FMVSS NO. 207 INDICANT TEST

DAIMLERCHRYSLER CORPORATION 2005 CHRYSLER 300, PASSENGER CAR NHTSA NO. C50306

GENERAL TESTING LABORATORIES, INC. 1623 LEEDSTOWN ROAD COLONIAL BEACH, VIRGINIA 22443



JUNE 24, 2005

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAPPIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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WASHINGTON, D.C. 20500

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16. Abstract					
Indicant tests were conducted on the subject 2005 Chrysler 300 passenger car in a	ccordance				
with the specifications of the Office of Vehicle Safety Compliance Test Procedure N	lo. 1P-207-09				
for the determination of FMVSS 207 compliance.					
Test failures identified were as follows:					
NONE 17 Key Words 18. Distribution Statement					
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Room 2336 (NPO-405)					
400 7th St., S.W.					
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SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2005 Chrysler 300 4-door passenger car was subjected to the following tests to determine the effects of the newly developed FMVSS 207/210 force application devices (FAD) (a.k.a. Tornmy (FAD 1) and Tornmy Jr (FAD 2) as compared to the current FMVSS 207/210 seat belt body blocks.

1.1 TEST VEHICLE

The test vehicle was a 2005 Chrysler 300 4-door passenger car. Nomenclature applicable to the test vehicle are:

- A. <u>Vehicle Identification Number</u>: 2C3JA43R65H556582
- B. NHTSA No.: C50306
- C. Manufacturer: DAIMLERCHRYSLER CORPORATION
- D. Manufacture Date: 08/04

1.2 TEST DATE

The test vehicle was subjected to testing on June 16, 2005.

SECTION 2 TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 GENERAL

The 2005 Chrysler 300 4-door passenger car, NHTSA No. C50306, was subjected to testing on June 16, 2005.

2.1 TEST PROCEDURE

FAD Positioning Procedure:

- 1. Place seat in full rearward and full downward position.
- Set seatback angle per manufacturers recommendation.
- identify and mark the centerline of the seat and seat back for each seating position.
- 4. Place the FAD so the midsagittal plane of the FAD contains the centerline for both the seat and back support of the seat. (Centerline of Body aligns with the centerline of the seat)
- 5. Rotate torso forward.
- Push on pelvis parallel to surface of seating surface so the back of the pelvis is solidly against the seat back.
- Rotate the torso up against the seatback while holding the pelvis in place.
- Push on torso at center of gravity, perpendicular to the seat back with a force of 40 pounds.
- Attach seatbelt and position the seatbelt so lap belt is over the FAD's hips and the shoulder strap over the torso (chest).
- 10. If seatbelts need to be replaced with wire rope, Install ratchet-type-belt tensioner on B-pillar between D-Ring and retractor and remove excess belt from the retractor. If a second retractor is installed on the lap belt, install a second ratchet type-belt tensioner between the FAD and the lap belt retractor.
- 11. Attach one actuator to the torso pull yoke and one to the pelvis eyelet.

Pull Test Procedure:

- 1. Connect load cells and actuators to the FAD's so they pull in a plane that is inclined 10° ± 4° above the hortzontal. The applied load shall be parallel to the vehicle's centerline ± 3°. Also connect the standard test blocks in accordance with FMVSS 207/210 compliance testing.
- 2. Take pre-test photographs.
- 3. Ramp to holding load within 30 seconds.
- 4. Take photographs
- 5. Hold the maximum force for a period of not less than ten seconds.
- 6. Take post test photographs.

SECTION 2 Continued

Test Configuration for Chrysler 300 5 Passenger Sedan:

- 1. LF FAD1
- 2. RF Standard Blocks
- 3. LR Standard Blocks
- 4. CR FAD2
- 5. RR FAD1

2.2 SUMMARY OF RESULTS

The test results are provided in Section 3, Test Data.

SECTION 3 TEST DATA

3.0 DATA

The following items were noted during the conduct of these tests.

- The new FMVSS 207/210 FAD (Tommy Blocks) are much easier to position and set for lap and shoulder belts than the current FMVSS 207/210 body blocks.
- The current FMVSS 207/210 shoulder belt body block wants to slide down and rest on top of the lower body block. This is no longer a problem with the new FMVSS 207/210 FAD (Tommy Blocks).
- 3. The new FMVSS 207/210 FAD (Tommy Blocks) appear to be more "seat belt friendly" than the current FMVSS 207/210 body blocks, ie: A remote chance of breakage of the lap belt buckle due to bending around the corner of the current FMVSS 207/210 lap belt body block and less pay-out of shoulder belt during the test due to the torso being connected to the lap on the new FMVSS 207/210 FAD (Tommy Blocks).
- 4. Using existing body block, pay-out of seat belt webbling due to load limiters causes hydraulic test load application cylinders to bottom-out and test cannot be completed without resetting and starting the test over again. The resetting of the hydraulic test load application cylinders was not necessary using the new proposed FMVSS 207/210 FAD (Tommy Blocks).
- This vehicle appears to meet the requirements of FVMSS 210 when tested with current FMVSS 207/210 body blocks and the proposed FMVSS 207/210 FAD force application device (a.k.a.) Tommy (FAD 1) and Tommy Jr. (FAD 2).

DATA SHEET 1 LAP AND SHOULDER BELT ASSEMBLY ANCHORAGE LOADING

VEHICLE MAKE/MODEL/BODY STYLE: 2005 CHRYSLER 300 PASSENGER CAR
VEHICLE NHTSA NO.: C50306 ; VIN: 2C3JA43R65H556582
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/16/05
OBSERVERS: G. Fa <u>rrand, J. Latane, E. Chan, B</u> . Kra <u>uss, K. Chappel</u>

SEAT	BELT ASSEMBLY TESTED	MAXIMUM LOAD REQUIREMENT	APPLIED LOAD	
FRONT	Left Lap	3000 lbs, -10, -50	2990	
GTL TEST #5313*	Left Shoulder	3000 lbs, -10, -50	2989	
	Right Lap	3000 lbs, -10, -50	2973	
	Right Shoulder	3000 lbs, -10, -50	2939	
	Left Lap	3000 lbs, -10, -50	2975	
FRONT GTL TEST #5314	Left Shoulder	3000 lbs, -10, -50	2994	
RETEST OF 5313	Right Lap	3000 lbs, -10, -50	2981	
	Right Shoulder	3000 lbs, -10, -50	2988	
	Left Lap	3000 lbs, -10, -50	2991	
REAR	Left Shoulder	3000 lbs, -10, -50	2972	
GTL TEST #5315	Right Lap	3000 lbs, -10, -50	2973	
	Right Shoulder	3000 lbs, -10, -50	2988	
	Center Lap	3000 lbs, -10, -50	2972	
	Center Shoulder	3000 lbs, -10, -50	2980	

REMARKS: *Passenger side shoulder belt hydraulic ram ran out of travel due to spool-out of the shoulder belt retractor on test #5313. Hydraulic rams were re-hooked and test was continued. See Test #5314.

RECORDED BY:~

DATE:___

06/16/05

APPROVED BY:

5

DATA SHEET 2 SEAT BELT ASSEMBLY LOAD ANGLE MEASUREMENT

VEHICLE MAI	KE/MODEL/BODY STYLE: 2005 CHRYSLER 300 PASSENGER CAR
	TSA NO.: C50306 ; VIN: 2C3JA43R65H556582
	Y: GENERAL TESTING LABORATORIES
TEST DATE:	
OBSERVERS	
CROEKAEKO	G. Falland, J. Latane, E. Chan, B. Mades, N. Orlapper

		ANGLE AT 10% LOAD (degrees)					
ANGLE MEASURED	ANGLE REFERENCE						
		LEFT DSP		CENTER DSP		RIGHT DSP	
		FRT	RR	FRT	RR	FRT	RR
Load Application Angle (degrees)	From Side View Hortzontal 10 ± 4	10°	8°	N/A	80	10°	8°
	From Plan View Vehicle Centerline 0 ± 3	0°	O.	N/A	0°	0°	C°
Load Application Angle (degrees)	From Skie View Hortzontal 10 ± 4	110	9°	N/A	3 ₀	110	ð _u
	From Plan View Vehicle Centerline 0 ± 3	0°	0"	N/A	O _n	O _c	Oc
	Load Application Angle (degrees)	Load Application Angle (degrees) Load Application Angle (degrees) Load Application Angle (degrees) From Plan View Vehicle Centerline 0 ± 3 From Plan View Hortzontal 10 ± 4 From Plan View Vehicle Centerline	ANGLE REFERENCE Load Application Angle (degrees) Load Application Horizontal 10 ± 4 From Plan View Vehicle Centerline 0 ± 3 Load Application Angle (degrees) From Side View Horizontal 10 ± 4 From Plan View Vehicle Centerline 0° From Plan View Vehicle Centerline 0°	ANGLE REFERENCE Load Application Angle (degrees) Load Application Prom Side View Hortzontal 10 ± 4 From Plan View Vehicle Centerline 0 ± 3 Load Application Angle (degrees) From Side View Hortzontal 10 ± 4 From Plan View Hortzontal 10 ± 4 From Plan View Vehicle Centerline From Plan View Vehicle Centerline	ANGLE REFERENCE Left DSP CENTR FRT RR FRT Load Application Angle (degrees) From Side View Hortzontal 10 ± 4 From Plan View Vehicle Centerline 0 ± 3 Load Application Angle (degrees) From Side View Hortzontal 10 ± 4 From Plan View Vehicle Centerline 0 ± 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ANGLE REFERENCE Left DSP CENTER DSP FRT RR FRT RR Load Application Angle (degrees) From Plan View Vehicle Centerline 0 ± 3 Load Application Angle (degrees) From Side View Horizontal 10 ± 4 From Plan View Horizontal 10 ± 4 From Plan View Yehicle Centerline 0 0 0 0 0 N/A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ANGLE REFERENCE Left DSP CENTER DSP RIGH FRT RR FRT RR FRT Load Application Angle (degrees) From Side View Hortzontal 10±4 From Plan View Vehicle Centerline 0±3 Load Application Angle (degrees) From Side View Hortzontal 10±4 From Plan View Hortzontal 10±4 From Plan View Vehicle Centerline 0° 0° N/A 0° 0° From Plan View Vehicle Centerline 0° 0° N/A 0° 0°

REMARKS:

RECORDED BY:

DATE: 06/16/05

APPROVED BY:_

SECTION 4 INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
COMPUTER	AT&T	486DX266	N/A	N/A
TEST FIXTURE	GTL	N/A	BEFORE USE	BEFORE USE
SIGNAL CONDITIONER	METRABYTE	EXP-RES	BEFORE USE	BEFORE USE
LOAD CELL	REVERE	46021	01/05	01/06
LOAD CELL	REVERE	46022	01/05	01/06
LOAD CELL	REVERE	48023	01/05	01/06
LOAD CELL	REVERE	46024	01/05	01/06
LOAD CELL	REVERE	46025	01/05	01/06
LOAD CELL	REVERE	44243	01/05	01/06

