

RAILROAD PROBLEMS

DIFFICULTIES AND NEEDS OF TRANSPORTATION IN THE UNITED STATES

Statement made by James J. Hill before the
Interstate Commerce Commission

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"The government of this country, its growth, its business are up against a stone wall so high that it cannot see the top of it. No man can see the top of it to-day."

Twelve years ago, when the Interstate Commerce Commission held hearings to determine the causes and remedies for traffic congestion throughout the country, it called for information upon Mr. James J. Hill. The questions asked and his replies covered in general terms almost the entire field of railway construction and operation. In brief and positive terms he showed what was the stone wall standing across the path of the country's progress, and indicated the only way to climb over it or get around it.

The gift of accurate foresight was one of Mr. Hill's remarkable qualities. The passage of twelve years has intensified the conditions existing then. No one has discovered any curative other than those he suggested. So clear and true was his vision, that the testimony he gave then is as pertinent and as living as it was in 1906.

The assumption by the Federal Government of the control of railways as a war measure makes it possible now, as it never was before, to apply remedies universally, and to enforce improvements and reforms with an authority co-extensive with the government itself. The testimony of Mr. Hill is reproduced in

what follows, with only such changes as will relieve the tedium of the original form of questions and answers, and will group in the same paragraph, or connect the replies made by Mr. Hill to questions of the same general tenor that are widely scattered in the original report. Mr. Hill's testimony follows:

The railroads have not kept up with the growth of the country. They haven't kept within sight of it. In the two years 1901 and 1905, we added 1.4 per cent to our main line of railroad, and the Interstate Commerce Commission report, which is made up from the statistics furnished by the railroads under oath, as your honorable body knows, shows, that in the ten years from 1895 to 1905 the ton mileage increase was 110 per cent and the passenger business 98 per cent. It is just as impossible to do that business with that machine as it is to bore a one inch hole with a half inch auger. The country doesn't realize it yet, but it will. The people must understand what they have to face and what they have, to do.

If anybody, at the present time, had a ship lying in New York harbor, it would be impossible for him to get a contract to take 500 car-loads from Chicago to New York in four or five weeks to load that ship. If a railroad did give such a contract, the chances are it would fall down and be unable to fulfill it.

In 1870 the United States had 52,808 miles of railroad, and in 1880, it had 93,671; the increase was 40,773 miles, or an annual addition of 7.7 per cent; from 1880 to 1890 the annual increase was 7.40 per cent; from 1890 to 1901 it was 2.19 per cent, and between 1904 and 1900 the increase for the two years was 2.8 per cent.

In the ten years, from 1895 to 1903, the business of the country, the tons moved one mile, increased 110 per cent. The facilities for doing this business, the mileage, increased 20 per cent in ten years or 2 per cent per annum. It must be taken into account, however, that three-quarters of the 20 per cent was mileage built in new sections of the country whose construction instead of relieving, added to the congestion of the old.

Take the case of our own railroad system. We have provided a very large equipment, but the growth of this country has been wonderful. In no place in the United States and in no time of the history of the country has there been growth as great in twenty-five years as that which has taken place along the line of the Great Northern Railway.

In 1883, we carried 341,000,000 tons one mile; in 1888, the traffic rose to 562,000,000; taking five year periods, the number of tons hauled one mile rose in 1893 to 1,093,000,000; in 1898 to 1,937,000,000; and in 1903 to 3,606,000,000; between 1893 and 1903 the total almost doubled. In 1900 it rose to 4,933,000,000 from the 3,000,000,000 of only three years before.

In equipment and power, we have tried to keep up with the increase of the country. From June 30, 1901 to June 30, 1902, the number of engines increased from 476 to 519, or 9.70 per cent. From 1902 to 1903 the increase was thirty-five or 18.04 per cent; from 1903 to 1904 seventy-five or 17.16 per cent. In the year from 1904 to 1905, there was a crop failure owing to which the traffic fell off about 2,000,000 tons and no new engines were bought. From 1905 to 1906 eighty-two engines or 14.89 per cent were added, and in the last half of 1906 one hundred and twenty or 21.37 per cent.

