NHTSA-98-3837-1

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. NHTSA–98–3837, Notice 1]

RIN 2127–AH07

Federal Motor Vehicle Safety Standards; Metric Conversion of Tire Standards

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Final rule; technical amendment.

SUMMARY: This document revises selected Federal Motor Vehicle Safety Standards (FMVSS) on tires by converting English measurements specified in those standards to metric measurements. This is one of several rulemaking actions that NHTSA is undertaking to implement the Federal policy that the metric system of measurement is the preferred system of weights and measures for United States trade and commerce. The conversions are not intended to make any changes in the stringency of the affected FMVSS. A companion final rule published in today's **Federal Register** converts, from English measurements to metric measurements, selected FMVSSs that do not relate to tires.

This document also includes a technical amendment to the standard on tire selection and rims for motor vehicles other than passenger cars so that tire information provided on labels may use abbreviations for units of weight (mass) measurement.

DATE: This final rule is effective May 27, 2003. Optional early compliance with the changes made in this final rule is permitted beginning May 27. 1998.

ADDRESSES: Petitions for reconsideration of this final rule should refer to the docket and notice number cited in the heading of this final rule and be submitted to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590. It is requested, but not required, that 10 copies be submitted.

FOR FURTHER INFORMATION CONTACT: Mr. Kevin Cavey, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590. Mr. Cavey's telephone number is: (202) 366-5271.

SUPPLEMENTARY INFORMATION:

I. Background Information

Section 5 164 of the Omnibus Trade and Competitiveness Act (Pub. L. 100–418). makes it United States (U.S.) policy that the metric system of measurement is the preferred system of weights and measures-for United States trade and commerce. Executive Order 12770 directs Federal agencies to comply with the Act by adopting a conversion schedule for their programs by September 30. 1992. In a **Federal Register** document of April 2 1, 1992 (57 FR 146 19), the National Highway Traffic Safety Administration (NHTSA) published its plan to use the metric system in NHTSA programs, and included an implementation schedule to convert the Federal Motor Vehicle Safety Standards (FMVSSs) to metric measurements.

In a final rule published on March 15. 1995 (60 FR 13639), NHTSA completed the first phase of metrication, converting English measurements in the following FMVSSs to the metric system: Standard ***No.*** 102, ***Transmission shift lever sequence, starter interlock, and*** transmission ***braking effect,*** Standard ***No.*** 103, ***Windshield defrosting and defogging systems;*** Standard No. 104, ***Windshield wiping and washing systems;*** Standard ***No.*** 107. ***Reflecting surfaces;*** Standard No. 110, ***Tire selection and rims:*** Standard No. 112, ***Headlamp concealment devices:*** Standard ***No.*** 114, ***Theft protection;*** Standard ***No.*** 115, ***Vehicle identification number-basic requirements:*** Standard ***No. 120, Tire selection and rims for motor vehicles other than passenger cars;*** Standard ***No.*** 124, ***Accelerator control systems;*** Standard No. 126. ***Truck-camper loading;*** Standard No. ***205, Glazing materials;*** Standard No. ***206, Door locks and door retention components;*** Standard ***No. 207, Seating systems:*** Standard ***No.*** 212, ***Windshield mounting,*** and Standard No. 2 16, ***Roof crush resistance.***

In the March 14, 1995 final rule, NHTSA established the following principles for converting English system measurements to the metric system:

(1) Equivalent conversions are generally favored, not exact ones;

(2) The term "'mass" is favored over the term "weight," except when "weight" is used as part of a defined term;

(3) Force measurements are converted by specifying in the regulatory language the steps for making the conversion; and

(4) Dual measurements (i.e., both English and metric measurements) are used in a standard when it seems likely that it will be read by persons not fully accustomed to using the metric system. NHTSA stated its intent to follow these principles in future metrication rulemakings.

II. Notice of Proposed Rulemaking for Second Phase

On April 21, 1997, NHTSA began its second phase of metricating the FMVSSs by publishing a notice of proposed rulemaking to convert English measurements in the following Federal Motor Vehicle Safety Standards to the metric system: Standard No. 10 1, ***Controls and displays;*** Standard No. 109, ***Newpneumatic tires;*** Standard No. 111, ***Rearview mirrors;*** Standard No. 116, ***Motor vehicle brake fluids;*** Standard ***No.*** 117, ***Retreaded pneumatic tires;*** Standard ***No.*** 119, ***New pneumatic tires for vehicles other than passenger cars;*** Standard ***No. 123, Motorcycle controls and displays;*** Standard No. 20 1, Occupant protection in interior impact; Standard ***No. 202, Head restraints;*** Standard ***No. 203, Impact protection for the driver from the steering control system;*** Standard ***No. 204, Steering control rearward displacement;*** Standard ***No. 209, Seat belt assemblies;*** Standard ***No. 2 10, Seat belt assembly anchorages;*** Standard No. 2 19, ***Windshield zone intrusion;*** Standard ***No. 220, School bus rollover protection:*** Standard No. 222, ***School bus*** passenger ***seating and crash protection:*** Standard ***No. 30 1, Fuel system integrity;*** and Standard ***No. 302, Flammability of interior materials.***

The agency raised issues concerning the following proposed conversions: [1]

Exact Versus Equivalent Conversions-In the NPRM, NHTSA stated that although it generally favors the use of equivalent conversions, it will not use equivalent conversions where there is a specific safety need or other reason to make an exact conversion. For

[1] The issues relating to the other standards addressed in the NPRM are discussed in today's companion notice.

certain proposed conversions (Le.. ones involving requirements that specify the height of lettering, the minimum depth to which the lettering must be impressed, or the maximum height to which it must be embossed), NHTSA proposed exact conversions to minimize the possibility of manufacturers having to change molds and materials. NHTSA also proposed exact conversions for measurements in several non-tire standards to avoid a possibility that the standard would become more stringent after the conversion.

