

dup

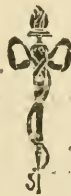
UNIVERSITY of CALIFORNIA
AT
LOS ANGELES
LIBRARY

PROCEEDINGS OF
The FEDERAL ELECTRIC
RAILWAYS COMMISSION

Held in WASHINGTON, D. C., during the months
of July, August, September, and October, 1919

— together with —
Final Report of the
Commission to the
President

IN THREE VOLUMES
VOL. 3



WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

127867

HE
4401
A4
1920
V3

PROCEEDINGS

OF

FEDERAL ELECTRIC RAILWAYS COMMISSION.

WASHINGTON, D. C., *October 4, 1919—10 a. m.*

Present: Parties as before.

The CHAIRMAN. Commissioner Eastman, will you take the chair, please?

STATEMENT OF COMMISSIONER JOSEPH B. EASTMAN.

Mr. EASTMAN. Shall I proceed now, Mr. Chairman?

The CHAIRMAN. Yes.

Mr. EASTMAN. Mr. Chairman and gentlemen of the commission, I am very glad to respond to the invitation to appear before this commission, although I should not have sought the opportunity myself, and I am glad to appear because I realize how difficult is the question you have to deal with, and if I can be of any help in aiding you to solve that question I want to do it. My chief fear is that I shall not be of much help, because, although I have spent a good deal of time in the study and consideration of this street-railway question, I never felt satisfied that I had really arrived at any satisfactory solution of it.

I think I ought to state before I begin that I am here solely as an individual and not as a member of the Interstate Commerce Commission. I have not talked the matter over with my colleagues at all; they know nothing whatever of what I am going to say, and they are not in any way responsible for the views I am going to express. The blame is wholly my own.

Whatever qualifications I possess to discuss this question come from experience as a member of the Public Service Commission of Massachusetts. I was on that commission from the fall of 1914 until the end of last year, and during that time we dealt almost exclusively with the street-railway problem. I am somewhat handicapped in speaking to you this morning because of the fact that my experience is confined almost exclusively to Massachusetts and you are considering the entire country. I have some fragmentary knowledge of the situation in other parts of the country. Also I am handicapped that since the beginning of the year I have given little

thought to the situation even in Massachusetts, being rather fully occupied with my duties on the Interstate Commerce Commission. I am not familiar, for instance, with the statistics of the street-railway operations in that State since the beginning of this year.

I should have liked to have been able to prepare a careful statement on the subject, because that is the kind of a statement that it deserves, but I have been unable to do that; I have not had time; and so I must content myself with certain notes which I have made and the discussion of those topics in a rather random and cursory manner.

Now, I think I ought to begin by setting forth briefly the situation in Massachusetts, because it differs, I think, in a good many respects from the situation in other States. That whole matter, the history of the street-railway situation in Massachusetts, was discussed at great length by Frederick J. McLeod, chairman of the public-service commission, when he appeared before the special street-railway-investigation commission of Massachusetts in November, 1917. That statement of his was afterwards published, and I think it is accurate and it describes the situation fairly, and if you are interested it is well worth your perusal.

But, briefly, there are certain sources of weakness in the Massachusetts situation. In the first place, more street-railway mileage was constructed there in proportion not only to territory but also in proportion to the population than in other States. The last time I saw the figures the discrepancy was rather striking. And naturally enough, much of that mileage was in the country and of a rather inferior type. We have no genuine interurban lines in Massachusetts, although we have plenty of cities which would support lines of that character. The country lines are constructed as a rule not on private right of way but along the highways, just as the street railways are constructed in the city. And that results in slow speed and operation, which enhances the cost and at the same time discourages the traffic. To illustrate that fact—

The CHAIRMAN. Under the law are they permitted to occupy the streets as telegraph and telephone companies are?

Mr. EASTMAN. Yes.

The CHAIRMAN. Without paying for it?

Mr. EASTMAN. Yes. They were given locations in the street through the agency of the cities and towns acting for the Commonwealth. The locations there are revocable locations which do not confer any perpetual right. They can be revoked at any time by the local authorities after one year's time, provided the public-service commission certifies that that is consistent with the public interest. Originally there was not even that proviso; the locations could be revoked at any time and without granting any compensation to the companies.

The CHAIRMAN. So the companies can be protected against arbitrary action taken by municipalities?

Mr. EASTMAN. Yes; they can under the law as it has existed for some years.

Now, to illustrate what I mean in regard to these country lines, take the case of the Bay State Street Railway Co.—I believe now called the Eastern Massachusetts, since its reorganization: That operates all over eastern Massachusetts and extends from Newport,

R. I., on the south to Nashua, N. H., on the north and has a mileage of very nearly 1,000 miles of track. And although it has a good many urban systems in populous-city centers, it also spreads all over the country districts. And notwithstanding that fact, in 1914-15 when we had that company before us, the average number of car-miles per car-hour was only 8.4, as I recall it, which is a figure which you would not expect in a distinctively urban system.

Now, many of these country lines which were constructed in that way never had a chance of success and probably ought never to have been built. Many of them were practically insolvent from the start and others would have reached that condition if they had been allowed to continue in an independent way. But instead of that—and this is the second point in which our situation is weak—they were taken under the wing of the stronger city company and extensive consolidations were brought upon a share-for-share basis.

The CHAIRMAN. Before you go into that consolidation can you tell the commission why these lines were built which never had a chance to succeed?

Mr. EASTMAN. Well, they were built, I suppose, because of the desire of the country districts to have lines and because of the hope that they would succeed; and also because of the profit which accrued in their construction to promoters of those lines.

The CHAIRMAN. Did the municipalities contribute to the construction of these roads?

Mr. EASTMAN. They did not contribute except in this way, that I think in a good many cases subscriptions were made to the stock by individuals in those towns who hoped to secure benefits from the building of the lines.

The CHAIRMAN. But there was no public aid or donations?

Mr. EASTMAN. There was no public aid or donations. As I was saying, many of these weaker lines were consolidated with the strong lines upon this share-for-share basis. That was regarded as proper in Massachusetts, because it did not result in any increase in the aggregate stock and bonds outstanding. In other words, it resulted in no inflation, in the ordinary sense. But it did have the result in spreading the earnings of the strong lines out over these weaker systems which could not have existed without the help of the stronger lines and upon an independent basis. And that has resulted in greatly weakening many of the city properties. There are very few distinctively city properties in Massachusetts. The Eastern Massachusetts Co., for instance, operates in such populous cities as Lowell, Lawrence, Haverhill, Lynn, Brockton, Fall River, Salem, Beverly, and others that I might name. But at the same time, it spreads out all over the country districts, and the earnings of the city lines are diluted in that way to support the lines which could not exist or thrive upon an independent basis.

That is also true of the lines in Springfield, which extend considerable distances to the west, east, and south of the city, out into the country districts. It is equally true of the Worcester company, which has extensive country lines.

About the only company outside of the Boston company of which that is not true is the one located in New Bedford, the Union Co., which is the sole exception to the Massachusetts companies in the

matter of prosperity. The Union Co., which has confined itself largely within the city borders and has not entered into entangling alliances with outside properties and has been managed by local men and owned by local capital in very large degree, has been much more successful than the others, and up to the present time has been able to preserve the 5-cent fare, although it is now petitioning, I think, for an increase before the public-service commission.

Mr. WARREN. It has also reduced its dividend, Mr. Eastman.

Mr. EASTMAN. It has?

Mr. WARREN. Yes.

Mr. EASTMAN. Its dividend for many years was 8 per cent, although under the Massachusetts law much new stock was issued at a premium, the premium going as high as \$50 a share.

In the third place, a factor of weakness, I think, was the control of the companies in many instances by holding companies organized in the form of voluntary associations or, to use a more technical term, express trusts. Although the stock and bonds of the street-railway companies themselves were issued under public supervision, these voluntary associations which coralled all their stock were subject to no regulation whatever and issued shares upon an inflated basis and that had the result of accentuating the desire to draw every possible drop of income out of the underlying companies that could be secured in order to support earnings upon the inflated shares of these voluntary associations.

In the fourth place, our street-railway companies are entirely separate and distinct from lighting and power property. They are not merged with those properties and operated under one management, as is the case in many other parts of the country. I think it is true, so far as I have knowledge, that in many cases the superior earnings of the lighting and power properties have been able to support the street railway companies which were united with them, but we have not had that element of strength in Massachusetts and our street railways have had to go it alone.

The CHAIRMAN. Does the law prevent such consolidations?

Mr. EASTMAN. Well, it does not permit it. There is no law authorizing such consolidations. It has, in some cases, been brought about indirectly through the medium of these holding companies, but there is no actual merger of the property.

Now, in the fifth place—and this is true not only in Massachusetts but in all other parts of the country—there has been the ordinary failure to care for depreciation; the need of caring for that was not recognized, and depreciation was not cared for.

In the sixth place, in Massachusetts the cost of coal is, I think, higher than it is in most other parts of the country because we have to bring our coal from rather remote districts. The country itself is hilly, so that it is much more difficult to construct a first-class high-speed interurban line than it is in the Middle West or many other parts of the country; and our cities are old and laid out in many cases with narrow, crooked streets, which also adds to the cost of operation.

In the case of Boston there is a further source of weakness which lies in the enormous investment in rapid-transit structures, subways, tunnels, and elevated lines which have been constructed in

Boston to a much greater extent than in any other city except New York, and I think in proportion to the population the expenditure has perhaps been as great in Boston as it has in New York. There was an unusual necessity for such structures in Boston because of the layout of the city and the absolute need for constructing underground highways in the congested central district—congested by physical condition—in order that traffic might be carried through there at a reasonable rate of speed and in reasonable quantity.

As I recall it, about \$35,000,000 has been invested by the city of Boston in subways and tunnels. That does not include the amount expended by the company on the Cambridge subway, which cost about \$9,000,000, and in addition to that there is a very large expenditure in elevated lines.

In the last place, I might mention that a source of weakness in Massachusetts has been the pioneer in the construction of good roads, and well-constructed highways exist all over the State, which has made automobile competition relatively easy.

Now, as counter to that, there have been certain sources of strength, and the chief source of strength has been the supervision over capitalization. The securities of the companies have very largely been issued under the regulation of the public-service commission or its predecessor, the board of railroad commissioners, and that has resulted in a much less capitalization per mile than in other parts of the country.

Another allied source of strength was the fact that there was a plentiful supply of local capital which could be secured for investment in these railways, and I think they were practically all constructed by that local capital and the investment of that local capital was encouraged by favorable tax laws. In other words, the stock of these companies was not subject to taxation, and for that reason, it became a popular investment for the trust estates and similar investors in Massachusetts who are obliged by law to disclose their holdings and hence have the need of investing in tax-free securities. That resulted in the acquisition and purchase of street-railway stock in many cases upon a bond basis. The security or stock of the Boston Elevated, for instance, was bought by investors on about the same rate of return very largely which they might have secured in investing in bonds, and it is very widely held.

That, in a sense, it has developed into a sort of weakness, is rather a paradox. At the same time I think it is true. In other parts of the country the exploitation which took place resulted in early smash. That came about in Cleveland, that came about in Chicago, and I think in other large cities, and they had to begin all over again about the year 1907, and they started in on a depreciated basis and proceeded to rehabilitate the property and they have since had the advantage of that rehabilitation.

Now, in Massachusetts, the fact that the securities were regulated and the capitalization was relatively low resulted in prolonging the life of the companies until they began to receive the full effects of accrued depreciation, and they are suffering from that now. If you go back 10 or 12 years, Massachusetts was, I think, receiving as good street-railway service as any part of the country. We used to boast of the street-railway service we received at that time and we were

proud of the service which was being given in Boston in comparison with the service which was being given in many other large cities. But at the present time the failure to take care of depreciation, added to the other elements and factors which have entered into the situation in recent years, has resulted in a very weak and undesirable situation.

Coming to regulation, until 1913 the railroad commission in Massachusetts had no mandatory powers. It only had the power to recommend, and for that reason the street-railway companies were free—if they wanted to do so, and except to the extent that they felt bound by agreements with the local authorities—to raise their fares and could do so without the permission of any State commission. Notwithstanding that fact, and notwithstanding the fact that now underlies the situation, they were always in a precarious condition. They did not, as a rule, increase their fares. They were rather optimistic of the future. They kept hoping that the increase of traffic would pull them out of their difficulties and it did look at one time as though it might, because traffic was increasing rapidly; population was increasing and traffic was increasing along with it. Of course, the development of the automobile has had a tendency to change that situation. But for some reason or other they did not increase their fares during the period in which they were at entire liberty to do so, except in a few cases. There were certain companies beginning about 1905 which changed from a 5-cent unit of fare to a 6-cent unit of fare, and after they had done it the railroad commission considered their situation upon complaint and said they were justified in making that increase.

Now, in 1913 the railroad commission was reorganized into the public-service commission and given full power over rates, substantially the same powers that the Interstate Commerce Commission possesses over railroad rates. And about 1914 the movement for general increases in fares began in Massachusetts. The first case, or the leading case, under the public-service commission, was that of the Middlesex & Boston; and in that case the commission laid down a rule which, I think, was entirely fair and reasonable, but at the same time, it was more favorable to the companies than the commission might have laid down relying upon the precedents of the courts. In other words, instead of taking the basis of reproduction cost less depreciation, the commission took the basis of the amount of money honestly and prudently invested in the property which it was ordinarily able to ascertain very easily because of the fact that the securities had in most cases been issued almost altogether under public supervision.

The commission held that the companies were entitled to a fair return upon the amount of money which they had put into the properties honestly and prudently, and did not deduct from that sum anything on account of depreciation, unless it felt that the failure to take care of depreciation was due to inexcusable mismanagement. There have been cases in which the commission said that companies were entitled to a somewhat lower return. It usually approached the matter in that way, because of the thought that they had paid dividends which they ought not to have paid under the circumstances. And I might say in passing at this time, that notwithstanding the adoption of that rule, which always seemed to me

eminently fair to the companies, the commission was generally regarded as hostile and oppressive. That was the very general feeling throughout Massachusetts in regard to the public-service commission. And I may further say, parenthetically, that the experience that I had on that commission did not tend to enhance my opinion as to the intelligence of investors in general. In many cases they bought securities without any real knowledge of what they were buying and when the results of that folly became apparent, they were very ready to seize upon the reason that the public-service commission was to blame for their evil situation and—

The CHAIRMAN. In this Middlesex case did the company ask for a return upon the cost of reproduction new less depreciation rather than investment?

Mr. EASTMAN. They did not.

The CHAIRMAN. Upon what did they ask for a return?

Mr. EASTMAN. They asked for a return upon their outstanding securities which were issued under public regulations.

Commissioner SWEET. And they got that, substantially?

Mr. EASTMAN. Yes; that is, we tried to give it to them. They did not get it, because the fares did not produce that amount. But that was—and I may say that the discussion of what returns the company should receive became very largely academic in Massachusetts.

Commissioner SWEET. They got the ruling from the commission that they wanted in that respect?

Mr. EASTMAN. Yes; because notwithstanding the increase which we gave them—and there were repeated increases—they still failed to secure anything like what under our rule we said they were entitled to receive, in most cases.

The CHAIRMAN. Then the cost of reproduction less depreciation was not a factor in that case on either side?

Mr. EASTMAN. It was a factor. It was urged by the remonstrants. I was not on the commission at that time, but as I recall it, it was urged by the remonstrants that the returns should have been based on the cost of reproduction less depreciation.

The CHAIRMAN. Did they say that would be more or less than the capitalization?

Mr. EASTMAN. Well, no valuation was made, but at that time I have no doubt whatever that the reproduction less depreciation would have resulted in a less amount than the outstanding capitalization.

