HSNC. 636796

REPORT NUMBER 110(IND)-GTL-03-0010

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

DAIMLERCHRYSLER CORPORATION
2003 GRAND CHEROKEE LAREDO, MPV
NHTSA NO. C30315

GENERAL TESTING LABORATORIES, INC.
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SEPTEMBER 9, 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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15. Supplementary Notes

16. Abstract

This test was conducted on the subject, 2003 Jeep Grand Cherokee MPV 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 Grand Cherokee Laredo MPV 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 Grand Cherokee Laredo MPV. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1J4GW48S53C542959

B. NHTSA No.: C30315

C. Manufacturer: DAIMLERCHRYSLER CORPORATION

D. Manufacture Date: 08/02

1.2 TEST DATE

The test vehicle was subjected to testing on June 3, 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 Grand Cherokee Laredo is a multipurpose passenger vehicle (MPV) 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 GRAND CHEROKEE LAREDO MPV
VEHICLE NHTSA NO.: C30315 ; VIN: 1J4GW48S53C542959
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/03/03

REQUIREMENT	YES/NO
The vehicle is equipped with tires that meet the requirements of FMVSS 109 or FMVSS 119.	YES
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.	YES
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).	N/A
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).	YES

REMARKS:

RECORDED BY: M. A. Ofa DATE: 06/03/03

APPROVED BY: D. Messick

DATA SHEET 2
TEST VEHICLE INFORMATION/RECEIVING INSPECTION

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

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 GRAND CHEROKEE LAREDO MPV

MANUFACTURE DATE: 08/02 NHTSA NO.: C30315 BODY COLOR: STEEL BLUE PEARL COAT

VIN: 1J4GW48S53C542959 VEHICLE TYPE: MPV

GVWR 2450 kg (5400 lbs) GAWR(Fr) 1248 kg (2750 lbs) GAWR(Rr) 1339 kg (2950 lbs)

BELTED SEATING POSITIONS: FRONT 2 MID N/A REAR 3 OTHER N/A

ENGINE DATA: 6 Cylinders 4.0 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual 4 No. of Speeds

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

INSTALLED TIRE DATA: Size - P245/70R16 Mfr. - GOODYEAR

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

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

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

REMARKS:

RECORDED BY: M. R. [illegible] DATE: 06/03/03

APPROVED BY: D. Messick

DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 GRAND CHEROKEE LAREDO MPV
VEHICLE NHTSA NO.: C30315 ; VIN: 1J4GW48S53C542959
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/03/03

Full Fluid Levels:
Fuel Full ; Coolant Full ; Other Fluids Full

Tire Pressure: LF 227 KPA (33 psi) LR 227 KPA (33 psi)
RF 227 KPA (33 psi) RR 227 KPA (33 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

LF 488 KG (1075 LB) LR 428 KG (944 LB)
RF 506 KG (1115 LB) RR 446 KG (984 LB)

Front Axle 993 KG (2190 LB) Rear Axle 875 KG (1928LB)

Total Vehicle 1868 KG (4118 LB)

B. MEASURED VEHICLE WEIGHT IN NORMAL LOAD CONDITION

(1) Seating Capacity (from Tire Information Placard) = N/A
Seating Capacity (# of belted seating positions) = 5

(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 529 KG (1166 LB) LR 486 KG (1072 LB)
RF 549 KG (1210 LB) RR 505 KG (1114 LB)

Frt Axle 1078 KG (2376 LB) Rr Axle 992 KG (2186 LB)

Total Vehicle 2069 KG (4562 LB)

DATA SHEET 3 – CONTINUED

(5) Calculated Vehicle Normal Load on the Tire
Front Tires (measured front axle normal load/2) = 539 ~~507~~ KG (1188 LB) 9/17/9/05
Rear Tires (measured front axle normal load/2) = 496 KG (1093 LB)

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

	Front	Rear
(a) Installed Tire Size	P245/70R16	P245/70R16
Max. Load Rating on Sidewall	950 KG(2094 LBS)	950 KG(2094LBS)
Reduced Sidewall Load Rating (if applicable)*	864 KG(1904 LBS)	864 KG(1904 LBS)
High Speed Test Load (88% of sidewall max. load rating)	760 KG(1676 LBS)	760 KG(1676 LBS)
(b) Optional Tire Size(s)	P225/75R16	P225/75R16
Max. Load Rating on Sidewall (from the 2003 Tire & Rim Association Yearbook)	950 KG(2094 LBS)	950 KG(2094LBS)
Reduced Sidewall Load Rating (if applicable)*	864 KG(1904 LBS)	864 KG(1904 LBS)
High Speed Test Load (88% of sidewall max. load rating)	760 KG(1676 LBS)	760 KG(1676 LBS)

