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TIRE SAFETY

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HEARINGS

BEFORE THE

COMMITTEE ON COMMERCE
UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

FIRST SESSION

ON

S. 1643

A BILL TO PROVIDE THAT TIRES SOLD OR SHIPPED IN INTERSTATE COMMERCE FOR USE ON MOTOR VEHICLES SHALL COMPLY WITH CERTAIN SAFETY AND LABELING REGULATIONS

MAY 25, JUNE 7, AND AUGUST 13, 1965

Serial No. 89–37

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TIRE SAFETY

TUESDAY, MAY 25, 1965

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10:08 a.m., in room 5110, New Senate Office Building, the Honorable Vance Hartke presiding.

Senator HARTKE. The committee will come to order.

The committee opens hearings this morning on S. 1643, to authorize the Secretary of Commerce to prescribe and publish minimum safety and performance standards and a grading and labeling system for motor vehicle tires. The bill was introduced by Senator Gaylord Nelson, and cosponsored by Senators Church, Clark, Douglas, Hartke, Inouye, Pell, Randolph, Williams of New Jersey, and Yarborough. It is designed to provide the public with safe tires so that the motor vehicle accidents caused by tire failure can be kept to a minmum.

(The bill will be printed in its entirety at this point in the record, together with comments received from various departments:)

[S. 1643, 89th Cong., 1st sess.]

A BILL To provide that tires sold or shipped in interstate commerce for use on motor vehicles shall comply with certain safety and labeling regulations

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce shall prescribe and publish in the Federal Register regulations prescribing minimum safety and performance standards and a grading and labeling system for motor vehicle tires. Such regulations shall be designed to provide the public with safe tires so that motor vehicle accidents caused by tire failure can be kept to a minimum. Regulations first established under this section shall be prescribed and published not later than one year after the date of enactment of this Act.

SEC. 2. (a) The manufacture for sale, the sale, or the offering for sale, in interstate commerce, or the importation into the United States, or the introduction, delivery for introduction, transportation, or causing to be transported, in interstate commerce, or for the purpose of sale, or delivery after sale, in interstate commerce, of any tire manufactured on or after the date this section takes effect shall be unlawful unless in compliance with the regulations prescribed by the Secretary of Commerce pursuant to the first section of this Act.

(b) Whoever knowingly and willfully violates this section shall be fined not more than $1,000, or imprisoned not more than one year, or both.

SEC. 3. As used in this Act—

(1) The term "interstate commerce" includes commerce between one State, territory, possession, the District of Columbia, or the Commonwealth of Puerto Rico and another State, territory, possession, the District of Columbia, or the Commonwealth of Puerto Rico.

Staff counsel assigned to this hearing: Michael Pertschuk and Donald Brodie.

(2) The term "motor vehicle" includes any vehicle or machine propelled or drawn by mechanical power and used on the highways.

SEC. 4. This Act shall take effect on the date of its enactment except that section 2 shall take effect on such date as the Secretary of Commerce shall determine, but such date shall be not less than one hundred and eighty days nor more than one year after the date of publication of regulations first prescribed pursuant to the first section of this Act. If such regulations first prescribed are thereafter changed, such regulations as so changed shall take effect on such date as the Secretary of Commerce shall determine, but such date shall be not less than one hundred and eighty days nor more than one year after the date of their publication in accordance with the provisions of the first section of this Act.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., April 27, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MAGNUSON: This responds to your request for the views of this Department on S. 1643, a bill to provide that tires sold or shipped in interstate commerce for use on motor vehicles shall comply with certain safety and labeling regulations.

The bill does not appear to relate to any matter within the jurisdiction of this Department or to affect any matter upon which the Department would be in a position to give helpful information or advice. Accordingly, we have no comment to offer with respect to the merit of the bill.

We welcome the opportunity to submit recommendations on any measure where possibly the activities of the Department may be involved, or where its experience may be of value.

Sincerely yours,

GEORGE E. ROBINSON,
Deputy Assistant Secretary of the Interior.

DEPARTMENT OF STATE,
Washington, May 25, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce, U.S. Senate.

DEAR MR. CHAIRMAN: This report on S. 1643, a bill to provide that tires sold or shipped in interstate commerce for use on motor vehicles shall comply with certain safety and labeling requirements is submitted in response to your request of April 19, 1965.

This bill would require that the Secretary of Commerce prescribe minimum safety and performance standards and a grading and labeling system for motor vehicle tires that are shipped in interstate commerce or imported into the United States. On the understanding that the same standards would apply to domestically produced and imported tires, this requirement would be consistent with the international obligations of the United States. Accordingly, the Department of State would have no objection to the enactment of this bill.

The Bureau of the Budget advises that from the standpoint of the administration's program there is no objection to the submission of this report.

Sincerely yours,

DOUGLAS MACARTHUR II,
Assistant Secretary for Congressional Relations
(For the Secretary of State).

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, April 27, 1965.

B–135374.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce, U.S. Senate.

DEAR MR. CHAIRMAN: Your letter of April 19, 1965, invites our comment on S. 1643, a bill to provide that tires sold or shipped in interstate commerce for

use on motor vehicles shall comply with certain safety and labeling regulations.

The bill relates to matters of which the General Accounting Office has no special knowledge. While we are in sympathy with the general purpose of the bill, we otherwise have no comment to offer.

Sincerely yours,

JOSEPH CAMPBELL,
Comptroller General of the United States.

GENERAL SERVICES ADMINISTRATION,
Washington, D.C., May 24, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in further reply to your letter dated April 19, 1965, requesting the comments of the General Services Administration on S. 1643, 89th Congress, a bill to provide that tires sold or shipped in interstate commerce for use on motor vehicles shall comply with certain safety and labeling regulations.

The bill would require the Secretary of Commerce to prescribe and publish in the Federal Register, not later than 1 year after enactment of the bill, regulations prescribing minimum safety and performance standards and a grading and labeling system for motor vehicle tires. It also would prohibit transactions in interstate commerce involving any tire failing to comply with the regulations prescribed by the Secretary. The effective date of the prohibition would be determined by the Secretary, but would be not less than 180 days nor more than 1 year after the publication of the regulations. Knowing and willful violation of the measure would be punishable by a fine of not more than $1,000 or imprisonment for not more than 1 year, or both.

GSA has the responsibility, pursuant to Public Law 88–515 and sections 206(a)(4) and 211(a)(5) of the Federal Property and Administrative Services Act of 1949, 63 Stat. 391, 68 Stat. 1126, as amended (40 U.S.C. 487(a)(5)), for prescribing standards for vehicles, including tires, purchased by the Government. Pursuant to its authority under the Property Act, GSA has developed Federal specification No. ZZ–T–381 for tires. We have incorporated this specification into proposed Federal standard No. 515/15, published pursuant to Public Law 88–515 in the Federal Register on January 26, 1965 (30 F.R. 801).

We believe that compliance with our specification should significantly reduce hazards attributable to tire failure, so far as Government vehicles are concerned.

We feel that the establishment of safety and performance standards and of a grading and labeling system for motor vehicles tires sold to the general public would substantially reduce the number of motor vehicle accidents caused by tire failure, and in addition, would to a considerable extent protect the consumer from the possibility of misleading advertising. GSA would, therefore, recommend enactment of S. 1643.

If S. 1643 were enacted, GSA would be happy to share its experience in the field of tire safety and performance with the Department of Commerce, to assist in the development of regulations pursuant to the legislation, and to coordinate them with existing GSA regulations.

The financial effects of the enactment of the legislative measure cannot be estimated.

The Bureau of the Budget has advised that, from the standpoint of the administration's program, there is no objection to the submission of this report to your committee.

Sincerely yours,

LAWSON B. KNOTT, Jr.,
Acting Administrator.

Senator HARTKE. I want to call to the attention of all the witnesses that the clerk will distribute copies of the statements to you. Statements of witnesses other than sponsors of the bill have been presented in accordance with the rules. Hopefully, you will summarize your statements, however, if you want to read them in their entirety, I will not object.

I do want to call your attention to the rule that requires you to submit your statement and summarize that portion or those portions which you consider to be most important.

We are delighted to have Senator Nelson, who is the author of this bill, with us this morning.

Senator Nelson, you may proceed.

STATEMENT OF HON. GAYLORD NELSON, A U.S. SENATOR FROM THE STATE OF WISCONSIN

Senator NELSON. Mr. Chairman, I have a prepared statement. I will read from it. I appreciate the opportunity to appear here today on behalf of this bill, of which I am an author, along with nine other Senators.

This bill authorizes the Secretary of Commerce to establish minimum safety and performance standards for tires and a uniform system of grading and labeling. The bill is cosponsored by nine other Senators.

The American public seems ready to do something serious about our appalling highway death rate—more than 48,000 people were killed in the Nation last year. The response to this proposal on tire standards has been impressive. A California tire dealer wired this comment: "You are right—many motorists are riding on a time bomb." From Madison, Wis., a tire dealer wrote:

> There has been a large increase in one-car accidents and I feel most of them can be traced to tire failures. I think Federal legislation on strength, sizing, and load-carrying capacity will be the only way that we can correct this.

A surprising number of these letters come from people who have had tires fail on new cars, for no apparent reason. Many express shock upon discovering that they had been riding—sometimes with a full load at high speed—on tires which were inadequate and dangerous from the moment they were put on the car. Many also express surprise at being told later, by tire experts, that the tires they got with their new car were not suited for the use to which they were expected to be put.

Hundreds of letters from consumers, shocking testimony presented at the Federal Trade Commission hearings in January, and numerous conversations with tire dealers, trucking industry representatives, safety experts, and engineers have convinced me of the need for Federal regulation to protect the public against irresponsible practices by both the tire and auto industry.

There are, I think, at least two distinct problems which this legislation aims to correct. First, it aims to assure motorists that the tires which are placed on a new car by the auto manufacturers are adequate to carry the load for which the car is designed.

There is overwhelming evidence that a substantial number of tires which now come as original equipment are inadequate to do the job rightfully expected of them. These motorists are unknowingly endangering the lives of their families and all other highway users.

For example:

A Goodyear Tire & Rubber Co. representative testified at the Federal Trade Commission hearings that eight-ply tires had been recommended for full-load continuous service for many 1965 station wagons.

I and my staff checked with car dealers in Washington, D.C., representing every major automobile manufacturer. All 1965 station wagons come equipped with two-ply—four-ply rated—tires. That is, all those we checked, and we checked every major manufacturer in this city.

I also checked in Milwaukee a week ago with retail tire dealers and they assured me that the same situation prevailed there.

The Goodyear Tire Co. recommended in a letter to a constituent who was confused about what type of tire he should have on his station wagon, that he use the "8.25 by 14 power-cushion, rayon, tubeless, eight-ply-rating tire."

Senator HARTKE. Gentlemen, let me explain that if you want to hold a conversation, you will remove yourselves from the committee room. I will ask the sergeant at arms to remove those who do not comply with this.

You may proceed, sir.

Senator NELSON. I would like to insert a copy of this letter from Goodyear into the record.

Senator HARTKE. It will become a part of the record at this place.

(The letter follows:)

THE GOODYEAR TIRE & RUBBER CO.,
Akron, Ohio, March 9, 1965.

Mr. JOHN R. SCHROEDER,
Plymouth, Mich.

DEAR MR. SCHROEDER: Thank you for your letter requesting information regarding tires for your car.

Based on the information contained in your letter we recommend that you use the 8.25 by 14 power-cushion, rayon, tubeless, eight-ply-rating tire.

The load capacities of this tire are as follows:

	[In pounds]			
Air pressure	30	32	34	36
Load capacity	1,380	1,430	1,480	1,530

Attached is our brochure which illustrates and describes the outstanding features of the power-cushion, rayon, tubeless tire.

We appreciate your interest and welcome this opportunity to be of service to you.

Yours truly,

A. F. MEDEIROS,
Auto Tire Sales.

Senator NELSON. Incidentally, this gentleman had to order these tires directly from the factory in Akron because no tire dealer in Detroit stocked them.

If the safety and life of a station wagon owner depends on having eight-ply-rated tires, they should be a part of the original equipment.

At the Federal Trade Commission hearing, a B. F. Goodrich representative explained how tires are chosen for new car equipment. "For example," he said, "with a six-passenger sedan the weight of three passengers is added to the curb weight of the vehicle to determine the load that is to be used for the selection of tires."

Is it unreasonable for the consumer to expect, when he buys a six-passenger sedan with a large trunk, that he can carry six passengers and luggage without jeopardizing his life?

He obviously cannot have this assurance if the tire which comes on the car is designed to carry only three people with no luggage.

The automobile manufacturer clearly bears the responsibility for the tires he places on new cars. The B. F. Goodrich Co. stated in another letter to a constituent that—

* * * we [the tire manufacturers] have no control over what tire is put on any make of car. We furnish tires to the automobile manufacturers, according to their specifications * * *. The size and type of tire put on a particular model of car is the decision of the car manufacturer and not of the tire companies.

I submit a copy of this letter for the record.

Senator HARTKE. It will be made a part of the record at this place. (The letter follows:)

Mr. LAWRENCE E. MARSHALL,
Ferguson, Mo.

DEAR MR. MARSHALL: We sincerely regret the trouble you report regarding tires of our manufacture, and thank you for your letter of August 3 in their regard.

Without physically examining the tires in question, we would be in a poor position to evaluate the matter from this long range. To overcome the difficulties of long-range handling, we have service representatives located throughout the country who are in complete charge of all adjustments for their particular area. The service representative for the area in which you live is Mr. H. S. Shattuck, and he is located at 1975 Walton Road, St. Louis, Mo. His phone number is HArrison 9–4300.

You have requested information regarding the carrying capacity of our tires, and therefore, I am sending you a booklet called "Passenger Car Tires Care and Service." This booklet is produced by the Rubber Manufacturers Association. Inc., and is published independent of any one rubber company.

On page 21 of this booklet you will find a load and inflation table. The last figure in each size column is the maximum permissible load for this particular size tire. In the 8.00 by 14 size 4 ply, the maximum load is 1,170 pounds per tire. In the 8.50 by 14 size 4 ply, 1,265 pounds is the maximum load per tire. Even with the 8.50 by 14 tire you are 984 pounds overweight when carrying the load you list in your letter. Naturally, this overload has much to do with your tread mileage. The countrywide average for 14-inch tires is considered to be approximately 20,000 miles. We know, however, that in most cases this is low since our tires give considerably more than this under normal circumstances. As for price and availability of these particular tires, you would have to contact your local dealer or Mr. Shattuck in St. Louis.

As for your statement that a company such as B. F. Goodrich would furnish a safe and reliable tire on a new nine-passenger station wagon, we have no control over what tire is put on any make of car. We furnish tires to the automobile manufacturers, according to their specifications. Our tires undergo severe testing both in our own laboratories and in the laboratories of the car manufacturers before being accepted as original equipment quality. The size and type of tire put on a particular model of car is the decision of the car manufacturer and not of the tire companies. As you will note from this chart, a considerably larger tire will be required to carry the load which you have listed (A normal nine-passenger station wagon load, reference enclosure 1). Should you decide to go to a larger size tire, you should also investigate the size rim required for this particular tire, as you will undoubtedly have to use a wider rim.

I sincerely hope that I have been able to be of some assistance to you and should you need further help, you may call on Mr. Shattuck, who is an expert of many years in the tire business, and I am certain he can be of great assistance to you.

Thank you again for your letter bringing this to our attention.

Yours very truly,

B. F. GOODRICH TIRE CO.,
R. I. GREER,
Service Department.

LOAD AND INFLATION TABLE

13" and 14" PASSENGER CAR TIRES

TIRE AND RIM ASSOCIATION STANDARD
(From TRA Tables PC-3A and PC-4)

TIRE SIZE	PLY RATING	MAXIMUM TIRE LOADS At Various Inflation Pressures					
		20	22	24	26	28	30
5.20-13	4	545	575	605	635		
	6	545	575	605	635	660	690
5.60-13	4	580	610	640			
	6	580	610	640	725	755	790
5.90-13	4	675	700	755			
	6	675	700	755	790	820	860
6.00-13	4	650	690	725			
	6	650	690	725	760	790	825
6.50-13	4	750	790	835			
	6	750	790	835	875	910	950
7.00-13	4	830	875	920			
	6	830	875	920	960	1010	1060
7.00-14	4	850	925	975			
	6	880	925	975	1020	1065	
7.50-14	4	980	1030	1085			
	6	980	1030	1085	1135	1185	
8.00-14	4	1060	1115	1175			
	6	1060	1115	1175	1230	1285	
8.50-14	4	1140	1205	1265			
	6	1140	1205	1265	1325	1385	
9.00-14	4	1220	1290	1355			
	6	1220	1290	1355	1420	1480	
9.50-14	4	1320	1395	1465			
	6	1320	1395	1465	1535	1600	

NOTE 1: Load is maximum permissible at each inflation. No increase in load is permitted for inflations higher than those shown in the table.

NOTE 2: For high speeds, inflation pressures are to be increased 4 pounds above those indicated in table.

NOTE 3: The selection of tire size for passenger cars should be based on the maximum actual individual wheel curb load with the rated number of passengers in the table below, and including all accessories (such as radio, heater, automatic transmission and power steering):

Car Pass. Rating	Pass. Load for Tire Selection	Pass. Weight to be Added to Curb Weight	
		Front Axle	Rear Axle
3 & 4	2F	160 lb.	140 lb.
5 & 6	2F & 1R	190	240
7 & 8	2F & 2R	220	260
Station Wagons	.....	220	260

Where actual weights are not available, the theoretical weights should include vehicle curb weights plus all occupants and passenger load distribution in table above.

When higher pressures are used for shipping purposes, up to 40 lb. inflation may be used. This higher pressure must be reduced to operating inflation *before* the vehicles are put into use.

When these tires are used on Light Trucks, increase the inflation pressures, with no increase in tire loads, as follows:

Ply Rating	Inflation Pressure Increase
4	4
6	8

Senator NELSON. The second aim of this legislation is to provide the consumer with information he needs to know so that he can be sure he is buying a tire that is safe and reliable. There is no way for him intelligently to make that judgment now.

The tire dealer is often just as much at a disadvantage today as the consumer because of the confusion of tire nomenclature and the absence of any adequate system of grading and labeling tires.

Again I refer to the Federal Trade Commission transcript.

A tire dealer testified that present labels on tires—including the size, the ply-rating, and the quality rating (such as "premium" or "super") have no real meaning. The president of the Rubber Manufacturers Association testified that it is a misconception to think that because a tire is identified as a 7.50 by 14 that it is a 7.50 by 14.

> The tire size is molded on the product as a nominal designation for purposes of easy identification by the consumer. It is not intended to precisely define the physical dimension of the tire or the wheel on which it is mounted.

This is shocking testimony. It means that the consumer has no assurance that when he buys a 7.50 by 14 tire that that is what he is getting.

The designation "first-line," "second-line," "third-line," et cetera, also has no meaning, another tire dealer testified.

> This concept * * * is basically * * * unsatisfactory * * * because it allows for infinite definition by an infinite number, not only of manufacturers but of retailers who sell private brands * * *. There is no general standard.

Again, the consumer and the tire dealer have no way of knowing the safety and performance features of the product they are buying. Grading and labeling will permit them to compare one brand and type of tire with another and choose what is best for them. Minimum safety standards will assure them that even the cheapest tire is safe.

At present the individual motorist seems to be the one person who must assume responsibility for the safety of his car's tires—and yet it is virtually impossible for him to meet that responsibility. This legislation, I think, will help him in doing so.

I think it is clear from all available evidence that both the tire manufacturer and the automobile manufacturer have failed to protect the public interest so far as tire safety is concerned.

The retail tire dealers and the trucking industry are in agreement that tires are not adequately labeled so that the buyer can make an intelligent decision in his purchase. They are in fact intentionally mislabeled. As a consequence, thousands of motorists are traveling on tires that are a threat to their lives and the lives of other motorists on the highway.

This is a disgraceful situation that ought to be rectified immediately by legislation. While it would be desirable if the tire and auto industries would move to protect the public interest on their own volition, it seems clear they have no intention to do so.

Now, Mr. Chairman, I would like to submit for the record a statement made by Mr. Andrew Ambli, of the Briggs Trucking Co. He made this statement as chairman of the Regular Common Carrier Tire Study Group. He made the statement before the Regular Common Carrier Maintenance Committee and Rubber Manufacturers Association, Marriott Motor Hotel, Dallas, Tex., 1965.

I ask consent to have this statement, which is seven pages long, printed as part of the record.

Senator HARTKE. It will be a part of the record at this place in the record.

(Statement follows:)

STATEMENT OF ANDREW AMBLI, FLEET MAINTENANCE SUPERINTENDENT, BRIGGS TRANSPORTATION CO., ST. PAUL, MINN., BEFORE THE REGULAR COMMON CARRIER CONFERENCE MAINTENANCE COMMITTEE AND RUBBER MANUFACTURERS ASSOCIATION, MARRIOTT MOTOR HOTEL, DALLAS, TEX., APRIL 2, 1965

Mr. Chairman, members of the maintenance committee and members of the Rubber Manufacturers Association, all the meetings we have had on tires and tubes have brought us here today. I think some of you know that I have an interest in getting improved tires and tubes. Not only for Briggs Transportation Co., but for the common carrier industry and for all the trucks that roll.

I want to caution the rubber manufacturers and other representatives against the idea that I am just one man up here today. I have a feeling, and so do many others in this room, that we are not "getting through" to the people who are supplying the tires and tubes that we must use in performing our work. Maybe we have grown apart and now it is time to get back together again.

The trucking field has changed a lot on the outside but not much on the inside. The kind of men who bet "the works" on trucks back in the beginning—well, the same kind of men are coming up to the top today.

We built the business against every kind of difficulty. They said we couldn't haul long distance, they passed all kinds of laws to keep traffic on the rails. The trucking industry today is not satisfied with its performance. Never mind, it has more revenue than the railroads. We have worked hard to develop the trucking industry—and we mean to keep on working to improve everything about trucking.

There is a lot of competition between the various truck lines. There is a competition between the regulated carriers and those outside of regulation. But still we are like a family. We have our internal scraps, at times. However, we know how to put those scraps aside and to work together. We have done it time and time again—we'll do it this time.

The trucking industry has become an economic giant. The giant is beginning to talk. We have 78 million vehicles in the United States—about 12,600,000 of them are trucks. There is one truck to serve every five families in America. The trucks represented here today provide direct employment for more than 8 million men and women.

Each year trucks wear out 21 million tires and 15 million tubes. Knowing how much truck tires cost, you can figure out the dollars involved. And, of course, trucking is a growing field, so each year we are using more and more tires and tubes.

Gentlemen, we have been talking about tire problems a long time. It seems years ago that the Minnesota Maintenance Council voiced their opinion in respect to tire size differentials. A long time ago we introduced tube failures at Denver and later at an SAE meeting at Baltimore, Md.

In this period of time, the entire trucking industry has joined us in a joint effort on the various problems to be resolved. Also, in this period, the 14- and 15-inch tires were added as we have thousands of city delivery vans and special equipment used by Bell Telephone Co. as well as power companies and common carriers—from one end of the Nation to the other. These are truck tires but they are being sold as if they were car accessories.

Also in this same period of time, covering years, State after State is requesting rules and regulations in regard to tires. Minnesota came out with a six-page proposal which deals with identifications on the tires. Part of this proposal reads: as to name and address of the manufacturer; the dealer's name and address, selling the tire; and also various tests of the tire.

House bill 831 approved by the Legislature of Louisiana, July 19, 1964, prohibits the sale of regrooved automobile tires. Many other States have enacted laws governing the sale, use, or standards permissible on tires in operation within that State.

Here we have the beginning of a situation that will very quickly become intolerable. It is simply not possible—to operate a truckline in interstate commerce—under conditions where each State has its own and different regulations, on lengths, weights, bridge formulas, brake laws, lighting, and everything else.

Here today, the trucking industry and the rubber industry stands facing the prospect of new State laws in 18 States. I have here copies of bills that have been introduced in California, Colorado, Connecticut, Iowa, Maine, Maryland, Massachusetts, Michigan, Nebraska, New Hampshire, New Jersey, Ohio, Wisconsin, New York, and Pennsylvania. Most of them deal with regrooved tires, but that would only be the beginning. The objective is to make certain that tires on all motor vehicles are safe. The objective is to protect the public using the highways.

Only 2 weeks ago I appeared before the house committee and the senate committee in the Minnesota State Capital. This was on a proposed bill for split hydraulic brake sysetm for trucks. I merely explained why this is not practical and I stopped the bill right there.

They also have the bill on tires for Minnesota. It is still yet to be acted on. I do hope I will be able to be there to explain to them what we have done on a national level. That depends on the outcome of today. I didn't tell them about our problem in uniformity or identification as well as our tube problems.

I felt and I do feel the State of Minnesota, like other States, must wait until this problem is settled on a national level.

Now gentlemen, this is a legislative year in the States. Already your industry and ours is faced with the possibility of new tire regulations in 18 States. Our business is not legislation but the maintenance of our fleets in prime operating condition.

Here is a clear case if ever there was one. If we do not solve our operating problems relating to tires and tubes, we will get a solution imposed on us in the form of legislation. The State has the power to enact laws. Also, if that is not enough to satisfy everyone, the Federal Government can and will enter the field.

Today it is a matter of regrooved tires. Tomorrow something else. The proposed law in Connecticut, generally an advanced State in such matters, will establish minimum safety standards for tires. It will require the commissioner of motor vehicles to promulgate regulations concerning various tire and rim sizes, and tire strength ratings, for identification purposes. The proposed law says, "The designation of tire and rim size shall include, the acceptable minimum of tire cross-sectional and circumferential dimensions which defines a tire of given tire and rim size, shall state the method of measuring such dimensions, and shall include, as a basis of tests only, a recommended maximum load for each tire and rim size, and tire strength rating of a stated inflation pressure, in accordance with the provisions herein * * *."

We are approaching the day when every truck entering my State of Minnesota, would have to stop on the border for an officer to check the tires and he would say, "You haven't got Minnesota tires—this is as far as you can go."

This condition is real. The "economic giant" of the trucking industry can be reduced to pigmy size unless we take intelligent action together on tires. The time for tall talk has passed the time for action is here. To those who want to keep on talking about the technical and engineering difficulties, I'll say, "No thanks, I have been in the rubber plants and I know you have problems, but measure them against the problems of marketing your truck tires and tubes with 18 different State requirements this year and who knows how many in 1966 or 1967."

Consider the technical problems that have been overcome in your industry and ours. We all watched the Gemini flight with a feeling of pride. Here was American "know-how" working with wonderful results. We can do anything we set out to do. First, of course, we have to want to. And as I said, this is the spirit that built our industry. It is unthinkable that we who represent trucking and the rubber industry would fail to take action now that it is clear we must.

We have two choices: take no action and within a matter of months the "economic giant" will find himself restricted here and there by various State tire laws. With each passing year, more such laws. Always, of course, there is the prospect of one big law since the Federal Government now has a very big stake in the highway construction field.

The other choice is the road of truth and the facts. Put the truth about the tire on the sidewall, give us also a table that will explain to us the material you are now using. In the future, new materials will be used, of course, progress and competition will see to that. Let us know the type of tire by clearly marking so. This will avoid mistakes which can result in accidents in respect to off-road

tires, piggyback tires, front tires, driver wheel tires, and special-built trailer tires.

An honest effort from the members of the RMA representing the tire industry has only to arrive at the sizes and to issue an order as the standard. This is the kind of action that will bring about an end of State legislation in the tire field. Frankly, I do not think anything else will.

In respect to tubes and tube failures, immediate action is required. Tubes must bear the manufacturer's name and date of manufacture. The tube must be quality controlled, tested, and guaranteed not to have "hidden flaws" in the seams. We are receiving tubes like that today—tubes with "hidden flaws." To send a truck out on the road under those conditions is inviting disaster. At this moment, I do not think that the State officials are aware of the present tube manufacturing and the dangers sometimes connected with it. Of course, there will be legislative action the moment the condition is made known.

To make my point a little bit more clear, I came here today for action, for an understanding and a decision. We are not asking any more than any other purchaser is demanding, only—what do I get for my dollar? What am I buying? We wish you will continue having a selection of tires all the way from low- to high-price tires as various applications demand so.

The city operation is only a very few miles a year, at very low speed and no heat to speak of. Whereas over the road is different—the steering tires, the tires for the drive wheel as well as trailer tires or piggyback tires.

Various identifications are going to be requested today, and we are not forgetting the O.D. of the carcass on all truck tire sizes, as I know all you gentlemen know.

How long is an inch?

This is my report as chairman of the Regular Common Carrier Tire Study Group. I have tried to present the problem fairly and factually. It cannot be solved by the rubber people alone, or by the trucking people alone. I am confident that we can solve the problems through joint action.

We have very little time—we need action.

Thank you.

Senator NELSON. I wish to read three paragraphs from the letter. He discusses in the beginning the multiplicity of State laws being considered on this problem and the necessity for some kind of uniformity.

On page 6 he states:

The other choice is the road of truth and the facts. Put the truth about the tire on the sidewall, give us also a table that will explain to us the material you are now using. In the future, new materials will be used, of course; progress and competition will see to that. Let us know—

and this is addressed to the tire manufacturer—

Let us know the type of tire by clearly marking so. This will avoid mistakes which can result in accidents in respect to off-road tires, piggyback tires, front tires, driver wheel tires, and special built trailer tires.

An honest effort from the members of the RMA representing the tire industry has only to arrive at the sizes and to issue an order as the standard. This is the kind of action that will bring about an end of State legislation in the tire field. Frankly, I do not think anything else will.

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I want to also submit for the record a statement made by Mr. Harry C. McCreary, Jr., chairman of the McCreary Tire & Rubber Co., In-

diana. Pa. I ask that his statement be printed in its entirety in the record.

Senator HARTKE. It will be a part of the record. I understand that he is here and has requested that he be heard.

STATEMENT OF HARRY C. MCCREARY, JR., CHAIRMAN, MCCREARY TIRE & RUBBER CO., INDIANA, PA., RELATIVE TO THE NEED FOR UNIFORM STANDARD FOR PASSENGER CAR TIRES

The Rubber Manufacturers Association recently published its recommended minimum standards for new passenger car tires. Our company feels that these standards are fine, as far as they go. Their weaknesses are: (1) They are strictly voluntary as far as any compliance therewith is concerned; and (2) they do not incorporate any provisions for regulating maximum tire loadings. We feel that the interests of highway safety would be considerably advanced if the Federal Trade Commission were to adopt and make mandatory: (1) The Rubber Manufacturers Association's minimum standards, and (2) the Tire & Rim Association's load and information tables for passenger car tires, which provide for maximum tire loading weights.

For years, the tire industry has tried to establish maximum tire carrying-capacity weights through the Tire & Rim Association, Inc. These efforts have been largely ignored by Detroit's engineers, who insist upon equipping their new cars with tires which are designed to carry the empty weight of the vehicle, plus "2½" passengers.

One of the quickest ways to ruin a perfectly good tire is to pile onto it more load than it was designed to carry, and then start it rolling down the road. For example, a 7.50 by 14 four-ply-rating passenger car tire carries a maximum tire and rim loading of 1,090 pounds, at 24 pounds inflation pressure. Most tire manufacturers design a safety factor into their tires which will permit them to carry greater loads without failing. Most 7.50 by 14's will carry a 20-percent overload with safety, provided the inflation pressure is kept up to 24 pounds minimum. However, let this overload rise to 50 percent and let the inflation pressure on any one tire drop off to around 20 pounds or so, and the occupants of this particular car are in a very dangerous spot. The worst part of it is that they quite probably don't realize just how dangerous the situation is.

The average new car buyer can probably be pardoned for assuming (wrongly, in some cases) that he can fill up his vehicle with people and baggage, and then drive off—safely. If he had just bought a six-passenger station wagon, he might be surprised to learn that if he put six 170-pound men in it, each of whom has placed his 30-pound suitcase in the back of the vehicle, the tires might be overloaded by as much as 20 percent. If any one tire on this vehicle was underinflated by as little as 4 pounds, a 3-hour turnpike trip, at 65 miles per hour would be a rather dangerous one.

At present, the average car driver is completely uninformed with regard to (1) the maximum rated load for his particular tire size, and/or (2) the empty weight of his car. These two rather important figures are not furnished to him by the vehicle manufacturers.

Our company feels that every new car should have in it a placard, easily visible from the driver's seat, showing the net number of pounds of people and/or baggage that can be put into the vehicle before any tire on said vehicle becomes loaded to the tire and rim maximum.

Then if the driver insisted on piling in more people and/or baggage, he would at least have some "ball park figure" which would indicate the degree of overloading. He would at least know that he was skirting the danger area. As things stand now, the average driver simply doesn't give any thought to the matter, because no one has ever told him that he was placing himself, his passengers, and every oncoming driver in a potentially dangerous situation.

We think it's time somebody gave him some facts.

And speaking of facts, let me speak out in defense of the tire manufacturers. It's a fact of life that in 1964, the automobile manufacturers bought approximately 35 million new passenger car tires. This made them very important customers in Akron. When Detroit snaps its fingers, Akron jumps through the hoop—backward, if necessary.

This fact of life explains why the decision as to what kind of tire shall be put on new automobiles is, and has been for years, made in Detroit. not Akron.

If you are a tire manufacturer, you are not apt to argue very loudly with your biggest customer. You give him what he demands, not what you feel he should have. If you don't like it, he can always get his tires from your competitor, right across the street. So, you give him what he demands. Unfortunately, the car manufacturer is not willing to put his warranty on the tires. This means that you, Mr. Tire Manufacturer, are going to put your warranty on them—and pray that what the Detroit engineers said was good enough will really do the job.

Naturally, Mr. Tire Manufacturer, this gives you some incentive to fight mildly for putting a better tire on all those new cars. But if you put up too hard a battle, your car manufacturer might just take his business across the street. So, you try to get him to put on a better tire. But when it comes right down to the wire, the decision as to what kind of a tire will go on those new cars is made in Detroit.

This decision, incidentally, will determine just how much (if any) of a safety cushion the new car buyer will have, as far as his tires are concerned.

And now, I guess I should speak out in defense of the car manufacturers.

Detroit is probably the only place in the world where a 10-cent saving per tire looks like $3½ million. Ten cents per tire, times five tires per car, equals 50 cents per car. Fifty cents per car, times 7 million cars, equals $3,500,000.

Personally, I can't blame the car manufacturers for trying to save money on their tire purchases. They operate in a very bitterly competitive business, indeed. If Ford can save 10 cents per tire, as compared with what Chevrolet is paying, that 10 cents can become a million dollars in a year's time.

So, let's not "blame" the car manufacturers for trying to stay competitive.

Instead, let's use the Rubber Manufacturers Association's minimum standards and the Tire & Rim Association's load and inflation tables as mandatory figures. Doing this would make it unlawful for any tire manufacturer to sell a tire which wasn't strong enough to carry its rated load. It would also make it unlawful for any car manufacturer to install, as original equipment, a tire which was simply not big enough to carry the load imposed on it when: (1) all the vehicle's seats were occupied by 170-pound people, and (2) there were 200 pounds of baggage in the trunk.

Let's also require the car manufacturers to install permanently a placard in every new car, easily visible from the driver's seat, which gives the net number of pounds of people and/or baggage which can be put into the vehicle before any tire on said vehicle becomes loaded to tire and rim maximums.

These don't sound very earth shaking; but in my opinion, they would represent a major step forward in protecting American drivers from being sold tires (whether as original equipment or as replacements) which are neither strong enough nor big enough to do the job.

Senator NELSON. I ask to have printed a letter dated October 27 from the General Counsel of the Department of Commerce in the record. And I ask that a letter dated January 4, 1965, signed by Mrs. Esther Peterson, special assistant to the President for consumer affairs, also be put in the record.

Senator HARTKE. All of these will be a part of the record.

GENERAL COUNSEL OF THE DEPARTMENT OF COMMERCE,
Washington, D.C., December 22, 1964.

Hon. GAYLORD NELSON,
U.S. Senate, Washington, D.C.

DEAR SENATOR NELSON: Secretary Hodges has asked me to furnish you with the Department's report regarding the effectiveness of the recommended minimum standards for new passenger tires published by the Rubber Manufacturers Association, Inc.

We requested the National Bureau of Standards to make a technical evaluation of those standards. The Bureau responded as follows: "We are not able to comment fully on the Rubber Manufacturers Association's recommended minimum standards for new passenger car tires since we have no experience with the high-speed performance test and limited experience with the tire strength test using a plunger three-fourths inch in diameter. Further, the tire endurance test is not equivalent to the one described in Federal specification ZZ–T–0038ij, since cuts are not placed in the tread grooves and the hours of test are less.

"The minimum cross sections listed in appendix A differ from the corresponding tire sizes by amounts ranging from 0.10 inch for the 8.90 by 15 tire to 1 inch

for the 9.00 by 15 tire and 0.95 inch for the 9.50 by 14 tire. This minimum dimension should be a fixed percentage of the tire size (e.g., 97 percent).

"The breaking energies listed in the last column of appendix A range from 1,000 to 1,300 inch-pounds for the four-ply-rating tires, whereas the load ratings range from 730 to 1,470 pounds. The minimum breaking energies should be proportional to the load ratings and, judging by our limited experience, should be considerably higher. Tire strengths determined on new tires do not indicate potential rapid deterioration in service. We recommend that the tire strength test be made after the endurance test, since some tires markedly decrease in strength with this flexing, whereas most tires show little or no change in strength.

"The Federal specification has a requirement for cut-growth that is not included in the Rubber Manufacturers Association specification. Small cuts are placed in the tread grooves prior to the endurance test. These cuts increase in length during the test, and in some unsatisfactory tires may result in loss of tread. An unsatisfactory tire may pass the endurance test if no cuts are placed in the grooves. In service, sharp stones, glass, and other objects on the highways cause small cuts in the tire tread. If these cuts increase rapidly in length, early failure of the tire results."

It should be recognized that the foregoing comments are based on limited information. An extensive program of testing and evaluating would be needed to produce complete and reliable data on the numerous types and quality levels of tires now available to the public. This would be a costly program. Preliminary estimates indicate that it might cost in excess of $150,000 to obtain the data required for sound technical recommendations.

The industry expects to spend more than $300,000 in implementing the new standards. We also understand that the participants are underwriting these standards by warranties that their products conform thereto.

The standards developed by the tire industry represent a type of self-regulation or self-discipline that has been 60 years in the making. These standards represent a substantial degree of progress. It should be recognized, however, that no standard can provide perfect performance. Protection against such factors as over- and under-inflation, excessive wear, poor alinement, bad driving practices and the like cannot be obtained through standardization.

Industry evaluation of the effectiveness of the new standards in actual practice is desirable. With appropriate consulation with the National Bureau of Standards, we think industry will be in a good position to make further progress in its tire standardization program.

Sincerely yours,

ROBERT E. GILES.

EXECUTIVE OFFICE OF THE PRESIDENT,
PRESIDENT'S COMMITTEE ON CONSUMER INTERESTS,
Washington, D.C., January 4, 1965.

Hon. GAYLORD NELSON,
U.S. Senate,
Washington, D.C.

DEAR SENATOR NELSON: Thank you for your letter requesting information on tire safety. I was very pleased to learn of your interest in this field.

The continuing number of traffic fatalities proves the need for further investigation of tires and some positive action to protect the consumer from any shoddy tire construction and deceptive tire advertising. Perhaps, Federal safety standards such as you proposed in your bill would be the answer.

Another solution to the problem might come from the Federal Trade Commission hearings to be held on January 13 and 14. The fact that such hearings are to be held is further recognition that a problem does exist, and I shall be very interested to learn of the Commission's proposals.

My own experience with tire safety has been limited. I cannot offer you any technical information, but, from the consumer's standpoint, I can tell you that my office receives a great many complaints about faulty tires and misleading advertising. The public wants and has a right to know that what they are buying is safe.

I want to emphasize my pleasure at the national recognition that this problem is receiving and assure you that I will do whatever I can to help in finding a solution.

Sincerely,

MRS. ESTHER PETERSON,
Special Assistant to the President for Consumers Affairs.

Senator NELSON. Mr. Chairman, this is all I have for submission into the record. I think it is perfectly clear that some legislation is necessary to protect the safety of the driving public, and that though this particular piece of legislation may not be the perfect answer, though testimony may indicate that it needs some revisions, I think it is perfectly clear that we will not achieve a standard that will protect the driving public on the highway without some regulatory action.

Senator HARTKE. Senator Nelson, You are to be congratulated for bringing some rather startling news and information to the unsuspecting public. I want to congratulate you for your statement.

Senator NELSON. Thank you.

Senator HARTKE. Senator Prouty has asked me to inform the committee and inform you that he had to attend a Labor and Public Welfare executive meeting. He will return as soon as possible.

I have no further questions.

Senator NELSON. Thank you.

Senator HARTKE. The next witness is the Honorable Paul Rand Dixon, Chairman, Federal Trade Commission. Good morning, sir.

Mr. DIXON. Good morning.

Senator HARTKE. It seems as though you and I are visiting each other quite often.

Mr. DIXON. Yes, sir. I am always happy to be here.

STATEMENT OF PAUL RAND DIXON, CHAIRMAN, FEDERAL TRADE COMMISSION; ACCOMPANIED BY JOHN V. BUFFINGTON, ASSISTANT TO THE CHAIRMAN, GERALD T. McDONOUGH, FEDERAL TRADE COMMISSION STAFF, AND FLETCHER G. COHN, ASSISTANT GENERAL COUNSEL, LEGISLATION

Mr. DIXON. Mr. Chairman, may I introduce my colleagues? To my right is my assistant, Mr. J. V. Buffington. To my immediate left is Mr. Gerald T. McDonough, Federal Trade Commission staff, and to my right is Mr. Fletcher G. Cohn, Assistant General Counsel, for legislation.

It is a pleasure to appear before you to comment on S. 1643, a bill now under consideration which would provide regulations for motor vehicle tires.

The bill would direct the Secretary of Commerce to prescribe regulations establishing minimum safety and performance standards and a grading and labeling system for motor vehicle tires in order that the public will be provided with safe tires.

The bill stipulates that such regulations shall become effective 1 year after the date of enactment and that its enforcement shall take effect between 180 days and 1 year after issuance of the regulations.

The bill would prohibit the manufacture, sale, and transportation in interstate commerce, and the importation into the United States of tires manufactured on or after the effective date of the regulations which did not comply with them. Criminal penalties are provided for willful violation.

Prior to making specific comment on the bill under consideration, I believe that it may prove useful to refer to some background information we have relative to the current nature of the tire industry.

The tire manufacturing industry is an integral part of our national economy, since the automobile has long since become far more than a mere luxury item for the average American family. Cars today, traveling as they must on tires, are higher powered, traveling farther distances at higher sustained speeds, and carrying greater loads on our ever-growing system of improved superhighways.

To meet this consumer need, the 14 domestic tire manufacturers are producing passenger car tires at an annual rate of well over 100 million. Statistics at our disposal reflect that in 1964, approximately 42½ million original equipment tires were placed on new automobiles, and that over 87 million new tires were sold in the replacement passenger car market.

In addition, it is our understanding that 35 million retreaded tires were sold in the replacement market during 1964. It is also estimated that there were 288 million passenger car tires in use at the close of the year 1964. In view of these staggeringly large totals, it is clear that the pricing practices, guarantees, quality, and safety of tires are all matters of considerable concern to the public.

In addition to the aforementioned 14 domestic tire manufacturers who market tires under their own brand names, we are informed that there are, at present, approximately 120 private label tires available in the replacement market, and a total of over 940 different tire names from which the consumer may choose.

The Commission has been aware, for some time, of the ever-mounting degree of public interest in the subject of traffic safety. The increasing number of interstate highways with higher speed limits, the ever-increasing number of automobiles and drivers making use of these highways, and the annually mounting toll of deaths, injuries, and property damage on our roads have resulted in a growing awareness of the need for remedial measures in the area of traffic safety.

During the past 5 years, this public concern has been increasingly focused on the relationship of tire safety to the overall problem of traffic safety and has been evidenced by legislative activity on both a State and Federal level; by industry and trade association activity; consumer communications; and the spate of articles which continue to appear in the trade and public press.

Activity seeking solutions to this national problem is currently in progress on Federal, State, local, and private levels. For example, during 1962, the National Tire Dealers & Retreaders Association applied to the Department of Commerce's Division of Commodity Standards for assistance in the formulation of voluntary safety standards for tires.

Several meetings were held and attended by dealer and retreader representatives, engineers representing tire manufacturers and Bureau of Standards personnel, but the project was apparently abandoned because of the inability of the various parties to reconcile their views.

In the latter part of 1963, 31 States joined together to form the Vehicle Equipment Safety Commission to recommend codes or other regulations embodying performance requirements for vehicle equipment.

In New York State, the Joint Legislative Committee on Motor Vehicles and Traffic Safety conducted a series of hearings during 1963 and 1964 which culminated in the introduction of proposed legislation which would have established mandatory minimum safety standards.

This proposed legislation, which was opposed by the Rubber Manufacturers Association and the Automobile Manufacturers Association, failed of passage in March 1964.

In apparent response to this flurry of legislative interest, the Rubber Manufacturers Association (RMA), which represents all the domestic tire manufacturers, announced on July 1, 1964, the adoption by all domestic tire manufacturers of a set of minimum safety sandards. This action was supplemented in August 1964 by RMA's adoption of a voluntary compliance program entailing certification and testing procedures.

As you are aware, the Federal Trade Commission held hearings relating to the marketing of automobile tires on January 13, 14, and 15, 1965. The matters which were the subject of this hearing were:

(1) Price advertising;
(2) Pro rata guarantees;
(3) Grade and quality;
(4) Tire safety; and
(5) Tire size, which has a definite relation to the subject of tire safety in general, and specifically to the problem of overload, another factor relating to tire safety.

Testimony adduced at the recent Commission hearings on tires confirmed the existence of a substantial belief on the part of the public as to the need for minimum safety standards for passenger car tires and as to the inadequacy of current RMA voluntary minimum standards to satisfy that need.

At the hearing, the need for safety standards was urged by the National Tire Dealers & Retreaders Association, several State agency heads or officials entrusted with traffic safety responsibilities, a tire manufacturer who is an RMA member, the director of an independent testing laboratory, tire dealers, retreaders, tire users, and a consumer publication.

The head of the Rubber Manufacturers Association also testified as to the industry's concern for tire safety and its awareness of its responsibility to produce and supply a safe product. However, the RMA's position, urged also by individual tire manufacturers who testified, was that the recently promulgated RMA minimum standards adequately insure that all new tires are safe tires.

It should be noted that the RMA standards are patterned on the existing Federal specifications for passenger car tires, but in the opinion of Bureau of Standards personnel are less severe in their requirements and test procedures.

It should also be noted that the Federal specifications was originally issued in 1930 and has undergone 10 revisions, the last of which occurred in 1959. It is our understanding that the original specification and all the revisions were based on work done by the National Bureau of Standards prior to 1953.

Our hearing contains substantial testimony as to the inadequacy of these RMA standards. The record contains statements by technical experts, inside and outside the Federal Government, that these standards are inadequate in certain respects, that they fail to reflect current performance demands on tires, and that they are in need of revision.

The specific safety problems which were developed at greatest length during our hearing relate principally to the matters of tire

size and the so-called practice of overloading, which are interrelated. Overload is the situation which exists when the curb weight of a vehicle plus the designed load capacity in terms of passengers and luggage exceeds the load-carrying capacity of the tires with which the vehicle is equipped.

The matter of tire size is directly related to the overload problem in that, all other things being equal, the size of the air chamber and the amount of inflation pressure therein determines the amount of load the tire can bear.

It is our understanding that the danger of overloading tires is the result of the heat buildup in the tire which results from constant flexing of the walls of the overloaded tire.

Heat, the enemy of a tire, weakens the fabric in the rubber and saps the strength of the adhesive which holds together the various layers of fabric and rubber, or other material, of which a tire is made.

Overloading, at best, will result in shortened tire life, and, at worst, in tire failure, property damage, personal injury, or death.

Our record contains a number of statements to the effect that many original equipment tires mounted on new cars are inadequate to safely carry the passenger and baggage load the vehicle is designed to carry.

One tire manufacturer stated that—

> over the years, vehicle manufacturers, in an attempt to cut costs, have cut down the amount of tire they are designing onto their vehicles, and that some vehicles are overloaded when they are empty of passengers or baggage.

Our record also reflects statements by tire industry engineers that the tire load capacity standards published by the Tire & Rim Association which, until the publication of their annual 1964–65 yearbook, have always been characterized as "maximum tire loads" were really representative of load ratings based upon average passenger loadings and do not represent maximum tire loadings. These load ratings are used by automobile and tire manufacturers as the basis for selection of original equipment tires for new cars.

At our hearing, one tire industry representative testified that:

> For example, with a six-passenger sedan, the weight of three passengers is added to the curb weight of the vehicle to determine the load that is to be used to select the tires.

Also included in the record are statements by RMA representatives that tire size designations which are customarily represented in dimensional terms are not intended to precisely define a tire's dimensions, but are merely approximations.

There were also allegations by a trade association representing independent tire dealers and retreaders that the practice of undersizing tires both as to section width and outside diameter was engaged in by manufacturers in order to cut production costs and lower tire prices.

The Commission is not, at this time, in a position to evaluate precisely all of the testimony and written submissions offered during its tire hearing. In most instances, such an evaluation would require the availability of extensive and in-depth tire testing facilities and procedures relating to a wide variety of factors which have bearing on the questions of tire safety, grade, and quality.

The necessary facilities and procedures, and the current knowledge and controlled laboratory experience required to perform and evaluate

these tests are not, at present, as far as we have been able to determine, available to the Federal Government.

However, it is our opinion that an overall study of the public record of the Commission's proceeding is supportive and illustrative of the current need for technically sound tire safety standards which would insure the new car owner and the replacement tire purchaser that his tires possess certain minimum safety qualities, regardless of the price paid for the tires.

With respect to the matter of tire grade and labeling and its relation to the grading and labeling system" which is provided for in the bill under consideration, the testimony received during our proceeding indicated that a great deal of consumer confusion and deception exists as a result of the "line," grade, and quality representations and claims currently used in the marketing of tires.

We believe confusion and deception are the results inherent in the existing situation where the approximately 950 different tire names currently marketed represent the products of approximately 120 private label marketers and 14 tire manufacturers; where tires may be designated as to quality, that is, "premium," "first line," "second line," et cetera, regardless of the tire's inherent quality or safety; where the price of the tire has no discernible relation to its quality or safety level; and where many of the descriptive terms employed, such as ply rating, 100 level, and other grade designations, have no real meaning or definitive value in the absence of uniform standards.

Testimony adduced at the hearing reflects that one manufacturer's "first line" tire may be inferior to another manufacturer's "third line" tire; and a manufacturer may supply a tire represented by him as a "third line" tire to a private label marketer who is free to designate it as his "premium" tire.

The testimony received also pointed up the fact that a very substantial degree of difficulty may well be involved in any attempt to develop grade, quality, and labeling standards. The testimony at the Commission hearing was conflicting in this regard.

Tire industry spokesmen, who commented on the matter of grade and quality standards, testified to the effect that—

(1) The development of such standards would be extremely difficult if not impossible of achievement, because of the complex technology of tire manufacture involving so many factors and characteristics, and combinations thereof.

(2) That such standards would be impractical because the delineation or specific definition of the various grades of tires involves a subjective judgment stressing certain factors or performance characteristics, and that the resulting grade definitions might not be suitable or adequate for individual tire users.

(3) That such standards might tend to freeze the industry's technology.

On the other hand, the record also reflects technical testimony to the effect that such standards—

(1) Would be technologically possible, the speed of achievement depending upon the degree of industry cooperation, and the facilities, manpower and financing made available in the event of Federal Government participation.

(2) Would help to dispel unfair marketing conditions such as are currently prevalent.

(3) Would assist tire manufacturers and dealers in clearly describing and defining the superior qualities of their products.

We have not completed our analysis of the available data respecting problems of grade and quality to enable us to make a judgment now on whether a grading and labeling system is either necessary or desirable.

On the other hand, some of the present consumer confusion and deception, which became evident during our hearings, engendered by the proliferation of tire names and grades currently offered in the marketplace, and their "first line," "second line," and comparable advertising may be susceptible to correction through customary Federal Trade Commission procedures.

In summary, the Commission supports Federal legislation looking toward the development of minimum safety tire standards by the Department of Commerce.

Once such standards are promulgated by the Secretary of Commerce, the Commission believes that the administration and enforcement of the bill would be immeasurably strengthened if the bill included provisions comparable to those of the Flamable Fabrics Act. In that act it is provided that there are both criminal and civil procedures—both approaches, instead of, as in this proposed bill, just one approach.

We would also like to point out that the present bill is addressed in a general fashion to "motor vehicle tires." The term "motor vehicle" is defined therein as including "* * * any vehicle or machine propelled or drawn by mechanical power and used on the highways."

As we interpret this provision, the bill would include the development of safety standards and grading and labeling for tires designed for such diverse vehicles as tractors, road graders, earthmovers, trucks, buses, motorcycles, and others.

Since our proceeding was specifically limited to automobile tires, we have no information as to the need for standards on these other varieties of tires designed for use on other types of vehicles.

Although S. 1643 would impose criminal penalties on willful violators, it makes no specific provision for regulation and enforcement. In the absence thereof, it would appear that enforcement would fall within the purview of the Department of Justice.

We suggest that consideration be given to providing, specifically, that enforcement responsibility be assigned to an agency which has the necessary experience and facilities to conduct a continuing enforcement program, which might include a program of inspection and testing.

We also feel that the rather general language of the bill in referring to "a grading and labeling system" would permit a number of approaches to the development of such a system which could be of a markedly different character. It is suggested that consideration be given to describing this "system" in more definite terms.

Another suggestion we would make for the consideration of the committee is that a bill requiring the labeling of tires should have specific provisions as to the party or parties responsible for such labeling.

This would be similar to the requirement in the Wool Products Labeling Act, which the Commission administers, 15 U.S.C. 68(c), wherein the manufacturer is the party responsible for affixing the label to the wool product.

I would like to state that the Commission is currently considering what steps it can take, based upon the public record in our hearings, to eliminate consumer deception with respect to a number of current practices employed in the marketing of automobile tires, including the matters of tire safety and grade and quality designations.

I trust that my remarks and suggestions will be helpful to this committee. May I reiterate that the Commission is intensely interested in tire safety, and that the staff of the Commission, at all times, is ready to cooperate with any members of this committee in advancing automobile tire safety.

Senator HARTKE. Thank you, Mr. Dixon.

Mr. Nelson is not a member of this committee, but since he is the sponsor of the legislation, I am going to ask if he has any questions.

Senator NELSON. On the tire standards, am I correct that the standards of the Rubber Manufacturers Association are not compulsory?

Mr. DIXON. They are not, sir. They are voluntary.

Senator NELSON. As I remember from your testimony, the industry has said that labeling and so forth are impractical and would affect the development of tires or changes in tire quality or improvement.

If the tire industry were required to have the tire reflect the actual size that is on the side of the tire, do you see any way that that would inhibit the development of the tire industry?

Mr. DIXON. I have a very difficult time seeing how truth can inhibit anybody's development.

Senator NELSON. I take it, for example, that the weight load that it can bear could be put on the tire, without inhibiting tire development. Also an accurate description of whether it is their first-, second-, third-, or fourth-line tire could be put on that tire, could it not, without inhibiting the development of the tire industry?

Mr. DIXON. This could be done if it did not add to confusion. There is a problem in my opinion and in the opinion of my fellow commissioners when you get into what you call grade and quality.

I think here, Senator, as I read your bill, what it is aimed at is to remove confusion. Probably there are many avenues open to doing this. One of them certainly would be to just set up some ironclad grades that they all had to fall in. This, in my opinion, if it did not interfere with future development and competition among the manufacturers, would be a good purpose.

If it can be accomplished another way, I think it should be explored. But that is separate and apart from minimum safety standards. We are not talking about that when you or I go into the marketplace to replace a tire and what we are subjected to when opening up any of the daily newspapers and find there is a tire sale going on every day somewhere, and we set out to find out what we are going to get.

You may sit down and say, "I have this automobile, this tire came on this automobile," and if you will follow that practice, you want one just like it, then as I understand the procedure, you will be getting what is called a first-line tire. This is what is generally known to happen in the industry. Whether the public knows that or not, I don't know. You would be seeking the replacement of an identical tire.

But if you read the paper, "first-line" could mean anything. And most people are looking for bargains. So if they are looking in the paper and they see a two-for-one, or a special sale of a first-line tire for

$16 or $17 plus tax, you should know that you just don't get bargains like that.

You go down and say, "I want one just like this," and the fellow will look in the book, and he tells you the suggested price or gives you whatever he wants off of that.

Senator NELSON. Anyway, where the buyer can get a tire safely for his automobile, is there any way he can go into a retail tire shop and take a look at the tire and find out what weight it will bear and know what weight his own automobile is, and if he happens to be one who travels cross country with a full load at high speed, can he find out what is the best tire for that automobile? Can the ordinary citizen find that out?

Mr. DIXON. If he were an ordinary purchaser, he might not. If he were a discerning purchaser, from what I heard from the tire manufacturers, if he would go to one of their dealer outlets, that sells nothing but tires, and said: "I want to see the book, I want to see the specifications, I want to be told," he might be able to be confronted with that information.

But an ordinary purchaser doesn't know any more about tires than they do about flying to the moon. What he wants is a tire on his automobile, one that is recommended for his automobile, and at the cheapest price that he can get. I don't believe the ordinary purchaser asks much more than that.

Senator NELSON. Did I understand you to say that if he went to a manufacturer's outlet and demanded to see the book, that the retail outlet has a book from the manufacturer that gives the pounds that that tire will carry and so forth?

Mr. DIXON. They don't go into that depth, sir. I know of no book that goes into that depth on how many pounds it will carry. It goes into the description of the tire, how it is made, and what it generally is recommended for.

But a firstline tire, according to what we heard, even on a new automobile—and if you will take the Tire & Rim Association's recommendations you will find some of the new automobiles that are coming out are recommended to carry only 200, 300, or 400 pounds. To the average person that means three good-sized men will overload the automobile.

Senator NELSON. Is there any practical way for the ordinary purchaser who goes to a little retailer to get informed about this?

Mr. DIXON. No, sir; unless he takes Consumers Reports. They come out once or twice a year with this. If you are one of the small number who take that magazine, you might read it, and that might mean something to you. But you would have to be directed to the particular column to know what to look for there.

Senator NELSON. And to be sure you weren't on vacation when that particular edition arrived at your home.

Mr. DIXON. That is correct, sir. I think the average consumer, Senator, expects that the tire on his car—like one of our Commissioners, who has a station wagon—expects to load it up with all of his kids and take out in the summertime and go up to Cape Cod. He expects it to give him a safe ride. The tire on his car wasn't recommended for that.

What I heard would lead me to believe that if anybody is buying a new automobile, the first thing he would ask the dealer is how much

it will cost me to oversize that tire on this car. And he ought to put them on there.

Senator NELSON. The testimony, as I recall it—including the testimony of the hearings that you conducted in the Federal Trade Commission, and the letters we have received, and testimony elsewhere—the station wagons are being tested, as you said a moment ago for 2½ people. When you get six people in, with their luggage, the tire is overloaded.

Do you see any problem in establishing a standard, and enforcing it that requires the automobile industry to install a tire so that if it is a nine-passenger station wagon it will carry a full load safely? Is there any regulatory problem that makes it impractical?

Mr. DIXON. I see none. I see none for setting the minimum standard, and this is what this bill is talking about, is a minimum. I see practical problems of inspection and beyond that. But I think that you must start somewhere when you are talking about safety. And I think the best place to start is with the manufacturer who introduces things in interstate commerce. Right there is where you should start.

That doesn't mean that you or I couldn't buy a brand-new car with good, safe tires on it, and either you or our wives drive along the block and whack up against the curb and we would be in trouble beyond that point. But at least we would start out with something.

Senator NELSON. The testimony before the Commission that original equipment tires are not adequate for the purpose, has that testimony been refuted at any place by the automobile industry, or answered?

Mr. DIXON. No, sir. I think our record is pretty concrete. I think I have given a fair summary of what we listened to there.

Senator NELSON. Since that testimony went into the record and received wide circulation in the press, has the automobile industry or any of their representatives contested the statements that were made?

Mr. DIXON. I am informed by the staff that after the record was closed for oral testimony, but remained open for written statements, industry informed the Commission, and what they stated is part of the record that they are working toward some maximum standards for overload—they are working toward it now.

Senator NELSON. But the testimony that went into the record saying that a nine-passenger station wagon was being load tested with three passengers and no luggage, and that this was the tire that was being installed as original equipment—two-ply—four-ply rated tires—has not been refuted by the automobile industry?

Mr. DIXON. I don't know of any that is refuted.

Senator NELSON. Mr. Dixon, what I gather from your testimony, however, is that you indicate some reservation as to what action you recommend.

You indicate also that you had not completed your survey. Is this because you do not have the staff available to do this? Or is it due to a lack of legislative authority to proceed?

Mr. DIXON. I think the main problem here is that we have no hallmark from which to work. We have no dependable hallmark.

Under present law, as you know, Mr. Chairman, there is a procedure set up for the adoption of what you would call voluntary standards. I gave you the history of how the history of how the voluntary stand-

ard that we presently have developed. It would appear not to be current. It would appear not to be entirely dependable.

We do not have any testing facilities. If you commanded in a piece of legislation that we establish standards, we could do it. But we would have to turn to, I would say, the Bureau of Standards, as the technical expert to conduct the test.

Once that factor is passed, it seems to me the rest of the factors will be easy to deal with. Many of them, I think, we can possibly deal with, such as deception right now, which arises from a failure to reveal. I think we can do some good here.

On the question of guarantees that are confusing, I think we can possibly do something here, on the question of pricing, fictitious pricing, that is, any of those general deceptive areas, I think we can do a lot about them.

Whether we can finally——

Senator HARTKE. Let's stop there, Mr. Chairman. Have you taken any action in any of these fields? Has there been any action instituted by the Federal Trade Commission in this field in which you, at the present time, do have the legislative authority to proceed?

Mr. DIXON. We have not, because we are presently undertaking to bring together the record of the hearings, analyze them, and from that point we are going to proceed. We have many ways. We may do it by guide, by statement. We have outstanding guides, and they have done some good. But still, we do not know exactly what good they have done. These problems popped up to such an extent that we had hearings.

Senator HARTKE. This is a relatively new field you are in and you have not proceeded far enough to even take the initial steps to determine whether or not there is deception in pricing, in guarantees, and in quality. Is that true?

Mr. DIXON. I wouldn't say we haven't proceeded far enough to know there is a problem. We are looking for a proper approach to do it across the board.

Senator HARTKE. You feel that there is a problem of such magnitude as to require action?

Mr. DIXON. That's correct, sir. That is the purpose of our hearing. But our hearing encompassed, also, and we listened to, the tire safety factors. Full well, when we were listening to them, I think we have inherent in our powers that if someone were to say we have a $8.75 tire that is as safe as any, that is a misstatement and we can prove this. We don't know yet what is a safe tire, nor do I think anybody else does.

Senator HARTKE. You have several factors—the guarantees, the pricing and safety. You have also the question of size.

Do you feel that the question of size is a difficult technical matter?

Mr. DIXON. I think it is a highly technical matter, and it is difficult. Because I have always thought, until these hearings came along, that this was a way of just reading 7.50 by 14, as Senator Nelson said. This was definitely supposed to mean something.

But today various manufacturers have different approaches as to what 7.50 by 14 means—7.50 means, I think, the measurement through the widest cross section of the width; 14 is the rim, I suppose, on which it is mounted.

But there is a low-profile tire coming out now. Just the other day, on my own automobile, I had this happen to me. I won't name the type of tires, but I changed my snow tires finally. I rolled the two tires out to get them put on. One of them was much higher than the other, and they were the same tires.

Senator NELSON. You mean the same description and size?

Mr. DIXON. The same description of the tires. But there was, even without any inflation, it was noticeable to me that there was a difference. I would say, if you rolled them, the height of the tires was different.

Senator HARTKE. That much difference?

Mr. DIXON. It was quite noticeable. I will tell you, it was more than that [indicating]. It scared me.

Senator HARTKE. Let me ask you this: in this field of course, we come into certain legal doctrines which are pretty well established. For example, the case of *MacPherson* v. *The Buick Motor Company* involves an implied warranty of fitness for use. Do you feel that this is not sufficient in this regard?

Mr. DIXON. Not fit for use? I didn't understand the question.

Senator HARTKE. There is a legal doctrine that an item which is sold carries with it an implied warranty that it is fit for the use for which it is sold. Would this not apply in most of these fields if there had been a case? Could there not be a legal suit instituted by the person?

Mr. DIXON. It certainly is an invitation for the suit. We heard some testimony about deaths that result from tire accidents, and failure to have adequate inspections to know what caused the accident.

When you are going 70 miles an hour, if you hit somebody head on, do you know whether the tire blew out before you hit him or after? You don't always know.

Senator HARTKE. I don't want to suggest that the implied warranty is an item of sufficient magnitude to prevent this difficulty. What I am pointing out is that there are legal doctrines which are available. There is caveat emptor—let the buyer beware.

Mr. DIXON. We buried that one in 1938, the Congress did, with the passage of the Wheeler-Lea amendment.

Senator HARTKE. That's right. These doctrines are not sufficient in your opinion, is that true?

Mr. DIXON. That's correct, they are not. They are never sufficient to take care of the mass public.

Senator HARTKE. And the idea of a little bit of puffing could lead to death or injury.

Mr. DIXON. It certainly didn't occur to me until this problem started building, before we announced our hearings. Just like a drug product, which is a very wonderful thing under proper circumstances. It must be safe, and Congress has gone to great extents to see that the products are safe.

Senator HARTKE. You mentioned inspections. Would you envision that there would be Federal inspectors, for example, if such legislation were passed, in all of the plants which manufacture automobile tires? Would it be spot inspection or continuous inspection?

Mr. DIXON. We now have many inspectors to carry out our obligations under the Wool Products Labeling Act and the other acts. I think we have done a very fine and adequate job here.

I think if we were to occasionally call on them to see their practices, to see if they are properly marked and labeled, that would be commensurate with sound enforcement of such a law. But inspection in the sense of road testing, no. I am talking just about the labeling.

Senator HARTKE. You say there are 14 domestic tire manufacturers, and there are 120 private label tires available with 940 different tire names. What type of staff would be needed for an adequate inspection of that type of operation?

Mr. DIXON. I don't think a great deal more than we have.

Senator HARTKE. What do you mean?

Mr. DIXON. You don't have to call on them every 20 minutes. You don't have to do that.

Senator HARTKE. What do you mean by not a great deal more?

Mr. DIXON. Before I said how much money it is going to cost, I would want to go back and very carefully evaluate that, rather than shoot from the hip. But I frankly don't think that fitting this into our regular type of inspection in the field on the manufacturer, wholesaler, or retail level, wherever we found it, would be too difficult.

Senator HARTKE. When you do have a little extra time, would you make a determination as to what you think would be involved, based on an examination of your staff and the best judgment you could give us, and supply that for the record?

Mr. DIXON. We certainly will, sir.

(The following was submitted for the record:)

FEDERAL TRADE COMMISSION,
Washington, D.C., June 2, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Commerce Committee,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: During my appearance before your committee on May 25, 1965, on S. 1643, Senator Hartke, the presiding chairman, asked that I furnish the committee my estimate of the costs which would be incurred by the Federal Trade Commission if it were assigned administrative inspection responsibilities in connection with the enforcement of the proposed minimum tire safety standards.

I am sure the committee realizes that, in the event S. 1643 is passed, it will be necessary for moneys to be appropriated for use of the Department of Commerce to properly outfit a laboratory with the facilities and technicians necessary to develop minimum tire safety standards. I am unable to make an estimate of this cost. Assuming that the facilities and technicians obtained by the Department of Commerce for the development of the standards are continued and that moneys are provided to that Department for operation of these facilities, it is my estimate that the Federal Trade Commission could carry out the tire safety inspection responsibilities as required by the act for approximately $250,000 per annum. I reiterate that this is based on the assumption that the Federal Trade Commission would have at its disposal the testing facilities in the Department of Commerce and want to emphasize that we could not perform these tasks at this estimated figure if it were necessary for us to reimburse the laboratory.

If S. 1643 is passed and includes not only a requirement for the establishment of minimum safety standards but also a requirement for the establishment of grade and quality standards, the overall cost of administering the act will be greater, especially with respect to the expense of testing.

If the grade and quality standards must be met for each grade of tire, then, obviously, testing would be required for each different grade.

With kind personal regards, I am

Sincerely,

PAUL R. DIXON, *Chairman.*

Senator HARTKE. Are you acquainted with the organization known as the Vehicle Equipment Safety Commission?

Mr. DIXON. That is the one I referred to, the State compact group.

Senator HARTKE. That's right. They issued a release under date of May 22. They issued the first regulation covering performance requirements for new tires for passenger cars and station wagons. Have you examined that regulation?

Mr. DIXON. I asked my staff to look at that. The tentative advice I have now is that they see very little difference between the standards that they have adopted and the Rubber Manufacturers Association standards. I don't know whether this is true or not. They say they see very little difference there.

Senator HARTKE. Senator Nelson?

Senator NELSON. The bill that is pending before us is quite general. The essence of it is that the Secretary of Commerce would be authorized to establish grade labeling and safety standards.

Mr. DIXON. Yes, sir.

Senator NELSON. Would I be assuming too much if I suggested that it may very well be practical and quite likely that the manufacturers, the truckers who are big users, the automobile industry, the retail tire dealers, and the Secretary of Commerce representing the public, could, as a practical matter, on a kind of continuous dialog over the years, attempt to come to agreement as to what is practical today, what is sensible, how the tires ought to be tested and what standards ought to be established, and therefore make it a cooperative venture, using all the knowledge of the people who sell the tires and the truckers who use the tires and the manufacturers who equip them, and the automobile manufacturers who equip the automobiles, and the rubber manufacturers, plus the Secretary of Commerce representing the public, as well as independent safety experts.

My question is, wouldn't that be a practical approach to the establishment of standards and enforcement?

Mr. DIXON. I think any time you try to arbitrarily establish a standard without full cooperation at all levels, in the first place, you may never get anything worth while, that is, unless you can get this cooperation.

I think industry, if they feel that they have to do it, will come forward and they will offer their best, and I think something good will come from it.

My problem, one thought I was trying to make here, was to separate the two—grade and quality—from safety standards. I would visualize that if your bill was passed just requiring the development and establishment and enforcement of minimum safety standards, and let this be the first piece of legislation, what effect would that have? I would imagine that every tire, no matter what its cost, would disappear, that didn't meet that standard. That would be minimum safety. Nothing on the road, nothing manufactured that didn't meet that.

Now beyond that, I think that industry then would be engaged in competition in selling what you might call supersafety, premium safety. And I know of no one that would not think that is a good idea, although I know today, if you want the safest of all tires, if you will ask any of these tire manufacturers who are going to be here what it will cost you, it will cost you quite a bit of money to get you such a tire, the best tire that Goodyear or Firestone makes, or U.S. Royal, or Goodrich.

You ask them the question, what is the difference in the price between that super-super-duper-duper-safe tire and that first-line tire, and I will tell you, if you want to find it out, it is money. That is what it is. You get just what you pay for.

[Laughter.]

Senator NELSON. When you say, as the bill does, "minimum safety standards," it was not my intent, and I don't think as a practical matter it would be anybody's intent to interpret that to mean that every tire manufactured for a six-passenger light automobile, say, would be the same as the one manufactured for a heavy six-passenger Cadillac, Buick, or something else. In other words, the minimum safety standard is the minimum safety standard for the purpose for which that tire is intended to be used.

Mr. DIXON. That's right, sir.

Senator NELSON. Therefore I am not suggesting—I certainly wouldn't suggest that you won't have a great variety of tires on the market.

But suppose I go to the retail tire dealer and say I have a second car, and it is a light Ford, Plymouth, Chevrolet, preferably Ambassador, Rambler in my State, and the only intent of the use of this car is for my wife to drive it to the grocery store and drive it around town, it will never go out on the highway any distance at 60 or 70 miles an hour fully loaded. What is an adequate tire, safe tire, for that purpose?

Mr. DIXON. They will tell you an $8.95 tire.

Senator NELSON. It may very well be adequate for that purpose. The consumer ought to be able to be informed. If he goes in and says: "I travel cross country, taking my whole family on camping trips, and intend to travel 2,000, 3,000, or 4,000 miles in the summer at 65 or 70 miles an hour, what tire do I have to have for that?"

You would have a minimum safety tire for that purpose, and a minimum safety tire for in-town driving, and a minimum safety tire to meet the purpose for which the vehicle is intended to be used. Is that not the proper interpretation of minimum safety?

Mr. DIXON. That is one way to approach it, sir. That is one of the problems that seems to permeate this industry. I think that they are making tires just like you are describing today. I think today, if they would describe their tires in great detail, and say we have our cheapest tire, after everyone has one, it is a tire made to serve just the purpose you describe, that second or third car used to go to the grocery store and back, it never gets over 35 or 40 miles an hour, never is it used for any extensive trip where heat would build up. That tire, for that purpose, would be safe.

But if your daughter or your son took that car and told you they were going to the grocery store and got out on the highway and took out somewhere, would it be safe? There is your problem.

Senator HARTKE. We have heard the testimony of the Chairman of the Federal Trade Commission. He has completed his testimony and his statement. Senator Bass, do you have any questions?

Senator BASS. I was just trying to briefly go over his statement to see what he said. Being a fellow Tennessean I know that what he said is backed up with a great deal of facts.

Mr. Chairman, I welcome you before the committee again. I don't have any questions right now because I haven't had a chance to absorb his statement.

Senator HARTKE. All people from Tennessee are fine people.

Senator BASS. Yes, sir.

Senator HARTKE. As well as from Indiana and Wisconsin.

Mr. DIXON. I appreciate those kind remarks.

Senator HARTKE. Thank you, Mr. Dixon.

Mr. DIXON. Thank you, sir.

Senator HARTKE. The next witness will be the Honorable J. Herbert Hollomon, Assistant Secretary for Science and Technology of the Department of Commerce.

Good morning, sir. We are delighted to have you with us.

STATEMENT OF J. HERBERT HOLLOMON, ASSISTANT SECRETARY OF COMMERCE FOR SCIENCE AND TECHNOLOGY; ACCOMPANIED BY GORDON A. CHRISTENSON, ASSISTANT GENERAL COUNSEL, DEPARTMENT OF COMMERCE; DAVID M. BALDWIN, BUREAU OF PUBLIC ROADS; AND DR. ROBERT STIEHLER, NATIONAL BUREAU OF STANDARDS

Dr. HOLLOMON. Mr. Chairman, I would like to introduce my associates with me this morning. On my right is Dr. Stiehler, of the National Bureau of Standards. On my left, Mr. Gordon Christenson, Assistant General Counsel from the Department of Commerce. And on his left, Mr. Baldwin, from the Bureau of Public Roads.

I appreciate the opportunity to appear before this committee on this bill now under consideration regarding motor vehicle tires.

The bill would require the Secretary of Commerce to prescribe regulations establishing minimum safety and performance standards and a system of grading and labeling for motor vehicle tires, with the objective of providing safe tires for the motoring public. The bill would require regulations to be issued within 1 year after enactment of the bill and enforcement of these regulations to take effect between 180 days and 1 year after their issuance. Any subsequent amendments to the regulations would become effective only after a similar period of notice. The bill would prohibit the manufacture, transportation, or sale in interstate commerce and the importation into the United States of tires that were manufactured after the effective date of the regulations and did not comply with them. Criminal penalties would be imposed on willful violators.

In many respects, the bill is similar to Public Law 87–367 of September 5, 1962, and Public Law 88–201 of December 31, 1963, which direct the Secretary of Commerce to promulgate minimum safety standards for hydraulic brake fluids and for motor vehicle seat belts. Both of these acts require mandatory Federal safety standards to protect the public. Both provide criminal penalties for those who knowingly produce, import, transport, or sell substandard brake fluid or seat belts. These acts have no requirements for grading and labeling, however.

The Department of Commerce strongly favors national tire safety standards and an adequate system for tire grading and labeling. We

believe the Federal Government has a public responsibility not only to provide for the construction of safe Federal highways but also, increasingly, for the safety of vehicles traveling on the highways to reduce the number of tragic deaths and injuries resulting from accidents. Since tires, as well as brakes, seat belts, and other components, play a very important part in safety on the highways, it is essential that we have sound tire safety legislation, both Federal and State.

Through the Vehicle Equipment Safety Commission, established by compact in 1963, at least 37 States are now cooperating to improve highway safety by promoting uniform safety standards for vehicle equipment. Only a few days ago, on May 22, the Commission issued its first regulations. These were performance requirements for new tires for passenger cars and station wagons. The States must now act to adopt the regulations.

But the scope of the Commission's work is limited and does not satisfy the national need. I do not want to criticize what the Commission has done because its new tire standards, for example, are an improvement on existing industry standards. However, I do want to point out some inherent weaknesses in the Commission's jurisdiction and power. Perhaps most important, the Commission cannot undertake laboratory research and testing for vehicle equipment safety. It can recommend research or rely on industry's or Government's. It can let contracts for a Government agency. But it has no authority for its own research program. Nor can it enforce the regulations it issues or require all States to adopt them.

These limitations let us see more clearly that a national need exists for a national tire safety standards program. To meet the need, effective tire safety standards legislation should be enacted, we believe. Before spelling out the possibilities for legislation and giving our recommendations, let me first set the backdrop of the problem of tires and highway safety. Next I shall identify the existing tire standards, how they have been developed and some of the problems in improving them from a safety point of view. Then we can talk about what legislation would be desirable in a more meaningful way.

With the steady progress in the completion of the Interstate Highway System and State construction of other highways permitting sustained high speed, the conditions under which the modern tire is used are making it daily a far more critical component of a vehicle than it formerly was. Developments in vehicles also have contributed to the increased performance demands on tires. The technology of the tire industry has made great strides toward meeting these demands. However, an undetermined portion of tires available to the public may not only fail to meet these rigorous demands but may also pose a positive danger under far less stringent conditions than high-speed travel on the highways.

It is very difficult, and I think this constitutes one of our most severe problems, to determine the exact contribution of tires to the highway safety problem. Accident records are not usually sufficient to provide complete and accurate information about the mechanical failures contributing to accidents. In reviewing traffic accidents on turnpikes during 1962 and 1963, we note that tire failure was a contributing factor in 5 percent of all accidents and in 7 percent of fatal accidents. An 18-month study, beginning in the year 1952, of accidents

on the Pennsylvania Turnpike indicated that, of the 3,118 total accidents studied, 13.5 percent or 233 were determined to be the result of vehicle failure. Eighty-five or over one-third of the vehicle failures were attributable to blowouts or soft tires. It is difficult to break these figures down further into failures caused by faulty manufacturing or processing, improper installation, normal wear and tear, owner abuse or neglect, or other factors.

You can see that there is a definite Federal interest in the contribution to traffic accidents by products such as tires moving in interstate commerce, particularly when we have incomplete information and statistics on the relationship between accidents and tire failure.

Perhaps the first specification for tires was the Federal specification issued in January 1930 for procurement purposes. This specification has undergone 10 revisions. The last one dated July 13, 1959. A proposed 11th revision has been developed by the General Services Administration and is now under consideration.

The original Federal specifications for tires and all the revisions have been based primarily on work done at the National Bureau of Standards prior to 1953. Since the Bureau tested only first-line tires in developing the Federal specification, its laboratory experience is incomplete for comprehensive tire standards, including labeling and grading, and is also, obviously, being 10 years old, dated.

Senator HARTKE. Does it serve any useful purpose, then, even for Federal purchases by the General Services Administration, or other agencies of the Government to rely upon these standards at the present time?

Dr. HOLLOMON. Yes, sir. As I understand the situation, the Federal specification requires the purchase of first-line tires. It is these tires to which the Federal specification is directed, and this is, therefore, useful to the Federal Government to do so.

Senator HARTKE. If it is true, as indicated here in the testimony, that first-line may mean different things to different manufacturers, of what value is that?

Dr. HOLLOMON. The tires which are to be tested have to meet certain minimum specifications which are substantially more stringent than, for example, the Rubber Manufacturers Association specifications for tires. And whether these tires are called first-line or otherwise, they are tires which are of superior quality to the tires which would meet the minimum standards of, say, the Rubber Manufacturers Association.

Senator HARTKE. Do you have available with you those general specifications?

Dr. HOLLOMON. Yes, sir; I do.

Senator HARTKE. Can we incorporate those by reference?

Dr. HOLLOMON. Yes, sir.

Senator HARTKE. I don't want them printed, but I would like to have them available for the committee to see.

Dr. HOLLOMON. May I clarify your question? Are you asking for the latest Federal specifications, or also the Rubber Manufacturers Association specification?

Senator HARTKE. GSA is scheduled to testify. Let us put in what you are referring to here regarding the latest Federal specifications, and it will be included by reference.

Dr. HOLLOMON. That will be made available to you for the record. The Federal specifications to which I am referring are Federal specifications ZZ–T–38li and interim Federal specification ZZ–T–38lj.

In July 1964, the Rubber Manufacturers Association issued minimum standards for passenger car tires in response to concern in various States, notably New York. These standards are patterned after the Federal specification but the tests and requirements are less stringent, even though they include a short high-speed test that was not in the Federal specification.

They also include a provision for minimum cross section widths, which is to become effective at the beginning of next year. These Rubber Manufacturers Association standards were developed by representatives of tire manufacturing companies. We do not know whether users of tires participated.

At Senator Magnuson's request last year, the National Bureau of Standards reviewed the Rubber Manufacturers Association standards and compared them with the Federal specification. This was reported in a letter from Mr. Robert E. Giles, of the Department of Commerce, dated October 7, 1964, which I will refer to later, and which was introduced into the record this morning by Senator Nelson.

The Society of Automotive Engineers (SAE) has under development a set of specifications for tires for passenger cars. The society is an organization composed largely of professional engineers. Its standards are drawn up by committees of members and approved by one of the four councils within the society.

The SAE tire specifications are being drafted by a passenger car tire committee composed of professional or technical employees of either the automotive industry or the tire manufacturing industry. To our knowledge, consumers and users other than automotive manufacturers have no representation on the committee developing the standards.

Another organization which has developed certain standards concerning tires is the Tire & Rim Association. It issues a yearbook listing dimensional standards for rims, load ratings, and maximum dimensions for tire sections for tires. However, it does not list minimum dimensions.

I have already referred to the standards just issued by the Vehicle Equipment Safety Commission. These were first proposed in November 1964 for tires used on passenger cars and station wagons. While they follow the Rubber Manufacturers Association minimum standards, they are more stringent and have tests on cut growth—this is the rate of growth of a cut preplaced in the tire and how it would grow during service—and tire bead unseating which do not appear in the Rubber Manufacturers Association standards.

In other words, these tests are somewhat more stringent than the Rubber Manufacturers Association standards, including other factors, but still not as stringent as the Federal specification standards. None of these standards, however, have a test for skid or skid resistance, an important element of the tire characteristics under braking conditions, or sliding on the highway.

Senator HARTKE. I recall seeing advertisements stating that certain tires are able to stop skidding at less distance than other tires. Is that true, or is that false?

Dr. HOLLOMON. I have seen such advertisements myself, Mr. Chairman. But as far as I know, I believe no standard, either the Rubber

Manufacturers Association standard, or the standard which I have referred to on the Vehicle Equipment Safety Commission includes a skid-resistance measurement as a basic element of the tire standard.

Senator HARTKE. Is it possible that these tests were made by the companies themselves?

Dr. HOLLOMON. They may very well have been.

Senator HARTKE. In other words, the advertisements are not necessarily false.

Dr. HOLLOMON. Not at all. Skidding resistance is simply not a requirement in the standard to which the tire would be manufactured and sold.

As you know, in January of this year the Federal Trade Commission held hearings on tire sizes, safety standards, and marketing practices, and you have heard a report from its Chairman this morning on the FTC activities.

In summary, many organizations and agencies are now actively concerned with tire standards. To our knowledge, little laboratory work is being done to collect the necessary data for establishing sound technological standards.

For example, no group is known to be developing standards for skid resistance of tires, one of the most important characteristics from a safety standpoint. Nor do we know of any active work taking place to relate tire performance on vehicles to traffic accidents, under controlled laboratory conditions.

Further, I would comment that the efforts of tests of endurance and the tests that have to do with impact and cut resistance, are based upon laboratory experiments which were conducted a number of years ago, and which do not particularly relate to today's performance characteristics.

To give further detail and as our letter to Senator Magnuson pointed out, the Rubber Manufacturers Association minimum standard lacks a test for measuring the rate of growth of the cuts.

Also, the standard tests the carcass strength of new tires rather than the carcass strength of tires that have first undergone wear in an endurance test—as is provided in the new standard proposed by the Vehicle Equipment Safety Commission standard. In addition, it does not provide for skid-resistance testing. But, as we said in the letter:

> An extensive program of testing and evaluating would be needed to produce complete and reliable data on the numerous types and quality levels of tires now available to the public. This would be a costly program.
>
> * * * * * * *
>
> Industry evaluation of the effectiveness of the new standards in actual practice is desirable. With appropriate consultation with the National Bureau of Standards, we think industry will be in a good position to make further progress in its tire standardization program.

These are quotes from a letter which we previously sent to Senator Magnuson.

One can see that there are questions about the present voluntary tire standards from a safety point of view. It seems clear from the background I have given that neither we nor others that we know of presently have the comprehensive technical competence to write with any assurance optimum safety standards, whether mandatory or voluntary, though some improvement could be made immediately.

It would take several years for the Federal Government to acquire the full competence and obtain the relevant information necessary to write optimum standards, notwithstanding the past contributions of the National Bureau of Standards and other agencies of the Federal Government.

Turning again to the legislation before this committee, we must clarify its purpose in light of what I have just said. S. 1643 requires mandatory tire safety standards to be prescribed by the Secretary of Commerce within 1 year.

The laudatory goal is to reduce the number of deaths, injuries, and accidents caused by defective tires, while not making the cost of tires higher than the public would accept. Not only do we know little about the relationship of tire failure to accidents, as I have just explained, but we also know little about the quantitative relationship between tire characteristics, such as materials of which they are made, the thickness of the ply, et cetera, and their performance.

So it is clear that first we must get this knowledge and put it to use before we can write the standards that will reduce accidents most effectively.

In addition, we can reduce accidents from tire failures by enforcing the standards for tire safety that already exist after improving them as best we can while doing the research and testing necessary for optimum standards.

S. 1643 would achieve its purpose through this second method predominantly at this time. Its effect is more to keep from the market those tires which are clearly unsafe than to improve industry standards by a research and testing program.

Yet both of these methods are essential to a good tire safety law. In our view, S. 1643 is inadequate in both respects. Regarding the relationship of tire performance to accidents, the bill makes no provision for the necessary research or testing and requires standards to be issued within a year—which would permit very little of the additional technical information to be developed.

As to the adoption and enforcement of existing standards, there is no provision for inspection or for civil enforcement authority, both of which are essential if a safety standard is to be enforced effectively.

Further, if we are going to have mandatory tire standards by law, it would be more sensible to have civil regulatory authority to keep unsafe tires off the market in advance than to have enforcement carried out exclusively by punishing a wrongdoer after the fact, as the bill provides, and thus leaving to the deterrent effect the protection of the public.

Having clarified the purposes for the legislation and pointed up some deficiencies in the bill before you, let me state three different approaches that the committee might wish to take, and then evaluate those approaches.

Briefly, there is a mandatory approach, a discretionary approach, and a voluntary approach. The first would require the Secretary of Commerce to issue mandatory standards within a time period fixed by law, along the lines of S. 1643 with improvements. It would include authorization for research and testing, inspection, and civil enforcement.

With a year's time for prescribing the standards, it would mean that the industry standards and the existing Federal specification with

their present inadequacies, although improved, would be the basis for the mandatory standards until the research and testing program would be completed and we knew something more about the relationship of tire performance to accidents.

We would not know in advance how effective the mandatory standards would be in reducing accidents, but we would have good reason to believe that they would help by preventing tires not meeting present voluntary safety standards from being sold or distributed in interstate commerce.

Thereafter, the results of research would contribute to improving the mandatory standards, which after 2 years would be substantially more effective.

The second alternative would have the same provisions as the first, except that the Secretary of Commerce would have discretionary authority to decide whether to issue mandatory tire standards, after considering both the likelihood of reducing accidents and the technical knowledge available.

He could issue standards either before or after the results of the research and testing program were available. No time limit would exist for issuing them, but a duty to issue them would arise once the Secretary determined that standards would reduce accidents causing death, injury, and property damage.

This second alternative would put into law the discretion of the Secretary of Commerce to issue mandatory standards when he felt that the voluntary process was not producing adequate results.

The third alternative would authorize a continuing program which, in 2 or 3 years, would improve the technical competence of the Government through research, testing, and gathering information on the relationship between the performance of tires on vehicles and accidents, under controlled conditions.

It would leave the voluntary standards as they are for the moment. However, cooperation between automotive and tire manufacturing industries, Government agencies, the States, and users could be expected to result in voluntary revisions to existing standards without compulsion.

Congress would receive reports on the degree of voluntary acceptance and compliance, together with any recommendations. Congress would thus be in a position to enact legislation to require enforcement of mandatory standards at any time voluntary compliance is inadequate.

If voluntary improvement required added cost in the manufacturing of safer tires, however, this approach could prove unsuccessful unless all competitors were compelled by the market or their own sense of public interest to produce a safer product at a higher cost.

Each of these three approaches would call for the same research, development of laboratory equipment, testing, and collection of technical information in order to produce the best safety standards.

It would include testing skid resistance and tread wear, among other factors, and obtaining technical information to show the relationship between the performance of tires on vehicles and accidents, under controlled conditions.

