

REPORT NUMBER 110(IND)-GTL-03-040

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 110(INDICANT)
TIRE SELECTION AND RIMS**

**FORD MOTOR COMPANY
2003 FORD E350 XLT SUPER DUTY 15 PASSENGER BUS
NHTSA NO. C30210**

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SEPTEMBER 26, 2003

FINAL REPORT

PREPARED FOR

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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WASHINGTON, D.C. 20590**

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16. Abstract This test was conducted on the subject 2003 Ford E350 XLT Super Duty Bus in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-110-02 (partial), to gather data relating to the normal load requirements specified in FMVSS 110. NHTSA's Office of Safety Performance Standards requested this data to support the agency's TREAD tire rulemaking efforts.					
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SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2003 Ford E350 XLT Super Duty Bus was subjected to a FMVSS No. 110 (Indicant) test intended to gather data relating to the normal load requirements specified in FMVSS 110. NHTSA's Office of Safety Performance Standards requested this data to support the agency's TREAD tire rulemaking efforts.

1.1 TEST VEHICLE

The test vehicle was a 2003 Ford E350 XLT Super Duty Bus. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1FBSS31S13HA53319

B. NHTSA No.: C30210

C. Manufacturer: FORD MOTOR COMPANY

D. Manufacture Date: 11/02

1.2 TEST DATE

The test vehicle was subjected to testing on June 04, 2003.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

The vehicle was inspected, photographed and filled with fuel. It was then weighed to establish total curb weight and the weights of all wheels were measured and recorded. The vehicle was then ballasted to its normal load condition (refer to appendix) and the weights of all wheels were measured and recorded. Tire information labeling data and tire sidewall data were recorded.

This indicant test did not include any other requirements in FMVSS 110.

2.1 SUMMARY OF RESULTS

Currently FMVSS 110 applies only to passenger cars. The subject Ford E350 XLT Super Duty 15 Passenger vehicle is a bus and therefore it is not required to meet FMVSS 110 requirements. It was subjected to the normal load testing as executed for FMVSS 110 compliance verification for information only.

SECTION 3
TEST DATA

DATA SHEET 1
SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR. BUS

VEHICLE NHTSA NO.: C30210 ; VIN: 1FBSS31S13HA53319

LABORATORY: GENERAL TESTING LABORATORIES

TEST DATE: 06/04/03

<u>REQUIREMENT</u>	<u>YES/NO</u>
The vehicle is equipped with tires that meet the requirements of FMVSS 109 or FMVSS 119.	<u>YES</u>
The vehicle normal load on the tire is not greater than the high speed performance test load specified in FMVSS 109 paragraph S5.5 or FMVSS 119 paragraph S7.4.	<u>YES</u>
For passenger cars, the tire information placard is permanently affixed to the glove compartment door or equally accessible location; and displays the required information (FMVSS 110, S4.3).	<u>N/A</u>
For vehicles other than passenger cars, a combined certification/ tire information label or separate tire information label is permanently affixed to either the hinge pillar, door-latch post or to the inward-facing surface of the door next to the driver's seating position (FMVSS 120, S5.3).	<u>YES</u>

REMARKS:

RECORDED BY: *M. A. [Signature]*

DATE: 06/04/03

APPROVED BY: *D. Messic*

DATA SHEET 2
TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES DATE: 06/04/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR. BUS

MANUFACTURE DATE: 11/02 NHTSA NO.: C30210 BODY COLOR: WHITE

VIN: 1FBSS31S13HA53319 VEHICLE TYPE: BUS

GVWR 4218 kg (9300 lbs) GAWR(Fr) 1610 kg (3550 lbs) GAWR(Rr) 2759 kg (6084 lbs)

BELTED SEATING POSITIONS: FRONT 2 2nd 3 3rd 3 4th 3 5th 4

ENGINE DATA: 10 Cylinders 6.8 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual No. of Speeds

FINAL DRIVE DATA: X Rear Drive Front Drive 4 Wheel Drive AWD

INSTALLED TIRE DATA: Size - LT245/75R16 Mfr. - GOODYEAR WRANGLER

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT/MAKE SURE ALL OPTIONS ON WINDOW STICKER ARE LISTED:

<input checked="" type="checkbox"/>	Air Conditioning		Traction Control	<input checked="" type="checkbox"/>	Clock
	Tinted Glass		All Wheel Drive		Roof Rack
<input checked="" type="checkbox"/>	Power Steering	<input checked="" type="checkbox"/>	Cruise Control	<input checked="" type="checkbox"/>	Console
<input checked="" type="checkbox"/>	Power Windows		Rear Window Defroster	<input checked="" type="checkbox"/>	Driver Air Bag
<input checked="" type="checkbox"/>	Power Door Locks		Sun Roof or T-Top	<input checked="" type="checkbox"/>	Passenger Air Bag
<input checked="" type="checkbox"/>	Power Seat(s)		Tachometer	<input checked="" type="checkbox"/>	Front Disc Brakes
<input checked="" type="checkbox"/>	Power Brakes	<input checked="" type="checkbox"/>	Tilt Steering Wheel	<input checked="" type="checkbox"/>	Rear Disc Brakes
<input checked="" type="checkbox"/>	Antilock Brake System	<input checked="" type="checkbox"/>	AM/FM/CD		Other -

ARE ALL OPTIONS LISTED ON "WINDOW STICKER" PRESENT ON THE TEST VEHICLE:
(YES/NO) Yes

REMARKS:

RECORDED BY: *M. A. [Signature]*

DATE: 06/04/03

APPROVED BY: *P. [Signature]*

DATA SHEET 3 -- CONTINUED

- (5) Calculated Vehicle Normal Load on the Tire
 Front Tires (measured front axle normal load/2) = 769 KG (1696 LB)
 Rear Tires (measured front axle normal load/2) = 868 KG (1913 LB)

- (6) High Speed Test Load from () FMVSS 109 (S5.5), or (X) FMVSS 119 (S7.4)

	Front	Rear
(a) Installed Tire Size	<u>LT245/75R16</u>	<u>LT245/75R16</u>
Max. Load Rating on Sidewall	<u>1380KG(3042 LBS)</u>	<u>1380KG(3042 LBS)</u>
Reduced Sidewall Load Rating (if applicable)*	<u>N/A</u>	<u>N/A</u>
High Speed Test Load (88% of sidewall max. load rating)	<u>1214KG(2677 LBS)</u>	<u>1214KG(2677 LBS)</u>
(b) Optional Tire Size(s)	<u>NONE</u>	<u>NONE</u>

* If a passenger car tire is installed on a multipurpose passenger vehicle (MPV), truck or bus, the tire's load rating shall be reduced by dividing by 1.10.

REMARKS: The Vehicle Normal Load on the Tire is not greater than the High Speed Test Load.

RECORDED BY: M.A. Lyke

DATE: 06/04/03

APPROVED BY: D. Messer

DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR. BUS
 VEHICLE NHTSA NO.: C30210 ; VIN: 1FBSS31S13HA53319
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/04/03

A. Vehicle Type from Certification Label: BUS (NOT SCHOOL BUS)

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label Yes No
 Is Label Permanently Affixed: Yes No
 Label Location: "B" Pillar
 Description of Label: Vinyl

Vehicle has a separate Tire Information Label or Placard Yes No
 Is Label Permanently Affixed: Yes No
 Label Location: _____
 Description of Label: _____

C. Enter Information from Combined or Separate Tire Information Label/Placard

Vehicle Capacity Weight - N/A(see remarks)

Designated Seating Capacity (DSC) - N/A(see remarks)

Expressed In—

(1) Total No. of Occupants Yes No

(2) Terms of Occupants for Each Seat Location Yes No

Manufacturer's Recommended Tire Size(s) and Cold Tire Inflation Pressure(s) for
 Maximum Load Vehicle Weight:

LT245/75R16 FRONT - 414 kPa (60 psi)
 REAR - 552 kPa (80 psi)

Manufacturer's Recommended Tire Size(s) and Cold Tire Inflation Pressure(s) for Other
 Load Conditions: NONE

REMARKS: The vehicle labeling requirements of FMVSS 120 for a bus do not include Vehicle Capacity Weight (VCW) or Designated Seating Capacity (DSP) as required by FMVSS 110 passenger car labeling.

RECORDED BY: *M. P. [Signature]*

DATE: 06/04/03

APPROVED BY: *D. Merrett*

DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR. BUS

VEHICLE NHTSA NO.: C30210 ; VIN: 1FBSS31S13HA53319

LABORATORY: GENERAL TESTING LABORATORIES

TEST DATE: 06/04/03

All tires on the vehicle are the same size: (Yes/No) Yes

INFORMATION FROM TIRE SIDEWALL:

Right Front Tire

Tire Size Designation LT245/75R16

Tire Load Index/Speed Symbol 120/116R

Maximum Inflation Pressure 550 kPa (80 psi)

Maximum Load Rating 1380 KG (3042 LBS)

Mfr. Name or Brand & Code GOODYEAR WRANGLER

Tube or Tubeless TUBELESS

Treadwear/Traction/Temp. Grades N/A

Sidewall (Plies & Composition) 2 PLY POLYESTER

Tread (Plies & Composition) 2 PLY POLYESTER
2 PLY STEEL
2 PLY NYLON

Serial Number: Right Front - DOT MD11 MMWV 4502

Tire has "DOT" markings: (X) YES () NO () UNDETERMINED

REMARKS:

RECORDED BY: 

