

HS # 63741

REPORT NUMBER: 301S-MGA-05-004

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

**Blue Bird Corporation
2005 Vision School Bus
NHTSA No. C50901**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53106**



Final Report Date: July 25, 2005

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW, ROOM 6116 (NVS-224)
WASHINGTON, D.C. 20590**

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Prepared by:  Date: July 25, 2005
James Hansen, Program Engineer

Reviewed by: David Winkelbauer Date: July 25, 2005
David Winkelbauer, Program Manager

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16. Abstract A compliance test was conducted on the subject 2005 Blue Bird Corporation Vision School Bus, NHTSA No. C50901 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 MY2005 Blue Bird Corp Vision School Bus, NHTSA No. C50901, 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 MY2005 Blue Bird Corp Vision School Bus, NHTSA No. C50901 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 MY2005 Blue Bird Corp Vision School Bus, NHTSA No. C50901.

**DATA SHEET 1
SCHOOL BUS DATA**

Test Vehicle: **2005 Blue Bird Corp Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C60901**
 Test Date: **7/7/05**

GENERAL VEHICLE IDENTIFICATION

School Bus Manufacturer:	Blue Bird Corporation	
School Bus Model:	2005 Vision	
Build Date:	09/04	
Incomplete Vehicle Manufactured By:	N/A	
Build Data for Bus Chassis:	N/A	
School Bus GVWR (kg):	13612	
School Bus GAWR Front (kg):	4537	
School Bus GAWR Rear (kg):	9528	
School Bus VIN:	1BAKGCKH05F227003	
No. of Designated Seating Positions (DSP) Including Driver:	39	
School Bus NHTSA No.:	C50901	
Bus Body Color:	Yellow	
Engine Displacement	7.2L	
No. of Cylinders:	6	
Fuel Pump Actuation:	Electrical Pump "ON" with ignition	
School Bus Width (mm):	2440	
School Bus Length (mm):	11557	
Bus Unloaded Vehicle Weight (UVW) (kg):	8606	
Bus Occupant Load:	2052 kg - Passenger 68 kg - Driver 2120 kg - Total	
Target Bus Test Weight (SBTW) (kg):	10726	
Actual (SBTW) (kg):	10720	
School Bus Tire Manufacturer:	Michelln	
	Front	Rear
Rec. Cold Tire Inflation Pressure (kpa):	723	723
Tire Size:	11R22.5	11R22.5
Load Range:	G	G

DATA SHEET 1 (CONTINUED)

SCHOOL BUS DATA

Test Vehicle: **2005 Blue Bird Corp Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C60901**
 Test Date: **7/7/05**

GENERAL VEHICLE IDENTIFICATION

SCHOOL BUS ATTITUDE

	Units	LF	RF	LR	RR
As Received:	mm	NR	NR	NR	NR
Pre-Test:	mm	1222	1206	1136	1122
Post-Test:	mm	1225	1200	1146	1132

NR = Not Recorded

Weight of Fuel:	0.84 kg/liter (7.03 lbs./gallon)
Fuel Tank Capacity (liters/kg):	379 liters/318 kg (100 gallons/703 lbs.)
Tank Test Volume (liters/kg):	357 liters/300 kg (94.3 gallons/663 lbs.)

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	1548	2876	8608	1484	3660	10720
Right	kg	1516	2888		1548	4028	
Ratio	%	35.6	64.4		28.3	71.7	
Totals	kg	3082	5544	8608	3032	7688	10720

COMMENTS: NONE

Recorded By: *Jordan Boyas*

Approved By: *[Signature]*

Date: 7/7/05

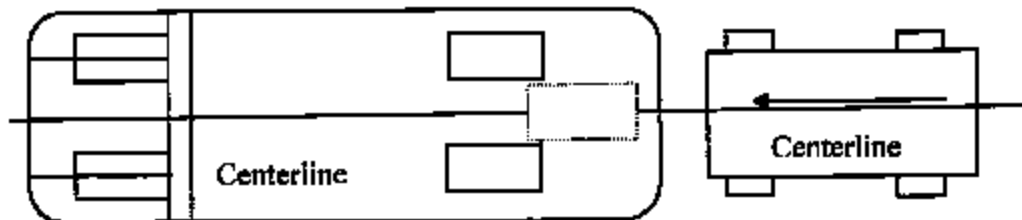
DATA SHEET 2
SCHOOL BUS IMPACT DATA

Test Vehicle: 2005 Blue Bird Corp Vision School Bus
Test Lab: MGA Research-Wisconsin Operations

NHTSA No.: C50901
Test Date: 7/7/05

Time of Impact:	8:44 am
Ambient Temperature (°C)	21.1
Barrier Velocity – Speed Trap 1 (kph):	47.8
Barrier Velocity – Speed Trap 2 (kph):	47.8
Barrier Penetration:	74 mm

INDICATE IMPACT POINT BELOW:



LEGEND: Red dotted line indicates location of fuel tank
The center of the barrier coincides with the centerline of the bus.