The increase in locomotives between 1903 and 1906 on the Great Northern system was 277. This amounts to 14 per cent.

There was a similar additional provision of freight cars. Between June 30, 1901, and June 30, 1902, 2,000 new cars were added increasing the car capacity by 12.71 per cent, and bringing the total number up to 25,217; by 1903 there had been added 3,482 more, increasing the total capacity by 21.75 per cent; by 1904 we added 2,365 cars with increased capacity of 10.97 per cent. In 1905, when the 2,000,000 decrease in freight carried occurred owing to crop failure, only 503 or 2.27 per cent were added, but in 1905, the addition was 2,219 cars or 10.41 percent, and in 1906 there was 5,897 or 27.49 per cent. Such was the provision made by one system in the Northwest to keep pace with the expansion of the country. It was needed badly enough. The number of ton miles increase between 1903 and 1906 was over 33 1/3 per cent. The tons of revenue freight moved in 1903 were 16,148,000; in 1904 they were 14,245,000; in 1905 they were 17,535,000 and in 1906 they were 19,230,000. The increase in 1903 was 21.99 per cent; in 1905, increase 23.10 per cent; in 1906, increase 9.09 per cent, with a decrease by poor crops of 11.78 per cent in 1904. Through that period, including nearly twenty years, a constant effort of the Great Northern system was to keep its facilities equal to its business, notwithstanding the increase of the volume of that business with the development of the Northwest. In the period from 1903 to 1906, the

average tonnage increase was 12.06 while the traction power of the system increased 14 per cent.

This shows that the Great Northern was well to the front in handling a situation that, taking the country as a whole, has, I think, become desperate. It has been stated already that freight traffic of the country increased 110 per cent in the ten years from 1895 to 1905. There was no such addition to mileage or equipment. In 1870 we had 52,898 miles of railroad and by 1880 we had 93,671. The increase in mileage was 10,773 or 7.7 per cent annually. From 1880 to 1890 the increase was 7.40 per cent; from 1890 to 1900 two and nineteen-hundredths per cent, and from 1900 to 1906 two and eight-tenths per cent. These statistics, covering a period so considerable and reflecting the relation of the transportation machine to the transportation needs of the country, are alarming.

In addition to insufficient mileage to carry traffic, there are other causes contributing to the general freight congestion into •which this inquiry goes. These especially are the lack of labor, the inability to get new cars and the unusual delay in moving cars from point to point and in returning them from distant parts of the country to the system to which they belong. The Great Northern, in endeavoring to give satisfactory service, started in 1906 to build from Aneta to Devil's Lake. This was practically doubling the line from Devil's Lake to St. Paul and Minneapolis. It started also to build a double track westward from Devils Lake to Rugby Junction.

Owing to the scarcity of labor and material, although we pushed that line as hard as we could, we got only within twelve miles of Devils Lake. We expected that line to be in on the first of September, before the crop movement, and that would not have been difficult if men to do the work could have been had.

When harvest comes, the railways always expect the farmers to take labor from the tracks or from the railway to handle their crops. We have made it a rule for years to carry all the men we can get into the country as our workmen in the spring, expecting that the farmers will hire them away from us. It is the only way they can get the help they need, and we agree that it is necessary.

Paying \$2.00 and \$2.50 a day for Italian labor, we could not hold them. We could not complete this Devil's Lake line until another season. This line and the double tracking west to

Rugby will take care of the additional freight movement. It equals three or four times the present capacity of the road. But among the causes of congestion insufficient trackage is first, and that is partly due to the impossibility of getting labor to build new lines.

I think it safe to say that we carried out west this year 15,000 men, and never had at any one time more than 3,000 or 4,000 of those 15,000 at work. We could not lay the new track; we could not put the double track in shape, could not finish the work that we desired to do, and that it was our interest to do and the farmers' that we should do, because we could not get the men. The difficulty of securing labor to do necessary work in railroad building is one that this country has to meet.

