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REPORT NO. 105-83-TRC-05-001 - TRC20000113 - BLUE BIRD BODY CO.
NHTSA C50901 - 2005 BLUE BIRD VISION, HANDY BUS

FMVSS 105-83
HYDRAULIC BRAKE SYSTEM COMPLIANCE TEST
2005 BLUE BIRD VISION, 38-PASSENGER SCHOOL BUS
NHTSA C50901

TRANSPORTATION RESEARCH CENTER INC.
East Liberty, Ohio 43319



MAY 2005
FINAL REPORT

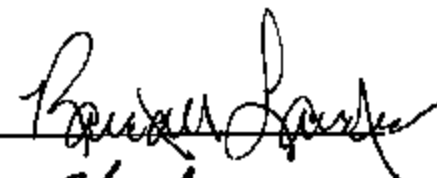
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Enforcement
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16. Abstract Compliance tests were conducted on the subject 2003 BLUE BIRD VISION, 38-PASSENGER SCHOOL BUS in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-105-83-02 for the determination of FMVSS 105 compliance. Test failures identified were as follows: S5.3 Brake system indicator lamp. S5.3.5 (a) Each indicator lamp shall display word, words or abbreviation, in....(A) & (D).			
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1.0 INTRODUCTION

Tests were conducted on a 2005 Blue Bird Vision, "Handy Bus," 38-Passenger School Bus manufactured by Blue Bird Body Company to determine compliance with FMVSS 105-83 "Hydraulic Brake Systems."

All tests were conducted in accordance with the U.S. DOT, NHTSA Laboratory Procedure TP 105-83-02 and/or the corresponding Transportation Research Center Inc. (TRC Inc.) test procedure, which was submitted to NHTSA for their approval. The Test Procedure was clearly described in the submitted document and has not been repeated in this report.

All stops were performed manually.

TRC Inc. personnel using the following TRC facilities conducted all tests:

7.5-Mile Test Track

Instrument Check
Burnish & Reburnish
Fade & Recovery

Skid Pad

Effectiveness
Water Recovery
Failed Stops
Inoperative Power Assists

Brake Slope

Parking Brake

Brake Soak

Water Recovery

Average PFC during the test period was 0.95 (Skid Pad) and 0.93 (Test Track) utilizing the ASTM E1337 w/E1336 tire method.

The test vehicle did not meet all the requirements of FMVSS 105-83.

2.0 FMVSS 105-83 VEHICLE INFORMATION SHEET Date: 10/14/04
 Vehicle: Make: Blue Bird Body Co. NHTSA No. C50901
 Model: Vision, "Handy Bus" GVWR: 30,000 lbs.
 Model Year: 2005 Manufacture Date: 09/04
 Body Style: 38-Passenger School Bus Wheelbase: 273 in.
 VIN: 1BAKGCKH05F227003
 Buses Chassis Mfr.: Blue Bird GAWR: Front: 10,000 lbs.
 Only Manufacture Date: 09/04 Rear: 21,000 lbs.
 Serial No.: 227003 No. of Seats: 38+Driver (Design - 72)

Engine Type: Diesel, Fuel Inj., Turbocharged, I-6 Cyl., Piston,
 Displacement: 7.2 Liters HP: 210
 Engine Idle Speed: 800 RPM
 Transmission Type: Automatic, 4-speed, RWD
 No. of Axles: Two
 GAWR: Front: 10,000 lbs. Rear: 21,000 lbs.
 Tires: Size: 11R22.5 Manufacturer: Michelin
 Type: XZE, regroovable steel belted radial, tubeless
 Recommended Pressure at GVWR: front 105 psi rear 105 psi

Brakes: Front: () Drum (X) Disc
 Rear: () Drum (X) Disc

Actuation: Describe Hydraulic Circuit Split: Axle by axle
 Power Unit: Hydraulic, Vacuum, etc. Hydraulic
 Brake Power Assist Unit: Yes X No
 Brake Power Unit w/Accumulator: Yes No X
 Power Assist or Power Unit w/Backup: Yes X No
 Variable Proportioning System: (Electronic) Yes X No
 Antiskid Device: Mfg. Wabco Yes X No

Parking Mechanism: (see definition)

Description: Not so equipped
 Master Cylinder: 2.05 in.
 Pedal Ratio: 3.24:1

2.0 FMVSS 105-83 VEHICLE INFORMATION SHEET, continued

Front Brakes:

Wheel

Brake

Components: Type: Drum ()

Disc (X)

MATERIAL CONSTRUCTION
 Cast Cast
 Iron Composite
 Steel Centrifuse
 Bi-Metal Pressed
 _____ _____

MATERIAL CONSTRUCTION
 Cast Integral
 Iron Cast
 Steel 2-piece
 Bi-Metal Vented
 _____ Unvented
 _____ Bonded Linings

Diameter: Inside: N/A
 Thickness: Not Applicable N/A
 Lining Code: Primary: * N/A
 Or Color: Secondary: * N/A
 Shoe Cage: Left: N/A Reset To: N/A
 Diameter: Right: N/A Reset To: N/A

Outside 15.378 in.
 Include Vent 1.541 in.
 Inboard: MA 704 HB (Meritor)
 Outboard: MA 704 HB (Meritor)
 Not Applicable N/A
 Not Applicable N/A

Dimensions:

Width: Primary: N/A
 Secondary: N/A
 Length: Primary: N/A
 Secondary: N/A
 Thickness: Primary: N/A
 Secondary: N/A
 Hydraulic Wheel
 Piston Diam: Cylinder N/A

Inboard 2.524 in.
 Outboard 2.524 in.
 Inboard 8.335 in.
 Outboard 8.334 in.
 Inboard 0.744 in.
 Outboard 0.745 in.
 Disc
 Calliper 2.754 in. (x4)

*May be Primary/Secondary or other: Not Applicable

Rear Brakes:

Wheel

Brake

Components: Type: Drum ()

Disc (X)

MATERIAL CONSTRUCTION
 Cast Cast
 Iron Composite
 Steel Centrifuse
 Bi-Metal Pressed
 _____ Bonded Linings

MATERIAL CONSTRUCTION
 Cast Integral
 Iron Cast
 Steel 2-piece
 Bi-Metal Vented
 _____ Unvented
 _____ Bonded Linings

2.0 FMVSS 105-83 VEHICLE INFORMATION SHEET, continued

Rear Brakes:

Wheel

Brake

Components: Type: Drum ()

Disc (X)

Diameter: Inside: N/A

Outside 15.373 in.

Thickness: N/A

Include Vent 1.571 in.

Lining Code Leading*: N/A

Inboard MA 704 EE (Meritor)

Or Color: Trailing*: N/A

Outboard MA 704 EE (Meritor)

Shoe Cage Left N/A Reset To N/A

Not Applicable

Diameter: Right N/A Reset To N/A

Not Applicable

Dimensions of Linings:

Width: Primary N/A

Inboard 2.525 in.

Secondary N/A

Outboard 2.525 in.

Length: Primary N/A

Inboard 8.336 in.

Secondary N/A

Outboard 8.334 in.

Thickness: Primary N/A

Inboard 0.742 in.

Secondary N/A

Outboard 0.742 in.

Hydraulic Wheel
Piston Diam: Cylinder N/A

Disc 2.754 in. (x4)
Caliper

*May be Primary/Secondary or other: Not Applicable

Other Component Information:

Friction-Type Parking Brake: () Hand-Operated
() Foot-Operated

Non-Service Brake Type: (X) Hand-Operated
Parking Brake: () Foot-Operated

Will adjusters be locked out
for this test series? () Yes () No (X) Not Appl.

Describe method used to lock out adjusters: Not Applicable

Note: If at any time the test series has begun, any brake system part requires replacement or the brake system requires adjustments other than permitted in burnish and reburnish procedures, discontinue testing and notify the COTR immediately.

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 1 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

GVWR: 30,000 lbs.

Test	Required Performance	Actual Performance*	P	F	
Max. Speed in 2 miles	None	<u>69.3</u> mph avg.		<u>Not Appl.</u>	
First Effectiveness:	30 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>38</u> ft. for one stop	<u>2</u> of six stops pass Best Stop: <u>142</u> <u>78.9</u> ft., <u>109</u> lbs. PF (max)	<u>X</u>	<u> </u>	
	60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>388</u> ft. for one stop	<u>1</u> of six stops pass Best Stop: <u>242.1</u> ft., <u>139</u> lbs. PF (max)	<u>X</u>	<u> </u>	
	Second Effectiveness:	30 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>70</u> ft. for one stop	<u>4</u> of six stops pass Best Stop: <u>64.0</u> ft., <u>132</u> lbs. PF (max)	<u>X</u>	<u> </u>
		60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>280</u> ft. for one stop	<u>5</u> of six stops pass Best Stop: <u>228.9</u> ft., <u>142</u> lbs. PF (max)	<u>X</u>	<u> </u>
		80 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>N/A</u> ft. for one stop	<u>N/A</u> of four stops pass Best Stop: <u>N/A</u> ft., <u>N/A</u> lbs. PF (max)	<u>Not Appl.</u>	<u> </u>

*Stopping Distance - Visual Data

Pedal Force - Visual Data

Special Note: For all the 30 mph and 60 mph stops in both First and Second Effectiveness, the distances were less than the maximum allowable. However, the driver momentarily exceeded the maximum allowable pedal force, depending on the stop, from a force of one pound to approximately 20 pounds.

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 2 of 9)

Veh.: 2005 BLUE BIRD VISION

NETSA No.: C50901

GVWR: 30,000 lbs.

<u>Test</u>	<u>Required Performance</u>	<u>Actual Performance*</u>	<u>P</u>	<u>F</u>																		
Parking Brake REGULAR	Shall hold vehicle stationary for 5 minutes in both uphill and downhill direction on a 20% grade, both at LLVW and GVWR, with no more than 125 lbs. hand lever or 150 lbs. foot pedal force.	Held stationary for 5 minutes? Yes																				
		<table border="0"> <tr> <td></td> <td style="text-align: right;">Force (lbs.)</td> <td></td> <td></td> </tr> <tr> <td>GVWR-Uphill</td> <td style="text-align: center;"><u>86</u></td> <td style="text-align: center;"><u>X</u></td> <td style="text-align: center;">___</td> </tr> <tr> <td>GVWR-Downhill</td> <td style="text-align: center;"><u>97</u></td> <td style="text-align: center;"><u>X</u></td> <td style="text-align: center;">___</td> </tr> <tr> <td>LLVW-Uphill</td> <td style="text-align: center;"><u>92</u></td> <td style="text-align: center;"><u>X</u></td> <td style="text-align: center;">___</td> </tr> <tr> <td>LLVW-Downhill</td> <td style="text-align: center;"><u>87</u></td> <td style="text-align: center;"><u>X</u></td> <td style="text-align: center;">___</td> </tr> </table>		Force (lbs.)			GVWR-Uphill	<u>86</u>	<u>X</u>	___	GVWR-Downhill	<u>97</u>	<u>X</u>	___	LLVW-Uphill	<u>92</u>	<u>X</u>	___	LLVW-Downhill	<u>87</u>	<u>X</u>	___
	Force (lbs.)																					
GVWR-Uphill	<u>86</u>	<u>X</u>	___																			
GVWR-Downhill	<u>97</u>	<u>X</u>	___																			
LLVW-Uphill	<u>92</u>	<u>X</u>	___																			
LLVW-Downhill	<u>87</u>	<u>X</u>	___																			
		() Foot Pedal																				
		(X) Hand Lever																				
Parking Brakes	(1) Shall meet REGULAR PROCEDURE requirements with transmission in "Park." (2) Shall meet REGULAR PROCEDURE requirements on 20% slope with transmission in "Neutral." (3) Parking mechanism shall not disengage or suffer damage in front and rear 2 1/2 mph moving barrier impacts.	GVWR-30%-Uphill	<u>Not Appl.</u>	___																		
		GVWR-30%-Downhill	" " "	___																		
		GVWR-20%-Uphill	" " "	___																		
		GVWR-20%-Downhill	" " "	___																		
		LLVW-20%-Uphill	" " "	___																		
		LLVW-20%-Downhill	" " "	___																		
		LLVW-30%-Uphill	" " "	___																		
		LLVW-30%-Downhill	" " "	___																		
	MEETS MOVING BARRIER SPEC	<u>Not Appl.</u>	___																			

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 3 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: CS0901

GVWR: 30,000 lbs.

<u>Test</u>	<u>Required Performance</u>	<u>Actual Performance*</u>	<u>P</u>	<u>F</u>
Third Effectiveness LLVW	60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>280</u> ft. for one of six stops	<u>6</u> of six stops pass Best Stop: <u>176.3</u> ft., <u>127</u> lbs. PF (max)	<u>X</u>	___
Partial Failure LLVW	60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>613</u> ft. for one of four stops with any sub-system failed.	<u>System #1</u> Inoperative: <u>4</u> of four stops pass Best Stop: <u>336.6</u> ft., <u>123</u> lbs. PF (max) <u>System #2</u> Inoperative: <u>4</u> of four stops pass Best Stop: <u>359.1</u> ft., <u>137</u> lbs. PF (max)	<u>X</u>	___
Partial Failure GVWR	60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>613</u> ft. for one of four stops with any sub-system failed.	<u>System #2</u> Inoperative: <u>4</u> of four stops pass Best Stop: <u>426.6</u> ft., <u>127</u> lbs. PF (max) <u>System #1</u> Inoperative: <u>4</u> of four stops pass Best Stop: <u>440.0</u> ft., <u>128</u> lbs. PF (max)	<u>X</u>	___
Partial Failure Antilock and/or Variable Proportioning Brake Systems GVWR	60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>613</u> ft. for one of four stops with any sub-system failed.	<u>ABS</u> Inoperative: <u>4</u> of four stops pass Best Stop: <u>233.8</u> ft., <u>130</u> lbs. PF (max) <u>Variable Prop.</u> Inoperative: ___ of four stops pass Best Stop: ___ ft., ___ lbs. PF (max)	<u>X</u>	___ <u>Not Appl.</u>

*Stopping Distance - Visual Data

Pedal Force - Visual Data

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 4 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: CS0901

GVWR: 30,000 lbs.

<u>Test</u>	<u>Required Performance</u>	<u>Actual Performance*</u>	<u>P</u>	<u>F</u>
Inoperative Power Unit (Primary - Hydraulic from Power Steering Pump)	60 mph: Pedal Force, 15-150 lbs. 613 ft. for one of four stops with power disconnected and reserve depleted.	<u>4</u> of four stops pass Best Stop: Stopping distance, <u>359.8</u> ft., <u>135</u> lbs. PF (max)	<u>X</u>	<u> </u>
Inoperative Power Unit (Secondary - Electric Hydraulic Pump-Backup System)	60 mph: Pedal Force, 15-150 lbs. 613 ft. for one of four stops with power disconnected and reserve depleted.	<u>4</u> of four stops pass Best Stop: Stopping distance, <u>225.5</u> ft., <u>139</u> lbs. PF (max)	<u>X</u>	<u> </u>
Inoperative Power Unit Optional (Brake Power Assist Units)	Six stops from 60 mph: at specified decels. Seventh stop at no less than seven fpsps (554 ft.).	7th Stop: <u> </u> fpsps <u> </u> decel <u> </u> lbs. PF	<u>Not Appl.</u>	
Inoperative Power Unit - Optional Procedure (Accumulator Systems)	Ten stops from 60 mph, at specified decelerations Eleventh stop at not less than seven fpsps (554 ft.).	11th Stop: <u> </u> fpsps <u> </u> decel <u> </u> lbs. PF	<u>Not Appl.</u>	
Inoperative Power Unit - Optional Procedure (Backup Systems)	15 stops from 60 mph, at average deceleration of 12 fpsps (stopping distance 293 ft.) stops with any sub-system Failed.	<u> </u> of fifteen stops within 293 ft. Worst Stop: <u> </u> fpsps <u> </u> decel <u> </u> lbs. PF	<u>Not Appl.</u>	

*Stopping Distance - Visual Data
Pedal Force - Visual Data

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 5 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

GVWR: 30,000 lbs.

Test	Required Performance	Actual Performance*	P	F
First Fade and Recovery (Baseline)	40-20 mph: Three snubs at 10 fpsps Pedal Force: 10-90 lbs.	Average Control Force (max) <u>41</u> lbs. PF	<u>X</u>	___
First Fade and Recovery (Fade)	40-20 mph: Pedal Force: 15-150 lbs. (min) Snubs 1-5: 10 fpsps (min) Snubs 6-10: 5-10 fpsps decel	Snubs 1-5: <u>6.5</u> fpsps decel (min) <u>48</u> lbs. PF (max) Snubs 6-10: <u>8.8</u> fpsps decel (min) <u>44</u> lbs. PF (max)	<u>X</u>	___
First Fade and Recovery (Recovery)	40-20 mph: Makes 5 snubs at not less than 10 fpsps (1) a maximum for the first four recovery stops of 150 pounds, and for the fifth stop, of 20 pounds more than the average control force for the baseline check (but no more than 100 lbs.; and (2) a minimum of (a) the average control force for the baseline check minus 10 lbs., or (b) the baseline check times 0.6, whichever is lower (but in no case less than 5 lbs.). Allowable range: <u>25</u> to <u>61</u> pounds	Snubs 1-4: <u>43</u> lbs. PF (max) <u>8.6</u> fpsps decel (min) Stop 5: <u>36</u> lbs. PF (max) <u>10.2</u> fpsps decel (min)	<u>X</u>	___
			<u>X</u>	___

*Stopping Distance - Visual Data
Pedal Force - Visual Data

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 6 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

GVWR: 30,000 lbs.

<u>Test</u>	<u>Required Performance</u>	<u>Actual Performance*</u>	<u>P</u>	<u>E</u>
Second Fade and Recovery (Baseline)	40-20 mph: Three snubs at 10 fpsps Pedal Force: 10-90 lbs.	Average Control Force (max) <u>56</u> lbs. PF	<u>X</u>	___
Second Fade and Recovery (Fade)	40-20 mph: Pedal Force: 15-150 lbs. (min) Snubs 1-10: 10 fpsps decel (min) Snubs 11-20: 10 fpsps decel	Snubs 1-10: <u>8.7</u> fpsps decel (min) <u>52</u> lbs. PF (max) Stops 11-20: <u>8.8</u> fpsps decel (min) <u>54</u> lbs. PF (max)	<u>X</u>	___
Second Fade and Recovery (Recovery)	40-20 mph: Makes 5 stops at not less than 10 fpsps (1) a maximum for the first four recovery stops of 150 pounds, and for the fifth stop, of 20 pounds more than the average control force for the baseline check (but no more than 100 lbs.; and (2) a minimum of (a) the average control force for the baseline check minus 10 lbs., or (b) the baseline check times 0.6, whichever is lower (but in no case less than 5 lbs.). Allowable range: <u>34</u> to <u>76</u> pounds	Snubs 1-4: <u>44</u> lbs. PF (max) <u>9.3</u> fpsps decel (min) Snub 5: <u>40</u> lbs. PF (max) <u>9.4</u> fpsps decel (min)	<u>X</u>	___
			<u>X</u>	___

*Stopping Distance - Visual Data

Pedal Force - Visual Data

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 7 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: CS0901

GVWR: 30,000 lbs.

<u>Test</u>	<u>Required Performance</u>	<u>Actual Performance*</u>	<u>P</u>	<u>F</u>
Fourth Effectiveness	30 mph: Pedal Force, 15-150 lbs. <u>NA</u> ft. for one of six stops	_____ of six stops pass Best Stop: _____ ft., _____ lbs. PF (max)		<u>Not Appl.</u>
	60 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>NA</u> ft. for one of six stops	_____ of six stops pass Best Stop: _____ ft., _____ lbs. PF (max)		<u>Not Appl.</u>
	80 mph: Pedal Force: 15-150 lbs. Stopping distance: <u>NA</u> ft. for one of four stops	_____ of four stops pass Best Stop: _____ ft., _____ lbs. PF (max)		<u>Not Appl.</u>
	100 mph: Pedal Force, 15-150 lbs. Stopping distance, <u>N/A</u> ft. for one of four stops	_____ of four stops pass Best Stop: _____ ft., _____ lbs. PF (max)		<u>Not Appl.</u>

*Stopping Distance - Visual Data

Pedal Force - Visual Data

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 7 continued of 9)

Veh.: 2005 BLUE BIRD VISION		NHTSA No.: C50901		GVWR: 30,000 lbs.	
Water Recovery (Baseline)	30 mph: Three stops at 10 fpsps Pedal Force: 10-90 lbs.	Avg. Sustained Control Force (max)	<u>45</u> lbs. PF	P	<u>X</u>
Water Recovery (Recovery)	30 mph: Make 5 stops at not less than 10 fpsps (1) maximum for the first four recovery stops at 150 pounds, and for the fifth stop, of 60 pounds more than the average control force for the baseline check (but no more than 110 lbs.); and (2) a minimum of (a) the average control force for the baseline check minus 10 lbs. or (b) the baseline check times 0.6, whichever is lower (but in no case less than 5 lbs.). Allowable range:	Stops 1-4: <u>52</u> lbs. PF (max) <u>7.5</u> fpsps decel (min) Stop 5: <u>55</u> lbs. PF (max) <u>8.3</u> fpsps decel (min)			
			<u>27</u> to <u>105</u> pounds		<u>X</u>

*Stopping Distance - Visual Data

Pedal Force - Visual Data

**Recorded Data

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 8 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: CS0901

GVWR: 30,000 lbs.

