: Jordan Haynes

Approved By: _____ Date: 10/04/2007

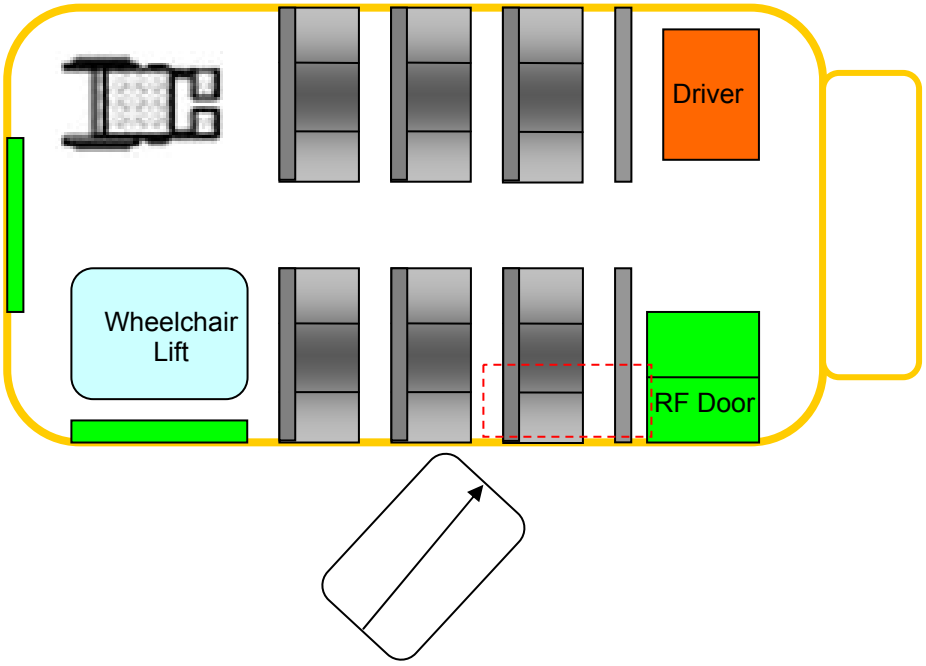
DATA SHEET 2

SCHOOL BUS IMPACT DATA

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/4/07**

Time of Impact:	9:59 am
Ambient Temperature (°C)	21.1
Barrier Velocity – Speed Trap 1 (kph):	47.8
Barrier Velocity – Speed Trap 2 (kph):	47.8
Barrier Penetration:	380 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

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/4/07**

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	**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: Jordan Hayes