Dual Measurements-The agency stated its belief that converting some tables so that they contain only metric measurements may not be very informative to American tire manufacturers and retreaders and mirror manufacturers. many of whom may be more familiar with English measurements Accordingly, in the case of the mirror and tire standards, NHTSA proposed that the tables and regulatory text provide both the English and metric systems of measurement. Specifically. for Standard ***No.*** 117. ***Retreaded pneumatic*** tires. NHTSA proposed to include both p.s.i. and kPa measurements in Table I—"Plies". For Standard No. 119, ***New pneumatic tires for vehicles other than passenger cars.*** NHTSA proposed to provide both English and metric measurements in Table I--"Strength Test Plunger Diameter", Table II—"Minimum Static Breaking Energy", and Table III—"Endurance Test Schedule".

NHTSA sought public comment on the proposal to use dual measurements for the specified tables and on the period of time after which use of the English units of measurements should be phased out.

Leadtime—NHTSA proposed that, if made final, the changes proposed in the NPRM take effect one year after the publication of the final rule. with manufacturers given the option to comply immediately with the new measurements. NHTSA stated its belief that one year is enough lead time for industry to make any necessary changes. In the past, NHTSA has consistently stated that it is not the agency's intent to impose unnecessary costs to manufacturers as a result of the metrication process. NHTSA stated it was aware that if some of the proposed changes in the tire standards were made final, tire mold manufacturers would have to change molds to accommodate the new metric/English measurements Changing tire molds to accommodate labeling with metric measurements where the metric measurements are not specified may result In manufacturers incurring significant costs unless sufficient leadtime is given so that changes could be made when molds are changed.

NHTSA specifically sought comment on the amount of lead time that tire manufacturers should be given so that they could meet any changes that may result if the amendments proposed in NPRM are made final. NHTSA asked whether one year is enough lead time to permit tire manufacturers to purchase new molds that would meet the metricated standard.

III. Public Comments and NHTSA's Response

In response to the NPRM. NHTSA received comments from 17 commenters. Several commenters addressed only proposed metric conversions in the tire standards: Japan Automobile Tire Manufacturers' Association, Goodyear, Rubber Manufacturers' Assn., Toyota, and the European Tyre and Rim Technical Organization. The following comments were offered on Standard No. 109, New ***pneumatic*** tires: Standard No. 117, Retreaded ***pneumatic tires***; and Standard ***No.*** 119. ***New pneumatic tires for vehicles other than passenger cars.***

Most of the suggestions of commenters for changes to the three tire standards were to correct typographical errors or to make the conversions more consistent with established tire industry, European or other international standards. Many of the commenters made identical suggestions for changes. NHTSA has reviewed each suggested change and determined whether the change, If adopted. would have a substantive effect on the tire standard. The final rule incorporates the suggested changes, except as noted below.

The Rubber Manufacturers Association (RMA), in a June 19, 1997 submission. made detailed comments on proposed changes to Standards 109. 117, and 119. NHTSA has made almost all of RMA's suggested changes. However, the agency is not making RMA's suggested changes for Standard No. 119's S6.5(d) and S6.5(e). S6.5 specifies information that must be marked on tire sidewalls. That information includes the maximum load rating and corresponding inflation pressure of the tire (S6.5(d)) and the speed restriction of the tire. if 55 miles per hour or less (S6.5(e)). RMA's recommendation would make it optional, not mandatory, that the S6.5(d) and (e) information on tires be marked in metric and English system units. RMA's reason for its recommendation is that virtually every mold for tires regulated by Standard No. 119 would have to be restamped and there is "no justification for that kind of expense," even if spread out over several years.

In a submission dated August 28. 1997. RMA stated that its members estimate a cost to the industry of $18.2 million dollars to make changes to tire molds, if the one year implementation date proposed in the NPRM is adopted. The $18.2 million figure was calculated by adding the estimates provided by Goodyear, Michelin and Bridgestone-Firestone (a total of $15 million) and those provided by Dunlop, Continental, and Cooper (a total of 93.2 million).

Goodyear Tire and Rubber Company also asked that NHTSA not require metric markings for Standard No. 119. Goodyear stated that adding metric markings would mean that it would have to "virtually have to restamp every mold that currently exists for tires covered" by Standard No. 119. Goodyear stated that the restamping would be a major expense and not consistent with NHTSA's desire not to unduly burden tire manufactures.

NHTSA is not adopting RMA and Goodyear's request not to metricate Standard No. 119. NHTSA has undertaken this rulemaking to implement the Federal policy that the metric system of measurement is the preferred system of weights and measurements for United States trade and commerce. The metrication policy applies to all Federal Motor Vehicle Safety Standards, including Standard No. 119.

NHTSA notes that neither RMA nor Goodyear provided information on a leadtime for implementing the metrication of Standard No. 119 that would minimize the compliance burden on the tire industry. Therefore, in order to lessen the burden on tire manufacturers, NHTSA will not make the final rule effective in one year. as proposed in the NPRM but will delay the effective date of the metricated tire standards for five years. Optional immediate compliance is also provided. NHTSA believes that during the course of five years, tire manufacturers will have the opportunity to replace molds as they become outmoded or worn out with new molds that incorporate both metric and English measurements.

IV. Technical Amendment to Standard No. 120

In the NPRM. NHTSA did not propose changes to Standard No. 120. ***Tire selection and rims for motor vehicles other than passenger*** cars. Nevertheless, Rover Group Ltd. suggested that the sample label titled "TRUCK EXAMPLE-SUITABLE TIRE-RIM

CHOICE" (following S5.3.2 of Standard No. 120) be amended to permit lower case letters for KG, the abbreviation for kilogram.

Land Rover's comment indicates that it believes "kilograms" used in the label may be abbreviated as "kg". At present. the label example specifies that units of weight be spelled out. i.e., "kilogram" or "pound". However. NHTSA has reexamined the label example and determined that consumers will not be confused by the abbreviations "kg" and "lbs" in lieu, respectively. of "kilograms" and "pounds." Thus, NHTSA in this final rule is also amending the label example that follows S5.3.2 of Standard No. 120 to permit abbreviations for kilograms and pounds.

However, NHTSA is not specifying that the abbreviation "kg" be in lower case letters because S5.3 ***Label information*** specifies that all information provided be "lettered in block capitals and numerals." NHTSA does not agree with Land Rover that persons seeing an upper case "KG" on the label will likely mistake this abbreviation for "Kelvin Giga" (which means Kelvin temperature of Celsius +273° times 10 to the ninth power) instead of the more common "kilogram."

