REPORT NUMBER: 120-MGA-2011-003

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 120 TIRE SELECTION AND RIMS FOR MOTOR VEHICLES WITH A GVWR OF MORE THAN 4,536 kg

BLUE BIRD COMPANY 2012 ALL AMERICAN D3 RE SCHOOL BUS NHTSA NO.: CC0901

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



FINAL REPORT DATE: NOVEMBER 9, 2011

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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Date: November 9, 2011

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Date: November 9, 2011

FINAL REPORT ACCEPTED BY:

Date of Acceptance

Technical Report Documentation Page

Technical Report Documentation Page			
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15. Supplementary Notes			

16. Abstract

A compliance test was conducted on the subject 2012 Blue Bird All American D3 RE School Bus, NHTSA No.: CC0901, in accordance with FMVSS 120, "Tire selection and rims for motor vehicles with a GVWR of more than 4,536 kilograms," and TP-120-03. The vehicle was weighed in the unloaded and fully loaded conditions and its tires, rims, and related information were checked.

Test failures: None

17. Key Words 18. Distribution Statement		nent	
Compliance Testing		Copies of this report are available from: NHTSA Technical Information Services	
Safety Engineering		(NPO-411)	
FMVSS 120		1200 New Jersey Ave., S.E.	
		Washington, DC 20590	
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Form DOT F1700.7 (8-72)

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SECTION 1 PURPOSE OF COMPLIANCE TEST

The purpose of this test report is to document the results of tests performed on a MY 2012 Blue Bird All American D3 RE School Bus, NHTSA No.: CC0901, in accordance with the requirements stated in Federal Motor Vehicle Safety Standard (FMVSS) No. 120, "Tire selection and rims for motor vehicles with a GVWR of more than 4,536 kilograms."

This standard establishes requirements to ensure that applicable vehicles are equipped with tires of adequate size and load rating and rims of appropriate size and type designation.

TEST PROCEDURE AND DISCUSSION OF RESULTS

Testing of the 2012 Blue Bird All American D3 RE School Bus, NHTSA No.: CC0901, was conducted at MGA Research Corporation in accordance with NHTSA TP-120-03, dated April 10, 2000 and MGA-TP-120-03 dated November 20, 2002. The vehicle mounted tires and rims were surveyed to ensure that the rims were suitable for the tires and that the tires inflated to the maximum inflation pressure stated on the tire sidewall were appropriate for the vehicle's certified Gross Axle Weight Ratings (GAWR). The vehicle certification and tire information labeling was surveyed to ensure that the vehicle manufacturer's recommended rims were suitable for the recommended tires, and that the recommended tires inflated to the recommended inflation pressures stated on the labeling were appropriate for the vehicle's certified GAWRs. The vehicle was ballasted and weighed in three different loading conditions to determine if axle or tire overloading could occur. The three loading conditions were:

- Condition 1 Unloaded Vehicle Weight (UVW).
- Condition 2 Vehicle in Condition 1 state plus the addition of ballast to simulate 48 passengers (1 adult driver and 47 students).
- Condition 3 Vehicle in Condition 2 state plus the addition of ballast to simulate cargo loading.

 Target vehicle load is the vehicle loaded to the certified gross vehicle weight rating (GVWR).

The vehicle mounted tires inflated to the inflation pressure labeled on the tire sidewall and the vehicle labeled tires inflated to the recommended cold inflation pressures have load ratings appropriate to carry the maximum loads as required by FMVSS No. 120. The vehicle rims are suitable for the vehicle tires and contain the required markings.

SECTION 2 TEST PROCEDURE AND DISCUSSION OF RESULTS

Model Year / Mfr. / Make / Model	2012 Blue Bird All American D3 RE	
Incomplete Vehicle Make / Model	N/A	
NHTSA No.	CC0901	
GVWR	14,973 kg	
Build Date for Bus	12/2010	
VIN	1BABLBPA8CF283351	
Designated Seating Capacity	(1 Driver, 47 Passengers)	
Vehicle Type	School Bus	
Tire Pressure from certification label (at capacity)	Front: 723 kPa	Rear: 723 kPa
Odometer Reading	1,145 miles	
Dealer Installed Optional Accessories	None Noted	

SUMMARY

Requirements	PASS / FAIL
TIRE AND RIM SELECTION (S5.1)	PASS
Installed tires and rims are suitable for vehicle	1 400
Rim Marking (S5.2)	PASS
Rims contain all required markings of proper dimensions	PASS
LABEL INFORMATION (S5.3)	
Vehicle has proper certification/tire information label. Label tires at	PASS
recommended inflation pressure and rims are suitable for vehicle.	
Weight Distribution (49 CFR 567 Certification)	PASS
Vehicle loaded with occupants and cargo does not exceed GVWR	PASS
Results	PASS
Test data indicates compliance with FMVSS 120	PASS

Remarks:

The VIN indicates the school bus is a model year 2012 vehicle, but the additional information label on the vehicle (see page 18 photograph) indicates the vehicle is a model year 2011.