Approved By: _____ Date: 10/04/2007

SECTION 3

INSTRUMENTATION AND EQUIPMENT LIST

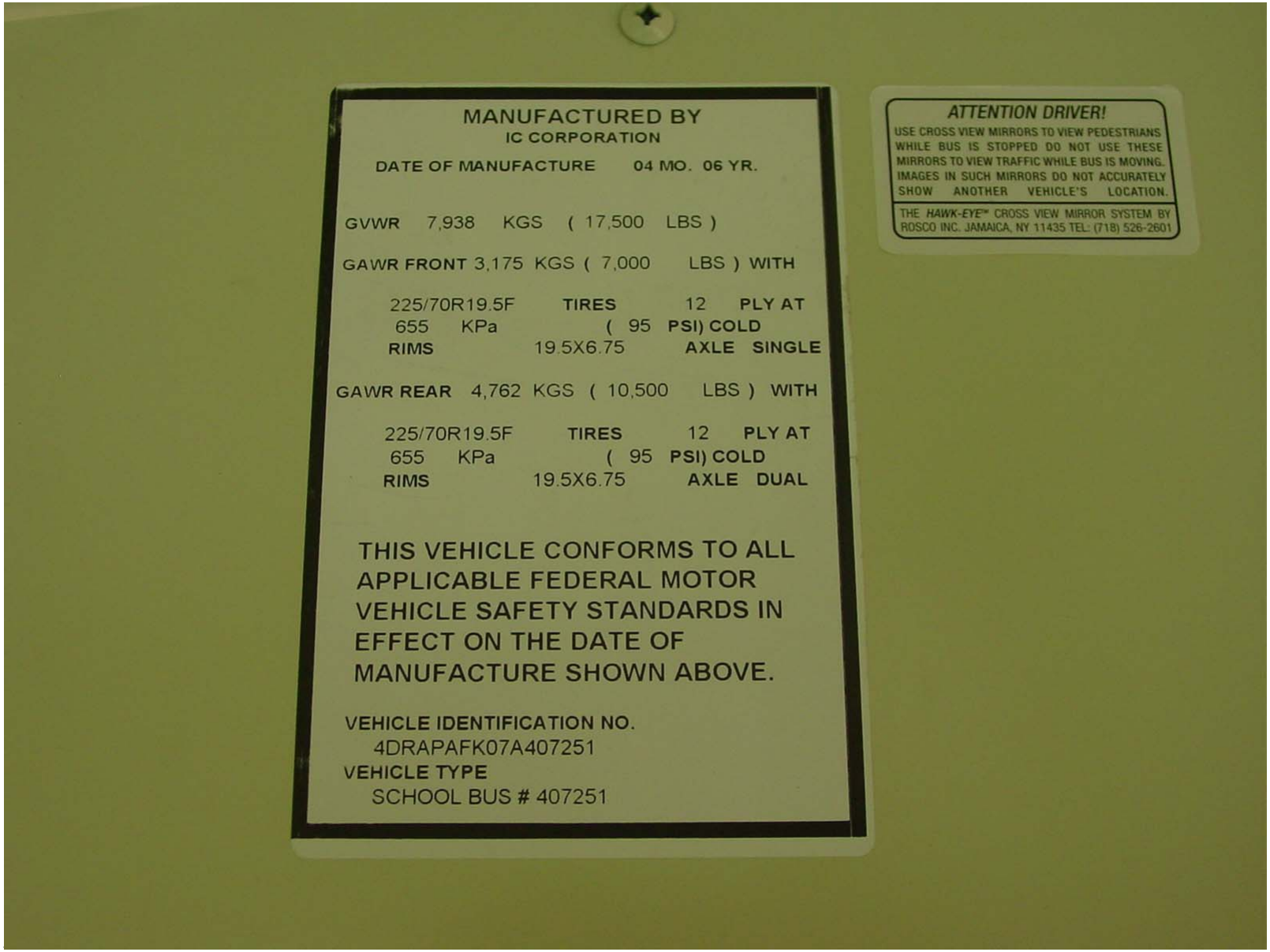
Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/4/07**

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	512	04/09/07	10/1/07

SECTION 4
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/04/07**



Vehicle Certification Label

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

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

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/04/07**

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

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/04/07**

Post-Test Cart and School Bus (frontal view)

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/04/07**

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

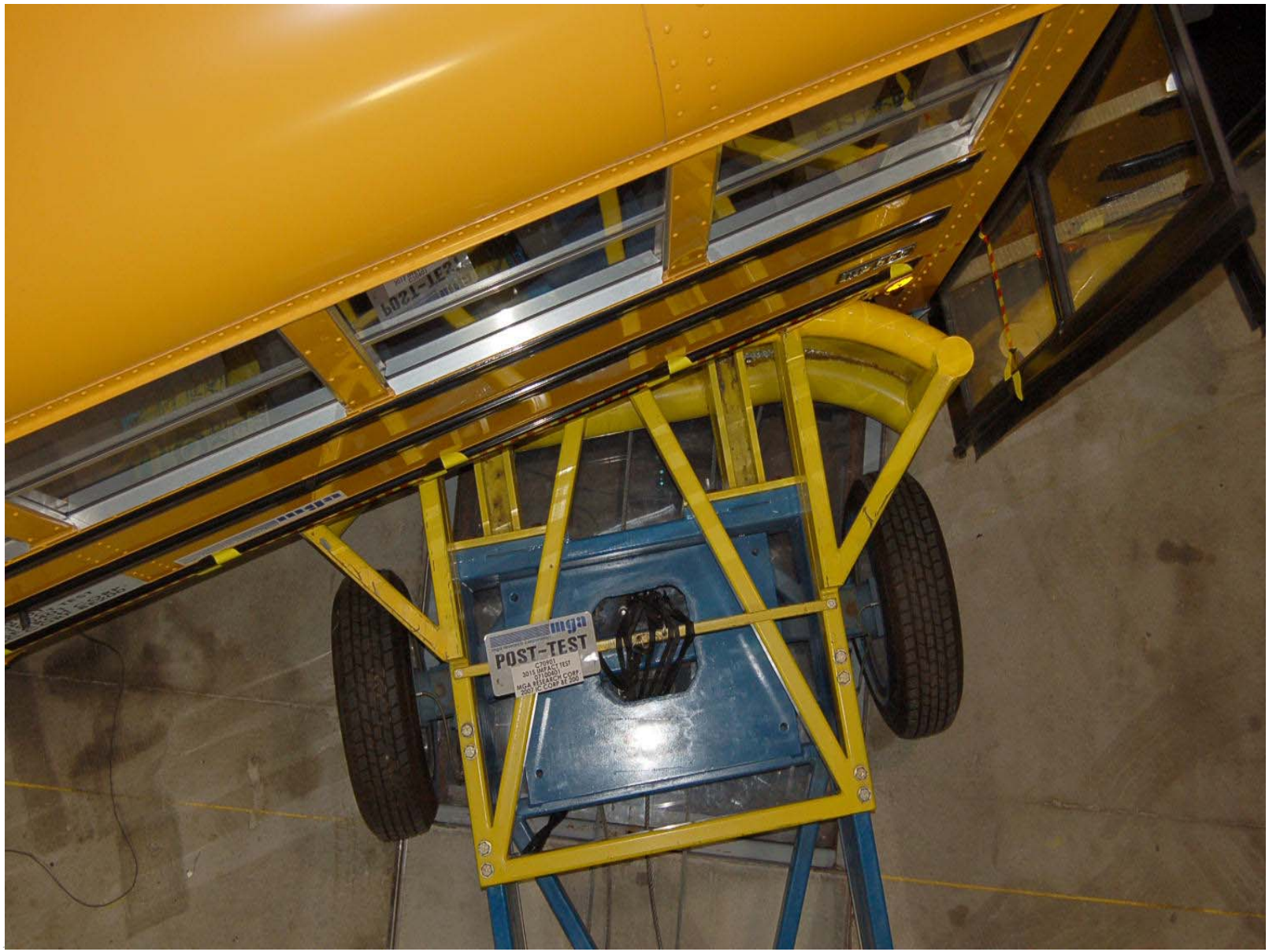
Post-Test Cart and School Bus (side view)