<u>Test</u>	<u>Required Performance</u>	<u>Actual Performance*</u>	<u>P</u>	<u>F</u>
Spike Stops	30 mph: Vehicle shall be capable of making 10 spike stops.	<u>NA</u> stops completed Max. pedal force ** ____ lbs. (peak) ____ lbs. avg.		<u>Not Appl.</u>
Post-Spike Effectiveness	60 mph: Pedal Force: 15-150 lbs. Stopping distance: <u>NA</u> ft. for one of six stops	____ of six stops pass Best Stop: ____ ft., ____ lb. PF (max.)		<u>Not Appl.</u>
Moving Barrier (For vehicles tested by the Optional Brake Procedure)	Parking mechanism shall not disengage or fracture when vehicle is subjected to front and rear 2-1/2 mph moving barrier impacts.	Front Impact: Vehicle Movement? Yes ____ No ____ Rear Impact: Vehicle Movement? Yes ____ No ____		<u>Not Tested</u> <u>N/A</u>

*Stopping Distance - Visual Data

Pedal Force - Visual Data

**Manual Apply

3.0 Data Sheet No. 1.1 Summary of Tests (Sheet 9 of 9)

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

GVWR: 30,000 lbs.

Test	Required Performance	Actual Performance*	P	F
Final Inspect:				
Lining	Firmly attached to backing. Areas 90% of original. Working surface free of lubricant or fluid.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mechanical	Components must be intact and functional.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydraulic	Components must be leak- free. Independent reservoirs must have adequate volume. Total reservoir volume must be adequate.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Indicator Lamp	Lit when key is ON or in "check" position. Lit when following occur either (A), (C), or (D): or else (B), (C), or (D): (A) Gross pressure loss, (B) Unsafe fluid level, (C) Electrical failure, (D) Parking brake on. Color meets requirement Lettering meets requirement	Lit for check of function: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Lit for (A): Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Not Appl.</u>
		Lit for (B): Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Lit for (C): Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Lit for (D): Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(For vehicles without split service brake system)	Indicator lamp flashes and is accompanied by audible signal:	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>

4.0 Data Sheet No. 1.2 Vehicle Weight

Veh.: 2005 BLUE BIRD VISION NHTSA No.: C50901 Date: 03/10/05
 TIRE PRESSURE (cold): FRONT 105 psi; REAR 105 psi
 ODO.: START 357 mi.; FINISH 1373 mi.

SCALE(S) USED: TRC Toledo-Mettler Platform

VEHICLE WEIGHT (9.0 - S6.1)

<u>Schedule</u>	<u>Requirements</u>
Obtain GVWR, LLVW, and axle weights within +0, -1%	None
GVWR <u>30,000</u> lbs. GAWR: Front <u>10,000</u> lbs. (front vehicle certification label)	Target Weight Front <u>9,677</u> lbs. Rear <u>20,323</u> lbs. GVWR = <u>30,000</u> lbs.

UNLOADED VEHICLE WEIGHT (UVW) - Actual Weight of Test Vehicle with Maximum Capacity of Engine Fuel, Oil, and Coolant.

Left Front 3,370 lbs. Right Front 3,340 lbs. Total Front 6,710 lbs.
 Left Rear 5,960 lbs. Right Rear 6,210 lbs. Total Rear 12,170 lbs. Veh. 18,880 lbs.

LIGHT LOADED VEHICLE WEIGHT (LLVW)

Note 1: LLVW = UVW + 500 lbs.

Note 2: Weight distributed in front passenger seat area.

Note 3: Neither axle load at LLVW less than at UVW; ballasted as required

Left Front 3,570 lbs. Right Front 3,540 lbs. Total Front 7,110 lbs.
 Left Rear 6,000 lbs. Right Rear 6,270 lbs. Total Rear 12,270 lbs. Veh. 19,380 lbs.

ACTUAL TEST LLVW

Left Front 3,570 lbs. Right Front 3,600 lbs. Total Front 7,170 lbs.
 Left Rear 5,910 lbs. Right Rear 6,280 lbs. Total Rear 12,190 lbs. Veh. 19,360 lbs.
 Load: Driver 160 lbs. + Instrument 90 lbs. + Ballast 250 lbs. = 500 lbs.

4.0 Data Sheet No. 1.2 Vehicle Weight, continued

FULLY LOADED VEHICLE WEIGHT (GVWR)

Note 1: Vehicle loaded so axle loads proportional to GAWR shown above (target).

Note 2: But no axle weight to be less than at LLVW.

Load: Driver 160 lbs. + Instrument 90 lbs. + Ballast 10,870 lbs. = 11,120 lbs.
Left Front 4,900 lbs. Right Front 4,780 lbs. Total Front 9,680 lbs.
Left Rear 10,320 lbs. Right Rear 10,000 lbs. Total Rear 20,320 lbs. Veh. 30,000 lbs.

COMMENTS: None.

DATA INDICATES COMPLIANCE YES () NO () NO REQUIREMENTS (X)
DRIVER Karen Easterday OBSERVER None
RECORDED DATA PROCESSED BY R. Landes DATE 03/21/05
APPROVING LABORATORY OFFICIAL K. Webster DATE 05/13/05

Symbols for Brake Components

4	-	4 Wheel	G	-	Groan	DL	-	Deceleration (State FPSPS)
X	-	Skid	SQ	-	Squeal	PF	-	Pedal on Floor
L	-	Left	SQK	-	Squeak	SCP	-	Shoe Scrape
R	-	Right	PO	-	Pinchout	RB	-	Rubber Banding
R	-	Rear	P	-	Pull	O	-	Odor
F	-	Front	R	-	Shudder	NOX	-	No Skid
B	-	Both	M	-	Momentary			

INCIP	-	Incipient
INT or INIT	-	Initial Part of Stop
MID	-	Middle of Stop
END	-	End of Stop

EXAMPLE

"BFMID" = Both front wheel lockup occurred at approximately middle of stop

**Section 5.0 – Test Data
Data Sheets 4 through 22A**

Vehicle: 2005 BLUE BIRD BODY NETSA NUMBER: C80901

Make: BLUE BIRD

Model: VISION

Body Style: HARDY SUV

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10818 State Route 347

East Liberty, Ohio 43319

(937) 466-2011 www.trcpg.com

Date Tested: 03/14/05

DATA SHEET 4 - SPEED VERSUS DISTANCE DETERMINATION

Testing Conditions: INV DATA, Section 0083, 03/14/05, 09:40:13

Weather Conditions: 31°F Wind: 1 mph 276° Start Cdc.: 288 End Cdc.: 407

Schedule:

GVWR, accelerate from 0 mph to maximum speed attainable in 2 miles or to 104 mph. Record times to speeds.

Performance Requirements:

Maximum Speed
First Run South
Second Run North

	0-40	0-60	0-80	AVE MPH
MIN	MAX	MIN	MAX	TIME
#	(mph)	(second)	(second)	(second)
1	71.1	22.0	29.8	0.8
2	67.4	24.5	31.0	0.8

INSTRUMENTATION CHECK (87.2)

Testing Conditions: INV DATA, section 0010, 03/14/05, 10:07:54

Schedule:

GVWR, 10 Steps, 30-0 mph, 10 ft/ps
in gear, 150-200 Deg F IGT

Performance Requirements: None

STOP	INITIAL SPD	Ave IGT	Ave IGT	Stop Distance	Ave Sustained Pedal Force	Average Deceleration	Max Pedal Force
#	(mph)	(°F)	(°F)	(feet)	(lb)	(ft/sec²)	(lb)
1	30.0	147.0	165.0	148.7	52.3	6.4	72.0
2	30.2	166.5	181.0	149.7	50.6	6.5	68.1
3	29.7	174.0	191.5	133.1	56.9	7.1	76.5
4	30.2	166.5	179.0	131.5	49.0	7.5	69.5
5	30.0	175.0	191.0	140.6	50.7	8.9	64.2
6	30.1	180.0	190.5	101.6	40.8	10.8	74.4
7	30.4	175.5	165.5	106.6	46.2	10.8	74.0
8	30.4	173.8	182.0	118.3	47.3	9.8	60.4
9	30.8	182.5	186.8	128.2	47.7	9.6	58.8
10	30.2	182.8	182.5	138.7	48.4	9.3	62.2

DATA INDICATOR COMPLIANCE: YES () NO () NO REQUIREMENTS (X)

Driver: KAREN BASTERDAY Observer: NONE

Recorded Data Processed by: CRUCK JENKINS Date: 04/28/05

Approving Laboratory Official: MRY WEBSTER Date: 05/05/05

Vehicle: 2005 BLUE HIND BODY TEST# NUMBER: CS0901

Make: BLUE HIND

Model: VIRION

Body Style: HANDB SV8

Front Cold Tire Pressure: 185 (psi)

Rear Cold Tire Pressure: 185 (psi)

Transportation Research Center, Inc.

10820 State Route 347

West Liberty, Ohio 43219

(937)566-2811 www.trcpg.com

Date Tested: 03/14/08

DATA SHEET 5 - FIRST EFFECTIVENESS AT GVWR (87.3)

Testing Conditions: JPV-DATA, Section 0018, 03/14/08, 11:46:40

Weather Conditions: 36°F Wind: E wph 109'

Start Odo.: 410

End Odo.: 445

Schedule:

GVWR, 150 - 200°F Initial brake temperatures,
Initial speeds 30 & 60 mph to zero
6 stops each speed WITH transmission in neutral

Performance Requirements:

One Stop with:
Stopping distance less than 16 feet@30mph
and less than 28 feet@60mph
Pedal force <150 lbs.
Lock-Up of one wheel or less
Vehicle must stay in lane of 12 ft.

STOP #	INIT SPD (mph)	AVG. FRONT IDV (%F)	AVG. REAR TIRE (%F)	ACTUAL STOP DISTANCE [feet]	CORRECTED DISTANCE (SEE 208) [feet]	MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DRUM [ft/sec ²]	AVG. DRUM [ft/sec ²]
1	30.0	152.5	152.0	79.6	80.4	139.2	88.4	19.7	16.6
2	30.0	184.5	180.0	78.9	78.1	142.1	126.6	25.7	15.3
3	30.4	172.5	171.5	77.5	78.8	160.7	126.8	22.6	15.2
4	30.5	137.5	182.0	73.4	78.8	162.2	129.8	21.8	18.9
5	30.0	175.0	180.0	73.4	72.4	162.4	128.8	23.5	16.4
6	30.4	198.0	187.0	74.4	72.6	167.5	144.2	22.4	16.3
1	60.0	147.5	180.0	296.1	286.7	170.6	138.6	18.3	14.7
2	60.0	166.5	186.5	275.0	276.2	151.2	111.8	20.6	15.7
3	60.0	177.0	178.0	256.2	258.0	160.8	140.8	22.4	16.2
4	60.0	180.0	188.5	241.0	247.1	183.2	139.7	23.8	17.7
5	60.0	185.0	184.0	242.1	242.6	129.0	121.3	23.3	17.0
6	60.0	175.0	188.5	239.8	241.3	152.4	126.6	25.1	18.2

STOP #	DRIVER VEHICLE STOP COMMENTS		
#	(Wheel Lock up	- Direction of Stop	- Stay in Lane)
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	lockup rr wheel	NOX	SOUTH YES
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN KASTERDAY

Observer: MCHW

Recorded Data Processed by: CHUCK JENKINS

Date: 04/28/05

Approving Laboratory Official: KIM HENDER

Date: 08/06/05

Vehicle: 2005 BLUE BIRD BODY NHTSA NUMBER: C50982

Make: BLUE BIRD

Model: VISION

Body Style: HATCH BUS

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10820 State Route 147

West Liberty, Ohio 42319

(937) 666-2011 www.trcpg.com

Date Tested: 03/14/05

DATA SHEET 6 - BURNISH AT GVWR (S7.4)

Testing Conditions: INV DATA, Section 0802, 03/14/05, 19:07:07

Weather Conditions: 34°F Wind: 3 mph 74°

Start Odo.: 447

End Odo.: 876

Schedule:

GVWR, 100 snubs in neutral, 40 - 20 mph,
10 fpeps decel, 1 mile interval.

Performance Requirements:

Lock-up <= 1 wheel, stay in 12
ft. lane. NOVA: pedal force
may exceed 150 lb.

STOP #	INIT SPD (mph)	LEFT FRONT INT (°F)	RIGHT FRONT INT (°F)	LEFT REAR INT (°F)	RIGHT REAR INT (°F)	MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	AVG. DECEL (ft/sec ²)
1	40.3	45	33	18	48	55.9	42.7	9.1
15	40.5	339	388	407	387	35.2	28.9	9.3
30	39.8	281	386	361	384	23.3	28.6	9.3
45	40.8	334	386	365	367	34.6	29.8	9.4
60	40.2	312	340	377	347	32.0	27.9	9.0
75	39.6	306	333	348	348	33.1	29.3	9.4
90	40.2	291	332	346	338	34.1	29.4	9.2
105	40.5	304	386	336	381	49.6	22.4	10.0
120	40.2	280	350	341	364	23.6	20.6	9.4
135	38.5	295	341	341	358	24.2	20.8	9.3
150	40.2	286	331	352	353	26.5	22.8	10.0
165	40.3	264	388	337	353	27.8	23.8	9.9
180	40.0	272	324	354	346	27.1	22.3	9.5
195	40.2	272	313	353	334	31.8	23.8	10.0
210	40.1	268	302	342	327	27.2	22.2	9.3
225	39.9	262	304	348	333	27.4	22.9	9.6
240	40.5	282	245	341	327	40.1	33.5	10.0
255	40.1	289	338	340	340	42.8	31.5	9.3
270	39.7	279	270	342	342	41.5	28.2	9.1
285	40.3	290	351	350	341	49.4	30.4	9.2
300	40.7	288	340	349	340	45.1	28.5	9.3

BRAKE ADJUSTMENT

Schedule:

Adjust service brakes; record procedure and amount adjusted.

Left Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Right Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Left Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED.
 Right Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED.

MANUFACTURER'S PROCEDURE: NO ADJUSTMENT REQUIRED.

DATA INDICATES COMPLIANCE: YES () NO () NO REQUIREMENTS (X)

Driver: KAREN HASTEDAY Observer: FOWE

Recorded Data Processed by: CRUCE JENKINS Date: 04/25/05

Approving Laboratory Official: IAN WHESTER Date: 05/08/05

Vehicle: 2005 BLUE BIRD BODY METEA NUMBER: C80981

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 195 (psi)

Rear Cold Tire Pressure: 195 (psi)

Transportation Research Center, Inc.

10420 State Route 347

West Liberty, Ohio 42219

(607)666-1811 www.trc.org

Date Tested: 03/16/08

DATA SHEET 7 - SECOND EFFECTIVENESS AT GVWR (S7.5)

Testing Conditions: INV DATA, Section 0038, 03/16/08, 14:37:57

Weather Conditions: 41°F Wind: 8 mph 71° Start Odo.: 878 End Odo.: 1002

Procedure:

GVWR, 150 - 200°F Initial brake temperatures,
5 Stops in neutral, 30, 60,
4 Stops 80 - 0 mph

Performance Requirements:

One Stop With:
Stopping Distance less than 75 ft/30mph,
150 ft/60mph, and 200 ft/80
Pedal Force <150 lbs.
Lock-Up of one wheel or less
Vehicle Must stay in lane of 12 ft.

STOP #	INIT SPD (mph)	LEFT	RIGHT	LEFT	RIGHT	ACTUAL DISTANCE (feet)	CORRECTED DISTANCE (EAR 2PS) (feet)	MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec ²)	AVG. DECEL (ft/sec ²)
		FRONT INP (°F)	FRONT INP (°F)	REAR INP (°F)	REAR INP (°F)						
1	30.8	185	161	158	180	63.8	60.5	155.8	98.7	35.3	15.7
2	30.0	152	165	162	159	64.5	64.7	113.5	77.2	31.0	13.3
3	39.7	157	168	171	151	64.8	65.3	122.0	108.1	40.8	14.5
4	29.8	164	189	181	159	65.8	66.6	138.3	81.5	32.8	12.0
5	30.7	175	176	180	180	68.1	64.5	142.7	98.1	36.8	14.4
6	39.8	174	177	189	181	62.2	62.0	181.8	101.3	36.2	13.8
1	59.8	158	165	171	179	238.9	246.7	143.1	111.8	24.5	14.9
2	60.2	141	168	180	182	237.5	235.9	138.4	103.9	26.9	15.5
3	60.0	160	171	178	176	228.0	228.8	138.9	115.1	26.0	16.5
4	58.5	159	174	178	179	226.9	222.4	141.8	112.2	24.8	15.2
5	59.9	110	178	182	183	224.8	228.6	154.1	116.2	15.2	16.2
6	50.2	164	168	166	170	229.9	228.5	146.1	100.6	28.0	16.1

STOP #	DRIVER VEHICLE STOP COMMENTS		
	(Wheel Lock up)	Direction of Stop	Stay in Lane)
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BASTENBAY

Observer: NUNE

Recorded Data Processed by: CRUCK JENNINS

Date: 04/28/08

Approving Laboratory Official: KIM WEBSTER

Date: 05/08/08

Vehicle: 2005 BLUE HIRD BODY METRA NUMBER: C34901

Make: BLUE HIRD

Model: VISION

Body Style: HATCH 5DR

Front Cold Tire Pressure: 185 (psi)

Rear Cold Tire Pressure: 185 (psi)

Transportation Research Center, Inc.

10820 State Route 347

East Liberty, Ohio 43317

(937)465-2021 www.trcpg.com

Date Tested: 03/17/08

DATA SHEET B - FIRST REBURNISH AT GVWR (S7.6)

Testing Conditions: INV DATA, Section 0010, 03/17/08, 09:49:27

Weather Conditions: 43°F Wind: 13 mph SE2°

Start Odo.: 1016

End Odo.: 1052

Schedule:

GVWR, 35 runs in neutral, 40 - 20 mph,
10 kpa's accel, 1 mile interval.

Performance Requirements:

Lock-up <- 1 wheel, stay in 12
ft. lane. MAX: Pedal Force
may exceed 150 lb.

STOP #	SPD (mph)	LEFT		RIGHT		MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	AVG. DECEL (ft/sec²)
		FRONT INT (°F)	FRONT EXT (°F)	REAR INT (°F)	REAR EXT (°F)			
1	40.1	118	117	125	148	44.9	34.5	9.2
10	19.9	101	101	116	143	38.3	27.8	9.7
20	19.7	125	104	139	147	67.0	26.4	9.2
30	40.1	127	178	149	181	41.1	28.8	9.6
28	19.7	129	168	141	142	42.6	29.1	9.8

BRAKE ADJUSTMENT

Schedule:

Adjust service brakes; record procedure and amount adjusted.

Left Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Right Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Left Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED.
 Right Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED.

MANUFACTURER'S PROCEDURE: NO ADJUSTMENTS REQUIRED.

COMMENTS: NONE.

DATA INDICATES COMPLIANCE: YES () NO () NO REQUIREMENTS (X)

Driver: KAREN HASTEDAY

Observer: NONE

Recorded Data Processed by: CRUCE JENKINS

Date: 04/28/08

Approving Laboratory Official: KEN WEBSTER

Date: 08/08/08

Vehicle: 2005 BLUE BIRD BODY VIN: 5A NUMBER: C50991
 Make: BLUE BIRD
 Model: VISION
 Body Style: HATCHBACK

Transportation Research Center, Inc.
 10320 State Route 147
 East Liberty, Ohio 43019
 (614) 888-2811 www.trcpg.com

Front Cold Tire Pressure: 105 (psi)
 Rear Cold Tire Pressure: 105 (psi)

Date Tested: 03/17/05

DATA SHEET 9 - PARKING BRAKE AT GVWR & LLWV (S7.7.1)

Testing Conditions: INV DATA, Section 0050, 03/16/05, 11:29:52

Testing Conditions: INV DATA, Section 0068, 03/17/05, 13:11:22

Parking Mechanism: MECHANICAL 0

Service type: S/A

Non-service type: HAND OPERATED

Weather Conditions: 31°F Wind: 19 mph 284°

Start Odo.: 1053

End Odo.: 1056

Test Weight: Total: 13508kg, GVWR

Total: 876kg, LLWV

Subdata:

GVWR & LLWV, IST <-150°F, Neutral, 30V grade, vehicle held on grade with service brake pedal force <-100 lb., then parking brake applied and service brake released.
 2 reapplications of force to service brake and parking brake allowed.

Performance Requirements:

Hold vehicle stationary for 5 minutes, GVWR & LLWV, uphill and downhill, park brake pedal force <-100 lb. Foot lever, <-125 lb. hand lever.

NOTE: For vehicles with parking brake systems not utilizing the service brake friction elements, the friction elements of such systems are to be lubricated prior to parking brake tests according to the manufacturer's published recommendation as furnished to the purchaser. If no recommendations are furnished, test the system in an unlubricated condition. If recommendations are furnished, record method used.

