REPORT NUMBER: 301SB-MGA-2011-002

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 301 FUEL SYSTEM INTEGRITY

GIRARDIN MINIBUS, INC.
2011 GIRARDIN MICRO BIRD SCHOOL BUS
NHTSA NO.: CB0903

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

TEST DATE: AUGUST 26, 2011

FINAL REPORT DATE: OCTOBER 5, 2011

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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Prepared by: _____ Date: September 12, 2011
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Technical Report Documentation Page

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4. Title and Subtitle Final Report of FMVSS 301 Compliance Testing of 2011 Girardin Micro Bird School Bus NHTSA No.: CB0903		*5. Report Date* October 5, 2011 *6. Performing Organization Code* MGA	
7. Author(s) Eric Peschman, Project Engineer Michael Janovicz, Program Manager		*8. Performing Organization Report No.* 301SB-MGA-2011-002	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-08-D-00075	
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 8/26/11 *14. Sponsoring Agency Code* NVS-220	
15. Supplementary Notes			
16. Abstract A compliance test was conducted on the subject 2011 Girardin Micro Bird School Bus, NHTSA No. CB0903 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 identified were as follows: None			
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Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

SECTION 1
PURPOSE OF COMPLIANCE TEST AND SUMMARY

A fuel system integrity test was performed o n a MY201 1 Girardin Micro Bird School Bus, NHTSA No. CB0903, in accordan ce with the specificatio ns of the Office of Vehicle Safet y Compliance (OVSC) Te st Procedur e TP-301-04, to determine complia nce to the r equirements of Federal Motor Vehicle Safety Standards (FMVSS) 301, “Fuel System Integrity”.

Based on t he test resu lts, the MY2011 Girardin Micro Bird School B us, NHTSA No. CB090 3 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 MY20 11 Girardin Micro Bird School Bus, NHTSA No. CB0903.

DATA SHEET 1

SCHOOL BUS DATA

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

GENERAL VEHICLE IDENTIFICATION

School Bus Manufacturer	Girardin	
School Bus Model	Micro Bird	
Build Date	11/10	
Incomplete Vehicle Manufactured By	Ford	
Build Date for Bus Chassis	9/10	
School Bus GVWR (kg)	5,216 kg / 11,500 lbs	
School Bus GAWR Front (kg)	1,837 kg / 4,050 lbs	
School Bus GAWR Rear (kg)	3,545 kg / 7,800 lbs	
School Bus VIN	1FDEE3FLXBDA10617	
No. of Designated Seating Positions (DSP) including Driver	20	
School Bus NHTSA No.	CB0903	
Bus Body Color	Yellow	
No. of Cylinders	5.4 L	
Fuel Pump Actuation	Electrical – Pump “ON” With Ignition	
School Bus Width (mm)	2,629	
School Bus Length (mm)	6,548	
Bus Unloaded Vehicle Weight (UVW) (kg)	4,543	
Bus Occupant Load	1,026 kg - Passenger 68 kg - Driver 1,094 kg - Total	
Target Bus Test Weight (SBTW) (kg)	4,782	
Actual (SBTW) (kg)	4,780	
School Bus Tire Manufacturer	Michelin	
	Front	Rear
Rec. Cold Tire Inflation Pressure (KPa)	450	450
Tire Size	LT225/75R16	LT225/75R16
Load Range	E	E

DATA SHEET 1

SCHOOL BUS DATA

GENERAL VEHICLE IDENTIFICATION

SCHOOL BUS ATTITUDE

	Units LF		RF	LR	RR
Pre-Test mm		896	888	832	824
Post Test:	mm	869	872	870	743

FUEL TANK CAPACITY INFORMATION

Fuel Tank Capacity (liters)	151.4
Tank Test Volume (liters)	140.1

TEST VEHICLE WEIGHTS

Units		As Delivered			As Tested		
		Front	Rear	Total	Front	Rear	Total
Left	kg	653	1,153		700	1,605	
Right	kg	687	1,195		733	1,742	
Ratio	%	36.3	63.7		30.0	70.0	
Totals	kg	1,340	2,348	3,688	1,433	3,347	4,780

COMMENTS: NONE

Recorded By: 