* 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. Ayala DATE: 06/03/03

APPROVED BY: D. Musick

DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 GRAND CHEROKEE LAREDO MPV
VEHICLE NHTSA NO.: C30315 ; VIN: 1J4GW48S53C542959
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/03/03

A. Vehicle Type from Certification Label: MPV

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label (X) Yes ( ) No
Is Label Permanently Affixed: (X) Yes ( ) No
Label Location: Driver's Door
Description of Label: Paper, Vinyl Covered

Vehicle has a separate Tire Information Label or Placard ( ) Yes (X) 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:

P225/75R16

FRONT - 227 kPa (33 psi)
REAR - 227 kPa (33 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 an MPV do not include Vehicle Capacity Weight (VCW) or Designated Seating Capacity (DSP) as required by FMVSS 110 passenger car labeling.

RECORDED BY: DATE: 06/03/03

APPROVED BY:

DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 GRAND CHEROKEE LAREDO MPV
VEHICLE NHTSA NO.: C30315 ; VIN: 1J4GW48S53C542959
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/03/03

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

INFORMATION FROM TIRE SIDEWALL:

	Right Front Tire
Tire Size Designation	P245/70R16
Tire Load Index/Speed Symbol	106S
Maximum Inflation Pressure	300 kPa (44 psi)
Maximum Load Rating	950 KG (2094 LBS.)
Mfr. Name or Brand & Code	GOODYEAR WRANGLER
Tube or Tubeless	TUBELESS
Treadwear/Traction/Temp. Grades	360/A/B
Sidewall (Plies & Composition)	2 PLY POLYESTER
Tread (Plies & Composition)	2 PLY POLYESTER 2 PLY STEEL
Serial Number: Right Front -	DOT-M69L DYWR 3302

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

REMARKS:

RECORDED BY: M. A. Clay DATE: 06/03/03

APPROVED BY: D. Messel

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

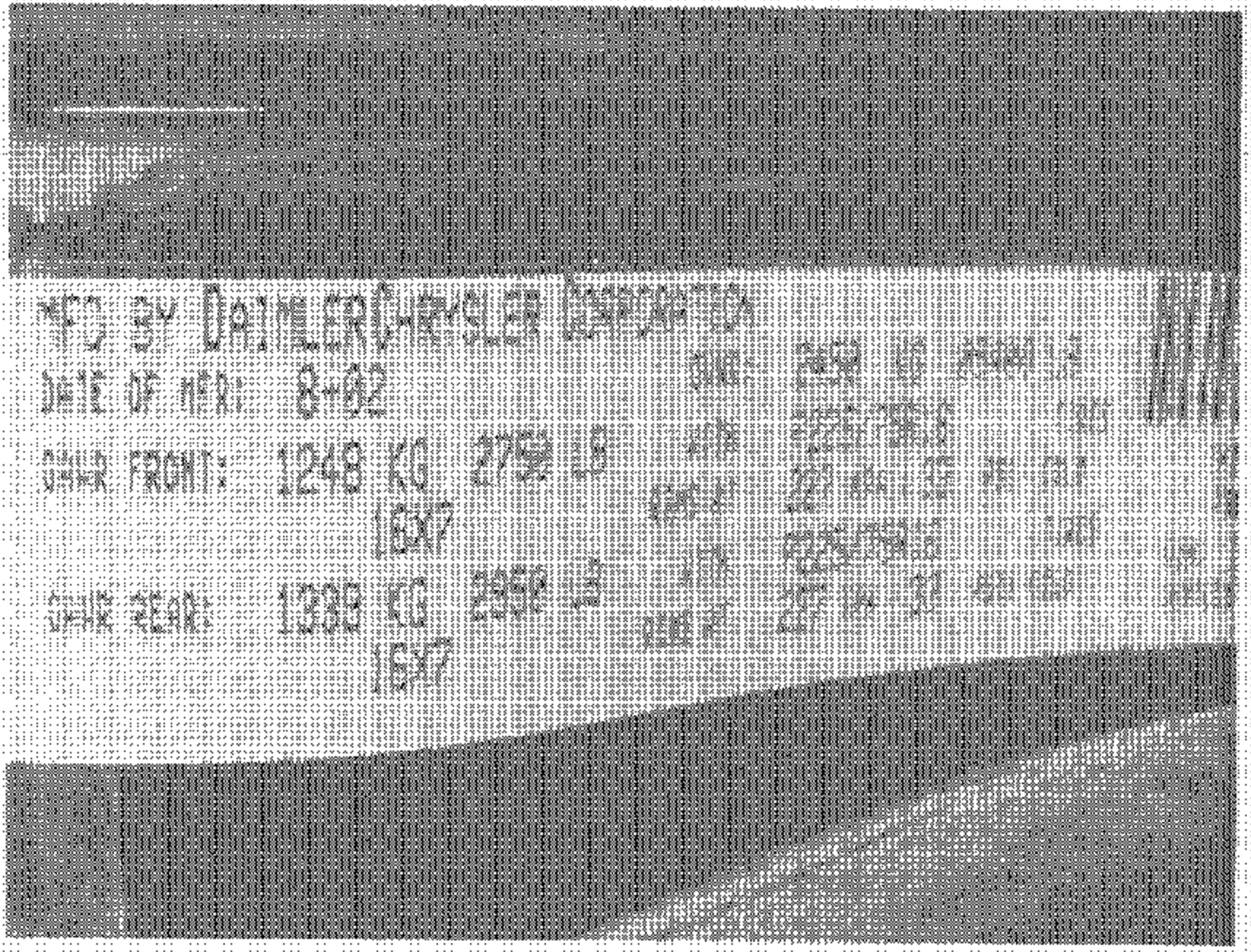
TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