Test Vehicle: **2007 IC BE 200 SCHOOL BUS** NHTSA No.: **C70901**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **10/04/07**

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

Post-Test Cart and School Bus (rear view)

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



Post-Test Cart and School Bus (overhead view)

Post-Test Impact View 1

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

Post-Test Impact View 2

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

Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

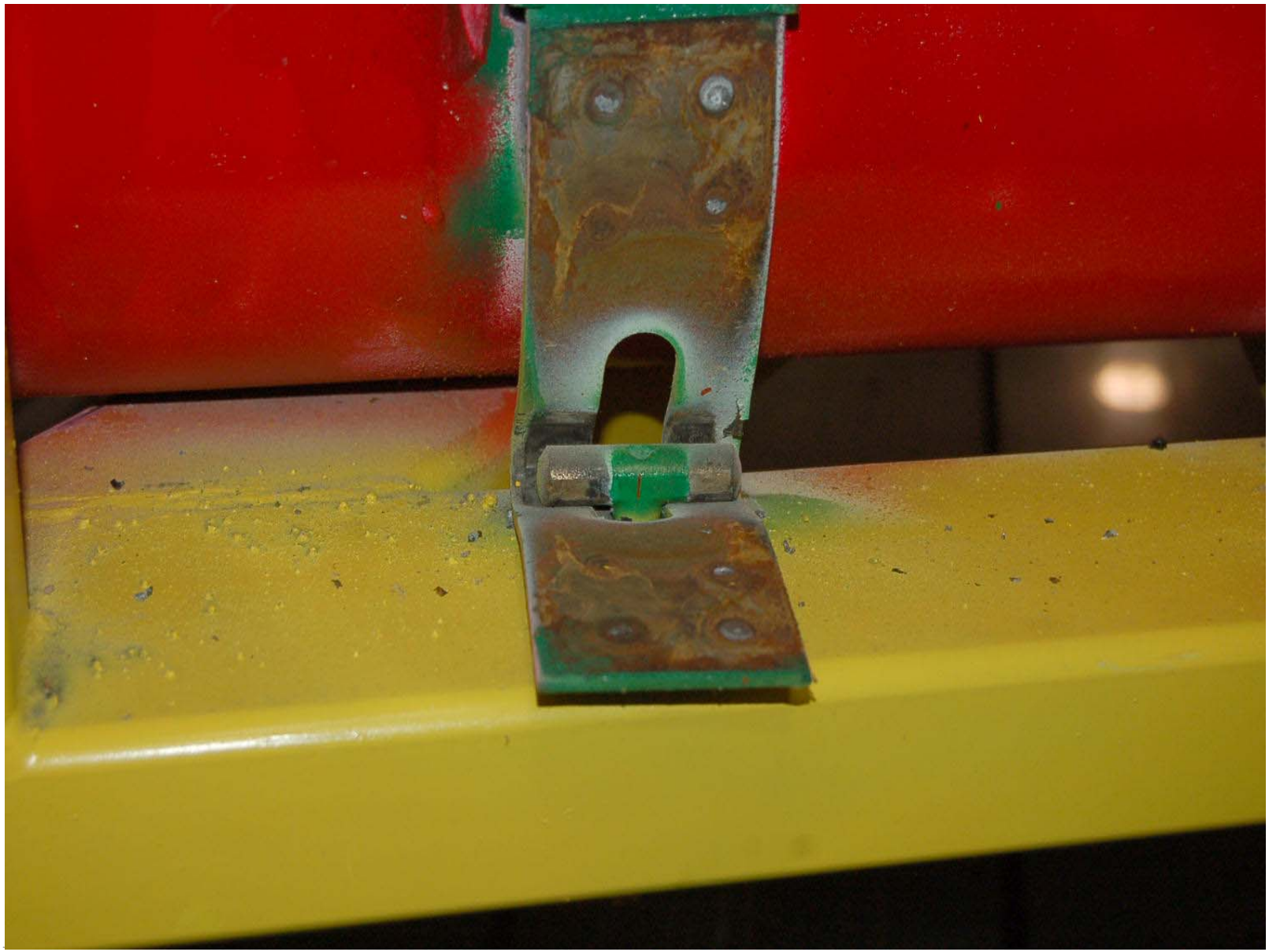
Post-Test Right Rear Three-Quarter View of School Bus w/out Cart