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	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:

Recorded By: *Jonathan Hayes*

Approved By: *[Signature]*

Date: 7/7/05

**SECTION 3
INSTRUMENTATION AND EQUIPMENT LIST**

Test Vehicle: **2005 Blue Bird Corp Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **7/7/05**

Equipment	Description	Serial No.	Cal. Date	Next Cal. Date
Counter/Timer	DCI	939095	10/28/04	10/28/05
Counter/Timer	DCI	939094	10/28/04	10/28/05
Vehicle Scales	GSE	212091 & 212092	06/10/05	12/10/05
Tape Measure	Stanley Powerlock 8M	162	05/19/05	11/19/05

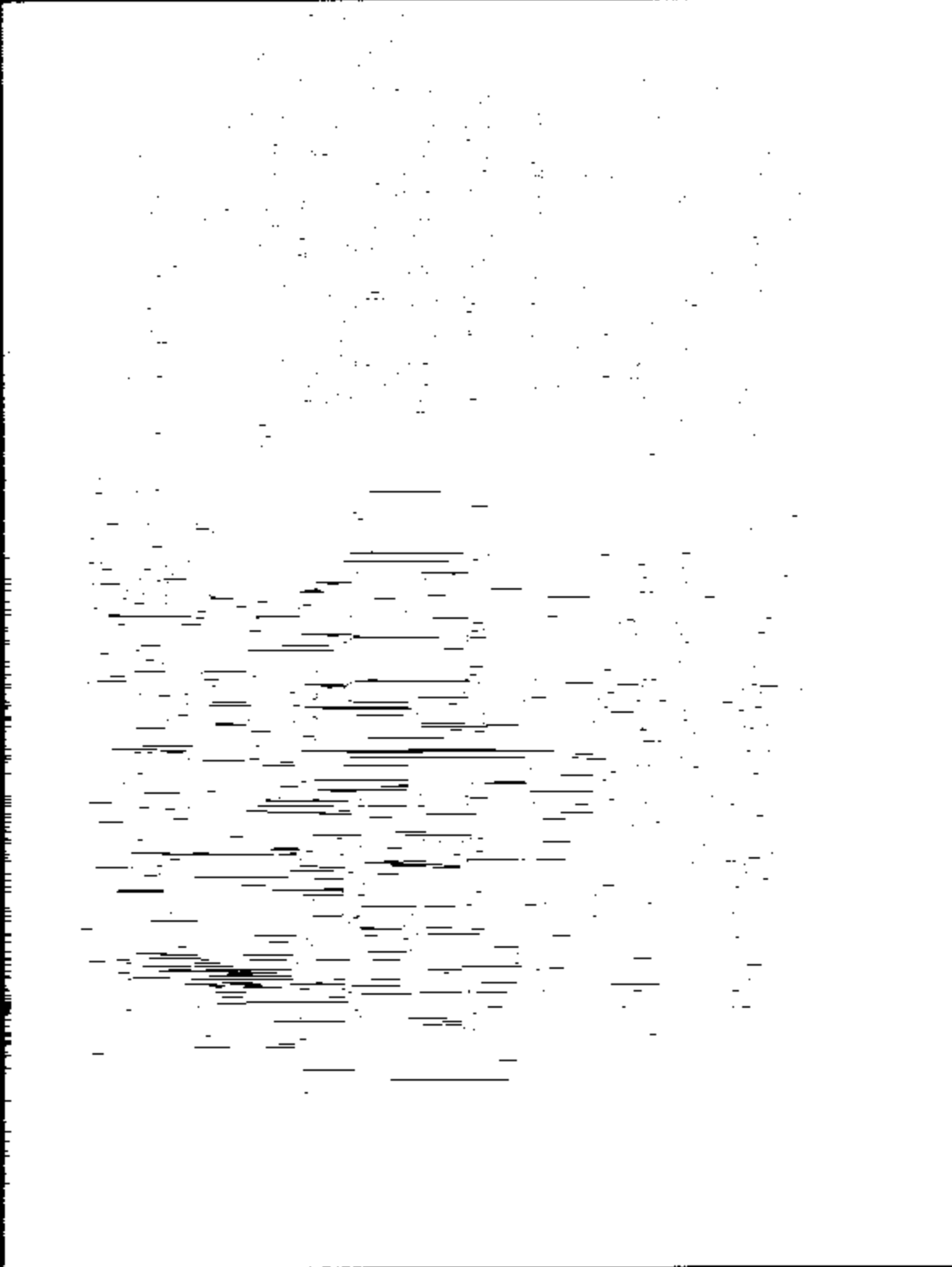
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Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901