SECTION 3 COMPLIANCE TEST DATA

DATA SHEET 1

GENERAL TIRE AND RIM DATA

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

GENERAL DATA

Tire Type: (Passenger car or other)	Truck/Bus
Are tire and rim sizes the same for all axles, including the spare?	Yes
Does the tire size fitted to the axles appear on the Certification or Tire label? (If NO, describe)	Yes
Number of axles	2
Dual tires on rear axle(s)	Yes

TIRE DATA FROM SIDEWALL

Right Front		
Manufacturer	Goodyear	
Brand	G661 HAS	
Tire Size	11R22.5	
Maximum Tire Load Rating (kg)	Single: 2,800 kg Dual: 2,650 kg	
De-rated Tire Load Rating (kg)	N/A	
Maximum Inflation Pressure (KPa)	720	
Tire has DOT symbol (Yes/No)	Yes	
DOT serial number	MC3T E5BW	

MOUNTED TIRE VS. AXLE RATING COMPARISON (AT SIDEWALL MAXIMUM INFLATION PRESSURE)

A. GAWR (kg) from certification label

B. (No. of tires) x (tire load rating (kg) from above table)

C. Is "B" equal to or greater than "A"? (Yes/No)

Front Axle

Rear Axle

10,600

10,600

Yes (marginal)*

Yes

^{*}Tire load rating from the tire sidewall is 3 kg less than the GAWR rating listed on the vehicle certification label using metric units. Using the English units the sum of the tire load ratings on the front axle (12,350 lb) equals the 12,350 lb front GAWR.

DATA SHEET 1 GENERAL TIRE AND RIM DATA

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

RIM MARKINGS

	Right Front
A. Source of published dimensions (letter designation)	Т
B. Rim Size	22.5 x 8.25
C. Does rim contain DOT symbol? (Yes/No)	Yes
D. Manufacturer's name, symbol or trademark (copy format)	HAYES LEMMERZ
E. Date of manufacture or symbol	10 21 10
Do items A-C appear on weather side of rim? (Yes/No)	Yes
Letter height (not less than 3 mm)	Yes – 4.5 mm
Lettering (impressed or embossed)	Impressed
Are all rim markings legible? (Yes/No)	Yes
Do all markings comply with requirements? (Yes/No)	Yes
Rims are suitable for tires on vehicles? (Yes/No)	Yes

RIM MEASUREMENTS

	Right Front
Rim width	210 mm
Rim diameter	572 mm
Rim measurements same as rim markings? (Yes/No)	Yes

Requirements	PASS / FAIL
TIRE AND RIM SELECTION (S5.1) Installed tires and rims are suitable for vehicle	PASS
Rim Marking (S5.2) Rims contain all required markings of proper dimensions	PASS

Remarks: None

Tested By:

Approved By:

Date: April 5, 2011

DATA SHEET 2

CERTIFICATION AND TIRE LABEL INFORMATION

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

LABEL INFORMATION

Label Design (Combined Certification and Tire Label)	Combined
Label Design (Separate Tire Information Label)	N/A
Label in English? (Yes/No)	Yes
Block capital letter and numbers are not less than 2.4 mm in height (yes/no)	Yes – 3.1 mm
Label is permanently affixed; describe method of affixing (rivets, glue, etc.)	Yes / Glue
Does label text color contrast with background? (yes/no)	Yes
Location of Label(s) on the vehicle	Inside Wall Above Passenger Entrance

TIRE AND RIM DATA FROM LABEL (FOR EACH GAWR/GVWR)

GVWR: 14,973 kg	Front Axle	Rear Axle
Tire Size	11R22.5G	11R22.5G
Rim Size (in)	22.5x8.25	22.5x8.25
Recommended inflation pressure (KPa)	723	723
Are labeled rims suitable for labeled tires (Yes/No)1	Yes	Yes
Referenced load rating at label recommended inflation pressure (kg) ¹	2,800	2,650

¹ Referenced source for tire/rim match and load rating data: 2011 Tire and Rim Association Yearbook