SECTION 5 PHOTOGRAPHS

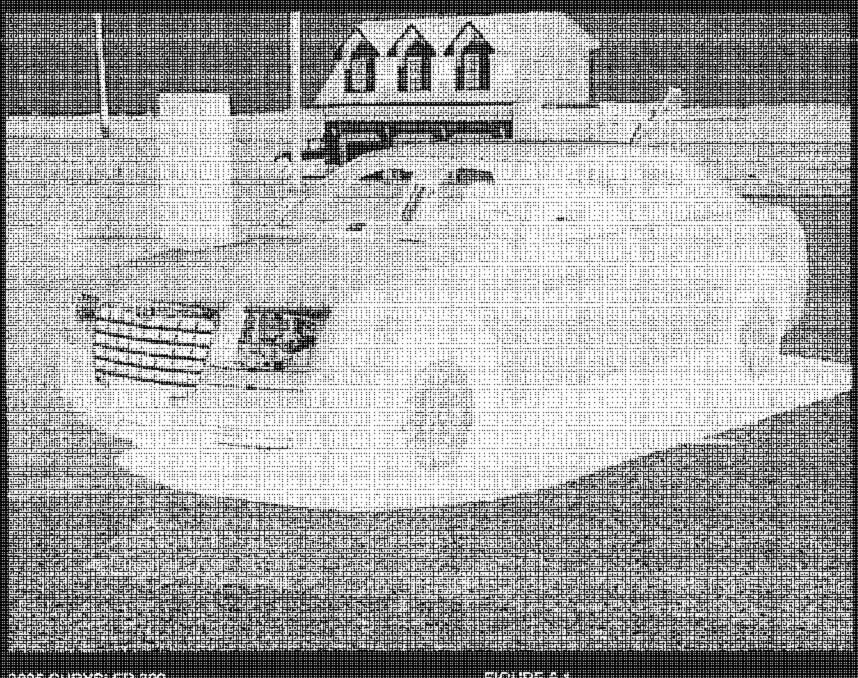


FIGURE 5.1
% FIGURE 5.1

FIGURE 5.2 % REAR RIGHT SIDE VIEW OF VEHICLE 2005 CHRYSLER 300 NHTSA NO. C50306 FMVSS NO. 210 FIGURE 5.3 VEHICLE CERTIFICATION LABEL

