

REPORT NUMBER 110(IND)-GTL-03-025

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

**FORD MOTOR CO.
2003 MERCURY GRAND MARQUIS PASSENGER CAR
NHTSA NO. C30215**

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



SEPTEMBER 17, 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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1. Report No. 110(IND)-GTL-03-025	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of FMVSS 110 (Indicant) Test of 2003 MERCURY GRAND MARQUIS PASSENGER CAR NHTSA No. C30215		5. Report Date September 17, 2003
		6. Performing Organ. Code GTL
7. Author(s) Grant Farrand, Project Engineer Debbie Messick, Project Manager		8. Performing Organ. Rep# GTL-DOT-03-110(INDICANT)-025
9. Performing Organization Name and Address General Testing Laboratories, Inc. 1623 Leedstown Road Colonial Beach, Va 22443		10. Work Unit No. (TRAIS)
		11. Contract or Grant No. DTNH22-01-C-11025
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Admin. Safety Enforcement Office of Vehicle Safety Compliance (NVS-220) 400 7 th Street, S.W., Room 6111 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report June 02, 2003
		14. Sponsoring Agency Code NVS-120 & NVS 220
15. Supplementary Notes		
16. Abstract This test was conducted on the subject, 2003 Mercury Grand Marquis passenger car 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.		
17. Key Words Vehicle Testing Safety Engineering FMVSS 110		18. Distribution Statement Copies of this report are available from NHTSA NHTSA Technical Reference Div., Rm. 5108 (NPO-230) 400 7 th St., S.W. Washington, DC 20590 Telephone No. (202) 366-4946
19. Security Classif. (of this report) UNCLASSIFIED	21. No. of Pages 24	22. Price
20. Security Classif. (of this page) UNCLASSIFIED		

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SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2003 Mercury Grand Marquis passenger car 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 Mercury Grand Marquis. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 2MEFM75W63X643171

B. NHTSA No.: C30215

C. Manufacturer: FORD MOTOR CO.

D. Manufacture Date: 09/02

1.2 TEST DATE

The test vehicle was subjected to testing on June 02, 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

Test results are provided in Section 3.

SECTION 3 TEST DATA

DATA SHEET 1
SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: 2003 MERCURY MARQUIS PASSENGER CAR
VEHICLE NHTSA NO.: C30215 ; VIN: 2MEFM75W63X643171
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/021/03

<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>YES</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>N/A</u>

REMARKS:

RECORDED BY: M. R. BlaDATE: 06/02/03APPROVED BY: D. Munc

DATA SHEET 2 TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES DATE: 06/02/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 MERCURY GRAND MARQUIS

MANUFACTURE DATE: 09/02 NHTSA NO.: C30215 BODY COLOR: ICE BLUE

VIN: 2MEFM75W63X643171 VEHICLE TYPE: PASSENGER CAR

GVWR 2494 kg (5500 lbs) GAWR(Fr) 1247 kg (2750 lbs) GAWR(Rr) 1247 kg (2750 lbs)

BELTED SEATING POSITIONS: FRONT 3 MID N/A REAR 3 OTHER N/A

ENGINE DATA: 8 Cylinders 4.6 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual No. of Speeds

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

INSTALLED TIRE DATA: Size - P225/60R16 Mfr. - MICHELIN

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

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

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

REMARKS:

RECORDED BY: M. A. Gbor

DATE: 06/02/03

APPROVED BY: A. M. M. M. M.

DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 MERCURY MARQUIS PASSENGER CAR
 VEHICLE NHTSA NO.: C30215 ; VIN: 2MEFM75W63X643171
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/02/03

Full Fluid Levels:

Fuel Full ; Coolant Full ; Other Fluids Full

Tire Pressure: LF 221 KPA (32 psi) LR 241 KPA (36 psi)
 RF 221 KPA (32 psi) RR 241 KPA (36 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

LF <u>512</u> KG (1128 LB)	LR <u>411</u> KG (905 LB)
RF <u>528</u> KG (1164 LB)	RR <u>420</u> KG (926 LB)
Front Axle <u>1040</u> KG (2292 LB)	Rear Axle <u>831</u> KG (1831 LB)
Total Vehicle <u>1870</u> KG (4123 LB)	