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

SECTION 5
PHOTOGRAPHS

2002 JEEP GRAND CHEROKEE LAREDO
NHTSA NO: C30315
FMVSS NO. 110 (INDICANT)

FIGURE 5.1
¾ FRONTAL VIEW OF VEHICLE

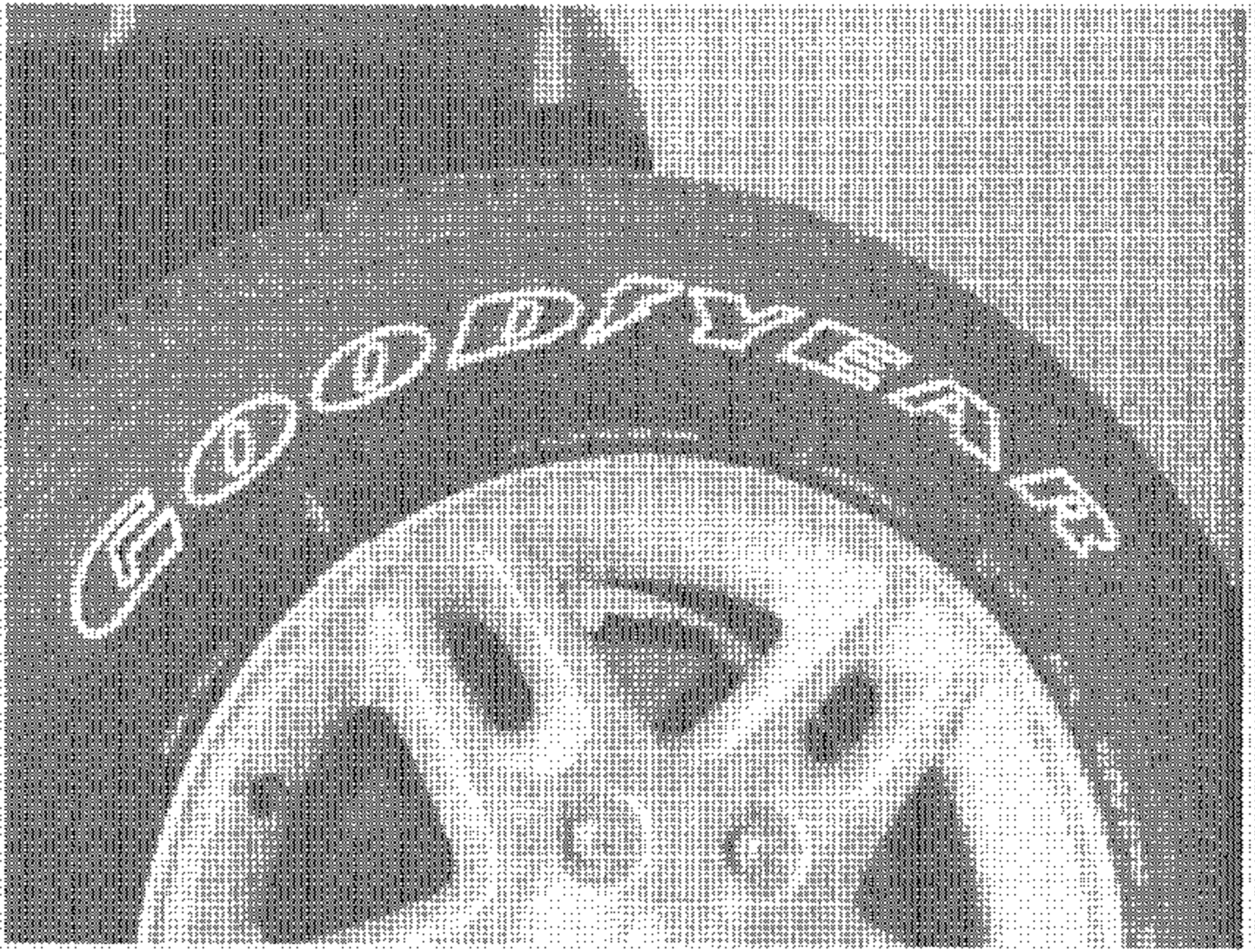