GVWR	MAX SERVICE FORCE (lb)	MIN F-FORCE TO HOLD (lb)	LEFT REAR IST (*F)	RIGHT REAR IST (*F)	AVG REAR IST (*F)	DRIVER VEHICLE STOP COMMENTS			
						(No. of Reapplications)	Direction of Stop (Up/Down)	Brake holds/Fails	
1	49.4	86.2	113	129	121.0	0 REAPPLY	DOWNHILL	HOLDS	200
2	106.7	58.7	50	78	64.0	0 REAPPLY	UPHILL	HOLDS	200

LLWV	MAX SERVICE FORCE (lb)	MIN F-FORCE TO HOLD (lb)	LEFT REAR IST (*F)	RIGHT REAR IST (*F)	AVG REAR IST (*F)	DRIVER VEHICLE STOP COMMENTS			
						(No. of Reapplications)	Direction of Stop (Up/Down)	Brake holds/Fails	
1	142.1	91.6	147	148	146.5	0 REAPPLY	UPHILL	HOLDS	200
2	150.3	96.5	101	137	119.0	0 REAPPLY	DOWNHILL	HOLDS	200

Is brake system indicator lamp activated: YES (X) NO ()

WFL'S TURNING PROCEDURE FOR NON-SERVICE ELEMENTS: N/A

COMMENTS: OPTIONAL PROCEDURE (DATA SHEET 10) NOT PERFORMED.
 PARKING BRAKE APPLIED TO DRIVESHAF.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTWADY Observer: NONE
 Recorded Data Processed by: CHUCK JENSEN Date: 04/25/05
 Approving Laboratory Official: IAN WEBSTER Date: 05/05/05

Vehicle: 2008 BUICK ENCLAVE SUV TEST NUMBER: CS8901

Make: BUICK ENCLAVE

Model: ENCLAVE

Body Style: SUV

Front Cold Tire Pressure: 188 (psi)

Rear Cold Tire Pressure: 185 (psi)

Transportation Research Center, Inc.

10620 State Route 247

East Liberty, Ohio 43319

(614)666-2011 www.trcinc.com

Date Tested: 03/18/08

DATA SHEET 11 - Third Effectiveness (S7.8)

Testing Conditions: INV DATA, Section 0015, 03/18/08, 10:40:49

Weather Conditions: 49°F Wind: 18 mph 229°

Start Odo.: 1073

End Odo.: 1084

Schedule:

11VW, 6 stops in manual, 60-0 mph,
180 - 200°F INT.

Performance Requirements:

One stop with:
Stopping Distance less than 200 feet
Pedal force <150 lbs.
Lock-Up of one wheel or less
Vehicle must stay in lane of 18 ft.

STOP #	INIT SPD (mph)	LEFT	RIGHT	LEFT	RIGHT	ACTUAL STOPPING DISTANCE (feet)	CORRECTED DISTANCE (feet)	MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	AVG. DECEL (ft/sec ²)	MAX. DECEL (ft/sec ²)
		FRONT INT (°F)	FRONT INT (°F)	REAR INT (°F)	REAR INT (°F)						
1	58.2	153	188	156	185	175.3	174.9	125.5	87.3	20.9	29.5
2	58.9	175	187	181	188	175.0	175.3	137.8	109.0	21.2	30.6
3	58.4	188	188	166	173	170.7	182.3	132.8	102.5	20.2	25.5
4	50.2	188	186	160	161	183.5	182.3	137.2	108.3	19.8	24.9
5	60.1	187	186	185	164	185.2	189.8	136.4	102.8	17.2	33.6
6	59.7	182	182	149	142	184.8	185.8	138.9	104.0	15.5	32.3

DRIVER VEHICLE STOP COMMENTS

STOP # (Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOYX
2	-	NOX	SOYX
3	-	NOX	SOYX
4	-	NOX	SOYX
5	-	NOX	SOYX
6	-	NOX	SOYX

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN HASTEDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 04/25/08

Approving Laboratory Official: IAN WISBYEK

Date: 08/05/08

Vehicle: 2005 BLUE BIRD BODY METRA NUMBER: C80961

Make: BLUE BIRD

Model: VISION

Body Style: HANDBUS

Front Cold Tire Pressure: 175 (psi)

Rear Cold Tire Pressure: 195 (psi)

Transportation Research Center, Inc.

10222 State Route 367

West Liberty, Ohio 43329

(937)666-2021 www.trcrgp.com

Date Tested: 03/21/05

DATA SHEET 12 - Partial Failure LLVM (S7.9)

Testing Conditions: INV DATA, Section 0050, 03/21/05, 09:49:35

Testing Conditions: INV DATA, Section 0058, 03/21/05, 12:36:02

Weather Conditions: 37°F Wind: 2 mph 343°

Start Odo.: 1097

End Odo.: 1109

Subdata:

LLVM, 4 stops in gear with each subsystem

Inoperative, 60-0 mph, 180-200° INT.

Non-split system vehicle: 16 stops.

Performance Requirements:

One stop, 40 mph, 613 ft., pedal force <150 lbs.,

lockup allowed, stay in 12 ft. lane.

Warning light on at 50 lbs. pedal force manual,

25 lbs. power, or 225 psi.

System #1 Inoperative

STOP #	INIT SPD (mph)	LEFT FRONT INT (°F)	RIGHT FRONT INT (°F)	LEFT REAR INT (°F)	RIGHT REAR INT (°F)	ACTUAL STOP DISTANCE (feet)	CORRECTED DISTANCE (MAX 399) (feet)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec²)	MAX PEDAL FORCE (lb)	AVG DECEL (ft/sec²)
1	60.5	40	40	159	164	351.4	346.1	101.5	22.0	122.9	10.6
2	60.9	40	39	185	179	360.4	360.8	106.4	19.1	136.3	10.0
3	59.7	39	39	175	174	352.1	355.8	108.7	21.4	142.7	9.8
4	60.1	39	32	181	177	336.4	335.4	92.8	23.1	123.1	11.5

STOP # DRIVER VEHICLE STOP COMMENTS (Wheel Lock up - Direction of Stop - Stay in Lane)

1	-	NOI	SOUTH	YES
2	-	NOI	SOUTH	YES
3	-	NOI	SOUTH	YES
4	-	NOI	SOUTH	YES

System #2 Inoperative

STOP #	INIT SPD (mph)	LEFT FRONT INT (°F)	RIGHT FRONT INT (°F)	LEFT REAR INT (°F)	RIGHT REAR INT (°F)	ACTUAL STOP DISTANCE (feet)	CORRECTED DISTANCE (MAX 399) (feet)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec²)	MAX PEDAL FORCE (lb)	AVG DECEL (ft/sec²)
1	60.5	160	130	52	55	359.1	353.6	109.6	18.1	136.9	11.0
2	60.2	180	195	48	49	362.1	360.8	105.8	16.1	120.3	10.6
3	58.0	171	172	38	46	362.4	366.0	116.4	22.4	149.5	11.0
4	60.2	173	177	45	48	368.2	365.8	100.4	18.1	132.3	10.6

STOP # DRIVER VEHICLE STOP COMMENTS (Wheel Lock up - Direction of Stop - Stay in Lane)

1	-	NOI	SOUTH	YES
2	-	NOI	SOUTH	YES
3	-	NOI	SOUTH	YES
4	-	NOI	SOUTH	YES

COMMENTS:

System #1: Warning light on at 18 lb., W/C WHEEL PAT DISCONNECTED LEAF INOP

System #2: Warning light on at 18 lb., W/C WHEEL PAT DISCONNECTED, WHEEL INOP

PLSD LEVEL SENSOR? YES () NO (X) LEAF ON? YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN HASTEDAY

Observer: NONE

Recorded Data Processed by: CHUCK HENKINS

Date: 04/25/05

Approving Laboratory Official: KIM WISBYER

Date: 05/05/05

Vehicle: 2008 BLUE BIRD BODY NHTSA NUMBER: CB0901

Make: ALCO BIRD

Model: VISION

Body Style: HARDY BUS

Front Cold Tire Pressure: 198 (psi)

Rear Cold Tire Pressure: 188 (psi)

Transportation Research Center, Inc.

10470 State Route 247

East Liberty, Ohio 43318

(614)666-2011 www.trc.org

Date Tested: 02/22/05

DATA SHEET 13 - Partial Failure GVWR (S7.9.3)

Testing Conditions: INV DATA, Section 0068, 02/22/05, 08:43:27

Testing Conditions: INV DATA, Section 0065, 02/22/05, 11:00:46

Weather Conditions: 40°F Wind: 9 mph 78°

Start Odo.: 1127 End Odo.: 1159

Schedule:

GVWR, 4 stops in gear with each subsystem inoperative, 60-8 mph, 150-200° INT.

Performance Requirements:

One stop, 60 mph, 612 ft., pedal force <150 lbs., lockup allowed, stay in 12 ft. lane.

System #2 Inoperative

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL STOP DISTANCE (feet)	CORRECTED DISTANCE (SEE 299) (feet)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec²)	MAX PEDAL FORCE (lb)	AVG DECEL (ft/sec²)
		INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)
1	59.4	149	181	42	36	481.8	450.6	104.8	14.4	128.8	9.5
2	60.5	179	179	42	41	473.9	456.1	97.2	23.9	146.0	10.0
3	59.9	143	148	38	38	426.8	449.8	107.2	15.4	127.4	9.6
4	60.3	150	149	28	38	444.7	440.5	104.4	13.5	127.9	9.3

DRIVER VEHICLE STOP COMMENTS

(Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES

System #1 Inoperative

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL STOP DISTANCE (feet)	CORRECTED DISTANCE (SEE 299) (feet)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec²)	MAX PEDAL FORCE (lb)	AVG DECEL (ft/sec²)
		INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)	INT (°F)
1	58.9	93	62	159	193	442.8	444.9	95.1	16.0	153.7	10.2
2	60.7	58	56	150	158	436.9	444.8	113.3	14.7	133.9	10.0
3	60.0	48	48	193	194	442.5	442.2	98.9	14.8	119.5	8.9
4	59.7	44	44	160	164	440.8	445.1	94.4	14.7	127.7	8.9

DRIVER VEHICLE STOP COMMENTS

(Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN KANTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENNINGS

Date: 04/28/05

Approving Laboratory Official: XNF WEAVER

Date: 08/25/05

Vehicle: 2005 BLUE BIRD BODY NHTSA NUMBER: C56901

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

16820 State Route 347

East Liberty, Ohio 43319

(937)646-2011 www.trc.org

Date Tested: 03/22/08

DATA SHEET 14-ANTILOCK OR VARIABLE PROPORTIONING BRAKE SYSTEM (S7.9.4)

Testing Conditions: INV DATA, Section 0040, 03/22/08, 14:18:54

Weather Conditions: 44°F Wind: 12 mph S24 Start Odo.: 1162 End Odo.: 1179

Schedule:

GVWR, 4 stops in gear, 60-0 MPH,
antilock or variable prop failed, 150-200°F INT

Performance Requirements:

One stop, 60 mph, 511 ft., pedal force <180 lbs.,
lookup allowed, stay in 13 ft. lane.

ABS FAILURE

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE (feet)	CORRECTED DISTANCE (SAB 299) (feet)	AVG. PEDAL FORCE (lb)	MAX PEDAL FORCE (lb)	AVG DECEL (ft/sec ²)	MAX DECEL (ft/sec ²)
		(°F)	(°F)	(°F)	(°F)						
1	69.3	128	131	177	178	290.4	297.0	53.0	127.5	14.3	21.8
2	60.4	188	165	178	177	249.0	246.0	71.4	92.2	20.8	27.3
3	60.8	164	178	178	178	233.8	227.1	94.6	128.8	22.1	33.7
4	59.4	188	162	188	148	243.6	247.1	94.8	138.0	19.5	27.4

STOP # DRIVER VEHICLE STOP COMMENTS (Wheel Lock up - Direction of Stop - Stay in Lane)

1	-	NOX	SCUTE	YES
2	-	NOX	SCUTE	YES
3	-	NOX	SCUTE	YES
4	-	NOX	SCUTE	YES

COMMENTS: NONE

IS ABS/VARIABLE PROP WARNING LAMP ACTIVATED? YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN MASTERSDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 04/28/08

Approving Laboratory Official: KEN WEBSTER

Date: 05/08/08

Vehicle: 1995 BLUE BIRD BODY NHTSA NUMBER: C589D1

Make: BLUE BIRD

Model: VISION

Body Style: HANDBY BUS

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10920 State Route 347

East Liberty, Ohio 43023

(607)666-8811 www.trcpg.com

Date Tested: 03/24/05

DATASHEET 15-REGULAR PROCEDURE FOR FAILED BOOSTER OR PWR ASSIST(S7.10)

Testing Conditions: IFV DATA, Section 0980, 03/24/05, 14:26:30

Weather Conditions: 38°F Wind: 2 mph 2" Start Odo.: 1189 End Odo.: 1218

Schedule:

GVWR, 4 stops in gear, 60-0 MPH, antilock or variable prop failed, 150-200°F IST

Performance Requirements:

One stop, 60 mph, 217 ft. pedal force ±150 lbs., lockup allowed, stay in 12 ft. lane.

System #1 Inoperative

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE (feet)	CORRECTED DISTANCE (SAS 299) (feet)	MAX PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec ²)	AVE DECEL (ft/sec ²)
		INT (°F)	INT (°F)	INT (°F)	INT (°F)						
1	60.4	188	141	166	144	175.2	170.6	149.2	105.8	24.8	14.4
2	59.7	151	152	166	161	289.8	163.9	134.8	113.3	22.9	14.1
3	60.5	182	144	124	169	173.5	168.6	142.6	122.3	21.4	12.8
4	59.8	188	133	167	143	182.3	166.2	143.7	126.2	28.3	11.9

DRIVER VEHICLE STOP COMMENTS (Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE	
1	-	NONE	SOUTH	YES
2	-	NONE	SOUTH	YES
3	-	NONE	SOUTH	YES
4	-	NONE	SOUTH	YES

System #2 Inoperative

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE (feet)	CORRECTED DISTANCE (SAS 299) (feet)	MAX PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec ²)	AVE DECEL (ft/sec ²)
		INT (°F)	INT (°F)	INT (°F)	INT (°F)						
1	60.59	148	148	162	154	234.5	230.0	133.0	106.8	24.8	16.1
2	60.46	134	147	154	161	228.8	222.3	136.2	111.6	33.0	15.6
3	60.22	148	168	171	173	228.8	224.1	143.1	123.3	30.4	17.7
4	60.88	148	162	168	173	228.8	219.2	129.0	119.0	21.6	19.7

DRIVER VEHICLE STOP COMMENTS (Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE	
1	-	NONE	SOUTH	YES
2	-	NONE	SOUTH	YES
3	-	NONE	SOUTH	YES
4	-	NONE	SOUTH	YES

COMMENTS: SYSTEM #1 INOP.- INSTALLED BYPASS HOSE FROM PWR. STEERING OUTPUT TO P.S. RESERVOIR, NO HYDRAULIC PRESSURE TO BOOSTER.

SYSTEM #2 INOP.- REMOVED IMF FROM SECONDARY ELECTRIC HYDRAULIC PUMP. DATA SHEET 18, OPTIONAL PROCEDURE, NOT PERFORMED.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BASTERDAY Observer: NONE

Recorded Data Processed by: CRUCH JENKINS Date: 04/25/05

Approving Laboratory Official: KEV WEBSTER Date: 05/05/05

Vehicle: 2005 BLUE BIRD HOOF METSA NUMBER: C85901

Make: BLUE BIRD

Model: VISION

Body Style: HATCH 5DR

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 101 (psi)

Transportation Research Center, Inc.

10828 State Route 147

West Liberty, Ohio 43319

(614)666-2811 www.trcpg.com

Date Tested: 01/29/05

DATA SHEET 17 - FIRST FADE AND RECOVERY (BASELINE) (87.11)

Testing Conditions: INV DATA, Section 0100, 03/28/05, 10:16:27

Schedule:

QWRB, 3 snubs in neutral, 40 - 20 MPH,
150-200°F INT, 10 fpm decel

Performance Requirements:

Pedal Force 10-60 lb., lockup
-e 1 wheel, stay in 12 ft. lane.

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	MAX PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec ²)	AVG DECEL (ft/sec ²)	AVG MAX PEDAL FORCE (lb)
		INT (°F)	INT (°F)	INT (°F)	INT (°F)					
1	40.2	154	160	282	160	49.3	34.8	15.8	9.9	41.2
2	39.7	169	175	148	172	37.5	29.3	12.8	9.6	
3	39.4	178	179	147	148	26.7	22.4	15.2	9.8	

COMMENTS: NONE.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 04/25/05

Approving Laboratory Official: KIM WIDSTEN

Date: 05/05/05

Vehicle: 2006 BLUE BIRD BODY NHTSA MIDRNR: CB0902

Make: BLUE BIRD

Model: VISION

Body Style: HANDB BUD

Front Cold Tire Pressure: 103 (psi)

Rear Cold Tire Pressure: 103 (psi)

Transportation Research Center, Inc.

18820 State Route 347

East Liberty, Ohio 42219

(937)684-2811 www.trcpg.com

Date Tested: 03/29/08

DATA SHEET 17A - FIRST FADE AND RECOVERY (FADE) (S7.11)

Testing Conditions: INV DATA, Section 8101, 03/29/08, 11:08:43

Schedule:

GVWR, 10 runs in neutral, 40 - 20 MPH,
130-150°F INT, 10 fpm accel,
30 second interval.

Performance Requirements:

5 runs at 10 fpm, 5 runs at
10 fpm, pedal force = 150 lbs.,
terminate reading at 5 mph.

STOP #	INIT SPD (mph)	LEFT FRONT INT (°F)	RIGHT FRONT INT (°F)	LEFT REAR INT (°F)	RIGHT REAR INT (°F)	MAX PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec ²)	AVG SUSTAINED DECEL (ft/sec ²)	APPLICATION TIME (seconds)	TOTAL ELAPSED TIME (minutes)
1	40.6	123	140	147	143	46.3	26.6	11.9	8.5	2.14	5.12
2	40.7	174	197	209	207	46.9	35.8	14.8	11.8	0.77	
3	39.7	229	258	272	267	41.2	31.4	13.7	10.4	0.52	
4	41.3	280	312	318	324	38.3	30.4	12.9	9.9	0.41	
5	40.6	340	370	392	392	36.7	29.8	11.6	9.1	0.54	
6	40.3	399	425	440	408	39.4	35.5	12.0	10.1	0.44	
7	39.2	481	458	548	503	39.4	24.8	10.7	9.1	0.81	
8	40.8	536	541	606	624	44.5	30.8	12.7	9.6	0.42	
9	40.6	546	595	648	621	46.1	38.1	11.8	9.3	0.56	
10	40.2	619	652	684	697	42.6	38.8	10.7	8.8	1.84	

COMMENTS: NONE

DATA INDICATES COMPLIANCE: Y/N (X) NO ()

Driver: KAREN EASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENNINS

Date: 04/28/08

Approving Laboratory Official: KIM WEBSTER

Date: 05/05/08

Vehicle: 2008 BLUE HIRD BODY METSA NUMBER: C50991

Make: HONDA HIRD

Model: VISION

Body Style: HEMMY BUS

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10620 State Route 247

East Liberty, Ohio 43015

(937)666-2011 www.trcrgp.com

Date Tested: 03/29/08

DATA SHEET 178 - FIRST FADE AND RECOVERY (RECOVERY) (S7.11)

Testing Conditions: INV DATA, Section 0102, 03/29/08, 12:06:00

Weather Conditions: 80°F Wind: 3 mph 92°

Start Odo.: 1221

End Odo.: 1247

Schedule:

SVWR, 5 snubs in neutral, 40 - 20 MPH,
10 Spws decel, 1.5 mile interval.

Performance Requirements:

5 snubs at 10 Spws, snubs 1-4 pedal force
< 100 lbs., snub 5 pedal force +20
lb. to lesser of -10 or .6 times the
average baseline pedal force. Pedal force
range: Max. 61.0 lb. Min 25.0 lb.

STOP #	SPEED (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	MAX PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	AVG. DECEL (ft/sec ²)
		INT (°F)	INT (°F)	INT (°F)	INT (°F)			
1	40.7	401	425	566	523	43.4	34.1	8.6
2	40.3	432	483	495	462	39.6	32.3	9.3
3	41.0	371	401	441	425	36.4	32.8	10.0
4	40.7	363	371	372	367	34.6	38.2	9.8
5	40.6	315	268	377	347	35.5	29.8	10.2

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BAUTERDAY

Observer: NONE

Recorded Data Processed by: CROCE JENKINS

Date: 04/25/08

Approving Laboratory Official: IAN WEBSTER

Date: 05/05/08

Vehicle: 2008 BLUE BIRD BODY METSA NUMBER: 075901

Make: BLUE BIRD

Model: VISION

Body Style: RAMPY SUV

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10620 State Route 247

East Liberty, Ohio 43019

(614) 668-2011 www.trcpi.com

Date Tested: 01/29/05

DATA SHEET 18 - SECOND REBURNISH AT GVWR (S7.12)

Testing Conditions: HW DATA, Section 8025, 03/29/05, 13:48:55

Weather Conditions: 56°F Wind: E wgh 167"

Start 060.: 1241 End 060.: 1258

Schedule:

GVWR, 34 studs in neutral, 40 - 20 mph,
10 fpm denel, 120 - 270°F IRT or
1 mile interval.