CERTIFICATION/TIRE LABEL MAXIMUM CAPACITY COMPARISON

GVWR: 14,973 kg	Front axle	Rear Axle
A.GAWR (kg) FROM CERTIFICATION LABEL	(C) 5,603	(D) 9,528
B.(No. of tires) x (Tire load rating (kg))	5,600	10,600
Is "B" equal or greater than "A"? (Yes/No)	Yes (marginal)*	Yes
Is (C) plus (D) equal to or greater than GVWR? (Yes/No)	Ye	S

^{*}Tire load rating determined by "2011 Tire and Rim Association Yearbook," is 3 kg less than the GAWR rating listed on the vehicle certification label using metric units. Using English units the sum of the tire load ratings on the front axle (12,350 lb) equals the 12,350 lb front GAWR.

DATA SHEET 2 CERTIFICATION AND TIRE LABEL INFORMATION

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

Requirements	PASS / FAIL
LABEL INFORMATION (\$5.3) Vehicle has proper certification/tire information label. Label tires at recommended inflation pressure and rims are suitable for vehicle.	PASS

Tested By:

Approved By: 💄

Date: April 5, 2011

DATA SHEET 3

WEIGHT DISTRIBUTION

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

FLUID LEVELS

Fuel	FULL
Coolant	FULL
Other Fluids: Washer fluid, brake fluid, etc.	FULL

TIRE PRESSURES

Tire	Left Front	Right Front	Left Rear	Right Rear
Tire Pressure (KPa)	724	724	724	724

OCCUPANT AND CARGO LOADS

Total Occupant Load (kg) [# of designated seating position 54 kg per student]	s x 68 kg per adult or	2,606 (1 driver, 47 students)				
Manufacturer's Rated Cargo Loa [If not stated on vehicle or provid leave blank]	` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `					
		ccupant = Rated Cargo Load 1 kg (must be positive)				
Describe Placement of Cargo	of Cargo In Aisle and Wheelchair Area					

WEIGHT DISTRIBUTION

	Tire or	CONDIT	TION 1	CONDI	TION 2	CONDITION 3		
ITEM.	Vehicle	UV	W	Cond. 1 + 0	occupants	pants Cond. 2 + cargo		
ITEM	Rating*	(ko	1)	(kg	g) .	(kg)	
	(kg)	· · · · · · · · · · · · · · · · · · ·		Measured	Overload	Measured	Overload	
Left Front Tire	2,800	1,635	No	2,082	No	2,657	No	
Right Front Tire	2,800	1,567	No	2,052	No	2,791	No	
Front Axle	5,603	3,202	No	4,134	No	5,448	No	
Left Rear Tire	5,300	2,889	No	3,680	No	4,652	No	
Right Rear Tire	5,300	3,155	No	4,034	No	4,872	No	
Rear Axle	9,528	6,044	No	7,714	No	9,524	No	
Total Vehicle	14,973	9,246	No	11,848	No	14,972	No	

^{*} Vehicle and axle weight ratings (GVWR & GAWR) are located on the vehicle certification label plate. Vehicle tire load ratings are based upon the inflation pressure specified on the certification label plate for each respective axle, as determined from the appropriate tire manufacturer's specification table.

DATA SHEET 3

WEIGHT DISTRIBUTION

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

Requirements	PASS / FAIL
Weight Distribution (49 CFR 567 Certification) Vehicle loaded with occupants and cargo does not exceed GVWR	PASS

Remarks: None

Tested By:

Approved By: Approved By:

Date: April 5, 2011

SECTION 4 INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

	Digital Caliper	Vehicle Scale	Vehicle Scale	Tape Measure
Make	Mitutoyo	GSE	GSE	Stanley
Model	CD 6" CS	465	465	Powerlock 3M
Serial No.	07416506	004804&212091R	004804&212092R	573
Range	0 to 150 mm	0 to 20,000 lb	0 to 20,000 lb	0 to 8 m
Accuracy	0.01 mm	0.25% static	0.25% static	1 mm
Cal. Date	12/28/10	10/01/10	10/01/10	12/06/10
Cal. Due Date	06/28/11	09/29/11	09/29/11	06/06/11

INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

SCALE CALIBRATION SHEET

TYPE	DIGITAL	FLOOR	SERIAL#		00	04804	ID#	VIII.	NONE CLA	ASS	IIIL
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TEST POINT	EXPECTED VALUE	MEASURED VALUE	ERROR	ACCEP	REJECT	MEASURED VALUE	ERROR	ACCEP!	LOW LIMIT	HIGH L	LIMIT
	VALUE	VALUE		S	CALI			4 4			
DISTRIBUTION	1000	1000	0	1	T	1000	0	/	995		1005
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			3						APP	ROVI	ED
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Next scheduled Full (Calibration is du	· 4/10	11		Ne	ext Preventive	Maintenance v		NIA	ate	

The calibration interval for this instrument is 12 months. The next scheduled full calibration is due September 30, 2011.

INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus NHTSA No.: CC0901
Test Lab: MGA Research Corporation Test Date: 04/05/11

SCALE CALIBRATION SHEET

MINDOEL 465 MIN. DIV. 5 ILOCATION BUS AND TRUCK BAY 1 TEST AND UNCERTAINTY PROCEDURE JUSTIFICATION NIST TRACEABLE TEST STANDARDS USED THIS CALIBRATION ALDER REPTA TO TEST STANDARD REMOLEUR PROCEDURE AND REPTATOR 500# NUMBER(S) □ Cy □ Cy □ □ Cy □ Cy □ Cy □ Cy □ Cy	TYPE	DIGITAL	FLOOR	SERIAL#		00	4804	ID#		NONE (CLASS	IIIL
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Next scheduled Full Calibration is due Date Next Preventive Maintenance visit is due Date	Next scheduled Full C	alibration is du	£ 9120	Ц		Ne	xt Preventive	Maintenance v	isit is due	NVA	D	

The calibration interval for this instrument is 12 months. The next scheduled full calibration is due September 30, 2011.

PHOTOGRAPHS

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CC0901 04/05/11



Three-Quarter Frontal View of Left Side of Vehicle





Three-Quarter Rear View of Left Side of Vehicle

Test Vehicle: 2012 Blue Bird All American D3 RE School Bus Test Lab: MGA Research Corporation

CC0901

NHTSA No.: Test Date:

TYPE CLASSIFICATION SCHOOL BUS RIMS. AT 723 KPA (105 PSI) COLD SINGLE 22.5X8.25 RIMS. AT 723 KPA (105 PSI) COLD DUAL 11R22.5G GAWR: REAR 9528 KG (21000 LB) WITH 11R22.5G **BLUE BIRD BODY COMPANY** THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE SUITABLE TIRE - RIM CHOICE GVWR: 14973 KG (33000 LB) GAWR: FRONT 5603 KG (12350 LB) WITH MANUFACTURED BY DATE OF MFR. 12/10 1BABLBPA8CF283351 22.5X8.25

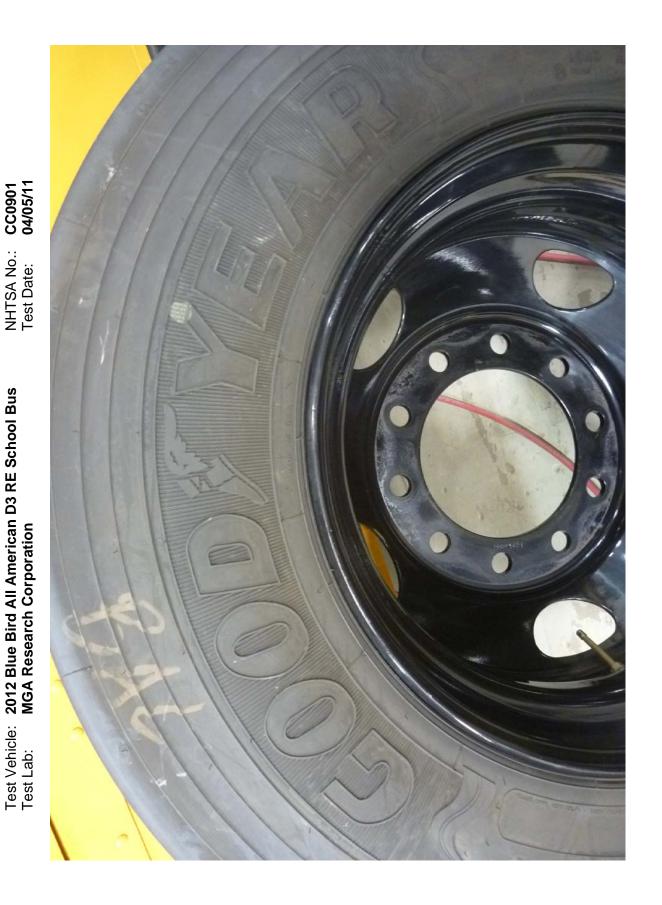
Vehicle Certification Label

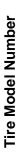
Test Vehicle: **2012 Blue Bird All American D3 RE School Bus**Test Lab: MGA Research Corporation

