As I understand, this is the only state in the Union that limits trucks to 90 inches. Why shouldn't 96 inches for trucks be safe on those arteries?

A. Well, in some cases it probably will, but again we have over a hundred miles of paving which is only 16 feet wide. Twice 8 feet is 16.

Q. Are they on the arteries of interstate commerce?

A. Yes, we have some that go from here to Newberry not more than 16 feet after you get out of Columbia.

Q. 96 inches take up fully half of it?

A. Yes, sir, fully half and when two of those meet, there isn't much room between them. As a matter of fact, my experience in meeting those 8 foot buses on the road of that kind, I usually hit the dirt. That is the safe thing [fol. 254] to do. I take my chances on the dirt rather than on the bus.

Judge Glenn: How wide are the Greyhound Buses, do you know?

A. They are 8 feet wide. They are 96 inches.

Q. They are going to run here?

A. Yes, sir, they are running here now. When I meet one on the 16 foot pavement, I hit the shoulder. I always do that with the automobiles too.

Judge Parker: And ordinarily you don't feel so good when you meet one of them?

A. I don't repeat the Sunday school lesson, anyway.

Redirect examination.

By Mr. Griffith:

Q. As to the cost of maintenance, does that amount to anything?

A. Oh, yes, it is a considerable item. We are spending a million and three-quarter dollars a year now—about a million and three-quarters—for maintenance of bridges and roads.

Q. In the State Highway System?

A. Yes, sir.

Q. Does the Federal Government contribute any part of that?

A. No, sir.

Q. Going back to the width—you said you ran on the shoulder when you meet the wide vehicles. Does traveling on the shoulder, the edges of the road, add to the maintenance?

A. Yes, it is a good bit more probably, it cuts the shoulder up.

Q. You have to keep the shoulders even?

A. If traffic stays off the shoulders normally, we keep grass growing up to the pavement and there is no wearing down.

Q. Where is the weakest part of the road?

A. The weakest part of the road generally is at the edge.

Q. You want to keep the traffic away from there?

A. We have designed pavement to correct that by making the edges thicker than the center.

Q. In your opinion and in the opinion of the State Highway Department since you have been connected with it are the heavy motor trucks bearing their proportionate part of their cost and maintenance?

[fol. 255] Judge Parker: How is that relevant?

Mr. Griffith: It is the design of the State law that all revenue derived shall be placed on those roads.

Judge Parker: It isn't a question of taxes, it is a question of size and weight. How does this question of the proportionate part of the expense have anything to do with that?

Mr. Griffith: We want to complete a State highway system in this state.

Judge Parker: We all agree it hasn't anything to do with the question here.

Judge Parker: Is that all of the testimony you wanted to put in out of order, Mr. Griffith?

Mr. Griffith: Yes, thank you, Your Honor.

Judge Parker: Let the plaintiff put up another witness.

[fol. 256] Mr. J. Ross Hanahan, a witness for the plaintiffs, after having been duly sworn, testified:

Direct examination.

By Mr. Funkhouser:

I live in Charleston, South Carolina, and am President of the Planters Fertilizer Company, manufacturers of com-

mercial fertilizers. The gross output of my business per year is around 50,000 tons of commercial fertilizers, worth a million one hundred thousand dollars. We ship by truck into North Carolina, South Carolina and Georgia. The nature of our business has changed very much in the last few years. The State of South Carolina uses around 650,-000 to 700,000 tons of commercial fertilizers, a large part of which goes out of the State and is manufactured in the State. The South Carolina manufacturers have to compete with outside manufacturers. The percentage of our principal plant in the last three years from nothing has increased to around 31½% to move by truck in the whole State of South Carolina; 50% is now moving by truck out of the interior plant, and out of the Anderson plant 100% is moved by truck. If the law in South Carolina were enforced it would almost stop the trucking business, the cargo load 20,000 pounds is such that you could not convey the material for a very great distance. Conditions today are different from what they were a few years ago. The farmers use 650,000 tons of fertilizer in South Carolina and he wants it at his cotton row and with the advent of the truck he is getting it at his cotton row. To go back fifteen years, we commenced to ship fertilizer in December, delivered it at the station, the farmer hauled it from the station in his truck to his barn and in the spring carried it to his farm. To day, the fertilizer business in the spring is finished in about 45 days. It comes directly from the manufacturer's plant by truck, a great part of it, directly to the farmer's cotton row or tobacco row. The farmers want quick deliveries and want it when he is ready to plant. That is the custom in the fertilizer business today. We could not make these deliveries by rail. The change in the manner of deliveries has changed the price of fertilizers. The expense of delivering to the farm is all con-[fol. 257] tained in the price. If the gross weight of 20,000 pounds were enforced or the size of the truck cut down it would increase the price to the buyer and the service of delivering the fertilizer direct to the farm would be denied the purchaser. The things about which I have testified would apply to other merchants and fertilizer companies, to all the fertilizer companies doing business in South Carolina. The mileage for delivery of commercial fertilizer is gradually being extended from 30 miles originally around

the small plant to where they are being delivered in trucks as high as 250 miles, but ordinarily 150 miles and as the tonnage grows the extent of delivery will increase. My company is a plaintiff in this case and if the relief prayed for is denied we will suffer a loss of at least $3,000.00, and the same would be true as to the Merchants Fertilizer Company.

(No cross-examination.)

MR. G. A. HOWELL, a witness for the plaintiff, after having been duly sworn, testified:

Direct examination.

By Mr. Funkhouser:

I live at Rock Hill, South Carolina, and am employed by the Rock Hill Printing and Finishing Company, engaged in the business of finishing cotton piece goods. This Company does a large volume of business per year, it will average anywhere from fifteen to twenty million yards a month, amounting to about $35,000,000.00. This Company ships by truck, to a large extent, the trucks being loaded over 20,000 pounds in ordinary shipping interstate commerce. If the running of these trucks is stopped or the size of the trucks cut down it will increase the cost of our merchandise to the customer, as well as in the handling of the supplies, we would not be in position to compete with out of state competitors, allowing them to deliver to the customers at less money and with better service than we would be able to give. In our line of business wages have increased all over the country. We have about 1600 em- [fol. 258] ployees. If the law is enforced it would throw some of the business we are now getting to our out of state competitors and would cut down the necessity for the number of employees we now have.

(No cross-examination.)

J. A. SUTTON, a witness for the plaintiffs, after being first duly sworn, testified:

Direct examination.

By Mr. Beall:

I live in Charlotte, North Carolina, and am Secretary and Treasurer of the Horton Motor Lines, Incorporated. When this Company was organized in 1930 they had between 25 and 30 units of equipment, and at the present time operate approximately 270. We have through routes and joint rates with numerous other motor carriers. With our own equipment we operate in North Carolina, Virginia, District of Columbia, Maryland, Pennsylvania, New Jersey, Delaware and New York, but taking in the territory covered by our connections we serve the greater part of the eastern section of the United States. We withhold solicitations of freight on the lower classifications for delivery to our connection lines south of Charlotte, North Carolina, because the restrictions placed on operators in the State of South Carolina, if we were to actively solicit people for the lower classifications of freight, which we can carry ourselves north of South Carolina profitably, we feel that we might flood them to the point, with that classification of freight, that the proportion of the rate would be so low compared with the exceedingly high rate with some other units, that we do not solicit the lower classes of freight for trucking into and through South Carolina, and we do not have connections to complete that movement. We do not feel in cases of that kind that we can, when we make these joint rates, take into consideration with connection lines that they are bearing that cost and make arrangements with them for a proportionately higher charge out of Charlotte if their operating costs are higher than those going north. We feel that we would be running afoul of the provisions of the Revenue Act [fol. 259] of 1935, which provides against discrimination, and such rates would be a discrimination in that movement South of Charlotte at a higher rate than for the same movement going north of Charlotte and we feel that if we propose such a rate it would be illegal. It is approximately the same mileage from Atlanta to Charlotte as from Charlotte to Richmond. If the provisions of the South Carolina law were enforced, our southern connections south from Charlotte

would have to increase the rate approximately 75% or more. If we have a rate where one shipper pays 75% higher rate going the same distance over a similar route and the same kind of territory than he would pay going in another direction, it is my understanding we would run afoul of a section of the Federal Law. I think as a practical proposition it is more important to motor carriers to comply with the Federal law and at the same time as a matter of fairness and without discrimination in rates, and also a compliance with the State law. If the South Carolina law were enforced on our connections it would cost us in damages in excess of $3000.00. Our Company is a plaintiff in this case. We operated in and through South Carolina from Charlotte to Atlanta until March, 1932. I think there is a direct relationship between the size and weights to the matter of service which motor carriers are required under the Motor Carriers Act to render. It has a direct connection to safety and reasonable rates. What I have said in connection with the rate situation, the operating cost, etc., affecting rates applies to the other operators who are plaintiffs in this case and to all motor carriers where it places a proportionately higher rate and where it means a higher cost.

(No cross-examination.)

M. M. STUART, a witness for the plaintiffs, was recalled, and having been heretofore duly sworn, testified:

Direct examination.

By Mr. Funkhouser:

* * * * * * *

[fol. 260] Q. Do you have a financial statement of your company?

A. Yes, Barnwell Brothers, Incorporated.

Q. For what year?

A. 1936, October 31st.

Q. What conclusions does it show they rated it?

Judge Parker: For what purpose is this?

Mr. Funkhouser: Showing the development of the industry, the stability of it.

Judge Parker: It doesn't make any difference if it is solvent, insolvent, prosperous or what not. If they are entitled to maintain this commerce, they are entitled to maintain it.

Mr. Funkhouser: The allegation of the Bill is that they have invested large sums of money which would be jeopardized and damaged.

Judge Northcott: Didn't you prove that by him on the stand. You went all over that.

Mr. Funkhouser: He didn't touch on that.

Judge Northcott: Didn't he develop how many trucks [fol. 261] he operated in his business?

Mr. Funkhouser: I wasn't going into that.

Judge Glenn: Mr. Stuart, the situation is this. Your company has increased and is rendering good service and expects to do so right on?

A. Yes, sir.

Judge Glenn: You have reason to believe that you will render adequate service to the public in the years to come?

A. Yes, sir.

Judge Glenn: And you have some money?

A. Yes, sir.

Judge Glenn: I think that is competent as far as it goes. Is that true as to the other companies in this case?

A. As far as I know it is.

(No cross-examination.)

MARTIN JOHNSON, a witness for the plaintiffs, after being first duly sworn, testified:

Direct examination.

By Mr. Funkhouser:

I live at Charlotte, North Carolina, and am connected with the National Convoy & Trucking Company, one of the plaintiffs in this case. We operate in interstate commerce 65 trucks. If the relief prayed for in this bill is denied we will suffer a loss of $3000.00. I am familiar with the highway running from Cornelia, Georgia, on through toward Asheville only by observation on the map. I have never traveled it. The testimony given by Mr. Sutton would apply equally to our Company.

(No cross-examination.)

Mr. Funkhouser: I am through with all the witnesses on the subjects we have covered. I have one or two more, that is all. I have an accountant who has made a study of the [fol. 262] records of the Highway Department. These records will show the contribution of these trucks and automobiles to the various uses of the highway.

Judge Parker: We ruled that out on the other side.

Mr. Funkhouser: I know you did. I want to make the proffer of it. It will show that 60% of the gross income comes from the automobiles and trucks of the State.

Judge Parker: The plaintiff proffers proof by the witness, Mr. H. E. Gooding, a certified public accountant. That he has examined the records of the State Highway Commission and that with Federal aid, 60% of the gross income of the State of South Carolina comes from trucks and automobiles.

Mr. Blease: You mean for road purposes?

Mr. Funkhouser: No, sir, I mean gross income of the State. We might add to that our proffer to prove the income from trucks, automobiles and railroads and make the comparison of the income from other sources in the State of South Carolina. We proffer to prove that the amount paid by trucks alone and gasoline and license fees is expended for the maintenance of the highways in South Carolina.

Judge Parker: None of this testimony is relevant. It is incompetent, irrelevant, immaterial and throws no light on the issues involved in this case.

Exception noted by plaintiff.

Judge Parker: The Court excludes it, having heretofore excluded similar testimony on the part of the defendant.

Mr. Griffith: I offer to prove that they are not paying their share.

Judge Parker: When you get to your proof, you can offer what you want.

T. J. Burke, a witness for the plaintiff, having been heretofore duly sworn, was recalled and testified:

[fol. 263] Direct examination.

By Mr. Funkhouser:

Mr. Funkhouser: Judge Glenn asked for information with regard to actual tonnage in Charleston.

Judge Glenn: All right.

A. In 1934 for exterior movement from Charleston, 36,778 tons and in 1935 75,780 tons.

Judge Glenn: And moved by rail to the port and moved by ship beyond port in exterior trade.

DR. HARRY TUCKER, a witness for the plaintiffs, having heretofore been duly sworn, was recalled and testified as follows:

Direct examination.

By Mr. Coleman:

Q. Some question has been raised here that even though 16,000 or 18,000 pound axle weights are needed to break highways, the thing that is needed to break bridges is gross weight of the truck. Have the American Association of State Highway Officials and the Bureau of Roads an approved formula as to that?

A. Yes, they have.

Q. Will you tell the Court what it is and explain about that—whether it is gross weight that breaks bridges?

A. The gross weight for designing bridges is W equals C times L plus 40, where the C is a constant depending on the weight of the vehicle using the roads. L is the length of the vehicle, on combination vehicles from the front axle to the extreme rear axle and 40 is a constant. That is the formula that is recommended in designing highways. We have three classifications. One is known as the H10 classification, which means a ten ton truck. We have the H-15 classification. That means a 15 ton truck. We have an H-20 classification. That means a 20 ton truck. The nature of the constant in this formula varies depending on the weights and class of vehicles using the highway. For [fol. 264] the smallest, which is H-10 ton truck, the constant is 670; for the H-15 trucks, the constant is 1010, I believe, and for the H-20 trucks, the constant is 1340. Now, as far as my information goes all of the bridges in the southern section of the United States have been designed for the H-10 loading. That means a ten ton truck. Now that does not mean that you put a single vehicle on the bridge. In designing bridges you must design a bridge for

the most extreme conditions we can get on it. The most extreme condition is—for a two-way bridge or a double track bridge, the most extreme conditions are two rows of trucks following each other. In the case of the H-10 loading that would be two rows of trucks, each truck carrying 10 tons, or 20,000 pounds. The general spacing for those trucks is 14 feet, axle to axle, that is, the distance from the rear axle of the end truck to the front axle of the other truck is 14 feet. In other words, you can get the H-10 load—it is perfectly safe to put axles on the bridge in succession on which the front axle carries 8,000 pounds and the rear axle carries approximately 16,000 pounds. That is the explan-tion of how we design highway bridges and how highway bridges have been designed in this section of the United States ever since I have known anything about it.

Q. To make it clear to me and to laymen who don't understand certain terms, isn't it true that the important thing in carr-ing loads on bridges is to prevent the whole load from being on one span like that (indicating) but to distribute it on one or more spans?

A. The main thing is to so load your bridge that the members will not be stressed to the maximum amount and that will obtain when you have crossed it.

Q. Isn't it true that you want to distribute the weight over two or more spans.

A. Yes, sir.

Judge Glenn: The constant is the unit you have to support in the length covering the bridge? Gross weight is [fol. 265] not the test for the bridge?

A. No, sir.
Q. That is your constant of 670?
A. Yes, sir.

By Mr. Coleman:

Q. Isn't the approved constant 750?
A. I don't know what the approved constant is.
Q. Let's take the smallest constant of 670 and a 30 foot tractor-semi-trailer—won't the result of that formula be 670 multiplied by 30 plus 40, or 42,000 pounds?
A. Approximately so.
Q. So that the smallest constant that you would have in

the classifications about which you spoke, or maximum weight, is 42,000 pounds?

A. On tractor-trailers, yes.

Q. And that 30 feet will be distributed ordinarily on bridges on one or two spans?

A. Do you mean spans on the truck?

Q. The bridges are supported by beams, as I illustrated here?

A. We use the word "span" in a little different sense.

Q. I don't know, but the bridge is supported at some one point?

A. Yes.

Q. And the load is distributed over more than one point?

A. So that the load will not be on one panel of the bridge.

Q. So the load does not break the bridges?

A. Absolutely not.

Judge Parker: Let me see if I understand you. You say these bridges that have been referred to as weak bridges, are so constructed that the entire weight of one of these large trucks cannot fall within a span? I am using the "span" in the sense in which counsel used it, between points where the weight is divided.

A. It is difficult for them to fall within those points, in the ordinary construction.

Judge Parker: I am not speaking about what is ordi- [fol. 266] narily difficult. We are considering a practical proposition. One witness has testified particularly that the Pee Dee River Bridge was unsafe for a greater weight than a ten ton truck. As I understand, counsel is attempting to prove that it is the weight on the axles and not the weight of the truck that is determining. Now, I want to know whether or not you are prepared to testify that these bridges are so constructed, that he has referred to,—that these bridges are so constructed that the entire weight of the truck will not fall upon any particular part of the bridge?

A. I can't answer that. But in further explanation I will say that the gross load of the vehicle, or 20,000 coming on the bridge between supports——

Judge Parker: You call that a pound?

A. Yes, sir, I call that a pound on the bridge. That load may produce a greater stress than if you had two vehicles

each of 20,000 pounds following each other on the same place. It is a question of where you put that particular load. It is rather technical. I can't go into it much further. The point I am trying to make in my testimony is this: When you say a bridge is designed for a ten ton vehicle, that means the bridge is designed for the vehicles following after, each of ten tons, because that is the most loading you can get on a bridge. Not only that, but you can put trains of them, each behind the other.

Judge Parker: Up in Western North Carolina I have seen a big truck down in the creek; the bridge had gone with it. It struck me that it was too heavy for the bridge.

A. That is probably so for that particular short span right in there. The panel length may be so proportioned to the length of that truck that the greatest load came not when you had that bridge fully loaded, but when you had that one vehicle right there on that particular point.

Judge Glenn: You have studied the highway business [fol. 267] generally. Suppose you had trucks in threes upon Highway No. 1, a highway that was designed to carry heavy traffic, would it be advisable, under your previous testimony here, to so control the traffic of these very heavy trucks over bridges so as to avoid the putting of five or six of them on at one time, without seriously impeding the interstate commerce?

A. I don't believe that would be practical, Your Honor, because there would be certain cases in which you couldn't control it. If you got those on there the bridge might fall. If I were highway engineer I would prefer to go back and reinforce the bridge to carry the extreme case.

Judge Glenn: I mean to take care of an emergency.

A. I would put an officer there and wouldn't let but one or two or three trucks, as the case might be, proceed over the bridge at the same time. That is done many times.

Q. Are you prepared to say from your knowledge of bridge design, and your knowledge of the bridges in this particular part of the country generally, what the average length of the panel is on a bridge?

A. No, it is impossible, they vary so widely.

Q. Are you familiar with the bridge which Mr. Williamson spoke of this morning?

A. You mean on route No. 1?

Q. Yes.

A. No, sir; I am not familiar with that bridge. It is one section of the state highway system I didn't ride over.

Q. Well, if you were told that heavy traffic has been going over that bridge for several years, trucks and buses weighing over 20,000 pounds up to 30,000 pounds, would you expect that bridge if it were weak to have given way within a space of three or four years?

A. That is hard to tell, because bridges that are weak have some way of continuing in use even though you could prove they should fall down. I would investigate bridges, determine what load they would carry, and if they wouldn't carry certain loads, I would post a notice to that effect.

[fol. 268] Q. Would undue stress on a bridge like that be inclined to appear on the bridge?

A. I believe that is a wooden bridge, isn't it?

Judge Parker: Yes.

A. You can't figure stress on a wooden bridge like that, I don't believe, very well.

Mr. Funkhouser: I would like to have it admitted that the State law has not been enforced since its passage in 1933. I don't suppose that will be denied, will it?

Mr. Lyles: No, sir.

Mr. Blease: You have enjoined it all the time.

Mr. Funkhouser: I beg pardon. None of the plaintiffs in this case have.

Judge Parker: It is admitted that the Act has not been enforced because its enforcement has been enjoined by various parties.

Mr. Blease: Yes, sir; we will agree to that.

Mr. Funkhouser: Will it be admitted the inter-state roads, three or four—I will name them—have been in use for the period by these heavy trucks, since 1930 without any restriction?

Judge Parker: Better name the roads.

Mr. Funkhouser: Road 17; 15-A; 1; 29; 25.

Mr. Griffith: We will admit that they have been open to use to all kinds of trucks and vehicles, but the extent it is impossible to even prove, I suppose. They have been open for traffic.