Performance Requirements:

Lock-up <= 1 wheel, stay in 12
ft. lane. NOTE: Pedal Force
may exceed 150 lb.

STOP #	INIT SPD (mph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	AVG. DECEL (ft/sec ²)
		(°F)	(°F)	(°F)	(°F)	(lb)	(lb)	(ft/sec ²)
1	40.5	151	157	152	156	47.3	24.5	9.3
10	40.3	323	348	371	373	44.6	27.8	9.3
20	40.3	348	380	403	394	46.9	25.3	10.0
30	40.2	350	387	411	406	36.1	28.2	9.5
35	40.6	344	387	413	340	37.8	28.7	9.8

BRAKE ADJUSTMENT

Schedule:

Adjust service brakes; record procedure and amount adjusted.

Left Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED

Right Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED

Left Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED.

Right Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED.

MANUFACTURER'S PROCEDURE: ADJUSTMENT NOT REQUIRED.

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES () NO () NO REQUIREMENTS (X)

Driver: KAREN BASTREDAY

Observer: NONE

Recorded Data Processed by: CHUCK JERRINS

Date: 04/25/05

Approving Laboratory Official: KEN WEBSTER

Date: 05/05/05

Vehicle: 2008 BLUE BIRD BODY NHTSA NUMBER: CS0901

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10620 State Route 347

West Liberty, Ohio 43329

(614) 666-2811 www.trcpc.com

Date Tested: 03/20/08

DATA SHEET 19 - SECOND FADE AND RECOVERY (BASELINE) (S7.13)

Testing Conditions: INV DATA, Section B108, 03/20/08, 08:37:35

Schedule:

GVWR, 3 snubs in neutral, 40-20 MPH, 150-200"
INT, 18 fpsps decel.

Performance Requirements:

Pedal Force 10-60 lb., lookup
← 1 wheel, stay in 12 ft. lane.

STOP #	LEFT FRONT		RIGHT FRONT		REAR		MAX PEDAL		AVG PEDAL		AVG OF MAX PEDAL	
	SPD (mph)	INT (°F)	SPD (mph)	INT (°F)	SPD (mph)	INT (°F)	FORCE (lb)	FORCE (lb)	DECEL (ft/sec ²)	DECEL (ft/sec ²)	FORCE (lb)	FORCE (lb)
1	40.3	138	144	148	147		52.4	47.5	9.8	14.0	55.6	
2	19.5	146	154	159	157		51.4	38.9	8.9	12.4		
2	19.8	172	165	192	192		53.6	41.8	10.8	13.9		

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: LAREN KASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JUNKINS

Date: 04/28/08

Approving Laboratory Official: KEN BRADY

Date: 05/05/08

Vehicle: 2006 BLUE BIRD BODY METER NUMBER: C88901

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 125 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10820 State Route 247

East Liberty, Ohio 43213

(614)466-2011 www.trc.org

Date Tested: 02/26/08

DATA SHEET 19A - SECOND FADE AND RECOVERY (FADE) (S7.13)

Testing Conditions: INV DATA, Section 0106, 03/28/05, 09:44:28

Schedule:

CVWR, 20 snubs in neutral, 40 - 20 MPH,
180-200°F INT, 10 Spgs decel,
10 second interval.

Performance Requirements:

20 snubs at 10 spgs,
pedal force <= 150lb,
terminate reading at 1 mph.

STOP	INIT SPD (mph)	LEFT FRONT INT (°F)	RIGHT FRONT INT (°F)	LEFT REAR INT (°F)	RIGHT REAR INT (°F)	MAX SPEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	AVG. SUSTAINED DECEL (ft/sec²)	MAX DECEL (ft/sec²)	APPLICATION TIME (seconds)	TOTAL ELAPSED TEST TIME (minutes)
1	48.2	131	131	118	134	52.3	38.9	8.7	13.9	2.17	9.60
2	40.9	185	191	184	202	45.1	41.1	10.4	13.8	0.62	
3	29.0	228	249	248	275	44.1	28.9	9.7	11.9	1.07	
4	40.2	248	297	304	335	44.4	33.2	9.3	14.3	0.82	
5	40.4	378	392	291	444	41.1	33.6	9.6	12.1	0.41	
6	40.4	408	427	423	503	41.9	33.7	8.8	12.9	0.81	
7	22.8	449	461	471	582	40.8	18.4	10.0	12.9	0.42	
8	40.7	482	499	529	588	37.8	32.1	9.3	12.2	0.42	
9	40.4	515	536	566	627	43.2	34.2	9.9	13.8	0.57	
10	39.8	542	577	585	634	40.5	34.8	10.0	12.9	0.89	
11	40.2	599	604	629	664	41.8	38.5	10.0	12.1	0.72	
12	40.4	610	633	657	684	42.3	36.6	10.3	12.3	0.80	
13	38.9	636	628	683	699	39.3	26.2	9.8	12.0	0.69	
14	39.5	658	680	680	729	38.9	33.9	9.3	10.8	0.42	
15	39.8	679	780	740	748	48.3	15.8	9.3	12.3	0.51	
16	40.1	688	717	788	739	40.1	34.3	9.3	13.4	0.63	
17	39.8	713	738	751	785	53.2	40.9	10.6	13.7	0.51	
18	40.4	728	788	798	805	49.8	40.8	9.9	13.1	0.88	
19	40.9	757	778	816	828	51.8	41.1	9.4	11.6	0.52	
20	41.0	771	798	842	821	54.2	42.1	8.8	13.2	1.42	

Comments: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTRDAY

Observer: BOWE

Recorded Data Processed by: CRUCEY JENKINS

Date: 04/25/03

Approving Laboratory Official: KEV WENSTER

Date: 05/05/08

Vehicle: 2006 BLUE BIRD BODY NHTSA NUMBER: C50901

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 185 (psi)

Rear Cold Tire Pressure: 185 (psi)

Transportation Research Center, Inc.

10628 State Route 347

East Liberty, Ohio 43319

(614)456-2811 www.trc.org

Date Tested: 02/20/08

DATA SHEET 19B - SECOND FADE AND RECOVERY (RECOVERY) (S7.13)

Testing Conditions: INV DATA, Section 0187, 02/20/08, 09:56:35

Weather Conditions: 55°F Wind: 18 mph 150°

Start Odb.: 1298 End Odb.: 1319

Procedure:

CVT, 5 steps in gear, 30-0 MPH,
10 ft/sec accel. Pedal force 10-60 lb.,
1 mile interval.

Performance Requirements:

5 runs at 10 ft/sec, steps 1-4 pedal force
≤ 180lb; step 5 pedal force +20
lb. to lesser of -18 or .6 X the
average baseline pedal force. Pedal force
range: Max. 76.0 lb. Min 24.0 lb.

STOP #	INIT SPD (mph)	LEFT FRONT		RIGHT FRONT		MAX PEDAL FORCE (lb)		AVG. PEDAL FORCE (lb)		AVG DECEL (ft/sec ²)
		INT (°F)	EXT (°F)	INT (°F)	EXT (°F)	FORCE (lb)	FORCE (lb)	FORCE (lb)	FORCE (lb)	
1	29.9	196	144	178	169	44.2	38.8	9.3		
2	40.8	223	132	193	182	48.0	39.0	10.0		
3	39.8	168	122	116	128	44.1	36.7	9.9		
4	40.2	181	143	141	129	46.2	33.2	10.0		
5	48.1	244	181	208	181	39.5	34.0	9.4		

Comment: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN KATHERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 04/29/08

Approving Laboratory Official: IAN HENRY

Date: 05/08/08

Vehicle: 2005 BLUE BIRD BODY HWYQA NUMBER: C89901

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10820 State Route 147

West Liberty, Ohio 43081

(607)644-2011 www.trcnyg.com

Date Tested: 03/30/05

DATA SHEET 20 - THIRD REBURNISH AT GVWR (87.14)

Testing Conditions: INV DATA, Section 0110, 03/30/05, 10:33:53

Weather Conditions: 55°F Wind: 16 mph 115°

Start Odo.: 1316 End Odo.: 1358

Schedule:

GVWR, 35 snubs in neutral, 40 - 20 mph,
10 snubs decel, 1 mile interval

Performance Requirements:

Lock-up <= 1 wheel, stay in 12
ft. lane. NOTE: Pedal Force
may exceed 150 lb.

STOP #	SPD (mph)	LEFT		RIGHT		AVG.	
		FRONT INT (°F)	FRONT EXT (°F)	REAR INT (°F)	REAR EXT (°F)	PEDAL FORCE (lb)	DECCEL (ft/sec ²)
1	39.8	194	212	158	163	25.7	8.3
10	40.4	212	208	242	248	35.8	9.8
20	40.4	229	266	262	241	28.0	9.9
30	40.7	243	289	276	276	24.1	9.3
25	40.8	216	280	269	242	26.6	9.8

BRAKE ADJUSTMENT

Schedule:

Adjust service brakes; record procedure and amount adjusted.

Left Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Right Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Left Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Right Rear: DISC DISC BRAKE NO ADJUSTMENT REQUIRED

MANUFACTURER'S PROCEDURE: NO ADJUSTMENT REQUIRED.

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES () NO () NO REQUIREMENTS (X)

Driver: KAREN KASTERDAY

Observer: NONE

Recorded Date Processed by: CHUCK JENKINS

Date: 04/25/05

Approving Laboratory Official: KEV WERTER

Date: 05/05/05

Vehicle: 2006 BLUE BIRD BODY METAL NUMBER: C80801

Make: BLUE BIRD

Model: VISION

Body Style: HATCHBACK

Front Cold Tire Pressure: 188 (psi)

Rear Cold Tire Pressure: 188 (psi)

Transportation Research Center, Inc.

18820 State Route 347

West Liberty, Ohio 43319

(937)664-1811 www.trcpg.com

Date Tested: 03/28/05

DATA SHEET 22 - WATER RECOVERY (BASELINE) (87.16)

Testing Conditions: INV DATA, Section 0125, 03/28/05, 12:56:47

Schedule:

SVNR, 3 stops in gear, 30-0 mph,
180-200*W INR, 18 Steps decel.

Performance Requirements:

Pedal Force 10-50 lb., Lock-up
=cl wheel, stay in 12 ft. lane.

STOP #	INR (mph)	LEFT		RIGHT		MAX. PEDAL FORCE (lb)	AVG. PEDAL FORCE (lb)	MAX. DECEL (ft/sec ²)	AVG. DECEL (ft/sec ²)	AVG. MAX FF (lb)
		FRONT INT (%F)	FRONT EXT (%F)	REAR INT (%F)	REAR EXT (%F)					
1	30.6	138	152	144	180	45.4	38.2	12.9	7.9	45.2
2	30.0	160	191	196	167	45.4	32.8	13.4	8.4	
3	28.4	160	161	144	121	44.8	38.3	12.6	8.5	

STOP #	DRIVER VEHICLE STOP COMMENTS		
	(Wheel Lock up - Direction of Stop - Stay in Lane)		
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: ZAKEN EASTRDAY

Observer: NONE

Recorded Data Processed by: CRUCK JENKINS

Date: 04/28/05

Approving Laboratory Official: LEO WEDSTEN

Date: 05/05/05

Vehicle: 2005 BLUE BIRD BODY METAL NUMBER: C88901

Make: BUICK BIRD

Model: VISION

Body Style: HATCH 508

Front Cold Tire Pressure: 105 (psi)

Rear Cold Tire Pressure: 105 (psi)

Transportation Research Center, Inc.

10320 State Route 347

East Liberty, Ohio 43019

(937) 866-1011 www.tropg.com

Date Tested: 03/30/05

DATA SHEET 22A - WATER RECOVERY (RECOVERY) (87.16)

Testing Conditions: IAW DATA, Section 0130, 03/30/05, 13:22:21

Weather Conditions: 45°F Wind: 21 mph 151° Start Odo.: 1357 End Odo.: 1359

Schedule:

Drive for 2 min., at 5mph in any combination of forward and reverse directions in 6 inches of water

5VMA, 5 stops in gear, 30-0 wph, 10 fpeps decel. stops initiated as soon as 30 wph is reached.

Performance Requirements:

5 stops at 10 fpeps, stops 1-4 pedal force <= 150lb; stop 5 pedal force <= 1b. max. min. force (5th stop only) baseline -15 lb. or times .6, whichever is lower but >5 lb. Pedal force range: max:108lb min:27 lb.

STOP #	INIT	MAX	Avg.	Max	
	SPD (mph)	PEDAL FORCE (lb)	PEDAL FORCE (lb)	AVG DECEL (ft/sec²)	DECEL (ft/sec²)
1	10.3	52.0	38.4	7.5	13.4
2	29.8	55.0	28.8	7.7	13.4
3	30.0	57.9	42.9	7.8	13.3
4	30.4	56.1	46.8	7.7	13.8
5	30.0	58.0	42.8	9.3	13.4

STOP #	DRIVER VEHICLE STOP COMMENTS		
	(Wheel Lock up)	Direction of Stop	Stay in Lane
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES

COMMENTS: NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTWELL Observed: NONE

Recorded Data Processed by: CROCK JENKINS Date: 04/25/05

Approving Laboratory Official: KIM WEBSTER Date: 05/05/05

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

Date: 04/08/05

TEST COMPLETION INSPECTION (S7.18)

Requirements: No fracture of any components such as brake springs, brake shoe or disc pads facing. All mechanical components shall be intact and functional. Friction facing tearout shall not exceed 10% of the lining on any single frictional element. No visible brake fluid or lubricant on the friction surface of the brake. No leakage at any system reservoir cover, seal, or filler opening.

Friction Material Condition:**Primary/Inner/Primary**

LF Normal appearance and color
 RF Normal appearance and color
 LR Normal appearance and color
 RR Normal appearance and color

Secondary/Outer Secondary

LF Normal appearance and color
 RF Normal appearance and color
 LR Normal appearance and color
 RR Normal appearance and color

Drum (or Rotor) Condition:

LF Normal appearance and color
 RF Normal appearance and color
 LR Normal appearance and color
 RR Normal appearance and color

Brake Fluid/Lubricant Inside Brakes:

LF None
 RF None
 LR None
 RR None

Hydraulic Component Condition:

LF Normal appearance; no leakage
 RF Normal appearance; no leakage
 LR Normal appearance; no leakage
 RR Normal appearance; no leakage
 Master Cylinder: Normal appearance; no leakage

Mechanical Component Condition:

Brake Pedal: Good
 Power Brake: Good
 Stoplights: Good
 Linkages: Good

Comments: None

DATA INDICATES COMPLIANCE

Yes (X) No () No Requirements ()

DRIVER Karen Easterday

OBSERVER None

RECORDED DATA PROCESSED BY

R. Landea

DATE 04/13/05

APPROVING LABORATORY OFFICIAL

K. Webster

DATE 04/14/05

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

Date: 04/07/05

MASTER CYLINDER RESERVOIR

<u>Reservoir Compartments</u>			P	F
(1) Does master cylinder have a reservoir compartment for each subsystem?	Yes <u>X</u> No _____	Master cylinder shall have a reservoir compartment for each subsystem.	<u>X</u>	_____
(2) Does loss of fluid in one compartment result in complete loss for another compartment?	Yes _____ No <u>X</u>	Loss of fluid from one compartment shall not cause complete loss from another compartment.	<u>X</u>	_____

Reservoir Capacity

Shall conform to requirements (1) or (2), state units. (1) For reservoirs having completely separate compartments for each subsystem.

Subsystem 1

Subsystem reservoir capacity	<u>Not Appl.</u>	Shall have a minimum capacity equivalent to the fluid displacement resulting when all wheel cylinders or caliper pistons serviced by that portion of the reservoir move from a new lining, fully retracted position to a fully worn, properly adjusted, fully applied position.	<u>Not Appl.</u>
Fluid Displaced	<u>Not Appl.</u>		

Subsystem 2

Subsystem reservoir capacity		Same as above	<u>Not Appl.</u>
Fluid displaced	<u>Not Appl.</u>		

6.0 Data Sheet No. 1.23 - Test Completion Inspection, continued

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

Date: 04/07/05

- (2) For reservoirs utilizing a portion of the reservoir for a common supply to two or more subsystems.

			<u>P</u>	<u>F</u>
Total minimum capacity for the entire master cylinder reservoir.	<u>1606 ml</u>	Shall have total minimum capacity for entire reservoir for displacement resulting from all subsystem wheel cylinders or caliper positions moving from new lining to full worn condition as above. Shall have minimum reservoir volume in partial compartment equal to at least the volume displaced by the master cylinder piston servicing the subsystem.	<u>X</u>	—
Fluid displaced	<u>1199.3 ml*</u>		<u>X</u>	—
<u>Subsystem 1</u> Minimum volume in partial compartment	<u>265 ml</u>			
Fluid displaced	<u>58.7 ml</u>			
<u>Subsystem 2</u> Minimum volume in partial compartment	<u>216 ml</u>	Same as above.	<u>X</u>	—
Fluid displaced	<u>58.7 ml</u>			

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

Date: 04/07/05

MASTER CYLINDER PISTON DISPLACEMENT

<u>Reservoir Compartments</u>		P	E
Fluid displaced by three strokes of master cylinder piston.			
Primary (Subsystem No. 1)	<u>176 ml</u>		
Secondary (Subsystem No. 2)	<u>176 ml</u>		
Fluid displaced per stroke.			
Primary	<u>58.7 ml</u>	X	—
Secondary	<u>58.7 ml</u>		
Fluid available in partial compartment			
Subsystem No. 1	<u>264 ml</u>	X	—
Subsystem No. 2	<u>216 ml</u>	X	—
<hr/>			
<u>Brake Power Unit Reservoir</u>			
Volume displaced in charging system piston or accumulator to normal operating pressure plus wheel cylinder or caliper piston displacement.	—		
			Shall have a capacity at least equal to the fluid displacement required to charge the system pistons or accumulators to normal operating pressure plus displacement when wheel cylinders or caliper pistons move from new lining to full worn condition as above.
			<u>Not Appl.</u>

6.0 Data Sheet No. 1.23 - Test Completion Inspection, continued

Veh.: 2005 BLUE BIRD VISION

NHTSA No.: C50901

Date: 04/07/05

Reservoir Labeling

P E

Exact copy of reservoir label:
 On reservoir cap - *WARNING. CLEAN
 FILLER CAP BEFORE REMOVING.
 USE ONLY DOT 3 FLUID FROM A SEALED
 CONTAINER.

Label shall read:
 "Warning, clean filler
 cap before removing;
 use only *fluid from
 a sealed container."

X —

*Fluid type specified in
 49 CFR 571.116.

Measure letter height Primary: 1/8 in.

Letters shall be at least
 1/8 inch high.

X —

Describe label attachment method
 and location.

Primary: Embossed on the top of the master cylinder
 reservoir.

Secondary: Label on the driver's side, forward
 corner of the reservoir, with contrasting letter colors.

Label shall be
 permanently
 affixed, engraved, or
 embossed and located
 so as to be visible by
 direct view either on or
 within four inches of
 the brake fluid reservoir
 filler plug or cap.

X —

Does the lettering contrast
 with the background?

Yes X
 No X

If label is not
 engraved or embossed,
 letters shall be of a color
 that contrasts with the
 background.

X —

BRAKE SYSTEMS INDICATOR LAMP

Functional Requirement:

Split service brake systems - with ignition on, lamp must light either for conditions (a) and (d) or (b) and (d). If vehicle is so equipped, must also light for (c). DQ
NOT TEST BULB CHECK.

Non-split systems - same as for split systems plus for (a), must light and sound alarm when supply pressure falls to 50% normal.

Condition:	Performance	P	F
(a) In event of hydraulic leak, must meet 1 of 4 criteria below:			
(1) Pressure differential \leq 225 psi	<u>Not Appl.</u> psi	<u>Not Appl.</u>	
(2) Non power-assisted brakes, pedal force \leq 50 lbs.	<u>Not Appl.</u> lb.	" " " "	
(3) Power-assisted brakes, pedal force \leq 25 lbs.	<u>15 & 15</u> lbs.	<u>X</u>	
(4) Supply pressure to brake power unit	Normal psi <u>Not Appl.</u> psi	" " " "	
\leq 50% normal pressure	Lamp on @ <u>Not Appl.</u> psi	" " " "	
Lamp on psi/Normal psi x 100	<u>Not Appl.</u> %	" " " "	
(b) If any reservoir falls below safe level or 25% capacity, whichever is greater.	Resvr. full <u>Not Appl.</u> ml	() @ safe lev.	
(Lamp on cc/Full cc) x 100	Lamp on <u>Not Appl.</u> ml	() above level	
	@ <u>N/A</u> %	<u>Not Appl.</u>	
(c) If total electrical failure of anti-skid or variable proportioning system.	() not so eq	<u>X</u>	
	() not so eq		
	(X) varbl. propn. Electrical	<u>X</u>	
(d) If parking brake applied		<u>X</u>	

6.0 Data Sheet No. 1.23 - Test Completion Inspection, continued

Veh.: 2005 BLUE BIRD VISION

NEHTSA No.: C50901

Date: 04/07/05

Labeling Requirement:

(For purposes of this inspection only): Lamps shall be noticeable to the driver in daylight when lighted, shall remain lighted (ignition on) as long as condition exists, and shall be labeled as indicated below.