In the matter of operating, car movement is an important factor. Even when cars can be obtained fast enough, they are no use unless they are busy all the time moving the freight. There is no excuse for not moving cars if they can be moved. I suppose that 90 per cent of the cars move without unreasonable delay as compared with 5 or 10 per cent that are unreasonably delayed. A year ago our average time from here to the coast for a year for all classes of freight, a distance of 2,000 miles, was less than nine days; but the car movement, owing to the carelessness of shippers and of other railroads, grows less every year. On the Missabe division where we control the unloading ourselves, we get from 75 to 80 miles a day. The average for the whole system is not more than 26 to 28 miles a day.

We have ordered locomotives and cars enough, if we can get the other facilities needed. There must be terminals where connecting roads can exchange their business quickly. A road is not confined to itself. We load a car at some point on the Great Northern road, and it may be destined for New Orleans or New York. A car from the Pacific coast loaded with lumber may go to Portland, Maine, or to Wilmington, Del. If we can let our cars go straight through, this shipment will be made and we do so, but they do not go through in a hurry or come back in a hurry.

I know last year about this time, I think it was about the 12th of December, we sent cars to points in southern Illinois for coal for our use, and they were loaded from Minneapolis with flour as far as Chicago. When they got to Chicago the connecting lines there east of Chicago, had no cars to which they

could be transferred. They telegraphed back and recommended and urged us to let our cars go through and the other lines would pet them back in less time than it would take for them to wait to get empties to unload them in Chicago. We consented that they should go through, and in March, I think between the 10th and 12th of March, or three months after, they hadn't got a hundred miles out of Chicago.

I was getting some inside fitting and some furniture for my house in New York the other day from Boston. It took so long that I told the man to ship it by water; ship it around by the Metropolitan steamers. He did some of it, but he had some bedding and some mattresses. I left New York on Sunday, and on Saturday the man was down to the rooms to see me; I was confined to the room with a cold and he said that the mattresses had left Boston on the 12th of November and hadn't reached New York on the 10th of December.

When we get cars of other systems accumulated on our line, we do not mean to hold them. Our orders are that as fast as a car can be unloaded it must be returned. People are sending cotton from the South, and manufactured goods from all over the country between here and Puget Sound, and 2,000 cars would be a very small proportion of foreign cars to be on our road, but I should feel very much grieved if our men kept these foreign cars in local service.

The remedies for the situation disclosed by these facts are, the addition of necessary facilities and the application of economy in the railroad business itself. It costs the railroads more to do the business when they are trying to move traffic with everything taxed beyond its capacity. The best economy is to have all equipment and facilities properly adjusted to the volume of business, and then keep it moving in a harmonious and useful way. Anything else is wasteful.

The greatest need of all is more mileage. I have discussed this question with a number of the most intelligent railroad men that I know, asking them how much additional mileage should be built to relieve the country absolutely from the difficulty under which it is laboring because of the unreasonable delay in moving freight. There must always be some delay, but there should not be unreasonable delay. Some of them put the necessary mileage as high as 50 per cent. We may say that that is out of the question, but those who have thought about

the matter and tried to work it out agree that there should be anywhere from 25 to 33 per cent. This doesn't include lines built into new territory, but should practically all be used for additional track and yards, putting in double tracks where there is now only one and four tracks where there are now two.

If new mileage equal to 25 per cent of the old should be built, most of it east of the Mississippi River, it would not any more than take care of existing congestion and the growth of the business. Now 25 per cent of the existing mileage would be 55,000 miles and if that should be built in 5 years, it would take 11,000 miles a year. If we take this lowest estimate that any intelligent railway man has given, this 25 per cent would be only 5 per cent a year for the next five years, and prior to 1890 the average was 7.4 to 7.7 per cent per annum. For the next five years we should have to average at least 5 per cent to make up for lost way and to provide reasonably for the future.

To this you would have to add one-third to serve as terminals and passing tracks. People think that a double track road does not need any passing tracks, but when they undertake to operate one without them, they find that they are in the same trouble that they are when they try to run too many freight trains over a single track. The number of collisions is great. The number of collisions between passenger trains and the number of people killed today are largely due to the fact that there isn't mileage enough in the country to move the business of the country.