Pre-Test Fuel Filler Cap

Pre-Test Fuel Tank

Post-Test Fuel Tank

Post-Test Damage Underbody View 1



Post-Test Damage Underbody View 2

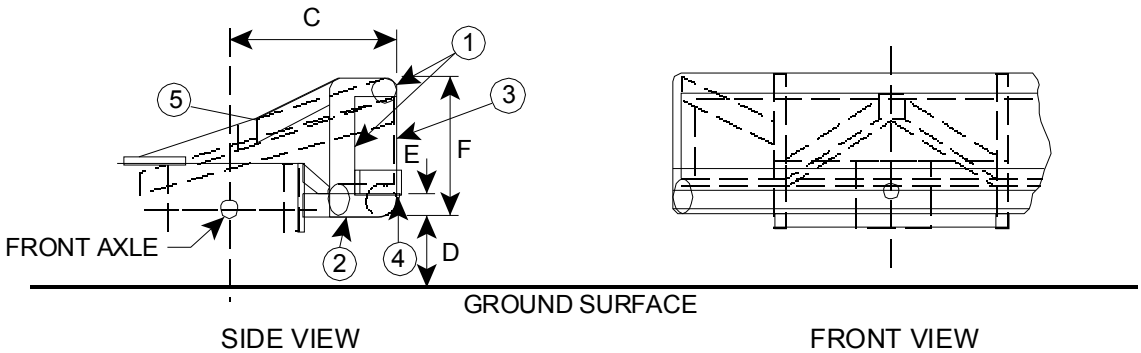
Test Vehicle:	**2007 IC BE 200 SCHOOL BUS**	NHTSA No.:	**C70901**
Test Lab:	**MGA RESEARCH CORPORATION**	Test Date:	**10/04/07**

Pre-Test View of Ballast Weight View

SECTION 5

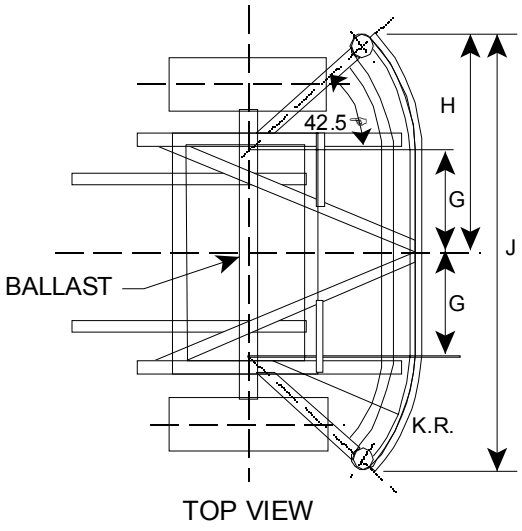
BARRIER INFORMATION

CONTOURED IMPACT SURFACE FOR COMMON CARRIAGE



SIDE VIEW

FRONT VIEW



TOP VIEW

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 ± 13.6 slug-ft^2 (367 ± 18.4 kg-m^2)
I_Z = 3,475 ± 174 slug-ft^2 (4,711 ± 236 kg-m^2)

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