<u>Condition:</u>	<u>Performance</u>	<u>P</u>	<u>F</u>
(a & b) Hydraulic failure indicator labeled Brake <u>Symbol only - NO LETTERING</u>	() BRAKE,	<u>Info. only</u>	
(1) Noticeable to the driver	(X) Y, () N	<u>X</u>	___
(2) Remain lighted (with leak, turn ign. off & on)	(X) Y, () N	<u>X</u>	___
(3) Lens or lettering shall be red - color of lens, coloring of lettering	<u>Black</u>		
	<u>Red</u>	<u>X</u>	___
(4) Lettering at least 1/8" high (1/4" non-split) (for a & b only)	<u>1/8 in.</u>	___	<u>X*</u>
(c) Antilock or electrical proportioning failure () ANTILOCK, <u>"ABS" within symbol</u>	() BRAKE,	<u>Info. only</u>	
(1), (2), (3) may be yellow () Y, (X) N, & (4) OK () not so eq		<u>X</u>	___
(d) Parking brake applied, indicator labeled	(X) BRAKE,	<u>X</u>	___
() PARK BRAKE, () PARK, () <u>Symbol only - NO LETTERING</u>		<u>Info. only</u>	
(1), (2), (3), (4) OK () Y, (X) N, & (4) OK		___	<u>X*</u>

*See Appendix F.

7.0 Data Sheet No. 1.25 Calculation of Minimum Reservoir Volume Requirements

Veh.: 2005 BLUE BIRD VISION

NHSA No.: C50901

Date: 04/07/05

LOCATION	TYPE	DESCRIPTION	MIN. THICKNESS	THICKNESS TO FULLY WORN (1)		
Left Front	Drum () Primary ()	()	Pre-Test	<u>0.744 in.</u>	<u>0 in.</u>	
			Post-Test	<u>0.676 in.</u>		
	Disc (X) Primary ()	()	Inboard (X)	Δ	<u>0.068 in.</u>	
			Secondary ()	Pre-Test	<u>0.745 in.</u>	<u>0 in.</u>
			Secondary ()	Post-Test	<u>0.735 in.</u>	
			Outboard (X)	Δ	<u>0.010 in.</u>	

Lining Clearance:

Diametral⁽²⁾ Not Appl. Inboard Approx. 0 in. Outboard Approx. 0 in.

Wheel Cylinder Dia⁽³⁾ Not Appl. Caliper Piston Dia⁽³⁾ 2.754 in. (x4)
 Shoe Cage Dia⁽⁴⁾ Not Appl. Center Point of Brake Assembly to
 Center Point of W.C. Not Appl.

Right Rear	Drum () Primary ()	()	Pre-Test	<u>0.742 in.</u>	<u>0 in.</u>	
			Post-Test	<u>0.654 in.</u>		
	Disc (X) Leading ()	()	Inboard (X)	Δ	<u>0.088 in.</u>	
			Secondary ()	Pre-Test	<u>0.742 in.</u>	<u>0 in.</u>
			Trailing ()	Post-Test	<u>0.652 in.</u>	
			Outboard (X)	Δ	<u>0.090 in.</u>	

Lining Clearance:

Diametral⁽²⁾ Not Appl. Inboard Approx. 0 in. Outboard Approx. 0 in.

Wheel Cylinder Dia⁽³⁾ Not Appl. Caliper Piston Dia⁽³⁾ 2.754 in. (x4)
 Shoe Cage Dia⁽⁴⁾ Not Appl. Center Point of Brake Assembly to
 Center Point of W.C. Not Appl.

7.0 Data Sheet No. 1.25 Calculation of Minimum Reservoir Volume Requirements, continued

Subsystem 1 consists of: LF () LR (X) RF () RR (X) Operative
 Subsystem 2 consists of: LF (X) LR () RF (X) RR () Operative

(1) Manufacturer's Recommendations (X) (2) Drum Brakes, Measured At Horizontal
 Rear - N/A (X) Centerline
 Manufacturer's Data: Not Appl.

Front - N/A (X) (4) Reset Position

(3) Manufacturer's Data: Metal Lining Foundation Thickness
 Front - N/A Front - 0.245 in. (nominal)
 Rear - N/A Rear - 0.245 in. (nominal)

Note: Manufacturer's new lining thickness specifications: Fronts - N/A
 Rears - N/A

No manufacturer's specifications were available.
 Thickness to Fully Worn (Linings) was not available.
 Therefore, defaulted to a zero measurement.

Procedure and Calculations for Determining Master Cylinder Volume Requirement

The procedure followed for determining the minimum volume requirements is outlined in the example shown below. The required data is taken from the previous page. Both measured and manufacturer's provided data utilized to obtain the greatest amount of fluid volume.

Disc Brake:
$$V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi d^2}{4}$$

Where:
 V_r = Volume required per wheel
 Δt = Change in thickness (average)
 i = Inboard
 o = Outboard
 d = Caliper cylinder diameter
 C = Average radial drum-to-lining clearance

Front

Disc Brake:
$$V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi d^2}{4}$$

$$\Delta t_i = 0.744 \text{ in.}$$

$$\Delta t_o = 0.745 \text{ in.}$$

$$t_{ic} + t_{oc} = 0 \text{ in.}$$

$$d = 2.754 \text{ in.}$$

$$V_r = (0.744 + 0 + 0.745 + 0) \frac{\pi (2.754)^2}{4}$$

$$= 1.489 (5.9569)$$

$$= 8.8698 \text{ in.}^3 = 150.166 \text{ ml} \times 2 \text{ Pistons per Caliper} = 300.332 \text{ ml}$$

Rear

Disc Brake:
$$V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi d^2}{4}$$

$$\Delta t_i = 0.742 \text{ in.}$$

$$\Delta t_o = 0.742 \text{ in.}$$

$$t_{ic} + t_{oc} = 0 \text{ in.}$$

$$d = 2.754 \text{ in.}$$

$$V_r = (0.742 + 0 + 0.742 + 0) \frac{\pi (2.754)^2}{4}$$

$$= 1.484 (5.9569)$$

$$= 8.8400 \text{ in.}^3 = 149.662 \text{ ml} \times 2 \text{ Pistons per Caliper} = 299.324$$

$$\text{Total Volume required } 2(300.332) + 2(299.324) = 1199.3 \text{ ml}^*$$

APPENDIX A

Instrumentation
Pre- & Post-Test Calibrations
Daily Calibrations

7.0 INSTRUMENTATION - FMVSS 105-83 CALIBRATION (12 MONTH MAX. INTRVL)

VEHICLE: 2005 BLUE BIRD VISION; NHTSA NO.: C50901; DATE: 03/10/05

INSTRUMENT	SERIAL NUMBER	CALIBRATION DATE	NEXT CALIBRATION
Data Acquisition System - Link DAS 2030	975016	02/28/04	08/30/06
Computer - Dell Latitude/Link Engr.	TRC-43207	Not Applicable	Not Applicable
Software - Link Engr. Rev Data	TRC Propr.	NA	NA
LF Torque Wheel	Not Utilized		
RF Torque Wheel	Not Utilized		
LR Torque Wheel	Not Utilized		
RR Torque Wheel	Not Utilized		
Stopwatch - Accusplit	SW ST03	07/15/04	07/15/05
Tire Pressure Gauge - Dill	AG-034	04/27/04	04/27/05
Voltage Multimeter - Dana 4300	M-108639	02/07/05	02/07/06
Pedal Force Transducer - GSE	SN - 120	Each Test	Each Test
Asst. Pipe-Handle Steel Weights - Ohaus	LB-0002	06/22/04	06/22/05
Park Brake Force Transducer - Interface	41721	Each Test	Each Test
LF Hydraulic Pressure Transducer	Not Utilized		
RF Hydraulic Pressure Transducer	Not Utilized		
LR Hydraulic Pressure Transducer	Not Utilized		
RR Hydraulic Pressure Transducer	Not Utilized		
Accelerometer - Setra (+ or - 15 g) 141A	A-167627	Each Test	Each Test
Fifth Wheel - ADAT DSR-06 Radar	140.0182	Each Test	Each Test
Wind Velocity/Direct. - Davis Model 6410	041008N03	11/23/04	11/23/05
Ambient Temp. Gage - Davis Model 6150C	B10910A01	11/23/04	11/23/05
LF Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
RF Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
LR Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
RR Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
Lock-up Detection System	TRC Propr.	Each Test	Each Test
Vehicle Weight - Toledo/Mettler Scales JAGXTREME 3000, (Bldg. 50)	7581RD4011 SN 118641-1KD	02/08/05	05/08/05

QUALITY ASSURANCE 

PRE-TEST CALIBRATION

INSTRUMENTATION CALIBRATION

FMVSS 105-83

<u>X</u>	Pre-Test Calibration	Technician	<u>Karen Easterday</u>
—	Post-Test Calibration	Date	<u>03/10/05</u>
	Test Vehicle No. <u>C50901</u>	Approved By	<u>Randy Landes</u>

INSTRUMENT	CALIBRATION PROCEDURE	DESIRED VALUE	INDICATED VALUE	RECORDED VALUE	ALLOWED DEVIATION
Velocity Meter	7.83 KHz Input	70 mph	<u>N/A</u> mph	<u>N/A</u> mph	.1 mph
5th Wheel Distance Meter	Drive	1000 ft.	<u>1000.0</u> ft.	<u>1000.0</u> ft.	10 ft.
	Measured	500 ft.	<u>501.8</u> ft.	<u>501.8</u> ft.	5 ft.
	Distance	250 ft.	<u>250.6</u> ft.	<u>250.6</u> ft.	2.5 ft.
	@ <10 mph	100 ft.	<u>99.5</u> ft.	<u>99.5</u> ft.	1 ft.
5th Wheel Velocity Meter	Drive	30 mph	<u>119.96</u> sec.	<u>30.0</u> mph	1 sec./
	Measured Mile @ Constant Speed	120 sec. 60 mph/ 60 sec.	<u>59.70</u> sec.	<u>60.0</u> mph	1 mph 1 sec./
Pedal Force Transducer	Cal. Value	73.7 lbs.	<u>73.7</u> lbs.	<u>73.7</u> lbs.	1.5 lbs.
	Dead Weight	0 lbs.	<u>0.0</u> lbs.	<u>0.0</u> lbs.	1.5 lbs.
		25 lbs.	<u>25.1</u> lbs.	<u>25.1</u> lbs.	1.5 lbs.
		50 lbs.	<u>50.2</u> lbs.	<u>50.2</u> lbs.	1.5 lbs.
		75 lbs.	<u>74.9</u> lbs.	<u>74.9</u> lbs.	1.5 lbs.
		100 lbs.	<u>100.0</u> lbs.	<u>100.0</u> lbs.	1.5 lbs.
		125 lbs.	<u>124.9</u> lbs.	<u>124.9</u> lbs.	1.5 lbs.
		150 lbs.	<u>150.0</u> lbs.	<u>150.0</u> lbs.	1.5 lbs.
		175 lbs.	<u>175.2</u> lbs.	<u>175.2</u> lbs.	1.5 lbs.
		200 lbs.	<u>200.0</u> lbs.	<u>200.0</u> lbs.	1.5 lbs.
Accelerometer	Tilt To	0 fpsps	<u>0.0</u> fpsps	<u>0.0</u> fpsps	.5 fpsps
	Known Angles to Simulate Decel	10 fpsps	<u>10.0</u> fpsps	<u>10.0</u> fpsps	.5 fpsps
		20 fpsps	<u>20.0</u> fpsps	<u>20.0</u> fpsps	.5 fpsps
		25 fpsps	<u>25.0</u> fpsps	<u>25.0</u> fpsps	.5 fpsps
		32.2 fpsps	<u>32.2</u> fpsps	<u>32.2</u> fpsps	.5 fpsps

INSTRUMENTATION CALIBRATION, continued

FMVSS 105-83

<u>X</u>	Pre-Test Calibration	Technician	<u>Karen Easterday</u>
—	Post-Test Calibration	Date	<u>03/10/05</u>
	Test Vehicle No. <u>C50901</u>	Approved By	<u>Randy Landes</u>

Lock-Up
Detector

0 Wheel	Light "ON"		
Speed	LFX	<u>X</u>	Yes
Simulation	RFX	<u>X</u>	Yes
@ over	LRX	<u>X</u>	Yes
20 mph	RRX	<u>X</u>	Yes

DAILY CALIBRATION

DAILY CALIBRATIONS (1 of 3)

Vehicle: 2005 Blue Blvd Vision

NHTSA No.: C60601

Deceleration Calibration Data for Unit 5051

Desired full scale value is: 32.2 ft/s/s

Allowed deviation is: + or - 0.5 ft/s/s

Accelerometer Level to zero, then tilt to full scale

"Date"	"Time"	Zero	Cal
"stp"	"stp"	"Decal"	"Decal"
3/9/2005	15:50:59	0.04	32.25
3/14/2005	8:44:30	0.02	32.19
3/16/2005	8:47:48	0.13	32.14
3/16/2005	8:22:00	0.02	32.20
3/16/2005	15:56:16	0.06	32.15
3/17/2005	8:39:22	-0.02	32.18
3/17/2005	15:24:09	0.00	32.18
3/18/2005	8:22:58	-0.04	32.23
3/18/2005	11:58:31	0.06	32.19
3/21/2005	8:29:50	-0.05	32.19
3/21/2005	16:13:21	0.06	32.26
3/22/2005	8:22:36	0.03	32.18
3/22/2005	15:02:25	-0.01	32.18
3/24/2005	13:50:27	0.09	32.21
3/24/2005	15:18:30	0.07	32.25
3/29/2005	8:47:49	-0.02	32.18
3/29/2005	15:23:48	-0.04	32.20
3/30/2005	8:14:06	-0.02	32.22
3/30/2005	13:36:08	0.00	32.23
4/6/2005	7:33:48	0.03	32.27

PRE-TEST CAL

POST-TEST CAL

Pre-Test Linearity Check 03/10/05

Actual (ft/s/s)	Req. (ft/s/s)
0.0	0.0
10.0	10.0
20.0	20.0
25.0	25.0
32.2	32.2

Post-Test Linearity Check 03/30/05

Actual (ft/s/s)	Req. (ft/s/s)
0.0	0.0
10.0	10.0
20.0	20.0
25.0	25.0
32.2	32.2

Distance Calibration for 5051

Desired value is: 1000 ft

Allowed deviation is: 10 ft

Light beam Drive from 0 to 100 to 0 km/h
distance sensor on a measured Micrometer

"Date"	"Time"	Distance for
"stp"	"stp"	"1000 meters"
3/10/2005	11:47:21	1000.1
3/10/2005	11:48:30	501.6
3/10/2005	11:50:51	250.6
3/10/2005	11:52:14	99.6
3/14/2005	8:49:52	999.8
3/15/2005	9:01:09	999.6
3/16/2005	8:31:18	999.9
3/16/2005	16:02:29	1000.2
3/17/2005	9:30:12	1000.0
3/17/2005	15:27:01	1000.0
3/18/2005	8:32:41	1000.1
3/18/2005	11:45:25	997.7
3/21/2005	8:40:01	1001.5
3/21/2005	16:02:47	1000.2
3/22/2005	8:33:22	1000.1
3/22/2005	15:08:59	1000.2
3/24/2005	14:20:06	1000.3
3/24/2005	15:18:50	1001.2
3/28/2005	9:00:21	1001.8
3/29/2005	15:18:48	999.2
3/30/2005	8:23:31	999.7
3/30/2005	13:42:25	999.9
3/30/2005	13:48:59	499.1
3/30/2005	13:51:54	250.4
3/30/2005	13:54:23	100.5

PRE-TEST CAL 1000

PRE-TEST CAL 500

PRE-TEST CAL 250

PRE-TEST CAL 100

POST-TEST CAL 1000

POST-TEST CAL 500

POST-TEST CAL 250

POST-TEST CAL 100

DAILY CALIBRATIONS CONTINUED (2 of 3)

VEHICLE: 2005 Blue Blvd Vision

NHTSA No.: C50901

Wheel Tachometer Calibrations for Unit 5051

Wheel tachometer calibrations: all wheel speeds should be 20 mi/h

Wheel lock detector
While at a standstill, check zeros. Drive vehicle at approx. 20 mi/h and engage zero speed switch for each wheel

"Date" stp	"Time" stp	Zero LF	@20mi/h LF	Zero RF	@20mi/h RF	Zero LR	@20mi/h LR	Zero RR	@20mi/h RR
3/14/2005	8:51:43	-0.1	23.1	-23.0	22.2	-0.1	22.7	-0.2	23.2
3/15/2005	8:57:48	0.0	22.5	-5.5	23.0	0.0	24.1	-0.2	23.5
3/16/2005	8:26:39	0.0	2.7	-2.8	0.0	0.0	2.6	0.0	2.6
3/18/2005	18:00:45	-0.1	22.4	-0.3	22.8	-0.1	21.4	-0.8	24.1
3/17/2005	8:25:42	-0.1	23.8	-12.8	22.0	0.0	23.9	-0.1	22.5
3/17/2005	15:25:59	0.0	21.8	-16.3	21.7	-0.1	22.3	-0.8	23.5
3/18/2005	8:28:19	-0.1	21.7	0.0	22.3	-0.1	21.5	-0.2	22.0
3/18/2005	11:44:10	0.0	22.5	-4.1	21.7	0.0	22.0	-0.6	21.8
3/21/2005	9:36:39	0.0	23.1	-0.3	22.9	-1.7	20.5	-0.2	23.7
3/21/2005	16:00:36	0.1	22.6	-0.2	21.7	0.0	21.5	-0.1	22.0
3/22/2005	8:51:33	0.1	22.8	-11.5	22.1	0.0	21.8	-0.3	22.8
3/22/2005	16:06:47	-0.1	22.3	-2.5	22.4	-3.8	19.4	-0.4	22.4
3/24/2005	14:16:45	-0.1	21.5	-6.7	22.2	-0.1	21.1	-0.2	21.5
3/24/2005	16:18:39	-0.1	21.9	0.0	22.0	-0.1	21.8	-0.9	21.5
3/28/2005	8:58:38	-0.1	23.7	0.0	23.1	-1.7	21.3	-0.2	24.2
3/29/2005	15:16:16	-0.2	22.2	-0.1	22.8	0.0	21.5	-0.5	22.8
3/30/2005	8:20:41	-0.1	23.4	-3.2	22.4	0.0	21.9	-0.2	23.1
3/30/2005	13:40:48	0.1	22.7	-0.2	23.0	-0.1	23.2	-0.4	24.1

PRE-TEST CAL.

When driven over 20 mi/hr and the wheel tach generators are shunted to zero volts, do all four wheel lock indicators align?: Yes, No.

Pedal Force Meter Calibration for Unit 5051

Target shunt calibration is 73.7 lb

Desired recorded value is: 73.7 lb

Allowed deviation is: 1.5 lb

Service brk. pedal effort
Driver engages a fixed shunt cal switch.

"Date" stp	"Time" stp	Zero Force	Cal Val Force lb
3/8/2005	15:28:48	-0.8	200.8
3/14/2005	9:14:38	-0.8	74.4
3/15/2005	8:45:39	-1.0	74.9
3/16/2005	8:20:49	-1.1	74.3
3/16/2005	16:58:49	-1.0	74.5
3/17/2005	8:37:22	72.7	74.9
3/17/2005	8:38:38	-1.5	74.4
3/17/2005	15:22:27	-1.2	74.5
3/18/2005	9:23:42	-1.1	74.3
3/18/2005	11:41:14	-1.3	74.4
3/21/2005	9:09:06	-1.1	15.3
3/21/2005	9:28:22	-0.7	74.9
3/21/2005	11:51:00	-1.1	15.2
3/21/2005	16:01:49	-0.9	74.5
3/22/2005	8:29:27	-1.0	74.8
3/22/2005	15:01:43	-1.2	74.8
3/24/2005	13:51:11	-0.9	74.6
3/24/2005	15:13:24	-1.1	74.4
3/28/2005	8:49:38	-1.0	74.6
3/29/2005	15:12:48	-1.0	74.9
3/30/2005	6:18:22	-0.9	74.9
3/30/2005	13:39:29	-0.9	75.2
4/6/2005	8:30:18	-0.9	201.3

PRE-TEST CAL. @ 200 lb. Load

SUBSYSTEM #1 WARN. LAMP

SUBSYSTEM #2 WARN. LAMP

POST-TEST CAL. @ 200 lb. Load

Pre-Test Linearity Check - 03/10/05

Actual Force (lb)	Recorded Force (lb)
0	0.0
50	50.2
100	100.0
150	150.0

Post-Test Linearity Check - 03/30/05

Actual Force (lb)	Recorded Force (lb)
0	0
50	50.3
100	100.5
150	150.5

DAILY CALIBRATIONS CONTINUED (3 of 3)

VEHICLE: 2005 Blue Bird Vision

NHTSA No. C50901

Dynamic Speed Calibration for Unit 5051

Desired speed value is: 60 mi/h

Allowed deviation is: 1.0 mi/h

Desired time value is: 60 seconds

Allowed deviation is: + or - 1.0 seconds

Light beam
speed sensor

Drive vehicle
at a steady
60 mi/h
through a
mile.