Speaking again of the situation of investors, we were constantly confronted by this situation: We asked companies, "Now, why did you continue dividend payments when you knew that dividends were not really earned, taking into the consideration the necessity of maintaining the property and taking care of depreciation?" Those dividends, I might say, in most cases were small and not large. And the answer we almost always received was this: It was necessary to continue dividends in order to maintain the credit of the properties. That means, in other words, that investors looked at the thing in the most superficial way, that so long as the company is paying dividends they are satisfied that it is all right without making any endeavor to find out the real facts and whether or not it is earning the dividends which it is paying. I consider a statement of that sort, as

a whole, a reflection on the intelligence of investors. And I might say also that in the Bay State case we were actually confronted by the claim that depreciation was a newly discovered science, that nobody knew anything about depreciation until a few years ago when that theory was developed, although as a matter of fact, if you will examine the laws of Massachusetts you will find that the earliest law applying to the capitalization of street railways, which was passed away back in 1874, was based directly upon the theory of depreciation. In other words, it was provided that the commission should not allow increases in stock if it found that the value of the property was impaired. That law was afterwards, I am sorry to say, emasculated. But depreciation is not a new science, but has been recognized for many years, as you know.

Now, beginning in 1914 there has been a flood of increases in rates in Massachusetts and they have been of every imaginable variety. We have had increases from 5 to 6 and 7 and 8 cents, horizontal increases in the fare; we have had city zone systems where the ride which you could make for 5 cents was cut down and a larger sum charged for the longer rides. We have had the introduction of mileage system where you took a country line and divided it into zones, about one mile in length, and charged a certain rate, varying from 2 up to 3 cents per mile, and the passenger received a ticket when he boarded the car showing just where he was going to get off and paid in proportion to his ride. And we have also had various schemes of reduced-rate tickets to encourage the regular customer, and those tickets have been of paper and of metal, and we have even tried the experiment on off-peak tickets: that is to say, a lower fare during the time when the peak-load is not on.

Now, none of those experiments, I am sorry to say, have been successful in producing the revenue which it was desired to produce. And I can not say that anyone of them has been much more successful than another. You take the zone systems. At the first I was very favorably impressed by the argument in favor of a zone system; in other words, by the desirability of cutting down the fare to a rate no higher than 5 cents in the strictly settled portions of the system where you might expect to encourage short-haul riders. But I can perhaps describe the situation best to you by telling you what happened in the case of certain zone systems of that sort which were established.

In the case of the city of Holyoke, for instance, we established the zone system which preserved the 5-cent fare in a central district which had a radius, I think, of about $2\frac{1}{2}$ miles, and beyond that the fares were made higher by the use of tickets grading up, I think, to 10 cents. Well, now, the desired revenue was not produced by that system; and when you came to consider changing it you were either confronted by the problem of reducing the central zone, which was practically impossible, or by throwing all the added increase upon the outlying sections; and of course the main portion of the travel and the business being in the central district, it meant a very heavy burden upon them and created a great deal of alarm.

In the case of Holyoke, the people apparently preferred to have a horizontal increase in fare, and we extended the central district somewhat, but not out to the old boundaries, and allowed the company to establish a 7-cent fare within that central district.

In the case of Springfield, practically the same thing happened. The zone there was about $3\frac{1}{2}$ miles in radius, and the 5-cent fare was preserved. That zone was made necessary by the physical conditions practically, and when that tariff failed to produce the revenue desired, it became necessary to consider changes, and a 6-cent fare was permitted in that central district.

So, in the case of a zone system, if it does not produce the revenue desired, you are almost inevitably confronted by the necessity of either reducing the central area beyond possible limits, or of increasing the fare in that central area, and thus doing away with the advantage of a 5-cent fare.

In the case of the Bay State Co., their cities were more compact, and they finally reduced the central area, in the endeavor to preserve a low fare in those districts, to a radius of about $1\frac{1}{2}$ miles. That did not produce results. Now, they have a 10-cent fare, spread over a larger area, and still they are not getting the results.

The situation became so bad that in 1917 it was considered by a street-railway investigating commission appointed by the governor and the legislature, and at that time it seemed to be the rather general idea that the trouble with the situation was that the public-service commission had not responded readily enough to the demands for increased fares, and that there was delay in granting the increases; that the companies were hampered; and that if they could have an automatic system, by which they could raise rates automatically on the cost-of-service plan, that would be a solution of the difficulty.

That plan was adopted by the legislature, and strangely enough, I think—perhaps I am wrong in this—but I think that the owners of the properties were persuaded at the time that that system would result in higher fares and better revenues, while the public had the impression that it would result in lower fares. In other words, they both held the commission to blame—the public, because we granted the fares too rapidly, and the owners of the companies, because we had not granted them fast enough.

That general service-at-cost plan was adopted to enable the company to have its capital investment determined, and to raise rates automatically to produce a return of 6 per cent upon that amount, it being required to contribute a certain amount of money to be used as a reserve fund, and the fluctuations in rates being determined by the movement of that fund; when it fell below a certain point, fares were to go up, and when it rose above a certain point, fares were to go down.

At the same time special plans were adopted for the Boston Elevated Co. and for the Bay State Co. The Boston Elevated was put under the control of public trustees appointed by the governor for the period of 10 years and possibly longer, and a service-at-cost plan was adopted for that company, and the rate of return was made upon the stock of the company 5 per cent for two years, $5\frac{1}{2}$ per cent for two, and 6 per cent after that time.

In the case of the Bay State Co., that company was also placed under public trustees; but there was no guaranty of the amount which it should receive upon its stock, but it was given the benefit of the credit of the Commonwealth for an issue of securities, I think, of

about \$4,000,000, in order that it might have funds for rehabilitation purposes, but the same service-at-cost scheme was applied. In that act the Bay State Co. was reorganized, the securities being somewhat reduced.

None of those schemes have yet succeeded in solving the difficulty, and at the present time another commission is sitting to consider the situation in Massachusetts and attempt to find a remedy.

Without going into any more details in regard to the situation in Massachusetts, I come to the problem by which this commission is faced.

I do not know exactly what you have been asked to do. I speak at a disadvantage for that reason. It seems to me, however, that the street-railway problem is essentially a local one, rather than a national one. Any direct action which is taken must be taken either by the States or by the cities.

I assume that a Federal commission of this sort only helps by advice; in other words, by diagnosing the disease, making the situation just as clear as it can, and suggesting possible remedies. It has the advantage over local authorities of a broader view, embracing the entire action, unbiased by any local viewpoints or prejudices, and the further advantage that it is made up of men who command public confidence, and whose statement of the situation will, I think, be received with respect.

Attempting to think what I should do if I were a member of this commission, I have arrived at this tentative conclusion: I think I should want, first of all, to lay a groundwork by describing the general situation as clearly as I could.

I should wish to start off by making clear the importance of street-railway transportation. I do not need to enlarge upon that. You realize how important it is to the development, particularly of urban communities, and while it may be that some substitute will be developed in time, we know that at the present time there is no such substitute and that the street railways are the only machinery which can be relied upon to secure the movement of urban populations which is absolutely necessary to their health and growth.

So I think I should enlarge upon and describe the importance of street-railway transportation.

Then I think I should state frankly the past evils from which many of the companies still suffer. I do not think it is desirable in any way to gloss those over. There is no doubt that overcapitalization has taken place in many cases; there have been extortionate rentals; bad financial policy; mismanagement in various respects. In some cases the history of the street railways in this country has been absolutely disreputable, as we all know. Those facts ought to be frankly stated. At the same time, I think you ought to make clear that not all companies have been guilty of those practices in the past, and that some of them have done penance by reorganization, getting down to basic facts.

I would go on from that point and show that a more important cause even than these past practices, a more important cause for the present plight in which the companies find themselves is the vast increase in expense which has taken place in recent years; the increase in wages, in the cost of coal, in the cost of basic material.

You have those facts. I need not enlarge upon them. I think you can present that situation very clearly by making comparisons with the rise which has taken place in the same period in the cost of commodities in common use. Just before I left Massachusetts, last February, I remember talking to a woman who was criticizing the street railways very severely for adopting a 10-cent fare, and very shortly afterwards in the conversation she mentioned the fact, without an equal amount of complaint, that she was paying three times the price for canned goods that she used to pay. That is the situation all along the line, and it ought to be made clear—the rise which has taken place in the item of expense in these street railways as compared with the rise which has taken place in the cost of commodities in common use.

Then, I think you should point out the absolute necessity, if the systems are to do what they ought to do, of making a larger provision for depreciation than has been made in the past. The more I study the situation of public utilities the more I am convinced of the necessity for adequate depreciation funds.

The CHAIRMAN. Should that be permissive or required?

Mr. EASTMAN. I am inclined to think that it ought to be required. The requirement might take a flexible form; in other words, I am not at all sure that a commission could lay down a uniform rule which should be applied to all companies under all situations. The rate of depreciation in some properties is much more rapid than it is in others, and I think you have to have a study of the situation in each particular case, and that probably no uniform and inflexible rule be laid down.

The CHAIRMAN. I think that is true.

Would you have the law require utilities to provide for depreciation and have that approved by some regulating commission, or would you in lieu thereof require the commission to make an investigation of the amount of depreciation for each utility and prescribe it?

Mr. EASTMAN. I think, in the case of a State regulating body, where the companies are comparatively small in number, probably the best rule would be to require the commission to investigate the circumstances of each company and lay down a rule for that company, but I am not dogmatic upon that point at all. I think the question of depreciation is an exceedingly difficult question, and my own mind has not, I shall have to admit, come to rest finally in regard to all phases of that question.

The CHAIRMAN. Of course, it opens up a very large practical question. If depreciation should be required for street-railway companies, the same rules should apply to electric, water, and gas companies perhaps?

Mr. EASTMAN. Yes.

The CHAIRMAN. And if the commission were required to investigate and report upon all of those utilities it would be almost an insuperable task?

Mr. EASTMAN. Yes.

The CHAIRMAN. So that perhaps it would be better, if you were going to so have the companies make a depreciation charge, to have it approved by the public authority?

Mr. EASTMAN. Yes. There are various ways in which the problem might be approached, but I am inclined to think that there ought to be some public supervision over that phase of the problem. I am not quite sure what form it ought to take.

The necessity for depreciation lies in this, among other things: It is not sufficient merely to keep the property that you have in good condition, because, primarily, of the changes in the art. The first thing you know somebody makes an improvement in a car or in an electrical-developing machinery, etc., and if you could have the advantage of those improvements you could improve your service and at the same time conduct it at less cost, and the only way in which you can be in a position to take advantage of the development of the art is to have a depreciation fund, so that you can replace your property when you need and ought to replace it in the public interest; and the results, I think, to the public will be better, because instead of having old, antiquated and obsolete equipment they will have new and modern equipment, which will give them better service and also give it at less cost.

I should want to point out further to the public, very clearly, the inroads which have been made by automobile competition. There is no doubt whatever that that has been a very important factor in decreasing the revenue of street-railway companies all over the country, and particularly in the country districts, although it has also operated in the cities. No one can see the number of automobiles which operate here in the city of Washington, for instance, without realizing the effect which that must have upon street-railway revenues.

Commissioner MAHON. Was there ever any estimate of that made in Massachusetts, Mr. Eastman—in Boston or any of those cities?

Mr. EASTMAN. No; only in a very indirect way, by showing the increase in the number of automobiles per capita, as I recall it. Isn't it true that that is the only way in which the matter has been approached, Mr. Warren?

Mr. WARREN. We had an estimate in Springfield as to how much the jitneys have taken from the Springfield Street Railway, assuming that the jitney passengers would ride in the cars if they did not ride in the jitneys. The estimates vary from \$200,000 to \$300,000 a year, because of the varying number of the jitneys. When the weather is bad they do not run, and when the weather is good they do run; so that it is a little difficult to estimate; but from \$500 to \$1,000 a day is the estimate of the street-railway officials.

Commissioner MAHON. I saw a statement published in the Boston papers at one time, and I wondered whether that was authentic, or whether it was just an estimate setting forth the effect upon the city of Boston of the automobile upon the owners and those who incidentally rode with them, showing the effect of the automobile; and also of the automobile picking up certain passengers every day. I lost the article. I had clipped it, and in some way lost it. I wondered if Mr. Eastman knew anything about it, or if there was any investigation made of that by the State commission.

Mr. EASTMAN. There was never any investigation made by the commission, and I think it would be a pretty difficult one to make. I do not know just how you could go about it, except to show the increase which has taken place in the number of automobiles owned in the State.

Mr. WARREN. That was about 1 to 16 people, I think.

Mr. EASTMAN. It is growing all the time.

Now, having laid that foundation, I think the next thing that I should want to do is to make clear, both to the owners and managers of the companies and to their employees, and also to the public the very broad opportunities which exist for improving service in ways that will result in substantial economy and also add to traffic and revenue.

I think there are very great opportunities, or at least, very substantial opportunities which exist in that respect. We went into that in Massachusetts to a considerable extent. We employed experts to examine into the operations of the properties and suggest ways and means by which they could be improved. I believe that you have had evidence upon all those matters. I can summarize at the present time simply by saying that they consist, first, of means of conserving labor by increasing the mileage of the cars per hour in various ways, such as the skip-stop plan, improved motors, better acceleration and deceleration, decrease in the number of layovers, and all those various means of making the car do more work in a given hour, and thus conserving labor.

Second, by the introduction of trailers, which are really one-man cars, and conserve labor in that way; by the introduction of one-man cars of proper type, which we laid a great deal of emphasis upon in the Public Service Commission of Massachusetts; and by properly located and equipped car houses and shops. Those are all means of conserving labor. Then you have means of conserving power, by lighter cars, by adequate feeders, and by various power-measuring devices, which helps the motorman to use power more economically.

Then you have means of conserving property—and these, I think, are very important—by proper maintenance of tracks and cars. So long as you have properties where the cars are bumping along over poor joints and poor rails, and where the cars themselves are in poor condition, you not only increase the expense of operation and the necessity for repairs, but, at the same time, you decrease the respect for property on the part of the public. Nobody can be very friendly to a property which is giving poor service and does not look as though it were in good condition—that looks as though it were nearing the end of its existence.

In the final place, there are means of conserving revenue, such as various fare-registration devices, fare boxes, and reduction in the misuse of transfers.

Then, in addition to the means of conserving expense, you have the means of attracting traffic and revenue by giving good service, with attractive and efficient equipment, by courteous treatment of the public on the part of the employees, by the development of subsidiary services, such as freight and express traffic and, possibly, the sale of power.

All of these matters, I have no doubt, have been gone into before this commission. I think you ought to lay stress upon them.

In this connection, I think I should point out to the owners and managers the need for enterprise in these directions. When they are faced by the necessity of getting greater net revenue the tendency is to rely too much upon increasing fares and to forget or neglect,

for the time being, these other means of improving their situation. We found that to be the case in Massachusetts.

In the next place, I think you ought to point out very clearly to the employees the great need for cooperation and moderation. They are working for a sick industry. It is absolutely essential that the situation should be worked out and that that sickness should be cured; and no one has a greater interest in the recovery of the patient than they have. It is in the employees' interest, just as much as it is in the public interest, that every possible means should be adopted of saving expense and attracting revenue and traffic to the company; and they can do that. I need only point out the importance of such things as patient and courteous treatment of the public and also the proper handling of equipment.

I want to say this, also: I believe very thoroughly in recognizing and dealing with organizations of the men. I think that that can be utilized to great advantage through committees which deal with such matters as service, safety of operation and efficiency of operation and discipline; and I also think, in many cases, it would be an advantage to give them direct representation upon the management.

I think you also ought to point out to them that the situation is very delicate, and that it may endanger their own best interests, as well as the interests of the public, and alienate public sympathy at this time if, in this crisis of the industry, they are guilty of hot-headed, intemperate, or extreme action. In other words, they must realize, as I said before, that they are working for a sick industry, and cooperate along with the public and the owners of the property to help cure that sickness and put the industry upon a basis where it will really do what it ought to do. If they do not do that they are very likely not only to injure the interests of the public but at the same time to injure their own.

In the same connection, I think you ought to point out to the public the need for cooperation upon their part. A great many of these means of reducing expense which I have suggested depend upon the cooperation of the public—in the loading and the unloading of the cars, for instance; in the suffering of minor inconveniences for the sake of getting larger benefits, for instance; in acceding to the establishment of skip-stops, which results in a minor way to the disadvantage of some of the travelers, but, on the whole, improves the service for the entire public—and in that connection I can point out also the need for proper traffic regulations, keeping the ordinary vehicular traffic off the car tracks, in order that the companies may operate upon the best kind of schedule.