The cost of a meaningful technical program—while we do not have all the analysis necessary to indicate its exact magnitude—might be as

much as $1 million per year to provide information necessary if the Federal Government is to participate in the improvement of the standards. If the standards were to become mandatory, we believe that appropriations would be required for inspection—and here I am talking about inspections to meet the standards, not for grading and labeling—and civil enforcement.

A disadvantage in issuing mandatory standards immediately, using industry standards as a basis, is in the lack of sure knowledge as to whether they would reduce accidents. If most tire manufacturers at present follow existing private standards or State standards, we could ask whether a mandatory standard based on these same standards—pending any further development or research testing—would appreciably reduce accidents from their present level and rate.

The value of keeping the existing standards voluntary and stressing improvement by a research and testing program is that Congress would have this knowledge before deciding whether to have compulsory tire standards.

On the other hand, there could very well be thousands of tires on today's market which do not meet the standards issued by private associations or by the Vehicle Equipment Safety Commission.

In that event we could assume that a compulsory standard would help reduce accidents to some extent, even without knowing the results of a research and testing program.

A more general difficulty is how to balance improvement in contributing to safety through standards with the added cost to the public in buying safer tires.

Finally, we should not underestimate the work which the Federal Trade Commission can accomplish in preventing deceptive trade practices. If labeling and grading of tires in some instances result in deception to the public, we believe that the Commission now has the authority to take appropriate steps to prevent it.

In summary, if this committee determines that mandatory tire safety standards are desirable by law or within the Secretary's discretion, either one, the bill should:

(1) Authorize a continuing research and testing program for tire safety standards and for grading and labeling.

(2) Authorize inspection and civil enforcement.

(3) Recognize and, if necessary, broaden the authority of the Federal Trade Commission concerning grading and labeling to avoid deception to the public, in consultation with the Department of Commerce.

On the other hand, if a voluntary, cooperative approach is determined to be more desirable, then the bill should:

(1) Authorize a continuing research and testing program for tire safety standards and for grading and labeling.

(2) Authorize technical assistance to the Vehicle Equipment Safety Commission, the States, and industry in improving existing safety standards.

(3) Require appropriate reports with recommendations to be furnished at the end of a 2- or 3-year period.

On balance, the Department of Commerce prefers the voluntary approach, for a 2- or 3-year period, with recommendations to be made to Congress on its success.

However, the Department would not object to legislation placing discretionary authority in the Secretary of Commerce to issue mandatory standards if, in his discretion, he determines that voluntary tire standards do not provide adequate safety requirements for the motoring public.

Mr. Chairman, I hope that this background and analysis has been helpful to the committee. I want to thank you for the opportunity to give you our views. While we object to S. 1643 in its present form, it is our belief that a revised bill along the lines that I have outlined would be an enlightened approach to a very difficult problem.

Senator HARTKE. Thank you, Dr. Hollomon.

Senator Bass?

Senator BASS. I have no questions.

Senator HARTKE. Why would you need legislation at all for a voluntary approach?

Dr. HOLLOMON. At the present time there is at least nothing but the implied authority for a tire research, testing, and development program, No. 1.

Senator HARTKE. I don't think that is correct. In the first place, you have the requirement and the authority to develop these standards for the Federal Government, do you not?

Dr. HOLLOMON. Yes, under our authority to advise Federal agencies, but the tests required for the Federal Government are certainly not as broad nor as deep as tests required for all of the——

Senator HARTKE. How could you possibly have a testing of an automobile tire without having a complete latitude to inspect and provide a complete testing of the whole range of tires which are available? Or are you arbitrarily excluding some tires from consideration, just by name brand or the fact that they are not listed specifically?

Dr. HOLLOMON. I would like to turn to Dr. Stiehler, who is responsible for the testing, for the Federal specifications. I think he can give you the answers to that.

Dr. STIEHLER. The industry standard that is issued by the Federal Manufacturers Association is to be policed through the contract with the Electrical Testing Laboratories. They will take tires from the market, as I understand it, and test these periodically. If any tire does not meet these standards, they will come off the list.

This would, of course, be a voluntary thing and does have the objection of anybody who does not want to agree to these voluntary standards, he does not have to do it.

Dr. HOLLOMON. I think the question is, Why isn't the testing program for GSA for Federal specifications adequate to develop the data that are required for a broad civil domestic specification? That is the question.

Dr. STIEHLER. The testing that was done for the Federal specification was on first-line tires, and was done at the request of GSA.

Senator HARTKE. We have already laid to rest this question of first-line tires, unless you are willing to give us a definition of a first-line tire, which evidently is not definable.

Dr. STIEHLER. It is definable in this sense as far as the Federal Government is concerned. It is the brand of tire which each manufacturer is willing to sell to the Government at the price that is published in the Federal schedule for tires complying with the Federal procurement specification.

Senator HARTKE. You have authority now to test any tire which is going to be sold to the Federal Government, do you not?

Dr. HOLLOMON. We do that testing for, and at the request of the General Services Administration.

Senator HARTKE. And you have that authority. In making that determination, you can inspect a whole range of tires on the market and determine whether or not they are available for Government use.

Dr. HOLLOMON. Mr. Chairman, what is required here is the development of tests which will be adequate for a broad range of uses and the funds and authority to develop those broad ranges of tests, not just to do only the testing itself, but the development program as well.

Senator HARTKE. Let me tell you what I was driving at. I looked at these three approaches. I find no real distinguishing mark in them, except that you need legislation or you don't need legislation.

Dr. HOLLOMON. No, sir. We are trying to be helpful to the committee and the Congress. We believe the distinguishing mark is that legislation is desirable if Congress thinks a voluntary program is preferable. This legislation would have two requirements: one would explicitly authorize the necessary development program to develop the tests and the data, to provide the basis for improved standards—it would specifically authorize that program even if implied authority exists; and second, would require that the Secretary of Commerce report back and indicate whether he then had success in developing——

Senator HARTKE. The Commerce Department, in my opinion, has the authority without legislation at the present time. Maybe the other members of the committee disagree. I think under the safety standards provision of the present Highway Act and under the Bureau of Standards legislation, it has sufficient authority if you need to do that.

I think you have authority. Maybe you don't have the manpower or the money. That may be possible. That is only a matter of providing the funds for personnel.

I think you have that authority to make recommendations in the whole field of safety regulations. That is part of the highways legislation which was enacted through the years.

Dr. HOLLOMON. I can only state, Mr. Chairman, that for the last decade the only development program with respect to tire safety standards leading to the basis for these tests have been in response to specific Federal requirements for the purchase of tires. They have not been for the purpose of providing development tests, for example, necessary to develop the proper grading characteristics. If you are going to develop grading tests for tires, one of the things you wish to know is what the various grades would consist of.

Senator HARTKE. Let me stop you, Dr. Hollomon. I do not think that Congress is going to ask you to do something that you don't know anything about.

Dr. HOLLOMON. Right.

Senator HARTKE. If they ask you to develop certain standards and techniques, it is only natural that you would assume that there will be improvements as you move along.

Dr. HOLLOMON. Right.

Senator HARTKE. If we pass a law tomorrow which becomes effective tomorrow we would only expect that you would use that informa-

tion and that testing which is being used at the present time and use it to the best of your ability.

Dr. HOLLOMON. I agree.

Senator HARTKE. That is all this bill really says.

Dr. HOLLOMON. Right. We believe that the bill, from that point of view, could be improved by specifically authorizing the necessary development program that would lead to the improvement of those standards.

Senator HARTKE. Senator Nelson has testified that on the tests for a station wagon they add three passengers, for example. In these types of tests you could require them, for example, to carry certain loads and put certain other requirements on them.

Dr. HOLLOMON. This is labeling and grading. I am not referring to that kind of test. I am referring to tests as to how one measures the endurance of a tire under high-speed conditions.

Senator HARTKE. What I am saying is that as those tests are developed, they could be placed into your regulations. No one anticipates that you are going to do something when you have not completed research to establish at least the minimum requirement in the field of safety.

Dr. HOLLOMON. That I agree with. The only point I am trying to make to the committee is that really to make substantial improvements over the specifications that are now available, a substantial amount of testing work is required.

Senator HARTKE. Let's assume that is true. Now let us return to specifics.

Dr. HOLLOMON. Yes.

Senator HARTKE. There is another item here, for example, as to the size. The minimum standards on size could be specified.

Dr. HOLLOMON. Oh, yes. Mr. Chairman, I am not referring to the question of labeling——

Senator HARTKE. I understand that. But we are.

Dr. HOLLOMON. And you can do that at the present time, and the bill, the legislation could require mandatory labeling. I am trying to distinguish, as did the Chairman of the Federal Trade Commission, between the two problems, labeling and grading, and the other minimum standards.

Senator HARTKE. I understand that. The point still remains, as the Chairman of the Federal Trade Commission indicated, that if the authority were given to the Commerce Department to establish these requirements, both in labeling and grading and minimum safety standards, that if this authority was given to the Commerce Department, and they would issue regulations in accordance with that authority and utilize the facilities of the National Bureau of Standards, that then it would be possible without much additional personnel, according to his testimony, to provide enforcement. Why would you feel that such authority should not be given to the Commerce Department?

Dr. HOLLOMON. Mr. Chairman, I believe that the Chairman of the Federal Trade Commission referred to the amount of additional people that would be required to enforce grading and labeling, not the number of people that would be required to enforce and inspect with respect to the standards. I think this was a distinction he made and I would like to make that same distinction. If you are going to

require mandatory standards—this is to meet the standards such as in the Rubber Manufacturers Association or the Federal specifications which do not refer to grading and labeling—then we believe it will be necessary to select tires made by various manufacturers, test those tires to determine whether or not they meet the standards, and to determine whether or not the mandatory standard is being carried forward. For that we believe we will require additional people and facilities.

Senator HARTKE. So it will require additional people, facilities, and money. Why is it that the Commerce Department is so reluctant to move in this field?

Dr. HOLLOMON. I don't think we are reluctant, Mr. Chairman. What we have recommended is that the Congress determine (*a*) that this additional technical program is required; (*b*) that, if necessary, the Federal Trade Commission's authority with respect to grading and labeling be broadened and (*c*) that we would accept—we would have no objection to the discretionary authority being given to the Secretary of Commerce to have mandatory standards, if he found them necessary.

Senator HARTKE. This is the point we want to avoid. Do you feel there is not sufficient information available at the present time upon which you could even establish regulations of a minimum nature?

Dr. HOLLOMON. There is sufficient information at the present time to make some improvement—and I am speaking now of standards, not grading and labeling—of standards. We believe that there is sufficient information to make some improvement in the Rubber Manufacturers Association standards.

Senator HARTKE. Why then are you, in the Department of Commerce, reluctant to receive from the Congress a legislative mandate to utilize those standards which are presently available, with a requirement that you effectuate such provisions of safety which you have already determined are in the public interest?

Dr. HOLLOMON. It is our belief that, in general, that we should try to accomplish this through a voluntary cooperation between the industry, the users, and the Government whereby these standards would be developed voluntarily. It is our view that this is a preferable approach to the problem. If this turns out, with the technical information that has to be developed, to be inadequate, we would have no objection to mandatory standards.

What I am trying to say is that we believe that the Bureau of Standards and the industry should be given an opportunity through this legislation to develop the standards.

Senator HARTKE. What is your idea on labeling?

Dr. HOLLOMON. On the question of labeling we believe that there is a responsibility that lies within the Federal Trade Commission and that they have now authority, as the Chairman stated, to control the problem of deceptive labeling. They may need improved legislation or broadened legislation for the general problem of grading and labeling.

Senator HARTKE. Those are all the questions that I have. Thank you.

Dr. HOLLOMON. Thank you very much.

Senator HARTKE. Mr. Henry Wakeland, engineer and automotive consultant, New York City.

Your entire statement will be made a part of the record, and you may summarize it as you desire.

STATEMENT OF HENRY WAKELAND, AUTOMOTIVE CONSULTANT, 179 ROCKAWAY AVENUE, GARDEN CITY, N.Y.

(The prepared text follows:)

I am Henry H. Wakeland, an automotive consultant, and presently consultant to New York State Senator Edward J. Speno, ranking minority member of the senate motor vehicle committee. I was staff consultant to the New York Joint Legislative Committee on Motor Vehicles and Traffic Safety under Senator Speno's chairmanship from 1961–65. During 1963–65, much work was done by the committee in tire safety legislation. Our committee has also worked closely with several Federal agencies in the field of motor vehicle safety legislation and I personally have been studying the field on a scholarly basis since 1957. Thus, part of our statement is based on the New York experience and part is personal views.

I support S. 1643 just as it is written, with minor additions concerning administrative fairness. The bill is necessary from the standpoint of the public safety and highly desirable from the standpoint of fair dealing between consumer and supplier. It does not conflict with the purposes of the two tire safety bills now before the New York State Legislature. Under proper administration, the bill can provide the type of definitive, fair, and forward moving regulation that is needed.

In 1963, the legislature passed a committee-originated tire condition bill that effectively ruled bald tires and damaged carcass tires off the road. These requirements were incumbent on the tire users, and needless to say, the tire industry welcomed that law. The next phase, in equity, was minimum standards for new tires incumbent upon manufacturers. The cooperation of the tire industry, the main group concerned, was sought and at first obtained.

A 2-day visit to Akron was made by a large New York legislative and administrative group. A technical committee, of which I was cochairman, held four meetings, and one meeting was held at the capitol in Albany with high executives of several major tire companies. Then the motor industry entered the picture. After a number of changes to the bill including removal of important sections intended to prevent overloading of tires on new cars, the tire manufacturers proposed, at a last hearing, a completely new and surprising approach which would have removed cognizance from the legislature entirely.

Essentially, the bill reported by the committee adopted the then current standard of the General Services Administration, as prepared by the National Bureau of Standards. The lobbying campaign against the bill that followed was not only heavy, but has been characterized for the record, at a later hearing, as "out of bounds" and "impermissible" by an experienced lobbyist of a labor union. The bill was killed in the assembly, short of a few needed votes. It has been cooperated to death, but a new bill is moving in Albany and another in Massachusetts.

Now, how badly do we need assurance of tire safety? The New York Thruway is typical of the Federal Interstate Highway System which will eventually carry an estimated 20 percent of all highway traffic mileage. On the thruway, blowouts alone caused 5.6 percent of all accidents in 1964. Failure of only one type of part (an automobile has about 15,000 parts) is causing 1 accident in every 18. True, we do not know the actual condition of these tires, but we do know that the tires had too little reserve to meet the actual stresses they encounter. We suspect many were damaged by stresses beyond their strength, unknown to the user, long before they went on the thruway. Higher margins would definitely mean fewer blowouts. The thruway speed limit is 65 miles per hour, not at all an unusual speed for ordinary highways in many parts of the country and speeds are rising. The present 5.6 percent of incidence represents a 60-percent increase in incidence of blowout accidents in the last 5 years.

Tires too small for the car are also part of the blowout picture. On the thruway, we found blowout-caused accidents of station wagons to be 70 percent more frequent than they should have been if station wagons were on the thruway in proportion to registrations. Through letters to the committee, we turned up five cases with the same complaint—all four tires had blown out,

one after another, over a period of months, even though there was much tread remaining and the tire looked right to inspectors. These tire sizes were selected by automobile manufacturers and installed as original equipment. The automobile manufacturers tell us they select tires and tire sizes by 60 millions of miles of road tests under all conditions.

We surveyed a number of cars by calculation to determine whether the tires installed met the size and load carrying recommendations of the Tire & Rim Association, which is a trade association as its name implies. We found original equipment tires ranging from one size larger than recommended, down to two sizes smaller. It seems that the automobile manufacturers actually assume usage of cars and station wagons at average loads, not at full loads, and in some cases make their own decision to reduce the tire size one size below even the average load size.

It is customary for new cars to come equipped with tires having rayon cord rather than the stronger nylon. The main reason for this practice seems to be the so-called nylon thump which is a tire noise during driving after a car has been standing for a time. This noise is very bothersome to car salesmen, who must explain it to some prospects on a test drive.

Some Consumers Union tests done at the National Bureau of Standards also were reported to the committee. They showed that nylon carcass tires lasted 10 to 100 times as long in a repeated bump test as similar rayon cord tires. In the GSA tire purchase specification, rayon tires are tested only to 50 miles per hour because of their basically lower cord strength, instead of the 60 miles per hour used to test nylon tires. All of the quadruple blowout cases reported to us appear to have involved rayon cord tires.

Since nearly all replacement tires being sold today have nylon cord, it should be possible to find by test a certain number of nylon tire models that actually have superior blowout resistance at the same price as the rayon tires originally installed. Thus, even if the rayon cord tires could be considered "adequate," the customer should have the option of choosing between higher blowout resistance or freedom from nylon thump. Given such a clear choice, how many customers would choose lower blowout resistance to be freed of a temporary noise? The choice, of course, can't be made because the possibility is unknown to most customers, and there are no grades of blowout resistance to allow selection of another tire. It is technically impossible to compare blowout results because we cannot know which tires to compare.

The 1964 New York legislation was directed primarily at blowouts. In final form, the legislation sought merely to place a performance test floor under blowout resistance, and to establish initial legal authority for the first tests used. To determine whether the floor (the GSA specification) would take in some of the very low priced tires that were being widely advertised, we had three counter-purchased tires of one model tested at the National Bureau of Standards. The brand name of these tires was "safety special" and they were also labeled "nylon."

The Bureau of Standards reported that the tires failed the endurance test, being unable to hold air, well before the end of the test. Usually tires at least complete the test, though they may be damaged.

One of these three "safety specials" was given another test and was cut apart afterward. As you can see, there are tunnel-like voids all around the circumference.

The Bureau of Standards also measured the size of the tires at our request. Surprisingly, they met the Tire & Rim Association's standard for the labeled size, but only because the standard describes nothing beyond the width. The tires were more than 1 inch in diameter smaller than the same size tire of other manufacturers. The tires had been plumped out a bit in width so as to meet the letter of an inadequately specified standard.

These tires were labeled "two-ply, four-ply rated." After publicity on the test, the manufacturer provided several explanations based on several types of poor quality control, implying that the design itself was sound. He said that the tires had passed his tests, but didn't say what the tests were. Later the manufacturer stopped sending two-ply tires to Long Island stores and sent only actual four-ply tires. We don't know what changes he made elsewhere. The four-ply tires cost 50 cents a tire more.

It may be significant that the manufacturer was one of those taken over by one of the large manufacturers in the series of mergers that have been going on since about 1950.

Mr. Chairman, real people bought these swiss cheese tires and they are driving on some of these tires this summer. You and I, when we drive, are passing these tires, and others like them, face to face in the opposing lane of traffic on the highway. But we lost our bill in New York. It is even legal to design these tires this way, holes and all. Furthermore, when these tires blow out, there is not one police investigator in a hundred who would detect any tire problems. A blowout through one of those voids would have to be detected by an expert.

There is no speed limit on these tires and no guide to their correct application other than the size, which is misleading. This tire size could be used on a number of station wagons which may have been underequipped in the first place.

Some may say "Shouldn't a person know better than to put a cheap tire on a car, even if it is called a nylon safety special?" One answer is that these tires were sold and went into use. But we have a better answer.

The Automobile Club of New York is one of the largest in the country. They treat their own staff cars well, and they reported their experience to our committee. I am satisfied, from the detailed discussion, that it is a good report.

Some 20 cars were equipped with brandnew, premium tires of one of the best known names in rubber. The tires were a kind that had been unabashedly advertised to indicate they were the safest tire in the world. The tires retailed at well over $50 per tire.

With the new tires in use, staff people began to have close calls in their driving, being unable to stop and skidding unexpectedly. At first, it seemed unbelievable there could be a problem, such was the reputation of the maker. Finally, the club tested several cars, comparing the premiums with much lower priced tires of competitive make. Not only did the premiums skid more easily, but they skidded farther. The skids were between 20 and 80 percent longer than skids with the rather ordinary lower priced tires.

The club then told us that the manufacturer took back the entire group of tires, and they think he also pulled back stock from warehouses. The manufacturer actually changed his rubber compounding. The club obtained replacement tires, but they don't know of any individual owner's tires being replaced or any warnings given.

Again, all of this is still perfectly legal in New York and everywhere else. It is very unlikely that accidents from these tires would be detected; in fact, in some jurisdictions, the driver would be charged with speeding based on length of skid marks, and could well be indicted and even convicted of manslaughter.

In the technical discussions with the Rubber Manufacturers Association, our committee was told by company engineers that there were no reliable skid tests that could be used to control or regulate skid tendencies. The Automobile Club of New York somehow found a way, since they had a motive.

The automobile club's report also implied that tread compounds could be (and were) introduced without any actual tests of skid resistance being made. And this case also implied that discovery of a dangerous condition in tires did not necessarily mean that corrective action would be taken by the manufacturer. It is as though the manufacturer had discovered the side effects of thalidomide and made no effort to trace any of the drug that had been sold.

Are these examples extreme? I don't think so. They are examples which we found during the short period of a year and a half while we were on the lookout part time with a small staff and when we were able to call on the Bureau of Standards for help.

New questions arise constantly. One company is now advertising "rain tires," supposedly able to stop faster on wet streets. The advertising message says "If they'll stop so much better on wet streets, just imagine what they'll do when the weather is dry." Both wet and dry stopping characteristics can be measured by test as well as adjective. When that is done, and only then, will any consumer know how much stopping ability is actually present and how much is "just imagined."

A literal-minded consumer has no way of knowing whether he should buy a new "rain tire" or another longstanding trade name, "all weather." On the face of it, "all weather" is a much more inclusive name that merely "rain." "All weather" seems to include dry roads, rain, snow, ice, dust, and mud. If I were literal minded, I would hestitate to put on only one "rain tire" for fear it would pull a car to one side when the brakes were applied. More and more, though, people are no longer literal minded about advertising statements. Meaningful language in tire marketing is steadily being destroyed.

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We have found, also, that a so-called patrol tire is available which has superior high-speed blowout resistance and stability at some cost in softness of ride. This tire is not inherently more expensive than soft-riding tires, but it is not offered to consumers.

Our experience could be summarized up thus:

The "nylon safety special" label meant almost the exact opposite of its generally understandable words. It has no special safety characteristic.

The idea that "you get what you pay for" in tires is a poor guide. High-priced boobytraps are for sale.

The idea that an intelligent consumer can take care of himself in the tire market is a myth. Even an institutional consumer can be fooled. We know of no expert who believes that he could compare tires reliably for even his own purchases on the basis of consumer-available information.

The claim that "we test the tires at the proving ground" may well be true. If true, it has no effect on replacement tires available and has not prevented tires from being unwittingly overloaded by users. Manufacturers make tire application decisions for the consumer on the basis of his assumed desires in noise and ride.

Each of these difficulties indicates the need for minimum requirements based on performance tests and for graded levels of performance in various categories. The following safety requirements can be tested and grades established though in some cases the tests must be developed:

Size.
Load carrying ability.
Skid resistance under various conditions.
Blowout resistance.
Resistance to curb-striking and chuckhole damage.
Cornering ability.
Resistance to tire coming off rim.
Balance and roundness.
Cornering squeal (some squeal desirable).

Every one of the above characteristics is being evaluated by tire or automobile manufacturers at present date, although not by the same method. Direct labeling of the tire with its design grade in each category is practical, in my opinion.

In addition, tires can be graded for wear resistance and smoothness of ride. These are economic characteristics more than safety characteristics, and must be understandable to the purchaser because they tend to be antagonistic to safety characteristics.

It should be recognized that two problems are not handled by S. 1643 itself. The bill would result in better guides to loading vehicles, but does not insure that tires on vehicles cannot be overloaded by the manufacturer or user. The bill also does not reach the problem of poor manufacturing quality.

Specific suggestion: The bill should state a goal for grading and labeling in terms of fairness between buyer and seller as well as safety. Graded levels are required to allow buyers to identify and compare levels of safety above the minimum, but the whole structure of the safety levels will be far more understandard if tire wear and ride characteristics are also graded.

Based on our observations of the standard-setting process in several agencies where consumer interests are affected, we believe that the decision process should not be left to any department head on a general administrative basis. Rather, definite guidelines should be set which can prevent de facto dependence on manufacturers' point of view. The following are proposed because they have been specific sources of unfairness to the consumer in past cases:

(*a*) The Secretary of Commerce should establish a formal procedure for the study and establishment of the minimum requirements, graded levels, and performance tests to be used. This procedure should recognize the principle of representation of interests and should be almost parliamentary in character.

(*b*) The principle of consensus should not be employed in such regulatory involuntary standard setting. This principle is useful where cooperation of several groups must be obtained and when no superior authority is present. It is not appropriate where the standards are being set by legislation because they have been neglected. A majority decision is not inappropriate.

(*c*) The consumer interest should be formally represented in proportion to its interest in the actual deliberation process, not left to supposed executive adjudication as part of the "public interest" supposition which clothes a chief administrator's final decision. This means formally designating consumer representatives who should not be Government officials or civil servants. The con-

sumer representatives should have a visible background in consumer stewardship and contact with sources of consumer opinion and consumer-oriented technical expertise.

(*d*) The findings and decisions of the Secretary of Commerce should be supported by a technical document explaining the reasoning of the decisionmaking group, and the technical sources employed, so that the reasoning can be reconstructed, as well as by a minority report. This is necessary to allow future technical analysis and upgrading and to allow policy review by concerned interests. It is also an important safeguard against the situation in which the regulatory agency may eventually tend to identify with the regulated group.

The tire field has been, until recently, somewhat conservative in product marketing, at least as compared to the automobile field. If the tire industry has not identified the safety values in its products very clearly, it has attempted to advance to a higher level of safety in at least a few products, and is willing to talk safety. S. 1643 is particularly appropriate at this time because the stylists and psychological motivationists are beginning to enter the tire field more aggressively. Their skills, unfortunately, tend to blur the rational decisions that a consumer must make to stay alive. At Indianapolis on May 30, for example, two tire companies will be struggling for a winning psychological position almost as much as the race drivers themselves. In the past the psychological route has meant fewer competitors and less product variety. S. 1643 will provide rational handles by which the values of tires can continue to be understood no matter what direction is taken by the large competitors.

Senator HARTKE. We will have to conclude. If you want to present any more testimony, it will be done tomorrow morning.

The committee will recess until 10 o'clock tomorrow morning. We are scheduled for a vote on the floor on the civil rights bill within the next 2 minutes.

Is Mr. White here?

Mr. WHITE. Yes, sir.

Senator HARTKE. I am awfully sorry about not being able to reach you. We will take you the first thing tomorrow morning on the completion of this witness.

(Whereupon, at 12:17 p.m., the committee recessed, to reconvene at 10 a.m., Monday, June 7, 1965.)

TIRE SAFETY

MONDAY, JUNE 7, 1965

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10 a.m., in room 5110, New Senate Office building, Hon. Vance Hartke presiding.

Senator HARTKE. The committee will come to order.

Mr. Henry Wakeland, who was testifying previously, will be heard now.

SUPPLEMENTAL STATEMENT BY HENRY H. WAKELAND, AUTOMOTIVE CONSULTANT, GARDEN CITY, N.Y.

Mr. WAKELAND. Mr. Chairman, I have a short supplemental statement to the first part of the statement. I will summarize the last part.

Based on our observations of the standard-setting processes in several agencies where consumer interests are affected, we believe that the decision processes should not be left to any department head on a general administrative basis. Rather, definite guidelines should be set up which can prevent de facto dependence on the plaintiff's point of view.

We have several proposals here: that there should be a formal procedure for the study and establishment of the minimum requirements; almost parliamentary in character; that the principle of consensus should not be employed in this area as it is in regulatory involuntary—as it is in voluntary standard-setting; that the consumer interests should be formally represented in proportion to its interests in the actual deliberation processes.

This means some method of formally designating a consumer representative who should not be a Government official or a civil servant.

Of course, there is a problem in determining who represents the consumer interests. It is a great problem. We have found agencies which say they represent the consumer interests but which we have felt do not. It is possible that it could be handled on the basis of appointing a representative to take the consumer's point of view somewhat in the way that a counsel is appointed for an indigent defendant, and the findings and decision of the Secretary of Commerce should be supported by a technical document explaining the reasoning of the decisionmaking group so that it can be studied by others in the field.

Now I must discuss something that is perhaps of concern to the whole Congress, as well as to the Commerce Committee. I refer to the proposal which is inherent in recent press releases that this legislation

should be taken from the purview of Congress and the problem assigned to the Vehicle Equipment Safety Commission. If this is done, the same proposal will be heard for every future congressional consideration of any aspect of automobile safety. A standard political strategy for avoiding congressional jurisdiction, the every-State compact, will have been placed in precedent.

We cannot say too emphatically, and here I speak also for State Senator Edward J. Speno, that no such leave-it-to-the-Commission approach should be taken. In the experience of our committee this compact has proven to be a sleeper—a strange new invention in the field of government, and a competitor to legislatures. The compact will also work at cross-purposes to your proper authority here.

New York was the first State to adopt the compact. It was approved through our committee. We expected the Commission to work for uniformity by communicating our laws to other States, by obtaining unbiased research, and by providing advice and help in our legislative work.

We have been sorely disappointed in this expectation. The compact is now functioning and has intentions for action far beyond its stated purposes. The compact has been used to confuse and impede our legislation and legislation in other States. In the long run we believe the compact will tend to dampen State legislative initiative.

After further study we now regard the compact as having been initiated and sponsored by manufacturers for the purpose of keeping both Federal and State legislatures away from effective leadership in the automotive safety field, and for holding national vehicle safety policy direction within the traditional relationship between State administrators and the industry. The Commission, by its own word, intends to seize the initiative from interested State legislators and other legislators at will and to direct rather than advise legislatures and administrators.

The facts which support that interpretation, as well as further analysis, are found in our 1964 Joint Legislative Committee Report. I offer the pertinent portion of that report for inclusion in the record.

The report details the origin of the first draft of the compact and the manner in which manufacturers' funds found their way into the promotion of the compact and organization of the Commission. Following the defeat of the 1964 New York tire bill by the tire and automobile industries and the transfer of the issue, unreferred, to the Commission in some unknown way, the tire and automobile companies then proceeded to advance their own point of view to the same Commission which their funds had organized. The New York Legislature was then invited to attend the hearing:

The Commission has now presented to all these States a tire "regulation" of its executive committee of the Commission which contains nothing but findings. No review of the technical basis of the "regulation" by any legislature or administrator is possible, except by whatever information that legislature or administrator can develop for himself.

The Vehicle Equipment Safety Commission appears to be the only compact between States to date which potentially takes in all 50 States and which could actually bind some States to accept regulations in the name of all 50. So far as we know the Vehicle Equipment Safety

Commission is the only general assemblage of the States for such a governing purpose (beyond mere discussion) since the Constitutional Convention.

The resolution, House Joint Resolution 221 of 1958, which authorized the compact in advance is still the only instance in which Congress has authorized a compact without seeing it. In the House debate on House Joint Resolution 221, the chairman of the Judiciary Committee, then as now, Emanuel Celler, pointed this out and noted the past problems with compacts that had become uncontrollable by Congress or by the States which had formed them. At that debate, an interpretation was given that Congress had authorized only negotiation between States, not any compact, itself. (Congressional Record, June 30, 1958, p. 11500.) Those words were said before the vote.

If such every-State compacts in health and safety had been in effect in the past, we would now have no Federal food and drug control, no Interstate Commerce Commission safety rules for trucks and buses, no Federal mine safety law, no air safety regulations.

These well-thumbed automobile safety hearings, which I hold up for your view, which we have used of Congressman Kenneth Roberts' Subcommittee on Health and Safety and other congressional committees would have never been available to States. Without the Roberts' committee hearings, it is questionable whether our joint legislative committee would have had the full background for our 1961 "showdown" visit, as it was called by the newspapers, to Detroit which finally forced installation of anchorages for safety belts.

There has been an excellent reciprocal relationship between Federal and interested State legislative groups in the growing automobile safety field. This type of reciprocity requires no planning—with each in its constitutional role, information moves both ways. I sit here before you today, as a State person, because our roles are constitutionally defined, and unimpeded and unconfused.

In New York, we have a tire bill which mentions the Commission. However, the Commission is placed merely as one source of information on a par with the General Services Administration and other sources.

Our 1964 tire bill in New York would have adopted the existing GSA minimums and allowed our commissioner to increase above that point. After the success of the combined effort against our bill, which was heavily based on a refer-it-to-the-compact argument, the Automobile Manufacturers Association urged our committee to refer its entire automobile safety package, a planned entity, to the same compact instead of taking any action.

In Massachusetts, the same maneuver killed the Vehicle Safety Study Commission bill and the same interests requested that four other bills not be acted upon, but sent to the Commission. The Massachusetts AAA, cosponsor of those bills with State Senator Francis X. McCann, has also cosponsored H. 1933, a bill to withdraw Massachusetts from the compact. In New York, a 1965 tire bill mentions the Commission, but places it merely as one source of information on a par with the General Services Administration and several other sources.

To our knowledge, Mr. Chairman, no other States have yet felt the real effect of this compact. The New York State Legislature is apparently the only legislative body to have studied its background and probable future closely after the compact was known.

I submit that Congress may have a responsibility to review this compact and I suggest that no delay be imposed upon S. 1643 because of such a review.

Senator HARTKE. Thank you, Mr. Wakeland.

I think the Vehicle Equipment Safety Commission people will testify, so we will permit them to testify to whatever portions of this they care to.

The Honorable H. A. Abersfeller, Commissioner, Federal Supply, General Services Administration.

STATEMENT OF HON. H. A. ABERSFELLER, COMMISSIONER, FEDERAL SUPPLY, GENERAL SERVICES ADMINISTRATION; ACCOMPANIED BY GEORGE W. RITTER, ASSISTANT COMMISSIONER, FEDERAL SUPPLY SERVICE, GENERAL SERVICES ADMINISTRATION (FOR STANDARDS AND QUALITY CONTROL), AND ROBERT DAVIS, CONGRESSIONAL LIAISON OFFICER, OFFICE OF THE ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION

Mr. ABERSFELLER. Mr. Chairman, I am Heinz A. Abersfeller, Commissioner, Federal Supply Service, General Services Administration, and I have with me Mr. George Ritter on my left, Commissioner for Standards and Control, and Mr. Robert Davis, of our Administrator's Office on my right.

On behalf of the Acting Administrator of General Services, Lawson B. Knott, Jr., who asked me to represent him at this hearing, I wish to thank you for the opportunity of appearing before your committee for the purpose of expressing the views of the General Services Administration on S. 1643, a bill to provide that tires sold or shipped in interstate commerce for use on motor vehicles shall comply with certain safety and labeling regulations.

In so doing, Mr. Chairman, I wish also to review with you and the members of your committee the actions which the General Services Administration has taken and is taking to protect the interest of the Federal Government in its purchase of tires.

The proposed legislation would require the Secretary of Commerce to prescribe and publish in the Federal Register, not later than 1 year after enactment of the bill, regulations prescribing minimum safety and performance standards and a grading and labeling system for motor vehicle tires. Also, it would prohibit transactions in interstate commerce involving any tire failing to comply with the regulations prescribed by the Secretary.

The effective date of the prohibition would be determined by the Secretary, but would be not less than 180 days nor more than 1 year after the publication of the regulations. Further, the bill provides for punishment by a fine of not more than $1,000 or imprisonment for not more than 1 year, or both, for knowing and willful violation of the regulations pursuant to the proposed legislation.

I have read with a great deal of interest the remarks of Senator Nelson which appeared in the Congressional Record on April 1, 1965, at the time he introduced S. 1643, as well as your own comments, Mr. Chairman, which followed his in the Congressional Record. I can add very little to his comprehensive statement except perhaps to underscore the obvious dilemma that a private citizen faces in buying tires.

Not only is he confronted with claims of price economy and guarantees of tire wear but he is also faced with choosing from a variety of tires of more than 100 brand names.

A group of such tires, all apparently comparable, may differ in quality of rubber, depth of tread, cross section size, breaking energy, or safe life expectancy. The consumer has no way of knowing exactly what he is buying.

The recommended minimum standards for new passenger car tires, developed by the Rubber Manufacturers Association, represent an effort on the part of the tire industry to attack the problem itself. With this they published a Certified Tire Directory listing all new passenger car tires which "have been certified as meeting Rubber Manufacturers Association minimum test performance standards, effective January 1, 1965." Establishment of the standards and their acceptance by tire manufacturers can be taken as an indication of the need for quality standards which will ultimately benefit the producer and the consumer.

The General Services Administration has responsibility for the development and maintenance of Federal specifications and standards in accordance with the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended.

In addition, under Public Law 88–515, approved August 30, 1964 (78 Stat. 696), GSA has the responsibility for prescribing automotive vehicle passenger safety standards. The specifications describe supply items in common use meeting the minimum requirements of the using Federal agencies and include methods of test to determine that these requirements are met.

In prescribing Federal standards and specifications for motor vehicles and related items purchased for use by the Government, GSA has kept and shall continue to keep safety in mind as a major objective. The Federal Government, as owner and operator of one of the largest fleets of motor vehicles, clearly has an obligation to set a national example in automotive safety.

Federal specification ZZ–T–381, developed by GSA pursuant to its statutory authority, is used by Federal agencies in the procurement of pneumatic tires for Government use. While the specification is not intended to regulate the quality of tires manufactured for non-Government users, it does prescribe the minimum requirements of pneumatic tires that are acceptable for use by Federal agencies.

The present specification covers tires of the types sold commercially to the public as first-line tires, defined as those recognized in the trade as at least first-line, first-grade, 100 level, and of no lower quality than tires normally furnished in representative quantities by original equipment tire manufacturers as standard original equipment for automobiles, trucks, tractors, and similar motor vehicles.

The fact that such a list of terms is necessary to define what is meant by "first-line tires," in itself, argues the need for a national standard. To meet Federal specification requirements tires must (1) fit standard rims as recommended and approved by the Tire & Rim Association; (2) be marked with the manufacturer's name or trademark, nominal size, ply or ply rating, and identification or serial number; and (3) be not more than 12 months old on date of shipment to the Government.

In addition, tires are required to have a minimum tread life as determined by a road test to withstand an indoor endurance test. They

must also comply with minimum requirements for breaking energy, cut growth, tensile strength, elongation, tread thickness, and cross-section measurement.

The acceptability of a manufacturer's production is determined by results of annual road and semiannual laboratory tests conducted and certified by the manufacturer as stipulated in the specification. The test samples are taken by Government inspectors from the regular production of each manufacturer intending to supply tires to the Government.

Federal specification ZZ–T–381i, dated August 6, 1957, and interim Federal specifications ZZ–T–00381i, dated July 13, 1959, currently in effect, were developed from data and recommendations resulting from road and laboratory tests conducted by the National Bureau of Standards, from Tire & Rim Association standards, and from technical data from the Rubber Manufacturers Association, tire and tire material manufacturers, and the using Federal agencies.

Although GSA has done a considerable amount of work in this area, we remain unsatisfied, and are now developing a proposed revision to strengthen the existing specifications. This revision will include currently available commercial tire sizes, modify requirements to recognize acceptable industry recommendations, and utilize technical information resulting from the use of the existing specifications in procurement.

On Friday, May 21, 1965, GSA held a Specification Developmental Conference for the purpose of obtaining assistance from industry and trade associations in the further development of this revision. As a part of this effort and our efforts to develop safety standards for motor vehicles purchased by the Federal Government, we have asked for funds in our 1966 fiscal year appropriation request to undertake research on tires, to incorporate improvements in Federal specifications and standards, to activate and operate a tire testing facility which should contribute measurably to the progress we make in improving tire specifications and standards.

GSA has not only developed specifications establishing minimum requirements for tires purchased for the Government, but is developing safety standards to establish requirements for the automotive vehicles purchased by the Federal Government.

Public Law 88–515 requires that passenger-carrying motor vehicles purchased for use by the Federal Government, except vehicles designed or used for military field training, combat, or tactical purposes, shall meet such reasonable passenger safety standards as the Administrator of General Services shall prescribe.

The proposed standard was published in the Federal Register on January 26, 1965 (30 Fed. Reg. 801), for information and comment. A specification developmental conference was held on the standard on Wednesday and Thursday, May 19 and 20, 1965, so that we might obtain technical advice and assistance from industry and trade associations. When the official standard is published on June 30, 1965, it will be effective for the purchase by the Federal Government of the 1967 model series of motor vehicles.

Number 515–15 of the proposed standard establishes requirements for tires and safety rims installed on Federal automotive vehicles. Not only must the tires conform to Federal specifications ZZ–T–381, but they must comply with the additional requirements of the pro-

posed standard. The tire used on a particular vehicle must have a rated capacity which takes into account the wheel load imposed by the fully loaded vehicle.

The standard also requires tire retention tests. One test is a blowout test with the vehicle traveling at 60 miles per hour, to assure that the rim will retain the deflated tire until the vehicle can be stopped. The second, applicable only to sedans and station wagons, involves 180° turns, both left and right, at 50 miles per hour, to assure that the tires will show no loss of original inflation pressure and will show no permanent displacement from the original position on the rims.

Both the Federal specifications and the proposed Federal standard provide that the tire shall be of a certain quality when it is new. However, once a tire has been installed, it does not remain new very long, and the life expectancy of its safety qualities depends upon the way it is used.

High-speed performance capability will be reduced after undetected rupture or severe straining of tire carcass cords has been caused by hitting curbs, road debris, or rough paving. Tire traction and skid resistance both will gradually diminish as the tread is worn away through continued use.

GSA has published and distributed a "Guide for Preventive Maintenance of Vehicles." Systematic scheduled inspections on Government vehicles are made of, among other items, wheel alinement, tires, tread depths, and tire cuts. This program which was endorsed by the Interdepartmental Highway Safety Board is now in its third year of operating throughout the interagency motor pool system and in several agencies. State tire inspection legislation might provide such guidelines for the public and protect them from accidents caused by the use of tires which have outlived their safety qualities.

We believe that compliance with the Federal specification should significantly reduce hazards attributable to tire failure, so far as Government vehicles are concerned. Further, we believe that the establishment of safety and performance standards and of a grading and labeling system for motor vehicle tires sold to the general public would substantially reduce the number of motor vehicle accidents caused by tire failure, and, in addition, would to a considerable extent protect the consumer from the possibility of misleading advertising. GSA therefore recommends enactment of S. 1643.

This concludes my prepared statement, Mr. Chairman. However, if you or members of your committee have any questions you may wish to ask, we shall endeavor to answers them at this time or furnish the desired information for the record.

Senator HARTKE. Thank you for your statement.

Do you feel that you have adequate testing facilities at the present time to meet the requirements of your own specifications?

Mr. ABERSFELLER. We have the basis for adequate test facilities, Mr. Chairman—the National Bureau of Standards. The particular equipment involved requirements renovations. When renovated it will meet our requirements.

Senator HARTKE. What do you mean by "when renovated"?

Mr. ABERSFELLER. It needs to be updated. This happens to be a vertical wheel on which tires, fully loaded, are pressed. We need to stabilize the wheel and repair it so that we can run it as speeds upward of 60 miles an hour.

Senator HARTKE. What is involved here?

Mr. ABERSFELLER. An expenditure of about $35,000.

Senator HARTKE. You do not have the money at the present time?

Mr. ABERSFELLER. Yes; we do have the money and we are now doing that. That was in our supplemental for 1965. We got the money for that.

Senator HARTKE. So far as your determination is concerned you feel that the National Bureau of Standards does have sufficient facilities and equipment to perform testing at this time?

Mr. ABERSFELLER. Yes, sir.

Senator HARTKE. They have indicated to the contrary in these hearings.

Mr. ABERSFELLER. The particular tests that I am referring to, Mr. Chairman, are those which would be conducted under our sponsorship. They would do the technical work. I am not familiar with the problems they may have. There is not, as an example, a road test facility at the National Bureau of Standards. We would plan to either do that commercially or use one of the military road test facilities. But as far as static laboratory tests are concerned——

Senator HARTKE. In your purchase, how many manufacturers do you go to? Are all manufacturers able to bid?

Mr. ABERSFELLER. Yes; all manufacturers are able to bid.

Senator HARTKE. How many originally do bid?

Mr. ABERSFELLER. Generally all of them bid, all of the better known ones. We now have some 15 or 16 manufacturers.

Senator HARTKE. Therefore, you are doing a complete test employing all of these products on what they consider their first line?

Mr. ABERSFELLER. Yes. I should explain we are doing a current complete test as the current specification is written. As I have indicated in the statement, we are not satisfied with the specifications. We expect the tests after the specifications are revised to be substantially increased.

Senator HARTKE. Isn't there in the General Services Administration such a diversity of use that it would practically encompass the same type of use which would be placed upon commercial vehicles?

Mr. ABERSFELLER. Oh, yes; I would think so.

Senator HARTKE. What I am really trying to find out is: Do we at the present time have in the Government a set of minimum standards, at least upon practically all the manufacturers, upon what they classify as their firstline tires? Do we not at the present time then, according to your testimony, have a testing system which is now in operation?

Mr. ABERSFELLER. A testing system is not now in operation as it pertains to the National Bureau of Standards, Mr. Chairman. That will be in operation. The testing system we now use is the manufacturers' certification of meeting test requirements. These tests, the road tests specifically, are performed by certain contractors with the industry. These are actual road tests.

There will be in being——

Senator HARTKE. Do you feel that these certifications provide you with the element of safety that is necessary, and conformity to your specifications, or do you feel that your specifications are so loose at the moment, antiquated, that they do not really provide the type of safety requirements that you need?

Mr. ABERSFELLER. I believe the specifications are antiquated. As you know from the Department of Commerce testimony, these were based on certain tests conducted in 1952, and certainly are antiquated.

We believe the current testing that is being done is adequate to meet the needs of that particular specification. But we are again totally dissatisfied with that specification.

Senator HARTKE. When you have completed the proposed changes in the specification and when changes are made on the test equipment at the National Bureau of Standards, will you then be able to provide minimum standard requirements for firstline tires?

Mr. ABERSFELLER. We would be able to provide a start for that. Mr. Chairman, I would like to explain it this way: None of us in the entire safety program—this includes tires—have all the wealth of information we would like to have to do a really excellent job to start with. One could wait 4 or 5 years and perhaps accumulate these data. Statistics, as an example, are missing.

We don't believe that this is the way this problem should be approached. We like to feel that the thing we have done on vehicle safety standards is the way to start. Start sometime, soon, immediately, as quickly as you can, with what you have, and set, as you suggest, a minimum standard, a standard which can be improved as time goes on as you gain additional information.

If we are to wait until all the information that will satisfy everyone is garnered and on file it will be almost infinity before we would have them.

Senator HARTKE. In your statement you refer to—

no lower quality than tires normally furnished in representative quantities by original equipment tire manufacturers as standard original equipment for automobiles, trucks, tractors, and similar motor vehicles.

Does that in and of itself provide any safety or quality control?

Mr. ABERSFELLER. Yes, I believe it does to some extent, Mr. Chairman. That happens to be a section which we are very dissatisfied with because if the industry chose to lower its tire standards—and I am not suggesting they they do—but if they chose to do that, our standards would follow that, and I don't believe that is proper. I believe we should set the standards.

Senator HARTKE. There has been some evidence here that the so-called original equipment is not necessarily the type which is needed for complete safety.

Would you agree or disagree with that?

Mr. ABERSFELLER. Yes, I believe I would agree with that.

Senator HARTKE. So this really does not provide a suitable criteria for making that judgment?

Mr. ABERSFELLER. This is our judgment, yes.

Senator HARTKE. I want to thank you for your testimony.

STATEMENT OF DEWITT WHITMAN, CHAIRMAN, VEHICLE EQUIPMENT SAFETY COMMISSION, WASHINGTON, D.C., AS READ BY JOSEPH P. HENNESSEE

Mr. HENNESSEE. Mr. Whitman has asked me to express his appreciation to you for the opportunity to present this statement. With your permission, I will proceed with the written statement.

Traditionally, States have had the primary responsibility for building their highways and regulating their use.

The Congress recognized the traditional role of the States and the importance of regulation at the local level when, in 1958, it enacted Public Law 85–684, known as the Beamer resolution. With the passage of the Beamer resolution, the Congress gave its consent in advance to interstate compacts in the field of traffic safety.

Soon thereafter, at the request of three organizations of Western States officials, development of two compacts was initiated. These three organizations of Western States officials were the Western Interstate Committee on Highway Policy Problems; Region IV of the American Association of Motor Vehicle Administrators; and the Western Governors' Conference.

Two compacts—one dealing with driver licenses and the other with motor vehicle safety equipment—were begun. In their final form, these two compacts reflect the efforts and judgment of a large number of Governors, legislators, motor vehicle and enforcement officials, and traffic safety consultants from all regions of this country.

The attention of these compacts is focused on two problems. The driver license compact, on the need to protect the driving public from unsafe or poor-risk drivers; the vehicle equipment safety compact, to the need for better ways to secure prompt adoption of uniform standards for new or improved automotive safety equipment.

Compact legislation was drafted by the Council of State Governments after consultations with the aforementioned three groups of Western States officials. These drafts were approved by the National Conference of Commissioners on Uniform State Laws.

By September 1, 1963, vehicle equipment safety compact legislation had been enacted in 24 States. This compact authorized a commission composed of one member from each compact member State and called for the organization of this commission when as many as six States had enacted this legislation.

The Vehicle Equipment Safety Commission was formally organized on the afternoon of September 24, 1963, during the annual conference of the American Association of Motor Vehicle Administrators at the Queen Elizabeth Hotel in Montreal, Canada.

Gov. (now Senator) Paul Fannin, of Arizona, Chairman of the Governors' Conference Committee on Roads and Highway Safety, convened the organizational meeting. Secretary of State Paul A. MacDonald, compact commissioner from Maine, was elected to serve as temporary chairman.

Other temporary officers elected were DeWitt Whitman—secretary, Washington State Commisison on Equipment, compact commissioner from Washington, vice chairman; and B. H. G. Eiting—director, Nebraska Department of Motor Vehicles, commissioner from Nebraska, treasurer.

At this organizational meeting, committees on bylaws, and budget and operations were appointed. The American Association of Motor Vehicle Administrators offered the services of members of its staff and of its technical committee on engineering and vehicle inspection. The Commission, in turn, asked the AAMVA to act as interim secretariat for the Commission during the initial period of its existence while it was without funds.

The subject of "Performance Standards for New Tires for Passenger Cars and Station Wagons" was discussed at the 1964 spring meeting of the AAMVA's Committee on Engineering and Vehicle Inspection.

It was the consensus of this committee that tire performance standards would be a good first subject for consideration by the Vehicle Equipment Safety Commission. To facilitate this, Chairman James L. Karns, Wisconsin's commissioner of motor vehicles, appointed a tire standards task force under the chairmanship of Capt. R. B. King, safety officer, Virginia State Police.

This task force was instructed to make a study of tire performance needs and to make a report together with recommendations to the Vehicle Equipment Safety Commission at its first annual meeting in Des Moines, Iowa, September 21, 1964.

At this meeting Captain King presented a comprehensive report from the tire standards task force. This report included proposed performance standards for new tires and standards for recapping, retreading, regrooving, and recutting used tires.

The Commission gave this careful consideration and decided to separate the new tire performance provisions from the balance of the report. The Commission's executive committee was instructed to make this separation, and to put the portion relating to new tires for passenger cars and station wagons into proper form and to issue it as a report, as required by the compact, precedent to the establishment by the Commission, of tire performance requirements. This report was issued November 4, 1964.

No less than 60 days after publication of a report, the Commission, upon due notice, is required to hold a hearing. A public hearing on the Commission's "Report on Performance Requirements for New Tires for Passenger Cars and Station Wagons" was scheduled and held in New York City on January 8, 1965.

Just prior to the January 8, 1965 hearing, Chairman MacDonald resigned as Maine's secretary of state and his retirement as chairman of this Commission was automatic. As vice chairman, DeWitt Whitman succeeded to the chairmanship.

At the January 8 hearing, testimony was read into the record from several member States and from the tire and automotive industries. Most were in general agreement with proposed tire performance test requirements contained in the report.

Some indicated apprehension that the Commission's standards might be too stringent. Some fear was expressed that such standards might be so weak as to be meaningless.

Following this hearing, interested parties were permitted an additional 60 days in which to submit supplemental information.

In the meantime, the Commission and its interim staff continued to explore the matter of tire standards and testing methods.

The Commission's executive committee met again for 3 days, April 27, 28, and 29, 1965. During this meeting it again consulted with State equipment approval officials, private consultants, National Bureau of Standards officials, and with industry representatives.

It was only then, after consideration of all currently available information, that the tire performance requirements and uniform test procedures contained in Vehicle Equipment Safety Commission Reg-

ulation V–1 formally adopted on May 14, 1965, and released Saturday, May 22, 1965 were formulated.

As chairman of the Vehicle Equipment Safety Commission, I feel that we have approached the task of determining minimum performance requirements for new tires for passenger cars and station wagons as objectively as possible. I feel that we have moved forward, in the words of our Supreme Court, with "all deliberate speed."

In establishing and issuing performance requirements for new tires for passenger cars and station wagons within a year after it began its study of the problem, the Commission has progressed, I submit to you, with the degree of dispatch contemplated by the Congress when it enacted the Beamer resolution.

The road to our first vehicle equipment safety regulation has been neither smooth nor easy. The Commission has been the target of considerable criticism. We have been accused of being a tool of the automotive industry.

We have been accused of being under the control of the American Association of Motor Vehicle Administrators. It was predicted that we would docilely rubberstamp, no pun intended, voluntary tire standards promulgated by the tire industry.

Nothing could be further from the truth. We believe that our new tire regulation is the best evidence that we have approached the problem of performance requirements for new tires objectively and that we have arrived at a fair and equitable solution. A copy of our tire standards is attached. I ask permission to have these standards included as part of the record. (See app. p. 55.)

Senator HARTKE. That will be included as part of the record.

Mr. HENNESSEE. We are indebted to many people for their advice and counsel. We are especially indebted to staff personnel of the American Association of Motor Vehicle Administrators, to Mr. Arnold W. Wise, counsel to New York's commissioner of motor vehicles, and to Mr. Don Blanchard, former technical official of the Society of Automotive Engineers, who served as legal and technical advisers.

We also gratefully acknowledge the counsel, assistance, and cooperation of State officials from California, New York, and Pennsylvania, and to representatives of the U.S. Bureau of Standards, the General Services Administration, the Society of Automotive Engineers, the Tire & Rim Association, the Rubber Manufacturers Association, the Automobile Manufacturers Association, and to the many individuals who have rendered material assistance to the Commission.

Thirty-eight—it is now, Mr. Chairman, 39, with the addition of Minnesota—States are now, by legislative enactment, members of the Vehicle Equipment Safety Compact. This means that in at least 39 States uniform regulation of tires, and eventually of all items of vehicle safety equipment, is in sight.

It is now possible for an interstate commission to approve uniform standards which can be promptly adopted by member State legislatures or be put into effect administratively by State motor vehicle authorities.

Our tire regulation is a milestone. We present our standards to member States, the motoring public, and to the tire industry humbly, but with pride. We believe that with the adoption of these standards we have succeeded in putting a stable "floor" on tire safety perform-

ance which will eliminate unsafe and dangerous tires and raise the quality of passenger car tires generally.

In conclusion, as Chairman of the Vehicle Equipment Safety Commission, chartered jointly, in effect, by the Congress and the Commission's 39 member legislatures, I wish to make two points.

First, the Vehicle Equipment Safety Commission is interested in providing the motoring public with a safe and usable tire. The Commission is not in competition with the Congress, with the General Services Administration, the Federal Trade Commission, or anyone else. We are concerned, in the instant case, under the authority given us, with determining minimum performance requirements for new tires.

The General Services Administration is concerned with specific tire purchase specifications; the Federal Trade Commission, as I understand it, with truth in tire advertising. These three objectives are not in conflict. They each complement the other.

My second point is that this Commission, created by the States under authority granted in advance by the Congress, has moved forward rapidly to meet its public obligations in the area of new tires for passenger cars and station wagons. It has promulgated performance requirements for new tires that are substantially stronger than those previously recommended.

In its own right the Commission deserves a chance to prove that it can—that it has—provided tire standards that are adequate to protect the motoring public.

This, Mr. Chairman, concludes the statement of Chairman Whitman. I would, if I may, make just one point of my own in answer to some questions that have been raised here today and in the previous hearing.

First, it is my understanding—and I am no engineer—that these standards are considerably higher than the standards contained in the Rubber Manufacturers Association's voluntary standards, and they are also, I have been told, considerably higher than those contained in Senator Speno's bills in New York.

For example, in relation to the comparative standards here of the rubber manufacturers, the VESC standards on the blowout or plunger test are 25 percent stronger across the board.

In addition, these tests are scheduled to be held on a tire which has completed the endurance test. This, in effect, will add an additional 10 or 15 percent to the strength of the test.

So, in effect, then, these standards we submit to you are approximately 35 to 40 percent stronger across the board than the standards contained in the rubber manufacturers. In addition to this, and it was noted by Assistant Secretary Hollomon in his presentation, previously, our standards do contain a cut growth test and a bead separation, or rolloff test.

I would like to thank you very much for your courteous reception. That concludes my statement.

Senator HARTKE. Mr. Hennessee, for the purpose of the record, what is your position with the Vehicle Equipment Safety Commission?

Mr. HENNESSEE. This is rather difficult to actually describe, I suppose. I am counsel for the American Association of Motor Vehicle Administrators.

Senator HARTKE. Who are they?

Mr. HENNESSEE. This is the association of State and provincial motor vehicle administrators who are charged with the administration of our motor vehicle laws and with the establishment of vehicle safety equipment standards on the State level.

Senator HARTKE. Who employs you in that capacity? Who pays the bill, in other words?

Mr. HENNESSEE. Our funding generally comes from State membership dues. We also operate under some specific grants from the insurance industry and from the automotive industry.

Senator HARTKE. Do you have any connection with the Vehicle Equipment Safety Commission other than in this advisory relationship?

Mr. HENNESSEE. No, sir.

Senator HARTKE. Are you in a position to answer questions on behalf of the Vehicle Equipment Safety Commission?

Mr. HENNESSEE. No, sir.

Senator HARTKE. Under such circumstances, it can't do very much good for me to direct any questions to you. I have some questions from Senator Nelson for the record to be answered by the Vehicle Equipment Safety Commission.

I will submit those for the record and ask that the commission answer them.

QUESTIONS SUBMITTED BY SENATOR GAYLORD NELSON TO THE VEHICLE EQUIPMENT SAFETY COMMISSION ON S. 1643

Question (1) How did the commission take up the tire question? Was it formally referred by any State legislature?

Question (2) Can the commission take up any vehicle safety subject on its own? If it can, couldn't the commission consider all known vehicle safety issues immediately and produce a comprehensive code?

Question (3) Is there anything in the compact that would prevent a single State from referring 40 or 50 safety subjects and then asking all other States to refrain from passing any legislation until standards had been decided by the commission?

Question (4) I understand that the compact allows the commission to study the need for safety equipment as well as technical requirements. Do you foresee that the compact would ever issue reports saying that there was no need for proposed State or Federal legislation?

Question (5) Does the compact allow the commission to set up quality grades or labels not strictly connected with safety? For example, if safety is considered adequate when a tire wears out before it blows out, it is possible that all tires could meet such a requirement. However, there would still be some tires that would wear far longer than others. Can the commission set up such grades for consumer information beyond a strict safety purpose?

REPLY TO QUESTIONS SUBMITTED BY SENATOR GAYLORD NELSON TO VEHICLE EQUIPMENT SAFETY COMMISSION RE S. 1643, BEFORE THE SENATE COMMERCE COMMITTEE ON JUNE 7, 1965

(By Basil R. Creighton, Administrative Officer, Vehicle Equipment Safety Commission, Washington, D.C., July 21, 1965)

Question 1. How did the commission take up the tire question? Was it formally referred by any State legislature?

Answer. The tire performance standards question was referred to the commission by the Engineering and Vehicle Inspection Committee of the American Association of Motor Vehicle Administrators. The membership of the American Association of Motor Vehicle Administrators is made up of State and provincial officials charged with responsibility for administration and enforcement of our motor vehicle laws. (See p. 3, statement, DeWitt Whitman, chairman, Vehicle Equipment Safety Commission, submitted June 7, 1965.)

This question has not been formally referred to the commission by individual State legislature. The broader question of minimum performance requirements for all items of automotive equipment, however, has been referred to the commission by the legislatures of all member States through enactment of the vehicle equipment safety compact. Pertinent portions of article V of the vehicle equipment compact are as follows:

ARTICLE V. VEHICULAR EQUIPMENT

"(a) In the interest of vehicular and public safety, the commission may study the need for or desirability of the establishment of or changes in performance requirements or restrictions for *any item of equipment* * * *.

"(b) * * * the commission may issue rules, regulations, or codes embodying performance requirements or restrictions for *any item or items of equipment* * * *." [Empasis added.]

Question 2. Can the commission take up any vehicle safety subject on its own? If it can, couldn't the commission consider all known safety issues immediately and produce a comprehensive code?

Answer. The commission cannot take up any vehicle safety subject on its own. The commission's authority is limited by article V of the vehicle equipment safety compact to consideration of the need for or desirability of establishment of or changes in performance requirements or restrictions for items of automotive equipment and to issuance of rules, regulations, or codes embodying such performance requirements or restrictions. The commission can, on its own motion, consider any item of automotive equipment within these contextual restrictions.

Under this authority, limited as it is, the commission could immediately consider the need for the establishment of or changes in performance requirements for any item of automotive equipment. Practical considerations relating to commission budget and personnel limitations and to procedural steps which must be followed, as set forth in article V of the compact, preclude "immediate" consideration of an action on all items of automotive equipment.

Article V contains procedural limitations which relate directly to the "immediacy" of the commission's efforts and productivity. For example, a "needs" study is required. If sufficient need is found, a report which contains recommended or proposed performance requirements must be published. Issuance of this report is a condition precedent to holding a public hearing within "no less than 60 days" after publication of a report.

These limitating factors preclude both the "immediate" consideration of "all known vehicle safety issues" or the "immediate" production of any comprehensive equipment safety code.

Question 3. Is there anything in the compact that would prevent a single State from referring 40 or 50 safey subjects and then asking all other States to refrain from passing any legislation until standards had been decided by the commission?

Answer. The thrust of this question seems to be toward what any single member State or member State legislature, rather than the compact commission, migth or might not do. If this is the question's true import, it lies outside the scope of the commission's authority.

To answer directly, however, there is nothing in the compact that would prevent a single member State from referring 40 or 50 items of automotive equipment to the commission for its consideration and action under the authority and restrictions contained in article V. Direct referral by a State has not been made a condition precedent to the commission's authority, and, although not precluded, would not be binding.

Whether or not any single member jurisdiction would resort to the procedure outlined in the question as a device to discourage legislation on the subject is purely conjectural. We do not understand that the commission's role should be to block needed legislation; it is inconceivable that the commission would lend itself to such practices.

Question 4. I understand that the compact allows the commission to study the need for safety equipment as well as technical requirements. Do you foresee that the compact would ever issue reports saying that there was no need for proposed State or Federal legislation?

Answer. The precise and pertinent language of the commission's authority, as set fort in paragraphs a and b of article V of the compact are to (*a*) study the need for or desirability of the establishment of or changes in performance re-

quirements or restrictions or codes embodying performance requirements or restrictions for any item or items of equipment. We interpret this as giving authority to the commission to promulgate or issue minimum safety performance standards for any required or permissive automotive equipment. This interpretation is consistent, with provisions of article I(c), that it is the intent of the compact to emphasize performance requirements and not to determine specific details of engineering in the manufacture of vehicles or equipment.

Assuming, as we must, that the thrust of this question goes to the authority of the commission, reference is made to article IV which gives the commission authority to collect and evaluate research and testing information and to "(d) recommend to the party States changes in law or policy with emphasis on uniformity of law and administrative rules, regulations, or codes which would promote effective governmental action or coordination in the prevention of equipment related highway accidents or the mitigation of equipment related highway safety problems."

This undoubtedly permits recommendations by the commission favorable to particular legislation. The identical authority would seem to permit, if not to require, unfavorable recommendations as well.

The commission is not precluded, under this interpretation, from issuing reports or making recommendations relative to the need or lack of need for proposed legislation, State or Federal, which comes within the substantive scope of the commission's authority. It may even be under a positive duty to advise as to undesirability of particular items of legislation whether State or Federal. We can only conjecture as to what the commission may or may not do at some future date relative to some future legislative proposal of an undetermined nature.

Aside from the jurisdictional aspects implicit in this question, commission members are all responsible State officials whom we would expect to advise member States in good faith as to the desirability or undesirability, as the case might be, of proposed State or Federal legislation within the scope of the commission's interest.

Question. 5. Does the compact allow the commission to set up quality grades or labels not strictly connected with safety? For example, if safety is considered adequate when a tire wears out before it blows out, it is possible that all tires could meet such a requirement. However, there would still be some tires that would wear far longer than others. Can the commission set up such grades for consumer information beyond a strict safety purpose?

Answer. As we interpret the compact, it does not permit the commission to set up quality grades or labels not strictly connected with safety. Under this interpretation the commission's authority is limited to establishment of "minimum" performance requirements and restrictions and to labeling or markings which indicate that such minimums are being met. We find no authority in the compact to establish grades for consumer information. Nor do we find any conflict between the commission's authority to establish minimum standards and the authority of the Federal Trade Commission on the one hand or the General Services Commission, on the other (see p. 8, statement, DeWitt Whitman, chairman, Vehicle Equipment Safety Commission, submitted June 7, 1965).

Vehicle Equipment Safety Commission

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VEHICLE EQUIPMENT SAFETY COMMISSION

Regulation V–1

MINIMUM PERFORMANCE REQUIREMENTS AND UNIFORM TEST PROCEDURES FOR NEW TIRES FOR PASSENGER CARS AND STATION WAGONS

1. SCOPE

This specification is for new pneumatic tires, designed for use on passenger cars and station wagons operated on highways open to public use for vehicular traffic.

2. DEFINITIONS

2–1 Bead—that part of the tire which is shaped to fit the rim.

2–2 Carcass—tire structure, excepting tread and sidewall rubber.

2–3 Chunking—separation of the tread from the carcass in particles which may range from a very small size to several square inches in area.

2–4 Cord—strands forming a ply in a tire.

2–5 Cross section—the lateral width of a tire mounted on an official measuring rim, after it has been allowed to stand for 24 hours at room temperature inflated to the pressure recommended in table 1. An official measuring rim is one that has been calibrated and found to meet the precise measurements specified by the Tire & Rim Association, Inc. The tire shall be calipered at six different points approximately equally spaced around the circumference. The average of these measurements is to be taken as the cross section. In the event the widest part of the tire occurs at a letter of sidewall design, the height of such configuration shall be deducted from measurements. The tire shall meet the minimum cross section dimensions specified in table 1 for the tire size listed.

2–6 Groove—space between two tread rows.

2–7 Ply—layer of parallel cords used in forming the tire body.

2–8 Ply rating—an index of tire strength; does not necessarily represent the actual number of plys in the tire.

2–9 Rib—tread section running circumferentially around the tire.

2–10 Rim—metal support for tire or tire and tube assembly on the wheel. Tire beads are seated on the rim.

2–11 Sidewall—portion of tire between buttress and bead.

2–12 Standard rim—one that has been calibrated and found to meet the precise measurements specified by the Tire & Rim Association, Inc.

2–13 Tread—portion of tire which comes in contact with road.

2–15 Tread separation—tread pulling away from tire body.

3. TEST PROCEDURES AND REQUIREMENTS

3–1 Tire endurance test

3–1.1 *Preparation of tire for endurance test.*—A new tire shall be mounted on a standard rim and inflated to the pressure shown in table 1. Loads on the tire during the test shall be determined with the tire positioned on the standard test wheel after the tire has been conditioned at a temperature of 100° F., plus or minus 5° F. for a minimum of 3 hours and with inflation pressure adjusted to that specified.

Four groups of cuts shall be placed circumferentially around the tire, spaced approximately 90° apart. Each group shall consist of one cut in each groove with the cuts located so that one does not come directly opposite a cut in the adjacent groove. Dimension of cuts are to be one-fourth inch long and one-sixteenth inch deep. If brambles or tie bars are present in the grooves, the cuts shall be located approximately midway between them. The initial total length of the cuts so made shall be recorded for the particular tire involved.

3–1.2 *Equipment.*—The test wheel shall be a flat-faced steel wheel 67.23 inches in diameter and at least the same width as the cross sectional diameter of the tire to be tested. The tire while being tested shall be located in an airspace controlled at a temperature of 100° F., plus or minus 5° F.

3–1.3 *Procedure.*—The tire and wheel assembly shall be mounted on the text axle and pressed against the test wheel with the required axle load. Specifications for the test shall be as follows: 100 percent of the required axle load shall be the load specified in table 1.

Tire endurance test

Speed	Initial inflation pressure	Test load (percent)	Hours	Test miles
50 miles per hour	From table 1	100	4	200
		120	6	300
		140	24	1,200
Total				1,700

3–1.4 *At the conclusion of the endurance test, there shall be no evidence of tread, ply, cord, or bead separation or broken cords.*—The final total length of such cuts made pursuant to section 3–1.1 shall not exceed 3½ times the length of the original cuts for this test.

3–2 Breaking energy test

3–2.1 *Preparation of tire for breaking energy test.*—The tire used in this test shall be one which has survived the endurance test. This tire shall be mounted on a standard rim and shall be inflated to the pressure shown in table 1.

3–2.2 *Equipment.*—The test shall be made with a cylindrical steel plunger three-fourth inch in diameter with a hemispherical end.

3–2.3 *Procedure.*—The plunger shall be forced into the tread as near to the center line as possible avoiding penetration into a tread groove or in the area of the cuts made pursuant to section 3–1.1 and at the rate of 2 inches per minute until the tire breaks or until the plunger is stopped.

Tires shall meet the requirements for minimum breaking strength as shown in table 2. No tire shall have a strength below that of a tire of the same size and cross section, with four-ply rating. For sizes not listed, the strength requirement shall not be less than that for the nearest smaller sizes in cross section and the same ply rating.

Final measurement of force and penetration at break shall be made at five points equally spaced around the circumference of the tire. In the event the tire does not break before the plunger is stopped by the rim, the force and penetration shall be taken as this occurs. The energy value to break a tire shall be calculated from the average value at break by means of the following formula:

$$W = \frac{F x P}{2}$$

where
W equals energy at break in inch-pounds;
F equals force at break in pounds;
P equals penetration at break in inches.

3–3 High-speed performance test

3–3.1 *Preparation of tire for high-speed test.*—A new tire shall be mounted on a standard rim and inflated to 30 pounds per square inch pressure. The tire shall be conditioned at a temperature of 100° F., plus or minus 5° F., for a minimum of 3 hours and with inflation pressure adjusted to that specified.

3–3.2 *Equipment.*—The test wheel shall be a flat-faced steel wheel 67.23 inches in diameter and at least the same width as the cross-sectional diameter of the tire to be tested. The tire while being tested shall be located in an airspace controlled at a temperature of 100° F., plus or minus 5° F.

3–3.3 *Procedure.*—The tire and wheel assembly shall be mounted on the test axle and press against the test wheel with the load as specified in table 1. Specifications for the progressive test speeds and conditions shall be as follows:

High-speed performance

Speed	Initial inflation pressure	Test load	Hours	Test miles
50 miles per hour [1]	30 pounds per square inch.	From table 1	2	100.0
75 miles per hour	do	do	½	37.5
80 miles per hour		do	½	40.0
85 miles per hour [2]			½	42.5
Total				220.0

[1] After 2 hours break-in, running at 50 miles per hour, tire should be allowed to cool to 100° F. temperature Inflation pressure should then be readjusted to 30 pounds per square inch before continuing test.
[2] This test is not performed on deep-tread winter tires.

3–3.4 At the conclusion of the high-speed performance tests there shall be no evidence of separation or tread chunking.

3–4. Tire bead unseating (roll-off) test

3–4.1 *Preparation of tire-wheel assembly for bead unseating test.*—The tire should be washed and dried at the two beads, mounted on a new finished painted standard rim without the use of lubrication and inflated to pressures indicated in table 1 at ambient temperature.

3–4.2 *Equipment.*—A fixture used to support the mounted tire-wheel assembly is shown in figure 1. A standard block (detailed in fig. 2) is forced against the tire sidewall as dictated by the fixture geometry. This load can be applied by a hydraulic ram or its equivalent.

3–4.3 *Procedure.*—With the tire and the wheel mounted in the fixture the load should be applied through the block to the tire sidewall at a rate of 2 inches per minute. The load at which the bead unseats shall be recorded. Raise the block and rotate the tire-wheel assembly one wheel stud hole. Repeat the test for each stud hole position, thus acquiring from four to six load figures for each tire-wheel assembly.

3–4.4 *Resistance to bead unseating.*—When tested in accordance with the foregoing procedures, the applied force required to unseat the tire bead at the point of contact shall not be less than 2,500 pounds for conventional tires mounted on 13-, 14-, or 15-inch rims conforming to Tire & Rim Association, Inc., standards.

4. IDENTIFICATION

Each tire which meets or exceeds the standards prescribed by these regulations shall be permanently identified in the English language on each side of the outside wall thereof at a location which will normally not be obstructed by the rim when the tire is inflated on the rim and will normally not be removed in a retreading or recapping process, with at least the following information:

(*a*) Manufacturer's or distributor's name or trademark.
(*b*) Brand name, if any.
(*c*) Size.
(*d*) The designation "V–1."

5. REPORT

Any report required to be made to secure approval under this regulation shall include full information on tests and observations made as required by this regulation.

Adopted May 14, 1965.

TABLE 1.—*Inflation pressures, loads, and rim for tire tests*

Tire size (nominal), inches	Ply rating	Measuring rim (Tire & Rim Association), inches	Load, pounds	Tire inflation, pounds per square inch	Cross section (minimum), inches
6.00 by 13	4	4J	730	24	5.70
6.50 by 13	4	4½J	840	24	6.25
7.00 by 13	4	5J	920	24	6.70
6.00 by 14	4	4J	800	24	5.75
6.50 by 14	4	4½K	890	24	6.25
7.00 by 14	4	5K	980	24	6.70
7.50 by 14	4	5½K	1,090	24	7.20
8.00 by 14	4	6K	1,180	24	7.70
8.50 by 14	4	6K	1,270	24	7.85
9.00 by 14	4	6½K	1,360	24	8.25
9.50 by 14	4	6½K	1,470	24	8.55
6.00 by 15	4	4J	900	26	5.75
6.50 by 15	4	4½K	1,000	26	6.25
6.70 by 15	4	4½K	1,120	26	6.55
7.10 by 15	4	5K	1,210	26	6.95
7.60 by 15	4	5½K	1,320	26	7.45
8.00 by 15	4	6L	1,400	26	7.85
8.20 by 15	4	6L	1,420	24	8.00
8.90 by 15	6	6½L	1,790	28	8.80
6.15 by 14	4	4J	730	24	5.70
6.45 by 14	4	4½J	840	24	6.25
6.95 by 14	4	5J	920	24	6.65
7.35 by 14	4	5J	1,020	24	6.95
7.75 by 14	4	5½JK	1,120	24	7.35
8.25 by 14	4	6JK	1,210	24	7.80
8.55 by 14	4	6JK	1,320	24	8.10
8.85 by 14	4	6½JK	1,390	24	8.50
6.35 by 15	4	4½J	800	24	5.95
6.85 by 15	4	5J	900	24	6.45
7.35 by 15	4	5½JK	1,035	24	7.05
7.75 by 15	4	5½JK	1,100	24	7.15
8.15 by 15	4	6JK	1,180	24	7.65
8.45 by 15	4	6JK	1,280	24	7.85
8.85 by 15	4	6½JK	1,370	24	8.25
9.15 by 15	4	6½JK	1,470	24	8.50
9.00 by 15	4	6JK	1,420	24	8.00

TABLE 2.—*Minimum breaking energy requirements*

Tire size code:	*Minimum breaking, inches-pounds*
6.00 by 13	1,250
6.50 by 13	1,250
7.00 by 13	1,375
6.00 by 14	1,250
6.50 by 14	1,250
7.00 by 14	1,375
7.50 by 14	1,500
8.00 by 14	1,625
8.50 by 14	1,625
9.00 by 14	1,625
9.50 by 14	1,625
6.00 by 15	1,250
6.50 by 15	1,250
6.70 by 15	1,375
7.10 by 15	1,375
7.60 by 15	1,500
8.00 by 15	1,625
8.20 by 15	1,625

Tire size code:	*Minimum breaking, inches-pounds*
8.90 by 15	1,875
6.15 by 14	1,250
6.45 by 14	1,250
6.95 by 14	1,250
7.35 by 14	1,375
7.75 by 14	1,500
8.25 by 14	1,625
8.55 by 14	1,625
8.85 by 14	1,625
6.35 by 15	1,250
6.85 by 15	1,250
7.35 by 15	1,250
7.75 by 15	1,375
8.15 by 15	1,375
8.45 by 15	1,500
8.85 by 15	1,625
9.15 by 15	1,625
9.00 by 15	1,625

FIGURE 1

1. LOAD ARM TO BE PARALLEL TO TIRE & RIM ASSEMBLY AT TIME OF ENGAGEMENT
2. LOAD BLOCK TO CONTACT TIRE AT MAXIMUM SECTION OF TIRE

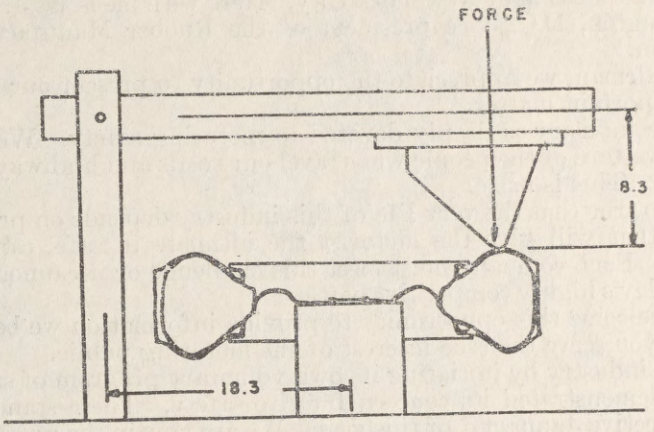
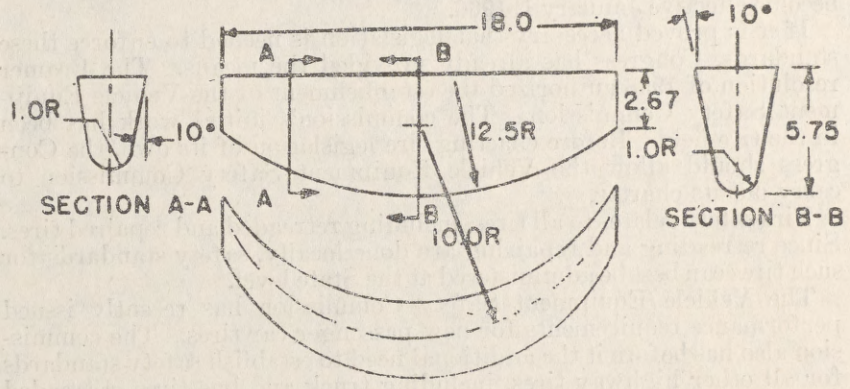
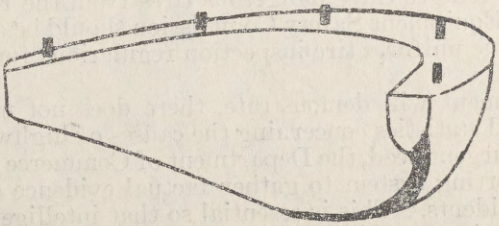


FIGURE 2





MATERIAL : HARDWOOD

STATEMENT OF ROSS R. ORMSBY, PRESIDENT; ACCOMPANIED BY W. J. SEARS, VICE PRESIDENT, RUBBER MANUFACTURERS ASSOCIATION, NEW YORK, N.Y.

Mr. ORMSBY. My name is Ross R. Ormsby, president, Rubber Manufacturers Association of New York City. Here with me is W. J. Sears of Washington, D.C., vice president of the Rubber Manufacturers Association.

Mr. Chairman, we appreciate the opportunity to present our views on this important matter.

The tire industry is deeply devoted to motoring safety. We consider the welfare of the people who travel our roads and highways our obligation. This is basic.

It is also true that the very life of this industry depends on providing tires that will give the motorist the ultimate in safe, carefree motoring. Each company must meet this challenge or it cannot long exist in today's highly competitive battle.

So we welcome this oppotrunity to provide information we believe may help you serve the true interest of the motoring public.

The tire industry by initiating its own voluntary program of standards has demonstrated its concern for tire safety. These standards became effective January 1 of this year. We are now in the process of strengthening and improving these standards, and these revisions will become effective January 1, 1966.

If it is proved necessary that legislation is needed to enforce these standards, Congress has already provided the means. The Beamer resolution of 1958 authorized the establishment of the Vehicle Equipment Safety Commission. The commission's initial work has been in the tire field. Before enacting tire legislation of its own, the Congress should allow the Vehicle Equipment Safety Commission to carry out its charter.

Tire safety relates to all tires, including retreaded and repaired tires. Since retreading and repairing are done locally, safety standards for such tires can best be administered at the State level.

The Vehicle Equipment Safety Commission has recently issued performance requirements for new passenger car tires. The commission also has before it the additional need to establish safety standards for all other highway tires, including truck and bus tires, retreaded tires, and repaired tires.

As we will develop in this statement, continued use on the highways of wornout, damaged, and abused tires presents the major tire safety problem. Only the individual States, through laws requiring tire inspection, can remove these dangerous tires from the roads.

The Vehicle Equipment Safety Commission should be encouraged to develop and issue uniform tire inspection regulations for adoption by the States.

As our statement will demonstrate, there does not now exist any reliable national statistics concerning the causes of highway accidents. As a matter of urgent need, the Department of Commerce could initiate a uniform reporting system to gather factual evidence on the causes of highway accidents. This is essential so that intelligent, corrective action can be taken to minimize such causes, no matter what their nature.

With this in mind, let's turn to S. 1643 which would authorize and direct the Secretary of Commerce to (1) establish minimum safety and performance standards for all motor vehicle tires, including passenger car tires, truck and bus tires, and tires for other highway vehicles; and (2) establish a grading and labeling system for all of these tires.

The bill specifies that both of these sets of regulations:

> shall be designed to provide the public with safe tires so that motor vehicle accidents caused by tire failure can be kept to a minimum.

SAFETY AND SAFETY STANDARDS

Since the accent is on safe tires, I shall direct my comments to this subject.

How big is the problem? First of all, we should try to measure the size of this problem.

Do new tires constitute a serious hazard on the highway? Frankly, we have never been able to find any reliable evidence that they do. There has been much talk about the menace of tire failures and some guesses as to the number of accidents and deaths they cause. But whenever we try to get the actual facts to support such statements, they seem to boil down to a small residue or evaporate entirely.

Statistics published by the Bureau of Public Roads indicate that in 1964, passenger cars ran 2.7 trillion tire miles. Trucks and buses spun off 1 trillion tire miles. If we knew the number of accidents attributed to tires per billion of tire miles we would have a fairly clear idea of the size of the problem. But such statistics are not available.

The Assistant Secretary of Commerce pointed out to the committee that they—

> have incomplete information and statistics on the relationship between accidents and tire failure.

Not long ago the Rubber Manufacturers Association attempted to gather some facts on this subject. We canvassed all the States and found that 21 of them have some type of information about tires in their accident reports. Of all the highway accidents listed in 1963 in these 21 States, only fifty-seven one-hundredths of 1 percent mentioned tires as a contributing factor.

On high-speed turnpikes, tires as a contributing factor were reported as a somewhat larger percent of the accidents. But, taking all kinds of roads and highways into consideration, the overall average was less than six-tenths of 1 percent.

Actually the problem is even smaller than that when we are talking about standards for new tires.

For one thing, it is an open question as to how many tire failures occurred before an accident and how many were the result of the accident. This possibility was also pointed out by the Chairman of the Federal Trade Commission in response to a question from this committee.

For another thing, during 1964, 28 percent of all replacement passenger tires sold and 38 percent of all replacement truck and bus tires were retreaded tires. These are tires onto which a new tread has been vulcanized after the body of the tire has already safely carried a vehicle throughout the life of the original tread.

We do not know what part of that fifty-seven one hundredths of 1 percent of accidents attributed to tires involved retreaded tires. But a share of them did, thus reducing the number of new tires subject to the proposed safety and performance standards.

We also do not know how many tires in that fifty-seven one hundredths of 1 percent were badly worn or damaged and should not have been on the highway at all. We do know that about 90 percent of all tire failures occur in the last 10 percent of the tread life. The same applies to tires which are operated at high speed—excessive high speed—either underinflated or excessively overloaded. How many of them are among that fifty-seven one hundredths of 1 percent?

In any case, the proposed legislation will not touch this phase of the problem, since it applies not to tire usage by the operator of the vehicle, but only to the manufacturer of new tires.

We believe a nationally uniform reporting system on the causes of highway accidents could be initiated by the Department of Commerce, through its Bureau of Public Roads in consultation with the Interstate Commerce Commission and the several States. A statistically sound and uniform system should be developed to assure the accuracy and validity of the results.

These reports should include complete and detailed statistics to show how many accidents are caused by new tires, how many by newly retreaded tires, and how many by overworn, damaged, underinflated, and overloaded tires. This would be a real service to the motoring public and the tire industry.

With respect to current tire production and performance, here is one thing we know for sure. The tire industry, as a whole, now has between $75 and $100 million invested in laboratory and outdoor tire testing facilities. It spends more than $25 million a year to test tires to make sure of their high level of reliability before they are offered for sale.

One company I know of has run more than 25 million test miles on passenger car tires alone in the past year and one-half of its proving ground in Texas. All kinds of passenger tires were tested—all levels of tires, its own and its competitors.

The tests were run on high-speed highways, on gravel roads, on crushed stone, on a high-speed track at speeds as high as 140 miles an hour.

In that 25 million miles of tire testing they had just one blowout. And that blowout was on an experimental tire which has been built to test a proposed new cord material, not a tire available to the public.

This is the experience of one company. It is typical of test results of others.

What is being done to further minimize the problem?

Now, although all evidence indicates that tires are not a major factor in highway accidents, they are still a factor. There are still some tire failures.

As long as there are any, the tire industry will continue to seek ways to eliminate them.

The greatest progress has been made and will continue to be made by the tire manufacturers themselves. Each year these companies make new strides in tires. They develop new and tougher types of rubber, new and better cord materials, improved designs, more effective tread patterns, and new types of construction.

The industry has reached the point where its tires are guaranteed against all defects and even all road hazards, except deliberate abuse, for the full life of the tread. Obviously the industry could not long endure such guarantees unless its product enjoyed a high level of reliability.

To further assure the public that tires are reliable, the manufacturers have joined with the Rubber Manufacturers Association to establish and abide by a set of minimum safety standards. These standards went into effect on January 1 of this year. They measure:

1. Tire carcass strength.
2. Tire endurance under varying loads.
3. High-speed performance at varying speeds.

The RMA standards also establish minimum cross section dimensions for each size of tire. The association's Certified Tire Directory lists all tires by brand and name meeting or exceeding these standards as certified by the manufacturer.

The Electrical Testing Laboratories, Inc., of New York City, is now installing more than $100,000 worth of equipment to verify the manufacturers' certifications by testing randomly selected tires.

Some people have said these standards are not adequate because they do not eliminate certain tires from the market.

Our critics seem to imply that low-priced tires are less safe than higher priced tires. But this does not logically follow. Our standards were not designed to eliminate tires from the market on the basis of price or riding comfort or design or tread life. They were designed to set basic criteria for safe operation during the life of the tread.

Other critics have said our standards are ineffective because they do not impose any penalties, such as could be provided in legislation. Delisting by the association from its Certified Tire Directory would strike at the very heart of a company's competitive position in the marketplace. This is certainly more severe and effective than any fine could ever be.

What more can be done?

The RMA tire standards are not final. That was announced at the time they were issued. They will be changed, extended and upgraded as tire demands and tire technology advance.

Let me tell you what was said of the RMA standards by Dr. Robert D. Stiehler, of the National Bureau of Standards. He spoke before the Federal Trade Commission on January 13, 1965:

> The RMA standards—
>
> said Dr. Stiehler—
>
> represent a first step toward self-regulation within the industry. These standards, like all standards, are bound to undergo many revisions.
>
> If the next revision of the RMA standards should eliminate the principal deficiencies, there would be no need for Government to issue separate standards for tire safety and tire size.

The RMA Tire Engineering Committee is constantly reviewing the standards. Each of the three performance tests are being reevaluated. Also, more effective dimensional limitations for tires are under study.

In addition standards similar to those now in effect for passenger car tires will be established by our association for truck and bus tires.

Our industry groups are also working toward improved tire standards. The Tire & Rim Association will soon announce a new concept for tire load ratings and minimum dimensional factors that are directly related to the load-carrying capacity of each size of tire.

In his statement presented on May 25, 1965, the Chairman of the Federal Trade Commission pointed out:

The specific safety problems which were developed at greatest length during our (tire) hearing relate principally to the matters of tire size and the so-called practice of overloading, which are interrelated.

This constructive action of the Tire & Rim Association, to be completed shortly, will establish maximum load capacities for each size tire. It will also establish a new standard of minimum dimensions to assure that new tires will be of size capable of carrying the maximum loads.

The 1966 Tire & Rim Association Yearbook, to be published before the end of this year, will include tables reflecting these new standards.

This action will meet the points described by the Federal Trade Commission and others.

The Society of Automotive Engineers will soon issue a report recommending uniform laboratory test procedures for evaluating tires.

The RMA Tire Engineering Committee will use the complete findings of these organizations in further improving our standards. The first revision of our standards will become effective January 1, 1966.