"Date" stp	"Time" stp	"Speed" km/h	"Time" sec
3/10/2005	11:57:29	60.2	59.70
3/10/2005	12:00:19	30.3	119.96
3/14/2005	8:56:25	55.2	65.39
3/15/2005	9:04:11	55.2	65.29
3/16/2005	8:34:55	55.0	65.44
3/16/2005	16:05:26	54.9	65.29
3/17/2005	9:33:17	55.1	64.59
3/17/2005	15:30:15	55.1	65.74
3/18/2005	9:36:01	60.1	59.89
3/18/2005	11:48:36	60.1	59.68
3/21/2005	9:42:57	60.0	59.63
3/21/2005	16:05:49	55.1	65.29
3/22/2005	8:37:07	55.6	64.90
3/22/2005	15:10:13	55.6	64.95
3/24/2005	14:23:14	56.0	65.28
3/24/2005	16:22:42	55.6	64.93
3/29/2005	9:03:38	55.5	64.78
3/29/2005	16:20:16	55.5	64.87
3/30/2005	8:28:29	55.2	65.58
3/30/2005	13:57:56	55.9	65.31
3/30/2005	14:01:11	30.0	119.86

PRE-TEST CAL. 60

PRE-TEST CAL. 30

POST-TEST CAL. 60

POST-TEST CAL. 30

Special Note: On occasion, due to weather, vehicle load or traffic, the test vehicle was unable to achieve 60 mph. Therefore, 55 mph was used as the calibration check. The time interval for 55 mph is 65 seconds.

POST-TEST CALIBRATION

POST-TEST CALIBRATION

FMVSS 105-83

<u>X</u>	Pre-Test Calibration	Technician	<u>Karen Easterday</u>
	Post-Test Calibration	Date	<u>03/30/05</u>
	Test Vehicle No. <u>C50901</u>	Approved By	<u>R. Landes</u>

INSTRUMENT	CALIBRATION PROCEDURE	DESIRED VALUE	INDICATED VALUE	RECORDED VALUE	ALLOWED DEVIATION
Velocity Meter	7.90 KHz Input	70 mph	<u>N/A</u> mph	<u>N/A</u> mph	.1 mph
5th Wheel Distance Meter	Drive Measured Distance	1000 ft.	<u>999.9</u> ft.	<u>999.9</u> ft.	10 ft.
		500 ft.	<u>498.9</u> ft.	<u>498.9</u> ft.	5 ft.
		250 ft.	<u>250.4</u> ft.	<u>250.4</u> ft.	2.5 ft.
	@ <10 mph	100 ft.	<u>100.5</u> ft.	<u>100.5</u> ft.	1 ft.
5th Wheel Velocity Meter	Drive Measured Mile @ Constant Speed	30 mph	<u>119.86</u> sec.	<u>30.0</u> mph	1 sec./1 mph
		120 sec.			
		55 mph/65 sec.	<u>64.31</u> sec.	<u>55.0</u> mph	1 sec./1 mph
Pedal Force Transducer	Cal. Value	73.7 lbs.	<u>73.7</u> lbs.	<u>73.7</u> lbs.	1.5 lbs.
	Dead Weight	0 lbs.	<u>0.0</u> lbs.	<u>0.0</u> lbs.	1.5 lbs.
		25 lbs.	<u>25.9</u> lbs.	<u>25.9</u> lbs.	1.5 lbs.
		50 lbs.	<u>50.3</u> lbs.	<u>50.3</u> lbs.	1.5 lbs.
		75 lbs.	<u>75.4</u> lbs.	<u>75.4</u> lbs.	1.5 lbs.
		100 lbs.	<u>100.5</u> lbs.	<u>100.5</u> lbs.	1.5 lbs.
		125 lbs.	<u>125.6</u> lbs.	<u>125.6</u> lbs.	1.5 lbs.
		150 lbs.	<u>150.5</u> lbs.	<u>150.5</u> lbs.	1.5 lbs.
		175 lbs.	<u>175.4</u> lbs.	<u>175.4</u> lbs.	1.5 lbs.
200 lbs.	<u>200.5</u> lbs.	<u>200.5</u> lbs.	1.5 lbs.		
Accelerometer	Tilt To Known Angles to Simulate Decel	0 fpsps	<u>0.0</u> fpsps	<u>0.0</u> fpsps	.5 fpsps
		10 fpsps	<u>10.0</u> fpsps	<u>10.0</u> fpsps	.5 fpsps
		20 fpsps	<u>20.0</u> fpsps	<u>20.0</u> fpsps	.5 fpsps
		25 fpsps	<u>25.0</u> fpsps	<u>25.0</u> fpsps	.5 fpsps
		32.2 fpsps	<u>32.2</u> fpsps	<u>32.2</u> fpsps	.5 fpsps

INSTRUMENTATION CALIBRATION, CONTINUED

FMVSS 105-83

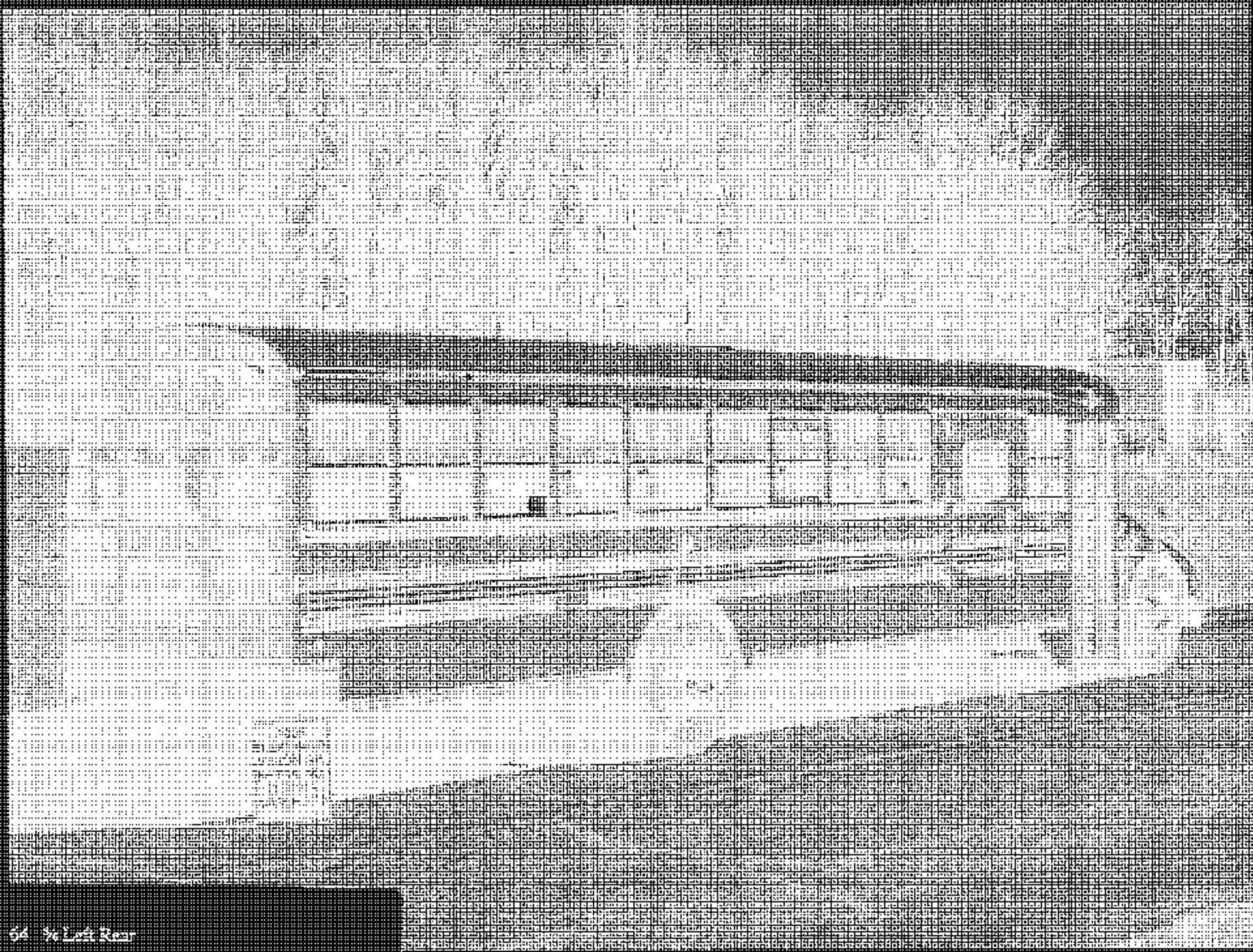
<u> </u>	Pre-Test Calibration	Technician	<u>Karen Easterday</u>
<u> X</u>	Post-Test Calibration	Date	<u>03/30/05</u>
	Test Vehicle No. <u>C50901</u>	Approved By	<u>R. Landes</u>

Lock-Up Detector	0 Wheel Speed Simulation @ over 20 mph	Light "ON" LFX RFX LRX RRX	<u> X</u>	<u> Yes</u>
			<u> X</u>	<u> Yes</u>
			<u> X</u>	<u> Yes</u>
			<u> X</u>	<u> Yes</u>

APPENDIX B

Photographs





MANUFACTURED BY
BLUE BIRD BODY COMPANY

DATE OF MFG. 08/04

AVAILABLE TIRE - RER CHOICE

GVWR 13612 LB (30000 LB)

GVW FRONT 4537 LB (10000 LB) WITH 11RX22 56 TREAD

7 50X22 5 RIMS AT 723 RPM (105 PSI) COLD CHARGE

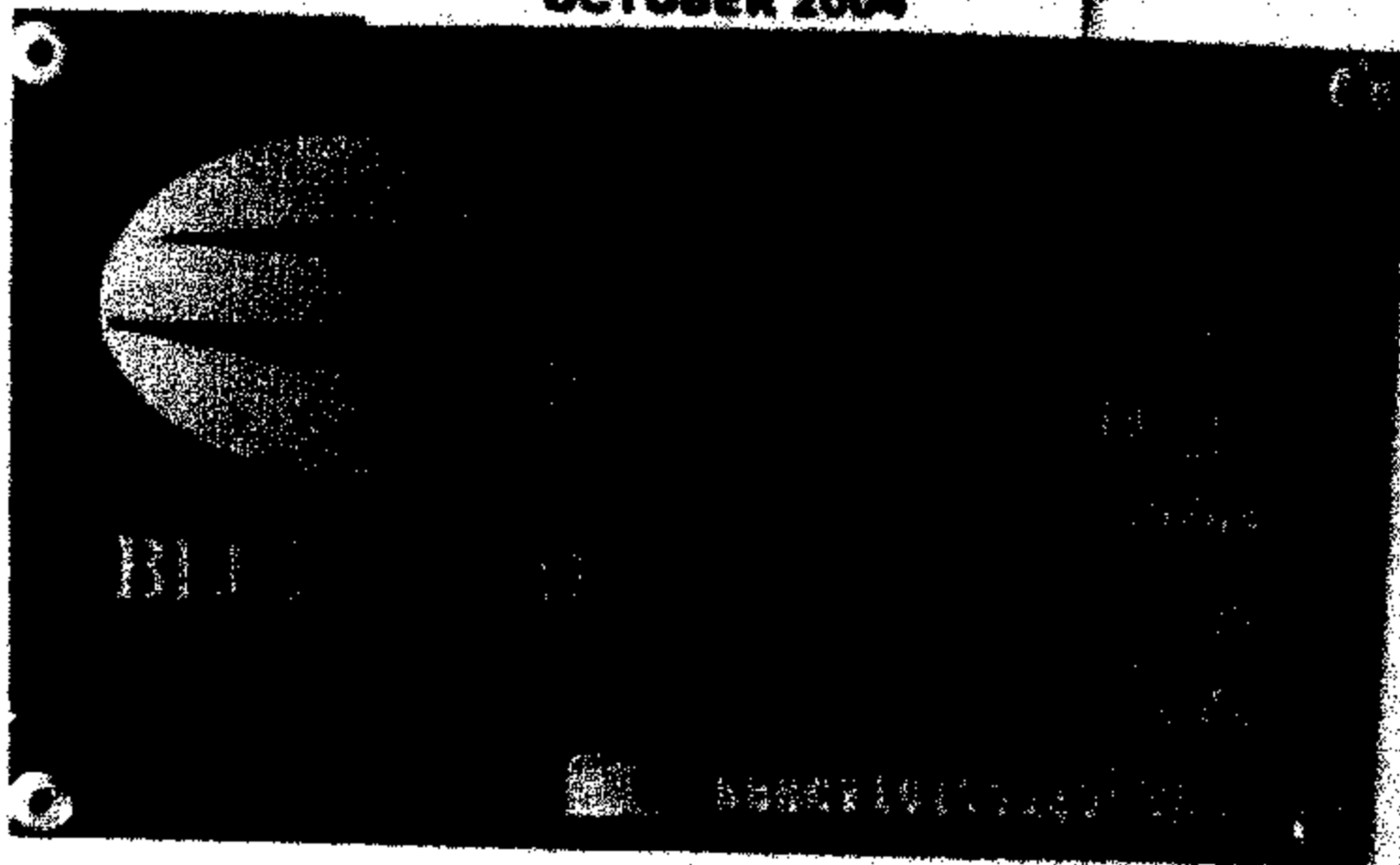
GVW REAR 9528 LB (21000 LB) WITH 11RX22 56 TREAD

7 50X22 5 RIMS AT 723 RPM (105 PSI) COLD CHARGE

THIS VEHICLE COMPLIES TO ALL APPLICABLE U.S.
FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN
EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE

V.I.N. 1BAKGCXHD5F227003 TYPE CLASSIFICATION SCHOOL BUS

**2005 BLUE BIRD VISION S.S.
NHTSA NO. C50901
OCTOBER 2004**



FURNISH INFORMATION FROM THE

CHASSIS
SERIAL

22103

TRANSMISSION

22415

FRONT
AXLE

22610

REAR
AXLE

22650

REAR AXLE
RATIO

3.70

CHASSIS SERVICE NO.