V. Regulatory **Impacts**

A Executive Order 12866 and DOT Regulatory Policies and Procedures

NHTSA has examined the impact of this rulemaking action under E.O. 12866 and the Department of Transportation's regulatory policies and procedures. This rulemaking document was not reviewed under E. 0. 12866. "Regulatory Planning and Review." This action has been determined to be not "significant" under DOT's regulatory policies and procedures.

In converting the Federal Motor Vehicle Safety Standards from the English to the metric measurement system. the agency has made conversions in a way that does not substantively change the safety performance required of motor vehicle and motor vehicle equipment. As a result of this rule. manufacturers now providing consumer information (e.g.. labeling) may incur minimal additional costs since they will have to add metric units to the information on their tires. In order to ensure that tire manufacturers can make the timing of their addition of the metrics unit information coincide with the timing of the replacement of their tire molds as they wear out and naturally reach the end of their useful life. the agency is providing five years of leadtime. The impacts of this action will be so minor that preparation of a full regulatory evaluation for this proposed rule is not warranted.

B. Regulatory Flexibility Act

The agency has considered the effects of this rulemaking action under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.). I certify that this proposed rule will not have a significant economic impact on a substantial number of small entities. As noted above. converting from the English system to the metric system will not require a change in the performance of any tire. While tire molds may have to be changed to accommodate dual metric/English labeling on tires. tire manufacturers can schedule the change so that it coincides with the normal retirement of tire molds as they wear out.

NHTSA does not know of any U.S. small businesses that manufacture tires. The U.S. Small Business Administration (SBA)'s small business size standard for a tire manufacturer is at 13 CFR 121.601 ***Standard Industrial Classification Codes and size standards.*** The Standard Industrial Classification Code (SIC) for manufacturers of tires and inner tubes is 3011. For SIC 3011, the SBA has established a size standard of 1.000 employees or fewer.

C. Environmental Impacts

In accordance with the National Environmental Policy Act of 1969, the agency has considered the environmental impacts of this rulemaking action and determined that, as a final rule. it will not have a significant impact on the quality of the human environment.

D. Federalism

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that the final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

E. Civil Justice Reform

This proposed rule will not have a retroactive effect. Under 49 U.S.C. section 30103. whenever a Federal motor vehicle safety standard is in effect. a state may not adopt or maintain a safety standard applicable to the same aspect of performance which is not identical to the Federal standard. 49 U.S.C. section 30106 sets forth a procedure for judicial review of final rules establishing. amending or revoking Federal motor vehicle safety standards. That section does not require submission of a petition for reconsideration or other administrative proceedings before parties may file suit in court.

List of **Subjects in 49 CFR Part 571**

Imports, Motor vehicle safety, Motor vehicles. Rubber and rubber products. Tires.

In consideration of the foregoing. the Federal Motor Vehicle Safety Standards (49 CFR Part 571). are amended as set forth below.

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

1. The authority citation for part 571 continues to read as follows:

Authority: 49 U.S.C. 322. 30111, 30115, **30117. and 30166; delegation of authority at 49** CFR 1.50.

2. Section 571.109 is amended by revising in S4.2.1, paragraph (d): revising S4.2.2.3.1; revising S4.2.2.3.2: revising the first sentence of S4.3 ***Labeling Requirements*** introductory paragraph; revising the first sentence of **S4.3.5: revising** S5.2.2.1; revising S5.3.2.1; revising S5.3.2.3: revising S5.4.1.2; revising S5.4.2.1; revising **S5.4.2.2:** revising S5.4.2.3: revising **S5.5.2;** revising S5.5.3: and revising S5.5.4 to read as follows:

9571.109 Standard No. 109, New pneumatic tires.

* * * * *

S4.2.1. General. Each tire shall conform to each of the following:

* * * * *

(d) It shall incorporate a tread wear indicator that will provide a visual indication that the tire has worn to a tread depth of 1.6 mm (1/16 inch).

* * * * *

S4.2.2.3.1 When a tubeless tire that has a maximum inflation pressure other than 420 kPa (60 psi) is tested in accordance with S5.2. the applied force required to unseat the tire bead at the point of contact shall be not less than:

(a) 6,670 N (1.500 pounds) for tires with a designated section width of less than 160 mm (6 inches);

(b) 8.890 N (2.000 pounds) for tires with a designated section width of 160 **mm (6** inches) or more but less than 205 **mm (8** inches):

(c) 11.120 N (2.500 pounds) for tires with a designated section width of 205 **mm (8** inches) or more. using the section width specified in a submission made by an individual manufacturer. pursuant to S4.4.1 (a), or in one of the publications described in S4.4.1 (b) for the applicable tire size designation and type.

S4.2.2.3.2 When a tire that has a maximum inflation pressure of 420 kPa

(60 psi) is tested in accordance with S5.2. the applied force required to unseat the bead at the point of contact shall be not less than:

(a) 6.670 N (1,500 pounds) for tires with a maximum load rating of less than 399 kg (880 pounds):

(b) 8.890 N (2,000 pounds) for fires with a maximum load rating of 399 kg (880 pounds) or more but less than 635 kg (1,400 pounds);

(c) 11.120 N (2.500 pounds) for tires with a maximum load rating of 635 kg (1.400 pounds) or more, using the maximum load rating marked on the sidewall of the tire.

* * * * *

S4.3 Labeling Requirements. Except as provided in S4.3.1 and S4.3.2. each tire shall have permanently molded into or onto both sidewalls. in letters and numerals not less than 2 mm (0.078 inches) high, the information shown in paragraphs S4.3 (a) and (g). * * *

* * * * *

S4.3.5 If the maximum inflation pressure of a tire is 420 kPa (60 psi), the tire shall have permanently molded into or onto both sidewalls, in letters and numerals not less than 12.7 mm (½ inch), the words "Inflate to 420 kPa (60 psi)". * * *

* * * * *

S5.2.2.1 Apply a load through the block to the tire's outer sidewall at the distance specified In Figure 1 for the applicable wheel size at a rate of 50 mm (2 inches) per minute, with the load arm substantially parallel to the tire and rim assembly at the time of engagement.

