

REPORT NUMBER 110(IND)-GTL-03-023

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

**GENERAL MOTORS CORP.
2003 PONTIAC SUNFIRE PASSENGER CAR
NHTSA NO. C30123**

**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
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590**

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By:

Dellie M. M. M.

Approved By:

M. P. B.

Approval Date:

09/17/03

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By:

John L. L.

Acceptance Date:

9/29/03

1. Report No. 110(IND)-GTL-03-023	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 110 (Indicant) Test of 2003 PONTIAC SUNFIRE PASSENGER CAR NHTSA No. C30123		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)-023	
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 May 22, 2003	
		14. Sponsoring Agency Code NVS-120 & NVS 220	
15. Supplementary Notes			
16. Abstract This test was conducted on the subject, 2003 Pontiac Sunfire 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 25	22. Price	
20. Security Classif. (of this page) UNCLASSIFIED			

TABLE OF CONTENTS

SECTION		PAGE
1	Introduction	1
2	Test Procedure and Summary of Results	2
3	Test Data	3
4	Test Equipment List	10
5	Photographs	11
	5.1 ¾ Frontal View of Vehicle	
	5.2 Vehicle's Certification Label	
	5.3 Vehicle's Tire Information Label	
	5.4 Tire Showing Brand	
	5.5 Tire Showing Model	
	5.6 Tire Showing Size, Load Index and Speed Symbol	
	5.7 Tire Showing Max Load Rating	
	5.8 Tire Showing Max Inflation Pressure	
	5.9 Vehicle Ballasted to Simulate Normal Load Condition	

APPENDIX – Normal Load Occupation Distribution

SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2003 Pontiac Sunfire 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 Pontiac Sunfire. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1G2JB12F437186129

B. NHTSA No.: C30123

C. Manufacturer: GENERAL MOTORS CORP

D. Manufacture Date: 10/02

1.2 TEST DATE

The test vehicle was subjected to testing on May 22, 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

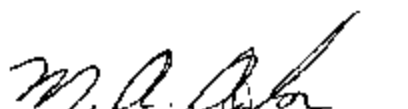
DATA SHEET 1
SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: 2003 PONTIAC SUNFIRE PASSENGER CAR
VEHICLE NHTSA NO.: C30123 ; VIN: 1G2JB12F437186129
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 05/22/03

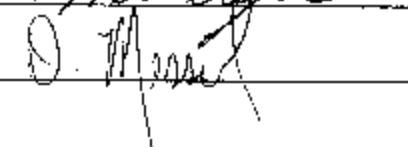
<u>REQUIREMENT</u>	<u>YES/NO</u>
The vehicle is equipped with tires that meet the requirements of FMVSS 109 or FMVSS 119.	<u>YES</u>
The vehicle normal load on the tire is not greater than the high speed performance test load specified in FMVSS 109 paragraph S5.5 or FMVSS 119 paragraph S7.4.	<u>YES</u>
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:

DATE: 05/22/03

APPROVED BY:



DATA SHEET 2 TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES DATE: 05/22/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 PONTIAC SUNFIRE

MANUFACTURE DATE: 10/02 NHTSA NO.: C30123 BODY COLOR: BLACK

VIN: 1G2JB12F437186129 VEHICLE TYPE: PASSENGER CAR

GVWR 1616 kg (3562 lbs) GAWR(Fr) 869 kg (1916 lbs) GAWR(Rr) 747 kg (1647 lbs)

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

ENGINE DATA: 4 Cylinders 2.2 Liters Cubic Inches

TRANSMISSION DATA: Automatic X Manual 5 No. of Speeds

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

INSTALLED TIRE DATA: Size - P195/65R15 Mfr. - B.F. GOODRICH

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. P. [Signature]

DATE: 05/22/03

APPROVED BY: [Signature]

DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 PONTIAC SUNFIRE PASSENGER CAR
 VEHICLE NHTSA NO.: C30123 ; VIN: 1G2JB12F437186129
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 05/22/03

Full Fluid Levels:

Fuel Full ; Coolant Full ; Other Fluids Full

Tire Pressure: LF 210 KPA (30 psi) LR 210 KPA (30 psi)
 RF 210 KPA (30 psi) RR 210 KPA (30 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

LF 402 KG (886 LB) LR 211 KG (466 LB)
 RF 367 KG (808 LB) RR 226 KG (498 LB)
 Front Axle 768 KG (1694 LB) Rear Axle 437 KG (964 LB)
 Total Vehicle 1206 KG (2658 LB)