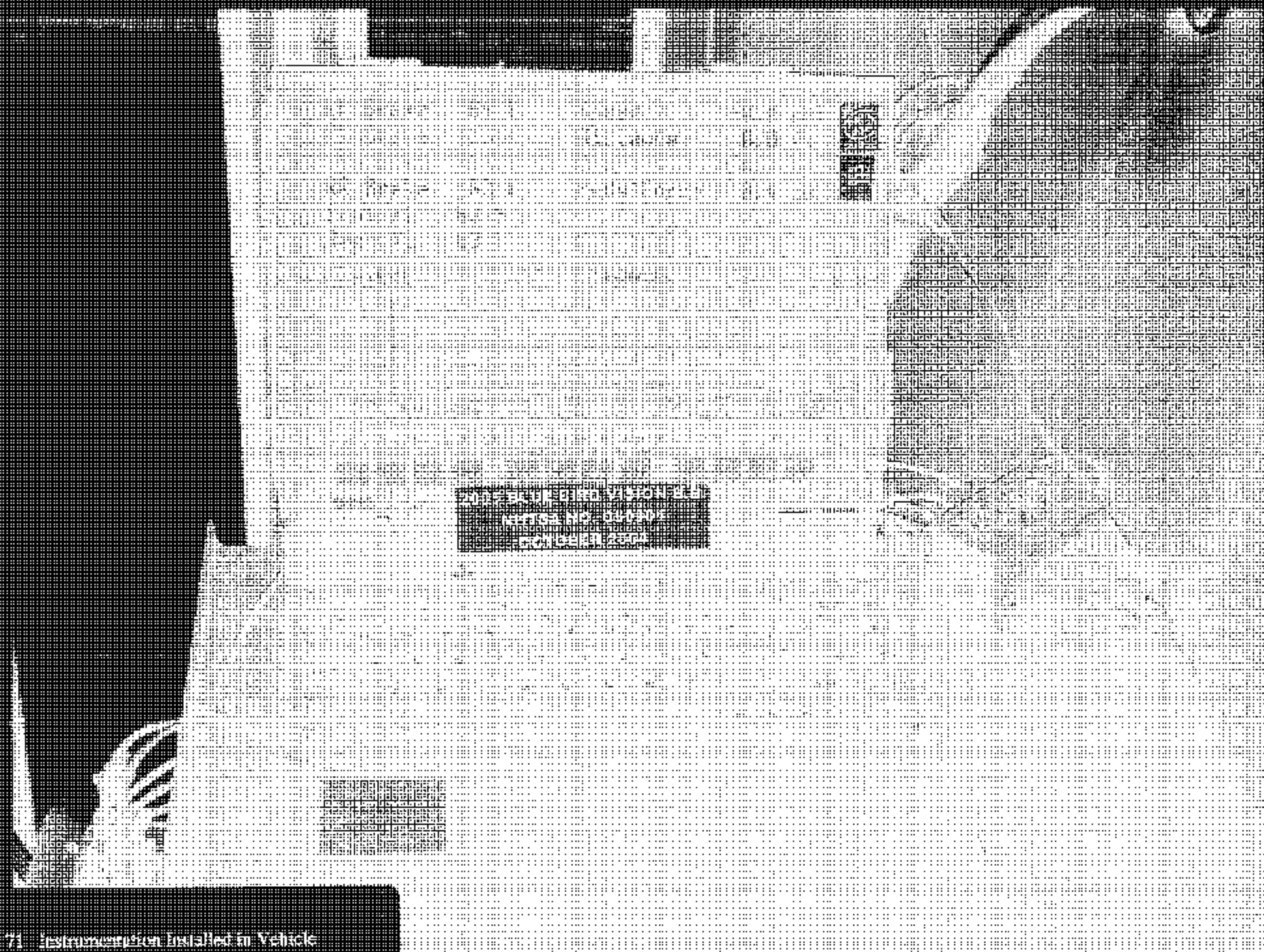
22103

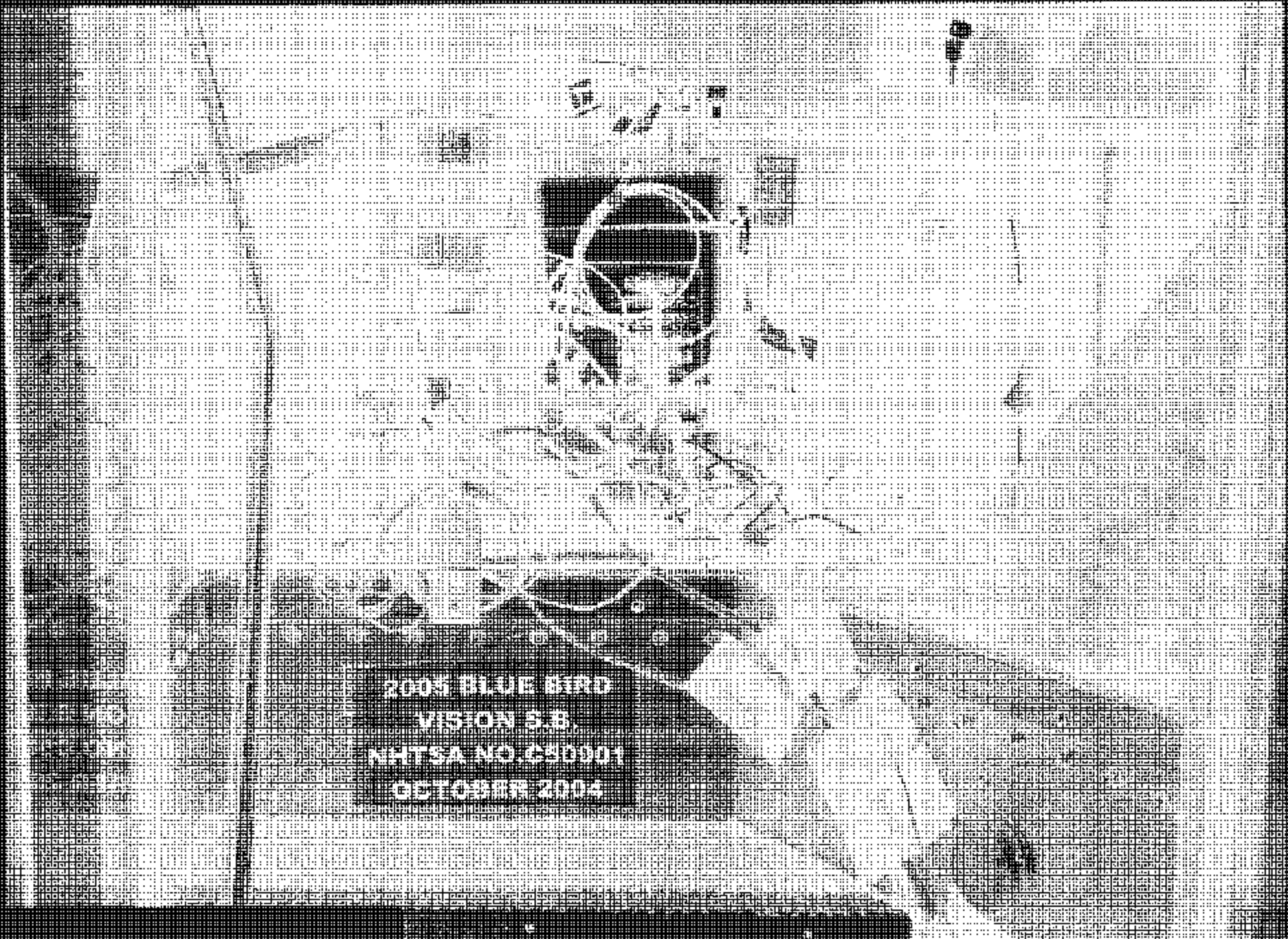


68 Thermocouple installation
Left Front

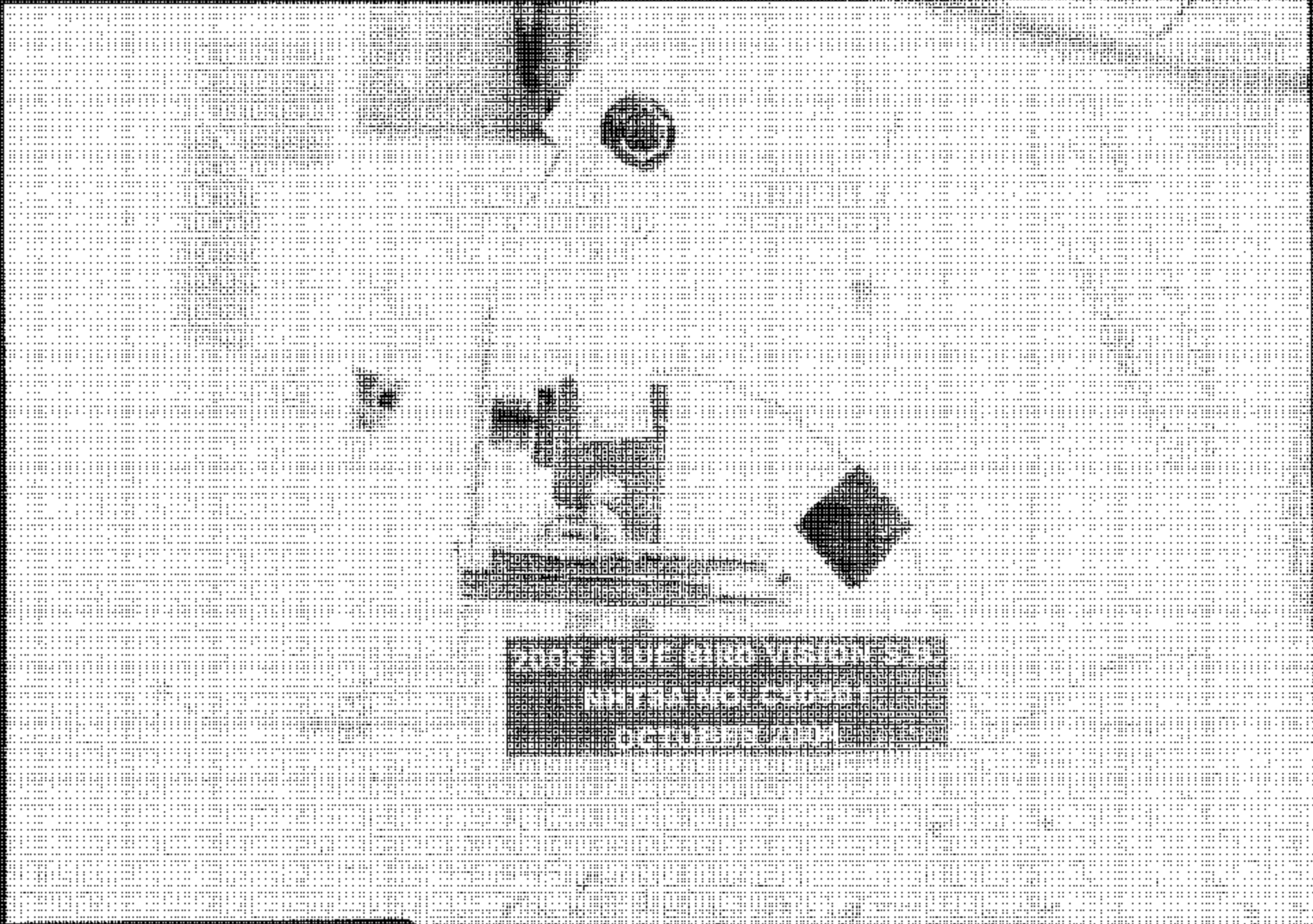


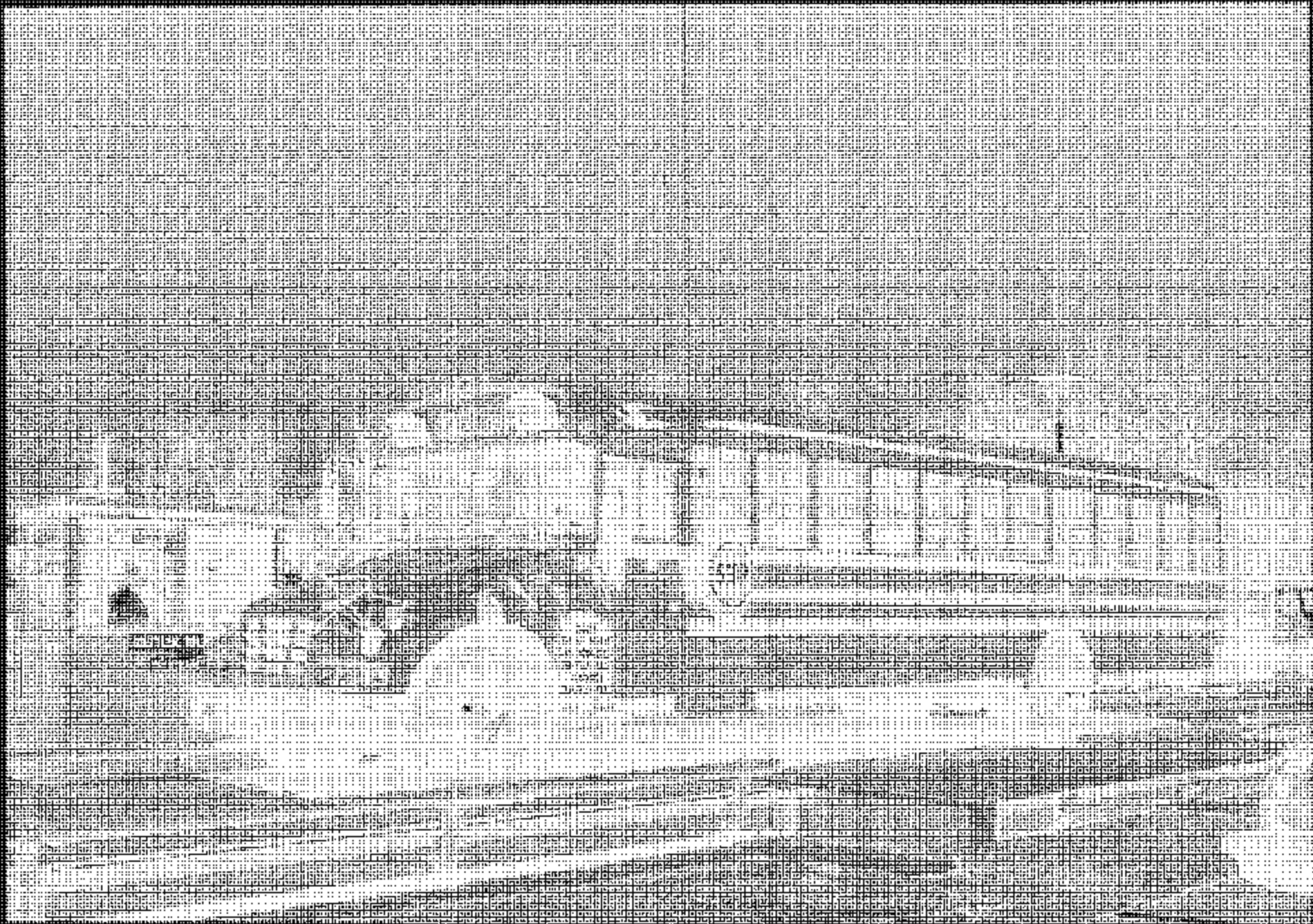
69 Thermocouple Installation
Right Rear





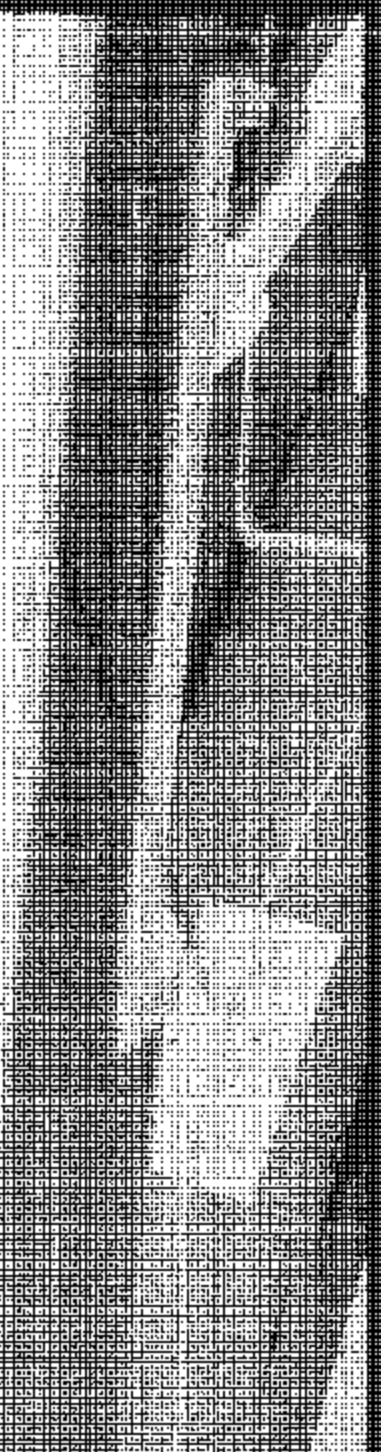
2004 BLUE BIRD
VISION 38
NITSANO 43001
02 0200 2004



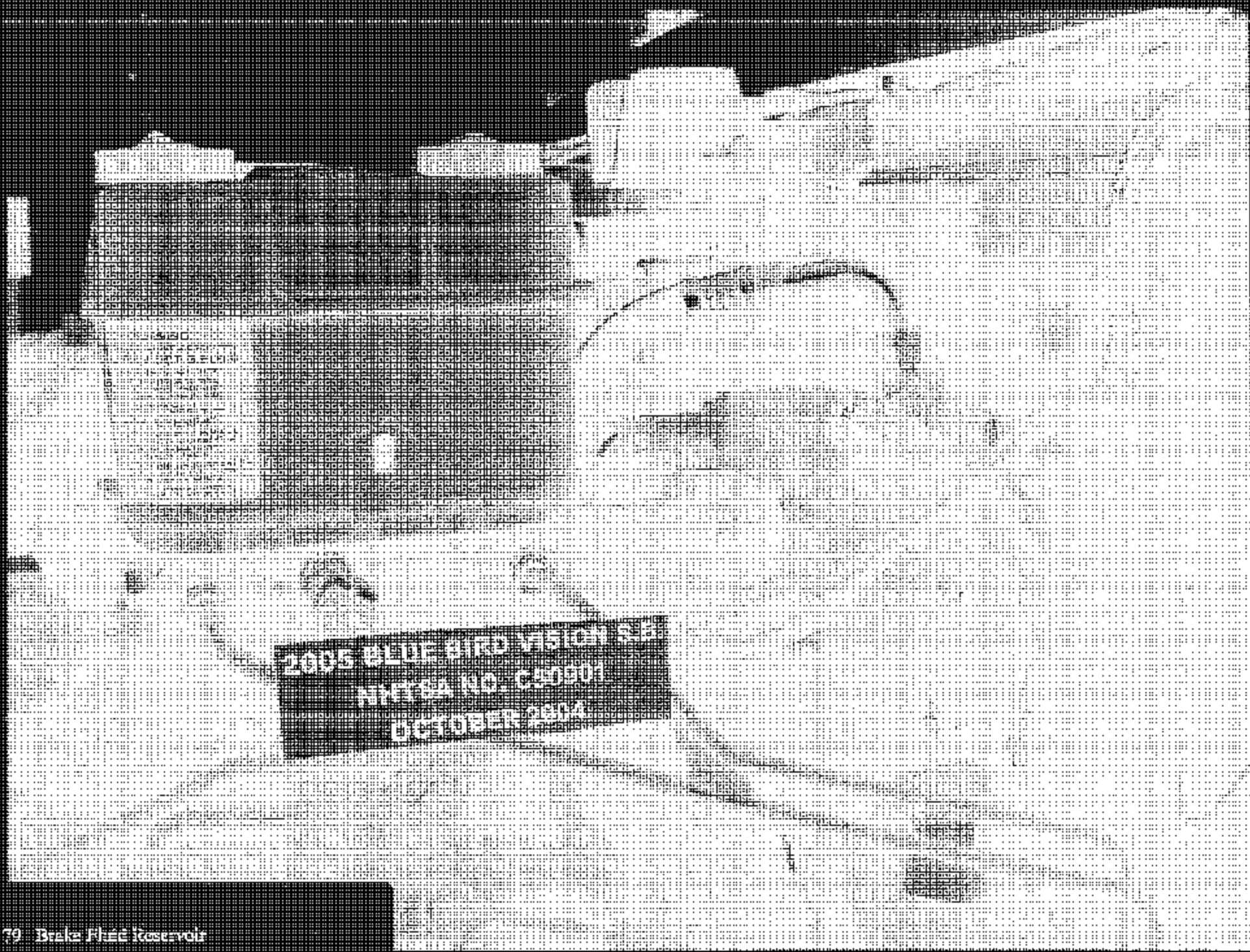


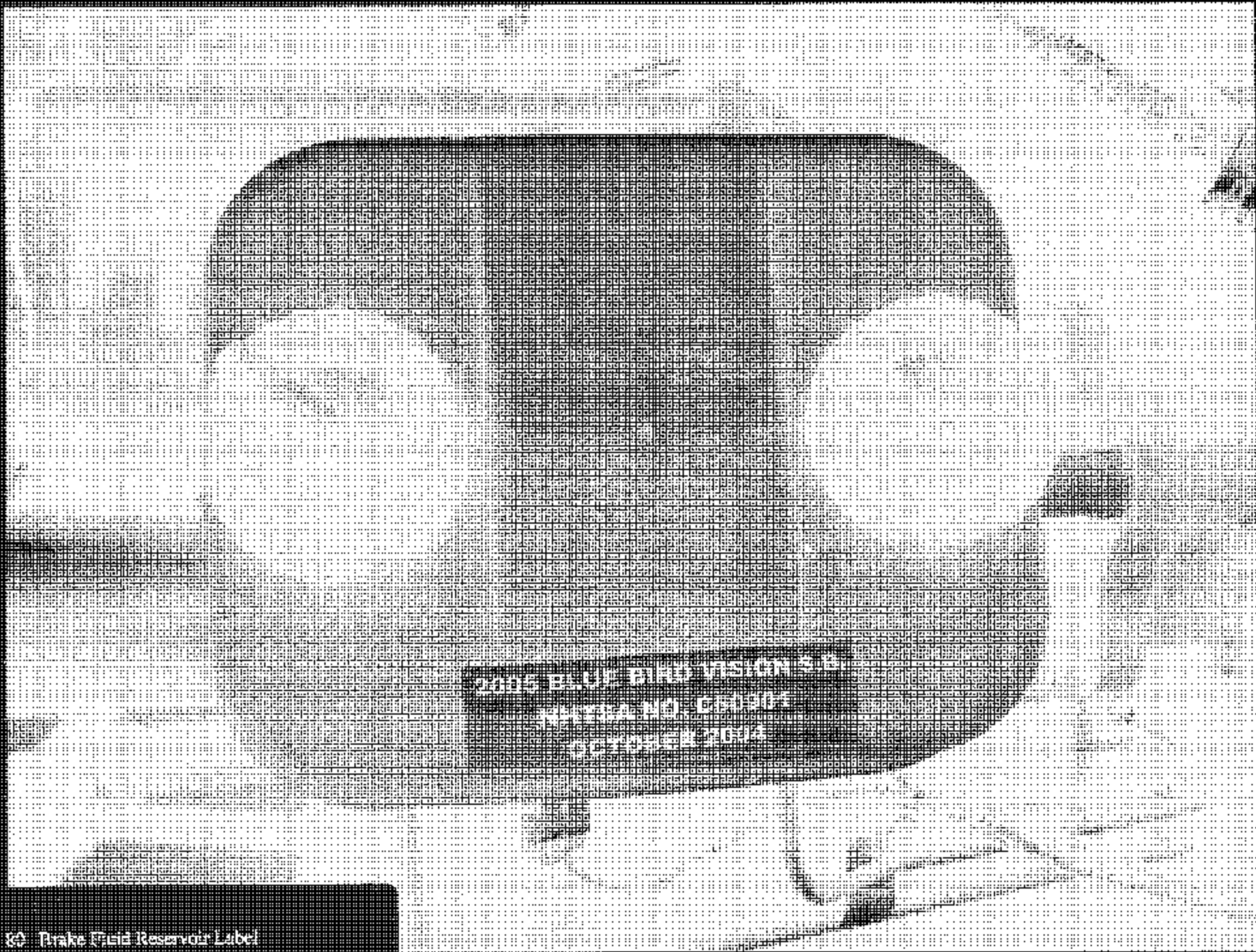


2005 BLUE BIRD
VISION S.B.
NHTSA NO. C50901
OCTOBER 2004



2005 BLUE BIRD VISION S.B.
NHTSA NO. C50901
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APPENDIX C

Copy of Manufacturer's Sticker

Note for C50901:

There was no manufacturer's sticker available for the final stage manufacturer

APPENDIX D

Discussion on Data

DISCUSSION ON DATA

Any discrepancies in brake temperature from visual to recorded data are probably due to the fact that the visual temperatures were taken prior to accelerating to speed, and the recorder was not turned on until just before starting the stop.

Symbols for Brake Components

4	-	4 Wheel	G	-	Groan	DL	-	Deceleration (State FPSPS)
X	-	Skid	SQ	-	Squeal	PF	-	Pedal on Floor
L	-	Left	SQK	-	Squeak	SCP	-	Shoe Scrape
R	-	Right	PO	-	Pinchout	RB	-	Rubber Banding
R	-	Rear	P	-	Pull	O	-	Odor
F	-	Front	R	-	Shudder	NOX	-	No Skid
B	-	Both	M	-	Momentary			

INT or INIT	-	Initial Part of Stop
MID	-	Middle of Stop
END	-	End of Stop

All stops were performed manually.

APPENDIX E

Contractor's Comments
Procedure Modifications
and
Test Facility

Comments for vehicle C50901.

For all recorded decelerations:

The recorded average deceleration values for the tests are slightly lower than that which is required or targeted for certain test sections. However, in all cases and in reality, the driver maintained the correct required/target deceleration values for the majority of time for each of those stops. The recorded deceleration is acquired from the moment the service brake pedal is moved until the vehicle reaches zero speed. Therefore, the time needed to achieve the target deceleration (rise time) and the time the vehicle goes from the target deceleration to zero (fall time) is included in the average deceleration calculation. The rise and fall times were added to the entire length of the stops. Hence the recorded average deceleration values were always less than the required/target deceleration values.

The test vehicle has a design capability of 72 passengers when the 3-abreast seats are used on both sides of the vehicle for the full length of the passenger compartment. However, the test vehicle was actually equipped with three seat configurations: three abreast seating on the curb side with the seat installation utilizing approximately two-thirds of the vehicle length, two abreast seating on the road side utilizing approximately one-half of the vehicle length and two wheel chair spaces also on the road side. A chair lift was located on the curbside of the vehicle across from the area dedicated to the wheel chair installation.

The Parking Brake was a non-service type drum brake, located at the output shaft of the transmission. It was engaged by means of a hand-operated, over-center lever with a cable tensioner on the lever's end. Rotating the tensioner clockwise tightens the cable and anti-clockwise loosens the cable tension.

The variable proportioning is likely integrated with the ABS actuator and has not the ability to be failed separately from the ABS failure mode. Therefore, no failed proportioning tests were performed.

7.5-MILE TEST TRACK

The 7.5-mile test track encloses a 1,600 acre area, one mile wide and 3.5 miles long.

The track has a downward grade, north to south, of 0.228 percent and a cross slope in the straight-aways of 3/16 inch per foot. The 1.88 mile long straight-aways flow into transition areas 2,300 feet in length and then into 5,275 foot long curves with a constant radius of 2,400 feet. The 36-foot wide straight-aways and the 42-foot wide curves provide three test lanes. Paved berms, 16 feet in width, border the straight-aways and the inside of the curves.

As a vehicle moves toward the outside of the track in the curves, it encounters a progressively steeper bank. The inside lane (or "slow" lane) has a bank of 10 degrees allowing a neutral speed of 80 mph with no side forces. In the center lane, the slope increases to 19 degrees resulting in a neutral speed of 110 mph. The outside lane's 28-degree bank allows a 140 mph neutral speed. Rimming the outer lane is a seven-foot safety lane culminating in a 36-degree slope at the guardrail.

The facility is paved with Portland cement concrete. It carries a maximum single axle load of 36,000 pounds and a maximum tandem axle load weight of 48,000 pounds. Special provisions can be made for heavier weight loads.

With 22.5 lane miles, our track will accommodate many vehicles simultaneously. Research which utilizes the track includes component performance and durability studies, brake tests, aerodynamic studies, fuel economy studies, drive line efficiency tests, and the determination of vehicular acceleration and cruise characteristics. In addition, it supports maximum speed determination, road load power, noise and emission measurements and tire durability test programs.