DATE: 06/04/03

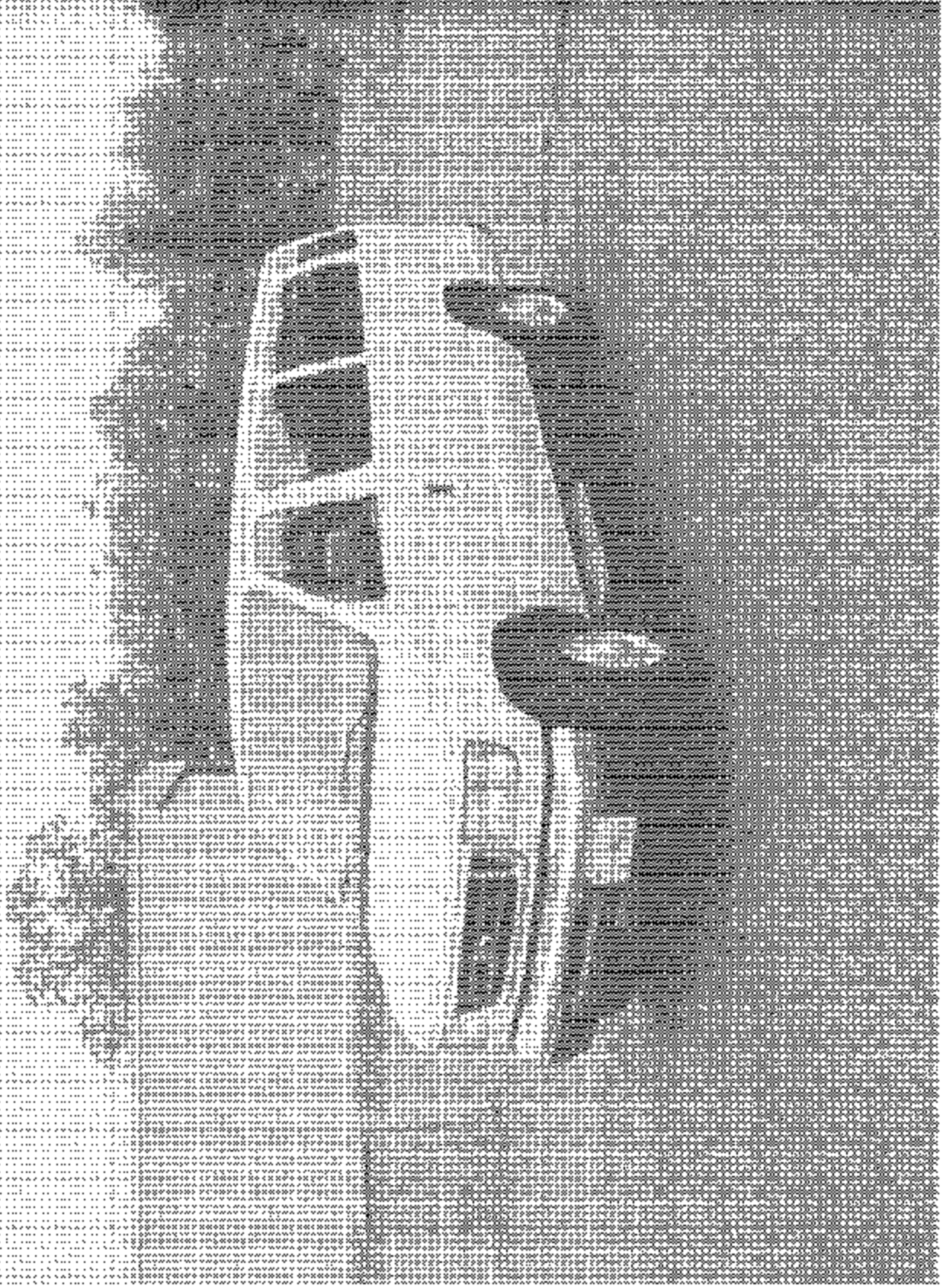
APPROVED BY: 

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

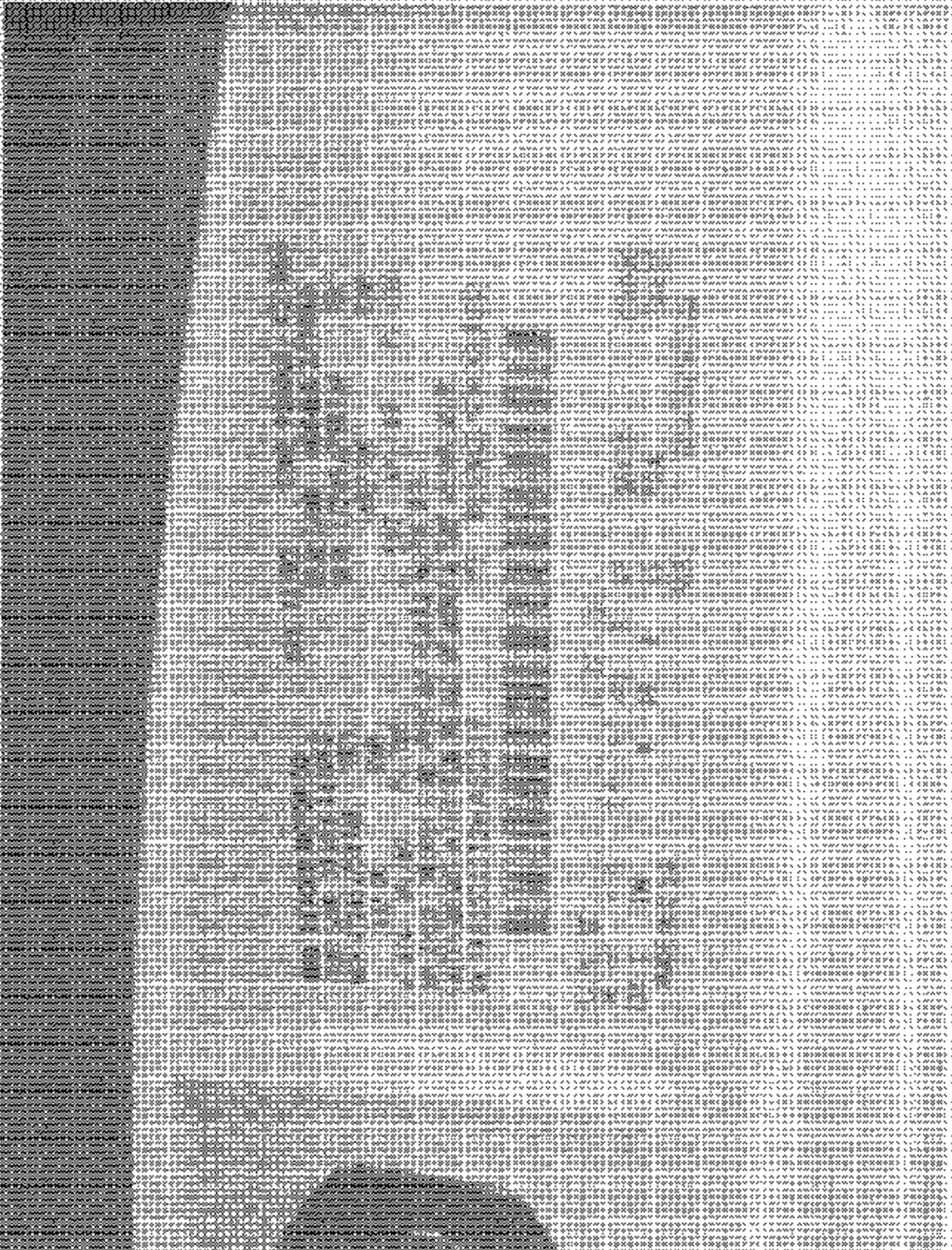
EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
PAD SCALES	#1 199744LF	199744LF	06/02	06/03
	#2 199744RF	199744RF	06/02	06/03
	#3 199744LR	199744LR	06/02	06/03
	#4 199744RR	19974RR	06/02	06/03
PRESSURE GAGE	WESKLER	0-100	11/02	05/04
SURFACE LEVEL	GTL	N/A	BEFORE USE	BEFORE USE