B. MEASURED VEHICLE WEIGHT IN NORMAL LOAD CONDITION

(1) Seating Capacity (from Tire Information Placard) = 5
 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 446 KG (984 LB) LR 269 KG (593 LB)
 RF 413 KG (911 LB) RR 281 KG (620 LB)
 Frt Axle 860 KG (1895 LB) Rr Axle 550 KG (1213 LB)
 Total Vehicle 1410 KG (3108 LB)

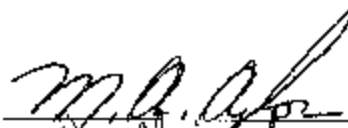
DATA SHEET 3 – CONTINUED

- (5) Calculated Vehicle Normal Load on the Tire
 Front Tires (measured front axle normal load/2) = 430 KG (948 LB)
 Rear Tires (measured front axle normal load/2) = 275 KG (607 LB)
- (6) High Speed Test Load from (X) FMVSS 109 (S5.5), or () FMVSS 119 (S7.4)

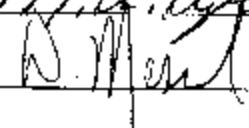
	Front	Rear
(a) Installed Tire Size	<u>P195/65R15</u>	<u>P195/65R15</u>
Max. Load Rating on Sidewall	<u>580 KG(1279 LBS)</u>	<u>580 KG(1279 LBS)</u>
Reduced Sidewall Load Rating (if applicable)*	<u>N/A</u>	<u>N/A</u>
High Speed Test Load (88% of sidewall max. load rating)	<u>511 KG(1126 LBS)</u>	<u>511 KG(1126 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: 

DATE: 05/22/03

APPROVED BY: 

DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 PONTIAC SUNFIRE PASSENGER CAR
VEHICLE NHTSA NO.: C30123 ; VIN: 1G2JB12F437186129
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 05/22/03

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: _____
Description of Label: _____

Vehicle has a separate Tire Information Label or Placard ☒ Yes ☐ No
Is Label Permanently Affixed: ☒ Yes ☐ No
Label Location: Inside Door Jam
Description of Label: White/Black Sticker

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

Vehicle Capacity Weight - 400 KG (882 LBS)

Designated Seating Capacity (DSC) - 5
Expressed In—

(1) Total No. of Occupants ☒ Yes ☐ No

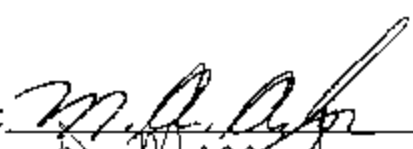
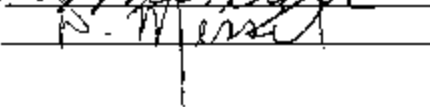
(2) Terms of Occupants for Each Seat Location ☒ Yes ☐ No

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

P195/65R15 FRONT - 210 kPa (30 psi)
REAR - 210 kPa (30 psi)

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

REMARKS:

RECORDED BY: 
APPROVED BY: 

DATE: 05/22/03

DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 PONTIAC SUNFIRE PASSENGER CAR
 VEHICLE NHTSA NO.: C30123 ; VIN: 1G2JB12F437186129
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 05/22/03

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

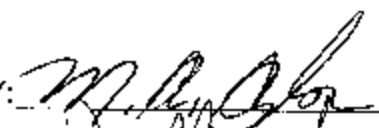
INFORMATION FROM TIRE SIDEWALL:

Left Front Tire

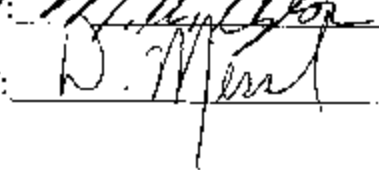
Tire Size Designation	<u>P195/65R15</u>
Tire Load Index/Speed Symbol	<u>89S</u>
Maximum Inflation Pressure	<u>240 kPa (35 psi)</u>
Maximum Load Rating	<u>580 KG (1279 LBS.)</u>
Mfr. Name or Brand & Code	<u>B.F. GOODRICH TOURING TA</u>
Tube or Tubeless	<u>TUBELESS</u>
Treadwear/Traction/Temp. Grades	<u>540/A/B</u>
Sidewall (Plies & Composition)	<u>1 PLY STEEL</u>
Tread (Plies & Composition)	<u>1 PLY POLYESTER</u> <u>2 PLY STEEL</u>
Serial Number: Right Front -	<u>LOCATED ON INSIDE OF TIRE</u>