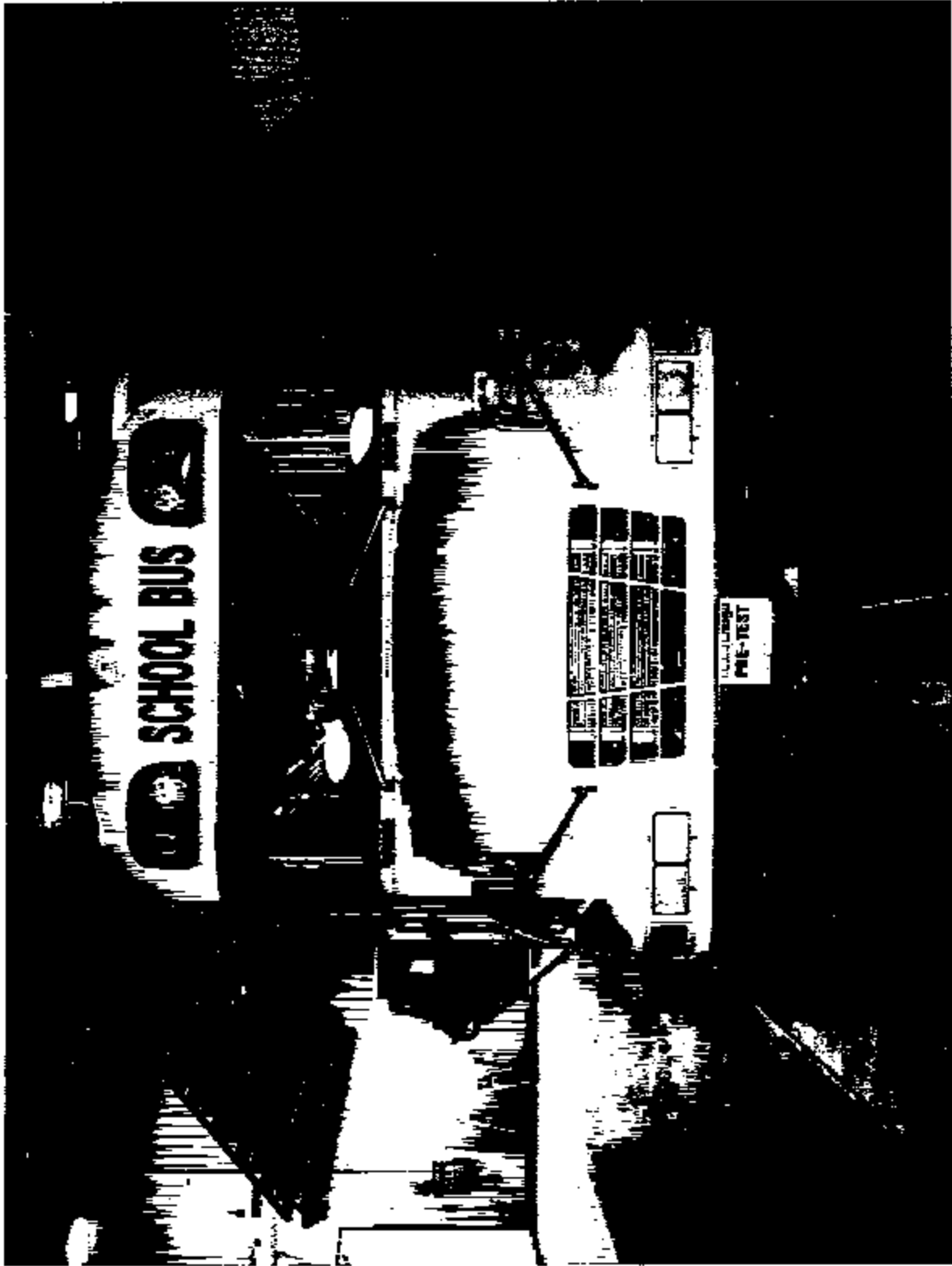


Vehicle Certification and Tire Information Label

Test Vehicle: 2005 Blue Bird Vision School Bus

Procedure: FMVSS 301

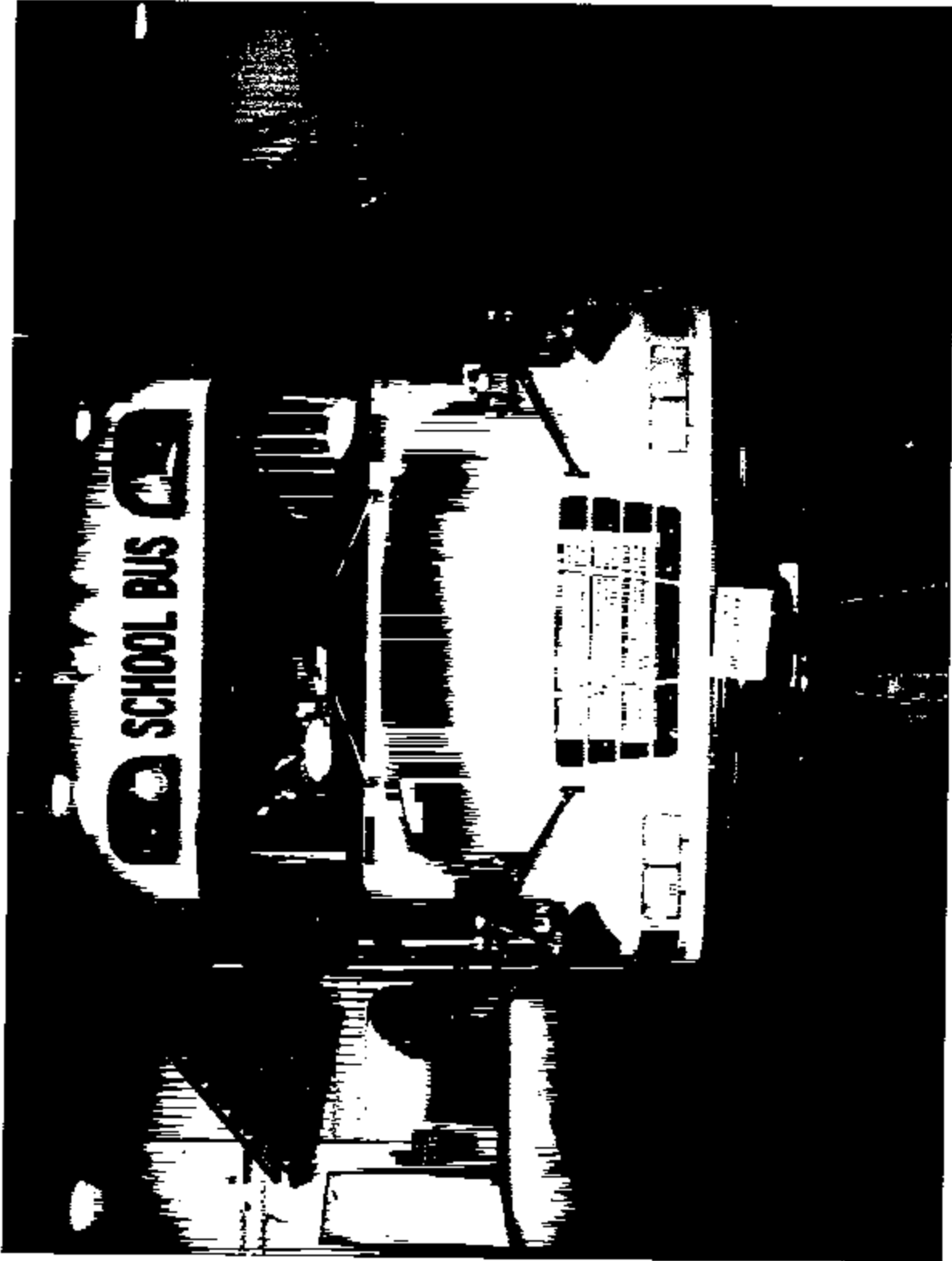
NHTSA No.: C50901



Pre-Test Front View of School Bus

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Post-Test Front View of School Bus

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50801



Pre-Test Rear View of School Bus

Test Vehicle:
Procedure:

2005 Blue Blind Vision School Bus
FMYSS 301

NHTSA No.: C50901



Post-Test Rear View of School Bus

Test Vehicle: 2005 Blue Blrd Vision School Bus
Procedure: FMVSS 301

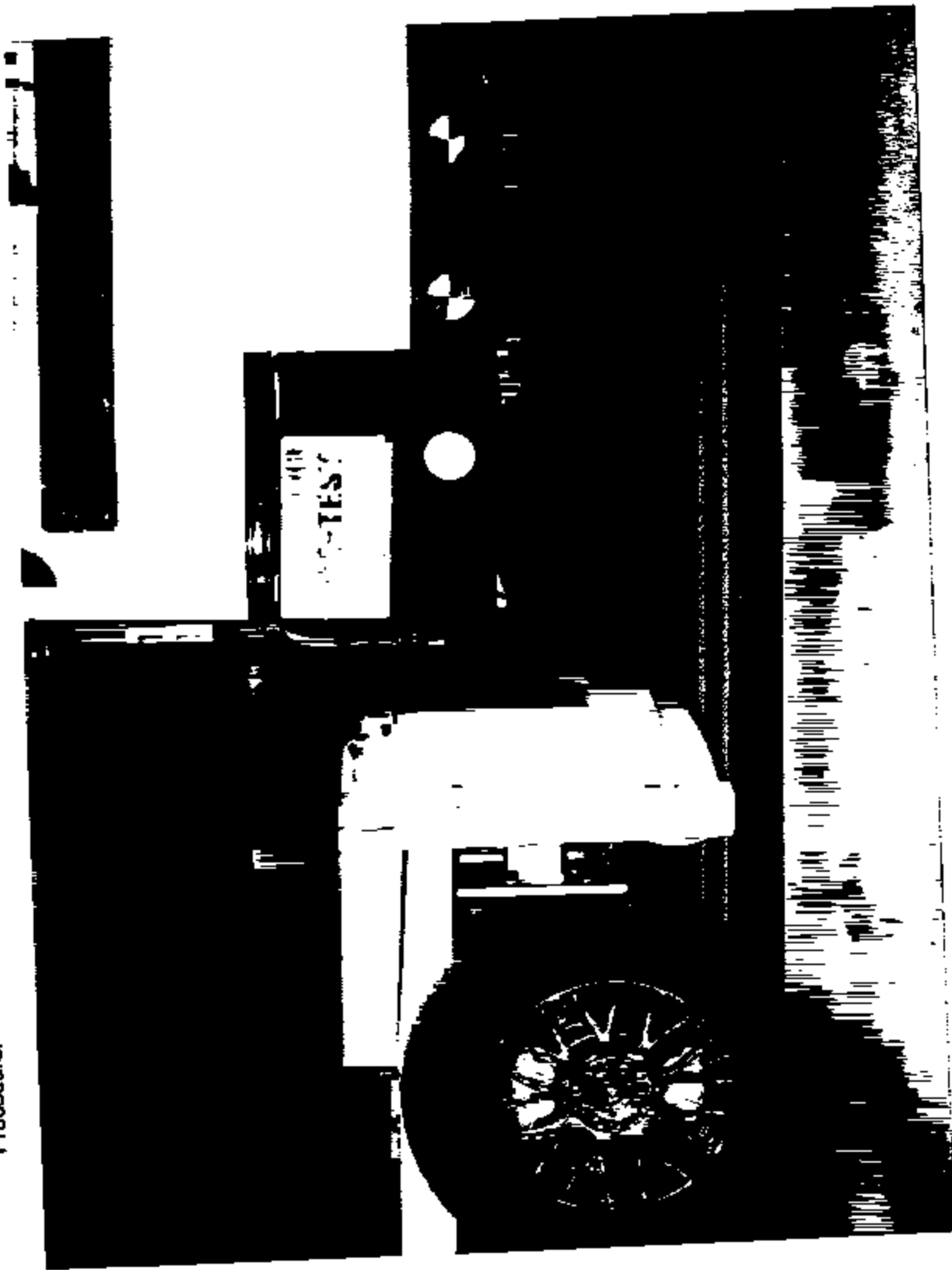
NHTSA No.: C50901



Pre-Test Left Rear Close up View of School Bus against Barrier

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Pre-Test Right Rear Close up View of School Bus against Barrier