In the same connection, you ought to point out to them the great danger of encouraging jitney competition, because if they are going to encourage a rival, competing form of industry, it may be so much the more difficult for this essential industry to get on its feet again. So much for that.

Coming to the final point—I really think it is the vital point: You ought to make clear the essential need of adjusting conditions so that necessary supplies of capital can be secured. It is absolutely vital to many of the improvements which I have suggested that capital should be available, so that the improved equipment and apparatus can be bought, and, apart from those improvements,

it is equally vital, so far as the extensions and developments of the properties in the future are concerned. No property can go on operating in a growing city unless it has the ready means of securing needed capital.

There are only two possible policies that I can see of accomplishing that end. One is to support, strengthen, and use the credit of the private corporation. The other is to rely upon public credit.

If private credit is used, it is obvious that the companies must be placed in a position to market their common stock. You can not depend for any length of time upon the issuance of bonds. If you increase the debt of the company out of proportion to its capital stock, you soon get to a time when its credit automatically ends and new issues of capital stock are necessary to support its credit, so that it is absolutely necessary, if you are going to depend upon private credit, to place the companies in a position where they can market common stock.

I am not familiar with the situation in other parts of the country than Massachusetts. There may be situations—I think there are—where you can depend upon private credit. Apparently the Cleveland situation is one of those, although I noticed in yesterday morning's paper that they are saying that they have got to have 7 per cent instead of 6 per cent upon their stock up there, and their expert, Mr. Mortimer E. Cooley, says that in other cities than Cleveland it would require 8 to 10 per cent stock to finance the street-car companies.

There may be, however, situations like Cleveland, where, without any change in conditions, you can go on and depend upon private credit. In most other cases, or in a great many other cases, if you are going to depend upon private credit, I think it will be necessary to reorganize the properties, to get them on the same basis as the Cleveland property. I do not see how you are going to depend upon private credit in the case of an overcapitalized company under present conditions. You could not expect the public, certainly to make good their watered stock or the results of inexcusably bad management in the past.

So, if you depend upon private credit in those cases, you are faced by the necessity for some form of reorganization, I think; and even then you may not accomplish what you want to accomplish, because the results of these increases in fares have shown they do not always produce the results that they are expected to produce. The earnings are not high enough to support the credit of even a conservatively capitalized company, in many cases, and, even if the earnings were better, I am still afraid that the credit would be poor, because street railways have apparently ceased to be an attractive field for private investment. The investors are afraid of street-railway securities. They are afraid because of their experience in the past, and I think they are also afraid because of their fear of what may possibly happen in the future. They are in doubt, for instance, in regard to the possibilities of automobile competition and labor complications.

If you do not depend upon private credit, the only alternative that you have is some form of public ownership.

I regret very much that the discussion of the question of public ownership has so often been enshrouded in a veil of prejudice—prejudice on both sides.

It seems to me that too often one side regards public ownership as an unmitigated evil, and forerunner of socialism, bolshevism, and various other evil things that may happen, and, on the other side, it is regarded as a cureall, or panacea for all the ills of humanity. Between two opposing points of view of that sort, of course, we can have no sane discussion of the question.

It seems to me that in the present instance the question ought to be approached in this way: Here is an industry which is essential and vital to the development and growth of the community. It is performing a public function which has got to be performed. Now, if the industry has ceased to be a field for private investment, obviously the only alternative that you have is some form of public ownership; and instead of denouncing that possible remedy and dismissing it as the breeder of all sorts of evils, you ought, instead, to attempt to analyze the dangers which may possibly inhere in it, and attempt to find some remedy for those dangers.

I am by no means convinced that it is impossible to find such remedies. I am stating that mildly. I am of the opinion that they can be found, and I am of that opinion because of this saving factor: That street-railway service is so important to every element in the community, not only to the general public but also to the business interests; it is essential that it should be operated efficiently and economically, even more essential to the community at large than it is to the owners of securities in the private corporations, because they can often get their return by increasing rates rather than by efficient and economical operation.

Under those circumstances there are various safeguards in the situation. One is voluntary action on the part of public-spirited citizens. I can cite as illustrating that the case of the public schools. It is essential to the welfare of the community that the public schools, for instance, should be kept out of politics; and in Boston a group of public-spirited men got together and formed a Public School Association, and they proceeded to follow those schools, follow them in the elections, and follow them outside of the elections; and I think it is the general opinion that they have been quite successful in keeping the schools out of politics. In fact, the chief complaint, so far as I know, in regard to the Boston schools, is that they have come too largely into the control of what the ordinary voter regards as a high-brow, and that they are devoted too much to fads and fancies. That is the ordinary criticism which is made of them.

The same thing is true of the fire departments. It is essential to the business interests of the community that the fire departments should be efficiently conducted, and that when a fire occurs, they should be able to dispose of it in an efficient way. I think we will all agree that our fire departments in the cities are, on the whole, very efficiently handled, and that they do the service which they are called upon to furnish. I think that voluntary action of that sort can be a great safeguard; but apart from that, you have the possibility of introducing directly into the management representa-

tives of the various elements in the community who are interested in good service.

Public ownership does not necessarily mean public operation, if you do not want to have public operation. Personally I do not fear it. But if you have public ownership it is entirely within your power to say that you will delegate your management to certain groups of citizens who are not under the control of politics. You may say that the management shall be in the hands of chambers of commerce or improvement associations or labor unions or various other representatives of the community. There are all sorts of possibilities, in other words, which ought to be considered and given constructive thought which bear upon the possibility of avoiding the dangers which are believed to be inherent in some form of public operation.

And in that connection I think I ought to say this: That if public ownership is to be adopted in any community I think it is essential that the public should not be misled by any glamour or false hopes in regard to what may happen. In other words, they should not be given the impression that a millenium is going to take place if they receive public ownership, but that a situation will be created where good service and good management can only be brought about by vigilance and cooperation on the part of all the members of the general public as well as particular elements in that community.

And I think also it is highly desirable if public ownership is to be adopted in any particular case that it should be supported, or the experiment should be undertaken after a vote of the public, so that they will be behind it from the start, and can not say that here are some interested parties who have been trying to put over on us some experiment and we do not like it and are not going to support it or cooperate in it.

If you get them directly behind the experiment at the start by a vote, the chances of success are very much greater.

Commissioner WEHLE. I am compelled to leave for a little while on account of an important engagement, a meeting at the Treasury Department, and I hope you will excuse me. I hope to be back here before you conclude your testimony.

Mr. EASTMAN. Yes. I am almost through. The final thing I was going to suggest is that there is another advantage, or possible advantage, in some form of public ownership apart from the question of credit, and that is you are not entirely dependent, as you are in the case of private credit, upon the earnings of the property. In the case of private credit you are absolutely dependent and have got to make the earnings in some way sufficient to support the credit, and if you can not do that your problem is simpler.

Now, in the case of public ownership, you are not under that same necessity. As a general rule, I think, it is eminently sound policy to make such properties under public control pay their own way out of their own resources, but you may be faced, in the case of street railways, by a situation where it is in the public's interest to carry at least a part of the expenses in another way. In other words, if you find your fares going up to a point where they are decreasing the utility of the properties and also endangering the public welfare by concentrating the population in the thickly settled centers and by

cutting down service and cutting down revenues at the same time, it may be very well that it will be to the interest of all concerned that a part of that expense should be carried with tax levy.

I am not dogmatic about that. The matter was discussed and the possibilities in that connection were discussed rather fully in the last annual report of the Public Service Commission of Massachusetts, and I have no settled and positive conclusions upon that subject.

The CHAIRMAN. Can you call attention to the part or page of the report?

Mr. EASTMAN. It starts on page 22, in Roman type, and ends on page 48. As I say, I am not dogmatic about that, but it is a possibility that deserves very serious consideration. It is a good deal like the case of the old highways in Massachusetts. There was a time in the first part of the century where companies were chartered, and a great many of them, to build toll roads throughout Massachusetts; and beginning at Boston as the center of the hub they extended out in great lines to various populous cities in the eastern part of the State, and they were built by private capital, and they charged a toll for the right to use those highways. But the experiment was unsuccessful and could not be supported in that way, and they were finally taken over by the entire community, and they are now operated without any revenue of their own at all, and entirely by the tax levy.

That is not what I am suggesting here. I am suggesting that it may be advisable in this case to secure the best net results to all concerned that a part of the cost should be based upon the tax levy, and you can do that under public ownership and can not do it under any form of private ownership.

I think that is all I have to say. I regret that I can not go into it any more thoroughly.

Mr. WARREN. Before you begin to question Mr. Eastman I want to say a word about the Springfield system of fares, as I think it will interest Mr. Eastman. The system which was put in there, and under approval of our public-service commission, when Mr. Eastman was on the commission, did result in a very satisfactory increase of fares, but it only had about a month to operate before wages were increased about 25 per cent under an arbitration award. Then it became necessary, I think while Mr. Eastman was still there, to ask for a further increase in rates, which was made, and that produced a very satisfactory increase in revenue, and that has been operating up to the present time.

There has recently been another arbitration award with a 32 per cent increase in wages, and there is now pending a third application for an increase in rates.

I mention this because I was very much interested in the outcome, as Mr. Eastman probably remembers, and I felt it might solve the problem for that company, and apparently it has. Whether we can raise again and get the necessary net revenue, of course, is a puzzle, but it has—

Mr. EASTMAN. It was necessary to abandon the 5-cent unit?

Mr. WARREN. Oh, yes; we had to abandon the 5-cent unit. We had to go to 6 cents, and now we are proposing to go to 7.

Mr. EASTMAN. And when you say the results are satisfactory, you do not mean that you are earning what you think you ought to earn in that property, do you?

Mr. WARREN. We would like to earn more, but I think we were earning enough on the 6-cent rate to have paid a dividend if we had not been embarrassed by the credit situation. We found if we paid a dividend, which we should have liked to do to restore our credit with security holders, that our banks which held our short-term paper would have objected and called upon us to pay the short-term paper. That was a dilemma which was a very serious one.

The CHAIRMAN. How was the stock exchanged when these consolidations were made between the strong and weak line?

Mr. EASTMAN. It was exchanged on a share-for-share basis. Sometimes in a single case—I can illustrate perhaps the process by one company. The Holyoke company was connected with a small line called the Amherst & Sunderland, which operated out in the country districts, built originally by the farmers. Now, the men who held the stock of the Holyoke company went out and bought the stock of that Amherst & Sunderland Co., which had no hope of success, I think, at about 50 cents on the dollar or less.

At the time when they were buying it the Holyoke stock was worth between \$150 and \$200 per share. And they proceeded to exchange each one of these shares of Amherst & Sunderland stock for a share of Holyoke stock.

Now, in other cases the process was not quite so simple as that. In the case of the Bay State consolidation a great many different companies were acquired, and through the medium of a holding company then, the name of one of them was changed and they were all consolidated with that upon a share-for-share basis.

In other words, for an outstanding share in one of the companies the holder received a share of this company with its name changed.

The CHAIRMAN. Where the stock of the weaker lines was exchanged for the stock of the Holyoke system, selling for \$150, what did the Holyoke stock sell for after the consolidation?

Mr. EASTMAN. Well, immediately after, at about the same price.

The CHAIRMAN. One hundred and fifty dollars?

Mr. EASTMAN. Yes. Of course, this was not a large line, and compared to the Holyoke company it represented a very small increase in capitalization; but it had the effect of impairing the financial strength of that company as times grew worse and, to an extent, is one of the reasons for the later difficulties of the Holyoke company.

Now, that particular company, I think, only acquired one or two lines of that character. But in the case of other companies there were many more of those mergers or consolidations.

The CHAIRMAN. Did that consolidation enable the purchaser of the cheap stock to sell it at an increase of 200 per cent?

Mr. EASTMAN. Yes; it did. I have not figured out the percentage, but it certainly enabled him to make a substantial profit on the transaction.

The CHAIRMAN. My percentage was simply based upon the figures you presented.

Mr. EASTMAN. Yes.

The CHAIRMAN. Was that a common method of consolidation in that State?

Mr. EASTMAN. The share-for-share basis?

The CHAIRMAN. Yes.

Mr. EASTMAN. Practically all were made on that basis.

The CHAIRMAN. Did that develop the feeling in the community that these consolidations were being made simply for promotion or speculation purposes?

Mr. EASTMAN. Not at the time they were made. In fact, there were hearings at the time they were made and no public objection, in most instances, were offered to the merger. I ought to say this: It was thought at the time when many of them were brought about that the consolidation would result in economies, improved service, and lower fares—

The CHAIRMAN. I was coming to that.

Mr. EASTMAN. And to a certain extent it did result in lower fares. Some of the people on these lines were given more advantageous fares when they were linked up with the larger company than they had before.

So far as the economies are concerned, I do not think they worked out. I think the Union Co., which stayed by itself and is a small company, has been able to operate more economically than the Bay State, which spread all over eastern Massachusetts.

The CHAIRMAN. Broadly speaking, was that consolidation in the interests of the public?

Mr. EASTMAN. Looking back on the situation, I should say that it was not. I do not know that I would have the foresight to say that at the time those were made; I was not around at that time; but looking back, with my present knowledge, I should say not.

The CHAIRMAN. Is your answer based upon the thought that smaller companies would have been able to meet the present operating conditions with greater economy and simplicity than a larger organization?

Mr. EASTMAN. Well, what would have happened to the smaller companies is what happened to some of them who were not taken in with some stronger company: They would have gone into the receiver's hands and been reorganized and either operated independently on a shrunken basis or been bought over by some stronger company at a depreciated value.

The CHAIRMAN. You have had quite a little experience with the zone system; and your testimony shows that your zones have been narrowed and extended and expanded, and in some cases abandoned, I believe. Generally speaking, do you believe that a zone system is a proper system?

Mr. EASTMAN. Well, that is a very difficult question. As I say, I at first was very much attracted by the theory of the zone system. It seemed to me it made the rider pay in proportion to what he got, and it also enabled the company to attract the short-distance rider. And if you had originally started on that basis, I think in all probability it would be a proper system to adopt in this country, just as they have done in Great Britain, for example.

But when a community has grown up on the other basis, it undoubtedly causes a serious dislocation in many cases by suddenly changing the system from a flat-fare system to a zone system, so that some people will still retain their 5-cent fare and others will have to pay a much higher fare. And it was my experience that the introduction of the zone system caused more irritation on the whole than a flat increase in fare.

The CHAIRMAN. Did that irritation continue for a long time?

Mr. EASTMAN. Well, of course, a good many of the things, relatively speaking, have not been in operation very long.

The CHAIRMAN. Has the system been in operation long enough to enable you to form a judgment as to whether it tends to decentralize a community or scatter industries over larger areas?

Mr. EASTMAN. No; I do not think that I have any very positive information on that subject. I suggested to the Commission of Massachusetts which is now investigating the street-railway situation that they should endeavor to collect all the direct and positive information that they could in regard to the effect of the higher fares. I saw in one of the Boston papers the other day that the 10-cent fare there is causing a great demand for tenements and lodging within walking distance of the central districts and that the demand is much greater than the supply. I was told in some of the cases of the Bay State cities—and I think it was Lynn—that an investigation was made after the establishment of the zone system, and it was found that houses and apartments could be easily secured outside the central district, but that within the central district the demand was much greater than the supply there, showing the tendency of population to move inward.

Mr. WARREN. Where was that?

Mr. EASTMAN. Lynn. But I do not think the experience has been sufficient at the present time to do anything more than to raise the possibility of danger in that respect. In other words, it is no positive proof.

The CHAIRMAN. Do you regard a zone fare as still in the experimental stage in this country?

Mr. EASTMAN. I should say so.

The CHAIRMAN. You were discussing the holding companies, and you mentioned that as one of the weaknesses of the Massachusetts system. To what extent is a holding company a weakness in the system of operation?