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

REMARKS:

RECORDED BY: 

DATE: 05/22/03

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	06/20/03
	#2 199744RF	199744RF	06/02	06/20/03
	#3 199744LR	199744LR	06/02	06/20/03
	#4 199744RR	19974RR	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

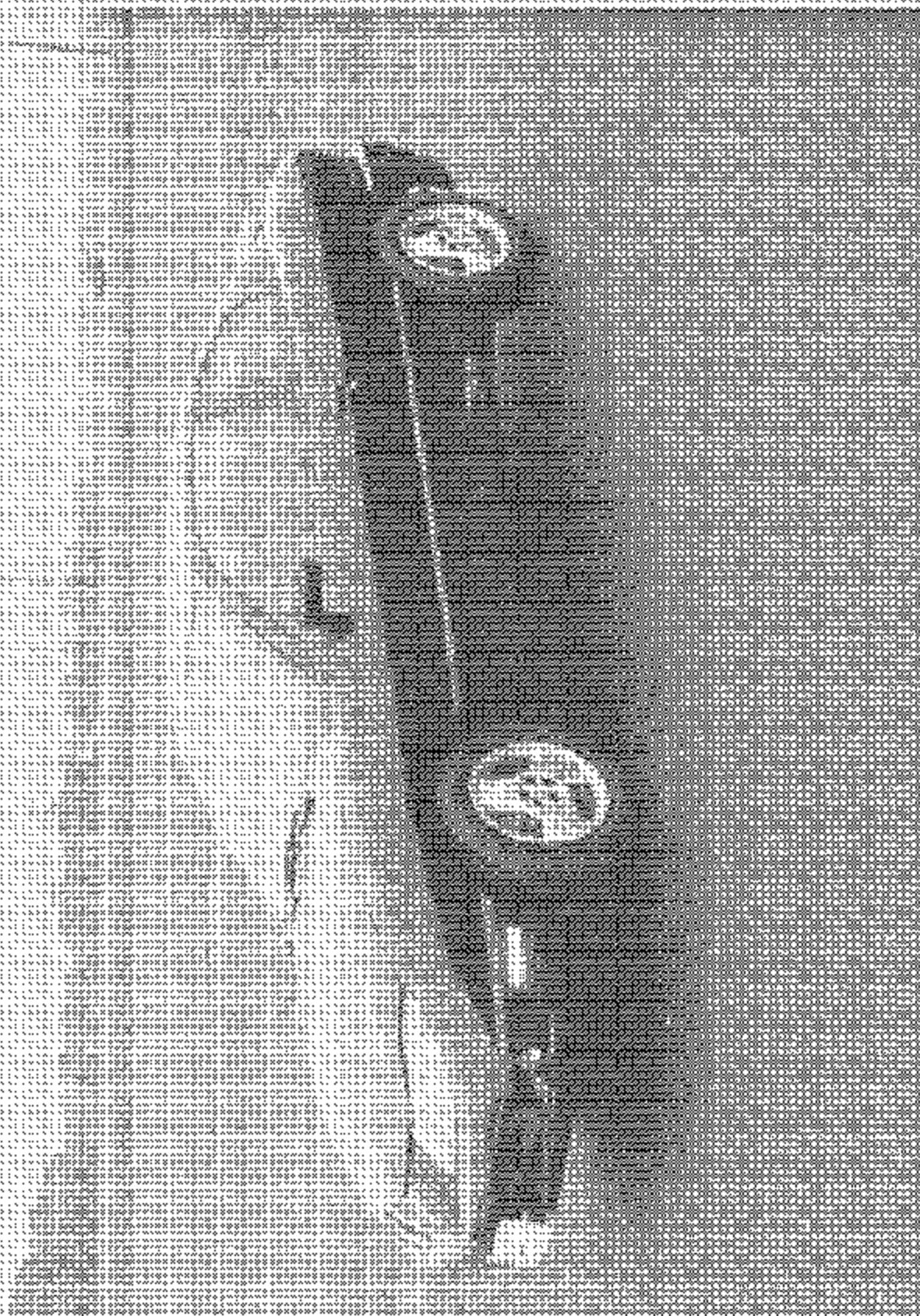


FIGURE 31
A. FRONTAL VIEW OF VEHICLE

THIS PHOTOGRAPH IS MORE
A. HISA NO. 02013
A. HISA NO. 110 (INDICANT)