Test Vehicle:

NHTSA No.: C50801

2005 Blue Bird Vision School Bus
FMVSS 301

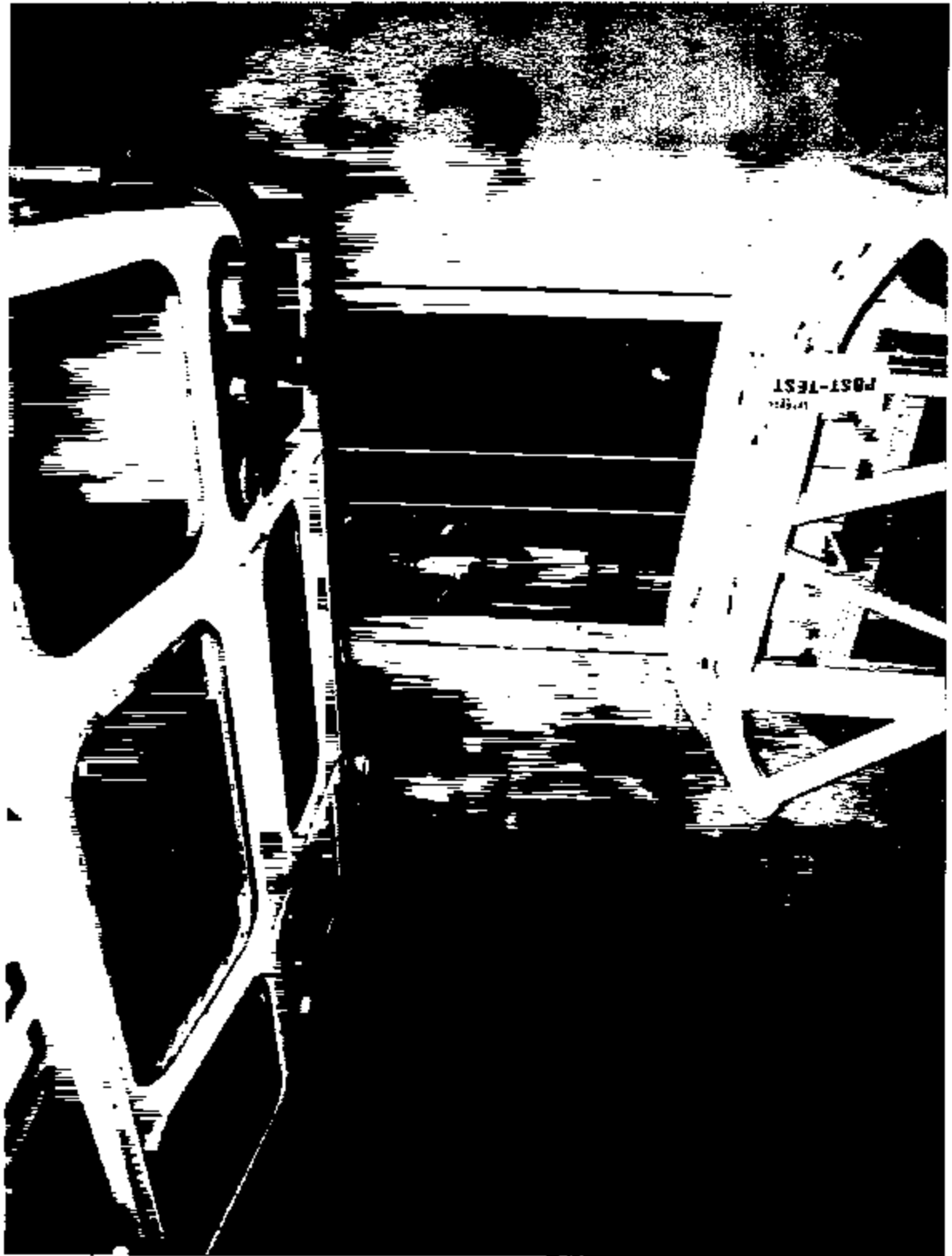
Test Vehicle:
Procedure:



Pre-Test Right Rear 3/4 View of School Bus

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Post-Test Overhead View of Barrier and the School Bus

Test Vehicle:
Procedure:

2005 Blue Bird Vision School Bus
FMVSS 301

NHTSA No.: C50901



mga research corporation

PRE-TEST

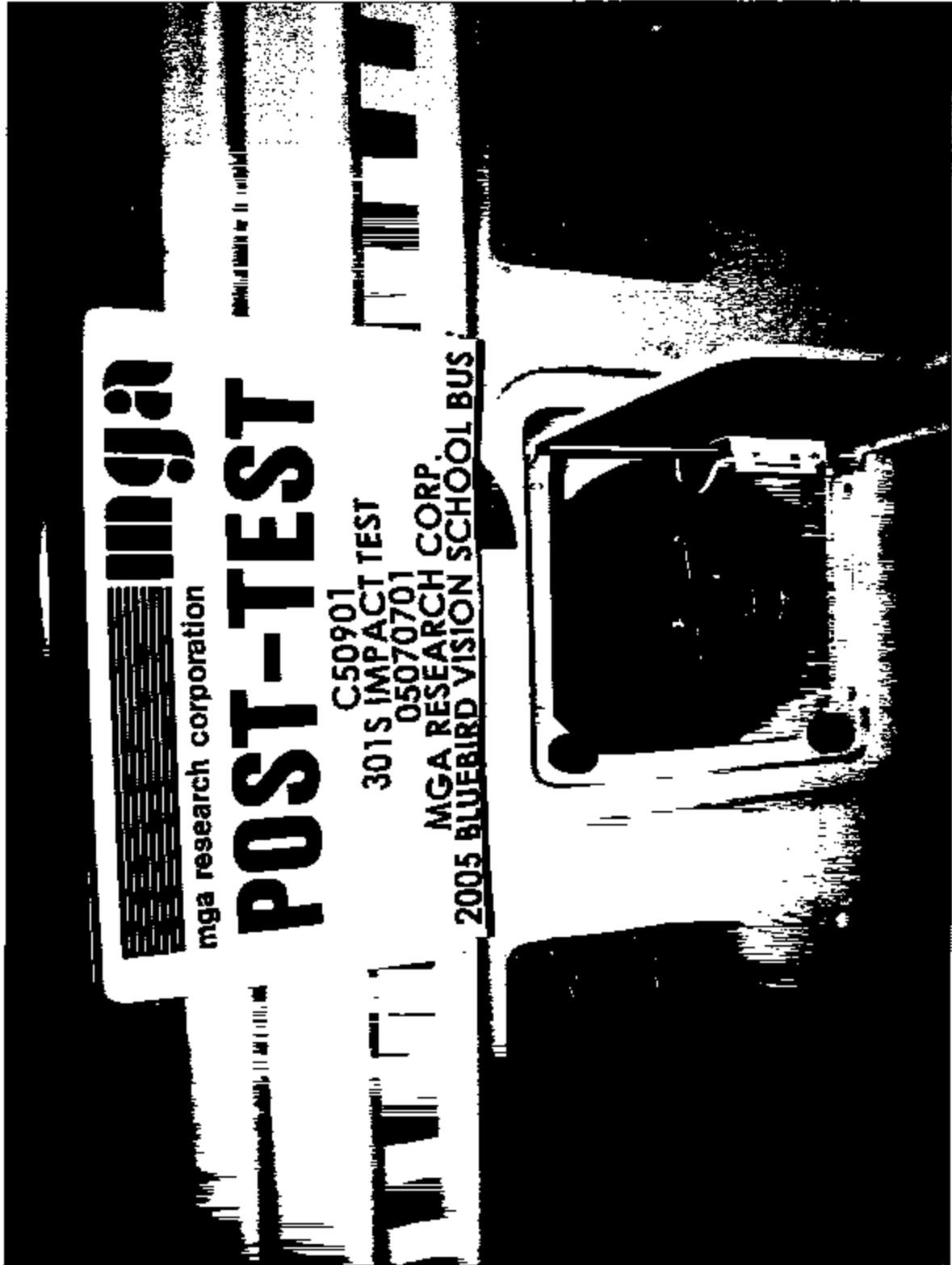
C50901
301S IMPACT TEST
05070701
MGA RESEARCH CORP.
2005 BLUEBIRD VISION SCHOOL BUS



Pre-Test Fuel Filler Cap View

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Post-Test Fuel Filler Cap View

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C660901



Pre-Test of Fuel Tank Cage (View #1)

Test Vehicle: 2006 Blue Blrd Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C60901



Post-Test of Fuel Tank Cage (View #1)

Test Vehicle: 2006 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Pre-Test of Fuel Tank Cage (View #2)

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Post-Test of Fuel Tank Cage (View #2)