Mr. EASTMAN. Well, I think it is a weakness in this way—where the securities of the holding company are issued on an inflated basis, as they were in Massachusetts, that two things result:

In the first place, there is a tendency to draw from the underlying companies every possible cent which you can, in order to make a showing on these inflated; and, outside of that, there was in Massachusetts a very deep-seated tendency to mislead investors. For instance, I have known of investors who bought preferred shares of the Massachusetts Electric Co., which was the holding company which controlled the Bay State, and they were under the impression that they were buying preferred stock of the street-railway company, whereas the preferred shares of that holding company were no better than the common stock in the underlying company. Now, when they are disillusionized by their experience, that all tends to injure the credit of street-railway companies.

The CHAIRMAN. Have you reached a conclusion as to whether street-car fares ought to be fixed by a franchise or open to change to meet operating conditions?

Mr. EASTMAN. I think they ought to be open to change. I think any contracts—and I am sure I am on record on this before my

present experience—that any contract with a public utility is bound to be a one-sided contract. If that fare or the charge, or whatever it may be, proves high and advantageous to the public utility the public will never be able to secure any reduction. In other words, the utility will insist upon the advantage of that contract.

Now, when the situation is reversed and the fare or charge becomes too low to properly support the company, the public is faced by the alternative of either insisting upon its contract or having poor service or releasing the company from its contract.

The CHAIRMAN. With reference to the regulation of these corporations, have you an opinion as to whether that should be by the municipality or by the State, or whether there should be some form of cooperation between the two?

Mr. EASTMAN. Now you are touching upon a question which I think has been a much more prominent question in other parts of the country than it has in Massachusetts. Our companies, almost all of them, spread beyond—I think all of them spread beyond the bounds of any one municipality. They operate, usually, in a considerable number of different municipalities. In such a case as that it is obvious that the State has got to be the regulating factor, and you can not depend upon local control. But there may be situations in other parts of the country, I do not know, where companies are wholly city companies, operating within city limits, and where the city can deal with the situation quite as well as the State can.

The CHAIRMAN. Well, take your own State, where a company spreads over a good many communities, should there be any control by the municipalities and, if so, what, as to service of places of stops and the speed and extensions of line?

Mr. EASTMAN. Well, as a matter of fact, there has been no control over those matters in Massachusetts, except so far as they attempted to exercise it when they granted locations, and, for the most part, the courts have decided in Massachusetts that those obligations were not binding as against the State, since the municipality was acting merely as the agent of the State.

The CHAIRMAN. Is there a demand for home rule in your State?

Mr. EASTMAN. There has been a demand for home rule in the case of a company like the Bay State. One of the most difficult questions with which we had to deal in considering the affairs of that company was in deciding whether we ought to base the fares upon the results of operation of the system as a whole or upon the results of operation in some one community.

The people of Brockton or Lynn, for instance, would say: "Now, the figures show that our service is making a pretty good return to the company, and if we were all that there was to the system, it would not be necessary to increase the fares. Now, under those circumstances it is not fair that we should be penalized merely because the company has taken over a lot of other properties which can not support themselves." And there has been a feeling in Massachusetts that instead of regarding the company as a unit, each particular unit ought to be given the advantage of their own favorable conditions. I believe the trustees of the Bay State at the present time are trying to do that to some degree, and they are also giving

the local communities a voice in the management of the property—I mean in the service which is being afforded.

The CHAIRMAN. Is the demand for home rule growing or diminishing in your State?

Mr. EASTMAN. At the time when I left there I should not say that there was any great demand for home rule. There may be now, but I doubt it, except in the respect which I have suggested, that they think fares ought to be based upon local conditions.

The CHAIRMAN. You commented somewhat upon public ownership of these properties. When you refer to public ownership of such a system as the Bay State, do you mean that that should be by the State or by the municipalities?

Mr. EASTMAN. Oh, it would have to be by the State in that case.

The CHAIRMAN. So there would be no such thing as municipal ownership of the Bay State plant?

Mr. EASTMAN. It would not be possible.

The CHAIRMAN. Would it be practicable to apply municipal ownership to any system which spreads through several communities?

Mr. EASTMAN. I should not think it would be.

The CHAIRMAN. Then it would mean that the State would be required to take over a property that may be serving but a small part of the State?

Mr. EASTMAN. Yes; but the State can arrange matters so that the benefit or burden will fall upon the particular municipalities that are interested. As a matter of fact, that was done in Massachusetts when the Metropolitan Water and Sewer Board was formed. For instance, the Metropolitan Water and Sewer Service supplies a number of communities surrounding Boston, including Boston; and in some manner which I can not tell you the details of, it is so arranged that the burden of that system falls pro rata upon those municipalities and not on the State as a whole.

The CHAIRMAN. From your study of this situation, have you reached the conclusion that either municipal or State ownership presents the real solution of the problem?

Mr. EASTMAN. I think, as I said already, there may be cases where you can work the situation out satisfactorily without it, and if affairs are going along in a satisfactory way I see no occasion to change them. In Cleveland for instance, the people are apparently satisfied with what they have, and the experiment which they undertook has developed satisfactorily. Under those conditions I see no reason to change.

The CHAIRMAN. There have been but two experiments of municipal ownership of street-railway plants in this country, have there not?

Mr. EASTMAN. I believe there have.

The CHAIRMAN. Do you believe the experiments have been continued over long enough period and are sufficiently numerous to justify this commission in recommending municipal ownership as the solution?

Mr. EASTMAN. If you are going to base it on the results of experience, I do not think you have sufficient evidence in this country to justify a recommendation. My only suggestion would be that if you advocate it that you base it upon the ground that that is the only way of meeting the situation which has got to be met, and that the

thing for the public and those interested to do is to get together and see that that plan is successful, and I believe that they can make it successful.

The CHAIRMAN. Have you made a study of what is known as the cost-of-service plan as they have it in Cleveland or in Cincinnati?

Mr. EASTMAN. To some extent. We have the general service-at-cost plan in Massachusetts.

The CHAIRMAN. What do you think of that plan?

Mr. EASTMAN. I think under certain circumstances it may work very satisfactorily. It apparently has worked well in Cleveland, and I believe it has worked well in Dallas, and possibly in Des Moines and certain other places.

I think it is liable to work well where it is the result of mutual agreement between the local people and the owners of the property, and is not forced upon them by some agency like a State government. In other words, where it is the result of a mutual feeling and a meeting of minds of those most vitally interested, and it is also likely to be successful where the fares vary around 5 cents. When you get to a situation where the cost of service leads to fares higher than 5 cents, you are running into great danger, because it is very apt, if you base it upon a flexible rule—you keep fares mounting up indefinitely without any real advantage to anyone. One of the difficulties in raising fares is that once you have them raised it is almost impossible to reduce them, if they do not produce the results desired.

The CHAIRMAN. Do you believe that a municipality or a State should subsidize, through taxation, a privately operated and privately owned corporation?

Mr. EASTMAN. I should not recommend that.

The CHAIRMAN. What is the objection to it?

Mr. EASTMAN. I think that that is a very dangerous principle and an undesirable one. If the State is going to lend its resources to the aid of any industry, it should have complete control over the situation. If it does not, it runs the risk that it will have to meet deficits which may be due to the bad management, or worse, of men over whose appointment and conduct in office it has no control.

The CHAIRMAN. I have no further questions.

Mr. BEASLEY. I would like to ask a question of this very intelligent witness.

The CHAIRMAN. What is your name?

Mr. BEASLEY. C. Oscar Beasley.

The CHAIRMAN. Where are you from?

Mr. BEASLEY. From Philadelphia. I would like to know if Philadelphia could get a little light from this very intelligent witness on one point.

The CHAIRMAN. Whom do you represent?

Mr. BEASLEY. I represent the United Business Men's Association, of Philadelphia, an association of citizens.

The CHAIRMAN. I would prefer to ask Mr. Eastman if he wishes to answer any questions.

Mr. EASTMAN. I have no objection, if I can answer them.

The CHAIRMAN. I have to leave for a few minutes, and I will ask Mr. Sweet to take the chair.

Commissioner SWEET. I understand you wish to ask one question, now?

Mr. BEASLEY. I want to ask what they did with excessive rentals to an underlying company, in the form of leases, if they had any such situation there.

Commissioner SWEET. Yes. I believe they had. You may answer that, if you like, Mr. Commissioner.

Mr. EASTMAN. We had only one situation which resembled that. Most of the mergers of properties, combinations of properties, were brought about in Massachusetts through direct consolidation, so far as street-railway companies are concerned.

The only important case of a lease that I know of is where the Boston Elevated Railway Co. leased the West End Street Railway Co. That property was leased upon terms which were approved, after a good deal of public discussion, by the board of railroad commissioners. It was leased upon the basis of dividends which would now seem high. The preferred stock, of which there is a comparatively small amount outstanding, was permitted to pay 8 per cent dividends. The common stock was permitted to pay 7 per cent dividends. In reality, however, those dividends are not so high as would appear from that mere statement, because since the lease was made in 1897, a great deal of additional West End stock has been issued, and under the State law it has been issued at the market value: in other words, in some cases, I think, it was issued on a 3-and-a-fraction per cent basis, and those premiums which were paid in on the issue of new stock have tended to cause the 7 per cent dividend in reality to be a considerably lower percentage upon the actual money contributed at the time of the issuance of the stock.

Commissioner SWEET. Are you willing, Mr. Eastman, to express an opinion on a case such as they have in Philadelphia?

Mr. BEASLEY. Seventy-one per cent some of our companies get—

Commissioner SWEET. The situation there is different from anything, I think, that could have existed in Massachusetts.

The Philadelphia Rapid Transit Co. has been shown by evidence presented to us to be now leasing a great many small lines at a rental price that is far beyond anything that is reasonable, that is based upon watered stock of these small companies, and contracts that were made for a long period at prices that are away out of sight.

Now, the public object, naturally, to paying returns upon that sort of thing and have protested against it. Can you suggest any means of relief, anything that ought, under the circumstances, to be done?

Mr. EASTMAN. That brings up what I think is one of the most difficult problems in public regulation. Supposing a State commission has before it a company, and after investigating its affairs it finds out that its stock is watered, or that it has made a lot of improvident leases, such as you have described. It is perfectly justified—in fact, it ought to say that the public should not be required to pay a fare which is higher than it otherwise would be on account of this exploitation which has taken place in the past. But the minute you do that you can not avoid having an effect on the credit of the company. The minute you make allowances for a situation of that sort, you impair the credit of the company.

The only answer to it is that in such cases there must be a reorganization, in order to place the affairs of the company on a satisfactory basis. Just how you can bring about such a reorganization I don't know; but that is one of the dilemmas of public regulation.

Commissioner SWEET. This is all by contract relation between the company, the lessor and the lessee, and the public are getting the worst of it.

Mr. BEASLEY. That is what I came here to try to talk to—

Commissioner SWEET. And now the question is how the public is going to get any substantial remedy.

Mr. EASTMAN. Sometimes the company can maintain its credit by various devices, even where the return it is allowed is not sufficient to produce a yield upon its common stock. They can issue preferred stock of various descriptions; they can issue convertible debentures, etc.; but those are really temporizing with the situation; and I believe the credit of no company will ultimately be sound unless it is in a position to pay a return on its common stock.

Commissioner SWEET. You do not, of course, recommend that a company fail to keep its contract? That is, this present company, the Philadelphia Rapid Transit Co.—in most respects that company is doing wonderfully well apparently; but here is this great burden, and the question seems to me to be a very difficult one as to how to get out from under it.

Mr. EASTMAN. I think a commission which is under the duty of prescribing just and reasonable fares should take into consideration a situation of that kind, and should make the necessary allowances so that no burden will be imposed upon the public.

The results of that may be unfavorable so far as the question of credit is concerned, but I do not see any escape from it.

Commissioner SWEET. Of course, you may not be familiar any more than I am with the laws of Pennsylvania in all respects, but ordinarily would you think that the public-service commission could in any way exercise control over this leasing of these small companies that own the little properties and lease them?

Mr. EASTMAN. You mean whether it could disturb those leases now?

Commissioner SWEET. Yes.

Mr. EASTMAN. And set them aside?

Commissioner SWEET. Yes. They are not operating them, you see. The public-service commission would have no jurisdiction over a question of that kind, would it?

Mr. EASTMAN. I should not think it would have any authority to disturb those leases, but it can say that, if the company has seen fit to make a lease at a rental which is exorbitant, more than it ought to pay, its stockholders shall bear the burden and not the public.

Mr. BEASLEY. That is punishing the innocent for the sake of the guilty?

Mr. EASTMAN. The public are innocent, too.

Commissioner SWEET. May there not be a remedy, Mr. Eastman, in some practical way—that is, not by legislation, but by building parallel lines, or something of that kind that would—no; that would not do. I give it up.

Mr. EASTMAN. I do not know. You may have ground there in Philadelphia for setting aside some of the leases on the ground of fraud. I do not know anything about that local situation.

Commissioner SWEET. I think we will have to pass beyond that. I believe that is all that we can say that will help you, Mr. Beasley.

Mr. BEASLEY. I have something to suggest, in addition to what was said.

Commissioner SWEET. We will listen to that if you want to give it to us later on.

Now, Mr. Eastman, I want to ask a few questions about public ownership. It seems to me that is a very important part of the problem before us.

You have stated that it is your view that the companies are in such shape, many of them, in the United States at the present time, that it is going to be a matter of exceedingly great difficulty to restore their credit, and that without restored credit betterments in conditions can hardly be expected; they must be able to get in new funds in order to keep up their present systems and extend them as the needs of the various communities require. If they can not, as you say, sell their stock—if that is not marketable—of course there is a limit, as you have stated, to the amount of bonds that can be disposed of; but if they can not sell stock or bonds they practically are out of business, are they not, as far as permanent organizations for the benefit of the communities are concerned? I think you have stated, as your idea, that the only recourse then is to public ownership and operation or public ownership and private operation. Now, would you liken the street railroad in its relation to the public somewhat to the water supply of a city? I think you did make some allusion to that. I did not quite understand it.

Mr. EASTMAN. They both perform a public function, and they both are monopolistic in character. There was a time when private water companies were very common in Massachusetts. They are in some parts of the country now. In Massachusetts they have practically all been taken over by the cities.

Commissioner SWEET. As you view it, they would be similar in another respect, and that is that an income is expected to be obtained by the municipality from each?

Mr. EASTMAN. As a rule that is so; yes.

Commissioner SWEET. Two witnesses, at least, have been before the commission to urge that the municipalities should own street railroads and charge nothing whatever for the service—let everybody ride free. Would you recommend a plan of that kind?

Mr. EASTMAN. I do not recommend that. I think you can make a rather plausible argument in favor of it, but I do not recommend it at the present time. No, sir; I think it is desirable that you should get all that you can get from the riders on the cars, consistent with the best interests of the entire community.

Commissioner SWEET. Is the theory upon which you would go, in regard to water supply and street-railroad service, that it should be on something of a cooperative basis, in the sense that the city should not make any profit whatever, and should attend to the duties of ownership or operation, as the case may be, in either case at mere cost?

Mr. EASTMAN. You include in cost the interest upon what it has to pay for the properties?

Commissioner SWEET. Certainly. In either case.

Mr. EASTMAN. I will say this: That if the situation should change so that a 5-cent fare would produce a profit, it might well be good policy for the city to retain whatever profit it could make on that fare, or it might decide to reduce the fare. It could do either one in a perfectly consistent way.

Commissioner SWEET. Speaking generally, however, would you consider that either in the case of water or of street-railroad service the city ought to charge any more than the actual cost?

Mr. EASTMAN. No; I should not say so.

Commissioner SWEET. If it did, it would be imposing upon the water user in the one case or the car rider in the other an obligation that ought to be borne by the whole community, would it not?

Mr. EASTMAN. It would be taxing them indirectly.

Commissioner SWEET. That is what it would amount to. There is a very decided distinction in either case of that kind between the people who contribute, particularly in the case of water supply, to the upkeep of the water system and the community as a whole, is there not?