The 7.5-mile test track can be used in conjunction with other facilities at TRC. It provides an excellent area for pre-test conditioning of equipment such as brake burnishing, tire break-in, and vehicle warm-up.

TRC SKID PAD

The Skid Pad is a test facility which is utilized primarily for the evaluation of tire and brake systems.

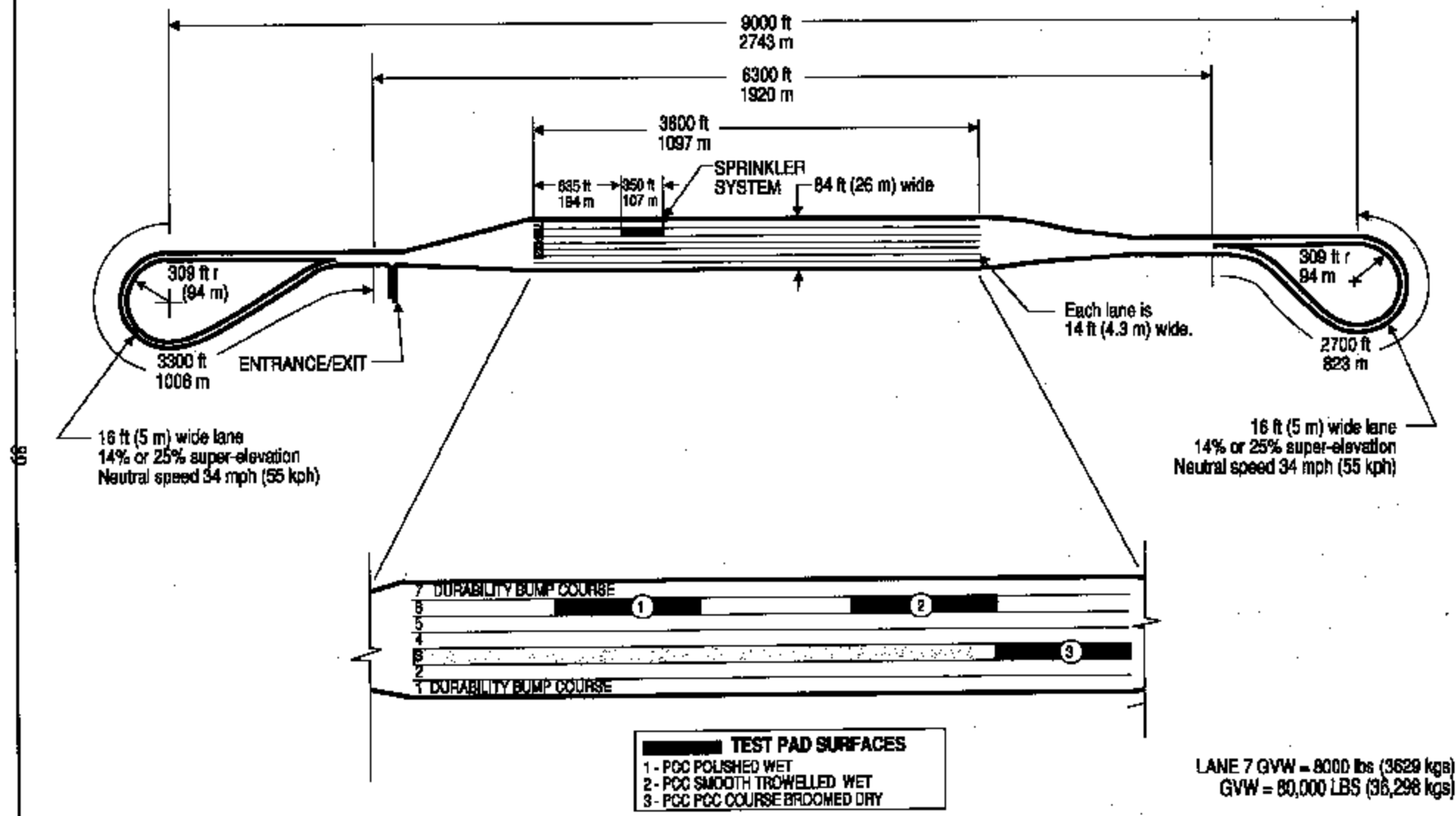
The overall dimensions of the pad are 9,000 feet by 84 feet with loops on the north and south ends. Both turnaround loops have a 309-foot radius and are 16 feet wide with a 25 percent super elevation. They will accommodate speeds of 45 mph with zero side force and 60 mph with .5 g's lateral acceleration. The acceleration/deceleration lanes at each end are 3,280 feet in length.

A test area of 210,000 square feet is situated in the center of the skid pad containing several test pads with varying surface textures. Skid numbers in this area range from 30 (wet) to 80 (dry).

The skid pad is paved with Portland cement. The load capacity of the skid pad is 36,000 pounds maximum single axle weight and 48,000 pounds maximum tandem axle weight.

Varying surface textures in the main test area are ideal for testing tire and/or brake system performance on different surfaces as characterized by "skid numbers." The skid pad is also used for acceleration studies, aerodynamics, rolling resistance, noise testing, and vehicle top-speed determination.

ALL CONCRETE BROOMED SURFACE
1 LAP = APPROXIMATELY 4 MILES (6.4 KILOMETERS)



NOTE: BUMP COURSES PARALLEL THE PERIMETERS OF LANES 1 AND 7.

Not to scale
All dimensions are approximate

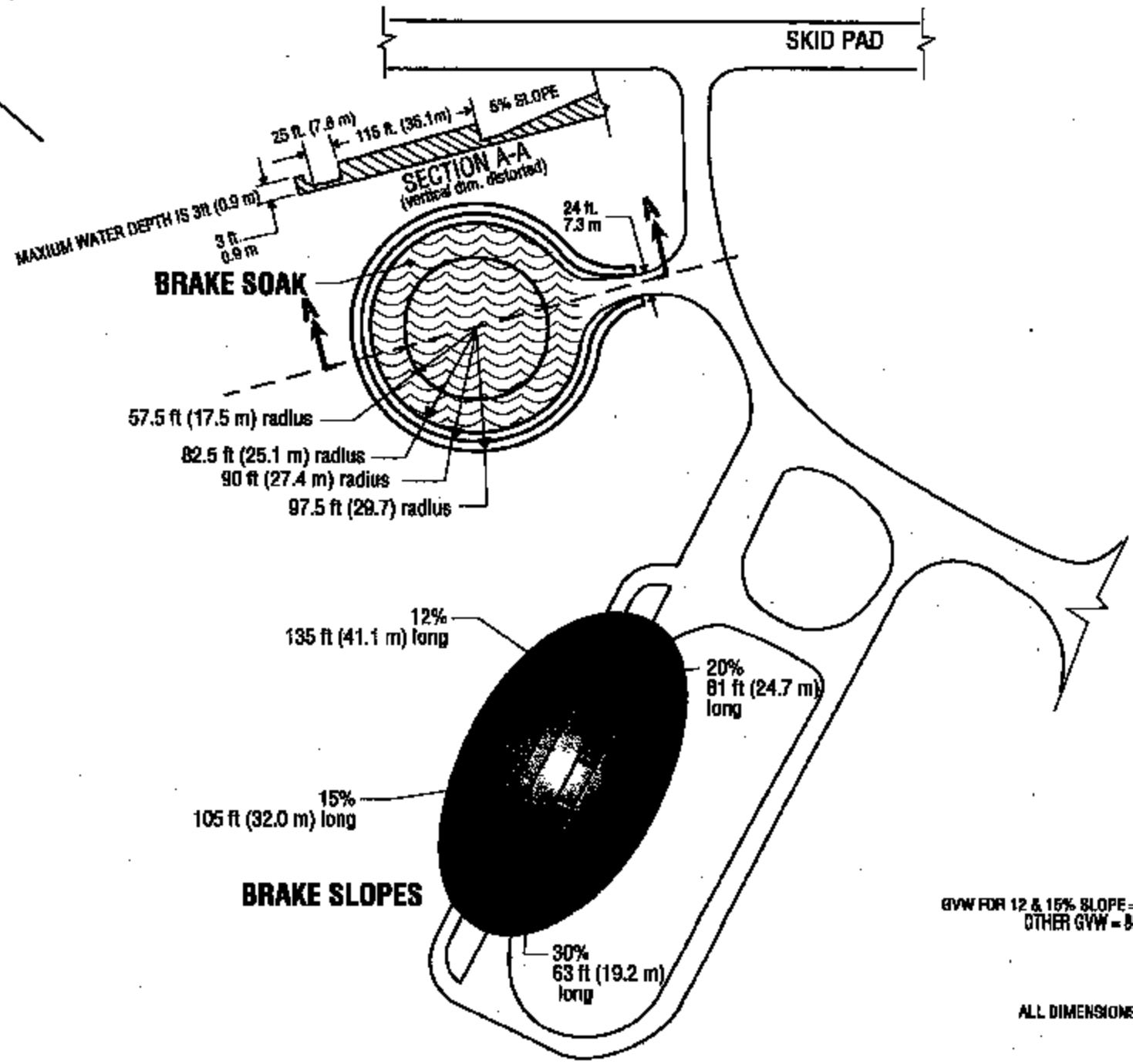
SKID PAD



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GVW FOR 12 & 15% SLOPE = 4000 lbs (1814 kg)
 OTHER GVW = 80,000 lbs (36,290 kg)

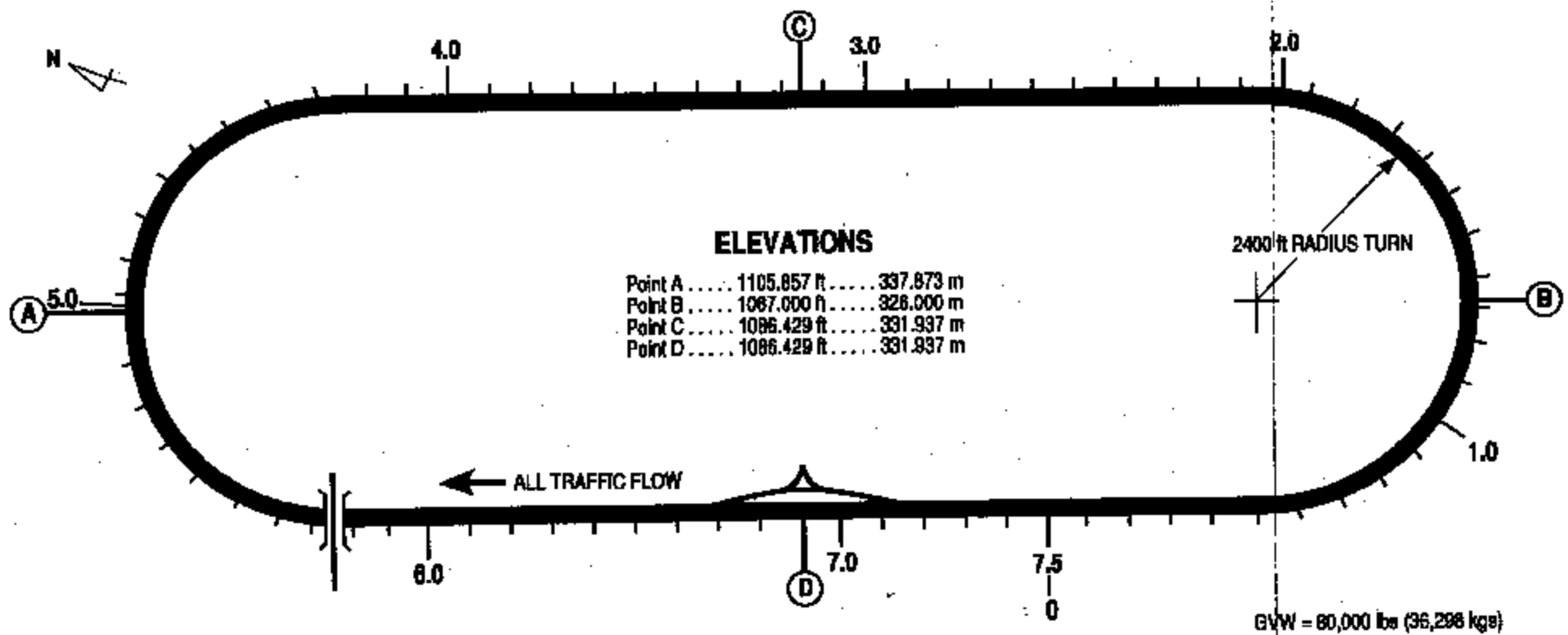
NOT TO SCALE
 ALL DIMENSIONS ARE APPROXIMATE

BRAKE SOAK and BRAKE SLOPES



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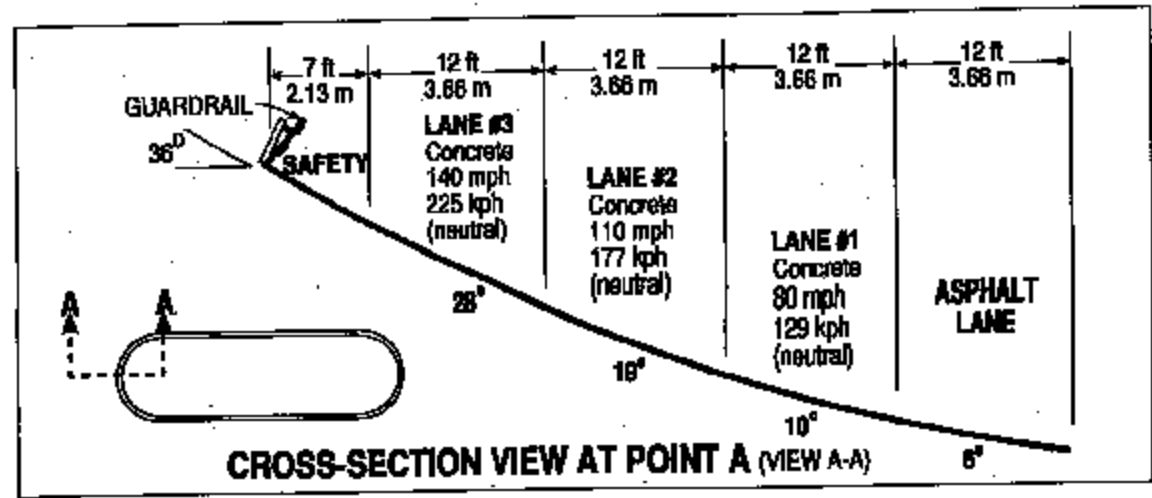


ELEVATIONS

Point A 1105.857 ft 337.873 m
Point B 1067.000 ft 326.000 m
Point C 1086.429 ft 331.937 m
Point D 1086.429 ft 331.937 m

2400 ft RADIUS TURN

GW = 60,000 lbs (36,298 kgs)



CROSS-SECTION VIEW AT POINT A (VIEW A-A)

DISTANCES

Lane 3 7.539 mi 12.139 km
Lane 2 7.521 mi 12.104 km
Lane 1 7.507 mi 12.081 km
Point A to Point B 3.333 mi 5.364 km
Point C to Point D947 mi 1.524 km

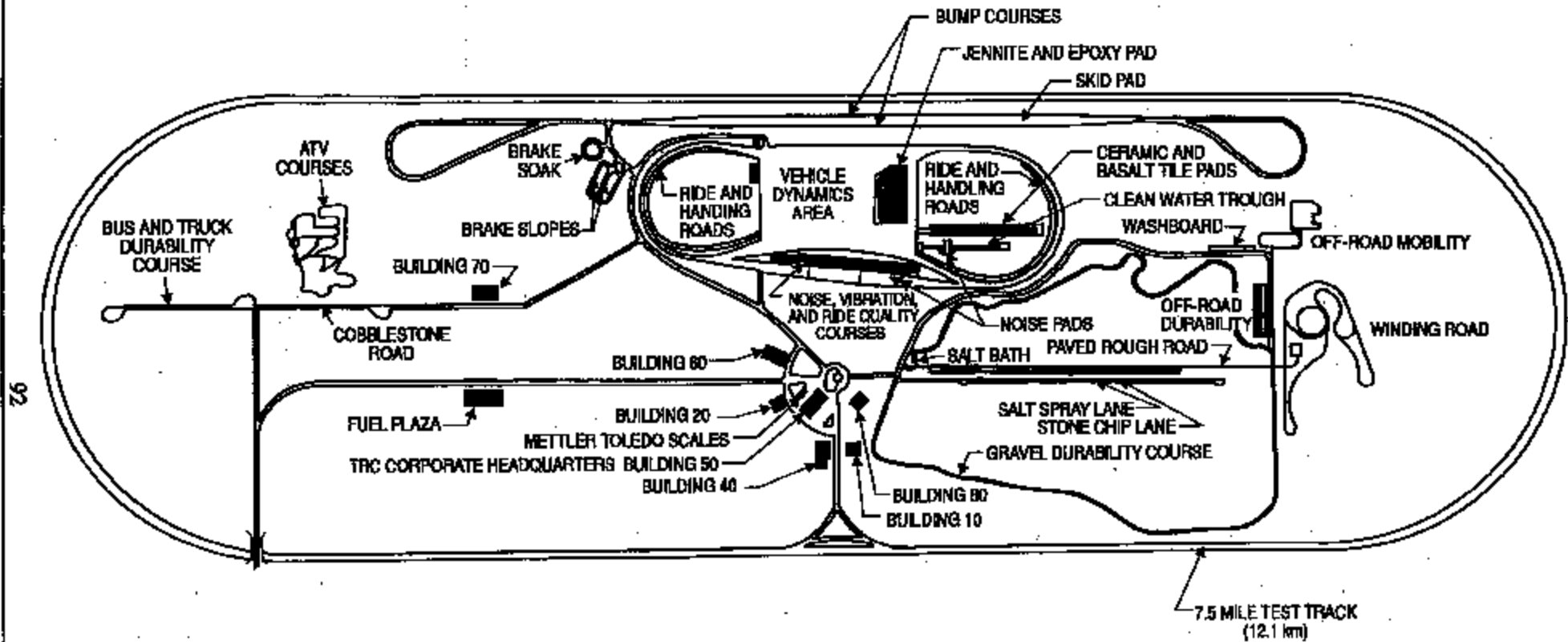
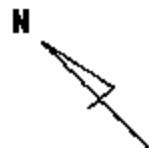
NOT TO SCALE

7.5-MILE TEST TRACK



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T-19 0195



7.5 MILE TEST TRACK
(12.1 km)

NOT TO SCALE

TEST FACILITY DETAIL



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F-18 0601

APPENDIX F
Notice of Possible Non-Compliance

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 105

TEST DATE: April 11, 2005

LABORATORY: Transportation Research Center Inc. (TRC)

CONTRACT NO.: DTNH22-01-C-21025

DELIVERY ORDER NO.: 4

LABORATORY ENGINEER'S NAME: Randall Landes

TEST VEH. MAKE/MODEL/BODY STYLE: Blue Bird Vision "Handy Bus", 38-pass, SB

VEHICLE NHTSA NO.: C50901;

VIN: 1BAKGCKH05F227003

VEHICLE MODEL YEAR: 2005;

BUILD DATE: 09/04

TEST FAILURE DESCRIPTION: The vehicle possesses warning lamps for the Parking Brake, Failed Hydraulic Subsystem transmission and ABS Failure. Only the ABS Failure possesses the letters/words "ABS." The Parking Brake and Partial Systems warning lamps display symbols, only. For the Parking Brake, the "P" symbol is used. For the Partial Systems (pressure loss) and/or Hydraulic Booster Failure, the "!" symbol is used.

S105 REQUIREMENT, PARAGRAPH S5.3: Brake system indicator lamp.

S5.3.5(a) Each indicator lamp shall display word, words or abbreviation, in.....(A) If a separate indicator lamp is provided for gross loss of pressure, the words "Brake Pressure" shall be used for S5.3.1 (a).(D) If a separate lamp is provided for application of the parking brake, the single word "Park" may be used for S5.3.1 (d).

NOTIFICATION TO NHTSA (COTR): Stuart Siegel

DATE: April 11, 2005

BY: Randy Landes, via telephone

REMARKS: None

APPENDIX G
Conversion Sheet

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	What You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	9.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
VOLUME				
teaspoon	teaspoons	5	milliliters	ml
Tablespoon	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.96	liters	l
gal	gallons	3.8	liters	l
cu ft	cubic feet	0.03	cubic meters	m ³
cu yd	cubic yards	0.76	cubic meters	m ³
TEMPERATURE (exact)				
F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

* 1 in = 2.54 (exact). For other exact conversions and more detailed tables, see NIST Spec. Publ. 280, Units of Weight and Measure, NIST 42.25, 83 Catalog No. O-19-10126.

Approximate Conversions from Metric Measures

Symbol	What You Know	Multiply by	To Find	Symbol
LENGTH				
cm	centimeters	0.04	inches	in
m	meters	3.3	feet	ft
mi	kilometers	0.6	miles	mi
AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
ha	hectares (10,000 m ²)	2.5	square miles	mi ²
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	1.1	pints	pt
l	liters	1.06	quarts	qt
m ³	cubic meters	35	gallons	gal
m ³	cubic meters	1.3	cubic feet	ft ³
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

