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

TOYOTA MOTOR MANUFACTURING KENTUCKY, INC.
2003 TOYOTA CAMRY PASSENGER CAR
NHTSA NO. C35109

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

SEPTEMBER 25, 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. 20580
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| Washington, DC 20590
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16. Abstract | This test was conducted on the subject, 2003 Toyota Camry 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.
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<td>11</td>
</tr>
</tbody>
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APPENDIX – Normal Load Occupation Distribution
SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2003 Toyota Camry 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 Toyota Camry. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 4T1BE30K13U741389

B. NHTSA No.: C35109

C. Manufacturer: TOYOTA MOTOR MANUFACTURING KENTUCKY INC.

D. Manufacture Date: 05/03

1.2 TEST DATE

The test vehicle was subjected to testing on June 11, 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 indicator 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 TOYOTA CAMRY PASSENGER CAR
VEHICLE NHTSA NO.: C35109
VIN: 4T1BE30K13U741389
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/11/03

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).

Yes

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).

N/A

REMARKS:

RECORDED BY: [Signature]

DATE: 06/11/03

APPROVED BY: [Signature]
DATA SHEET 2
TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES

DATE: 06/11/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 TOYOTA CAMRY

MANUFACTURE DATE: 05/03 NHTSA NO.: C35109 BODY COLOR: SILVER

VIN: 4T1BE30K13U741389 VEHICLE TYPE: PASSENGER CAR

GVWR 1900 kg (4189 lbs) GAWR(Fr) 1210 kg (2688 lbs) GAWR(Rr) 1210 kg (2688 lbs)

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

ENGINE DATA:

4 Cylinders 2.4 Liters ___ Cubic Inches

TRANSMISSION DATA:

X Automatic ___ Manual 4 No. of Speeds

FINAL DRIVE DATA:

___ Rear Drive X Front Drive ___ 4 Wheel Drive

INSTALLED TIRE DATA: Size - P205/65R15 Mfr. - BRIDGESTONE

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

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

ARE ALL OPTIONS LISTED ON “WINDOW STICKER” PRESENT ON THE TEST VEHICLE:

(YES/NO) Yes

REMARKS:

RECORDED BY: M.A. DATE: 06/11/03

APPROVED BY: [Signature]
DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 TOYOTA CAMRY PASSENGER CAR
VEHICLE NHTSA NO.: C35109
VIN: 4T1BE30K13U741389
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/11/03

Full Fluid Levels:
Fuel___ Full___;  Coolant___ Full___;  Other Fluids___ Full___

Tire Pressure:
LF_ 200  KPA (29 psi)  LR_ 200  KPA (29 psi)
RF_ 200  KPA (29 psi)  RR_ 200  KPA (29 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>455</td>
</tr>
<tr>
<td></td>
<td>KG (1003 LB)</td>
</tr>
<tr>
<td>RF</td>
<td>405</td>
</tr>
<tr>
<td></td>
<td>KG (893 LB)</td>
</tr>
<tr>
<td>LR</td>
<td>285</td>
</tr>
<tr>
<td></td>
<td>KG (628 LB)</td>
</tr>
<tr>
<td>RR</td>
<td>314</td>
</tr>
<tr>
<td></td>
<td>KG (692 LB)</td>
</tr>
<tr>
<td>Front Axle</td>
<td>860</td>
</tr>
<tr>
<td></td>
<td>KG (1896 LB)</td>
</tr>
<tr>
<td>Rear Axle</td>
<td>599</td>
</tr>
<tr>
<td></td>
<td>KG (1320 LB)</td>
</tr>
</tbody>
</table>

Total Vehicle___ 1459 ___ KG (3218 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)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>503</td>
</tr>
<tr>
<td></td>
<td>KG (1103 LB)</td>
</tr>
<tr>
<td>RF</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td>KG (993 LB)</td>
</tr>
<tr>
<td>LR</td>
<td>341</td>
</tr>
<tr>
<td></td>
<td>KG (751 LB)</td>
</tr>
<tr>
<td>RR</td>
<td>367</td>
</tr>
<tr>
<td></td>
<td>KG (809 LB)</td>
</tr>
<tr>
<td>Frt Axle</td>
<td>953</td>
</tr>
<tr>
<td></td>
<td>KG (2101 LB)</td>
</tr>
<tr>
<td>Rr Axle</td>
<td>708</td>
</tr>
<tr>
<td></td>
<td>KG (1560 LB)</td>
</tr>
</tbody>
</table>

Total Vehicle___ 1661 ___ KG (3661 LB)
(5) Calculated Vehicle Normal Load on the Tire
Front Tires (measured front axle normal load/2) = 477 KG (1051 LB)
Rear Tires (measured front axle normal load/2) = 354 KG (780 LB)

(6) High Speed Test Load from (X) FMVSS 139 (S5.5), or ( ) FMVSS 119 (S7.4)