* * * * *

S5.3.2.1 Force a 19 mm (¾ inch) diameter cylindrical steel plunger with a hemispherical end perpendicularly into the tread rib as near to the centerline as possible, avoiding penetration into the tread groove. at the rate of 50 mm (2 inches) per minute.

* * * * *

S5.3.2.3 Compute the breaking energy for each test point by means of one of the two following formulas:

$W=[(F\times P)/2]\times 10^{-3}$ (joules)

Where

W=Energy, in joules:

F=Force, Newtons; and

P=Penetration, mm; or

$W=[(F\times P)/2]$

Where

W=Energy, inch-pounds:

F=Force, pounds: and

P=Penetration, inches.

* * * * *

S5.4.1.2 Condition the tire assembly to 38°±3° C (100°±5° F) for at least three hours.

* * * * *

S5.4.2.1 Mount the tire and wheel assembly on a test axle and press it against a flat-faced steel test wheel 1708 mm (67.23 inches) in diameter and at least as wide as the section width of the tire to be tested or an approved equivalent test wheel. with the applicable test load specified in the table in S5.4.2.3 for the tire's size designation, type and maximum permissible inflation pressure.

S5.4.2.2 During the test, the air surrounding the test area shall be 38°±3° C (100°±5° F).

S5.4.2.3 Conduct the test at 80 kilometers per hour (km/h) (50 miles per hour) in accordance with the following schedule without pressure adjustment or other interruptions:

The loads for the following periods are the specified percentage of the maximum load rating marked on the tire sidewall:

	Percent
4 hours	85
6 hours	90
24 hours	100

* * * * *

S5.5.2 Break in the tire by running it for 2 hours at 80 km/h (50 mph).

S5.5.3 Allow to cool to 38°±3° C (100°±5° F) and readjust the inflation pressure to the applicable pressure specified in Table 11.

S5.5.4 Without readjusting inflation pressure. test at 121 km/h (75 mph) for 30 minutes. 129 km/h (80 mph) for 30 minutes. and 137 km/h (85 mph) for 30 minutes.

* * * * *

3. In 5571.109. Figure 1—"Bead Unseating Fixture-Dimensions in Inches", the Table titled "Figures for Standard No. 109". Figure 2—"Diagram of Beat Unseating Block Dimensions in Inches". and Figure 2A—"Diagram of Bead Unseating Block-Dimensions in Inches" after S6, and preceding Appendix A. are revised to read as follows:

BILLING CODE 4910–59–P

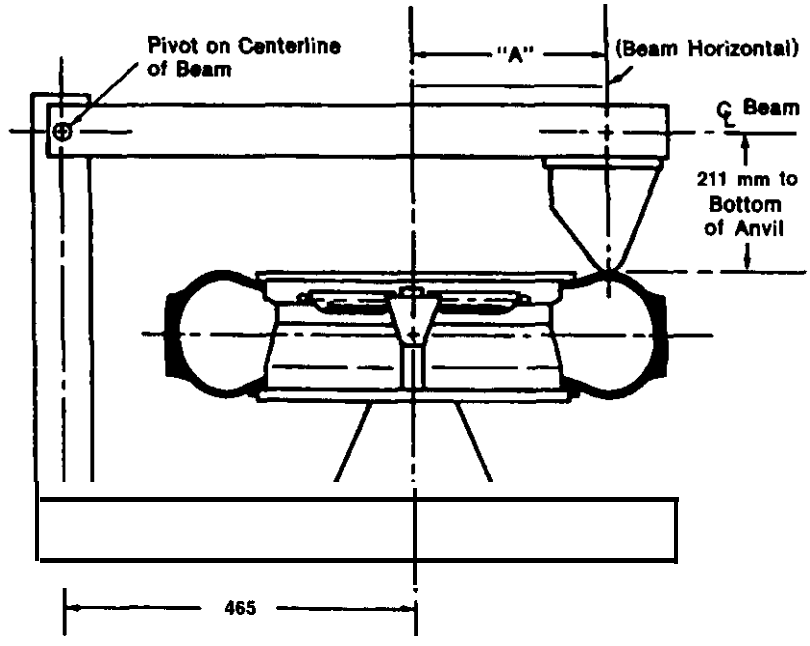


Figure I.-Bead Unseating Fixture
All Dimensions in Millimeters (mm)