Judge Parker: They have been open for traffic and have been used by trucks and other vehicles.

At this point, Mr. Funkhouser offered in evidence five affidavits.

Mr. Griffith: We don't object to the form of the evidence. [fol. 269] We do object to its relevancy, and upon the further ground it is cumulative and is unduly burdening the record.

Mr. Funkhouser: On the question of relevancy, they have admitted similar testimony without objection during the trial.

Judge Parker: He objected to this line of testimony, and I told him he need not keep it up, because in a hearing in equity the Court was assumed to have considered only relevant evidence. Let it appear plaintiffs offer the affidavits of the following: E. F. Skidmore, P. W. Lowry, Russell Borjes, Ashmead Pringle, Jr., Frank Brumby Wellons.

Judge Parker: The defendants do not object to the form of this testimony, and do not object that the testimony is offered in the form of affidavits, and not by the production of witnesses in open court. Defendants do object on the ground the testimony is irrelevant and cumulative. Objection overruled.

Defendants except. The affidavits are admitted.

[fol. 270] AFFIDAVIT OF E. F. SKIDMORE, SALES MANAGER, CHARLESTON DIVISION INDIANA FLOUR COMPANY, INC., A SUBSIDIARY OF GENERAL FOODS, INC.

Beginning three or four year ago a large movement of flour from the West Coast to the Atlantic Seaboard has been caused by a surplus of wheat west of the Rocky Mountains. This surplus exists because the natural foreign markets for this wheat have been destroyed by disparity between the price of American wheat and that of foreign countries.

The Indiana Flour Company in October of this year constructed a plant at Charleston, S. C. This flour moves by boat, in jute bags, in bulk, through the Panama Canal to the Charleston plant. There it is processed, self-rising ingredients added, and re-placed into family size packages. From this plant the re-packed flour is distributed to inland

jobbers and handlers of flour throughout the States of South Carolina, North Carolina, and Georgia.

Loaded on a truck flour makes a compact load. The average pay-load of these trucks is around 20,000 pounds, so that the gross weight approximates 30,000 pounds or over. One method of this transportation is to drop partial truck-load deliveries of this flour at various points on the route from Charleston at various South Carolina points and make final delivery of the load in Georgia or North Carolina, as the case may be.

Movement of this commodity by motor truck is required as a matter of economy and service, because, in the first place, speed of delivery is essential not only to the demands of the jobber, but to prevent deterioration of the product; in the second place, movement by motor-truck does away with the necessity for warehousing; and in the third place, movement by motor truck is cheaper to practically all of the communities which it serves. In the absence of Motor transportation those communities would be dependent upon flour shipped by rail in less than carload lots.

[fol. 271] While it cannot be said definitely what effect the enforcement of this law will have upon the policies of the Indiana Flour Company in regard to continuing operations in South Carolina, it can be surely said that it will substantially decrease the volume of business, for the reason that if the Charleston Division of Indiana Flour Company increases the price of this product because of increased transportation costs, the present North Carolina and Georgia business will be thrown to competitors and move through the ports of Wilmington and Savannah respectively.

The effect of the enforcement of this law will be that the price of flour to the citizens of South Carolina will be substantially increased. This increase can be approximated as 65 cents per barrel, or an increase of 15%.

The price of flour in South Carolina, as in North Carolina, Georgia and other states on the Atlantic Seaboard and Gulf Coast, is at a lower level than even those states lying near or within the Wheat Belt, for the reason that transportation by water from the West Coast through the Panama Canal to the Atlantic Seaboard and distribution from the Seaboard by truck to the point of use is cheaper than the rail rates from the Wheat Belt in the Middle West to those points of use.

Indiana Flour Company is but one of five major companies who are in the same business and have plants at Charleston, S. C. The other four companies are: Southern Gold Medal Company, Dixie Portland Flour Mills, Ballard & Ballard, Fisher Flour Mills Company.

This commodity is one of the major commodities moving into the Port of Charleston and a large portion of it moves in interstate commerce. The enforcement of this law will sharply curtail this movement and divert it to the ports of Wilmington, Savannah and other ports along the Atlantic Seaboard.

(Signed) E. F. Skidmore.

(Jurat omitted.)

[fol. 272] AFFIDAVIT OF P. W. LOWRY, COLUMBIA, SOUTH CAROLINA

For the last thirteen years I have been associated with various saw-mill operations in South Carolina as Traffic Manager, and am a Licensed Practitioner by the Interstate Commerce Commission.

The lumber industry in South Carolina has assumed its present major importance within the last fifteen years, particularly with reference to hardwood lumber.

Since the depletion of our timber land adjacent to the railroad lines, it has been necessary to move lumber by truck to the rail termini or to the mills, and in most instances it is found advantageous to carry it to the mill directly. Moreover, some of the mills here represented are from 1½ to 12 miles from any rail line, and are solely dependent upon truck transportation. This includes our largest as well as our smallest operations.

In the last few years, since the coming of good roads and the development of motor transportation, a large interstate movement of mill lumber takes place in South Carolina from these mills. This movement is north into North Carolina, Virgina and Maryland.

A survey of 23 saw-mills in the State shows an annual movement by truck of approximately 103,000,000 feet of lumber and 130,000,000 feet of logs. Twenty-one of these mills show an average of 17,854 pounds of lumber per load. This includes both intrastate and interstate transportation.

It is absolutely necessary for profitable transportation of the commodity in interstate commerce that the gross weight exceed 20,000 pounds.

New competitive conditions have been created in the lumber industry. The consuming public demands that shipments of lumber be sent direct to the point of use. Railroads are of course unable to give this service. In many instances the mills are located some distance from the railroad, and in most instances the point of use is located some [fol. 273] distance from the railroad.

In certain instances rates by truck are higher than by rail. Nevertheless, transportation by truck is demanded because of service rendered by truck transportation, which cannot be rendered by rail. For example, for delivery to point of use, and with regard to the Port of Charleston, certainty of delivery according to shipping schedules, and time of delivery.

Considerable quantities of lumber heretofore mentioned moving in interstate commerce moves north to the furniture factories of North Carolina and Southern Virginia. Should this law be enforced this interstate movement by truck will practically cease and this transportation will go back to the rails, at a serious loss of profit to a South Carolina industry and serious curtailment of service both in convenience and time to the consuming public.

(Signed) P. W. Lowry.

(Jurat omitted.)

AFFIDAVIT OF MR. RUSSELL BORJES, TRAFFIC MANAGER OF SOUTHERN GROCERY STORES, INC., ATLANTA, GEORGIA

My name is Russell Borjes. I live in Atlanta, Georgia, and am employed by Southern Grocery Stores, Inc., 682 Whitehall Street, Atlanta, Georgia, as Traffic Manager. We operate a chain of grocery stores with headquarters in Atlanta, Georgia. The majority of the capital invested in our Company is of citizens of Georgia. Our Company operates 380 stores, located in Georgia, Florida, Alabama and South Carolina. Our main warehouse is in Atlanta. We have a branch warehouse at Greenville, S. C. From our warehouse at Greenville, S. C., we deliver to our twelve stores in Augusta, Ga. Our Company has attempted to buy equipment to comply with the South Carolina weight

laws. The equipment we bought has decreased the size of the load that would be carried if it were not for the South Carolina weight law and has increased the cost of distribution of our products. The present average cost of distribution is 27½c per hundred pounds. If we could carry a [fol. 274] payload of 10 tons, to 20,000 pounds the average cost of distribution would be 16½c per hundred pounds, or an average saving of 11c per hundred pounds, which saving would be passed on to the public. Our Company operates upon the basis of making a small profit, we attempt to net 2% of our sales. This necessitates each factor of expense being kept to the minimum. As our Company is now obeying the South Carolina law, we are not permitted to fill our trucks to capacity, which is a factor in our present transportation costs.

(Signed) Russell Borjes.

(Jurat omitted.)

AFFIDAVIT OF ASHMEAD PRINGLE, JR., CHARLESTON, SOUTH CAROLINA, VICE PRESIDENT OF MERCHANTS FERTILIZER COMPANY, CHARLESTON, S. C.

The company operates a complete fertilizer plant and sells complete fertilizer and fertilizer materials. We have been in the fertilizer business since 1918 and under the present corporate form since 1931. I have looked over the records of our shipments made during the 1935-36 season, and I found that about 90% of out total motor transported tonnage was moved in trucks carrying a pay load of 12,000 pounds or more and 7% more of less, of the motor transported fertilizer tonnage moved in interstate commerce.

During this season we move about 12,300 tons by truck to areas in excess of 50 miles from our Charleston plant and furthermore, we shipped approximately 6,500 tons of fertilizer to the market gardening areas which lie within a radius of 50 miles of Charleston.

Inasmuch as fertilizer is a commodity which has very low value in proportion to its weight any regulation which decreases the pay load of fertilizer truck will automatically increase the cost of fertilizer transportation and will, therefore, increase the cost of fertilizer to the consumer.

(Signed) Ashmead Pringle, Jr.

(Jurat omitted.)

[fol. 275] AFFIDAVIT OF MR. FRANK BRUMBY WELLONS, SALES MANAGER OF THE BRUMBY CHAIR COMPANY, MARIETTA, GEORGIA

My name is Frank Brumby Wellons. I live in Marietta, Georgia, and am employed as Sales Manager of the Brumby Chair Company, Marietta, Ga., manufacturers of common chairs of all types. We sell these chairs principally in the southeast. We sell them in South Carolina. I am familiar with the limitations of the South Carolina law as to width and length. We ship 75% of our product by truck. We can ship by truck at less cost than by rail. The saving in transportation cost permits us to sell our product to the public at a competitive price, which saving is passed on to the public. It is necessary for us to use trucks of minimum width of 8 feet and if this width is decreased to 7½ feet as result of the enforcement of the width law in South Carolina it would decrease the size of our loads approximately 25%, which would automatically increase the transportation cost by that figure and this increased cost would have to be passed on to the public. Considering the competition between our Company and our North Carolina competitors, it would practically force us out of business in South Carolina for the reason that if we were compelled to add 25% to the delivery cost of our merchandise in South Carolina we would not be competitive. The same would be true as to all of our customers in South Carolina and points north. We could ship by rail except for the fact that the cost of delivering the goods by rail would run from five to twelve percent higher than our present average costs to deliver by truck. For instance, the L. C. L. freight rate from Marietta, Georgia, to Columbia, South Carolina, is approximately $1.00 per hundred pounds, and on an item of our manufacture costing $12.00 per dozen and weighing 100 lbs. per dozen, the cost would be $1.00 per dozen for delivery by freight, whereas, our actual cost records covering deliveries of the same item by truck to Columbia, South [fol. 276] Carolina, is less than 50¢ per dozen. In this instance it can be readily seen that the rail cost would be approximately double our truck cost. This would affect us materially in that the delivery cost of our product would be so much higher than the cost of similar merchandise sold by our competitors who are better geographically located. We would lose our markets due to the fact that

since 1929 we have established a definite sales policy in the State of South Carolina wherein we have continually had a delivered price for all items of our manufacture to store doors in the state, and to be compelled to ship by rail would force us into a field wherein we would be non-competitive, and we would lose our trade in the state and points north. It would decrease the amount of the flow of our product in interstate commerce. If the law were enforced we could not ship by smaller trucks for the simple reason that the operation of smaller trucks with the distance to be covered would involve excessive expense, and again it would make us non-competitive in South Carolina and points North. We couldn't go around South Carolina to points north for the reason that the only avenue into North Carolina from Georgia, other than going through South Carolina, is by way of Cornelia, Georgia, and Asheville, North Carolina. This is a narrow road, full of short curves and mountain climbs which make it a very hazardous highway for trucks of any size to travel. Since the South Carolina law was passed we have attempted to use that road and our experience in trying to deliver over this road resulted in our truck driver asking that he never be routed over this road again due to the fact that in more than one instance the curves were so excessive that when his large truck was making the curves he completely blocked the road for traffic coming in either direction. Our investigation of the driver's contention was verified when his truck got off the road in making this short curve, and he was compelled to block the highway for three or four hours until assistance could be had to get his truck off the road. In shipping over the route from Cornelia to Asheville the time in which the shipment is made is materially delayed and [fol. 277] this increases the cost of the shipment if the distance is greater. We could not remain in business and make shipments by truck over that road. The chair industry suffered during the depression, as did most all manufacturing industries, unless it might be stated that the chair industry suffered more in comparison, and this is brought out by the number of complete failures in our industry which took place during the depression. Those of our industry who weathered the depression did not operate full time. Some of them had long shut-downs and the majority of them ran from two to four days a week. Our Company weathered the depression and we had no shut-downs during the depres-

sion for lack of business. Our Company did not lose many days in operation during the depression due to lack of business. I attribute this to the fact that we established quick service and made it possible for the furniture dealers to buy in small quantities without being compelled to pay excessive freight charges. In other words, I attribute this to the fact that we could deliver by truck economically and in an efficient manner. When we established our truck service we did it primarily to enable the dealers to buy in small quantities and to avoid the expense of having to pay a minimum freight charge on shipments by rail, and by this I mean that when the depression started and dealers were compelled to retrench, they refrained from buying from such sources where they would be compelled to pay freight on 100 pounds shipment whereas the shipment might actually weigh only 20 pounds. In our truck service the dealer was compelled to pay the ratio of freight only on the actual weight of the shipment. Over and above that, we were eliminating the expense of hauling merchandise from the freight depot to the stores, and we eliminated completely the necessity of the dealer having to file claims against the rail carriers for damage to merchandise in transit, and the fact that the commodity is of a fragile nature it is nothing uncommon for freight claims to be filed on eight out of ten shipments made by rail. The damage occurring to shipments by truck as compared with shipments by rail is very trivial, and this is due primarily to the [fol. 278] fact that shipments by our trucks are handled only in loading and unloading. In other words, we do not have to break bulk cars such as is done in L. C. L. freight shipments at terminal points. Likewise our experience in handling our commodity for loading and unloading has been such as to teach us how to handle the goods with the least possible element of damage, and over and above this, in the event damage should occur to a shipment in one of our trucks, the merchandise is not delivered to the customer, but is brought back to our factory by the truck for repairs. Whereas, if railroad damage occurs, there is nothing to do but to refuse the goods and file a claim with the carrier. As an illustration and a comparison of two shipments going from our factory to Sumter, South Carolina. A shipment by our truck is loaded at our factory and is not touched again until it is taken off the truck at the dealer's store door. Whereas, the same shipment by rail freight

calls for our putting the shipment in our local freight depot at Marietta, Georgia, where it is loaded into a box car with other commodities and is brought to the distributing terminal in Atlanta. At that point it is unloaded and reloaded into another car with various other commodities and is taken over another line to Columbia, South Carolina. At Columbia this car is broken and our shipment placed in still another car of mixed merchandise for shipment to Sumter, and at Sumter it is unloaded in a freight depot where the dealer sends his truck to pick up the shipment. It can be readily seen that in the number of handlings a shipment of fragile merchandise by reaching its destination by rail freight has unlimited possibilities for damage. The method of merchandising has changed materially and excessively as result of the development of motor transportation. In "boom" days prior to the depression, furniture dealers maintain warehouses where they stored excess stock, and in those days the dealers bought in sizeable quantities. At the beginning of the depression they naturally adopted a retrenchment program and did away with practically all warehouse space. From the beginning of the depression until now furniture dealers have refrained [fol. 279] from carrying practically any stock other than that what is now on their sales floors. This, of course, resulted in small purchases from the factories and in our case, where a dealer in Columbia, South Carolina, used to buy ten to twenty-five dozen units of a pattern and carried its excess stock in a warehouse, he has, during the depression, and continues to buy in smaller quantities of one to five dozen, and as soon as delivery is made this stock is put on his sales floor. This in itself has made it necessary for the manufacturer to speed up his delivery in order to keep the dealers supplied with merchandise. This change has resulted in benefit to the public because it has enabled the dealer to materially lower his operating cost and his general overhead, which, of course, has resulted in his being able to offer his merchandise to the buying public at a lower figure. Motor transportation has not only helped us develop our business, but it has likewise enabled us to stay in business at a fairly profitable figure throughout the depression. Our Company has approximately 400 employees. If the South Carolina width and length laws are enforced it is entirely possible that it would cause some unemployment in our Company in that we would lose a

sizeable percentage of the volume of business we are enjoying in South Carolina and states north, and if we were compelled to reduce our manufacture program sufficiently to offset the business we would lose, we would either have to reduce the size of our operating personnel or go west for sufficient business to absorb the volume we would lose in South Carolina and points North. In other words, the flow of our business would be diverted to the west instead of to the north.

(Signed.) Frank Brumby Wellons.

(Jurat omitted.)

Mr. Lyles: Defendant admits the allegations of paragraph of the Bill numbered Arabic One, reading as follows:

1. That the plaintiffs, Planter's Fertilizer & Phosphate Co., and Merchants Fertilizer Co., with their principal [fol. 280] offices and places of business in the City of Charleston, South Carolina; Poole Transportation, Inc., with its principal office and place of business at Greenville, South Carolina; and South Carolina Produce Association, with its principal office and place of business in the town of Meggetts, South Carolina; are each of them a corporation, organized and existing under and by virtue of the laws of the State of South Carolina.

That the plaintiffs, Barnwell Bros., Inc., with its principal office and place of business in the City of Burlington, North Carolina; Horton Motor Lines, Inc., National Convey & Trucking Company, and Carolina Transfer & Storage Co., with their principal offices and places of business in the City of Charlotte, North Carolina; and Akers & Hudson Motor Lines, Inc., with its principal office and place of business in the City of Gastonia, North Carolina; are each of them a corporation, organized and existing under and by virtue of the laws of the State of North Carolina.

That the plaintiffs, Sarah A. Geraty, John W. Geraty, and Charles W. Geraty, constitute partnership trading as William C. Geraty Co., and are each of them residents of Yonge's Island, in the County of Charleston, South Carolina, and are each of them citizens of the State of South Carolina.

That the plaintiff, Dewey D. Maner, is a sole trader, trading as Maner Transfer Co., and is a resident of the

City of Rome, Georgia, and is a citizen of the State of Georgia."

Mr. Lyles: Defendant admits the allegations of the paragraph of the Bill numbered Roman 2, Arabic 3, reading as follows:

II

"3. That the jurisdiction of this Court is invoked because the subject matter of the action involves the rights of the plaintiffs under the laws and the Constitution of the United States and the amount in controversy, as to each of the plaintiffs, exclusive of interest and costs, exceeds the sum and value of $3,000.00, as will hereafter appear; [fol. 281] and because the suit arises under a law of the United States regulating commerce."

Mr. Lyles: Defendant admits the following sub-paragraphs of paragraph numbered Arabic 10: one, two, three, four, five, six, and seven, which read as follows:

"10. That the plaintiff, Barnwell Bros., Inc., is now and was for a number of years prior to the passage of such Act of South Carolina, engaged in the transportation of property in interstate commerce as a common carrier; that it offers by its own facilities or through connecting agencies door to door delivery and daily direct service in the District of Columbia, Georgia, Maryland, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Virginia, and other States, and has branch offices and terminals at Atlanta, Ga., Baltimore, Md., Charlotte, N. C., Cumberland, Md., Greenville, S. C., Newark, N. J., New York City, Philadelphia, Pa., Shelby, N. C., and Washington, D. C.

That the plaintiff, Poole Transportation, Inc., is now, and was for a number of years prior to the passage of such Act of South Carolina, engaged in the transportation of property in interstate commerce as a common carrier, that it offers door to door delivery and daily direct service into, from, within, and across the State of South Carolina, from and to the States of Delaware, District of Columbia, Georgia, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Virginia, and other States, and has traffic a-ents at Greenville, S. C., Atlanta, Ga., Baltimore, Md., Burlington, N. C., Chester, Pa., Richmond, Va., Charlotte, N. C., Paterson, N. J., and Kings Mt., N. C.

That the plaintiff, Horton Motor Lines, Inc., is now, and was for a number of years prior to the passage of such Act of South Carolina, engaged in the transportation of property in interstate commerce as a common and contract carrier; that it offers door to door delivery and daily direct service in the District of Columbia, Maryland, New Jersey, New, York, North Carolina, Pennsylvania, Tennessee, Virginia, and other States, as a direct and connecting carrier [fol. 282] of South Carolina, and has warehouses and terminals at Baltimore, Md., Burlington, N. C., Charlotte, N. C., New York City, Philadelphia, Pa., Richmond, Va., Washington, D. C., Wilkes-Barre, Pa., Cumberland, Md., Hickory, N. C., Greensboro, N. C., and Pittsburgh, Pa.

