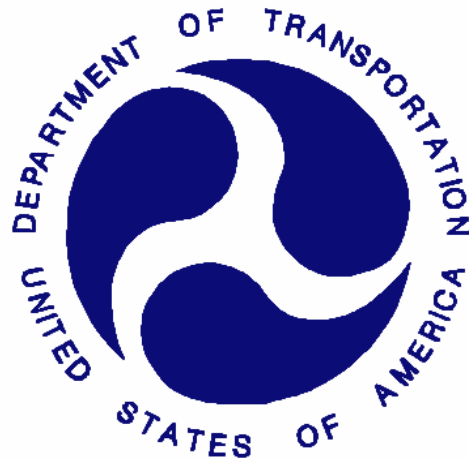


**REPORT NUMBER: 131SB-MGA-2011-002**

**SAFETY COMPLIANCE TESTING FOR  
FMVSS NO. 131SB  
SCHOOL BUS PEDESTRIAN SAFETY DEVICES**

**2011 GIRARDIN MICRO BIRD SCHOOL BUS  
NHTSA NO.: CB0903**

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



**TEST DATE: FEBRUARY 15, 2011**

**FINAL REPORT DATE: FEBRUARY 17, 2011**

**FINAL REPORT**

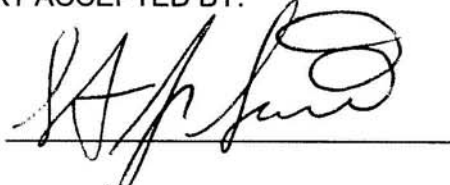
**PREPARED FOR:  
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
ENFORCEMENT  
OFFICE OF VEHICLE SAFETY COMPLIANCE  
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Prepared by:  Date: February 17, 2011  
Eric Peschman, Project Engineer

Reviewed by:  Date: February 17, 2011  
Michael Janovicz, Program Manager

FINAL REPORT ACCEPTED BY:

  
2/18/11  
Date of Acceptance

**Technical Report Documentation Page**

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16. Abstract Compliance tests were 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-131SB-01 for the determination of FMVSS 131 compliance.  Test failures identified were as follows: None					
17. Key Words  Safety Bus Compliance Testing Safety Engineering FMVSS 131				18. Distribution Statement Copies of this report are available from: NHTSA Technical Information Services (TIS) Mail Code: NPO-411 1200 New Jersey Avenue, S.E. Washington, D.C. 20590 Telephone No.: (202) 493-2833 E-mail: <a href="mailto:tis@dot.gov">tis@dot.gov</a>	
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**SECTION 1**  
**PURPOSE OF COMPLIANCE TEST**

Tests were conducted by MGA Research Corporation-Wisconsin Operations on a 2011 Girardin Micro Bird School Bus, NHTSA No.: CB0903, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-131SB-01 to determine compliance to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) 131, "School Bus Pedestrian Safety Devices."

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

**SECTION 2**  
**TEST DATA SUMMARY**

Based on the tests performed, the 2011 Girardin Micro Bird School Bus, NHTSA No.: CB0903, appears to meet all of the requirements of FMVSS 131SB. See Test Summary Data Sheets on the following pages.

**FMVSS 131SB – SCHOOL BUS PEDESTRIAN SAFETY DEVICES  
VEHICLE INFORMATION AND TEST SUMMARY**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
Test Date: **02/15/11**

VIN	1FDEE3FLXBDA10617	Chassis Cab	Yes
No. of Stop Signal Arms	1	Rear Engine	No
Pass. Capacity (driver included)	20	Tire Size (on bus)	LT225/75R16E
Stop Signal Arm Manufacturer	*		

\*Stop Signal Arm Manufacturer is not visible on signal.

**DATA FROM CERTIFICATION LABEL**

Final Stage Manufacturer	Corp. Micro Bird Inc.	Date of Mfg.	11/10
Incomplete Vehicle Manufacturer	Ford Motor Company	Date of Mfg.	09/10
GVWR (kg)	5,216	GAWR Front (kg)	1,837
		GAWR Rear (kg)	3,538

**TEST SUMMARY**

	PASS/FAIL or N/A
Dimensional Requirements (S5.1)	<b>PASS</b>
Surface Content and Labeling (S5.2)	<b>PASS</b>
Conspicuity Requirements (S5.3)	<b>PASS</b>
Location and Position Requirements (S5.4)	<b>PASS</b>
Arm Operation Requirements (S5.5)	<b>PASS</b>

Note: The 2011 Girardin Micro Bird School Bus was only equipped with one stop signal arm.