What Government can do:

The Vehicle Equipment Safety Commission, made up of motor vehicle and safety officials of 38 States, has been making an intensive study of tire standards since September 1964. They are required to cooperate with all agencies, both public and private, to obtain the most reliable data and technical advice.

The VESC has issued its final report on "Performance Requirements for New Tires for Passenger Cars and Station Wagons." That has been referred to here this morning. These requirements will be considered in preparing the forthcoming revision of the RMA standards.

Since tire safety relates to all tires on the highway, the Vehicle Equipment Safety Commission should be encouraged to go forward with its studies for safety standards relating to retreaded tires, repairing tires, as well as truck and bus tires.

Need for State tire inspection laws:

But the real tire problem today is not how they are made but rather how they are used. All new tires offered for sale today are safe tires for the life of the travel, if they are not seriously abused, heavily overloaded, or run at dangerously excessive speeds.

Periodically the tire companies inspect cars in parking lots. They usually find that up to 40 percent of the cars have one or more tires in an unsafe condition. This substantiates the results of a massive safe tire survey made in Wichita, Kans., a few years ago. After checking about one-third of the registered automobiles in that city, it was found that 42 percent had one or more unsafe tires. These tires were either clearly damaged in some way or worn smooth. Some were even worn through to the cords.

As mentioned earlier, about 90 percent of all tire failures take place in the last 10 percent of the tread life.

Senator HARTKE. Let's return to the first part of this presentation, in which you talk about guarantees.

You say, and this is the second time you made this basic statement:

All new tires offered for sale today are safe for the life of the tread.

If something happens, isn't the guarantee that they will just be replaced?

Mr. ORMSBY. That the tires will be replaced?

Senator HARTKE. Yes.

Mr. ORMSBY. I think, that the tires—my understanding of the commercial practice, Mr. Chairman, would be that if the tire did not wear as well as the manufacturer had represented it to wear, that there would be an adjustment.

Senator HARTKE. But it would be replaced, and a deduction made for the length of time for which it had been used?

Mr. ORMSBY. That's right.

Senator HARTKE. That is not really much of an offer, is it? All they are saying in substance is, "folks, if something happens, we don't think it will, if something happens you are going to have to pay for the length of time you used this tire."

That is not a guarantee, really. It is a fulfillment—if you are going to guarantee the product, you wouldn't have any product at all. You would receive the full purchase price of your item back.

Mr. ORMSBY. It is a type of depreciation guarantee.

Senator HARTKE. I grant you this is customary procedure in a number of products, but it is really not a full guarantee. I don't think it is a guarantee of safety at all.

Mr. ORMSBY. We believe that the tires are safe, that all tires are safe for the life of the tread.

Senator HARTKE. I would think you would probably lose your job and your representative position if you said you didn't think the tires manufactured by the people you represent were safe.

Mr. ORMSBY. I want to go beyond that.

Senator HARTKE. I am not asking you to prejudice your own position. What I am trying to develop is that the guarantee that you mention, which you have referred to twice in your statement—that the industry has reached a point where its tires are guaranteed against all defects and even all road hardships except deliberate abuse for the full life of the tread.

Obviously an industry could not long endure such guarantees unless its product enjoyed a high level of reliability.

My own interpretation is that they could endure very well, as long as you have the depreciation clause. I don't think you are really giving the customer much of a bargain.

Mr. ORMSBY. If the tire fails, say, after 300, 400, or 500 miles, under that type, then you would certainly have——

Senator HARTKE. What if it fails after 3 or 4 months?

Mr. ORMSBY. It depends on how far you have driven that tire.

Senator HARTKE. You are not really guaranteeing the product. This is a trade adjustment. I am not going to complain; you can do it. I feel that most people are unaware of the true nature of the "guarantee" unless and until they try to collect on it, and then are shocked and upset to discover they don't really have a full money-back guarantee.

Mr. ORMSBY. That has to do with the commercial practice. May I make this comment? I have a suit. I purchased it, I don't know when, but not too long ago. If I lose it, the insurance company is going to deduct depreciation. I am not going to get what I paid for it.

Senator HARTKE. That is a different thing. That is an insurance principle. Another aspect of the problem is that the so-called guarantee only covers the life of the tread. If the tread wears out quickly, giving rise to a complaint, the guarantee has ended. But bypassing that problem for the moment, the amount of depreciation is determined in relation to the list price. Isn't that true?

Mr. ORMSBY. I think that is not quite correct. I think it is what they call the exchange price. We have some people here. I am not fully familiar with the technical details. But I don't think that is true with respect to the list price.

Senator HARTKE. Let me ask it a different way. Is the depreciation determined in accordance with the purchase price, the actual purchase price?

Mr. ORMSBY. I think that is more correct, that it is determined more in terms of the——.

Senator HARTKE. Is it correct or not?

Mr. ORMSBY. It is determined on a broad basis of the exchange price, not the list price.

Senator HARTKE. The testimony is that the exchange price is not generally the price at which the tire is sold. What I am trying to find out here is if there isn't just a little bit of sharp dealing with the public in this field.

Mr. ORMSBY. I understand. Mr. Chairman, you also have to understand that as a fellow who works for a trade association, I cannot get too closely involved in this price thing you are talking about. I have to be able to provide information from industry, individual industry companies on this price thing you are talking about. I would have to disqualify myself to that extent, because I am just not able to get into this price thing too carefully.

Senator HARTKE. What I am pointing out is that these statements have very little value as evidence in this regard.

Mr. ORMSBY. We are talking here about safety.

Senator HARTKE. Yes; I am talking about safety, too. I am concerned with the ultimate effect that results from a tire that fails, or is destroyed.

Mr. ORMSBY. We are talking about safety for the life of the tread. The life of the tread may vary all over the lot.

Senator HARTKE. I grant you that this may be true. Taking what you have said so far, the value of the statements become less and less to me as having much——

Mr. ORMSBY. You are talking now about the guarantee.

Senator HARTKE. I am talking about the statements in your presentation. They are less and less valuable as evidence of safety on the part of the tire manufacturers than they were before I started asking these questions. I become less and less convinced by the moment.

Mr. ORMSBY. I am sorry if I have left you with that impression, sir, because the fact is that tires are better today than they have ever been in the past.

Senator HARTKE. I hope so. I know we have had scientific improvement.

Mr. ORMSBY. There is no question about the fact that improvements have been made in the tire industry. If there is anything that I have said here that will give you the impression that safety is not inherent in the tires made today, that is a very wrong impression.

May I continue with my statement, sir?

Senator HARTKE. No; let's return to what you have already said. When tires are offered for sale, is there a statement that defines "seriously abusing"? Do you tell people that they cannot drive an automobile, for example, at specific rates of speed?

Mr. ORMSBY. I would say that tires—we are talking about tires that were operated. Tires were sold for general purpose tires. They are sold to be operated on the Interstate System.

Tires are manufactured for various purposes. We manufacture police patrol tires that are to be operated at well in excess of legal speeds.

If a person wants to operate on highways in the United States at excessive speeds, beyond normal legal speeds, what we consider, in the first place, I don't think that the normal motorist is equipped to drive at high sustained speeds in excess of 80 miles an hour over long periods of time and still be in a safe operating condition.

Senator HARTKE. When you speak of dangerously excessive speeds, do you refer to 80 miles an hour?

Mr. ORMSBY. We refer to something in excess of legal speeds over a sustained period of time.

Senator HARTKE. The legal speed on interstate highways in some areas is 70 miles an hour.

Mr. ORMSBY. That is right.

Senator HARTKE. Would you say then that an automobile tire which is driven at 70 miles an hour, say for a 3-hour period of time, or a specified period of time, that that would be considered to be normal use?

Mr. ORMSBY. Absolutely.

Senator HARTKE. Do you feel that those tires are safe?

Mr. ORMSBY. Yes, sir.

Senator HARTKE. At that speed?

Mr. ORMSBY. Yes, sir.

Senator HARTKE. And they would last for a period of time?

Mr. ORMSBY. Last for the life of the tread.

Senator HARTKE. The life of of the tread: What does that mean?

Mr. ORMSBY. We have a statement here later on that if you drive a passenger car tire at 75 miles an hour—taking a passenger car tire——

Senator HARTKE. You say 70?

Mr. ORMSBY (continuing). Seventy-five miles an hour, you will get less tread wear than at 50 miles an hour.

Senator HARTKE. Is the life expectancy of the tire brought to the attention of the buyer?

Mr. ORMSBY. Yes.

Senator HARTKE. If you drive at 70 miles an hour?

Mr. ORMSBY. There is a lot of literature on this subject.

Senator HARTKE. We are in a hearing. If you have anything of any value here, you may state it.

Mr. ORMSBY. This information is available to the public.

Senator HARTKE. Let me explain. If you want to give us something, if you want me to do your research for you, I will do it.

Mr. ORMSBY. May I come back to the question, sir?

Senator HARTKE. You have a statement "All new tires offered for sale today are safe tires for the life of the tread." What I am trying

to find out is what this really means, whether this has any value whatsoever, because you have a qualifying statement "if they are not seriously abused," which I would assume would have some meaning other than actual common use in the highway driving.

Mr. ORMSBY. Let's assume that a tire is run—we recommend, in all the literature that is available, that tires should be kept to a certain inflation pressure. Let's assume the tires are run at a grossly underinflated condition.

Senator HARTKE. What if they were run in an overinflated condition?

Mr. ORMSBY. If you run at an overinflated condition it would probably help the tire user.

Senator HARTKE. Does anybody say that?

Mr. ORMSBY. Yes, we do.

Senator HARTKE. Is that stated in the guarantee when a new automobile comes on the road, that the life of the tire and the safety of the tire would probably be increased if it were operated at an overinflated pressure?

Mr. ORMSBY. I can't answer specifically. Just a minute.

Mr. Sears?

Mr. SEARS. The 1965 driver's manual in the glove compartments——

Mr. ORMSBY. Mr. Sears?

Mr. SEARS. To our knowledge, the 1965 model automobiles have in their glove compartments, in their owners' operator's manual, information on tire inflation pressures that are recommended under differing driving conditions. Each individual company, at the point of sale, attempts to advise the consumer of the proper conditions in tire maintenance and the importance of inspection. We as the association put out these types of bulletins. This is "Passenger Car Tires, Care and Service."

Senator HARTKE. That will be included as a part of the record of this hearing by reference.

Mr. SEARS. This particular one is under revision at the moment. These are printed in hundreds of thousands of copies and purchased by individual tire companies who distribute them through their dealers.

Senator HARTKE. Do all dealers distribute them?

Mr. SEARS. I don't know what happens to them after the tire companies ship them out to their dealers. And these kinds of illustrative charts—this is a new one, it will be in color—bear specifically on the point of advising the motorist about speed, load, and the effect of speeds on his tire life. It talks about mechanical irregularities of the vehicle that must be corrected to get maximum tire life, and a whole series of information.

Senator HARTKE. Does this apply equally to all outbound tires?

Mr. SEARS. Yes.

Senator HARTKE. Or is it a relative situation to all automobile tires?

Mr. SEARS. It applies to all automobile tires.

Senator HARTKE. Then you do have the uniformity of quality and typing by manufacturing that can apply to all of them?

Mr. ORMSBY. I think this is referring to the use of tires. We have uniform recommendations with respect to the use of tires, and the care of tires.

Senator HARTKE. I am returning to that. You have testified that at 75 miles an hour the tire could give up to 50 percent less tread service than at 50 miles an hour. Is that information given to the public at the time they buy the automobile tires?

Mr. ORMSBY. This information is given to the public, yes, at the time that he would buy the tire, or buy his car. It is in the car manual that he will get less tread service at this excessive speed or at this higher speed. This is not excessive speed from the standpoint of safety.

You don't regard 75 miles an hour as excessive speed from the standpoint of safety. Our tires are tested under our standards, Mr. Chairman, 85 miles an hour.

Senator HARTKE. Would that vary in accordance with the load which the vehicle is carrying?

Mr. ORMSBY. Yes, load has a lot to do with the wear of the tire.

Senator HARTKE. What is, for example, the load testing element? Is it the number of passengers, number of pounds per vehicle? How does the purchaser know?

Mr. ORMSBY. The vehicle is geared for a number of people and certain luggage.

Senator HARTKE. Let's clarify one thing. What is a two-ply, four-ply rated tire?

Mr. ORMSBY. A two-ply tire is a fairly new development in which it consists of two plies but has the strength of four plies, four-ply tires, what they used to be made of.

Senator HARTKE. You are labeling and grading then, is that right?

Mr. ORMSBY. We are advising the public as to the tire that is—the construction of the tire.

Senator HARTKE. It is an implied statement that this tire is equivalent to what a four-ply tire used to be; is that right?

Mr. ORMSBY. That is correct.

Senator HARTKE. How do you find out what a four-ply tire used to be?

Mr. ORMSBY. Mr. Chairman, you are getting into a lot of technical detail. What I would like to do——

Senator HARTKE. This is exactly——

Mr. ORMSBY. Wait a minute. May I finish one statement? I am sorry, I don't want to argue with you. I would like to submit our statement to the Federal Trade Commission—our supplemental statement—which we submitted to the Federal Trade Commission which bears on the two-ply, four-ply question, the load question, as well as the size question, which has much technical detail. If I would be permitted——

Senator HARTKE. We can do that by reference. Will you now tell us how would a consumer know what he was buying when he buys a two-ply, four-ply rated tire since he was under the impression that when he buys a two-ply tire he is going to get a four-ply tire but didn't know what the four-ply tire was in the first place.

Mr. ORMSBY. The tire advancement, the consumer needs to know the performance he is getting from his tires. That is what the consumer needs to know. The facts are that the two-ply tire is a better tire for the consumer today than the original four ply was.

Senator HARTKE. It is better?

Mr. ORMSBY. He is getting a better tire.

Senator HARTKE. That is fine. What did he receive in the original four-ply tire in relation to safety? Did it take care of the man who has a station wagon, for example, and six people, going on a trip loaded with his baggage in the car, and all the people and their luggage who are going on a 3- or 4-week trip?

Mr. ORMSBY. I think that the automobiles which came with the four-ply tire, which was made a few years ago, that the two-ply tire today is just as strong if not stronger than the other ply tires.

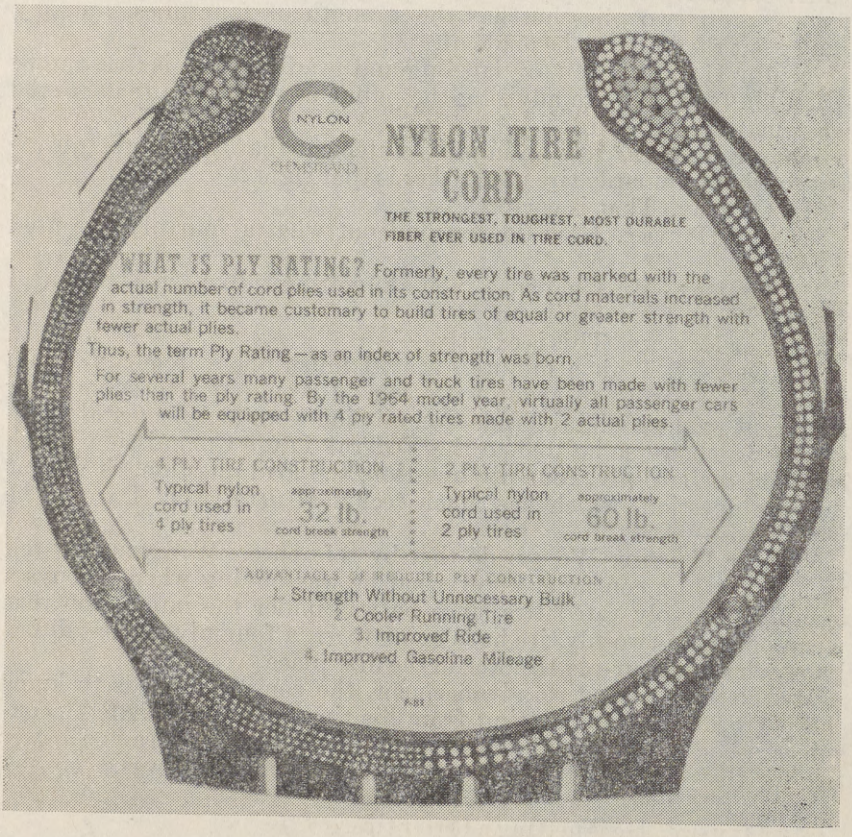
Senator HARTKE. The point is that the consumer is not trying to make a determination as to how the equipment of today relates to the older equipment. He wants to know if he has an automobile tire that will be safe to drive across the country.

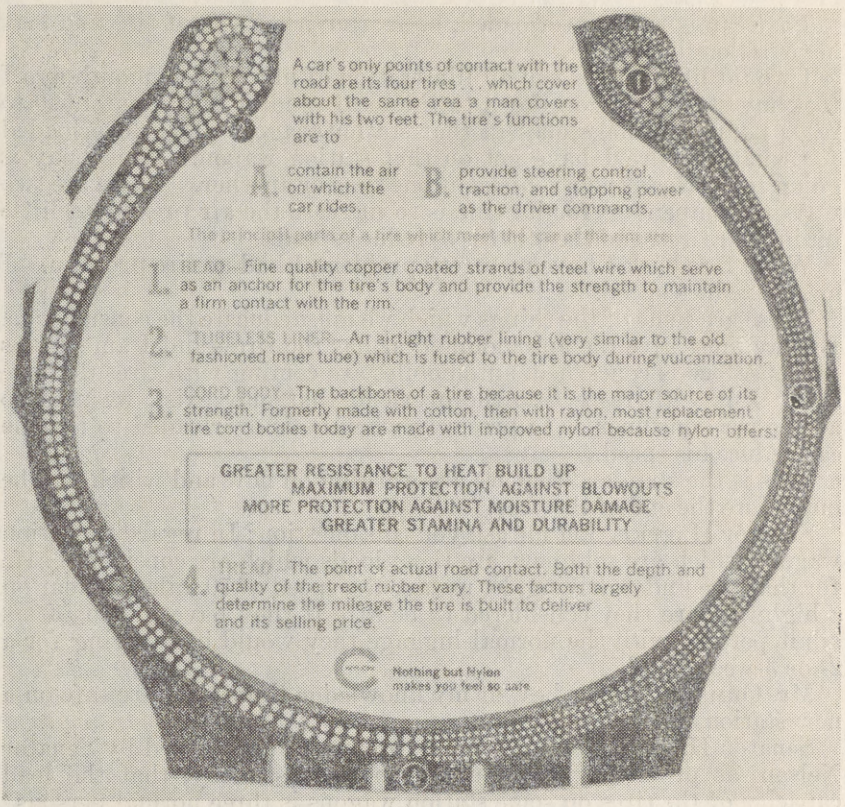
One person wrote to one of the major tire manufacturers and complained about this very item. He was told that in order to accommodate this type of load an eight-ply tire is required. How was he to know?

Mr. ORMSBY. Mr. Chairman, may I introduce in the record a statement by one of the cord manufacturers? It is a little exhibit which explains the difference between ply ratings.

Senator HARTKE. Yes, certainly. We will put that in the record.

Mr. ORMSBY. I am not promoting this particular type of cord but it is representative of a cord which is used in tires.





Senator HARTKE. I think that is fine. There is in the May 1965 issue of Consumers Bulletin—and I am not speaking for its reliability—this statement: "In rating the 1965 Ford, Chevrolet, and Plymouth, the cars selected as first, second, and third choice as regularly delivered, have overloaded tires and we suggested that the consumer order his car with tires of the next larger size."

Is this statement misleading? Are you saying it is not necessary?

Mr. ORMSBY. Here is what I would recommend—in other words the new standards which will come out, and this is what we haven't had, we didn't regard it as a safety problem—I still feel, as far as safety is concerned, there are two things we are talking about, one is wear of the tire, the optimum use of the tire, and the other is safety. As far as safety is concerned we don't regard that there is a safety problem involved with the loading of the car. But with respect to advising the consumer as to when his tires are considered to be overloaded from a safety standpoint, that standard will be out before the end of this year.

Senator HARTKE. How is a consumer to know when he is heavily overloaded?

Mr. ORMSBY. Mr. Chairman, basically the consumer has to know now by looking at his automobile. I am sure that you have seen automobiles going down the road in which the front end is up the air and the rear end is practically on the road.

That car is really overloaded, no matter what size of tire you may have put on the vehicle.

I would like to give you an illustration of myself. A month ago I took my station wagon down to the local sandpit and I put 1,500 to 2,000 pounds of flagstones in that station wagon. I am overloaded for whatever tire I have got on that station wagon. Everybody is going to overload their vehicles at one time or another. There are two ways to compensate for it: One is to increase the air pressure a little bit in your tires, and the other is to reduce speed.

When I go back I have no safety problem, I had no tire problem. I merely reduce speed.

These are some of the things which we must educate the consumer to. But we must give the automobile that has the tire—and I am sure as far as safety is concerned, automobiles are coming with tires that are safe. But with respect to the overload that may exist, we need to advise the consumer as to precisely when he is overloaded so that he can reduce his speed.

This is the standard that we are working on now and which will be out before the end of the year.

Senator HARTKE. Let me ask you this question: In regard to station wagons which are sold new, are those loads which are considered safe for that tire under driving, let us say, at a speed of 70 miles an hour on a highway, are they considered to be safe if they have a load of six adult persons with the normal luggage they would be carrying for a 2- or 3-week trip?

Mr. ORMSBY. To the best of my knowledge those tires are safe on a new station wagon.

Senator HARTKE. Isn't it true, as previously questioned by Senator Nelson, as previously brought out in the testimony, that the load capacity of the tires on some station wagons is three normal persons?

Mr. ORMSBY. I think that that has to do with the selection of the tire, with respect to the optimum use of the tire. It has never been designed for the safe carrying capacity; never been designed. That the practice of selecting the tire with three people, the cushion weight plus three people, and possibly some luggage, was never designed for a safety measure. It was designed for the optimum use of the tire.

The new standard, which is coming out this year, will design a maximum load for the first time. This will be done before the end of this year, a maximum load for the tire to carry, including people and luggage.

That will be issued as a public standard by the Tire & Rim Association, and it will be called a maximum load.

Senator HARTKE. What will a maximum load consist of?

Mr. ORMSBY. The maximum load will consist——

Senator HARTKE. It will say——

Mr. ORMSBY. It has to do with the size of the tire. If the vehicle is designed to carry six people plus 200 pounds of luggage, the size of the tire will be specified that this is the maximum load, and you can probably go beyond this particular load. But when the public puts into its car six people plus the normal luggage. But if he is going to put a boat on top, if he is going to put flagstones in the station wagon, he will know that he is overloaded.

Senator HARTKE. This is a change in procedure from the normal curb weight plus three persons.

Mr. ORMSBY. This will be a change in the advising of the public and a change in the procedure.

Senator HARTKE. But that is not being done at the present time?

Mr. ORMSBY. That is in the process of working out a new standard.

Senator HARTKE. You may proceed, sir.

Mr. ORMSBY. We are talking about getting these tires, which we think is important, off the road.

If we could get such damaged and overworn tires off the road, we would eliminate most of "the tire safety problem."

The best way we know of to remove these highly vulnerable tires from the road is for the individual States to pass uniform tire inspection laws. A few States already have such laws and we are strongly urging other States to do the same. However, the State laws are not being established on a uniform basis. This is why we believe the Vehicle Equipment Safety Commission should be encouraged to develop and issue national, uniform tire inspection regulations for adoption by all States.

These State statutes should make it unlawful for any driver to be on the road with a damaged tire or one with less than a specified minimum tread depth. These laws should not only be based on periodic vehicle inspections—they should be subject to continuous enforcement by police officers whenever and wherever such unsafe tires are found on the public highways.

GRADING AND LABELING

Now we come to the matter of grading and labeling of tires. The legislation before this committee suggests that this is a second way to "provide the public with safe tires so that motor vehicle accidents caused by tire failure can be kept to a minimum."

We have already shown that available statistics indicate such accidents are so infrequent that they have no bearing on the overall highway safety problem. We have also shown that our industry has issued safety performance standards which are undergoing further development. And we have demonstrated that the main safety problem concerning tires is the neglect, and lack of attention given to them after they have been put in service.

Under these circumstances what could a system of grading and labeling of tires be expected to accomplish in terms of improved highway safety? We believe it is impractical to grade label tire safety.

The ultimate performance of any tire depends largely on the driving habits of the motorist, and on the care and attention which he gives to his tires. For example, when a passenger car is driven at 75 miles an hour, the tires will give up to 50 percent less tread service than when driven at 50 miles an hour.

Attention to speed, pressures, loads, and proper car handling can greatly increase tire mileage and minimize failure. But a system of grading and labeling could not induce the motorist to use his tires properly or to replace them at the right time.

To provide a market in which the consumer can buy with confidence, we must assure, first, the absence of inherently dangerous offerings, and second, a choice of products in a wide variety of materials, designs, performance, and costs.

The products of the tire industry conform to these criteria. They are safe. They are widely differentiated from line to line within the production of any one manufacturer, and from one manufacturer to another.

This wide variety of product not only gives the tire buyer a wide choice, it also makes it exceedingly difficult to establish a meaningful and helpful system of grading and labeling.

The tire industry's multiplicity of product stems from the complex nature of the product. Tires are made from several kinds of synthetic rubber, and in some cases from natural rubber, and these rubbers are compounded in almost endless ways to provide a wide choice of performance characteristics.

There are several cord materials, each having its own properties, and these are available in different weights or thicknesses for use in plies which may vary in number for any one rim size.

The basic tire structures and designs also vary. There are differences in traction and antiskid properties, varying section contours, and special provisions in some cases for puncture sealing and extra safety features.

It would be impractical to develop a grading system which could accommodate properly all these choices in materials and designs as well as performance.

Then, too, different people want different characteristics in tires. One car owner may value long wear, another quiet running, another traction and nonskid. Some people want extra safety features, or ability to seal punctures, other a very soft, cushioned ride.

Any one tire can, of course, be described as to its materials, design, structure, size, and other physical features. Its capabilities can be set forth in terms of tread wear, comfort, and the speeds and loads for which it is intended. Special features can be spelled out.

Senator HARTKE. You say any tire can, of course, be described as to its size. The evidence is that this size specification is sometimes inaccurate.

Mr. ORMSBY. No. 1 tire is a flexible tire. No. 2, the same size—and this is again in our statement—the size of the tire is an approximation. It is more like a part number rather than an actual precise definition of the size of the tire. On a 7.50 by 14 tire, it may vary as to its dimension. We must describe the tire in terms of an air container.

This tire, which is a 7.50 by 14, when it comes down by this and is wider but less in diameter, it still has the same air container. If it goes up in height and goes in at the cross section, it is still the same size tire as long as it fits on the rim as a 7.50 tire which might be a little bit wider, but the other is a little bit higher.

This I might submit as an exhibit, which shows the evolution of tire design in size, beginning way back in, I think, 1903, if possible. We won't go back that far—1930–32—it shows how the tires have changed in their contour and design from the 1930 cars to the 1940 cars up through the line.

You will notice that tires are tending to become broader and less in height. The thing we don't want, and we fully agree that the tire at 7.50 by 14 shouldn't be a tire which really is a 6 by 14.

Senator HARTKE. What is the difference, and what difference would it make if there is no uniformity among even a 7.50 by 14?

Mr. ORMSBY. This is the standard that we are working on. A new standard will be issued this year which will describe——

Senator HARTKE. In other words, the old standard really was fallacious?

Mr. ORMSBY. No, it is not fallacious. It was a name size of a tire, and it was not fallacious. It just didn't ever mean precisely what people thought it meant.

Senator HARTKE. That is right. You put your finger on exactly what these hearings are about. In other words, it didn't mean what people thought. If that isn't something which the consumer could know, then I certainly feel that there is something lacking what people have been told by the tire industry. That is an amazing statement that you made.

Mr. ORMSBY. What I am saying is that that still didn't affect safety, the fact that it didn't mean what——

Senator HARTKE. Does it affect the life of an automobile tire?

Mr. ORMSBY. No, it wouldn't affect that, either. It didn't affect—the differences in the sizes of these tires, the tolerances and the differences involved, in my judgment, did not affect safety.

Senator HARTKE. In your judgment. What do you base your judgment upon?

Mr. ORMSBY. I am basing my judgment upon discussions with the tire engineers and with the experience of the industry in the service of their tires and in testimony before the Federal Trade Commission.

Senator HARTKE. You have recommended that the Commerce Department should make studies, that the statistics are not sufficient to make a determination, and yet you have said that you are making a determination with regard to safety.

Mr. ORMSBY. We are making a determination to advise the public with respect to the precise size of the tire. But the size of the tire, what we are trying to prove here.

Senator HARTKE. Just a minute. You said:

> As a matter of urgent need, the Department of Commerce could initiate a uniform reporting system to gather factual evidence on the causes of highway accidents. This is essential so that intelligent, corrective action can be taken to minimize such causes, no matter what their nature.

And yet you have testified that in your judgment the fact that a 7.50 by 14 is not 7.50 by 14 is not really going to affect the question of highway accidents or safety.

Mr. ORMSBY. Mr. Chairman, I don't think our communication is quite right here. I do say this, that if a tire, measured from bead to bead, the fact that it was 7.50 across on the cross section, and another tire was 7.35 on the cross section, 15 hundredths below that, but if it measured 7.35 on the cross section, but it measured higher, you would still have the same load-carrying capacity of the tire.

It would not be a smaller tire than the tire that actually measured 7.50. What we are trying to prove to you through this new standard is the precise measurement of the tire. It is a new dimension.

Senator HARTKE. Why is there a need for the change in the standards if the other standards were all right?

Mr. ORMSBY. The other standards are all right from an engineering point of view. But when people measure tires and say this tire only

measures 7.35, therefore, it must be a smaller tire than the tire that actually measures 7.50, that is not a fact in terms of load capacity.

Senator HARTKE. What about the diameter of the whole tire?

Mr. ORMSBY. That is the point we need to combine the diameter with the cross section and say that a name size tire, a 7.50 tire, will have a minimum dimension of a combination of the cross section and the outer diameter, and it can have small tolerances, one way or the other.

But we are trying to define the load, the air chamber of the tire. That hasn't been done before. It hasn't been felt necessary. People have said because they don't measure precisely, then one tire must be a smaller tire than the other.

Senator HARTKE. I think this point is well taken. Suppose you buy from two separate manufacturers, or even one manufacturer. Let's assume for the moment you buy two 7.50 by 14 tires. You put one on the right front wheel which actually is one-half inch lower than the one you put on the left front wheel. Would this affect wear? Would this affect safety?

Mr. ORMSBY. I will ask Mr. Sears to answer that question.

Mr. SEARS. If a tire has a half inch difference in outside diameter and it is the same name size, when that tire is mounted on a rim and inflated, this difference may become less.

Senator HARTKE. I am talking about when they are mounted and they are inflated, and one of them is a half inch different in size than the other even though they are both rated as 7.50 by 14 tires.

Mr. SEARS. In that instance, your radius, instead of being a half inch, is a quarter inch. Then your important dimension includes the deflect shown on the tire under load. This, instead of being a quarter inch is probably reduced in the nature of a tenth of an inch and often the very differences in tire construction that cause this difference are cord angles which take a different rate of deflect shown under load. So your actual operating radius will be so close that you will have no problem.

Senator HARTKE. It will make no difference as far as the length of time that the tread will last?

Mr. SEARS. No.

Senator HARTKE. It will make no difference as far as safety of operation is concerned?

Mr. SEARS. Nothing in safety.

Senator HARTKE. Will it affect the method and the type of wear which will go on one tire as compared to the other one?

Mr. SEARS. There might be some difference, but so long as your deflected radius is practically similar, I can't see any difference.

Senator HARTKE. How do you find your deflected radius? Is there a statement on the tire saying what its deflected radius is?

Mr. SEARS. No. It is determined by the air pressure in the tire. You see, there are so many differences in a tire. You can have a tire carrying exactly the same air pressure, but it squats down a little more than the other tire because of the difference in construction. The squatting down radius is important.

Senator HARTKE. Does it make any difference of any nature in the use of that tire?

Mr. SEARS. No; not that I have ever heard described.

Senator HARTKE. On what basis and what testing and what type of statistics is that judgment based?

Mr. SEARS. That judgment is based upon many months and hours and days of discussion with tire engineers.

Senator HARTKE. The point is that we are back again where we were on page 3 of this statement: "Do new tires constitute a serious hazard on the highway?" You answered that question: "Frankly, we have never been able to find any reliable evidence that they do."

That question, in all honesty, could equally have been answered: "Frankly, we have never been able to find any reliable evidence that they don't."

Mr. SEARS. Now, wait a minute.

Senator HARTKE. I know you don't like that. But, on the basis of your statement, isn't that what you have said?

Mr. SEARS. No.

Senator HARTKE. What have you said that is different?

Mr. ORMSBY. Mr. Chairman, we have said this: that we tried to make a survey. We tried to find out. You have 21 States which, to the best of our knowledge, even consider tires important enough to put in their accident reporting system.

If only 21 of the States consider tires important enough to put in their accident reporting system, then I would say that the majority of the States don't regard tires as an important enough factor to report.

Senator HARTKE. Let me say to you sir, in all honesty: I come from Indianapolis, Ind. One of the factors on that racetrack is tires, and they consider it a safety factor.

Mr. ORMSBY. Yes, sir.

Senator HARTKE. I would say that the ordinary policeman does not make a scientific judgment as to whether or not a tire was a contributing factor in an automobile accident.

There certainly must be a lot of money wasted by the tire people with the ads they are publishing in saying how safe they are on the highway.

Mr. ORMSBY. We are not saying safety is not involved. What we are saying is that tires are not a major cause of accidents on the highway.

Senator HARTKE. We could spend all day discussing your basis for that. It is pretty well agreed by the Commerce Department, and by yourself, that the statistics are not sufficient to make any type of conclusion, either way.

I am just trying to bring to your attention that, according to the statistics, we cannot make a definitive statement in either direction.

Mr. ORMSBY. Our statement suggests that we try to get those figures. Let's get the facts.

Senator HARTKE. You may proceed.

Mr. ORMSBY. But all these original capabilities of a given tire may vary widely in actual service. A lower grade tire could outperform a higher grade tire in certain ways, dependent upon the type of vehicle use, different driving habits, and widely different road and weather conditions. An attempt to combine all these tire elements into arbitrary grade levels would not assure the motorist he would actually obain the service from he product that he anticipated.

With such a complex product in such a complex market, any system of grading and labeling would have to be so oversimplified that it would mislead rather than aid the consumer. It is true that the tire

buyer needs to know many facts about his tires, but this information can best be given to him by the tire dealer and by the descriptive literature made available to him at the point of sale or elsewhere.

Such an oversimplified system of grading and labeling would also encourage manufacturers to conform closely to the established grades by eliminating product differences. This would rob the consumer of his wide range of choice.

And it would tend to stultify the industry's initiative in research and its spirit of innovation and product improvement, which have brought tires to their present high level of safe, dependable service for every type of need and for every pocketbook.

We sincerely believe that a grading and labeling system would not contribute to the stated safety objectives of this bill and the tire industry objects to it in the strongest terms.

CONCLUSION

Let me reemphasize that tire safety is a prime concern of the tire industry. For one thing, safe, carefree motoring is the most compelling selling point the industry has to offer. Tire manufacturers stand to succeed or fail in terms of their ability to build the last ounce of reliability into their product.

The hazards of new tires, we believe, have been greatly exaggerated. As we have shown, the main tire hazard on the highway today is the creation, not of the manufacturer, but of the user.

Therefore, we respectfully suggest that the tire standards and the grade labeling which would be authorized in S. 1643 are not needed. We earnestly believe they would not measurably reduce the number of highway accidents.

In fact, we fear that such legislation would work against the best interests of the motoring public by hampering and stultifying the free competitive forces which are at work in the industry today to deliver to the public the ultimate degree of tire reliability.

We are drawn to the following conclusions:

1. In view of the work which has been done on a voluntary basis by the tire industry and the work now in process by other organizations, such as the Tire & Rim Association and the Society of Automotive Engineers, we recommend that these voluntary actions be evaluated before considering tire legislation. The RMA and the tire industry are committed to broaden, extend, and upgrade these standards by January 1, 1966.

2. The Vehicle Equipment Safety Commission, authorized by the Congress, has taken the first step in accomplishing its mission. Before any action is taken to preempt the function of the VESC, we recommend this approach should be given a chance to work.

3. Tire safety relates to all tires on the highway. We recommend that the Vehicle Equipment Safety Commission should be allowed to complete its mission, which includes studies not only of new passenger car tires, but also of retreaded tires, repaired tires, and truck and bus tires.

4. We recommend and encourage action to establish uniform tire inspection laws in each of the 50 States. Such laws, we are convinced, would eliminate most of the tire failures on the road and genuinely

serve the public interest. We believe the Congress should help promote such laws, possibly with the help of the Vehicle Equipment Safety Commission.

5. We need better statistics on the actual specific causes of motoring accidents, gathered in a uniform manner for all States. This would demonstrate how many accidents are actually caused by new, retreaded, and repaired tires, and how many by the careless use of tires.

We recommend that the Congress authorize the Department of Commerce to gather these statistics. The Rubber Manufacturers Association offers full cooperation in the accumulation of this important information. Such a continuing study by the Department of Commerce would enable the Congress to evaluate the need for any legislation in the field of tire safety.

This would be a really significant contribution which only Government can provide. On the other hand, for the Government to duplicate the vast testing facilities being provided by individual manufacturers and the Rubber Manufacturers Association is, in our opinion, unnecessary.

6. A system of grading and labeling would not add anything to tire safety. On the contrary, such legislation would work against the best interests of the motoring public. It would deprive the consumer of his wide range of choice. It would hamper the free competitive forces which are at work in the industry today to deliver to the public the ultimate degree of reliability. Consequently, we strongly oppose this type of legislation.

Mr. Chairman, this concludes our statement and we thank you for this opportunity to express our views.

Senator HARTKE. How many people are represented by the Rubber Manufacturers Association? How many corporations manufacture tires?

Mr. ORMSBY. We have roughly, a total membership, about 170 members. If we are talking about the tire industry it would be 12 to 14.

Senator HARTKE. What is the number of tire manufacturers in the United States?

Mr. ORMSBY. The number, total manufacturers would be about 17. Some of those would be wholly owned subsidiaries of the other corporations.

Senator HARTKE. Under how many different brand names are they distributed?

Mr. ORMSBY. There are literally hundreds of brand names. We have issued our tire directory. There are about 940 names in this tire directory, which may not include all of the names, but includes all that have been certified to us.

Senator HARTKE. Do those brands state, when they are distributed to the public, the name of the manufacturer?

Mr. ORMSBY. It states the name of the brand—the brand name, but not always the name of the manufacturer.

Senator HARTKE. As far as the public is concerned, they would not be in a position to make a determination as to the manufacturer just by looking at the brand, is that correct?

Mr. ORMSBY. That is true. For instance, take an Atlas tire, or Allstate tire, which is sold widely. Those tires do not have the name of the manufacturer on them.

Senator HARTKE. So the statement that the "tire manufacturers stand to succeed or fail in terms of their ability to build the last ounce of reliability into their product," is not a matter of consumer determination, is that true?

Mr. ORMSBY. The consumer can quickly determine that if he has that experience with the tire, he will not buy that type of tire in the marketplace.

Senator HARTKE. Do you mean that he will go through the process of elimination, of testing——

Mr. ORMSBY. No, it isn't quite that way, sir, at all. There are about 140 million passenger car tires produced at this time. We pointed out to you the number of miles that they are run.

We are talking about the consumer. We are talking here of safety.

Senator HARTKE. We are talking about safety and length of use and other things, too.

Mr. ORMSBY. All right. But we are talking basically safety.

If the consumer bought a tire that he expected to get 20,000 miles out of, and he only got 10,000, he would be unhappy about it. Depending on how he drove the car might have some difference. If he drove it at 70 miles an hour and got the expected tread wear out of it he would probably buy it again. If he had a bad experience he would probably buy somebody else's tire. Each tire manufacturer is highly competitive.

Senator HARTKE. He might buy one tire under one brand name, and he would say that it was no good so I am going to buy another one, and still buy the same manufacturer's tire, right?

Mr. ORMSBY. Well, that is possible.

Senator HARTKE. Not only possible, but with 17 manufacturers and 900 different categories, it is highly probable, isn't it?

Mr. ORMSBY. No; I wouldn't say it is highly probable, on the basis of tires being sold that he could buy.

Senator HARTKE. All right.

Mr. ORMSBY. I would say it is possible.

Senator HARTKE. You say it is possible, and I will say it is probable. How is that? I don't want to put you in a bad light.

The manufacturers of tires have no control, do they, over the type of tire that is placed on new vehicles?

Mr. ORMSBY. The automobile manufacturers issue their purchase specifications, and the tire manufacturers live up to those purchase specifications.

Senator HARTKE. They live up to the specifications as listed by the automobile manufacturer.

Mr. ORMSBY. That is correct.

Senator HARTKE. I know that you don't want poor quality tires but the truth is, whether or not they are safe or whether they are of the standard and quality and grade should have been on that particular automobile, is a matter that is beyond the tire manufacturer.

Mr. ORMSBY. This is controlled by the automobile manufacturers.

Senator HARTKE. Thank you, sir.

Mr. ORMSBY. Pardon me. Could I put this report in the record?

Senator HARTKE. We will include it by reference.

Mr. Nelson has some material to submit for the record.

Senator NELSON. Mr. Chairman, I have a letter, five pages, which is being typed in my office, addressed to the presidents of the major

automobile manufacturers—General Motors, Ford, Chrysler, and Rambler—which outlines issues that have been raised respecting the responsibility of the automobile industry and the tires they put on the automobile, and recites the testimony that is in the record that two-ply tires are being put on station wagons, with a letter from the Goodyear Co. advising the buyer that he needed eight-ply rated tires. I am raising this question plus the question of the fact that the automobile industry tests their six-passenger automobiles, or many of them, with only three passengers and no luggage, whereas the buyer assumes that he is buying a six-passenger car fit to be used for the purpose for which it is sold, and is thus driving, many times, when he has six passengers and luggage, in a dangerously overloaded situation.

I have addressed this five-page letter to the testimony that has been put in the record here as well as before the Federal Trade Commission, and I am asking for a response from the automobile industry because it does seem to me that they have an important responsibility, too. It doesn't matter how high the quality of the tire is, if it is overloaded it is a dangerous tire.

The evidence, from several sources, indicates that the tires, original equipment tires, are being installed on automobiles by all manufacturers that are inadequate for the purpose for which the public intends to use the vehicle, and that they are being given no notice.

I checked every major station wagon in town, that is, station wagons produced by every major automobile manufacturer. All of them were equipped with two-ply tires. In my judgment, if the testimony in the record is correct, the statements by Goodyear, as well as others, then the automobile industry is failing in its responsibility to the public.

I think that their answers to the statements ought to be in the record.

The automobile industry has thus far remained silent. When Mr. Dixon, the Chairman of the Federal Trade Commission appeared the other day, I inquired whether these statements about the original equipment tires installed by the automobile industry had been answered in any way, so far as he knew. He said, "No, they had not." I don't thinks this record will be complete without answers to these questions from the automobile industry.

I ask the Chairman if, as soon as this five-page letter is completed, it may be submitted and printed in this record.

Senator HARTKE. It may be printed in the record. At that time we may consider calling or requesting or offering the opportunity to these people to testify in person.

Senator NELSON. If I do get a response, I will ask that that go in the record also. (See appendix.)

Senator HARTKE. Very well. The committee will adjourn until 1:30 o'clock this afternoon.

(Whereupon, at 12:26 p.m., the committee recessed, to reconvene at 1:30 p.m., this same day.)

AFTERNOON SESSION

Senator HART. The committee will be in order.

The first witness for the afternoon will be Winston W. Marsh, National Tire Dealers & Retreaders Association.

I should add for the record, I think Senator Hartke will be here soon.

Mr. Marsh, you have a statement. It will be ordered printed in full in the record as though given. If you want to attempt to summarize or interpolate as you go along, feel free to do so.

STATEMENT OF WINSTON W. MARSH, EXECUTIVE VICE PRESIDENT, NATIONAL TIRE DEALERS & RETREADERS ASSOCIATION, INC.; ACCOMPANIED BY ASHLEY SELLERS, ATTORNEY, SELLERS, CONNER & CUNEO, ATTORNEYS AND COUNSELORS, WASHINGTON, D.C.

Mr. MARSH. Let me introduce the gentleman to my left, Ashley Sellers, attorney and counsel for our association. He might make some contribution.

In view of some of the things which have preceded this particular session this morning, I think it might be well if you could bear with me to try to as expeditiously as possible read the statement as I have it prepared.

My name is Winston W. Marsh. I am executive vice president of the National Tire Dealers & Retreaders Association. This is a trade association of independent tire dealers from every one of the 50 States and Canada.

Our interest in the matter of tire standards is a long one dating back over many years. We believe that a recitation of the background and activities of the members of this organization of small business groups will reflect a very keen desire to serve the Nation and the consumers' best interest even to the point of their own disadvantage.

Members of this association are all basically small businessmen and exist in a highly competitive business climate which has had the effect of putting many of them out of business. Their action in this matter of tire standards reflects very much to their credit and shows the kind of attitude that has helped them survive at all.

There are a number of ways the problem of tire standards might be approached but any contribution this association might make toward a purposeful accomplishment would have to remain with the marketing and servicing of tires.

We make no claims as engineers; however, the tire dealer is very knowledgeable in the servicing of tires whether they be passenger, truck, off-the-road, or racing tires, or almost any other facet of this great industry.

As a result in this matter we have found ourselves as somewhat of a "go-between" with the consumer and his experiences in the marketplace on one hand and the tire manufacturers on the other hand.

There is one area, however, in which the independent tire dealer is dominant—I refer to the retreading business which is a business that the independent tire dealer has found very much to his liking, has made a great many signal contributions in the development of retreading and some very fine contributions to tire safety.

Members of our association have adopted the slogan "The Men Who Know Tires Best" which is indicative of their constant and

abiding interest in improving themselves to service the American consumer.

To try to put the tire standards problem in perspective, let's take a look at what happens when a customer comes in a tire store.

He comes in and the independent tire dealer looks at the tires on his car and if one or more is worn out he recommends that the tire be replaced. He will check the car to find out what size tire the motorist has been using. He might check the listing in his tire book and then recommend the proper size. There is supposed to be a proper size for every car.

However, recent statements in the industry have indicated that sizes no longer have any real meaning and the tire dealer now is faced with the fact that he can't really depend on a tire actually being sized as marked. Thus a 7.50-by-14 tire might only have a 7-inch cross section.

I have here as an exhibit a picture of three tires. On the left is a tire which was purchased in a department store, which measured 84 inches rolling radius, with a 4⅛-inch tread, size 7.50 by 14. The center one is the so-called firstline "original quality" tire measuring 84½- by 4⅝-inch tread and one is an automotive chainstore tire measuring 82¾ inches with a 3⅞-inch tread. You can quickly tell the difference.

This picture story could be told in many ways. They are not sized the same and they don't look the same. Dealers understand that carrying or load capacity is directly related to size.

The second part of this is that the tire dealer needs to know that this 7.50 by 14 is built to a minimum performance standard so that it will carry the car. When he sells the tire he wants to be sure that it's a safe product for the intended use.

Here are several cross sections and you can see that even to the average person the strength is not really the same. Again in this case the wider cross section is one which came off of an original equipment tire, and one is the tire purchased at a department store, and one was a tire purchased at an automotive chain.

You might be interested to know that with white crayon, I have marked the tire, one of the tires which was purchased—this one, from the department store. You will find that the white crayon depicts a built-in separation which by a strange stroke of luck we found in cutting the tire. The tire would obviously fail. It and the other tire depicted are on the approved list of tires which meet the minimum standards.

These tires ought to be the same size and they should also have some performance safety standard so that these tires will carry the load and resist abuse and reasonable wear and tear.

We are faced today with a severe price competition which brings many people to buy cheaper tires instead of original equipment or premium tires. But we must be sure that even the cheapest tire is a safe tire. How can we be sure that we are selling a safe tire without a minimum floor in terms of performance? This is the whole problem of standards that we have been trying to solve.

The interest of the National Tire Dealers & Retreaders Association in matters concerning highway safety dates back many, many years. In 1951 the association inaugurated a program called cut a bead—save a life. Through a resolution the association urged all tire dealers and tire renewers whenever possible to cut the bead of all tires

which they deemed unsafe, in order that such tires would not be repaired and sold to the public.

Whole community programs were developed around this theme and parades were held accompanied by huge bonfires of dangerous tires, thus pointing up the subject of tire safety.

Senator HART. Mr. Marsh, for the laymen, what is the bead of the tire to which you refer?

Mr. MARSH. The bead, Senator, is this metal part which is down here. It is this which is the factor which holds it into the well of the rim. Of course to cut that bead with a big pair of bolt cutters or something, renders it completely unusable.

Senator HART. Thank you.

Mr. MARSH. The association joined forces with the Auto Industries Highway Safety Committee in conducting inspections of vehicles in the various communities and added their skill and knowledge of the tire industry in eliminating unsafe tires from the vehicles on the road.

They recognize that with each revolution of a wheel on an automobile there is constant chance that the tire may be cut, split, bruised, or damaged in some way that might lessen the life of the tire or affect its safety.

However, by 1953 the dealers became concerned with some changing procedures in the production of new tires and passed a resolution in that year stating it was the opinion of these independent tire dealers that the recently introduced so-called third-line tire would be unsafe for use on the present-day, high-speed automobiles and would increase traffic hazards.

This resolution also earnestly urged the tire manufacturers not to produce a third-line tire of this type. A third-line tire in industry, using the nomenclature, is terminology which identifies the third grade of quality that a single manufacturer produces. Actually in many cases it is the fourth in the line starting with premium tires.

The firstline tire which is, at least by theory, equivalent to the quality of tires put on new cars. Below that comes the second-line tire and then the third-line, et cetera, et cetera.

In this same year of 1953, through resolution, the independent tire dealers recommended to tire manufacturers that in planning advertising programs the manufacturers should lay more stress on quality products, the need for quality merchandise, the danger of worn tires, the services of the tire dealer, and refrain from advertising or stressing prices which tend to disrupt local markets.

However, the trend in tire manufacture was not to be diverted so easily and the practice of lower price, lower quality of tires had grown throughout the industry. So in 1954 another resolution was passed which said the third-line tires has proved to be of little or no marketable value and might prove dangerous when used on high-speed cars. This same resolution asked the tire manufacturers and mass distributors who sell such tires to discontinue this practice.

Copies of this resolution were sent not only to all tire manufacturers but to all large marketers of private label merchandise as well.

In this same year a further resolution encouraged all States to adopt laws establishing regular periodic inspection of motor vehicles using the public highways.

It is significant that 2 years later in 1956, the National Tire Dealers & Retreaders Association brought out still another resolution opposing the regrooving of tires in the belief that such regrooved tires are not safe for use on modern passenger automobiles and that we would favor legislation outlawing the practice of regrooving.

In this same year of 1956 still another resolution regarding low-price, low-quality tires was passed wherein it stated that the sale and distribution of thirdline tires had created substantial confusion in the minds of consumers who can no longer distinguish between the various grades and lines of tires now being marketed.

Again, the tire manufacturers were urged to discontinue the sale of thirdline tires and other tires of comparable quality with a view toward distributing only tires that are safe and serviceable for use on modern automobiles, and to facilitate consumer understanding and acceptance of the various types, grades, and lines of tires that are now being offered for sale.

So, almost 10 years ago, the National Tire Dealers & Retreaders Association posed the problem which is the matter of concern to this committee and this hearing today.

It is of further interest to note that the National Tire Dealers & Retreaders Association in January 1955 at a meeting called by this association, invited industry representatives from all facets of the tire and retreading industry to meet together to discuss standards for the retreading industry.

Representatives of mold companies and tread rubber manufacturers were brought together at the Hotel Cleveland in Cleveland, Ohio. In due time reasonable standards were laid out for the retreading of the tires and adopted by the industry. Copies of these standards are attached to this statement as appendix A. [See appendix.]

These standards were promptly adopted—first by the National Tire Dealers & Retreaders Association, and then by the Tire Retreading Institute, a subsidiary organization.

The Tire Retreading Institute was formed at this time in order to identify quality retreaders who subscribed to shop inspection, the use of the very best quality of materials and certain standards for the production of tires that would meet the very highest of requirements in the retreading field. Their code of ethics is shown in appendix B. [See appendix.]

In 1958 changes had taken place in the industry to the point that these standards were reviewed by members of the Tire Retreading Institute, then circulated among the industry, and in 1959 the modification to upgrade and modernize these standards was brought about.

In 1957 still another resolution was adopted by the association. This resolution asked that there be clear and meaningful terminology established in the designation of comparative tire qualities. The association at that time was directed to take such action as will insure the protection of he tire-buying public.

Indicative of the attitude of these small businessmen was the fact that in this same year of 1957, the staff of the association was directed to formulate and bring about a code of ethical standards governing the manufacture and marketing of tires so as to dispel the confusion currently prevalent in the minds of the motoring public as to the relative quality and utility of tires now being offered for sale. A

sample of this code of ethical standards is attached to this statement as appendix C. [See appendix.]

The reason for these series of resolutions can be best illustrated by the attachment known as appendix D which shows the industry trends in so-called second-, third-, and fourth-line tires starting in January of 1957 with 17 sizes of second-line tires and 3 sizes of thirdline emerging some 7 years later with 40 sizes and types of secondline tires, 26 sizes and types of thirdline tires, and 6 sizes and types of fourthline tires. [See appendix.]

This illustration shown in this appendix is drawn from one prominent tire manufacturer's price list and cannot be considered as accurate for all companies either of major brand, minor brand, or private label merchandise.

In the opinion of many members of this association there are some tires today being sold to the public which will not even measure up to the quality shown in some of the fourthline tires of other manufacturers.

This means that in addition to retreading offered to the public, that the consumer is faced with a choice of possibly six lines of tires not specifically designed for different service, but rather all of highway tread design but priced at six different levels. Tire facts shown as appendix E was designed by the association to help this problem. [See appendix.]

Senator HART. I think that my earlier comment with regard to printing in the record following your statement will include all of the appendixes. Let me make clear this is the intention, and they will be printed.

Mr. MARSH. Thank you, sir.

However by 1960 this interest in standards was no longer to be denied and the association took a step toward pushing toward some sort of meaningful tire standards.

At the convention in 1961 the matter came to a head in such a way that it had to be dealt with on a very broad base. Meantime the association had been considering the many ramifications of the problem and staff and the executive committee of the association were keenly aware of the problems which surrounded any establishment of standards and the many changes which might result in the marketplace.

On May 15, 1962, at the invitation of the president of the National Tire Dealers & Retreaders Association, more than 50 representatives of the industry met in the South American Room of the Statler Hotel in Washington, D.C., to discuss tire industry standards. Many of the people who were representatives of industry were people of high office in their own respective companies. The staff of the association gave a background of the reason for the meeting, pointing out the problems which we had discovered in buying some low-quality tires from various marketers in the community and comparing them with quality pieces of merchandise. We believed this presented a very serious public relations problem and it would have a bearing on legislative problems in the various States which were all a matter of concern to us.

Staff continued by giving a review on the studies and research done through facilities of the association and with outside help in our efforts to study the problem of new tire standards. It was conclusion of the association at that time that after this research comprehensive tire

standards did not seem to be wholly feasible, however, simple standards could provide some improvement and be a step toward later modifications.

The history of the association's interest in the matter was reviewed at this meeting including the activities of the 1960 convention on the matter of labeling. The resolution passed on the floor of the 1961 convention resulted in a resolution by the executive committee at their January 1962 meeting, directing the then executive secretary to seek standards through the Commodities Standards Division of the Department of Commerce, and, failing this, to bring the matter to the attention of Congress. This is shown in appendix F. [See appendix.]

Representatives of the Department of Commerce and most particular of the Commodities Standards Division were present. The staff of the association introduced them and distributed a book showing how this could be done with the assistance of the Department of Commerce. A petition made by the association to the Department of Commerce was read. This petition sought assistance in this and it was through this vehicle that this meeting was established. A reply from the Commodities Standards Division of the Department of Commerce was read in which it expressed a feeling that after carefully studying the problem it believed that such standards were "feasible."

In order to get the solutions to the problem underway, the association recommended that a two-part step be made:

1. That there should be a minimum as well as a maximum dimension in tires both in overall height and cross section.

2. That tires be marked on the sides by the actual number of plies, cord material used and the ply rating of the plies in the tire, and that furthermore the meaning of ply rating would be clearly understood by the tire dealer and consumer alike.

It should be noted here that from the beginning the association has not concerned itself with the respective qualities of tires nor the labeling problem as such. They were of the belief that a standardization of the size of tires, so that a 7.50 by 14 tire would be a 7.50 by 14, would help. Furthermore, if there was some understandable safety factor below which a tire manufacturer could not build a tire, this would make tremendous improvements in the tires sold to the public. To some degree it would probably limit the number of lines and kinds of tires that were offered for sale, reducing the number by a considerable amount.

Representatives of the Rubber Manufacturers' Association were present and read a statement drawn up in June of 1961 by a special committee of seven presidents of the various rubber companies which stated in essence that while they were gravely concerned with the safety of tires, they felt the detailed technical standards would not be feasible and would be burdensome to the industry. They furthermore pointed out the Tire & Rim Association had standards governing a tire fitting the rim and fitting a vehicle and specifying the load limits.

After a considerable discussion, it was decided that a committee would be named by the industry—that this committee would be made up of technical people and that this matter would be reviewed by this committee to pursue the matter further and see whether formal standards could possibly be developed.

These events took another step forward when on July 31, 1962, at the Hotel Cleveland some 20 representatives of 15 tire manufacturers,

the Tire & Rim Association, the Rubber Manufacturers' Association, and the Department of Commerce met in Cleveland, Ohio. The president of NTDRA, the association's counsel, and two members of the staff were present.

Procedures of the May 15, 1962, meeting were reviewed in order that everyone might become familiar with NTDRA's objectives in the matter. The association made it quite clear that the request for standards did not involve compounding tensile strength, et cetera, et cetera, but was for the moment requesting initially a uniform size and an identification of strength. It was pointed out that the State of Pennsylvania was already considering legislation on tires that could involve size, labeling, and safety factors. A tire engineering representative present pointed out that standards for rubber are different from standards of such products as oil or steel. It was pointed out that load factors were most important and that different quality tires may carry the load, but it is questionable how far. A subcommittee was named to study the discussions of this meeting and report back.

The next meeting was held again in Cleveland, Ohio, on August 30, 1962, attended by a subcommittee of nine men including eight tire manufacturer representatives and a representative of RMA, and also admitted Government personnel from the Department of Commerce. Two tire dealers were present along with one staff member and the association's counsel.

Finally, a representative of the tire manufacturers made the motion that manufacturers endorse the policy of producing their replacement tires to the dimension of tires made for original equipment. In other words, to Tire & Rim Association's specifications.

Furthermore, that they agree to do this to the extent that is presently feasible; however, it must be recognized the technical complexity in economics of the dimensional problem will need considerable study and some time will be required before the course of action to realize the goal can be determined and carried out. After discussion this motion was passed. In the original discussions, it called for a full maximum effort but as one tire manufacturer said, it would take probably 3 years for their company to clear up their dimensional problems to bring it up to this standard.

The NTDRA representatives present were greatly cheered by what they felt was a signal step forward and request was made of the industry to help to disseminate information on specifications and sizing to tire dealers over the country, and possibly production of a movie and series of meetings of technical people across the country in order that the independent tire dealer might better service the needs of the consumer. In order that tire dealers would be better informed as to the proper measurement of tires, it was recommended that the booklet prepared by the Tire & Rim Association at nominal cost be made available to all tire dealers for their use.

Before adjournment, the matter of safety factors in tires was discussed and whether "ply rating" was a satisfactory phrase to use in determining the safety factor or whether there was a proper measure of ply rating or a consistent pattern in ply ratings among companies.

In September of 1962, the association again had its annual convention, this time in St. Louis, Mo., and the action taken at the last meeting of the technical committee in Cleveland, Ohio, was reflected in the resolution attached here as appendix G. (See appendix.)

On October 16, 1962, again in Cleveland, Ohio—this time at the Statler Hilton Hotel—the technical committee of tire manufacturers met with representatives of NTDRA again. There were eight engineers present representing eight manufacturers, a representative of the Rubber Manufacturers Association, another from the Tire & Rim Association, along with five tire dealers, each of whom had a wide experience in the servicing of tires, as well as the NTDRA president and two representatives of NTDRA staff and the association's counsel. The meeting opened with a review of the resolution of September 18, 1962, passed in St. Louis.

Next, the representatives of RMA were informed of the interest manifested on September 28, 1962, by the Federal Trade Commission where the Director of Industry Guidance requested representatives of NTDRA to meet with them about guidelines on tire quality to protect the consumer.

The staff pointed out that the Federal Trade Commission had expressed a great deal of interest in our meetings of the past and our planned meeting of this date and asked to be kept advised.

After a considerable discussion on the matter of ply rating, it was quickly seen there was very little agreement among the manufacturers present on the real meaning of ply rating. This then was not a vehicle that might be used to any satisfaction in determining a basic minimum of quality.

At this point the president of the National Tire Dealers & Retreaders Association suggested that possibly the manufacturers themselves had something which they wished to propose inasmuch as all the discussions to date had been provoked by the association's representatives in their effort to bring a satisfactory conclusion to the discussions. However, there were no suggestions made by any of those present.

Finally, in summary, the tire chairman of the meeting urged the manufacturers to assist the association, to do something on a strictly voluntary basis as had been the very objectives from the beginning before the Government found it necessary to establish some arbitrary standards through some regulatory procedure. The chairman pointed out that the wide number of lines offered had brought about misleading advertising and deception—that we had fairly well agreed that some grades of tires do exist that are unsafe and especially those tires not made for the use to which they are put.

In closing, the representatives of the tire manufacturers were asked to write the association collectively, individually, or pursue any possible avenue to bring the problem to a conclusion. It was obvious, at this point, that a stalemate had been reached.

The interest of the National Tire Dealers & Retreaders Association in this problem never wavered. As pointed out earlier, the association recognized that one of the real needs to safeguard the motorist was to do something about the tires on his car, even those of good tread. Appendix H shows a manifestation of this interest through a resolution passed October 8, 1963. [See appendix.]

Tire dealer interest in the subject of standards remained high and the National Tire Dealers & Retreaders Association Standards Committee along with the staff worked unstintingly to find a breakthrough. Having failed at "ply rating," load and carrying capacity of tires came under scrutiny. Surely, a full-sized tire would carry more weight

farther and more safely than an undersized tire even with the same air pressure. However, we were always limited by the lack of technical know-how in the building of tires.

Despite calls and discussions and requests from the National Tire Dealers & Retreaders Association, nothing further was heard on this subject until the Rubber Manufacturers certification program of some 944 different tires was announced in the summer of 1964.

So this brings us to what might be called the third phase. The third phase became the fulfillment of the prediction made by the National Tire Dealers & Retreaders Association some many years before, and that was that the consumers' interest would be served and with a great awakening of consumer interest in not only tires but other subjects, as the motorists in the country became seriously concerned about tires.

The development of the wonderful new roads system throughout all the United States merely accentuated the problem. The possibility of driving at sustained high speeds for hour after hour over the Nation's fine new road system meant that tires were being put to a greater strain than ever before.

Various States reported an increase in the number of accidents which might be attributed to tires. Some States developed accident investigation teams who spent a considerable amount of time in tire dealerships to become thoroughly familiar with the service factors of tires and thus better equipped to judge the results of highway accidents.

So, with a vengeance, the predictions made by the association began to become true. Probably the first initial step came from the State of New York where the State legislature proposed standards on a wide and extensive basis and a great deal of accumulated evidence provided by the bureau of motor vehicles was outlined at public hearings. In reasonable time other States began to follow the pattern set in New York and we found States such as Pennsylvania, California, Ohio, Nebraska, and others introducing tire legislation. In the face of this, the National Tire Dealers & Retreaders Association kept expectantly hoping to hear from the tire manufacturers about further discussions along the line of voluntary industry standards, but such word was not forthcoming.

In time, it became obvious that the days allowed to such a solution were briefly numbered and some legislative procedures would take over.

The Rubber Manufacturers Association brought out a booklet on "tire standards" but unfortunately, it had no relationship to standards at all. In the summer of 1964, the Rubber Manufacturers Association did take a major step forward in bringing out an industry course of action for certification, testing, et cetera. The response to this announcement can be shown by the tire dealers action reflected in appendix I. [See addenda.] This resolution, identified as appendix I, praises the Rubber Manufacturers Association for their efforts, but the tire dealers felt it did not go far enough in protecting the consumer.

In January 1965, the Vehicle Equipment Safety Commission had hearings on the matter of tire standards and the National Tire Dealers & Retreaders Association, like others, testified at this time. Testimony was centered basically on the recommendations by the compact com-

mission regarding new tires. The association agreed with the principle involved, but felt that the standards as thus projected by the commission did not fulfill the purpose for which they were intended.

The association took particular exception to appendix A which is similar to the "standards" set by the Rubber Manufacturing Association on tire sizing. As a matter of fact, the entire proposal was quite similar to the Rubber Manufacturers Association proposition and their appendix A showing tire dimensions were identical.

However, National Tire Dealers & Retreaders Association pointed out that in the matter of cross-section diameter, each tire was literally undersized one full size. For example, the Tire & Rim Association standard for a 7.50 by 14 and the table A set by the MVC for an 8.00 by 14 were almost identical. The same things were true for a 7.00 by 14 versus a 7.50 by 14, et cetera. The association said that since cross-section size and air pressure are determining factors in load and carrying capacity, then it is logical that undersized tires, regardless of the sized marked on the side, cannot possibly carry the load that is expected of them.

A quick evaluation of the empty weight of a given automobile plus a full complement of passengers, luggage and gasoline clearly point up the problem that even quality tires have at low-speed operation. Compound this problem with lesser quality merchandise, high-speed operation, and the average motorist's disregard for the poundage of air pressure in his tires, and you spell disaster on the highways.

The association further recommended that in order to insure full size and carrying capacity any tire standard should have an overall height and cross-section measurement. It seems logical that uniform cross sections could do much to insure uniform tire height. The National Tire Dealers & Retreaders Association firmly believes that the industry should conform to some reasonable standard of tire sizing with a minimum of tolerance so that an 8.00 x 14 tire is a 8.00 by 14 tire, just as a quart of oil is a quart of oil regardless of the quality. Think of the confusion that would result if a quarter-inch nut did not fit a quarter-inch bolt when it was purchased in a hardware store; or that the man who wore a 7⅜ hat found that the size and measurement had no further meaning.

We do not believe that grade labeling as such is feasible, workable, or to the best interest to the American consumer. The drive, initiative, the research, the enterprise of one organization may be greater than another, and so we would find ourselves in constant turmoil by trying to relate the products of one manufacturer as against another. It would be a great unfairness to a manufacturer who had developed some fine new product to have a so-called secondline tire compared by label with a lesser manufacturer's, or a private label producer's so-called secondline tire. The accepted identification of these as being of equal safety and equal quality would work a hardship and unfairness and would not be in keeping with the spirit of free enterprise as we know it today.

However, NTDRA does believe that some minimum standard of safety can be determined whether it be by load and carrying capacity of a tire, or by understandable ply rating, or from some engineering and testing facility to set such a standard. The tire may very well be designed to go to the store and return, and nothing more, but there

is no way of knowing whether such an automobile will end up through the used car lot into the hands of another who uses it at 60 miles per hour on today's expressways. We cannot believe that a tire purchased over the counter which can be penetrated with a 5-cent lead pencil is really a safe tire.

We are not concerned about the fact that some of the treads are of such inferior quality that they can be easily cut apart with a dull knife. Such a tire will wear out quickly, but does not necessarily involve the safety of the passengers in the vehicle. But when we combine rapid tread wear with a deficiency of the safety of the body of the tire itself, then we have created a problem which is a matter of concern to the American consumer and a matter of serious interest to the independent tire dealer.

To restate our position, we believe grade labeling will be an impairment to our free enterprise system. It would be hard to imagine a firstline show versus a secondline show or a first-class paint versus a second-class paint. Manufacturers may choose to build more than one quality of tire, but no one should be allowed to build and sell undersized, inadequate tires that fail to meet a reasonable safety requirement like that required for building construction or elevator operation. Claims that "certain tires" can do what is expected under "certain circumstances" is no more reasonable than flying in an airplane built to fourthline specifications. It might get off the ground, but its return might be problematical.

Today we believe we have cited the need for some minimum performance standards. Construction standards are neither feasible nor necessary. We have discussed what we have done as an association to fulfill our members' responsibilities to their customers. We have cited our partial successes and partial failures. We reluctantly conclude that Federal legislation is now justified to answer these needs. This approach may not be the only answer, nor necessarily the best answer, but we believe that it is the correct approach at this time. Beyond this, the Federal Trade Commission has the necessary power to handle the problem of misleading advertising and deceptive marketing practices.

Today the United States has only 14 parent tire manufacturing companies left. This was decreased by two this year and by seven since 1951. Competition is keen in the tire manufacturing industry. Some reasonable steps should be taken to protect the American consumer. Possibly in doing so, we may prevent further mortalities among the tire manufacturing companies. These mortalities are taking place at a time when our automobile growth and rate of use is increasing beyond any time in American history.

We thank you for the opportunity of being here today and we stand prepared to be of any service that we can, within our capabilities, to this committee and any actions that it deems necessary.

Senator HART. Thank you very much, Mr. Marsh.

Mr. Sellers, do you have anything to add?

Mr. SELLERS. I don't believe that I need to add anything, Senator.

Senator HART. It is an interesting, chronological story.

You have referred to it in the prepared statement, but let me present it as a direct question. You and your association members serve the consumer directly, do you not?

Mr. MARSH. That is correct.

Senator HART. If I went in today as a consumer and asked you to give me counsel, to help me make a rational shopping decision on tires, how adequately could you advise me?

Mr. MARSH. Senator, your question should probably be split into two parts. First let me say we do not represent all of the places that sell tires in the United States. We have some 3,500 members. We think they are the cream of the crop. But by various statements we understand that they are anything from stores of 245,000 to 325,000 places that sell tires.

If you were to come in to one of the people that we represent, we would take a look at your car, we would ask you your driving habits, whether possibly you had a young son at home who might occasionally use the car, whether you had occasion to use the car for anything else than going to the office or back, whether you carried any unusual loads. Then we would make a determination from that, and the appearance of the tires on your car, from what service you had from them, and what you should put back on the car.

However, in doing this, again we must assume that the size that we are putting back on is the same size you had on, unless we thought you might get an oversize, and we must, therefore, depend upon books supplied to us either by the Tire & Rim Association, or by our tire supplier as a source of that information.

Of course, it is the fact that we have been rather shaken up by the fact that tire size has no meaning. Because it has been my own personal experience—I have been in this industry for 35 years, and this sort of shakes up the foundation of what you always believed in. So, then, at this point it is rather hard to answer a question where things you have always accepted are no longer acceptable.

Senator HART. It is your judgment, I take it, that unless there are regulations issued prescribing minimum safety and performance standards in grading and labeling——

Mr. MARSH. We believe we have arrived at a point where this is the only thing that can be done which will salvage the situation.

Furthermore, we are convinced of the fact, Senator, that this can be done and with a minimum of effort. As a matter of fact, I just returned from a conference of distributors of tires of all the European countries. During the course of my stay there I had the opportunity, with this fresh in mind, to discuss this problem with some of the various European manufacturers.

While in Australia I visited the Simplex Corp., an Australian tire company, and I asked them about this problem of sizes. The problem of variation of size is literally nonexistent in Europe. There are reasons for that, but the fact still remains that they have no difficulty in pairing tires or sizing tires regardless of make.

As a matter of fact, I seized the opportunity to bring back with me for my own particular edification a copy of their data book, similar to ours. I was quite amazed to find that in a tire like the 7.50 by 14, which we mentioned here, that there is a maximum and minimum tolerance of less than 6 millimeters.

I said, "You are obviously devoted to your own company. What about your competition?" He said, "We have no competition that does anything less than that." All European manufacturers fall within the scope. The man seemed to be very knowledgeable and in a good position. I have every reason to take his word on this.

Senator HART. Were there any circumstances unique to the production of tires in Europe that would make it possible there, and yet argue against it being possible here?

Mr. MARSH. It is my understanding from the manufacturers there that—of course we are aware of the fact that most cars in Europe are of smaller size and dimension than the cars in this country. We are seeing a great many here now. They do not have the overloading problem, No. 1, and the car won't take much in the way of luggage or passengers.

But the weight and carrying capacity of the tires which are furnished on new cars in Europe is far more than the car would ever really require. So they are adequately protected.

Senator HART. That difference would not affect the ability, would it, of the industry to produce within very limited, narrow tolerances?

Mr. MARSH. It would not affect the dimensions. My reference there was thinking there is no need to oversize. For example, you can replace the tire that you have on there with the tire that was on there by size, and you will get exactly the same size back.

Senator HART. My questions may be repetitious, so I apologize.

Are you aware of any estimates that have been made as to the cost increase in the production of a tire that might result if there were a very rigid size maximum-minimum tolerance regulation issued?

Mr. MARSH. I doubt seriously if I could give you a proper answer to that question, inasmuch as problems of our association are basically concerned with the marketing and distribution of tires. While we are very knowledgeable of some of the problems which come about to the tire manufacturers, I don't think I could intelligently answer that.

Senator HART. What is your particular expertise? What kind of consumer protection is there available with respect to a retreaded tire?

Mr. MARSH. Our appendix shows that we have brought about an industry standard for retreading which is embraced by a great many retreaders over the country. Retreaders are not nearly as numerous as the new tire dealers.

I would expect that our association has the great bulk of retreaders within its framework because we are at least specialists in the field of tire selling.

We tried to recodify these standards from time to time in keeping with the changes that come about. As a matter of fact, on June 21, 22, and 23, we are having a review again of the standards as they relate to the industry today to again recodify them.

Furthermore, we have also created a division of the association called the Retreading Institute, which employs technical, qualified engineering service which does determine whether a retreader uses quality material.

More important to the safety of the tire, we have an engineering inspection which goes into the shop, determines his methods, the manpower that he has in the place, and whether his equipment is in top shape and capable of doing it.

Even more than that, this past year we were the first trade association selected by Secretary of Labor Wirtz and the Department of Commerce to set up a job training program. We are well on the way to training the technical skills of retreaders all over the country through the Retraining Act as established through the Government.

We are at the same time taking a look at the new tire industry, trying to be mindful of our own responsibilities in the retreading industry to be sure we stay apace.

Senator HART. The bill that Senator Nelson introduced, and which is before the committee, S. 1643, does not reach nor affect the retreading activity, is that correct?

Mr. MARSH. That is true. The position we have taken—we hope we are completely mindful of our responsibilities to the consumer and I hope our statements reflected that attitude.

The real truth of the matter is that you can do nothing about guaranteeing the complete retreading process until you can do something about the problem of the casing itself.

It is becoming increasingly difficult to identify tires which come into the retread shop and to establish some sort of quality controls on this with the great variables that we have.

For example, sizing on the side of the tire means nothing any more. Once you could cure it. This is not true any more. It can take four or five molds because the tires are so variable in size.

Until we develop something which will give us some idea of the casing standard, you cannot proceed to the problem of trying to give the same guarantee in the retreading field until this is accomplished.

Senator HART. Thank you very much, gentlemen.

Our next witness is the director of the Motor Vehicle Research of New Hampshire, Mr. Andrew J. White.

STATEMENT OF ANDREW J. WHITE, DIRECTOR OF MOTOR VEHICLE RESEARCH OF NEW HAMPSHIRE, LEE, N.H.

Mr. WHITE. Thank you, Mr. Chairman, for the opportunity of coming here today.

The need for realistic and practical tire standards is becoming more and more critical in view of the increased speeds of vehicles on our highways together with the advance in sophisticated design of these vehicles.

The recent Rubber Manufacturers Association recommended minimum standards for new passenger car tires does not approach the area of satisfying the minimum requirements for safety standards for tires. The categories—carcass strength, endurance, high-speed performance, and minimum dimensions for tire cross sections—contained in the Rubber Manufacturers Association minimum standards are not, in themselves, sufficiently broad to have any real meaning in order to provide motorists with safety. They also do not include many areas of importance from a standpoint of labeling, diameter, serial numbering, type of cord used and standards for bead grommet construction, et cetera.

The present method of grading tires by the use of a number level is most ambiguous and generally suggests price levels and not performance or safety levels.

The standards established voluntarily by all 17 domestic car tire producers to be effective January 1, 1965, is the first of any uniform standards to be offered in the 64-year history of the Rubber Manufacturers Association. These standards, as stated previously, are incomplete and offer very little assurance to vehicle users that what they are purchasing are really comparative values for the prices they are paying.

Aside from the pricing policies for tires, the areas are of real importance, multiple and in need of clarification.

(1) The random use of consecutive serial numbering of tires is causing confusion among law enforcement agencies, insurance companies, the legal profession, and vehicle owners. Up to several years ago every tire contained a separate and distinctly different serial number debossed on the sidewall of the tire. This created a positive means of identification so vital in law enforcement work, et cetera. Such a practice is now being ignored and the same serial number is being found on a number of tires. As an example, Motor Vehicle Research of New Hampshire purchased four tires of the same brand and size offered by a national chainstore complex. The same serial number was found on each tire. The same condition was found in an evaluation of tires for a State university by Motor Vehicle Research. Both instances occurred within the last 3 months.

A legal trial in which a tire was involved resulted in confusion for the court as several jurors examined the tires on their vehicles during the trial and found their tires bore the same serial number as the tire under discussion in the trial. In this case, the identification of the tire was an important point in order to serve justice.

A brief mental study of the many areas in which an identification of a tire can be important will confirm the need for individual tire numbering.

(2) The need for identifying whether or not a tire is manufactured to be a tubeless or tube type is of importance from a motorist's safety standpoint. The mounting of a tube-type tire without a tube is not uncommon and generally causes tire failure, such as ply separation under dynamic vehicle operating conditions.

When a tube-type tire is used without a tube the inflating air migrates from the tire air chamber into the cord body causing a breakdown of the ply adhesion followed by heat generation and reversion of the polymers involved.

(3) If retreading is to continue, the type of tire cord with which a tire is built should be clearly shown on the tire exterior to alert the retreader and allow him to apply the required techniques in the retread process of a particular tire. The two generally used tire cords; namely, rayon and nylon, require vastly different handling techniques in order to produce a retread tire of reasonable quality.

(4) The lack of balance standards for tires is a constant source of annoyance for the motorists who are forced to spend up to $3 a tire to eliminate front- and rear-end suspension imbalance. The total elimination of imbalance is not possible using the most exacting standards in tire balancing at the service level.

The original equipment manufacturers of vehicles demand a minimum level of tire balance and those tires which do not satisfy this requirement are sold as firstline replacements requiring the application of weights sometimes far beyond a reasonable and acceptable engineering level.

Premature replacement of tires can be traced to abnormal imbalance which can cause preferential wear on the tread, reducing the normal tread life. In aggravated imbalance of a tire, accelerated wear of the tire, wheel bearings, and suspension system of the vehicle can result. Further in this vein, the very control of the vehicle can be violated, generally manifested in front-end "tramp" or wheel "wobble."

The degree of tire balance should be part of a tire standard and expressed in a symbol on each tire.

(5) The dimensional inconsistencies of tires has not been dealt with in the recently offered tire standards. The minimum cross-section area is shown in the standards offered but no provisions have been made for the overall diameters of various size tires. Nor have the bead diameters of various size tires been included to assist in the prevention of injuries to service personnel during mounting procedures due to various diameters of the bead areas under compression while attempting to seat the beads and inflate the tire. This is especially true when K-type rims are used.

(6) The lack of clear-cut and understandable terminology to describe a tire grade leaves the buying public in a quandary. The adoption of a system of grading tires should be undertaken and such a system should clearly state the factors involved. My understanding of the present systems of grading tires is, these systems simply imply a higher or lower cost, with the word "premium" meaning a premium price. Each grade of tire should contain the several factors that are expressed in the grade standards from the size, weight, balance, cord, bead, grade of polymers used, et cetera.

(7) The strength of a tire cannot be wholly assessed by the forcing of a plunger into a small section of the tread downward toward the rim. This test has value from a limited area deflection standpoint. The true test is one which tests the force resistance characteristics of the entire tire where all the components of the tire work together to resist an internal force. Such a test is standard in most industries, including the cardboard carton manufacturing industry with the Mullins test and others. All air tanks and boilers are strength tested in this manner.

Motor Vehicle Research of New Hampshire undertook a sampling in the field of passenger car tires of most brands and "grades" of tires and subjected them to a force resistance test. This test, known as the MVR AB–4 tire test, showed that a force resistance of 10 times the recommended inflation pressure of a 6.70 by 15 tire was a reasonable "norm" as the greater majority of the tires tested resisted an inflation pressure of 255 pounds per square inch. The least expensive tire of one brand performed better than all other tires. This data is contained in the MVR Report No. 4 concerned with tire strength comparisons. Such a test should be used in conjunction with the plunger test.

Where a two-ply tire with a four-ply rating is involved, the force resistance test would provide a workable standard.

(8) Certain tire tread depths for grades of tires should be included in standards as well as under tread stock thickness. Tread widths measured at the tire buttress should be also considered. Tread wear rates established by standard tread wear tests should be included also.

(9) The establishment of an agency similar to the Underwriters Laboratories of the electrical industry to provide the tire standards based on tests of tires should be undertaken.

A complete and exhaustive study of radial-ply tires should be undertaken immediately and a separate set of standards should be created based on present tire performance in all areas, including sidewall impacting.

The complexity of the subject of tire standards can, in some measure, be taken from the foregoing and further assessed in the following:

The need for tire standards is becoming critical in view of the industry's practices in advertising, pricing, tire dimension differences, grading, and the multitude of designs and claims offered to the motoring public. While it may not be possible to create a set of standards that will apply to every tire application, a reasonable set of tire standards are needed and can be created for most tire applications and should be adopted in the interest of the public.

A tire is a complex structure composed of several highly dissimilar materials that must function as a unit. It cannot be made to very fine tolerances such as used for machining metals because it is a complicated structure made from flexible materials. They are not regarded as "engineering components" by vehicle designers and are generally regarded as units having vague and variable properties.

The complexity of tire design, construction, handling, use, and care create conditions that oftentimes lead to failure, resulting in accidents. A tire body, bead grommet, innertube of liner and wheel assembly must function as a unit as if they were one piece.

The complexity of tire construction involving rubber, textile or manmade fibers, chemicals, compounds, steel wire, and other metals creates problems in producing a system that will work harmoniously with a wheel under a number of conditions.

No other component of a vehicle controlling safety of operation is more important than a tire. However, they are not generally recognized as such. Tire failures are not treated, investigated, or often suspected as being the primary cause of an accident. Generally, the causes of tire failures are not clearly uncovered due to the lack of investigative procedures required or known in order to reach a valid conclusion.

It is my considered opinion that if every premature tire failure ended in a lawsuit, the price of a single tire would reach an astronomical figure in order to satisfy judgments and allow for a profitable operation of the tire manufacturers. Fortunately, a large percentage of failures occur under static or conditions that allow for vehicle control and are usually taken care of on an adjustment basis.

It should be recognized that the development of the pneumatic tire is one of the most important contributions to the creation and maintenance of our transportation system. The research and development efforts of the tire manufacturers has been an outstanding achievement in the transportation industry and, as such, deserves sufficient and proper recognition by those who depend upon tires in their daily pursuits.

In a similar vein, users of tires who support the industry have a right to expect proper and reasonable performance from all the tires they purchase.

The problems of tire selection by the average motorist has become more complex as vehicle operating speeds have increased. The intervals of time between tire purchases has decreased due to an accelerated use of vehicles during recent years. The average motorist is in a quandry when tire purchase time is at hand. He is told that the extra-heavy tire usually offered at a premium price is the safest tire and the one to be purchased. This information is given at many levels

by one manufacturer who at the same time makes claims that a heavy tire heats up more than a light one and should not be used for high-speed driving.

The motorist usually accepts what is offered by the salesman at the moment of purchase and is finally controlled by the size of his purse at the moment. The one problem that contributes to such conditions is a lack of basic standards that can be easily understood and relied upon by the layman car owner.

My research in the field of tires became accelerated on an academic level during a research project in 1956. Before this date, the subject of rayon versus nylon as the best cord for tires was widely discussed wherever tires became the subject of conversation.

Claims and counterclaims of strength and resistance to impact for each cord were the prime themes in advertising copy. I became involved in a project to evaluate the resistance to impact of tires containing both of these cords which resulted in a report to car owners and others.

This report, title "Motor Vehicle Research Report No. 2," contains data obtained when tires made with both cords were mounted on passenger cars and these cars were driven over a 6-inch granite curb at speeds of 20 to 60 miles per hour followed by a complete dissection of these tires to determine if cord failure had occurred.

The report is clean and concise, stating that one cord was no better than the other when a passenger car impacts a curb 6 inches high. In this test series, the tires were heated to temperatures of 145° to 235° F. before impact in order to create the most severe conditions. A copy of that report is contained in "Motor Vehicle Research Report No. 2." I feel this research project was basic and helped to clear up the confusion created by advertising.

It would be most redundant to discuss the descriptive nomenclature used to describe the quality of a tire by "level," "grade," "line," or any other popular term generally used to indicate a certain tire. The whole structure of this type description is ambiguous and has no real meaning. The origin of such designation is hazy and is used to indicate anything. I have found these particular descriptions describe the price of a tire and not its comparative quality or performance.

Tire "rating" and wheel loads are described in a number of ways without a clear, concise meaning that anyone can understand. The word "premium" when used to describe a tire has always meant a price description and not a performance factor.

Another basic safety factor that should be included in tire standards is a minimum coefficient of friction for each grade tire under locked wheel vehicle stopping. Such a standard would have meaningful value to vehicle users under emergency conditions.

The adoption of a Federal law for minimum tread depth requirements would eliminate the use of tires worn to a point of danger.

Tires are important to safety and a tire with less than two thirty-seconds of an inch of tread depth remaining should be classed as defective. New York State has adopted such a law. Included in such a law should be a device which will measure the tread depth of a tire more accurately than the plunger-type tread depth gage which is now used and cause a questioning of the measurements taken. Such a

device is now designed by Motor Vehicle Research and will become available to the service and enforcement agencies when required.

Further in the tire field, a Federal law covering the retread tire field is long overdue. It is my opinion that any retread tire that will not perform as well as a new tire should be classed as a defective tire using the same acceptable standards of testing as those used for a new tire. Too many retread tires are failing at turnpike speeds during elevated summer temperatures.

We are approaching the 100-mile-an-hour speed limit for our superhighways and we cannot use the 50-mile-per-hour methods for producing and selling a vital safety component such as a vehicle tire. The time to prepare for the 100-mile-an-hour speed limit is now.

A tire is no longer a hit-or-miss-made component for a vehicle but has become a sophisticated system requiring standards of a sophisticated nature to cope with the problems of vehicle use.

The proper standards would rule out substandard tires and provide safety for vehicle users. The technological advance of the land vehicle has been the backbone of our economic greatness.

However, this amazing progress of science while it has endowed us with vast physical power, it has brought with it gigantic responsibility. There is a problem with power and there looms the prosaic danger of just plain mistakes that can misdirect this power or fail to apply it when needed.

The amplification of our physical power, which not only multiplies our useful effort but by the same token magnifies our mistakes in proportion, has not come through simplicity.

Our present-day automobiles are examples of complication.

Tire nonuniformity problems: From a manufacturer's point of view, engineers are becoming more interested in the dynamics and construction of tires, whereas, in the past, their interest was generally centered on tire clearances, controlling static unbalance, noise characteristics, "thump," et cetera. Of late, there is an increasing interest in "tire esthetics" which in part is concerned with effects on sound and vibration caused by tire and wheel nonuniformity. Such interest is required due to the sophistication in vehicle suspension design, a quiet car interior environment, and the sensitivity of vehicle control at the higher operating speeds of passenger cars.

Every designer is concerned with creating a more quiet vehicle than the previous model together with smooth operation throughout the speed range. His problem is one dealing with self-excited tire vibrations and the transmission of such vibrations. His task is herculean and he is forced to demand more tire uniformity in order to satisfy his "tuning" designs in the chassis and suspension systems. A change in radial bounce frequency on a front wheel can be from 3½ cycles per second to 10 to 11 cycles per second by blocking out a coil spring where the frequency of a tire and wheel bounced by itself is in the order of 17 to 18 cycles per second. The membrane frequency of various tire designs controlled by where the tire is impacted and the magnitude of the blow must be coped with. The designer is always in a dilemma as absolute or accurate attenuation control of three-dimensional tire vibrations is an unsolved problem. The chassis designer is always working on the assumption that tires are free of irregularities. Such a condition is rarely present.

Experience has established that it is impossible to mass-produce perfectly uniform tires and wheels. Tire manufacturers are keenly aware of nonuniformity problems and have been since tires were first produced. They are constantly plagued with quality control problems and changes in tire architecture.

I offer these points in an effort to clarify the tire standard needs. Manufacturing of tires cannot be governed by laws of absolute certainty such as those applied to the production of some metal products.

In tire manufacturing, there is no substitute for quality craftsmanship. The use of automatic or semiautomatic machines and devices have improved control of tire quality. However, the laws of cybernetics generally include variations in human performance; therefore, the automated devices will operate as they are programed. One error in a setup operation results in a substandard run of tires. The tire manufacturer is faced with the human factor both from the standpoint of human tire builders and human programing of automatic machines. The results are substandard tires, from time to time.

I bring out these nontechnical factors in an effort to apprise this committee of the tire industry's problems.