That the plaintiff, National Convoy and Trucking Co., is now and was for a number of years prior to the passage of such Act of South Carolina, engaged in the transportation of property in interstate commerce as a common and contact carrier, offering door to door delivery and daily direct service in Georgia, North Carolina, South Carolina, Tennessee, Alabama, and other States, with traffic agents at Atlanta, Ga., Chattanooga, Tenn., Greenville, S. C., High Point, N. C., Knoxville, Tenn., Spartanburg, S. C., Winston-Salem, N. C., and Birmingham, Ala.

That the plaintiff, Carolina Transfer & Storage Company, is now, and was for many years prior to the passage of such Act of South Carolina, engaged in the transportation of property in interstate commerce as a contract and irregular common carrier; that it has specialized in the movement of household furniture and goods in interstate commerce, which is an indispensable service among all the several states of the United States, but that 35% of its total traffic moves into, from or across the State of South Carolina.

That the plaintiff, Dewey D. Maner, trading as Maner Transfer Company, of Rome, Georgia, is now, and was for many years prior to the passage of the Act of South Carolina, engaged in the transportation of property in interstate commerce as a common carrier; that he offers door to door delivery and daily direct service in Georgia, North Carolina, South Carolina, Tennessee, Alabama, and Virginia, Maryland, Pennsylvania, New York, and other states, with terminals at Baltimore, Md., Philadelphia, Pa., New York City, Chattanooga, Tenn., Atlanta, Ga., Birmingham, Ala., and Rome, Ga.

That the plaintiff, Akers & Hudson Motor Lines, Inc., is now and was for many years prior to the passage of such [fol. 283] Act of South Carolina, engaged in the transportation of property in interstate commerce as a contract carrier, that it offers door to door delivery and daily direct service in the States of Connecticut, Georgia, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, and other states, with traffic agents at Gastonia, N. C., Baltimore, Md., Newark, N. J., New York City, Reading, Pa., South River, N. J., Trenton, N. J., and Chester, Pa."

Mr. Lyles: We do not admit the other paragraphs concerning which counsel made inquiry.

Mr. Funkhouser: We are together on all except one, and that paragraph is as follows:

"II. That each of the plaintiffs hereto has made large investments of money, property and effort in the respective businesses in which they are engaged as alleged heretofore; that the necessary effect of the enforcement of the South Carolina Act will be to curtail the business of each of the plaintiffs, damage or destroy their investments in an amount, and reduce their lawful profits, in an amount, greatly in excess of One Thousand ($1,000.00) Dollars, for each month that they are thus unlawfully prevented from a reasonable use of the highways of the State of South Carolina."

Judge Parker: They say they do not admit that?

Mr. Funkhouser: No, sir.

Judge Glenn: You have introduced substantial testimony along that line, anyway.

Mr. Funkhouser: Yes, sir.

Judge Parker: Have you anything else?

Mr. Coleman: May it please the Court, we think possibly the Court got the impression from Mr. Williamson's testimony that when he said a bridge was designed to carry a ten ton load, that he meant that those bridges would not carry a semi-trailer tractor weighing from twenty to forty thousand pounds.

Judge Parker: What do you want to do?

Mr. Coleman: I want to prove what he meant was——

Judge Parker: Call your witness.

[fol. 284] HARRY TUCKER, a witness for the plaintiffs, having been previously sworn, was recalled and testified:

Direct examination.

By Mr. Coleman:

Q. You heard the testimony of Mr. Williamson when he said these——

Judge Parker: No, you can't prove what he meant. Prove anything else you want by this witness.

By Mr. Coleman:

Q. In engineering language, Professor Tucker, when a bridge is designed to carry a ten ton load, does that mean that only one ten ton load can be carried on that bridge?
A. No, sir.

Judge Glenn: We understand that—that it means as many ten ton trucks as can conceivably get on the bridge going both ways at the same time.

Q. Doesn't that mean that a tractor and a semi-trailer weighing 35,000 pounds could safely operate on that bridge?
A. Absolutely. The only difference would be instead of having two trucks following each other, you in effect connect by a draw-bar.
Q. So those are open to vehicles weighing 20,000 to 30,000 pounds?
A. Yes, sir, if they were designed for ten ton vehicles.

Judge Parker: Would that be sufficient—would a bridge designed to carry a ten ton truck support a line of tractors of that character going in both directions?

A. Absolutely, sir.

Judge Parker: What would be the weight of them? How long are these tractors?

A. The tractors are about—they range in different lengths, but around ten to twelve feet. The overall dimensions of the tractor and semi-trailer will run 28 to 35 feet.

Judge Parker: Then semi-trailer has the same capacity for going on there that a ten ton truck has?

A. That is correct.

By Mr. Coleman:

Q. And the tractor, plus the semi-trailer, is the equivalent [fol. 285] to two single trucks each weighing 20,000 pounds, and the effect of the tractor semi-trailer weighing 40,000 pounds on the bridge would substantially be no worse than two single trucks each weighing 20,000 pounds.

A. That's correct.

Q. The South Carolina law construes those two units as one, does it not?

Judge Parker: Oh no, you can't prove that. We will do that ourselves.

Mr. Coleman: That is all.

* * * * * * *

Mr. Funkhouser: When we appeared before Judge Glenn at Rock Hill, I made a motion before him for an interlocutory injunction on the ground that he alone could grant it under the authority of ex parte Hobbs, which I construed to hold that a single District Judge, where you had two grounds in your application, could grant an interlocutory injunction. I want to amend the former motion that we made then on the supersedure issue so as to base it not only on that ground, but also on the constitutional ground of a burden on Interstate Commerce.

Judge Parker: I thought that was what we have been trying to do.

Mr. Funkhouser: I want it to show in my motion.

Judge Parker: Is there any objection? The motion to be permitted to amend the motion is allowed.

Mr. Beall: If the Court please, we would like to offer in [fol. 286] evidence a certified copy of the original Senate Bill S-1629 which later became the Motor Carriers Act so that it will be available for comparison with the language of the Act as passed and the language in the bill at its original introduction.

Mr. Griffith: It is just as the Court prefers, but we presume that the Court will take judicial notice of the Committee report which we have already handed up. I don't see why he wants to encumber the record. I was going to suggest to the Court, that the Court has a right to look into the legislative history of the Act.

Judge Parker: I don't think there is any doubt about that.

Mr. Beall: I only wanted to be on the safe side. I only wanted to be sure that the documents were available to the Court, if the Court feels it can take judicial notice of these things, and incorporate them in the record.

Mr. Griffith: We admit they are before the Court.

Judge Parker: It is admitted by counsel for the defendants that the Senate Bill 1629, known as the Wheeler Bill with its amendments, which became the Motor Carriers Act, is before the Court and the Court can take judicial notice thereof, and plaintiff objects to the introduction of the bill on the ground that it will unnecessarily encumber the record.

Objection is thereupon sustained.

Mr. Funkhouser: I suppose this same rule will apply to all the various bills that lead up to the enactment of the Act?

Judge Parker: I think so.

Mr. Beall: Here is a matter which has no connection with the legislative history of the Act. There is only one page, one paragraph of this pamphlet, entitled "National Motor Freight Classification" on which motor carriers base their rates, and the page is No. 111A which contains a rule which was made necessary because of the conflicting State weight law.

Judge Glenn: Who made the rules?

Mr. Beall: The motor carriers.

[fol. 287] Judge Parker: It is filed with the Interstate Commerce Commission. I think we can take judicial notice of that, but you might put it in.

Mr. Griffith: We have no objection.

Judge Glenn: Read what it says.

Mr. Beall: (reads) "National Motor Freight Classification, D. R., under rule 13, page 111A, Section 2 of the rule:

"Volume ratings shown in this classification do not apply in states where provisions of law so restrict the payload limits as to make the applications of ratings invaluable or impracticable. In such states the carrier shall in rate making provide its own rules for volume ratings so as to comply with such restrictive law."

Mr. Beall: These are matters of committee hearings. It is not necessary to put in all the pages.

Judge Parker: It is not necessary to encumber the record. They are available to the Supreme Court. If the Supreme Court wants to see them, we have notice of them here. We can take judicial notice of that.

Mr. Ross: I desire to offer four sheets. They are statistics indicating the mileage in the various highway systems, including South Carolina, of different types of roads and for the United States as a whole indicating in a general way the necessary highway transportation system. The copies are certified. These are some that I think are unnecessary. I will detach those if permissible.

Judge Northcott: Does that include any statistics in regard to bridges?

Mr. Ross: No, sir, it does not, except that they may be included in the total mileage perhaps.

Judge Parker: Let them be received. Has the defense objection?

Mr. Griffith: None, except our standing objection of irrelevancy.

Judge Glenn: We think they are highly relevant.

[fol. 288] The Four Sheets of statistics referred to by Mr. Ross and offered by him are received in evidence and marked "Plaintiff's Exhibit 11."

Plaintiff rests.

Testimony Offered for the Defendants

Mr. Griffith: If the Court please, I thought of reading the testimony of Mr. Moorefield, but I do not think I will go into it except to give you a brief summary of what it covers.

Judge Parker: I understand the testimony is filed in the record?

Mr. Griffith: Yes, sir.

Judge Parker: Just tell us what it is about and read such portions as you think fit the Carolina States.

Mr. Griffith makes an oral statement, giving to the Court a brief summary of the salient points in Mr. Moorefield's testimony.

Judge Parker: Are there any matters in the report of the Legislative Committee's report that you wish to call attention to?

Mr. Griffith: Not at this particular time. I wish to offer in evidence at this time Senate Document No. 43. This was an investigation made by the Interstate Commerce Commission, or some branch of it, on the matter of the transportation industry. The purpose of offering it is to show both sides of the picture. We haven't attempted to go out and get witnesses to come in and contradict the plaintiff's evidence. We offer it for the purpose of showing the two sides of the question. It is a report by taking testimony of people, similar to what was taken here, from all over the United States. Senate Document No. 43, which was taken at the time of the consideration of this Act.

Mr. Ross: Is that a proposed report of the Examiner of [fol. 289] the Commission?

Mr. Griffith: Yes, Leo J. Flynn.

Mr. Ross: This is a proposed report. There was a report of the Commission which was to some extent adopted.

Mr. Griffith: This was a report of the facts, like a Master sitting on a hearing on which he was making a finding.

Judge Parker: Is that a document of which judicial notice can be taken or not?

Mr. Griffith: I think so, because that was a report of an Examiner who reported to the Commission and the Commission made its report and we don't know whether it was adopted or not. The final report of the Commission is in the I. C. C. report, and this was preliminary to that report.

Judge Parker: I am asking whether it is necessary to put it in the record or whether we can take judicial notice of it.

Mr. Funkhouser: We consent to it.

Judge Parker: It is consented that the Court take judicial notice of this document. Suppose you offer it in evidence and let it be admitted and it is understood in making up the record that this won't be printed, and copies of them may be used.

Mr. Griffith: I contemplated that at the time, not knowing what is in there at this time, I would like to suggest that the Commission's report which is either an exact or modification of this report, should also be included. That undoubtedly can be taken judicial notice of.

Judge Parker: All right. You can call attention to that in argument.

A. H. BOHLEN, a witness for the defendants, after having been first duly sworn, testified:

Direct examination.

By Mr. Griffith:

* * * * * * *

[fol. 290] Mr. Bohlen, what is your position?

A. Director of the Motor Vehicle Division.

Q. Of the State Highway Department?

A. Yes, sir.

Q. Did you make a tabulation as to the registration of motor trucks from 1933 to 1936 by rate capacities?

A. Yes, sir.

Q. Is that the tabulation?

A. Yes, sir.

Q. Is that taken from the record of the State Highway Department?

A. Yes, sir.

Mr. Griffith offers in evidence the tabulation referred to and same is received in evidence and marked "Defendant's Exhibit 13".

Q. Did you also make a tabulation of all motor vehicles, and if so, for what years?

A. Yes, sir; this was taken out of the Highway Department's annual report.

Q. For what years?

A. 1925 through 1936.

Mr. Griffith: Defendant offers in evidence the tabulation from 1925 to 1936 of motor vehicles, and same is received and marked "Defendant's Exhibit 14".

Judge Parker: What is the substance of these things? I like to know what we are doing as we go along.

Mr. Griffith: In 1933 there were registered trucks not over one ton, 8857, which increased in 1934 to 10,046, and [fol. 291] 1935 to 12,567 and 1936 to 14,243. There was a gradual increase in practically every rating capacity for all those years. The vehicles in 1925, the registered passenger automobiles was 153,978. They gradually increased, except in 1932 where it dropped down, and in 1936 it was 218,690. For trucks in 1925, it was 15,409 which in 1936 had increased to 30,492.

Judge Parker: All sized trucks?
Mr. Griffith: That is all sized trucks.

Q. Now, Mr. Bohlen, what class of trucks are used, particularly by carrier for hire, if you know?
A. Two to three tons, that is, on your semi-trailer combination outfits.
Q. I wish you would read the registration of those types of trucks for 1933 to 1936?
A. 1933 there were 522; 1934—764; 1935—1580; 1936—2306.
Q. Has any other type of truck increased in proportion?
A. No, sir.
Q. Do you have the weights of buses registered in this State?
A. I have some records here that I brought down from the Highway Department which shows the registration of the Greyhound buses.
Q. What do those buses show with respect to the weight of the vehicles?
A. We have one here. The bus was first registered in 1936, 17,500 pounds; another one registered in 1936, 17,500 pounds, and another one in 1936, 17,500 pounds. One in 1934, 18,500 pounds; one in 1933, 16,900 pounds; another one in 1933, 16,900, and one in 1934, 18,000 pounds. That is all I have.
Q. So far as you know are those as heavy buses as you have registered in the State?
A. Yes, sir.
Q. What is the width of those buses?
A. They run 96 inches, the majority of them, I would say.

[fol. 292] Cross-examination.

By Mr. Funkhouser:

Q. Mr. Bohlen, those weights you gave for buses were the weight when the buses were empty?
A. Yes, sir.

By Mr. Griffith:

Q. What is the maximum carrying capacity of those buses to the bus?
A. From 30 to 31 passengers.

Q. So at an average weight per passenger of 150 pounds would mean about 4500 pounds if loaded to capacity.
A. Yes, sir.
Q. What are the limits as to baggage, do you know?
A. No, sir, I might explain that in registering passenger cars, we go by the weight of the passenger car. We don't take into consideration the passengers. In registering trucks, of course, we go by the load.

By Mr. Funkhouser:

Q. If the weights you have given for a bus is empty, a loaded or gross weight is over 20,000 pounds?
A. Yes, sir.

By Mr. Blease:

Q. It depends on how many passengers it has?
A. I am going by the maximum figure.

W. W. GOODMAN, a witness for the defendants, after having been duly sworn, testified:

Direct examination.

By Mr. Griffith:

I am employed by the Public Service Commission of this State as Director of the Motor Transport Division. We keep record of the registration of trucks for hire. I have made a tabulation of them. The total number of *ev*hicles engaged in common carrying is 111.

Judge Northcott: For what year is that?
[fol. 293] A. For the current period. There are 1202 vehicles registered as contract carriers.

Mr. Griffith: Defendant offers in evidence the tabulation referred to by the witness Goodman, and same is received and marked "Defendant's Exhibit 15". (Tabulation showing 111 vehicles.)

By Mr. Funkhouser:

Q. Is that interstate and intrastate carriers?
A. Yes, sir.

By Mr. Griffith:

Q. That includes all of your registered carriers?
A. Yes, sir.

Judge Parker: How many were there?
A. 1202, compared with 111 common carriers.

Mr. Griffith: Defendant offers in evidence the tabulation showing a total of 1202 and same is received and marked "Defendant's Exhibit 16".

Cross-examination.

By Mr. Funkhouser:

I cannot state how many interstate carriers who have filed applications for public convenience and necessity with the Interstate Commerce Commission have filed them with us. There is about 1600 of all motor vehicle carriers, both common and contract, passenger and others. In other words, there are 1600 of those that would come under the jurisdiction of the Interstate Commerce Commission. I don't have the figures as to how many from within the State of South Carolina. It is true the Interstate Commerce Commission construes the term common carrier differ-ntly from what our Commission construes it in South Carolina. The irregular route common carrier as defined under the Federal Motor Carrier Act is the contract under the South Carolina law generally. That is the only difference.

[fol. 294] CLIFFORD OLDER, a witness for the defendants, after first being duly sworn, testified as follows:

Direct examination.

By Mr. Griffith:

Q. Mr. Older, are you the Clifford Older who was referred to in the testimony yesterday?

A. I presume so. I know of no other person by that name. My present home is in Willomet, Illinois, a suburb of Chicago. The first formula that I know of that was proposed for the design of concrete roads was one that I believe I advanced. However, it was merely an adapt-ion of well known engineering formulae to the particular pur-

pose. For the first time, I believe, I proposed that formula used in the design of concrete pavement. The Older formula, referred to yesterday was the formula that was prepared by me and so far as I know it was the first one that was proposed. I graduated from the University of Wisconsin, College of Engineering, with a degree of Bachelor of Science in Civil Engineering in the year 1900; for six years after that, until 1906, I was employed by a number of different railroads in various capacities. From 1906 to 1924 I was an employee of the Illinois Highway Department. From 1917 to 1924 in that period I was Chief State Highway Engineer; from 1924 to the present date I have been in consulting practice; part of the time in cooperation with certain definite associates; for the last three years without any associates in business or in the consulting profession. I conducted the highway test known as the Bates test. The Bates test included a series of sections of highway laid on a road in a location where no traffic could use the location and consisted of 67 sections of highway, each of different construction in one way or another, the total length being about two and a half miles. The plan of the road was to test not only different types of paving construction, but different thicknesses, to test every element that entered into the strength of carrying capacity of the various sections of pavement. I might illustrate in one way, how the attempt was made to determine the load limitations of these various sections, by referring first to [fol. 295] the concrete sections.

We began the series of concrete sections with a section four inches thick, a uniform thickness of four inches. The next section along the road was five inches thick, and then with spaces of one inch, the succeeding sections were increased until a maximum of nine inches was reached. In other types of road, such as were called flexible types, meaning by that a gravel or stone base without any cement in it, over which was laid some kind of varying surface, we had a similar series of sections. We made steps in thicknesses and so on through the various so-called brick types and asphalt types or concrete-asphalt surfaces, on these flexible bases. The final plan was to begin operating over this test highway a fleet of trucks, beginning with trucks of the lightest weights that we could get or that we

have available, and operating them along one side of the road and back the other, noting very carefully what happened to these various sections. Then stepping up the load of the trucks, particularly on the rear axle, operating them again for a particular number of times and again noting and observing the behavior of each of these various sections, and so on, stepping the load up by multiples of 1000 pounds in general until we reached the legal limit that was then in force in Illinois, which was 16,000 pounds an axle, and when we reached that limit, we ran the trucks many more times because that was the consideration of design that we were looking for, and we stepped them up beyond the legal limit.

Prior to the traffic test, I might say that we carried on innumerable individual tests with loads, that is, the application of a load at corners and centers and various other places throughout the slab, and observing, as one would in a laboratory, the behavior of the materials, in an endeavor to determine the laws, the natural or fundamental laws governing the behavior of the road. The truck traffic test, as a matter of fact, was to test or prove whether or not any theory might be developed from a scientific investigation as regards producing a formula for design. If I were [fol. 296] called upon to build a highway today the first thing I would want to know would be whether there was any limitation of funds. If I were going to apply my formula and make up a formula today for the building of a certain highway or road the first thing I would want to know would be the load limitation. Without knowing the load limitation the formula is valueless, as far as I know. I mean by my formula that I would try to adopt a plan by which a person wanting to know how to build a certain strength road, they could apply their formula and get it. With the experience I have had in engineering, I could not tell the strength of a road by looking at it. There are so many factors that you cannot see by merely traveling over a road, or even getting out of your car and examining it, even if you know how thick it is, how wide it is, and the various other matters that you can see before your eyes; for example, by merely looking at it you know nothing whatever of the strength of the concrete, if it is a concrete pavement. There is most decidedly a difference in the strength of concrete pavements.

Judge Glenn: Regardless of the thickness, the same thickness, in concrete, there is a different strength in it?
A. Yes, sir.
Judge Glenn: Does that vary considerably?
A. Yes, sir.

By Mr. Griffith:

Q. What else would you want to know?
A. I would want to know a good deal about the type of the soil on which the pavement was to be laid.

Judge Glenn: We take for granted this gentleman has had a whole lot of experience. How about bringing him down to our roads down here?