**SECTION 3**  
**COMPLIANCE TEST DATA**



**FMVSS 131SB – DATA SHEET 1**  
**DIMENSIONS OF STOP SIGNAL ARM (S5.1)**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
 Test Date: **02/15/11**


“Regular octagon” with diameter of at least 450 mm (point to point).

	Forward Signal Arm (mm)
Diameter 1	497
Diameter 2	494
Diameter 3	495
Diameter 4	495
Range (max. – min.)	3

Requirements	Yes, No, N/A
Are all octagon diameter values $\geq$ 450 mm?	Yes
Is range of octagon diameter values $\leq$ 12 mm?	Yes
Are all octagon chord dimensions equal within 6 mm?	Yes

Test Results		PASS/FAIL
S5.1	Dimensions of Stop Signal Arm	<b>PASS</b>

Recorded By: 

Approved By: 

Date: February 15, 2011


**FMVSS 131SB – DATA SHEET 2**  
**SURFACE CONTENT AND LABELING (S5.2)**


Test Vehicle: **2011 Girardin Micro Bird School Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
 Test Date: **02/15/11**

Requirements	Forward Signal Arm	
	Front Side	Aft Side
Color RED except for border & legend (Yes/No)	Yes	Yes
Color of border is WHITE (Yes/No)	Yes	Yes
Color of word "STOP" is WHITE (Yes/No)	Yes	Yes
Word "STOP" is in upper case letters (Yes/No)	Yes	Yes
Width of border ( $\geq 12$ mm)	15 mm	15 mm
Percent of border obscured by mounting brackets, clips, or bolts, or other components ( $\leq 15\%$ )	0%	12.64%
Height of letters ( $\geq 150$ mm)	156 mm	156 mm
Stroke width of letters ( $\geq 20$ mm)	27 mm	27 mm

Test Results		PASS/FAIL
S5.2	Surface content and labeling	<b>PASS</b>

Recorded By: 

Approved By: 

Date: February 15, 2011

**FMVSS 131SB – DATA SHEET 3**

**CONSPICUITY (S5.3)**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
Test Date: **02/15/11**

The Stop Signal Arm shall comply with either S5.3.1 or S5.3.2, or both.

**REFLECTORIZED MATERIAL (S5.3.1)**

Requirements	Forward Signal Arm	
	Front Side	Aft Side
Entire surface of stop signal arm reflectorized except for mounting brackets, clips, bolts, or other necessary components. Front side of rearmost stop signal arm must not be reflectorized. (Yes/No)	Yes	Yes
Percent of entire surface obscured by mounting brackets, clips, bolts or other components necessary for mechanical or electrical operation. (7.5% max. each side)	0%	3.6%

**FMVSS 131SB – DATA SHEET 3**

**CONSPICUITY (S5.3)**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
 Test Date: **02/15/11**

**OPTIONAL ILLUMINATED LETTERING (S5.3.1.1)**

Item	Stop Signal Arm
	Forward
Does the stop sign(s) have illuminated lettering? If optional illuminated lettering is installed, the following requirements apply in addition to reflectorized surface. (Yes/No)	<b>No</b>

Requirements	Forward Signal Arm	
	Front Side	Aft Side
Only Red lamps used (Yes/No)	N/A	N/A
Red lamps form the complete shape of each letter of the legend. (Yes/No)	N/A	N/A
Red lamps centered within stroke of each letter (Yes/No) or Red lamps outline each letter in immediately surrounding area (Yes/No)	N/A	N/A
The shape of each letter remains constant (Yes/No)	N/A	N/A
Net stroke width $\geq$ 15 mm (stroke width minus lamp width)	"S"	N/A
	"T"	N/A
	"O"	N/A
	"P"	N/A
Lamps on each side of the signal arm flash (60-120 flashes/min.)	N/A	N/A
Lamps current "on" time of 30% to 75% of the total flash cycle	N/A	N/A
Total current "on" time for the two terminals shall be between 90-110% of the total flash cycle.	N/A	N/A
If Xenon short-arc lamps – "off" time before each flash of at least 50% of the total flash cycle.	N/A	N/A