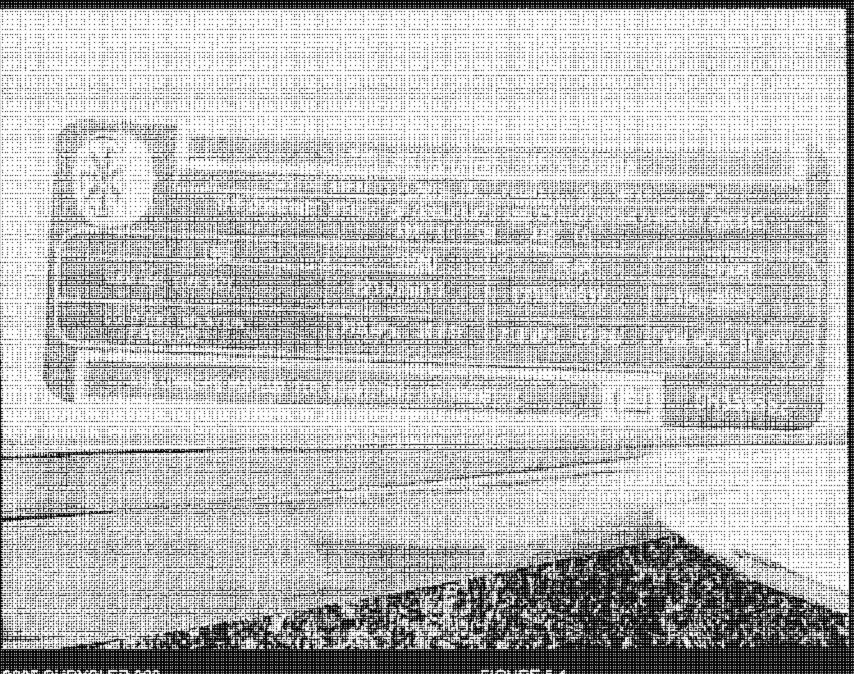


FIGURE 5.4 VEHICLE TIRE INFORMATION LABEL

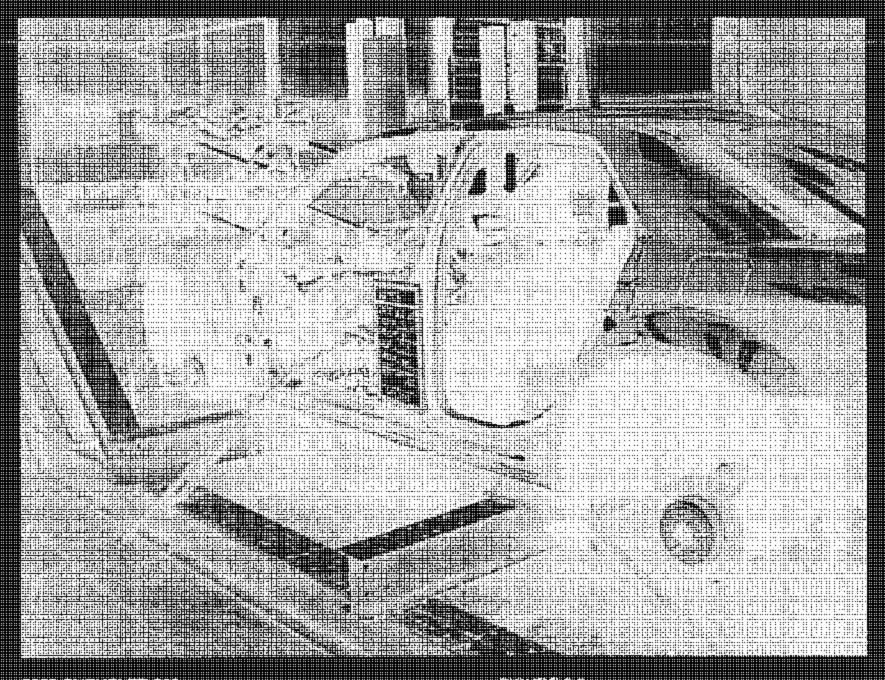


FIGURE 5.5 % LEFT REAR VIEW OF VEHICLE IN TEST RIG



FIGURE 5.6 % LEFT FRONT VIEW OF VEHICLE IN TEST RIG

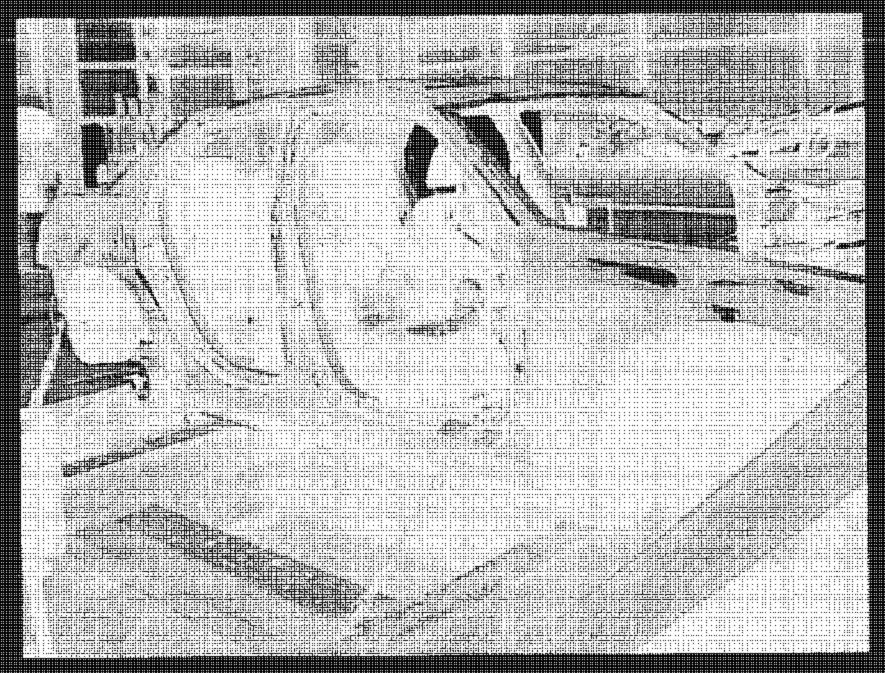


FIGURE 6.7 % RIGHT FRONT VIEW OF VEHICLE IN TEST RIG

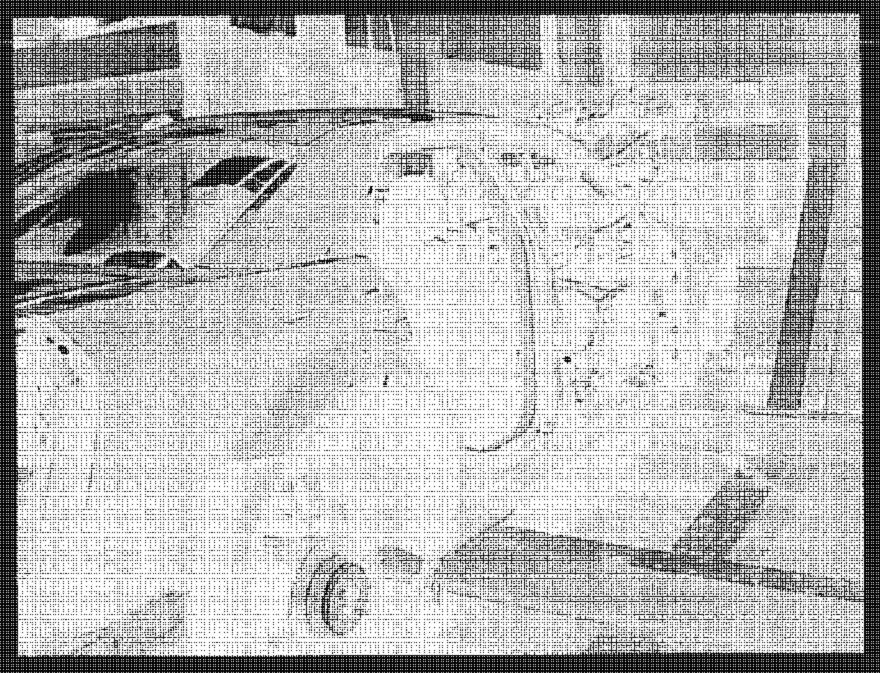


FIGURE 5.8 % RIGHT REAR VIEW OF VEHICLE IN TEST RIG

FIGURE 5.9 PRE-TEST ROW 1. LEFT SIDE VIEW

FIGURE 5.10 PRE-TEST ROW 1, % LEFT FRONT VIEW

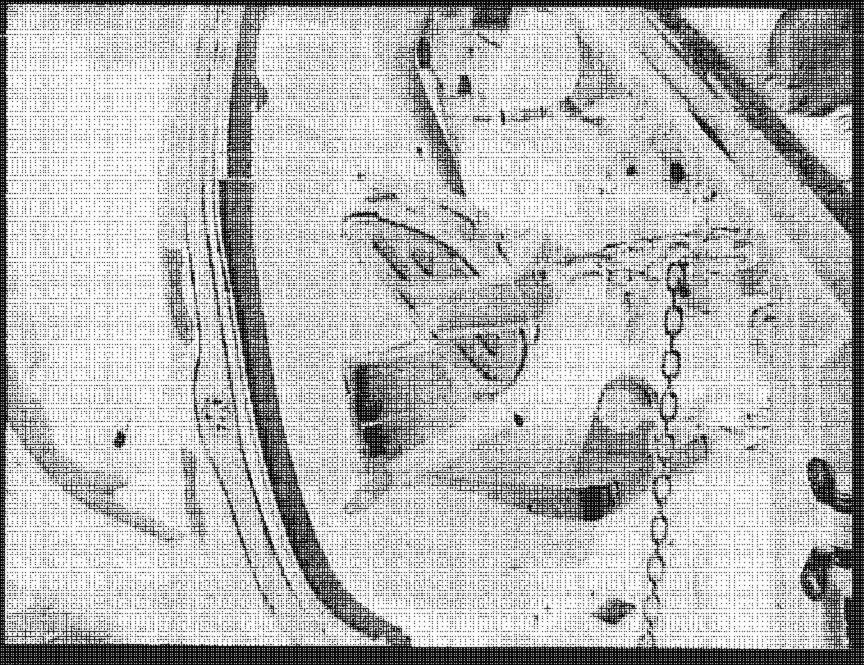


FIGURE 5.11 PRE-TEST ROW 1, 14 RIGHT FRONT VIEW

FIGURE 5.12 PRE-TEST ROW 1, RIGHT SIDE VIEW