2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C30315
FMVSS NO. 110 (INDICANT)

FIGURE 5.2
VEHICLES CERTIFICATION AND TIRE
INFORMATION LABEL (PART 1)

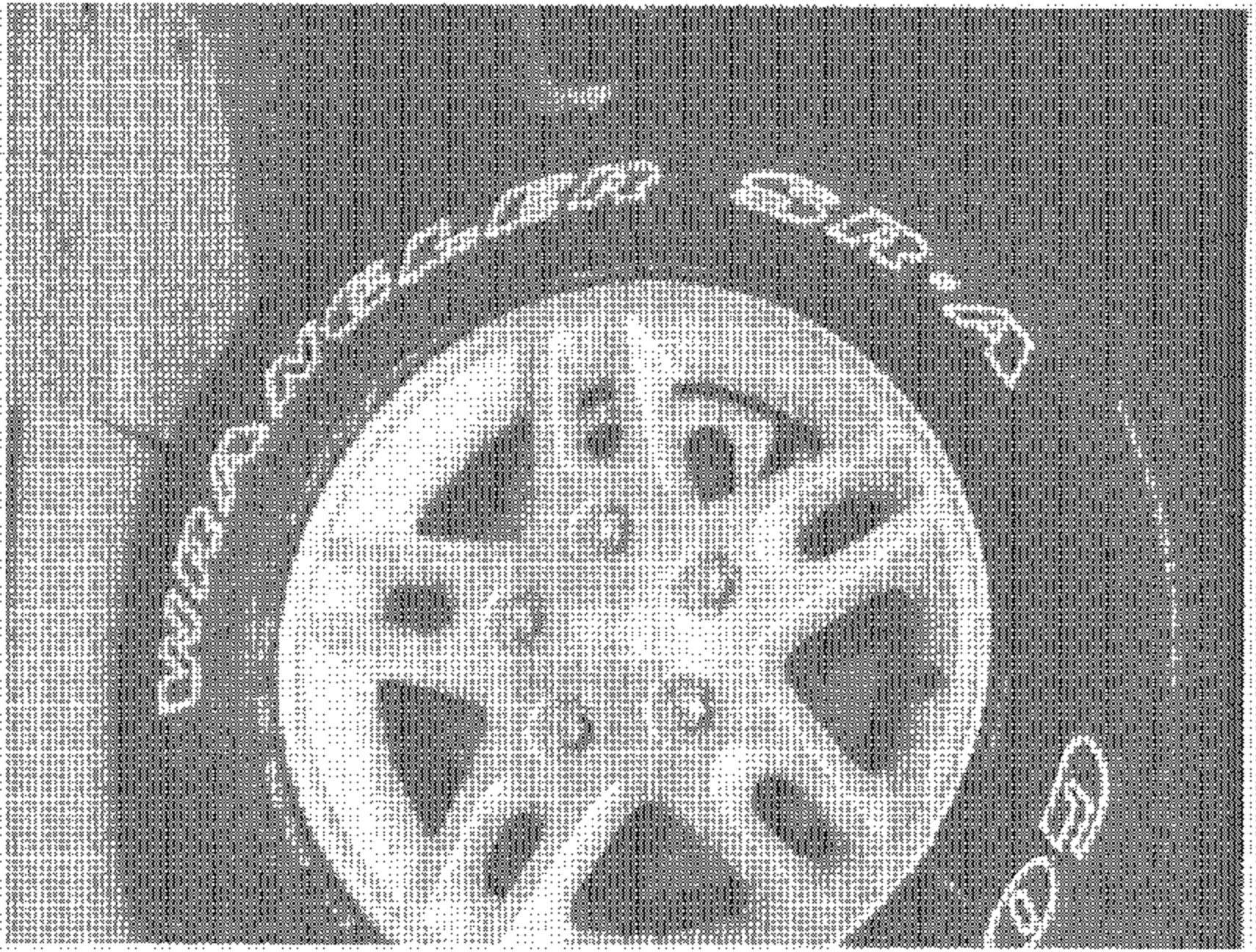
2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C0015
FMVSS NO. 110 (INDICANT)