Approved By:  Date: 8/26/11

DATA SHEET 2

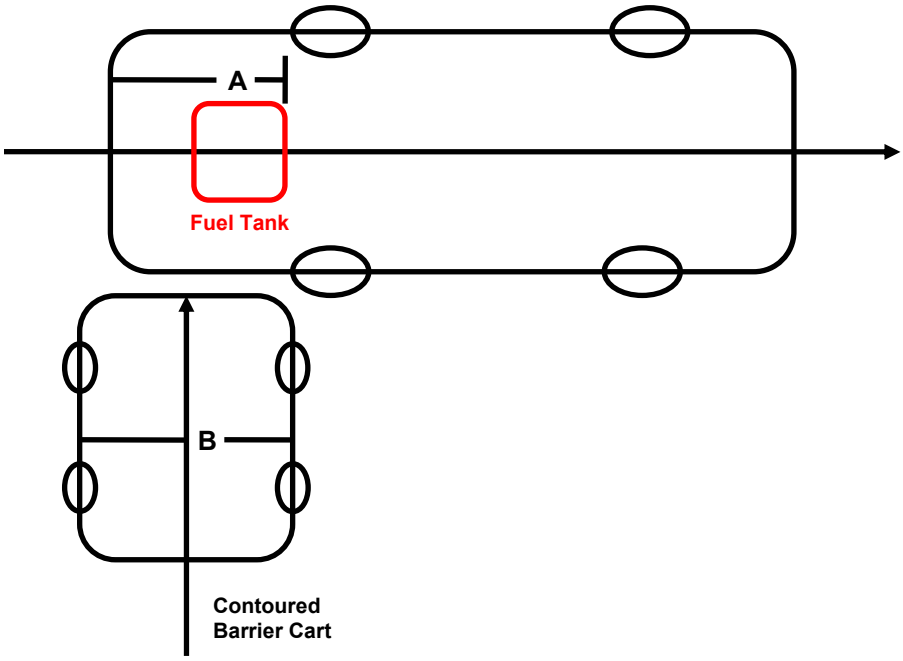
SCHOOL BUS IMPACT DATA

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

IMPACT INFORMATION

Time of Impact	10:09 AM
Ambient Temperature (°C)	21
Barrier Velocity – Speed Trap 1 (kph)	29.55
Barrier Velocity – Speed Trap 2 (kph)	29.55
Barrier Penetration	323 mm

INDICATE IMPACT POINT BELOW:



LEGEND: Arrow indicates point and angle of barrier impact (C_L of arrow coincides with C_L of monorail).

DESCRIPTION: Fuel tank is located on the centerline of the vehicle, just rearward of the rear Axle.

DATA SHEET 2

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	**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	28 grams (1 ounce) per minute 775 grams (25 ounces) Total Allowed	0	**PASS**

COMMENTS: None

Recorded By: 