I have been present during the hearings by the FTC and before this committee concerning tire standards and, frankly, I am concerned with the nebulous statements of some of the persons giving testimony. It is my opinion that most of the testimony is not based on engineering fact but on subjective layman information.

In fairness to this committee, the FTC, and the motorists, I think we should open "Pandora's box" and attempt to clarify some important points in order that this committee can gain a clear insight of the tire standards problem.

One witness offered a tire cutout section as an example of poor tire design. My understanding of the offering was that this tire brand should be eliminated from the market. It would not be difficult to eliminate most brands of tires on the same basis, as channeling or peaking in the tread base of tread cap is generally a quality control and not a design problem. Inspection through dissecting of most brands and grades of tires show this channeling in the tread base, from time to time. Substandard adhesion, mold temperatures, pressures, and times account for such problems.

The design problems such as "wrap-around tie-in," "conventional tie-in," and "envelope carcass construction" in tires account for tire failures when such designs are first introduced.

The main tire failure problem is one of quality control created by excessive variation in manufacturing causing lack of tire uniformity. A few of the factors involved are as follows:

Variation in stiffness and eccentricity.

Cornering force, alining torque, and rolling resistance fluctuations.

Static unbalance.

Variations in the physical characteristics of the tire cord, from yard to yard or cord to cord.

Variation in cord counts.

Variation in calendering.

Variations in adhesion properties.

Variations in compound textures and physical properties.

Variations in tread processing such as cooling or shrink control.
Excessive tread stretch or heavy or bulky tread splices.
Excessive tread wobble due to poor tread centering or excessive shrinkage.
Variation in bead centering.
Nonuniform bead grommets.
Off-center plies.
Bead tie-in, or ply lock-to side variations.
Wrinkled or wavy plies.
Cord distortion, caused by too vigorous stitching.
Heavy ply stock splices.
Ply stock voids.
Irregular lap splices.
Excessive stretch application.
Imprecise molding and nonuniform vulcanizing.
Improper air permeability control in liners and carcass.
Liner porosity problems and improper splices, et cetera.
Improper polymer extenders or quantity used.

These few factors should bring the quality control factors into sharp focus.

The art of employing tire uniformity grading machines to the problems of quality control is a relatively new one requiring broad human interpretations.

These machines can provide radial force spectrums, loaded radial runout spectrums, lateral and radial force variations, and other data. The development is young and promises to have value if explored. Succinctly, it is my opinion that tire failures are, for the most part, the result of the quality control problem.

However, there are vast differences in tires from a strength standpoint and a realistic standard for this factor is needed together with standards for dimensions, including overall diameters.

Touching on the ply rating problem, especially in the area of station wagons, this is an area that needs clarification for this committee.

The standards, for example, for type III airplane tires contain size, ply rating, maximum static load, maximum nose tire load during braking, inflation, inflated dimensions in cross section minimum and maximum widths, shoulder width, center line and shoulder minimum and maximum diameters, normal loaded radius, size, rim dimensions and others, plus the maximum ground speeds for various sizes and types of tires. Passenger car tires are not treated in such a manner.

The term "ply rating" is an index of strength and is used to identify a given tire with its maximum recommended load when used in a particular type of service.

Much has been said about the use of two-ply tires on station wagons. From an engineering standpoint, a proper two-ply tire used on a station wagon is correct. The load and inflation pressure engineering guide should clear up some of the misinformation data stated in the testimony. For example, the load-carrying capacity of a two-ply tire with a four-ply rating is increased with an increase in the inflation pressure and is rated parallel to an eight-ply rating tire up to 26 pounds per square inch.

The limit for the four-ply rated tire ceases at that inflation pressure while the same size eight-ply rated tire has increased capacity up to an inflation pressure of 36 pounds per square inch.

What has been questioned in various testimony is the load-carrying capacity of a two-ply tire versus a four-ply tire. What was not clear in that testimony was whether the tire design included for example, two plies of 3,200-denier cord of a certain cord count versus four plies of 1,600-denier cord. The load-carrying capacity of both can be the same. It was my interpretation of the testimony that the number of plies was in question, not the tire load-carrying capacity.

I trust I have been able to offer the facts on a nontechnical basis for such a complex subject.

We need standards for tires in the areas discused in the first part of this paper. Tire standards will eliminate substandard tires now in existence and which appear from time to time, thus providing more safety for vehicle users. The standards will upgrade quality control. The standards will have to be evaluated by a program of sampling and testing. The standards can be created by cross section testing of existing tires which will provide the basis for such standards.

Such a program should require a time period of approximately 6 months and should not exceed $200,000 in operating costs.

Senator HART. Mr. White, you imply in the concluding statement that you recognize that lay people in this field might have trouble absorbing all the data. I believe that is a valid assumption. I haven't been exposed to this problem until this afternoon and it appears that the harder one tries to inform himself, the more confusing it becomes until a breakthrough is made. I hope that we can make a breakthrough.

You accurately describe the usual consumer-vendor relationship. One generally accepts the salesman's suggestion within the limits of his purse. You say:

> One problem which contributes to such conditions is the lack of basic standards which can be easily understood and relied upon by the layman car owner.

In your judgment is it conceivable that basic standards can be developed that could be easily understood by the average car owner?

Mr. WHITE. I really do.

Senator HART. I hope the day will come.

Mr. WHITE. I think it can be done with a cross-section buying of all of the tires, dissecting them, taking a cross section of those tires, putting a safety factor over them, and you will come up with a pretty good answer. Our tires today are a pretty wonderful piece of mechanism. There are some areas that need cleaning up. For instance, in our particular fleet, composed of four station wagons, we run third-line tires. They cost between $7.50 and $9.50 on a wholesale level plus tax. We operate them on runways at 80 or 90 miles an hour and we have no problems.

In our first sampling of the industry we went out and bought every make of tire and grade. We subjected them to the force resistance characteristics tests, similar to that used in the carton industry or boiler industry. We were surprised to find out that the third-grade tires performed much better than the hundred-level tires. When we

cut them open we found that the hundred-level tire in January became the third-level tire in June and the second-level tire in the fall.

So what we are doing really is selling pounds of rubber and pounds of polyester and pounds of steel. It costs just as much to put a tire through the mold process and building process in a factory whether or not it sells for $7.50 or $27.50, if you follow what I mean. The number of operations are the same, the amount of difference in weight of the tire is for a third-rate tire 16 pounds and a hundred-level tire 20. We have 4 pounds of material. If we run it into classification, we are talking about 80 cents difference.

Your problem, as I see it, Senator, is a problem of quality control with very minimum standards. If we look back in the December issue of Fortune magazine, 1934, we will see that the industry itself, one segment of it, the president of a tire company made a statement that all the tires they built in 1 year were bad tires. So they do run against these problems.

They should be sure they are getting a serial number on a tire, it should be marked "tubeless" or "tube-type," it should be marked as to the type material in the tire, and its grade based—what its grade is based on.

In the Tire & Rim Association you will find—and I listened this morning to a discussion about a 7.40 by 15 tire of a low profile. In a low-profile tire it has less carrying capacity than a straight-wall tire, yet it is of the same size. You have to break it into categories of straight sidewall, low profile, and then rating. A four-ply tire rating is the same as eight-ply up to a certain inflation pressure. These standards are set right out by the Tire & Rim Association and are very plain.

We need to let the public know that when it buys a tire it is grade A, and grade A means X and grade B means X–1, or whatever specifications we have.

As far as the station wagons are concerned, I think that there should be on the windshield of every station wagon a notification of the size of tire and its load-carrying capacity on it, to notify the purchaser of that vehicle that this is the maximum load these tires will carry with safety at a given speed. If he requires a greater speed or a greater load to be carried in that vehicle, he should change the size of that tire.

There is no question it is a valid thing. The first station wagon we bought in 1961 had a two-ply tire. We were notified 3 days later to take them off and put on four-ply. This was in the early days before they increased the denier. Today the two-ply tire with a tested load is the same as four-ply with a smaller diameter and cord count. We have the problem of bringing out what constitutes tire loading and what constitutes ply.

Senator HART. Let me see if I interpret correctly what you are suggesting.

You would have Congress, or an agency technically equipped to do so, set broad minimum standards.

Mr. WHITE. Based on a cross-section test of the existing market in tires of all grades. What I am saying basically is to go out and purchase all the grades of tires, give them the force resistance test, the

high speed, the overload test, whatever it is. Take the median of that, add a safety factor to it and set your standards at that point and you can't go wrong because you will immediately eliminate the substandard tires or marginal tires on the bottom, because they won't perform in the median range. So you have something to launch on.

Today there isn't any way of setting up standards. I think this was expressed by the Bureau of Standards. They said it would take 3 years. If you want standards, buy the tires, give them the tests, take the median, add the safety factor, and you have a good launching platform.

I read an article coming down on the plane in this week's Time. It said, and I was very much amazed, that we are now building a tire that will stop you faster from 30 miles per hour on a dry road better than all premium tires. This type of advertising, sir, is violating all the laws of physics, because at 30 miles per hours a tire has a coefficient of 0.8 normally. They are going up to 0.147, meaning that you are stopping like you hit a fixed object. This type of advertising is misleading to the public. The one important thing which should be put into the standards is the coefficient of friction that is available for the particular tire, meaning that when a man buys it, that he knows he is going to stop on a dry, level road in a given distance—because there are some problems with some of the polymers used.

The reason why the manufacturer puts the polymer in is for soft ride characteristics and things of this nature. Set up a minimum.

When you go down below 0.7 coefficient of friction on a dry level pavement, when the man wants to stop his car in an emergency, you are getting the car owner in trouble, he is not going to stop in time.

These are the things that are important.

I say the standards could be very well set up by just a cross section test under four or five different program areas.

No one has brought them in. I haven't heard one single set of standards brought in here comparing any tires. We are the only people who have done it. We found out that the majority of tires will operate as far as strength is concerned on a force resistance characteristic basis well and above the 10 times its operating pressure.

A lot of people are surprised that a tire will withstand 240 pounds per square inch of pressure before it bursts. A tire will.

Senator HART. Thank you very much, Mr. White.

Mr. WHITE. You are welcome, sir.

Senator HART. Our concluding witness this afternoon is Mr. Harry C. McCreary, chairman of the board of McCreary Tire & Rubber.

STATEMENT OF HARRY C. McCREARY, CHAIRMAN, McCREARY TIRE & RUBBER CO., INDIANA, PA.

Mr. MCCREARY. When a man buys a can of olives in a grocery store, he can't tell what kind of olives he's getting.

Senator HART. Mr. McCreary, you must have had some prescience to know that I would chair the hearing this afternoon. I have been concerned with truth in packaging for several years. Perhaps you should appear at those congressional hearings as well.

Mr. McCreary. I use this story to make a point about tires, which I think is somewhat valid.

Senator Hart. I am with you all the way on that first line. Go ahead.

Mr. McCreary. But he doesn't have to worry about getting gypped, because somewhere on the label of that can it says specifically just what kind of olive is inside.

Senator Hart. Now, wait a minute. I do not wish to delay you or clutter this record. But, until we have some standards that really inform the consumer as to whether giant, king, or queen size olives carries an objective meaning, I can't necessarily go along with your second sentence.

Mr. McCreary. I agree with you that the olive industry's opinion of what constitutes a jumbo olive is perhaps somewhat at variance with mine. I think the point is that at least when you buy a can of olives you have something on the sidewall of the olive can, if you please, that tells you what you are getting.

But when a man buys a tire in a tire store, he can't tell what kind of a tire he's getting. And he's got plenty to worry about, because nowhere on that tires does it say specifically just what is inside—in terms of carcass strength, load-carrying capacity, maximum speed rating, et cetera.

Our company's position is very simple. If a man buys the "wrong" kind of canned olives, he's not hurt too badly. He may be in the doghouse when he gets home, but that's about the worst that could happen. But if he buys the "wrong" tire for the kind of driving he intends to do, someone may get killed.

Does anyone need a better argument for some kind of grade-labeling of tires?

What kind of a tire are you getting?

Some tire buyers may feel that they know what tire quality level they are purchasing, and that said quality level is adequate for their needs. Unfortunately, this is not always the case. For example, let's take a man who lives in the wide-open spaces and does a lot of high-speed—80 miles per hour and over—driving. If this man buys a premium tire with an extra-deep tread and built-in puncture-sealing capabilities, he is not buying the tire best suited for long-distance, high-speed driving. He would be better off with a thinner—and probably less expensive—tire. The thinner tire would generate less internal heat at high speeds and would be much less susceptible to heat blowouts.

Unfortunately for Mr. Tire Buyer, there is nothing anywhere on the tire sidewall which would indicate this. It would appear that even the man who is willing to spend a lot of money on his tires needs some kind of grade-labeling guidance.

For another example, let's take a fellow who doesn't want a premium-priced tire, but who does want a tire that is at least as good as the original equipment tires which came on his car when it was new. He is a responsible citizen who feels some obligation to the other drivers on the highway to keep his own car in safe running condition—including the tires. He is not looking for the cheapest tire he can find. How can he tell what he's getting?

The answer is: He can't, because nobody is supplying him with any information.

What the consumer needs to know:

There are five questions which the consumer needs to have answered with regard to just what he's getting when he buys a tire for his car. He needs to know:

(1) How strong the body of the tire is.

(2) How many miles of service the tire tread will deliver, as compared to some "standard."

(3) What kind of antiskid qualities the tire has, as compared to some "standard."

(4) What limitations there are, if any, on the maximum speed the tire will sustain.

(5) How much load the tire will carry at a particular inflation pressure.

From a tire-engineering point of view, there are other factors to be considered, but our company feels that the factors listed are the primary ones. If the consumer can be given some "ball park figure" for these items, he will be in a pretty good position to make up his own mind as to what kind of a tire he needs for his particular driving conditions.

Tire engineers are fond of pontificating about how "complex" the problems of tire service requirements are.

We agree; they are complex.

But if the consumer can be given the ball park figures mentioned above, he will certainly be in a much better position to decide for himself just what kind of a tire he needs. At present, he can't judge—for the simple reason that he is given practically no figures, ball park or otherwise, on which to make a decision.

Compulsory inspection: The best tire ever made is not very safe if it has been misused or worn to the point of imminent failure. It's a sad fact that many drivers never take a close look at their tires. As a result, there are thousands of tires running right at this very moment which are a menace to every other driver traveling the same highway.

There are some States which require periodic vehicle inspections, including the tires. But there are many States which do not require any periodic inspection of any kind.

We feel that some form of compulsory periodic vehicle inspection is needed in all 50 States.

Retreaded tires: A large percentage of the vehicles on the American highways right now are running on retreaded tires. If a system of grade labeling or some minimum quality standard is set up for new tires, it would seem necessary that something similar should be set up to cover retreaded tires.

From an administrative point of view, this will be more difficult. There are thousands of retreading shops in this country, each one having its own particular idea as to what "quality control" means.

From the retreader's point of view, one of the biggest problems is that he can't look at a tire and determine how much strength is left in the tire carcass. Some tires today are not built to retain an adequate carcass strength over the life of two treads. In our opinion, they should not be retreaded. Most tires being built today will retain ade-

quate carcass strength over the life of two treads. Some premium tires can be be retreaded as many as half a dozen times, just as the airlines do with their jet aircraft tires.

The retreader's problem is that he simply can't distinguish which is which. We feel that one way of solving this problem would be to start with the new tire. Some statement could be molded into the sidewall such as, "This tire may be retreaded not more than ——— time(s)." The number of times could be based on the new tire's original carcass strength, plus some sort of a factor which would take into consideration the percentage loss in carcass strength within a certain number of miles. After a period of, for example, 5 years from the date this type of new tire first hit the market, it would be illegal for a retreader to retread any other type of worn-out tire carcass.

This would at least provide the consumer with some kind of a built-in protection regarding the carcass strength of any retread which he might buy.

Rubber Manufacturers Association minimum standards: The Rubber Manufacturers Association's minimum tire quality standards are certainly a step in the right direction, but their principal weakness, from the consumer's point of view, is that they are strictly voluntary as far as compliance by the manufacturer is concerned. If the manufacturer does not wish to comply, he doesn't have to. In fact, if a manufacturer wants to start selling a tire made of chewing gum and old neckties, he can do so. There is presently nothing to prevent him from so doing—except the pressures of the marketplace.

We think that the American consumer deserves a little more protection than he has gotten from the "pressures of the marketplace."

We think that it's time the consumer was given some facts about what he's getting when he buys a tire. The American consumer may not be a tire engineer, but he's no idiot. If we will supply him with a few basic facts, he is perfectly capable of deciding what type of tire most suits his particular driving needs.

Our recommendations: The McCreary Tire & Rubber Co. feels that the job of furnishing these facts to the consumer is not nearly as difficult as some people in the tire industry have claimed. We feel that there are four things which are needed:

(1) Some kind of minimum tire quality standard.

(2) Some kind of tire grade labeling.

(3) Compulsory periodic vehicle inspection—including tires—in all 50 States.

(4) A method of assuring some minimum tire carcass strength in all retreaded tires.

Our company stands ready at any time to work with the other members of the tire industry in arriving at these objectives.

Senator HARTKE. Thank you very much, Mr. McCreary, for a statement that is extremely cogent. You express a measure of confidence in the manageability of this problem. May I, for the record, ask your own background in the field?

Mr. MCCREARY. I spent 6 years in the production and technical end of our business, and then spent 3 years in the field in two different sales territories, and have been connected with the general management of our company since then.

Senator HARTKE. And do you manufacture automobile tires?

Mr. McCreary. Yes. Of the 14 tire manufacturers in this country, we are about the 12th, I would guess, in terms of size. Our company, this year, will do about $12 million worth of business. We are very small in terms of an industry in which the top two are over a billion dollars in sales. I think Goodyear went over $2 billion last year for the first time.

So we are a rather small member of the tire industry, but we have been in business for 50 years. We celebrated our 50th anniversary just last week. I think that we are qualified to speak out on the particular subject involved here.

Senator Hartke. Your survival in that kind of competition over the past 50 years has suggested that we should listen to you.

Mr. McCreary. It wasn't easy, I will say that.

Senator Hartke. How many brands of tire do you make?

Mr. McCreary. All of our tires—with an exception which does not exceed 1 percent of last year's sales—all of our tires were sold under our own brand name, McCreary. We sell our tires through independent tire dealers, and most of our dealers also carry major brands of tires.

The dealer takes us on as a companion line in addition to his major brand. We do very little consumer-type advertising. We are primarily truck tire manufacturers, rather than passenger tire manufacturers, which, to some extent, explains why the consumer has never heard of us.

I would imagine that people in the trucking industry would have heard of our name. The average consumer has not. Until, or unless, there is available to the consumer these "ball park" figures which enable him to make a rational comparison, there really isn't much validity to the argument that the pressures of the marketplace will assure the survival of the worthy.

Senator Hartke. When we propose legislation which seeks to require a fuller disclosure of the product, the argument is made that the discipline of the marketplace insures that only the worthy survive.

What kind of discipline can the consumer apply in the marketplace if there isn't some rule of thumb such as you have outlined in the five items that you gave? How effective is a consumer in the tire market if he hasn't the foggiest notion whether one tire is better than another, or what the maximum safe speed is?

Mr. McCreary. As a consumer, your influence over what the manufacturer is offering is very little, if any, if you don't really know what you are getting. I think this is the big problem here.

If the consumer knew what he was getting; if the American consumer knew that in some cases he was riding around in a brandnew car, for example, on which the tires are overloaded rather seriously; if he should be so brave as to fill up all the seats with adults; if the average consumer knew this, I don't think they would do this.

But no one ever told him he was riding around on overloaded tires. We think it is time that someone did tell him.

Senator Hartke. If the tire purchaser had available to him the information that you suggest under your five headings, would he not be more able to exert pressure in the marketplace?

Mr. McCreary. I would think that you would be in a much better position to do so than you are now.

Senator HARTKE. Why don't we insure that the marketplace is enlightened in that way?

Mr. MCCREARY. That we should, and I think it should be done through some kind of Federal legislation because from our company's standpoint, the worst thing that could happen would be for each of the 50 States to pass a slightly different law regarding quality standards or grade labeling for tires that would require us to produce different tires for sale in the State of Pennsylvania and different tires for New York, and different tires for Ohio, and so on.

This would be rather intolerable from our point of view. We would much rather have uniform legislation applying to all 50 States. I am sure the major rubber companies would sooner have this than even we, because we only do business in the eastern half of the country.

Senator HARTKE. Is it a fair statement, or does it simplify it too much to say that until specific information on each brand is available to the consumer, the dominant force and pressure in the marketplace is dependent upon which advertising program is most effective?

Mr. MCCREARY. I think that is correct. As someone said here earlier, it just depends on what the salesman tells you when you walk in to buy a tire. If he says you ought to buy this one, the chances are, you will buy this one. If he doesn't say anything, and in a great many cases they don't, you will, I guess, buy the tire that is the cheapest.

If the salesman points to two tires and says this one is $12, and that one is $25 and if you, as the consumer, can't see any difference, the chances are you will buy the cheaper one, thinking there isn't any difference, or whatever difference there is isn't worth the difference in price.

Senator HARTKE. Or a consumer might think he is acting responsibly toward his family and the traveling public, and assume that the $25 purchase is a prudent purchase because it must be twice as good as the other.

Mr. MCCREARY. That's right. As I pointed out in my statement, if you are going to do a lot of high-speed driving—80 miles an hour or over—you might be doing yourself and your family a disservice to buy an extra heavy premium tire with built-in puncture sealing and all this, because at speeds in excess of 80 miles an hour, these tires will generate a lot of internal heat.

This is a very dangerous situation. If you get it hot enough, it tends to come apart. This is no good. You are better off, really, with a more inexpensive product. There is nothing on the sidewall of the tire anywhere that would inform the consumer one way or the other.

Senator HARTKE. If Congress does not enact a labeling bill for tires, maybe we will have to consider creating an Office of Tire Counselor.

Mr. MCCREARY. In our opinion, something is needed along these lines. We feel that the average American driver is beginning to get the idea that he wants some kind of protection when he goes to buy a tire. He doesn't know what he is getting, and this is beginning to worry a lot of them.

Senator HARTKE. Do you know of any other tire manufacturer who agrees with you?

Mr. MCCREARY. No, I do not. I suspect that maybe some of them feel this way, but not as strongly as we do. One of the reasons we feel so strongly about this subject is, very simply, that our company is

not engaged in the manufacture of these so-called promotional tires which are designed to sell at a rather low retail price.

Not being in this business, this makes it rather difficult for us to compete with the low-priced tires. As I have said before, if you are offered a tire for $10, and another tire for $25, and if you, as a consumer, are not aware of the quality differences, chances are that you will elect to take the cheaper one.

If somewhere on the sidewall of the tire it should specify that the $10 carrier has maximum carrying capacity of 1,000 pounds, and the $25 tire maximum carrying capacity was 1,600 pounds, this might tell you something.

If there were speed limitations on the sidewall of the tire to the effect that the cheaper tire is not approved for driving in excess of 40 miles per hour, for example, this might tell you something as a consumer.

But, at the present time, there is nothing that appears anywhere on any tire that I know of, other than, perhaps, aircraft tires, that puts any sort of a maximum speed limitation on the product. There is nothing on the sidewall that says what the maximum rated carrying capacity is.

We feel that the consumer has a right to know at least how much this particular tire that he is looking at is rated to carry.

Senator HARTKE. I thank you very much for expressing your point of view. It is one with which I generally agree.

TESTIMONY OF ALLAN BRATMAN, PRESIDENT, MARKET TIRE CO., ROCKVILLE, MD., ON S. 1643

Mr. Chairman, I appear today on behalf of Market Tire Co., of Maryland, Inc., at the kind invitation of Senator Nelson. I am accompanied by Mr. Earl W. Kintner and Mr. Ralph S. Cunningham, Jr. of the law firm of Arent, Fox, Kintner, Plotkin & Kahn, Washington, D.C. These gentlemen advise our company on the legal implications of tire marketing.

At the outset we wish to commend you for holding this public hearing. We believe that the marketing of automobile tires in the Washington metropolitan area and throughout the Nation presents a pattern of abuses which is unparalleled. We believe that this hearing is a necessary step toward eradicating this pattern of widespread abuses.

Market Tire Co. operates a chain of retail tire stores concentrated primarily in the Washington metropolitan area. We believe that Market Tire Co. may be of assistance to the committee because marketing patterns at the retail level affect the consumer most intimately.

Our company endorses the objectives of S. 1643. Market Tire Co. has been on record for years as favoring a uniform system of grade rating and quality rating for tires. We believe that the necessity for such a system has increased rather than diminished since our first public statement on this important matter.

S. 1643 speaks of minimum safety and performance standards for tires. Minimum safety standards are certainly desirable in any event. However, we believe it may be helpful to you to point out that minimum safety standards alone will not terminate deception in the retail marketing of tires or adequately protect the consumers of this country.

Today, virtually every tire manufacturer produces and markets many lines of tires, each with differing construction standards and

performance characteristics. The typical manufacturer's firstline tire conforms to the specifications of automobile manufacturers for tires supplied to them as original equipment on new automobiles. The typical tire manufacturer also sells his designated firstline tire in the replacement market, but in addition produces a number of other lines for the replacement market. He markets one or more lines of premium tires whose standards and performance characteristics exceed those of his firstline tire. He also manufactures a second line, thirdline, fourth line, and even a fifth line of tires whose construction standards and performance characteristics are less than for his firstline ticular subject involved here.

Now, all of these various lines of tires may meet minimum safety standards, but the existence of minimum safety standards as contemplated by S. 1643 does not solve the problem of the retailer who honestly wishes to avoid misrepresenting tires he sells or the problem of the consumer who wishes to purchase a tire which meets his specific requirement.

It is desirable that a number of lines of tires with differing performance characteristics are made available to the public in the replacement market. This is so because the needs of consumers vary widely. Thus, a salesman who drives a large station wagon loaded with heavy sample cases 40,000 miles a year, averaging 60 to 70 miles per hour on turnpikes, may need premium tires with an eight-ply rating whose performance characteristics materially exceed the tires which came with his station wagon as original equipment. On the other hand, his wife, who drives a lightweight compact 3,000 miles a year, primarily on shopping trips in her immediate neighborhood may find a thirdline tire is quite adequate for her needs.

However, the sad fact is that the average American consumer today finds it almost impossible to get accurate information about the performance characteristics of different lines of tires manufactured in the United States.

American tire manufacturers as a group issue little or no information with respect to construction standards or performance characteristics of tires to independent retail dealers. Nor is any information disseminated to consumers which would permit them to make rational decisions with respect to the purchase of replacement tires. This pattern contrasts sharply with the practice of European tire manufacturers. Affirmative disclosure of the performance characteristics and proper use of each line of tire is the rule rather than the exception in Europe. Manufacturers such as Pirelli, of Italy, have for a number of years provided detailed information as to the construction, performance characteristics, and proper use of each line of tire they manufacture. I have with me examples of the literature furnished by Pirelli to dealers and consumers. I offer them for insertion into the record of the hearing as examples of what can be done to educate consumers so that they may make rational choices based upon their individual needs.

Not only have most American manufacturers failed to make the kind of affirmative disclosure of perfomance characteristics and intended use which have been made in Europe, but some manufacturers have added the pattern of confusion and deception by changing their line designations from year to year. For example, the XYZ Manu-

facturing Co. may have used the designation "Sprite" for its firstline tire in 1963. In 1964 XYZ changes the designation for its firstline tire to "Super Sprite," but retains the name "Sprite" as a new designation for its secondline tire. The consumer who bought a new 1963 automobile equipped with XYZ "Sprites" and who wishes to duplicate his original equipment firstline tire when he purchases replacements in 1964 would ask his tire dealer for XYZ "Sprites." Unless the dealer was alert and informed the consumer of the changes in line designations, the consumer purchasing XYZ "Sprites" in 1964 would in fact be receiving secondline tires. We would be happy to furnish actual examples of such changes in the nomenclature for lines of tires if the committee so desires.

For years Market Tire Co. has hoped that American tire manufacturers would voluntarily provide authority and information as to performance characteristics and intended use fo each line of tire to retail dealers and to consumers. We still retain this hope. However, the need has been urgent for a long time and action has not been forthcoming on a voluntary basis. Therefore, the provision of S. 1643 directing the Secretary of Commerce to publish regulations prescribing a grading and labeling system for motor vehicle tires is, in our view, clearly in the public interest. Indeed, we believe the problem of consumer education in the performance characteristics and intended use of differing grades and lines of tires is, if anything, more important than the promulgation of minimum safety standards.

I would like to address myself for a moment to another area of concern to this committee. I speak now of the committee's duty of overseeing activities of the Federal Trade Commission. S. 1643 is addressed to matters of real concern in the never-ending task of consumer protection. However, there are a host of abuses in the marketing of automobile tires at the retail level which are beyond the scope of the present bill. Perhaps the most flagrant abuses in this broader area have occurred in fictitious price advertising. Use of "fictitious list prices" and "no trade in price" abounds in retail tire advertising. The deceptive "second tire offer" is a particularly invidious tire advertising practice which has disrupted fair competiton in the Washington metropolitan area since the spring of 1964. Deceptive advertising of tire guarantees is also a matter of continuing concern. Recently, the Federal Trade Commission has taken a necessary first step in correcting some of these abuses on an industrywide basis by conducting public hearings on automobile tire marketing. Hopefully, that hearing will result in the promulgation of equitable rules by the Federal Trade Commission designed to eliminate some of the most flagrant of these abuses. However, past experience in the tire industry indicates that the mere promulgation of rules will not terminate abuses. The Federal Trade Commission must be prepared to direct a major enforcement effort against flagrant violators if the public interest is to be protected. We respectfully urge this committee to express its continued concern over the abuses in the advertising and marketing of automobile tires to the Federal Trade Commission and to support the Commission's efforts to correct these abuses.

Our basic business philosophy is that equitable rules are necessary to protect the consumers desiring to purchase an honestly represented tire. Market Tire Co. is willing to live by such rules. We believe that

living by the rules is good business. However, we believe that our competitors should also live by the rules. Equality of opportunity in business competition has always been a fundamental goal of this Nation. We respectfully submit that this fundamental tenet is being flagrantly flouted today. We heartily endorse your commendable efforts to correct this injustice.

Senator HARTKE. This concludes the testimony scheduled for today. We will adjourn, subject to the call of the Chair. It is possible, the staff informs me, that additional witnesses may be called.

(Whereupon, at 3:20 p.m., the hearing was adjourned.)

TIRE SAFETY

FRIDAY, AUGUST 13, 1965

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10 a.m. in room 5110, New Senate Office Building, the Honorable Vance Hartke presiding.

Senator HARTKE. The committee will come to order.

The Commerce Committee reopens hearings this morning on S. 1643, Senator Nelson's proposed tire safety and labeling bill.

During the first days of testimony, the committee heard extensive testimony on the role of the tire manufacturer in tire safety. Today we are concerned with the role of the automobile manufacturer.

Our earlier hearings produced disturbing testimony concerning the adequacy and safety of original equipment tires supplied with the Nation's new cars. The Commerce Committee has since received a significant volume of complaints concerning the premature failure of these original equipment tires; complaints of tires blowing out at 5,000, 6,000, and 7,000 miles; of tires wearing out at under 10,000 miles; of multiple tire failures on new cars; and of hazardous defects developing on the tires of virtually new cars.

Perhaps equally disturbing has been the complaint that the car manufacturers and their dealers refuse to warrant the safety of the tires which they sell with their cars. The owner is forced to turn to the tire dealer for satisfaction when the tires on his new car fails. Yet, it is the car manufacturer and not the tire manufacturer who selects the tires and sets their specifications.

We have asked the members of the Engineering Advisory Committee of the Automobile Manufacturers Association, representing General Motors, American Motors, Chrysler, and Ford, to appear before us this morning and to document for us their contention that the original equipment tires sold with their automobiles are as safe as modern technology can make them.

Harry F. Barr, vice president, engineering, of General Motors Corp., who is chairman of the engineering advisory committee, will present a prepared statement on behalf of his committee.

Mr. Barr?

54-441—65——9

STATEMENT OF HARRY F. BARR, VICE PRESIDENT, ENGINEERING, GENERAL MOTORS CORP., AND CHAIRMAN OF THE ENGINEERING ADVISORY COMMITTEE, AUTOMOBILE MANUFACTURERS ASSOCIATION, INC., 320 NEW CENTER BUILDING, DETROIT, MICH.; ACCOMPANIED BY B. W. BOGAN, VICE PRESIDENT AND DIRECTOR OF ENGINEERING, CHRYSLER CORP., RALPH H. ISBRANDT, VICE PRESIDENT, AUTOMOTIVE ENGINEERING AND RESEARCH, AMERICAN MOTORS CORP., HERBERT L. MISCH, VICE PRESIDENT, ENGINEERING AND RESEARCH STAFF, FORD MOTOR CO., AND R. A. PITTMAN, EXECUTIVE ENGINEERING, FORD MOTOR CO., MEMBER OF THE AUTOMOBILE MANUFACTURERS ASSOCIATION TIRE COMMITTEE

Mr. BARR. Thank you, Mr. Chairman. I am Harry F. Barr, vice chairman of the engineering staff of General Motors Corp. and chairman of the engineering advisory committee of the Automobile Manufacturers Association. This chairmanship, I might add, rotates on a 2-year basis with each committee member in the chairmanship at that frequency.

With me today are three other members of that committee. They are the American Motors Corp. vice president of automotive engineering and research, Mr. Ralph H. Isbrandt; the Chrysler Corp. vice president and director of engineering, Mr. B. W. Bogan, and the Ford Motor Co. vice president, engineering staff, Mr. Herbert L. Misch. As a group, we four constitute the panel which was referred to in Senator Magnuson's letter of invitation to our industry.

Mr. Chairman and members of the Senate Commerce Committee, we appreciate your invitation to present our views on tire safety in connection with your consideration of S. 1643.

We would like to present our statement and technical discussion in a continuous manner in the interest of better continuity of the story. We do not presume to have all the answers but we believe that when we have finished the prepared material in this sequence, you should have a better overall understanding of our efforts to constantly improve tire performance.

We of the automobile industry have always been and continue to be deeply conscious of the importance of safety in the manufacture of motor vehicles. Because tires are a significant element in the safety of these vehicles, each year the companies of the automotive industry put tires through more than 60 million miles of the severest tests, on public roads, on the proving grounds, and in our laboratories. As a consequence, we can and do offer our motor vehicles equipped with tires manufactured to specifications which make us confident that these tires will operate safely and withstand rigorous driving conditions.

To properly qualify tires, extensive and costly road, proving ground, and laboratory tests are employed. Even with facilities to perform such tests, sound evaluation is then only possible if based on broad experience and capable engineering judgment.

For many years our engineers have been working effectively with the Tire & Rim Association, the Rubber Manufacturers Association,

and tire manufacturers, and, more recently, with the Society of Automotive Engineers and the Vehicle Equipment Safety Commission in developing standards for original equipment tires. The results of these cooperative efforts have been better tires with improved safety, reliability, and durability.

It is an obvious fact that automobile tires have been improved greatly through the years. Tire life has been greatly extended. Resistance to blowouts and even to punctures has been improved so that a flat tire is a rare occasion for the average motorist. Instead of carrying two or three spare tires, as the early drivers did, today's motorist may drive through the entire life of a set of tires without ever using the spare tire except to rotate it with the other four tires, which is recommended in order to extend the life of the set of five tires.

Despite the improvement through the years, which is apparent to the millions of people who own and operate motor vehicles with good tire maintenance, there has arisen in recent months a question whether tires are adequate and safe.

The goal of those who raised the subject for discussion in some States was to insure that tires applied by individuals to replace original equipment tires should be as safe as, and meet the generally established performance levels of, original equipment tires. In other words, original equipment tires were considered as the standards against which others are judged.

Subsequently, allegations have been made, and presented in the Congressional Record on July 13, 1965, that automobile manufacturers are supplying original equipment tires that are "inadequate" and "dangerously unsafe," that we have been recommending "overinflation" and "dangerous pressure." Further, individual automobile company letters written in response to a letter of inquiry have been characterized as being admissions that the industry supplies inadequate tires.

Before we proceed with our statement, we consider it important to state that these allegations are not consistent with the facts. Further, we do supply safe tires for the various loads carried in automobiles and recommend safe, proper inflation pressures for various tire services.

Our discussion today will concern original equipment tires.

We would now like to proceed with a technical discussion illustrated by charts, to point out to you some of the important factors in the testing and selection of original equipment tires. We believe that this will put before your committee a résumé of basic facts and information which have not been reviewed in your hearings previously. We think it will contribute to a better understanding of the overall engineering approach and will help your committee deal with the questions before you.

At this point, we would like to introduce Mr. R. A. Pittman, executive engineer, Ford Motor Co., and spokesman for the Tire Subcommittee of our Automobile Manufacturers Association Engineering Advisory Committee, who will make our technical presentation.

STATEMENT OF R. A. PITTMAN, EXECUTIVE ENGINEER, FORD MOTOR CO., MEMBER OF THE AUTOMOBILE MANUFACTURERS ASSOCIATION TIRE COMMITTEE

Mr. PITTMAN. Senator Hartke, we have supplied a complete technical report to your committee, and I am not going to stand up here today and read it in its entirety.

Senator HARTKE. The entire report will appear in the record as though it were read. You may proceed to cover such portions as you feel are necessary to help us in your presentation.

(The report follows:)

AUTOMOBILE INDUSTRY TECHNICAL PRESENTATION ON TIRES

(With charts and illustrations)

Gentlemen, my remarks will deal with the construction, functions, testing, and selection of tires.

THE TIRE

A tire is a precisely engineered assembly of rubber, fabric, and metal. It is designed to carry a load under varying conditions while rotating.

It (fig. 1) is made of metal beads, fabric and rubber carcass plies, rubber liner, rubber tread, and sidewalls.

The beads, or bead bundles, are usually fabricated by winding several turns of a small diameter steel wire into a continuous hoop. The size of the tire will dictate the number of turns and the diameter of the steel wire in the bead bundle.

The carcass is made up of plies of fabric. Each ply is a layer of parallel cords embedded in a rubber matrix. In the case of a tubeless tire, there is an air-retaining membrane or liner which is an integral part of the assembly.

The exterior portion of the tire consists of a tread and two sidewall covers. The tread is of a highly abrasive resistant rubber compound. The sidewall covers are made of a resistant rubber compound to protect the carcass from the elements.

THE FUNCTIONS OF THE TIRE

The functions of a tire are:

1. To support a load.
2. To develop tractive forces (braking, acceleration, and cornering).
3. To cushion road shock.

The tire supports its load largely by virtue of its internal inflation pressure, not the stiffness of its materials (fig. 2). The support of the load actually comes from the tension produced on the carcass cords by the internal air pressure. Theoretically, the pressure should be changed with each change in load. In actual practice, the pressure is adjusted for the average and maximum load conditions.

Tires are also called upon to provide traction and braking forces on all types of surfaces and under varying conditions. A sufficiently large area of contact must exist between the tire and the road for effective forces to develop, and inflation of the tire has an affect on the area of contact. Here, again, this requires a proper inflation of the tire for the load being carried.

In addition to carrying load and providing traction, a tire must also cushion the vehicle from road shock. To do this it must be capable of deflecting to a considerable degree. In order to maintain continuous contact between the tire and the road for the type of obstacles which are likely to be met in everyday usage, it is necessary for tires to have a deflection of approximately 1 inch. The normal deflection can be increased by lowering the inflation pressure. However, the durability of the tire would be adversely affected if the deflection became excessive. Durability depends on the load supported by the cords of the tire and the degree of deformation or distortion that takes place in the carcass of the tire as it rotates. It is, therefore, important that tire pressure be adjusted either for average load or maximum load to obtain the proper balance between control forces and tire life.

So far I have discussed the functions of a tire—supporting the vehicle and its load, supplying tractive forces and cushioning road shock. Now I would like to describe briefly the process of selecting original equipment tires which will perform these functions satisfactorily and safety.

The automobile and tire industries work together on all aspects of tire development and there is a continual exchange and utilization of technical data. Tires are tested on proving grounds at all load conditions over every conceivable kind of road a driver could be expected to encounter. Over the years this cooperation in development has improved the tires supplied as original equipment on our vehicles in every aspect of tire safety, quality, and performance.

THE SELECTION OF ORIGINAL EQUIPMENT TIRES

Each year the tires selected are tested on prototype vehicles. Specifications for running these evaluation tests are well defined and are used by expert vehicle engineers (figs. 3a–3g.)

For these tests, special types of road surfaces (potholes, broken concrete, and so forth) characteristic of different parts of the country are reproduced on the proving grounds and form part of a special durability course which has a severity factor three times normal customer usage. Such courses produce test information on an accelerated basis. A typical tire qualification test on the proving grounds would consist of the following:

FIGURE 3. VEHICLE ENGINEERING QUALIFICATION SPECIFICATIONS FOR TIRES

(*a*) Tire durability: Tires are tested over a special durability course which has a severity factor of three times customer usage.

A typical durability course consists of the following: Severe braking and acceleration up to 90 miles per hour over a test course com-

posed of roads constructed with smooth concrete, bricks, cobblestones, Belgian blocks, potholes, and rough concrete.

The vehicles negotiate rough and uneven railroad crossings, hills, salt, and mud baths. The tread of all tires must wear out and no blowouts are tolerated. This test is based on the fundamental concept that to qualify for final selection, a tire must demonstrate blowout resistance capability throughout its entire life.

(*b*) High-speed test: All original equipment tires must pass continuous, stabilized running tests at 90 to 100 miles per hour for a minimum distance of 100 miles. This is an extremely severe test because it is conducted at ambient temperatures in excess of 80° F. and road surface temperatures build up to 130° F. Tires qualifying under these test conditions have the capacity to run safely at 80 miles per hour for the useful tread life.

(*c*) Stability: Straight course evaluation is conducted at speeds varying from 50 to 80 miles per hour with up to 30-mile-per-hour crosswind conditions. The evaluation of this safety aspect is based on the ability of the vehicle to hold a straight line course. Tests are also conducted on crown roads and streetcar tracks. Passing stability is evaluated by determining car response during rapid directional changes. This is a most important safety consideration in emergency passing situations on the highway.

(*d*) Handling: Tire evaluation for handling of a vehicle is based upon responses of the tire to steering control while negotiating special car-handling courses and passing maneuvers. To establish handling capability of the tires the vehicle is exposed by expert drivers to maneuvering far beyond what the average driver would normally experience. This involves abrupt lane changing, evasive turns, driving into and out of ditches, and negotiating smooth transitions from roadside to pavement. The tire is a basic factor in the safe negotiation of such maneuvers.

(*e*) Skid resistance: Skid resistance is evaluated on wet and dry pavement under varying climate conditions and compared to master sample performance from previously accepted tire data. A typical picture of an instrumented vehicle undergoing a stopping test on wet pavement is shown on the next figure.

(*f*) (Photo of skidding car.)

(*g*) J-turn: The purpose of this test is to determine the ability of the tire to stay on the rim under extreme operating conditions. These tests are conducted on surfaces selected to yield the most rigorous test conditions, such as dry lakebeds. The test car is steered remotely by electronic control. The steering wheel is abruptly turned to full lock. This causes extreme pressure on the tire, tending to tear it off the rim. To pass this safety test, the tire must stay on the rim without loss of air at speeds up to 50 miles per hour.

In addition to these tests which are performed to assure the safety of tires, still other tests are conducted to ascertain that tires will perform adequately and satisfactorily in other respects, such as freedom from roughness, thump, harshness, tread noise, cornering and braking squeal as well as vehicle shake.

In qualifying tires for original equipment, the vehicle manufacturers are guided also by the testing performed by the tire suppliers them-

selves. The original equipment tire suppliers utilize proving grounds of their own, automobile test fleets and extensive laboratory test equipment to certify to the automobile industry that their tires meet the previously described engineering performance requirements.

TIRE STANDARDS

There are existing tire standards, based on competent engineering and test data, which provide a technically sound basis for tire selections.

TIRE & RIM ASSOCIATION

This association is composed of engineers representing the manufacturers of tires and rims for motor vehicles. It has developed standards for the size selection of tires and rims, including loads and pressures, since 1917. These standards are published in the annual T. & R.A. Yearbook, and have changed progressively as the art has developed.

Tire loads, as published, were used by the engineers of car and tire manufacturers as a design guide basis for initial tire size selection for original equipment application, in accordance with the footnotes at the bottom of the tables.

These tables were well understood by engineers of both automobile and tire industries. In no way did these tables reflect the maximum load carrying capacity of a tire, though they have been widely misinterpreted and quoted as such.

In view of such misinterpretation, the 1966 publication of the Tire & Rim Association Yearbook will specify maximum load carrying capacities of tires and a standardized procedure for their size selection. Now there can be no question whether a vehicle is being adequately tired.

SOCIETY OF AUTOMOTIVE ENGINEERS

The SAE has published in June 1965, its tire standard, J–918—"Passenger Car Tire Performance Requirements and Test Procedures"—which is being used on all 1966 models.

The SAE is an organization of engineers which draws its members from all branches of the automotive industry, including users of original equipment. The technical board of SAE, with numerous councils or subcommittees concerned with specific areas of interest, has the responsibility to develop standards. When a standard is approved by this board it is published and is available for use.

SAE standard J–918 specifies test procedures and minimum standards for endurance, high-speed performance, breaking energy, and resistance to bead unseating (holding the tires on the wheel). Figure No. 4 illustrates these requirements in some detail for a typical tire.

The tire endurance test is run at progressively higher loads. These loads go as high as 1,568 pounds—140 percent of the starting load. The test speed is 50 miles an hour for a total of 1,700 miles.

The high-speed performance test is an indoor laboratory test performed at a constant load of 1,120 pounds at increasing speeds from 50 to 85 miles per hour at ambient temperatures of about 100° F.

The breaking energy plunger test requires that a three-fourths-inch-diameter plunger be forced into the tread with a minimum 1,200-inch pounds of energy without failure.

In the test for resistance to bead unseating a 2,500-pound load is applied against the sidewall of the tire. This is a laboratory version of the J-turn test which has already been discussed.

The SAE standard J–918 represents an orderly testing procedure developed from test practices long in use by individual tire suppliers.

With these two standards (SAE J–918 and the Tire & Rim Association Yearbrook) tires meeting the proper performance standards and sized properly for the T. & R.A. load carrying requirements are selected for each vehicle in our industry.

For the guidance of car owners the automobile companies publish detailed information in their owners' manuals concerning vehicle load carrying capacity, tire inflation pressures and tire care. A typical sheet from an owners' manual is shown in figure 5.

In addition, for the model year 1966, decals will be displayed in the car summarizing this information (fig. 6).

It should be emphasized that the increases in pressure recommended in industry owners' manuals to accommodate higher loads cannot by any technical standard be interpreted as "overinflation."

The pressures recommended do not carry the risk of failure, nor do they create the danger of blowouts. The recommended inflation pressures to accommodate increased loads are within the normal operating range recommended by the Tire & Rim Association for each size tire.

Furthermore, tires specified for new passenger cars have a static burst strength at least five times the highest pressures recommended in industry owners' manuals.

It is not difficult for a motorist to select the proper inflation pressure from the table in the owners' manual provided with his car. The owners' manuals clearly spell out a pressure for an average load and a higher pressure for a maximum load in terms of number of passengers and pounds of trunk load.

Therefore, the operator may readily determine what average and maximum loads are. With this information applied in terms of proper tire pressures, loads of five or six passengers plus trunk load can be carried adequately and safely in all-day travel at highway cruising speeds.

Moreover, in those instances where owners intend to subject their vehicles to severe operating conditions, such as continuous operation at or near full-rated load on poor or unimproved roads, or at sustained high speeds, oversize, or higher ply rating tires are available.

It should be pointed out, however, that even with oversize or higher ply rating tires proper inflation pressure must also be maintained at average or maximum vehicle load. The accompanying chart (fig. 7), developed from 1966 T. & R.A. Yearbook data, clearly shows the load carrying ability of typical tire sizes with average (24 pounds per square inch) and maximum (32 pounds per square inch) inflation pressures.

PLY RATING

In view of the confusion that seems to exist about ply ratings, it might be useful at this point to discuss this subject.

The two-ply, four-ply rating tire is superior to the four-ply, four-ply rating tire is replaced for these reasons:

1. Runs 4.4 percent cooler,
2. Provides superior ride and handling.
3. Produces a 1.7-percent improvement in fuel economy.
4. Results in better traction and skid resistance.
5. Is of equivalent strength to the four-ply, four-ply rating tire.

These factors have contributed importantly in recent years to improved tire safety and performance. Additional figures (Nos. 8, 9, 10) detail comparisons between two-ply, four-ply rating and four-ply, four-ply rating tires.

These data clearly indicate the validity of our decision to use two-ply, four-ply rating tires as soon as they were properly developed to meet our existing qualifications standards. The implication that these tires are inferior to four-ply, four-ply rating tires is incorrect.

The safety and quality of tires have improved steadily over the years. The improvements previously enumerated, together with many others, have resulted in substantial gains in the traction, cornering, riding, and load-carrying abilities of tires, as well as in handling, stability, and tire life—all important considerations in tire safety.

I should now like to go on to a brief discussion of the advantages of tubeless tires.

In 1955, original euipment tires were changed from the tube type to tubeless. Tubeless tires provide improved protection against failures from punctures and blowouts. (Fig. 12.)

The tubeless tire provides protection against blowouts from impact breaks. Severe impacts can break a few cords in both tube and tubeless tires initially and tire failure takes place after the break enlarges with further running.

In the tubeless tire the liner is integral with the inner ply and the rupture of the carcass will normally produce only a slow leak in the tire, providing the motorist with a greater degree of safety. In a tube tire, the carcass break becomes too large for the tube to bridge and the tub blows out through the break causing instantaneous loss of air.

Fleet testing of tubeless tires has shown a substantial reduction in road delays due to puncture, compared to tube tires. One such series of tests consisted of 914 taxicabs in 4 different cities, accumulating 4¾ million miles per month, resulting in two-thirds fewer road delays.

Tubless tires also yield improved high-speed performance because they run cooler.

CORD STRENGTH

Figure 12 shows improvements made in the tensile strength of cord materials since 1935.

The tensile strength of the cotton material used during the middle thirties was less than half the strength of present cord materials.

Rayon was introduced in 1937 and has steadily been improved over the years as indicated by the rayon graph.

Total improvement in tensile strength of rayon cord has been continuous and the rayon material is about twice as strong as when it was

introduced. We have every reason to believe that this trend will continue upward with further development in rayon cord now underway.

Rayon is generally used on original equipment tires because it is, at this state of fabric development, the material best suited to all-around tire performance. Other cord material are also being improved by advanced processing and technnology. We are interested in continuing the technical improvements in this field and using the best possible combination of construction components to obtain even better tire performance in the future.

Mr. Chairman, this has been a somewhat technical presentation. However, we thought it would be useful in demonstrating that no effort is spared to assure that tires specified as original equipment for our vehicles are both adequate and safe.

(The charts referred to follow, except for 3a, 3b, 3c, 3d, 3e, and 3g:)

FIGURE 1

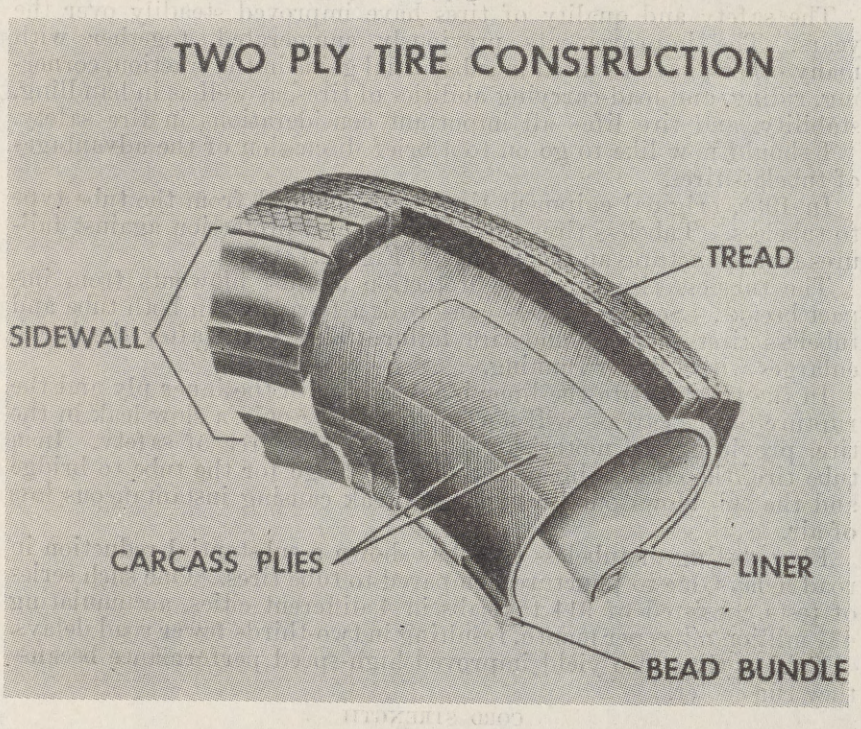
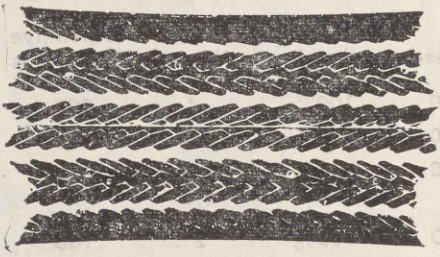


FIGURE 2



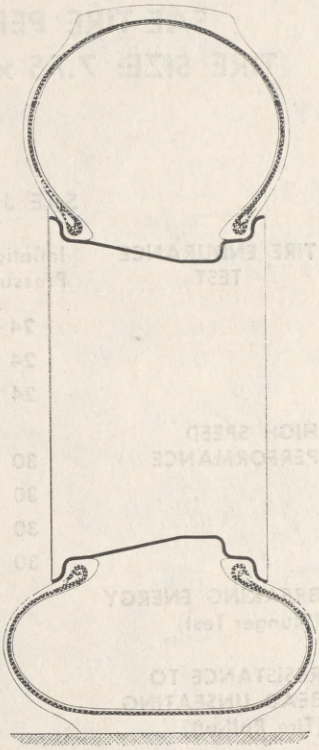


FIGURE 3

SAE TIRE PERFORMANCE STANDARDS
TIRE SIZE: 7.75 x 14, TIRE LOAD: 1120 LBS.

SAE J 918

TIRE ENDURANCE TEST	Inflation Pressure	Speed	Load	Hours	Cumulative Total Miles
	24	50	100%	4	200
	24	50	120%	6	500
	24	50	140%	24	1700
HIGH SPEED PERFORMANCE	30	50	100%	2	100
	30	75	100%	1/2	137.5
	30	80	100%	1/2	177.5
	30	85	100%	1/2	220
BREAKING ENERGY (Plunger Test)	1200 Inch Pounds				
RESISTANCE TO BEAD UNSEATING (Tire Roll-off)	2500 Pounds				

FIGURE 4



FIGURE 5

IMPERIAL VEHICLE LOAD AND TIRE PRESSURES

For sustained driving above 60 M.P.H. cold inflation pressures should be increased 4 PSI above those indicated below, but not to exceed the maximum pressures of Item 1. Front to rear differential pressure should be maintained.

	SEDAN—HARDTOP				CONVERTIBLE			
	AVERAGE RATED LOAD		FULL RATED LOAD		AVERAGE RATED LOAD		FULL RATED LOAD	
VEHICLE LOAD (POUNDS)	UP TO AND INCLUDING 5 PASSENGERS 750 LBS.		6 PASSENGERS AND LUGGAGE 1100 LBS.		UP TO AND INCLUDING 5 PASSENGERS 750 LBS.		6 PASSENGERS OR EQUIVALENT LOAD 1100 LBS.	
RECOMMENDED TIRE PRESSURES PSI COLD	FRONT	REAR	FRONT	REAR	FRONT	REAR	FRONT	REAR
	22	22	26	28	24	24	28	30

1. Cold inflation pressures must not exceed 32 PSI for 4 ply rating and 40 PSI for 8 ply rating tires. Pressure build-up during driving is normal. Do not reduce pressure of warm tires.

2. Snow tires should be operated with rear tire pressures 4 PSI above standard but must not exceed the maximum pressures of Item 1.

FIGURE 6

TIRE LOADS AND PRESSURES

MODELS	TIRE PLY RATING	RECOMMENDED COOL TIRE INFLATION PRESSURES			
		AVERAGE LOAD 1 TO 5 PASSENGERS		OVER 5 PASSENGERS TO FULL RATED LOAD	
		FRONT	REAR	FRONT	REAR
All models except Station Wagons	4	24	24	24	32
	8	24	24	24	40
Station Wagons	4	24	28	24	32
	8	24	28	24	40

Full load capacity of the vehicle is:

All models except Station Wagons - 1100 lbs. total
Station Wagons - 1200 lbs. total

For additional information refer to Owner's Manual.

FIGURE 7

350

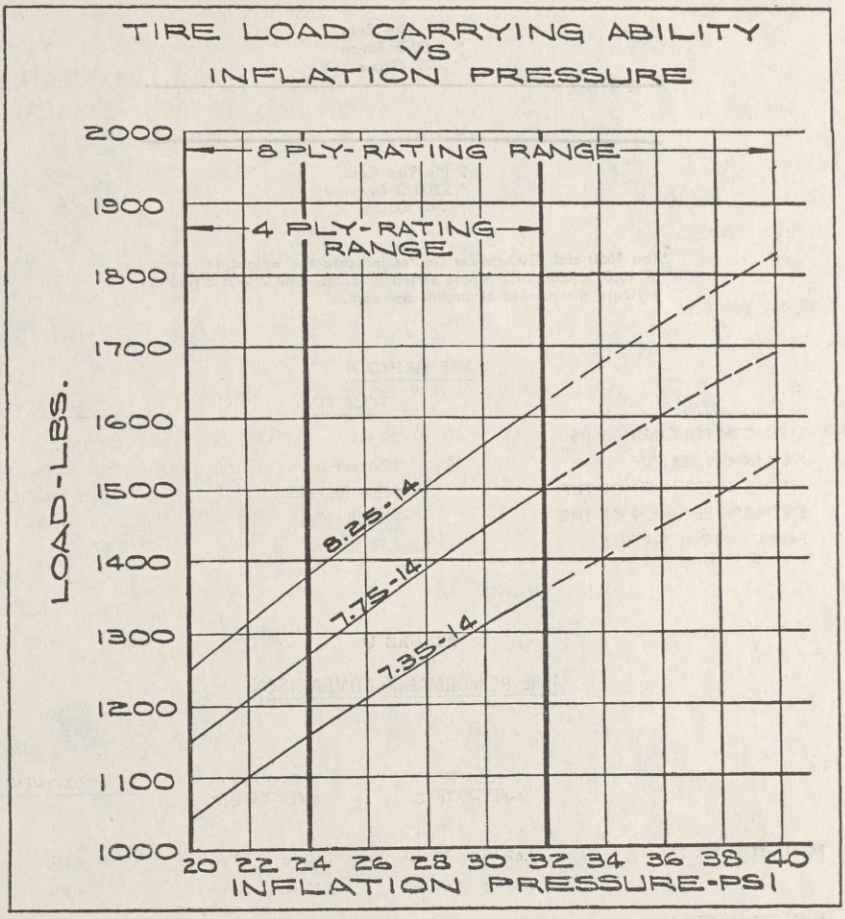

TIRE LOAD CARRYING ABILITY
VS
INFLATION PRESSURE
8 PLY-RATING RANGE
4 PLY-RATING RANGE
8.25-14
7.75-14
7.35-14
LOAD-LBS.
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
20 22 24 26 28 30 32 34 36 38 40
INFLATION PRESSURE-PSI

FIGURE 8

COMPARISON 4 PLY 4-PLY RATING VS 2 PLY 4-PLY RATING TIRE STRENGTH

4 Ply Tire Cord
* 1650/2 Rayon
.029 Gauge

2 Ply Tire Cord
* 2200/3 Rayon
.040 Gauge

*The 1650 and 2200 denier figures indicate the weight, in grams, of 10,000 yards of a single strand of cord. The 2 and 3 figures indicate the number of strands per cord.

TIRE STRENGTH

	FOUR PLY	TWO PLY
STRENGTH PER CORD	29 lbs.	58 lbs.
NO. CORDS PER PLY	19.6 per in.	19.6 per in.
STRENGTH PER INCH OF PLY	568.4 lbs./in.	1136.8 lbs./in.
STRENGTH PER INCH OF TIRE	2274 lbs./in.	2274 lbs./in.
FABRIC WEIGHT PER TIRE (7.75-14 Tire)	1.98 lbs.	2.07 lbs.

FIGURE 9

TIRE PERFORMANCE COMPARISON

	FOUR PLY 4-PLY-RATING	TWO PLY 4-PLY-RATING	% IMPROVEMENT*
POWER LOSS PER TIRE	1.67 hp @ 30 mph	1.60 hp @ 30 mph	4.2%
	3.36 hp @ 60 mph	3.20 hp @ 60 mph	4.8%
FUEL CONSUMPTION	17.6 mpg	17.9 mpg	1.7%
TEMP. INCREASE IN 30 MIN.	to 136°F	to 130°F	4.4%
PRESS. INCREASE IN 30 MIN.	5-1/2 psi	4 psi	30.0%
TREAD WEAR	100%	up to 120%	up to 20%
HIGH SPEED	100%	up to 120%	up to 20%
STRENGTH (Hazard Resistance)	100%	100%	0
STABILITY	-	Superior	-
RIDE COMFORT	-	Equal	-

* % improvement related to four ply, 4-ply rating tire.

FIGURE 10

PER CENT OF ROAD CALLS DUE TO TIRE DELAYS

1950	22.79%	1955	24.85%
1951	21.36%	1956	24.13%
1952	25.98%	1957	22.93%
1953	23.01%	1958	21.09%
1954	25.26%		

THREE YEARS PRIOR TO TWO PLY INTRODUCTION:

1959	20.16%	
1960	18.73%	Average 19.49%
1961	19.58%	

FIRST THREE YEARS OF TWO PLY CONSTRUCTION:

1962	18.58%	
1963	18.03%	Average 18.37%
1964	18.51%	

(Data supplied by National Director of Road Service, American Automobile Association)

FIGURE 11

TUBELESS TIRE ADVANTAGES

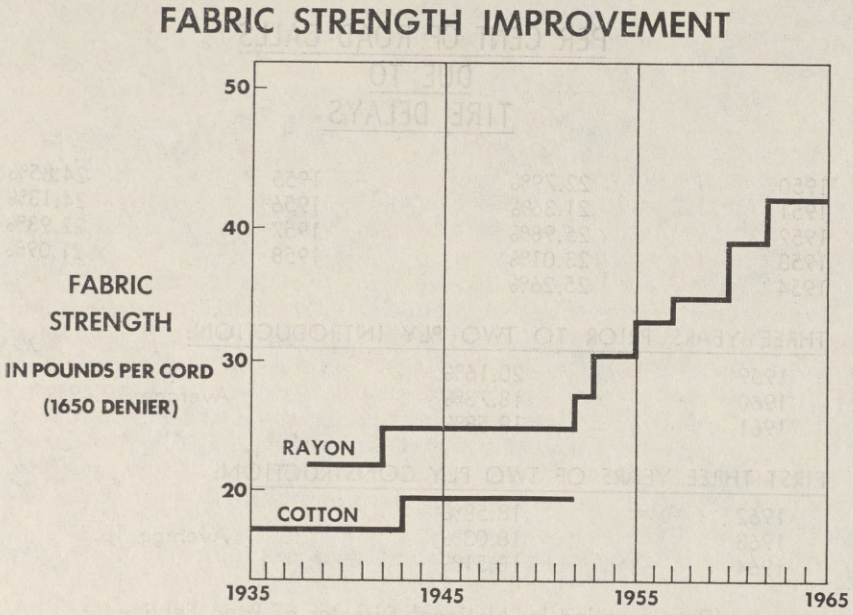
IMPROVED BLOW OUT PROTECTION

ROAD DELAYS DUE TO PUNCTURES REDUCED

IMPROVED HIGH SPEED PERFORMANCE 5%
(COOLER RUNNING)

54-441—65——10

FIGURE 12



Mr. PITTMAN. I am going to make a chart presentation and try to get the high spots of this technical report.

You gentlemen have been listening to tire testimony for a number of weeks, so I don't think I have to spend time telling you what a tire is.

Senator HARTKE. I am not too sure about that, after listening to the testimony. I am not so sure now that we know what a tire is. I thought we knew beforehand.

Mr. PITTMAN. I think I can clear that up for you this morning, sir.

Senator HARTKE. Fine.

Mr. PITTMAN. I would like to establish the terminology we are going to use throughout the presentation this morning.

Carcass plies, sidewall of the tire, the tread of the tire, the liner, and the bead bundle.

The three main functions of the tire are quite obvious. One is to support a load. Two, and most important, is to develop tractive forces—braking, acceleration, and cornering. And, of course, the third is to cushion road shock.

We are showing here just a cross section of a typical tire under load for the purpose of illustrating how the lower portion of the tire in contact with the road deflects and is, of course, different in cross section than the upper portion.

In this particular portion of the chart we are showing a footprint of a particular tire. When we say "footprint," this is the kind of thing we are talking about.

In the selection of original equipment tires, we have a set of technical specifications which must be met on the proving ground for all original equipment tires. I would like to just review briefly what these technical specifications include.

First we have a specification concerning tire durability. These tires are tested over a special durability course which has a severity factor of three times customer usage.

Senator, I have a movie which we would like to show at the end of this presentation which we think will amplify this particular point and illustrate to you what we mean by a severity factor of 3.

A typical durability course on any one of the proving grounds of the industry would consist of the following: Severe braking and acceleration up to 90 miles an hour over a test course composed of roads constructed with smooth concrete, bricks, cobblestones, Belgian blocks, potholes, and rough concrete.

The vehicles negotiate rough and uneven railroad crossings, hills, salt and mud baths. The tread on all of these tires must wear out and no blowouts are tolerated. This test is based on the fundamental concept that to qualify for final selection, a tire must demonstrate blowout resistance capability for its entire life.

I would like to point out here that this technical work is carried on in close cooperation with the tire companies and they, too, have proving grounds and they perform similar kinds of tests. They certify to us that the original equipment tires that they supply to us do meet our technical specifications.

Another engineering specification for tires is a high-speed test. All original equipment tires are required to pass a 100-mile test at from 90 to 100 miles an hour. This is a severe test usually conducted in our western or southwestern proving grounds at ambient temperatures of from 80° to 100°. We reach road temperatures that sometimes measure as high as 130°.

We have another engineering specification that concerns the stability of a tire. This particular requirement is evaluated over a straight course. It is conducted at speeds of from 50 to 80 miles an hour with up to 30 miles an hour crosswinds. The evaluation of this safety aspect is based on the ability of the vehicle to hold a straight-line course. Tests are also conducted on crown roads, and streetcar tracks. Passing stability is evaluated by determining car response during rapid directional changes. This is a most important safety consideration in emergency passing situations on the highway.

We have an engineering specification concerning handling. This tire evaluation for handling of a vehicle is based on responses of the tire to steering control while negotiating a special car-handling course and passing maneuvers. To establish handling capability of the tires, the vehicle is exposed by expert drivers to maneuvering far beyond what the average driver would normally experience. This involves abrupt lane-changing, evasive turns, driving into and out of ditches, and negotiating smooth transitions from roadside to pavement. The tire is a basic factor in the safe negotiation of such maneuvers.

We have another engineering specification concerning the skid resistance of a tire. This skid resistance is evaluated on wet and dry pavement under varying climate conditions and compared to master sample performance from previously accepted tire data. A typical picture of an instrumented vehicle undergoing a stopping test on wet pavement is shown on the next figure (fig. 3–f, supra).

This is just an illustration of the many kinds and types of pavement that skidding tests are performed on. You will note here that we are keeping a film of water over the pavement.

We have another engineering specification called a J-turn. The purpose of this test is to determine the ability of the tire to stay on the rim under extreme operating conditions. These tests are conducted on surfaces selected to yield the most rigorous test conditions, such as dry lake beds. The test car is steered remotely by electronic control. The steering wheel is abruptly turned to full lock. This causes extreme pressure on the tire, tending to tear it off the rim. To pass this test, the tire must stay on the rim without loss of air at speeds up to 50 miles an hour.

This test is also performed on dry pavement and in the movie that we would like to show at the end of this presentation we will show a driver putting a vehicle through a J-turn with closeups of the tire and rim.

I would like to speak for just a moment concerning the Tire & Rim Association, and the Society of Automotive Engineering Test Standards.

First, the Tire & Rim Association has been in existence for over 50 years. Since 1917 they have published a tire and rim yearbook. In this yearbook they have listed loads, pressures, standardization of rims, and this sort of information. The tire, load, and inflation pressure information in these manuals has been used as a design guide by both tire and automobile industry engineers, and these tables have been well understood by both the tire and automobile industry engineers, but have never been intended to show maximum safe loads.

But recently these tables have been misquoted. The tables have indicated load values for a car under 3-passenger condition. There have never been loads shown for a 4-passenger condition, a 5-passenger, 6- 7- 8- or 9-passenger condition even though the tires were quite safe with larger loads. In order to correct these misunderstandings, the new 1966 Tire and Rim Yearbook will reflect maximum load-carrying capacities of tires.

The SAE tire performance standards—and we are showing an example here of its contents—cover four major areas of tire safety. We have a tire endurance test; a high-speed performance test; a breaking energy test; and we have a resistance to bead unseating test. This means a tire rolloff test. These are laboratory tests, not car tests. There is correlation between these lab tests and the proving ground.

During the model year 1965 we added considerable detail to our owner's manuals concerning tire inflation pressure and tire loading. In 1966 we have further improved this information to the owner, and I am showing here a typical owner's manual chart in which we point out the two load conditions and average rated load which we define as anywhere from one up to five passengers, and a full-rated load, which we define as six passengers and luggage, or 1,100 pounds in the case of a sedan. In the case of a station wagon, the full load capacity—this chart shows a convertible—is 1,200 pounds in any combination. We show the corresponding pressures for each condition.

I should add a point here, Senator Hartke. These tables as you look at them are specific. The instructions are specific But there has to be a certain amount of reasonableness exercised in their use.

Obviously, if you are driving down the street with a three-passenger load condition and your tires are correctly inflated, and you stop to pick up friends on the corner, and suddenly you are at a six- or seven-passenger condition, this doesn't mean that you have to drive into the nearest gas station and inflate your tires.

But, on the contrary, if you are going to put seven people in the car and start out for California on the throughway, our recommendation is to put in this specified tire inflation pressure.

Further, in 1966 we are adding decals to the car. In most cases these decals will be in the glove compartment or in a prominent place where they can easily be seen. They will show condensed information from the owner's manual. There will be no guesswork involved so far as the customer is concerned as to what is the average load, what is the full load, and what the pressure should be.

Going back to some data concerning the new 1966 tire and rim load tables, we have shown the load that these tires will support versus the inflation pressures, and I want to make just a single point on one tire, and that is that we show the load-carrying capacity as it varies with inflation pressures up to our maximum recommended 32 pounds per square inch inflation for two-ply, four-ply rating tires. And merely going to the next larger size tire and relating this load-carrying capacity to 24 pounds per square inch does not result in an increase in load-carrying capacity sufficient to handle the vehicle full loads.

For all conditions up to five passengers, we are operating on this line beneath the 1,175-pound rating shown here. There is no need to add inflation pressure, as I have said before, until you exceed the average condition, which means more than five people and this additional baggage. Then you have this other condition to inflate for.

There has been a lot of talk about plies. I would like to explain the difference between the two-ply and four-ply tire. A ply consists of a layer of materials. My fingers represent the cords from which this tire is constructed. These cords are imbedded in rubber. They constitute a layer, or a ply.

In a four-ply tire we have four of these layers, superimposed one on top of the other, and the cords at varying angles to each other. They are not parallel; they are at angles.

When the two-ply tire was developed, we made a single ply with a cord that was twice as strong—and I repeat—twice as strong as the cord in the old four-ply tire. So that what we say is that a ply of the two-ply tire is now twice as strong as the ply in the old four-ply tire. But there was a problem here. For years people had associated strength with plies. So suddenly, if we were going to put a two-ply tire on the market, it just naturally sounded like a two-ply tire was weaker than a four-ply tire. This is why we used the extra terminology "four-ply rating."

So a two-ply tire means that there are two plies of construction, a four-ply rating means that it has the rating of a four-ply tire. At the same time the four-ply tire is called a four-ply tire, four-ply rating.

We show here in the report just the diameters of the cords used in the old four-ply tire. It was 0.029 in diameter. In the two-ply tire the cord, as I say, is much larger, more strands, 0.040 gage. Actually the strength of the cord differs by a factor of 2—29 pounds for the cord in the four-ply tire, 58 pounds for the cord in the two-ply tire.

Since we have two plies of heavier cord in the two-ply tires rather than four plies of lighter cord, I should explain that the thickness of these two plies is still less than the thickness of the four plies in the old tire, therefore, that we can make the statement that the two-ply tire is a cooler running tire, and a cooler running tire gives us better high-speed characteristics.

We have shown here some advantages in two-ply tire performance over four-ply, and I won't go through all these numbers, except to point out that there is less power loss with a two-ply tire.

Senator HARTKE. That is not too long a chart and it is important, so you had better go on through it for the record. (Fig. 9, supra.)

Mr. PITTMAN. The power loss in the two-ply tire amounts to 1.60 horsepower at 30 miles an hour. With the four-ply there is a loss of 1.67 horsepower at 30 miles an hour, so there is a 4.2-percent improvement in the two-ply tire power loss.

Fuel consumption shows a further improvement of about 1.7 percent. I might add, that this might not seem like very much, but we fight for fractions of 1 percent of fuel economy.

The temperature increase in a four-ply tire is greater than the two-ply tire by 4.4 percent, 136° F. versus 130° F.

The pressure increase after 30 minutes of running is greater in a four-ply tire than the two-ply tire by about 30 percent, 5½ pounds per square inch versus 4 pounds per square inch.

With tread wear in the four-ply tire taken as a baseline of 100 percent, this shows a 20 percent improved tread life because of cooler running in the two-ply.

The strength, as I have stated before, of the four-ply and the two-ply are equal.

The stability of the two-ply tire is superior to the four-ply tire, based on our proving ground tests. And the ride comfort is equal.

This next chart (fig. 10 supra) is a record of AAA calls where tire failures or tire delays resulted in a road service call. What we are attempting to show here is that if we averaged the 3 years prior to the introduction of the two-ply tire, that there was an improvement in the 3 years after the introduction of the two-ply tire in a matter of maybe a little over 1 percent. But I think the important thing here is that there is a downward trend. It is not going up.

I want to spend just a moment to mention the advantages of the tubeless tire which some years ago replaced the tube tire.

These advantages are: Improved blowout protection—let me illustrate for a moment why a tubeless tire has more blowout protection than a tube tire.

In running a tire over an uneven road surface, if you hit a sharp stone or a bottle or something like that, we call them road hazards, it is possible in some cases to cut through the tire to the fabric. And in the cases of the tube tire and the tubeless tires, both of these tires will be cut in approximately the same manner.

If this cut penetrates into the interior of the tire, in the case of the tubeless tire there is a gradual loss of air. There isn't a sudden loss of air. It just gradually leaks out and the motorist finally gets a slow flat.

In the case of the tube tire, because you have the air contained in the tube inside the tire, this crack in the tire carcass will widen and

widen until finally the tube cannot support the load over this crack and it will suddenly blow out through the crack. For this reason we say that the tubeless tire is a safer tire than the tube tire.

Also road delays due to punctures are reduced, as I mentioned. And we have this improved high-speed performance, because here again there is less tire mass involved and the tire is going to run cooler.

I want to talk just a moment about fabric strength. We are showing here (fig. 12, supra) fabric strength in pounds per cord as it has changed over the years from 1935 up to 1965.

In the case of the cotton cord, we can see that it was fairly low compared to rayon. Rayon was introduced about 1937, was stronger than cotton, and has been improved tremendously, really, over the years to where it is now over twice as strong as it was when it was first introduced.

We are continually investigating and evaluating other tire cords. But today the rayon cord presents the best overall performance for our tires, and that is why we are using, by and large, mostly rayon cord, with some exceptions.

Senator Hartke, this has been perhaps somewhat of a technical presentation. I tried to hit the high spots.

I thank you very much for listening.

Senator HARTKE. Mr. Barr?

Mr. BARR. Senator Hartke and members of the committee, Mr. Pittman's presentation points up the volume of work involved in tire evaluation and tire selection. His presentation indicates, however, the orderly procedures which we are using, based on existing standards which are improved and updated from year to year. The result is that we provide original equipment tires best suited for the safe operation of the individual vehicles we produce.

We believe your committee's personal inspection of our testing facilities and a demonstration of our tire testing procedures is essential for a further better understanding of the methods used. We invite you to Detroit and we will be pleased to provide more complete information which would help materially in your consideration of the legislation before this committee.

Turning now to the provisions of Senate bill 1643, it states that the Secretary of Commerce shall prescribe minimum safety and performance standards and a grading and labeling system for motor vehicle tires. Its stated objective is to provide the public with safe tires so that motor vehicle accidents caused by tire failure can be kept to a minimum.

As we said earlier, we have always been and continue to be deeply conscious of the safe operation of the motor vehicles which we produce, and tires are a significant element in vehicle safety. We believe that the Society of Automotive Engineers J–918 performance specification and the Tire and Rim Association Yearbook standards on loads and sizes, that Mr. Pittman mentioned, together with existing road testing procedures, are presently accomplishing the objective of the proposed legislation with respect to original equipment tires.

In addition to these standards, the General Services Administration of the Federal Government has issued over the years procurement specifications for Government-purchased vehicles, including tires.

These specifications were originally developed in consultation with the tire manufacturers and the Tire and Rim Association. The new General Services Administration standard 515/15 on tires, references the previous GSA purchase specification, ZZ–T–381, the SAE J–918 standard and the Tire and Rim Association Yearbook.

We especially invite your attention to the Vehicle Equipment Safety Commission, an interstate compact, now endorsed by 43 States and the District of Columbia, which has issued tire specification standards. These specifications were developed by the commission after months of study and public hearings. The commission made use of the Society of Automotive Engineers and the Tire and Rim Association standards and data. Acceptability of the Vehicle Equipment Safety Commission standards is indicated by actions taken already by several States to make these standards the basis of their regulations. I might add that Maryland and California were the first two States that adopted these standards.

The Federal Congress in 1958 took cognizance of all aspects of vehicle equipment safety and through the Beamer resolution of that year authorized the States to come together in a compact to promote vehicle equipment safety.

The commission is empowered by its constitution to use whatever facilities and professional experience are in existence in order to pursue the objective of vehicle safety. The independence and high integrity of the commission is guaranteed by the fact that its members are important officials in their respective States, are selected for membership by their own State governments and are deeply experienced in problems of highway safety in their home States.

The police power for traffic safety has always resided in the local governments, municipal and State. The Vehicle Equipment Safety Commission enables States to retain this local control while, at the same time, providing a basis for uniformity in tire standards.

Your distinguished colleague, Senator Fannin, of Arizona, during his three-term tenure as Governor of Arizona, was a principal in the creation and development of this new commission. As Chairman of the Highway Safety Committee of the Western Governors Conference, then-Governor Fannin played a leading role in the development of the commission. I commend to you Senator Fannin's statement endorsing the Vehicle Equipment Safety Commission made before the Ribicoff subcommittee of the Senate Committee on Executive Reorganization on July 14 of this year. His statement pointed out that in creating the commission, Congress—

> in effect * * * reaffirmed the principle that primary responsibility for traffic safety rests with the States and suggested that use of compacts to achieve more effective interstate cooperation.

He also said that—

> the commission's record demonstrates that it has been able to move aggressively with deliberate speed to attack a serious problem. Its work deserves the commendation of the Federal Government.

It is our view that the standards program of the VESC, taken in conjunction with the standards of the other groups which we have described, represents a sound approach to the objectives with which you are concerned in S. 1643.

This bill, S. 1643, appears to be deficient in that it provides no guide as to how the stated objectives of the bill are to be implemented. These provisions are important to any consideration of the necessity for legislation. There is no indication in the bill as to the basis on which the Department of Commerce would establish standards or the methods to be employed.

Also noticeable by its omission from S. 1643 is any recognition of the importance of tire inspection and maintenance. New original equipment tires constitute only a small percentage of all tires in operation. Most tires are used tires. We know that nearly all tire failures occur when tires are nearly worn out or have been damaged in some way.

The bill ignores the whole question of the condition of tires which are in use, including—

Tires vulnerable to damage because of not being maintained in accordance with instructions in the owners' manuals supplied by the manufacturers;

Tires operated with excessive tread wear;

Tires which have been improperly repaired or retreaded;

Tires in use which are not inspected for carcass damage.

We submit that these tire conditions are most critical areas.

In ignoring them, S. 1643 leaves the major tire safety problem untouched and neglects the most important aspect of highway safety as it relates to tires.

Also it would seem logical that retreaded tires should conform to the same performance specifications, SAE J–918, to which new original equipment tires conform.

Because tires are exposed continually to road hazards and constant wear, safe performance can only be assured when tires are checked frequently to determine their condition. In each owner's manual the automobile industry spells out the need for periodic tire inspection for defects and inflation checks. This affords the owner an opportunity to safety check his own tires. Because there are owners who do not follow these procedures and take the necessary corrective action, mandatory tire inspection seems necessary.

The Automobile Manufacturers Association has been on record for many years as supporting motor vehicle inspection. It has recently reaffirmed this position. It has for many years provided assistance, training aids, technical information, and promotional help to the administrators of motor vehicle inspection programs.

We have also helped in the writing of the American Standards Association Code D7.1, which is entitled "Inspection Requirements for Motor Vehicles, Trailers, and Semitrailers Operated on Public Highways," and have produced handbooks to provide technical advice to inspectors. Tires are the first item in the content of these inspection handbooks.

We would like to submit copies of these handbooks for the record.

Senator HARTKE. Without objection, they will be made a part of the record by reference.

Mr. BARR. Thank you.

We contend that wornout or damaged tires constitute the true hazard so far as tire safety is concerned.

As to labeling, original equipment tires are identified as to—

1. Manufacturer.
2. Name brand.
3. Size.
4. Type (tube or tubeless).
5. Ply rating.
6. Serial number.

These items are embossed on the sidewall of the tire.

With the information furnished in our owners' manuals and these items identified on the tire, we believe adequate information is provided for correct servicing and inflation.

Since the automobile manufacturers do not recommend or sell or test any aftermarket tires or any retread tires in this country, we cannot address ourselves specifically to these particular problems.

As to the future, we can inform your committee that it is our intention in our own companies to initiate or accelerate the following action programs:

1. To specify with the tire manufacturers who provide original equipment tires for us that they will place the ply rating on both the inside and outside wall of the tire in order to overcome some misunderstanding about tire loading.

2. To specify with the tire manufacturers that they will identify tires produced as original equipment with a label indicating tire standard compliance.

3. To work unstintingly and as effectively as possible with the Vehicle Equipment Safety Commission and the various States to achieve a maximum uniformity and an early adoption of meaningful tire regulations based on sound standards.

4. To continue the effective cooperation with the Society of Automotive Engineers. A first priority is the development of test procedures and levels of performance for skid resistance of tires. This work is currently underway. We will also continue our extensive cooperation with the Bureau of Public Roads, the American Society for Testing Materials, and others who are working to develop sound information and meaningful standards on the skid resistance characteristics of road-surface materials.

5. To continue our efforts to better inform the public in regard to tire maintenance and use.

6. To cooperate as we have in the past with the tire manufacturers in programs to improve tire technology and to evaluate tires developed by new processing methods in all ways that contribute to tire safety.

7. To continue our efforts to encourage State inspection programs to insure maximum tire safety in use.

To summarize our discussion of tire safety, we have—

Described the existence of SAE standards for tire performance qualifications, the Tire & Rim Association Yearbook for tire loading and size determination, and the VESC tire standards issued May 14, 1965, and now being implemented by the States.

Outlined the continuous and extensive testing programs in the automotive industry.

Offered evidence of the automotive industry's continuing concern with automotive safety demonstrated by its contribution to the development of standards for tires. No agency has done more in this area or is as well qualified with its facilities and experience to continue this important work.

Called attention to the fact that inspection and maintenance of used tires is the most important area of tire safety and the responsibility of the owner. As a mandatory requirement, it should be the responsibility of the State and local governments, which have the power of enforcement.

Reaffirmed that original equipment tires installed on our vehicles are safe, reliable, and durable.

Because our test procedures and quality requirements result in original equipment tires which are safe and dependable for the vehicles we produce, it is our opinion that S. 1643 would serve no useful purpose in this area. Further, because it ignores the whole question of condition of tires which are in use on our highways, it would not achieve its stated objective of providing the public with safe tires so that motor vehicle accidents caused by tire failure can be kept at a minimum.

Mr. Chairman, and members of your committee, we conclude now by saying again that our goal, like yours, is to improve tire safety.

We do appreciate this opportunity to appear before you today and to present our views on tire safety.

Now if you have time, Mr. Pittman has a film which will show in depth some of the things we have done. We should like to show this film. It takes about 8 minutes.

Senator HARTKE. That will be fine. You may proceed with the film.

(Motion picture presentation.)

Mr. BARR. Mr. Pittman will narrate this film as we go through the various road tests.

Senator HARTKE. That will be fine.

Mr. PITTMAN. I hope this film will be readily visible. It is a little bit dark. This particular test we call the grist mill. The purpose of this test is to test wheels and the ability of the tire to stay on the rim.

The driver is driving in a very tight circle, about 40 feet in diameter. He is traveling at around 20 miles per hour. You can note the extreme cornering and tilting of the wheel. This test is a very severe test on sidewalls. In the course of the test we wear out probably four tires to complete the test on the wheel. We finally abrade the sidewall of our tire down to the fabric.

In our durability course we have approximately 40 to 50 percent of running on different types of roads, hills, curves, this sort of thing. That is a closeup of the tire to show the way that the sidewall has been abraded. Again as I say this is a test to keep the tire on the rim and a wheel test for wheel fatigue.

This is the J-turn I described. We have a driver coming into the J-turn at around 55 miles per hour. He cramps the steering wheel over to the right. Note this slow motion shot. I wish the light was better. You can see the smoke coming off that tire. It is pulling away from the rim but it is still not losing air. We are still maintaining an air seal. This is tremendous punishment.

On part of the regular durability course we have around 10 percent of varying gravel conditions. There will be a closeup here in a moment that will better show the action between the tire and the gravel.

This is a slow action shot of about 1,000 frames a second. You can see the action between the tire and the gravel.

Cobblestones: There are still streets in the United States paved with cobblestones. Our proving grounds in the industry have stretches of cobblestone roads. Proving grounds of the tire companies also have stretches of cobblestone roads.

We traverse these roads at about 15 miles an hour. This constitutes about 10 percent of our accelerated durability road test. It constitutes about 1 percent, along with chuckholes which will be seen shortly, in our regular durability road test.

Here is again a slow motion of the action between the cobblestones and the tire.

You will notice the smooth ride on those cars, too.

Senator HARTKE. An unsolicited testimonial.

Mr. PITTMAN. Here is another closeup. I think I mentioned these automobiles are being driven at between 10 and 15 miles per hour. The wheel travel amounts to anywhere up to 4 or 5 inches on some of these.

Deep chuckholes: We still have in parts of the country unimproved roads. We have simulated different parts of the country that have this particular pavement. This is known as a V-shaped chuckhole. That is 4 inches deep in the middle. The cars are traveling approximately 15 miles per hour.

This is a different type chuckhole. This is what we call a square edged chuckhole. The tire doesn't necessarily reach the bottom of that hole. It more or less bridges the chuckhole. But notice in the slow motion that the tire is deflected nearly to the rim. This is tremendous punishment not only to tires but to the entire car.

There you saw the tire bounce and clear the ground. Here is a slow motion shot coming into the square edged chuckhole. That was not so bad. You will see another one that will deflect more in just a minute.

It takes a long time to get from one axle to the other in slow motion.

The square edge pothole is different than a chuckhole in that it is approximately 30 to 40 inches in length. So that the wheel can drop to the bottom and then has to climb back out of the hole. This is a very severe test. It is not part of our normal durability run. It is used in our evaluation of the suspension and steering mechanism. However, in these tests the tire is subjected to the same kind of punishment, and we don't tolerate failures. You will notice that we are deflecting almost into the wheel rim there on those shots.

Very shortly coming up here, the most severe condition will be a brake stop through a square edge pothole. You will see the left front hubcap fly off. You will notice that the wheel has been braked to a stop. We usually run these tests without hubcaps. They didn't take them off for the movie.

We are talking about transient car handling here. This is a special handling course where steering, recovery, feel, response of the car to curve, is evaluated. There is much more violent driving, we didn't get a picture of it, but these same roads are traveled for a short time at speeds up to 70 or 80 miles an hour, which is far above the capability of the average person to hold the car on the road.

We are going to demonstrate controllability of a car here, with a dynamite cap installed the right front tire of the car. The dynamite cap will blow out the sidewall. You will notice the driver has no trouble maintaining a straight-ahead course. You will see the tire starts peeling over on the rim but it does not come off.

And this is of course because of the safety rim design that is being used in the industry.

That is the end of the film, sir.

Mr. BARR. Thank you, Mr. Pittman. This concludes our statement and presentation, Senator Hartke. Thank you very much.

Senator HARTKE. In your durability tests, I noticed different types of road surfaces, but not what we commonly call black top or asphalt.

Mr. PITTMAN. Yes, sir. I should mention we didn't show that particular part. Approximately 50 percent of this durability course does cover varying types of pavement, hills, curves, and this sort of thing. We have brick, we have asphalt, we have concrete. And then we have ripple-concrete, broken-up concrete, and so forth.