By Mr. Griffith:

Q. You cannot give an opinion on a road by just looking at it?
A. I could not give an opinion that would not be modified between limits of perhaps considerable spread.
Q. Is it a fact that any opinion has got to be varied to a certain extent?
[fol. 297] A. I am certain that mine would have to be.
Q. Let me ask you this question. What do you mean by how much a road can bear?
A. A matter of judgment aided by formula. That won't apply to the average conditions as you know it and presume that may occur in this location. You may arrive at a figure that you could consider is a fair one under the circumstances as known to you.
Q. What percentage of the ultimate strength do you consider is the proper basis?
A. Something under 50%, of the ultimate strength.
Q. Now, if a concrete road is used for weights under 50%, how long will they last?
A. As far as the engineering profession knows, I believe it would last indefinitely until it becomes obsolete.
Q. I will ask you this question in that connection. Do roads which are subjected to heavier loads than they should have deteriorate at once or gradually?
A. The deterioration that may come from an overload—by overload I mean a load that produces a stress in the pavement slab in excess of 50% of the ultimate stress—it may

be very slow or very rapid, depending upon the amount that this 50% of the ultimate strength is exceeded—I might illustrate that in this way: If that ultimate stress—I mean if the stress caused by the load is 90%, we will say of the ultimate stress—the failure may appear almost immediately, perhaps a few days after the road is opened to traffic. It simply depends upon how many loads that produce that ultimate stress have to go over it each day, not ultimate stress, but 90% stress that goes over it each day. Now, if the loads that use the highway cause a stress of 80% of the ultimate, it may be a week or ten days before anything would show up, and that daily increases. As the load stress approaches to somewhat higher than 50% for example, 54% or 55%, it might not cause any visible signs of distress for a number of years. It might be possible that the road is not a heavily traveled road, and the number of vehicles that travel it are [fol. 298] few and the failure is never reached until the road becomes obsolete; it would not fail, but it does not take very much more than 50% of the ultimate, say 60%, when the loads break the road in a comparatively short time. This is based upon well known laws on the behavior of structu-al material. So, when the deterioration as you speak of takes place, I can't say. There may be signs of visible deterioration right away. There may be no visible deterioration. It may be delayed for any period, from a few years to perhaps 10 years, or even more.

Q. But destruction begins before the least sign of destruction is seen?

A. After it occurs, however, it is likely to be very rapid from that time on.

In so far as I know, if a road is not subjected to a greater weight than around 49% of its ultimate strength it would probably last forever, in so far as carrying loads, but not the natural agencies of destruction and obsolescence. I have had a considerable number of proper illustrations of that in my experience. The strength of concrete varies. The same concrete constructed in as nearly the same manner as we know how to make it will still vary in strength. There is also a variation in the strength of the subgrade and foundation. It varies in different parts of the state, and even in the same territory approximately. It varies sometimes at very short intervals along the particular piece of road. It is due to such variations as those I have mentioned that I

say that an opinion as to what a road can carry has got to be flexible.

Q. Relating to the width of a vehicle, does that have any relation to the damage to the road?

A. Yes, the width of the vehicle is inter-related with the strength of the pavement, the only thing, the load must have an influence. I explain that this way. Presume a 20 feet wide pavement which is called a two-way pavement, in that case two vehicles 96 inches wide can pass with a certain clearance, and the outer wheel of the two vehicles will not be required to travel immediately over the edge of the pavement on the shoulder off the pavement, as where it is 16 feet wide. The width of the vehicles in this case forces each vehicle in passing, in order to obtain clearance, to either [fol. 299] travel the wheels on the extreme edge of the pavement or perhaps on the shoulder, running off on that. Now, if the edge strength of the road is not balanced with the middle portion, or if the edge is not thickened sufficiently for that condition, then the width of the vehicle has a very important bearing upon how soon one might expect destruction of the edges of the pavement, on the roads that have the same center thickness and the same edge thickness.

Q. You have heard the testimony of Mr. Williamson, our Highway Engineer, would you give us your opinion as to the weights the concrete roads in this state should bear?

A. As I understood Mr. Williamson, as I heard Mr. Williamson's testimony, the concrete pavements, were in general of three different widths, that is, 16, 18, and 20 feet, and of two different thicknesses generally speaking. For example, some of them have an eight inch thickness at the edges, and a six and a half inch thickness at the center. I understand from his description that this extra thickness at the edge was tapered gradually down to the six and a half inch thickness at the center. Another series was seven and a half inches thick at the edge and six inches at the center, and tapering in the same way.

I think it is quite obvious that disregarding width, these differences in thickness along, assuming that the concrete is of the same strength in all cases, would mean that the thinner roads would not be able to carry the same wheel load as the thicker ones. The load carrying capacity of the concrete pavement is not only dependent upon the thickness

of the concrete, the strength of the concrete and the character of the sub-grade, but it is also dependent, to a very marked degree upon other factors in the pavement bases. For example, pavements have transfer joints to provide contraction and expansion at intervals. A pavement may or may not have a longitudinal joint or a joint running down the center of the road, so there is a further modification. Mr. Williamson's testimony indicated that part of [fol. 300] this pavement did not have longitudinal joints. For example, that part of the concrete pavement—without repeating that, I am talking altogether about concrete pavements for the time being. The concrete pavements having no longitudinal joints having a thickness of six and a half inches at the center and seven and a half inches at the edges are the weakest pavements of the lot, the reason being that in my, I will say 30 years experience in highway matters, during nearly all of which period I have been in touch with concrete pavements, it is a matter of common observation that if there is not a center longitudinal joint built into the pavement, nature will put a longitudinal crack in it. Now, when this crack comes it will separate a certain amount, due to contraction during low temperature periods. Then at the interior portion of the pavement we have an edge that is only six and a half inches thick that is exposed to the wheels of traffic. The outer edge has been strengthened to perhaps carry a heavier load, but here is an inner edge that is a weak link in those pavements. For those pavements I would be forced to give an opinion of a load that is quite low. In my judgment those pavements are not capable of supporting indefinitely wheel loads in excess of about forty or forty-two thousand pounds, subject to these various conditions we have spoken of.

Judge Parker: You say forty-two thousand pounds?

A. Forty-two hundred pounds—pardon me, making axle loads in the neighborhood of eighty-four hundred pounds. On pavements having an eight inch thickness, on the other hand, and seven and one-half mid portion and transverse joints, I would place the load limits in the neighborhood of 6400 pounds per wheel, or about 12,800 pounds per axle approximately. It might be subject to a variation of perhaps 500 to 1000 pounds per wheel, due to these various causes either way. That is the actual load supporting capacity.

Judge Parker: Is that the best type pavement we have been testifying about you are talking about now?

A. Yes, sir.

[fol. 301] Q. That is an axle load of about 12,500 pounds?

A. Yes, sir.

Judge Parker: Now, if I may interrupt you, I would like to ask you this question. What do you say as to the maximum axle load of 18,000 pounds in so many states? Is that an excessive load in those states?

A. I would say in all probability that it is. May I elaborate a little, please?

Judge Parker: Yes,

A. In the State of Illinois while I was responsible for the construction of the pavement, I spent one hundred million dollars of the peoples' money. In the law was written a 16,000 pound axle load—8,000 pound wheel load. I was responsible for building approximately one hundred million dollars worth of pavements.

It is a matter of extreme regret to me that I have seen many of those pavements fail—the concrete failed. They have been destroyed by the travel, and the necessity has arisen for the replacement of those pavements. Now the law provided for this axle load of 16,000 pounds, and a police force—a highway police force—was employed by the State not only to look after load limitations, but accidents on the highways, and to serve generally.

Some of those pavements, some considerable mileage of those pavements, in the neighborhood of six or seven hundred miles, had thicknesses approximately the same as this 7½-6 inch pavement described here. I have seen them go to pieces and require replacement. Some of them are still in use after a service of about fifteen years. Many miles of them are gone. That is one reason why I want to be conservative, and yet not ultra-conservative in estimating the life of a pavement, because I feel if I fail once I can fail again.

By Mr. Griffith:

Q. From a description of the bridges which Mr. Williamson designated "weak bridges", isn't your opinion that they would be helped by spacing the weight of a truck on sev-

[fol. 302] eral axles?

A. Mr. Williamson described, as I recall it, quite a number of bridges. They would not behave exactly alike under these conditions.

Q. With a bridge with a span the length of 200 feet, would it make any difference how much the gross weight was spaced with axles?

A. The spacing of the axles—I will have to first assume that this bridge of 200 feet length is a single span reaching from abutment to another, or an abutment to a sill, and so forth, 200 feet long. Now, the spacing of the axles would have an important bearing on parts of the bridge, but not the whole of the bridge. It would have an important bearing upon the floor—which may be likened to the sills or joists under the floor resting upon a beam in the cellar to another beam in the cellar, because that is the way it is supported. The spacing of the axle would have an important bearing on support, on the stresses produced in such stringers. It also has some bearing upon the stresses caused in the beams that support the stringers. There would be very little, if any, effect on the cross members as a whole, although usually at least four, sometimes more, suspenders of the bridge would be so affected. The destruction of the bridge as a whole, the falling of it entirely under such a load would be affected very little, if any. Practically none, I would say.

Q. I believe it has been testified to here that there is no formula to test the strength of any road except a concrete road. Do you agree with that?

A. I do.

Q. You know of no method of testing such roads as these bituminous surfaces?

A. No.

Q. You then have depended entirely on just common sense knowledge and observation?

A. That is correct.

[fol. 303] Q. Well, do you know whether or not they are designed for heavy traffic?

A. The earth types described by Mr. Williamson, I would say that they are not designed, or at least that they are not suited for heavy traffic.

Q. What is your judgment as to the weight that such roads should be subjected to?

A. With the person responsible in such case, I would sure see in order not to encourage excessive maintenance

and reconstruction that the road should be confined practically to that of the average passenger car or truck of equivalent weight and tire equipment.

Q. Well now, how about the dirt type of road?

A. The same thing would hold true. Of course there are cases on certain, particularly clay soils or soils of that nature when the surface material might support almost any load without any serious detriment, as far as weight is concerned. Subsequently comes a wet period and it won't support any load without serious cutting up and destruction of the surface, and the amount of the destruction, in my experience and judgment, depends upon the weight of the vehicle to a large extent.

Q. Would axles help you very much—distribution of weight by axles?

A. Not very much.

Q. You think that the weight of a vehicle has a direct relation to its danger or safety?

A. Yes, sir, I do. The heavier the vehicle the more destruction it is capable of causing if it is in an accident. It is true, in so far as I know, that with equal braking facilities, mechanical devices, the heaviest truck on the highway or the heaviest bus might stop in just as short distance as the lightest passenger car, both equipped with the same proper brakes. Theoretically they should stop in the same distance, coming down from an equal speed, but if either of these vehicles, or we will say both of them strike an object at the same speed, presuming they have their brakes on but are still moving, the damage done by the [fol. 304] heavier vehicle will be in proportion to its weight as compared with the light vehicle.

I might illustrate it by say, suppose we have in our hand a tennis ball and a stone, both of the same size but of different weights. We throw the ball and the stone up against the window, and when they reach the window they are both traveling at the same rate of speed. The stone would undoubtedly crash through the window—the tennis ball would have no effect on the window.

Personally I always like to give those illustrations that I can grasp very readily myself.

The same thing applies in the case of the heavier vehicle, and the light vehicle on the highway. In the City of Chicago, for example, it is almost an every day occurrence

that a passenger car rams the street car. Ordinarily the passenger car suffers seriously. Perhaps the driver suffers seriously, depending on his speed and circumstances. The passengers in the street car are practically unhurt. Less often a truck or a bus rams a street car. We can't say that any two of them are going at the same rate of speed, but we know by observation that the truck collision, on the average, with the street car not only endangers the truck driver but very frequently injures or even kills occupants of the street car, merely due to this momentum that must be suddenly stopped, in the one case very great and in the other comparatively small. Therefore, I feel the weight of the vehicle has a very important bearing upon accidents, attributable to highway accidents in general.

Q. How about the length of a vehicle?

A. The length of a vehicle, as I see it, is a matter of passing. Obviously it requires a greater length of time for one vehicle to overtake a long vehicle, to get past it and in the clear than if the passed vehicle is relatively short. That, I think, has been advanced previously in testimony. I agree with it.

Q. In that connection do you think the width of a vehicle has anything to do with the difficulty as to the length of [fol. 305] time in passing it?

A. Very much so. I will illustrate it in this way. Supposing I am traveling in a car along the highway. I find that I wish to pass a slower moving vehicle ahead of me. Circumstances are such that I can't swerve out into the opposite lane of traffic to see what is in that opposite lane of traffic. Perhaps there is a curve ahead, or other cars coming. Numerous circumstances might cause that until I have approached the slower moving car as closely as I think it is safe to do so, and still have plenty of room to swerve out to get by and past.

In that position a narrow car in front of you—you are sitting in the driver's seat. From your eyes past the edge of the car on the left, the angle that your vision makes with the center line of the opposing traffic lane will extend much further down the highway than in case the vehicle is wider; your angle of vision is then cut down at a much shorter distance.

Q. Is it cut off in proportion to the width?

A. Quite rapidly.

Judge Glenn: In other words, six inches difference would make a great difference?

A. That is true.

By Mr. Griffith:

Q. So, you would say all these factors have a direct relation to the safety on the highway?

A. I would.

Q. Would you say they have a direct relation to the congestion on the highway.

A. Yes. After hearing Mr. Williamson testify I think the gross load limitation in this State of 20,000 pounds is decidedly generous. I agree with the gentleman from the Bureau of Roads that in so far as the highway safety itself is concerned, axle or wheel load determines the amount that should be allowed. That is on concrete roads and it is more or less true also on the bituminous roads. It is not true so much so on dirt roads.

[fol. 306] Q. I ask you if in your opinion a load limit of 20,000 pounds has any relation to the preservation and protection of the highway?

A. I believe that it does.

Q. Would it be possible under a 20,000 pound gross weight limitation to get an excessively high actual limit?

A. Excessive with regard to the pavements of South Carolina?

Q. Yes, sir.

A. Yes, sir; it would.

Q. Assume the commercial vehicles that have been testified here, the haulers for hire, have three axles. Would you say under those circumstances that the excessive axle load would be infrequent?

A. Yes, very infrequent, in my judgment.

The 20,000 pound gross weight would limit reasonably the axles on a three-axle truck, as such trucks are ordinarily designed the axle load in that case would be down to quite reasonable limits, with respect to the carrying capacity of the roadways of the State.

I said in the beginning that when I started out to building highways, the first thing I wanted to know was the traffic that would go over it. That is the reason I developed my formula. In my experience as an engineer in the years past, working for the State of Illinois, I have never con-

templated that the roads of this country would be subjected to the burdens that are now being imposed on them by heavy trucks. It is a difficult matter to enforce the highway laws. The axle load limits would be and is harder to enforce than a gross load, because especial equipment is necessary in the hands of the enforcing officers in order to weigh axle loads. Gross loads may normally be weighed at existing scales that may have been checked.

Mr. Griffith: The witness is with you.

Cross-examination.

By Mr. Funkhouser:

Q. Mr. Older, when did you last design a road?
A. Including city streets—city pavements?
Q. No, sir. I am talking about highways.
A. I think about 1932.
[fol. 307] *A.* I believe approximately that date.
Q. And did you design that road without considering axle weights?
A. No, sir.
Q. Didn't you make the statement a moment ago that it wasn't necessary to consider axle weights in designing a highway?
A. I think not.
Q. I understood you to say it was the gross load and not the axle weight that counted in the highway.
A. I am sorry but I didn't make any such statement, as I recall.

Judge Parker: I understood him to say the test was easier to apply—the law was easier to enforce on gross load than axle load.

By Mr. Funkhouser:

Q. Well, now let's take that up for a moment. Isn't it a fact the axle weight is easier to enforce than the gross weight laws?
A. Not in my opinion and experience.
Q. Then you disagree with the American Association of State Highway Officials? I would like to read to you page 9 of this pamphlet, which is generally known in highway circles, entitled "Who Shall Use the Highways and How:"

'Highway stresses are ruled by wheel loads and not by gross loads. Those who really seek the protection of the highways should help to impress that fact indelibly upon the minds of legislators and law enforcement officers. For it so happens, that the wheel load is not only the more critical factor but is also the more easily determinable factor. To measure gross loads, stationary platform scales are a practical necessity; and, unless they are placed and actually operated on at least all important roads, the gross load limitation, whatever it may be, will be a virtual dead letter. The wheel load limitation is, on the other hand, easily enforceable by officers, equipped with small, portable scales, who appearing suddenly, first on one road, then on another, may plant their telltale instrument by the roadside and require any driver to run his heaviest wheel on it, and so, quickly and practically, detect the law violators. And of this at [fol. 308] least there can be no question: That for the protection of the roads an enforced wheel load limitation is immeasurably better than an unenforceable gross load limitation.''

Do you agree with that?

A. I certainly don't. I have had experience in the law enforcement—I haven't said it—but for a part of the time I was State Highway Engineer I had the direction of the Highway police of the State, and we tried both methods.

Q. Do you know of the American Association of Highway Officials.

A. I do.

Q. Isn't that about the most scientific and learned association of highway officials in America?

A. I would say so.

Q. But you do disagree with them?

A. Yes, sir.

I have been in consulting practice since 1924. Prior to the last three years I have been connected with the firm of Cosoer, Older & Quinlan, an engineering organization. For the last three years I have been offering—or acting as consultant whenever called upon to do so—whenever I decided to accept the assignment. In recent years I have done considerable appearing before various bodies and testifying. I believe I appeared before the North Carolina Legislature in 1933 when there was a bill similar to the present law in South Carolina introduced in North Carolina.

Q. And there you urged the Legislature to reduce their weights and size to the present law of South Carolina, did you not?

A. I don't remember the exact figures that were used at that time.

I appeared on behalf of the railroads and have appeared before other legislative bodies on behalf of the railroads; the Legislature of Missouri at one time, or rather a legislative committee; Kansas at one time; Illinois, Georgia—that is all I recall. I did not appear in Tennessee, or Kentucky or Alabama, not before the legislative committee. I never appeared at all in Alabama, never in Tennessee that I recall. I never appeared before any legislative committee in Kentucky, although I recall giving a deposition that was used in [fol. 309] Kentucky. I persume it was used before the Legislature. That is part of the kind of consulting practice I have been in in recent years. It is not true that I have been part of my time a railroad lobbyist.

The test road construction was started in 1920, finished in 1931, and the test went along, these traffic tests went on through 1922 and 1923.

Q. Why didn't you tell this Court when you were testifying a moment ago and giving the results of that test that the conditions were entirely different from today, and that you used a solid tire in that day?

A. It didn't occur to me. I am perfectly willing to add that testimony. The solid tires were used on the trucks.

Q. And 1922 was fourteen years ago, wasn't it?

A. Yes, sir.

Q. Isn't it a fact that great advances have been made in the mixing of concrete and in the building of roads in the last fourteen years?

A. Well, the word "great" is rather an indefinite term. Advances have been made, yes, sir.

Q. Isn't it a fact also that great advances have been made in the building of automobiles scientifically, and from an engineering standpoint and in the distribution of the loads of those automobiles?

A. I don't know a great deal about the building or construction of automobiles.

Q. So you don't know whether the distribution of loads have made—the science of distributing loads has made any progress in recent years?

A. I don't know that. I am entirely ignorant of that fact.

Q. How can you tell this Court that any tests you made fourteen years ago, with the changes in the mixing of concrete and the building of roads and building of automobiles would be comparable to any conditions today?

A. Because fundamental laws do not change with time.

Q. I believe you said you built one hundred million dol- [fol. 310] lars worth of roads in Illinois. Is that true?

A. Approximately that amount.

Q. And I believe you said you had been distressed, or something to that effect, to notice those roads wear out. Is that true?

A. Yes, sir; part of them—not all.

Q. Were those the same roads you built?

A. Part of them, yes, sir.

Q. And what weight limits did you allow on those roads at the time you built them?

A. I tried to design them for a 16,000 pound axle load, to the best I knew how.

Q. And did Illinois allow a 16,000 pound axle load?

A. Yes, sir.

Q. What does Illinois allow today?

A. 16,000 axle load, so far as I know.

Q. It has never changed it, has it?

(No answer.)

Q. Did you appear before the Legislature of Illinois?

A. Yes, sir.

Q. And didn't you try to get them to lower the axle load?

A. Yes, sir.

Q. And they refused to do it?

A. Yes, sir.

Q. Now, I believe you said that when a concrete road is properly built it lasts forever, didn't you?

A. Not exactly.

Q. Please state what you said.

A. I said if the road was so built that the loads that came upon it did not stress the concrete in excess of its endurance limit, that in so far as I know the loads would not destroy it, no matter how many times they used it. That may not be the exact language, of course, but that is the intent.