SECTION 5
PHOTOGRAPHS



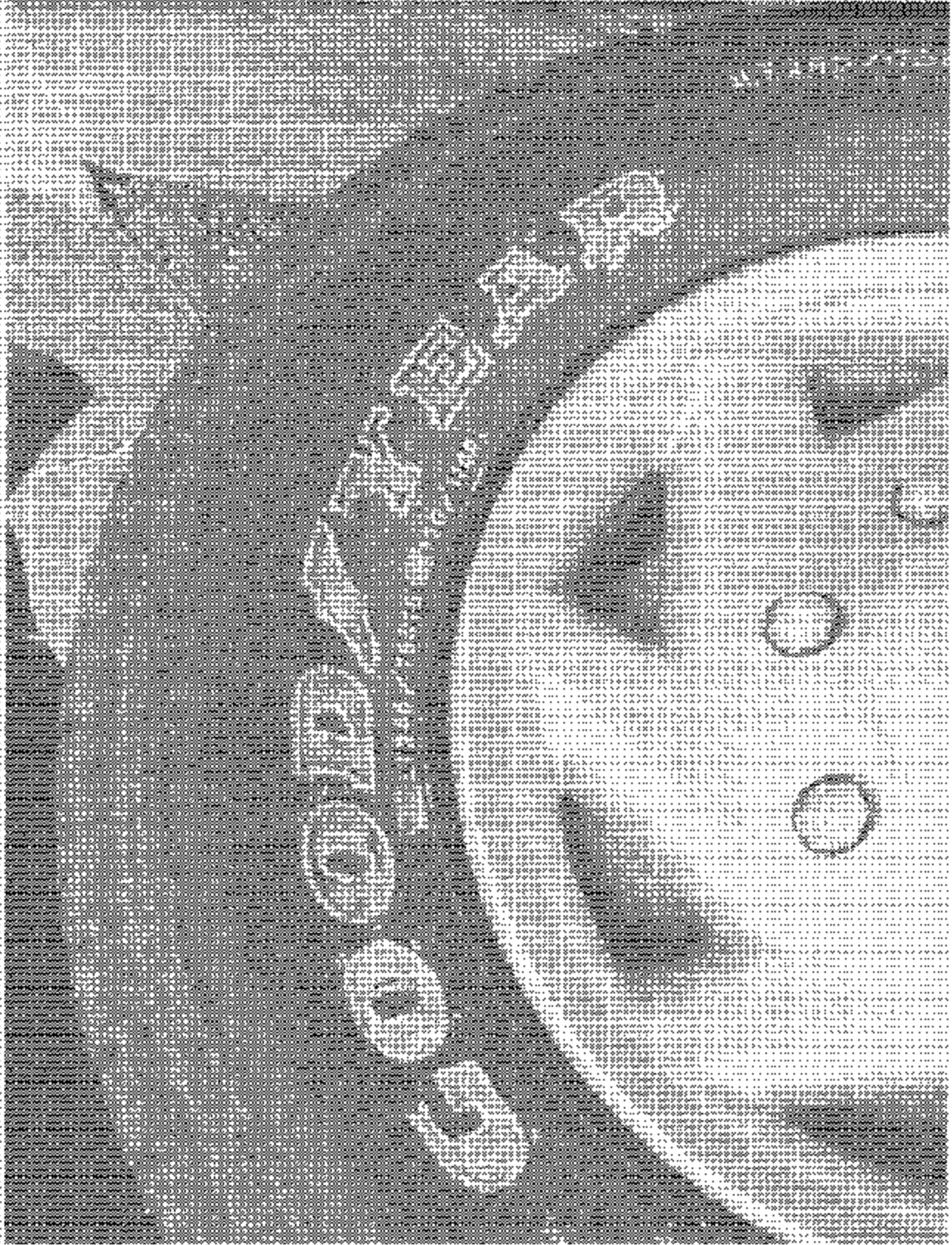
2003 FORD E650 XL1 15 PASSENGER BUS
NHTSA NO. C8021D
MASS NO. 1101MEDICANT