WFO BY GENERAL MOTORS CORP

DATE	GVWR	GAWR	DATE
1002	1516 KG	3033 LB	1018
	3322 LB	7316 LB	1018

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND EMISSION PREVENTION STANDARDS IN
EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

1G2JB12F43T186123 TYPE PASS CAR

2003 GMC SIERRA 1500
VIN 1G2JB12F43T186123
EPA NO. 113 (PRELIMINARY)

ISSUED BY
VEHICLE CERTIFICATION LABEL

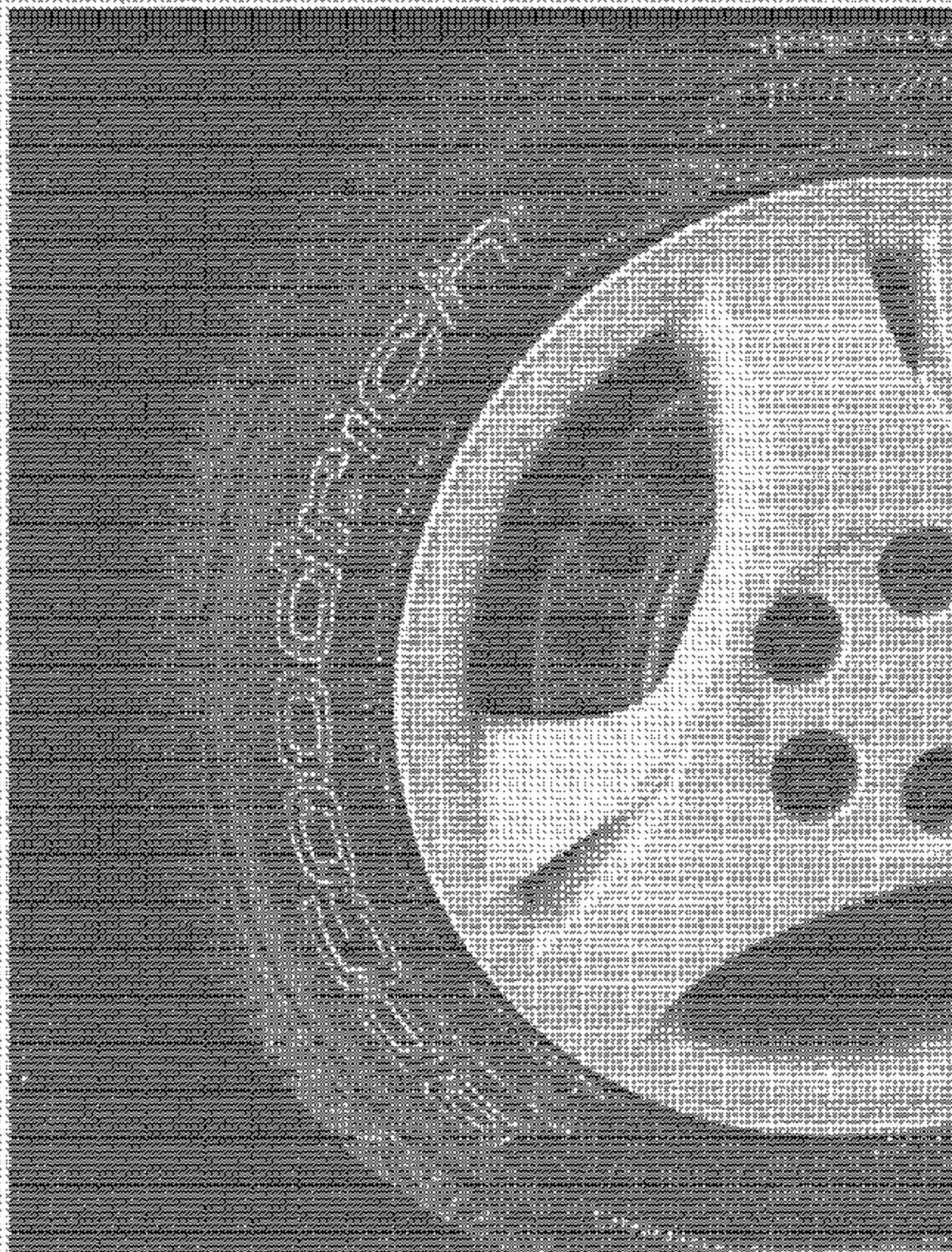