**FMVSS 131SB – DATA SHEET 3**

**CONSPICUITY (S5.3)**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
 Test Date: **02/15/11**

**RED FLASHING LAMPS (S5.3.2)**


Requirements	Forward Signal Arm	
	Front Side	Aft Side
Are the Red Lamps centered on the vertical centerline? (At least 2, enter quantity)	Yes – 2	Yes – 2
Is one lamp at extreme top and another at extreme bottom? (Yes/No)	Yes	Yes
Do the lamps on each side of the signal arm flash alternately? (60-120 flashes/min.) (Yes/No)	Yes – 67	Yes – 67
Lamps current “on” time of 30% to 75% of the total flash cycle. (Yes/No)	Yes – 49%	Yes – 49%
Total current “on” time for two terminals shall be between 90 and 110% of the total flash cycle. (Yes/No)	Yes	Yes
If Xenon short-arc lamps-“off” time before each flash of at least 50% of total flash cycle. (Yes/No)	N/A	N/A
Is there a symbol “DOT” on each lamp lens? (Yes/No) (Not Required)	Yes	Yes
Additional markings on lamp lenses	SMC 1940 FMVSS 131	SMC 1940 FMVSS 131

**MARKINGS ON THE FLASHER**

Make	In Power LLC	Serial No.	LOT – 1004121403
Model	SBF90	Date of Mfg.	N/A

Test Results		PASS/FAIL or N/A
S5.3.1	Reflectorized Material	<b>PASS</b>
S5.3.1.1	Optional Illuminated Lettering	N/A
S5.3.2	Red Flashing Lamps	<b>PASS</b>

Recorded By: 

Approved By: 

Date: February 15, 2011

**FMVSS 131SB – DATA SHEET 4**  
**STOP SIGNAL ARM INSTALLATION (S5.4)**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
 Test Date: **02/15/11**

Dimensions and angles measured with Signal Arm in the extended position.

Requirements	Stop Signal Arm
	Forward
Signal arm perpendicular to side of bus (Measure angle between vertical plane of side of bus and vertical plane of the signal arm.) $90 \pm 5^\circ$	90.3°
Top edge of signal arm parallel to horizontal plane (Measure angle between vertical plane of side of bus and the top edge of the signal arm.) $90 \pm 5^\circ$	88.1°
Top edge of signal arm not more than 152.4 mm from a horizontal plane tangent to lower edge of frame of passenger window immediately behind the driver's window:	
Measure top corner closest to the school bus to the bottom edge of the window.	7 mm
Measure top corner furthest from school bus to the bottom edge of the window.	9 mm
Vertical centerline of signal arm not less than 228.6 mm away from side of bus	373 mm
Stop signal arm(s) installed on left side of bus (Yes, No, or Not Applicable)	Yes

Test Results		PASS/FAIL or N/A
S5.4	Stop Signal Arm Installation	<b>PASS</b>

Recorded By: *Eiv Leardman*

Approved By: *Michael Janoy*

Date: February 15, 2011

**FMVSS 131SB – DATA SHEET 5**  
**STOP SIGNAL ARM OPERATION (S5.5)**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
 Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
 Test Date: **02/15/11**


Stop Signal Arm(s) shall be automatically extended, at a minimum, whenever the red signal lamps on the bus required by FMVSS 108 are activated; except that a manual override device may be installed that prevents automatic extension.