FIGURE 3.3
VEHICLE'S CERTIFICATION AND TIRE
INFORMATION LABEL (PART 2)



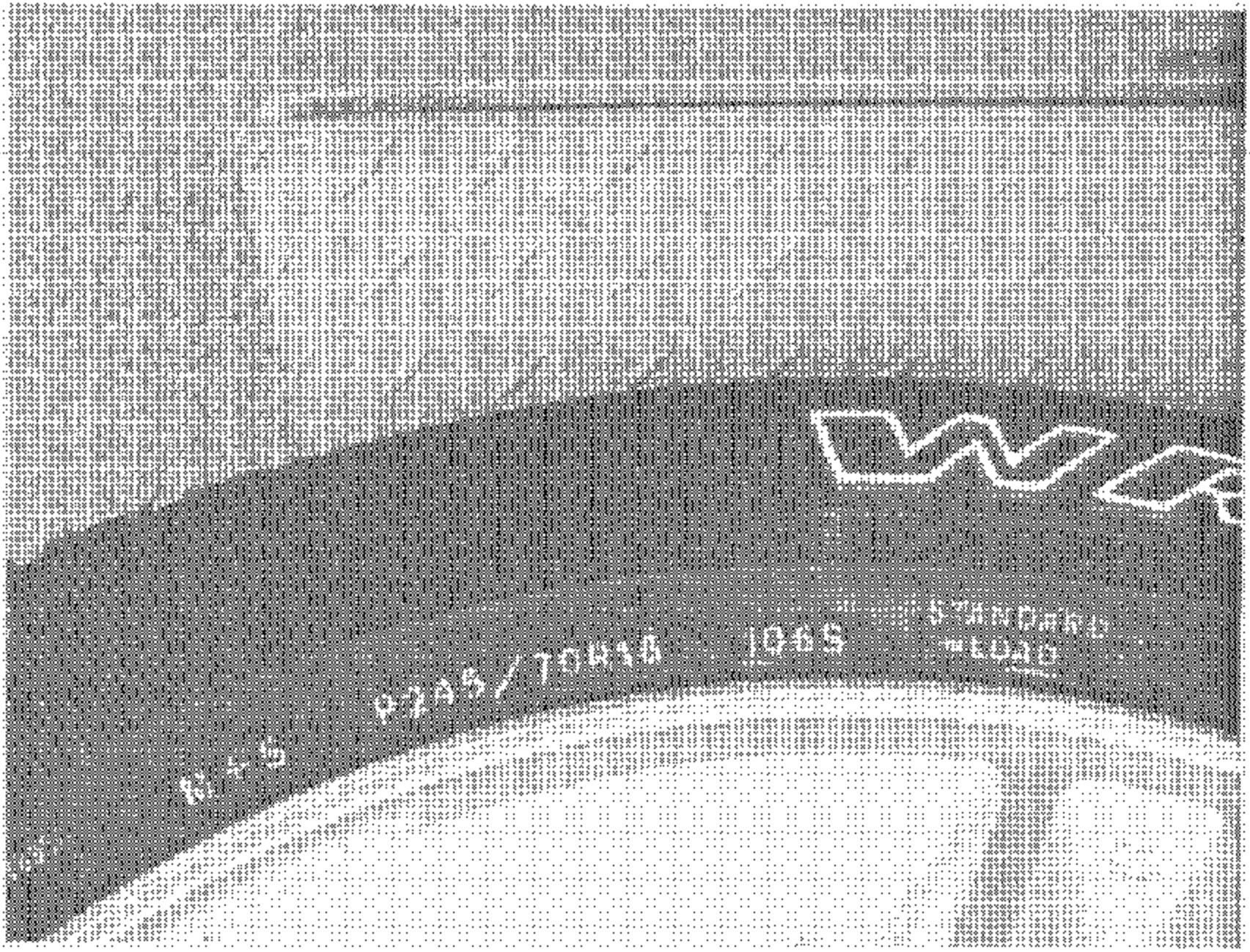
2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO: C30315
FMVSS NO. 110 (INDICANT)