Senator HARTKE. I just noticed it didn't have that one item.

Let me ask you, Mr. Barr, in reference to your statement, you indicated in your comments on the bill itself that it appeared to be deficient. From the reading of what you had to say, I gathered that you thought it was deficient in that it was not strong enough, not that it was too——

Mr. BARR. I believe the intent in that reference—and let's hope it was constructive, we didn't mean to be critical——

Senator HARTKE. I am not worried about criticism.

Mr. BARR. Actually it is most important in our view that some recognition be taken of the importance of the used tire, and we tried to emphasize that, and I believe that is what we meant when we used that word, sir.

Senator HARTKE. In other words you think that——

Mr. BARR. Some means of inspection and assuring that tires that are being operated on vehicles are safe tires.

Senator HARTKE. One question which has been raised on new equipment especially concerns station wagons. When an inspection was made under the supervision of Senator Nelson, the type of tires that were found to be on station wagons here were below the standards recommended in the field. In other words, they were two-ply tires, and none of the station wagons had the oversize or larger size tires on them. Would you have somebody explain that?

Mr. BARR. Yes. I think we will work as a panel here now.

Senator HARTKE. All right.

You have identified all the people at the table.

Mr. BARR. Mr. Bogan of Chrysler might take this.

Senator HARTKE. Identify yourself so that the reporter can take your name.

Mr. BOGAN. We tire our vehicle, Senator, from the sedan up through the station wagon, as described in the report this morning. We do use heavier tires on station wagons on the basis that we specify a 1,200-pound load now as opposed to an 1,100-pound maximum load for sedans. And the tire that we have on there we feel are adequate and safe tires, as they are specified.

Senator HARTKE. Let's do it one step at a time. We have really two problems here, as I understand it. One of them is the question of

the ply, and one of them is the question of the size. Am I right in that? Or am I wrong?

Mr. BARR. I believe you should restate your question for Mr. Bogan.

Senator HARTKE. The size of the tire itself and the ply of the tire are two different elements. Is that true?

Mr. BARR. Right.

Mr. BOGAN. Yes.

Senator HARTKE. Let's come back to the ply, first. What, generally speaking, on the station wagon, what ply is recommended, or is there a recommended use in the field? In other words what is considered safe?

Mr. BOGAN. We use both, two- and four-ply.

Senator HARTKE. Is this difference, then, between the two-ply and the four-ply, a difference of safety, or is it, as you indicated in your chart, just a difference of choice of tires which are to be used by this manufacturer?

Mr. BOGAN. Difference in the choice of tires, not a difference in safety.

Senator HARTKE. You mean there is really no safety factor involved as to whether you use a four-ply tire or a two-ply tire, is that right?

Mr. BOGAN. I don't believe you can say that. I think you can say that we can have a two-ply that is stronger and more durable than some four-plies. It depends on the size and the selection of the tires.

Senator HARTKE. What I am trying to develop is this: First, what you recommend, and then what you use. What we are trying to find out—I don't mind telling you what I am after—what we are trying to find out is whether you are using something which is less desirable than that which would ordinarily be recommended by the manufacturer if he wanted a real safety feature. We are trying to find out whether you are recommending one thing and using another.

Mr. BOGAN. We are not.

Senator HARTKE. "We are not." Is this all of you?

Mr. BOGAN. The industry. I think what is bothering you is that certain services recommend higher ply tires. That generally is extreme service. We do not construe that as necessary for ordinary service where the cars and station wagons will cross this country adequately with full loads.

Senator HARTKE. Let's come back to the very heart of this question. Generally speaking, the industry, as I understand from what you have testified to, and what you now have stated is using a four-ply rated tire, is that right? Whether it is four-ply or two-ply, it is still a four-ply rated, is that true?

Mr. BOGAN. Right.

Mr. PITTMAN. That is correct.

Senator HARTKE. This, generally speaking, is the one which the purchaser will find on his station wagon when he goes to the automobile sales room, is that right?

Mr. BOGAN. Right.

Mr. BARR. Could I express something on this?

Senator HARTKE. Yes.

Mr. BARR. The two-ply, four-ply rated tire is recommended on most of our station wagons and all of our passenger cars. But if there is

unusual duty or service, some owners' manuals specify the next larger size two-ply or a four-ply, eight-ply rating of the same size.

Senator HARTKE. This is what it comes to. We are talking about what is unusual. Maybe we are coming to a definition. During the Federal Trade Commission hearings, a tire industry executive testified that some compact station wagons should be equipped with eight-ply tires. When asked how the motorist was expected to know this, the witness testified that he thought such a warning might be found in the car manual. The Goodyear Tire & Rubber Co., answering the complaint from a station wagon owner plagued with tire troubles, stated that his car, on the basis of the Tire & Rim Association loading tables, should be equipped with an 8.25 by 14, eight-ply rating tire.

My question is: Is this statement wrong? Or is this an explanation? what is the story?

Mr. BARR. He will ask Mr. Isbrandt, of American Motors.

Mr. ISBRANDT. I don't believe the statement is complete. The statement that I am familiar with, in that particular condition, indicated that the owner anticipated carrying unusually heavy loads, including a trailer, the trailer imposes loads that we would consider to be unusual. And if he intended to use the vehicle continuously in this type of service, then we would expect that he would use the next size tire, or even the next ply rating.

Senator HARTKE. Let's assume for the moment that what you say is true. Would he have found that in his manual?

Mr. ISBRANDT. Yes, he would have. Not as specific as I have just indicated, probably.

Senator HARTKE. How unspecific would he have found it?

Mr. ISBRANDT. It would be indicated that where unusual, heavy loads, or continuing heavy load service was anticipated, then oversize tires were available.

Senator HARTKE. I am presented with a problem. At this time, by virtue of the business on the floor of the Senate, which we had anticipated would be concluded satisfactorily last night we ran into an obstacle and it has been continued to after the prayer this morning. I am going to have to go to the floor of the Senate for the tariff bill. Senator Monroney is going to take over the hearings. I will be back as soon as I can.

Mr. BARR. Thank, you, Senator Hartke.

Senator MONRONEY (presiding). Mr. Barr, these questions come from the staff and from those suggested to the staff by Members of the Senate.

In an inquiry directed to all of the leading automobile manufacturers, questions as to the safety of original tires were asked. Is there an overloading problem? Automobile companies have continued to maintain that tires which come on new cars are safe, but according to the correspondence which some of the Members of Congress have had, their answers are always qualified with the following: American Motors: "Original equipment tires are adequate for occasional full-load service with the inflation pressures quoted above."

Chrysler, GM, and Ford gave similar replies: "Safe as long as inflated and deflated as the load changes."

In the GM manual they advise you to increase the air pressure if you add air conditioning.

The Mercury manual recommends a much larger tire with the use of air conditioning.

Is the margin of safety in the original equipment tires actually that small?

Mr. BARR. Senator Monroney, I think before we address ourselves to this question we should remind you of what we said in the beginning, that we would be free to admit that there is much to be done in this general area.

I believe that in the statement that we have made, we have said that we have in the past and will in the future continue to improve the information that we give to our owners. And I feel if you read the various owners' manuals in any given year in the past you would find some areas that could be improved. We admit that these areas can be improved, and we are saying that they will be improved in the future. This is what we said in our statement.

I don't know whether any of the other gentlemen want to add to that. But that is a general statement that applies.

There is room for improvement, and we are going to improve it.

Mr. Isbrandt, of American Motors.

Mr. ISBRANDT. I would like to address myself specifically to the question on American Motors cars and the language in our manual. It was an unfortunate choice of words, when we said "occasional." We meant by that if an owner were to go to the west coast, as an example, his tires are perfectly adequate for a full-load condition.

However, if he were to drive on a continual basis with a full load, not just occasionally—we recommend larger size tires. We are changing the language in 1966 to make it much more specific. We are changing it to say "all normal operating requirements within the vehicle capacity, including full-load service." We believe this will clarify the point. We made no tire changes as a result of this. It was just a matter of changing the manual to have the manual more clearly indicate the capacity of the tires that we specified.

Senator CANNON. Will the Senator yield?

Senator MONRONEY. Yes.

Senator CANNON. Did you make change in the pressures as a result of that statement?

Mr. ISBRANDT. No, we have not. Our pressure requirements are indicated the same as the year before, indicating that under full-load conditions you are expected to increase the tire pressure.

Senator CANNON. I thought the statement you read there indicated that you wouldn't necessarily have to change the pressure under full-load conditions.

Mr. ISBRANDT. Depending on whether or not high speeds or cruising speeds are involved. If cruising speeds are involved, the statement does indicate that "When inflated with the pressures listed in the above table," and the table indicated additional pressures required under full-load conditions or sustained high-speed driving.

Senator CANNON. So they still would have to go back to the chart to see whether they should increase the pressures with a full load?

Mr. ISBRANDT. Yes, sir.

Senator CANNON. Don't you think that is an unusual requirement to impose on the owner-driver?

Mr. ISBRANDT. I don't think so. It can be related to putting a roast in the oven. The housewife must use judgment there, and must use

a manual to determine what temperatures to cook a roast at. I would expect that it would not be unreasonable to ask the owner to inflate a tire appropriately for the conditions that he intends to impose on the vehicle at the time.

Senator CANNON. I drive pretty good cars and I read the instructions occasionally, and I don't think I have ever seen that little line about increasing the pressure based on the load. Yet I know that it has to be done. Either that or that the pressures recommended are way under the amount that you should have.

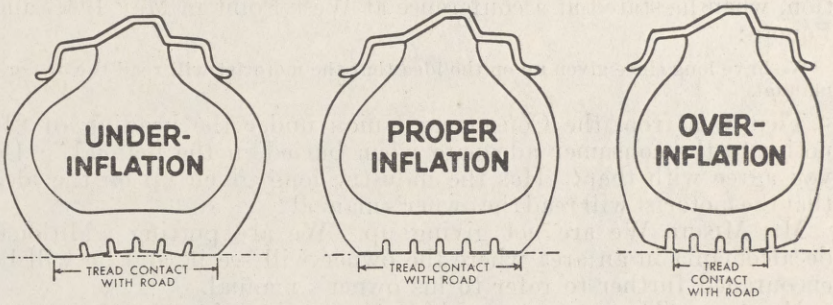
For example, you flip your little glove compartment down and you have the recommended pressures on there. I don't think it says anything on that about increasing the pressure based on full load.

Mr. BARR. With your permission, may we let Mr. Misch, vice president of Ford, discuss this as well?

Mr. MISCH. Actually the intentions are, when we place these decals in the cars in 1966, there will be quite a complete set of instructions. But over, above, and beyond that, it will indicate that for further information they should refer to their owner's manual. Therefore we believe collectively at the moment that the decals that will be added will be a major help in clarifying to the owner or the driver what is required.

We want to stress this: proper inflation is in the best interests of the owner because of its influence on wear. I might, if I could, I would like to show one chart which shows this relationhip.

May I have the chart which shows an underinflated tire and overinflated tire, and an appropriately inflated tire, please?



You will notice that the tire cross section in the center, labeled "Proper Inflation," has the footprint, as we call it, in contact with the road all the way across the tread from one side to the other in contact with the road.

You will notice that in the underinflated tire—these examples assume the same load, and we vary the inflation—there is a tendency for the center portion of the tread to rise above and contact either less firmly or not contact at all, the road surface, so that the rubber in contact, and consequently that which is subjected to wear, is reduced materially in area.

If you look to the far right of the chart, to the overinflated condition, opposite occurs; that is, the center of the tire then is doing the major portion of the job, and is wearing. This is what we refer to as uneven or something less than an optimum wear condition.

We are quite sure that it is in the best interest of the owner to optimize his wear conditions, so that he gets more miles per dollar.

For this reason we believe that—and it is the reason why we say for occasional use versus a planned unusual usage, the owner should apply these relatively simple rules for his own benefit.

When we say something that is not occasional use, we refer to the situation where a station wagon is going to be used by a salesman continuously, and he knows he is going to be carrying heavy sample cases or whatever the wares of his trade are. He knows this, and he knows what the conditions of his load will be. He should anticipate that for the best investment on his part, or to insure the investment, he should appropriately inflate.

This is the reason why we usually show two pressures for two different load conditions. It is a phenomenon of the tire. Once again, these are not major factors. There aren't going to be great spreads in the loss in wear. But they are significant.

Further than that, for the occasional use—such as hauling trailers—I think all of our industry has gone to considerable length to provide literature through our dealers with specific recommendations for hauling trailers, whether they be boat trailers or whatever.

Incidentally, included in these recommendations are not just the consideration of tires, but other parts of the vehicle as well, which are not normally designed to anticipate this type of usage for each and every vehicle that we sell.

Senator CANNON. I wonder what your comments are on this statement, which I understand one of your colleagues made, Mr. Sherman, who is technical director of the Automobile Manufacturers Association, when he stated at a conference at West Point in May 1961, and I quote:

> We have long since given up on the idea that the motorist will read the owner's manual.

That was from the Consumers Union under the heading of "Is notice to the consumer adequate when buried in the manual." Do you agree with that? Has the industry long given up on the idea that the motorist will read the owner's manual?

Mr. MISCH. We are not giving up. We are putting additional decalcomania in an area where the owner will see it, and he will be encouraged further to refer to his owner's manual.

Mr. BARR. There are many things in an owner's manual that the owner should read in his own interest in getting the most out of his investment. But certainly we have no absolute control over this. This is why, as we indicated in the statement, and as Mr. Misch just indicated, we are putting this information where it is very obvious to him.

Senator CANNON. Couldn't you get around that if it is a fact that the owner, the user, will not read the owner's manual, couldn't you get around that by putting on the tire that it will be safe under all of these conditions, so that you don't have to worry about, if you take a 200 pound less load, that you need a little less pressure in your tire, or if you take 400 pounds more, that you need more pressure?

Mr. BARR. I think the chart shown there indicates very clearly the extremes of load that we are talking about. What we are talking about, as Mr. Pittman indicated, is for a load of one to five passengers,

the normal type of load around town, on trips, we have one pressure indicated. But if you are going to have six or more passengers, and luggage as well, and use this load for an extended time, then you must increase the inflation pressure as indicated on these charts.

So it is quite a simple thing to consider. There is one pressure that you use on your car for most of your use of it, and the average family would load up their station wagons and their passenger cars for maximum load perhaps for a vacation trip. We are saying clearly in the owner's manual and in this decal, which will be apparent, that the pressure should be increased to some other value.

Senator CANNON. Would the increase in the size of the tire increase the margin of safety under these extreme conditions?

Mr. BARR. No, it would not, sir, because if you would increase the tire pressure to 32 pounds per square inch, which is the maximum pressure that we are going to have, that we do have proposed for 1966, to drive that car with one passenger, a man going back and forth to work, or a lady shopping, this tire would wear in the center, and then when used later with the proper load it would not be a good tire.

So this is one of the variables in our business that we must get across to our customers. I think we will do much better on it in the near future.

Senator CANNON. You are in effect saying if a person puts oversize tires on his car, they are not increasing their safety factor at all?

Mr. BARR. We are saying oversize tires where recommended. I think Mr. Misch would like to address himself to this question again.

Mr. MISCH. I want to clarify one point, and that is that we may well have some vehicles in which there is only one inflation pressure, regardless of the load. But not all vehicles. And there is a good reason for it.

The smaller the increment of load compared to the curb weight of the vehicle, the less variation we get between the so-called overinflated and underinflated condition of loading.

So therefore for those vehicles with relatively high curb weight and low incremental load, it is conceivable to have one inflation pressure. I think as an industry we have been working in this direction.

But where the vehicle curb weight is low, and the applied or carried load increment is high, we then have the phenomenon in its extreme that we showed on the chart.

So we can't categorically say that one inflation pressure will serve under all circumstances. I hope I have clarified rather than confused you on the reasons why we can't be specific that each and every car will be treated the same.

Senator CANNON. I thank the chairman for yielding.

Senator MONRONEY. I am glad you developed that. I think it is quite important.

Chairman Dixon, in the Commerce Committee hearings on tires in January stated:

> Our record contains a number of statements to the effect that many original equipment tires mounted on new cars are inadequate to safely carry the passenger and baggage load the vehicle is designed to carry.
>
> One manufacturer stated that over the years vehicle manufacturers, in an attempt to cut costs, have cut down the amount of tire they are designing onto their vehicles, and that some vehicles are overloaded when they are empty of passengers or baggage.

I would like to have one of you gentlemen comment on the chairman's declaration.

Mr. BARR. Let's consider one thing you said there, that the tire sizes had been changed in order to reduce costs. The record will show that through the years tires have been changed in our vehicles from model year to model year depending on the weights of the vehicles, and sometimes these tire sizes have been increased and sometimes they have been reduced, depending on the safe weight-carrying ability of the tire and the load concerned.

This is a matter of experience in the past. So we are saying that each year we review this and have installed as original equipment the tire that we feel is safe and will do the job.

Senator MONRONEY. Could you supply the committee with a graph comparing the tire size with the weight over, say, the past 5 or 10 years?

Mr. BARR. The tire size with the weight?

Senator MONRONEY. Yes. The tire size with the weight that must be sustained, selected from two or three of your models.

Mr. BARR. This can be accomplished.

Senator MONRONEY. We would like to get something graphic.

Mr. BARR. This could be accomplished. We do have some information on tire-size changes. We can develop the specific information.

Senator MONRONEY. If you can make a graph it will be very helpful to us.

(See appendix.)

Senator MONRONEY. Again the Federal Trade Commission transcript said:

> Our record also reflects a statement by the tire industry engineers that the tire load capacity standards published by the Tire & Rim Association, which under the publication of their annual 1964–65 yearbook, tire loads were really representative of load ratings based upon average passenger car loadings and do not represent maximum tire loadings. The load ratings are used by automobile and tire manufacturers as a basis for selecting the original equipment for new cars.
>
> At our hearing one tire industry representative testified that "A six-passenger sedan, the weight of three passengers added to the curb weight of the vehicle to determine the load that is to be used to select the tires."

Mr. BARR. I think you hit at something, Senator Monroney, that has been confusing some of the members of the committee and others on this question.

Senator MONRONEY. This is all in the record.

Mr. BARR. I am not disputing the record. Mr. Pittman did attempt to indicate the difference between the design loads we have used in the past and also the maximum loads. He does have a chart here which, with your permission, if he could run through this, I believe you will better understand the question you have addressed to us.

Senator MONRONEY. We would like to have you elaborate on it.

Mr. PITTMAN. I was retrieving a chart from the back of the room. Could you repeat your question?

Senator MONRONEY. The charge made by the Federal Trade Commission was that in selecting a tire for a six-passenger sedan, that

they choose the weight of the car with only three passengers in the sedan.

Mr. PITTMAN. I see. I attempted to cover that when I discussed the old tire and rim tables against the new tire and rim tables. I have a chart (see accompanying chart) of the 1965 tire and rim tables

1-10 THE TIRE AND RIM ASSOCIATION, INC.

LOW SECTION HEIGHT 15" PASSENGER CAR TIRES

TABLE PC-6

TIRE AND RIM ASSOCIATION STANDARD

TIRE SIZE	PLY RATING	ENGINEERING GUIDE Loads and Inflation Pressures								
		20	22	24	26	28	30	32	34	36
6.35-15	4	720	760	800						
	8	720	760	800	840	880	910	950	980	1020
6.85-15	4	800	850	900						
	8	800	850	900	930	970	1010	1050	1090	1130
7.35-15	4	930	980	1035						
	8	930	980	1035	1085	1130	1180	1225	1270	1310
7.75-15	4	990	1040	1100						
	8	990	1040	1100	1150	1200	1250	1290	1340	1390
8.15-15	4	1060	1120	1180						
	8	1060	1120	1180	1240	1290	1350	1400	1450	1500
8.45-15	4	1160	1220	1280						
	8	1160	1220	1280	1350	1400	1460	1520	1570	1630
8.85-15	4	1230	1300	1370						
	8	1230	1300	1370	1440	1500	1560	1620	1680	1740
9.15-15	4	1320	1390	1470						
	8	1320	1390	1470	1540	1600	1670	1730	1800	1860
9.00-15	4	1280	1350	1420						
	8	1280	1350	1420	1490	1550	1620	1680	1740	1800

NOTE 1: The selection of tire sizes for passenger cars should be based on the actual individual wheel curb load with the rated number of passengers as shown in the table below, and including all accessories (such as radio, heater, automatic transmission, power steering, power brakes, power windows, power seats, and air conditioning):

Car Pass. Rating	Pass. Load for Tire Selection	Passenger weight to be added to curb weight	
		Front Axle	Rear Axle
3 & 4	2F	160 lbs.	140 lbs.
5 & 6	2F & 1R	190	260
7 & 8	2F & 2R	220	380
Station Wagons	.....	220	380

Where actual weights are not available, the theoretical weights should include vehicle curb weights plus all accessories and passenger load distribution in table above.

Inflation pressures for design load on passenger cars, station wagons, and light trucks may be up to 24 psi for 4 ply rating tires and up to 36 psi for 8 ply rating tires.

NOTE 2: For high speeds, inflation pressures are to be increased 4# above those indicated in table.

NOTE 3: On light trucks or station wagons, increase operating inflation pressure 6 psi.

NOTE 4: When higher pressures are used for shipping purposes, up to 40# inflation may be used. This higher pressure must be reduced to operating inflation before the vehicles are put into use.

NOTE 5: It is necessary to use the widest recommended rims for 8 ply rating tires. If clearances do not permit the use of the widest recommended rim, then the next narrower rim of a Heavy Duty type is required.

which I refer to as the old tire and rim tables. I will subsequently show a chart that will be the 1966 tire and rim tables, and, in fact, for a number of years, Senator, these charts showed the load-carrying capacities.

Let's take, for example, the top line, a 6.35 by 15 tire. It showed the load-carrying capacities for a four-ply rating tire and eight-ply rating tire at different inflation pressures varying from 20 through 24 pounds per square inch for a four-ply, and with an eight-ply varying up to 36 pounds per square inch.

The important thing about this chart is that you have to read the footnotes at the bottom. In order to determine this load, you put three people in the car and then determine what load is on the wheel. So all this chart really shows is the load-carrying capacity for a three-passenger condition.

Senator MONRONEY. Three passengers in fine type down below.

Mr. PITTMAN. Yes, sir. For a five- to six-passenger automobile, you add two people in front and one in the rear. For a seven or eight-passenger automobile, which would be a station wagon, you add two, front, and two, rear. But this is just a guide.

This information, over here, can be used if you don't know what the load distribution is to the front and rear axle. These are fairly approximate distributions to the front and rear that will give you the answer. We don't have to consider this for our explanation.

It is just that, here, on this chart, the three-passenger condition is used in a normal sedan to merely indicate what the load-carrying capacity would be at a given inflation pressure at this three-passenger condition. But this is not how we tire cars.

Once the Tire & Rim people found that the tables were being misinterpreted, they took steps to correct this misinterpretation, and that is why we feel so confident, both industries, that with these 1966 tables, this clarification will be established. There will be no more misunderstanding as to whether you have got the right tire on the car, or not, because we state in this new table the maximum load-carrying capacity of the tire. Would you allow me to show you what these new tables will look like?

Senator MONRONEY. Yes.

Mr. PITTMAN. Here is a 6.85-by-15 tire. We show four and eight ply. We show the load-carrying capacities for pressures varying from 20 pounds per square inch up to 32 for the four-ply-rating tire. We go as high as 40 pounds per square inch for the eight-ply-rating tire. Now it is possible to indicate the maximum load condition and load-carrying capacity.

When you read the footnotes, you will not that we say under condition B, "Maximum load as defined on page X." There is a description of three or four pages that precedes this chart that establishes a specified procedure for calculating the load on the wheel, and this is so that the procedure is standardized.

LOW SECTION HEIGHT 15" TIRES USED ON
PASSENGER CARS AND STATION WAGONS
TIRE AND RIM ASSOCIATION STANDARD

TIRE SIZE	PLY RATING	TIRE LOAD LIMITS AT VARIOUS COLD INFLATION PRESSURES										
		20	22	24	26	28	30	32	34	36	38	40
6.85-15	4	950	1000	1050	1100	1140	1190	1230				
	8	950	1000	1050	1100	1140	1190	1230	1270	1320	1360	1390
7.35-15	4	1070	1130	1180	1240	1290	1340	1390				
	8	1070	1130	1180	1240	1290	1340	1390	1440	1480	1530	1570
7.75-15	4	1150	1210	1270	1330	1380	1440	1490				
	8	1150	1210	1270	1330	1380	1440	1490	1540	1590	1640	1690
8.15-15	4	1240	1300	1370	1430	1490	1550	1610				
	8	1240	1300	1370	1430	1490	1550	1610	1660	1720	1770	1820
8.45-15	4	1340	1410	1480	1550	1620	1680	1740				
	8	1340	1410	1480	1550	1620	1680	1740	1800	1860	1920	1970
8.85-15	4	1430	1510	1580	1650	1720	1790	1860				
	8	1430	1510	1580	1650	1720	1790	1860	1920	1980	2040	2100
9.15-15	4	1510	1600	1680	1750	1830	1900	1970				
	8	1510	1600	1680	1750	1830	1900	1970	2030	2100	2160	2230
9.00-15	4	1460	1540	1620	1690	1760	1830	1900				
	8	1460	1540	1620	1690	1760	1830	1900	1970	2030	2090	2150

NOTE 1: The selection of tire sizes for passenger cars and station wagons shall be based on the following two criteria:
A. "Design Load" as defined on Page X must not exceed tire loads shown at 24 psi for 4 ply rating tires and at 32 psi for 8 ply rating tires.
B. "Maximum Load" as defined on Page X must not exceed tire loads shown at 32 psi for 4 ply rating tires and at 40 psi for 8 ply rating tires.

NOTE 2: Minimum recommended service inflation pressures are to be as indicated in table for the various loads. Inflation pressures may be increased above those indicated in table when recommended by the car manufacturer for optimum stability and handling but not to exceed 32 psi for 4 ply rating tires and 40 psi for 8 ply rating tires.

NOTE 3: Maximum cold inflation pressure of 4 ply rating tires is 32 psi and of 8 ply rating tires is 40 psi. For sustained driving over 60 mph, cold inflation pressures should be increased 4 psi above those indicated in the table, but not to exceed the maximum.

NOTE 4: For 8 ply rating tires, consult rim and wheel manufacturers to determine if rims and wheels are of sufficient strength for the intended service. Widest recommended rims should be used; however, if clearances do not permit, then the next narrower rim may be used.

We put all the accessories on the car, all the people in the car that the car was designed to carry, and as stipulated in the owner's manual. You then calculate the wheel load and come to the chart. If at 32 pounds per square inch you can't carry the load, you have got to go to another size tire. There is just no way we see that this table can be misinterpreted, and we think this should clarify the situation.

Mr. BARR. Thank you, Ray.

Senator MORTON. Mr. Chairman?

Senator MONRONEY. Senator Morton.

Senator MORTON. We are here considering S. 1643, a bill introduced by my distinguished colleague and others. Do you think that by passing a bill we can force everybody to read all these charts and all this stuff that you get in your glove compartment when you buy a new car?

Mr. BARR. Sir, we believe that your bill would have nothing to do with that. We think this is our responsibility to give the owner the best information we can. I believe that with these charts, we have taken you a little bit into the engineering of this and how the design engineer of an automobile company and the tire engineer of the rubber company arrive at the proper tire for a proper load-carrying ability on an automobile.

Senator MORTON. Please don't misinterpret my question. I certainly appreciate these charts.

Mr. BARR. We are saying the owner of the car will not see these charts. The owner of the car will see a decal and the information in his manual.

Senator MORTON. My point is this: We passed a fool law around here about 1918 doing away with whiskey, and we got over that in a hurry. Now we are trying to pass one to do away with smoking cigarettes.

And I don't know how you can pass a law around here that will make everybody read all the stuff that is in the glove compartment. Did you ever hear of a Saxon car?

Mr. BARR. Yes, sir.

Senator MORTON. You gentlemen represent the motor interests. I remember 50 years ago, and I wasn't very old then, old enough to change a tire, though, I went with my maternal great uncle to shake it down. It takes you about an hour and a quarter to make a drive to Shakertown today. Then it was an all-day trip. We had a Saxon roadster. Before we left, we strapped on five extra tires on the back of the car, and I changed four of them before we got to Shakertown.

If we had had a law then which would cost you $1,000 fine, or put you in the penitentiary for a year for using a little imagination in this field, I don't think we would have had any better tires than we had in the days when I rode in that Saxon roadster.

Don't you think, as a prominent member of the automobile industry, that we have the best tires here, in this country?

Mr. BARR. We feel so, sir. I think we have tried to explain that to you this morning.

Senator MORTON. I have had more flat tires in Spain than I ever had in the United States, I will tell you that. I think we are actually getting into something here. I want to give careful consideration to this bill, but I honestly believe that when we start restricting the great imagination, the will to produce, in this country, by putting all kinds of restrictions on them, I think we would be back to those five old tires I strapped on the back of that Saxon. You don't have to comment on that. Thank you, Mr. Chairman. [Laughter.]

Senator MONRONEY. I think the reason these hearings are going on is the hope that we can——

Senator MORTON. How many flat tires have you had lately? I swear—touch wood—I haven't had one in about 4 years.

Senator MONRONEY. We have had well over a hundred letters, unsolicited, to the committee. I have had wires from my AAA in Oklahoma, representing the great body of motorists out there, calling attention to what appears to be one area of lack of safety that can be achieved.

I have the greatest confidence, personally, in the miracle of the American automobile. I think they have built into that extra gear strength, extra quality in carburetion, in ignition, and things of that kind, that are so fantastic compared with the old days that there is no comparison whatsoever.

But when a man buys a brandnew car, I think he expects the rubber on that car to be as good as the engine, as good as the transmission, as good as the differential. Apparently according to what we are getting—and this may be a false headline—apparently what we are getting is that for the lack of a nail, the kingdom is lost; for the lack of a dollar on a tire, or something of that kind, you have a tire that is not a safe tire with some thousand miles use on a brandnew car. That is what I think these hearings are all about.

I wonder if the automobile industry, which has a great reputation in making the world's finest transportation, has ever tried to put

together a safety package that for a certain bonus on the price could be sold so that you could tell the buyer that this is the finest tire equipment that money will buy, and it is the safest.

It seems to me that in line with other step-ups that you have in equipment, air conditioning, radio, and maybe television in the future, this is a very desperately needed package in the light of at least what a considerable number of consumers and consumer organizations seem to feel is the weak point in the armor of an otherwise nearly flawless product.

Mr. BARR. Senator Monroney, we think the technical information presented here this morning should give you a better understanding of the true maintenance requirements and the pressure required to properly operate tires on a vehicle.

Also, we have stated, and Mr. Pittman has shown you, what we would call new standards, but they have been under development for several years, and will be applied or are now under application to our 1966 model automobiles.

Further, we say that these tires are tires that must wear out before there is any rapid type of loss of air encountered in the tests that we have indicated to you.

Beyond the mere safety of a tire—and we sometimes wonder what you have in mind when you talk about safety—but I believe the biggest consideration in your mind to date has been rapid loss of air, because, when a tire blows out this is an unsafe thing. But there are many other factors, and we have eliminated the one of rapid loss of air by designing our tires and providing equipment that will wear out before we do encounter rapid loss of air. This is our objective and we test them on that basis.

There is controllability, which Mr. Pittman went through in quite a bit of technical detail and depth in his charts. In order to have tires control properly on turns with normal types of usage on the city streets, the pressure we recommend for the normal passenger load of one to five persons is the proper pressure.

A pressure that is required on a station wagon fully loaded for a vacation trip is proper for that extended use. But that pressure, 32 pounds per square inch with one passenger in the car is not the proper pressure to be used for city driving or short trips. It is just that simple.

Senator MONRONEY. Senator Hartke, in one of the hearings mentioned—and I quote:

> There is in the May 1965 issue of Consumers Bulletin—and I am not speaking for its reliability—"In rating the 1965 Ford, Chevrolet, and Plymouth, the cars regularly delivered, have overloaded tires and we suggest that the consumer order his car with tires of the next larger size."

I would like to have you comment on this. This gets to the heart of what we are talking about. You can buy the tires, you can equip the cars that will have the fail-safe or greatest fail-safe possibilities on the market today, but you don't do it.

Mr. BARR. What we are saying is that we are doing this in what we are approaching here. I would like for Mr. Bogan to answer your question in greater detail.

Senator MONRONEY. Mr. Bogan.

Mr. BOGAN. Our original equipment tires—I just happen to have a line of tires of one of the major tiremakers, which they make for us—is the safest tire in the line. What you buy up and down the line is tread life.

The 100 level or original equipment tire has the maximum tread life for the dollar. And the tires we select, regardless of what Consumers Union, or any other source says, are selected by the process that has been explained, and are safe and adequate tires. If they want to say that you can buy more tread life by putting the next larger size tire on, that is possible. But we still go back to the point that the original equipment tire, selected by the manufacturer, is the most for the money and is a safe and durable tire under those conditions.

Senator MONRONEY. You keep coming back, sir, to the most for the money. I think what this committee is concerned with is the greatest safety that can be put on to the new car and to maybe encourage the automobile dealers who deal in safety and other features of the car to at least offer a supersafe package to the buyer when they are selling the new car. This is the time to get the rubber on.

Mr. BOGAN. I think we are confusing the most tire life for the money with safety if you say that.

Senator MONRONEY. You say it is the safest tire for the dollar.

Mr. BOGAN. No.

Senator MONRONEY. In the matter of a $3,000 or $4,000 car, if it is a dollar or two dollars extra, I think it is the automobile companies' purpose and responsibility to try to urge the buyer to pay more for a premium tire.

Mr. BOGAN. We tried to make the point, and I guess we didn't get it clear to you, that from the low line to the high line, the tires are equal in safety. If you are talking about tread life and you want to pay more for greater tread life, you can do so, particularly if you want to carry extremely heavy loads all the time. But the 100 level tire that we put on new cars, commensurate with all other factors involved in the tiring and the making of an automobile, we feel they are adequate.

Mr. BARR. And they are safe.

Senator MONRONEY. That wasn't the testimony, I understand, that was given—unfortunately I missed it—by the tire manufacturers when they were here at the previous hearing, that there were better tires that could be placed on new cars.

Mr. BARR. I don't believe Mr. Bogan heard your statement, Senator. Could you repeat it?

Senator MONRONEY. Sir?

Mr. BARR. Would you repeat the question? I don't believe Mr. Bogan heard it.

Mr. BOGAN. The last part of the statement.

Senator MORTON. The chairman made the point that the tire manufacturers testified you could put safer tires on cars. Wasn't that it?

Senator MONRONEY. This was my understanding. I was not here, unfortunately. I had to preside at another hearing.

Mr. BARR. We are telling you this morning we are putting safe tires on cars.

Senator MONRONEY. Can you put safer tires on the cars?

Mr. BARR. We can put, as Mr. Bogan explained to you in detail, we can put oversized tires on some applications that will increase the tread mileage. Therefore you get more miles for your dollar. But the car is safe on the original tire.

Senator MONRONEY. And no money could buy a better tire, a safer tire?

Mr. BARR. No money could buy a safer tire. We will say it that way.

Senator MONRONEY. You will say that for the record, that the maximum amount of safety that can be bought to fit the rim size and the weight of the car is now being installed on the Ford and on the Chrysler and on the Rambler and on the GM cars?

Mr. BARR. With respect to safety, sir.

Senator MONRONEY. You said a while ago it is the best tire that could be had for the money. I am trying to rule out the money factor and say, Can there be a better tire? You say there can be no better tire than you are putting on. Is that correct?

Mr. BARR. Let's state it this way. The tires that we are equipping our vehicles with, in accordance with the charts that Mr. Pittman showed you, that involve new standards being applied at this point in our industry—this is a safe tire endorsed by our industry for original equipment, and I feel there is no safer tire available than you are going to see on our cars in 1966.

Senator MONRONEY. There will be no tires available that will be safer?

Mr. BARR. Than those.

Senator MONRONEY. Than the tires that will be on your cars in 1966, is that a correct statement?

Mr. BARR. And we have optional tires that will extend the mileage for high-load conditions and will get more miles than probably other tires, but no greater safety.

Senator MONRONEY. You say 1966. How about 1965? Have you always had safe tires available in 1965 and 1964?

Mr. BARR. We stated that tires are safe in 1964 and 1965 in our statements. Mr. Isbrandt might like to add to that.

Did you hear the question?

Mr. ISBRANDT. Yes, I believe I did. Our tires have always complied with the safety standards that we have been aware of, and that we have developed in the industry.

I think the point that may be confusing here is the fact that the standards, as they will be published by the Tire & Rim Association, and by the SAE standards that have been adopted, will more clearly indicate the basis for which we select our tires. We have used this practice all through the years.

Senator MONRONEY. What would it cost per new car to include premium-quality and oversize tires in car sales?

Mr. BARR. I don't believe we have that information.

Are you stating the question in view of the increased mileage that we might obtain by a larger tire, or some premium tire?

Senator MONRONEY. Disregard the quality and make it just the size. How much increased cost would the next larger size tires require in the purchase of new equipment?

Mr. BARR. If you are talking about the list price——

Senator MONRONEY. One size. How much would it cost the manufacturer to equip his car with one size above the original equipment?

Mr. BARR. You are talking about an optional tire size. If 7.35 × 14 is the standard size, what would a customer pay for 7.75 × 14? Is that the question?

Senator MONRONEY. How much would it cost you, the manufacturer——

Mr. BARR. I do not have this information, Senator.

Senator MONRONEY. Will you supply it for the committee?

Mr. BARR. I cannot say on the matter of cost. We do have the list price——

Senator MONRONEY. You surely can supply it for the committee if we give you time, with all the facts and figures. You buy all these, and you know exactly what the additional tire size of that quality would cost.

Mr. BARR. I am not qualified to answer the question——

Senator MONRONEY. I am asking you to supply it for the record. Will you do that?

Mr. BARR. We will contact our people at Detroit.

Senator MONRONEY. We would like to have it. I think it should be in the record to know what the cost of an additional upgraded tire size would be.

Senator Hartke is here.

Senator MORTON. What would it cost the owner of the car in additional gasoline consumption?

Mr. BARR. We may have that figure here, Senator Morton. I don't have it here at this desk. Someone in the staff may have it. I think Mr. Misch can supply some information on the list price of this option, if you want that?

Senator HARTKE (presiding). What would be helpful here is not the list price, but the actual cost. In other words, if you increase the size by one size, what would the cost to the manufacturer be?

Mr. BARR. We cannot answer that here, sir.

Senator HARTKE. Can you supply that for the record?

Mr. BARR. We will take the request back, sir. I am not qualified to say we can. But it will be considered.

Senator HARTKE. I am sorry, Mr. Barr, I did not hear that answer. What was that answer again?

Mr. BARR. I say I am not qualified to supply that, sir.

Senator HARTKE. Can you supply it for the record, or have it supplied for the record?

Mr. BARR. You are asking the industry this question, and we will have to consult Detroit. If you request it, sir, I presume——

Senator HARTKE. I didn't hear it.

Mr. BARR. I am not a lawyer. I don't know if we are expected to supply such information or not. Under the rules of the committee, if we should, we will.

Senator CANNON. I think, Mr. Chairman, he is saying that he will attempt to supply it with enthusiastic reluctance. [Laughter.]

Mr. BARR. Very good.

Let's cross everything else out of the record.

Senator HARTKE. We are trying to develop a record here, and without some of this information it is impossible for even the members of the committee. A lack of information could in my opinion act as much as a detriment to the manufacturers as it could an asset.

Mr. BARR. Mr. Bogan would like to add to that.

Mr. BOGAN. I think that there is an impression that the industry could put one size larger tire up on all our cars right across the board. And let's say it costs some nominal amount, or regardless of what it costs, that would straighten out this safety question. If we believed that, we would do that now. We are not trying to argue about it; we are simply trying to tell you that we do put out safe tires today, and the size is right.

Senator HARTKE. I am not asking you in any way to retract any of that approach. But the current stories carried in the press, and which are attributable to the industry, indicate, and almost outright say, that this whole question of safety, really, is a question of cost.

The point of it is, in light of those assertions you can understand that the committee itself then becomes interested in just what is involved in the cost. I think if you want to supply this, we are not just asking for yes or no, that it costs so much. If you want to explain along with it, that is fine. We are not trying to keep you from making any statements which would clarify what the position is. We are asking for some information. If you want to go ahead and give some additional information on top of that and say how you feel this is of no value, that is all right. We are not objecting to that.

Mr. BARR. OK, sir. We will comply with that.

(See Appendix.)

Senator HARTKE. Let me ask you a question with relation to safety and length of use. Are we talking about the same thing?

In other words, if you talk about how long a tire will last, does that deal with the question of safety in any other aspect other than the final end use of the product? Do you follow what I am asking?

Mr. BARR. I believe I do. Would you like to address yourself to this?

Mr. ISBRANDT. Certainly the tire is not as safe after it has its entire tread worn off, and in some instances baring the fabric. This is why we recommend inspection, periodic inspection.

Another point is, if a tire is damaged for some reason or other, this can cause and have an effect on its life. You must relate the condition of the tire with safety, there is no question about that.

Senator HARTKE. Then let's come back again to the initial thrust of this. On the original equipment, the tires that are placed on this first use of the automobile, would there be a greater built-in factor of safety if you used a tire which in and of itself would last longer, or are you using at the present time the tire which you feel will give the maximum legnth of use and safety in combination?

Mr. ISBRANDT. We are using the tires as they are specified on our vehicles in the entire industry that we as engineers believe are the safest and the best tires that we can put on, as original equipment; yes, sir.

Senator HARTKE. In other words, you would not feel that by changing from, say, a four-ply-rated tire, whether two-ply or four-ply, to

say an eight-ply tire, that you would have any additional safety in the tire?

Mr. ISBRANDT. No, sir.

Senator HARTKE. This is under all conditions?

Mr. MISCH. May I elaborate on that, Senator Hartke?

Senator HARTKE. Yes. I don't mind telling you that is a surprising answer. That is why I am a little concerned.

Mr. MISCH. I think we would answer that it would not contribute to any improvement in the problem for this reason. If the customer is determined to use his tires until the tread is gone, he is going to arrive at that point.

You may change the number of miles he travels before he arrives there, but if it is his practice to do so, he will ultimately arrive at that point. And for that reason we are influencing only, I think, the rate at which he buys new tires rather than whether or not he is going to drive them without proper tread and without proper inspection and maintenance.

It would seem to us that changing the tread life is going to have no statistical bearing upon the situation.

Senator HARTKE. Now you are back to exactly what I asked in the first instance. Let's start out from day No. 1. Is there any increased safety factor by increasing the size of the tire, by increasing the ply of the tire, or by any other change which can be made in the original equipment tire?

Mr. MISCH. No. In our estimation, no. We in no way compromise the safety of the tire in the selection of our original equipment tires. I would, and I think we all would, urge you, time permitting and your schedules permitting, to visit us and see firsthand these tests that we put these tires through.

Senaor HARTKE. We may do just that.

Mr. MISCH. After seeing these tests, if there is a question in your mind as to whether or not we are severe in our testing, and whether or not there is a compromise with regard to the selection of our tires for safety, we will be quite surprised.

Senator HARTKE. We may go to Detroit, or wherever you want us to go. I don't want to go to Korea right now. But what I am trying to find out is simply, is there an increased safety factor? As I understand, there is a difference in length of use. Is that true?

Mr. BARR. There could be.

Mr. MISCH. Yes, for various——

Senator HARTKE. Even assuming they use them under normal, proper conditions?

Mr. MISCH. Yes.

Senator HARTKE. That there can be one tire which can give longer use?

Mr. MISCH. Yes, sir.

Senator HARTKE. That is not the question that I am directing to you at the moment. What I am trying to find out is not in the length of use, but in the tire which is on the original vehicle, is there an increased safety factor involved by changing the tire to either an increase in the number of plies or an increase in the size?

Mr. MISCH. My answer to that is "No," because we strive to get the safest tire on each vehicle.

Mr. BARR. Senator Hartke, were you here when Mr. Pittman ran through his——

Senator HARTKE. I was here for all the original——

Mr. BARR. Subsequently he showed what happens to a tire under different inflation pressures.

What we are bring out is that the tire that we supply as original equipment tires are properly sized for service on that vehicle under varying load conditions, and that you wouldn't want to drive a sedan around town with tires that fit a station wagon with the pressure of station wagons on the city streets, that this would be an unsafe tire.

Senator HARTKE. I don't want to repeat all that. I think I understand.

Mr. BARR. It is a very fundamental thing. When you talk about tire safety you must talk beyond the blowout or rapid loss of air of a tire. You must talk about roadability, having the right footprint on the road for city street operation and things like this. Making a tire bigger is not necessarily making the tire safer.

Senator HARTKE. Let me ask you this: are you saying, then, that an automobile tire, which is on the market with a two-ply/four-ply, which is what you are using on your original equipment, at say a cost of $10, is as good as another one costing about $35? Is there no increased safety factor involved in these tires?

Mr. BARR. We ran through that before.

Senator HARTKE. I'm sorry.

Mr. BARR. Mr. Misch answered it in terms of life of the tire. We have stated several times here that so far as safety, no.

Senator HARTKE. In other words, there is a distinction as far as life of the tire is concerned, but as far as safety factor, there is not?

Mr. MISCH. That is correct.

Senator CANNON. Would the Senator yield?

Senator HARTKE. Yes.

Senator CANNON. I would like to ask your comments along that line on this letter:

> On October 31, 1964, we purchased a 1965, new, black station wagon. After the third day of use we had a front tire blow out. In March we had a second blowout, and last Monday, July 12, we had a third blowout on this car, all different wheels, all different tires. Fortunately, we avoided accidents in each case, although I was petrified last Monday when it occurred at rush hour at the Annapolis Expressway at 60 miles an hour.

They go on to say about the adjustments made by the factory, and it cost $1.89 on one tire, $9.23 on another, and $18.54 on another.

> We did not learn until after the first blowout that our new first-line tires were only two-ply, but marked four-ply rating. In each case, upon examination after the blowout, there was no evidence of an object piercing the casing but rather a soft, mushy spot. The inside of the casing is split, of course, but no evidence of a sharp or puncture-type hole.
>
> The explanation given me by the Goodyear service manager locally is that at some time or another the casing was bruised and did not react until road heat bubbled the spot, then the tire blew out.

Now, what I would like to ask is, if this were a higher ply tire, would it have undergone that risk of blowout that occurred in these three instances?

Mr. BARR. Senator Cannon, we would have to have additional information as engineers before we could address ourselves to this ques-

tion. We would have to know how the station wagon was loaded; we would have to know something about the inflation pressure that was used on the car. And the description that you indicate as to the ultimate failure does have some little leaning toward improper inflation. You have to have the proper facts as to load and inflation pressure before you attempt to analyze any such information.

Senator CANNON. Then the inflation that would probably be related to this Tire & Rim Association chart for 1963, where they add as note 5:

When these tires are used on light trucks or station wagons, increase the inflation pressures with no increase in tire loads.

And they set out the increase in the inflation pressure.

I note that isn't on the 1964 chart. That is on the 1963 chart.

Mr. BARR. Yes, sir.

Senator CANNON. Isn't that in effect an admission that you are using too small a tire, or——

Mr. BARR. Now you are addressing yourself to the 1963. Again, should we prolong the discussion on 1963 when we have already put in the record that we are making improvements, we have made improvements, as Mr. Pittman indicated, in 1965, and further improvements coming in 1966. That will create better understanding.

Senator CANNON. I was trying to relate it to this question here. In other words, you are saying that maybe they didn't increase the pressure as they should have done because this was a station wagon. Is that it?

Mr. BARR. Right. And this is why there is a need for better information that we are committing ourselves to here, with decals on the station wagon telling the customer precisely what he should do under very definite conditions.

Senator HARTKE. Mr. Barr, on page 5 of your statement you comment:

In addition to these standards, the General Services Administration of the Federal Government has issued over the years procurement specifications for Government-purchased vehicles, including tires. These specifications were originally developed in consultation with the tire manufacturers and the Tire & Rim Association. The new GSA standard 515/15 on tires, references the previous GSA purchase specification, ZZ-T-381, the SAE-J-918 standard and the Tire & Rim Association Yearbook.

In testimony before this committee—I just referred to your statement—Mr. Abersfeller, the Commissioner for Federal Supply for GSA, made this statement:

I believe the specifications are antiquated. As you know, the Department of Commerce testimony, these were based on certain tests concluded in 1952 and certainly are antiquated. We believe the current testing that is being done is adequate to meet the needs of that particular specification, but we are again totally dissatisfied with that specification.

In view of that, what comment would you have to make as to why you would want to follow antiquated specifications?

Mr. BARR. Did we say in our statement that we wanted to follow GSA specifications?

Senator HARTKE. No. I gather from this——

Mr. BARR. We merely made a statement concerning what they were.

Senator HARTKE. You referred to these as standards of safety. That is what I understood.

Mr. BARR. Yes; and it is the only known standard, at least the only standard we know of, in any Federal Government department or agency, and it was included here as reference material to indicate how this existing Government agency concerns us only in Government-purchased vehicles which GSA buys.

Senator HARTKE. You do not point to this as a standard of safety as far as you are concerned? All you are saying, as I understand it, is that——

Mr. BARR. The GSA standard is being worked on, as indicated here, I believe. I don't know whether Commissioner Abersfeller was referring to the standard as approved June 30th of this year, or before that. Because, so far as tires are concerned, the standards that are stated in GSA Specification $^{515}/_{15}$ refer to these things that I indicated, and this has been developed within the last year. Prior to that I believe the last date was something like July 1959. But in the past year these standards that we use in our industry were introduced as a part of, or reference material to, the General Services Administration standards.

Senator HARTKE. What you are referring to now is proposed standards?

Mr. MISCH. No, sir; they are standards.

Mr. BARR. They are standards for GSA-purchased vehicles.

Senator HARTKE. Let me refer specifically to numbers so we know what we are talking about. The existing standard is designated as ZZ–T–38 LI. Is that right? The proposed standards are ZZ–T–381 J.

Mr. BARR. Yes, sir. This is the standard right here, sir, Federal Register——

Senator HARTKE. What is the designation?

Mr. BARR. Volume 30, number 125, Federal Register, and the section I referred to, $^{515}/_{15}$ of that standard, the references are made to standard characteristics, and from our knowledge these have been developed in the last year cooperating with our SAE and with the rubber manufacturers as we indicated in the statement.

Senator HARTKE. Let me ask: On the basis of your examination of this latest GSA specification, is this standard now up-to-date, and is it one which is considered safe?

Mr. MISCH. I think the answer is "Yes," and the standard as we understand it is written on a referencing basis so that it will continue to be up-to-date.

Senator HARTKE. In other words it will continually be modified?

Mr. MISCH. Yes; because as we understand $^{515}/_{15}$, it references the SAE specifications which certainly would be modified as technology permits, and also references the Tire and Rim Association tables. So therefore, we have a reason to believe that $^{515}/_{15}$ will be maintaind in a modified and up-dated condition.

Senator HARTKE. Do you follow for the general public the same standards as are specified in this GSA reference?

Mr. MISCH. Yes, sir.

Senator HARTKE. In other words just the same?

Mr. MISCH. Yes sir.

Mr. BARR. That is SAE. The reference is the same; yes, sir.

Senator HARTKE. For your original equipment?

Mr. MISCH. Yes, sir.

Senator HARTKE. Is there a proposed new standard above this which you are now following?

Mr. BARR. The SAE?

Senator HARTKE. No, no. GSA.

Mr. BARR. We don't know any, sir, although we believe the engineers, the commissioners and engineers in GSA, are studying these standards as we are, at all times. And this is the standard as it exists since June 30, and there may be revisions.

Senator HARTKE. Are you acquainted with the fact that hearings are being conducted at the present time on this matter? Are you participating in them?

Mr. MISCH. Yes.

Mr. BARR. Which hearings are you referring to?

Senator HARTKE. For the GSA standards.

Mr. BARR. We have representatives that are participating in those hearings, yes.

Senator HARTKE. Why would GSA be here endorsing the bill? Mr. Abersfeller said, "There is a need to protect the consumer's interest from the misleading consumer advertising." If this is in fact being followed on original equipment, as far as you are concerned you would not have any objection to a clarification of that situation, is that right?

Mr. BARR. We are saying under the existing standards that we are operating under, which we indicated very clearly here this morning, the SAE and the Tire & Rim Association, and also more recently the one that is endorsed by the States, the VESC—Vehicle Equipment Safety Commission—that standards now exist that commercial practice can apply themselves to and that we are using, that are adequate to assure our customers' safety in tires. That is really our feeling. GSA concerns itself with Government-purchased tires.

Senator HARTKE. You tell me that the GSA specifications, which at the present time have been updated and are no longer antiquated, that they are being followed in relation to equipment which is supplied to the Government?

Mr. BARR. Right.

Senator HARTKE. And that the same procedure is followed and the same tires are supplied to the consumer generally in the marketplace, is that true?

Mr. MISCH. Yes, sir.

Mr. BARR. Yes, basically. They do have one specification, sir, that is their spec ZZ–T–381 that I mentioned in the text, and that is the one that I understand that GSA is holding hearings on now with capable engineers, and there may be some revisions that will be accruing in a few months on that point.

Senator HARTKE. Have you increased the size of your tires on any of your new 1966 models?

Mr. BARR. As I indicated a little bit previously, we have increased sizes and decreased sizes through the years, and there will be some increases in our 1966 models on a selected basis.

Senator HARTKE. Will there be any decreases in size in 1966 models?

Mr. BARR. I do not know of any.

Senator HARTKE. Are they all increases in size?

Mr. BARR. We will have to find out about that.

Senator HARTKE. We have all the experts here now. Let's go.

Mr. BOGAN. We can't answer categorically for each company. But I think if you will allow me, I will answer for Chrysler Corp.

Senator HARTKE. We will take one at a time. We are in no big hurry.

Mr. BOGAN. In our small cars, what you call compacts, and so forth, I have listed here seven. One is changed on a Dart convertible with air conditioning from 6.50 by 13 to 7.00 by 13. That is a change with the new rating. It takes into account optional equipment whether on the car or not, that increase the total weight of that car. And in this year we are updating that tire one size. That is the only one out of seven.

Senator HARTKE. What about the ply on that?

Mr. BOGAN. No change in the plies. On the medium-sized cars, we have eight listed here. The first one drops down from 7.35 by 14 to 6.95 by 14, same ply. This is due to a reduction in weight of this vehicle.

The rest, there are no changes with the exception that on a three-seat station wagon we are increasing the size one size, from 7.55 by 14 to 8.25 by 14.

Essentially in both categories, so far, we have not changed except one is down and one is up, and I guess no change in the small size.

On the next larger size cars, which we call our C-bodies, or the larger size cars, we have 11. Out of 11 we are changing one. So I say essentially——

Senator HARTKE. One is changed which way?

Mr. BOGAN. That is again the station wagons, in the Chrysler line, and that was changed from an 8.55 to a 9.00. And again there is a weight consideration.

You see with the change in the Tire & Rim table, we are taking into consideration the additional, the maximum weight that you can get on the car, in other words all the extra equipment is added in, and have tired it accordingly. In some cases where the tire sizes are on the borderline, we would go up. In other cases because of manufacturing changes which affect vehicle weight, we could go up or down depending on the weight differences caused by trim for instance. These changes vary the weight of the car sometimes as much as 50 pounds from one model year to another. So we go all over these each year and tire accordingly. I still want to assure you that we are tiring them safely.

Senator HARTKE. That is Chrysler. Is there any further comment from——

Mr. BARR. Mr. Misch?

Mr. MISCH. I am sorry I don't have a complete breakdown. But we are changing tire sizes, some for reason of the 1966 models being larger and heavier than the 1965, and in other cases reflecting, as Mr. Bogan indicated, some of the changes in the Tire & Rim Association's yearbook. I can't give you a rundown on how many or just which ones.

Senator HARTKE. Were they adjusted only for weight? In other words, is the adjustment made only for weight?

Mr. MISCH. Yes.

Senator HARTKE. Let me ask you this: It was indicated that the weight has been adjusted this year to take into consideration not those

which are normal equipment, but those which would include extra equipment on the vehicle?

Mr. MISCH. Yes; and this should be made clear. For example, on each model of automobile we would in the past have what we call a break point; we would add equipment to the base automobile, until we got to the break point, then we change the tire size. In many instances one of the major options that would be taken into account would be air conditioning because so much of the weight of air conditioning is forward of the front wheels and therefore tends to load the front wheels and unload the rear wheels. We would take these into account and we would then change the tire size when the car was manufactured in this way.

The new Tire & Rim Association guides or standards indicate that regardless of whether or not the car is built with certain of these options, we would include them in our theoretical weight in selecting the tires.

Senator HARTKE. In other words are you saying then that you are taking all the vehicles in 1966, for example, and assuming that they will have air conditioning?

Mr. MISCH. No; not air conditioning per se. I am saying there is a group of options that are included in the base weight of the vehicle. I can't run this down.

Mr. BOGAN. I can explain that. If you buy a sedan or a station wagon and order air conditioning, that will change the size of the tire in some cases by the fact that the front end weight is over the load for that particular tire and we go to the next size.

Mr. BARR. Ralph?

Mr. ISBRANDT. I would like to make this very clear. As a result of the new standards that we have adopted for 1966, and the publication of those, we would be in the position where actually we could reduce tire sizes on our Ambassador station wagon V–8 model. We don't intend to do so. By the same token when we come to the Classic wagon, we must up-size that one tire size for this very same reason of weight.

In the case of our sedans, we could also, on the basis of the new standards, reduce the tire size. We do not intend to do this. We have one model on which we are providing tires that are one size larger.

Mr. BARR. We were discussing up-sizing the tires for 1966. Mr. Misch explained that these new standards, the Tire & Rim Association standards for maximum load, require that we include every accessory and option that weighs 5 pounds or more. This may not seem like much added weight. I have here a chart that indicates that through the years on a couple of General Motors cars, the Tempest and the Chevrolet, this value has gone up to something like 200 to 220 pounds.

Senator HARTKE. Doesn't the discussion we have had just now come up with the ultimate conclusion that really tire size is a safety factor?

Mr. BARR. No, sir. If I could go on just one more, I have a few more things to say here.

Senator HARTKE. Go ahead.

Mr. BARR. Another example of information. From 1957 to date, we have information concerning tire sizes. This only reaffirms again that we do, in the industry, watch the SAE standards and the Tire

& Rim standards and we size our tires accordingly and under all conditions with safety.

In 1957 we had changes, in 1958 on through the years, and in a few cases we have had tire sizes go down when for some reason we would reduce the weight of the front end of an automobile, or the rear, and we would put on the appropriate tire, because the larger tire would not handle as well as the smaller one.

Senator HARTKE. Would not handle as well?

Mr. BARR. Under the reduced weight; yes, sir. And it wouldn't be appropriate for safety. There were changes also for 1964 and 1965. These change every year. So the things that we are doing in 1966 are not new, but we are applying new standards. I believe there are more changes in General Motors in 1966 than there were in 1965 or 1964, and all of them are up-sizing.

Senator HARTKE. Do you feel, as a result of these changes, that the tires on the new equipment in 1966 will be safer than those in 1965?

Mr. BARR. Let's say they will give better and longer service.

Senator HARTKE. Better and what?

Mr. BARR. Longer service.

Senator HARTKE. Longer service but not necessarily any increased safety?

Mr. BARR. We feel our tires are adequate and safe.

Senator HARTKE. In other words, your safety factor will remain the same?

Mr. BOGAN. Yes.

Senator HARTKE. You are not getting any better in safety?

Mr. BARR. Yes, we have always tired our cars safely.

Senator HARTKE. You say that the extra tires are needed on fully loaded station wagons. This seems to be an area in which there is some, at least, difference of opinion. The station wagons, especially, present a question. If you are going to have a fully loaded station wagon, continuously used in that fully loaded condition, would these special tires that we are talking about be any safer on unloaded station wagons and unloaded sedans, and if not, why not? They would not be any safer?

Mr. MISCH. I think we failed to make one point clear, and that is that regardless of the ply, two-ply—four-ply rated—or four-ply—eight-ply rated—tires, you must adjust the pressures, whether they be fully loaded or lightly loaded.

Therefore the same situation would prevail for an eight-ply rated tire as a four-ply rated tire that we showed in the chart.

Senator HARTKE. What you are really saying, and maybe this has been asked several times, you are saying that an eight-ply rated tire is no more safe than a four-ply rated tire; is that right?

Mr. MISCH. Yes, sir.

Mr. BARR. The tire has to be proper for the vehicle.

Senator HARTKE. Suppose a family wants to make a trip across country from Washington, D.C., or New York to California. You buy a new station wagon to make the trip. You want to be completely safe. You are going to load it down with your family, normal-size family—not mine. Mine is a little abnormal. I have seven children.

A normal-sized family. What is a normal sized family?

Mr. BARR. Three.

Senator HARTKE. One child, or three children?

Mr. BARR. Three children.

Senator HARTKE. We are 2⅓ times the normal size.

What I am trying to find out, let's assume a normal-sized family wants to load it down with ordinary luggage which they will take for a cross-country trip from here to the west coast with a new car. Would they have to buy special tires in order to have a safe trip?

Mr. BARR. No. We have tried to clearly state that if you have a load in a station wagon up to 1,200 pounds, that is the specific figure, and this would take care of six adults plus 300 pounds of luggage, that the tires on the rear of the station wagon should be inflated to what the owner's manual says, 32 pounds per square inch, and the front tires adjusted also as stated in the manual. There are two pressures set. This tire would be safe for cross-country trips at highway speeds.

Senator HARTKE. At what?

Mr. BARR. Highway cruising speeds.

Senator HARTKE. What are highway cruising speeds?

Mr. BARR. Expressway speeds, 60 or 70 miles an hour, whatever the limits are on those expressways.

If you are going to drive 90 miles an hour continuously, we could not support that. This would be a little bit higher speed. In this case we would recommend the next higher sized tire for continuous high-speed operation at 90 miles an hour, or in some cases our owner's manual would recommend four-ply—eight-ply rating. That is rather exceptional duty.

Senator HARTKE. Senator Cannon?

Senator CANNON. I have no further questions.

Senator HARTKE. Senator Monroney?

Senator MONRONEY. I have no further questions.

Senator HARTKE. The warranty on automobile tires at the present time is carried by the tire manufacturer; is that true?

Mr. BARR. Yes, sir; it is.

Senator HARTKE. And not by the automobile manufacturer?

Mr. BARR. No, sir.

Senator HARTKE. In your warranty, no matter what it is, the warranty itself has to go back to the manufacturer? Or does it run through you?

Mr. BARR. No; it depends. There are arrangements in some of the industry dealerships where the warranty can be performed for our tire supplier by a dealer. This is an arrangement the dealer makes with them and the tire supplier. This is done.

Usually the warranty is covered by a local tire company dealership. The reasons for this, perhaps, are because they have a complete and adequate stock of tires in one location to handle their complete service, and they do have highly skilled and specialized service equipment for servicing tires. This is the arrangement that we have now in our industry. We feel it is operating satisfactorily because it does, in the case of a high warranty expense, or any deficiencies in manufacturing, bring it immediately to the attention of the tire supplier concerned. We would think it would have an incentive on the part of the manufacturer to correct any deficiency, if one existed.

Senator HARTKE. Let me ask you in relation to that, why would you not permit the tire manufacturer to set the specifications, rather than

the automobile manufacturer if the warranty is going to have to be applied by the——

Mr. BARR. I thought we stated that we set these specifications working together with the tire manufacturer. Let's let Mr. Isbrandt expand on that.

Mr. ISBRANDT. I would like to read from a statement we made to Senator Nelson: "In agreeing to supply our tires, the tire manufacturer accepts the responsibility for performance, service, and warranty of his tires to the vehicle owner." This is part of our requirement when the tire manufacturer accepts our purchase order. And he doesn't accept such a purchase order unless he is satisfied that the tire specifications and the tire requirements we specify for our cars are compatible with his requirements.

Senator HARTKE. The point of it is that at the present time the manufacturer sets the specifications. Is that true?

Mr. ISBRANDT. Which manufacturer are you speaking of, the tire manufacturer or the automobile manufacturer?

Senator HARTKE. At the present time the automobile manufacturer sets the specifications for the type of tires that he wants for each vehicle which is a new vehicle; is that true?

Mr. ISBRANDT. This is correct.

Senator HARTKE. You say you do that in consultation with them. But in reality the specification which is set forth is set forth by the manufacturer of the automobile, not by the manufacturer of the tires?

Mr. ISBRANDT. By specification I assume you mean the size of tires?

Senator HARTKE. No.

Mr. ISBRANDT. What do you mean?

Senator HARTKE. I mean specifications, all of them, the ply rating, the size of the tire, and everything else.

Mr. ISBRANDT. There is much more to the specification of a tire than the ply rating.

Senator HARTKE. I understand.

Mr. ISBRANDT. We do not get ourselves involved with the specifications that the tire manufacturer uses to produce his tire. We get involved with performance specifications of the tires.

Senator HARTKE. The performance specifications, then, and what other specifications are set by the automobile manufacturer in relation to the tire?

Mr. ISBRANDT. Performance, safety, all of the factors that were indicated by the charts.

Senator HARTKE. That includes size and it includes ply rating?

Mr. ISBRANDT. Right.

Senator HARTKE. In regard to the safety feature of which we are speaking, this is a specification which is set forth by the automobile manufacturer, is that true?

Mr. ISBRANDT. It is encompassed by the overall performance requirement that we set up; yes.

Senator HARTKE. It is not the only one, but as far as safety is concerned, the safety factor, the safety specifications, they are set forth by the automobile manufacturer; is that right?

Mr. BARR. I think what you are trying to indicate is who does it, the tire manufacturer or the automobile manufacturer. The automobile manufacturer has the ultimate responsibility. But the tire

manufacturer, in providing tires after working with our industry engineers, confirms these decisions made.

Senator HARTKE. I can understand that. What I am talking about at the moment is—and if there is a difference you can correct this—when the manufacturer goes out to make a determination for the type of tire that is going on his new vehicle, he sets the overall safety specifications and the type of ply rating and the size of the tire?

Mr. BARR. Yes.

Senator HARTKE. He may have consultations, but the ultimate responsibility is with the manufacturer of the automobile?

Mr. BARR. That is right.

Senator HARTKE. When the warranty comes back, the warranty doesn't come from the person who sets the specifications, but from the person who supplies the material in accordance with the specifications set by the purchaser of bulk volumes of automobile tires. By its very nature, this volume is of such tremendous importance to the manufacturer of the automobile tires that he certainly is going to do everything he can to get that business; isn't that true? In other words, you are a big purchaser.

Mr. BOGAN. Right.

Senator HARTKE. The biggest in the United States, aren't you?

Mr. BARR. I believe we buy more tires than anybody else.

Senator HARTKE. The industry, itself. The new vehicle industry is the biggest bulk purchaser of tires. You are in the dominant position with buying power. Since you are in that dominating position, and since, if there is going to be any yielding, I would think the yielding would be, under such circumstances, on the seller rather than the buyer. Wouldn't the automobile manufacturer be in a better position to extend the warranty of the automobile tire as a part of their entire vehicle warranty?

Mr. BARR. We cannot indicate here whether that would be better or not, Senator. We have found the arrangement we have, we feel, quite satisfactory.

Senator HARTKE. Satisfactory to whom?

Mr. BARR. Satisfactory for taking care of the warranty complaints of our customers, and also enabling the tire manufacturers to quickly correct any deficiencies should they be discovered, or to improve the quality of their tire as production time goes on, or as new models come out.

Senator HARTKE. Do you have a record of complaints on new, original equipment tires? Do you keep a record of the complaints on the tires, themselves?

Mr. BARR. The only information we have, and I have to speak as General Motors in this case, is a very small figure, and is something like 0.015 percent on a frequency basis of cars produced in the first 6 months of this year.

Senator HARTKE. Does the automobile tire manufacturer supply you with the information of the number of complaints they have?

Mr. BARR. I don't have the information on that.

Mr. ISBRANDT. We review such information with them periodically.

Senator HARTKE. Do they supply on a regular basis to you, in other words, their warranty adjustment figure? That is what it amounts to, isn't that right?

Mr. ISBRANDT. I can speak for our company, not on a regular basis, but on a basis in which we think there may be a problem, or there may be a problem indicated. Also, if we go to a new model, or will require entirely a different size of tire than we are accustomed to, or acquainted with, we will look at their statistics of the tire performance so that we can use that as further evaluation.

Senator HARTKE. On any of the panel members, do any of your suppliers furnish you, on a regular basis, the warranty adjustment figures?

Mr. MISCH. We get warranty data and statistics as we request it, but it is made available to us.

Senator HARTKE. Would you supply for the record that information for a reasonable period of time, say, over the last few years, what you have available and how it is selected?

Mr. BARR. We will look at it.

Mr. MISCH. Yes, sir. We will look at it, also.

(See appendix.)

Mr. MISCH. May I clarify one point with regard to this particular subject? Testimony was given before the Federal Trade Commission hearing estimating that 42½ million original equipment tires, and 87 million after-market tires were sold in the year 1964, so there is a very significant tire sales volume that is not original equipment. And the tire companies do warrant all of these tires.

Senator HARTKE. We understand that. I understand that there is this big sale. What we are trying to develop here in this hearing today is on the original equipment. Part of the trouble, I suppose, is a matter of viewpoint. Many replacement tires are advertised as the safest tire on the road. If this is true, if the automobile manufacturers want to put the safest tire on the road, why wouldn't they use these tires?

Mr. BARR. Senator, I don't feel that this panel is in a position to comment on tire manufacturers' advertising practices. [Laughter.]

Senator HARTKE. Is it true that each manufacturer sets its own specifications for automobile tires?

Mr. BARR. Beyond that, we set the specifications for each individual tire and model thereof.

Senator HARTKE. Wouldn't it be possible for the industry to come up with a uniform approach on this so that we could have uniform safety?

Mr. BARR. We spent some time in our technical presentation, I felt, indicating we have very uniform standards that we comply with.

Senator HARTKE. Senator Cannon?

Senator CANNON. I have no further questions.

Senator HARTKE. Senator Monroney?

Senator MONRONEY. I have no further questions.

Senator HARTKE. Ladies and gentlemen, I want to thank you for coming and giving your time, and what, evidently, took some time to prepare for the presentation. Whether it was convincing or not, only the committee will decide.

In accordance with that, if you have any information which you think will be helpful, or any other persons have information which

they think will be helpful for the committee, the record will be kept open.

The hearing will be adjourned.

(Whereupon, at 12:40 p.m., the committee adjourned.)

(The following was subsequently submitted:)

STATEMENT OF GEORGE F. KACHLEIN, JR., EXECUTIVE VICE PRESIDENT, AMERICAN AUTOMOBILE ASSOCIATION, ON S. 1643, FEDERAL TIRE STANDARDS

The American Automobile Association appreciates the opportunity to comment on S. 1643, introduced by Senator Nelson, Democrat, of Wisconsin, which authorizes and directs the Secretary of Commerce to prescribe (1) minimum performance standards, and (2) a grading and labeling system for motor vehicle tires.

The American Automobile Association endorses the objectives sought by S. 1643 as is evidenced by the following AAA policy position, unanimously adopted at its last annual convention held in September 1964. The AAA resolution adopted on this subject provides:

"TIRE PERFORMANCE STANDARDS

"For the protection of the motorists, performance standards for tires should be established. The public should be kept properly informed of such standards.

"Tire manufacturers should clearly and specifically label all tires as to grade and quality, and the terminology used should be the same and mean the same for all tires so as to afford the purchaser a guide in making a selection and to assure him of the quality of the tire."

In addition to the foregoing AAA resolution, the delegates at the AAA annual convention in September 1964 also adopted a policy position favoring State, rather than Federal regulation of motor vehicle safety equipment. This specific policy position provides:

"MOTOR VEHICLE EQUIPMENT SAFETY STANDARDS

"It is the policy of the AAA in seeking legislation to establish standards for and regulation of equipment of motor vehicles, such as brake linings, tires, etc., that such legislation be enacted by the several States rather than by the Federal Government."

Thus, from the foregoing, while the AAA endorses the objectives of S. 1643, we favor the traditional method of achieving these objectives through State, rather than Federal regulation.

In this connection, we are fully aware that the States have, to date, not seen fit to face up to their responsibility in enacting much-needed performance standards for tires. We are, however, also aware that 44 States and the District of Columbia have enacted the vehicle equipment safety compact law which sets up an interstate commission consisting of one representative of each of the party States. The commission is charged with the responsibility of developing motor vehicle equipment standards including standards for tires.

On May 22, the Motor Vehicle Equipment Safety Commission issued its recommended minimum performance standards for new tires. California, Maryland, and Vermont have already adopted the commission's tire standards and the standards are now before many of the State legislatures.

We are also cognizant of the voluntary tire performance standards developed by the Rubber Manufacturers Association.

In addition, we have reviewed the tire standards developed by the General Services Administration, for federally purchased passenger cars.

Thus, at the present time we have three sets of minimum performance standards for new tires; namely, the General Services Administration standards, the Motor Vehicle Equipment Safety Commission standards, and the Rubber Manufacturers Association standards.

While the AAA conducts investigations and tests in a wide number of matters involving the motorists, it does not profess to have the technical staff and research facilities necessary to establish specific engineering standards for new tires. However, we have reason to believe that we are not alone in our lack of technical engineering knowledge to develop meaningful standards for new tires.

For example, Hon. Paul Rand Dixon, Chairman of the Federal Trade Commission, in answer to a question from the committee chairman, Senator Vance Hartke, on May 25, stated: "Today, we do not know what constitutes a safe tire."

Mr. Dixon, in his testimony before the committee regarding the FTC hearings held earlier this year on tires, testified that:

"* * * The Commission is not in a position to evaluate precisely all of the testimony and written submissions offered during its tire hearing. In most instances such as evaluation would require the availability of an extensive and 'in depth' tire testing facilities and procedures relating to a wide variety of factors which have bearing on the questions of tire safety, grade, and quality. *The necessary facilities and procedures, and the current knowledge and controlled laboratory experience required to perform and evaluate these tests are not at present, as far as we have been able to determine available to the Federal Government* * * *." [Emphasis added.]

Also testifying on the lack of existing technical knowledge to develop at this time meaningful tire performance standards, was J. Herbert Holloman, Assistant Secretary of Commerce for Science and Technology. Mr. Holloman, in his testimony stated in part:

"* * * Not only do we know little about the relationship of tire failure to accidents, as I have just explained, but we also know little about the quantitative relationship between tire characteristics and performance. *So it is clear that first we must get this knowledge and put it to use before we can write standards that will reduce accidents most successfully* * * *." [Emphasis added.]

It is an accepted fact that many automobile accidents are caused by a lack of antiskid qualities of tires. In this connection we would emphasize that the General Services Administration standards, the Vehicle Safety Equipment Commission proposed standards, and the Rubber Manufacturers Association tire standards are completely silent on the subject of antiskid qualities.

The AAA has, for many years, had a very clear policy position on this point. AAA policy provides:

"ANTISKID TIRES AND ANTISKID TESTS

"AAA urges intensified research on skid causes and prevention to determine the most effective corrective treatment.

"An approved system for testing antiskid qualities of pavements should be adopted.

"An approved system for testing antiskid qualities of tires and an approved antiskid rating plan for tires, which can be readily understood, should be developed. The tire industry should take necessary measures to protect the public through the development of tires with high antiskid ratings and should show on each tire its antiskid rating."

Recommendations

We recommend that the Congress authorize and direct the Secretary of Commerce to initiate a research and development program through the use of the testing facilities of the U.S. Bureau of Standards so as to develop the technical knowledge needed to specify meaningful tire performance standards, and to establish criteria so that all tires will be labeled as to grade and quality. The Secretary should be required to report his findings and recommendations to Congress within 2 years. The Secretary should also be required to submit his findings and recommendations for tire performance standards and the grading and labeling of tires to the Governors of the 50 States.

Following the receipt of such recommendations by the States, should they fail to enact appropriate uniform legislation, then the Congress would have the technical knowledge to enact into law tire performance standards and criteria for the grading and labeling of new tires, based on the Secretary of Commerce's scientific research and development tests.

APPENDIX

LETTERS, WIRES, RESOLUTIONS, ETC., RECEIVED

NATIONAL FEDERATION OF INDEPENDENT BUSINESS,
San Mateo, Calif., August 11, 1965.

Re tire safety.

Hon. WARREN MAGNUSON,
Senate Commerce Committee,
New Senate Office Building,
Washington, D.C.

DEAR MR. CHAIRMAN: It is my understanding your committee will hold hearings on Friday, August 13, as to automobile tire equipment on new passenger automobiles. The witnesses before the committee will be from the car producing industry.

The big question in the minds of the Government is if the present original equipment tires are safe tires, as brought out in Federal Trade Commission hearings a short time ago.

I speak and act authoritatively, with a background as an independent tire retailer from 1909 to 1935, and during the major portion of my business career, like thousands of others in the retail field, supplied the fifth or spare tire on new passenger cars.

It will be found as early as 1928 that independent tire dealers nationwide opposed any and all action which would have prohibited them from having an equal opportunity in supplying consumer requirements for the fifth or spare tire.

It will be found, appearing in a letter in the Akron Beacon Journal, signed by the writer, Sunday July 29, 1951, the statement was made:

"It will probably be found that during a 20-year period some 50 million units of tires and tubes have gone exclusively to the car manufacturer, denying the right to 300,000 independent tire dealers to participate in that business."

In this part that the independent played in serving consumer requirements on new passenger cars the consumer was able to designate the tire he wanted on his car. This in itself protected the ultimate consumer through having the proper size tire on his passenger car, which would fulfill all kinds of service.

The beneficiary on the whole proposition these past two decades or more has been the car producer and the four major tire manufacturers ever since that business was removed from the hands of the independents.

The pattern was originally introduced by certain divisions of General Motors, and shortly thereafter was followed by Chrysler, Ford, and others.

Bear in mind this fifth or spare tire is not a gift by the car manufacturer to the buying public, but it tied up with a package deal on which the car manufacturer has earned many hundreds of millions of dollars.

Under present conditions, due to the monopoly angle created by the car manufacturers and the major tire manufacturers, the public doesn't have a chance to protect itself against tires which may not be satisfactory or safe tires.

This subject matter is of considerable importance to the motoring public and should be thoroughly explored through the committee hearings if the public is going to get an even break.

Bear in mind that the many States have become increasingly alarmed as to the present tire equipment on new automobiles, and unless the present arrangements in supplying original equipment and the fifth or spare tire are corrected the public can continue to look forward to unsatisfactory tires, further endangering life and limb on the highways.

It is my hope for the overall good of the motoring public that through the action of your committee a full exposé will be made of the proposition.

You are privileged to read this communication into the record of the hearings.

Sincerely,

GEORGE J. BURGER, *Vice President.*

(Senator Nelson has sent the following letter to the presidents of Ford, General Motors, Chrysler, and American Motors:)

JUNE 7, 1965.

For some time now, various safety groups, individuals, and organizations have become increasingly concerned about the urgent necessity of improving automobile tire standards, labeling, etc., as one way of reducing the tragic loss of life on American highways. I have introduced legislation to require all automobile tires to be graded and labeled so that motorists could select tires which would be adequate for the use they have in mind. The Senate Commerce Committee held hearings on my bill, S. 1643, on May 25 and will continue these hearings on June 7.

It would be helpful to have your judgment and suggestions concerning this problem.

From the testimony before the Federal Trade Commission and the statements of interested individuals and experts, it appears that the automobile industry itself has an important responsibility respecting tire safety.

Presented below is a series of questions which bear directly on the issue of highway safety. I have indicated in each case the information which gives rise to the question. Your answers to these questions will be appreciated.

Senator Vance Hartke who is conducting the hearings on S. 1643 has agreed that my questions and your answers be printed in full in the record of the hearings. I have submitted my questions to the committee as of today.

Question No. 1

I have received letters from motorists all across the country who have had the terrifying experience of having tires blow out on practically new cars in normal usage. Upon contacting the automobile manufacturer, these motorists have been told that the matter of tire warranty is an issue between the tire manufacturer and the motorist. Upon contacting the tire manufacturer, many of these motorists have been told that the selection of the specific tire for a new car is solely a decision of the automobile manufacturer. For instance, the B. F. Goodrich Co. stated in a letter to Lawrence Marshall of Ferguson, Mo.: "We have no control over what tire is put on any make of car. We furnish tires to the automobile manufacturers according to their specifications. The size and type of tire put on a particular model of car is the decision of the car manufacturer and not of the tire companies."

Who is responsible for selecting the proper tire on a new automobile?

Question No. 2

At the Federal Trade Commission hearings, a tire industry executive testified that the weight used in computing the load for tire purposes was the weight of the car plus three passangers and no luggage. The FTC Chairman, Paul Rand Dixon, stated that testimony indicated that tires on some of our popular automobiles were not adequate for normal use and that "anybody in his right mind buying a new automobile" should ask the dealer to install larger tires. At the Senate hearing, I asked Mr. Dixon if this testimony had been refuted or answered at any time by the automobile industry. Mr. Dixon replied, "No, sir." Furthermore, according to Tire and Rim Association standard load and inflation tables inserted in the record of the Senate hearings, the most popular models of our new cars are equipped with tires which would be overloaded if filled to their capacity. The May 1965 issue of Consumer Bulletin, in rating the 1965 Ford, Chevrolet, and Plymouth states, "The cars selected as first, second, and third choice, as regularly delivered, have overloaded tires, and we suggest that the consumer order his car with tires of the next larger size."

This testimony and the statement in the Consumer Bulletin raises a grave question of public concern. Do you in fact equip any of your five- or six-passenger cars with tires designed to be safe for three passengers without luggage?

If so, are these tires safe and adequate to carry a load of five or six passengers and luggage across country in all-day travel at speeds of 60 to 70 miles per hour?

What tests do you use in deciding what tire should be placed on original equipment?

Question No. 3

During the Federal Trade Commission hearings, a tire industry executive testified that some compact station wagons should be equipped with 8-ply tires. When asked how the motorist was expected to know this, this witness testified that he thought such a warning might be found in the car care manual. The Goodyear Tire & Rubber Co., answering a complaint from a station wagon owner plagued with tire trouble, stated that his car—on the basis of Tire and Rim Association loading tables—should be equipped with an 8:25 x 14 8-ply rating tire. My inquiry to Ford, General Motors, Chrysler, and American Motors in the Washington area indicates that the largest station wagons of all these manufacturers are presently equipped with 2-ply tires "with a 4-ply rating."

How do you explain this discrepancy, and what steps are taken by you to notify motorists that they may require much stronger tires than those you supply with new cars?

What is your comment on the Goodyear Tire recommendation to use an 8-ply rated tire? Is a 2-ply rated tire adequate equipment on your large station wagons when fully loaded and used for cross-country travel?

What weight and travel tests will the 2-ply tires safely meet that come as original equipment on your station wagons?

Question No. 4

Tire industry executives testified at the Federal Trade Commission hearings that the quality labels such as "premium" and "super-deluxe" are misleading and virtually meaningless; that the size labels were never meant to indicate the precise size; and that the "ply-rating" label has virtually no meaning within the industry. It was testified that one company's first-line tire might be inferior to another company's second- or third-line tire; that an 8:00 x 14 tire might actually be smaller than a 7:50 x 14 tire, and that some cheap and inferior tires are being offered in the replacement tire market. Some new car tires do not appear to carry any labels indicating the number of plies or ply-rating. Obviously no motorist can select a tire of the right quality, the right size, and the right number of plies when the labels that indicate these important facts are misleading, meaningless, or nonexistent.

Do you feel that the present labels on automobile tires are adequate to enable a motorist to make an intelligent selection based on his anticipated needs?

Any additional information that you believe will be helpful would, of course, be welcome.

(Signed) Senator GAYLORD NELSON.

GENERAL MOTORS CORP.,
OFFICE OF THE PRESIDENT,
Detroit, June 18, 1965.

Hon. GAYLORD NELSON,
U.S. Senate, Washington, D.C.

DEAR SENATOR NELSON: General Motors is pleased to comply with your request for information concerning original equipment tires specified for our cars. Your specific questions are answered in the attachment to this letter.

For many years our engineers have been working effectively with the Tire & Rim Association, the Rubber Manufacturers Association, and tire manufacturers, and, more recently, with the Society of Automotive Engineers, and the Vehicle Equipment Safety Commission in developing standards for original equipment tire approval. The results of these cooperative efforts have been better tires with improved safety, reliability, and durability.

However, it must be remembered that new original equipment tires constitute only a small percentage of all tires in operation. Most tires are used tires. How they have been used or abused, the consistency with which the owner has maintained recommended air pressure, and whether they have or have not been inspected for damage and wear, vitally affect overall tire safety. We know that the great majority of tire failures occur when tires are nearly worn out or have been damaged in some way.

We are concerned at all times with improving all aspects of our cars, most particularly those related to the safety of their owners. In keeping with this concern, we intend to continue to work with tire manufacturers and the other groups mentioned to improve the safety, durability, and performance of the tires specified as original equipment for our cars.

Sincerely,

J. M. ROCHE.

Question No. 1

"Who is responsible for selecting the proper tire on a new automobile?"

The General Motors car divisions specify the tires for original equipment of their new cars in cooperation with the tire manufacturers. In this procedure the tire manufacturers have the responsibility for furnishing tire specifications and recommendations to the car division. These specifications set forth the load-carrying capacity, inflation pressure, and other pertinent data affecting the suitability of the various sizes and designs for specific uses, all as established by Tire & Rim Association standards. The data contained in these specifications are based on past field experience and extensive testing programs carried on continuously by tire manufacturers. The tires furnished are, of course, also tested by General Motors.

Question No. 2

"Do you in fact equip any of your five- or six-passenger cars with tires designed to be safe for three passengers without luggage?"

The much discussed three-passenger load has never been construed to define the maximum carrying capacity of the tire. This load for passenger automobiles is only a design guide in selecting tires, in accordance with Tire & Rim Association procedure. In other words, we start with an average load. Additional loads are compensated for by higher tire pressures, as set forth in our owners guides which are furnished with each new car. These owners guides contain operating instructions and recommendations for the guidance of dealers and customers. For example, the Buick owners guide sets forth the following recommendations for all models except station wagons and sports wagons:

	Average load—3 passengers		Full rated load—6 passengers plus 200 pound trunk load (approximately 1,100 pound load)	
	Front	Rear	Front	Rear
Tire inflation	24 pounds per square inch cold.	24 pounds per square inch cold.	28 pounds per square inch cold.	30 pounds per square inch cold.
Pressure	30 pounds per square inch hot.[1]	30 pounds per square inch hot.[1]	34 pounds per square inch hot.[1]	36 pounds per square inch hot.[1]

[1] "Hot" tire pressure includes typical pressure buildup from the recommended "cold" after a few miles of normal operation. This increase in pressure is a natural phenomenon which provides an inherent factor of safety.

"If so, are these tires safe and adequate to carry a load of five or six passengers and luggage across country in all-day travel at speeds of 60–70 miles per hour?"

As the above table shows, for loads of five or six passengers plus luggage, we specify higher inflation pressures. With such pressures these loads can be carried adequately and safely in all-day travel at speeds of 60–70 miles per hour.

General Motors owners guides, which contain operating instructions, are explicit as to the rated capacity of the vehicles covered, and the tire pressures to be maintained by the operator for the various load and driving conditions, as illustrated by the attached excerpt from the 1965 Buick Owners Guide."

"What tests do you use in deciding what tire should be placed on original equipment?"

General Motors conducts its own extensive testing program on original equipment tires. The high-speed capability of tires is tested at the GM desert proving ground in Mesa, Ariz. The hot Arizona climate adds to the rigor of this test. At our Milford, Mich., proving ground an annual tire durability test program is conducted. This represents thousands of miles on roads of varying surfaces—gravel, cobblestone, macadam, and concrete. The surfaces of these roads range from smooth to washboard and include chuck holes, railroad crossings, and spalled sections. The test cars are run through sharp curves, around skid turns, and up steep grades. The test schedule includes rapid acceleration, abrupt brake stops and high speeds. These test conditions are much more severe than will be encountered by the average owner.

Ride and handling characteristics of tires are appraised by the engineering department of each of our car divisions. Included are evaluations for ride quality, vibration damping ability, noise level, steering response, and stability. Followup procedures include continuous evaluations of tire performance on fleet and test trip vehicles.

Furthermore, the tire manufacturers conduct rigid laboratory tests of their tires to determine strength, endurance, and performance at high speeds. The data developed by these tests are correlated with the results of our own testing procedures.

On the basis of these data each General Motors car division and its tire suppliers reach agreement in regard to the application of tires to specific vehicles. Original equipment tires are then warranted by the tire manufacturer direct to the vehicle owner.

Question No. 3

"How do you explain this discrepancy, and what steps are taken by you to notify motorists that they may require much stronger tires than those you supply with new cars?"

"What is your comment on the Goodyear Tire recommendation to use an eight-ply rated tire? Is a two-ply-rated tire adequate equipment on your large station wagons when fully loaded and used for cross-country travel?"

"What weight and travel tests will the two-ply tires safely meet that come as original equipment on your station wagons?"

There is no discrepancy. Two different types of operating conditions exist. One condition is represented by station wagon loads up to 1,200 pounds which would provide for six passengers plus 300 pounds of luggage. The original equipment size tires (2-ply—4-ply rated) supplied on GM station wagons are satisfactory for such loads and can be driven in cross-country travel in the 60-to-70-mile speed range when properly inflated. Heavier loads (over 1,200 pounds) and sustained driving at speeds above the 60-to-70-mile range represent a different set of operating conditions for which we recommend optional oversize or eight-ply rated tires, inflated as recommended. This information is furnished in our owners guides, which dealers receive with all cars starting with the first car shipped in each new model year.