B. MEASURED VEHICLE WEIGHT IN NORMAL LOAD CONDITION

- (1) Seating Capacity (from Tire Information Placard) = 6
 Seating Capacity (# of belted seating positions) = 6
- (2) Normal Load # of Occupants from Appendix
 Occupant Distribution: Front Seat- 2 Second Seat- 1
 Third Seat - N/A Fourth Seat- N/A
- (3) Total Normal Occupant Load 204 KG (450 LB)
 (# of occupants x 68 KG per occupant)
- (4) Measured Normal Load on Each Wheel and Axles (Sum)

LF <u>555</u> KG (1224 LB)	LR <u>467</u> KG (1030 LB)
RF <u>572</u> KG (1262 LB)	RR <u>479</u> KG (1056 LB)
Frt Axle <u>1128</u> KG (2486 LB)	Rr Axle <u>946</u> KG (2086 LB)
Total Vehicle <u>2074</u> KG (4572 LB)	

DATA SHEET 3 – CONTINUED

- (5) Calculated Vehicle Normal Load on the Tire
 Front Tires (measured front axle normal load/2) = 564 KG (1243 LB)
 Rear Tires (measured front axle normal load/2) = 473 KG (1043 LB)
- (6) High Speed Test Load from (X) FMVSS 109 (S5.5), or () FMVSS 119 (S7.4)

	Front	Rear
(a) Installed Tire Size	<u>P225/60R16</u>	<u>P225/60R16</u>
Max. Load Rating on Sidewall	<u>730 KG(1609 LBS)</u>	<u>730 KG(1609 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>642 KG(1416 LBS)</u>	<u>642 KG(1416 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. R. [Signature]

DATE: 06/02/03

APPROVED BY: D. [Signature]

DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 MERCURY MARQUIS PASSENGER CAR
VEHICLE NHTSA NO.: C30215 ; VIN: 2MEFM75W63X643171
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/02/03

A. Vehicle Type from Certification Label: Passenger Car

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label ☒ Yes ☐ No

Is Label Permanently Affixed: ☒ Yes ☐ No

Label Location: Driver's Door

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 - "MAXIMUM LOAD" 499 KG (1100 LBS)

Designated Seating Capacity (DSC) - 6

Expressed In—

(1) Total No. of Occupants ☒ Yes ☐ No

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

Manufacturer's Recommended Tire Size and Cold Tire Inflation Pressure For Maximum Load Vehicle Weight:

P225/60R16

FRONT - 221 kPa (32 psi)

REAR - 241 kPa (35 psi)

Manufacturer's Recommended Tire Size and Cold Tire Inflation Pressure For Other Load Conditions: NONE

REMARKS:

RECORDED BY:

APPROVED BY:

DATE: 06/02/03

DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 MERCURY MARQUIS PASSENGER CAR
 VEHICLE NHTSA NO.: C30215 ; VIN: 2MEFM75W63X643171
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/02/03

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

INFORMATION FROM TIRE SIDEWALL:

Left Front Tire

Tire Size Designation	<u>P225/60R16</u>
Tire Load Index/Speed Symbol	<u>97T</u>
Maximum Inflation Pressure	<u>240 kPa (35 psi)</u>
Maximum Load Rating	<u>730 KG (1609 LBS.)</u>
Mfr. Name or Brand & Code	<u>MICHELIN ENERGY</u>
Tube or Tubeless	<u>TUBELESS</u>
Treadwear/Traction/Temp. Grades	<u>500/A/A</u>
Sidewall (Plies & Composition)	<u>1 PLY POLYESTER</u>
Tread (Plies & Composition)	<u>1 PLY POLYESTER</u> <u>2 PLY STEEL</u> <u>1 PLY POLYAMIDE</u>
Serial Number: Right Front -	<u>DOT B93VA LHX 2302</u>

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

REMARKS:

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

DATE: 06/02/03

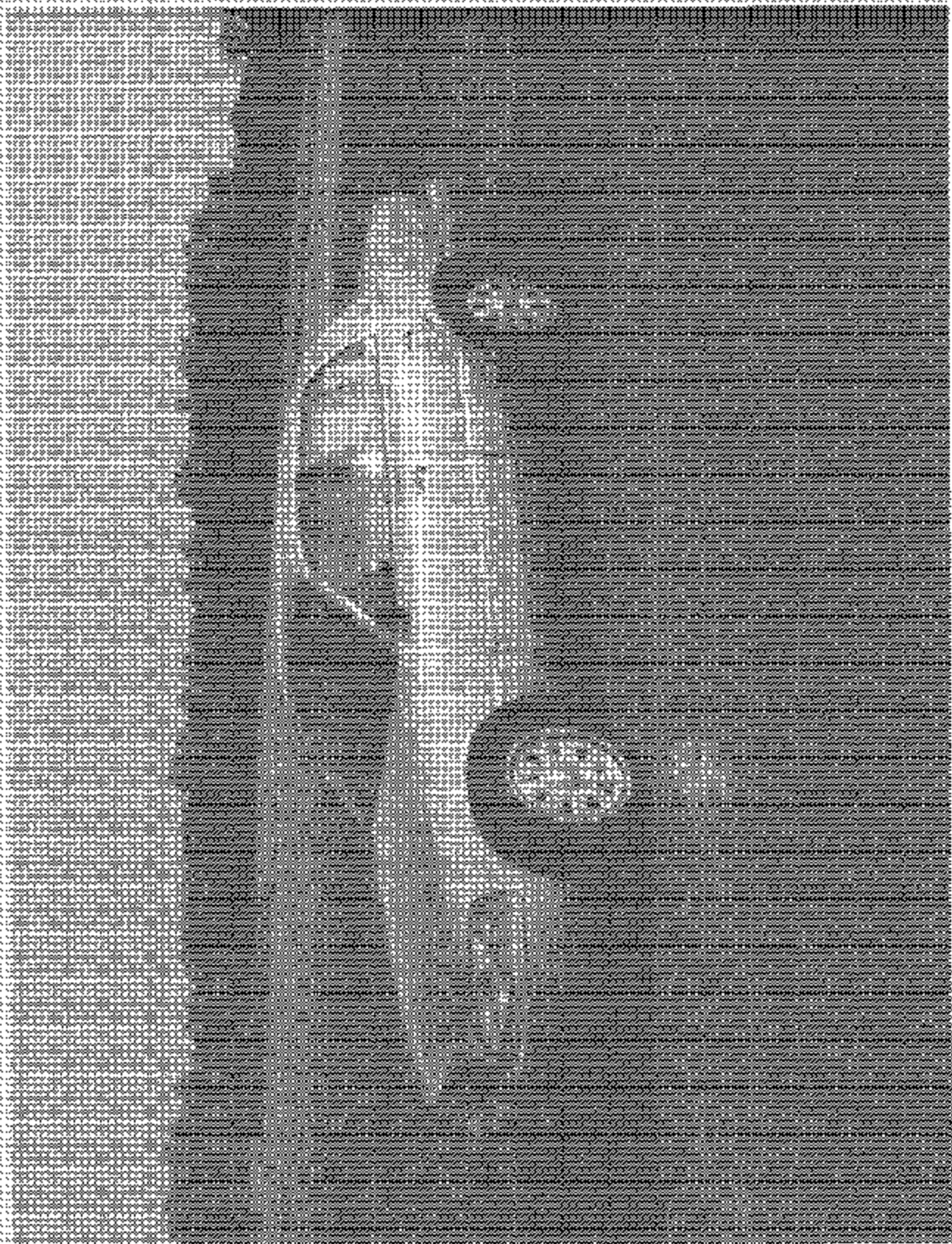
APPROVED BY: *A. [Signature]*

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	06/20/03
	#2 199744RF	199744RF	06/02	06/20/03
	#3 199744LR	199744LR	06/02	06/20/03
	#4 199744RR	199744RR	06/02	06/20/03
PRESSURE GAGE	WESKLER	0-100	05/03	05/04
SURFACE LEVEL	GTL	N/A	BEFORE USE	BEFORE USE