FIGURE 5.4
TIRE SHOWING BRAND



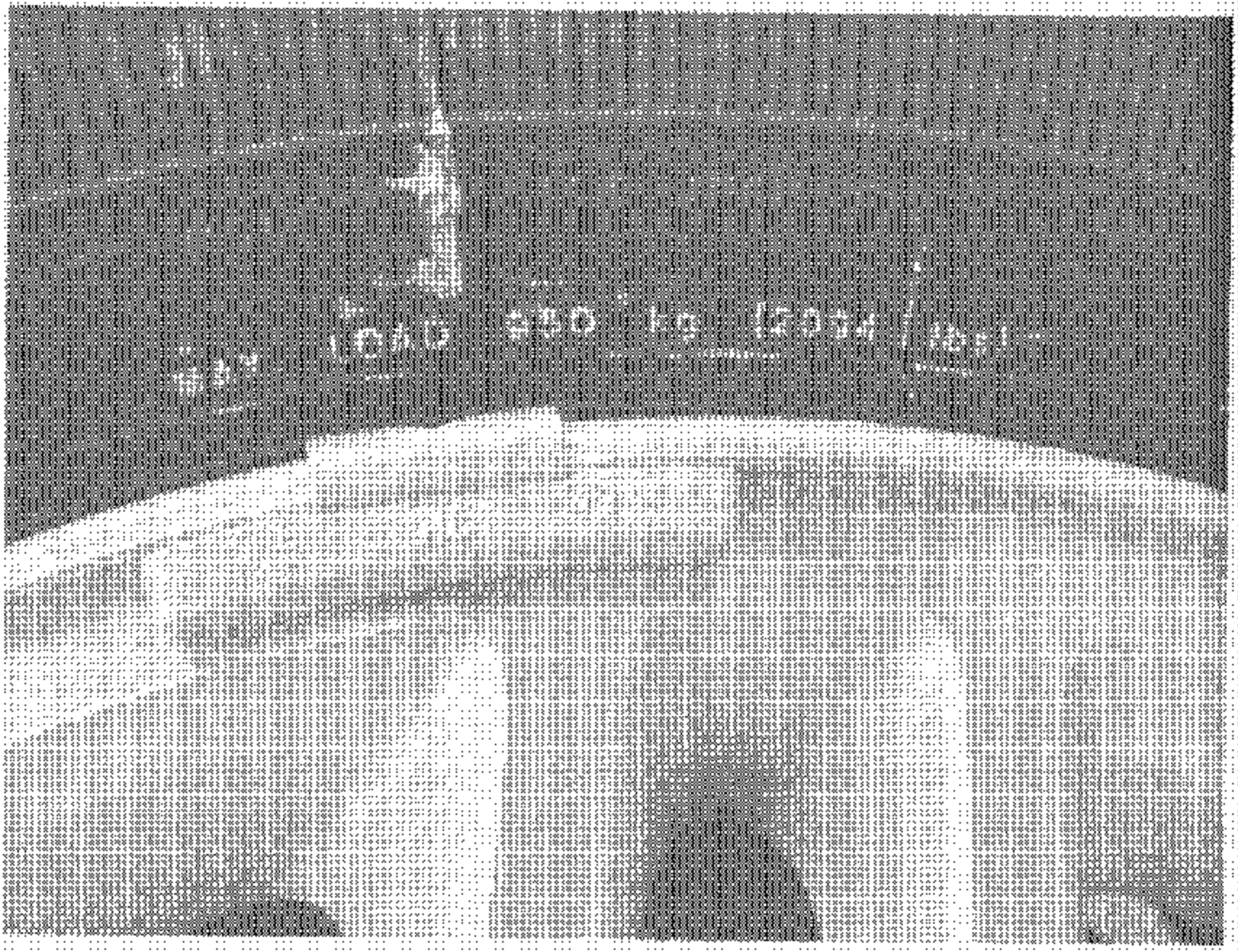
2002 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C30315
FMVSS NO. 110 (INDICANT)