Add 33 per cent to 55,000 and it makes 73,333 miles. Inasmuch as most of this main track mileage would be second or other additional tracks on existing lines, before they were made permanent, there would need to be heavy deductions in grades and curvatures on the old lines already built.

Twenty or twenty-five years ago engineers were satisfied with a one per cent grade. A one per cent grade railroad was then considered a good railroad. Today a one per cent railroad is like a harbor in front of a city with a depth of fifteen or eighteen feet, when the depth in the channel should be thirty or thirty-five feet. The hindrance to business is exactly the same. It is just as important to this country that its railroads should be built with low grades and with capacity to haul a full load, as it is that ships should have ample capacity and a suitable channel. Many different suggestions have been made, most of which tried to prove that twice two is one. No man living can

demonstrate that there is any other way to handle this business than to have the largest capacity for the cars and the engines.

We haven't handled anything like the number of ears that we had to before to do the same amount of business. We don't block the side tracks, we don't block the railroad. It is the same thing as having a one-horse wagon and a delivery cart to haul brick. You could haul brick with one horse and a cart, but it would be very slow work. I don't think that you need any further illustration than the ones I have given there to show that where we have fifteen miles of double track out of 295 miles of track total we move over 6,000,000 ton miles a year, and there is no delay; that we move 1,300 tons to the train, average 1,300 to 1,400.

When you have an adequate trackage, the next thing is to see that the cars are loaded properly. I know it is difficult to get a railroad man anywhere to appreciate the importance of loading a car and loading his engine with loaded cars. Suppose you take a car that weighs 35,000 or 30,000 pounds and half-load it or quarter-load it.

The object of loading the cars and loading engines as near as possible to capacity is not merely to increase the tonnage per train but to move the traffic. You have to do it to get the traffic over the line. Our records will show that most of the trains that were delayed are those that have the lightest loads.

The importance of density of traffic in the railroad business of the country is coming to be understood. I have some figures covering the time from the first of July to the end of October, showing the density of traffic on the Great Northern Railway as compared with the Lake Shore and Michigan Southern. This system has a double track and a very level road, and has increased its trainload from about 200 to 244 tons to the train ten years ago, if I recollect correctly, to about 600, but they have increased their density of traffic, that is the tons moved one mile for each mile of road, to 3,000,000 a year. The New York Central & Hudson River, with four tracks shows 2,000,000 a year. The Pennsylvania division of the Pennsylvania system from Pittsburg to Philadelphia shows 5,374,000.

On the Missabe Division, which runs from Cass Lake to the head of Lake Superior, 205 miles of road, in July the Great Northern moved 498,126 ton miles, average for the whole divi-

sion, or practically 6,000,000 a year. That is more than the Pennsylvania moves between Pittsburg and Philadelphia. But in order to do that let us see what we moved. We averaged 1,300 tons to the train, and there was no blockage. On the Superior division, running from here to Lake Superior, the density that we moved was 140,000. That would tie 1,780,000 for the year, on a single track, from here to the head of the Lake, against 2,000,000 that the New York Central averaged for the twelve months on four tracks.

The Missabe division in October moved 580,000 ton miles for each mile of road, 290 miles. One hundred and fifteen of that, and a large amount of tonnage, was iron ore; and, as I said before, we controlled the unloading. The cars were ours, and if there was any delay it was our delay. We got from seventy-five to eighty miles a day out of those cars. The train load was 1,406; the average car load was 39 tons, and I will undertake to say that never in the whole world has the same amount of track moved the same tonnage, or approached it. The nearest approach will be on the Bessemer road, hauling Bessemer ore from Conneaut to Pittsburg. The Superior division ran 226; that is from here to Lake Superior, that would be at the rate of 2,800,000 ton miles per annum, or close up to the average of the Lake Shore, 3,000,000, with its double track.

Take the Montana division, running from Havre to Williston. For July the average was 152,000 tons to the mile of road, single track; over 1,800,000 for the year. Close to the average of the New York Central with four tracks. In October it was 145,000. The Montana Central runs over three ranges of mountains. In seventy miles that road crosses two ranges of mountains, with maximum grades of 116 feet or 2.2. Although their average train load was 681 tons, they moved for that month, that is for the month of October, 110,798 tons one mile for each mile of road, notwithstanding they have these enormous grades. They handle very heavy traffic.