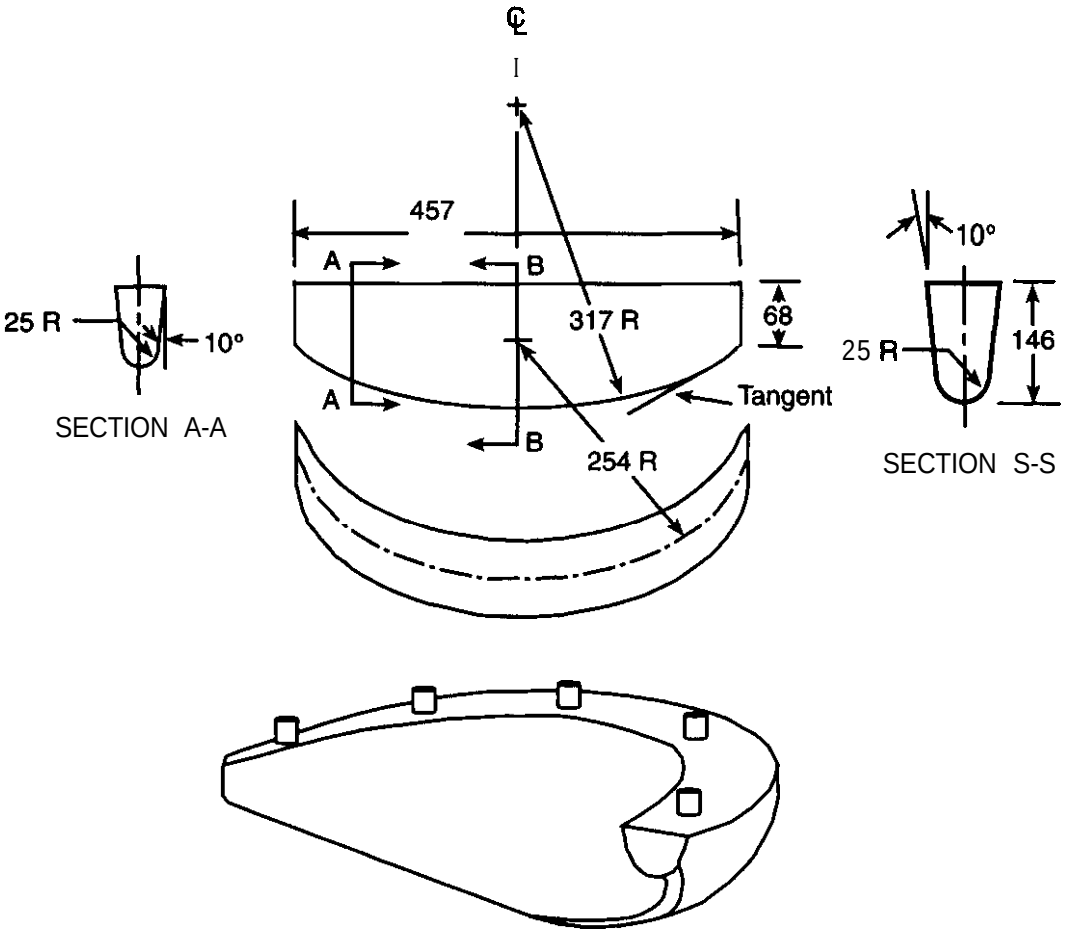
BILLING CODE 4910–59–C

FIGURES FOR STANDARD 109

Wheel sizes	Dimension "A" for tires with maximum inflation pressure			
	Other than 60 psi	Other than 420 kPa	60 psi	420 kPa
19	13.00 in	330	12.00 in	305
18	12.50 in	319	11.40 in	290
17	12.00 in	305	10.60 in	269
16	11.50 in	292	9.90 in	251
15	11.00 in	279	9.40 in	239
14	10.50 in	267	8.90 in	226
13	10.00 in	254	8.40 in	213
12	9.50 in	241	...	...
11	9.00 in	229	...	...
10	6.50 in	216	...	...
320	6.50 in	216	...	...
340	9.00 in	229	...	...
345	9.25 in	235	...	...
365	9.75 in	246	...	...
370	10.00 in	254	...	...
390	11.00 in	279	...	...
415	11.50 in	292	...	...
400[1]	10.25 in	260	...	...
425[1]	10.75 in	273	...	...
450[1]	11.25 in	296	...	...
475[1]	11.75 in	296	...	...
500[1]	12.25 in	311		

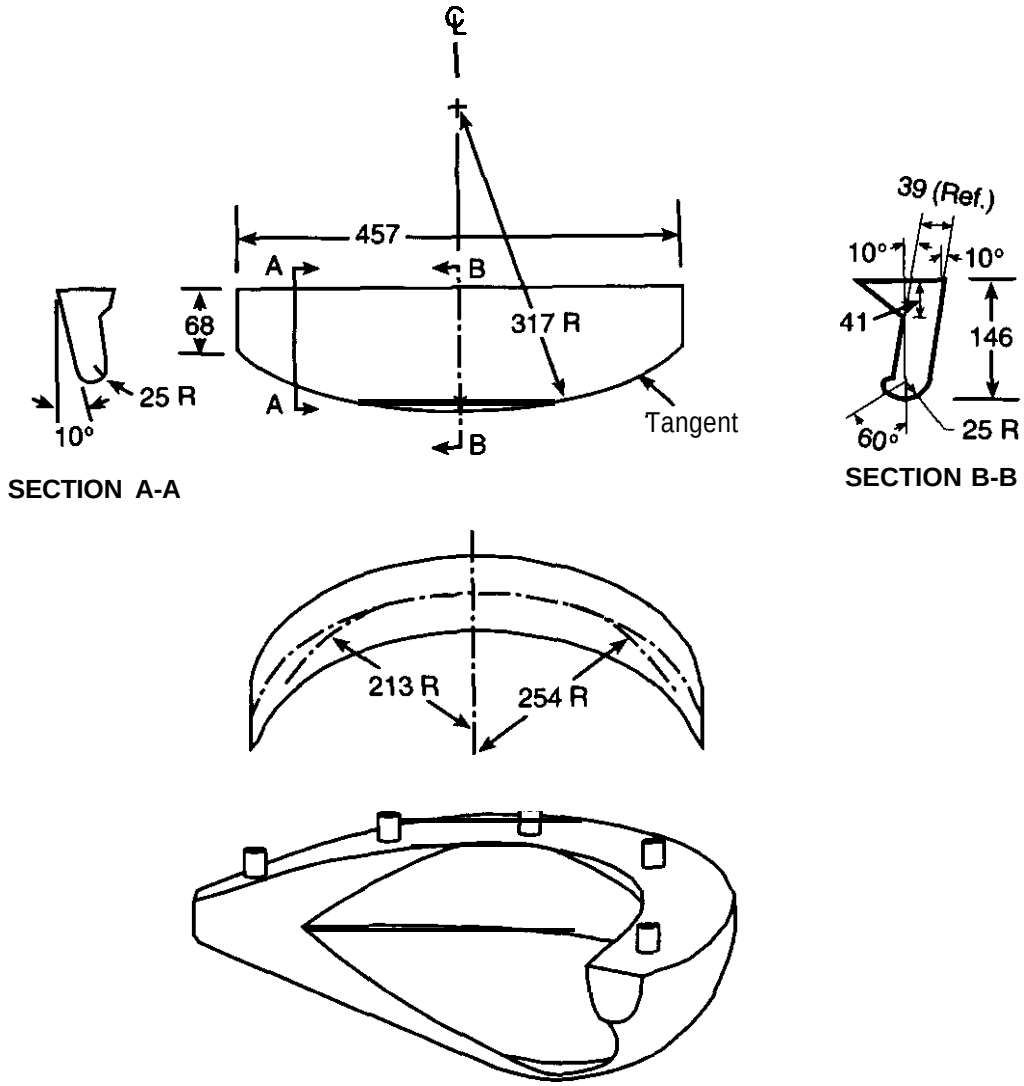
[1] For CT Tires only.