FIGURE 5.13 END OF TEST, ROW 1, LEFT SIDE VIEW

FIGURE 5.14 END OF TEST, ROW 1, 1% LEFT FRONT VIEW

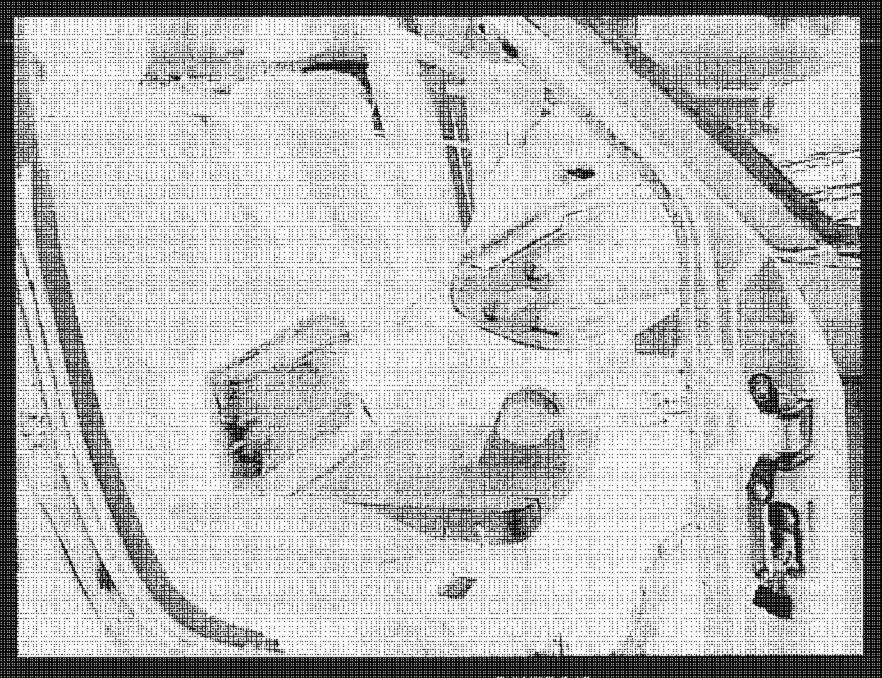


FIGURE 5.15 END OF TEST, ROW 1, 1/4 RIGHT FRONT VIEW

FIGURE 5.18 END OF TEST ROW 1, RIGHT SIDE VIEW

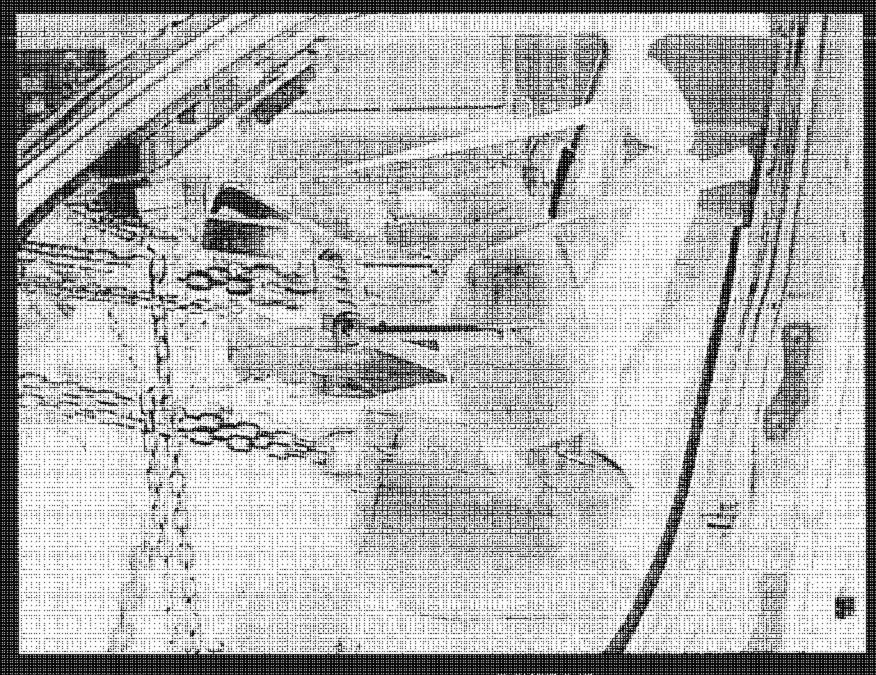


FIGURE 5.17 PRE-TEST ROW 1, LEFT SIDE VIEW

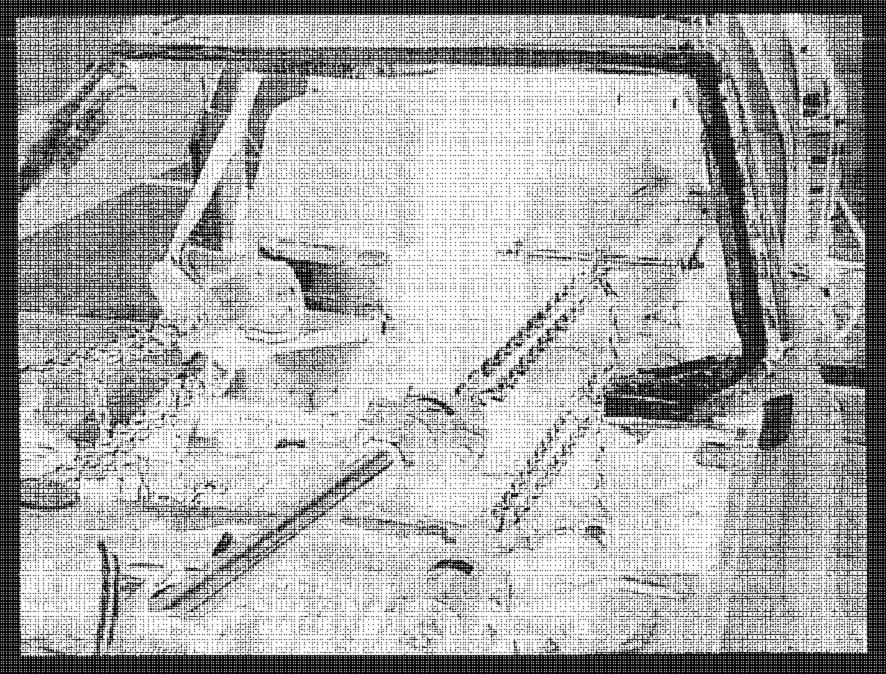


FIGURE 5.18
PRE-TEST ROW 1, % LEFT FRONT VIEW

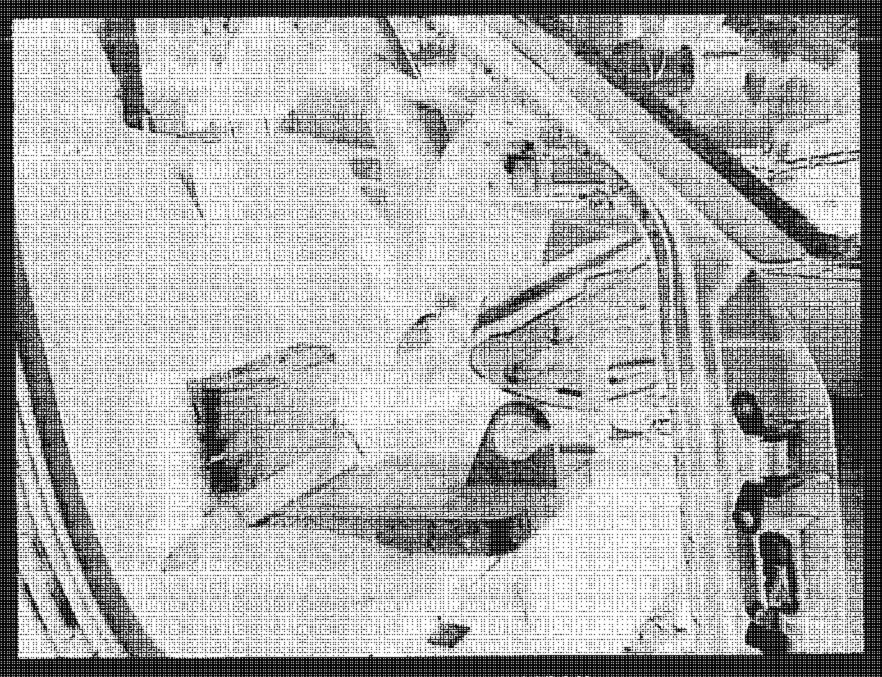


FIGURE 5.19 PRE-TEST ROW 1, % RIGHT FRONT VIEW

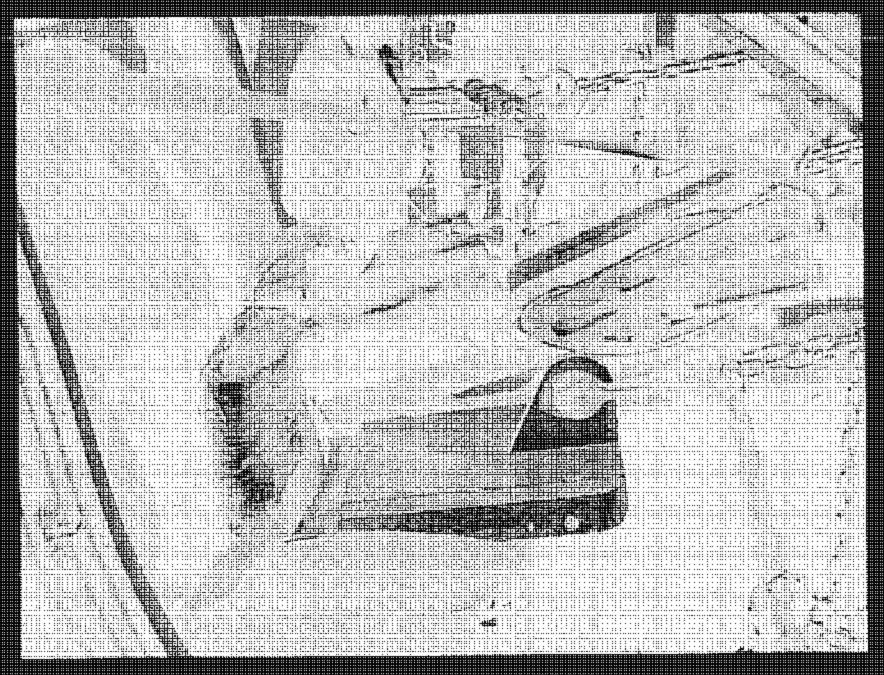


FIGURE 5.20 PRE-TEST ROW 1. RIGHT SIDE VIEW