FIGURE 5.0
TIRE SHOWING MODEL



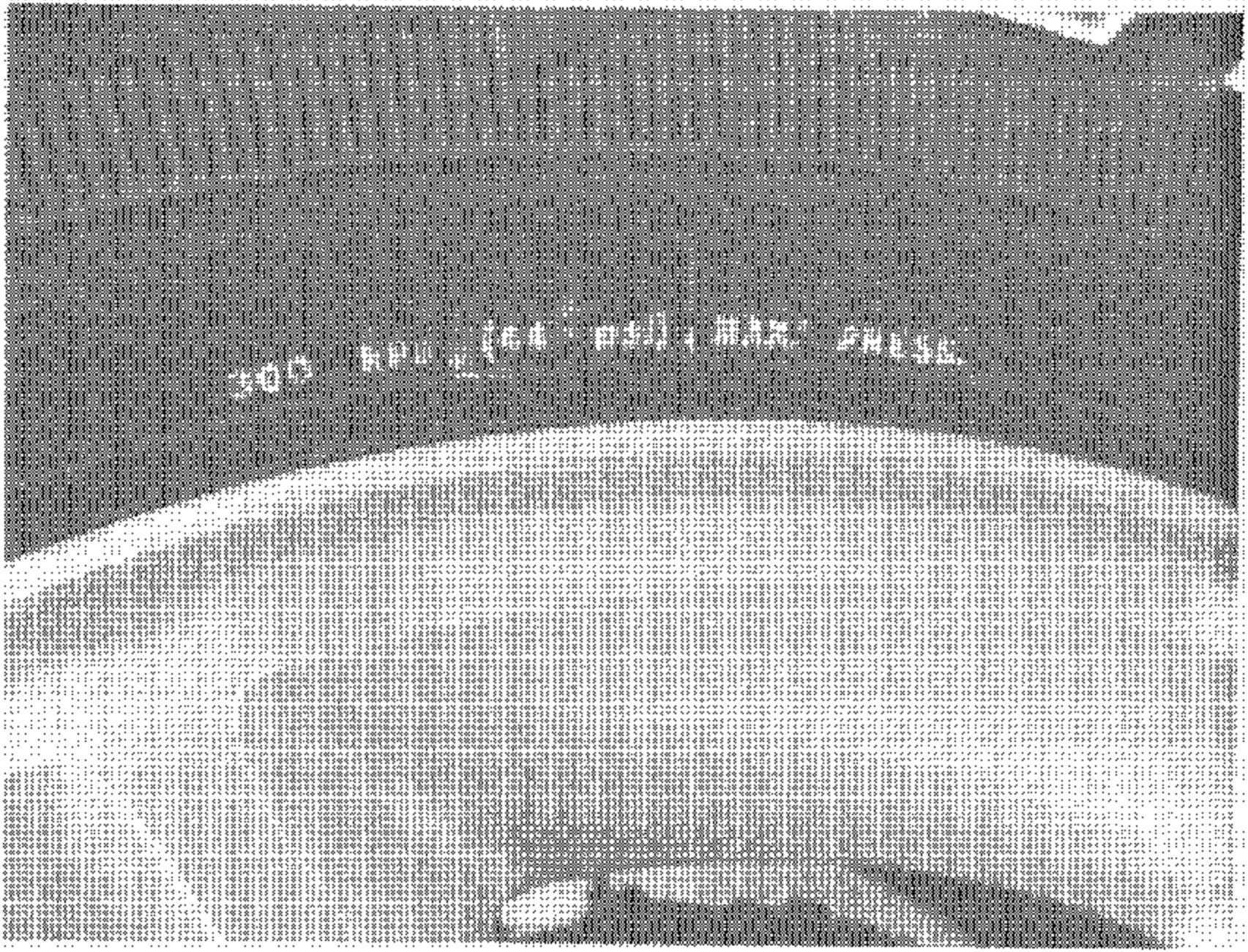
2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C30315
FMVSS NO. 110 (INDICANT)