BILLING CODE 4910–59–P



MATERIAL: Cast Aluminum 355
T-6 Condition
Finish-l .3 Micrometer (urn)

Figure 2. DIAGRAM OF BEAD UNSEATING BLOCK
All dimensions in millimeters (mm)



MATERIAL: Cast Aluminum 355
T-6 Condition
Finish-l .3 Micrometer (urn)

Figure 2A. DIAGRAM OF BEAD UNSEATING BLOCK
All dimensions in millimeters (mm)

BILLING CODE 4910–59–C

4. In § 571.109. in Appendix A. Table I-A—"For Bias Ply Tires with Designated Section Width of 6 Inches and Above", Table I-B "For Bias Ply Tires with Designated Section Width Below 6 Inches", Table I-C "For Radial Ply Tires". Table 1-D "For Tires with 60 lb/in² Maximum Permissible Inflation Pressure and Maximum Load Rating Below 880 Lb. And Above", and Table 1-E "For Tires With 60 lb/in² Maximum Permissible Inflation Pressure and Maximum Load Rating Below 880 Lb" are revised to read as follows:

Appendix A-Federal Motor Vehicle Safety Standard No. 109

TABLE I–A.—FOR BIAS PLY TIRES WITH DESIGNATED SECTION WIDTH OF 152 MM (6 INCHES) AND ABOVE

Cord material	32 psi	36 psi	40 psi	240 kPa	280 kPa	300 kPa	340 kPa
Rayon:							
(in-lbs)	1,650	2,574	3,300	1,650	3,300	1,650	3,300
(joules)	186	291	373	186	373	186	373
Nylon or polyester:							
(in-lb?.)	2,600	3.900	5,200	2,600	5,200	2,600	5,200
(joules)	294	441	588	294	566	294	566

TABLE I–B.—FOR BIAS PLY TIRES WITH DESIGNATED SECTION WIDTH BELOW 152 MM (6 INCHES)

Cord material	32 psi	36 psi	40 psi	240 kPa	260 kPa	300 kPa	340 kPA
Rayon:							
(in-lbs)	1,000	1,875	2,500	1,000	2,500	1,000	2,500
(joules)	113	212	262	113	262	113	282
Nylon or polyester:							
(in-lbs)	1,950	2,925	3,900	1,950	3,900	1,950	3,900
(joules)	220	330	441	220	441	220	441

TABLE I–C.—FOR RADIAL PLY TIRES

Size designation	Maximum permissible inflation											
	Tires other than CT tires								CT tires			
	psi			kPa					kPa			
	32	36	40	240	280	300	340	350	290	330	350	390
low 160 mm:												
(in-lbs)	1.950	2,925	3,900	1,950	3,900	1,950	3,900	1,950	1,950	3,900	1,950	3,900
(joules)	220	330	441	220	441	220	441	220	220	441	220	441
160 mm or above:												
(in-lbs)	2,600	3,900	5,200	2,600	5,200	2,600	5,200	2,600	2,600	5,200	2,600	5,200
(joules)	294	441	588	294	588	294	588	294	294	566	294	588

TABLE I–D.—FOR TIRES WITH 420 KPA (60 PSI) MAXIMUM PERMISSIBLE INFLATION PRESSURE AND MAXIMUM LOAD RATING 399 KG (660 LB) AND ABOVE

Cord material	Inch-pounds joules (J)
Rayon	1,650 inch pounds 186 joules (J).
Nylon or Polyester	2,600 inch pounds 294 joules (J).

TABLE I–E.—FOR TIRES WITH 420 KPA (60 PSI) MAXIMUM PERMISSIBLE INFLATION PRESSURE AND MAXIMUM LOAD RATING BELOW 399 KG (660 LB)

Cord material	Inch-pounds joules (J)
Rayon	1,000 inch pounds 113 joules (J).
Nylon or Polyester	1,950 inch pounds 220 joules (J).

5. Section 571.117 is amended by revising S6.3 to read as follows:

5571.117 Standard No. 117, Retreaded pneumatic tires.

* * * *

S6.3 Each retreaded tire shall bear permanent labeling through molding, branding, or other method that will produce a permanent label. or through the retention of the original casing labeling. in at least one location on the tire sidewall, in letters and numbers not less than 2 mm (0.078 inch) high, consisting of the following information:

* * * * *

6. In 5571.117. Table I-"Plies" is revised to read as follows:

TABLE I.—PLIES

Tire Size	2ply–4ply (4 ply rating)				4 ply (6 ply rating)				4 ply (8 ply rating)			
	Maximum load		Maximum Inflation Pressure		Maximum load		Maximum Inflation Pressure		Maximum load		Maximum Inflation Pressure	
	lb	kg	psi	kPa	lb	kg	psi	kPa	lb	kg	psi	kPa
6.00-13	1010	458	32	220	1060	499	36	250	1140	517	40	275
6.50–13	115c	55?	32	220	1230	556	36	250	1300	590	40	275
7.00–13	127C	576	32	220	1360	617	36	250	1440	653	40	275
6.45–14	112C	508	32	220	1200	544	36	250	1270	576	40	275
6.95–14	123C	558	32	220	1310	594	36	250	1390	630	40	275
7.35-14	136C	617	32	220	1450	656	36	250	1540	696	40	275
7.75-14	150C	680	32	220	1600	726	36	250	1690	767	40	275
8.25–14	162C	731	32	220	1730	765	36	250	1630	630	40	275
8.55–14	177C	803	32	220	1690	657	36	250	2000	907	40	275
8.65-14	186C	644	32	220	1990	903	36	250	2100	953	40	275
5.60–15	097C	44C	32	220	1040	472	36	250	1105	501	40	275
5.90–15	105C	476	32	220	1130	513	36	250	1200	544	40	275
6.85–15	123C	558	32	220	1320	599	36	250	1390	630	40	275
7.35-15	139c	630	32	220	1460	671	36	250	1570	712	40	275
7.75-15	1490	67ß	32	220	1590	721	36	250	1690	767	40	275
8.15–15	1610	730	32	220	1720	760	36	250	1620	626	40	275
8.25–15	1620	7 8	32	220	1730	765	36	250	1630	830	40	275
8.45–15	1740	789	32	220	1660	644	36	250	1970	694	40	275
8.55–15	1770	803	32	220	1690	657	36	250	2000	907	40	275
8.85–15	1860	644	32	220	1990	898	36	250	2100	953	40	275
9.00–15	1900	862	32	220	2030	721	36	250	2150	975	40	275
9.15–15	1 970	694	32	220	2100	953	36	250	2230	1012	40	275
8.90–15	2210	1002	32	220	2360	1070	36	250	2500	1134	40	275
A70–13	1060	481	32	220	1130	513	36	250	1200	544	40	275
D70–13	1320	599	32	220	1410	640	36	250	1490	676	40	275
D70–14	1320	599	32	220	1410	640	36	250	1490	676	40	275
E70–14	1400	635	32	220	1490	676	36	250	1560	717	40	275
F70–14	1500	680	32	220	1610	730	36	250	1700	771	40	275
G70–14	1620	735	32	220	1730	765	36	250	1830	630	40	275
H70–14	177	603	32	220	1690	657	36	250	2010	912	40	275
J70–14	1660	644	32	220	1960	696	36	250	2100	953	40	275
L70–14	1970	694	32	220	2180	989	36	250	2230	1012	40	275
C70–15	1230	558	32	220	1320	599	36	250	1390	630	40	275
D70–15	1320	599	32	220	1410	640	36	250	1490	676	40	275
E70–15	1400	635	32	220	1490	676	36	250	1560	717	40	275
F70–15	1500	680	32	220	1610	730	36	250	1700	771	40	275
G70–15	1620	735	32	220	1730	765	36	250	1630	630	40	275
H70–15	1770	803	32	220	1690	857	36	250	2010	912	40	275
J70–15	1660	644	32	220	1990	696	36	250	2100	953	40	275
K70–15	1900	662	32	220	2030	721	36	250	2150	975	40	275
L70–15	1970	694	32	220	2100	953	36	250	2230	1012	40	275
165-13	1050	476	32	220	1130	513	36	250	1200	544	40	275
175–13	1150	552	32	220	,240	562	36	250	1350	612	40	275
185–13	1270	576	32	220	1390	630	36	250	1510	665	40	275
155R13	950	431	32	220	1015	460	36	250	1075	466	40	275
155R14	1010	456	32	220	1080	499	36	250	1140	517	40	275
155R14	1015	460	32	220	1085	492	36	250	1150	552	40	275
165R13	1010	456	32	220	1080	499	36	250	1140	517	40	275
165R14	1120	506	32	220	1200	544	36	250	1370	621	40	275
165R15	1130	513	32	220	1200	544	36	250	1270	576	40	275
175R14	1230	556	32	220	1310	594	36	250	1390	630	40	275
185R14	1360	617	32	220	1450	656	36	250	1540	696	40	275
185/70R13	1090	494	32	220	1140	517	36	250	1190	540	40	275
145–14 [1]	665	392	32	220	905	411	36	250	935	424	40	275
145–15	89?	40(	32	220	94c	42f	3(	25(	975	442	4C	275
195-15	155(	703	32	220	168C	762	3(	25(	1820	826	4C	275
205-15	177C	80?	32	220	184C	835	3(	25(	2000	907	4c	275

[1] Dash Radial--Not an "R ladial.

7. Section 571.119 is amended by revising S6.3: revising S6.4; revising in S6.5, the introductory paragraph and paragraphs (d) and (e); revising S7.1.2: revising in S7.2. paragraph (c); revising in S7.3. paragraphs (c), (e), and (f); and revising in S7.4. paragraph (c) to read as follows:

5571.119 Standard No. 119, New pneumatic tires for vehicles other than passenger cars.

* * * * *

S6.3 *High speed performance.* When tested in accordance with the procedures of 57.3. a tire shall meet the requirements set forth in S6. 1.1 and S6.1.2(a) and (b). However, this requirement applies only to motorcycle tires and to non-speed-restricted tires of nominal rim diameter code 14.5 or less marked load range A. B, C. or D.

S6.4 Treadwear indicators. Except as specified in this paragraph. each tire shall have at least six treadwear indicators spaced approximately equally around the circumference of the tire that enable a person inspecting the tire to determine visually whether the tire has worn to a tread depth of 1.6 mm (one-sixteenth of an inch). Tires with a rim diameter code of 12 or smaller shall have at least three such treadwear indicators. Motorcycle tires shall have at least three such indicators which permit visual determination that the tire has worn to a tread depth of 0.8 mm (one-thirty-second of an inch).

S6.5 Tire markings. Except as specified in this paragraph. each tire shall be marked on each sidewall with the information specified in paragraphs (a) through (j) of this section. The markings shall be placed between the maximum section width (exclusive of sidewall decorations or curb ribs) and the bead on at least one sidewall. unless the maximum section width of the tire is located in an area which is not more than one-fourth of the distance from the bead to the shoulder of the tire. If the maximum section width falls within that area. the markings shall appear between the bead and a point one-half the distance from the bead to the shoulder of the tire, on at least one sidewall. The markings shall be in letters and numerals not less than 2 mm (0.078 inch) high and raised above or sunk below the tire surface not less that 0.4 mm (0.015 inch), except that the marking depth shall be not less than 0.25mm (0.010 inch) in the case of motorcycle tires. The tire identification and the DOT symbol labeling shall comply with part 574 of this chapter. Markings may appear on only one sidewall and the entire sidewall area may be used in the case of motorcycle tires and recreational. boat. baggage, and special trailer tires.

* * * * *

(d) The maximum load rating and corresponding inflation pressure of the tire, shown as follows:

(Mark an tires rated for single and dual load): Max load single ___kg (___lb) at ___kPa (___psi) cold. Max load dual ___kg (___lb) at ___kPa (___psi) cold.

(Mark on tires rated only for single load): Max load ___kg (___lb) at ___kPa (___psi) cold.

(e) The speed restriction of the tire, if 88 km/h (55 mph) or less. shown as follows:

Max speed -km/h (___mph).

* * * * *

S7.1.2 The tire must be capable of meeting the requirements of S7.2 and S7.4 when conditioned to a temperature of 35" C (95" F) for 3 hours before the test is conducted, and with an ambient temperature maintained at 35" C (95" F) during all phases of testing. The tire must be capable of meeting the requirements of S7.3 when conditioned at a temperature of 21° C (70" F) for 3 hours before the test is conducted.