FIGURE 5-1
FRONTAL VIEW OF VEHICLE



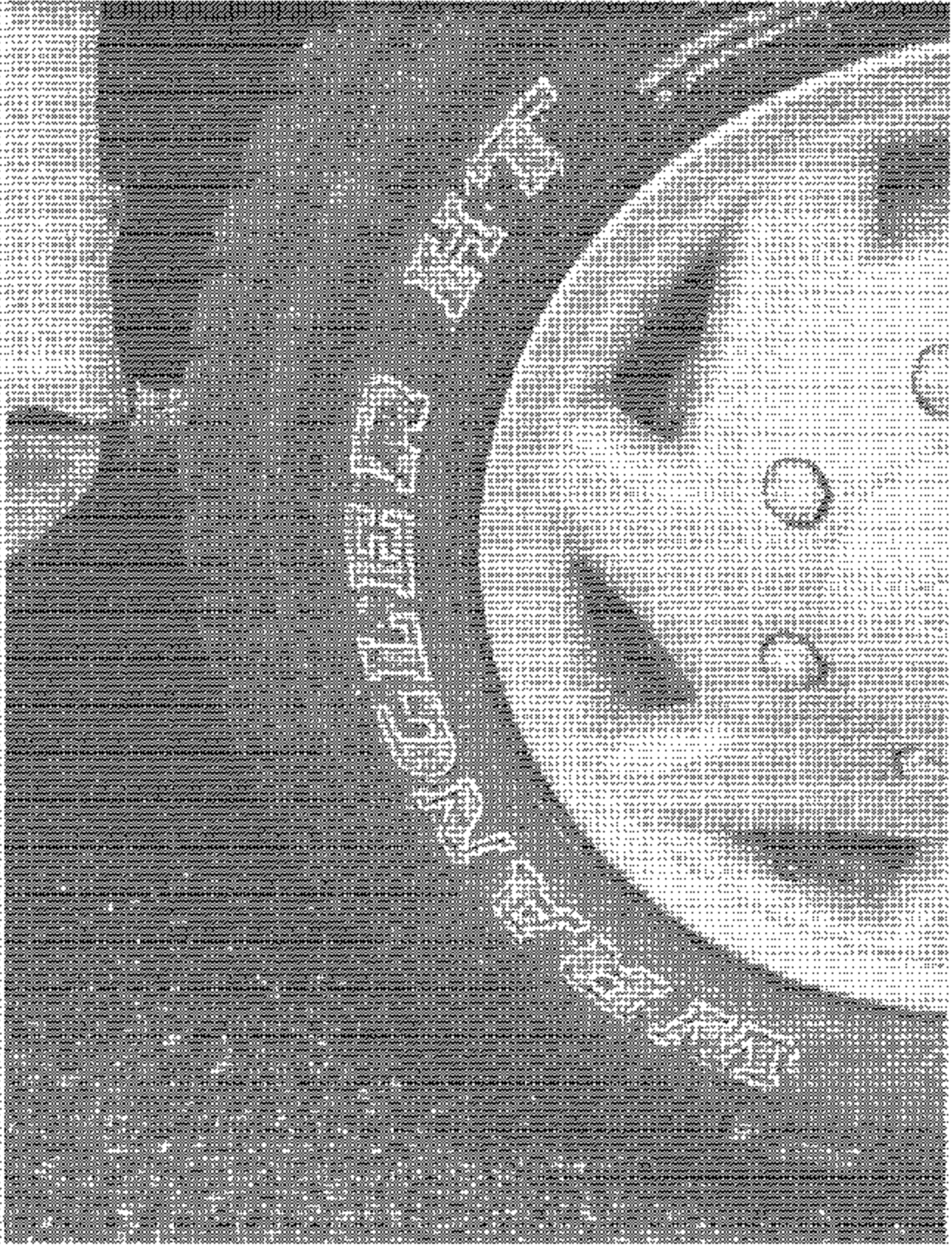
2003 FORD ESCORT 1.6 PASSENGER BUS
NHTSA NO. C40219
FAVSS NO. 110 (INDICANT)