Question No. 4

"Do you feel that the present labels on automobile tires are adequate to enable a motorist to make an intelligent selection based on his anticipated needs?"

All original equipment tires used by General Motors have ply and size information embossed on the sidewall which is consistent with the terms contained in our owners guides. This information reflects agreed-upon specifications and represents original-equipment-quality-level tires. Some tires sold in the aftermarket carry similar markings. However, we are not in a position to comment on the markings or designations on the hundreds of different brands of tires sold for replacement.

1965 BUICK SPECIAL OWNERS GUIDE TIRE INFORMATION

TIRES

The factory installed tires on your Buick are selected to provide adequate load carrying capacity for all normal passenger car requirements.

It is recognized that higher than average loads will be carried in normal passenger car usage for occasional short trips for which normal tire pressures are adequate. However, when heavy loads carried on vacation trips or other extended use, higher than normal tire pressures should be used.

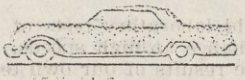
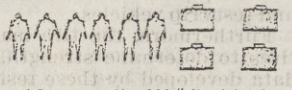
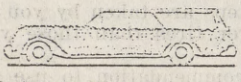
PRESSURES

To ensure proper tire inflation pressures for your particular requirements, use the following tire pressure table and vehicle capacity rating chart as a guide.

Buick owners will obtain the best life and riding comfort from their tires by using the inflation pressures in the column under average load for normal car usage. The full rated load pressures should be used with the car fully loaded for trips greater than 150 miles distance.

VEHICLE CAPACITY RATING

AND RECOMMENDED TIRE PRESSURES—SPECIAL, SKYLARK AND SPORTWAGON

	AVERAGE LOAD	FULL RATED LOAD
 All Models Except Station Wagons and Sportwagons	 3 Passengers	 6 Passengers Plus 200# Trunk Load (Approx. 1100# Load)
Tire Inflation Pressure	Front: 24 Psi Cold, 30 Psi Hot Rear: 24 Psi Cold, 30 Psi Hot	Front: 28 Psi Cold, 34 Psi Hot Rear: 30 Psi Cold, 36 Psi Hot
 Station Wagons and Sportwagons 2 or 3 Seat	 4 Passengers	 6 Passengers Plus 300# on Cargo Deck or 5 Passengers (Approx. 1200# Load)
Tire Inflation Pressure	Front: 22 Psi Cold, 28 Psi Hot Rear: 28 Psi Cold, 34 Psi Hot	Front: 24 Psi Cold, 30 Psi Hot Rear: 30 Psi Cold, 36 Psi Hot

NOTE:

1. "Hot" tire pressure includes typical pressures build up after operating 10 miles or more at 60-70 mph.
2. Air conditioned equipped cars—increase front tire pressure 2 psi above pressures shown (hot and cold).
3. Periodically check tire pressures cold before driving. Tires warm up and pressures increase when driven thus accurate checking is difficult.

Although under some conditions of extreme driving, over inflation may slightly increase tire life, higher inflation pressures under normal load conditions do increase road damage hazards to tires and do decrease car durability with increased road harshness. Under inflation promotes heat and irregular wear. Recommended inflation pressure for the load being carried will give the best car and tire life.

AMERICAN MOTORS CORP.,
OFFICE OF THE PRESIDENT,
Detroit, June 23, 1965.

Hon. GAYLORD NELSON,
Senate Office Building,
Washington, D.C.

DEAR SENATOR NELSON: As a motor vehicle manufacturer, we fully recognize the part that tires play in assuring the customer of safe and satisfactory performance of his automobile.

Our engineering staff is charged with responsibility of specifying the tires used as original equipment on our products. Such specifications are the result of exhaustive test programs of our engineering staff, together with such tests as they may require from our tire suppliers.

I attach hereto a copy of a report from our vice president of engineering, covering the questions referred to in your letter of June 7, 1965.

Should you desire further information we will be most pleased to cooperate to the fullest extent possible.

Sincerely,

ROY ABERNETHY.

AMERICAN MOTORS CORP.,
June 22, 1965.

Interdepartmental letter.

To: Mr. R. Abernethy.

From: R. H. Isbrandt.

Subject: Senator Gaylord Nelson's letter of June 7, 1965, re original equipment tires.

ENGINEERING SUMMARY OF ORIGINAL EQUIPMENT TIRE SELECTION FOR AMERICAN MOTORS CARS

This memorandum will serve to cover the questions and answers referred to in the subject letter.

1. Question. Who is responsible for selecting the proper tire on a new automobile?

Answer. American Motors engineers are responsible for specifying the tires to be used on our products. The selection is based on joint engineering development between the tire manufacturers' engineers and our own engineering staff. The engineering background of our company, as well as the tire company, is utilized in determining the final specifications. After the selection is made, the tire manufacturer is required to submit representative production samples which are subjected to our complete evaluation tests, and for final approval.

In agreeing to supply our tires, the tire manufacturer accepts the responsibility for the performance, service, and warranty of his tires to the vehicle owner.

2. Question. Do you in fact equip any of your five- or six-passenger cars with tires designed to be safe for three passengers without luggage?

If so, are these tires safe and adequate to carry a load of five or six passengers and luggage across country in all-day travel at speeds of 60 to 70 miles per hour?

What tests do you use in deciding what tire should be placed on original equipment?

Answer. American Motors original equipment tires are safe and will give satisfactory service within the life of the tread when operated within the full-load conditions as specified in the Rambler Owners Manual. Depending on the model, full load is listed as five to eight passengers plus luggage. Owner service is expected to include cross-country use, such as vacation trips. These instructions specify that under heavy load conditions and when sustained high-speed driving is anticipated that the inflation pressures should be increased as indicated in the following excerpt from our 1965 Rambler Owners Manual:

"TIRE PRESSURE

"The recommended tire inflation pressures are listed as follows:

"Recommended tire inflation pressures

[Pounds (P.S.I.), cold, before running]

	Normal inflation			
	Average-owner service up to 5 passengers		Full-load service	
	Front	Rear	Front	Rear
Do not reduce tire pressure if tires are warm:				
All classic 6 models except station wagons	24	24	26	30
All classic V–8 models except station wagons	24	24	26	26
All classic 6 2-seat station wagons	24	26	24	30
All classic 6 3-seat station wagons and all classic V–8 station wagons	24	24	26	30

"The front tire loads increase only slightly with passenger and cargo loading; therefore, the above is recommended for best steering characteristics.

"MAXIMUM CAR LOADING AND TIRE SELECTION

"The original equipment four-ply rated two-ply tires are designed and thoroughly tested to meet all normal requirements of your vehicle and are adequate for occasional full-load service with the inflation pressures recommended above.

"Oversize optional tires are capable of greater load capacity. Their use is applicable to all models, particularly station wagons. These tires are recommended for continued full-load service.

"Full-load service of the car is (each passenger is considered 150 pounds):

"All models except station wagons and convertibles, 1,100 pounds: three passengers front seat, three passengers rear seat, 200 pounds luggage.

"Convertibles, 1,050 pounds: three passengers front seat, two passengers rear seat, 300 pounds luggage.

"Classic 6, two-seat station wagons, 1,200 pounds: three passengers front seat, three passengers rear seat, 300 pounds of luggage.

"Classic 6, three-seat station wagons, 1,300 pounds: three passengers front seat, three passengers second seat, two passengers third seat, 100 pounds luggage.

"Classic V–8, two- and three-seat station wagons, 1,300 pounds: three passengers front seat, three passengers second seat, 400 pounds luggage, or two passengers in third seat and 100 pounds luggage.

"NOTE: Station wagon roof rack luggage should be limited to 150 pounds evenly distributed included in above capacity.

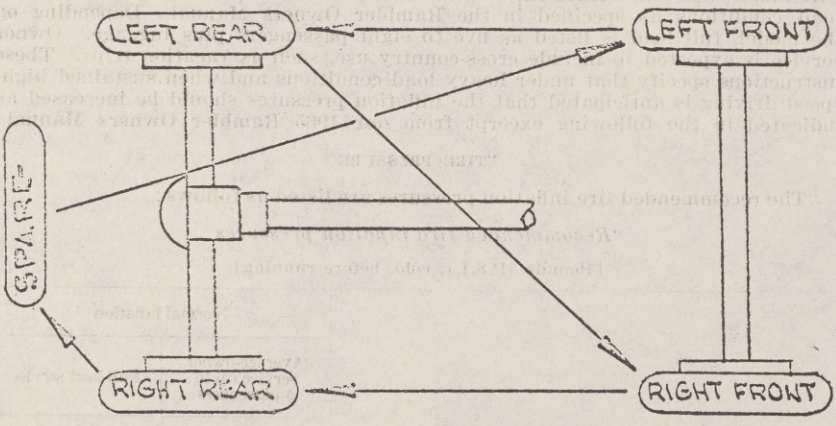
"When towing trailers, the allowable passenger and cargo load must be reduced by an amount equivalent to the trailer tongue load.

"For cars driven at sustained rates of high speed or on trips where above average speeds or loads are maintained, tire pressures may be increased up to 30 pounds (cold before running). The higher pressure will increase stability with some sacrifice of riding quality. The higher pressure will also improve fuel economy under all driving conditions, and is also recommended when hauling heavy loads. Continued use of higher pressures at light loads will adversely affect tread wear and ride.

"Check tires often for visible underinflation and for signs of uneven wear, which may indicate need for front-end alinement.

"In accordance with the diagram, rotating tires every 4,000 to 8,000 miles (normally) is recommended to assure longer overall tire life by equalizing wear.

"If no spare tire is used, move right to left front and follow balance of diagram.



"LIFEGUARD SAFETY TIRES

"This special tire is standard equipment in sets of four tires on three-seat station wagons, and optional on other models in sets of four or five tires. The single air valve automatically fills both the outer and inner air chambers at the same time. The inner chamber automatically receives a higher pressure

of 40 pounds per square inch, as the outer chamber is normally filled to 24 pounds per square inch.

"Each tire has a built-in spare tire. The outer tire is of premium-quality construction. The inner tire, which acts as a safety air chamber, has a honeycomb-patterned tread, plus a tube chamber. In the event of outer tire injury, causing pressure loss in the outer air chamber, the inner tire carries the load. In such event, the unique "Safety Signal," a built-in flat spot on the tread of the inner tire, will produce a thump or vibration warning the driver that repair service is required and to proceed at speeds under 40 miles per hour."

In reply to the second part of the question, we road test our tires under loaded conditions to ascertain satisfactory tread wear and tire fatigue life. Further tire fatigue tests are conducted in connection with our normal vehicle tests over all types of roads, and include our tortuous proving ground cobblestone surfaces. Tires are also tested for high-speed performance, on test tracks at speeds substantially beyond legal speed limits in this country. These tests subject the tires to abusive treatment far in excess of that which may be encountered in general field operation. Additional tire tests are conducted to determine the satisfactory tire qualities with respect to:

Handling (traction and cornering).
Steering response.
Stability.
Ride quality.
Noise characteristics.

In addition, our tire supplier companies also run laboratory and vehicular tests, and furnish us with these results to further substantiate our ultimate conclusions.

3. Question. How do you explain this discrepancy (regarding statement that some compact station wagons should be equipped with eight-ply instead of two-ply tires), and what steps are taken by you to notify motorists that they may require much stronger tires than those you supply with new cars?

Answer. In answer to this question, we want to repeat a portion of the information supplied in our Owners Manual which is quoted as follows:

"MAXIMUM CAR LOADING AND TIRE SELECTION

"The original equipment four-ply rated two-ply tires are designed and thoroughly tested to meet all normal requirements of your vehicle and are adequate for occasional full-load service with the inflation pressures recommened above.

"Oversize optional tires are capable of greater load capacity. Their use is applicable to all models, particularly station wagons. These tires are recommended for continued full-load service."

It should be pointed out that the purpose of offering optional oversize tires is not to increase the safety of the tire, but to assure the vehicle owner of increased tread life to cope with more severe operating conditions.

Question. What is your comment on the Goodyear Tire recommendation to use an eight-ply tire? Is a two-ply rated tire adequate equipment on your large station wagons when fully loaded and used for cross-country travel?

Answer. First we believe there is a misunderstanding in this part of your question, in that you stated a two-ply rated, rather than a four-ply rated two-ply tire.

Our four-ply rated two-ply tires are adequate for cross-country travel and high-speed travel, being within occasional full-load service usage, when inflated in accordance with recommendations outlined in the Owners Manual. Our Rambler Owners Manual also recommends the use of optional oversize tires for improved tread wear, where unusually heavy loads or continued high-speed operation is anticipated.

Original equipment tires used on American Motors cars will perform satisfactorily at highway speeds under full load conditions for the full life of the tread. However, tread life will, of course, be reduced proportionate to the degree of such operation. It is our opinion that the oversize tires provide more overall benefits than the use of eight-ply rated tires.

4. Question. Do you feel that the present labels on automobile tires are adequate to enable a motorist to make an intelligent selection based on his anticipated needs?

Answer. Original equipment tires used on American Motors cars have the manufacturer's name, the tire size, the ply rating, and the tire designation

molded on the side of the tire. With regard to our current suppliers, Goodyear's designation is "Power Cushion" and Goodrich's is "Silvertown." We recognize that in the aftermarket the motorist has available numerous brand names, as well as various tire designations, and we would believe it desirable to have such aftermarket tires designated as "original equipment quality."

The above identifications, we believe, adequately identify the quality level of our original equipment tires.

R. H. ISBRANDT.

FORD MOTOR CO.,
Dearborn, Mich., June 24, 1965.

Hon. GAYLORD NELSON,
U.S. Senate,
Washington, D.C.

DEAR SENATOR NELSON: This is in response to your letter of June 7, 1965, in which you have asked for our comments concerning automobile tire standards and for answers to certain specific questions.

Your first question relates to policy, and I would like to acknowledge that Ford Motor Co. is responsible for selecting the proper basic or standard tire size used on vehicles we produce. Standard equipment tires selected for a vehicle are adequate at the maximum rated capacity of the vehicle as shown in the owner's manual and in instructional material provided dealers for their use in discussions with customers.

Special duty tires are made available as options to provide better wear characteristics on vehicles operated continuously at high speeds with heavy loads. It is the user's privilege to determine if he needs the special duty tires based on his intended use of the vehicle.

With respect to the remainder of your questions, which require a more technical documentation, I have taken the liberty of providing answers prepared by our engineering people in the attached addendum.

I would like to add that we at Ford Motor Co. believe that our full support of recognized technical bodies concerned with the subject of tire safety standards is indicative of our willingness to work with these groups in setting appropriate standards. You are familiar, I believe, with our support of the programs developed by the Society of Automotive Engineers and the Vehicle Equipment Safety Commission.

We appreciate the opportunity you have given us to clarify the situation with respect to original equipment tires used on Ford Motor Co. automobiles, and trust that the attached material will satisfactorily answer your queries.

Sincerely,

ARJAY MILLER.

ADDENDUM TO ARJAY MILLER LETTER ANSWERING QUESTIONS 2, 3, AND 4

Question No. 2

Ford Motor Co. passenger cars are equipped with tires that will safely carry the maximum rated loads as indicated in the respective owner manuals. This includes all-day travel at turnpike speed conditions of 60 to 70 miles per hour.

For example, a 1965 Ford six-passenger sedan has a maximum load rating of 1,100 pounds. This means that the standard equipment tires on this unit—when inflated at specified levels of 30 pounds per square inch front and 32 pounds per square inch rear—have capacity to carry six passengers and 200 pounds luggage (or any combination of passenger weight and luggage totaling 1,100 pounds) in all-day travel at turnpike speeds. For moderate loads and normal operation, however, the recommended inflation pressures are 24 pounds per square inch front and 24 pounds per square inch rear.

Ford Motor Co. engineers use the Tire & Rim Association's yearbook as a source of tire and rim size data and as a guide for tentative selections of original equipment tires. The yearbook load-inflation tables never have indicated maximum capacities, and they are incomplete for four-ply rated tires, since load capacities are not shown for inflation pressures above 24 pounds per square inch. Also, load values shown for 20 to 24 pounds per square inch inflation pressures are not maximum loads for those pressures.

The following explanations are provided to resolve the current misunderstandings relative to the Tire & Rim Association's yearbooks and to indicate tests we use to assure the adequacy of standard tires ultimately selected for our vehicles.

Surveys, for several years, have indicated that predominate travel is with three-passenger occupancy or less, regardless of trip length. One such survey was the Bureau of Public Roads vehicle use study.

Tires are tailored to provide the best overall performance (wear, ride, traction) at the load representing majority usage—three passengers or less—when inflated to 20 to 24 pounds per square inch pressure, but there is no compromise in safety since additional load capacity is built into tires and is achieved by inflating to pressures above 24 pounds per square inch.

It has been customary, therefore, to make tire size selections on the basis of three-passenger load at 20 to 24 pounds per square inch pressure and maximum rated capacity at higher inflation pressures. The final proof of the adequacy of a tire, of course, has always been obtained from results of our proving ground tests. To qualify for final selection a tire must demonstrate blowout resistance capability throughout its useful tread life.

Tire development tests are conducted by Ford Motor Co. prior to testing for durability and include steering control, skid resistance, high-speed cornering, bead strength, unseating resistance and air retention, and tire uniformity characteristics.

Proving ground testing of our 1965 models amounted to 17 million miles (68 million tire-miles) of operation in which conditions are several times more severe than customer operation with respect to the combination of stress, temperature, and speed. Durability testing consists of repetitive cycles on a special 39-mile circuit. Each 39-mile cycle includes 5 miles of operation at 90 miles per hour and 34 miles of travel over rough roads and gravel at lower speeds. Other elements of the test procedure on this 39-mile course include frequent severe stops and heavy accelerations and hard cornering maneuvers.

In addition to our own tests, our quality control procedures require tire supplier firms to certify that their tires regularly pass tests designated in our engineering specifications which include 90-mile-per-hour operation for 100 miles at ambient temperatures of 80° F. to 90° F., high-speed maneuvering and passing to assure steering control and severe handling tests to assure air retention capability and directional traction on both dry and wet pavement.

Question No. 3

The situation with respect to Ford Motor Co. station wagons equipped with four-ply rated tires is similar to that described in the first paragraph of the answer to No. 2, in that these vehicles are equipped with tires that will safely carry the maximum rated loads as indicated in the owner manuals, including all-day travel at turnpike speeds.

In the case of the 1965 Ford station wagon, however, the maximum load rating of 1,300 pounds is 200 pounds greater than that for the sedan. Standard equipment tires on the station wagon, when inflated at the specified levels of 28 pounds per square inch front and 36 pounds per square inch rear, have the capacity to carry six passengers and 400 pounds of luggage or eight passengers and 100 pounds of luggage—or any combinations of these passenger-luggage weights totaling 1,300 pounds—in all-day travel at turnpike speeds. For moderate loads and normal operation, however, the recommended inflation pressures are 22 pounds per square inch front and 30 pounds per square inch rear.

In the absence of more detailed information in connection with the Goodyear Tire & Rubber Co.'s communications with a customer complaining of tire trouble, we believe the following comments will clarify the subject of tire ply ratings and tests relating to station wagon requirements.

The long history of four-ply being synonymous with standard tires led to the present nomenclature wherein tires of two-ply construction with the strength of former four-ply tires are designated two-ply with four-ply ratings. Each ply of our two-ply tires is double the strength of a single ply in former four-ply tires by virtue of improved carcass construction, including larger and stronger cords and other refinements.

Our four-ply rated tires with two actual plies are superior in several important respects to the four-ply tires they replaced. Chief among the better qualities are improved ride and a greater high-speed durability. In operation, less internal heat is generated because there are fewer plies and consequently a reduced number of shear planes between plies. The tires run cooler and thereby provide the high-speed durability improvement.

In a similar manner, eight-ply ratings have been applied to tires which have four actual plies that are equivalent in strength to eight individual plies of former construction. Nomenclature for the current four-ply rated and eight-ply

rated tires is comparable only when both are identified on the same basis, i.e., either by actual plies or by ply ratings. The latter is preferable since it is consistent with historical usage.

As part of the answer to question 2 we described development and durability tests used to qualify tires on our vehicles.

We make available optional eight-ply rated tires which have better wear characteristics on vehicles operated continuously at maximum rated loads and high speeds, such as a salesman driving on long trips with heavy loads of samples and literature. Information relative to this and similar usage is provided in the owner's manuals supplied with our vehicles and recreation brochures readily available at dealerships, copies of which are attached.

Question No. 4

Original equipment tires installed on Ford Motor Co. passenger cars are labeled both according to size and ply rating. The car owner who replaces his worn tires with similar tires manufactured by any of the five suppliers of our original equipment tires can be assured of making an intelligent selection.

Our direct concern for tire labeling, of course, is confined to original equipment tires since we do not market replacement tires. In reference to the question posed, however, we offer the suggestion that the Vehicle Equipment Safety Commission's regulation V–1, which would require tires of aftermarket manufacturers to pass certain safety tests to be eligible for sale to the public, be adopted by all States. A "VESC V–1" label, indicating such approval, would assure the buyer a safe tire.

Tire characteristics other than safety, such as tire wear (tread life), frequently are determined by price. The primary factor in this discussion, we believe, is safety. The combination of labels including size, ply rating, and the V–1 safety approval certainly would be an important guide to the car owner who purchases replacement tires.

CHRYSLER CORP.,
June 28, 1965.

Hon. GAYLORD NELSON,
U.S. Senate, Senate Office Building,
Washington, D.C.

DEAR SENATOR NELSON: This is a further reply to your letter of June 7, 1965. Both this reply and the accompanying detailed answers to the specific questions asked in your letter have been done at the request of Mr. Townsend to whom your letter was directed.

At the outset let me say that we fully understand your concern and are glad to answer your questions. Not only to give you the facts but also that you may know something of our own effort to meet squarely and effectively the problems of safety and efficiency which are presented.

Although we fully share your concern as to the causes of automobile accidents, data available to us does not disclose tire failure of original equipment tires as a cause of accidents where the tires had one-sixteenth inch or more of tread and had been reasonably cared for, including the avoidance of gross underinflation and overloading. At the same time, as indicated, this does not lessen our awareness of a high degree of responsibility we have for proper tires on our vehicles.

We have always placed particular emphasis on factors which affect safety. Both the tire builders and our own technical experts strive each year for tires which are more reliable than the year before. I am sure you will appreciate that the approach is made on a professional basis using engineers particularly trained and experienced in the examination of test data not only in the laboratory but at the proving grounds. The knowledge so gained is the product of a great many years of experience and many hours annually expended in this as in other research and engineering projects.

Specifically, recommendation for original equipment tires on new automobiles is made after examining the test data, conclusions, and recommendations from our steering and suspension development group as well as our durability test section at our proving grounds. Tires from the five major tire companies are tested. We normally purchase from three of these with whom we work closely in this area. We also solicit and use durability and reliability information from independent tire testers, fleet operators, police departments, and others whose use and size make them a useful source of such information. As a result, the

tires which are supplied today on Chrysler-made cars are the most reliable that we have ever used.

Some years ago Chrysler Corp. developed what it has called "safety rim wheels," which for the past 25-years have been installed as standard equipment on all of our passenger type and those of our commercial automotive products that would accept them. Thoroughgoing tests, as well as extensive road experience by customers, have proved that with such wheels, even if a blowout occurs, the tire will stay on the wheel and the car will not be "thrown" to one side or the other of the road because of the tire leaving the rim and jamming between the wheel and fender. We understand that our U.S. competitiors have recently been adding this safety feature to their products. It is our belief that this feature and the improved tires that have been developed will virtually eliminate accidents from blowouts, if such is not already the case.

We go into this in preparation for answering your questions because we feel it fair to you, your committee, and to us that your basic background understanding of our approach to the installation of tires on our automobiles should be as broad as possible.

Equally, you must thoroughly appreciate our complete concern with not only the satisfaction and comfort of the customers who purchase our automobiles but, of course, their safety, their obtaining full value and their knowledge of what they are getting. In this regard we are constantly attempting to improve the various customer manuals and dealer service bulletins to the end that owners, drivers, and dealers may more fully understand the problems involved and what we have done to meet them.

You should also understand, as I am sure you do, that this is a continuing and evolving process always subject to change as technological advances are made. I am sure this is true for other automobile manufacturers and for the tiremakers as well but I can only speak for ourselves.

If out of the answers to the questions you have asked further questions arise, we will be only too glad to answer them to the best of our ability. Furthermore, if in the objectives of the legislation which you have in mind we can be of assistance, we will be glad to do so.

Sincerely,

HARRY E. CHESEBROUGH.

[Attachment]

Question No. 1

"Who is responsible for selecting the proper tire on a new automobile?"

The tires for Chrysler Corp.'s new automobiles are selected by the car divisions on the basis of recommendations by our engineering office. The engineering recommendation is made after examining test data, conclusions, and recommendations from our steering and suspension development group and our durability test section at our proving grounds. The corresponding testing sections of the five major tire companies are consulted. Durability information from independent tire testers, fleet operators, police departments, etc., is used in the final selection.

Tire company development engineers use laboratory and road test procedures exhaustively to screen designs and to prove their soundness prior to offering them to the automotive engineers for consideration. These new designs may originate with the tire company or may be the direct request of Chrysler Corp. The new tires are approved only after comprehensive evaluations of all performance characteristics by both engineering groups.

Question No. 2

"Do you in fact equip any of your five- or six-passenger cars with tires designed to be safe for three passengers without luggage?

"Are these tires safe and adequate to carry a load of five or six passengers and luggage across country in all-day travel at speeds of 60–70 miles per hour?

"What tests do you use in deciding what tire should be placed on original equipment?"

The tires used on Chrysler Corp., passenger cars are designed to carry the full complement of passengers plus a reasonable amount of luggage. In addition to vehicle load capacity, the suitability of a tire is determined by other characteristics of the car, such as accelerating performance, braking and speed capability, all of which affect tire durability.

The original equipment tires are very safe and more than adequate to carry six passengers plus a reasonable amount of luggage across country at speeds of 60–70 miles per hour, provided they are properly maintained, as improper maintenance is a major contributor to tire failures.

In order to insure adequate and proper tire performance characteristics, durability and performance testing is conducted on cars operating at our Chelsea, Mich., proving grounds and at our Arizona testing station. This is supplemented by fleet testing, both by the tire companies and Chrysler Corp., and by cross-country testing to include a wide variety of road conditions. The tires are approved for production only after passing our high-speed, 100-mile-per-hour test, and our durability test. This total performance testing is designed to evaluate not only durability but also steering response, stability, handling, ride, skid resistance, and noise.

Question No. 3

"What steps are taken by you to notify motorists that they may require much stronger tires than those you supply with new cars?

"What is your comment on the Goodyear tire recommendation to use an eight-ply rated tire?

"Is a two-ply rated tire adequate equipment on your large station wagons when fully loaded and used for cross-country travel?

"What weight and travel tests will the two-ply tires safely meet that come as original equipment on your station wagons?"

All Chrysler Corp. vehicles are adequately tired for normal service. Larger tires are furnished as standard equipment whenever extra capacity is required, as on some heavily equipped models, station wagons, or trailer towing vehicles.

In order to evaluate the response by Goodyear Tire & Rubber Co. to an owner plagued with tire trouble, we would need to know the conditions under which this vehicle was being operated.

As indicated in the answer to question No. 2, the current original equipment 2-ply tire is equal or superior to previous 4-ply tires and is adequate for cross-country travel with a fully loaded station wagon. (Incidentally, all our 2-ply tires have a 4-ply rating, and we do not supply any tires with a 2-ply rating.) Our original equipment 2-ply tires have the same load-carrying capacity as 4-ply rated tires, each ply being twice as strong in the 2-ply tire. As indicated above, these tires will carry the full capacity of the vehicle at normal highway speeds.

As with any piece of equipment, it is possible to damage a tire by abusive driving. Our Owner's Manual states that tire care is important to achieving the designed performance of the vehicle.

Question No. 4

"Do you feel that the present labels on automobile tires are adequate to enable a motorist to make an intelligent selection based on his anticipated needs?"

The original equipment tires supplied on Chrysler Corp. automobiles are adequately and simply marked with the size and ply rating.

Since we have no experience in merchandising tires for the "after market" we are not knowledgeable about the labels used on the many makes and brands offered for sale in this market. It is certainly important that "after market" tires be labeled with consistent and meaningful markings so that an owner of a vehicle who finds it necessary to replace original equipment tires will be able to do so with confidence. If it is felt we would be helpful we would be willing to cooperate with others in the development of criteria for such a labeling system.

OKLAHOMA CITY, OKLA., *July 28, 1965.*

Senator MIKE MONRONEY,
Senate Office Building, Washington, D.C.:

Understand hearing going on with automobile manufacturers regarding safety and standardization equipment new automobiles. Oklahoma Motor Club (AAA) represents over 17,000 Oklahoma members. Several members report apparent inferior grade tires being supplied by manufacturers as equipment new cars resulting in blowouts and accidents at early periods normal tire life. One of first requirements should be heavy-duty, first-grade tires on all new cars for protection motorists under existing driving conditions today of high speeds, expressways, and summer heat.

OKLAHOMA MOTOR CLUB INC., AMERICAN AUTOMOBILE ASSOCIATION,
E. PHIL ALLEN, *President.*

AMERICAN FEDERATION OF LABOR AND
CONGRESS OF INDUSTRIAL ORGANIZATIONS,
Washington, D.C., May 27, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: In connection with the hearings of your committee on S. 1643, relating to tire safety, I wish to express the support of the AFL–CIO for legislation to set basic safety standards for automobile tires.

Testimony in Federal Trade Commission hearings early this year revealed a shocking, dangerous situation in the sale of automobile tires. Many new cars come equipped with tires which are not safe, not adequate even for normal use. Furthermore, as a result of the confusing mish-mash in tire grading and tire labeling, it is impossible for the tire buyer to make an intelligent choice among competing brands. Not only the consumer tire buyer but also the tire dealer are often completely unaware of the safety and performance features of tires.

The AFL–CIO supports legislation to establish Federal tire safety standards along the lines proposed by Senator Nelson in S. 1643. We believe it is absolutely vital to the safety of the American people that all automobile tires sold conform to Federal minimum safety and performance standards. Furthermore, we believe that the welfare of the consumer public requires a uniform, federally enforced system of tire grading and tire labeling.

Mr. Chairman, I respectfully request that this letter be included in the record of hearings by your committee on S. 1643.

Sincerely yours,

ANDREW J. BIEMILLER,
Director, Department of Legislation.

WASHINGTON, D.C., *May 25, 1965.*

Hon. WARREN G. MAGNUSON,
Chairman, Senate Commerce Committee,
New Senate Office Building, Washington, D.C.:

Being present this a.m. during the hearings before your committee on S. 1643, tire safety standards, sponsored by Senator Nelson, I noted in his oral statement he said: "There is overwhelming evidence that a substantial number of tires which now come as original equipment are inadequate to do the job rightfully expected of them. These motorists are unknowingly endangering the lives of their families and all other highway users." Those few of us who are left who have spent over half a century, the bulk of that time catering to the needs of the average motorist in the supplying of tires know the statement to be a fact, and the basic problem originated when the four major tire producers monopolized the original equipment tire business for passenger cars, and the increasing monopoly in supplying the fifth or spare tire on passenger cars in original equipment. This action was instituted in the late twenties and early thirties, so the public never had an opportunity to designate what they believed was the most satisfactory tire to use. Of course, through the monopoly, and particularly on the fifth or spare tire, the car manufacturers have enjoyed a real bonanza from the inception of this action. The net result is monopoly in high gear, through which John Q. Public pays the bill. Will you kindly have this message made part of the record of the hearing?

GEORGE J. BURGER,
Vice President, National Federation of Independent Businessmen.

JULY 15, 1965.

Hon. JOHN T. CONNOR,
Secretary of Commerce, Department of Commerce,
Washington, D.C.

DEAR MR. SECRETARY: During the first 2 days of hearings on S. 1643, the proposed automobile tire safety and marketing bill, serious questions were raised concerning the adequacy of original equipment tires supplied with certain automobiles.

The automobile manufacturers have now addressed themselves to these questions, in individual letters sent to Senator Nelson.

I am enclosing a copy of each of these letters (as reprinted in the Congressional Record) and I ask that you review their substance in the light of information on tire safety developed by the Commerce Department.

Specifically, the committee should have the benefit of your judgment as to:

1. Relevant information which the automobile manufacturers may have failed to include in their responses;

2. Questions of fact raised by any statements contained in the letters; and

3. The impact of the information contained in these letters on the legislation now pending before this committee.

Sincerely yours,

WARREN G. MAGNUSON,
Chairman.

(Same letter sent to Hon. Paul Rand Dixon, Chairman, Federal Trade Commission, July 15, 1965.)

THE SECRETARY OF COMMERCE,
Washington, D.C., August 6, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to the three questions which you asked in your letter of July 15, 1965, concerning the safety of original tires on cars supplied by certain automobile manufacturers.

We have reviewed the copies of the letters which Senator Nelson received from each of the automobile manufacturers. Senator Nelson's general concern, as I understand it, is whether the standard tires on new cars are adequate to protect the public, particularly if there is a chance of underinflation or overloading.

Concerning information which the automobile manufacturers may have failed to include in their responses, I believe that they did not include details concerning the tests that they perform, particularly in their relationship to the performance of tires in actual service. While the responses generally describe the types of tests used, they did not include information giving specific characteristics that had to be met so that the tire performance could be adequately determined. Therefore, it is not clear from the responses whether the tests performed are adequate to reduce, minimize, or prevent accidents.

Concerning your second question, we have found no questions of fact raised by any of the statements contained in the letters.

In answer to your third question, the information contained in these letters only serves to strengthen this Department's position, as expressed by Assistant Secretary Hollomon before your committee on May 25, 1965. Our position is that we need a research and development program for developing test methods which, with reasonable assurance, relate tire performance to safety. A two-ply—four-ply rated—tire, for example, may or may not be adequate and safe even when overloaded, and there is no evidence that a four-ply tire will necessarily be stronger than a two-ply tire. Tests must be developed which will relate these ratings to safety. We do not think this kind of test development should be expected of the automobile manufacturers alone. It is also a public responsibility. It requires a much more extensive program of correlating accident statistics with adequate tests than the industry has undertaken. This Department is of the firm view that there must be national tire safety standards which are adequate to protect the public. It is our further position that discretionary authority should be given to the Secretary of Commerce to issue a mandatory tire safety standard if voluntary action in cooperation with the Federal Government is inadequate.

I hope that these views will be of use to your committee in its consideration of this very important subject of automotive safety.

With cordial regards.

Sincerely yours,

JOHN T. CONNOR,
Secretary of Commerce.

FEDERAL TRADE COMMISSION,
Washington, D.C., July 21, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: We are in receipt of your letter of July 15, 1965, in which were enclosed copies of letters from four automobile manufacturers to Senator Gaylord Nelson written in response to a number of questions raised by the Senator concerning the adequacy of original equipment tires with which new passenger cars are equipped.

You requested that we review these responses in the light of the information developed during the course of our tire proceeding. The responses are directed principally to the adequacy of original equipment tires in terms of load-carrying capacity. This subject and the so-called practice of overloading were developed at some length during our hearing.

Overload is the situation which exists when the curb weight of the vehicle plus the designed load capacity in terms of passengers and luggage exceeds the load-carrying capacity of the tires with which the vehicle is equipped. Our information indicates that when the tire overload goes above 10 percent, the result will be drastically shortened tire life, and the increasing possibility of tire failure.

The matter of tire size is directly related to the overload problem in that, all other things being equal, the size of the air chamber and the amount of inflation pressure therein determines the amount of load the tire can support. Thus, the Tire & Rim Association rates an 8.50 by 14 tire as having a load capacity of 1,270 pounds at 24 pounds inflation pressure; while a 9.00 by 14 tire at the same pressure is rated as having a load capacity of 1,360 pounds. The dangers implicit in overloading tires is the result of the heat buildup in the tire which occurs due to the constant flexing of the walls of the overloaded tire. Heat, a tire's natural enemy, weakens the tire's fabric and saps the strength of the adhesive which holds together the various layers of fabric and rubber, or other material, of which a tire is made.

As I stated before your committee on May 25, 1965, in my testimony on S. 1643, the public record in our tire proceeding contains a number of statements to the effect that many original equipment tires mounted on new cars are inadequate to safely carry the passenger and baggage load the vehicle is designed to carry. One tire manufacturer stated that, "over the years, vehicle manufacturers, in an attempt to cut costs, have cut down the amount of tire they are designing into their vehicles, and that some vehicles are overloaded when they are empty of passenger or baggage."

Your letter also requested the benefit of our judgment on three specific points.

1. Relevant information which the automobile manufacturers may have failed to include in their responses.

While it is somewhat difficult to comment on what a party may have failed to state, we feel that the auto manufacturers could have been more specifically responsive to allegations of overloading had they included information on the curb weights of their various car models and the theoretical load-carrying capacities of the original equipment tires with which the vehicles are equipped. Given these figures, it is possible to determine the number of pounds in passengers and baggage which may be placed in the vehicle without overloading.

2. Questions of fact raised by any statements contained in the letters.

(*a*) Paragraph 3 of the Chrysler Corp. letters indicates their belief that original equipment tire failure is not a cause of accidents when certain precautions are taken "* * * including the avoidance of gross underinflation and overloading." In connection with this statement, it would be pertinent to discover whether Chrysler informs car owners in their manuals or otherwise what the safe load-carrying capacity of their vehicles is, in order that * * * gross * * * overloading" may be avoided.

(*b*) Paragraph 6 of the Chrysler letter contains a statement that the safety rim wheel, developed over 25 years ago, and the improved tires that have been developed will virtually eliminate accidents from blowouts, "if such is not already the case."

The record in our recent proceeding contains a number of consumer statements alleging original equipment tire failure after relatively low mileage and little discernible treadwear.

(*c*) In answer to question No. 2 in the attachment to the Chrysler letter, it is stated that the original equipment tires used on Chrysler products are designed to carry the full complement of passengers, plus a reasonable amount of luggage.

The May 1962 and March 1963 issues of Consumer Bulletin contain surveys of certain 1962 and 1963 automobiles. The surveys contain statements as to percentage of overload on tires with which the vehicles are equipped. Of the 25, 1963 cars surveyed, all products of the 3 largest producers, 19 were described as overloaded more than 5 percent on either front or rear wheels or both. The descibed overload ranged from a low of 7 percent to a high of 17 percent. Of the 25, 1962 cars surveyed, all products of the 3 largest producers, 16 were described as overloaded. The described overload ranged from a low of 5 percent to a high of 18 percent.

(*d*) The answer to question No. 2 contained in the attachment to the Ford Motor Co. letter contains a discussion of the data contained in the Tire & Rim Association (TRA) Yearbook which is published annually and is used as a guide for selection of original equipment tires.

Ford states that "The yearbook load-inflation tables never have indicated maximum capacities and they are incomplete for four-ply rated tires since load capacities are not shown for inflation pressures above 24 pounds per square inch."

Ford also states that their engineers use this yearbook as a guide for the tentative selection of original equipment tires. We feel it is somewhat inconsistent to assert that the TRA data used by Ford as a guide for original equipment tires does not contain maximum-load capacities, and that the load capacities which are contained therein cover only an incomplete range of tire inflations. You committee may wish to make further inquiry of Ford Motor Co. on this point.

In this connection, it is interesting to note that prior to publication of the 1964–65 TRA Yearbook, the load and inflation tables were always captioned "Maximum tire loads," instead of the present caption "Engineering guide—Loads and inflation pressures." Perhaps the auto and tire manufacturers may wish to furnish background information as to why these tables were described as maximums, if indeed they are not; and why the change in descriptive terminology took place in the 1964–65 yearbook.

(*e*) In the Ford answer to question No. 3, it is recommended that the rear tires of the 1965 Ford station wagon be inflated to 36 pounds per square inch under certain load conditions.

Senator Nelson, in his letter of July 12, 1965, directed to you, stated that he has been advised by TRA that 36 pounds inflation represented a dangerous overinflation which was likely to cause extremely rapid wear, which would increase the danger of blowouts. The General Motors letter states that "Although under some conditions of extreme driving, overinflation may slightly increase tire life, higher inflation pressures under normal load conditions do increase road damage hazards to tires, and do decrease car durability with increased road harshness."

We might suggest that your committee contact the National Bureau of Standards to determine whether 36 pounds inflation pressure does in fact represent a dangerous overinflation. We do not have sufficient information to comment at this time.

(*f*) In the American Motors Corp. letter under the caption "Maximum car loading and tire selection," it is stated in the car owner's manual that "It should be pointed out that the purpose of offering optional oversize tires is not to increase the safety of the tire, but to assure the vehicle owner of increased tread life to cope with more severe operating conditions."

We do not feel that this is a completely accurate statement because although we agree that using a larger size tire will increase tread life, its use is also related to safety if it replaces a tire whose size is inadequate to support the load of the vehicle, its occupants, and baggage or luggage. In such event, the larger tire might eliminate or reduce the danger of overload which is certainly a threat to safety.

3. The impact of the information contained in these letters on the legislation now pending before this committee.

We are unable to completely evaluate the contents of these letters as to their import on pending legislation, since we feel that such an evaluation would require the availability of extensive and "in-depth" tire testing facilities and procedures relating to a wide variety of factors which have a bearing on the question of tire safety.

The necessary facilities and procedures, and the current knowledge and controlled laboratory experience required to perform and evaluate these tests are

not, at present, as far as we have been able to determine, available to the Federal Government.

However, in my testimony concerning S. 1643 before your committee, I stated that the Commission supports Federal legislation looking toward the development of minimum safety standards by the Department of Commerce. In any effort looking toward the development of such standards, I would hope that provision will be made for the inclusion of requirements looking toward solution of the overload problem.

We have seen nothing in the responses of the automobile manufacturers which would indicate that such provision is other than desirable and necessary.

By direction of the Commission.

PAUL RAND DIXON, *Chairman.*

PITTSBURGH, PA., *August 14, 1965.*

Senator VANCE HARTKE,
Senate Office Building,
Washington, D.C.:

Re your tire investigation. I buy a new car every year. The tires that are equipped on these cars are undersized and underrated. Example: this year I suffered three blowouts due to tire failure. I replaced these tires with a four ply and larger size. Keep up the good work. Us poor consumers need you.

DONALD W. FLOWERS.

PEOPLES CAB CO.,
PITTSBURGH, PA., *May 19, 1965.*

Hon. WARREN MAGNUSON,
Chairman, Senate Commerce Committee,
Washington, D.C.

DEAR SENATOR MAGNUSON: Senator Gaylord Nelson requested that I write to you (letter dated May 14, 1965).

I appeared as a witness at the Federal Trade Commission hearings on the matter of tires on January 15, 1965. My testimony dealt with aspects which still mystify most so-called safety experts.

I revealed areas dealing with traction (aquaplaning), of which only a handful of Americans are cognizant.

My principal protest is the insertion of carbide studs in tires. As it now stands, this adoption will kill countless thousands and inflict injury upon hundreds of thousands of our citizens.

The enclosed letter addressed to Pennsylvania State Senator George N. Wade will provide you with a historic background so that you may evaluate the danger which exists in this public-be-damned attitude on the part of the tire industry, stud manufacturers, and a certain member of the Pennsylvania House of Representatives.

Please read this letter. It is long. It rambles. But it points out a new and novel danger. It should be placed into the record.

Promotion and claims of the tire industry is no guarantee. We learn this the hard way. The public should be educated in these various findings and facts of life. I want to help, if I may.

If you are desirous of obtaining more information, I will be very happy to respond. If necessary, I will appear before your committee for further testimony.

Sincerely yours,

ADOLPH FRAM, *President.*

PEOPLES CAB CO.,
Pittsburgh, Pa., May 13, 1965.

Senator GEORGE N. WADE,
Chairman of Highways Committee,
Senate of Pennsylvania, Harrisburg, Pa.

DEAR SENATOR WADE: I want to thank you for inviting me to appear before your committee.

Inasmuch as the hearing room had to be vacated by 1 p.m., I felt that, in this atmosphere of rush, I was unable to present my point effectively and properly.

I am vitally interested in safety, in life, in the prevention of accidents and the causes of accidents. I have dedicated myself in the past 16 years to this

field. We have received awards and recognition for our work. Harry H. Brainerd, Commissioner of Traffic Safety, Commonwealth of Pennsylvania, has in the past particpated in some of these affairs.

We have developed a safety program with a membership of over 1,500 and our mailing is sent beyond continental United States. It is recorded that our little company has devoted more time, money, and effort to the cause of safety than any other company in this area, including the large corporations.

The Pittsburgh Plate Glass Co., Bell Telephone Co., insurance companies, trucking companies, and numerous others reproduce our safety material for their own employees. They have requested permission and it has been granted. We have not charged 1 cent for this service. This program has been conducted by me personally. The ideas and the sketches are blocked out by me. I originated this program in 1955. The Sunday edition of a Pittsburgh newspaper carried a full-page writeup of this project back in 1959.

My quest for methods to reduce accidents, research and investigation, has resulted in a file unequaled but by a few. The fleet experience relating to accident frequency, the causes, the various types of tires, tread design, skids, "fishtailing" of a vehicle, and items relating to the safe operation of a motor vehicle, I have lived with and have studied.

I am a "gadget and gimmick" man. I will listen to, attempt to learn, and buy anything that will improve our operation. One minor speck of improvement, I believe, is a plus. I have seen many products and processes come and go. Some were worthless, indeed harmful. Some we have adopted and as a result have saved lives by reducing accidents by incredible percentages not only here but in other areas as well.

On this basis, and with this background, I have been invited to address national conventions of fleet operators. I do not pose as an expert, but merely one qualified to talk on a subject which is still in darkness and cloaked in mystery. There are few people in this Nation who know as much as I revealed to you and your committee even though I was standing on one foot off balance.

I journeyed to Harrisburg to appear before your committee. I was notified to appear Tuesday, May 4, at 9:30 a.m. My wife accompanied me. We left our office in Pittsburgh late Monday evening. We were on the Pennsylvania Turnpike at 8 p.m. We arrived in Harrisburg at approximately midnight.

The next morning we arrived at the majority caucus room at 9:20 a.m. We met at that time. You asked me to place my name on a pad and you explained the reason * * * for position of appearance. We then seated ourselves in the rear of the room. The meeting began at approximately 9:45. We listened to the proceedings until about 12:15 when an announcement was made that the meeting would close at 1 p.m. due to other commitments for the room. Harry Brainerd was still testifying.

How could I possibly bring to light a problem which I feel has a devastating effect upon our Nation, when we are pushing so for time? We know that when a presentation does not follow sequence and order, it is more often than not misunderstood and misinterpreted. As you know, I did not follow Harry Brainerd. He was followed by another speaker. Finally I was called upon.

The purpose in appearing before your committee is fairly well defined in my prepared statement. The main points are:

A. I object strenuously to the license which the present House bill No. 69 will provide to anyone who cares to insert carbide studs. Specifically, the insertion of studs in worn or partially worn tires will cause a terrifying condition.

B. There are no rules or standards to follow in the application or the use of the studs by the motorist.

C. The discrepancies that exist between the stud manufacturers are cause for alarm. Their printed brochures are full of contradiction. They continuously use the phrase "under normal driving conditions." The public has not yet realized that this phrase is a misnomer. The incalculable number of variables, especially with our high-speed automobiles, causes the phrase "normal driving" to lose its meaning. The stud manufacturers are obviously using the phrase as a cushion.

D. It is stated, "the studs are designed to wear at the same rate as American made tires." This is a flagrant farce. The 15 remaining tire manufacturers

in the country (having been reduced from several hundred) each have their own formulas which are secret for compounding rubber. Rarely do two tires wear alike. There are approximately 900 name lines of tires manufactured in the United States by these companies.

The speaker who followed me, representing a stud manufacturer, stated that millions of dollars were spent by the manufacturers in engineering the studs. This would indicate to the layman that nothing could be more sacred and hence, how can it possibly be questioned?

However, Senator Clarence Bell grasped this bull by the horns and remarked that he was aware of the fact that manufacturers spend millions of dollars engineering, etc., etc., and he mentioned the "cheapie" tire and some of the fallacies that are inherent in the manufacture of tires which have caused a public clamor. Hence, millions spent doesn't rule success and the public should not jump blindly.

I am certain from the statement which Senator Bell made that he is familiar with the Federal Trade Commission investigation of the tire manufacturing industry. He quoted almost ad verbatim the language used during this investigation which was held in Washington, D.C., in January 13, 14, and 15, 1965.

I had the privilege of appearing as a witness at this FTC hearings and also attended the 3-day investigation. The testimony which consists of over 800 pages is a revelation. Senator Gaylord Nelson remarked, "A national scandal in automobile tires," and he intimated that the practices by segments of the tire industry are deceptive and the public is misled. There will no doubt be instituted a set of standards for the tire industry to follow so that the public can get a fair shake * * * no matter whose tire is purchased. (In fairness, there are some tire manufacturers who are not involved.)

E. One of the most important areas which I tried to cover on Tuesday is as follows:

Mr. Walter Lee, one of the foremost engineers in the tire industry and director of tire development for Goodyear Tire & Rubber Co., said, "Since initial stopping traction is supplied by the front wheels and better control is achieved by nearly equal traction on all wheels, we feel four studded tires are required."

Senator Wade, if nothing else, the ignorance of this one fact of physics alone has been responsible for killing and maiming so many people in our automotive history that it is beyond conception. The straight-line stop, regardless of tire type, is a key to safe driving and 99.44 percent of the public is not cognizant of this. I have been revealing to fleet operators, their maintenance people, and to tire dealers this very elementary fact.

Having been in the tire business for 40 or 45 years does not necessarily qualify the tire dealer as an expert on traction. I have yet to find tire dealers who are not astonished to hear these bare, basic facts. True, most of them are good businessmen and know how to sell rubber and are acquainted with the various compounds and wearing quality of rubber but the number who know about the traction-action of contact points on the roadway are few and far between.

The look of astonishment was registered on the faces of several members of your committee when I reported there were 22 million motorists involved in automobile accidents last year. You seemed aghast. The statement was hard to believe. Then I told you of Porter's prediction of 36 million motorists who will be involved in automobile accidents in 1965. I could sense the keen interest on the part of the committee when I explained that the variable tread depths of the tires have much to do with the vehicle's ability to stop safely on a wet roadway. There was again astonishment that the tread depth of a brand new tire is eleven thirty-seconds of an inch.

F. I wanted to explain to the committee that if the tires of a station wagon are overloaded by as much as 20 percent and if any one tire was underinflated by as little as 4 pounds of air, a 3-hour trip on the turnpike, at 65 miles per hour, would be a rather dangerous one. This is not my analysis, but a quote verbatim of a chief executive of a tire manufacturing corporation. The public does not recognize the importance of this so-called "insignificant thing." So many accidents and mishaps involving fatalities result from this "insignificant thing."

G. Additional dangers in the use of carbide studs:

(1) Will all four tires be studded?

(2) In the event of a failure on the part of one of these tires, will the spare tire be studded? If not, that motorist will be playing Russian roulette with

his life, the lives of his passengers and other innocent motorists on the highway.

(3) In the event of a flat tire, which tire will fail? Will it be a rear snow tire or a conventional tire on front? If so, should not the motorist carry two spares with studs (one snow—one conventional)?

(4) Will the number of studs on the right rear tire be the same as the tire on the left? Will the same hold true for the front tires? If the number of studs are different on the related tires, again danger exists.

(5) Studded tires should not be driven at high speeds. They should not be driven at sustained speeds.

(6) Unscrupulous dealers looking for the big dollar from the public will sell studs in overabundant amounts merely to extract an additional 10 cents for each. The average cost presently is somewhere between $8 and $12 extra for each tire (that is, if 80 to 120 studs are used).

(7) How many studs are necessary in each tire to be considered safe? The stud manufacturers themselves disagree. One manufacturer said, "We run about 300 to 350 studs to a tire." He was gleeful when he made this statement. This would, of course, cost the poor sucker motorist $35 additional for that one tire alone.

His competitor however stated, "The usual amount is 80 to 100 and more than that might cause trouble." (This man also said that they had not conducted tests on foreign cars.)

Which is correct? Whom do we believe?

(8) No one knows how many studs to use. There are too many variables which exist for every yard of roadway traversed by a vehicle—snow, ice, slush, wet roadway, concrete, asphalt, weight of car, number of occupants, reflexes of driver—to make a determination. The admission of this vast difference of opinion by the stud manufacturers is frightening.

I appeared before your committee as a citizen of this Commonwealth, prepared to testify on a bill which is vague and ambiguous and to relate to those interested the pitfalls in the application of carbide studs.

At the introduction of carbide studs, as a fleet operator myself, I became interested in them and about the prospect that they could be helpful in fleet operation. An investigation produced so many inequities that I felt caution should be exercised in the use of studs in their present form. There may be a possibility that studs could function properly and effectively, but I am opposed to submitting to the proposition that the public be used as a scapegoat for the purpose.

I was shocked when Representative McNally interrupted me before I had concluded my prepared statement. I had anticipated taking the 10 to 15 minutes that you and I talked about prior to the commencement of the meeting in delivering my prepared address, and then as you remarked, "We will have a little more time with some questions."

I was deprived of my time by the remarks and statements of Representative McNally and his reference to my interest in Micro-Siping. I was surprised when Representative McNally stated that he was responsible for introducing House bill No. 69—the stud bill.

He held the bill in his hand, pointed to his name thereon, and then revealed that he was a tire dealer of 45 years' experience and in favor of carbide studs. He intimated rather strongly that his 40 or 45 years' experience in the tire business excelled my experience. I refrained from argument. I felt that the cause is too great to sink to a personality conflict.

I did not mention Micro-Siping. Representative McNally did. I did not appear to promote Micro-Siping, but to reveal facts about carbide studs which would endanger human beings and to so inform the members of this important committee. Carbide studs and Micro-Siping are but a small segment of my interest in the cause of safety.

I stated on the floor, and herewith repeat again, Micro-Siping is not in the same league as carbide studs. Studs, as they are now engineered, are used for a one-purpose period, for possibly 1 day's use in an entire year on a thick ice-crusted roadway. The use in Scandinavian countries in Europe, where heavy ice-crusted highways are common for numerous months, and on unpaved highways, are the ticket for carbide studs but not in this hemisphere in their present form.

Micro-Siping was created and developed approximately 40 years ago for the purpose of maintaining grip on wet roads in the New England area in the summertime. Hence, there is no relationship here. The only competition that could be fabricated would be in the minds of those advocating the use of carbide studs and the profits that would be realized in the proposed manufacture, this year, of 250 million studs which retail for 10 cents each. This represents $25 million. I mention this so that all evidence may be weighed and the quest for the big dollar be slowed down when dealing with human lives.

Since Micro-Siping was mentioned, I might as well state for the record that the traction and the straight-line stop that Micro-Siping has produced in the summertime has also had remarkable effect on other road conditions. During the years, experiments have been conducted and it was discovered that the Micro-Siped tires have an effect upon slush and snow heretofore believed unattainable.

There are users all over the Nation, reliable, respected businessmen, who attest that Micro-Siping has saved their lives and the lives of many others. A truck operator in Texas, who uses the Micro-Siping process, received a $104,000 insurance refund for a 1-year period. Traffic engineers in major cities have attested the value of this process. Some fleet operators have reduced their accidents in excess of 50 percent and have gained other benefits in the safe operation of their vehicles. By the way, the cost of Micro-Siping a passenger tire is only $3.

Representative McNally stated he knew about Micro-Siping. He mentioned the process which is called siping, but this process has been withdrawn from the market by the manufacturer. The difference between these siping systems is that Micro-Siping provides a pressure on the tire while it is being processed that is relative to its position when the weight of the car is supported by the tire.

Were I in the business of manufacturing or marketing of chains, I would still oppose any proposition which I felt would be harmful to the motoring public. Educating the public and revealing the danger of chains during certain periods would be in order. Chains give a false sense of security. I would point out, with clear statistics and logic, the fallacies and not accept as holy and final, the slogans promoted by interests with an eye directed to deriving the big dollar.

Representative McNally said, "Studs are better than chains." However, he failed to state that chains are removed when conditions no longer warrant them. What can the motorist do with studs? He can't remove them. He must continue to drive on the roadway and during conditions for which the studs were not intended.

That the record may be current, I am presently engaged in another aspect of safety dealing with the use of light in the operation of fleet vehicles, even during daylight hours. The American Association of Optometrics has reported a remarkable discovery and experiments are now being conducted. I have been in touch with the head of this division at the University of Indiana.

Some of the results of the "light" experiment are gratifying and bring great joy. Some fleet operators announce a reduction of 43 percent in their accident frequency. Some people believe this is a "witches brew." We have discovered that it is a physiological adaptation to the "awareness of safety."

I came to Harrisburg to make you and your committee aware of a danger. Any product dealing with safety or performance I may be interested in is not an issue. I have always had more than a one-track mind in dealing with safety. There is never a one cure-all method. Safety is a forever job.

I would be willing to come back again to address your committee. I would request 45 minutes. I will reveal to your committee another condition that exists on the road, especially during wet weather, where there is absolutely no contact between the front wheels and the roadway. The tires are actually suspended on a tough film of water. This condition is responsible for an incalculable number of accidents.

To the public, including most safety engineers and experts, this phenomenon remains an unknown. They are not aware that the condition exists. I am not speculating here. I have actual facts, data, and an official report.

I am sending a copy of this letter to President Lyndon B. Johnson. There are several chief interests involved in the health and security of this Nation.

One is our foreign policy. American lives and energy are being expended in Vietnam, the Dominican Republic, and elsewhere. We are very much concerned.

However, we look askance at the problem of Americans being killed and maimed on American soil which outnumber the casualties inflicted by warfare in our entire history. One hundred thousand deaths by auto are predicted in the United States for the year 1970. The meteoric yearly rise indicates this dreadful forecast could be surpassed.

If you are interested in learning of some preventive and constructive applications that will help to reduce accidents, I will be happy to make the journey once again. It might even save the lives of some of those who were in the majority caucus room on Tuesday, May 4. I would be happy that my senate committee would be as informed or better informed in these important subjects as any legislative body in the United States. Forty-five minutes will provide you with information which has required almost a lifetime to assemble.

Sincerely yours,

ADOLPH FRAM, *President.*

AUGUST, 13, 1965.

MR. HARLAN V. HADLEY,
Manager, Washington Office,
Automobile Manufacturers Association, Inc.,
Washington, D.C.

DEAR MR. HADLEY: Senator Hartke has asked that the committee staff obtain, for the hearing record on S. 1643, your comments on the allegation that nylon cord, while more expensive than rayon, provides an extra margin of strength and safety in automobile tires. In particular, Senator Hartke wished to call the attention of the manufacturers to tire advertisments which represent high quality nylon tires as superior in safety to rayon tires.

Yours truly,

MICHAEL PERTSCHUK,
Staff Counsel.

AUTOMOBILE MANUFACTURERS ASSOCIATION, INC.,
Detroit, Mich., September 2, 1965.

HON. VANCE HARTKE,
Committee on Commerce,
U.S. Senate,
Washington, D.C.

MY DEAR SENATOR HARTKE: This letter is in response to questions raised by members of the Senate Committee on Commerce on August 13 with the Engineering Advisory Committee Panel of the Automobile Manufacturers Association. The questions, including one in your letter of that date, concern the use of nylon cord, changes of tire size in relation to vehicle weight, the cost of equipping cars with the next larger size tire, and tire warranty data, and relate to our testimony on S. 1643.

With respect to the use of nylon cord in original equipment tires, it was pointed out in our testimony that there are no safer tires than those used as original equipment by our industry.

The strength of a tire is dependent not only on the strength of the material used but on the amount of material used. Rayon cord tires could be made stronger by using more rayon cord but the additional strength is not required.

Rayon is generally used in original equipment tires because it is, at this stage of fabric development, the material best suited to all-around tire performance. Generally speaking, rayon tires are selected for most passenger car applications, after taking into consideration safety, ride, handling, and tread wear.

Nylon cord tires, when statically loaded for approximately 1 hour, have a characteristic of developing a temporary flat spot on the portion in contact with the ground. This is reflected to the driver as a wheel out-of-balance condition for several minutes of initial driving. New car customers will not tolerate this condition.

Companies in the automobile industry do offer nylon cord tires for some special purposes such as police vehicles and other applications requiring the operation of vehicles for sustained periods beyond normal highway speeds.

While there is a difference in physical properties in various cords—rayon, nylon, polyester, and other materials—the type of cord is only one and certainly not the most important of the factors determining tire performance and safety. The amount of cord, its quality, the nature and quality of the rubber compounds, the construction and design of the tire, and other factors, enter into determining the overall performance and safety of tires. In other words, the type of cord used, taken alone, does not determine the strength of the tire.

As we have previously stated, we are interested in continuing the technical improvements in this field and using the best possible combination of construction components to obtain even better tire performance in the future.

The second question concerns changes in tire size as related to vehicle weight. Attached are exhibits No. 1 through No. 4 showing weight of vehicle and tire size for representative passenger cars. These data support our statement to the committee that: "The record will show that through the years tires have been changed in our vehicles from model year to model year depending on the weights of the vehicles. Sometimes these tire sizes have been increased and sometimes they have been reduced, depending on the safe weight-carrying ability of the tire and the load concerned."

The third question concerns the cost of equipping cars with the next larger size tire. That question has been referred to the individual manufacturers for consideration.

However, as was pointed out in the testimony at the hearing, it is believed that all original equipment tires, properly inflated, provide maximum safety and operating characteristics for all normal driving and loads. Automobile manufacturers recommend a different type of tire for extreme high speeds. Also recommended is a different size tire for extreme loads—for example, as when a trailer is to be pulled—but then it is generally recommended that other extra strength vehicle components such as shock absorbers and springs be installed as well.

Accordingly, we do not believe that the use of a larger size tire would contribute to increased safety. It would not eliminate the necessity for proper selection of inflation pressures for different loads. In some cases it might well have a deleterious effect on overall operation.

In reply to the question concerning tire warranty adjustments, exhibit No. 5 has been prepared by the original equipment tire manufacturers. The table breaks down adjustments by causes, in terms of weighted percentages of production. This information covers tires produced by the Firestone Tire & Rubber Co., the General Tire & Rubber Co., B. F. Goodrich Tire Co., the Goodyear Tire & Rubber Co., and United States Rubber Tire Co., during the year-and-a-half period January 1, 1964, to July 1, 1965.

We trust that this letter and the attached data supply the information you require.

Very truly yours,

H. F. BARR,
Chairman, AMA Engineering Advisory Committee and Vice President, Engineering, General Motors Corp.

R. H. ISBRANDT,
Vice President, Automotive Engineering and Research, American Motors Corp.

B. W. BOGAN,
Vice President, Director of Engineering, Chrysler Corp.

H. L. MISCH,
Vice President, Engineering Staff, Ford Motor Co.

EXHIBIT 1

TIRE AND VEHICLE COMBINATIONS

1957 - 1965

4 - Dr. Sedans

YEAR	MODEL	CURB WT.	TIRE SIZE	TIRE PRESSURE FT.	Rr.	WHEEL BASE
1957	Rambler 6-Cyl (Super)	2914	6.40 x 15	24	24	108
	Ambassador V8 (Super)	3639	8.00 x 14	24	24	121 1/4
1958	American 6-Cyl (Super)	2583	5.90 x 15	24	24	100
	Rambler 6-Cyl (Custom)	3076	6.40 x 15	24	24	108
	Ambassador V8 (Custom)	3564	8.00 x 14	22	20	117
1959	American 6-Cyl (Super)	2600	5.90 x 15	24	24	100
	Rambler 6-Cyl (Custom)	3064	6.40 x 15	24	24	108
	Ambassador V8 (Custom)	3539	8.00 x 14	22	20	117
1960	American 6-Cyl (Super)	2641	5.90 x 15	24	24	100
	Rambler 6-Cyl (Custom)	3069	6.40 x 15	24	24	108
	Ambassador V8 (Custom)	3546	8.00 x 14	22	20	117
1961	American 6-Cyl (Custom)	2696	6.00 x 15	24	24	100
	Classic 6-Cyl (Super)	3028	6.50 x 15	24	24	108
	Ambassador V8 (Custom)	3482	8.00 x 14	22	20	117
1962	American 6-Cyl (400)	2693	6.00 x 15	24	24	100
	Classic 6-Cyl (Custom)	3003	6.50 x 15	24	24	108
	Ambassador V8 (400)	3385	7.50 x 14	24	24	108
1963	American 6-Cyl (400)	2683	6.00 x 15	24	24	100
	Classic 6-Cyl (660)	2839	6.50 x 14	24	24	112
	Ambassador V8 (990)	3254	7.50 x 14	24	24	112
1964	American 6-Cyl (440)	2656	6.00 x 14	24	24	106
	Classic 6-Cyl (770)	2862	6.50 x 14	24	24	112
	Ambassador V8 (990)	3303	7.50 x 14	24	24	112
1965	American 6-Cyl (440)	2664	6.45 x 14	24	24	106
	Classic 6-Cyl (770)	2994	6.95 x 14	24	24	112
	*Ambassador 6-Cyl (770)	3127	7.35 x 14	24	24	116
	Ambassador V8 (990) (Opt.)	3432	7.75 x 14	24	24	116

* Ambassador 6-Cylinder models introduced in 1965

EXHIBIT 2

CHRYSLER CORPORATION

Curb Weight Versus Tire Size
Typical Models - 1961 thru 1965

	Sedan			Station Wagon		
	Wheel Base	Curb Weight	Tire Size	Wheel Base	Curb Weight	Tire Size
Valiant Six Cylinder Model						
1961	106.5"	2670#	6.50 x 13	106.5"	2850#	6.50 x 13
1962	106.5"	2620#	6.50 x 13	106.5"	2780#	6.50 x 13
1963	106.5"	2675#	6.50 x 13	106.5"	2835#	6.50 x 13
1964	106.5"	2715#	6.50 x 13	106.5"	2870#	6.50 x 13
1965	106.5"	2710#	6.50 x 13	106.5"	2870#	6.50 x 13
Plymouth Eight Cylinder Model						
1961	118"	3670#	7.50 x 14	122"	4170#	8.00 x 14
1962	116"	3360#	7.00 x 14	116"	3705#	7.00 x 14
1963	116"	3415#	7.00 x 14	116"	3750#	7.00 x 14
1964	116"	3445#	7.00 x 14	116"	3750#	7.50 x 14
1965	116"	3370#	7.35 x 14	116"	3675#	7.75 x 14
1965	119"	3820	7.75 x 14	121"	4265#	8.55 x 14
Dodge Eight Cylinder Model						
1961	122"	3805#	8.00 x 14	122"	4250#	8.00 x 14
1962	122"	3875#	8.00 x 14	122"	4320#	8.50 x 14
1963	122"	3940#	8.00 x 14	122"	4365#	8.00 x 14
1964	122"	3975#	8.00 x 14	122"	4365#	8.00 x 14
1965	121"	4095#	8.25 x 14	121"	4425#	8.55 x 14
Chrysler New Yorker						
1961	126"	4270#	8.50 x 14	126"	4690#	9.00 x 14
1962	126"	4135#	8.50 x 14	126"	4560#	9.00 x 14
1963	122"	4185#	8.50 x 14	122"	4565#	8.50 x 14
1964	122"	4225#	8.50 x 14	122"	4850#	9.00 x 14
1965	124"	4420#	8.55 x 14	121"	4850#	9.00 x 14
Imperial						
1961	129"	4985#	8.20 x 15			
1962	129"	4890#	8.20 x 15			
1963	129"	4955#	8.20 x 15			
1964	129"	5145#	8.20 x 15			
1965	129"	5120#	9.15 x 15			

EXHIBIT 3

GENERAL MOTORS CORPORATION
VEHICLE WEIGHT AND TIRE SIZE

	Model Year	Curb Weight	Tire Size
Chevy II 6-cyl. Nova 4-Dr. Sedan	1962(A)	2676	6.00-13
	1963	2687	6.00-13
	1964	2747	6.50-13
	1965	2770	6.50-13
Oldsmobile F-85 V-8 4-Dr. Sedan	1961(A)	2731	6.50-13
	1962	2751	6.50-13
	1963	2792	6.50-13
	1964	3312	7.00-14
	1965	3368	7.35-14
Chevrolet Bel Air 6-cyl. 4-Dr. Sedan	1958	3587	7.50-14
	1959	3760	7.50-14
	1960	3720	7.50-14
	1961	3620	7.50-14
	1962	3616	7.50-14
	1963	3415	7.00-14
	1964	3468	7.00-14
	1965	3505	7.35-14
Pontiac V-8 Catalina 4-Dr. Sedan	1958	3950	8.00-14
	1959	4093	8.00-14
	1960	4105	8.00-14
	1961	3907	8.00-14
	1962	3937	8.00-14
	1963	3922	8.00-14
	1964	3944	8.00-14
	1965	3968	8.25-14
Chevrolet V-8 Bel Air 3-Seat Station Wagon	1958	3913	8.00-14
	1959	4163	8.00-14
	1960	4120	8.00-14
	1961	4015	8.00-14
	1962	4041	8.00-14
	1963	3993	8.00-14
	1964	4007	8.00-14
	1965	4139	8.25-14
Buick V-8 Electra 4-Dr. Sedan	1958	4835	8.00-15
	1959	4688	8.00-15
	1960	4459	8.00-15
	1961	4429	8.00-15
	1962	4409	8.00-15
	1963	4368	8.00-15
	1964	4312	8.00-15
	1965	4492	8.85-15

(A) First year of production.

EXHIBIT 4

GENERAL MOTORS CORPORATION
VEHICLE WEIGHT AND TIRE SIZE (Cont'd)

	Model Year	Curb Weight	Tire Size
Cadillac "75" Limousine	1958	5374	8.20-15
	1959	5444	8.20-15
	1960	5572	8.20-15
	1961	5497	8.20-15
	1962	5536	8.20-15
	1963	5432	8.20-15
	1964	5443	8.20-15
	1965	5387	8.20-15

9-3-65

EXHIBIT 4-a

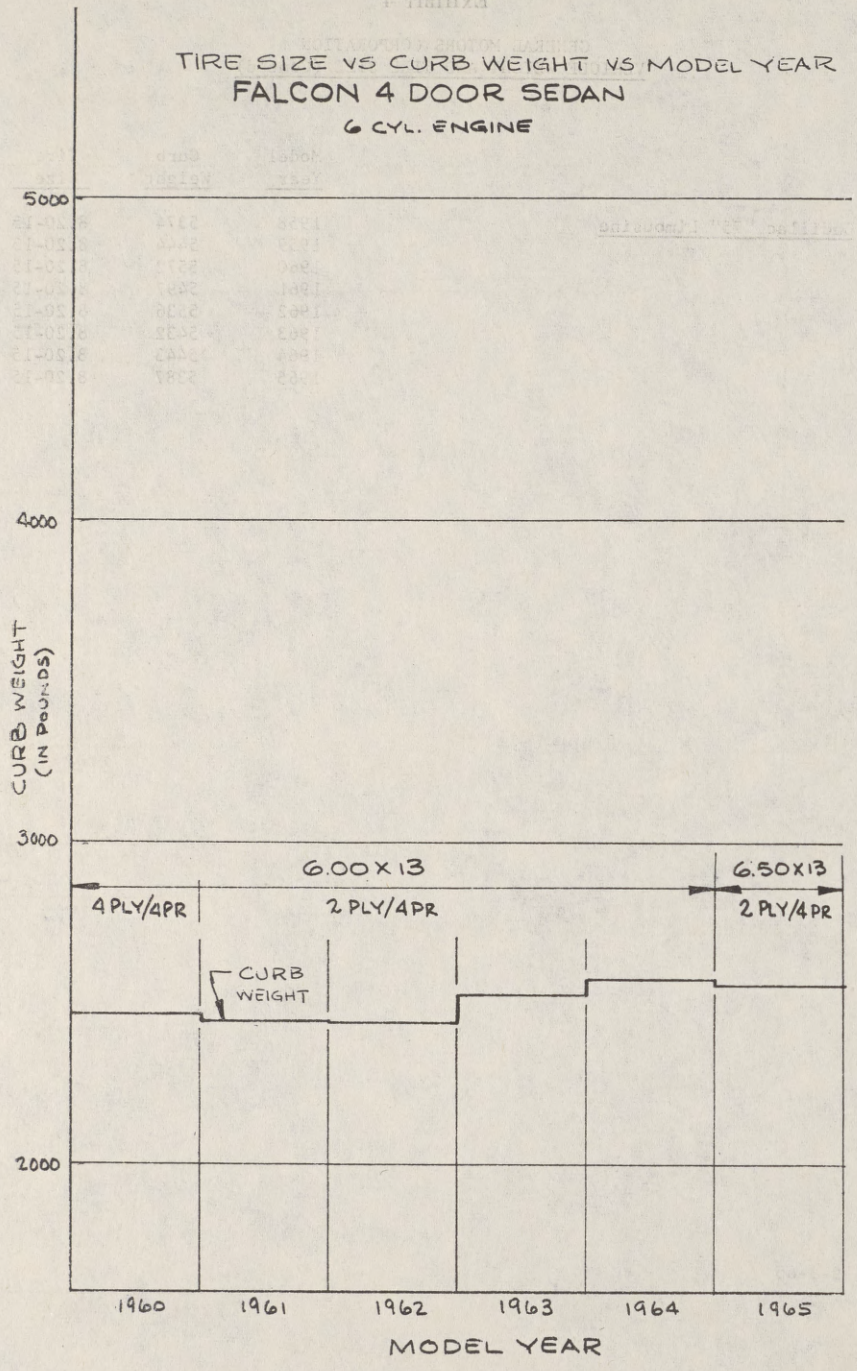

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
FALCON 4 DOOR SEDAN
6 CYL. ENGINE
5000
4000
3000
2000
CURB WEIGHT (IN POUNDS)
6.00 X 13
6.50 X 13
4 PLY/4PR
2 PLY/4PR
2 PLY/4PR
CURB WEIGHT
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4–b

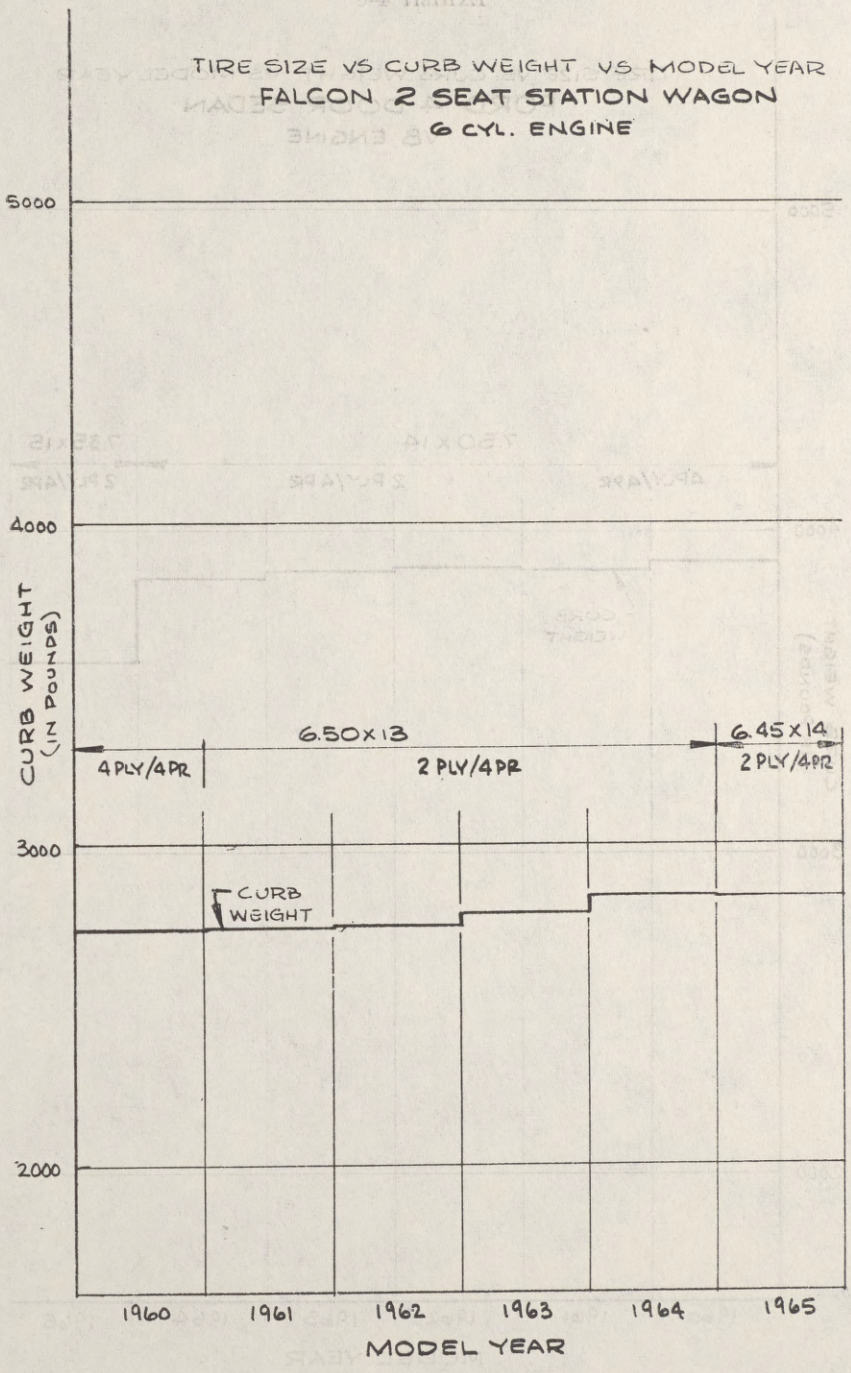

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
FALCON 2 SEAT STATION WAGON
6 CYL. ENGINE
5000
4000
3000
2000
CURB WEIGHT (IN POUNDS)
6.50X13
4 PLY/4 PR
2 PLY/4 PR
6.45X14
2 PLY/4 PR
CURB WEIGHT
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4–c

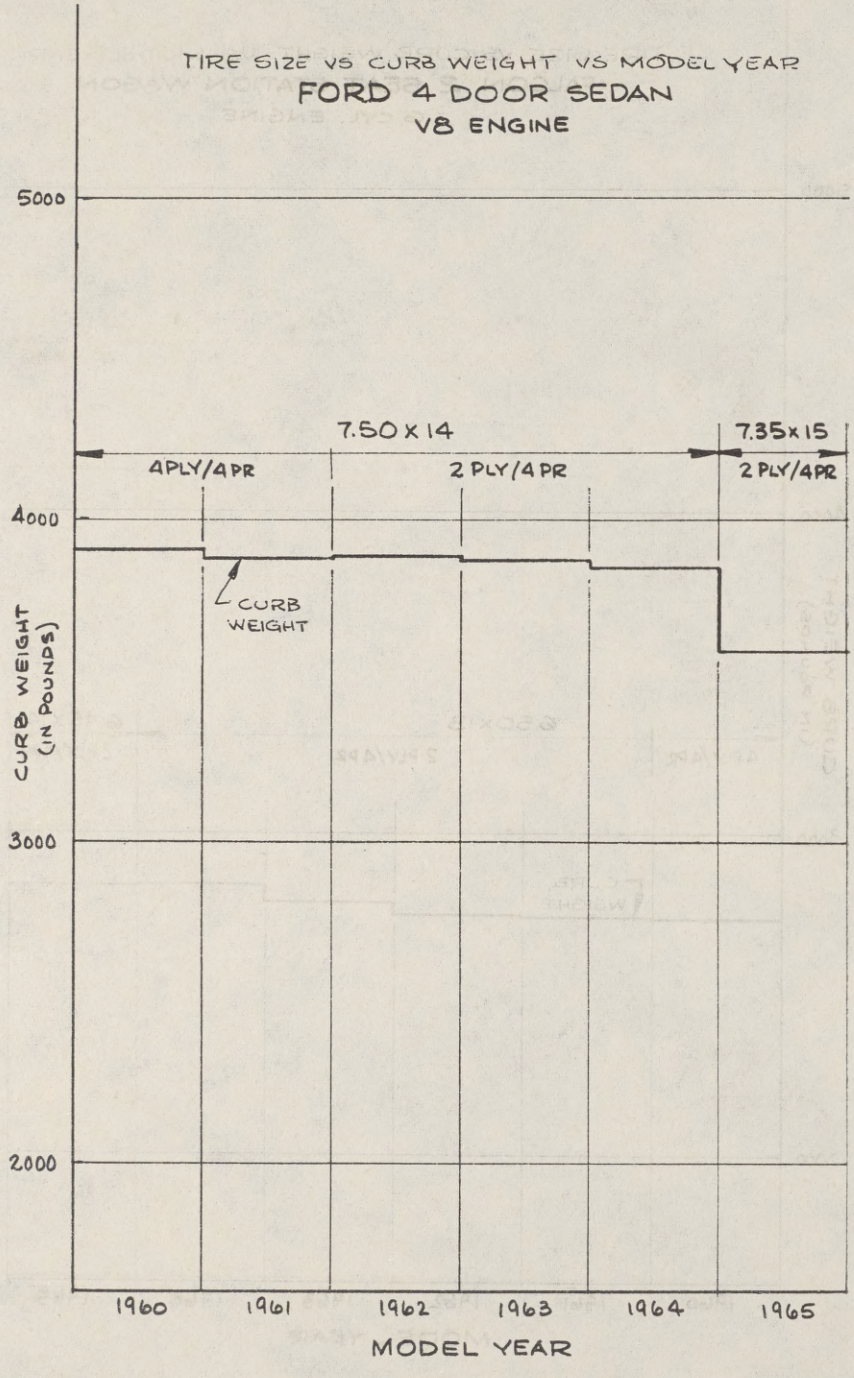

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
FORD 4 DOOR SEDAN
V8 ENGINE
5000
4000
3000
2000
7.50 X 14
7.35x15
4PLY/4PR
2 PLY/4 PR
2 PLY/4PR
CURB WEIGHT
CURB WEIGHT (IN POUNDS)
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4–d

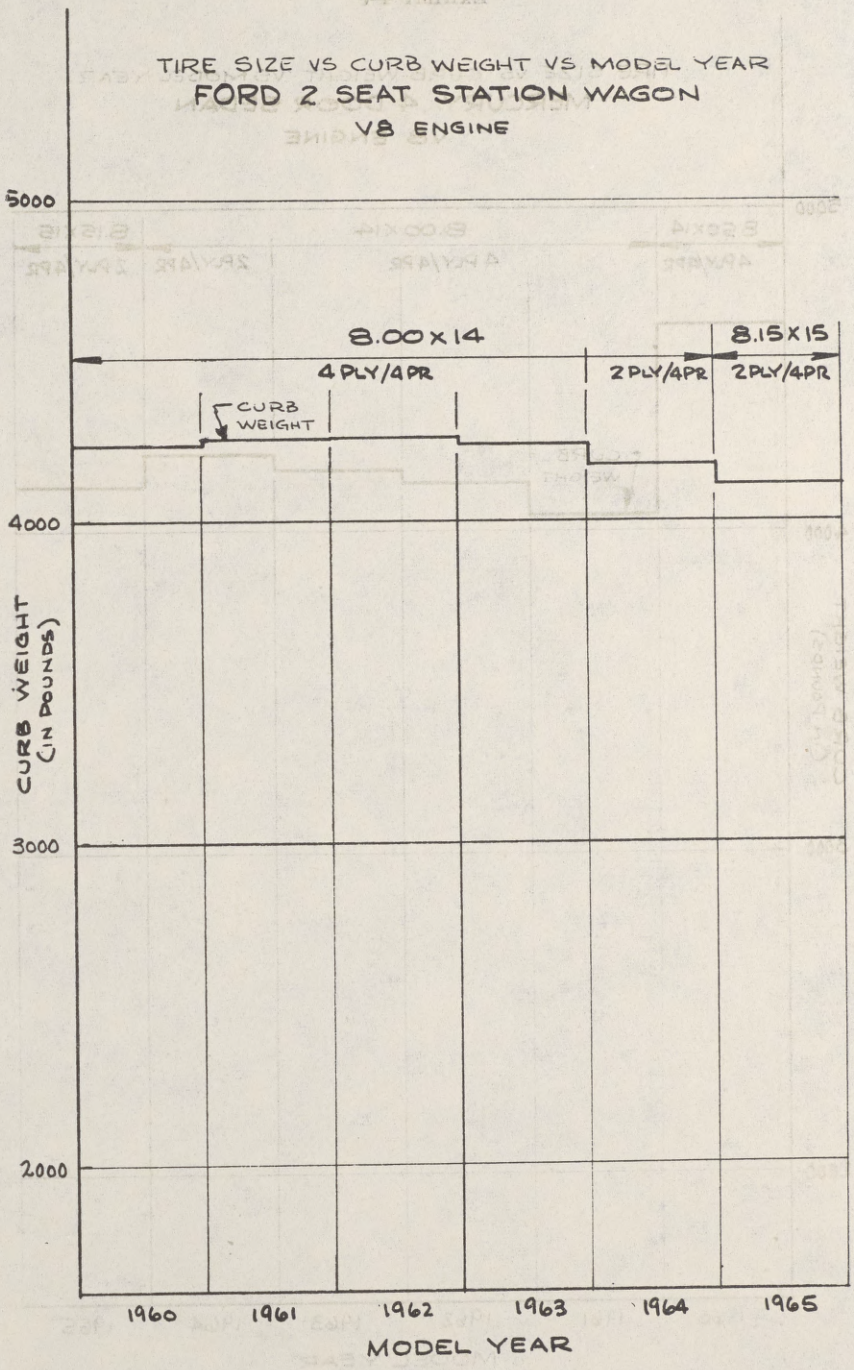

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
FORD 2 SEAT STATION WAGON
V8 ENGINE
5000
4000
3000
2000
8.00 X 14
8.15 X 15
4 PLY/4PR
2 PLY/4PR
2 PLY/4PR
CURB WEIGHT
CURB WEIGHT (IN POUNDS)
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4–e

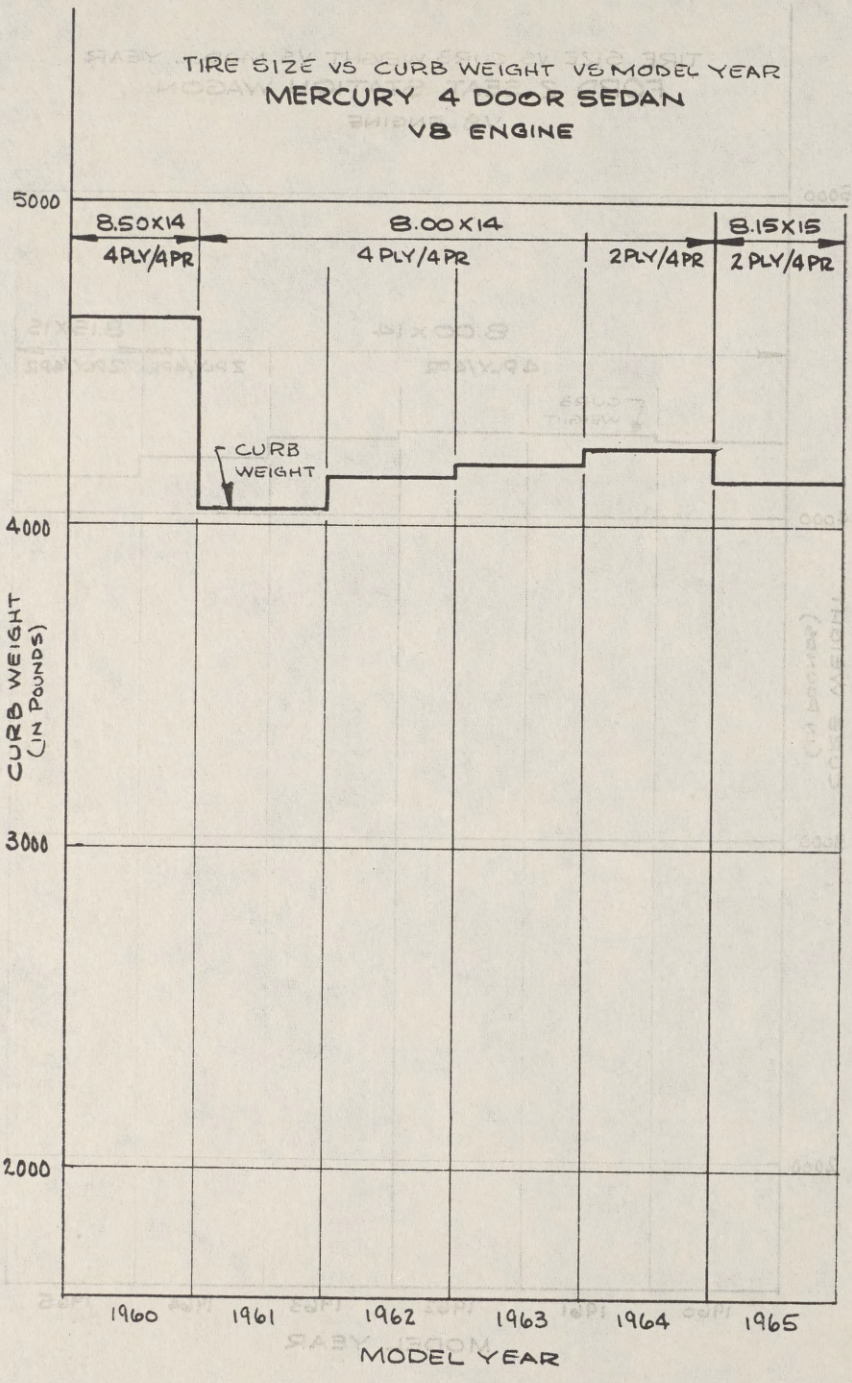

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
MERCURY 4 DOOR SEDAN
V8 ENGINE
5000
4000
3000
2000
8.50X14
4 PLY/4 PR
8.00X14
4 PLY/4 PR
2 PLY/4 PR
8.15X15
2 PLY/4 PR
CURB WEIGHT
CURB WEIGHT (IN POUNDS)
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4-f

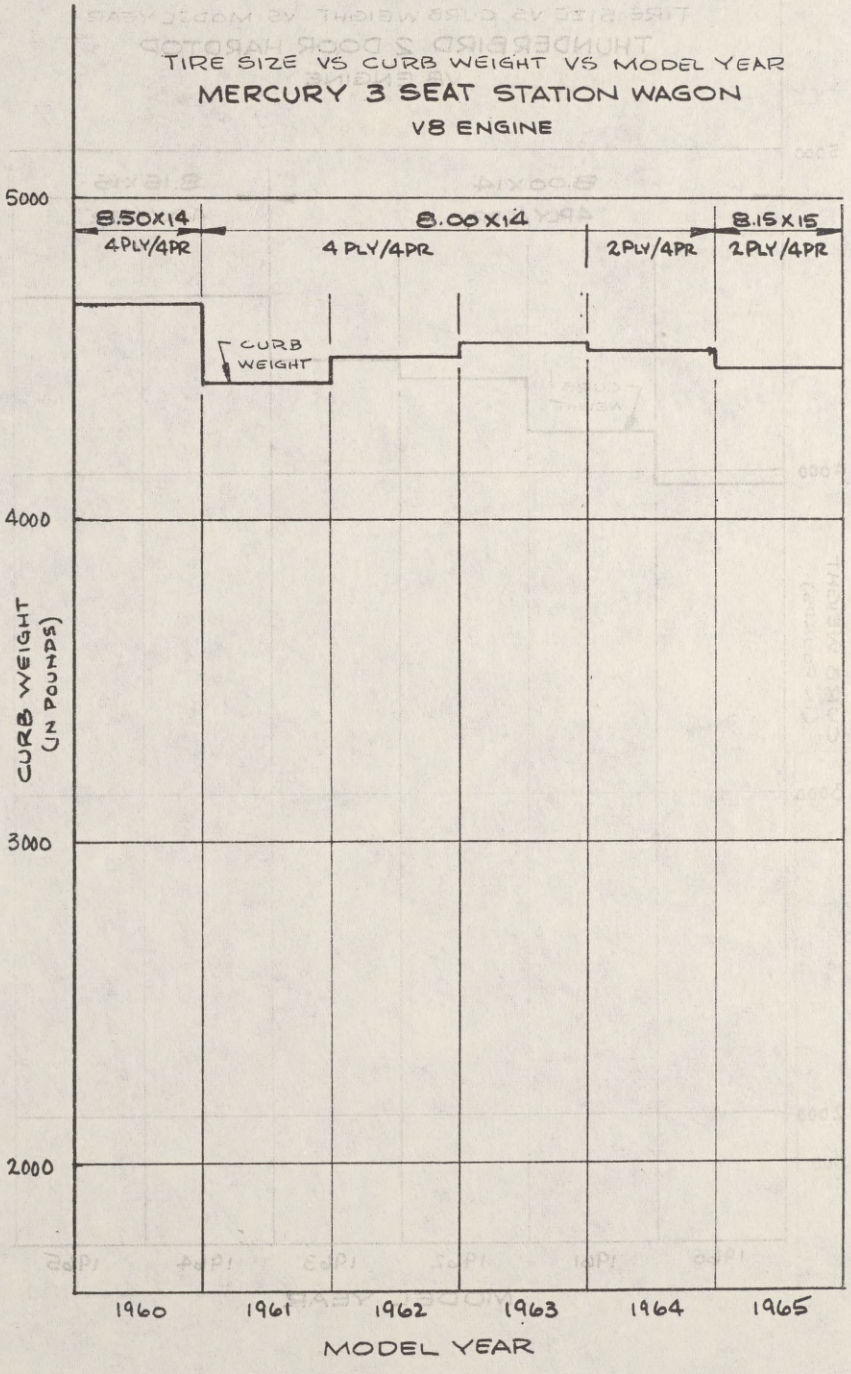

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
MERCURY 3 SEAT STATION WAGON
V8 ENGINE
5000
4000
3000
2000
CURB WEIGHT (IN POUNDS)
8.50X14
4PLY/4PR
8.00X14
4 PLY/4PR
2PLY/4PR
8.15X15
2PLY/4PR
CURB WEIGHT
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4-g

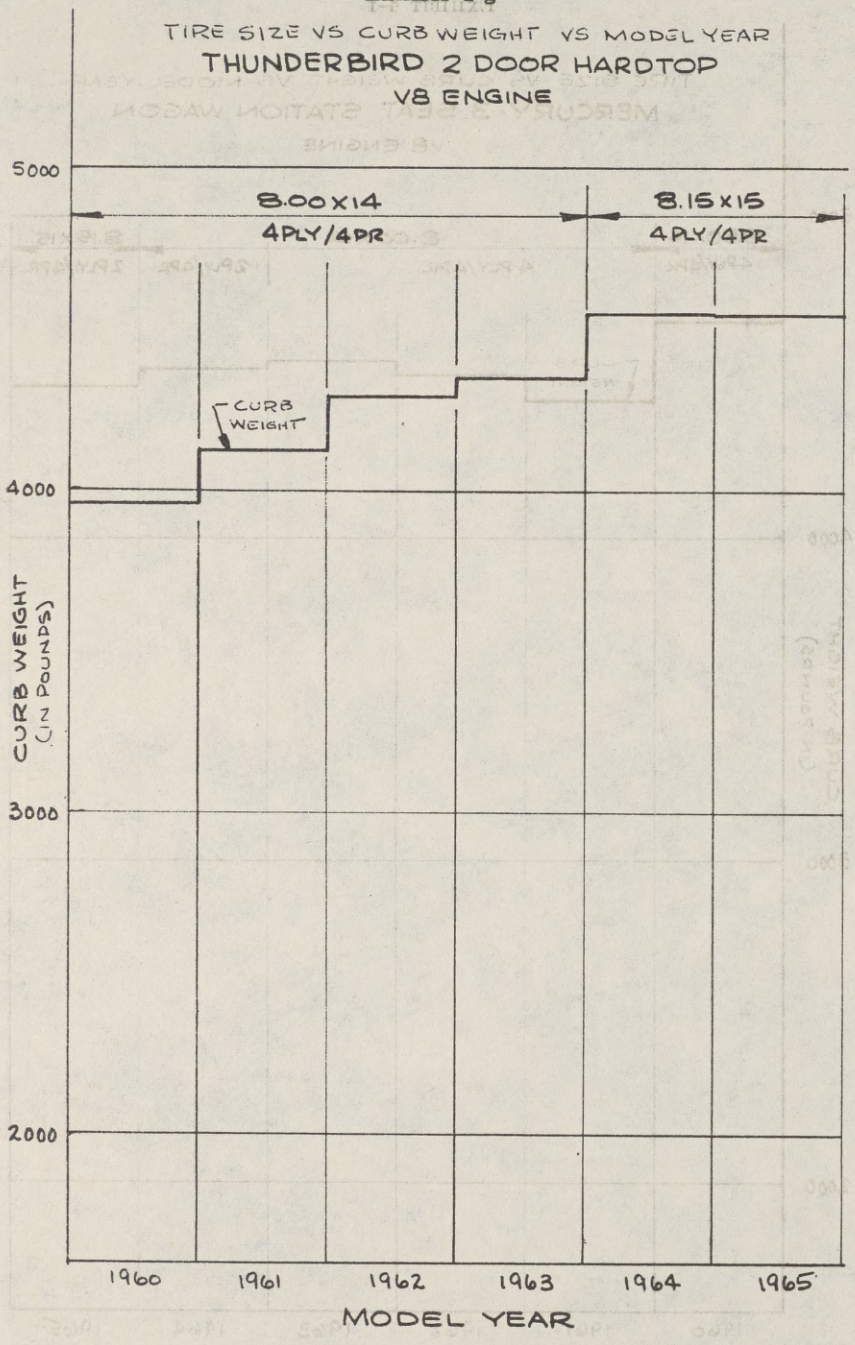
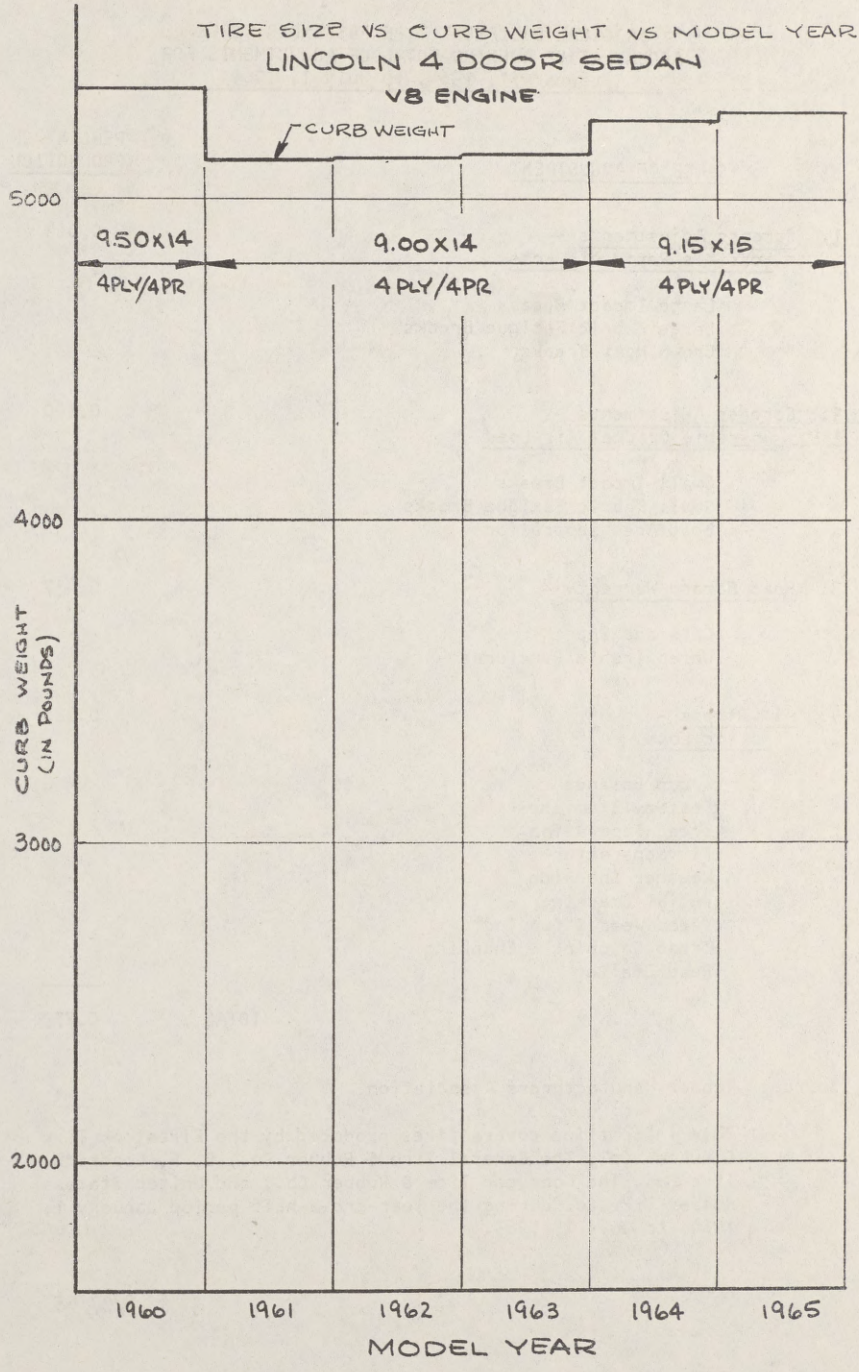

TIRE SIZE VS CURB WEIGHT VS MODEL YEAR
THUNDERBIRD 2 DOOR HARDTOP
V8 ENGINE
5000
4000
3000
2000
8.00 X 14
4 PLY/4 PR
8.15 X 15
4 PLY/4 PR
CURB WEIGHT
CURB WEIGHT (IN POUNDS)
1960
1961
1962
1963
1964
1965
MODEL YEAR

EXHIBIT 4–h



54–441—65——15

EXHIBIT 5

ORIGINAL EQUIPMENT TYPE PASSENGER TIRES
ACCUMULATIVE RUNNING TOTAL OF ADJUSTMENTS FOR
January 1, 1964, to July 1, 1965

CAUSE OF ADJUSTMENT	PERCENT OF PRODUCTION
1. Carcass Adjustments - Possible Rapid Air Loss	0.014
Large Impact Breaks Large Fabric Fatigue Breaks Crown Heat Breaks	
2. Carcass Adjustments - Possible Gradual Air Loss	0.100
Small Impact Breaks Small Fabric Fatigue Breaks Bead Area Separation	
3. Road Hazard Warranty -	0.437
Cuts and Snags Unrepairable Punctures	
4. All Others - No Air Loss	0.226
Thump Balance Factory Blemishes Tread Separation Ply Separation Weather Checking Radial Cracking Tread Wear & Cupping Tread Chipping & Chunking Bead Chafing	
TOTAL	0.777

Source: Rubber Manufacturers Association

This information covers tires produced by the Firestone Tire & Rubber Co., The General Tire & Rubber Co., B. F. Goodrich Tire Co., The Goodyear Tire & Rubber Co., and United States Rubber Tire Co. during the year-and-a-half period January 1, 1964, to July 1, 1965.