Q. Have you made any study of the climatic conditions of South Carolina as to its roads?

A. Not any special study, no sir.

[fol. 311] Q. Have you made any study of the soils and subgrades of the various main highways of this State?

A. No sir.

Q. Have you made any study of the workmanship of the building of the highways in this State?

A. No sir.

Q. Have you made any study as to the mixture of the concrete?

A. No sir.

Q. Do you know what kind of cement and what proportion of cement is put to sand on the highway?

A. I don't know.

Q. Do you know anything about the joints to which you testified, about the highways of South Carolina?

A. I do, as described to me individually by Mr. Williamson.

Q. I don't want your hearsay. I want your own knowledge.

A. As one engineer to another I would say I knew it, because I believe it.

Q. Have you observed the joints in the highways.

A. No sir.

Q. Does a high pressure pneumatic tire and low pressure pneumatic tire make any difference in the stresses on a road?

A. A very moderate amount on concrete pavements, in accordance with my way of figuring.

Q. Why is it then the Bureau of Roads, which has distributed about two billion dollars to the highways of this Nation, makes a distinction in axle load that can be carried when they have low pressure and high pressure tires?

A. I can't answer for the Bureau.

Q. Can you answer for yourself why would that distinction be made?

A. Why should the Bureau make that distinction?

Q. No. You said it wouldn't make much difference, and you say you can't answer for the Bureau. I am asking your opinion as an expert why would anyone, on what theory or what philos-phy could anyone reason that way?

A. Well now, the effect from a theoretical point of view [fol. 312] varies depending upon the type of pavement you are dealing with. On the concrete pavements, in accordance with the method of design they usually use, it would not

make any difference. The gross load would produce the result.

I do not claim that the method I use produces an exact mathematical result. I do believe that it produces a closely approximate result, the correctness of which is closely approximate to the correct result. Now there are other formulas in existence. The one, so far as I know, the Bureau of Public Roads relies upon to a considerable extent, is called the "Westergard Formula", which was mentioned here. That formula, when used, produces decidedly differ-nt results, depending upon the tire equipment, particularly pneumatic tires, as distinguished between low pressure and high pressure. In one place the area of contact of the tire with the pavement is small, as compared with the other. Now I reserve the right to myself to differ with the Bureau on the application of the formula.

Q. That formula of which you are the father—I believe you stated it was your child—was intended to have roads built taking into consideration axle weights and not gross loads, wasn't it?

A. Yes, sir.

Q. Then what has made you change your opinion and get away from the test of axle load to gross load?

A. I haven't, so far as the design of the pavement is concerned.

Q. I believe you drew some reference or made some comparison a moment ago about the difference between a ball and a stone throwing it against something, did you not?

A. I did.

Q. Is the difference between a bal-oon tire and a solid tire just about the same difference as between a ball and a stone?

A. In effect on the highway surface, no.

Judge Parker: Isn't there this difference between the two tires, that the low pressure tire contacts the pavement over a wider area?

[fol. 313] A. Yes, sir.

Q. And the pressure of the weight of a truck touches the pavement in an area three or four times as great as under a high pressure tire. Is that right?

A. Your Honor, I do not recall the relative area. Its is my recollection that the difference between the area contacted by the high pressure tire and the low pressure tire

for the same type vehicle, is not as great as two or three times, although I would not say I was not mistaken, as the area might be——

Judge Parker: Of course if the area of contact was twice as great, the pressure on the particular part of the road contacted would be half as much?

A. The unit pressure would be half as much, but in the design of the concrete road it is not the unit pressure on the surface of the pavement that has much effect on the behavior of the pavement. It has some effect but it is not in proportion to that unit pressure, by any means.

Judge Parker: I don't know that I get you.

A. Supposing we have a long beam and we place a load concentrated right in the center of an inch of length of the beam. We take the same load and spread it over two inches. It doesn't make very much difference in the breaking strength of that beam.

Judge Parker: The tension extends beyond the point of contact?

A. Yes. Of course there is a theoretical complication there, but the illustration I think holds good. There comes a time if you spread it over near the end of the beam it would have a decided effect, but a small variation near the middle doesn't much affect it.

Q. When did they pass the prohibition in Illinois against the use of solid tires?

A. That was after I left the State Highway Department and I haven't these dates.

Q. And the whole time you were there and you deprecated the wearing out of the roads, solid tires were used on [fol. 314] those roads the whole time?

A. The whole time I was with the Highway D*w*partment solid tires were used yes, but I want to modify that by saying I observed the destructive effect just the same after the pneumatic tires came into use, and the solids have been prohibited during the last——

Q. Wouldn't you think from your former testimony that because of the former tires the limit of elasticity had been stretched in those roads by the use of the solid tires and their deterioration naturally would follow later?

A. I think that is an extremely remote possibility; so remote that I would say in my judgment it is clear out of the question.

Q. I believe you heard Mr. Williamson's testimony today, didn't you?

A. Yes, sir.

Q. And you heard him state that these main thoroughfares would carry axle weights of 18,000 pounds?

A. Yes, I heard his testimony.

Q. In his testimony you have disagreed with him?

A. Yes, sir.

Q. And you still disagree with Mr. Williamson?

A. Yes.

Q. You realize, of course, he is the gentleman in charge —he is the chief engineer of this Highway Department, isn't he?

A. Yes, sir.

Mr. Funkhouser: That is all.

Mr. Griffith: That is all.

Mr. Griffith: May it please the Court, we would like to call to the Court's attention and ask them to take judicial notice of the Act of the Legislature authorizing the investigation which resulted in this report already offered in evidence.

Judge Parker: All right. We will take judicial n*p*tice of [fol. 315] that. You call it to our attention so we will know where to find it.

Mr. Griffith: If your Honor please, I am doubtful of another thing. There has been quite a bit of stress laid upon the width of vehicles in this Act. The former law, I presume, would be repealed by the passage of this Act. I want to ask the Court to take judicial notice of the law as it existed in 1932 in the Code, prior to the passage of this Act, and I desire to call attention at this time that the width was not changed—the width of *the width of* the vehicle.

Judge Parker: The 1932 Act was 90 inches was it?

Mr. Griffith: The law prior to the adoption of the 1932 Act was 90 inches width. There was no change in that. I am asking the Court to take judicial notice of all motor vehicle laws contained in the 1932 code, although they are being repealed by this Act.

Judge Parker: Well, we do that. We will consider any Act of South Carolina you call our attention to.

Judge Northcott: Do you mean, Mr. Griffith, the width permitted under the law of South Carolina has never been greater than 90 inches?

Mr. Griffith: That is right, since there has been any regulation.

Judge Northcott: What was the old law in regard to gross weight?

Mr. Griffith: Your Honor, off-hand I wouldn't be definite about it, but those trucks of the type which you are investigating here I think that would be limited to 10,000 pounds actual load.

Judge Northcott: Pay load?

Mr. Griffith: 10,000 pounds axle load and 40,000 pounds gross load.

Judge Northcott: What do you mean "actual load"?

Mr. Griffith: Axle load.

[fol. 316] Judge Northcott: I thought you said "actual".

Mr. Griffith: No; axle load.

Judge Parker: I asked a question about that the other day and somebody told me the in-tial legislation was 20,000 pounds and never had been 40,000 pounds. When the State Engineer was on the stand this morning I addressed an inquiry to him as to why they reduced the load allowed and somebody said that and I got the impression, at least, that this was the initial limitation; there had been no change made with respect to it.

Are there any other witnesses for the defendant?

Mr. Griffith: I believe not.

[fol. 317] PLAINTIFFS' EXHIBIT No. 2

United States Department of Agriculture, Bureau of Public Roads,

Washington, D. C.

November 28, 1936.

Payments to all States, District of Columbia, and the Territory of Hawaii from Appropriations Available to the Bureau of Public Roads

Fiscal Years 1918-1937 (July 1-October 31, 1936)
$2,197,634,970.13

[fol. 318] PLAINTIFF'S EXHIBIT No. 3

November 28, 1936.

Payments to State of South Carolina from Appropriations Available to the Bureau of Public Roads, by Fiscal Years

Fiscal Year	Total Payments
1918	$7,807.68
1919	60,593.98
1920	301,974.74
1921	876,823.16
1922	1,431,877.23
1923	1,363,450.11
1924	1,173,907.44
1925	1,220,841.20
1926	1,810,458.38
1927	1,187,023.41
1928	1,259,902.48
1929	816,484.11
1930	926,038.22
1931	3,306,421.66
1932	1,898,294.20
1933	2,151,541.73
1934	2,348,434.02
1935	3,742,636.16
1936	2,433,242.61
1937 (July 1 to Oct. 31, 1936)	1,423,385.11
Total	$29,741,137.63

[fol. 319] PLAINTIFFS' EXHIBIT No. 4

Mileage of Highway and Grade Crossing Projects in South Carolina Improved With Funds Available to the Bureau of Public Roads as of October 31, 1936

Graded and Drained	84.9
Sand-clay, Untreated	861.0
Sand-clay, Treated	624.4
Gravel, Untreated	100.7
Gravel, Treated	97.4
Low-cost Bituminous Mix	10.0
Bituminous Macadam	3.3
Bituminous Concrete	193.5
Portland Cement Concrete	795.8
Bridges and approaches	26.4
Railroad-Highway Grade Separation	0.4*
	2,797.8

* Involves the elimination of 18 grade crossings and the protection by signal devices of 18 grade crossings.

DEFENDANTS' EXHIBIT No. 7

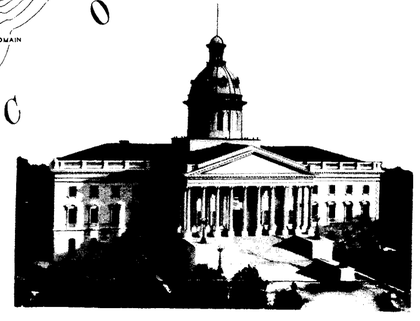
This is a map of the State Highway System of South Carolina, showing (in addition to the regular map), in red ink, the roads on which federal aid has been used.

(Here follows map of South Carolina State Highway System, Defendants' Exhibit No. 7)

Map of SOUTH CAROLINA STATE HIGHWAY SYSTEM

Legend

- HARD SURFACE COMPLETED
- HARD SURFACE UNDER CONSTRUCTION
- EARTH TYPES COMPLETED
- EARTH TYPES UNDER CONSTUCTION
- UNDER STATE MAINTENANCE PENDING RECONSTRUCTION
- ROADS OPEN TO TRAFFIC
- PROJECTED ROADS NOT OPEN TO TRAFFIC
- COUNTY ROADS HARD SURFACE
- COUNTY ROADS OTHER TYPES
- DISTANCES FROM INTERSECTION TO INTERSECTION SHOWN THUS
- ROUTE NUMBER STATE
- ROUTE NUMBER U.S.
- CAPITAL
- COUNTY SEAT
- OTHER TOWNS
- HIGHWAYS NUMBERED THUS CORRESPONDING TO ROUTE NUMBERS SHOWN ON MAP
- COUNTY LINES
- HIGHWAYS IN GEORGIA AND NORTH CAROLINA — HARD SURFACE
- OTHER ROADS IN GA. & N.C. — TYPE NOT SHOWN
- AIRPORTS — HANGAR ACCOMODATIONS
- STATE FOREST PARKS



THIS MAP NOT TO BE USED FOR ADVERTISING

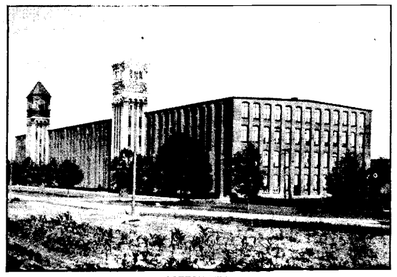
SCALE OF MILES

0 1 2 3 4 5 6 7 8 9 10 — 20 — 30 — 40 — 50

DRAWN BY CARL W. METZ

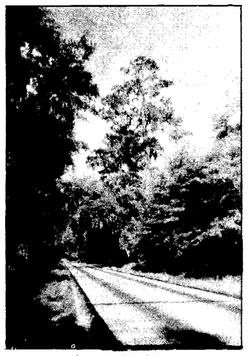
MOUNTAIN LAKE

TAKING THE JUMPS



COTTON MILL

WILD LIFE



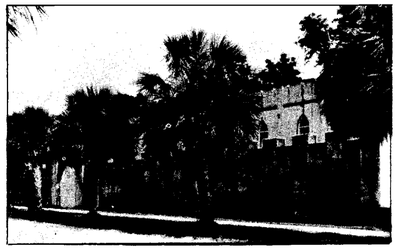
LOW COUNTRY SCENE

HOME MID VENERABLE OAKS

DRAPED STREAM

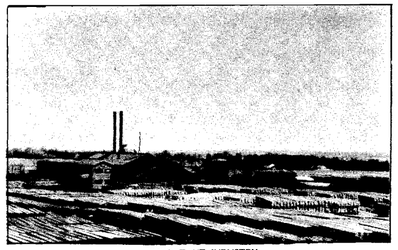
THE PALMETTO WROUGHT IN IRON

REVOLUTIONARY SHRINE



AN EARLY STATE ARSENAL

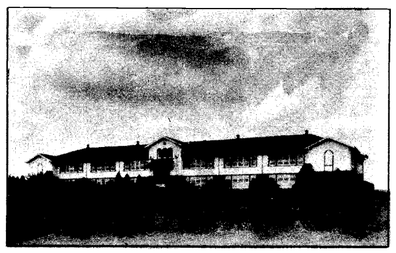
WINTER SPORT



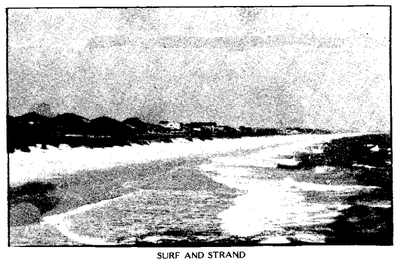
IMPORTANT INDUSTRY

RUINS OF A HERO'S HOME

REMAINS OF A COLONIAL CHURCH

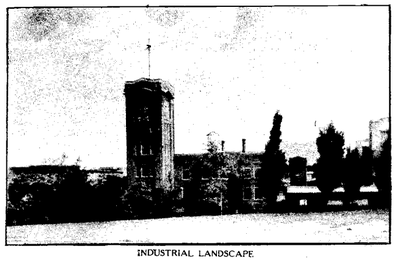


RURAL SCHOOL

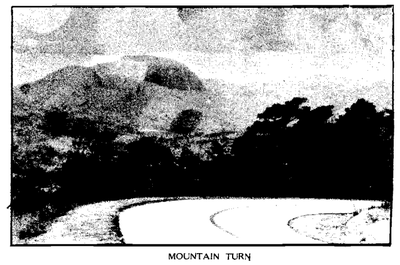


SURF AND STRAND

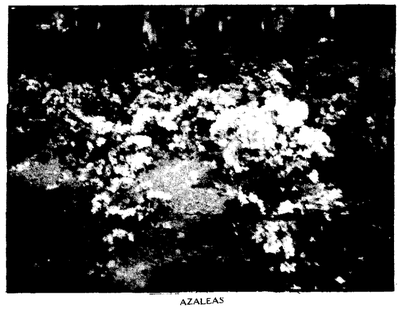
SHRIMP PACKING



INDUSTRIAL LANDSCAPE



MOUNTAIN TURN

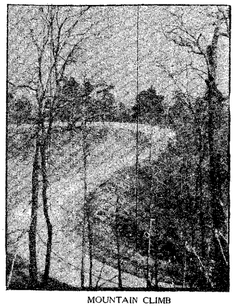


AZALEAS

MODERN HIGH SCHOOL

LOW COUNTRY

MOUNTAIN SIDE



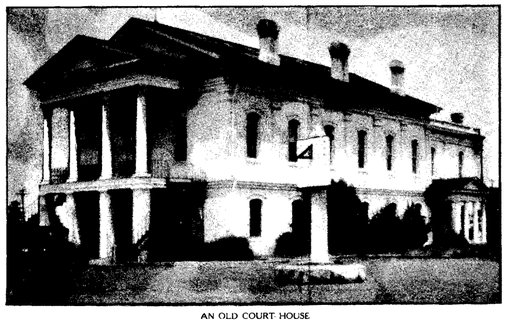
MOUNTAIN CLIMB

FAMOUS PEAK

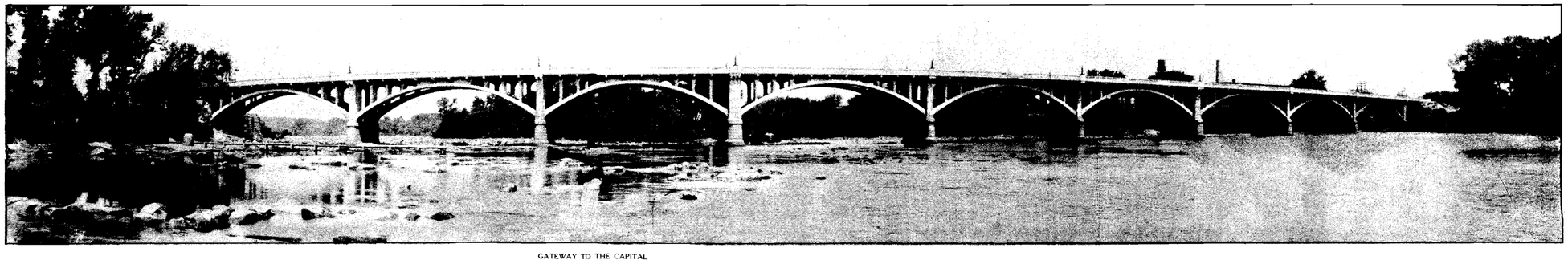
GRANITE QUARRY

THE STATE FLOWER—YELLOW JESSAMINE

CRABBING



AN OLD COURT HOUSE



GATEWAY TO THE CAPITAL

MAP

of the

South Carolina

State Highway

System

1936

Published by
South Carolina State Highway
Department
Columbia, S. C.

MEMORANDA

CROWSON PRINTING CO., COLUMBIA, S. C.

DEFENDANTS' EXHIBIT No. 8

Testimony of Mr. C. H. Moorefield, former Chief Engineer of the South Carolina Highway Department, in the form of a prepared statement.

(NOTE.—This statement was later repeated and added to by Mr. Moorefield as a part of his testimony before the Legislative Investigating Committee. See Exhibit No. 9 following.)

[fol. 320] "The Effect of Truck and Bus Traffic on the Cost of Highway Service in South Carolina."

February 4, 1931.

At the present time all work on the State Highway System of South Carolina is paid for out of receipts from motor vehicle license fees and gasoline taxes. This plan of finance is based on the theory that State Highways are built and maintained primarily for the use of the motor vehicle and that the benefits enjoyed by the owners and operators of motor vehicles because of the improved roads are at least equal in value to the service charges that the license fees and gasoline tax represent.

The discussions and arguments which led the law makers of the State to place the entire cost burden of State Highway improvement and maintenance on the automobile were generally confined to the question of whether any part of this burden should be borne by property taxes. When this question was once settled the schedule of license fees and the rate of gasoline tax were fixed with a view to raising the desired revenue and without much regard for equity in fixing the respective amounts to be paid by the different classes of vehicles. As the State's highway investment has increased the significance of the highway service in the transport of persons and commodities has kept pace, and the problem of properly recognizing differences in the cost to the State of furnishing highway service as between different classes of motor vehicles has grown in importance. Also, the State government is now concerned with the possibility of serious inequities that may have developed as between the highway service and other agencies that are engaged in transport, particularly because of the competitive situation now existing between the highways and the railroads.

As I understand it, the Railroad Commission is now attempting to work out plans for regulating public highway carriers that will be fair and equitable to all of the interests affected by the service that these carriers afford, and [fol. 321] the purpose of this hearing is to develop information as to the effect that truck and bus traffic has on the cost of highway service with the idea that such information will be helpful in working out this plan.

From my point of view, it is not practicable to separate the trucks and buses operating as public carriers from those that are owned and operated over the highways for other purposes. It is possible, however, by more or less rational analysis to bring out certain significant comparisons between light vehicles and heavy vehicles, as well as between small vehicles and large vehicles, as the different classes affect highway cost.

The cost of the State's highway service may, perhaps, be discussed best by separating it into the three items of construction, maintenance, and traffic control, because each of these items is affected in a different way by providing for the heavier and larger vehicles.