FIGURE 3-4
THE SHOVING BOARD

2003 PONTIAC SUNFIRE
NHTSA NO. 200123
EPAVSS NO. 110 (MEDIAN 17)

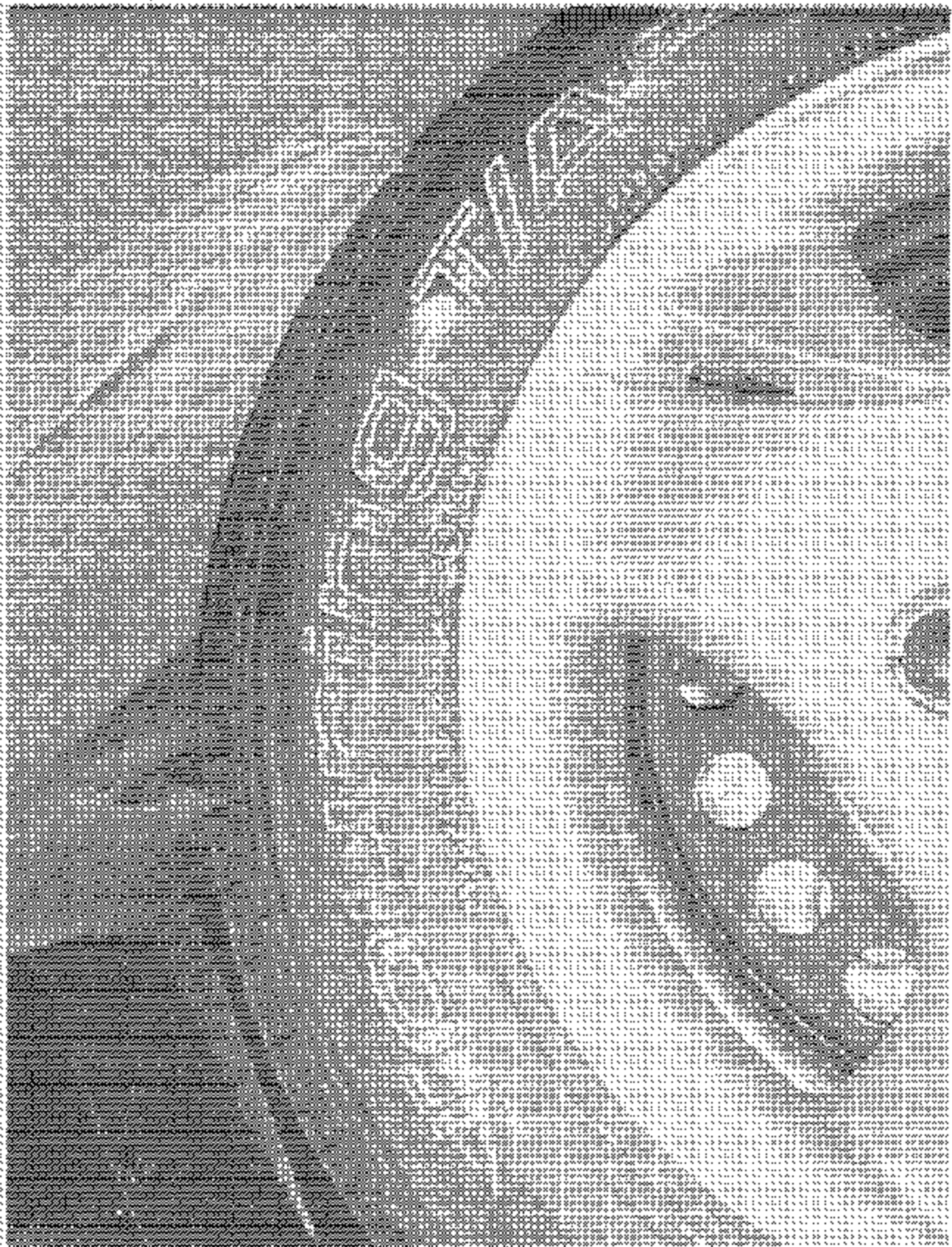
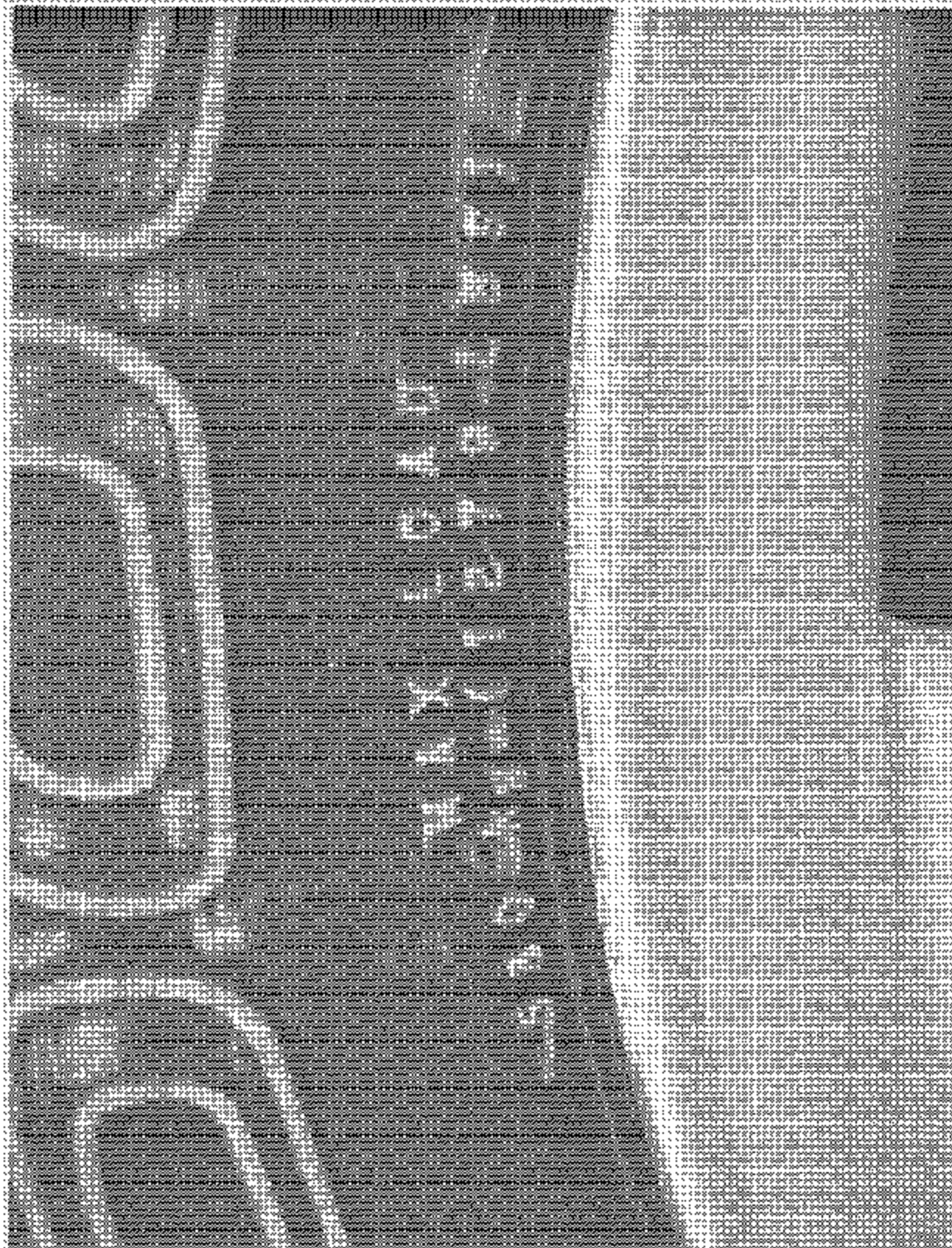


FIGURE 1A
TIRE SHOWING MODEL
EMISS NO. 35 (INDICANT)
NHESA NO. C30123

THE SHOW-A-TYPE ROAD INDEX AND SPEED SYMBOL

2003 FOX TAO SUBFIRE
NHISA NO. C30123
FNUSS NO. T10 BUDCAN7

FIGURE 5-5
THE SHOW-A-TYPE ROAD INDEX AND SPEED
SYMBOL



POUPONTAG BUNFIRE
NHTSA NO. C30123
EMVSS NO. 130 (INDICANT)

POUPONTAG
FIRE THROWING MAX LOAD RATING



2003 PORTERAC SUNFIRE
NHTSA NO. C20123
EPA/SS NO. 170 (INDICANT)

FIGURE 3-8
FIRE SHOWING MAXIMUM FLAME ON FIRE EXHAUST



2003 PONTIAC SUNFIRE

SAFARI, 4X4, 3.0L V6

EXCESS NO. 110 (INDICANT)

2003 PONTIAC

VEHICLE RELATED TO SIMILAR 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.