SECTION 5
PHOTOGRAPHS



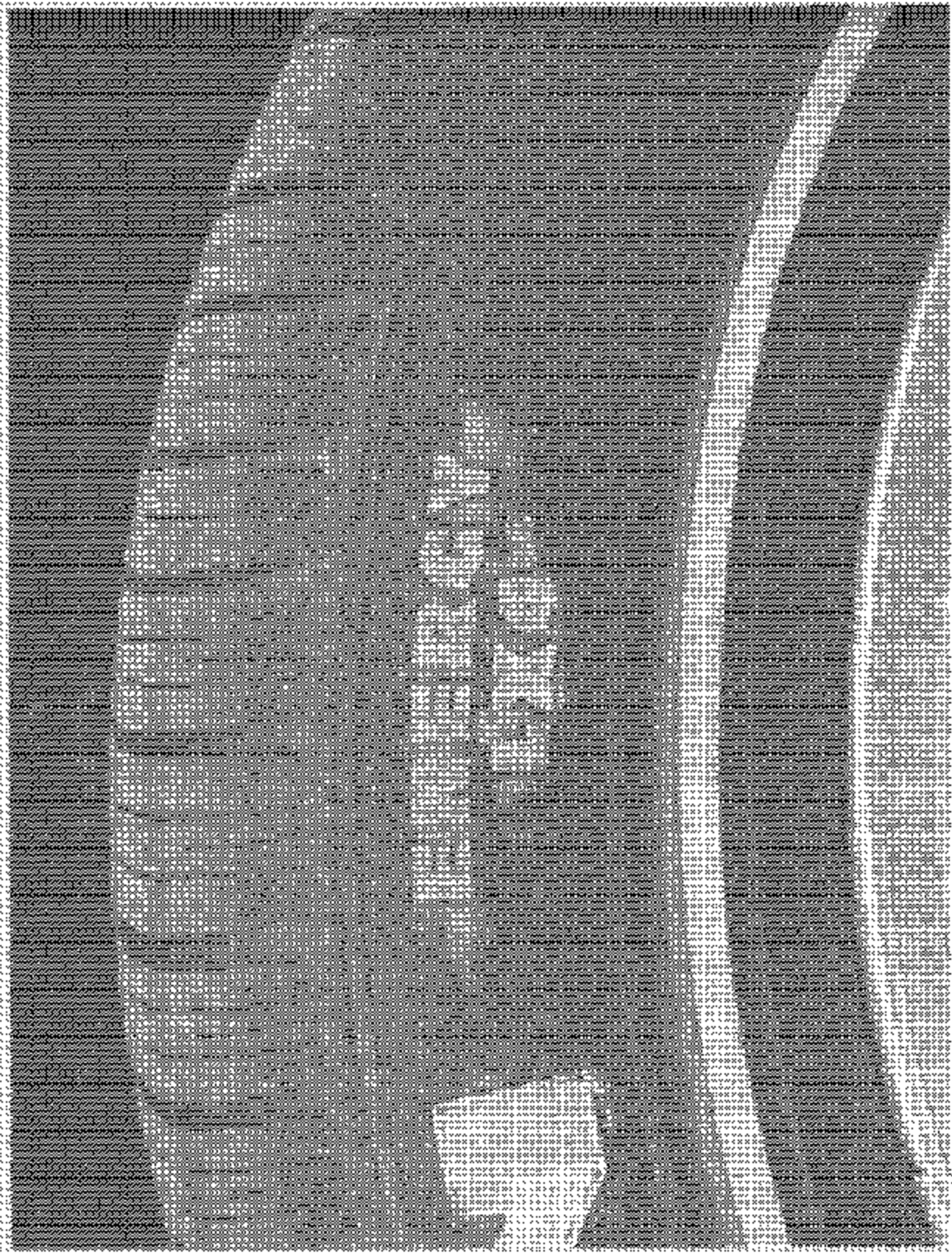
DODGE RAM
TRUCK NO. 1002-1
TRUCK NO. 1002-1