FIGURE 5.6
TIRE SHOWING SIZE, LOAD INDEX AND SPEED SYMBOL



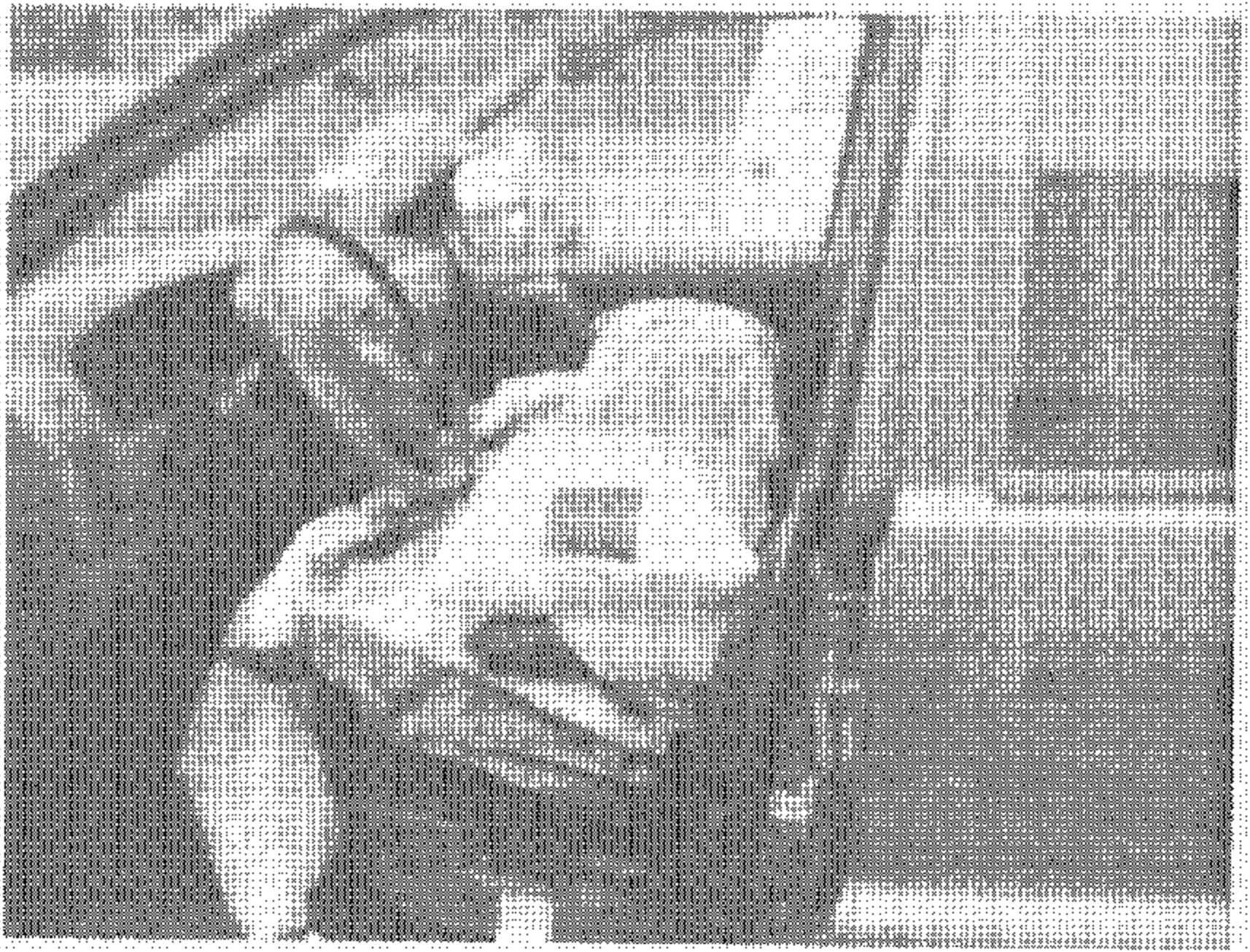
2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C30315
FMVSS NO. 110 (INDICANT)

FIGURE 5.7
TIRE SHOWING MAX LOAD RATING



2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C30345
FMVSS NO. 110 (INDICANT)

FIGURE 5.6
TIRE SHOWING MAX INFLATION PRESSURE



2003 JEEP GRAND CHEROKEE LAREDO
NHTSA NO. C30319
FMVSS NO. 110 (INDICANT)

FIGURE 5.8
VEHICLE BALLASTED TO SIMULATE NORMAL LOAD CONDITION

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.