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Installed Tire Size</td>
<td>P205/65R15</td>
<td>P205/65R15</td>
</tr>
<tr>
<td>Max. Load Rating on Sidewall</td>
<td>635 KG (1400 LBS)</td>
<td>635 KG (1400 LBS)</td>
</tr>
<tr>
<td>Reduced Sidewall Load Rating (if applicable)*</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>High Speed Test Load (88% of sidewall max. load rating)</td>
<td>559 KG (1232 LBS)</td>
<td>559 KG (1232 LBS)</td>
</tr>
<tr>
<td>(b) Optional Tire Size(s)</td>
<td>NONE</td>
<td>NONE</td>
</tr>
</tbody>
</table>

* 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: [Signature]  DATE: 06/11/03
APPROVED BY: [Signature]
DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 TOYOTA CAMRY PASSENGER CAR

VEHICLE NHTSA NO.: G35109; VIN: 4T1BE30K13U741389

LABORATORY: GENERAL TESTING LABORATORIES

TEST DATE: 06/11/03

A. Vehicle Type from Certification Label: Passenger Car

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label ( ) Yes (X) No
Is Label Permanently Affixed: ( ) Yes ( ) No
Label Location:
Description of Label:

Vehicle has a separate Tire Information Label or Placard (X) Yes ( ) No
Is Label Permanently Affixed: (X) Yes ( ) No
Label Location: "B" Pillar
Description of Label: Vinyl

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

Vehicle Capacity Weight - 410 KG (900 LBS)

Designated Seating Capacity (DSC) - 5
Expressed In—
(1) Total No. of Occupants (X) Yes ( ) No
(2) Terms of Occupants for Each Seat Location (X) Yes ( ) No

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

P205/65R15

FRONT - 200 kPa (29 psi)
REAR - 200 kPa (29 psi)

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

REMARKS:

RECORDED BY: [Signature] DATE: 06/11/03
APPROVED BY: [Signature]
DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 TOYOTA CAMRY PASSENGER CAR
VEHICLE NHTSA NO.: C35109; VIN: 4T1BE30K13U741389
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/11/03

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

INFORMATION FROM TIRE SIDEWALL:

Right Front Tire

Tire Size Designation: P205/65R15
Tire Load Index/Speed Symbol: 92T
Maximum Inflation Pressure: 300 kPa (44 psi)
Maximum Load Rating: 635 KG (1400 LBS.)
Mfr. Name or Brand & Code: BRIDGESTONE POTENZA
Tube or Tubeless: TUBELESS
Treadwear/Traction/Temp. Grades: 160/A/A
Sidewall (Plies & Composition): 1 PLY POLYESTER
Tread (Plies & Composition): 1 PLY POLYESTER
2 PLY STEEL
Serial Number: Right Front - DOT Y7UR PFA 1803

Tire has “DOT” markings: (X) YES ( ) NO ( ) UNDETERMINED

REMARKS:

RECORDED BY: [Signature] DATE: 06/11/03
APPROVED BY: [Signature]
### Table 1 - Instrumentation & Equipment List

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Description</th>
<th>Model/Serial No.</th>
<th>Cal. Date</th>
<th>Next Cal. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pad Scales</td>
<td>#1 199744LF</td>
<td>199744LF</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td></td>
<td>#2 199744RF</td>
<td>199744RF</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td></td>
<td>#3 199744LR</td>
<td>199744LR</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td></td>
<td>#4 199744RR</td>
<td>19974RR</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td>Pressure Gage</td>
<td>Weskler</td>
<td>0-100</td>
<td>05/03</td>
<td>05/04</td>
</tr>
<tr>
<td>Surface Level</td>
<td>GTL</td>
<td>N/A</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
</tbody>
</table>
SECTION 5
PHOTOGRAPHS
2003 TOYOTA CAMRY
NHTSA NO. C35109
FMVSS NO. 110 (INDICANT)

FIGURE 5.1
¾ FRONTAL VIEW OF VEHICLE
FIGURE 5.2
VEHICLE'S CERTIFICATION LABEL
2003 TOYOTA CAMRY
NHTSA NO. C35109
FMVSS NO. 110 (INDICANT)

FIGURE 5.3
VEHICLE'S TIRE INFORMATION LABEL
2003 TOYOTA CAMRY
NHTSA NO. C35109
FMVSS NO. 110 (INDICANT)

FIGURE 5.4
TIRE SHOWING BRAND AND SERIAL NUMBER
MAX LOAD: 635 kg (1400 LBS)
@ 300 kPa (44 PSI) MAX PRESS.

2003 TOYOTA CAMRY
NHTSA NO. C35109
FMVSS NO. 110 (INDICANT)

FIGURE 5.8
TIRES SHOWING MAX LOAD RATING AND MAX INFLATION PRESSURE
### Table 1 – Occupant Loading and Distribution for Vehicle Normal Load for Various Designated Seating Capacities

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

**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 $25^\circ$ 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.