S7.2 Endurance.

* * * * *

(c) Mount the tire-rim assembly on an axle and press it against a flat-faced steel test wheel that is 1708 mm (67.23 Inches) in diameter and at least as wide as the tread of the tire.

* * * * *

S7.3 Strength.

* * * * *

(c) Force a cylindrical steel plunger. with a hemispherical end and of the diameter specified in Table I for the tire size. perpendicularly into a raised tread element as near as possible to the centerline of the tread. at a rate of 50 mm (2 inches) per minute, until the tire breaks or the plunger is stopped by the rim.

* * * * *

(e) Repeat the plunger application at 72" intervals around the circumference of the tire, until five measurements are made. However, In the case of tires of 12 inch rim diameter code or smaller. repeat the plunger application at 120" intervals around the circumference of the tire. until three measurements are made.

(f) Compute the breaking energy for each test point by one of the two following formulas:

(1) $W = [(F \times P)/2] \times 10^{-3}$ (joules)

Where:

W = Breaking energy (in joules) (kJ)
F = Force in newtons (N) and
P = Penetration in millimeters (mm), or;

(2) $W = (FP/2)$

Where:

W = Breaking energy in inch-pounds,
F = Force in pounds.
P = Penetration in inches.

* * * * *

S7.4 High speed performance.

* * * * *

(c) Remove the load, allow the tire to cool to 35" C (95" F), and then adjust the pressure to that marked on the tire for single tire use.

* * * * *

8. In §571.119, Table I-"Strength Test Plunger Diameter", Table II—"Minimum Static Breaking Energy (Inch-Pounds)". and Table III—"Endurance Test Schedule" that follow paragraph (e) of S7.4 is revised to read as follows:

TABLE L-STRENGTH TEST PLUNGER DIAMETER

	Plunger diameter	
	(mm)	(inches)
Tire type:		
Light truck	19.05	3/4
Motorcycle		5/16
Tires for 12 rim diameter code or smaller rims except motorcycle	19.05	3/4
Tires other than the above types:		
Tubeless:		
17.5 diameter code or smaller rims	19.05	3/4
Larger than 17.5 rim diameter code rims:		
Load range F or less	*31.75*	1 1/4
Load range over F	*38.10*	1 1/2

TABLE I.—STRENGTH TEST PLUNGER DIAMETER-Continued

	Plunger diameter (mm)	Plunger diameter (Inches)
Tube type:		
Load range F or less	31.75	1¼
Load range over F	38.10	1½

TABLE II.-MINIMUM STATIC BREAKING ENERGY (JOULES (J)* AND INCH-POUNDS (INCH-MS))

Load range	Motorcycle		All 12 rim diameter code or smaller rim size		Light truck 17 5 rim diameter code or smaller rim tubeless		Tube type		Tubeless		Tube type		Tubeless	
Tire characteristic														
Plunger diameter (mm and inches)	7.94 J	5/16" inch-lbs	19.05 J	¾" inch-lbs	19.05 J	¾" inch-lbs	31.75 J	1¼" Inch-lbs		inch-lbs	38.10 J	1½" inch-lbs	J	nch-bs
A	16	150	67	600	225	2,000								
B	33	300	135	1,200	293	2.600								
C	45	400	203	1,800	361	3,200	768	6.800	576	5,100				
D			271	2,400	514	4,550	892	7,900	734	6,500				
E			338	3,000	576	5,100	1,412	12,500	971	8,600				
F			406	3,600	644	5,700	1,785	15,800	1,412	12.500				
G					711	6,300					2,282	20,200	1,694	15.000
H					768	6,800					2,598	23,000	2,090	18.500
J											2,824	25,000	2,203	19.500
L											3,050	27,000		
M											3,220	28,500		
N											3,389	30,000		

NOTE: For rayon cord tires, applicable energy values are 60 percent of those in table.
*J measurementa are rounded down to the nearest whole number.

TABLE IN-ENDURANCE TEST SCHEDULE

Description	Load range	Test wheel speed (r/m)	Test load: Percent of maximum load rating			Total best revolutions (thousands)
			I-7 hours	II-16 hours	III-24 hours	
Speed restricted service:						
68 km/h (55 mph)	All	125	66	84	101	352.0
80 km/h (50 mph)	C, D	150	75	97	114	432.0
	E. F, G, H, J, L	100	66	84	101	282.5
56 km/h (35 mph)	All	75	66	84	101	211.0
Motorcycle	All	250	[1] loo	2108	117	510.0
All other	A, B, C, D	250	75	297	114	
	E a	200	70	88	106	546.0
	F	200	66	84	101	564.0
	G	175	66	84	101	493.5
	H, J, L, N	150	66	84	101	423.5

[1] 4 hr.. for tire sizes subject to high speed requirements (S6.3).
[2] 6 hr., for tire sizes subject to high speed requirements (S8.3).

§571.120 [Amended]

9. Section 571.120 is amended by revising "TRUCK EXAMPLE—SUITABLE TIRE-RIM CHOICE" at the end of S5.3.2. and before S5.3.3, to read as follows:

S5.3.2. Rims.

* * * * *

TRUCK EXAMPLE-SUITABLE TIRE-RIM CHOICE
GVWR: 7,840 KG (17.289 LB)
GAWR: FRONT-Z.850 KC (6.280 LB) WITH 7.50–20(D) TIRES, 20 X 6.00 RIMS AT520 KPA (75 PSI) COLD SINGLE
GAWR: REAR-4.990 KG (11.000 LB) WITH 7.50–20(D) TIRES, 20 X 6.00 RIMS, AT 450 KPA (65 PSI) COLD DUAL
GVWR: 13,280 KG (29.279 LB)
CAWR: FRONT-4,826 KG (10.640 LB) WITH 10.00–20(F) TIRES, 20 X 7.50 RIMS AT 620 KPA (90 PSI) COLD SINGLE
GAWR: REAR-8,454 KC (18.639 LB) WITH 10.00–20(F) TIRES, 20 X 2.70 RIMS, AT 550 KPA (80 PSI) COLD DUAL

* * * * *

Issued: May 13. 1998.

Ricardo Martinez,

Administrator.

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