A general comparison of traffic density and traffic movement of some of the large systems of the country will show the importance of this feature.

The Milwaukee & St. Paul had 3,500 or 4,000 miles when we hadn't that many hundred miles, and we were following the Indians across the plains; but on 6,961 miles they move 4,663,000,000 ton miles, while on 5,906 we move 4,933,000,000

ton miles. In other words, their density of traffic as compared with ours is just 80 per cent. They run in a much older and much more densely populated country, to Chicago, Milwaukee and out to Omaha, Kansas City, and so on.

The Chicago & Northwestern, with 7,428 miles, or 125.77 per cent of our mileage, move 104 per cent of our tonnage.

The Chicago, Burlington & Quincy with 8,890 miles, or 150 per cent, move 6,347,000,000, or 128 per cent of our tonnage.

The Rock Island with 122 per cent of mileage, move 75 per cent of the tonnage. On the Rock Island the density of traffic, that is, the number of tons moved one mile for each mile of road, is 61 per cent of the Great Northern.

The Soo Line, with 34 per cent averaged for the whole year 3,297, or 35 per cent of the Great Northern.

Now, the Great Northern, with 5,906 miles, moved 4,933,000,000 tons one mile, a density of traffic of 835,287 tons.

The Northern Pacific, with 5,401 miles, or 91 per cent, moved 106 per cent of the tons one mile that the Great Northern moved. Their density of traffic is 971,000 ton miles, or 116 per cent of the Great Northern's, or 36 per cent heavier than the Milwaukee & St. Paul.

These are figures which can be verified, and are not somebody's hearsay. These are the actual figures of what is being done, and the reports are filed under oath.

I want to call attention to a point here. The Milwaukee & St. Paul, while moving 94 per cent of the Great Northern tonnage, ran 177.71 per cent of the train miles.

The Chicago & Northwestern, to move 104.51 per cent of the Great Northern tonnage, moved 210, practically 211, per cent of the train service. They ran a train service equal to a freight train a day around the world for 400 days. If you think that that does not interfere with traffic, if you think that doesn't take any meeting points, if you think that that facilitates business, take the reports and check them up and see. They couldn't move our tonnage, and they have more double track, I should say 600 or 700 miles, and they will have to build more.

Of course, when you have enough track and enough cars, and both your cars and your trains are loaded properly there must be a fair car movement, better than we have now. The suggestion has been made that there should be a car exchange and

clearing house, with a monthly adjustment between the roads, and a money payment for cars not returned. I do not think this would work. When there is a scarcity of oars, it will not relieve you a particle to get 50 cents a day for a car that would be worth \$5.00 a day to us at that particular time. Each railroad must have its own. We have sent our cars to Boston, for instance, and then sent a man after them to find them, and found that they had been in service for months hauling ice from Maine down to Boston. Last year, I found cars that started from St. Paul for St. Louis to be returned to us from that point, hauling ties into Savannah, Georgia. The car thief is the worst kind of a thief. They are all bad, but I think the car thief is the worst. Since the first of December, the per diem charge for cars has been raised from twenty to fifty cents, and I think that will go far toward curing the evil. I would like to see it a dollar. If you take a man who is brought up in making tariffs, you will generally find him very generous with the company's cars, but an operating man who actually knows and has to know thinks differently. The best thing, if it could be done, would probably be a transfer. As a car comes from the East here, have it transferred from the eastern car to our car and take it on to its destination. The cost of the transfer would be a bagatelle as compared with the mileage. The prejudice of the average shipper against changing cars is the main difficulty in the way.

So far as our own system is concerned, we are doing all that conditions permit. Take the Devil's Lake line just spoken of, we will have that line completed early in the spring. It is ballasted and ready for operations about to the end of the truck. Then we will complete the double tracking from Devil's Lake west to Rugby. That will take care of the additional movement. It ought to be equal to three times the capacity that we now have, and on the double track portion it would be four times.