CC0901



Manufacturer Information Label







Test Vehicle: 2012 Blue Bird All American D3 RE School Bus Test Lab: MGA Research Corporation



Test Vehicle: 2012 Blue Bird All American D3 RE School Bus Test Lab: MGA Research Corporation



Tire Size Designation and Tire Load Ratings

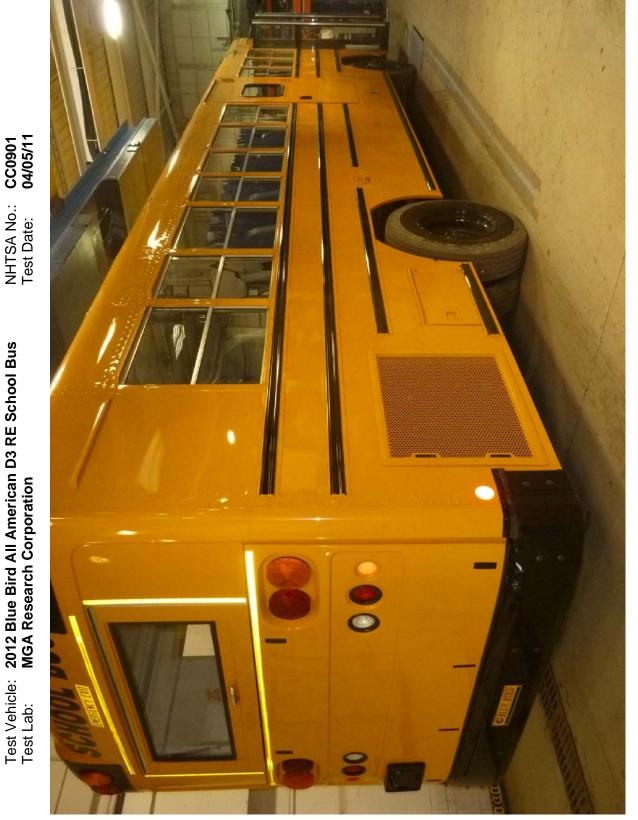


Test Vehicle: 2012 Blue Bird All American D3 RE School Bus Test Lab: MGA Research Corporation

DOT Symbol, Rim Manufacturer, and Rim Size

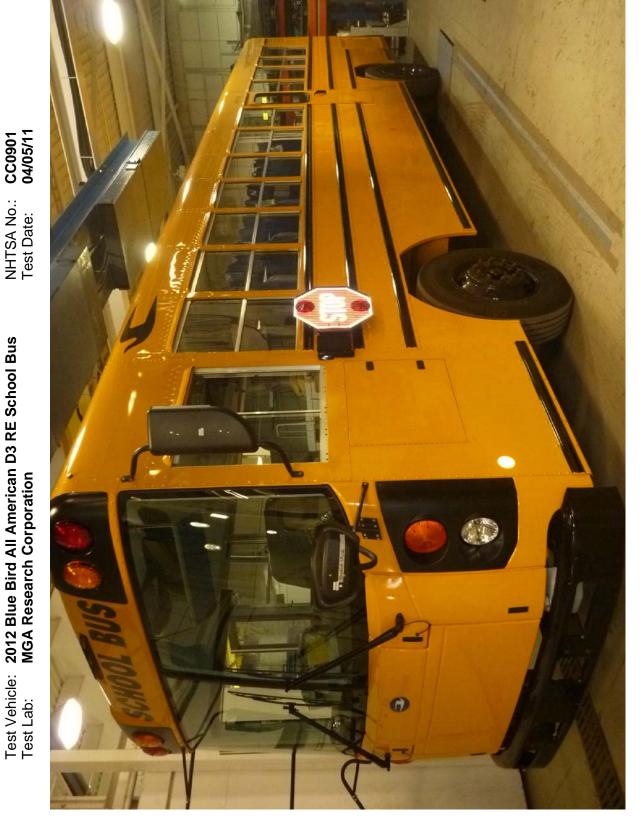


Test Vehicle: 2012 Blue Bird All American D3 RE School Bus Test Lab: MGA Research Corporation



Test Vehicle: 2012 Blue Bird All American D3 RE School Bus Test Lab: MGA Research Corporation

Vehicle on Scales Doing Measurement of Front Axle Loads



2012 Blue Bird All American D3 RE School Bus MGA Research Corporation Test Vehicle: Test Lab:

Vehicle on Scales Doing Measurement of Rear Axle Loads