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

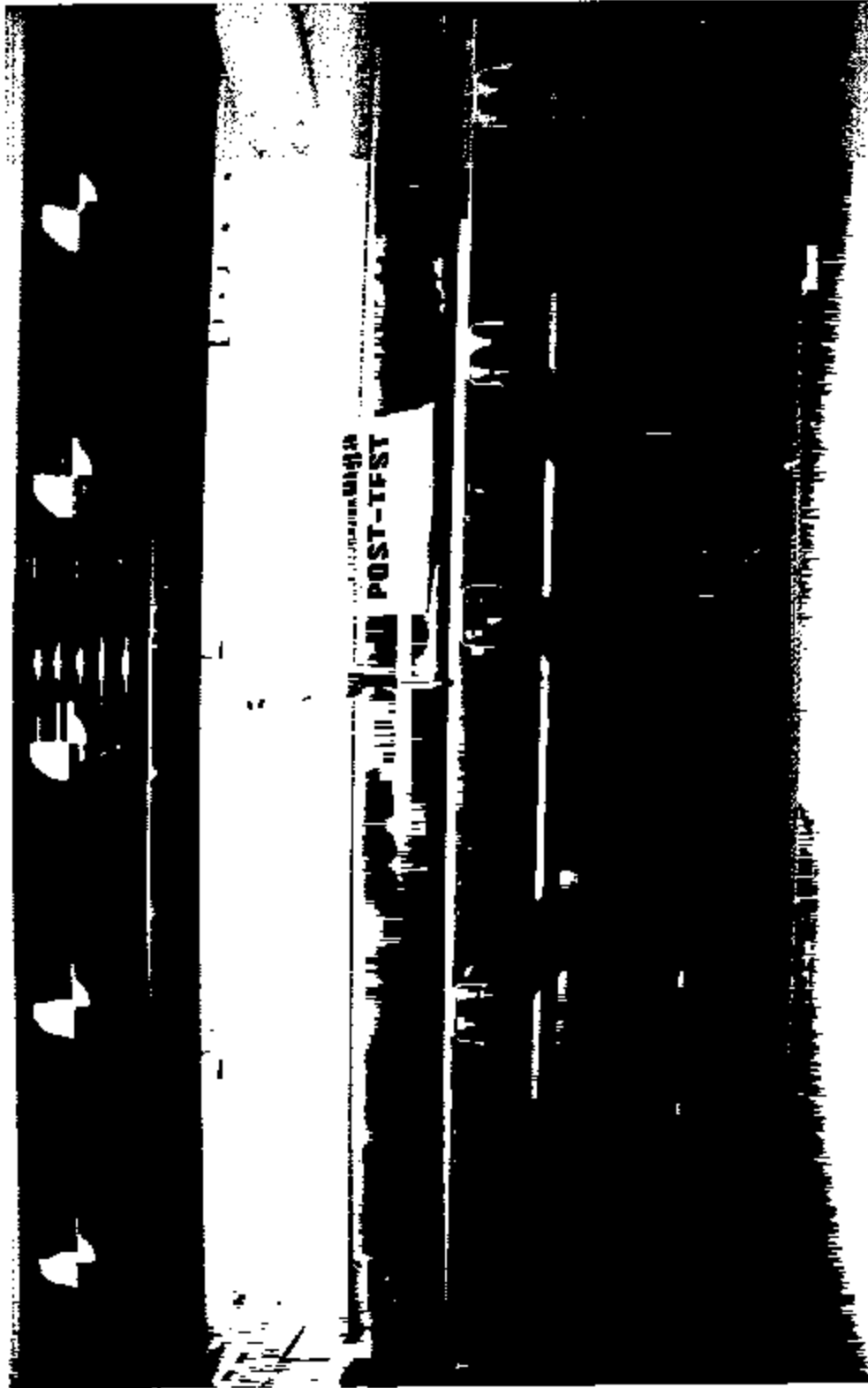
NHTSA No.: C50901



Pre-Test of Fuel Tank Cage (View #3)