For delivery 1907, we have ordered 150 locomotives. Last year we had 95 new ones but 5 of them were double locomotives, 300,000 pounds on the drivers, for use over heavy mountain grades. We have ordered 4,000 box cars of 85,000 pounds capacity, and one thousand coal and ore cars of 100,000 pounds capacity, and are placing a further order for an additional thousand.

We are at work reducing grades, and building double tracks. We have reduced the grade between Breckenridge and Minnea-

polis this year to four-tenths of one per cent or twenty-one feet to the mile. When I took the road it was 1 1/4 per cent, now it is down to four-tenths of 1. The Northern Pacific and the Great Northern work their two parallel lines between here and St. Cloud as a double track and that helps a great deal. In the next year or two we expect to spend a great deal of money building double tracks. We are about raising 800,000,000 to provide additional facilities and do our share of what is necessary.

I want to see that our road shall not be behind when the absolute crash comes; because it won't be a panic; it will be a crash if it can't be relieved. Men will not till the soil, they will not produce crops if they cannot send the product to market. We are doing the best we can to get ourselves into shape.

There is no subject anything like so important to the people of this country as the one you are dealing with today. Every day from now until this problem of traffic congestion is solved, its importance will grow greater and greater. I have tried to set out the principal causes of the difficulty and the possible remedies.

The allowance of 73,000 miles additional track will not be more than is actually necessary. I have distributed it over five years and in five years if we are to have crops at all, if we do not stand still, the allowance is altogether too small.

I do not think the new mileage, the new equipment, the terminal facilities, etc., could be produced for less than 575,000 a mile of main track, which would amount to \$5,500,000,000, or a yearly average of \$1,100,000,000. That is what it will take to move the business of this country, and it is not any more than is necessary. But it is 30 or 40 per cent of the cost of the Civil War. That is the stone wall we are up against and will be up against until the problem is solved.

I know one man said it was more cars we wanted. If he used his cars as we use ours he would do 60 per cent more business than he is doing. Better loading, better car movement and greater density of traffic will do much. A number of railroads have attempted to adopt our system and failed because they did not know how. They could not do it and so they went back to their own way. I have added to this statement some tables of figures, all of them from official sources that will cover the points discussed and help show the difficulty and the remedy.

I got out of a sick bed to come here for the purpose of putting this matter before the people. I want the people to see, through the investigations of this honorable Commission, where they stand. I beg the Commission wherever its meetings are held to investigate along these lines and see what the distributing facilities of the country are. Until the needed mileage is furnished the country will suffer. Its business cannot move. You can lead a horse to water ten times but you cannot make him drink once. You can't get any machine that will bore a one inch hole with a half-inch auger. You can't carry on the transportation business with present facilities, and because there is no room to do the business the situation is constantly getting worse.

GREAT NORTHERN RAILWAY.

Year	Miles Oper- ated	Increase	Tons of Rev- enue Freight	Increase Amount	Increase Per Cent
1902	5,249		13,237,303		
1903	5,490	459	10,148,073	2,911,310	21.99
1904	5,023	242	14,245,129	*1,903,544	*11.787
1905	5,723	178	17,535,789	3,290,000	23.100
1900	5,900	320	19,230,092	1,700,303	9.696

* Decrease.

GREAT NORTHERN RAILWAY.

Year	Tons Revenue Freight One Mile	Increase Amount	Increase Per Cent
1902	3,190,217,482		
1903	3,000,835,170	416,617,694	13.00
1904	3,351,802,089	*255,033,087	*7.071
1905	4,170,100,658	818,358,509	24.42
1900	4,933,530,997	763,370,339	18.31

*Decrease.

GREAT NORTHERN RAILWAY.