Construction Costs.—It is apparent to anyone who has thought even casually of highway construction that the cost must vary with the character of the road and that the character of the road in turn must vary with the character and volume of the traffic to be served. It is immediately apparent that the presence of buses and large vehicles of all sorts on the highways calls for greater width and easier curves. It is equally apparent that the supporting power of the road and its structures must be sufficient to withstand the heaviest loads to which the road will be subjected.

If our highways could be designed for a maximum vehicle load of not exceeding four tons, which would take care of an ordinary two-ton truck loaded to its rated capacity, the average cost per mile of construction would, in my judgment, be reduced by at least $3,000.00 and probably more. If this $3,000.00 per mile additional cost is multiplied by the 6,000 miles included in the State Highway System, we have a minimum estimate of $18,000,000.00 in construction cost for which the trucks and buses of unusual weight and size are responsible.

[fol. 322] Now, as a matter of fact, the total number of trucks having more than two-tons capacity, together with

all the buses and lighter trucks carrying trailers, now operating in the State would not exceed about 3,000. This means that the State is expending $18,000,000. to accommodate 3,000 vehicles and combinations of vehicles. These 3,000 vehicles represent only a little more than 1% of the total number of vehicles using the State Highways, while the estimate of $3,000. per mile additional construction cost necessary in order to provide for these vehicles represents about 15% of the average per mile construction cost.

It could be shown in the same way, of course, that trucks of less than two-ton capacity, but heavier than the ordinary vehicles which constitute the great bulk of traffic on the highways, are also responsible for some additional cost, though the comparison already made illustrates the point that I have in mind.

Maintenance costs.—The effect of large or heavy vehicles on the maintenance cost is not so clearly apparent as in the case of construction cost, because if the roads are designed at the start to accommodate the heavy vehicles the damage caused by the passage of such vehicles over the roads is automatically brought within reasonable limits. On the other hand, any road will ultimately wear out and give way under repeated strains and the heavier vehicles unquestionably cause greater wear and greater strain than the lighter vehicles. Ordinarily we have no way of attributing accelerated wear at any particular point to any special kind or class of vehicle because the roads are open to all kinds and classes, but we do have sections of road where deterioration over a period of years is pronounced and other sections that have been under traffic for an equal number of years that show much less deterioration. It appears from such studies as we have been able to make that the rate of wear has been materially influenced by the character of the traffic as well as by the volume.

We have had a very good illustration of how the traffic of heavy vehicles may affect maintenance cost by observ- [fol. 323] ing the behavior of our bridge pavements on roads that have recently been paved. For example, in one case we had a bridge built in 1925, the floor of which was covered with a ½″ bituminous surfacing. An average of about two hundred and twenty-five ordinary motor vehicles, including a small percentage of trucks, crossed this bridge

every day for two years, making a total for that period of about 160,000 vehicles, which perhaps, averaged two tons gross weight, or about 320,000 tons of traffic. In 1927 the road was closed to traffic and materials for about nine and one-half miles of pavement were hauled over this bridge. The hauling was done with trucks having a gross weight of about ten tons loaded and six tons empty. The aggregate gross weight hauled over the bridge by these trucks was about 50,000 tons.

The bridge surfacing, which had withstood two years of ordinary traffic, aggregating in the neighborhood of 320,000 tons, without damage, was practically destroyed by about 50,000 tons of heavy truck traffic.

Every paving contractor has observed how the earth type roads on which he hauls go to pieces under the traffic of his heavy trucks, but there is no way of making an exact comparison between the maintenance cost under ordinary traffic with the cost under the traffic of paving trucks, because weather conditions have a marked influence in each case.

In my judgment, the damage caused our roads by the heavy vehicles is in general out of proportion to the weight of the vehicles; that is, I believe that a five-ton truck will do more than five times the damage that a one-ton truck will do, and this belief is based on observation of and experience with the State Highway work in South Carolina. On the other hand, the five ton trucks pay less gasoline tax in proportion than the one-ton trucks because they consume less gasoline per ton mile hauled. According to the best information I have been able to get, the average gasoline consumed by trucks of one-ton capacity runs about ten miles to the gallon, while a five-ton truck goes on an aver- [fol. 324] age of about 4½ miles to the gallon. This means that the one-ton truck pays the same amount of gasoline tax for hauling ten-ton miles that the five-ton truck pays for hauling about 22½ ton miles.

Traffic Control.—The problem of controlling traffic on the highways and keeping accidents within bounds is one of the most serious responsibilities that the Highway Department has, and in spite of the utmost attention that we have been able to give this problem accidents have increased out of proportion to the increase in traffic. In 1929

we had 1,417 accidents reported by our maintenance organization with 213 fatalities resulting immediately; in 1930 the total number of accidents reported on State Highways was 1,833 with 215 fatalities. The increase in fatalities in this case was relatively very small, but the increase in the total number of accidents reported was very material, and this increase has gone on in spite of the fact that we have been constantly reducing road hazards by re-locating dangerous sections, eliminating railroad grade crossings, improving visibility, and erecting warning and guide signs. The heavy trucks and large trucks and buses appear to be involved in proportionately more accidents than the ordinary vehicles. In 1930, for example, there were 195 commercial buses registered and there were eighteen accidents reported in which these buses were involved. This means that the number of bus accidents reported was about 9.2% of the number of buses operating. The report shows, also, that 50% of the accidents reported involved other motor vehicles. In comparison with these figures there were 212,190 cars and light trucks registered and only 2,312 were involved in accidents, making the number of accidents a little more than 1% of the number of vehicles, and the number involving other cars was only about 26% of the total.

The accident comparison, of course, is not conclusive because of the wide discrepancy in the number of vehicles operating and the fact that the buses cover very much more mileage during the year than the ordinary vehicle would account at least in some measure for the much higher accident report. A similar comparison between accidents involving heavy trucks and those involving ordinary ve- [fol. 325] hicles shows a much less pronounced load for the trucks. The number of trucks above the two-ton capacity figuring in accidents during 1930 was about 3½% of the number of such trucks in operation, but the accidents involving other vehicles was about 50% of the total. Regardless of what the comparison of accident statistics may show, I believe it is an uneques-ioned fact that large trucks and buses interfere to a marked extent with the free use of the highways by ordinary vehicles. Even on our 20 ft. pavements the average driver of an automobile hates to meet a bus or a large truck and is conscious of being crowded to one side whenever he passes one.

On the whole, my judgment is that the buses and large trucks enhance the problem of traffic control all out of proportion to the relative number of such vehicles using the highways.

General Comments.—With particular reference to the competitive situation as between highways and railroads, I have made no special study, but as a general proposition it looks to me as though the railroads should be able to at least compete in the cost of transport with the trucks and buses, provided that the latter are given no special highway advantage to which they are not entitled in equity. At the present time the motor vehicles are actually paying their way so far as the State Highway System is concerned, though the buses and trucks are not, in my judgment, paying anything like a fair proportion. Also, of course, the motor vehicles are paying no taxes on the State's tremendous investment in highways. When the Highway System is complete it will represent an outlay by the State of about $120,000,000.00. If the motor vehicles were paying taxes on a 42% valuation, as are the railroads, this would represent quite an additional charge against them. Furthermore, about 3,000 trucks, buses and trailers might in equity be required to pay the additional charges representing taxes on about $18,000,000.00 of the highway investment in order to put these trucks and buses on a comparable basis with the railroads so far as taxation is concerned.

It is unquestionably a fact that the buses and trucks have [fol. 326] an important place in our community life and I am in no way suggesting that they should be ruled off the highway; at the same time it does seem to me that they might be made to carry an equitable share of the highway cost burden; or if they are to be in effect subsidized by the State the amount of the subsidy should, in my judgment, be so regulated as not to give the trucks and buses any advantages over the railroads, which enjoy no such subsidy.

It is conceivable, of course, that the transport by bus and truck might completely replace the work of the railroads, in which case the present use of the highways by bus and truck would be multiplied a great many times and the present State Highway System would in all probability become wholly inadequate for this service. If all the freight now hauled by railroad had to be carried over our public road system general reconstruction would immediately become

the order of the day and the present investment of $120,000,000.—would be small compared to what would be required for handling such a situation. It seems, therefore, that the State should hesitate to continue subsidies that encourage the over-development of truck and bus transport because of the possibility that in the end the cost to the State on account of such encouragement would be completely beyond anything that is now anticipated.

DEFENDANTS' EXHIBIT No. 9

(Defendant's exhibit No. 9, is as follows:)

Testimony of State Highway Engineer

Before Commission to Investigate Motor Transportation in South Carolina, November 10, 1931

At the request of Chairman Robinson I am identifying and presenting the identical testimony presented by me before the Railroad Commission of South Carolina on February 4, 1931.

Chairman Robinson also requested that I come here today prepared as far as practicable to suggest a workable plan for correcting the apparent inequities pointed out in my [fol. 327] testimony before the Railroad Commission as contained in the present statutes.

At the present time, I feel thoroughly convinced that in the matter of license fees and gas tax paid in to the Highway Department the trucks and buses are not contributing in anything like the proportion that they influence the cost to the State of highway service. So far as I can see clearly, however, there is no rational way to determine just what any class of vehicles should pay for the privilege of using the roads. Apparently, there is no question but that the motor vehicles should pay the entire cost of the highways System and there is no question in my mind but that the State should properly derive some net revenue from its Highway System over and above the total cost of the service. Such a net revenue is actually now being derived, though it is being applied at present, and properly so in my judgment, to extending the Highway System.

It seems reasonable that the present charges against ordinary passenger motor vehicles may be taken as representing a proper amount for these vehicles to pay for the highway service. If this is done, then it is possible by rational process to arrive at approximately comparable rates for other classes of motor vehicles based on the relative cost to the State of furnishing highway service.

Following this line of approach to the problem, it is necessary, first, to establish an approximate comparison between the cost of furnishing highway service for ordinary passenger automobiles and the cost of the same service for the larger and heavier motor vehicles.

As nearly as I am able to estimate with the few data we have collected bearing on the subject and more or less lump sum judgment as a guide, the cost of constructing and maintaining the State Highway System and regulating traffic over it is probably at least 50% more as a result of making provision for trucks and buses than it would be if traffic [fol. 328] were restricted to ordinary passenger automobiles. That is to say, the cost of constructing, maintaining and policing a State Highway System identical in extent with our present System for the exclusive use of ordinary passenger automobiles would only amount to about two-thirds as much as we are now spending on the Highway System for the same purposes, but including adequate provision for trucks, buses and trailers.

According to the motor vehicle registration records of the Highway Department, there are now operating in the State approximately 179,000 ordinary passenger automobiles, 25,000 trucks and buses, and 2,000 trailers comparable in weight and size to the trucks. This means that about one-eighth of the total number of motor vehicles should contribute to the Highway Department's revenues about one-third of the total amount, and that the schedule of fees and taxes should be arranged accordingly.

Inasmuch as there appears to be no practicable way for regulating the payment of the gasoline tax except according to the quantity of gasoline consumed, and inasmuch as the consumption of gasoline does not actually vary directly with the weight or size of the motor vehicle using the road but is proportionately less as the weight increases, it appears necessary that the entire differential to be collected from the heavier and larger vehicles should, for convenience,

be reflected in the schedule of motor vehicle license fees. With that idea in mind, I recommend:

1. That the present schedule of fees so far as it relates to the ordinary passenger automobiles be continued in effect.

2. That the schedule of fees as it relates to trucks, buses and trailers be modified to conform with the following:

Proposed Schedule of Annual Motor Vehicle License Fees for Trucks, Buses and Trailers

1.	Trucks, buses and trailers having a load capacity of not exceeding one ton:	
	Width not exceeding 6 ft.	$25.00
	Width more than 6 ft., but not exceeding 6 ft. 6 in.	75.00
	Width more than 6 ft. 6 in. but not exceeding 7 feet	200.00
	[fol. 329] Width more than 7 ft. but not exceeding 7 ft. 6 in.	$500.00
2.	Trucks, buses and trailers having a load capacity of more than one ton but not more than two tons:	
	Width not exceeding 6 ft. 6 in.	$75.00
	Width more than 6 ft. 6 in., but not exceeding 7 ft.	200.00
	Width more than 7 ft., but not exceeding 7 ft. 6 in.	500.00
3.	Trucks, buses and trailers having a load capacity of more than two tons but not more than three tons:	
	Width not exceeding 7 ft.	200.00
	Width more than 7 ft., but not exceeding 7 ft. 6 in.	500.00
4.	Trucks, buses and trailers having a load capacity of more than three tons but not more than four tons	500.00
5.	Trucks, buses and trailers having a load capacity of more than four tons but not more than five tons	1,250.00

The above schedule contemplates actual loads hauled, exclusive of vehicle weight, and maximum width including

loads. It also contemplates that no vehicle should be registered for load capacity greater than five tons.

It is estimated that this proposed schedule would yield, after allowing for diminution in the use of trucks, buses and trailers, somewhere about 50% as much as is yielded by the motor vehicle license fees on ordinary passenger automobiles, but, perhaps, does not make full allowance for the relatively larger gasoline tax collected against the latter.

As to the question of appropriate fees or taxes to be levied against public carriers, including both buses and trucks, I am unable to offer any very definite suggestions, except that the special privilege of carrying on public service on the State Highways should be considered apart from the ordinary service charges represented by the motor vehicle license fees and gasoline taxes. In handling this particular feature of the problem, it appears to me that equity would indicate some consideration for the effect of this service on the railroads, which constitute a competing transport agency. To my mind, the State should by all means [fol. 330] avoid any undue encouragement of transport by motor vehicles where such encouragement might contribute seriously to the present dilemma of the railroads, unless it is very certain that the service to be performed by the motor vehicle carriers is absolutely needed in the interest of public convenience. What I mean to say is that any charge that the State may make against a public motor vehicle carrier for the privilege of using the highways should in reality be considered as secondary to the question of whether the carrier service is actually needed in the interest of public convenience and economy.

The highways of South Carolina are absolutely not in shape at present to bear all of the traffic that would come upon them if railroad operations were suspended generally and, furthermore, the increasing bus and truck traffic on the highways is unquestionably objectionable to the great majority of highway users who now travel in ordinary passenger automobiles. In my judgment, therefore, the State should hesitate at the present time to encourage even the most gradual substitution of highway carrier service for the railway service. Only can public highway carrier service be completely justified where it unquestionably supplements available railway service. On the other hand, there is no question but that the people of the State are

entitled to whatever real net advantage the motor vehicle can be made to afford them. They are entitled, in my judgment, to have their products collected by truck and their needs delivered in the same way, and they are also entitled to enjoy any real net saving incost of transportation that the truck can effect, but nobody is entitled to have the State government materially foster destructive competition for their benefit. For the State to set up highway facilities for trucks and buses to use in competition with the established railroads and not charge in full for the use of these facilities, would, in my judgment, be like felling a large tree in order that goats might eat their leaves.

In conclusion, I believe the State Highway System is [fol. 331] one of the most important developments now under way and that the State cannot afford delay in connecting and completing the highway work that it has undertaken. Ultimately the Highway System ought to be a great source of revenue for the State. Before any of this revenue is diverted to other purposes than the extension of the Highway System, the work should at least have reached the point where further extension will not serve to increase the net revenue. In other words, I see no reason why the State Highway System should not be regarded as a great public utility that ought properly be developed and adapted so as to yield the greatest possible net benefit to the people of the State. The production of public revenue through actual service rendered by the government would certainly be in the class of public benefits.

DEFENDANTS' EXHIBIT No. 10

(Defendant's exhibit 10, so offered and receive- in evidence, is a printed report of the Motor Transportation Investigating Committee, of South Carolina. The following statement of Mr. Charles H. Moorefield, State Highway Engineer, which will be found on pages 14 through 18 of said printed record, was read in evidence, and is as follows:)

"Mr. Charles H. Moorefield, State Highway Engineer:

At the request of Chairman Robinson he made a statement in his own way. He presented the identical testimony given by him to the Railroad Commission on February 4th.

In this statement he said that at the present all work on the State Highway System in South Carolina is paid for out of receipts from motor vehicle license fees and gasoline taxes. Theory was that the State Highways are built and maintained primarily for the use of motor vehicles. When it was decided that the burden should not be borne by property taxes a schedule of license fees and a rate of gasoline were fixed with a view to raising the desired revenue and without much regard for equity in fixing the respective amounts to be paid by different classes of [fol. 332] vehicles. The problem of recognizing properly differences in cost to state of furnishing highway service as between different classes of motor vehicles has grown in importance. "The State government is now concerned with the possibility of serious inequities that may have developed as between the highway service and other agencies that are engaged in transport, particularly because of the competitive situation now existing between highways and the railroads."

"From my point of view it is not practicable to separate the trucks and buses operating as public carriers from those that are owned and operated over the highways for other purposes."

"If our highways could be designed for a maximum vehicle load of not exceeding four tons, which would take care of an ordinary two-ton truck loaded to its rated capacity, the average cost per mile of construction would, in my judgment, be reduced by at least $3,000. and probably more. If this $3,000.00 per mile additional cost is multiplied by 6,000 miles included in the State Highway System, we have a minimum estimate of $18,000,000 in construction cost for which the trucks and buses of unusual weight and size are responsible.

"Now, as a matter of fact, the total number of trucks having more than two-ton capacity, together with all the buses and lighter trucks carrying trailers, now operating in the State would not exceed about 3,000. This means that the State is expending $18,000,000. to accommodate 3,000 vehicles and combination of vehicles. These 3,000 vehicles represent only a little more than 1% of the total number of vehicles using the State highways, while the estimate of $3,000. per mile additional construction cost necessary in order to provide for these vehicles represents about 15% of the average per mile construction cost."

He cited the example of a bridge built in 1925, over which had passed during the two next years about 160,000 vehicles, which perhaps averaged two tons gross weight, or about 320,000 tons of traffic. In 1927 the bridge was closed to traffic and materials for road building hauled over the bridge by trucks having a gross weight of ten tons [fol. 333] loaded and six tons empty. The bridge surfacing which had withstood two years of ordinary traffic, aggregating in the neighborhood of 320,000 tons without damage, was practically destroyed by about 50,000 tons of heavy truck traffic.

As to accidents, comparing commercial buses with private cars and light trucks, a total number of 212,190 with 2,312 accidents a little more than 1%. In 1930, with 195 commercial buses there were eighteen accidents on 9.2% of buses operated.

He had no study of the competitive situation between highways and railroads. "At the present time the motor vehicles are actually paying their way, so far as the State Highway System is concerned, though the buses and trucks are not, in my judgment, paying anything like a fair proportion. In his typewritten statement presented November 10th, he said:

"At the present time, I feel thoroughly convinced that in the matter of license fees and gas tax paid in to the Highway Department the trucks and buses are not contributing in anything like the proportion that they influence the cost to the State of highway service. So far as I can see clearly, however, there is no rational way to determine just what any class of vehicles should pay for the privilege of using the roads. Apparently there is no question but that the motor vehicles should pay the entire cost of the Highway System over and above the total cost of the service. Such a net revenue is actually now being derived, though it is being applied at present, and properly so, in my judgment, to extending the Highway System."

"As nearly as I am able to estimate with the few data we have collected bearing on the subject and more or less lump sum judgment as a guide the cost of constructing and maintaining the State highway system and regulating traffic over it is probably at least 50% more as a result of making provision for trucks and busses than it would be

if traffic were restricted to ordinary passenger automobiles. * * *

"According to the motor vehicle registration records of the Highway Department, there are now operating in the State approximately 179,000 ordinary passenger automo- [fol. 334] biles, 25,000 trucks and buses and 2,000 trailers comparable in weight and size to the trucks. This means that about one-eighth of the total number of motor vehicles should contribute to the Highway Department's revenues about one-third of the total amount, and that the schedule of fees and taxes should be arranged accordingly.

He recommends the following schedule of motor vehicle license fees:

1. Trucks, buses and trailers having a load capacity of not exceeding one ton:	
Width not exceeding 6 ft.	$25.00
Width more than 6 ft. but not exceeding 6 ft. 6 in.	75.00
Width more than 6 ft. 6 in. but not measuring 7 ft.	200.00
Width more than 7 ft. but not exceeding 7 ft. 6 in.	500.00
2. Trucks, buses and trailers having a load capacity of more than one ton but not more than two tons:	
Width not exceeding 6 ft. 6 inches	$75.00
Width more than 6 ft. 6 in. but not exceeding 7 ft.	200.00
Width more than 7 ft. but not exceeding 7 ft. 6 in.	500.00
3. Trucks, buses and trailers having a load capacity of more than two tons but not more than three tons:	
Width not exceeding 7 ft.	200.00
Width more than 7 ft. but not exceeding 7 ft. 6 inches	500.00
4. Trucks, buses and trailers having a load capacity of more than three tons but not more than four tons	500.00
5. Trucks, buses and trailers having a load capacity of more than four tons but not more than five tons	1,250.00

"The above schedule contemplates actual loads hauled, exclusive of vehicle weight, and maximum width including loads. It also contemplates that no vehicle should be registered for load capacity greater than five tons."