8/27/65

(NOTE.—The committee requested information concerning the cost of equipping cars with the next larger size tire. That question was referred to the individual automobile manufacturers for consideration. The committee received answers from a portion of the industry. That information is being retained in the committee files.)

CITY OF RICHMOND,
Richmond, Va., May 18, 1965.

WARREN MAGNUSON,
Chairman, Senate Commerce Committee,
Washington, D.C.

DEAR SENATOR MAGNUSON: I understand your committee will hold hearings on S. 1643 to authorize the Secretary of Commerce to establish minimum standards and a system of grading and labeling for motor vehicle tires.

As purchasing agent for the city of Richmond, Va., and having been in this position for nearly 25 years, I trust you will permit me to add every iota of support within my power for this bill. This subject is one of extreme importance to Americans throughout our entire country.

There are two factors to be considered, and the first is safety. Just this immediate past weekend, from Friday morning, May 14, to midnight, Sunday, May 16, 22 persons were killed on the streets and highways of the State of Virginia. Of course, how many of these deaths were due to tire failures, I am unable to say, but from past statistics, it is a certainty that some percentage of this number would be living today if a tire had not failed in service.

Now relative to the second factor, our city has nearly 1,500 pieces of motorized equipment. A considerable number of these units are emergency type, such as fire, police, etc. In purchasing tires for our city, we naturally make every effort humanly possible to secure safe tires. Under conditions existing today, we have absolutely no way in the world that we can determine the quality of tires.

In purchasing any commodity, it is our dedicated objective to obtain the very best dollar value possible. No sound purchasing agent would think, as a usual thing, of purchasing commodities on a lowest cost basis, but when it comes to securing automobile tires, no vendor can give us sufficient evidence to justify our paying a higher price for one tire over another. We, therefore, find ourselves in the position of having to buy the tire with the lowest cost.

Of course, most all tire manufacturers have a first line, second line, and possibly a third or fourth line. No one can tell the difference by looking at them, and consequently if we purchase anything except the lowest price tire, we have no justification whatever in case our expenditure of tax funds for this commodity is attacked.

Being a governmental entity, we are required under statute to purchase tires on a sealed, competitive bid baisis, and it is most unfortunate for many reasons, not only for our city but all users of tires, to be unable, because of lack of quality tire standards, to write a specification that would enable us to intelligently buy this commodity.

This is truly a ridiculous and pathetic situation, and I know of no other source to turn for relief but to the Government of the United States. May I urge with all my being that immediate action be taken to correct this situation, which will mean the saving of untold lives and millions of dollars.

Very truly yours.

J. W. HUFFMAN, *Director.*

KOKOMO, IND., *July 23, 1965.*

HON. VANCE HARTKE,
Senator from Indiana,
Washington, D.C.

DEAR SIR: After reading No. 6 of your recent memorandum concerning Hartke bills now before Congress, the part that is to provide automobile and tire safety standards, I am enclosing a Xerox copy of my plan and drawing of what I named "Construction of Safer Automobiles."

I hope this will be of benefit to you and to the people of the United States.

I have the honor to remain,

Yours very truly,

LEONARD M. JOHNSON.

DESCRIPTION OF THE CONSTRUCTION OF SAFER AUTOMOBILES

Date: January 30, 1959.
Submitter: Leonard M. Johnson, 905 West Walnut Street, Kokomo, Ind.

CONSTRUCTION OF SAFER AUTOMOBILES

The plan I have for the construction of automobiles which I think can make them safer and reduce the number of fatalities in automobile accidents is as follows:

As shown in the accompanying drawings the front and back ends of the automobile come to a point in the middle.

A flat, wide, strong, and smooth bumper with no crosspieces on the outside, well braced to the frame of the automobile either extends entirely around each of the two ends of the automobile or entirely around the automobile.

The reason for the ends of the automobile being this shape and the bumper arranged in this way is so that in a head-on collision or if an automobile bumps into another from behind, if both cars are shaped this way, there will not be that sudden stop, but the automobiles might glance to one side. This might not be as dangerous as a sudden stop.

Added protection might be had in the above cases and also if another automobile would strike the side of the automobile if the same kind of bumper also completely extended the full length of the automobile along both sides of the automobile.

The bumper on the door and where the bumper passes the wheels, the bumper could be in sections well braced on the inside.

If you think the bumper should extend past the front wheels for protection in a collision, here are some plans for the front wheels. You might have either one usual size or smaller front wheel, or two usual size or smaller front wheels side by side placed in the middle of the very front part of the automobile. If the front wheels would be placed this way the automobile might upset more easily though, it might be rougher riding on a gravel road where the gravel is scraped into the middle of the road, and it might be more difficult in snow where the front wheels make different tracks than the rear wheels. Other arrangements for the front wheels are: The front wheels might be either arranged as in past years the same distance apart as the rear wheels, or maybe a little closer together, or closer to the rear wheels, or the body of the automobile and bumper wider if necessary so the front wheels could be inside of the bumper if you think the bumper should extend past the front wheels.

This plan of bumper might make the automobile some longer, unless the wheelbase is shortened, but because of the shape of the ends, in parallel parking along the side of a street the front end could move past the other automobile, so I wonder if any more space would be needed to park in as no space would be needed between the ends of the automobiles if all automobiles were built this way.

This is quite a change in the shape of the ends of automobiles but changes have been made in the past on automobiles. It is somewhat the shape of the top of the front end of a boat and streamlined.

See the attached drawing.

Signature of submitter:

LEONARD M. JOHNSON.

Date: February 2, 1959.
Full address of submitter: 905 West Walnut Street, Kokomo, Ind.

The above plan for the construction of safer automobiles has been explained to the two following witnesses and we fully understand it.

Witness:

ESTHER K. JOHNSON.

Date: February 2, 1959.
Witness:

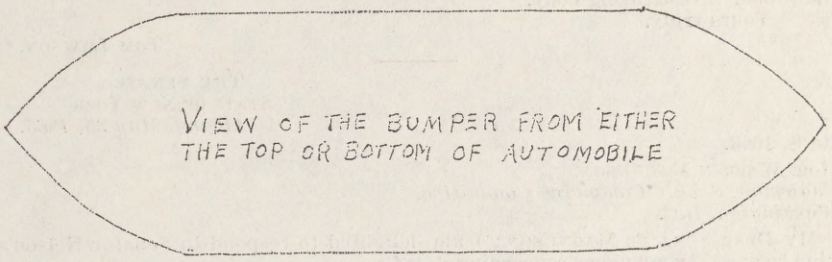
JOYCE M. JOHNSON.

Date: February 3, 1959.
[SEAL]

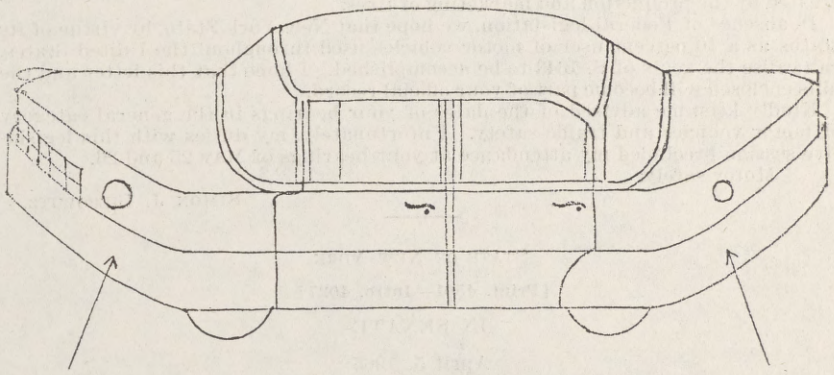
E. MAXINE JENKS,
Notary Public, Howard County, Ind.

My commission expires: January 29, 1968.

DRAWINGS FOR THE "CONSTRUCTION OF SAFER AUTOMOBILES"
DATE: JANUARY 30, 1959,.. SUBMITTER: LEONARD M. JOHNSON
905 WEST WALNUT STREET, KOKOMO, INDIANA, PHONE GL 2-4474.



THE DRAWING BELOW SHOWS THE LEFT HALF OF THE AUTOMOBILE



A FLAT, WIDE, STRONG, AND SMOOTH BUMPER WITH NO CROSS-PIECES ON THE OUTSIDE, WELL BRACED TO THE FRAME OF THE AUTOMOBILE, EITHER EXTENDS ENTIRELY AROUND EACH OF THE TWO ENDS OF THE AUTOMOBILE OR ENTIRELY AROUND THE AUTOMOBILE.

SECURITY BENEFIT LIFE INSURANCE CO.,
Topeka, Kans., September 10, 1965.

Hon. CHESTER L. MIZE,
Cannon House Office Building,
Washington, D.C.

DEAR SIR: On our recent vacation, we found it necessary to replace three tires on my new Chevrolet Impala station wagon. They were "four-ply rated two-ply tires" made by B. F. Goodrich and had less than 7,000 miles on them. We discovered that they were literally coming apart at the seams.

After a great deal of apprehension about my family's safety, much inconvenience in locating a Goodrich dealer, the loss of 3 hours travel time and the un-

expected expenditure of $92.98, I got my tires "adjusted" to four-ply tires of "premium" quality. I still have one two-ply tire I intend trading as soon as I recover from the $92 I had not expected to spend. Fortunately, we discovered this tire disintegration before we started across the desert between Tucson and Yuma, Ariz.

I have heard so many complaints and so much criticism of two-ply tires that I would like this letter to become part of the record. Would you please refer it to the proper investigating body.

Yours truly,

TOM LAWSON.

THE SENATE,
STATE OF NEW YORK,
Albany, May 25, 1965.

Re S. 1643.

Hon. WARREN MAGNUSON,
Chairman, Senate Commerce Committee,
Washington, D.C.

MY DEAR SENATOR MAGNUSON: I am delighted to respond to Senator Nelson's kind request for my views concerning S. 1643.

We, in the New York State Legislature, recognize the compelling need for such legislation as Mr. Nelson introduced. I have succeeded in passing the enclosed three bills in the New York State Senate, and I trust they will ultimately pass the assembly and become law.

You will note that the enclosed bills are similar to your S. 1643. We believe that Federal legislation is more ideally suited to a solution of the many problems created by the production and marketing of tires.

In absence of Federal legislation, we hope that New York State, by virtue of its status as a 10 percent user of motor vehicles used throughout the United States, can cause the goals of S. 1643 to be accomplished. I hope that this letter and the bills enclosed will become part of your official record.

Kindly keep me advised of the dates of your hearings in the general category of motor vehicles and traffic safety. Unfortunately, my duties with this legislative session precluded my attendance at your hearings of May 25 and 26.

Motor safely,

SIMON J. LIEBOWITZ.

STATE OF NEW YORK

[Print. 4501—Intro. 4027]

IN SENATE

April 5, 1965

Introduced by Mr. LIEBOWITZ—read twice and ordered printed, and when printed to be committed to the Committee on Motor Vehicles and Transportation

[EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.]

AN ACT To amend the vehicle and traffic law, in relation to listing of maximum load to be carried by motor vehicle

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section three hundred seventy-five of the vehicle and traffic law is hereby amended by inserting therein a new subdivision, to be subdivision thirty-four, to read as follows:

34. Every motor vehicle registered in this state and manufactured or assembled after June thirtieth, nineteen hundred sixty-six, shall have a metal or plastic sign or decal attached to such vehicle, in such position and in letters which can be read from the drivers seat, stating the number of pounds of persons and baggage above the gross weight of the vehicle which can be carried in such vehicle without the tires thereon reaching the tire and rim maximum load.

§ 2. This act shall take effect June thirteenth, nineteen hundred sixty-six.

STATE OF NEW YORK

[Print. 4502—Intro. 4028]

IN SENATE

April 5, 1965

[EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted]

Introduced by Mr. LIEBOWITZ—read twice and ordered printed, and when printed to be committed to the Committee on Motor Vehicles and Transportation

AN ACT To amend the vehicle and traffic law, in relation to minimum safety and performance standards for automotive tires

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Legislative intent. It shall be the intent of this legislature to establish a set of minimum safety and performance standards for all automotive vehicle tires and tubes to be sold and marketed in New York state in the future.

It was revealed by testimony and evidence taken and acquired by the joint legislative committee on motor vehicles and traffic safety; by the Federal Trade Commission; and by other investigative bodies, that the consuming public has little or no knowledge of the quality of the automotive tires and tubes that it purchases and does not have any way possible in which to determine the quality of the tires and tubes it purchases; therefore, it is in the greatest public interest that a set of minimum, determinable standards be established by some authority.

It is intended by this act that the commissioner of motor vehicles shall determine and issue a set of minimum safety standards for automotive tires and tubes to be sold in the state of New York. In so determining an adequate set of standards, the commissioner of motor vehicles should cooperate with other state, federal and local agencies, with private institutions, organizations, agencies and companies, and especially with any industries that would be involved therewith.

Where other instrumentalities have established and prescribed standards for automotive tires and tubes, the commissioner of motor vehicles may, when feasible and if in the best interests of the New York motoring public, adopt, use or be guided by same in making his determination.

Reference should be made to those standards prescribed by the federal general services administration under public law 88–515; by those that may be prescribed by the vehicle equipment safety commission; by other similar groups and should include, but not be restricted by, consideration of the following factors of automotive tires and tubes:

1. Size.
2. Load carrying ability and its relation to the type of service it is to render.
3. Year characteristics.
4. Rubber compounding and skid resistance.
5. Blow-out resistance.
6. Fail-safety principles.
7. Resistance to curb striking, and pothole or bump damage.
8. Cornering ability.
9. Rim resistance.
10. Any other factor that may relate to the safe use of the tire and tube.

The safety of the motoring public of this state is of the gravest concern to this legislature and would be greatly enhanced by the carrying out of this act.

§ 2. The vehicle and traffic law is hereby amended by inserting therein a new section, to be section three hundred eighty-three-a, to read as follows:

§ 383–a. Tires; minimum safety and performance standards. The commissioner shall on or before January thirty-first, nineteen hundred sixty-six determine and issue and promulgate rules and regulations relating to minimum safety and performance standards for all automotive tires to be sold or offered for sale within the state on and after July first, nineteen hundred sixty-six and shall review and, if necessary, in his discretion, adjust and amend such rules and regulations at least once each year.

1. On and after July first, nineteen hundred sixty-six, no person, firm association, or corporation shall sell, offer or expose for sale or have in his possession

with intent to sell any motor vehicle tire or motorcycle tire unless said motor vehicle tire or motorcycle tire is of such a type as to meet the minimum safety and performance standards issued or promulgated by the commissioner. Included under the provisions herein are tires affixed to motor vehicle or motorcycle when such motor vehicle or motorcycle is sold in its entirety.

2. The provisions of this section shall apply only to motor vehicles registered under the provisions of subdivision six of section four hundred one and motorcycles registered under section four hundred ten of this chapter.

3. Any person who violates any of the provisions of this subdivision shall be punishable by a fine not exceeding five hundred dollars or by imprisonment not exceeding ninety days or by both such fine and imprisonment.

§ 3. This act shall take effect immediately.

STATE OF NEW YORK

[Print. 4503—Intro. 4029]

IN SENATE

April 5, 1965

[EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted]

Introduced by Mr. LIEBOWITZ—read twice and ordered printed, and when printed to be committed to the Committee on Motor Vehicles and Transportation.

AN ACT To amend the vehicle and traffic law, in relation to standards and labeling of automotive tires

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Legislative intent. It shall be the intent of this legislature, in order to protect the consuming public of the state of New York from misrepresentations and confusions in the purchase of automotive tires, to establish a standardized definition of terms and phrases which would be required to be used by sellers of said tires in merchandizing his products.

It was shown from the evidence acquired and testimony taken by the joint legislative committee on motor vehicles and traffic safety, by the Federal Trade Commission; and by other investigative bodies that there are no reliable guides to quality in the phraseology and nomenclature used by the tire industry to aid the consumer in determining tires he is buying. It appears that the stated position of the tire manufacturing industry is that the best standard of the quality of a tire is the "discriminating and sophisticated taste of the American consumer", and yet, any manufacturer may call any tire he makes "first line premium" or by any other title, which title has a meaning known only to the manufacturer himself and that these titles have no identifiable relation to the same title when used by a competitor. This can only confuse, and not inform, the buying public.

Additionally, it seems that the grades, levels or other terms used in marketing tires relate only to the pricing ranges. While many terms are used widely by the tire industry, they have little common meaning and cannot be useful to the consumer in making his determination of quality. It is recognized that tires are complex products and it is not the intention of this legislature to force the tire industry to produce identical products, but rather, products that meet reasonable safety standards and which can be identified by the consumer by meaningful information provided by the manufacturer. The establishment of a standard definition of terms or grades to be used by the tire industry can help accomplish this purpose and be an asset to the people of the state of New York.

The commissioner of motor vehicles shall determine and issue rules and regulations relating to standard terms and phrases with their meanings, to be used in the labeling and marketing of automotive tires in the state of New York.

§ 2. The vehicle and traffic law is hereby amended by inserting therein a new section, to be section three hundred eighty-three-a, to read as follows:

§ 383-a. Tires; standards; labeling. The commissioner of motor vehicles shall collect and study the recommendations of government, trade, industry and consumer groups relating to automobile tire labeling and on or before January

thirty-first, nineteen hundred and sixty-six issue and promulgate rules and regulations as a basis for a grading and labeling system relating to automotive tires to be sold in New York state after July first, nineteen hundred sixty-six.

1. On or after July first, nineteen hundred sixty-six, no person, firm, association or corporation shall sell, any tire, for use on a motor vehicle, unless he shall deliver to the purchaser a label or written statement containing a representation of the quality and standards of the tire, in conformity with specification as promulgated by the commissioner of motor vehicles as required by this act.

2 Any person who violates any of the provisions of this subdivision shall be punishable by a fine not exceeding five hundred dollars or by imprisonment not exceeding ninety days or both such fine or imprisonment.

§ 3. This act shall take effect immediately.

JULY 13, 1965.

MR. ARJAY MILLER,
President, Ford Motor Co.,
Dearborn, Mich.

DEAR MR. MILLER: On June 10, 1965, I wrote to the four major American automobile manufacturers asking a series of questions on automobile tire safety. All of the manufacturers have answered the questions in that letter, and I have forwarded their replies to the Senate Commerce Committee which is considering my bill (S. 1643) to set up a national system of tire grading and labeling. I thank you for the courtesy and promptness of your reply.

At this time, I would like to ask further questions growing out of this earlier exchange of correspondence.

As I stated in my earlier letter, expert testimony before the Federal Trade Commission and the Senate Commerce Committee has indicated that many new car tires are seriously overloaded when the vehicles are filled to their designed capacity with passengers and luggage.

I think you will agree that your replies to my questions about this testimony have fully confirmed it. The automobile manufacturers concede that most new cars have tires which will not safely carry the full load of the car unless the tires are specially inflated. I think this is a shocking situation.

For example, American Motors, in reply to my June 10 letter, stated that: "Original equipment 4-ply rated 2-ply tires * * * are adequate for occasional full-load service with the inflation pressures recommended above."

This statement concedes that the vehicle as delivered is not adequate for full-load service unless the motorist takes special precaution to inflate his tires to high pressure. Secondly, it indicates that even after taking those precautions the tires are not adequate for more than "occasional" full-load service.

General Motors stated that its cars could safely carry a full load provided tire inflation was increased from 24 to 30 pounds. Ford stated that its six-passenger sedan could carry a full load of six passengers and 200 pounds of luggage provided the tires were specially inflated from 24 to 32 pounds, and that a Ford station wagon could carry eight passengers and 100 pounds of luggage if the rear tires were inflated to 36 pounds. Chrysler did not answer in such detail, merely stating that tires were adequate to carry full loads "provided they are properly maintained." However, I assume that the same requirement as to overinflation exists with Chrysler cars because they appear to use similar tires and to have similar weights when compared with their competitors.

I think it is both unrealistic and dangerous to expect the average American motorists to calculate the weight of their cars and passengers and their accessories to within 100 pounds, and then inflate and deflate their tires to handle such loads.

Further, a Tire & Rim Association official tells me that the overinflation of tires carries serious risks and that tire pressures as high as some which you recommend—in order to carry a perfectly typical load—create the danger of blowouts.

Your own safety research shows that the tires on many of your cars cannot safely carry the people and the luggage for which the cars are designed without special inflation precautions. Why not correct this situation by supplying the next larger size of tire?

I think it would be much more satisfactory if the manufacturers corrected this situation. However, if it is not corrected, I think legislation is necessary and inevitable.

From reading of the manuals and other literature which you and the other automakers have supplied me as a result of my June 10 letter, it would appear that you are already prepared to supply fully adequate tires at prices ranging from $15 to $22 extra per car. This would be a very modest increase in the automobile price and would greatly increase highway safety for all.

In my letter of June 10, I asked whether the present labels on tires were adequate in order to enable motorists to make an intelligent selection. All of the automobile makers replied by stating that the tires supplied with their cars were adequately marked with the size and ply rating.

However, it was not indicated that the important matter of ply or ply rating is, in most cases, carried on the inner sidewall of the tire where it is invisible to an automobile customer—where he could not see it, in fact, without crawling under the car or removing the wheel.

Would you please advise me whether the placement of the ply rating on the inside of the tire was done at the request of the auto manufacturers or on the initiative of the tire manufacturers.

If the ply rating label is of any significance at all, it is difficult to understand why it should be placed in a position on the tire so as to be invisible to the customer. The natural assumption arises that it was so placed to conceal this important fact.

Thank you again for the information which you have provided.

Sincerely yours,

GAYLORD NELSON, *U.S. Senator.*

(NOTE.—Identical letters were sent to Chrysler, General Motors, and American Motors.)

CHRYSLER CORP.,
July 23, 1965.

Hon. GAYLORD NELSON,
U.S. Senate,
Senate Office Building,
Washington, D.C.

DEAR SENATOR NELSON: Mr. Townsend has asked me to answer your letter of July 12 concerning your bill, S. 1643.

As we indicated in our previous reply, Chrysler Corp. has always placed special emphasis on those factors which affect the safety of our vehicles. This includes a very careful evaluation for safety and performance of the types and sizes of original equipment tires supplied on the vehicles we manufacture. Our tires are selected by experienced engineers after careful study of laboratory statistics, and after extensive testing in our laboratories, on our proving grounds, and on fleet vehicles.

In the opinion of these engineers, the original equipment tires supplied on Chrysler Corp. cars are safe and more than adequate to carry six passengers plus a reasonable amount of luggage cross country at legal turnpike speeds, provided they are properly maintained. Their opinion has been supported by the extensive experience of our customers. In order to obtain the maximum durability and performance from his tires, the owner must perform a minimum of proper maintenance, as he would with any other part of the car.

To be specific, for optimum performance, tire life, and maneuvering ability, a tire should operate at a specified sidewall deflection. We recommend to our owners that they vary the pressure according to the weight they will haul and the speeds at which they will drive. In this manner, the owner can obtain maximum durability and performance from his tires. Our owner's manual, which we supply with all vehicles, describes in detail how the proper pressures should be maintained.

Our tests indicate that the only abnormal adverse effect of operating a vehicle with tires at the higher pressures specified is a slightly harder ride. Many drivers actually operate their vehicles with tires at the higher pressure regularly without difficulty. We do not agree with the statement attributed to a Tire & Rim Association official to the effect that use of the higher inflation pressures we specify constitutes "overinflation." The tire pressures we recommend are entirely safe.

No tire, regardless of size, will perform at its designed effectiveness without proper maintenance. Even if larger sized tires were supplied, the vehicle operator would still have to perform the necessary maintenance to assure that those

tires were properly inflated. Moreover, a motorist using oversized tires at constant inflation pressures would lose a certain amount of steering ease and handling capability, and would also develop uneven tread wear on his tires. Our experience indicates that our present original equipment tires, properly maintained, perform safely and satisfactorily under the driving conditions most owners encounter. We believe this indicates our tires are properly selected as to size and other characteristics.

To anyone who uses his car for very heavy-duty purposes such as trailer towing, we recommend trailer towing equipment which consists not only of larger tires, but also of heavier chassis components.

The ply rating of the tires we supply as original equipment is marked on the inside of the tire. This placement of tire marking has been the common practice of the tire industry for several years, going back to about 1956. We frankly do not know how it came about, or by whose initiative it was done. We assume it was done for manufacturing purposes and to provide better appearance for the exterior surface of the tire. In any event, it was done at a time when the actual number of plies in the tire was indicated and before ply ratings were subsequently developed about 1962. We are certain it was not done to conceal any important facts from the consumer, since this information is readily available to him from our service information, our dealers, tire dealers, or from inspection of the tire itself.

We hope this will satisfactorily answer your questions, and we would like to assure you again of our willingness to answer any further questions to the best of our ability. If we can offer any further assistance to you in connection with the legislation you have in mind, we would be glad to provide it.

Sincerely,

B. W. BOGAN.

AMERICAN MOTORS CORP.,
Detroit, Mich., July 23, 1965.

Hon. GAYLORD NELSON,
Senate Office Building,
Washington, D.C.

DEAR SENATOR NELSON: Mr. Abernethy has asked the writer to supply the additional information requested in your letter of July 12, 1965. Your letter states: "expert testimony before the Federal Trade Commission and the Senate Commerce Committee has indicated that many new car tires are seriously overloaded when the vehicles are filled to their designed capacity with passengers and luggage.

"I think you will agree that your replies to my questions about this testimony have fully confirmed it. The automobile manufacturers concede that most new cars have tires which will not safely carry the full load of the car unless the tires are specially inflated."

We certainly cannot agree with the conclusions drawn from "expert testimony" nor from the interpretation which has been placed on our report of June 22, 1965. We want to again reaffirm that the original equipment tires used on American Motors cars will perform safely at highway speeds, under full-load conditions, for the full life of the tread when reasonable care is exercised by the customer in maintaining proper inflation pressures as recommended in our Rambler Owners Manual.

With reference to your statement "it would appear that you are already prepared to supply fully adequate tires * * * would greatly increase highway safety for all." Our cars are equipped with tires that will give satisfactory service for the purpose for which the vehicle is designed. We recognize that some owners will subject the vehicle to more than normal service. When continued full-load service is anticipated, oversize tires are available to assure the vehicle owner of increased tread life to cope with the more severe operating conditions.

Even with the use of oversize tires, the owner has the responsibility of maintaining proper inflation pressures.

The primary purpose for recommending inflation pressures is to enable the vehicle owner to optimize tread life, ride, handling, and stability characteristics of both the tire and the vehicle.

With regard to your question of ply rating identification being carried on the inner sidewall of the tire—this marking is placed in this position on the initia-

tive of the tire manufacturer, but for good reasons. Important markings, such as the serial number, the mold number, and ply rating might readily be obliterated because of scuffing against curbs, etc. The ply rating, size, serial number, mold number, etc., have been on the inside of the white sidewall tires supplied on American Motors cars for approximately the last 10 years. If a customer buys new tires for replacement, he can check the markings, if needed, in the process of replacement; and in the case of buying a new car he need only ask the salesman what the ply rating is.

We appreciate the opportunity to clarify and to supply this additional information and should more be required we will be pleased to cooperate.

Sincerely,

R. H. ISBRANDT,
Vice President, Automotive Engineering and Research.

FORD MOTOR CO.,
Dearborn, Mich., August 11, 1965.

Hon. GAYLORD NELSON,
U.S. Senate,
Senate Office Building,
Washington, D.C.

DEAR SENATOR NELSON: In Mr. Arjay Miller's absence from the country, your letter to him dated July 12 has been referred to me.

In your letter you raise three issues growing out of your earlier correspondence with the four major American automobile manufacturers. We shall respond to them as they relate to Ford Motor Co. Before doing so, however, we must express our disagreement with you that our reply to your earlier letter confirms in any way the "expert testimony" to which you refer in your letter, nor do we concede that the tires which we furnish on our vehicles are unsafe.

We should like to address ourselves, first, to the questions of tire size and inflation pressures.

The selection of the proper size tire for a specific vehicle must take into account such factors as stability, ride, steering response, and tire wear in addition to load carrying capacity. All of these are important to the performance and safety of a vehicle. Our experience over the years indicates that we provide the customer the best balance of these factors. We do not agree that the next larger size tire on our cars necessarily would be best for our customers, as you suggest.

We believe that the procedure of increasing inflation of vehicle tires to accommodate the instances of full-load travel is sound, realistic, and of benefit to the owner.

With our present tires, the motorist can readily select the proper inflation pressure from the table in the owner's manual provided with his car. The manual clearly spells out a moderate load and a maximum load in terms of numbers of passengers and pounds of trunk load. We believe it is entirely within the capability of the owner to determine what moderate and maximum loads are.

The tire inflation instructions given in our manuals are not meant to convey to the owner that he is unsafe if, for example, he occasionally exceeds a moderate load and does not add air to his tires. On the other hand, if he is going to operate his vehicle frequently or for extended periods at the heavy load condition, he should maintain the additional air pressure as recommended in order to enjoy the best service life of his tires with maximum safety.

Contrary to the information furnished to you, the tires are not over inflated when the pressure is increased to accommodate a full load condition. Inflating tires on Ford-built vehicles to 36 pounds per square inch as instructed in the owner's manual for certain conditions does not constitute over inflation, and does not represent an unsafe condition. Thus, the tire pressures we recommend for our vehicles do not "create the danger of blowouts" or carry "serious risks," as you indicate you have been told.

With respect to ply rating identification, the placement of ply labels on the inner sidewalls of tires, which we understand is not a uniform practice among all original equipment tire companies, preceded the development of the superior two-ply four-ply rated tires. We have been unable to determine just how the

practice originated, but wish to assure you that we never have had any thought of attempting to conceal the ply rating from the customer. It could be molded on both sides of the tire, and there would be no objection if this were done. Continuing to place the ply rating on the inner sidewall, however, would insure against obliteration which might occur by scuffing if it were only on the outer wall.

We trust that the foregoing satisfactorily answers your additional questions.

Sincerely,

H. L. MISCH.

GENERAL MOTORS CORP.,
Detroit, July 24, 1965.

Hon. GAYLORD NELSON,
U.S. Senate,
Washington, D.C.

DEAR SENATOR NELSON: This will acknowledge your letter of July 12, 1965, dealing with air pressures recommended by motor vehicle manufacturers for new passenger car tires, tire sizes, and tire labeling. We are very glad to comment on the issues raised.

You refer to "expert testimony before the Federal Trade Commission and the Senate Commerce Committee" and state "I think you will agree that your replies to my questions about this testimony have fully confirmed it. The automobile manufacturers concede that most new cars have tires which will not safely carry the full load of the car unless the tires are specially inflated. I think this is a shocking situation."

We cannot agree that our reply to your questions, in our letter of June 18 and attachments, confirm the "expert testimony" to which you refer. We did not "concede" that our vehicles are unsafe to operate with the tires with which they are originally equipped. We pointed out that our owners guides supply full information to owners in regard to air pressures required to be maintained for safe operation under varying operating conditions. We believe that owners should recognize the importance of maintaining proper air pressure to suit varying conditions of vehicle operations just as they recognize the need for meeting seasonal requirements with respect to lubricants and coolants.

We believe that a brief explanation of the function of tires might be useful to this discussion. Without the pneumatic tire the automobile, as we know it today, could not have been developed. In addition to providing steering and breaking control and transmitting power to the road surface, the tire is also an integral part of the suspension system. It is, in fact, a spring that smooths out minor road irregularities in conjunction with the suspension spring which carries the vehicle over large road undulations.

The load supported by the tire is a function of area times pressure, the area being the square inches of tire surface in contact with the ground, or "footprint." The pressure is that of the air confined within the tire.

When an automobile is operated on the highway, it encounters a variety of road surface conditions that impinge on the tire, constantly changing its "footprint." The variability of the product of the change in area and pressure determines the tire spring rate.

Proper absorption or cushioning of road irregularities requires the selection of an appropriate tire spring rate. This is provided through proper tire selection and inflation pressures to meet varying load requirements. In other words, the proper inflation pressure is fundamental to the proper performance of the tire as a part of the vehicle suspension system. In addition, from a safety point of view, unless the recommended tire pressure for the load is maintained within reasonable limits, traction, braking, and steering ability, as well as the wear rate of the tire, are materially affected.

The fundamental principle on which the pneumatic tire is based requires that the load carrying ability of the tire must be dependent on proper air pressure. Theoretically, to obtain maximum efficiency, the tire should have its air pressure adjusted for every change in load. Of course, from a practical point of view this is not possible. However, the great advances in tire technology and materials which have been achieved have provided a broad latitude of tire adaptability to varying loads at a given inflation. Therefore, it has been a common practice in the passenger car industry to recommend different tire pressures for varying loads. General Motors specifies no more than two air pressure settings for Gen-

eral Motors passenger cars, including station wagons, that will cover the full range of loads for which the vehicles are designed.

We believe that the confusion that appears to exist on this subject of proper tire pressures for varying loads arose out of the fact that the Tire & Rim Association design guides, which were intended for use by design engineers, are very difficult for others to interpret. Work has been going on for some time on standards to cover the varying load requirements. We believe that the 1965–66 Tire & Rim Association Yearbook, to be published shortly, covering these standards will be more readily understood.

The confusion that has arisen related particularly to the load-carrying ability of tires inflated beyond 24 pounds per square inch. The 1965–66 T & RA tables will show that inflation of two-ply, four-ply rated tires can be increased safely to 32 pounds per square inch with corresponding increases in load-carrying ability.

You state that you believe that "it is both unrealistic and dangerous to expect the average American motorist to calculate the weight of their cars and passengers and their accessories to within 100 pounds, and then inflate and deflate their tires to handle such loads."

May we refer you to the material under "Question 2" in the attachment to our letter of June 18. Our owners' guides clearly spell out what constitutes an average and maximum load in terms of number of passengers and pounds of trunk load. Accordingly, we believe it is entirely within the capability of the owner to determine what is an average or maximum load.

You mention a "requirement as to overinflation (which) exists with General Motors cars. * * *" You also attribute a statement to a Tire & Rim Association official to the effect that "the overinflation of tires carries serious risks and that tire pressures as high as some which you recommend—in order to carry a perfectly typical load—create the danger of blowouts."

We were concerned about the inconsistency between the statement which you state was made to you by a Tire & Rim Association official and what we believed to be the official position of the Tire & Rim Association. We therefore requested the association to comment. Following is the full text of a telegram received by General Motors on July 20:

"Regarding the statement of Senator Nelson that 'A Tire & Rim Association official has told him that the overinflation of tires carries serious risks and that tire pressures as high as some you recommend—in order to carry a perfectly typical load—creates the danger of blowouts,' we submit the following 'To the knowledge of the Tire & Rim Association office no official of this association has made such statements to Senator Nelson.' In reference to inflation pressures TRA load and inflation tables as published have considered all aspects of tire performance and have been based on design guides for original equipment tire size selection. They have not specified a maximum inflation pressure limit for 'safe' operation but have included certain increases over design inflations to control tire deflection with full loads and at high permissible speeds. In making these recommendations it has been neither stated nor implied that higher inflation would be 'extremely dangerous and could cause blowouts.'

"C. N. DYKES,
"*Executive Vice President, Tire & Rim Association.*"

The increases in pressure recommended in our owner's guides to accommodate higher loads cannot by any technical standard be interpreted as "overinflation." The pressures recommended by General Motors do not carry "serious risks" of failure nor do they "create the danger of blowouts." The inflation which we recommend to accommodate increased loads is within the normal operating range recommended by the Tire & Rim Association for each size tire. We might point out, incidentally, that tires specified for our new passenger cars have a static burst strength equivalent to five times the highest pressure recommended in our owner's guides.

As a matter of further information, the Tire & Rim Association, Inc., then known as the Clincher Tire Manufacturers Association, was formed in 1903 as the technical standardizing group of the tire and rim manufacturers. In 1917 the Tire & Rim Association added into their standards a load and pressure value for each tire and rim combination. Ever since 1917 the load and pressure tables for passenger car tires have been construed to be only a design guide for "average" or "design" loads. Such loads at 24 pounds per square inch inflation pressure have never been intended to indicate the maximum load carrying capability of

a tire. This is as fundamental as the fact that the automobile is not a vehicle designed to operate under only one load condition.

Your letter states that "Your own safety research shows that the tires on many of your cars cannot safely carry the people and the luggage for which the cars are designed without special inflation precautions. Why not correct this situation by supplying the next larger size of tire?"

We are at a loss to understand the basis for your comments about our "own safety research" indicating unsafe conditions in respect to tires. We do agree that certain operating conditions call for special inflation, as outlined in detail in our letter and attachment of June 18. We do not agree, however, that this represents an unsafe condition. The next larger size of tire which you have suggested is not recommended for normal use because under normal operating conditions it does not provide the best ride, handling, or stability characteristics.

As a matter of fact, the additional load carrying capacity of the next larger size of tire at the same inflation is not as great as the gain in capacity available on the original equipment tire by increasing the inflation up to the maximum of the approved range.

For example, as will be shown in the 1965–66 Tire & Rim Association Yearbook, a 7.75–14 two ply-four ply rated tire will carry an additional 230 pounds when inflated from 24 to 32 pounds of pressure per square inch. The next larger size tire—8.25–14—will carry only an additional 110 pounds at 24 pounds of pressure per square inch.

It should be emphasized that the selection of the proper tire size for a given vehicle must take into account—in addition to load carrying capacity—such characteristics as stability, braking, and driving traction, steering response, ride and handling, and uniform tire wear. All of these characterisics play an important part in the performance and safety of the vehicle. Whenever necessary we have increased or decreased the size of the standard tires on our vehicles, in conjunction with the annual model change, so as to achieve the best balance among these qualities. We intend to continue this practice in the future.

In answer to your question concerning the placement of ply rating information on the inner sidewall only, as far as we can discover, there was no uniform pattern among our tire suppliers as to their timing and reasons for changing the labeling with reference to ply ratings from the outer to the inner sidewall. Certainly there was no intent to conceal important facts. If it is thought desirable, we believe that the tire manufacturers would be willing to add ply rating information to the outer sidewall by changing their tire molds.

Perhaps an explanation of the term "ply rating" would be useful. The term originated with the introduction of large size rayon cord in truck tires during World War II. Rayon was the first important new synthetic fiber to supersede cotton. It was found that fewer plies of this new cord would result in a stronger, cooler running tire. The basic principle behind the 2-ply-4-ply rating tire is the use of cord of a size, or denier, much larger than the conventional cord use in 4-ply tires. As the size of the cord increases, so does its strength. Thus, it is possible to produce tires with 2 plies of larger cord with a strength equivalent to that of a tire with 4 plies of smaller cord.

Our present 2-ply-4-ply rating tires are equivalent in strength to 4-ply. In addition, 2-ply-4-ply rating tires are superior to the 4-ply tires which they replaced for these reasons:

1. Cooler running for better high-speed durability.
2. Superior ride and handling.
3. Better fuel economy.
4. Better traction.
5. Better skid resistance.

The quality of tires has improved steadily over the years. The improvements enumerated above together with many others have resulted in substantial gains in the traction, cornering, riding and load-carrying abilities of tires, as well as in handling, stability, and tire life.

Even before 2-ply-4-ply rating tires came into use, the tubeless tire had virtually eliminated blowouts. When a tubeless tire sustains damage, either through lack of proper inflation or from road hazards, it tends to lose air gradually rather than blow out. This is an important safety feature. In fact, tubeless and 2-ply-4-ply rating tires represent the most important safety improvement since the advent of the synthetic fiber for the tire carcass. In this connections it is interesting to note that American Automobile Association data indi-

cate a reduction of 25 percent over the last 10 years in the proportion of total road delays due to passenger car tire troubles.

In conclusion we would like to summarize the principal points made in this letter.

1. Inflation pressure is just as much a factor in the load-carrying ability of a tire as is its size or ply rating.

2. Inflation to values recommended in our owner's guides is entirely proper and safe. No hazard is involved.

3. The owner should recognize that maintaining proper tire pressure is a maintenance responsibility similar to making certain that proper lubricants are in the engine and transmission and proper coolant in the radiator, in the required amounts.

4. The next larger size tire is not the answer to every load requirement, because inflation pressures would still have to be increased to accommodate maximum loads.

5. Ply rating information, while presently shown on the inner sidewall, undoubtedly can be displayed on the outer sidewall if thought desirable.

We trust that this information will be helpful. If we can be of further service, please let us know.

Sincerely,

J. M. ROCHE.

CIVIL AERONAUTICS BOARD,
Washington, D.C., September 27, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: We were contacted recently by counsel to your committee seeking information on the aircraft tire situation in connection with your investigation of automobile tire safety. The enclosed Technical Services Report No. 66–8, "Summary of Air Carrier Aircraft Tire Failure Problems," August 25, 1965, is the product of that request.

Your counsel indicated the committee's desire to include this report with its full report. The Board certainly has no objections to this and our report is submitted for your use as you deem appropriate.

We hope the enclosed material will be of some benefit to you; if we can assist further, please let us know.

Sincerely yours,

CHARLES S. MURPHY,
Chairman.

CIVIL AERONAUTICS BOARD,
BUREAU OF SAFETY,
Washington, D.C., August 25, 1965.

TECHNICAL SERVICES REPORT NO. 66–8—SUMMARY OF AIR CARRIER AIRCRAFT TIRE FAILURE PROBLEMS

HISTORY OF BUREAU OF SAFETY PROGRAM

In 1962 a study was done to determine if there were any measurable defect parameters and if the problems were serious enough to require concerted corrective action. MRR [1] data for the period of January 1, 1962, to September 30, 1962 were tabulated. Missing information such as number of recaps (if any), number of landings, tire manufacturer, etc., were requested from the carriers. The study confirmed the following:

1. Failures occurred at all levels of tire life, including new tires. The vast majority of the failures were to recapped tires.

2. Failures occurred on all types of aircraft but most failures were on jet aircraft (high-speed rating) and Lockheed 188 (low-speed rating).

3. As expected, the number of failures was significantly higher during the summer months than during cooler periods.

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[1] MRR—Mechanical Reliability Reports—issued daily by FAA listing mechanical problems of all scheduled air carriers.

4. Number of reported recap failures versus total number of landings was about the same for each airline, suggesting an industrywide problem.

5. Two recap agencies were involved in a relatively large percentage of failures; however, these particular agencies are by far the largest recappers. With this point in mind, but with no specific figures as to numbers of tires recapped by each agency, there did not appear to be any trend as to manufacturer or recap agency.

6. The 120 cases during the 9-month period investigated indicated the problem was wanting of concerted corrective action.

7. There were several cases of structural damage, although none of serious proportions and no crippling damage to primary structure. It was recognized, however, that a potential hazard existed, such as damage in wheel wells, to control systems, fuel, and hydraulic lines, etc.

Since the original study, spot checks of MRR's have been made from time to time. For the period of October 1, 1962, to July 30, 1964, there were 149 failures. This is about a 50-percent reduction over the rate in the earlier study. A recent check reflected 45 tire failures during the second quarter of 1965 and 19 failures in July 1965. This higher rate for July is expected as it follows the trend every year of considerably higher rates during July and August.

CORRECTIVE ACTIONS AND RESULTS

On October 25, 1962, the preliminary results of the Bureau of Safety study were made known to FAA and a recommendation was made for corrective action. FAA immediately surveyed the operators for inspection techniques and conducted studies of their own. FAA issued notice No. FS 8320.22 on March 7, 1963, calling attention to the improved standards contained in MIL–R–7726B, and that MIL–C–7726, cited in CAM 18.30–9, was no longer applicable. Other material was issued from time to time, the most notable being notice FS P 8340.1A CH 27 on October 29, 1964, outlining procedures adopted by several carriers to further improve tire reliability. Listed were:

(*a*) Frequent, in depth tire-pressure audits. (An unannounced visit is made to an airport, and every aircraft tire of a particular operator is given a pressure check and an inspection. Complete records of the findings are made and kept for future comparison and reference.)

(*b*) Dial-type pressure gages are used to replace other types. The mechanics are trained to use the dial gage properly.

(*c*) Mechanics are trained in the meaning of usable tolerances together with the effects of under and over inflation.

(*d*) Proper assessment of tire damage, discovered by visual inspection is stressed in the training program.

(*e*) Establish and maintain detailed tire records, including results of tire audits, chronological histories of tires found with discrepancies, types of failures, costs, etc. Establish a periodic evaluation of the records in terms of trends (improvement or deterioration), problems, and possible corrective action.

(*f*) Development of methods to improve attitude toward necessity for proper inflation and to overcome psychological barriers, for example:

(1) Placing dial gages in a padded box not only to preserve its accuracy but to also visually impress the user that it is a delicate and important instrument.

(2) Keeping the dial gage and the air bottle together on a common cart or wagon with required lines and fitting. (Easy mobility of the cart or wagon is desirable.)

(3) Providing tire gage calibration checks at regular and frequent intervals.

In addition there has been a continued effort by the carriers, tire manufacturers, and recappers, and the Tire and Rim Society to improve the inspection techniques and more closely define acceptable and unacceptable tire conditions. One cargo carrier has elected to eliminate recapped tires on its jet equipment because of the unique exposure, wordwide, to poorer surfaced runways. Most of the jet carriers have limited high-speed tires to a maximum of six recaps regardless of tire condition.

ACCIDENT RECORD

Although there have been a considerable number of aircraft tire failures (primarily recaps on jet aircraft), damages of serious proportions have been

extremely rare. Most structural damage has been confined to "soft" structure; i.e., fairings, flap surfaces, landing gear doors. A check of U.S. air carrier accident records for the period 1960 to 1963 indicate only two accidents due to tire failure:

DOCKET 1–0091

September 13, 1960: Capital Airlines Viscount 700D, Minneapolis, Minn.
No injuries.

The aircraft was being rotated for lift-off when the No. 1 main wheel tire recap tread came off, struck the No. 2 propeller, and penetrated the left side of the fuselage. The takeoff was continued and the No. 2 propeller was feathered due to vibration. The flight thereafter returned and landed without further incident.

Probable cause: Failure of tire tread during takeoff.

DOCKET 1–0057

September 25, 1963: Riddle Curtiss C–46, Orlando, Fla.
No injuries.

At 1325 e.s.t., the captain of N–1243N initiated takeoff from the Orlando (Fla.) Airport using runway 7 which is 6,000 feet in length. At the time the runway was wet and light rain was occurring. As full power was established, a pronounced thumping or vibration began; however, the takeoff was continued until the aircraft had accelerated to between 60 and 65 knots, when a severe shaking of the right engine occurred. At this time the takeoff was aborted. Before the aircraft stopped it turned right, and the right main wheel went off the side of the runway. Rapid deceleration occurred and the plane nosed down, hit on the propeller and nose section, and rebounded to a normal three-point position.

Investigation revealed the right main wheel tire tube had failed. Examination of the tube revealed it had failed over a section where the tire fits to the wheel and where the thickness of the tube was 0.092 inch as compared to the manufacturer's standards of 0.110, minimum, and 0.180, maximum. The tire casing inside and out was in good condition.

Examination of the runway disclosed marks from the right tire over a distance of 588 feet short of the final stopping point of the aircraft. Heavy braking marks from the left main tire were evidenced over a distance of 364 feet prior to the final resting place of the plane.

Probable cause: Failure of the defective right main tire tube during the takeoff roll, resulting in a loss of directional control.

The air carrier accident summaries for 1964 have also been checked and no accidents were attributed to tire failures.

GENERAL COMMENTS

Aircraft tires, particularly recapped high-speed tires, continue to be a maintenance problem with the airlines; however, concerted efforts have reduced the frequency of failures. Continued surveillance and improvement in the state of the art should reduce the frequency even more. Tire failures do not appear to be creating dangerous situations although there is, as with any component failure, the remote possibility of such failures leading to further complicated situations.

Based on the latest quarterly figures available on tire failures (April, May, June 1965), i.e., 45 failures versus approximately 960,000 operations (takeoff plus landing), the current failure rate is 1 failure per 21,300 operations. In 1962 the rate was about 1 in 9,000 operations. The 2 accidents in the 5-year period 1960–64 against an approximate total number of operations of 18 million gives an accident rate of 1 in 9 million operations. Statistically, at least, the odds of causing injury are nil.

No effort should be made to extrapolate the aircraft tire situation to automobile tires for the following reasons:

1. Aircraft and automobile tires are subjected to different conditions of loading, wearing, etc. The major loadings given to aircraft tires are landing loads; i.e., spin-up from zero rotation to rotation compatible with landing speed, and the impact load of being dropped from several inches to several feet at speeds of 100 to 150 knots.

2. Aircraft tires are multiply construction. For example, high-speed tires are 16 or more ply compared to 2 and 4 ply of automobile tires.

3. Side stresses are generally lower on aircraft tires and they are not subjected to curb strikes and pressures against sidewalls.

4. Aircraft tires are generally free of subjection to nails, beer cans, glass, chuck holes, etc., which automobile tires come in contact with almost daily.

5. Aircraft tires are not subjected to misalinement conditions as the front tires of an automobile are, nor are they involved in power transmission as the rear automobile tires are.

6. The multiwheeled axle and bogie systems of aircraft offer a redundancy not found on automobiles (heavy duty trucks have this redundancy on rear axles).

JOHN S. LEAK,
Chief, Technical Services Section.

U.S. SENATE,
COMMITTEE ON LABOR AND PUBLIC WELFARE,
July 12, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Senate Commerce Committee,
Washington, D.C.

DEAR SENATOR MAGNUSON: As you may recall, on June 7 I wrote to the major automobile manufacturers asking them a series of questions on automobile tire safety. The presidents of the four major manufacturers, or their designated representatives, have now replied to my letter. I am forwarding their replies to be included in the hearing record of the Senate Commerce Committee. The committee has been taking testimony and gathering evidence on bill S. 1643. At this time I want to comment on these letters and ask that my comments also appear in the record.

I want to express my appreciation to the automobile industry for the prompt and thorough replies given to my questions. I am sure that the industry is sincerely interested in automobile safety.

However, testimony at the Federal Trade Commission hearings and the statements of the auto manufacturers in their letters to me make its abundantly clear that large numbers of new automobiles are equipped with inadequate and dangerously unsafe tires. For this situation the auto manufacturers are solely responsible because they decide what quality tire shall be placed on the car.

It is scandalous to equip new automobiles with tires that are unsafe when the car is fully loaded. The automobile industry is well aware of the inadequacy or their original equipment tires and apparently does not intend to do anything about it. I think, therefore, that Federal legislation setting safety requirements for original-equipment tires is necessary and fully justified.

The main question which I asked the automobile manufacturers was whether the tires supplied on their cars were adequate for full-load service.

At the Federal Trade Commission hearings, in January, there was expert testimony to the effect that these tires were not adequate. The replies from the automobile company presidents confirmed this fact.

Although they contend that their tires are adequate, all of the auto companies attach special conditions which, in my opinion, are both unrealistic and in some cases dangerous.

All of the auto manufacturers state that the tires on their cars must be overinflated in order to accommodate what I consider perfectly normal loads, such as six passengers plus normal luggage in a six-passenger sedan.

American Motors, for instance, states that if the tires on its cars are overinflated as American Motors recommends, they should be "adequate for occasional full-load service." This is a shocking admission which should jolt everyone concerned about the death of 47,000 Americans a year on our highways.

The Ford Motor Co. states that its large station wagons, commonly referred to as "nine passenger," can carry a full load up to 1,300 pounds only if the rear tires are inflated to 36 pounds pressure.

General Motors recommends increasing the tire pressure in sedans from 24 to 30 pounds to accommodate full loads. For loads of 1,200 pounds in station wagons (which are common), General Motors recommends optional oversize or

eight-ply-rated tires, while supplying a two-ply, four-ply-rated tires as standard equipment.

These letters add up to a clear admission that the tires supplied with new cars not not adequate for all around use unless each individual motorist carries out an elaborate ritual of weight computation and inflation and deflation. I seriously doubt that more than a tiny minority of American motorists would ever be expected to follow these elaborate precautions, calculating the weight of car passengers and accessories with great precision and changing tire pressure to accommodate it.

Furthermore, the attempt by the automobile manufacturers to make inadequate tires adequate by overinflating them creates serious dangerous in itself. I asked an official of the Tire & Rim Association to comment on the Ford recommendation of tire pressures up to 36 pounds. He stated that it was the consensus of the industry that such a tire pressure was dangerous, that it was likely to cause extremely rapid wear, and would increase the danger of blow-outs.

The auto company replies also show that there was a shockingly low margin of safety in the tires supplied with new cars. If you read the manuals, General Motors advises you to increase your front tire pressure if you add air conditioning. Mercury recommends a much larger with the use of air conditioning. It seems doubtful that air-conditioning equipment would weigh as much as a single passenger. Yet the industry seems to be telling us that the addition of this one accessory pushes the car so far beyond the margin of safety that the tires are no longer adequate.

No amount of evasiveness or talk about inflation and deflation will meet this problem. It is obvious that higher quality tires, with much greater safety margins, are required on our automobiles.

The auto company replies point up much better than anything I could say the existence of a national scandal in automobile tires. Tens of thousands of American motorists, fooled into thinking they are safe in their shiny new cars, are speeding across the Nation on a time bomb which could explode at any time.

Unfortunately, I do not believe we can leave the protection of the public interest in tire safety up to the fiercely competitive automobile industry. We have got to set some standards for tires at the national level.

I would appreciate it if the enclosed replies from the automobile manufacturers could be included in the record of the hearings, along with my covering letter.

Sincerely yours,

GAYLORD NELSON,
U.S. Senator.

AUGUST 20, 1965.

Mr. JAMES SEARS,
Rubber Manufacturers Association,
Washington, D.C.

DEAR MR. SEARS: I am enclosing a copy of a letter which was sent, at Senator Hartke's request to the automobile manufacturers, requesting their comments on the relative safety of nylon and rayon tires. The committee would similarly appreciate any light which the rubber manufacturers can shed on this issue.

Sincerely yours,

MICHAEL PERTSCHUK,
Staff Counsel.

RUBBER MANUFACTURERS ASSOCIATION,
Washington, D.C., September 28, 1965.

Mr. MICHAEL PERTSCHUK,
Staff Counsel, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. PERTSCHUK: This is in response to your letter of August 20, 1965, asking whether the RMA wished to comment on the relative safety of nylon and rayon tires.

This inquiry was discussed at a meeting of the RMA Tire Engineering Committee held on September 22, 1965. It is the view of our committee that a tire can be made adequately safe whether made of rayon or nylon. It is the responsibility of the tire manufacturer to put the quality of the cord—whether rayon or nylon—into the finished product for safe performance.

It is true that differences exist in the physical properties of the various cords that are being used and may be used in the future in tire construction—whether they be rayon, nylon, polyester, or others.

However, the amount and kind of cord and the cord angle used in tire construction are only two of several elements affecting the ultimate safety and performance of the product. Equally important factors include the various rubber compounds used in the tread stock, sidewalls, and in the adhesives used on the cords; design as it affects tire profile and the "footprint," or the tread area placed on the road surface; and even tread configuration. It is the art of bringing all elements into proper balance, the engineering compromise, that gives a tire its varied properties of safety, endurance, ride, good cornering, and responsive braking characteristics.

Sincerely,

W. J. SEARS,
Vice President.

L. B. STEWART MEMORIAL FUNERAL HOME,
Scottsburg, Ind., August 14, 1965.

Hon. VANCE HARTKE,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HARTKE: The Louisville Times of August 13, 1965, carried a story concerning the hearings before the Commerce Committee on the proposed bill to establish higher minimum standards on factory-installed tires on new cars. Representatives of the Automobile Manufacturers Association, General Motors, Ford Motors, and American Motors are quoted as saying that present factory-installed tires are safe and that there is no need for legislation on this matter.

I disagree completely with their statements. In connection with our funeral home we operate two ambulances, a Cadillac and an Oldsmobile Ninety-Eight. In less than 2 years we have thrown the tread off of four factory-installed tires. Because of past experiences we are overinflating these tires but this has not solved our problems.

One tire recently failed while transporting a critically ill child to the children's hospital in Louisville and had it not been for our State police escort, who took the child on to the hospital, it is possible the child would have died before we could change tires and get there. Because of the rate of speed involved in this case it is perhaps understandable that this tire could fail; however most of our failures have occurred at legal turnpike speeds on Interstate I65.

From the experience of tire manufacturers at our Indianapolis 500, we know that tires have been developed which will operate safely at high speeds. It would seem to me to be almost criminal for an automobile manufacturer to place on a chassis to be used for an ambulance anything less than the very best tire available for the purpose.

I would urge your support of legislation to remedy this dangerous situation.

Yours sincerely,

CHARLES M. STEWART.

WISCONSIN RURAL LETTER CARRIERS' ASSOCIATION,
June 18, 1965.

Hon. WARREN G. MAGNUSON,
Chairman, Commerce Committee, U.S. Senate,
Washington, D.C.

DEAR SENATOR MAGNUSON: At the annual convention of the Wisconsin Rural Letter Carriers' Association held in La Crosse, Wis., this week, the attached resolution was passed without dissent.

The rural mail carriers of Wisconsin would appreciate it very much if this resolution could be introduced into the record in favor of S. 1643.

Sincerely,

LEONARD J. SZATKOWSKI, *President.*

RESOLUTION 17. PASSED AT ANNUAL CONVENTION OF THE WISCONSIN RURAL LETTER CARRIERS' ASSOCIATION, JUNE 16, 1965

Whereas the Wisconsin rural letter carriers are deeply concerned about safety on the road in the performance of their duties; and whereas legislation has been introduced in Congress by the Honorable Gaylord Nelson in bill S. 1643, which would require the Secretary of Commerce to set minimum safety and performance standards in automobile tires and would require manufacturers to label tires as to content: Therefore, be it

Resolved, That the Wisconsin rural letter carriers in annual session support and urge passage of this legislation and that a copy of this resolution be sent to the Commerce Committee and to the author of this bill.

HAUBSTADT, IND.,
August 14, 1965.

Hon. VANCE HARTKE,
U.S. Senate,
Washington, D.C.

DEAR SENATOR: I read in the Evansville Press today how you raised cain with the auto manufacturers about the tire failures. Keep up the good work.

Here are some more areas that need improvement.

1. Engine deflectors: a network of rigid metal deflectors that would guide the engine down and under the passenger area. This will keep front-seat passengers from being crushed to death in a head-on collision.

2. Seat anchorage: Anchoring that is guaranteed to keep a seat from busting loose from its moorings in a crackup.

3. Rear lights: Why not have a different color light for turn signals and brakes. Nowadays, both these are same color as the tail lights. With different colors, the driver in back won't have so much doubt as to what your next move would be.

4. Seat backs in two-doors that would keep the flopping back of the front seat from busting onto the front-seat passengers when the riders in back are thrown against it. It would save over a thousand lives a year.

5. Windshields that won't shatter when objects going as fast as 24 m.p.h. hit them.

6. Hydraulic bumpers would cut down the effects of impact to one-half.

7. Roll bars three inches wide and an inch thick. If they were incorporated into the center pillars and ran across the roof of the car it would prevent the cave-ins when a car overturns.

8. An alternate braking system so a car will still have brakes when a fluid leak starts.

9. Control knobs of different shapes so they can be identified by touch.

If Detroit had its way, I believe we would never get relatively safe cars. Like it said in the paper: Detroit was moved to act about the tires only because of Government pressure. The only way the public can make Detroit act is to have men like you get some tough statutes on the books to whip Detroit into line.

I don't plan to buy one of those "rolling death traps" until they're safer. An insurance company has estimated that 3.6 million people will be injured in auto accidents in 1965. I hope you can get Congress to do something about Detroit. It legally gets away with murder. I wish you success.

Best wishes,

DOUGLAS WASHBURN.

[From the Motor Trend, July 1964]

The tremendous popularity of station wagons is reflected in the huge variety of sizes and models now being offered. By our count, there are a minimum of 80 or a maximum of 120 different models available to the prospective wagon buyer. These minimum or maximum figures depend on whether you count six- and eight-cylinder cars as separate models.

New station wagons range from the starkly functional to the screamingly ostentatious. Almost everything that's available to the passenger-car buyer is also offered in wagon lines. There's a full range of engine, transmission, and rear-axle options, plus all the usual creature comfort and convenience items. With a field like this, even the choosiest buyer should be able to select and tailor a package that'll completely satisfy his needs.

When we decided to devote an entire issue's test section to wagons, we came right up against the same problem that confronts the average buyer: one of choice. With all those models and combinations available, which ones should we corral for our tests? We wanted to get a good cross section of what's being offered and still put together a package that's appeal to the widest range of readers. In the end, we decided to let the public's choice be our guide. This we did by consulting the 1963 sales reports and settling on the top 10 wagons. At this writing, the 1964 sales reports are still too sketchy to base any concrete conclusions on, but it does look like the same wagons will hold their approximate positions through this year.

STATION WAGONS IN ORDER OF 1963 SALES

(1) Chevrolet
(2) Ford
(3) Rambler Classic
(4) Falcon
(5) Chevy II
(6) Fairlane
(7) Plymouth
(8) Pontiac
(9) Dodge
(10) American
(11) Valiant
(12) Oldsmobile
(13) Special
(14) Mercury
(15) Dart
(16) Buick
(17) Comet
(18) Corvair
(19) Olds F–85
(20) Tempest
(21) Studebaker
(22) Chrysler
(23) Dodge 880
(24) Meteor[1]
(25) Wagoneer
(26) Checker

Test procedures

Our regular road tests are run in two phases. The first is an around-town, over-the-road phase to check out the car's general characteristics and fuel consumption. The second phase takes place at a track, either Riverside International Raceway or Willow Springs, where we check various performance factors: braking, acceleration, and handling. We use these tracks so each car can be checked out completely under controlled conditions. It was decided that these regular procedures would be used on the wagons, but with one additional condition—load factor. Each wagon actually underwent two complete tests—unloaded and then loaded.

Determining a realistic and satisfactory load factor wasn't so easy as it sounds. None of the vehicle manufacturers gives a recommended gross vehicle weight. The maximum tire load rating (as established by the Tire & Rim Association) seldom exceeds the actual curb weight of the car by enough margin to make it realistic for our use. In a few cases, the curb weight of the wagon was already greater than its tires' load rating—even without a driver aboard.

As a last resort, we decided that, since each wagon (compacts included) was at least a six-passenger vehicle, we'd give each one a simulated six-passenger load. We figured an average of 150 pounds per passenger, which we simulated with sandbags. The test crew weighs 320 pounds, so this brought the load factor to 920 pounds for each wagon (two-man test crew and four sandbag passengers). This doesn't sound like much weight, but it resulted in each wagon carrying an overload of from 400 to 1,100 pounds.

[1] Discontinued.

The load factor brought out several important points. First of all, the manufacturers aren't equipping their wagons with tires that have an adequate load rating. The wagon owner who does carry a load, even a so-called normal one, is in most instances badly overloading his tires. As a tire's load increases over its maximum rating, it runs at greatly increased temperatures, and its mileage life decreases rapidly. In some instances, the higher temperatures can cause tread separation or a dangerous blowout. All manufacturers offer larger, higher capacity tires as options. We feel they should be standard.

Included below is a chart listing some of the more widely used passenger-car tires, their sizes and load ratings as determined by the Tire & Rim Association.

Tire size	Ply rating	Maximum per-tire loads at various inflation pressures (pounds per square inch)					
		20	22	24	26	28	30
6.00 x 13	4	650	690	725			
	6	650	690	725	760	790	825
6.50 x 13	4	750	790	835			
	6	750	790	835	875	910	950
7.00 x 13	4	830	875	920			
	6	830	875	920	960	1,010	1,050
7.00 x 14	4	880	925	975			
	6	880	925	975	1,020	1,065	
7.50 x 14	4	980	1,030	1,085			
	6	980	1,030	1,085	1,135	1,185	
8.00 x 14	4	1,060	1 115	1,175			
	6	1,060	1,115	1,175	1,230	1,285	
8.50 x 14	4	1,140	1,205	1,265			
	6	1,140	1,205	1,265	1,325	1,385	
6.70 x 15	4	955	1,010	1,065	1,115		
	6	955	1,010	1,065	1,115	1,165	1,215
7.10 x 15	4	1,025	1,080	1,140	1,195		
	6	1,025	1,080	1,140	1,195	1,245	1,300
7.60 x 15	4	1,125	1,190	1,255	1,310		
	6	1,125	1,190	1,255	1,310	1,365	1,425
8.00 x 15	4	1,195	1,265	1,335	1,395		
	6	1,195	1,265	1,335	1,395	1,455	1,520

NOTE.—Load is maximum permissible at each inflation. No increase is permitted for inflations higher than those shown in the table. For high speeds, pressures are to be increased 4 pounds above those shown in the table.

When used on light trucks and station wagons, increase inflation pressure, with no increase in tire loads, as follows:

Ply rating	*Inflation pressure (pounds)*
4	6
6	8

Test results and spec chart guide

Included at the beginning and end of this section are three sets of charts. The first, on page 25, is devoted to all the various tests that the 10 test wagons were subjected to and lists our results. In addition to the standard tests we always use, you'll notice that we've added several extras. We've given passing times and the distances required to pass at highway speeds. Until all the Nation's roads are divided and four lanes wide, we feel that this is an area in which the driver should be well aware of the limitations of his car. It takes quite a few more feet to overtake and pass another car when you're carrying a load.

Also included are swept-drum-area figures. This is the area of the brake drum rubbed by the brake lining and is an indication of how well (or badly) the brakes will resist heat buildup and fade. Naturally, the bigger the area, the more quickly heat can be dissipated.

You'll notice that there's very little difference in the 60-mile-per-hour brake tests between loaded and unloaded wagons. In some cases, the loaded wagons even stopped in less distance. This is because the load prevented a maximum weight shift (rear to front), which in unloaded wagons lets the rear wheels lock up too easily. What isn't shown on the charts is how much faster each wagon's brakes faded when carrying a load. With the load, the brakes were usually good for only one maximum-effort stop before fading completely.

The other two charts (pp. 46 to 49) list all the various wagon models currently available, with base price, engine and drive-train options, and all exterior and interior dimensions for all station wagons. These are self-explanatory.

Wagons in general

Before we get into the actual evaluations of the 10 test wagons, we might take a quick look at the overall wagon picture. Today's wagon has been designed with a duality of purpose in mind. It's set up to do service either as a passenger sedan or as a carryall. It can provide a family with their basic transportation needs and give them the room they might want for hauling large or bulky items.

This is good, but it's also bad. During the course of its development, the wagon has perhaps become too sedanlike. Almost all wagons are built on standard passenger-sedan chassis and use standard sedan suspensions and brakes. A few offer heavier springs and shocks as standard wagon equipment, but for the most part, heavy-duty suspension components are extra-cost options. The sedan suspension gives a nice, soft ride, but the minute you put a little weight on it, you're in trouble. Rear end sag and sway are only a couple of the problems that can make a loaded wagon a real handful on the highway. Also, with the rear end down, the front end is naturally up—meaning that your headlights are blinding oncoming traffic at night.

In every case, we strongly recommend ordering your wagon with whatever heavy-duty suspension components are available—also with the largest tires and rims that the manufacturer offers. For owners who expect to haul loads often, we recommend a set of rear overload devices. These are available from several sources, among them Delco, Gabriel, and Monroe.

Some notes on brakes

As we've already pointed out, passenger-car braking systems are at best minimal. When they have to cope with the added weight of a wagon, their efficiency is even lower. Here again, we strongly recommend the largest brakes available, along with power assist to help cope with the increased pedal pressures that go along with brake fade.

Before you buy a wagon, you should seriously consider whether you'll be able to fully utilize its capabilities. This is the only thing that determines whether or not owning a wagon will be worthwhile. A wagon has a higher initial cost than a sedan and, because it's also heavier, it's going to take more fuel to operate, and tires are going to wear much faster. If you don't really need the extra room, there's no sense paying for it. If you can use it, though, there's nothing better made.

The following pages give our test staff's impressions of the top 10 wagons. They're arranged according to 1963 popularity, based on number of sales. The individual articles aren't signed, but they're the work of Jim Wright, technical editor, and Bob McVay, assistant technical editor. All photos by Pat Brollier and Bob D'Olivo.

TOP 10 WAGONS—PERFORMANCE SPECS

	CHEVROLET IMPALA	FORD GALAXIE	RAMBLER CLASSIC	FALCON	CHEVY II	FAIRLANE RANCH WAGON	PLYMOUTH	PONTIAC SAFARI	DODGE 440	AMERICAN 300
Engine: cu. in./hp	327/250	390/300	287/198	170/101	194/120	289/195	383/330	389/267	383/330	195.6/125
Transmission	2-sp. auto	3-sp. auto	3-sp. auto	2-sp. auto	3-sp. manual	3-sp. auto	3-sp. auto	3-sp. auto	3-sp. auto	3-sp. auto
Rear-axle ratio	3.08	3.00	2.87	3.5	3.36	3.25	3.23	2.69	3.23	3.31
Tire size and ply	8.00 x 14 2-ply	8.00 x 14 2-ply	7.50 x 14 2-ply	6.50 x 13 2-ply	6.50 x 13 2-ply	7.00 x 14 2-ply	7.50 x 14 2-ply	8.50 x 14 2-ply	7.50 x 14 2-ply	6.00 x 14 2-ply
Recommended (mfr's) tire pressures (front/rear):										
Unloaded	24/28	24/28	24/24	24/28	24/28	24/28	22/26	20/26	22/26	24/24
Loaded	24/28	24/28	24/24	28/32	24/28	28/32	22/30	20/28	22/30	24/24
Mph/1000 rpm	24.4	25.0	26.0	19.5	20.5	22.5		29.0	23.0	21.0
Curb weight (unloaded)	4220	4740	3500	2780	3085	3540	4140	4500	4480	2800
Curb weight (loaded)	5140	5660	4420	3700	4005	4460	5060	5420	5400	3720
Max. tire load (mfr. rec.)	4700	4700	4340	3340	3340	3900	4340	5060	4340	3200
Weight/power ratio (unloaded/loaded)	16.88:1/ 20.56:1	15.8:1/ 18.86:1	17.67:1/ 22.32:1	27.5:1/ 36.6:1	25.7:1/ 33.3:1	18.1:1/ 22.5:1	12.5:1/ 15.3:1	16.8:1/ 20.3:1	13.5:1/ 16.3:1	22.4:1/ 29.8:1
Acceleration (unloaded/loaded in secs.):										
0-30 mph	4.1/4.5	3.6/4.5	4.8/5.3	6.5/8.2	5.8/6.2	4.6/5.2	3.7/4.0	4.2/4.3	3.5/3.7	5.5/6.2
0-45 mph	7.3/7.8	6.7/7.6	7.9/9.0	13.0/15.3	9.9/10.9	8.0/9.5	6.2/6.9	7.4/8.1	6.0/6.4	9.5/11.9
0-60 mph	11.0/12.4	10.4/12.0	13.7/15.1	24.4/27.6	16.5/20.1	14.0/16.2	9.4/10.5	11.7/12.7	9.0/9.9	18.5/20.4
Quarter-mile acceleration (mph/secs.):										
Unloaded	77/17.8	77/17.5	71/19.3	59/23.2	66/19.8	71/19.4	82/16.9	76/18.2	84/16.5	66/20.1
Loaded	74/18.8	74/18.4	68/20.2	57/26.4	63/21.3	68/20.5	79/17.5	74/19.1	82/17.2	63/22.6
Passing time in secs. (unloaded/loaded):										
40-60 mph	5.4/5.8	5.3/6.4	7.7/8.2	18.4/20.5	8.6/10.5	7.2/8.5	5.0/5.7	6.1/6.5	4.9/5.5	10.1/12.5
50-70 mph	6.5/7.3	6.5/7.1	8.7/10.5	20.5/26.3	12.3/13.7	10.3/11.8	5.5/6.0	6.5/7.5	5.3/5.7	14.5/16.9
Passing distance in feet (unloaded/loaded):										
40-60 mph	394/423	388/467	562/598	1341/1497	627/767	525/620	365/413	445/474	357/401	737/914
50-70 mph	572/632	572/624	765/924	1808/2318	1083/1205	905/1038	484/528	572/660	466/502	1275/1487
Top speed (actual)	108	105	98	82	86	92	112	110	114	86
Brake drum diameter in inches (front/rear)	11/11	11.03/11.03	10/10	9.0/9.0	9.5/9.5	10/10	10/10	11/11	11/11	9/9
Effective brake lining area in square inches	186.2	196.1	167.49	137.2	172.7	155.2	195.2	173.7	234.1	139.52
Swept drum area in square inches	200.4	381.2	267.07	254.0	228.6	314.2	314.2	312.2	380.1	226.16
Effective lining area/weight ratio:										
Unloaded	22.6:1	24.1:1	20.9:1	20.2:1	17.8:1	22.8:1	21.2:1	25.8:1	19.2:1	20.0:1
Loaded	27.6:1	28.8:1	26.3:1	26.9:1	23.1:1	28.7:1	25.9:1	31.2:1	23.0:1	26.6:1
Braking distance in feet (unloaded/loaded):										
From 30 mph	33/37	38/32	33/33	31/32	32/41	37/35	37/45	38/34	34/35	32/31
From 60 mph	152/160	170/187	167/169	164/170	156/187	162/162	187/180	179/155	176/176	163/154
Fuel consumption range in mpg (unloaded/loaded):										
City	9-11	8-10.5	14.5-17	13.5-16	15-18	9-12	10-13	10-13	10-13	16-19
Highway	12-15	11-13.5	18-22	16-19.5	18-22	12-15.5	13-16	13-16	13-16	19-24
Grade of fuel	Prem.	Prem.	Reg.	Reg.	Reg.	Reg.	Prem.	Prem.	Prem.	Reg.

MOTOR TREND/JUYL 1964

CODE OF ETHICS FOR MEMBERS OF THE TIRE RETREADING INSTITUTE

To advance the welfare of the tire retreading industry, to promote the standards in tire retreading, and to assure the motoring public of maximum safety in the use of retreaded tires, this subscriber pledges to the motoring public and the Tire Retreading Institute to follow good business practices, use only top-quality workmanship, and uphold the standards of the institute.

To carry out this pledge, _____
(Dealer name)

has certified to the Tire Retreading Institute that it will observe the following code of ethics in the conduct of its business.

That the workmanship performed by this company will be consistent in all respects with the retreading standards approved by the Tire Retreading Institute.

That this company will stand behind every tire retreaded and the guarantee and warranty issued by this company will be honored in all respects.

That every tire entering this company's shop for servicing will be given a rigid inspection and if a defective or unsound casing is found, this company will reject this tire and recommend to the customer that it be destroyed.

That all materials used in the retreading or repairing process in this shop will be of the highest quality and no inferior materials will be used.

That all curing temperatures, times, and pressures recommended by the equipment manufacturers and the specifications with regard to tread depth, width, and under tread set forth in the standards of the Tire Retreading Institute will be followed accurately.

That this firm is a member in good standing of the Tire Retreading Institute and is authorized to display the seal of this organization and to apply this seal to the tires serviced.

That this firm will devote itself to promoting the welfare of the motoring public and to the supplying of safe, good quality, guaranteed, retreaded tires to its customers by obliging itself to follow this code of ethics and will apply its experience and knowledge for the advancement of the tire retreading industry and the users of retreaded tires.

CODE OF ETHICAL PRACTICES FOR THE MEMBERS OF THE NATIONAL TIRE DEALERS & RETREADERS ASSOCIATION

As members of the National Tire Dealers & Retreaders Association, we believe that the Golden Rule of dealing with others as we would be dealt with is the cardinal rule of our business.

1. As independent tire dealers, we will act as good citizens, proud of our heritage and mindful of our economic, civic, and national defense responsibilities.
2. As transportation specialists, we will keep abreast of all new tire developments and render the highest in technical service.
3. We will sell our tires at a reasonable price, expecting a reasonable return on our investment but using no fictitious list prices or deceptive pricing techniques.
4. We will never be a party to price fixing, suppression of competition, or restraint of trade.
5. We believe that the differences in various grades of tires are real. We will sell you tires to fit your needs.
6. We will not make any false, misleading, or deceptive statement concerning the quality, strength, value, performance, designation, durability, safety, or composition of any tire we sell.
7. We will maintain the highest possible standards in our advertising.
8. We will not defame our competitors with false statements.
9. We will adjust our tires as specified by the regulations of the Federal Trade Commission.
10. We will stand behind our guarantees.
11. We will strive to provide the motoring public with our best personnel service, safety, and satisfaction.

12. We support the national standards for retreading automobile and truck tires, as adopted by the National Tire Dealers & Retreaders Association.