Year Ended June 30	Number Tons Hauled One Mile	Average Revenue Per Ton For Mile
1883	341,539,997	1.968
1888	502,531,432	1.306
1893	1,093,092,312	1.190
1898	1,937,955,894	.932
1903	3,000,835,176	.857
1906	4,933,530,997	.791

STATEMENT OF LOCOMOTIVES AND TRACTIVE POWER

Year	Locomotives on System		Yearly Increase		
	No.	Tractive Power in Lbs.	Loco- motives	Tractive Power in Lbs.	Per Cent
June 30, 1901	476	12,595,876			
June 30, 1901 to June 30, 1902	511	13,825,001	35	1,229,725	9.76
June 30, 1902 to June 30, 1903	546	16,320,919	35	2,495,318	18.04
June 30, 1903 to June 30, 1904	621	19,121,605	75	2,800,740	17.16
June 30, 1904 to June 30, 1905		19,121,665			
June 30, 1905 to June 30, 1906	703	21,909,021	82	2,847,356	14.89
June 30, 1906 to Dec. 1, 1906	823	23,209,141	120	4,087,476	21.37

STATEMENT SHOWING NUMBER OF CARS AND
TONNAGE CAPACITY REVENUE FREIGHT EQUIPMENT.

Year	Total Revenue Cars on System		Yearly Increase		
	No.	Tonnage	Cars	Tonnage	Per Cent
Juno 30, 1901	23,217	615,971			
June 30, 1901 to					
June 30, 1902	25,217	694,290	2,000	78,319	12.71
Juno 30, 1902 to					
June 30, 1903	28,099	845,316	3,482	151,020	21.75
June 30, 1903 to					
June 30, 1904	31,004	938,042	2,305	92,726	10.97
June 30, 1904 to					
June 30, 1905	31,567	959,352	503	21,310	2.27
June 30, 1905 to					
June 30, 1906	33,780	1,059,247	2,219	99,895	10.41
June 30, 1906 to					
Dec. 1, 1906	37,464	1,223,115	5,897	203,703	27.49

COMPARATIVE STATEMENT OF TONS MOVED ONE
MILE AND DENSITY OF TRAFFIC FOR
YEAR ENDED JUNE 30, 1906.

	Average			Mileage of
	Miles of	Tons one Mile	Density.	Freight
	Road	Revenue Frt.		and Mixed
				Trains
C.,M.&St.P	6,961.27	4,603,808,007	669,965	16,542,820
	117.85 Pct.	94.53 Pct.	80.21 Pct.	177.71 Pct.
C.&N.W.	7,428.77	5,156,074,115	694,068	19,634,933
	125.77 Pct.	104.51 Pct.	83.09 Pct.	210.93 Pct.
C.B.&Q...	8,896.00	6,347,902,891	713,568	17,394,484
	150.62 Pct.	128.67 Pct.	85.43 Pct.	186.86 Pct.
C..R.I.&P	7,218.07	3,715,621,556	514,766	15,154,364
	122.20 Pct.	75.31 Pct.	61.63 Pct.	162.80 Pct.
Soo Line. . .	2,020.39	1,084,153,866	536,605	3,297,169
	34.20 Pct.	21.98 Pct.	64.24 Pct.	35.42 Pct.
G. N	5,906.39	4,933,530,997	835,287	9,308,753
	100.00 Pct.	100.00 Pct.	100.00 Pct.	100.00 Pct.
N. P	5,401.14	5,243,260,080	071,139	13,097,617
	91.44 Pct.	106.32 Pct.	116.26 Pct.	140.70 Pct.

DENSITY OF TRAFFIC, EASTERN LINES, 1905.

Name of Railroad	Tons Moved One Mile Per Mile of Road
L. S. & M. S.	3,000,000
N. Y. C. & H. R.	2,000,000
Pennsylvania, Pennsylvania Division.	5,374,000

STATEMENT OF RAILWAY MILEAGE IN THE UNITED
STATES.

Year	No. Miles	Amount	Increase	
			Per Cent	Pct. Per Annum
1870	52,898			
1880	03,071	40,773	77.0	7.7
1890	103,597	69,926	74.0	7.40
1904	213,904	50,307	30.75	2.19
*1906	220,000	6,096	2.8	1.4

*Estimated, 1906.

	Miles
Present mileage in United States.	220,000
Estimated increase necessary to provide facilities for moving the traffic of the country without unreasonable delay, 25 per cent of present mileage, distributed over five years.	53,000
Add one-third for necessary passing tracks, yards, terminals, etc.	18,333
Total additional mileage required.	73,333