FIGURE 30
VEHICLE IDENTIFICATION AND TRAC
INFORMATION LABEL



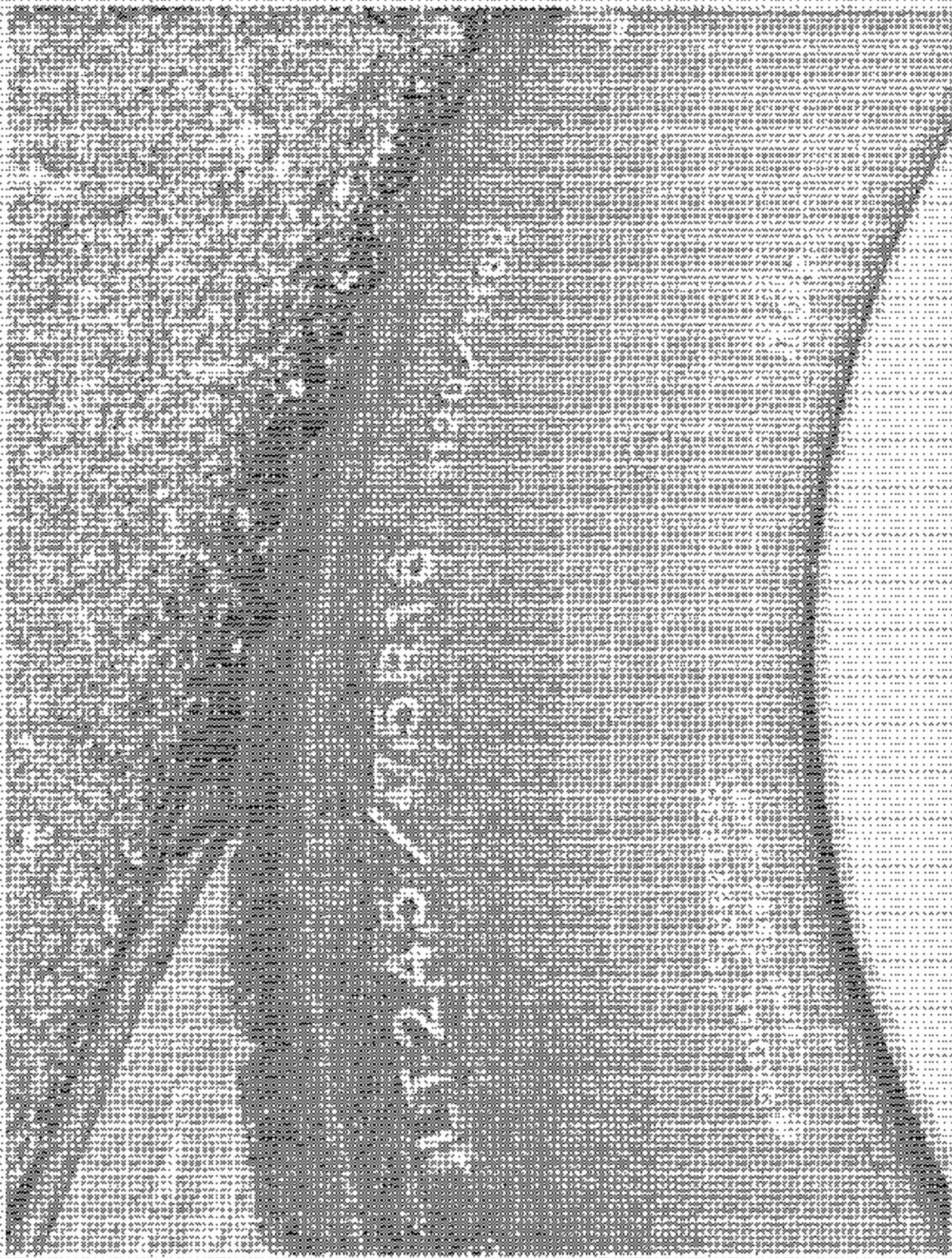
2006 FORD ECONOLINE PASSENGER BUS
VIN: 1F151A00000000000
PLATE: NO. 130 (INDICANT)

FIGURE 30
FIRE SHOWING SPREAD



2003 FORD E260 XI 16 PASSENGER BUS
UNIT # 102, D30210
FMS# NO. 110 (MEDICAR)

FIGURE 5A
FIRE SHOWING MODEL



2403 FORM E250 MUT-15 PASSENGER 3415
DOT BA NO. C10210
FMVSS NO. 110 (INDICANT)

FIGURE 5.5
TIRE SHOWING SIZE, LOAD INDEX AND SPEED
SYMBOL

UNION CARBIDE POLYESTER CARBONATE
SHEETS

MAXIMUM LOAD SINGLE 1080 LB (5042 N) AT 100% HUMIDITY

MAXIMUM LOAD DOUBLE 2160 LB (9684 N) AT 100% HUMIDITY

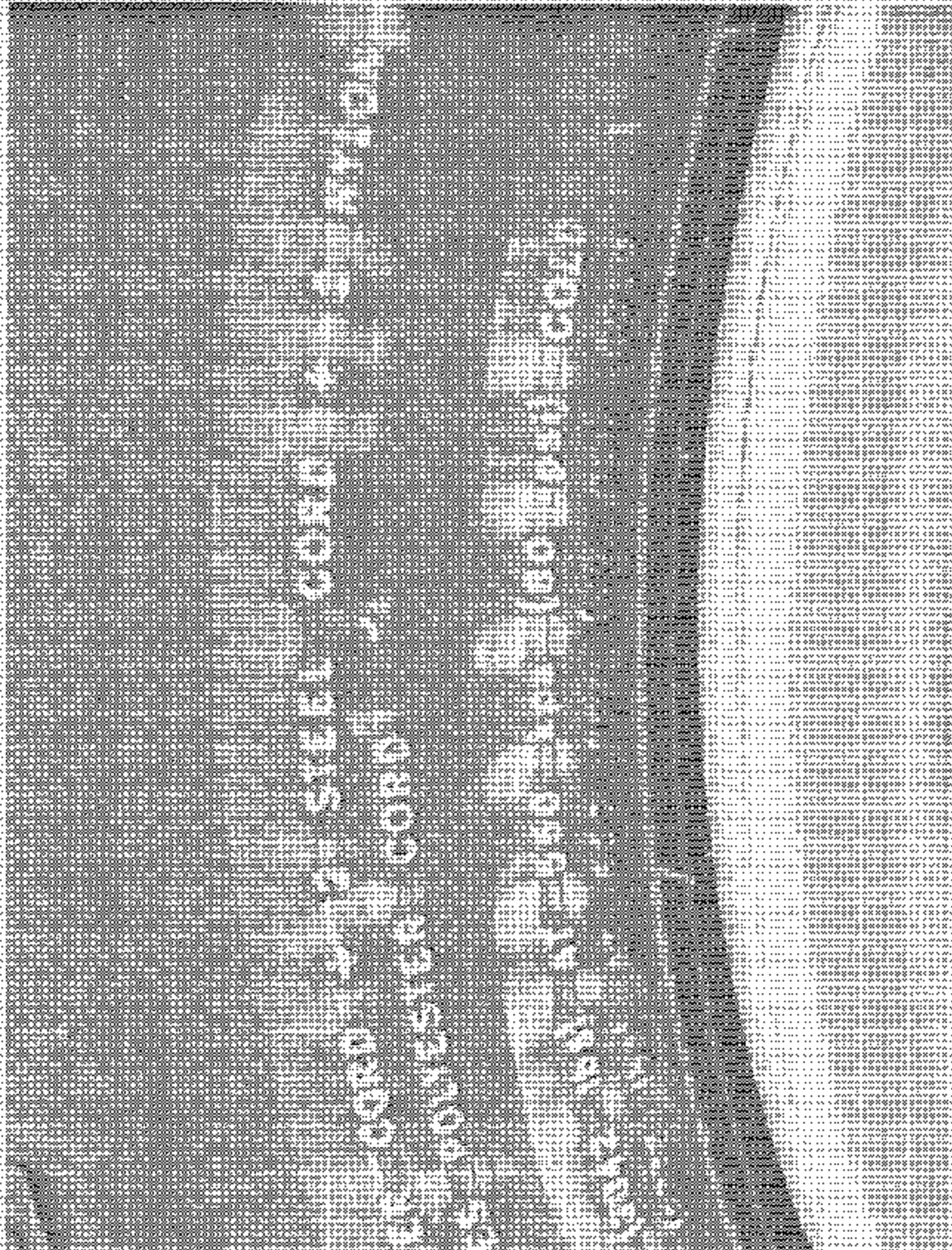
UNION CARBIDE POLYESTER CARBONATE
SHEETS