Mr. EASTMAN. I should think so.

Commissioner SWEET. For instance, take the case of water used in parks or cemeteries for the general good of the whole public. Would you not think that a proper arrangement in a city would be for the commission that has charge of the parks and cemeteries to pay to the board of public works, for instance, if that furnishes the water, the same as if the parks and cemeteries were a private customer? So that that cost might be spread over the entire community, and the price charged by the board of public works to the water consumers might be such as would be consistent with the service?

Mr. EASTMAN. I think that is largely a question of expediency. The cost has got to be met in some way.

Commissioner SWEET. Does it not also involve the question of fairness? Take the matter of fire hydrants: Don't you think that for fire service the entire community which is benefited by it ought to pay it by taxation, rather than that part of the community that we may call the customers of the water system?—because they are not necessarily all customers. Isn't that true?

Mr. EASTMAN. I should think so.

Commissioner SWEET. Looking at it as a matter of justice between one part of the community and another, is not the same kind of a question involved in the paving between the tracks of street railroads, as practiced at the present time? Are we not exacting from the car rider a service that ought to be performed by the entire community?

Mr. EASTMAN. I think you are. There is something to be said on the other side of that question, because while the situation is not now as it was when the practice originated—that is to say, it originated at a time when horse cars used to wear down the pavement—at the same time, I think it is true that the presence of street-railway tracks in the street increases the expense of paving. The paving is more apt to wear out quicker in streets where there are street-railway

tracks than when they are absent. So that the presence of the street-railway tracks in the street does impose some extra burden upon the paving cost. It is very difficult to measure that, and under present conditions, faced by the plight of the street railways at the present time, I think it is entirely desirable that that expense should be met by the entire community, rather than by the car riders.

Commissioner SWEET. But, in any case, would you not consider it a matter of justice, as between that part of the community, the riding part of the community, and the balance of the community, or the community as a whole, if the street-railroad company—which, of course, has no funds except what it gets from the street-railroad riders—should not be required to take care of that extra expense that you have alluded to by reason of the car tracks being there, and not require them, as has been done in the past and is being done generally now, to pay the entire cost of paving between the tracks, and for a short distance on each side of the tracks, under present conditions?

Mr. EASTMAN. I think that is a sound conclusion.

Commissioner SWEET. That, you think, ought to be done anyway without any regard to what other remedies might be recommended by this commission?

Mr. EASTMAN. Yes.

Commissioner SWEET. I think you have stated quite fully your views with regard to what the commission might do to render a definite public service. Do you not think, Mr. Eastman, that considerable service has already been rendered to the public by the publicity that has been given to the hearings that have taken place, and the better general information of the American public now upon the street-railway problem than it had before these hearings commenced?

Mr. EASTMAN. I have no doubt that that has occurred.

Commissioner SWEET. At the basis of all this whole problem is the education of the people—a proper understanding of the situation and getting away from prejudices that have been created as you have mentioned, and others, perhaps justly, by wrongdoing on the part of the railroad corporations in the past—to get away from that and start out on a new deal, so to speak.

Mr. EASTMAN. I think it is; and I think that is a function which this commission can perform.

Commissioner SWEET. The very basis of whatever good we might be able to accomplish.

Now, with regard to public ownership. You stated that you thought that if done at all in a community, it ought to be by vote of the people, so as to insure popular support; that a referendum vote should be taken upon the question. Have you anything to suggest with regard to the practical proceeding after a vote were taken that would be favorable to public ownership?

Mr. EASTMAN. No. I think perhaps the most difficult question of all involved in public ownership is the question of the price to pay for the properties; and I am inclined to think, offhand, that it would be advisable before any vote was taken by the community to have negotiations and reach, if possible, an agreement as to the price to be paid; and then let the voters vote on that precise question.

Commissioner SWEET. That was done in Detroit, you know.

Mr. EASTMAN. I did not know; no, sir.

Commissioner SWEET. It was; and Detroit voted it down, as I understand it, Mr. Mahon, because the people were not satisfied with the price. Isn't that true?

Commissioner MAHON. I think so. That was the real reason that they were dissatisfied—the price.

Commissioner SWEET. How would this do, Mr. Eastman: To establish a tribunal for the determination of the value of the property before the vote is taken, so that the people may be satisfied that they are going to be fairly represented and let the determination of the price come after the vote is taken?

Mr. EASTMAN. I think all those matters are matters which would have to be worked out by the communities which have got to take the direct action in the end. Personally, I should prefer definite negotiations, and a definite proposition before the public when they voted, rather than to leave it entirely uncertain what might have to be paid for the properties in the end.

Commissioner SWEET. Do you think that this commission, in its recommendations, ought to go into so much detail as that?

Mr. EASTMAN. I should not think so. If I may express any opinion about it at all, I think that it would be desirable to confine yourselves to the principles of the situation rather than to any detailed working out of these principles.

Commissioner SWEET. If the plan of municipal ownership and private operation were adopted, how would you arrange for the private operation? On the bidding plan, or in what way?

Mr. EASTMAN. There are various possibilities in that direction. For instance, I think Senator Lenroot introduced a bill providing, in effect, for the public acquisition of the railroads of the country and their management by a board of directors appointed by the President, representing certain interests, out of men nominated by those interests: in other words, the men would be taken from lists submitted by the farmers, we will say, the labor interests, the business interests, and so on, and the President would have a choice from that list but would be confined to the men that they offered for his choice. That is one way in which you might elect to place publicly owned properties under private management. You could do it in the way you suggest, by turning it over to an operating company upon bids, and so on.

Commissioner SWEET. What objections do you see to handling the street railroads as most cities now do their water system, by their own operation?

Mr. EASTMAN. So far as cities are concerned, as I say, I doubt whether a city could do it, except in a case where the property was operating mostly within the confines of that city.

Commissioner SWEET. Recognizing the distinction there, I will change the question to apply to public ownership, regardless of whether it is by the city or by the State.

Mr. EASTMAN. I have no great fear of the results in the long run of public management of these properties; that is, direct public management such as you speak of. I think it is attended, as any form of operation is, by certain dangers; but I believe that all the

elements of the community have so vital an interest in an economical and efficient management that, in the long run, you will secure it. You may have unfortunate experiences. I do not say that you will not. I think the best results can only be obtained by vigilance and cooperation. It is my opinion, however, that in the long run that can be secured.

Commissioner SWEET. The city can hire a general manager of the same ability, practically—perhaps the same man—who would be the general manager for a private corporation, the same as it hires a general manager for its board of public works or for its school system.

You made a comparison between the public interest in the schools and the removal of politics from the boards of education, and the possibility of doing the same with regard to the handling of railroads.

Mr. EASTMAN. You take the question of politics—and I have no doubt that attempts would be made to inject politics into the public operation of the street-railway system, but I have a very firm conviction that the voters would not want politics in the management of that system, and that any administration which was guilty of that practice in the long run would rue it.

Commissioner MAHON. You say would rue it?

Mr. EASTMAN. Yes.

Commissioner SWEET. The people do not want politics in such services?

Commissioner MAHON. Do you know anything of the history of the Canadian cities where they have municipal ownership which has now been working for some time?

Mr. EASTMAN. No; I have not investigated carefully into those.

Commissioner MAHON. The history of those cities shows that so far they have been unable to divorce them from the political situation. It is a very confused condition. One year there will be an administration that is, for instance, favorable to treating with labor as an organized body in making the contracts, and the next year you may find a body absolutely opposed to that. That is a condition that has continued throughout some of those municipalities and, as far as I know, all of them.

Commissioner SWEET. In the State of Michigan, Mr. Eastman, the boards of education are elected at a separate election. Perhaps in some States they are appointed rather than elected.

Commissioner MAHON. It does not divorce them from politics, though.

Commissioner SWEET. It does from national politics. So far as my observation goes, and I have been a member of the board of education of Grand Rapids at different times, I have never seen any national politics on the board of education. In Massachusetts are they elected or appointed?

Commissioner MAHON. How about local politics?

Commissioner SWEET. No; not exactly that. There have been evils, but not that.

Commissioner MAHON. We have had some awful messes in Detroit.

Mr. WARREN. And local politics are apt to be worse than national politics.

Commissioner SWEET. Are they appointed or elected in Massachusetts?

Mr. EASTMAN. They are elected.

Commissioner SWEET. At a general or special election?

Mr. EASTMAN. At a general election. Women are voted for on the school board in Boston and I think throughout the State.

Commissioner SWEET. They are in our State. Have the boards of education been satisfactory that have been elected in that way?

Mr. EASTMAN. My knowledge is limited on that. I do know that it is generally regarded that in Boston the public-school association has been, on the whole, fairly successful in keeping the schools out of politics. Do you not think that is true, Mr. Warren?

Mr. WARREN. I should go further than that. I think it is generally true throughout the State. There may be exceptional cases.

Commissioner SWEET. How would the results obtained by your board of education compare with the management of your water system? That is done by the city government, is it not?

Mr. EASTMAN. Yes.

Commissioner SWEET. And they are more political from the national standpoint than the boards of education undoubtedly, are they not?

Mr. EASTMAN. I should say they were. My knowledge of the city water system is not great, however.

Commissioner SWEET. Do you get satisfactory results in the management of your water system generally?

Mr. EASTMAN. I think the water supplies of the cities in Massachusetts are very good. They have a good water supply, free from impurities.

Commissioner SWEET. Is there complaint as to the business management, whether they are managed capably and economically?

Mr. EASTMAN. That has not come to my attention.

Commissioner SWEET. That perhaps is going more into detail than is necessary for our present purpose. But one way or another your idea would be that the street railroads could be managed by the public, the State, or the municipality, as the case might be, satisfactorily? That is, I am speaking now of operation.

Mr. EASTMAN. Yes. Coming to what Mr. Mahon has said, I think it is true that you will have that danger that politics would get into the situation. I think it is probably more likely to occur in case of municipalities than it would in the case of a larger unit of the State, such as the State or the Nation, but I believe it can be avoided by voluntary action of public-spirited citizens and also by considering plans for direct representation upon the management by men who are not politically appointed. In other words, I do not think that is a necessary and inevitable evil that can not be worked out if the public gives sufficient constructive thought to it.

Commissioner MAHON. That would have to be worked out, would it not, at the very start, or demoralized conditions would follow? Say you were municipalizing the system, you would have to lay down the policy of the nonpolitical management of it at that time or else the trouble would be there, would it not?

Mr. EASTMAN. Yes; it would be very desirable to lay down that policy at the start; but even if you started wrong it does not say you could not make improvements as you went along.

Commissioner MAHON. No.

Commissioner SWEET. What has been the tendency of late years with regard to politics in city government? Has there been an increase or decrease?

Mr. EASTMAN. My opinion would be that city governments have improved a great deal.

Commissioner SWEET. There is a great deal less national politics in city governments than there was 10 or 15 years ago?

Mr. EASTMAN. Yes. I do not claim to be an expert on that question, but I think, looking back to the time when Lincoln Steffens wrote *The Shame of the Cities*, that the situation in city government has very greatly improved since that day.

Commissioner SWEET. Is it not a fact that in all commission-governed cities a nonpartisan method of electing the commissioners is resorted to?

Mr. EASTMAN. I think that is true. I have no special knowledge on that.

Commissioner SWEET. And I will say in my own city, Grand Rapids, Mich., a nonpartisan method of electing city officials was adopted before the commission form of government was adopted, so that city officials were elected without regard to their national party connections.

Commissioner MAHON. That may be true with Grand Rapids, but it is not true in Detroit where we have a nonpartisan election of the mayor. I have not seen very much difference there. A Democrat was run and a Republican was run, and the organizations were in battle.

Commissioner SWEET. I have finished.

Commissioner MAHON. You have no doubt made quite a study of this subject. It has been brought up here several times that the city should operate the street-cars free of charge. Do you believe the matter of transportation should be placed in the same class that you would things like water, or is not transportation more a matter of the individual rather than making it that of the community? What is your opinion, Mr. Eastman, from your study of that?

Mr. EASTMAN. I think it is a combination of both. Of course, directly and immediately, the street railways are a benefit to the people who ride in them, but beyond that immediate benefit they are undoubtedly a benefit to others of the community who never ride in them at all, such as real-estate owners, business men, and so on. We would be much worse off if there were no street railways. You may say that that is true of almost any public utility, and of course it is, but I think it is true in a very great degree of street railways.

Commissioner MAHON. I am not an expert upon that matter, but I find this, that in bearing the share of burdens in the municipality, the taxes fall, of course, upon all property and upon the poor man more so than they do upon the real-estate dealers and fellows of that kind. I find they are usually able to evade that form of taxation while, as you say, they are getting the benefits of it. But would it not fall upon men who may never use the cars at all—the taxation burdens?

Mr. EASTMAN. Yes; I think it would. I think the question of placing part of the burden upon the taxpayer is simply a question of ex-

pediency. I would not suggest doing it unless you felt, all things considered, you could get better net results in that way.

Commissioner SWEET. There is a social phase of this question, is there not, that the whole community has an interest in, and a very deep interest perhaps, and sanitary questions may be involved to some extent in the diffusion of population? That is true, is it not?

Mr. EASTMAN. I should think so.

Commissioner SWEET. And moral questions may come in, questions of morality or immorality that are involved, to some extent, in it, and the ability to reach churches and places where lectures are given and that sort of thing has a bearing upon the educational as well as the moral uplift of the community; so in a sense, the same reasons that induce us to spend large amounts of money for hospitals, churches, schools and that sort of thing would justify us, to some extent at least, in making the matter of street-railroad transportation a public obligation; would they not?

Mr. EASTMAN. Yes; I think it is a question of expediency.

Commissioner SWEET. Yes. Taking all these things into consideration, of course. And the question as between a zone system and a flat-fare system is also involved in the social problems that are connected with the street-railroad problems?

Mr. EASTMAN. Yes. And I think that I ought to say perhaps I have given too unfavorable an impression of the experiments in Massachusetts. They were made, in many respects, under unfavorable conditions, due to weather conditions, due to the influenza epidemic that occurred at one time, during the absence of the young men at the front, and so on; so that it was exceedingly difficult to draw conclusions that you were sure of. And if they deal in some of those experiments in raising fares, applied over a long period of time, they would produce better results than apparently they have up to date.

Commissioner SWEET. Mr. Warren, do you want to ask any questions?

Mr. WARREN. I do not think so. I would just like to ask Mr. Eastman about that Middlesex & Boston case. There was a statement in that report, as I recall it, to the effect that the dividends paid by the company had been so small that whatever depreciation had occurred, the public rather than the company had gotten the benefit of it. Was there not something like that in there?

Mr. EASTMAN. There was something to the effect that the dividends of that company had never exceeded 4 per cent, as I recall it.

Commissioner SWEET. Mr. Ogburn, who is your next witness?

Mr. OGBURN. Mr. Maltbie is the next witness.

STATEMENT OF MR. MILO R. MALTBIE.

The CHAIRMAN. You may proceed, Dr. Maltbie.

Mr. MALTBIE. Mr. Chairman and gentlemen, I wish to say first, before beginning what few remarks I have to make, that I have had practically no time to systematize my thoughts on this question, having been exceedingly busy for many months and only having had a few moments on the train coming down yesterday afternoon to put together what may be called some rather cursory views on this situation.

Not that these are in the order of importance at all, but merely to mention the first thing that occurred to me, it seems to me that possibly the most important unfortunate factor in the situation as it exists to-day is the lack of confidence in the statements of and positions that are being taken by the public-utility companies and, in some instances, an utter lack of confidence in the motives and the purposes of the public officials who are upon the other side of the question.

Of course, post-mortems are of no particular interest unless they get us somewhere in this situation. And I refer to these facts and others that I shall mention not from any desire to hold a post-mortem but because they may point the direction in which relief may be secured in this situation, and that is the only purpose I have in mind.