TRUCK NO. 1002-1
TRUCK NO. 1002-1



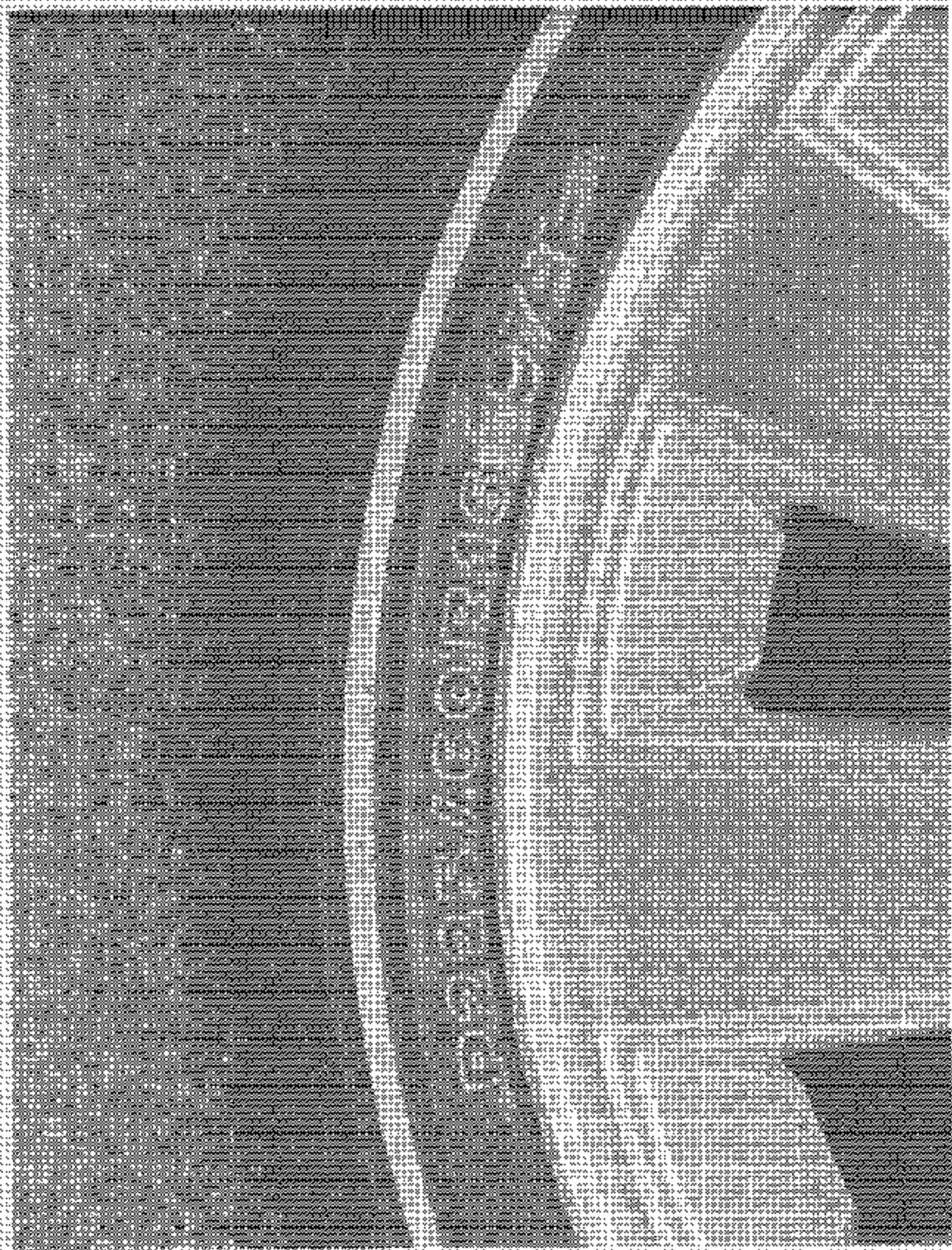
FIGURE 2
CHRYSLER 300

2003 GRAND MARQUIS
W-184 NO. DECZIS
EMVSS NO. 116 INDICANT



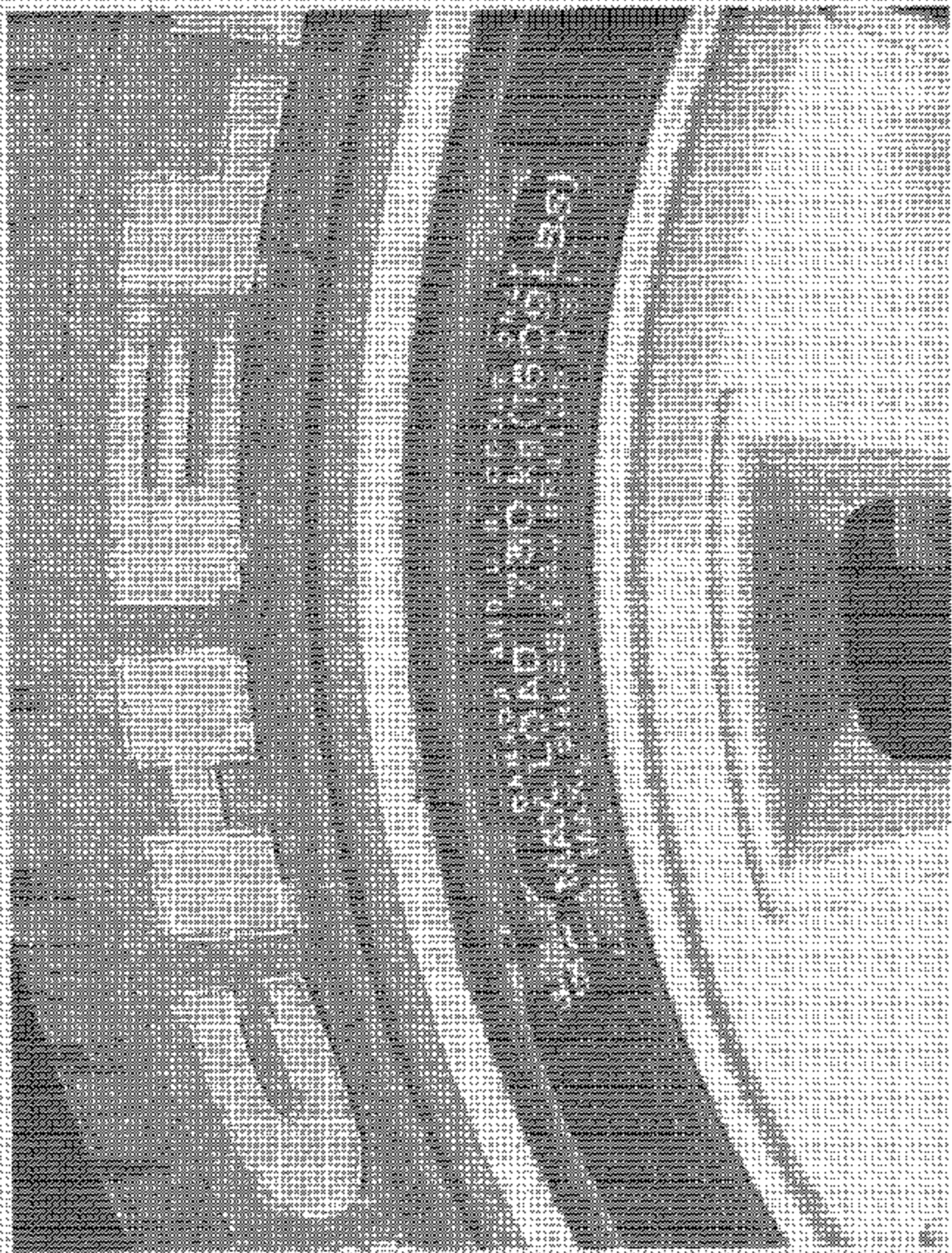
ZUOZHANG MARQUIS
ENTSA NO. 010210
ENVS NO. 110 (INDIAN)

THINKING FOR
THE FUTURE



2003 GRAND AWARDS
 NATION'S CHOICE
 FIRE-RESISTANT

FIGURE 2
 FIRE-RESISTANT SIZE LOAD INDEX AND SPEED
 SYMBOL



FOR MAXIMUM LIFE AND PROTECTION OF THE ENGINE, USE ONLY THE OIL RECOMMENDED BY THE MANUFACTURER.