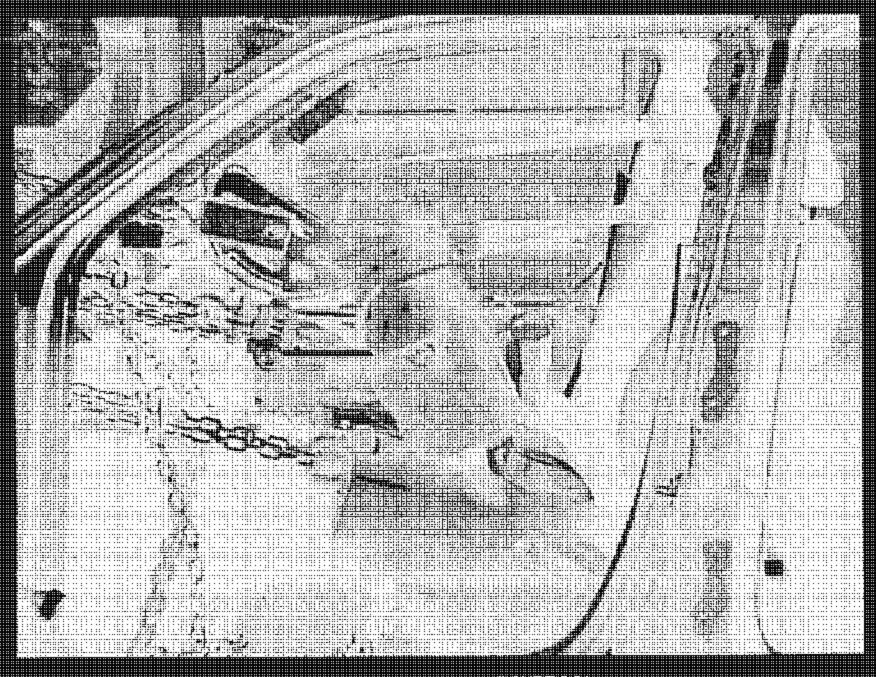


FIGURE 5.21 FULL LOAD ROW 1, LEFT SIDE VIEW

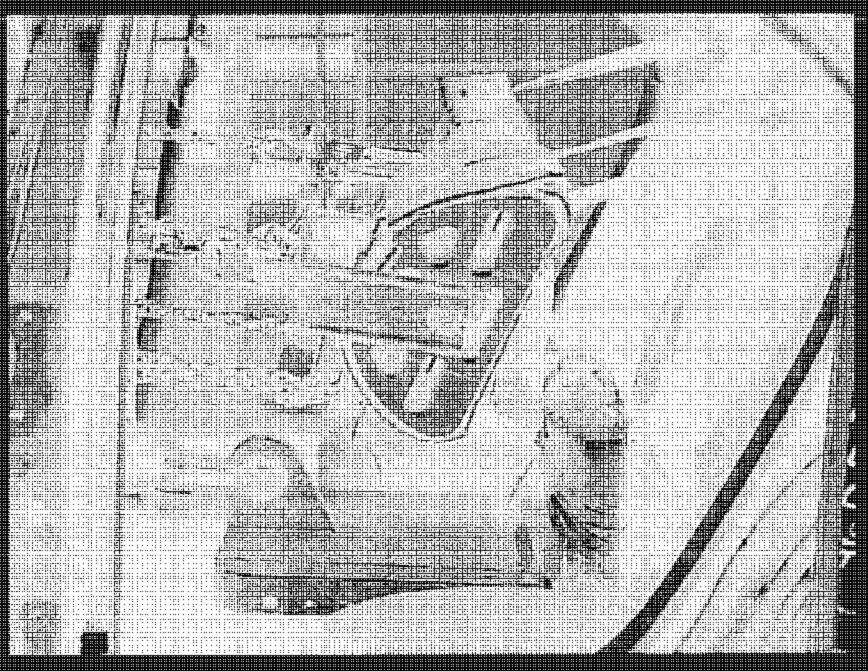


FIGURE 5.22 FULL LOAD ROW 1, 54 LEFT FRONT VIEW

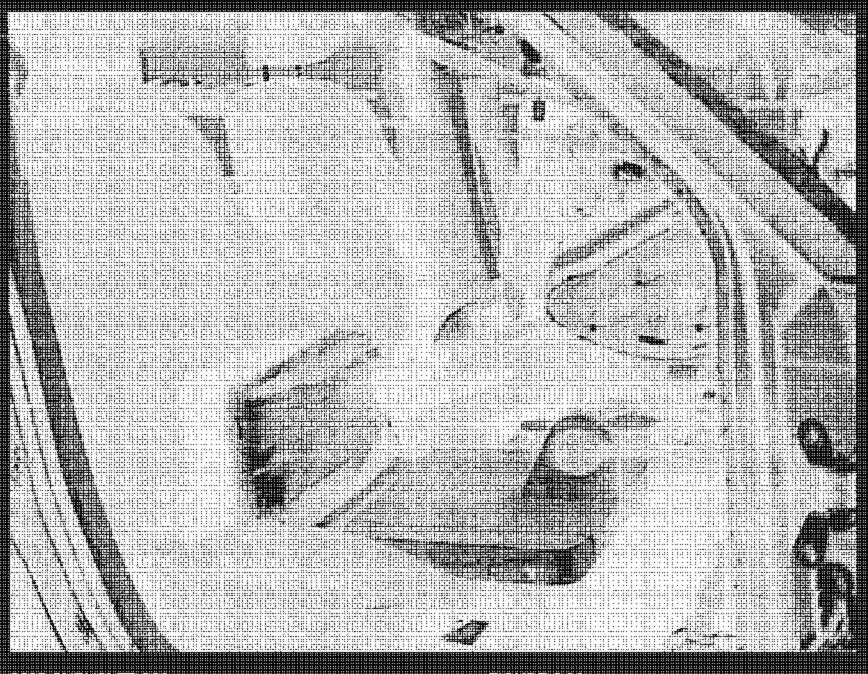


FIGURE 5.23
FULL LOAD ROW 1, % RIGHT FRONT VIEW

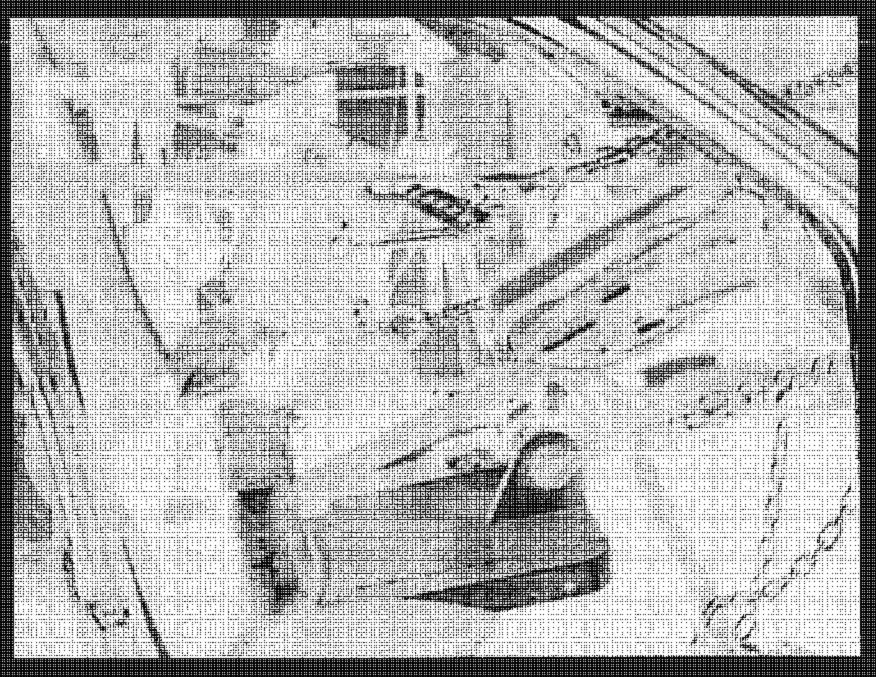


FIGURE 5.24 FULL LOAD ROW 1, RIGHT SIDE VIEW

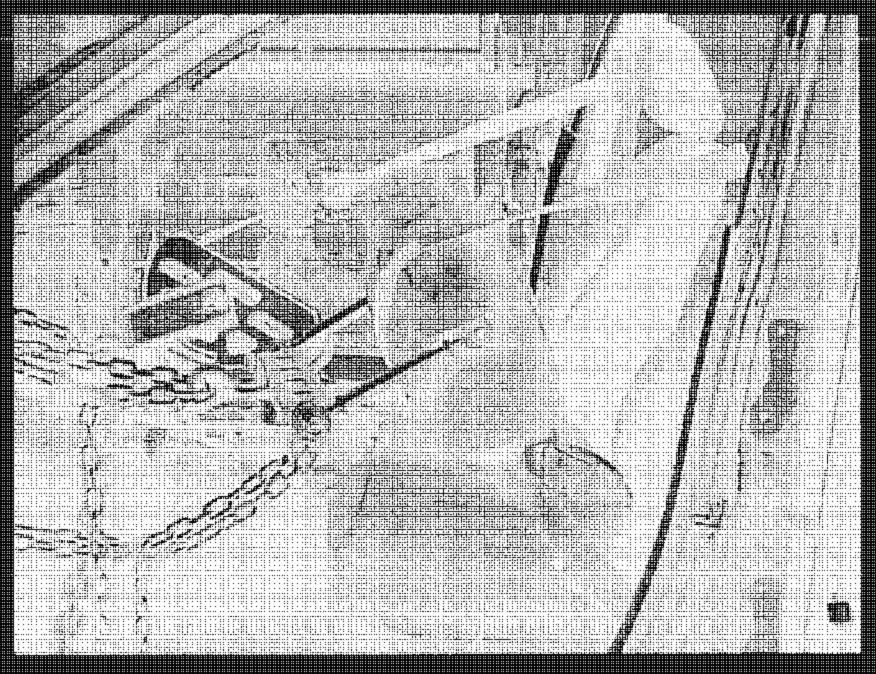


FIGURE 5.25 POST TEST ROW 1, LEFT SIDE VIEW

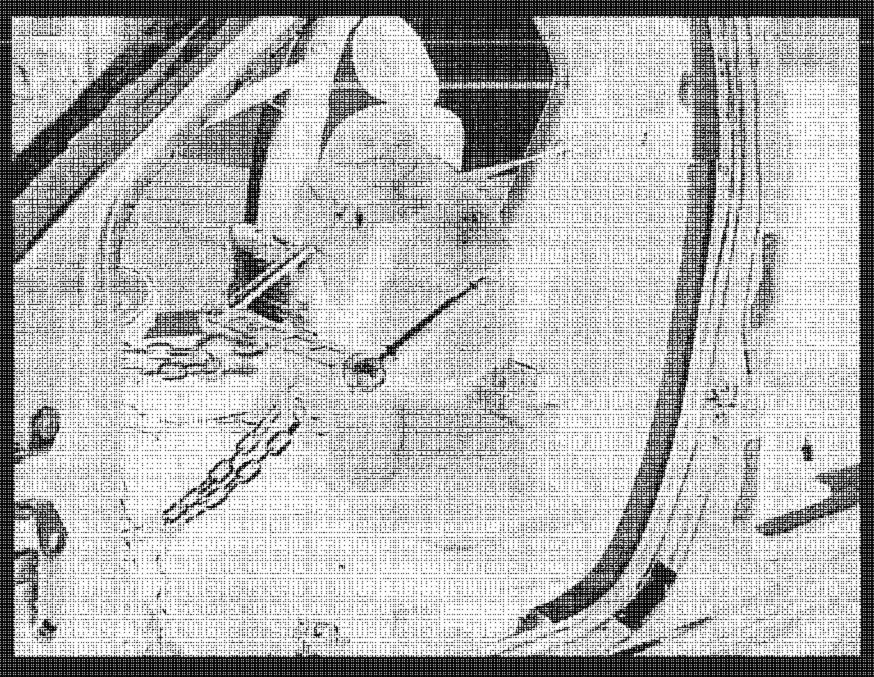


FIGURE 5.26 POST TEST ROW 1, 1/4 LEFT PRONT VIEW

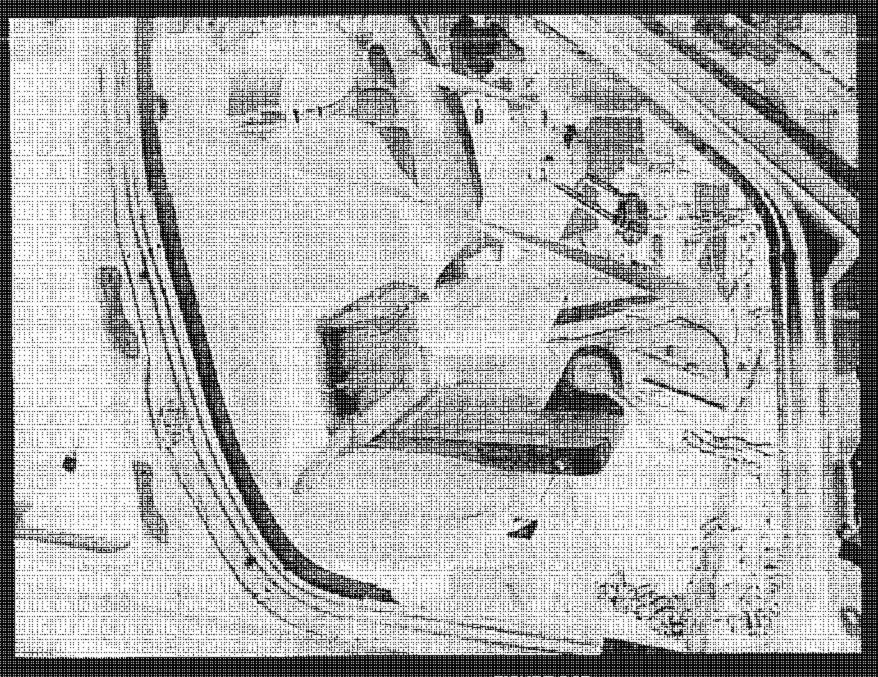


FIGURE 5.27 POST TEST ROW 1, 1/4 RIGHT FRONT VIEW