He was unable to offer very definite suggestions as to appropriate fees or taxes to be levied against public carriers, including both bus- and trucks "except that the spe-
[fol. 335] cial privilege of carrying on public service on the state highways should be considered apart from the ordinary service charges represented by the motor vehicle license fees and gasoline taxes. * * * To my mind the State should by all means avoid any undue encouragement that might contribute seriously to the present dilemma of the railroads unless it is very certain that the service to be performed by the motor vehicle carriers is absolutely needed in the interest of public convenience. I see no reason why the State Highway System should not be regarded as a great public utility, that ought to be properly developed and adapted so as to yield the greatest possible net benefit to the people of the State. The production of public revenue through actual service rendered by the government would certainly be in the class of public benefits."

In rely to questions Mr. Moorefield said that in northern latitudes they could not use the same light roads that could be used here and that the heavier trucks did increase the wear on such roads as were constructed here. That the Federal Government, while it did make contribution to several types of road—sand, clay and others—in this State, at this time the whole federal contribution could be absorbed in the highest type concrete roads in this State. He believed that unless this State built roads that interstate travel could use, federal appropriations would not come to this State. He thought it vital to this State to protect its own roads and he saw no reason why it should ask the Federal Government by congressional legislation to do this. He did not think it desirable to allow the residents of Georgia and North Carolina any privileges that were not allowed the citizens of this State. He thought residents of South Carolina should have the preference. Mr. Moorefield felt that it was necessary to control the common carrier more carefully than the individual user of the highways, but that the scale of fees recommended by him should

apply to all trucks and then some additional tax to the common carrier, the additional tax to cover the cost of regulation and proper control. "To foster the development of the common motor truck carrier means that probably [fol. 336] we are going to take on the burden of freight transport; that we are going to gradually assume the burden of freight transport for the highway that is now being handled by the railways, and that certainly the State should go slow in encouraging that burden on the highways. That is the point of view that I meant to occupy in expressing that opinion." "All that I know is that the roads are not in condition, and no prospect for them to be in condition, to assume the burden of railroad traffic and the freight traffic."

He said there were 53,000 miles of road in the State and approximately 6000 under the State Highway system. The gasoline tax of one cent went to the counties and five cents to the State highways. There were 2400 miles paved or in process of being paved; 900 miles of bituminous surface or in process of being bituminous surfaced, the balance of 6000 miles, sand and clay roads. Federal statute provides not exceeding 7% of total mileage in the State as eligible for inclusion in the Federal aid system; 7% of 53,000 miles, or 3700 miles would be subject to Federal aid. He had no doubt but that the General Assembly had the right to regulate all highway traffic, interstate or other, according to speed and weight in a reasonable way. If trucks or buses operated in other states and South Carolina should interpose objections to their use of her roads there would be strong evidence of unreasonableness. Mr. Moorefield stated that there were now approximately 179,000 ordinary passenger automobiles licensed in the State, 25,000 trucks and buses. Many citizens did not own cars. That to undermine the railroad service would, in his judgment, cripple the poor man. Mr. Moorefield said that he recommended that whoever operated heavy large vehicles over the roads be charged the same, whether he be private carrier, common carrier, or contract carrier. Mr. Moorefield pointed out that his schedule increased the license fee on the one-ton truck only $10,000 a year, but that on the big truck, which [fol. 337] was a menace to the road the increase was greater. He thought probably there would be an outcry against his schedule but he believed it to be right.

In answer to questions he said that it had been recommended to the Legislature to limit the length of trucks on the road to 33 ft. but that the Legislature had increased it to 50."

[fol. 338] PLAINTIFFS' EXHIBIT No. 11

United States Department of Agriculture, Bureau of Public Roads

Mileage of Approved Federal Aid Highway System as of September 30, 1935

State	Mileage
Alabama	4,146
Arizona	2,011
Arkansas	5,318
California	6,110
Colorado	3,798
Connecticut	1,109
Delaware	766
Florida	2,627
Georgia	5,905
Idaho	3,396
Illinois	8,266
Indiana	5,215
Iowa	7,987
Kansas	8,702
Kentucky	3,843
Louisiana	2,892
Maine	1,674
Maryland	2,206
Massachusetts	1,993
Michigan	6,350
Minnesota	7,506
Mississippi	3,841
Missouri	7,805
Montana	5,816
Nebraska	5,755
Nevada	1,782
New Hampshire	1,049
New Jersey	1,526
New Mexico	3,700
New York	8,915

Plaintiff' Exhibit No. 11—Continued

State	Mileage
North Carolina	6,249
North Dakota	7,242
Ohio	6,973
Oklahoma	8,129
Oregon	3,941
Pennsylvania	7,518
Rhode Island	521
South Carolina	4,322
South Dakota	8,596
Tennessee	4,832
Texas	13,218
Utah	1,842
Vermont	1,099
Virginia	4,474
Washington	3,547
West Virginia	2,354
Wisconsin	5,988
Wyoming	3,590
Hawaii	532
District of Columbia	73
Total	227,049

[fol. 339] DEFENDANTS' EXHIBIT No. 13

(Defendant's exhibit 13, so offered and received in evidence is in words and figures as follows:)

Motor Vehicle Division
Truck Registrations and Receipts
1933 to 1936

		Registrations			
	Class	1933	1934	1935	1936
H	Not over 1 ton	8,857	10,046	12,576	14,243
I	1 ton solid	6	9	8	11
J	1 to 2 tons	8,252	9,917	12,507	13,578
K	2 tons solid	64	50	33	26
L	2 to 3 tons	522	764	1,580	2,306
M	3 tons solid	13	11	6	5
N	3 to 4 tons	74	70	175	309
O	4 ton solid	4	2	1	0
P	4 to 5 tons	3	8	12	19
Q	5 ton solid	0	0	0	0
	Totals	17,795	20,877	26,898	30,497

[fol. 340] DEFENDANTS' EXHIBIT No. 14

(Defendant's exhibit 14, so offered and received in evidence is in words and figures as follows:)

Table Number S-3
Motor Vehicle Licenses

Year	Auto's	Trucks	Trailers	Motor-cycles	Dealers
1925	153,978	15,409	817	173	535
1926	163,368	17,599	1,006	270	519
1927	178,995	18,580	1,368	255	508
1928	194,267	22,538	1,637	432	658
1929	205,683	25,591	2,048	451	628
1930	195,405	26,261	2,111	559	595
1931	180,100	23,439	1,110	492	537
1932	157,680	19,567	2,041	487	476
1933	145,644	17,795	1,764	444	469
1934	182,052	20,877	1,919	560	522
1935	206,158	26,841	2,655	641	604
1936	218,690	30,492	3,091	617	598

[fol. 341]

DEFENDANT'S EXHIBIT No. 16

		No. of Vehicles	Trucks				Trailers			
			1½	2	3	4 Total	1½	2	3	4 Total
	A.A.A. Highway Express, Atlanta, Ga.	2	1			1	1			1
X	E. T. & W. N. C. Motor Transportation, Johnston City, Tenn.	4	2			2	2			2
	Ft. Sumter Navigation Tours, Mt. Pleasant, S. C.	1	1			1				
X1	Georgilina Motor Express, Savannah, Ga. (Two vehicles Extras)—1½ tons	10	4			4		4		4
	Inland Waterways Transp. Co., Georgetown, S. C. (One vehicle Extra)—1½ tons	2	1			1				
	Long Motor Lines, Greenwood, S. C.	1	1							
	Milk Transport Co., Denmark, S. C.	1	1			1				
X2	Miller Motor Express, Charlotte, N. C. (Tour vehicles Extras)—2–1½, 2–2	14	4		1	5		4	1	5
	R. L. Murray, St. George, S. C.	2	1			1	1			1
Z3	New South Express Lines, Columbia, S. C. (24 vehicles Extras)—20–1½, 2–2, 4–3	52	11	9		20	2	2	4	8
	Nilson Motor Express, Walterboro, S. C.	4	2			2	2			2
X	Poole Transportation Co., Greenville, S. C.	6		3		3		3		3
	Jerry T. Riley, Ridgeville, S. C.	1	1			1				
X	Southeastern Express Co., Atlanta, Ga.	3	1	1		2		1		1
X	The Transportation, Inc., Greenville, S. C. (One vehicle extra—1½)	8		6		6		1		1
		111	31	19	1	.. 50	8	15	5	.. 28

X Interstate only.
Z1 4 trucks—2 trailers Interstate only.
Z2 3 trucks—3 trailers Interstate only.
Z3 2 trucks—2 trailers Interstate only.

[fol. 342] IN UNITED STATES DISTRICT COURT

APPENDIX TO STATEMENT OF EVIDENCE

Act V

Uniform Act Regulating Traffic on Highways

This Act is part of Uniform Vehicle Code Consisting of:

I. "Uniform Motor Vehicle Administration, Registration Certificate of Title and Antitheft Act"

II. "Uniform Motor Vehicle Operators' and Chauffeurs' License Act"

III. "Uniform Motor Vehicle Civil Liability Act"

IV. "Uniform Motor Vehicle Safety Responsibility Act"

V. "Uniform Act Regulating Traffic on Highways"

As revised and approved by the Fourth National Conference on Street and Highway Safety, May 23-25, 1934.

U. S. Department of Agriculture, Bureau of Public Roads

United States Government Printing Office, Washington: 1934

[fol. 343] Published Under Authority Contained in The Federal Highway Act (42 Stat. 212), Approved November 9, 1921

Foreword

This act is one of five acts which constitute the uniform vehicle code as revised and recommended for State enactment as the foundation for uniform traffic regulation.

The uniform vehicle code was originally prepared in 1925-26 by the National Conference on Street and Highway Safety in cooperation with the National Conference of Commissioners on Uniform State Laws. It was reviewed and revised by the National Conference on Street and Highway Safety in 1930 and again this year. In each case the revisions were based upon thorough study by a representative committee, extending over a period of months, of the provisions of the various acts in the light of experience and changed conditions.

The changes in substance in the present code from the 1930 draft are few. The speed restrictions have been rewritten to make them simpler and more easily understood. The lighting provisions for motor vehicles have been revised in recognition of recent mechanical developments. Changes have been made in the sections dealing with sizes and weights of motor vehicles. There has been incorporated provision for periodic inspection of motor vehicles.

The first two acts of the 1930 draft covering respectively vehicle registration and certificate of title, have been consolidated and amplified to provide for a highway patrol and new administrative features. Two new acts have been added, dealing respectively with civil liability and safety responsibility. Former acts III and IV, covering respectively drivers' licenses and regulation of traffic on highways, have been renumbered acts II and V. In all of the acts long sections have been broken up into shorter sections for clarity.

[fol. 344] The National Conference on Street and Highway Safety, as heretofore, recommends two other sets of standards to supplement the uniform vehicle code—a model municipal traffic ordinance for municipalities and a Manual on Uniform Traffic Control Devices—the latter now covering conditions both in rural areas and in cities.

The importance of uniform legislative standards in reducing accidents and facilitating the movement of traffic cannot be overestimated, and the adoption of these standards by all States and municipalities is earnestly recommended.

Daniel C. Roper, Secretary of Commerce, Chairman, National Conference on Street and Highway Safety.

Washington, D. C., July 31, 1934.

NOTE.—The following associations have cooperated with the Department of Commerce in conducting the Conference: Bureau of Public Roads, U. S. Department of Agriculture; American Association of Motor Vehicle Administrators; American Automobile Association; American Mutual Alliance; American Railway Association; American Transit Association; Chamber of Commerce of the United States; National Automobile Chamber of Commerce; National Bureau of Casualty and Surety Underwriters; and National

Safety Council. The Automobile Club of Southern California has made substantial contributions to the staff work of the uniform vehicle code and model municipal traffic ordinance.

Sec. 145. Wheel and axle loads.[10]—(a) The gross weight upon any wheel of a vehicle shall not exceed the following:

1. When the wheel is equipped with a high pressure pneumatic, solid rubber or cushion tire, 8,000 pounds.

2. When the wheel is equipped with a low pressure pneumatic tire, 9,000 pounds.

(b) The gross weight upon any one axle of a vehicle shall not exceed the following:

[fol. 345] 1. When the wheels attached to said axle are equipped with high-pressure pneumatic, solid rubber or cushion tires, 16,000 pounds.

2. When the wheels attached to said axle are equipped with low-pressure pneumatic tires, 18,000 pounds.

(c) For the purpose of this section an axle load shall be defined as the total load on all wheels whose centers are included within two parallel transverse vertical planes not more than 40 inches apart.

(d) For the purposes of this section every pneumatic tire designed for use and used when inflated with air to less than 100 pounds pressure shall be deemed a low-pressure pneumatic tire and every pneumatic tire inflated to 100 pounds pressure or more shall be deemed a high-pressure pneumatic tire.

The American Association of State Highway Officials recommends the limitations stated for vehicles operated on all main rural and inter-city roads but suggests that heavier axle loads might be permitted upon vehicles operating in metropolitan areas if any city so desires. Also, The American Association of State Highway Officials recommends that the State highway department be authorized to restrict wheel and axle weights for reasonable periods where road subgrades are materially weakened by thawing after deep frost or from a continued saturated condition of the soil.

[fol. 346] S. A. E. Transport Code Committee Makes Report for Study by Members

Load and Dimension Limitations on Motor Vehicles

Developed by S. A. E. Automotive Transport Code Committee

The following recommendations are based on practical engineering requirements for the design and operation of motor trucks and their combination of units.

1. Width

The maximum body width shall be 96 in. The maximum width over dual pneumatic tires measured on a line through the center of the hub, parallel to the ground, shall be 102 in.

Weights:

(a) Definitions of Thoroughfares—

(1) Streets—Thoroughfares within municipalities and immediately contiguous metropolitan districts.

(2) Highways—Main arterial routes between cities and towns and connecting industrial areas.

(3) Roads—all others.

(b) Weight Limitations—The minimum (or least) maximum axle weight limitations in pounds, in lieu of limitations in gross weight and inch width of tires, shall be

	Streets (1)	Highways (2)	Roads (3)
High pressure pneumatics	22,500	18,000	16,000
Balloon Type Tires.....	22,500	20,000	18,000
Solid Tires (See note 1)..	22,500	Not allowed	Not allowed

[fol. 347] Who Shall Use the Highways and How

Published by The American Association of State Highway Officials

General Offices, 1222-24 National Press Building, Washington, D. C.

Wheel Loads vs. Gross Loads

Those who would elim-ate any competition in transportation by prohibiting even properly adjusted regulations in

the weights of vehicles on the highways, declare that it will take hundreds of millions of dollars to build the present system up to the standard to meet the requirements of this Association's recommendations, basing their statement on the false premise that the gross weights that would be permitted could not be borne by existing highways.

Highway stresses are ruled by wheel loads and not by gross loads. Those who really seek the protection of the highways should help to impress that fact indelibly upon the minds of legislators and law enforcement officers. For, it so happens, that the wheel load is not only the more [fol. 348] critical factor but is also the more easily determinable factor. To measure gross loads, stationary platform scales are a practical necessity; and, unless they are placed and actually operated on at least all important roads, the gross load limitation, whatever it may be, will be a virtual deadletter. The wheel load limitation is, on the other hand, easily enforceable by officers, equipped with small, portable scales who, appearing suddenly, first on one road, then on another, may plant their telltale instrument by the roadside and require any driver to run his heaviest wheel on it, and so, quickly and practically, detect the law violators. And of this at least there can be no question: That for the protection of the roads an enforced wheel load limitation is immeasurably better than an unenforceable gross load limitation.

It has been shown in this article that the wheel loads proposed by the Highway Officials exceed those now legally prescribed in only three States. This fact alone should allay any reasonable fear that adoption of the Association's weight suggestions would loose upon the highways a destroying caravan of excessively heavy vehicles.

Gross Weight, Dimensions and Speed for Vehicles Recommended for Adoption

It is the opinion of the Association of State Highway Officials that the adoption of a uniform standard to govern gross weight, dimensions, and speeds for motor vehicles operating on the highways is a fundamental necessity for the following reasons:

(a) To establish one of the fundamental prerequisites of highway design.

(b) To promote efficiency in the interstate operation of the motor vehicle.

(c) To secure safety in highway operation.

(d) To remove from the highways undesirable equipment and operations.

(e) To stabilize on a definite basis the many relationships between the highway and the motor vehicle.

[fol. 349] These conclusions have been reached after many years of consideration on the part of the Highway Transport Committee of the Association, supplemented by painstaking research by a number of the State Highway Departments and the Bureau of Public Roads.

The Association therefore makes the following recommendations to the proper State authorities having control of traffic on the highways:

(1) Width

Width of a Vehicle—No vehicle shall exceed a total outside width, including and load thereon, of 8 feet, except vehicles now in operation which, by reason of the substitution of pneumatic tires for other types of tires, exceed the above limit.

(5) Axle Load

(a) The wheels of all vehicles, including trailers, except those operated at 10 miles per hour or less, shall be equipped with pneumatic tires.

(b) No wheel equipped with high pressure, pneumatic, solid rubber or *chu*sion tires shall carry a load in excess of 8,000 pounds, or any axle load in excess of 16,000 pounds.

Research indicates that low-pressure pneumatic tires can carry 9,000 pounds per wheel without increasing pavement slab stresses.

An axle load shall be defined as the total load on all wheels whose centers may be included between two parallel transverse vertical planes 40 inches apart.

(c) These limitations are recommended for all main rural and inter-city roads, but should not be construed as inhibiting heavier axle loads in metropolitan areas if any State desires.

(d) These weight specifications for wheel and axle loads may be restricted by the State Highway Department for a reasonable period where road subgrades are materially weakened from thawing after deep frost, or from a continued saturated condition of the soil.

[fol. 350] Excerpt from the Testimony of Thomas H. MacDonald, Chief of the Bureau of Public Roads, Before the Interstate Commerce Commission, Dec. 5, 1931, Docket No. 23400

Chairman Brainerd: If pneumatic tires are used, what would be the maximum load that could safely be carried on the improved highways in which the Government has aided?

A. We believe that the maximum wheel load should be limited to about 9,000 pounds; gross loads heavier than that would make a 9000 wheel load. We believe if it is desired to move heavier loads the number of wheels should be increased containing the 9,000 pound concentration, so that if you want to go above that then we should place instead of four wheels six wheels or an increasing number of axles, so that we will not obtain more than 18,000 pounds per axle. The roads that we are building today will stand 18,000 pound axle load on pneumatic tires.

I do not *want* whether I make that point quite clear. Our tests show that in the application of wheel loads to the road, if the wheel rests as much as 36 to 40 inches apart, if the point of contact of one wheel is 46 inches ahead of the next wheel, there is no overlap of stresses in the road structure. In other words the road has to carry only the weight of each particular wheel. The stresses did not pile up. Therefore, if we had a load to move on the roads that would take more than 18,000 pounds on the rear axle it should be solved by placing two 18,000 rear axles with four wheels in place of two wheels. Do I make that clear?

Q. This morning, in your testimony, about highways carrying vehicles with an axle load of 9,000 pounds——

A. A wheel load.

Q. May I ask if you were referring to an 8-7-8 concrete highway or in substance that?

A. I think the table shows that that would be safe for that particular load, but in this case 7½ edged thickness, with 6½ center thickness, would carry such a load with an extreme fibre stress of 358 pounds, just right at the maximum

working stress we would *sue* of 350 pounds, but that does not necessarily mean, if I may explain, that we would use [fol. 351] just these dimensions. There are other factors which enter, depending largely upon climatic or soil conditions or the interrelationship of those two. In the south, for example, where we have an absence of frost action and good sub-grades to support, we would approve a cross-sectional design for the same loads much lighter than we would in the northern states. Take in South Carolina, we are building roads even lighter than 8 6 8; that is, we have actually gone to about this point of 7½ edge thickness, but we could not use that same design in the northern states.

[fol. 352]

Calendar No. 146

Senate

67th Congress, 1st Session

Report No. 134

Continuation of Federal Aid in the Construction of Highways

June 20, 1921.—Ordered to be Printed

Mr. Townsend, from the Committee on Post Offices and Post Roads, submitted the following:

Report (to accompany S. 1355)

The Committee on Post Offices and Post Roads, to whom was referred the bill (S. 1355) to provide for the establishment, construction, and maintenance of a post roads and interstate highway system, to create a Federal highway commission, and for other purposes, report it back with amendments, and as thus amended recommend its passage.