2003 GRAND MARQUE
EHTSA NO. 03E215
CLASS NO. 110 (INDICANT)

2003 GRAND MARQUE
EHTSA NO. 03E215
CLASS NO. 110 (INDICANT)

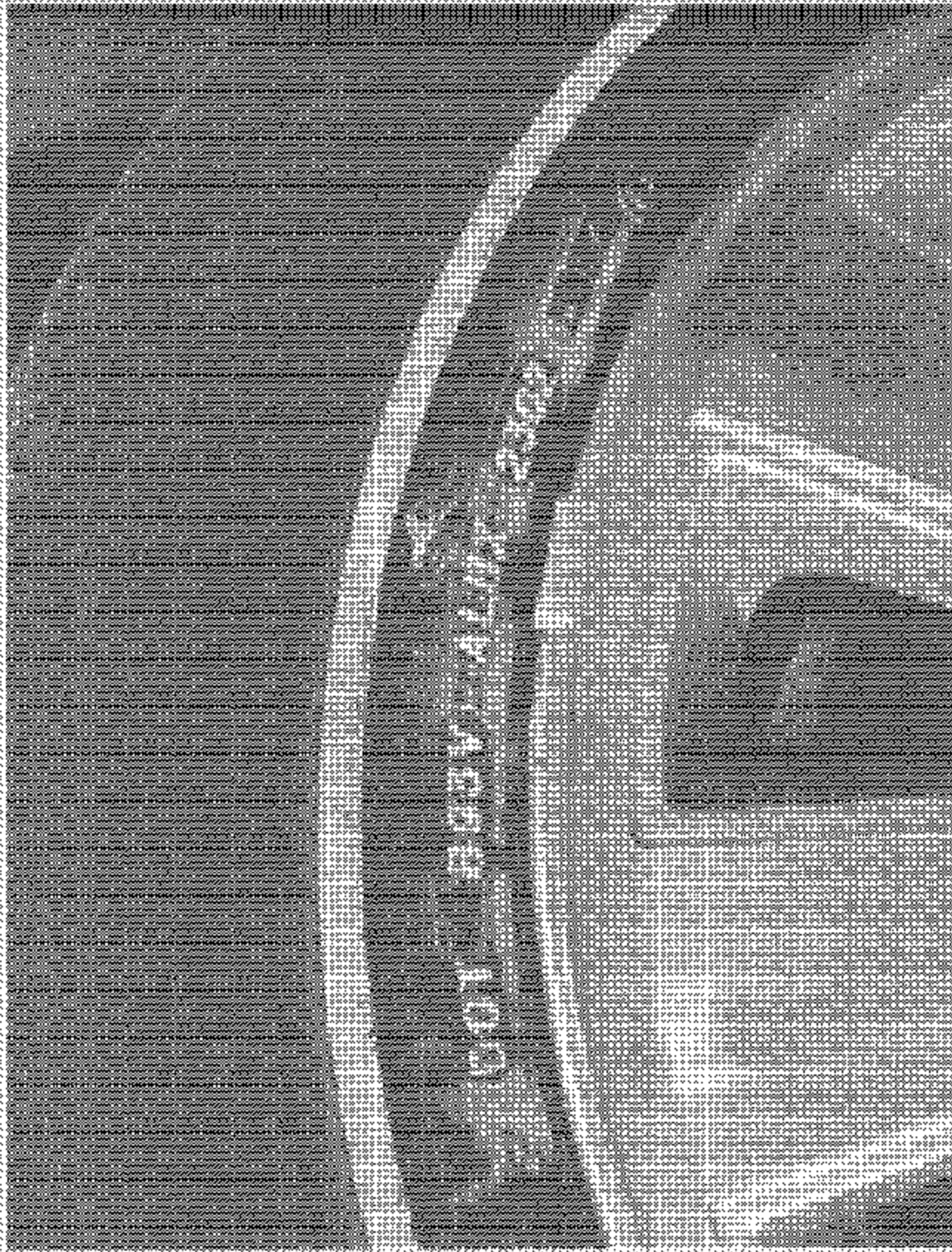


FIGURE 37
TIRE SHOWING SERIAL NUMBER

THIS GRAND JUROR IS
NHTSA NO. C22415
FMVSS NO. 110 (INDICATE)