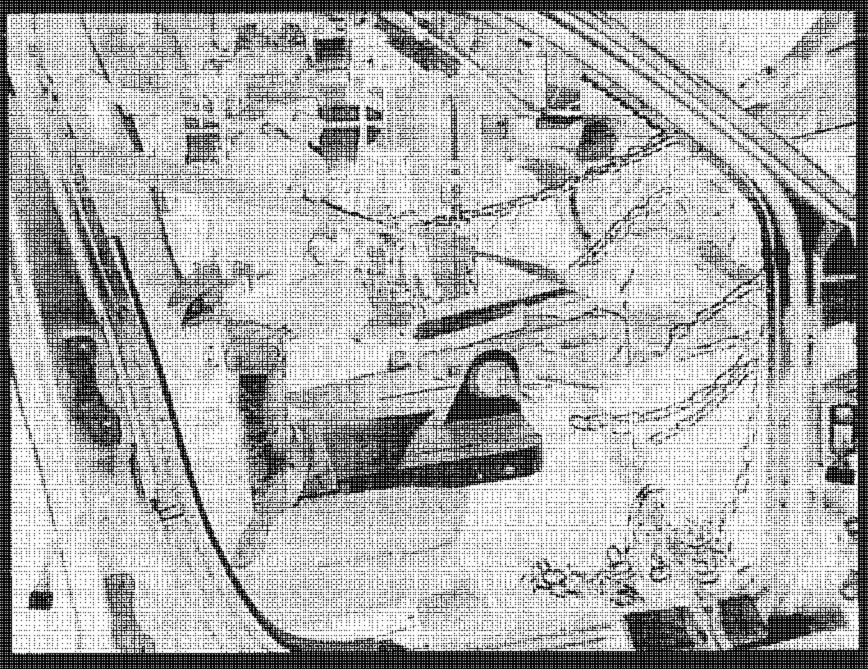


FIGURE 5.28
POST TEST ROW 1, RIGHT SIDE VIEW

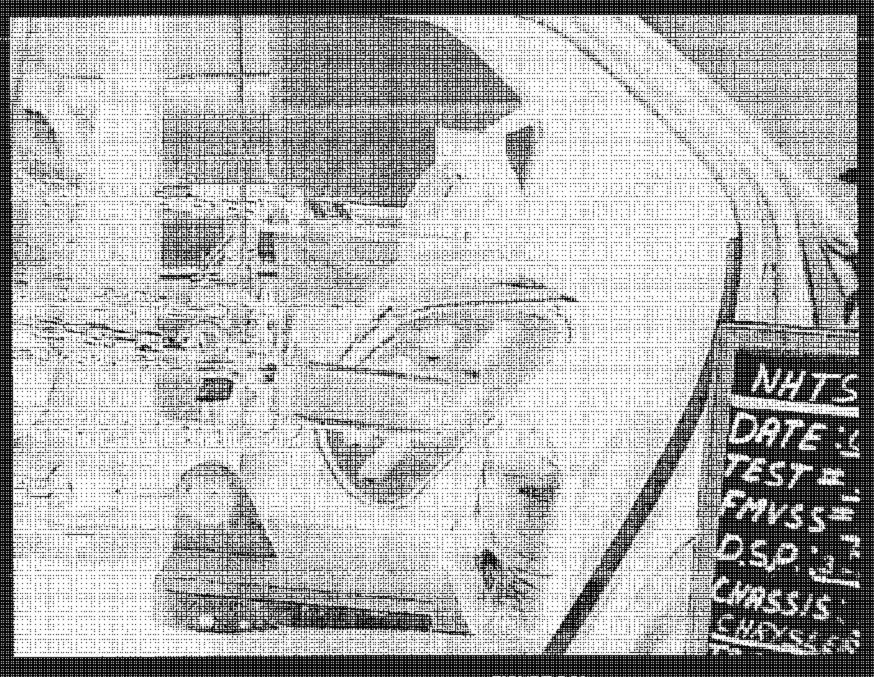


FIGURE 5.29 PRE-TEST ROW 2, LEFT SIDE VIEW

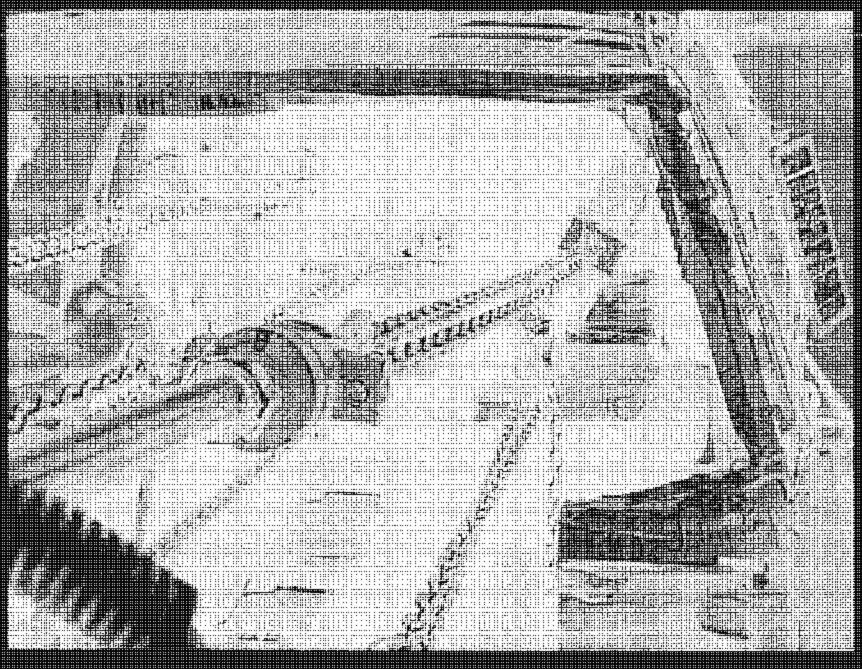


FIGURE 5.30 PRE-TEST ROW 2, % LEFT FRONT VIEW

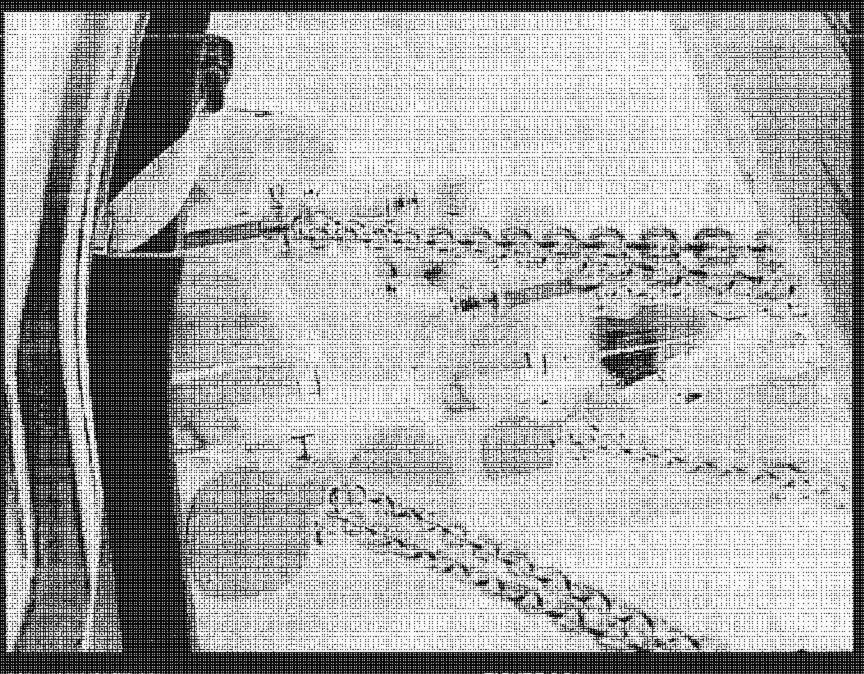


FIGURE 5.31 PRE-TEST ROW 2, % RIGHT FRONT VIEW

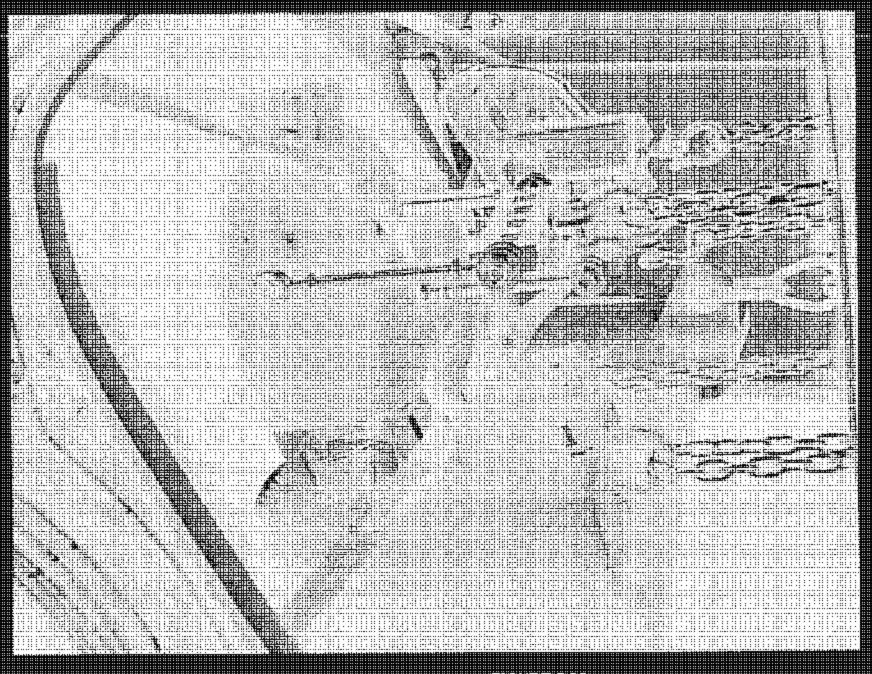


FIGURE 5.32 PRE-TEST ROW 2, RIGHT SIDE VIEW

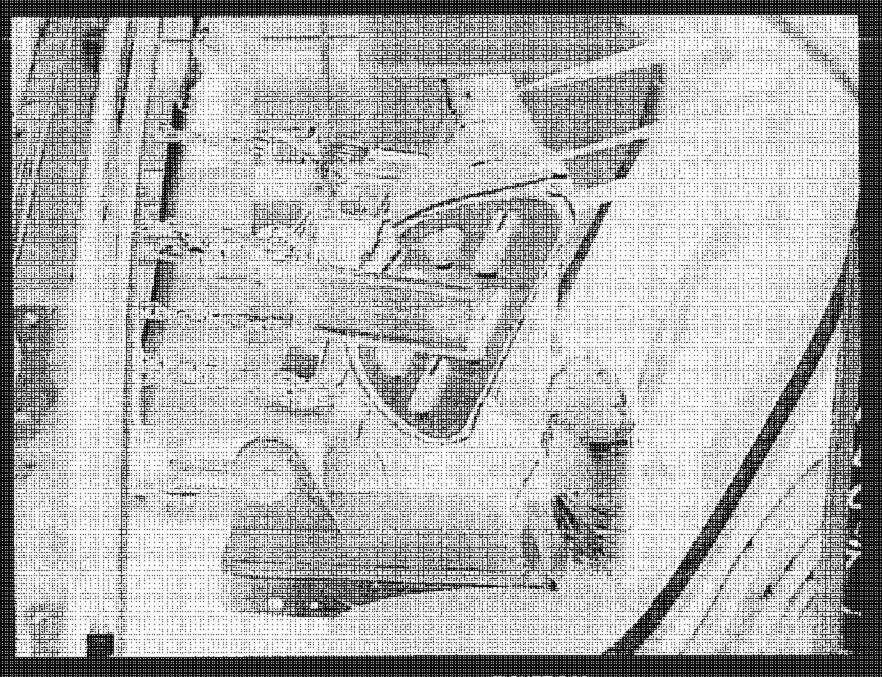


FIGURE 5.33 FULL LOAD ROW 2, LEFT SIDE VIEW

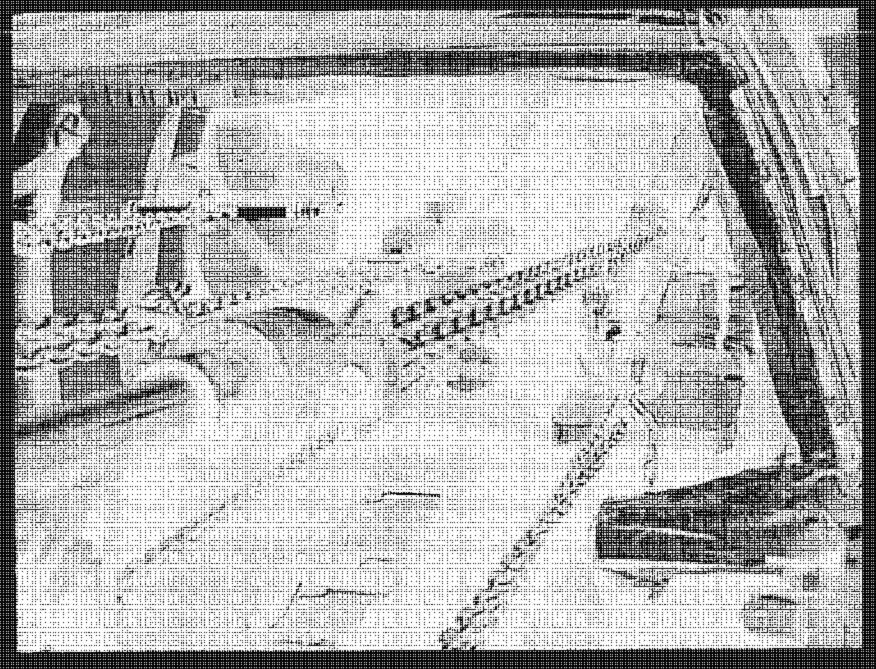


FIGURE 5.34 FULL LOAD ROW 2, % LEFT FRONT VIEW

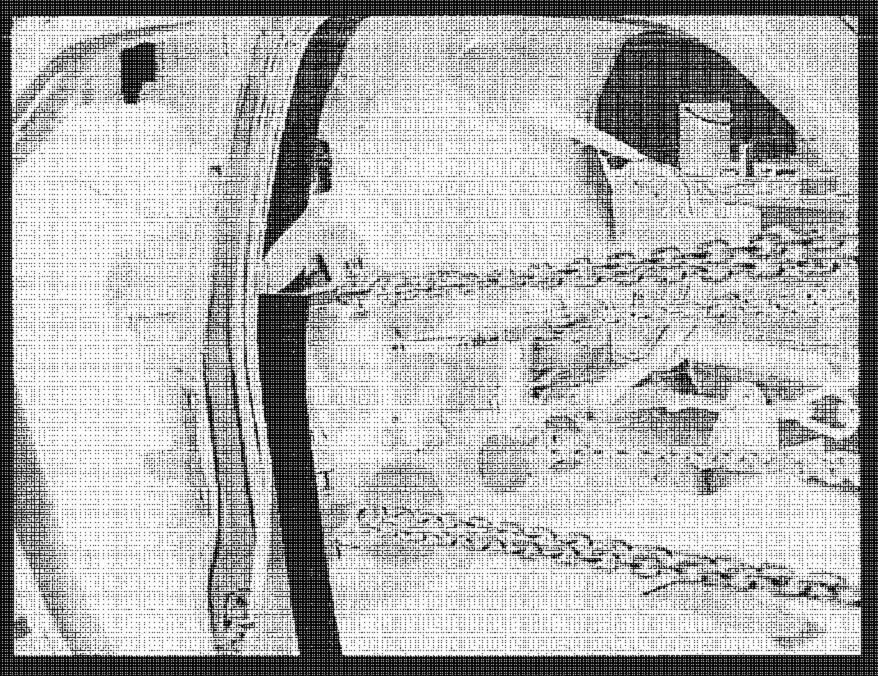