Test Vehicle: 2006 Blue Bird Vision School Bus
Procedure: FMVSS 301

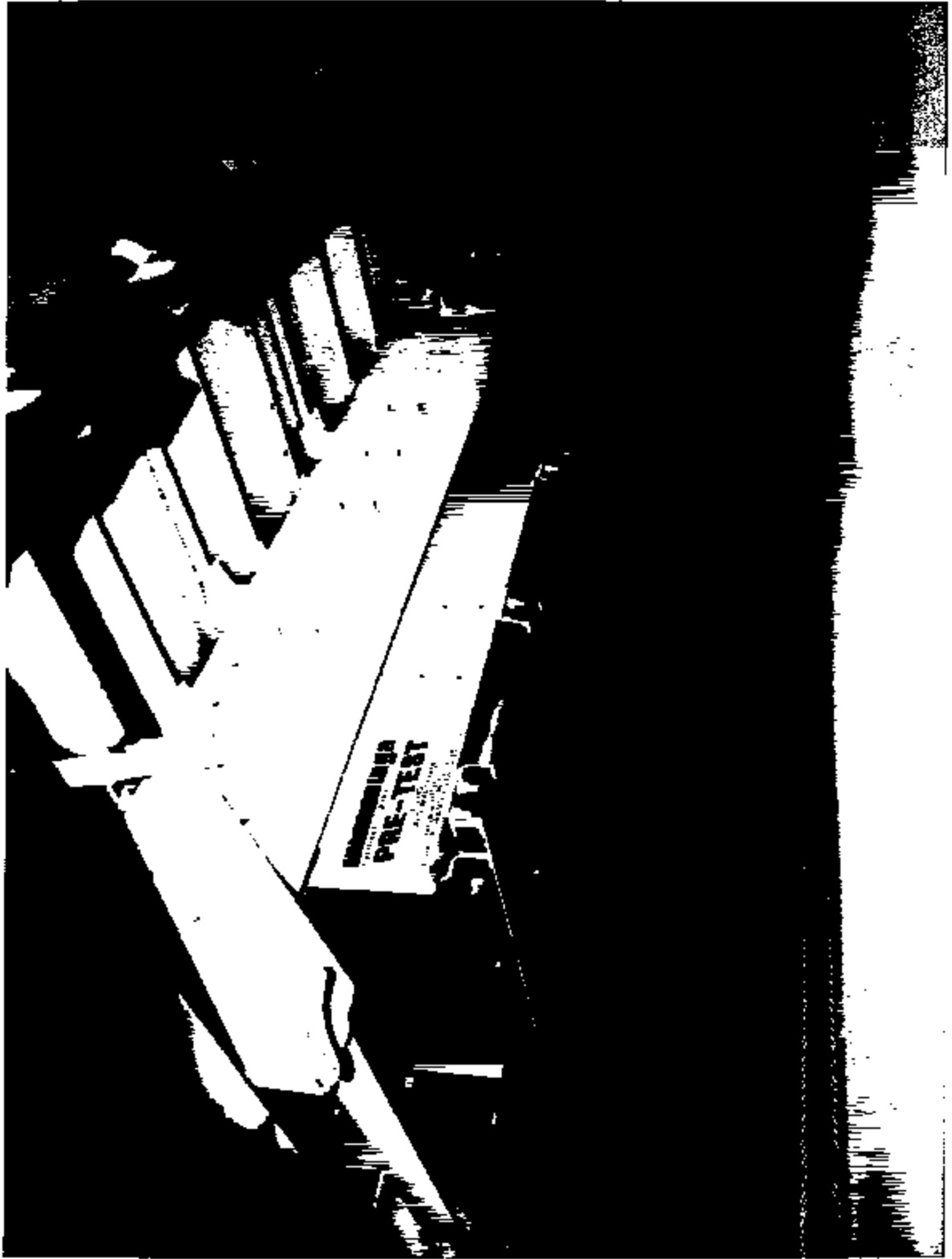
NHTSA No.: C450901



Post-Test of Fuel Tank Cage (View #3)

Test Vehicle: 2006 Blue Bird Vision School Bus
Procedure: FMVSS 301

NHTSA No.: C50901



Pre-Test of Fuel Tank Cage (View #4)

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 301

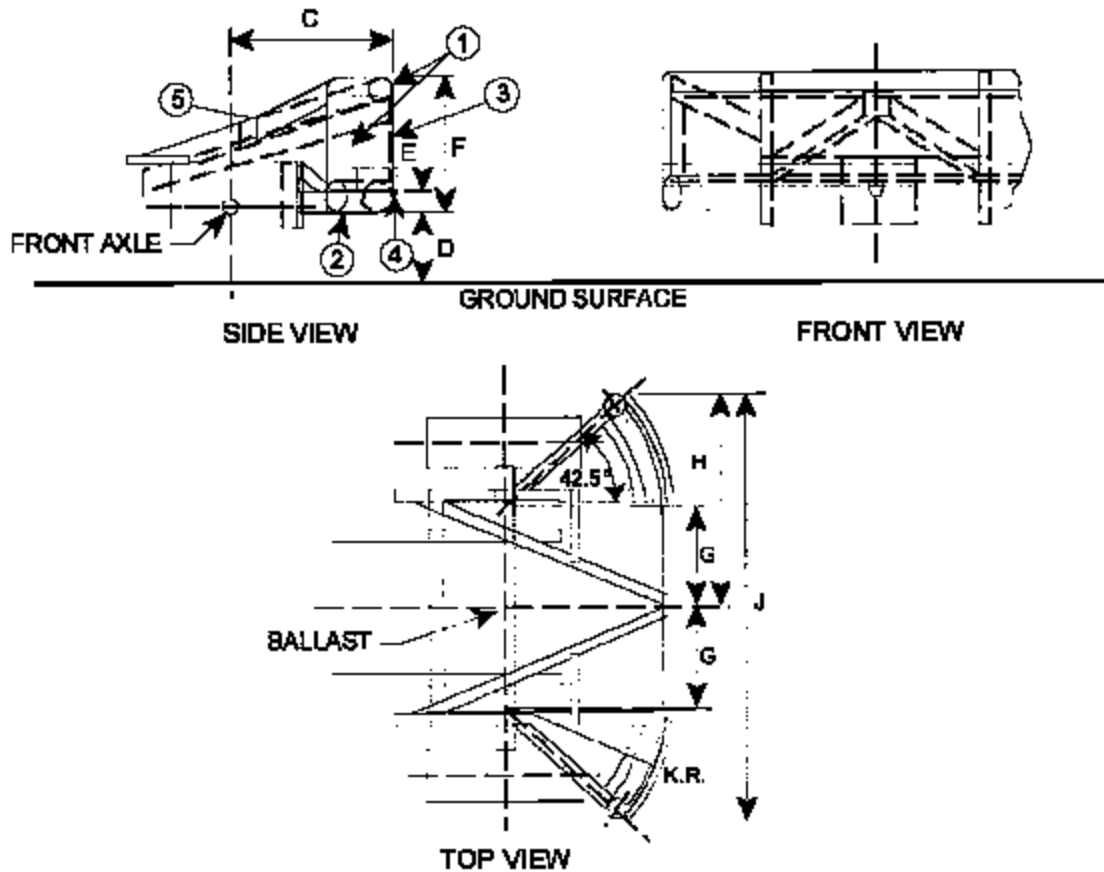
NHTSA No.: C50901



Post-Test of Fuel Tank Cage (View #4)

SECTION 6
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:

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

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

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