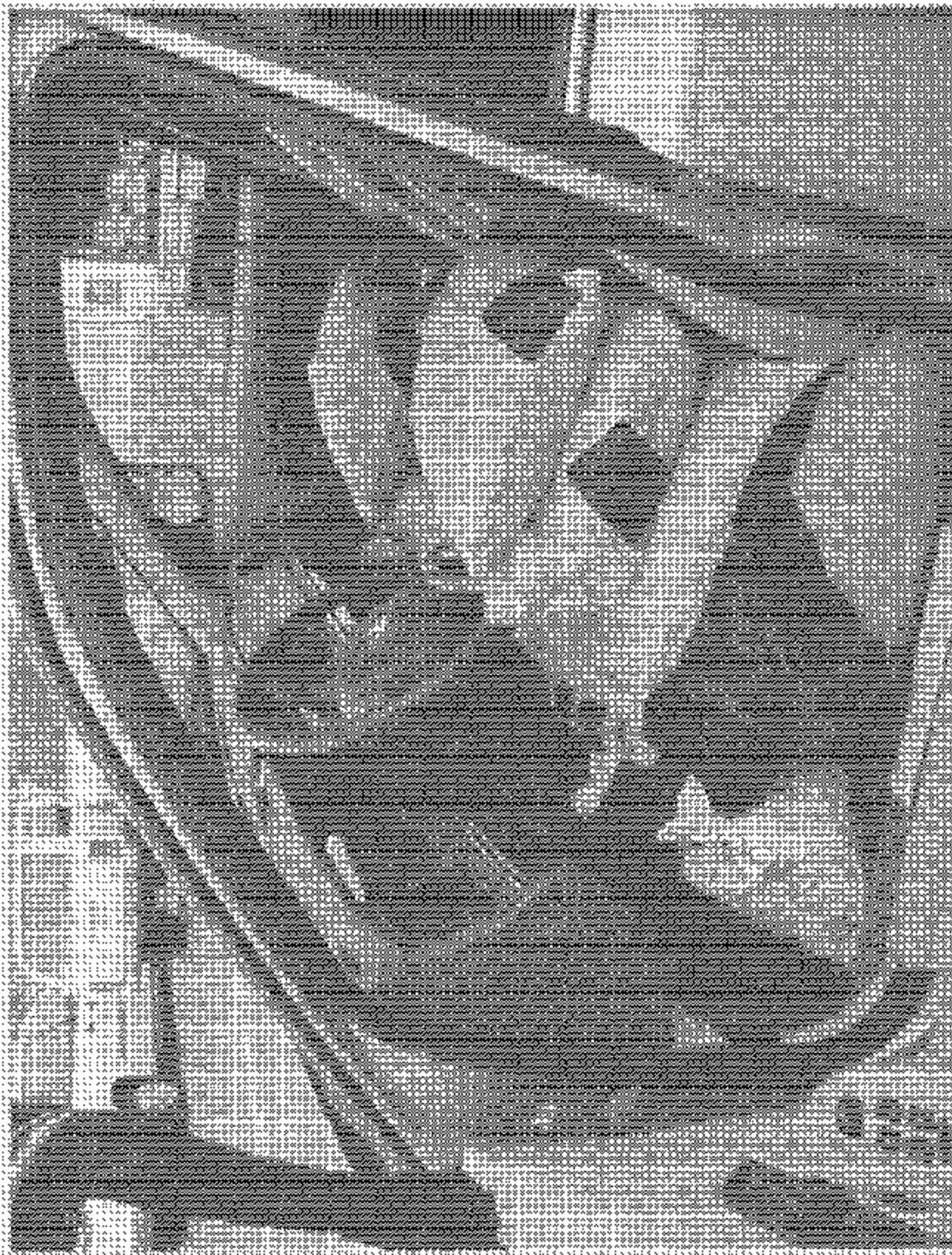


FIGURE 3.8
VEHICLE BASELINED TO SIMULATE NORMAL
LOAD CONDITION

UNION AND MARQUIS
NHTSA NO. C2C216
TRUCK NO. 110 (INDICANT)

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.