FIGURE 5.35 FULL LOAD ROW 2, % RIGHT FRONT VIEW

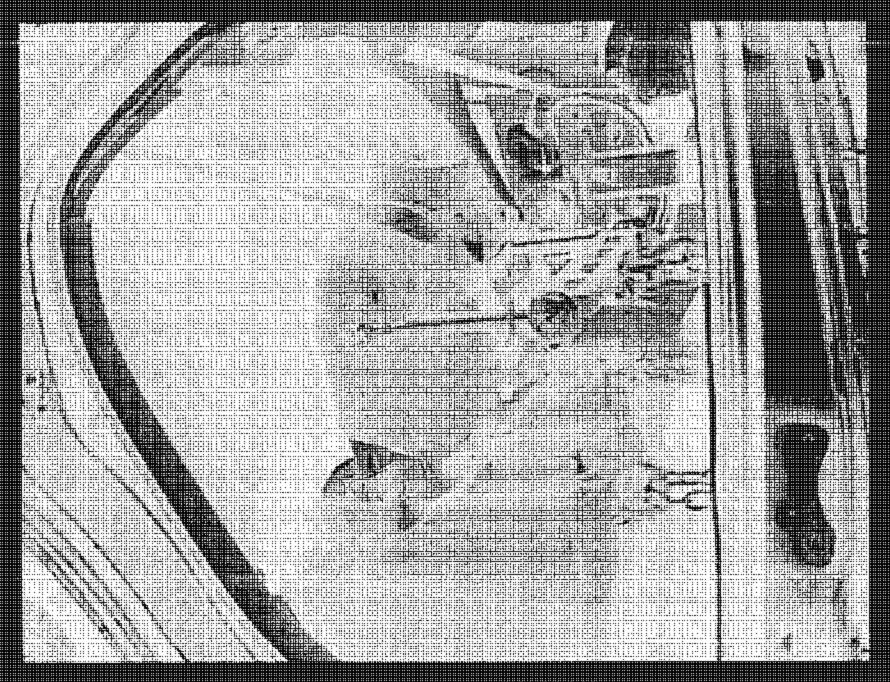


FIGURE 5.36 FULL LOAD ROW 2, RIGHT SIDE VIEW

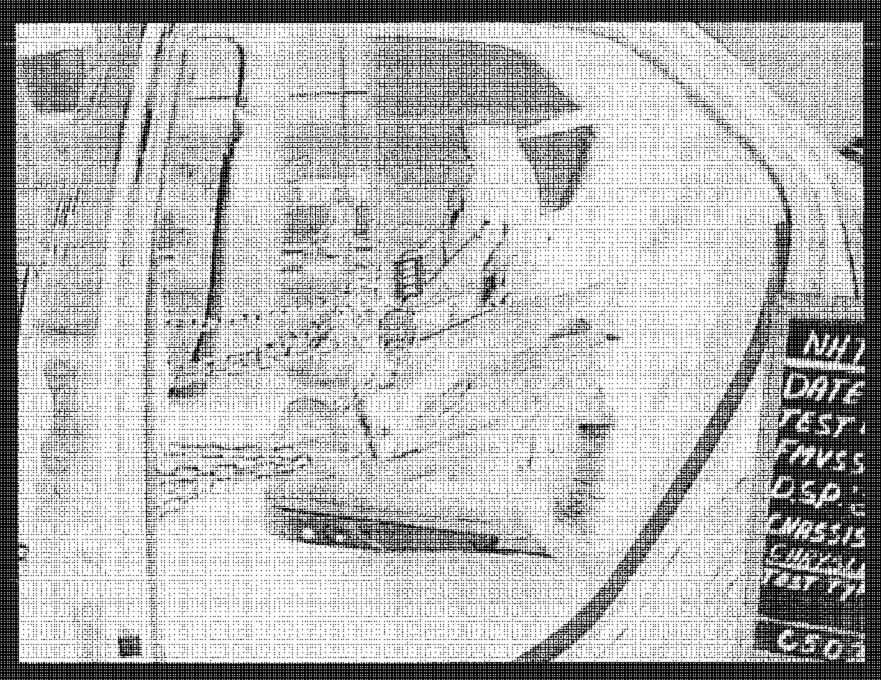


FIGURE 5.37 POST TEST ROW 2. LEFT SIDE VIEW

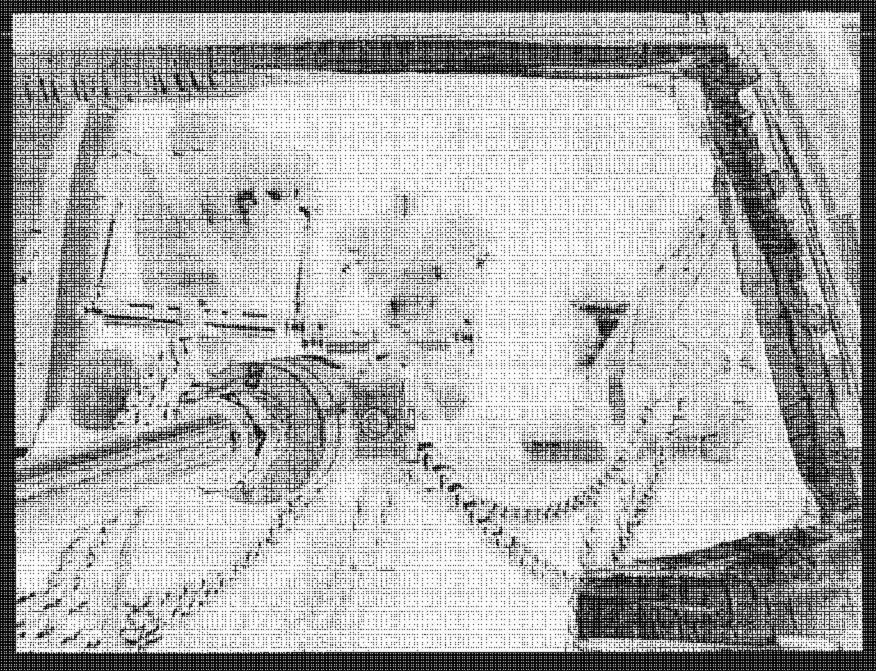


FIGURE 5.38 POST TEST ROW 2, % LEFT FRONT VIEW

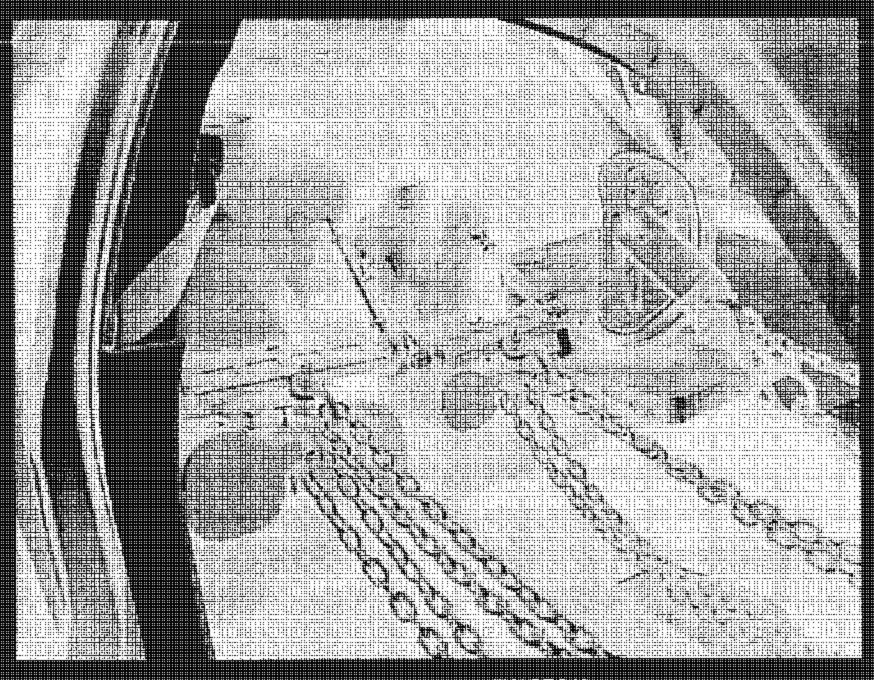
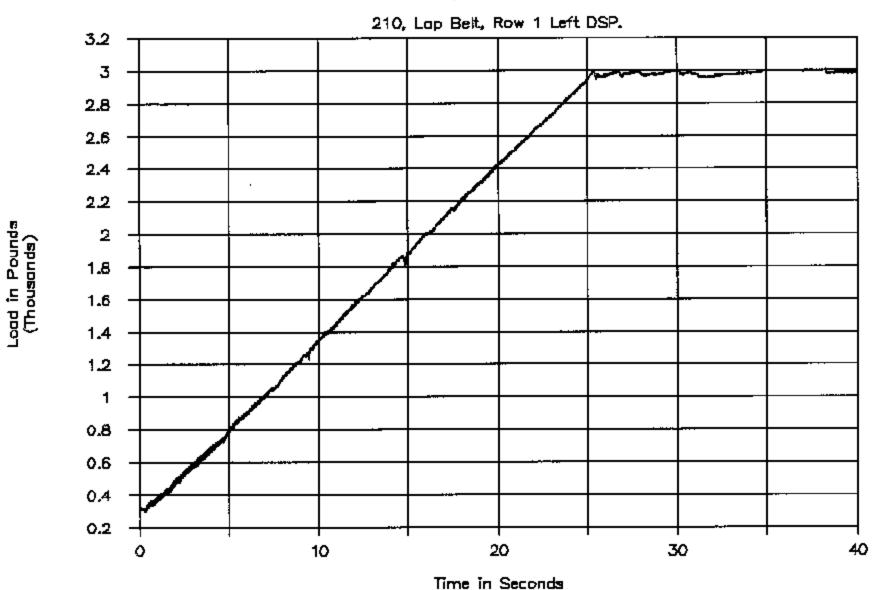
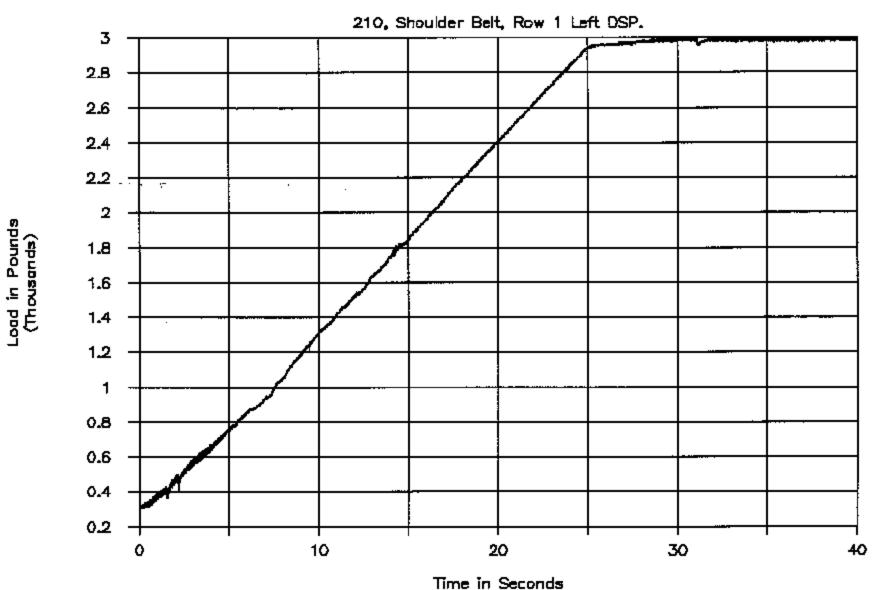


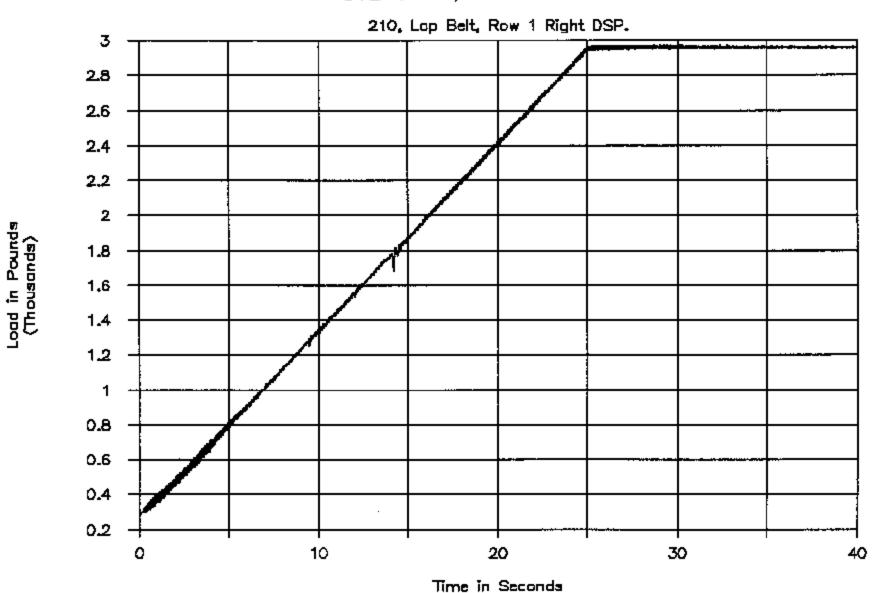
FIGURE 5:39 POST TEST ROW 2. RIGHT SIDE VIEW SECTION 6 TEST PLOTS



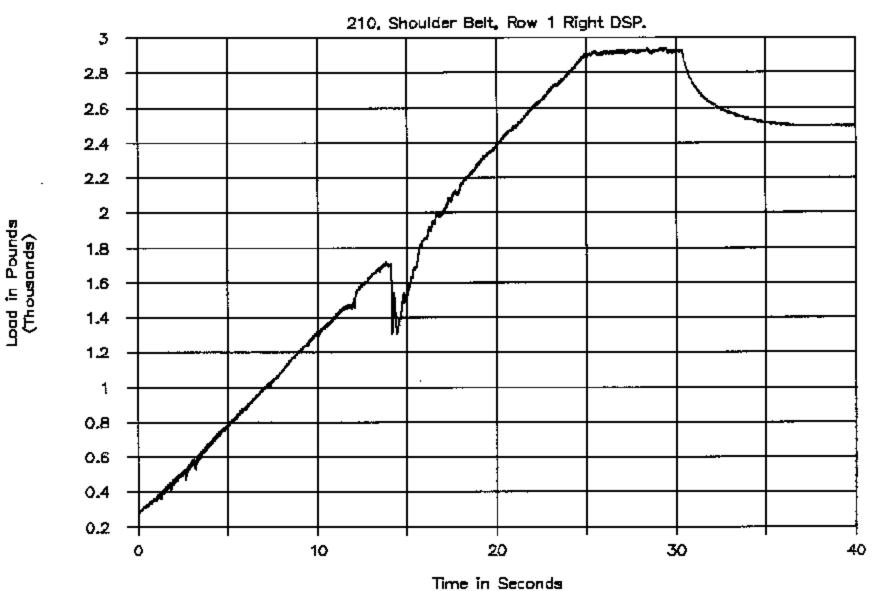
GTL 5313, NHTSA C50306.