Signed _____
(Name)

Registered No: _____ _____
(Company)

Date _____ _____
(City and State)

(The men who know tires best)

January 1957:
- Second line:
  - Tubeless, four sizes
  - Tube-type, 13 sizes
- Third line: Tube-type, three sizes

August 1957:
- Second line:
  - Nylon, tubeless, four sizes
  - Nylon, tube-type, five sizes
  - Rayon, tubeless, four sizes
  - Rayon, tube-type, 12 sizes
- Third line: Tube-type, three sizes

July 1958:
- Second line:
  - Nylon, tubeless, seven sizes
  - Nylon, tube-type, five sizes
  - Rayon, tubeless, seven sizes
  - Rayon, tube-type, 13 sizes

January 1959:
- Second line:
  - Nylon, tubeless, seven sizes
  - Nylon, tube-type, five sizes
  - Rayon, tubeless, seven sizes
  - Rayon, tube-type, 11 sizes
- Third line: Tube-type, four sizes

April 1959:
- Second line:
  - Nylon, tubeless, seven sizes
  - Nylon, tube-type, five sizes
  - Rayon, tubeless, seven sizes
  - Rayon, tube-type, 12 sizes
- Third line: Rayon, tube-type, four sizes

January 1960:
- Second line:
  - Nylon, tubeless, seven sizes
  - Nylon, tube-type, five sizes
  - Rayons, tubeless, eight sizes
  - Rayon, tube-type, 12 sizes
- Third line:
  - Nylon, tubeless, one size
  - Nylon, tube-type, four sizes
  - Rayon, tube-type, four sizes

January 1962:
- Second line:
  - Nylon, tubeless, 14 sizes
  - Nylon, tube-type, nine sizes
- Third line:
  - Nylon, tubeless, three sizes
  - Nylon, tube-type, four sizes
  - Rayon, tube-type, four sizes

January 1963:
- Second line:
  - Nylon, tubeless, 14 sizes
  - Nylon, tube-type, nine sizes
- Third line:
  - Nylon, tubeless, nine sizes
  - Nylon, tube-type, four sizes

January 1964:
- Second line:
  - Nylon, tubeless, 14 sizes
  - Nylon, tube-type, nine sizes
- Third line:
  - Nylon, tubeless, nine sizes
  - Nylon, tube-type, four sizes
- Fourth line:
  - Nylon, tubeless, two sizes
  - Nylon, tube-type, one size

January 1965:
- Second line:
  - Nylon, tubeless, 27 sizes
  - Nylon, tube-type, 13 sizes
- Third line:
  - Nylon, tubeless, 18 sizes
  - Nylon, tube-type, eight sizes
- Fourth line:
  - Nylon, tubeless, four sizes
  - Nylon, tube-type, two sizes.

EXCERPTS FROM STATE OF NEW YORK REPORT OF THE JOINT LEGISLATIVE COMMITTEE ON MOTOR VEHICLES AND TRAFFIC SAFETY, 1964

Legislative Document (1964)—No. 73

JOINT LEGISLATIVE COMMITTEE ON MOTOR VEHICLES AND TRAFFIC SAFETY

STATE CAPITOL,
Albany, N.Y., December 30, 1964.

To the Legislature of the State of New York:

Pursuant to concurrent resolution adopted by the senate and assembly of March 26, 1964, the joint legislative committee on motor vehicles and traffic

safety respectfully submits this report covering the work and studies by the committee to and including the present date.

Any specific recommendations in the report do not necessarily reflect the opinion of any individual member of this committee.

EDWARD J. SPENO, *Chairman.*
JULIUS VOLKER, *Vice-Chairman.*
WALTER E. COOKE, *Secretary.*
D. CLINTON DOMINICK III.
ROBERT J. FEINBERG.
ALEXANDER CHANANAU.

EXCERPTS FROM A RESTUDY OF THE VEHICLE EQUIPMENT SAFETY COMPACT

When the new-tire bill failed of passage, the committee chairman killed the retread bill, as a matter of equity.

Both are ready to move in the 1965 session and an overloading bill is being prepared. The automobile and tire industries have since been leaning more and more on a "wait for the commission" argument as a prelude to any automotive safety legislation.

The Automobile Manufacturers Association's Harry A. Williams, through letter and press release, urged the committee during a public hearing in Syracuse on September 17, 1964, to ship the entire automotive safety package to the Vehicle Equipment Safety Commission.

The committee has discovered that the Detroit manufacturers initiated and sponsored the compact and the resultant commission in order to prevent legislative initiative, such as that undertaken by this committee.

Introduction and conclusions

In 1962 the joint legislative committee and the legislature approved the entrance of New York into the vehicle equipment safety compact. New York was the first State to enact the compact. The projected role of the compact was understandable at that time largely from the formal purpose of the bill, which was to promote uniformity in vehicle equipment laws and regulations so as to reduce the time between development of safety features and their incorporation into vehicles.

Since the enactment, experience with the effect of the compact on proposed legislation and an apparent new direction of development of the compact have prompted a restudy.

The study finds that the commission created by the compact actually contemplates functions far beyond the stated purposes. These functions will very likely confuse or impede State-originated vehicle safety legislation. The commission created by the compact appears to remove vehicle safety decisions from normal legislative surveillance and initiative, while increasing the number of decisions, including policy decisions, made by self-organized adminstrators and their advisers. The compact lacks adequate interest-balancing mechanisms and safeguards in important functions of securing technical information, technical research, and development of standards. There is no assurance in the compact that a State, or the public, will be able to obtain full technical information about what is being proposed or reported by the commission.

In actuality, the stated functions of the compact in attacking a problem of delays supposedly caused by nonuniformity in laws among States are not of compelling necessity; in fact, the problems supposedly to be corrected have been rather easily solved in the past without large organizational effort. There is some question as to the facts in the alleged delays.

Other motives than those in the stated purposes of the compact have been ascribed to the compact by those closest connected with the commission. It appears that concern about Federal interest in the field has operated to oppose State legislative responsibility.

The compact and commission now appear to constitute a formal method of funding a national vehicle safety policy direction process coinciding in organization, staff, and housing with a private association, the American Association of Motor Vehicle Administrators.

To prevent confusion of State-originated vehicle safety legislation, and in view of the lack of necessity of large organization to meet the relatively small problem, two alternative courses may be adopted: (1) Withdrawal from the compact, recognizing that prior methods of resolving conflicts have been effective, (2) extensive revision and tightening of the enacting legislation to restate the circumstances under which the State will be associated with the compact. A completely new compact, originated by New York, is one approach. Congressional action of some kind may also be implied by previous statements concerning the compact's future made by the House Judiciary Committee.

The number of courses of action open is large enough so that further study and discussion is required.

Problems reveal changed concept of the compact

The original stated purpose of the compact was related entirely to uniformity. The first tangible New York experience from the compact occurred in connection with minimum tire safety standards legislation. At the March 1964 hearing, the Automobile Manufacturers Association, representing the largest customer of the tire manufacturers, asked for referral of the bill to the as-yet-unformed Vehicle Equipment Safety Commission for study before any action. At the same hearing, the Rubber Manufacturers Association, which had completed a long and apparently successful study of the tire legislation, in association with the JLC and the New York Department of Motor Vehicles, suddenly reversed its field and advocated referral of the whole subject to the VESC. One reason given was fear of nonuniformity among States, although the bill employed standards then in use by the Federal Government and no other State had such tire safety legislation in effect or under consideration.

The refer-it-to-the-VESC argument was used heavily thereafter in the final defeat of the bill. Since that time the Rubber Manufacturers Association has adopted standards like those in the New York bill.

The compact itself carries no direct requirement that legislation is intended to be referred to it prior to passage. No hint of this intent is found either in any of the congressional consideration which originally authorized the interstate compact. On the contrary, the main thrust of the compact in all public explanations prior to passages by Congress and New York was that of speeding introduction of manufacturer-desired changes which had been retarded by detailed language of preexisting laws in some States.

When the VESC referral argument arose, the JLC was assured by New York Department of Motor Vehicles that the compact and commission were not intended to precede or preempt State initiative or authority in any way.

Nevertheless, it was found that the VESC argument had also been used to oppose or divert new legislation in Massachusetts and Rhode Island. Specifically, the 1964 vehicle safety study commission bill in Massachusetts and a 1963 bill in Rhode Island which would have required extra-high-strength door latches were opposed on the ground that the compact would cover the problem.

In addition, a very recent statement of the temporary chairman of the Vehicle Equipment Safety Commission clearly leaves the stated purpose of "uniformity" behind and seems to indicate an intent of the commission to precede State initiative and even to exert superior overall cognizance. In May 1964, Temporary Chairman Paul A. MacDonald, secretary of state of Maine, included the following comments in a speech before the National Highway Users Conference:

"If *ideas* concerning safety equipment are considered worthy, they are referred for study * * *."

"The commission should act as a clearinghouse for ideas. It will prevent cluttering legislative dockets with a lot of useless bills * * *."

"The research, hearings, and deliberations of the commission will produce *suggested laws* that are not only uniform, but the best available * * *. If the commission does its work well, *a big burden will be taken off the legislatures* of the several States * * *."

"I predict that as time goes on, the commission will be relied upon as the expert agency in this field and its recommendations will be accepted without serious question * * *." [Emphasis supplied.]

Similarly, in a letter to Senator Speno, Chairman MacDonald gave this role of initiative and superior cognizance very specific form with respect to tire legislation: "* * * we will organize formally at the Des Moines meeting September 21 and, in my opinion, the first order of business will be to try to solve the

tire problem * * *." There was, of course, no problem of uniformity in tire legislation, since no bill had been passed anywhere.

These statements directly imply interference with State-originated legislation, and interference has actually occurred based on existence of the compact in three cases.

The commission, as interpreted by the chairman, is clearly desirous of making policy decisions. It will apparently decide which ideas are "worthy" and which are "a lot of useless bills" and it must choose between bills to produce "the best available."

This is more than imaginative speechmaking. In a technical portion of the compact, article V(a), the compact appears specifically to authorize study of the need for legislation and initiative reports by the commission. In the general interest of vehicular and public safety, "the commission may study the need for or desirability of or changes in performance requirements or restrictions for any item of equipment." (This can mean all parts of the car.) The commission may also publish a report on such studies, either with or without codes, rules, and regulations, and thus is able not only to propose legislation based on its decision of need, but to report on desirability, including "useless" bills. Studies of the original need or desirability for requirements that would be legislated is beyond the purpose of uniformity.

In another technical portion of the compact, article IV(d), titled "Research and Testing" the compact gives the commission power to "recommend to the party States changes in law or policy with emphasis on uniformity of laws and administrative rules * * *. As has already been shown by events in New York, uniformity is very easily claimed as the motive for almost any proposal. The seeming qualification to "uniformity" is not really limiting.

Both of these provisions IV(d) and V(a) are out of place under their respective titles. Indeed, the powers of the commission (p. 6, 1.16) and the responsibilities placed on the States (pp. 8, 9) are not very well understood under the respective titles of "Research and Testing" and "Vehicular Equipment" where they appear. Is this merely weak draftsmanship by the originators of the compact, or is it something else?

It must also be noted that the compact describes various State obligations to accept commission findings without legislation (V (f), (g)). These obligations in the uniform compact are then made ineffective in the later enacting part of the bill (3., p. 13). Therefore, acceptance of findings without legislative cognizance in some States must have been intended by those who drafted the compact. Otherwise, it would not be present.

Thus, where a State does not specifically rule out articles V (f) and (g) by a later disclaimer of its own, or by some preexisting law, not even a notice to a legislature is required. (The only direct address of the commission to a legislature is by annual report. All working contacts, including rules, regulations, codes, need be transmitted only to the Governor's appointee.) Wherever this later disclaimer is omitted, the State's motor vehicle agency is also placed on the defensive (V, (g)), if it desires to decline a regulation of the commission.

It is in this light that public explanations of the commission must be seen. E.g., MacDonald says, "It must be emphasized that the commission has no power to make laws. It makes recommendations in the form of a legislative proposal * * * each member State legislature will be acting upon the same proposal." Of course, legislatures will never see the proposals in any States which do not add the disclaimer.

It is not difficult to foresee that some States will omit the disclaimer or repeal it later ("a big burden will be taken off the legislatures"). This would open the way to requests upon all legislatures to do the same.

The restudy uncovered the first draft of the compact law and the fact its author was from the Automobile Manufacturers Association. In a memorandum to the American Association of Motor Vehicle Administrators, accompanying the draft, on June 13, 1961, he recommended against a provision making possible affirmative legislative action to adopt commission findings, saying:

"* * * it seems likely that most commission recommendations will be adopted either by unaided administrative action or by such action plus the absence of disapproval by the legislature.

"If it were also possible for adoption to be by affirmative legislative action, the question might arise as to whether the rule, regulation or code affirmatively and specifically acted upon by the legislature somehow had superior force with

that jurisdiction to a rule, regulation or code adopted in what will probably prove to be the more normal way. Such a question should not be raised."

The relationship between the AMA and AAMVA has been so close, of necessity, and the manner in which the AMA has already used the commission to prevent initial legislation by States has been such that the Massachusetts Legislature is considering withdrawing from the compact, House Intr. 1933.

A strong interest in policymaking and legislative initiative is also implied by the many statements that the compact and commission will keep the Federal Government out of the field. This intent is stated in the foreword of the Council of State Governments booklet on the compact, in the unsigned article explaining the compact issued by the magazine of the National Safety Council, and most prominently to the National Highway Users Conference in the MacDonald speech.

The goal of keeping the Federal Government out of the field cannot be accomplished by merely working for the stated "uniformity." Uniformity is only a small part of the vehicle safety problem, occupying certainly less than 1 percent of the pages of the pertinent Federal hearings. Keeping the Federal Government out would require confrontation by commission legislation or advance preempting of Federally initiated legislation. This is seen in the MacDonald speech and the letter to Senator Speno. The speech mentioned the recent Federal tire bill and stated a desire to "lessen the clamor for legislation and Federal regulation." The letter announced "solving the tire problem" as the "first order of business" of the commission.

(No State has referred tire legislation to the commission. If referral by anyone was the method of introducing the tire problem to the commission, the referral might well have come from the Automobile Manufacturers Association or the Rubber Manufacturers Association, both of which have proposed the referral. The New York Department of Motor Vehicles has said it would refer the law to the commission after passage.)

Interest groups and commission decisions

At present writing, the commission is made up of 31 men, the motor vehicle agency members of the 31 States which have joined the compact. Theoretically, there may be 50 members. Although the compact refers to "standards and requirements of law in accordance with expert knowledge and opinion" (a, (a)), this expertise is not formally possessed by the commission members themselves. Instead, through some as yet unstated procedure, the commission will judge knowledge from research (art. IV (a), (b), (c)), from advisory and technical committee established by the commission (art. VIII), and from standards of professional and technical associations (art. V(b)).

It should not be necessary to detail the fact that traffic safety is a field in which interest groups pursue desired policies, and in which research results and other technical material are the words and paragraphs of policy argument. The compact carefully guards against financial conflict of interest (kickbacks), but it fails to specify any method of considering technical statements which recognizes that interests are represented by technical results and findings. We know that some members of the commission are not unaware of this problem, but it is not resolved by the compact itself.

Research

The commission chairman emphasizes that "the commission must take into account research and test data available from any source." An all-source requirement may be in the commission by-laws; the compact merely authorizes the collection of data.

The commission chairman emphasizes that "the commission may not accept private funds for any purpose." But the compact merely authorizes receipt of funds from Government agencies. There is no specific prohibition.

Only four agencies have been mentioned by the commission thus far as "ready to assist the commission with its research problems." They are the Automobile Manufacturers Association, the American Standards Association, the Society of Automotive Engineers, and the American Association of Motor Vehicle Administrators.

The Automobile Manufacturers Association is clearly an agency of automobile manufacturers. The American Standards Association is openly financed by automobile manufacturers wherever it covers automotive purposes. The

Society of Automotive Engineers is formally an organization of individual professional members, but its staff is partially financed by automobile manufacturers and it is generally considered an industry-oriented organization. It has not adopted any of the codes of professional engineering ethics and it does not concern itself with the advancement of the conditions of automotive engineering practice.

The American Association of Motor Vehicle Administrators is a private organization of State motor vehicle administrators for whom the States pay dues out of public funds. However, the AAMVA also receives earmarked financial grants from the automobile manufacturers through the Automotive Safety Foundation (congressional hearings, 1959, p. 96), a fund distributing agency controlled by automobile manufacturers. Research grants averaging $1 million per year flow from the Automobile Manufacturers Association to the Automotive Safety Foundation and thence elsewhere.

Thus all four of the research agencies mentioned by the commission's temporary chairman are funded by the same interest group, automobile manufacturers. These are the organizations which would perform the research and write the reports of research to be paid for by funds from public agencies. There has been no mention of using any independent research organizations, such as universities or medical agencies. Actually, a total of five technical professions are involved in vehicle safety research but only automotive engineering is represented by organizations on the commission's list. The compact allows the commission to concentrate in any area of research which it chooses.

Technical and advisory committees

The absence of safeguards or formal interest-balancing in the advisory and technical committees (art. VIII) is most significant in view of the broad-scale intentions of the commission. These compact-authorized committees and the "organizations which the members represent" would very probably be involved as subcommittees to the commission in judging the worth of "ideas," reporting on "useless bills" and the like.

It is worth noting that the American Association of Motor Vehicle Administrators, which is nearly identical in membership to the commission, has utilized advice primarily from automobile industry sources and their suppliers for several decades. This is primarily because AAMVA has heretofore dealt only with existing automotive vehicle safety legislation in which administrative details were to be considered. Consumer organizations, medical organizations, automobile owners associations have not been in contact with AAMVA, nor have they financed it. It would seem that the automobile industry, being already in place, would enjoy a considerable advantage with the commission for some years.

Sources of technical standards

The requirement of "due regard for standards recommended by appropriate professional and technical associations and agencies" (art. V(b)) has considerable force in argument as to adequate regulations, especially when coupled with the additional compact policy "rules in accordance with expert knowledge and opinion" (2, (a)) and the requirement of uniformity "except to the extent that specific and compelling evidence supports variations" (2, (b)).

Two standardizing groups have thus far occupied the automobile field: the American Standards Association (a few types of standard) and the Society of Automotive Engineers. We have already noted the partial financing of the SAE staff. Staff work for standards which deal with automotive vehicles is financed entirely by industry.

The relationship of these two organizations to the industry is such that when a congressional bill requiring safety standards for federally purchased automobiles was up for hearing, the Automobile Manufacturers Association (after denying the necessity of the bill) proposed an advisory purchase committee to include both SAE and ASA. When that was not adopted and the bill passed the House, the manufacturers association proposed as a Senate amendment that the Federal standards "shall conform" to those SAE and ASA.

Standardizing committees of SAE are appointed by other higher level committees within SAE, a majority of whose members are industry employees. Although SAE rules require representation on standards committees of "those concerned," many of the more important committees lack any nonindustry representation whatsoever. Recent subcommittees on door latches, safety belt

anchorages, and rear vision were composed entirely of automobile company employees. The well-known SAE Seat Belt Committee is possibly the broadest based SAE committee. In 1962, the chairman of the committee appeared at a JLC hearing on seat belt legislation, arguing that a 4,000-pound loop load was sufficient (instead of the JLC-proposed 5,000 pounds), because his committee had so judged it. (At the time the U.S. General Services Administration required 5,000 pounds.) After the hearing, correspondence between the JLC and a number of the individual members of the SAE committee revealed that they favored levels above 4,000 pounds and even above 5,000 pounds.

It is most significant that SAE committees do not adopt or issue technical reasoning to support their findings or minority reports. The only report customary is a description of what is recommended. Thus, the commission, being required to have due regard for these standards, is actually in a weaker position to study them than a legislature. When the commission reports its rules, etc., employing the recommendation, it cannot state the reasons for the adoption of that particular level as a minimum requirement. But the recommendation will be advanced in the name of uniformity. And it will be up to the State, according to the compact, to find the "specific and compelling evidence" that supports variation (2.(b)).

The SAE door latch recommendation, for example, calls for 15,000 pounds strength. This strength can be reached by one ¼-inch bolt or by a single piece of seat belt webbing cut in half lengthwise. Obviously, far stronger latches are possible and practical, and are actually in use. But a definition of different levels of strength would allow competition in safety. From other sources, we know that loud competitive claims in safety are not part of industry thinking.

Since the SAE subcommittees are required to strive for unanimity in their decisions, and all manufacturers (and manufacturers only) were represented on the door latch subcommittee, it is very likely that any manufacturer's existing latch strength was disapproved. Thus a "professional standard" cannot only protect the weakest latch from criticism but, by its minimum-only framework, prevent competition, and direct the commission's decision.

It is submitted that the full meaning of the "due regard for professional standards" clause was not appreciated when the Compact was enacted. Does "Uniformity" require the compact?

No purpose for the commission other than promotion of uniformity is stated in the compact. But this purpose is leaned upon heavily. "There is a vital need for the development of greater interjurisdictional cooperation to achieve the necessary uniformity and to accomplish this by such means as will minimize the time between the development of demonstrably and scientifically sound safety features and their incorporation into vehicles." (Art. I.) The prior method of resolving uniformity problems was through the American Association of Motor Vehicle Administrators.

General statements citing delays were made to the congressional subcommittee which approved the compact before Congress passed it. The explanation in Chairman MacDonald's speech stated that substantial delays occurred before equipment could be put into use. MacDonald found the timelag becoming "increasingly critical." Three examples were given, based on examples in the pamphlet of the Council of State Governments. Two of these can be compared with other sources.

Commission Chairman MacDonald:

"When the sealed beam headlight was developed in 1953, the laws of 30 States had to be changed before the approved headlights could be installed and used legally. Four years were required to secure the necessary amendments."

But, C. A. Chayne, General Motors vice president, has explained it thus (traffic safety, congressional hearings, August 1956, p. 334):

"The improved sealed beam system was first used on production cars in July 1955, after receiving the approval of American Association of Motor Vehicle Administrators and after the laws in various States had been revised to permit its use."

The Chayne statement implies an effective delay in introduction, not of 4 years, but of about 2 years, depending on what month in 1953 the headlight was considered "developed."

The second example was dual headlights. According to MacDonald:

"* * * When lighting research established the fact that dual headlights, two on each side of the vehicle produced a superior distribution of light, it was

found that the statutes of 28 States barred the use of dual headlights. A delay of 3 years was encountered before the necessary legislative changes could be made."

C. A. Chayne (same source) said:

"* * * it was possible, by using experimental lamps, to demonstrate the system to the engineering subcommittee of the American Association of Motor Vehicle Administrators * * * February 15, 1956 * * *. Improvements were made and shown to the association's engineering subcommittee June 27, 1956. The introduction of the system now awaits final ratification by the AAMVA * * * this week (August 1956) * * *. Legislative action in 11 States will be required * * *. Now the use of the system is contemplated on a limited basis on some 1957 cars and greatly expanded use * * * for 1958 and future models."

Use of the system on "some 1957 cars" implies introduction sometime between September 1956, and July 1957; 1958 models would begin August 1957. If June 27, 1956, was the date of adequate development, Chayne's statement makes the delay in use somewhere between 3 months and 1 year, as opposed to 3 years in the other statement. And which was correct, 28 States or 11 States?

This leaves the one example of an alleged delay of 3 years in achieving amber front turn signals instead of white. If this third delay was correctly calculated, there are only three claimed cases of delay upon which to base the need for a compact, and two of these are questionable. No other examples have been cited.

Thus, it appears that the existing method, employing the good offices of the American Association of Motor Vehicle Administrators, has been rather effective in developing uniformity among existing laws. Any loss to the citizens of New York State from delay is either insignificant or limited to the case of the amber turn signals which may have been delayed.

The projected budget of the commisison is $50,000 per year, ostensibly to solve uniformity problems, with about $4,000 coming from the budget of the New York Department of Motor Vehicles. This sum is in addition to the sums already going to the American Association of Motor Vehicle Administrators in effect, for speeding up the present uniformity process of AAMVA. This sum could be far better used for our own New York Automotive-Medical Research Agency where it might be applied to problems that are real.

Perhaps some of the reaching out for additional areas of initiative in the compact and commission is due to the realization that the battle required to achieve equipment uniformity is not against nearly as large a tiger as Congress was led to believe.

The compact, AAMVA and the commission

We learn from the MacDonald speech on the commission that, "Instead of setting up a separate facility with office space, executive secretary, clerical help and equipment of our own, we propose to contract for this service with the American Association of Motor Vehicle Administrators. This arrangement should prove beneficial to both groups * * *."

In other words, the executive director authorized for the commission in article III(d) will, apparently, be the same person as the executive secretary of the AAMVA. (MacDonald even called the commission title of director erroneously by the AAMVA title of secretary.)

Apparently, the organizational effect of the compact is merely to vest more formal powers and more funds in the AAMVA in its other existence as the commission.

One thing is certain: No State legislature will now be able to escape the uniform-legislation arguments from the commission, for all that any one State can do is withdraw. The argument that the commission's legislation is the national standard will still be heard by every nonmember State, as well as the wait-for-the-VESC argument.

In objecting to the resolution allowing the compact, the chairman of the House Judiciary Committee complained that (1) Congress was for the first time authorizing a compact it had not seen, (2) compact agencies sometimes become autonomous and uncontrollable by Congress, and (3) such agencies are ofttimes not subject to State control. Congressman Ostertag, formerly chairman of the New York Committee on Interstate Cooperation, stated his view that the resolution gave consent only to negotiation by the States, and did not yet constitute congressional ratification of the compact. (Congressional Record, June 30, 1958, p. 11500.)

Withdrawal

Either withdrawal from the compact or substantial revision is desirable to reduce interference with future New York legislative efforts by the commission. Withdrawal can be accomplished by simple repeal. (The 1-year delay of a withdrawal's effect and continued financial liability supposedly required in article IX are probably of no real effect.)

Withdrawal does not prevent a State from adopting a commission recommendation if it seems useful, and such adoptions may be useful since the AAMVA vehicle equipment uniformity function will no longer be present.

Withdrawal, by New York, with a full explanation of the reasons to other States, may prevent the compact and commission from enveloping the other 19 States. This would somewhat reduce its future influence on New York legislation which has already been demonstrated. The tire legislation experience shows that the mere existence of the commission is harmful to State sovereignty and leadership.

Revisions

The compact was merely an interesting piece of literature before being enacted by New York. It was impossible to tell what the compact really meant without experience, and New York now has the benefit of sad experience.

The compact does not close off entrance into similar compacts based on House Joint Resolution 221. For that reason, two paths to revision are open:

(1) Develop a new compact having provisions more satisfactory to legislatures of many States. Ask the 19 other States to join the improved compact only and ask the 31 to join the new one in addition to the earlier one, repealing the earlier compact later if desired. (Arguments will be made against unilaterally amending the present compact, which is a contract.)

This action would probably produce a more satisfactory commission. It would most certainly cause a careful study of the old compact by States which have not adopted it as yet, as well as by those which have adopted it.

(2) Revise a few key parts of the present compact enactment possibly in the form of a resolution setting additional conditions under which reports, rules, etc., would be considered to be adequately understandable by the State so that they could be given "due consideration." The condition would require a minority report, complete reproduction of all the arguments, technical reports, a full statement of technical reasoning, personnel participating and backgrounds, methods of securing interest balancing in data collection, and financial reports of subcommittee organizations and the like. This is simply the expression of need for safeguards and full clarity, and it would at the same time provide the necessary material for questioning of every commission decision, in effect allowing rejudgment by every State. This would also insure that the commission did very thorough studies. (Notice that a dissenting State [V. (g)] must document with reasons and a transcript, while the commission need provide only a report.) This action would not touch all the problems raised by the commission.

There is no visible way to attack the refer-it-to-the-commission argument without an effort involving work with other States.

In early 1965 the Federal General Services Administration tentatively adopted a total of seven joint legislative committee safety recommendations in a revision of GSA's own earlier proposals. The recommendations were for certain safety standards for vehicles to be purchased by the Federal Government as required by Public Law 88–515.

An action of the National Bureau of Standards was perhaps even more significant from the standpoint of the validity of technical portions of the joint legislative committee's proposals. The Bureau of Standards adopted a technical method of describing and controlling the breaking energy of tires for test purposes which had been part of the joint legislative committee-originated language of the 1964 tire bill.

The "ratio" method will appear in the new Federal specification ZZ–T–00381k prepared by the National Bureau of Standards and to be issued by General Services Administration. Thus, although the tire bill failed to pass in 1964, part of this original bill has already been adopted elsewhere.

It is interesting that one of the arguments used against the joint legislative committee tire bill was that it allegedly contained "technical errors." In preparing the newly proposed Federal specification, the National Bureau of Standards has not only kept all the older alleged "errors" of technical framework

used in the joint legislative committee tire bill, but has also adopted the new "errors" originated by the JLC.

Conclusion

It would be easy to say that the AAMVA has promoted a governmental monster in its own desire for empirebuilding. This would do a disservice to an important and constructive organization which does excellent work in its proper sphere, whch extends far beyond vehicle safety. It is more probable that the vast sweep of the compact and the commission's one-interest group technical orientation grew out of natural forces, or was introduced by the AAMVA's various cooperating organizations. (Not only has AAMVA received indirect industry grants in the past, but some of its staff has been similarly financed in previous connections.) Manufacturers have been the only interest group contacts required in the traditional work of vehicle safety administration.

In any case, the New York administrators recognized the importance of noninterference with legislatures as soon as the door that had been opened became apparent. Very possibly other AAMVA members do not fully realize what they are getting into, either. The MacDonald speech suggests that State administrators have primarily feared a possible reduction in State administrative tasks through possible future Federal actions. Throwing away State sovereignty and initiative because of State administrators' vague fears is not the way to better legislation.

Chapter 101—Federal Property Management Regulations

SUBCHAPTER E—SUPPLY AND PROCUREMENT

PART 101–29—FEDERAL SPECIFICATIONS AND STANDARDS

Subpart 101–29.3—Standards

FEDERAL STANDARD NO. 515—STANDARD SAFETY DEVICES FOR AUTOMOTIVE VEHICLES

This amendment prescribes Federal Standard No. 515 covering safety devices for automotive vehicles purchased by the Federal Government for use by the Federal Government. Publication of the standard in the Federal Register is based on the requirement of Public Law 88–515, approved August 30, 1964 (78 Stat. 696), which provided that such regulation be so prescribed and published by the Administrator of General Services not later than 1 year from the date of enactment of the act. The standard was developed through consultation with the automotive industry, technical societies, trade associations, the medical profession, and Government agencies. It was published in proposed form in the Federal Register (30 F.R. 797) on January 26, 1965, for public comment. Prior to July 1, 1966, the General Services Administration intends to revise several of the detailed standards contained in Federal Standard No. 515, and to add additional detailed standards. Such proposed changes will be made after consultation with interested parties, and will be published in the Federal Register for public comment before issuance.

1. The table of contents for subpart 101–29.3 of subchapter E is amended by the addition of a new section as follows:

Sec.
101–29.303 Federal Standard No. 515—Standard Safety Devices for Automotive Vehicles.

2. A new § 101–29.303 is added which prescribes Federal Standard No. 515.

Section 101–29.303. Federal Standard No. 515—Standard Safety Devices for Automotive Vehicles.

(a) This section prescribes Federal Standard No. 515, covering safety devices for automotive vehicles, as required by Public Law 88–515, August 30, 1964 (78 Stat. 696). Automotive vehicles purchased by the Federal Government for use by the Federal Government shall be equipped with safety devices conforming to Federal Standard No. 515. Copies of this standard may be obtained from the Commissioner, Federal Supply Service, General Services Administration, Washington, D.C., 20405. The standard is composed of detailed Federal standards which include:

(1) No. 515/1—Anchorages for Seat Belt Assemblies for Automotive Vehicles.
(2) No. 515/2—Padded Instrument Panel and Visors for Automotive Vehicles.

(3) No. 515/3—Recessed Instrument Panel Instruments and Control Devices for Automotive Vehicles.
(4) No. 515/4—Impact Absorbing Steering Wheel and Column Displacement for Automotive Vehicles.
(5) No. 515/5—Safety Door Latches and Hinges for Automotive Vehicles.
(6) No. 515/6—Anchorage of Seats for Automotive Vehicles.
(7) No. 515/7—Four Way Flasher for Automotive Vehicles.
(8) No. 515/8—Safety Glazing Materials for Automotive Vehicles.
(9) No. 515/9—Dual Operation of Brake System for Automotive Vehicles.
(10) No. 515/10—Standard Bumper Heights for Automotive Vehicles.
(11) No. 515/11—Standard Gear Quadrant (PRNDL) for Automotive Vehicles Equipment with Automatic Transmissions.
(12) No. 515/12—Windshield Wipers and Washers for Automotive Vehicles.
(13) No. 515/13—Glare Reduction Surfaces—Instrument Panel and Windshield Wipers for Automotive Vehicles.
(14) No. 515/14—Exhaust Emission Control system for Automotive Vehicles.
(15) No. 515/15—Tires and Safety Rims for Automotive Vehicles.
(16) No. 515/16—Backup Lights for Automotive Vehicles.
(17) No. 515/17—Outside Rearview Mirror(s) for Automotive Vehicles.
(b) The standard rate as follows:

[Federal Standard No. 515]

STANDARD SAFETY DEVICES FOR AUTOMOTIVE VEHICLES

[Federal Standard No. 515/15]

TIRES AND SAFETY RIMS FOR AUTOMOTIVE VEHICLES

S1. *Purpose and scope.* This standard establishes requirements for tires and safety rims installed on automotive vehicles.

S2. *Application.* This standard applies to sedans, buses, carryalls, station wagons, and light trucks up to 10,000 pounds G.V.W.

S3. *Standard characteristics.* Federal Specification ZZ–T–381, SAE Recommended Practice for Passenger Car Tire Performance Requirements, SAE J918, and the recommendations of the Tire and Rim Association, Inc., Year Book (hereinafter cited as "Year Book"), form the basis for this standard. For tires and rims expressed in dimensions of the metric system, the performance requirements as outlined below shall be expressed in the nearest equivalents of inches, pounds, and miles per hour.

S3.1 *Tires.* Automotive vehicles shall be equipped with tires conforming to Federal Specification ZZ–T–381.

S3.1.1. *Rated capacity.* Each tire shall have a rated capacity, in accordance with Engineering Guide or Recommended Load of the Year Book, at least equal to the total load on each axle, divided by the number of tires on the axle, at the inflation pressure recommended by the vehicle manufacturer, provided that such inflation pressure shall not exceed the recommendations of the Year Book for the size and ply rating of the tire furnished.

S3.1.2. *Fully loaded vehicle.* A fully loaded vehicle is defined as the curb weight of a vehicle including all accessories plus the addition of 1,100 pounds distributed load for sedans, 1,200 pounds distributed load for carryalls and station wagons, and/or the specified G.V.W., or other specific vehicle manufacturer's rated load, distributed as closely as possible to load each axle to its rated load.

S3.2 *Rims for sedans and station wagons.* Automotive vehicles shall be equipped with rims conforming to or wider than the minimum of the listings of the Year Book for the size and ply rating of the tire furnished. In the event of rapid loss of inflation pressure with the vehicle traveling in a straight line at a road speed of 60 miles per hour, the rim shall retain the deflated tire until the vehicle can be stopped with a controlled braking application. For test purposes, an explosive device may be used to induce rapid loss of inflation pressure.

S3.2.1 *Resistance to tire bead unseating for sedans and station wagons.* When tested in accordance with the procedures described in paragraph 4.4 of SAE J918, the applied force required to unseat the tire bead at the point of contact shall be not less than 2,500 pounds.

National Standards[1] for Treading Automobile and Truck Tires

(Adopted by the Tire Retreading Institute, a division of National Tire Dealers & Retreaders Association, Inc., Washington, D.C.)

SECTION I. PURPOSE

The purpose of these specifications and treading standards, which are drawn up in the interests of motoring safety, is to provide a nationally recognized standard for treading tires; act as a basis for better understanding between producers and users; protect purchasers against inferior materials and workmanship; promote fair competition among retreaders; provide a basis for confidence in properly retreaded tires; and for declaration of quality workmanship and warranty.

SECTION II. SCOPE

These standards cover definitions of terms used in the retreading industry, general requirements for material quality and labeling, casing inspection and selection, preparation of the tire to be retreaded, inspection of the finished tire, as well as a statement of warranty that the finished tire conforms to these standards.

SECTION III. DEFINITIONS

For the purposes of this standard the term "retreading" (recapping) as used, refers to replacement of worn rubber on a tire tread by processes known in the trade as "full treading" (full capping) and "top treading" (top capping). These are defined as follows:

Full treading (full capping).—The worn tread rubber is rasped or buffed off the top of the tread and over the shoulders as far as the new rubber is to extend.

Top treading (top capping).—In top treading only the top of the old tread is rasped. All the new rubber is applied just to the top of the tread—hence the name "top tread."

Undertread.—Rubber between the base of the antiskid design and buffed tire body.

Skid-depth.—The distance measured near the centerline of the tire from the base of the antiskid design to the top of the tread.

Natural rubber.—Natural rubber shall include all forms and types of tree, vine, or shrub rubber.

GR–S synthetic rubber.—GR–S synthetic rubber shall include a synthetic rubber of the butadine-styrene type generally used in the manufacture of pneumatic tires and tread rubber.

Cold rubber.—Cold rubber is a type of GR–S synthetic rubber polymerized at approximately 41° F., as distinguished from hot rubber polymerized at approximately 122° F.

Reclaimed rubber.—Reclaimed rubber is any rubber derived from the processing or treatment of vulcanized rubber or cured scrap rubber.

SECTION IV. MATERIAL REQUIREMENTS

1. *General statement.*—The purpose and intent of this section is to establish within reasonable limits general guides for the selection of tread rubber and other materials which will give the ultimate user the highest possible tread wear under normal operating conditions. Therefore, the minimum quality tread rubber used must be of a grade and quality level which is considered as a manufacturer's highest quality exclusive of premium grades designed for high abrasion resistance.

2. *Labeling.*—Tread rubber shall be labeled: "Natural or crude rubber" "100 percent cold rubber," "cold rubber," "GR–S," etc., on each box.

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[1] These standards were originally established at a meeting of industry representatives, January 1955, and adopted by the Tire Retreading Institute Oct. 13, 1955. They were reviewed by members of the Tire Retreading Institute during the summer of 1958 with suggested revisions. The suggested revisions were circulated during the summer of 1959 and were adopted by the Tire Retreading Institute Sept. 16, 1959, at Washington, D.C.

3. *Standard dimensional tolerances.*—

(1) Thickness includes cushion, if used, but does not include the backing:

(*a*) For nominal gauges of $^{18}/_{32}$ inch and less, a tolerance of minus $^{1}/_{64}$ inch and plus $^{2}/_{64}$ inch is established.

(*b*) For nominal gauges of $^{20}/_{32}$ inch and up to and including $^{24}/_{32}$ inch, a tolerance of minus $^{1}/_{64}$ inch and plus $^{3}/_{64}$ inch is established.

(*c*) For nominal gauges of $^{26}/_{32}$ inch and over, a tolerance of minus $^{2}/_{64}$ inch and plus $^{4}/_{64}$ inch is established.

(2) Width:

(*a*) For tread rubber sizes with a base width of 6 inches and less, a tolerance of plus $^{1}/_{16}$ inch and minus $^{1}/_{8}$ inch is established.

(*b*) For tread rubber sizes with a base width of more than 6 inches, but not more than 12 inches, a tolerance of plus $^{1}/_{8}$ inch and minus $^{1}/_{8}$ inch is established.

(*c*) For tread rubber with a base width of over 12 inches, a tolerance of plus $^{1}/_{4}$ inch and minus $^{1}/_{4}$ inch is established.

(3) Bevel or wing width:

(*a*) Wing width control:

1. For "wing-size" tread rubber with a base-width of 6 inches or less, the centerline of the crown should coincide with the centerline of the base within $^{1}/_{16}$ inch.

2. For "wing-size" tread rubber with a base width of 6 but not over 12 inches, the centerline of the crown should coincide with the centerline of the base within $^{1}/_{8}$ inch.

3. For "wing-size" tread rubber with a base width of over 12 inches, the centerline of the crown should coincide with the centerline of the base within $^{1}/_{4}$ inch.

(*b*) Bevel width:

1. For all "Bevel" tread rubber, the centerline of the crown should coincide with the centerline of the base within $^{1}/_{8}$ inch.

(4) Wing edge thickness:

(*a*) A maximum edge thickness of $^{7}/_{64}$ inch is established.

1. The thickness should be measured by using calipers with graduations in 64th's of an inch.

2. The calipers should have the jaws opened at $^{7}/_{64}$ inch and the wing edge inserted. If the edge is admissible, it meets the required dimension.

(5) Centerline position:

(*a*) The center point of the centerline mark should be within $^{1}/_{16}$ inch of the actual measured center of the crown of the tread rubber when the crown width is 10 inches or less, and it should be within $^{1}/_{8}$ inch of the measured center of the crown when the crown width is over 10 inches.

4. *Padding stock.*—The padding stock shall be suitable for filling in worn (low) spots under tread rubber.

5. *Filler-strip stock.*—The filler-strip stock shall be a minimum of $^{4}/_{32}$ inch thickness at the centerline. This stock shall be suitable for filling around the complete circumference of the tire being retreaded to insure proper undertread.

6. *Cement.*—The vulcanizing cement shall be manufactured with natural rubber only, with no reclaimed rubber, and with solvent as defined. This cement shall be capable of being vulcanized, and shall be suitable for use in retreading and repairing of tires.

7. *Rubber solvent.*—The rubber solvent shall consist entirely of petroleum distillate, and shall be water-clear, free from foreign material, acid, water, or antiknock materials. When subjected to distillation in accordance with an applicable method, the solvent shall show an initial boiling point (I.B.P.) of 100° to 140° F., and an end point (E.P.) of 250° to 300° F., with no oily residue.

8. *Age limits and storage conditions for tread rubber and repair materials.*—Tread rubber for pneumatic tires of all types, repair materials, and unvulcanized accessories should be stored in a dry place, protected from the elements and direct exposure to sunlight and the temperature of the storage area should be kept below 80° F.

Under these conditions, tread rubber and repair materials should be expected to remain in a satisfactory condition for 6 months after date of receipt from the manufacturer. Colder storage conditions extend the shelf life, without harm to the product. Warmer storage conditions shorten the shelf life.

Tread rubber and repair materials exposed to temperatures of 80° to 95° F., can be expected to have their shelf life reduced 25 percent and if stored at temperatures of 95° to 110° F., a reduction of 50 percent or more can be expected. Tread rubber and repair materials will not tolerate temperatures of over 110° for more than a very short time without danger of vulcanization.

If the tread rubber and repair materials are exposed to temperatures which cause freezing or hardening of the stock (which can occur at temperatures below 40° F.) the stock must be carefully restored to its original condition by warming it at a temperature between 70° and 90° F.

Tread rubber, repair materials, and all unvulcanized accessories are made to meet exacting standards and to perform under existing field conditions, and at the same time to be as satisfactory as possible for shelf aging. Because these materials are shipped to widely varied climates and are subjected to all types of storage, the possibility of deterioration is always present.

The storage period and conditions specified reflect general industry experience. Violation of these specifications may be reflected as an appreciable deterioration of a percentage of the material affected and does not mean that such material is unusable or subject to failure because of age.

SECTION V. PRELIMINARY INSPECTION OF TIRE

1. *General statement.*—The purpose and intent of this section is to outline the general procedures in the inspection and selection of tire bodies to be retreaded.

2. *Inspection of tire.*—Careful inspections shall be made by a skilled operator, and shall include placing the tire on a mechanical spreader under adequate lighting, distorting the natural contour of the tire sufficiently to expose any evidence of ply separation, impact breaks, or other defects without damaging the bead.

3. *Inspection standards.*—Tires that have a known separation between the plies shall not be retreaded, and should be destroyed. No tires to be accepted for retreading may contain any of the following weaknesses or injuries.

A. Ply separation.

B. Fabric injury in the bead area.

C. Broken or damaged bead wires.

D. Flex breaks.

E. Loose cords on the band ply, or evidence of having been run flat.

F. Tread separation, other than that which can be removed in the buffing operation.

G. More than surface weather checking.

H. Generally weakened condition due to age, moisture, and/or exposure.

I. Any tire except a rear tractor tire carrying a synthetic marking such as S–3, S–7, etc.

J. Any automobile casing containing an impact bruise, or X-type break, cut, or any other type of casing injury requiring what is commonly known as a section repair.

4. All tires to be processed shall be thoroughly dry and all cords free of moisture.

5. *Nail holes.*—All nail holes must be thoroughly cleaned and inspected for extent of casing injury. If casing is punctured only and does not require a full section repair or reinforcement, the nail hole may be filled and treated in the conventional manner so as to provide a sound tire body for processing.

SECTION VI. PROCESSING

1. *General statement.*—The purpose of this section is to emphasize certain processing standards in the retreading of tires. Detailed instructions will be found in the NTDRA Shop Operating Manual, which should serve in all instances where there are specific questions.

2. *Buffing.*—The tire shall be uniformly buffed using a matrix template or other satisfactory system of measurement to insure proper matching of buffed crown contour with matrix tread contour and overall diameter. The buffed surface should be of a smooth texture and free from moisture, loose cords, and foreign material which would affect adhesion properties between casing and tread rubber.

Proper buffing dimensions for each matrix must be posted in the buffing room. These should include:

Matrix identification,
Buffed tread width,
Buffed crown contour,
Overall buffed width,
Overall buffed diameter,

with minimum and maximum measurements.

3. *Cementing.*—The cementing process should begin within a reasonable time after the buffing operation is completed to avoid the hazards of an oxidized surface.

It is suggested that each container of cement be tested for freshness.

If solvent is used as a thinner, this too must be tested for presence of oil.

Tires to be cemented must be free from moisture and foreign material such as buffing dust, dirt, loose cords, etc. Extreme caution must be taken on air lines used to blow dust from the surface of a tire. Efficient moisture traps must be located as close as possible to the air release valve to prevent moisture from being blown onto the surface of the tread area.

4. *Building.*—

(*a*) Full tread (full cap): Shall be made with wing-type tread rubber, and shall extend over shoulders.

(*b*) Top tread (top cap): Shall extend only across the tread area, thus conforming with that tread known commercially as a top tread (top cap).

(*c*) If the breaker is exposed on any portion of the buffed area, it shall be covered with a suitable protective padding stock or cushion gum before applying the tread rubber.

(*d*) Splicing: Tread rubber shall be skived or butted at one end. The tread rubber shall then be applied to the tire and shall be centered over the entire circumference. After the backing is removed, the cushion surface shall not be handled or touched. The other end of the tread rubber shall then be skived or butted to match the end previously skived or butted.

(*e*) Stitching: Stitching or rolling of tread rubber shall then be accomplished starting at the center and working to the edges so that air pockets will be eliminated. Wrinkles at edges of tread (on wing dies) shall be thoroughly stitched. Edges of top tread (top cap) tread rubber shall be tight. All air pockets must be eliminated. The use of mechanical stitchers or tread builders is recommended for efficiency. However, their operation must be checked for extrusion or thinning out of original tread rubber die size which causes thin spots, open splices, tread cracking, etc.

5. *Curing.*—

(*a*) Curing shall be started as soon as practicable after the building operation has been completed. Curing temperatures, time, and pressure shall accurately follow mold and rubber manufacturers directions. A correlation between the curing characteristics of the tread rubber and heating characteristics of the mold is necessary. Extra curing time must be taken into consideration when using filling strips or padding stock and the rubber cured accordingly.

(*b*) Curing equipment: Molds and/or matrices shall be so designed and installed with sufficient heat so that:

A. Temperatures to within plus or minus 5° F. tolerance will be maintained according to mold and/or tread rubber manufacturer's recommendation;

B. Necessary precaution should be taken to provide uniform drainage of condensate from the molds, if steam;

C. Necessary precautions should be taken to obtain uninterrupted flow of current to molds, if electric.

D. Proper sizes of curing tubes and rims shall be inserted in accordance with curing tube manufacturer's specifications.

(*c*) Molds shall be equipped with instruments in good condition, located to indicate mold temperature accurately. They shall be so designed as to cure retreaded tires without damage or distortion.

(*d*) Air pressure recommended by equipment manufacturer must be maintained and controlled through accurate gauges as close to each outlet as possible in order to insure proper reading.

6. *Final finishing.*—After curing, the retreader shall make a final examination of the tire, checking inside to insure that nail holes and loose cords have been properly treated and that the tire is not buckled. The outside of the tire shall be checked to insure adequate molding and curing. The tread shall be straight and not porous. Each tire shall be trimmed, cleaned and/or painted.

Tread thickness: The tread rubber used shall be of such thickness as to provide the following minimum amounts of undertread. Undertread thickness should be gauged after the tire has been retreated and does not necessarily reflect tread rubber thickness.

[In inches]

Tire size	Minimum under tread	Minimum skid depth
Passenger: Conventional designs:		
6.00 inches cross section and larger	2/32	10/32
Less than 6.00 inches cross section	2/32	9/32
Mud and snow designs:		
6.00 inches cross section and larger	2/32	14/32
Less than 6.00 inches cross section	2/32	12/32
Truck tires:		
Small (up to 7.00 inches cross section)	4/32	(1)
Large (over 7.00 inches cross section)	6/32	

[1] Equal to that of new 100 level tire of same size and type—minus tolerance 2/32 inch.

SECTION VII. CONTROL INSTRUMENTS

The effective use of time clocks, heat gauges, air pressure gauges, mold and/or matrix temperature gauges is required for the control of heat, time, and air pressure.

Further, it is recommended that these gauges be calibrated regularly to insure their accuracy.

SECTION VIII. WARRANTY

In order that the consumer may know that the retreaded tire purchased actually complies with the specifications set forth in these standards as well as the general practices outlined in the NTDRA Shop Operating Manual for Tire Reconditioning, all tires must carry a guarantee against defects in workmanship and material as well as give satisfactory service under norml operating conditions.

SECTION IX. LABELING

Members in good standing of the Tire Retreading Institute are required to affix an authorized medallion to each tire processed in compliance with these standards. This will give the consumer tangible assurance of minimum quality standards as set forth in these specifications. The medallion must be placed only on those tires meeting these standards.

Willful evasion and misapplication of the authorized medallion on retreaded tires not meeting these standards will be sufficient cause for expulsion from membership in the Tire Retreading Institute.

RESOLUTION OF THE NATIONAL TIRE DEALERS & RETREADERS ASSOCIATION, INC., AS AMENDED AND PASSED BY EXECUTIVE COMMITTEE IN LAS VEGAS, NEV., JANUARY 13, 1962

Whereas there is a great variety of automobile tires being manufactured and offered for sale, and the public is confused and frequently misled by the inexact

and sometimes deceptive terminology employed in the advertisement of automobile tires for sale; and

Whereas the public has no practicable means of substantiating the representations of the producers and sellers of automobile tires concerning the quality, size, value, or safety of the various kinds and grades of automobile tires offered in the market: Now, therefore, be it

Resolved, (1) That the National Tire Dealers & Retreaders Association, Inc., proclaim the urgent need for the establishment of standards of identity and quality for the various kinds and grades of automobile tires offered in the market; and (2) That it is preferred that such standards be prepared under the procedures made available to trade groups by the U.S. Department of Commerce pertaining to commercial commodity standards, and, to this end, this association directs its executive secretary, on its behalf, to make specific requests of the said Department to assist in the preparation of such standards for automobile tires; and be it further

Resolved, That in the event the preparation and publication of such standards for automobile tires under the procedures provided by the U.S. Department of Commerce as above mentioned should prove not to be feasible, then this association deems it to be in the interests of the public safety and welfare that the Congress enact legislation providing for the establishment of such standards, and directs its executive secretary, on its behalf, to request the Congress to enact such legislation.

RESOLUTION—42D ANNUAL CONFERENCE, NATIONAL TIRE DEALERS & RETREADERS ASSOCIATION, INC., SEPTEMBER 18, 1962

Whereas the membership of the National Tire Dealers & Retreaders Association, Inc., at the annual meeting on September 26, 1961, directed the association to take action to establish tire standards; and

Whereas the executive committee of the association at its meeting held on January 13, 1962, approved a resolution stating the position voted by the members on September 26, 1961; and

Whereas the executive committee subsequently requested the advice and cooperation of the Department of Commerce in the preparation of a commercial commodity standard for passenger tires; and

Whereas the executive committee called a meeting with Department of Commerce, and tire manufacturer representatives in Washington, D.C., on May 15, 1962, to discuss this matter; and

Whereas at this meeting it was agreed that the executive committee would meet with Department of Commerce officials and the leading authorities of the tire industry to further investigate the development of practicable tire standards; and

Whereas this meeting was held in Cleveland, Ohio, on July 31, 1962, with an attendance of 24, including representation from NTDRA, RMA, the Department of Commerce, and tire industry technical authorities for a very thorough examination and discussion of the numerous complexities which must be considered in establishing tire standards; and

Whereas the executive committee appointed a smaller subcommittee consisting of NTDRA officials and five tire technical authorities to summarize the conclusions reached in the July 31, 1962, meeting; and

Whereas a meeting of this subcommittee was held in Cleveland, Ohio, on August 30, 1962, at which time there was a review of the extensive studies made by NTDRA and the tire industry in an effort to develop practicable commercial commodity standards for tires, concluding with the following resolution: Now, therefore, be it

Resolved, That the National Tire Dealers & Retreaders Association, Inc., after study of the subject of tire safety standards and with the cooperation of the Department of Commerce and leading technical authorities of the tire industry, hereby petitions all tire manufacturers to manufacture new passenger tires in the future to dimensions specified by the Tire & Rim Association and acceptable for original equipment application to the extent feasible consistent with technical progress, such dimensions to apply to all tires regardless of grade.

Compliance with this petition is in the best interests of the consuming public, tire dealers, and the retreading industry; and be it

Resolved by the members of the National Tire Dealers & Retreaders Association, Inc., in annual conference this 18th day of September 1962, That the foregoing resolution is hereby ratified and confirmed.

RESOLUTION—43D ANNUAL CONFERENCE, NATIONAL TIRE DEALERS & RETREADERS ASSOCIATION, INC., OCTOBER 8, 1963

Whereas modern, high-speed superhighways require tires of sufficient carrying capacity for the automobile and for the reasonable safety, tires which are in good operating condition to minimize the hazard of accidents from blowouts and other tire failure: Now, therefore, be it

Resolved by the members of the National Tire Dealers & Retreaders Association, Inc., in annual conference assembled this 8th day of October 1963, That those States and municipalities which require inspection of automobiles under appropriate safety inspection codes be urged to include as a part of their inspection, the tires on the automobile to determine that the tires are in safe operating condition.

Further, That they are to ascertain that the size tire is not smaller than that recommended by the automobile manufacturer.

Further, That the following factors are recommended to be incorporated in safety inspection codes:

1. Sufficient tread depth for adequate traction.
2. Lack of sidewall cracks, scuffs, cuts, or other injury of the tires which run into the cord body, thus weakening the tire, or any bulges or bumps that indicate partial failure of the tire structure.
3. Prohibit on passenger automobiles the use of regrooved tires, which is the process of cutting a tread design into tires which have been worn smooth through use.

RESOLUTION—44TH ANNUAL CONFERENCE, NATIONAL TIRE DEALERS & RETREADERS ASSOCIATION, INC., SEPTEMBER 22, 1964

Whereas the National Tire Dealers & Retreaders Association has throughout its history developed, advocated, and supported tire safety programs; and

Whereas this association has actively advocated and pursued the adoption of tire standards that will effectively assure the users of safe tires; and

Whereas the Rubber Manufacturers Association has recently recommended a set of new automobile tire standards: Now, therefore, be it

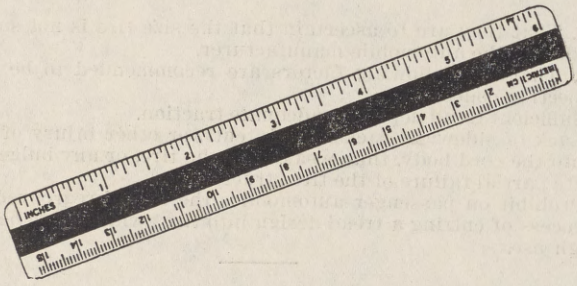
Resolved by the members of the National Tire Dealers & Retreaders Association, Inc., in annual conference this 22d day of September 1964, That this action by the Rubber Manufacturers Association be acknowledged and that it be considered a beginning in the eventual development of uniform standards for tire safety; and be it further

Resolved, however, That the new tire standards recommended by the Rubber Manufacturers Association are in the collective judgment of the members of this association, inadequate to prevent the marketing of automobile tires and truck tires of undersize outside diameter, low quality, and questionable safety; and be it further

Resolved, That further modifications of these tire standards be coordinated with the tire standards suggested or desired by the American Trucking Association, the Society of Automobile Engineers, State and other interested groups; and be it further

Resolved, That the National Tire Dealers & Retreaders Association reaffirms its support of uniform standards that will assure that tires will be constructed to provide safe performance on high-speed highways under all reasonably anticipated operating conditions, with effective enforcement procedures, and that these standards be communicated understandably to American consumers, truckers, and enforcement agencies.

TIRE FACTS



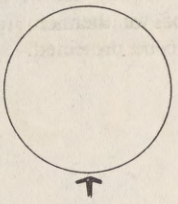
A yardstick for value

By

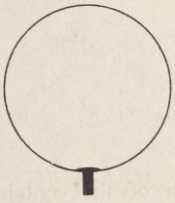
The Men Who Know Tires Best



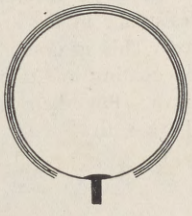
WHAT IS A TIRE?



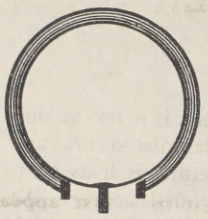
(1) Unfortunately, it is not as simple as 1-2-3 to describe a tire and its function, but neither is it as complicated as it may first appear. We often hear someone say, "We are riding on rubber." It would be more accurate to say "We are riding on air." A tire is a device for holding a circular chamber of compressed air. The circle on the left represents such a device.



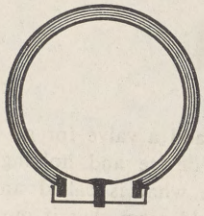
(2) When we add a valve for getting air into the device and holding it there, we have what is called an innertube. It would seem that if our car rides on air, this container would be all that is necessary to support the car. The rubber of the innertube will stretch under the pressure of the compressed air so we must develop a means of keeping the tube from stretching.



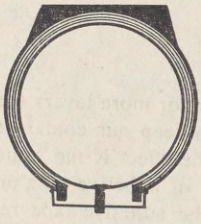
(3) We add one or more layers (or plies) of fabric to keep our container under control. The effect is the same as putting a piece of adhesive tape on a toy balloon. The adhesive tape restricts the stretching quality of the balloon. The plies of cord fabric restrict the stretching qualities of our tube.



(4) Since the tire is not a complete circle (requiring the rim or wheel to become a part of the circle), we must anchor our device so it will not stretch away from the rim. For this a series of wire bands called "beads" are used. The day to day use of the car in all kinds of weather requires that the cord fabric be protected.



(5) A layer of tough rubber is added to provide this protection. The rubber on the side walls must be thin enough to stand the flexing or bending of the container as weight is applied around the circumference of the container.



(6) In the area of the container that makes contact with the road we must have a heavy built-up area to withstand the friction or abrasion of the container against the road surface. This built-up area resembles the double knee in the little boy's trousers. It creates extra resistance in the area of toughest service. This is done by applying a heavy coating of tough rubber in that area. Put them all together and we have a tire.

WHAT MUST A TIRE DO?

(1) To give satisfactory service a tire must be large enough to contain enough air to carry the weight of the car, plus its passengers and luggage.

(2) A tire must be strong enough to hold the required air pressure without allowing the tire to distort until it is placed under loaded weight. It is often said in jest that a tire is "Only flat on the bottom." The fact is, that when mounted on the car, each tire is "flat on the bottom." It is this flat area that must carry the load.

(3) The flat area, however, is constantly moving as the tire rotates and this constant moving creates great stress and distortion. To perform satisfactorily a tire must be so constructed that it will withstand the constant distortion without literally coming apart.

(4) A tire must be so constructed as to be resilient enough to absorb the shock of striking a hole in the road or an object lying in the road.

(5) The tread material of a tire must be of sufficient quality and quantity to enable the tire to resist the friction created between tire and road surface.

FACTS AFFECTING TIRE PERFORMANCE

(1) Air Volume (Tire Size):

The volume of air is determined by the size of the tire. The Tire & Rim Association established a maximum load for each size tire based on this air volume.

54-441—65——18

Too little air volume causes a tire to be overloaded. *Overloading causes the tire* to flex or bend abnormally, creating excessive build up.

(2) Air Pressure:

The maximum load for a given tire as established by the Tire & Rim Association is based upon a specified air pressure. The decreasing or allowing the tire to be run at lower air pressure gives the same effect as overloading—namely, heat build up and rapid tread wear—particularly on the outside edges of the tread. Too much air pressure places the materials of the tire in an excessively stretched position reducing the resistance to impact. Tightening the ropes on the edges of a trampoline reduces the bouncing ability of the trampoline. Leaving them too loose has the same effect. Adjusting them just right gives the right amount of bounce or resiliency, the same as the right amount of air pressure gives the tire the ability to withstand normal impacts. Too much air pressure also reduces the size of the flat area or road contact area of the tire, causing rapid tread wear in the center of the tread area.

(3) Speed:

The speed at which the tire rotates determines the frequency of the flexing or bending of the sidewall of the tire. High speeds create heat build up. Low speeds mean lower heat build up. To prove this point, take an ordinary paperclip and bend it slowly and you will note the flex point does not build up heat and a great deal of time is required to break the paperclip. Now bend the paperclip rapidly. A quick check shows the flex point heating up and the clip breaks rapidly.

(4) Heat Build-Up:

The effect of excessive heat build-up can result in a sudden dangerous blowout no matter how it is caused—whether it be over-inflation, overload or excessively high speed. Any combination can be particularly dangerous.

(5) Road Conditions:

The road conditions under which one normally drives has a great deal of effect on the life and performance of the tire. Highly abrasive road surfaces cause tires to wear more rapidly. Crooked winding roads have the same effect. Straight, smooth highways tend to increase mileage. In short, a person driving with under-inflated, overloaded tires at high speeds on winding roads could be expected to get very poor tire mileage, while a person with properly inflated, underloaded tires, driving at moderate speeds over straight smooth road surfaces could be expected to get excellent tire mileage. All of these factors tend to have the same effect on all tires, regardless of the quality level. The difference being that better quality tires will tend to stand up longer under adverse conditions than will a lower quality tire. This difference could well be the difference between a dangerous blowout or no blowout. In other words, the better quality tire gives one an extra margin of safety.

(6) Drivers:

Some drivers by reason of car maintenance, driving habits, etc. can get double the mileage out of a given tire over another driver.

WHAT MAKES A BETTER QUALITY TIRE?

All tires are made of basically the same materials. It is the amount and quality of these materials that creates the difference in tire quality. Low price tires normally have a poorer quality or lesser amount of material than do the higher price counterparts. In some cases the actual size of a tire may be smaller than the actual size of another tire with the same size marking on the sidewall. This means less material. Tread widths of lower price tires are normally narrower than those of higher quality tires—this means less material.

The fabric type and amount is also a factor and normally you will find more and better fabrics in a better quality tire.

A comparison might be the fabric used for bed sheets. It is possible to buy from the same manufacturer a white, twin-size bedsheet with identical measurements, ranging in price from $1.71 to $2.99. The $1.71 sheet is a 128 count muslin, while the $2.99 sheet is a 207 count percale. Count means threads per inch. This particular manufacturer sells sheets of 128, 133 and 145 count muslin, plus 186 to 207 count percale. As the count goes up the price goes up. This same manufacturer sells cheesecloth that has a 20 x 12 count, meaning 20 threads in one direction and 12 in the other. It is quite obvious that the cheesecloth would not perform as a bedsheet and that the 128 count muslin would not resist as much wear as the 207 percale. Tire manufacturers make several grades of tires. Better tires have better material and more of it. The better tire provides better performance and the lower price tire may not be satisfactory for your service and safety needs.

Let "The men who know tires best" help you select the tire that is best for you.



1343 L Street, N.W.
Washington, D.C. 20005

Technical Report Preprint

This report is scheduled to appear in the 1966 SAE Handbook

Published June 1965

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.,
485 Lexington Avenue, New York, New York 10017

J918

PASSENGER CAR TIRE PERFORMANCE REQUIREMENTS AND TEST PROCEDURES - SAE J918

SAE Recommended Practice

Report of Passenger Car Tire Committee approved June 1965.

1. SCOPE

This SAE Recommended Practice provides minimum performance requirements and accompanying uniform laboratory test procedures for evaluating certain essential characteristics of new tires intended for use on passenger cars. (The requirements published in this SAE Recommended Practice pertain to tire sizes currently used on American passenger cars. For related information on older tire sizes and for those sizes used on import vehicles, contact Society of Automotive Engineers, Detroit Branch Office, 724 New Center Building, Detroit, Michigan 48202)

2. DEFINITIONS

2.1 Bead - That part of the tire which is shaped to fit the rim. Made of high tensile steel wires, wrapped and reinforced by the plies.

2.2 Carcass - Tire structure, excepting tread and sidewall rubber.

2.3 Chunking - Separation of the tread from the carcass in small particles which may range from a very small size to several square inches in area.

2.4 Cord - Texile, steel wire strands, and the like, forming the plies in the tire.

2.5 Groove - Space between two tread rows.

2.6 Ply - Layer of rubber-coated parallel cords forming of tire body.

2.7 Ply rating - An index number by which the design guide rating of a tire is defined.

2.8 Rib - Tread section running circumferentially around tire.

2.9 Rim - Metal support for tire or tire and tube assembly on the wheel. Tire beads are seated on the rim.

2.10 Sidewall - Portion of tire between buttress and bead.

2.11 Tread - Portion of tire which comes in contact with road.

2.12 Tread separation - Tread pulling away from tire body.

3. REQUIREMENTS

3.1 STRENGTH - When tested in accordance with the procedures described in paragraph 4.1 the breaking energy for a tire shall meet or exceed the requirements established in Table 1. Breaking energy value for a tire size not listed in Table 1 shall not be less than that shown for the nearest smaller size tire in cross section and of the same ply rating.

3.2 TIRE ENDURANCE - When tested in accordance with the procedures described in paragraph 4.2, tires shall show no evidence of tread, ply, cord or bead separation or broken cord.

3.3 HIGH SPEED PERFORMANCE - When tested in accordance with the procedures described in paragraph 4.3, tires shall show no evidence of separation or tread chunking.

3.4 RESISTANCE TO TIRE BEAD UNSEATING - When tested in accordance with the procedures described in paragraph 4.4, the applied force required to unseat the tire bead at the point of contact shall not be less than 2500 lb for conventional (bias ply) tires on 13, 14, or 15 in. rims, conforming to Tire and Rim Association standards.

4. TEST PROCEDURES

4.1 STRENGTH - Determination of the breaking energy value shall be made after the endurance test (see paragraph 4.2) and in the following manner. A cylindrical steel plunger 3/4 in. in diameter with a hemispherical end shall be forced into the tread as near to the centerline as possible, avoiding penetration into a tread groove, at the rate of 2 in. per minute. The tire shall be mounted on the rim and inflated to the pressure shown in Table 2. Five measurements of force and penetration at break shall be made at points equally spaced around the circumference of the tire. In the event the tire fails to break before the plunger is stopped by reaching the rim, the force and penetration shall be taken as this occurs.

The energy to break a tire shall be calculated from the average energy values at break by means of the following formula:

$$W = \frac{F \times P}{2}$$

where

W = Energy at break, in.-lb
F = Force at break, lb
P = Penetration at break, in.

4.2 ENDURANCE TEST, EVALUATION OF RESISTANCE TO PLY SEPARATION AND CORD FLEX FAILURE - Test procedure shall be as follows:

4.2.1 Preparation of Tire for Endurance Test - The tire shall be mounted on the rim and inflated to the pressure shown in Table 2. The average radial deflection of the tire at the load shown in Table 2 shall be determined on a flat surface after the tire has been conditioned at a temperature of 100 ± 5F for a minimum of 3hr and with inflation pressure adjusted to the value specified in Table 2.

4.2.2 Equipment - The test wheel shall be a flatfaced steel wheel, 67.23 in. in diameter, and at least the same width as the cross-sectional diameter of the tire to be tested. The tire while being tested shall be located in an air space

Table 1 - Minimum Breaking Energy Requirements

Tire Size Code[a]	Breaking Energy, in./lb, minimum
6.00-13	1000
6.50-13	1000
7.00-13	1100
6.00-14	1000
6.50-14	1000
7.00-14	1100
7.50-14	1200
8.00-14	1300
8.50-14	1300
9.00-14	1300
9.50-14	1300
6.00-15	1000
6.50-15	1000
6.70-15	1100
7.10-15	1100
7.60-15	1200
8.00-15	1300
8.20-15	1300
8.90-15	1500
6.15-14	1000
6.45-14	1000
6.95-14	1000
7.35-14	1100
7.75-14	1200
8.25-14	1300
8.55-14	1300
8.85-14	1300
6.35-15	1000
6.85-15	1000
7.35-15	1100
7.75-15	1200
8.15-15	1300
8.45-15	1300
8.85-15	1300
9.15-15	1300
9.00-15	1300

[a]Designation as reported in the Yearbook of the Tire and Rim Association, Inc., Comand Bldg., 34 N. Hawkins Ave., Akron, Ohio 44313

Table 2 - Inflation Pressures, Loads, and Rim for Tire Tests

Tire Size Code[a]	Ply Rating	Test Rim[a] in.	Tire Test Load, lb	Tire Inflation, lb/sq in.
6.00-13	4	4J	730	24
6.50-13	4	4-1/2J	840	24
7.00-13	4	5J	920	24
6.00-14	4	4J	800	24
6.50-14	4	4-1/2K	890	24
7.00-14	4	5K	980	24
7.50-14	4	5-1/2K	1090	24
8.00-14	4	6K	1180	24
8.50-14	4	6K	1270	24
9.00-14	4	6-1/2K	1360	24
9.50-14	4	6-1/2K	1470	24
6.00-15	4	4J	900	26
6.50-15	4	4-1/2K	1000	26
6.70-15	4	4-1/2K	1120	26
7.10-15	4	5K	1210	26
7.60-15	4	5-1/2K	1320	26
8.00-15	4	6L	1400	26
8.20-15	4	6L	1420	24
8.90-15	6	6-1/2L	1790	28
6.15-14	4	4J	730	24
6.45-14	4	4-1/2J	840	24
6.95-14	4	5J	920	24
7.35-14	4	5J	1020	24
7.75-14	4	5-1/2JK	1120	24
8.25-14	4	6JK	1210	24
8.55-14	4	6JK	1320	24
8.85-14	4	6-1/2JK	1390	24
6.35-15	4	4-1/2J	800	24
6.85-15	4	5J	900	24
7.35-15	4	5-1/2JK	1035	24
7.75-15	4	5-1/2JK	1100	24
8.15-15	4	6JK	1180	24
8.45-15	4	6JK	1280	24
8.85-15	4	6-1/2JK	1370	24
9.15-15	4	6-1/2JK	1470	24
9.00-15	4	6JK	1420	24

[a]Designation as reported in the Yearbook of the Tire and Rim Association, Comand Bldg., 34 N. Hawkins Ave., Akron, Ohio 44313

Table 3 - Tire Endurance Test

Speed, mph	Pressure	Test Load, %[a]	hr	Cumulative Total Miles
50	See	100	4	200
50	Table	120	6	500
50	2	140	24	1700

[a] 100% test load shall be the load necessary to obtain the same average radial deflection of the tire against the test wheel as was determined in paragraph 4.2.1

1 LOAD ARM TO BE PARALLEL TO TIRE & RIM ASSEMBLY AT TIME OF ENGAGEMENT.

2 LOAD BLOCK TO CONTACT TIRE AT MAXIMUM SECTION OF TIRE.

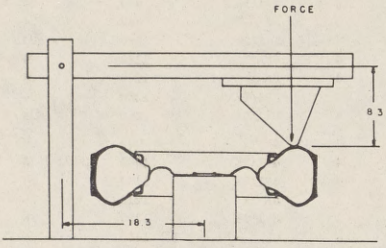


Fig. 1 - Fixture used to support mounted tire-wheel assembly

controlled at a temperature of 100 ± 5F.

4.2.3 Procedure - The tire and wheel assembly shall be mounted on the test axle and pressed against the test wheel with the required axle load. Specifications for the test shall be as shown in Table 3.

4.3 HIGH SPEED PERFORMANCE - Test procedure for evaluation of high speed performance shall be as follows:

4.3.1 Preparation of Tire for High Speed Test - The tire shall be mounted on the rim shown in Table 2 and inflated to 30 psi pressure. The average radial deflection of the tire at the load shown in Table 2 shall be determined on a flat surface after the tire has been conditioned at a temperature of 100 ± 5F for a minimum of 3 hr and the inflation pressure adjusted to 30 psi.

4.3.2 Equipment - The test wheel shall be a flatfaced steel wheel having a diameter of 67.23 in. and at least the same width as the cross-sectional diameter of the tire to be tested. The tire, while being tested, shall be located in an air space controlled at a temperature of 100 ± 5F.

NOTE: Alternate diameter test wheels may be used providing adequate correlation to 67.23 in. test wheel is provided.

Table 4 - High Speed Performance

Speed, mph	Inflation Pressure, psi	Test Load[a]	hr	Cumulative Total Miles
50	30	From	2	100
75	30	Table	1/2	137.5
80		2	1/2	177.5
85			1/2	220

[a] Test load for a specific tire size shown in Table 2 shall be that necessary to obtain the same average radial deflection of the tire against the test wheel as was determined in paragraph 4.3.1. Adjustment of 100% load in this manner permits test wheels of different diameters to be used.

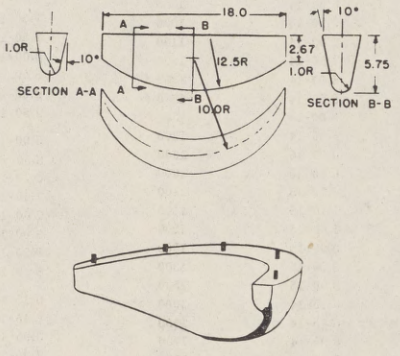


Fig. 2 - Standard block

4.3.3 Procedure - The tire and wheel assembly shall be mounted on the test axle and pressed against the test wheel with the required axle load. Specifications for the progressive test speeds and conditions shall be as shown in Table 4.

After 2 hr breakin running at 50 mph, tire should be allowed to cool to 100 F temperature. Inflation pressure should then be readjusted to 30 psi before continuing test.

After cooling period resume test at 75 mph. Increase speed 5 mph every half hour until maximum indicated speed has been achieved. Standard highway tires shall be tested at speeds up to and including 85 mph for a total test mileage of 220 miles. Deep tread winter tires shall be tested at speeds

up to and including 80 mph for a total test speed of 177.5 miles.

4.4 RESISTANCE TO TIRE BEAD UNSEATING

4.4.1 Preparation of Tire-Wheel Assembly for Bead Unseating Test - The tire should be washed and dried at the two beads, mounted on a new, finished painted rim without the use of lubrication, and inflated to pressures indicated in Table 2 at ambient temperature.

4.4.2 Equipment - A fixture used to support the mounted tire-wheel assembly is shown in Fig. 1. A standard block, (detailed in Fig. 2) is forced against the tire side wall as dictated by the fixture geometry. This load can be applied by a hydraulic ram or its equivalent.

4.4.3 Procedure - With the tire and wheel mounted in the fixture the load should be applied through the block to the tire side wall at a rate of 2 in. per minute. The load at which the bead unseats should be recorded. Raise the block and rotate the tire-wheel assembly one wheel stud hole. Repeat the test for each stud hole position thus acquiring from 4 to 6 load figures for each tire wheel assembly

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FIRST ANNUAL REPORT—VEHICLE EQUIPMENT SAFETY COMMISSION

Pursuant to the provisions of Article III, section (k), of the Vehicle Equipment Safety Compact, which requires that an annual report be made to the Governors and legislatures of the party States, the Vehicle Equipment Safety Commission makes this report which covers the first year's activity under the Compact.

Traditionally, the States have had the primary responsibility for building our highways and regulating their use. Lately, there have been rumblings on Capitol Hill which indicate some dissatisfaction with the States' regulation of the use of our highways. The Congress, however, through passage of the Beamer Resolution in 1958 (Public Law 85-684), recognized the traditional role of the States by granting congressional consent in advance to interstate compacts whose purpose is to promote safety on the highways.

Soon thereafter, development of a Vehicle Equipment Safety Compact was initiated under the sponsorship of the Western Interstate Committee on Highway Policy Problems, the western region of the American Association of Motor Vehicle Administrators, and the Western Governors' Conference. Compact legislation was drafted by the Council of State Governments.

By September 1, 1963, Compact legislation had been passed in 24 States, i.e., California, Colorado, Delaware, Florida, Idaho, Illinois, Kansas, Maine, Michigan, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Washington, and Wyoming.

The Vehicle Equipment Safety Commission, authorized by Article III, section (a), of the Compact, was organized at the Queen Elizabeth Hotel in Montreal, Province of Quebec, Canada, on the afternoon of September 24, 1963, during the 31st Annual Conference of the American Association of Motor Vehicle Administrators.

The organizational meeting was convened by Gov. Paul Fannin of Arizona, Chairman of the Governors' Conference Committee on Roads and Highway Safety. Explanatory remarks were made by Governor Fannin and Charles F. Schwan, Jr., of the Council of State Governments, under whose auspices the Compact was drafted.

Upon a showing, as required by Article IX, section (a), of the Compact, that six or more States had enacted the Compact into law, a resolution was adopted that by virtue of this fact, "the Compact is and shall be in force and effect."

Secretary of State Paul A. MacDonald, Compact Commissioner from Maine, was elected to serve as temporary chairman of the Commission. Other temporary officers elected were: vice chairman, Lt. DeWitt Whitman. Commissioner from Washington; and treasurer, B. H. G. Eiting, Commissioner from Nebraska.

As a beginning, Committees on Bylaws, and Budget and Operations were appointed. These committee lists are appended. See Appendix A.

It is important to note that during the first year of the Commission's activity, the Commission has been without funds or staff of its own. Funds were appropriated by the legislatures of Colorado, Kansas, and Nevada, but in the absence of a prepared budget, they have not been made available to the Commission. Staff and secretarial services during this first year have been provided by the American Association of Motor Vehicle Administrators and expenses incident to the operation of the Commission have been borne by this association.

Since the Commission neither received nor disbursed any funds during the first year, this report does not include an audit as provided in paragraph (d) of Article VI of the Compact.

A joint meeting of the two aforementioned committees was held at the Warwick Hotel in New York City on April 3, 1964. At this meeting proposed bylaws, drafted by staff of the Council of State Governments, and operating rules regarding conflict of interest, drafted by staff of the American Association of Motor Vehicle Administrators, were considered and approved for presentation for consideration of the Commission. It was agreed to recommend a tentative operating budget of $50,000 to the Commission for its approval. It was also agreed that

member Commissioners of each party State should be advised of the proportionate share his State would be expected to provide. They have been so advised and reminded of the importance of having this brought to the attention of the appropriate budget agency.

A copy of the proposed dues schedule based on an annual operating budget of $50,000 is appended. See Appendix B.

During this first year Compact legislation was passed in Arizona, Georgia, Kentucky, Louisiana, New Jersey, Mississippi, and Virginia. This brings the number of member States to 32. A current list of member States, together with their Commissioner designees, is appended. See Appendix C.

Compact legislation was introduced but failed of passage in South Dakota.

In order to accurately reflect the first year's activity of the Commission, it is necessary to borrow from the Second Annual Report which will be made to the Governors and legislatures of the member States next year.

The first annual meeting of the Commission, like the organizational meeting, was held in Des Moines, Iowa, on September 21 and 24, 1964, during and in conjunction with the 32d Annual Conference of the American Association of Motor Vehicle Administrators. This permitted the first annual meeting to be held without expense to the Commission, which is currently fundless, since, with one exception, all Compact Commissioners are members of the American Association of Motor Vehicle Administrators.

At this first annual meeting the Commission considered and adopted bylaws, operating rules, and an operating budget of $50,000 to be derived from membership dues. The Commission also authorized its executive committee to negotiate and enter into a contractual agreement with the American Association of Motor Vehicle Administrators as interim secretariat for the balance of this fiscal year. For a copy of the Commission's bylaws, see Appendix D; for a copy of the Commission's operating rules, see Appendix E.

At this meeting the Commission received a report on tire standards and specifications from the special Tire Standards Task Force, a subcommittee of the American Association of Motor Vehicle Administrators' Committee on Engineering and Vehicle Inspection. After careful consideration the new tire portion was separated from the balance of the report and approved, and the Commission's executive committee was instructed to put this into proper form and to issue this as the first report of the Commission.

This report on Performance Requirements for New Tires for Passenger Cars and Station Wagons was issued November 4, 1964. A public hearing on this report, required by Article V, section (b), of the Compact, was held in the New York State Motor Vehicle Building in New York City, January 8, 1965. For a copy of this report, see Appendix F; for a copy of the notice of hearing, see Appendix G.

The Commission may soon be expected to issue rules, regulations, or codes embodying performance requirements for new tires for passenger cars and station wagons. It is hoped that these can be prepared in time for submission to the member States for consideration during the 1965 legislative sessions.

A contract has been signed with the American Association of Motor Vehicle Administrators to provide the interim secretariat services for the commission. Basil R. Creighton, Assistant Executive Director of the association, who was instrumental in the promotion of the Vehicle Equipment Safety Compact, has been assigned to duties as administrative officer of the Commission. Offices of the Commission will be maintained with the American Association of Motor Vehicle Administrators at 404 Madison Building, Washington, D.C., 20005.

This, we respectfully submit, represents a substantial beginning for the Commission, especially so, in view of the fact that during the first year, and until July 1, 1965, the Commission has been without funds or staff of its own. It is appropriate at this time, we believe, that we acknowledge our indebtedness to the American Association of Motor Vehicle Administrators for the very substantial assistance they have given. Without this assistance the Vehicle Equipment Safety Commission could not have begun its work.

(The following statement was submitted for the record:)

STATEMENT OF HON. HENRY HELSTOSKI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. Chairman, I wish to thank you and the members of the committee for the opportunity given me to appear before this committee in support of S. 1643, a bill to provide that tires sold or shipped in interstate commerce for use on motor vehicles shall comply with certain safety and labeling regulations.

This bill was introduced by our esteemed colleague, the Honorable Gaylord Nelson, the Senator from Wisconsin, and I am happy to have sponsored similar legislation in the House, my bill being H.R. 7494.

Our mutual concern is for the health and safety of the American people on our city streets and highways. Death and injury on the highway is one of the gravest hazards of our existence. It behooves us to leave no stone unturned in making for greater safety in travel. And greater safety in travel, among other things, involves safer vehicles for the travelers. We can only work toward preventing accidents by doing something to eliminate the cause of accidents. My interest, in this instance, is in the tires on the automobiles.

The National Safety Council estimated in 1963 that 5 percent of all accidents on turnpikes have been due to tire failures, or tire conditions have been a factor in the accidents. The New York Thruway ranks tire failure as a major cause of auto accidents. Officials of the Indiana and Pennsylvania Turnpikes say that tire failure ranks second to driver fatigue as an accident cause. Ohio claims that 10 percent of its turnpike accidents are due to defective tires, and New Jersey attributes 9 percent to this cause. The head of the Pennsylvania State Police, Major Sheaffer, patroling the Pennsylvania Turnpike, believes that tires cause more accidents than is generally thought.

The Federal Trade Commission hearings in January revealed the problems in buying tires that beset the average car owner. There are 17 major tire manufacturers, more than 150 brands, and almost 1,000 model names which usually give no clue to comparative quality. There are 36 major tire sizes but the dimensions do not always match the size designations. Prices range from $7.50 to $40 or more for a tire of a given size. A single make of tire may have six or more lines or grades with no standards for comparing first-line tires of different brands. Mrs. Esther Peterson, the President's Adviser on Consumer Affairs, reports that she gets more complaints about tires than any other product. This is quite understandable when one realizes this multiplicity of producers, sizes, brands, model names, and lines or grades of tires. Some of these tires are sold under special brand names by auto accessory stores, department stores, gas companies, and discount houses. There are no guidelines to tell which tire is safer or longer wearing. To further confuse matters, one manufacturer's third-line tires may be as good as another's first-line tire.

Some other startling discoveries were made at the Federal Trade Commission hearings. It was brought out that a six-passenger automobile is equipped with tires that were made to support only the weight of three passengers, not including their luggage. Mr. M. A. Wilson, chief of tire engineering at Goodyear, stated that the tire and automobile industries had never developed maximum loads for auto tires. Their usual guide for tire engineering is the handbook of the Tire & Rim Association, a technical advisory group, that recommends tire sizes and loads on the curb weight of the car plus three passengers.

Harry C. McCreary, Jr., chairman of the McCreary Tire & Rubber Co., stated that automobile manufacturers had cut down so much on the size of the tires designed into their cars that some are overloaded before anyone gets into them. Station wagons particularly may be running on highways 50 to 70 percent overloaded. Cutting down on the amount of rubber used in tires has saved the automobile manufacturers a considerable sum of money—but at what a cost to the buyer?

The need for tire safety standardization cannot be overemphasized. The lack of it is amazing. The president of the Rubber Manufacturers Association, Mr.

Ross R. Ormsly, stated that the size printed on the side of the tire isn't the size at all but an approximate measurement referred to as the "name size." For example, if you wanted to replace a tire bearing a name size of 8.20 (meaning 8.20 in width), the new tire might range in actual size from 8.50 to 7.95 inches in width. To state it more plainly, many cars are being driven around with four different sized tires and with the possibility of more than a slight variation between sizes.

Investigators found that some tires are now being sold that are unsafe for the uses to which they are put. New York State investigators have found that low-grade tires, in some cases, have proved to be unfit even for normal driving. Because of the intense competition in the rubber tire industry, Government officials have reported that more and more lower grade tires are being sold. Last summer when Senator Speno's committee was conducting its investigation, it purchased tires and tubes based on price advertisements of a department store. The tires marked "Safety Special" and "Nylon" were without the manufacturer's name. These tires were sent to the National Bureau of Standards to see if they would meet the Government's test, which is now already considered outdated. Both tires failed the laboratory tests which were designed to simulate highway conditions. After about 12 hours of the 24-hour test period they lost air and collapsed. Examination showed broken cords and separated plies and tunnel-like hollow spaces between the carcass and the tread. The National Bureau of Standards indicated that "poor workmanship" was involved.

Senator Speno's New York State committee found difficulties with high-priced tires. An automobile club in New York State bought premium tires for 20 cars. There had been complaints that the tires seemed to skid easily. Stopping tests showed that the skidmarks on dry pavement were 20 to 80 percent longer than those for a comparable manufacturer. This was called to the attention of the manufacturer who changed the type of tread rubber in the tire specifications and eventually replaced all the tires that the automobile club had bought but the manufacturer never advised those who bought the similar tires outside the club that their tires were also unsafe.

Efforts have been made in the past to set some minimum standards of safety for automobile tires. In New York State, Senator Edward Speno attempted to write tire safety standards with the assistance of the tire manufacturers in Akron. His efforts were unsuccessful in regard to the legislation but did influence the Rubber Manufacturers Associaton to produce its own safety standards to be met voluntarily by the tire industry without, however, any plans for enforcement.

The Federal Government is rightly becoming concerned with the area of car safety. Legislation, however, has thus far generally taken a very mild form. The Department of Commerce is now required to set the standards for brake fluid and seat belts. Also in the Department of Commerce there is a National Driver Register Service. This office provides a Federal clearinghouse containing names of persons whose drivers licenses have been revoked. The Service, set up in 1960, now receives a half million queries per month.

The General Service Administration, the purchasing branch for civilian agencies, has had meetings with other Government agencies, and industry and independent experts to formulate safety standards for passenger vehicles purchased by the Government. The General Services Administration would require manufacturers to install, for example, safety padding in dashboards and other parts of the passenger compartment, provide seat belts for both front and back seats, safety locks on doors, a more dependable brake system, collapsible steering shafts, and stronger fenders and bumpers.

There is a considerable demand in the States, Congress, and the Federal Trade Commission that all new tires, at least, meet minimum safety standards to be set up by the Government. Tires rated unsafe would be banned from sale. At present there are at least nine States, including New York, California and Ohio where the legislatures have tire standards bills under consideration.

Traffic officials of at least 30 States are cooperating on a draft of their own legislation. Their purpose is to propose a uniform law for State legislatures that will convene in 1966.

The tire companies suggest that voluntary standards, enforced by the industry, should be the alternative to any new law creating State or National standards. A set of standards developed by the Rubber Manufacturers Association went into effect on January 1 of this year. These involve a tire's body strength and endurance under heavy loads at high speeds. Tiremakers, making their own tests, are to certify that tires measure up to the mark. Beginning in July, an independent testing laboratory is to verify these tests. Next January the tire industry is supposed to set up additional standards that will further insure that the dimensions of a tire will come reasonably close to those marked on the sidewall.

If we look realistically at this confused marketing picture, involving a bewildering multiplicity of brands, size markings, lines and grades, it should be apparent to the most naive observer that neither State laws nor voluntary action by the tire manufacturers can be relied upon to provide the American automobile driver with the information he needs and the assurance he should have that the tires he has on his car are safe and reliable. We need the passage of a Federal bill to give the American driver and his fellow passengers this assurance. The bill, S. 1643, and my bill, H.R. 7494, would fulfill this need. I urge that this committee take favorable action on this legislation and urge its prompt adoption.

Mr. Chairman, members of this committee, I wish to thank you for the time you have given me to present my case on this vital matter.

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