Requirements	Stop Signal Arm
	Forward
Signal Arm(s) automatically extended when red lights are activated and override device is not activated. (Yes, No, or Not Applicable)	N/A
If a MANUAL OVERRIDE DEVICE is installed, enter applicable data below:	
Mechanism for activating the override device is within reach of the school bus driver (Yes/No)	N/A
While the override device is activated; there is a continuous or intermittent signal audible to the driver unless equipped with optional cut-off timing device (Measure duration $\geq$ 10 min.) (Yes/No)	N/A
If audible signal is equipped with optional cut-off timing device, it sounds for at least 60 seconds while the manual override is activated. (Measure 3 times, duration $\geq$ 60 sec.)	N/A
If audible signal is equipped with optional cut-off timing device, it automatically recycles every time the service entry door is opened while the engine is running and the manual override is engaged. (Recycle 3 times, Yes/No each cycle)	N/A

Describe location and mode of operation of the manual override control, if installed:

Test Results		PASS/FAIL or N/A
S5.5	Stop Signal Arm Operation	N/A

Recorded By: 

Approved By: 

Date: February 15, 2011

**SECTION 4**  
**INSTRUMENTATION AND EQUIPMENT LIST**

Test Vehicle: **2011 Girardin Micro Bird School Bus**  
Test Lab: **MGA Research Corporation**

NHTSA No.: **CB0903**  
Test Date: **02/15/11**

Identify the instruments used during this test and record their make, model, serial number, range, accuracy, and calibration date.

	Digital Caliper	Inclinometer	Tape Measure
Make	Mitutoyo	Digital Protractor	Stanley
Model	CD 6" CS	Pro 360	Powerlock 3M
Serial No.	07416506	002	573
Range	0 to 150 mm	0 to 360 degrees	0 to 8 m
Accuracy	0.01 mm	0.1 degree	1 mm
Cal. Date	12/28/10	Daily	12/06/10
Cal. Due	06/28/11	N/A	06/06/11



**SECTION 5  
PHOTOGRAPHS**

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Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



3/4 Frontal View from Left Side of Vehicle with Stop Signal Arm

Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



MFD BY: CORP. MICRO BIRD INC.  
DATE OF MANUFACTURE NOVEMBER 2010

BODY NUMBER 11-24020      WI

GVWR 5,216 KG (11,500 LB)

GAWR FRONT 1,837 KG (4,050 LB)

WITH LT225/75R16E      TIRES

16X6.0K      RIMS AT 450 KPA(65 PSI)      COLD SINGLE

GAWR REAR 3,545 KG (7,800 LB)

WITH LT225/75R16E      TIRES

16X6.0K      RIMS AT 450 KPA(65 PSI)      COLD DUAL

THIS VEHICLE HAS BEEN COMPLETED IN ACCORDANCE  
WITH THE PRIOR MANUFACTURERS' IVD, WHERE APPLICABLE  
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL  
MOTOR VEHICLE SAFETY STANDARDS, AND THEFT PROTEC-  
TION STANDARD, IF APPLICABLE IN EFFECT IN 11/10 .

VIN: 1FDEE3FLXBDA10617

TYPE CLASSIFICATION: SCHOOL BUS





Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
 Test Lab: MGA Research Corporation                      Test Date: 02/15/11


INCOMPLETE VEHICLE MFD. BY FORD MOTOR COMPANY

DATE: 09/10 FRONT GAWR: 4050LB 1837KG WITH LT225/75R16E 115/112R 16x6.0K AT 450 kPa/ 65 PSI COLD VIN: 1FDEE3FLXBDA10617	TIRES RIMS DUAL
--	-----------------------

GAWR: 11500LB/ 5216KG REAR GAWR: 7800LB 3538KG WITH LT225/75R16E 115/112R 16x6.0K AT 415 kPa/ 60 PSI COLD	TIRES RIMS DUAL
---	-----------------------



Equipped with the Ford School Bus Prep Pkg

EXT PNT: BY	RC: 86 DSO: 2233		
WB	INT TR	TP/PS	R
138	CE	7	52
MADE IN U.S.A.			

SPR	BE414	
RRVV	R05	
ULN	▽ 5U5A-3520472-AA	

Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



Front Close Up View of Stop Signal Arm



Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



Back Close Up View of Stop Signal Arm

Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



Close Up View of System Controls



Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



Switch Console Relative to the Driver Seating Position



Test Vehicle: 2011 Girardin Micro Bird School Bus      NHTSA No.: CB0903  
Test Lab: MGA Research Corporation                      Test Date: 02/15/11



Flasher Unit