Going back, however, a few years, when the street railways were in rather thriving condition and before public regulation and control had become an active force in most States in the United States, the relationship between the municipalities and the street-railway companies was regulated by the contract provision and, of course, occasional regulation by the legislatures. At that time the efforts of the public were aimed at lower fares, because of the large profits that were being reported by the company; and in their efforts to secure lower fares they were backed only by the police power of the State, because the franchises, in most instances, provided for no adjustment of fares themselves. They were met, at that time, in many places, by the statement that the companies had the right to these large earnings; that they had made a franchise contract with the public authorities; that under the terms of that franchise contract they had been able to secure large profits, and that they were entitled to these profits as a matter of contract right.

Now the situation, of course, has entirely changed, but there still persists a feeling and a recollection of the time when the companies were pleading a matter of law as a justification for their insistence that they should continue these large profits and that rates should not be reduced. Of course, at the present time the feature in the situation that is being emphasized is that that is equitable, or that equity requires that the fares should be revised and that they should be increased.

Well, of course, it is very well to talk about law continuously and that is understandable. It is also understandable to talk about equity continuously. But when anyone takes the position of talking law at one time and equity at another, it is but natural that the feeling of lack of confidence and that the feeling of distrust should develop. And that is the situation in a number of cities at the present time, where they were met comparatively a few years ago by a refusal to have a revision of conditions because the provisions in the contract protected them; and now the public having the franchise provisions to protect them, of course turn around and plead the question of law.

Now, another factor which has led to this lack of confidence upon both sides is the large values that are claimed either in franchise readjustments or in rate cases. And I wish to refer to instances—not by name, because I take it you are not interested in discussing

the virtues or misdeeds of any one city or any one individual; it is a question of an issue here, it is a question of a principle involved; and I shall not, unless you ask me to, refer to the names of any city or any company except in one or two instances—but I have in mind a case where the public utility in a dispute over rates, through experts which it employed, asked through certain experts for a return upon over \$50,000,000 and through other experts a return upon over \$70,000,000, and an investigation made as to the actual cost of the property being made, consisting of one representing the company, one representing the complainant in the case, and a third representing the commission agreed upon a cost of the property of about \$25,000,000, omitting overhead expenses and omitting any consideration of depreciation.

Now, you can allow whatever you want for those factors; you can add if you wish 20 per cent for overhead, just pulling a figure out of the air, and you get \$30,000,000. You can deduct accrued depreciation, if you want to, of 10 or 15 per cent, again pulling a figure out of the air, and you will get less than \$30,000,000. But here the company was asking in that case for a return upon \$40,000,000 through certain experts and a return upon \$70,000,000 through other experts.

The CHAIRMAN. Perhaps the experts got their wires crossed.

Mr. MALTBIE. Well, I think it was worse than having wires crossed in that case. I do not think they had any basis upon which to put those large figures, as shown by an investigation through men representing the company itself of what was the actual cost of the property.

Now, I have in mind another case where companies are asking now, or have been just recently, for a return upon value based upon trend of prices, where the engineers have built up a curve and taken the prices which materials and labor demanded and got during the last year or two, and then have projected that trend curve into the future and found a price which admittedly the company did not pay, which is in excess of what the company did pay, and then have multiplied those land figures by 3—which was condemned some time ago by Justice Hughes in the Minnesota rate case—and are asking the cities in that case to approve an increase in fare upon the basis of that figure.

Now, I do not think it is surprising if utilities take that position that the public authorities do not have very much confidence in their claims. But whether it is surprising or whether it is not, whether it is justified or whether it is not, the fact remains that they do not have confidence in the claims of the companies upon that point.

Another thing which seems to me—and I refer to these because I think they have got to be cured: I think if we are going to deal in equity we have got to deal in equity, and if we are going to deal in law we have got to deal in law: but we can not mix the two things—sometimes dealing in law and sometimes dealing in equity: and as between the two, my own preference, of course, is for an equitable decision, whatever the conditions may be, basing the results upon conditions that exist at that time: as to values, if we are going to make progress there. I think we have got to have a modification of the extreme claims that are made for extreme values.

In the third place, it has frequently happened that companies have refused to allow public authorities to ascertain the facts. They have closed their books, refused to allow access to them. They even refuse to let them examine their property, such as their power plants, where they can close the door. Now, what is the result of that? The result of that is to breed suspicion, and a man can always imagine, when he is shut out from looking at a thing, more than is ever there; and that is what he usually does.

It has been my experience, and was my experience as a member of the public-service commission in New York that whenever that question arose, to urge upon the company, and perhaps, if necessary, to compel the company, to open its books and its property and its records and allow the complainants to investigate them, and where that has been done it has also been my experience that the feeling of distrust and suspicion and opposition has been allayed; and I do not know of a single exception to that rule.

The CHAIRMAN. At this point we will adjourn until 2 o'clock. (Whereupon, at 1 p. m., a recess was taken until 2 p. m.)

AFTERNOON SESSION.

STATEMENT OF MR. MILO R. MALTBIE—Continued.

Mr. MALTBIE. In connection with what I was saying before the recess, there are two things that should be added on that subject: One is that what I have said regarding picking out certain illustrations, of course, does not apply to all utility companies. There are instances which have come to my personal knowledge of companies that, whenever requested and whenever the question of a revision of rates or a consideration of their service were up, made a frank and full disclosure of all of their facts, allowed an examination of their books and an examination of their property, and have held nothing back; and the result, of course, in that case has been advantageous to them as well as to the public.

The second thing is that which, of course, naturally follows from what has been said, that where such conditions exist, and where they get the publicity that is usually given to any delinquency upon the part of a private corporation, every corporation has to suffer; and as a result, to-day, the securities of many corporations have felt the distrust and suspicion that is attached to their corporations in other cities.

I wish to refer next to the financial situation and make certain remarks in relation thereto. Of course, the street-railway companies at the present time are laboring, among other things, under a great disadvantage in any attempt to secure new capital for equipment which could be operated, possibly, at less expense to the company and greater advantage to the public. One of the things to which I wish to call your attention as an explanation of that situation, and something which prevents adjustments being made that ought to be made, is the fact that in many instances the companies have been overcapitalized; that is, they are capitalized for a par value of stocks and bonds very greatly in excess of either the cost of the property as it stands to-day, or the value of the property.

Of course, in such instances it is difficult to raise money, because those who are asked to accept the new securities fear that when their rates come before a public body for review, a public-service commission, for example, the value of the property will be found at less than the par value of the securities, and that some of the securities—of course, the junior securities—will be placed in such a position that they do not get—not a fair return, but do not get an amount appreciably toward a fair return, and consequently, there being no one to take the securities, there not being earnings sufficient to provide funds for their paying fixed charges and to purchase the property that is needed, there is no way of securing funds which might be used to advantage in the operation of the company, and the companies are compelled to go on with rolling stock, for example, which is not well adapted to the conditions that exist to-day.

Reference was made by Mr. Eastman to the question of depreciation, and I will say just a word or two upon that point.

It has been the law in many States for years that dividends could not be declared unless earned. Some of the States have recognized depreciation in the law, and other States have not referred to it specifically. Of course, it is a matter of common knowledge that in the past, say 20 years ago, many of the companies paid no attention to depreciation, expecting that the growth of the business and the increases in earnings resulting therefrom would be sufficient to take care of replacements and renewals when it became necessary to make them; and, of course, for a considerable time their expectations were justified. That is exactly what happened; and they did not find themselves in a critical situation.

Sooner or later, however, that condition is bound to catch up with a company, and put it in a position like the street railways were in in New York City about 10 years ago, when they went through reorganization, in 1907 and the years following, where the lack of provision for depreciation meant that the property had a service value far below the cost of the property and where, when it became necessary to make provision for renewals and replacements, there were not sufficient sums available, and the public authorities would not let them issue securities for the replacement of property. Many companies to-day are in that situation; not all, but many of them are in the situation where they have not adequate depreciation reserves, and where, in order to meet that delinquency, it is necessary to resort to other methods, which, of course, makes it particularly difficult to secure money from any financial house which has an examination made of the property before approving any considerable amount of security.

I think the principal thing that has happened of an unfortunate character, so far as utilities are concerned, in this regard, is that the investor, the small investor particularly, has become increasingly afraid of utility securities. Of course, that applies to street railways at the present time more than it does to other utilities, with the possible exception of railroads.

If you will pardon a personal experience, to illustrate how it comes: When the surface lines in Manhattan were going through reorganization in 1907 to 1912, and I was a member of the public-service commission, and the matter was under our supervision—at

least we thought it was until the court decided otherwise—one of the most trying things which we had to do at that time was to listen to the tales of small investors who had put their savings, accumulated through several years, into the securities of the old Metropolitan Street Railway Co. They had done it, of course, without any knowledge of the situation, as far as they themselves were concerned. They were not in a position to analyze the statements. They were not in a position to find out the facts. They determined it on the advice of perhaps some friend or some one on whose judgment they relied; but the fact of the matter was that after a few years they found themselves in a position where their securities were worthless, where they were unable to provide the money which was required under the reorganization plan in order to take up the new securities, and were compelled to sacrifice what they had paid.

The small investor, particularly, is helpless in a reorganization of that sort; not because the opportunity is not given to him under the new plan, but because he very frequently has not the funds to protect what money he has put in, so that he has to take the loss, whether he wants to or not. Of course, that leaves him with a distrust and a dislike for utility securities. Gradually the small investor has been made to feel that these securities are not the kind that he ought to invest in.

It seems to me that whatever utility speculation may have in other lines of activity, it is most unfortunate, from the public point of view, that utility securities should be speculative in any sense.

The best thing that can happen, so far as I can see it, from the security point of view is to have these securities of an investment character and not of a speculative character.

Of course, the immediate result is that money can be secured at a lower rate of interest if they are real investment securities than if you have to depend upon speculative capital, because investment securities will always demand a higher rate, and won't come in unless it gets it.

The most important thing, it seems to me, to be kept in mind in framing any new plan to be considered in the situation as it now exists, is that there must be some provision made, in any plan, which will furnish an inducement for efficiency. In other words, if any plan, whether it be a limited-term franchise or an indeterminate franchise, or a cost-of-service franchise, or no franchise at all, with just a local consent to operate, subject to regulation in every instance—unless some provision is made whereby inefficiency will be punished or suffer some loss and efficiency will be rewarded where it exists, the tendency will be toward stagnation, and public regulation and control has to labor with this problem as well as anything else, because the tendency will be, of course, to meet the demands. If it does not make any difference to the operators of a company whether they pay high prices for materials or not, the tendency will be not to give that subject any particular attention. They will pay the high prices. If there is no reward for purchasing materials when prices are low, and no punishment for purchasing materials when prices are high, the inevitable result will be to purchase in more or less of a haphazard way and to pay high prices.

In the same way, if there is no incentive to efficiency, politics is apt to come into the situation, in not the way which is usually re-

ferred to, but in a different way, which is just as effective, as far as that is concerned, in bringing bad results as it is in the old-fashioned way. But if control and management does not get its reward or its punishment, as the case may be, the political parties will be apt to use a private corporation as a means for locating their henchmen.

In a certain city there are two corporations, and it has been known for a number of years that one corporation takes care of the voters in one political party, and another corporation takes care of the voters in another political party.

THE CHAIRMAN. That is a combination in restraint of trade, is it not?

Commissioner GADSDEN. No. That is bipartisan—strictly in accordance with the statutes.

MR. MALTBIE. Equality of treatment. Strangely enough, perhaps, that developed under a provision in the franchise, or in the grant, that whatever profits were left over and above a certain rate of return should go to the city; and I do not think it is strange at all that under that arrangement there have not been any profits going to the city.

Commissioner WEHLE. They went to the city in a different form?

MR. MALTBIE. Well, on the assumption that the city is entirely represented by the Republicans and Democrats in that case, and no one else has a chance, I think that is true.

Commissioner WEHLE. Rather an unfortunate form?

MR. MALTBIE. Certainly satisfactory for those involved. That has a relation to the cost-of-service franchise. If the cost-of-service franchise is so drawn that, no matter what happens, the company operating the utility is allowed to deduct from the income the operating expenses actually paid, and there is no control over them, it seems to me that whether the result comes about immediately, sooner or later the great temptation will be upon the part of the management not to consider how efficiently that company can be operated from the point of view of what payments are made, but under pressure they will allow the cost of operation to go up. Of course, that is bad for the public, because if the cost of operation goes up, under the cost-of-service franchise, the rates have got to go up, and as there are illustrations without number, if the rates of fare go up, it may not result in the net income going up. In other words, the cost-of-service franchise, from this point of view, if not from all points of view, has many of the disadvantages of the construction contract on the basis of cost-plus; and unless this point is taken care of in some effective way, it is, in my mind, a most serious criticism of the cost-of-service franchise arrangement.

Turning now for the moment to what suggestions might be made and what matters might be considered, in view of the street-railway situation as it is to-day, the thing we have got to face: it is not necessary, in view of what Mr. Eastman has said—and that is the only testimony that I have heard or read which has been presented to you—it is unnecessary to say much about the difficulty of getting a higher net income out of an increase in fares.

General experience, I think, is that the increase of fares has been disappointing, to put it mildly. Of course, in some instances the net is not as much under the increased fare as it was before; and unless you can increase the net over what it would have been at

the lower fare, of course there is a great public disadvantage in a higher fare and no utility advantage.

What I would like to emphasize are two points in this connection:

In the first place, that every effort should be made to increase the service rendered rather than to increase the cost. What I mean by that is illustrated by certain of the interurban lines, particularly in the Middle West and the West—they have done much more of it than they have in the East—and that is in the development of the handling of commodities, as distinguished from the handling of passengers.

Of course everybody knows that for the middle hours of the night the street-railway lines are not used to their maximum capacity. They have not been, and never are. Apparently there is no business than can be developed that will use them to the maximum during the night. It is possible, however, and it has been done in some instances, to develop the handling of property, as distinguished from persons, at those hours; and there is not the objection to it through rural districts that there is in the city sometimes. But the objection even in the cities is not great, and in a situation such as exists at the present time it ought not to prevent the handling of property, whether in large carload lots or in package lots, the handling of garden produce, over the tracks of the utility companies.

Many companies do not have the right, under their franchise, to do that sort of business, and it would require a new grant to give it to them. In this situation, however, there will not be the hostility to the granting of that right that there was 20 years ago, when they were in a more thriving condition.

THE CHAIRMAN. Is it not also true, Mr. Maltbie, that a great many cities under their charter provision have not got the power to permit street-car companies to haul anything but passengers upon the tracks?

MR. MALTBIE. That may be so. I don't know that I could say that is the general rule. There may be some instances. I was rather of the opinion that the cities had the right to grant those franchises if they wanted to. They have not done it in very large numbers. Some of the old franchises provided for that, but the more recent franchises did not include it, because they did not want it done at that time. The situation has changed now, however, the companies are not in so good a condition, and it is a question of what can be done.

I started to say that I am not sure but what this suggestion is too late to be acted upon in some localities, because of the development of the motor truck for the delivery of garden produce, for example, and packages has developed in some communities, and the system has been established, and people are accustomed to it; so that it would be very difficult for a street-railway company now to get the business which it might have got, and which they did get, in some instances, 10 or 15 years ago.

On this question of getting a larger net income, it seems to me that in many instances the possibility of keeping or developing the short-haul traffic has rather been overlooked.

Whatever may be the circumstances in other cities, in my opinion it is true in the Borough of Manhattan, N. Y., that the future of

the surface lines—the financial future of the surface lines—is likely to be better if a short-haul traffic, even at a lower rate than 5 cents, is developed. To what extent it might be possible to do the same thing in other cities, I am unable to say; but our conditions in Manhattan are such that the short-haul traffic, even at a lower rate, could be made more remunerative than the present traffic at the 5-cent fare.

You are familiar, doubtless, with the situation, and I will just cover it in a few words. We have there in nearly every big thoroughfare north and south, except the two that go east of Central Park and west of Central Park, rapid-transit lines. We have the elevated and we have the subways.

Now, anyone who wishes a long-distance haul can be carried more cheaply on the subway or elevated road than he can be carried on the surface lines. Furthermore, he can be carried more rapidly on those lines than the surface, so that not only should he be carried there but he will be carried there, because he will go there. And under equality of conditions as to fare he will take the subways or the elevated rather than the surface lines.