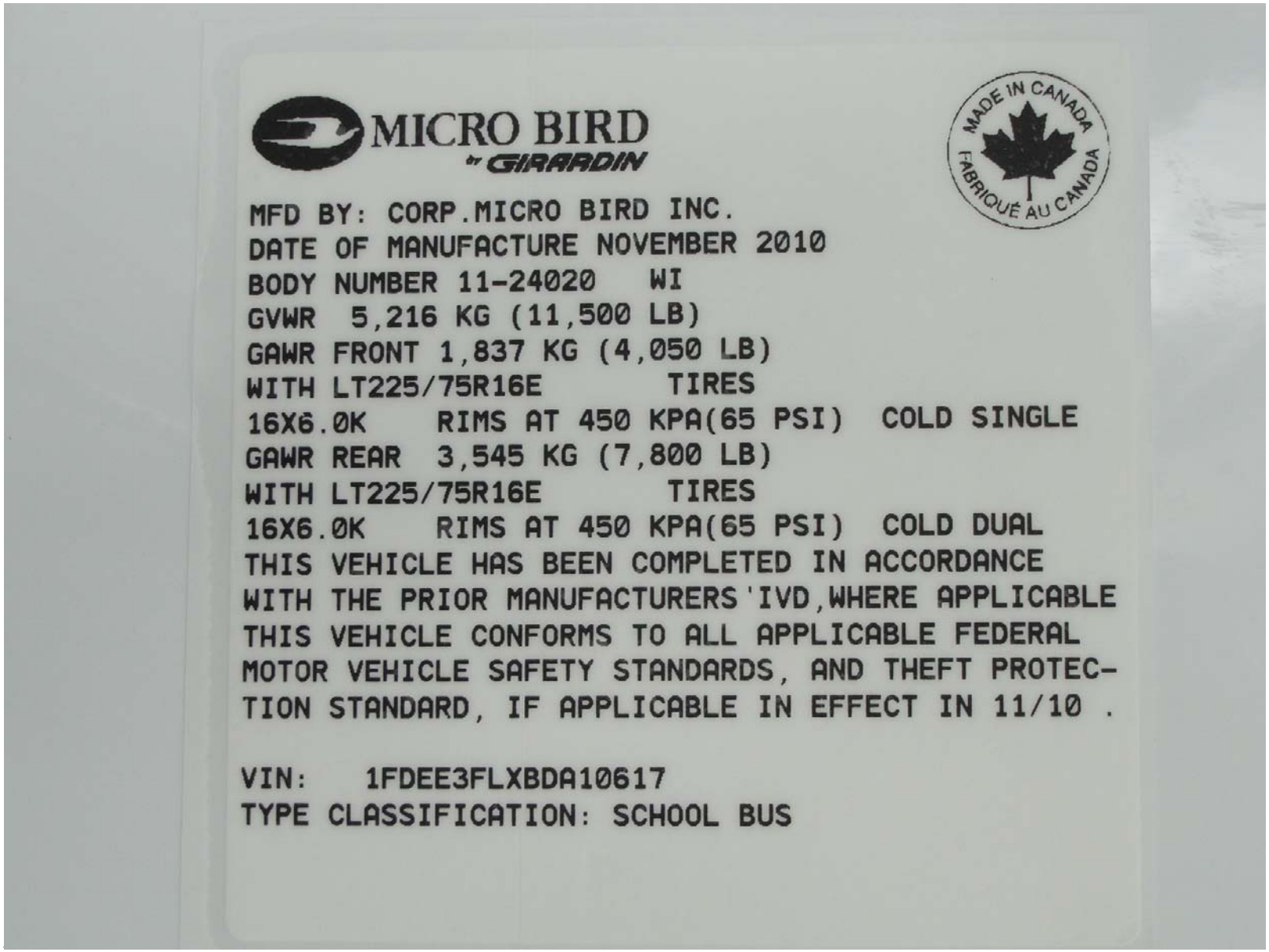
Approved By:  Date: 8/26/11

SECTION 3
INSTRUMENTATION AND EQUIPMENT LIST

Equipment	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
Counter/Timer	Newport	69	6/14/11	12/14/11
Counter/Timer	DTI	4470268	4/21/11	10/21/11
Vehicle Scales	Intercomp	SW500	6/1/11	12/1/11
Tape Measure	Stanley Powerlock	551	8/19/11	2/19/12

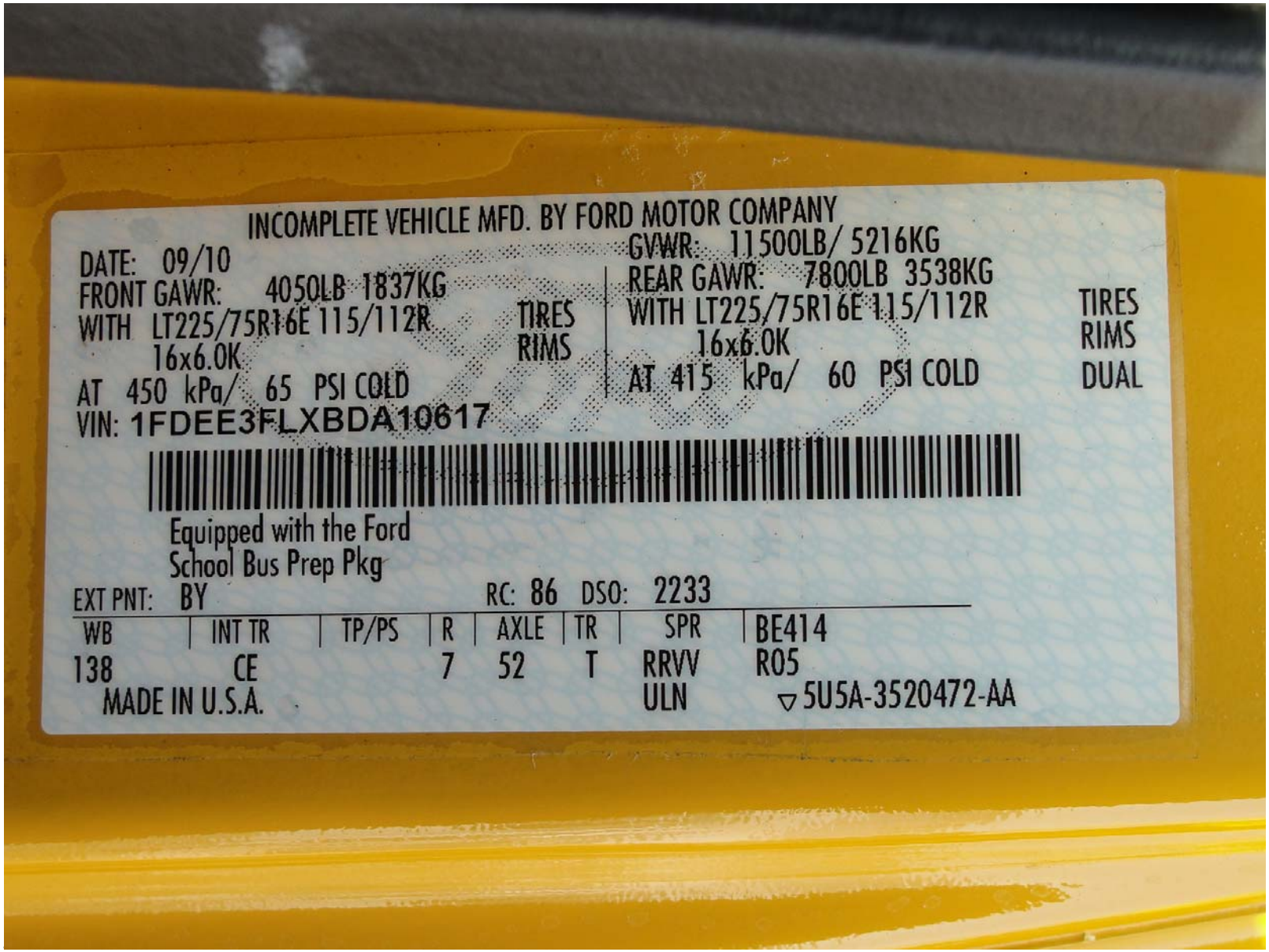
SECTION 4
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS



Vehicle Certification Label/Tire Placard

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**



Incomplete Vehicle Label

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Front View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Left Front Three-Quarter View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Right Front Three-Quarter View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Left Side View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Right Side View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Rear View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Left Rear Three-Quarter View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Right Rear Three-Quarter View of School Bus (Receiving Photograph)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Cart Positioned by School Bus (Rear View)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Cart and School Bus (Rear View)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Cart Positioned by School Bus (Side Close-up View)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Cart and School Bus (Side Close-up View)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Cart Positioned by School Bus (Front View)

Post-Test Cart and School Bus (Front View)

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Impact View 1

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Impact View 2

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Right Front Three-Quarter View of School Bus Without Cart

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Right Rear Three-Quarter View of School Bus Without Cart

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test Fuel Filler Cap

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Fuel Filler Cap

Pre-Test Fuel Tank

Post-Test Fuel Tank View 1

Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Post-Test Fuel Tank View 2

Pre-Test View of Ballast Weight View 1

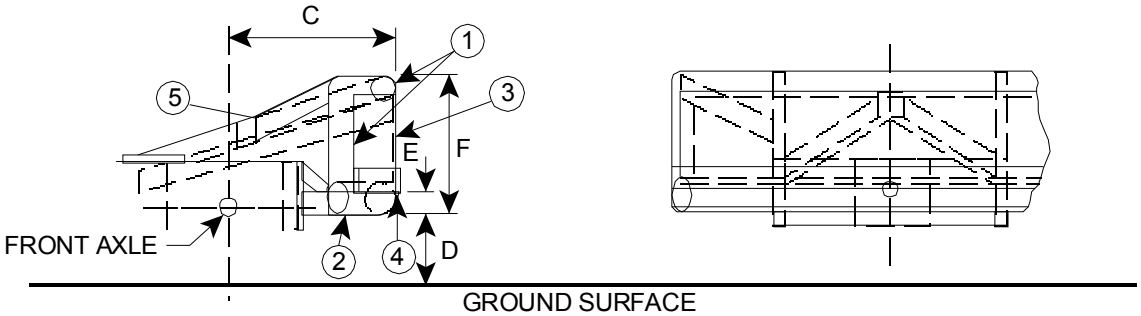
Test Vehicle: **2011 GIRARDIN MICRO BIRD SCHOOL BUS** NHTSA No.: **CB0903**
Test Lab: **MGA RESEARCH CORPORATION** Test Date: **8/26/11**

Pre-Test View of Ballast Weight View 2

SECTION 5

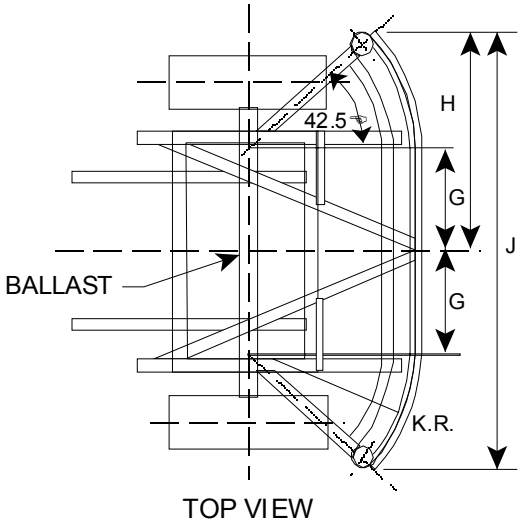
BARRIER INFORMATION

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)

SECTION 5

BARRIER INFORMATION

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