In view of the very general interest in the subject and the fact that the Committee on Post Offices and Post Roads has held hearings and given serious thought and consideration to the subject over a period of several years, the committee feels justified in presenting a general review of its labors and an analysis of the bill here presented together with a statement of the essential differences from the law passed in 1916 as amended in 1919.

A new era in transportation confronts the United States. An evolution of far-reaching social, political, and industrial

importance has been effected through the constantly grow- [fol. 353] ing use of highway transport. The modern motor vehicle has rendered obsolete old methods of highway construction, maintenance, and administration. The question is no longer local alone in application; it is national. Obviously our highway policies must be broadened and straightened to meet this changed condition if public expenditures are to be conserved and the best interests of the Nation cared for. Living costs can be reduced, and our defense strengthened, and a new spirit of nationalism created if we use intelligently this new means of communication between communities and States.

President Harding in his first message to Congress, delivered Tuesday, April 12, 1921, recommended the strengthening of laws governing Federal aid for road construction. In the course of his message he made the significant statement that the principle of Federal aid had been "acceptably established, probably never to be abandoned." The President's recommendation concerning highway development is given below:

Transportation over the highways is little less important (referring to the railways), but the problems relate to construction and development, and deserve your most earnest attention, because we are laying a foundation for a long time to come, and the creation is very difficult to visualize in its great possibilities.

The highways are not only feeders to the railroads and afford relief from their local burdens, they are actually lines of motor traffic in interstate commerce. They are the smaller arteries of the larger portion of our commerce, and the motor car has become an indispensable instrument in our political, social, and industrial life.

There is begun a new era in highway construction the outlay for which runs far into hundreds of millions of dollars. Bond issues by road districts, counties, and States [fol. 354] amount to enormous figures, and the country is facing such an outlay that it is vital that every effort shall be directed against wasted effort and unjustifiable expenditure.

The Federal Government can place no inhibition on the expenditure in the several States; but, since Congress has embarked upon a policy of assisting the States in highway

improvement, wisely, I believe, it can assert a wholly becoming influence in shaping policy.

With the principle of Federal participation acceptably established, probably never to be abandoned, it is important to exert Federal influence in developing comprehensive plans looking to the promotion of commerce and apply our expenditures in the surest way to guarantee a public return for money expended.

The need for a national policy that will develop a connected and correlating system of public highways that will adequately serve the requirements of the whole country and reduce the costs of transportation between producer and consumer, a system that will supplement our great railroad and water transportation, is apparent to every student of this question.

[fol. 355] IN UNITED STATES DISTRICT COURT

[Title omitted]

PETITION FOR APPEAL—Filed February 25, 1937

To the Honorable John J. Parker, United States Circuit Judge, Honorable Elliott Northcott, United States Circuit Judge, and Honorable J. Lyles Glenn, United States District Judge, composing a District Court for the Eastern District of South Carolina, pursuant to section 266, as amended, of the Judicial Code of the United States (Title 28, United States Code, section 380):

Your petitioners, defendants in the above entitled cause, South Carolina State Highway Department; South Carolina Public Service Commission; Joseph N. Poulnot, individually, and as Sheriff of Charleston County, and as representative of all such officers; George Bell Timmerman, individually, and as Chairman of the State Highway Commission of South Carolina, and as representative thereof; Ben M. Sawyer, individually, and as Chief Highway Commissioner of South Carolina; Alfred W. Bohlen, individually, and as Director of the Motor Vehicle Division of the State Highway Department of South Carolina, and as representative of said department; S. Eakin Wilson, individually, and as State Inspector for the State Highway

Department of South Carolina for Charleston County, and as representative of all like officers in South Carolina; Tee Hutto, individually, and as Patrolman for the State Highway Department of South Carolina in Charleston County, and as representative of all like officers in South Carolina; James W. Wolfe, individually, and as Chairman of the [fol. 356] South Carolina Public Service Commission, and as representative thereof; William W. Goodman, individually, and as Superintendent of the Motor Transportation Division of the South Carolina Public Service Commission, and as representative thereof; Benjamin K. Sanders, individually, and as State Inspector for the South Carolina Public Service Commission for Charleston County, and as representative of all like officers in South Carolina; Harold Fox, individually, and as Magistrate's Constable in Charleston County, and as representative of all like officers in South Carolina; Christian H. Ortmann, individually, and as Chief of Police for the City of Charleston, South Carolina, and as representative of all municipal police officers in the State of South Carolina; Atlantic Coast Line Railway Company; Legh R. Powell, Jr., and Henry W. Anderson, as Receivers of Seaboard Air Line Railway Company, and Charleston & Western Carolina Railway Company, respectfully show:

Your petitioners, defendants in the above entitled cause, considering themselves aggrieved by the final decree of said United States District Court for the Eastern District of South Carolina, entered in this cause on January 20, 1937, pray and appeal to the Supreme Court of the United States from said decree.

The errors for which your petitioners claim to be entitled to the appeal herein prayed for are more fully set out in the assignment of errors filed with the Clerk of this Court pursuant to Rule 9 of the Rules of the Supreme Court of the United States; and there has been likewise filed herewith the statement required by Rule 12 of said Rules disclosing the basis for the jurisdiction of the Supreme Court of the United States to review said order or decree.

Wherefore, in order that your petitioners may obtain relief in the premises and have an opportunity to show the errors complained of, your petitioners pray for an allowance of an appeal in this cause to the Supreme Court of the United States pursuant to the statutes and rules of said Court; that a true copy of the material parts of the record

[fol. 357] herein, including the assignment of errors, shall be made and transmitted to said Court in the manner and form prescribed by Rule 10 of the Rules of said Court, and that such further order or orders be made as may appear to this Court necessary or proper for the allowance of the appeal herein prayed.

February 22, 1937.

John M. Daniel, Attorney General of South Carolina; J. Ivey Humphrey, Assistant Attorney General of South Carolina; M. J. Hough, Assistant Attorney General of South Carolina; Eugene S. Blease, Steve C. Griffith, Solicitors for Original Defendants. Thomas W. Davis, Douglas McKay, Attorneys for Atlantic Coast Line Railroad Company; M. G. McDonald, Attorney for C. & W. C. Ry. Co.; J. B. S. Lyles, Attorney for Legh R. Powell, Jr., and Henry W. Anderson, as Receivers of Seaboard Air Line Railway Company, Solicitors for Intervening Defendants.

[fol. 358] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER ALLOWING APPEAL—Filed February 25, 1937

The petition of the defendants in the above entitled cause for an appeal to the Supreme Court of the United States from the decree of the District Court of the United States for the Eastern District of South Carolina having been filed herein, accompanied by an assignment of errors and statement as to jurisdiction, all as required by Rules 9 and 12 of the Rules of the Supreme Court of the United States, and the said papers having been presented to this Court, and the record in this case having been considered:

It is hereby Ordered that an appeal be, and it is hereby, allowed to the Supreme Court of the United States from the final decree of the District Court of the United States for the Eastern District of South Carolina, entered in this cause on the 20th day of January, 1937, and that the Clerk of this Court shall, within forty days from this date, make and transmit to the Supreme Court of the United States, under

his hand and the seal of this Court, a true copy of the material parts of the record herein, which shall be designated by præcipe or a stipulation of the parties or their counsel herein, all in accordance with Rule 10 of the Rules of the Supreme Court of the United States.

It is further Ordered that the appellants shall give a good [fol. 359] and sufficient cost bond in the sum of Two Hundred Fifty Dollars ($250), conditioned as required by law.

Done by this Court, this 23rd day of February, 1937.

J. Lyles Glenn, United States District Judge for the Eastern District of South Carolina.

[fols. 360-362] Bond on appeal for $500, approved and filed February 25, 1937, omitted in printing.

[fol. 363] In United States District Court

[Title omitted]

Præcipe for Record—Filed February 25, 1937

To the Clerk of the United States District Court for the Eastern District of South Carolina:

Counsel for defendants, appellants in above cause, request you to prepare and transmit, under your hand and the seal of the Court, to the Supreme Court of the United States, with reference to the appeal in this cause to said Court, a transcript of the record in this cause, as required by law and by the Rules of the said Court, and to include in said transcript of the record true copies of the following:

1. Bill of Complaint, filed August 11, 1936, omitting Subpœna.
2. Defendants' Motion to Dismiss, filed September 19, 1936.
3. Memorandum Opinion of District Judge upon Motion to Dismiss, filed October 24, 1936.
4. Order Granting Defendants' Motion to Dismiss as to certain paragraphs of Complaint, filed November 2, 1936.
5. Order Overruling Defendants' Motion to Dismiss as to Paragraph 9 of Bill of Complaint, filed November 2, 1936.

6. Plaintiffs' Motion for Temporary Injunction, filed November 2, 1936.

[fol. 364] 7. Order Permitting the filing of Motion for Temporary Injunction, filed November 2, 1936.

8. Memorandum Opinion on Motion for Temporary Injunction, filed November 2, 1936.

9. Temporary Restraining Order, filed November 2, 1936.

10. Answer, filed November 7, 1936.

11. Order Convening Statutory Three Judge Court, filed November 13, 1936.

12. Petition of Interstate Commerce Commission to Intervene as a Plaintiff, filed November 17, 1936.

13. Defendants' Motion to Dismiss Complaint, filed November 24, 1936.

14. Petition of Receivers of Seaboard Air Line Railway to Intervene as Defendants, filed November 24, 1936.

15. Petition of Atlantic Coast Line Railroad Company and Charleston and Western Carolina Railway Company to Intervene as Defendants, filed November 25, 1936.

16. Order Permitting Interstate Commerce Commission to Intervene, filed November 30, 1936.

17. Petition of Marlboro Produce Association to Intervene as a Plaintiff, filed December 1, 1936.

18. Petition of A. J. Mattheson, Inc., to Intervene as Plaintiff, filed December 1, 1936.

19. Order Permitting Receivers of Seaboard Air Line Railway, Atlantic Coast Line Railroad Company, and Charleston and Western Carolina Railway Company to Intervene and Adopt Defendants' Answer, filed December 2, 1936.

20. Order Allowing Marlboro Produce Association and A. J. Mattheson, Inc., to Intervene and Adopt Plaintiffs' Complaint, filed December 3, 1936.

[fol. 365] 21. Opinion of Statutory Three Judge Court, with Findings of Fact and Conclusions of Law, filed January 20, 1937.

22. Decree of Statutory Three Judge Court, filed January 20, 1937.

23. Order Extending Time to Defendants, filed January 20, 1937.

24. Order Extending Time to Defendants, filed February 13, 1937.

25. Petition for Appeal of Defendants.

26. Assignments of Error and Prayer for Reversal.
27. Statement as to Jurisdiction upon Appeal under Rule 12 of Supreme Court of the United States.
28. Order Allowing Appeal.
29. Citation and Service thereof.
30. Statement of the Evidence and Proceedings before the Court, together with Plaintiffs' Exhibits Nos. 3 and 4, and Defendants' Exhibits Nos. 7, 8, 9, 13, 14, and 16, and so much of Defendants' Exhibit No. 10 as is included in the list of exhibits attached to the Statement of Evidence.
31. Cost Bond on Appeal.
32. Praecipe for Transcript of Record.
33. Clerk's Certificate of Transcript of Record.
34. Notice Pursuant to Equity Rule 75.

Thomas W. Davis, Douglas McKay, Solicitors for Atlantic Coast Line Railroad Company, Intervenor; M. G. McDonald, Solicitor for Charleston & Western Carolina Railway Company, Intervenor; J. B. S. Lyles, Solicitor for L. R. Powell, Jr., and Henry W. Anderson, as Receivers of Seaboard Air Line Railway Company, Intervenors; John M. Daniel, Attorney General of South Carolina; J. Ivey Humphrey, Assistant Attorney General of South Carolina; M. J. Hough, Assistant Attorney General of South Carolina; Eugene S. Blease, Steve C. Griffith, Solicitors for all Original Defendants.

Dated February 23, 1937.

[fol. 366] IN UNITED STATES DISTRICT COURT

APPELLEES' PRÆCIPE FOR RECORD ON APPEAL—Filed March 6, 1937

To the Clerk of the United States District Court for the Eastern District of South Carolina:

Counsel for plaintiffs, appellees in the above cause, request you to include in the Transcript of the Record heretofore requested by the appellants in the above cause by

Præcipe dated February 23, 1937, true copies of the following:

1. That portion of plaintiffs' Exhibit 1, entitled "Apportionment of Federal Aid funds to various states for years 1917 to 1937, inclusive" showing apportionment of Federal Aid funds for South Carolina for each year and the total for the United States as a whole for the entire period.

2. Plaintiffs' Exhibits Nos. 2, 5 and 6.

3. Those portions, shown and copied in attached sheets properly marked for identification, of documents as exhibited at the trial of the cause (original copies of which documents in full are also attached hereto) entitled as follows:

(a) "Act V Uniform Act Regulating Traffic on Highways" prepared and adopted by the National Conference on Street and Highway Safety as published by the Bureau of Public Roads of the Department of Agriculture, 1934.

(b) "Recommendations of the American Society of Automotive Engineers on gross weight and dimensions of motor vehicles adopted in 1933."

(c) "Who Shall Use the Highways and How" published by the American Association of State Highway Officials 1932.

[fol. 367] (d) "Testimony of Thomas H. McDonald, Chief of the Bureau of Public Roads before the Interstate Commerce Commission, December 5, 1931, Docket No. 23,400."

(e) "Report of the Committee on Post Offices and Post Roads to the 67th Congress on June 20, 1921 entitled "Continuation of Federal Aid in the Construction of Highways"."

Respectfully, S. King Funkhouser, J. Ninian Beall, Frank Coleman, Martin P. Burks, III, Solicitors for all Original Plaintiffs.

March 4, 1937.

[fol. 368] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER SETTLING TESTIMONY AND RECORD ON APPEAL—Filed March 10, 1937

This matter comes before me for the settlement of various minor differences between the parties concerning the evidence to constitute a part of the record on appeal, and particularly as to the inclusion of various matters in this record. All of the original plaintiffs-appellees are represented by S. King Funkhouser, Esq., and Frank Coleman, Esq., and all of the defendants-appellants by Steve C. Griffith, Esq., and J. B. S. Lyles, Esq.

I conclude and order as follows:

As to the Exhibits: Plaintiffs' Exhibits numbered two, three, four and eleven, and defendants' Exhibits numbered eight, nine, ten, thirteen, fourteen and sixteen are to be included in the list of exhibits appended to the statement of evidence and printed as a part thereof, in the form, as to all such Exhibits, that the same have now been attached to the original statement of the evidence, as agreed to by the parties. Plaintiffs' Exhibits numbered five and six, and defendants' Exhibit numbered seven are maps, which are to be attached to the record as exhibits, forty copies of each thereof to be furnished the Clerk as required.

[fol. 369] As to the third section of appellees' præcipe for record on appeal—appellees ask that portions of certain documents exhibited at the trial of the case, and concerning which the Court took judicial notice, be printed as an appendix to the evidence. The portions desired to be so included by appellees have been typewritten and attached to their original præcipe, the original printed copies of the documents being filed therewith. In the circumstances, I find that the request of appellees in this respect is reasonable, and the same is granted. Such portions so desired to be printed by appellees have been, by agreement of counsel, actually attached as an appendix to the statement of evidence, and the Clerk will certify them in that form.

As to the statement of evidence filed by appellants pursuant to Equity Rule 75, I find that the same is true, complete and properly prepared. A substantial portion of the testimony has been reproduced in the exact words of the witnesses but I find it is not reasonably possible to sum-

marize this testimony or otherwise to convey the true and exact meaning of the witnesses. Hence, this meets with my approval and I approve the statement of the evidence as now filed, which includes such changes as the parties have made in the original statement by agreement, and direct that the same shall constitute a part of the record for appeal.

J. Lyles Glenn, United States District Judge for the Eastern District of South Carolina.

March 10, 1937.

[fol. 370] IN UNITED STATES DISTRICT COURT

[Title omitted]

NOTICE PURSUANT TO EQUITY RULE 75—Filed February 25, 1937

To S. King Funkhouser, J. Ninian Beall, Frank Coleman, L. Mendel Rivers, Thomas M. Ross, Edward M. Reidy, Daniel W. Knowlton, S. S. Tison, Esquires, Solictors for Plaintiffs-Appellees:

You will please take notice that the defendants-appellants have lodged their statement of the evidence and proceedings before the Court with the Clerk of the District Court of the United States for the Eastern District of South Carolina, at Charleston, South Carolina, a copy of the same being hereby served upon you, pursuant to Equity Rule 75, and will move the Honorable J. Lyles Glenn, United States District Judge for the Eastern District of South Carolina, to approve the same, at his Chambers in the Federal Court Room in the City of Columbia, South Carolina, on the 10th day of March, 1937, at ten o'clock in the forenoon, or as soon thereafter as counsel can be heard.

Steve C. Griffith, Thomas W. Davis, Douglas McKay, M. G. McDonald, J. B. S. Lyles, Solicitors for Defendants-Appellants. John M. Daniel, Attorney General of South Carolina; J. Ivey Humphrey, Assistant Attorney General of South Carolina; M. J. Hough, Assistant Attorney General of South Carolina; Eugene S. Blease, of Counsel.

February 23, 1937

[fols. 371-379] Clerk's certificate to foregoing transcript omitted in printing.

[fol. 380] Citation in usual form omitted in printing.

[fol. 381] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER EXTENDING TIME TO FILE RECORD—Filed May 4, 1937

On motion of Steve C. Griffith, Esq., Solicitor for all the original defendants-appellants, and J. B. S. Lyles, Esq., Solicitor for all intervening defendants-appellants, and upon due consideration, good cause having been shown therefor;

It is ordered That the time within which appellants may docket this case and file the record thereof on the appeal with the Clerk of the Supreme Court of the United States be and the same is hereby enlarged and extended until and including the twenty-third day of June, 1937, this constituting an enlargement of forty days of the time now current, which would otherwise expire on the fourteenth day of May, 1937.

J. Lyles Glenn, United States District Judge for the Eastern District of South Carolina.

Columbia, S. C., May 4th, 1937.

[fols. 382-384] Order extending time to file record to May 14, 1937, and notices omitted in printing.

[fol. 385] IN THE SUPREME COURT OF THE UNITED STATES

[Title omitted]

POINTS RELIED ON AND PARTS OF RECORD NECESSARY FOR CONSIDERATION THEREOF—Filed June 22, 1937

Come Now the Appellants and adopt their assignments of error as their statement of the points to be relied upon and represent that the following portions of the record filed in this cause are necessary for consideration of the points relied upon by the Appellants, and that the following, constituting the transcript of the record, should be printed by the Clerk:

1. Bill of Complaint, filed August 11, 1936, omitting subpœna.

2. Defendants' Motion to Dismiss, filed September 19, 1936.

3. Memorandum Opinion of District Judge Upon Motion to Dismiss, filed October 24, 1936.

4. Order Granting Defendants' Motion to Dismiss as to certain paragraphs of Complaint, filed November 2, 1936.

5. Order Overruling Defendants' Motion to Dismiss as to Paragraph 9 of Bill of Complaint, filed November 2, 1936.

6. Plaintiffs' Motion for Temporary Injunction, filed November 2, 1936.

7. Order Permitting the filing of Motion for Temporary Injunction, filed November 2, 1936.

8. Memorandum Opinion on Motion for Temporary Injunction, Filed November 2, 1936.

9. Temporary Restraining Order, filed November 2, 1936.

10. Answer, filed November 7, 1936.

11. Order Convening Statutory Three Judge Court, filed November 13, 1936.

[fol. 386] 12. Defendants' Motion to Dismiss Complaint, filed November 24, 1936.

13. Order Permitting Interstate Commerce Commission to Intervene, filed November 30, 1936.

14. Order Permitting Receivers of Seaboard Air Line Railway Company, Atlantic Coast Line Railroad Company, and Charleston and Western Carolina Railway Company to Intervene and Adopt Defendants' Answer, filed December 2, 1936.

15. Order Allowing Marlboro Produce Association and A. J. Mattheson, Inc., to Intervene and Adopt Plaintiffs' Complaint, filed December 3, 1936.

16. Opinion of Statutory Three Judge Court, with Findings of Fact and Conclusions of Law, filed January 20, 1937.

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20. Petition for Appeal of Defendants.

21. Assignments of Error and Prayer for Reversal.