The CHAIRMAN. Why do you say they can be hauled more cheaply on the elevated or subway?

Mr. MALTBE. Because they carry them in such quantities and at rapid rates of speed.

The CHAIRMAN. You mean more cheaply to the company rather than to the passengers?

Mr. MALTBE. Yes; more cheaply to the company.

Now, of course, a subway or elevated road is not well adapted to short-haul business. A person will go on the surface lines, other things being equal, rather than on the subway or elevated, provided there is sufficient frequency of service. But the thing that attracts him on the surface line is the ease of getting on and off the car without having to go up or down stairs, the quickness with which he will be able to take a car or get one going by, and the convenience of stepping on a car and stepping off a car at his point of origin and his point of destination.

Now, for experience in this line we have to go abroad, and I am not sure but what that situation has been called to your attention. But in the experience of the English cities it has been repeatedly shown that by the development of a low fare and short-haul service—that is, a low fare for a short ride—they have been able to increase their net income; that is, they have been able to increase their gross receipts without the corresponding increase in operating expenses.

Now, I am aware that that has been developed under a zone system of fares, which is a question, at least, as to the advisability of adoption in this country; but there are certain lines in New York, the cross-town lines particularly, where a short-line service—that is, a car running between terminals not far apart—at a fare of 2 or 3 cents, would, in my opinion, attract a considerable amount of traffic which is now walking because the people will not pay the 5-cent fare for the short ride which they wish to take.

The CHAIRMAN. In the Manhattan district would it be practicable to maintain a lower fare on the surface lines than prevails upon the elevated or subway?

MR. MALTBIE. No; and I am glad you referred to that. I intended to cover that, but it slipped my mind. Of course, that is the difficulty of the situation now in New York—namely, that with the 5-cent fare fixed in the subway contracts and the elevated contracts practically, as far as that is concerned, if they should increase the fare to 7 cents, we will say, on the surface lines, people would not use them unless they were more or less compelled to use them; they would go to the subway or the elevated, and the surface lines would lose. And the managers know it and have recognized it, and consequently, of course, what they are striving to obtain is an increased fare on all lines; otherwise, instead of getting more net income, they will have less net income.

That is almost inseparably tied up with the provision of more frequent service. New York has gone to large cars. About the only small cars that are operating there are the storage-battery cars, and they have been operated upon certain lines under traffic conditions which are very severe, so that they have made rather poor time; and many have construed that as a demonstration that the small car, the one-man car, could not be operated successfully in New York. There are other engineers who have an entirely different opinion, and who believe that the one-man car, the small car with frequent operation, would be a success in New York. Of course, there you come back, even if that were admitted, to the question of where they are going to get the money to buy those cars—and if you have not any money in your pocket it does not make any difference how cheap food is. But the short-haul business will not go to surface lines if you have to wait on a corner a considerable time before the car comes along; it will go to the subway; it is so much quicker in the final result than to stand there and wait for a car; and human nature is such that even with a split watch you could not prove to anybody that they would gain by waiting. They will not wait. You need not put it in the record, but you know a New York man is a man that gets mad if he loses a place in a revolving door.

Now, another point I wish to suggest for your consideration is the recommendation that certain charges imposed upon street-railway companies be reduced. Reference has been made to the paving matter. I think Mr. Sweet particularly called attention to that when Mr. Eastman was on the stand. It seems to me that certain, probably many, of the charges which have been imposed upon street-railway companies in the past might well be modified, perhaps temporarily, until we see what happens under the present circumstances. Of course, those charges arose in a time when companies were very profitable and when it seemed the only way in which the public could get a share of the large profits that were reported to exist; so they resorted to the power of taxation and utilized it to the full and piled up taxes in various forms, taxes and fees, over what the company had been paying.

Now, whether that was proper or not is wholly aside from the question at issue. The situation is now that those charges obtain; that in many instances, in view of the conditions that exist, they are not justified at the present time and, in my opinion, might be modified. If conditions change and they should be imposed again

at some future time, that is a matter to be taken care of then. But, so far as the present is concerned, they might be modified.

In the case of paving, let me suggest this for your consideration: The maximum burden which, under the circumstances, a company should be required to stand is the added cost of maintaining the pavement which the existence of the rails imposed upon the public. In my opinion, it does not seem to be fair to relieve the company of all paving charges whatever, because where there are rails in the street the paving will not last as long as in streets where there are no rails. The mere fact of the paving being broken by a rail, and that there has to be a joint between the paving and the steel rail, generally upon a very rigid bed, means that that paving is going to decay and break down sooner than if there were no rails in the street.

A modification of the franchise-tax law might be desirable, provided the modification can be done without becoming unconstitutional, because it does not seem to me to be fair to modify all of the franchise taxes for all of the companies; but the street-railway companies are in such condition as they are at the present time, and something ought to be done for them now. But the lawyers are usually so ingenious that the constitutional requirements can still be met and the result obtained.

As to the change which Mr. Eastman referred to—that is, the skip-stop and all those other things—I shall not say anything, to save your time, except that I agree with what he said regarding the things that can be done to improve the situation, by those various methods, provided you start out upon a basis of confidence with the public. Now, the skip-stop proposition has broken down in some cities and has aroused tremendous opposition, because it was not put in properly and it has been damned in those cities, so that it will be exceedingly difficult for anybody to put it in effect; and it had to be repealed, because the public disliked it; it was not put in properly and they got a hostility to it which was not justified by the fact. They did not understand the purpose of it. It was made rigid without a modification in view of the conditions that existed, and, I think, unfortunately so. So a great many of these things have their practical effect, depending upon the first point that I mentioned—namely, that there shall be developed somehow a feeling of confidence and trust between the parties at issue, and if that is not developed, a great many of the things that are being suggested and which are probably wise will never reap the results desired. As to the relation between labor, I here again will shorten my remarks by saying that I agree with what Mr. Eastman has said. I can not understand the attitude of a utility company which refuses to deal with the duly selected representatives of any considerable body of workmen. I can not see any reason why a company should refuse to do that any more than that the laboringmen might turn around and refuse to deal with the representatives of the stockholders. To my mind, it seems just as proper for the laboringmen to go to California or Boston or New Orleans to get a man to represent them as it is for the stockholders to go to Panama or Canada or England to get a manager for their proposition.

I think something has been said regarding the special-assessment idea—

Commissioner WEHLE. Or even Detroit, Mr. Maltbie.

Mr. MALTBIE. I see no difference between Panama and Detroit.

Mr. WARREN. They might get better knowledge in Detroit than in Panama of this particular industry.

Mr. MALTBIE. From what I know of the men coming from both places I entirely agree.

Whether there is anything in the special-assessment idea which will immediately help out in this situation, I am not entirely sure, but if I may suggest it, it seems to me it would be wise for you to call attention to this method of building extensions.

Now, I know that is not the thing that street-railway men are talking about at the present time very much. It is more a desire to make a return on what they have got rather than to make a lot more of what they do not like. But that is particularly apropos, if there is going to be municipal ownership of the street-railway lines with private operation or if there is going to be municipal ownership and municipal operation.

Of course, the fundamental idea is that the special-assessment idea which has been applied to sewers and, in some cases, to water works and laying out of streets, and so forth, should be applied to the building of new lines; and the justification of it is, in my opinion, particularly strong in the case of a transportation line, because there is not anything that will develop the value of property, if the lines are properly selected—there is not anything that will develop the value of the property so much as the transportation system. I do not know whether your attention has been called to a report issued by the City Club of New York a number of years ago. I am going to leave a copy of this report with you, if you have not a copy, and content myself now with just giving you a few statements made in this report which show the importance of this factor.

This investigation was a very careful investigation made, as I said, by the City Club of New York soon after the original subway of New York was opened, which operated originally, as you will recall, from the post office or the city hall up Fourth Avenue, across Forty-second Street, up Broadway to the northern end of Manhattan Island, another branch going over into the Bronx above the Harlem River. They show here that the aggregate rise in the land on the west side from One hundred and thirty-fifth Street to Spuyten Duyvil, which is approximately 4 miles, was \$69,300,000. Now, that is the land, as I recall, in the area which is a narrow area, and which is practically all of it tributary to this line.

Now, they deducted from that amount over \$20,000,000 as being the normal rise in the price of land. That is, they took the aggregate rise and then they deducted what they considered would have been the rise in the value in that land if there had been no subway built there whatever; which left \$49,200,000 as the rise in the value of that land due to the subway alone.

Then they took simply the land from north of the Harlem River to Two hundred and thirtieth Street in the Bronx; and they found there an aggregate increase in the value of land, limiting it this time to a half-mile, as I recall it, on each side of the line, because that is a large territory and it would not have been fair to have taken the increase in the value of all the land in the Bronx, as it was not all tributary

to this line—they found, in that case, a total increase of \$41,845,000. And there again they deducted what they estimated to be the normal rise of the land—that is, this would have been the rise if this subway had not been built—and found that there was remaining \$31,000,000.

Commissioner MAHON. That is from the river to where, did you say?

Mr. MALTBIE. Two hundred and thirtieth Street, as I recall. I think that is about 4 miles. Now, these were the outlying lines of the system, and they began at a point about 7 or 8 miles from the city hall.

Now, the entire cost of the subways is in this report. As I recall it, it was something between 35 to 40 million dollars. That is, from the city hall to the ends of the lines. So if they had assessed the entire cost of that subway—the entire cost—upon the property up in this district, the landowners could have paid for it and then had a nice fat profit left besides. I do not mean to say that that would happen in every instance, but it is an illustration of the great increase in the value of land due to the construction of rapid-transit lines.

Commissioner MAHON. Now, there are many cases in a plot so large as that where similar results could be shown in many cities.

Mr. MALTBIE. No doubt. Of course, you can go to the other extreme: You can build so many transit lines that you would not put up any value appreciably. You can overdo it, like a good many other good things. Of course, you all recall that when the railroads were built in the West many of them were built not on the same plan but under a plan which recognized the same ideas. These towns voluntarily issued bonds to provide money to buy the lines. Why? Because in those rural communities they foresaw the value of their farms would go up, so they could issue these bonds and pay for them and still have a profit left. There were some unfortunate instances where they tried to evade payment of those bonds afterwards, but the idea was recognized nevertheless.

Commissioner GADSDEN. And also some bonds were issued and the roads were never built.

Mr. MALTBIE. Yes; six of one and half a dozen of the other perhaps.

Commissioner WEILLE. In such a system as you have suggested, Mr. Maltbie, the assessment of the accretion in value would take place some time after the construction of the improvement; it would not be a prospective appraisal; it would be a retrospective appraisal.

Mr. MALTBIE. Well, I am not so sure that I would agree that that is wise. There is an automatic regulative feature in that idea of special assessment that is a pretty good thing; and it comes right down to this proposition: If you want that line will you pay for it. Now, if they do not want that line to the extent of being willing to put themselves down to pay for it before they build the line, there is a question whether it ought to be built; and that really is the test of how much they believe that line ought to be built. That is, will you contribute the money to build it? And if they say they want the line but are not willing to provide the money, they do not really want it very much.

Commissioner WEILLE. I think, fully accepting your idea that the community or that part of the community which is to benefit from the construction should shoulder the burden and should evince a

willingness to do so before the line is constructed, I am only going to the technical side of it and the business side of it, and I asked you whether the carrying out of your plan would not entail the final fixation of the assessment at a considerable time after the construction of the improvement itself.

Mr. MALTBE. That would have to be done afterwards—in practice, I mean.

Commissioner WEHLE. So that the liability of the land would become fixed by the statute somewhat as a lien upon the land of an indeterminate amount which would become fixed at the time of final appraisal?

Mr. MALTBE. Final determination of the cost of the line and an apportionment of the benefit conferred; because the law, I think, in practically every State is that the amount of assessment levied may not exceed the amount of benefit conferred. If it does, then the act is illegal; that is, the action of the authorities fixing the amount of special assessment is illegal, because it has exceeded the amount of benefit conferred.

Commissioner WEHLE. Then would you, or would you not, make the assessment payable in part payments or installments?

Mr. MALTBE. I certainly should provide for that system under any plan, and I think in practice it is the one that would be followed; otherwise it would impose such a large amount quickly and suddenly upon the owners of the property that many of them could not pay it, and they would have to lose their property, which of course would be unfair and damn the scheme eternally.

The CHAIRMAN. I understood you were discussing the general principle rather than the detail of how it would be put into effect.

Mr. MALTBE. Yes; but Mr. Wehle has referred to a point which is pretty important when it comes to the carrying out of the plan, because if you can not make it practicable, I do not care how beautiful it is in theory, it will not go into operation.

Commissioner WEHLE. Do you not think such a plan as that could be put into operation also when the public utility is under proper regulation in a case where you have private ownership and private operation?

Mr. MALTBE. Well, there is a sentimental factor there which is pretty important, even though it may be sentiment. Property owners or people generally do not like to contribute to something the ownership of which is going to pass to a private corporation. Now, if you could keep the ownership of that line in the municipality, or something of that sort, you might meet that objection. But whether it works out well or not, there is that feeling that they do not like to contribute to something which is going to be turned over to a private corporation.

Commissioner WEHLE. Well, if you made it clear that the title to the improvement remained in the city and that the full right to use and operate over the improvement was in the street-railway company under regulation, do you not think that by a campaign of education in which you would specially emphasize the fact that this arrangement enables the car rider to ride much more cheaply than he otherwise would, that such a plan as that could be put into use even where you have private ownership and private operation?

Mr. MALTBIE. I think it is possible to work out a plant which would cover that point as well. Of course, you know many gas and electric companies have done very much the same thing with land companies where they own large tracts of land. They have made the land companies pay for the pipes and the wires, although the private company has kept the ownership and control of them. But, of course, that is dealing with a few men of large business interests and not with a multitude of taxpayers and voters.

Now, there is one other feature as to the cost-of-service franchise that I would like to call to your attention, and that is this: That a result of the adoption of the plan is to make the relation between the city and the company one of contract and not one of the police power. Of course, the basis for the regulative power which exists in the legislature and which may be delegated to an administrative body is the sovereign power of the State. And of course, historically it goes away back to the old inn cases in England; and that power, as I understand it, can not be irretrievably delegated to someone else; it can not be contracted away, but always remains in the State in some form, either the legislature or the courts or an administrative body.

Now, if you substitute for regulation a contract or a paper—we will not call it a contract for the moment—a paper which attempts to specify all of the things that are usually covered by regulatory orders or by statutes, you have substituted a contract for a sovereign power, or for the police power, and it makes and establishes a more or less ironclad unchangeable paper which has practically all of the qualities of the contract, or else what is attempted to be covered in many cities by a cost-of-service plan.

Now, the trouble with a contract to cover all these points is, in the first place, that it becomes entirely out of date. We have seen that happen again and again. And one of the difficulties of the present situation is that the contracts that have been made in past years are not applicable to the conditions that exist, and while they might and perhaps did do very well for the time and for some time after they were made, they have become inapplicable to the conditions which exist at the present time, and consequently break down in some provision or another.

Mr. Eastman referred to the fact that when you have a contract as a statement of the relations between the public on the one side and the private corporation upon the other, the general result is that that contract is modified when the company wants it modified and not when the city wants it modified. If it is a contract, you have to get the assent of both parties and if the company does not want to modify it there is no way under heaven that you can compel them to modify it, if it is a contract. Whereas, under regulation, if a public-service commission makes a mistake—and not being a member of one now I am willing to admit they make mistakes—if a public-service commission makes a contract, because their orders are not contracts, it can be repealed or modified or changed at any time. But if you get a contract drawn up between a private company and a municipality that can not be modified except with the consent of both parties, and if the municipal authority makes a mistake, the shrewdness of the management of most utilities, human nature being the same

the world over, will lead them to take advantage of that, whereas, if the city wants that contract changed, it is not so easy to get it done.