MAXIMUM LOAD SINGLE 1080 LB (5042 N) AT 100% HUMIDITY

MAXIMUM LOAD DOUBLE 2160 LB (9684 N) AT 100% HUMIDITY

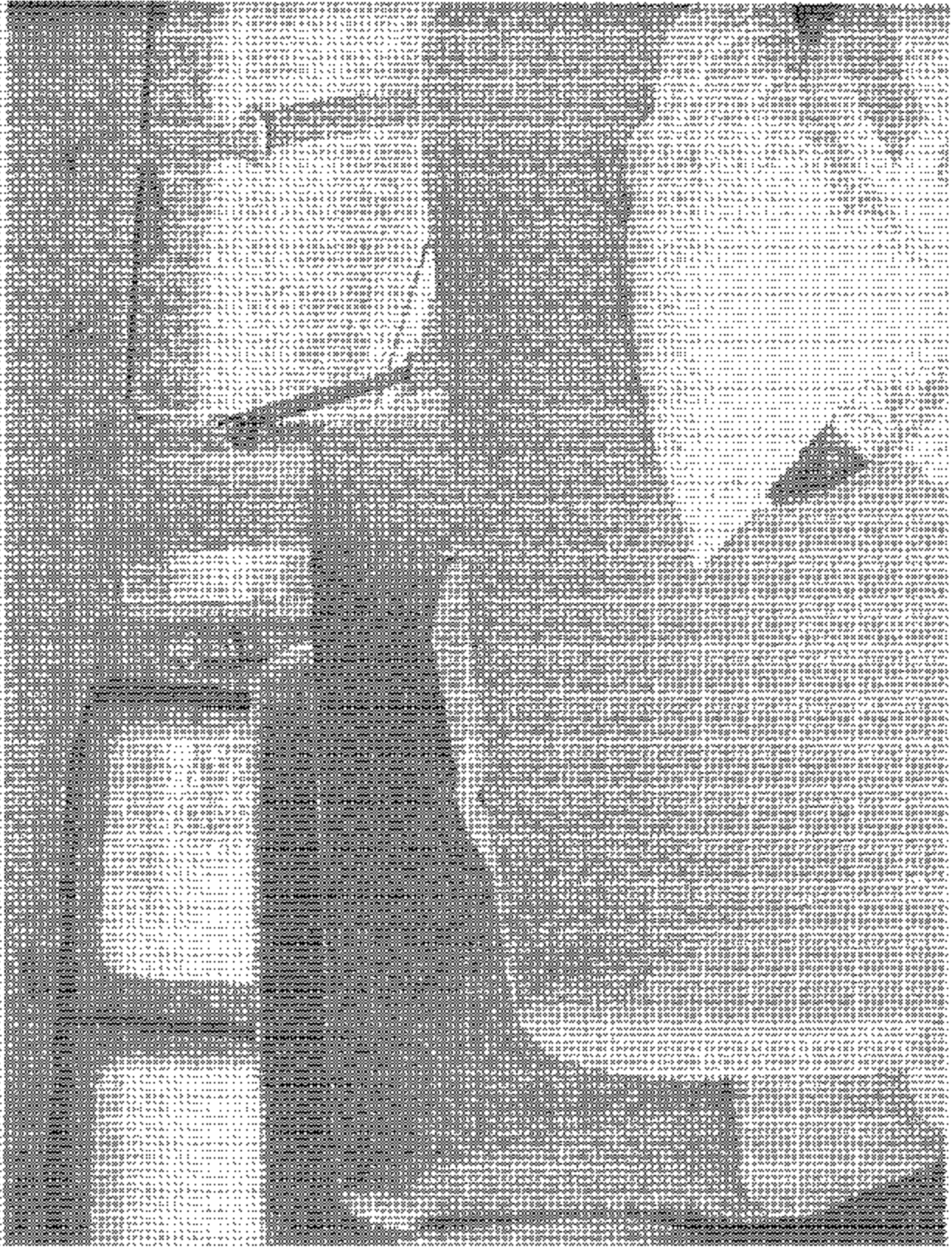
FIGURE 56
TIRE SHOWING MAX LOAD RATING

FIGURE 55
TIRE SHOWING MAX LOAD RATING



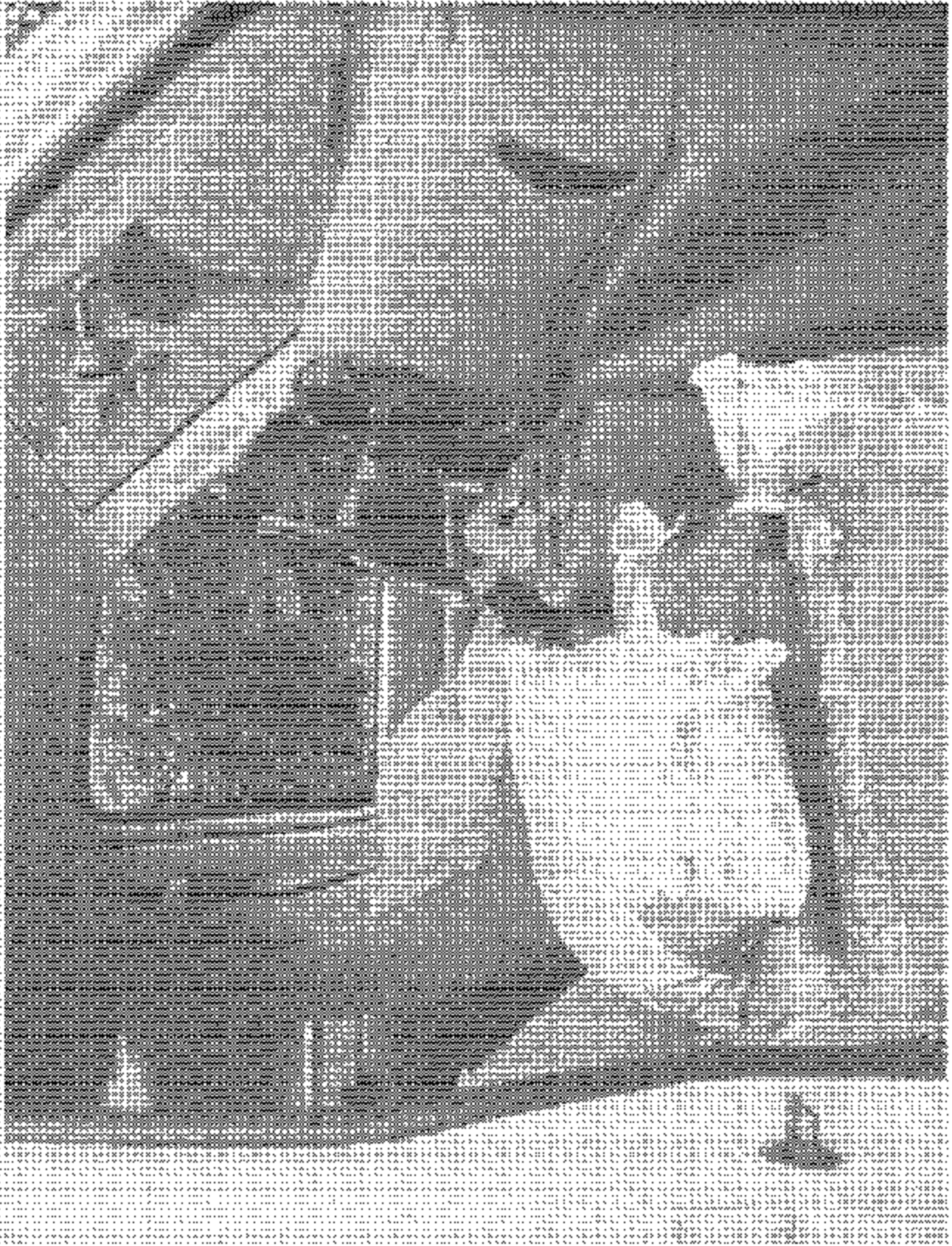
2003 FORD EDGE XLT 16 PASSENGER BUS
 AIR BAG NO. 230216
 FORD NO. 1104000001

FIGURE 80
 FIRE SHOWING 15% INFLATION PRESSURE



2003 FORD E350 XL F150 MASSIVE BUS
M113A (M) C00210
MASS NO. 1101010ANT

FIGURE 5.8
VEHICLE PALLASTED TO SIMULATE NORMAL
LOAD CONDITION (PART 1)



2003 FORD E550 XL1 15-PASSENGER BUS
NHTSA NO. C40210
FMVSS NO. 215 (SEMI-CANT)

FIGURE 5-10
VEHICLE BALLS ADDED TO SIMULATE NORMAL
LOAD CONDITION (PART 2)

APPENDIX

Table 1 – Occupant Loading and Distribution for Vehicle Normal Load for Various Designated Seating Capacities

Designated Seating Capacities, numbers of Occupants	Vehicle normal load, number of occupants	Occupant distribution in a normally loaded vehicle
2 through 4	2	2 in front
5 through 10	3	2 in front, 1 in second seat
11 through 15	5	2 in front, 1 in second seat, 1 in third seat, 1 in fourth seat
16 through 22	7	2 in front, 2 in second seat, 2 in third seat, 1 in fourth seat

NOTE: For the indicant test each seat was adjusted to its full down and mid forward to aft position with the seat back adjusted to a 25° reclined angle. Each designated seat position was ballasted with 54 KG (120 LBS) in the seat and 14 KG (30 LBS) on the floor directly in front of the respective seat position.