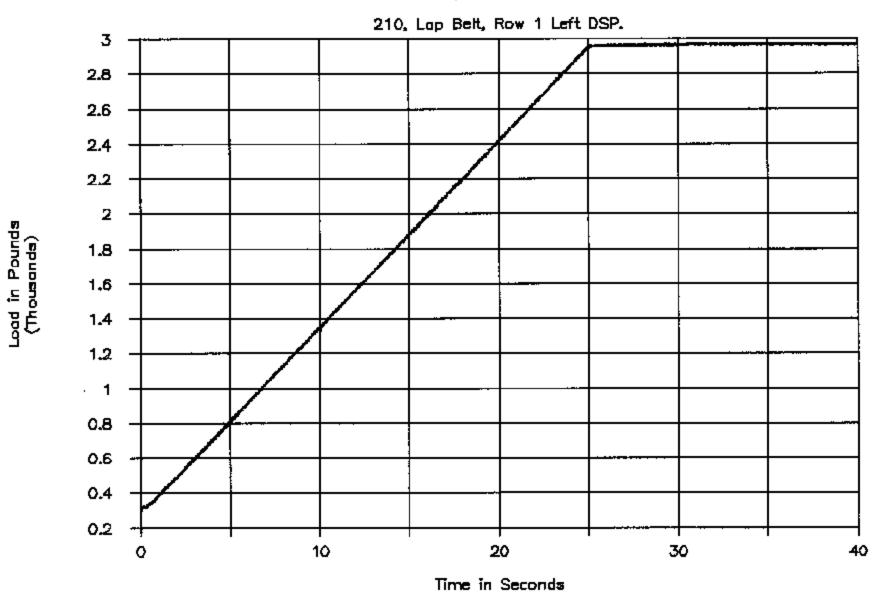


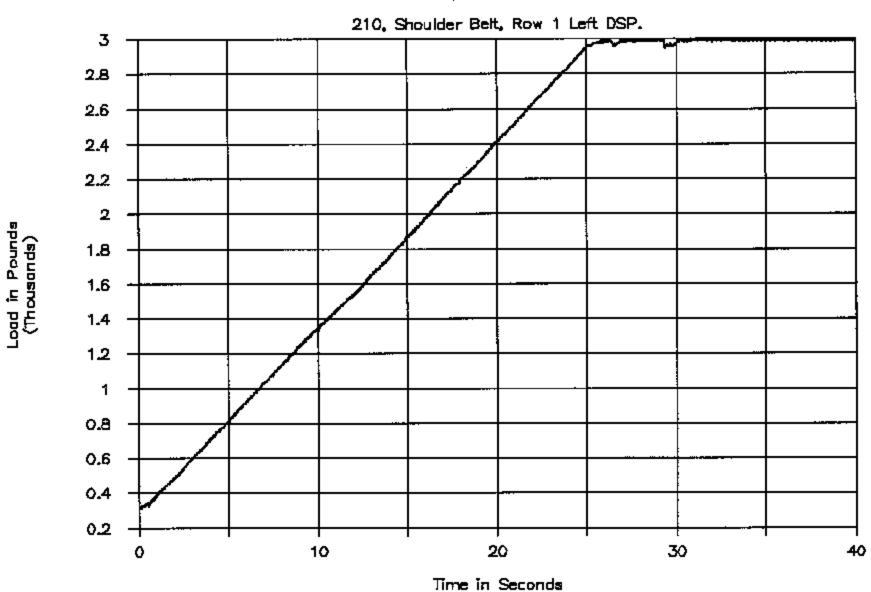
GTL 5313, NHTSA C50306.

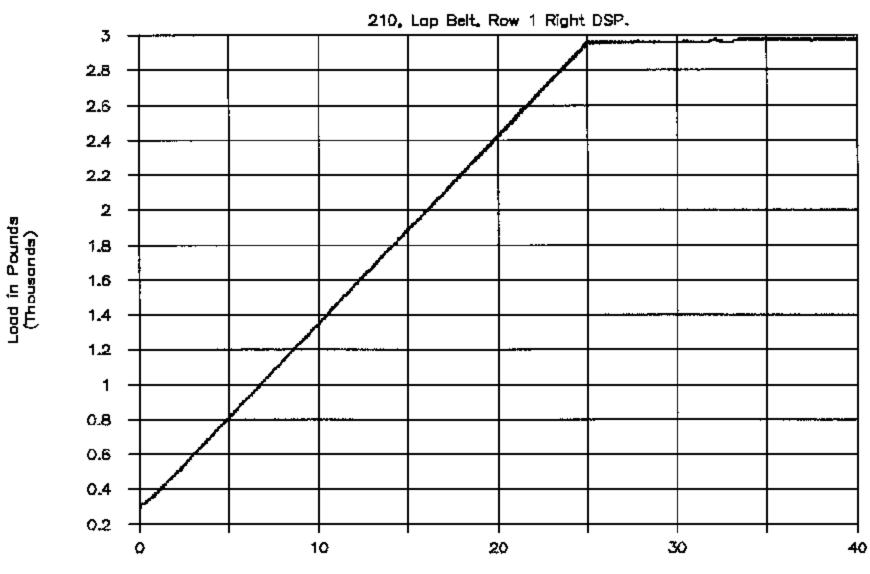


GTL 5313, NHTSA C50306.

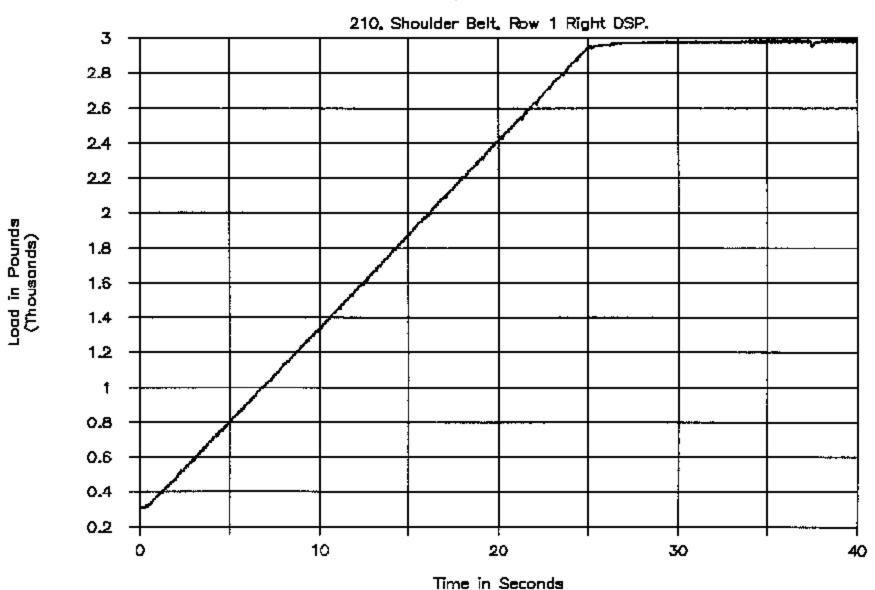




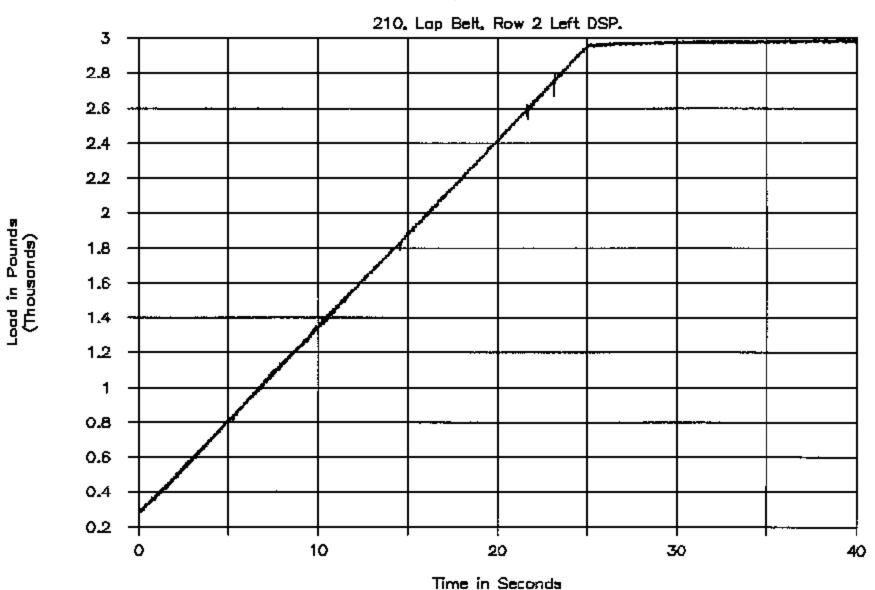


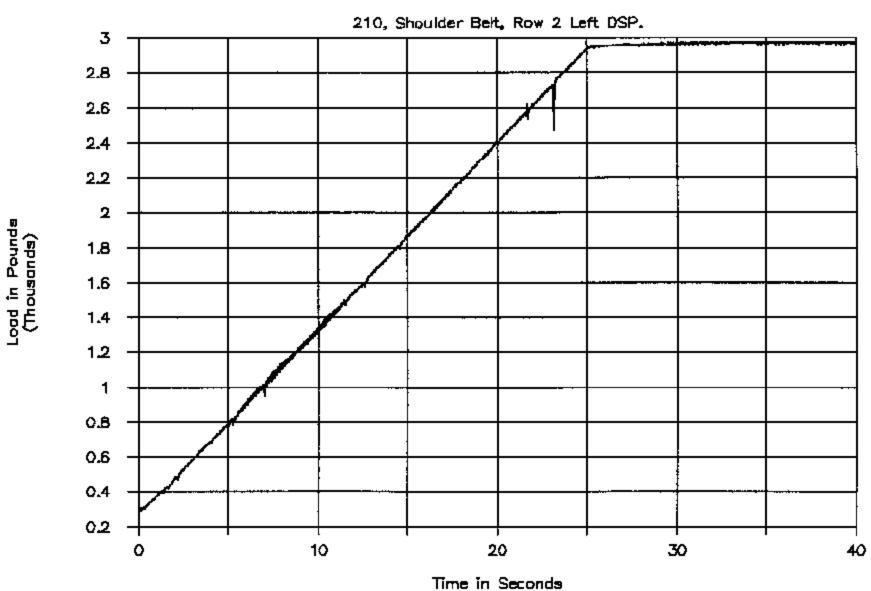


Time in Seconds



GTL 5315, NHTSA C50306.





GTL 5315, NHTSA C50306.