Whether a cost-of-service contract can be worked out which will protect all of these points I am not at present prepared to say. But reference has been made to the Cleveland franchise; and for the purposes of the record, I think your attention ought to be called to the fact that at the present time there is proceeding in Cleveland an arbitration to determine whether the rate of return shall be raised to 7 per cent or not. Now, there probably is not any more important thing in a cost-of-service franchise than the rate of return. And if a company and a city makes a contract that the security holders that have put in their money are entitled to a 6 per cent return on the money they have put in, and then in less than 6 months you proceed to arbitrate the question of whether they shall have more or not, you are going to the very vitals of the contract. And if you can arbitrate the rate of return in a cost-of-service franchise, I do not know what there is in the franchise that can not be arbitrated. Well, if you can arbitrate the whole thing and every provision in it, it simply means this: That you make a contract, or what is called a contract, and then you leave it to three persons to be chosen at some other time to decide every provision in that contract. Now, that is not regulation, because those arbitrators are not regularly elected public authorities. They are persons who are chosen outside. And if you are going to leave every provision in a contract to be arbitrated in that way, it is not a contract any more, except as there may be some restricting clauses to the extent of what may be arbitrated.

Whether 6 per cent is right or not I do not undertake to say at this time, in the Cleveland situation, but merely to point out that the basis for the claim that they should have 7 per cent instead of 6 per cent, is that conditions have caused 6 per cent not to be a fair rate of return, and that, in fairness, they ought to have 7 per cent.

Well, that is an illustration of what I said a few moments ago, namely, that a fixed contract which undertakes to provide all of these things is a thing that may become very ill adapted to the conditions which exist in later years. Personally, I do not believe the success or failure of these cost-of-service franchises can be determined by one year or two years' or five years' experience. When we have been through these war-time conditions, and the conditions that are going to obtain in the next few years, we will have a pretty definite idea whether those franchises are good or whether they are not good. The question is going to come as to whether they are suited to the conditions that change from time to time or whether they are not.

If the cost-of-service franchise is to be adopted by any city, it means that certain points become tremendously important; that is, if the cost-of-service franchise is to be a contract, they become important. And the important thing is the question of valuation. Whether these franchises are going to be accepted or not has, in many instances—in the case of Detroit, for example—turned on the question of whether the people are satisfied with the valuation or not. They are not going to be satisfied with the valuation unless they have confidence in the men who made that valuation. The man on the street can not value a street-railway system. He does not know whether the values are right or not, whether the proper allowances

have been made or not. He has got somebody's say so, and he is going to vote in favor of that proposition or against it very largely upon whether he believes that the amount which has been fixed and the terms of the franchise are acceptable to persons in whom he has confidence. I take it that that was one of the troubles in the Detroit situation. I know it has been in other cases—namely, that the people did not have confidence in the values which they did not know anything about; they did not have confidence in the values which had been fixed. They thought that they were too high, because certain persons in whom they had more confidence asserted they were too high; and consequently they voted down the franchise.

The CHAIRMAN. Was the value one of the prominent elements in consideration in Detroit, Mr. Mahon?

Mr. MAHON. Yes; I think it was the most prominent element in it, just as Mr. Maltbie said.

We have had, of course, a peculiar condition, an overcrowded condition; and from the condition of the service they weighed up the value. As Mr. Maltbie has said, the man on the street did not know anything about the value; but they weighed up the valuation of the property from the bad service—that it was not worth the amount asked. That is my opinion as to how they formed their opinion.

The CHAIRMAN. If the people of Detroit had confidence in the value that was established, do you think the vote would have been different?

Commissioner MAHON. I think it would have been a different vote; yes. We had twice voted in the past for municipal ownership in Detroit, and we have twice voted not to have municipal ownership. That is within the last 20 years.

Mr. MALTBIE. When they came to the medicine they had to take, they voted against it?

Commissioner MAHON. Yes.

Commissioner SWEET. What is your judgment, Mr. Maltbie, with regard to the advisability of taking a vote on a question of this kind before the value of the property is actually fixed, but after the system or plan for arriving at it has been fixed?

Mr. MALTBIE. There are two things about that—what my own judgment is and my guess as to what the people would do.

My own judgment is that I would not vote on that proposition in favor of it until I knew what I was going to buy. I am not for buying a pig in a poke very much. I am not particularly keen—as a voter now—in that situation to leave it to somebody else to fix afterwards; and as my guess as to what the people would do in such a situation, it is that they would look at it in that way and that they would say: "You tell us what we have got to pay, and we will talk to you; but that is too important a thing to leave out of consideration and to leave to three men or to some other body to fix." Of course, Mr. Sweet, it would considerably depend upon the confidence they had in those men who were going to fix it.

Commissioner SWEET. You have already said that that is an essential condition anyway.

Mr. MALTBIE. Yes. If the men were not named, I do not believe they would vote for it; and if the men were named, it would depend upon whether they had confidence in them or not.

The CHAIRMAN. Do not let us distract you, Mr. Maltbie, from your general presentation.

Mr. MALTBIE. I am through, Mr. Chairman, unless there are some questions that you want to ask.

The CHAIRMAN. Mr. Maltbie, your presentation has been so complete that the commission does not care to cross-examine you.

(Witness excused.)

STATEMENT OF MR. EDWARD W. BEMIS.

Mr. BEMIS. Gentlemen, I have come before you at your invitation, and I am sorry that I could not have accepted the invitation to come earlier, before your closing hours. What I shall have to say, however, will be very brief. It will not be, of course, an attempt to cover the whole street-railway situation, which has been so admirably covered by many others. My only effort will be to cover a few points that perhaps, in my judgment, may need emphasizing. Even those may have been emphasized sufficiently by previous witnesses without my knowledge, as I have not had the opportunity to read most of the testimony or to hear it, although I have read many synopses of it.

It has been my privilege in the past to study these utility questions for many years and to make a number of street-railway appraisals, such as Detroit. I valued the franchises in 1899 and the entire property about 1915, and I valued the properties at Dallas, here in Washington, in Peoria, and am now nearly through with the valuations in Erie of the street railways, and am helping cities in many other parts of the country in connection with street-railway valuations and adjustments of rates; but the principles are very much the same in other utilities.

The first point I would like to make is that each street railway must be considered separately. Conditions vastly differ. I do not think we can make these sweeping generalizations very fully, but since the street-railway companies have sought, before this commission and elsewhere, to generalize and to excite universal public sympathy for all railway companies, it becomes necessary to consider some of the broader aspects of the question, recognizing that they will not apply to many companies and never can take the place of local studies.

The great question before the country, with regard to these matters in general, has been whether they have been getting and are getting a fair return. The problem has not been so much what constituted a fair return in the shape of a percentage—that figure running anywhere, usually, from 6 to 7 per cent, as to the whole property, recognizing that part of it is usually in 5 per cent bonds—but the test has been the valuation on which the return is to be estimated.

There are two tests, it seems to me, and practically only two tests, of a fair return. There are variations of those two tests, but there are fundamentally only two; and the great problem before the country is the war between those two tests. One is the reproduction valuation, and the other the historical valuation.

The reproduction theory is the estimated cost of the reproduction new, to-day, on the basis either of existing prices or the prices of

two or three years just past, either with or without depreciation from all causes, physical obsolescence and inadequacy.

There is a minor conflict as to the application of the reproduction theory, whether depreciation shall be taken off or not. But the fundamental proposition is the estimated cost of reproduction on prices that exist to-day and have existed for two or three years, and may, to a large degree, exist for the next two or three years.

The great opposing test is whether a company is earning a fair return on the actual cost of the property now in use, less depreciation, and with due regard to the history of the investment. If a company has not earned enough in the past to take care of depreciation, an allowance under this theory must be made for it in some form. If a company has not earned enough to take care of depreciation, that does not prevent depreciation having occurred. Depreciation is not a factor of profit; it is a result of physical and functional causes; but the ability of the company to take care of depreciation through its earnings may greatly affect our treatment of it in a rate case, and may cause us to set up a counterbalancing figure in the shape of a going value or something of that kind if the company has not been able to take care of depreciation.

On the other hand, if the company has earned much more than a fair rate of return on the actual investment, weight must be given, under this theory, to that fact. I do not say how much weight, but some weight will have to be given to it, I believe.

Under the first theory, which I call the reproduction theory, the companies do make large claims, and they can properly make large claims, because the results, honestly, carefully applied, will result in much larger figures than the historical cost. To be sure, I believe they are exaggerated in the minds of many engineers by fanciful estimates, extremely large overhead charges allowed, and development charges; but still, under any application of the theory there will be a very large valuation secured by that method.

Under the second, which for short I will call the historical theory, which is adopted to a large degree by some State public-service commissions, notably, in Massachusetts, New Hampshire, Indiana, and Illinois, a valuation is reached which is usually much below the outstanding securities—not necessarily in Massachusetts, because there they have kept down the issuance of securities; but in other States that usually is the case.

This theory, however, in my judgment, is not only a popular theory among the great mass of citizens, but I believe it is an equitable theory. It is the theory that had been largely controlling in the United States Supreme Court until the Nebraska rate case, when the mistaken effort was made by the attorneys for Nebraska to introduce the reproduction theory, because it was thought the public would gain somewhat by that theory in the valuation of the Pacific railroads which had been built under war prices; and the courts very largely swung around afterwards to that theory. But they have now split with it in three vital respects, and the Supreme Court now has no definite theory.

The three respects in which they have broken from the reproduction theory are, first, with respect to paving over mains and conduits. That is no longer allowed by most courts, if the paving was

put there after the mains or conduits were laid; but it is an absolute logical split from the reproduction theory not to allow it.

Again, there has been a split from that theory with respect to the matter of land. In the Minnesota rate cases, Justice Hughes emphasized a position which is neither the historical theory nor the reproduction theory, but takes the value of the adjacent land at the time of valuation, and refuses to put on any costs of acquisition, any overhead, such as interest on the land while the railroad is being built, or engineering or any other charges, although they are always incurred both in the historical theory and in the reproduction theory; but the Supreme Court, perhaps thinking that even applying that value of adjoining land you got something nearer to justice than if you took the reproduction theory and then added the overheads on that, adopted a theory which has no logic in it, as I can see it, but nevertheless is interesting because it is a break from the reproduction theory.

The third break has been in the case of going value. The reproduction theory of going value is based on the cost of reproducing the business. The courts have split from that, and have taken the historical, early losses not made up by later gains, as in the Kings County gas case and in the Des Moines gas case.

Commissioner WENLE. Will you give a citation to those cases? In what courts were those cases?

Mr. BEMIS. The New York Court of Appeals in the Kings County gas case, and the United States Supreme Court in the Des Moines gas case. Therefore there are very important respects in which the Supreme Court has divorced itself from the reproduction theory which it held pretty strongly in the case of Consolidated Gas in 1909. At the same time, the court still seems to have leaned more toward the reproduction theory in some of its general expressions than toward the historical theory; but I think many of our strong State commissions are turning strongly toward the historical theory which has always been held in Massachusetts and is very strongly emphasized in many States besides the few that I have referred to.

The historical theory often bears down heavily upon investors, and that is its weakest point; but the number of really innocent investors in such securities must be rapidly diminishing, and the valuations are not being made suddenly—the matter has been under discussion for many years; and as it reaches more and more concrete form I think the market is doing as it has been doing very largely in the past—adapting itself to that situation. I doubt, for example, to-day, whether the railroad securities of the United States are selling in the market at any more or at much more than the cost of the property now in use less depreciation. I doubt it very much.

The nominal value of those securities, the par value, is somewhere, I understand, in the neighborhood of nineteen billion dollars; the market value is hardly over twelve billion—eleven or twelve billion dollars.

So when there is a great outcry against the injustice of the historical theory, it is quite likely that you will find, on exhaustive investigation, that the market is about on that basis to-day; and I think it is likely to be so in the case of the street railways.

Here is a conclusion from the historical theory that interests me very much: From the United States census volume for Street Railways for 1912 and from a summary of the 1917 volume, not yet out, on pages 46 to 51, and of the Aera for August, 1919, it appears that the United States census has divided the railways into four classes—elevated and subway and classes A, B, and C.

Class A includes railways having a gross operating income of \$1,000,000 or more per year and includes about 100 companies.

Class B includes those having from \$250,000 to \$1,000,000 per year of gross income and includes about 150 companies.

Class C includes about 700 small companies of less than \$250,000 per year of gross income.

It further appears that the nonoperating revenue available for interest and dividend in 1908 was \$192,615,567 in all of these companies, or 8.41 per cent of the amount of \$228,898,968 in the calendar year 1917.

Applying this percentage to the net operating revenues for 1917, as reported on page 50 of the August Aera, this result will follow:

In 1917 the elevated and subway roads had a net operating revenue available for interest and dividends and surplus per mile of track of \$51,485; and 1918, taking 8.41 per cent of it, \$43,299. Class A of the surface lines in 1917, \$7,893 per mile of track; 1918, \$6,638. Class B, \$3,461 in 1917, \$2,911 in 1918. Class C, \$1,877 in 1917 and \$1,579 in 1918.

This estimated revenue may be capitalized, for purposes of discussion, at 6 per cent, and then that would mean that the net revenue reported in the Aera for these classes of property, adjusted as above—would mean that the elevated and subway roads in 1918 are earning 6 per cent on \$721,150 per mile of single track; that the class A roads are earning 6 per cent on \$110,633 per mile of track, and that is, remember, all roads of over \$1,000,000 a year of gross, meaning roads possibly of 50 miles and upward; class B, earning 6 per cent on \$48,517 per mile; class C, the very small roads, 6 per cent on \$26,317 per mile of track.

It is impossible to make sweeping assertions. I do not want to be understood as making them. But my experience in appraisals of surface lines, mostly of class A and class B, has been that the above amounts are as much as the cost of the properties now in use less depreciation. In other words, the average class-A road has not cost, less depreciation, on the average, as much as \$110,000 a mile; and class B not far from \$48,500 a mile.

Some other appraisals, such as those in Pittsburgh, largely tend to bear out the same assertions, and appraisals that I might refer to elsewhere that I had nothing to do with. In other words, the companies are still earning 6 per cent, on the average, on the fair value, according to the historical theory.

There are, of course, many exceptions to this: so that I do not say that in each class there are not exceptions; and you notice I am not saying they are earning that on their securities—a very different proposition.

We are really face to face then with the question, which is very much in evidence: How far the cost of the properties now in use, less depreciation, due regard being had to the past profits of the company, as to how to treat that depreciation, shall have weight.

I believe the great difficulty that the street railways are having is because the popular belief, which seems to me to be pretty well buttressed by the fact, is that as a whole—I do not mean in individual cases, but as a whole—they are earning to-day on the fair value, according to the historical theory, probably as much as 6 per cent.

There are three classes of railways in each of the great classes, A, B, and C: Those not wisely or prudently built, such as appears to have been the case with many of the Massachusetts roads, as Mr. McLeod has told you; and I suppose Mr. Eastman, although I did not hear his testimony, where the roads were overbuilt as compared with the population and area; and where interurban roads were built, not for fast running, as in New York and elsewhere, but along ordinary roads and with ordinary city methods.

Then there is a second class of roads, once profitable, but incapable at any fare of becoming self-sustaining, due in part to competition with other means of transportation, such as may be true—I do not say positively that it is, but it may be true—of some of the surface lines in New York City that are competing with the subway and elevated roads that have gone into operation so extensively within the past year, for there has been practically a doubling of that subway and elevated system there in the last two or three years, at least.

Then the jitneys, of course, and automobiles, as you have heard, have made these roads impossible of self-support, and I believe some of them would be impossible of self-support on any fare that might be allowed, because beyond a certain point traffic is driven off and higher fares will not bring any more earnings.

Then there is the majority of our larger roads—I am not so sure about the various small ones, but there is a majority of our larger roads—which have, during the past five years, during the entire past history, and probably even this year since March, been earning a fair return on their investment; that is, using investment in the historical sense.

Even these roads did not come out as well as that probably last year or during the year ending with March 1; the influenza and other troubles, the absence of so many efficient men in the Army, causing greater inefficiency of operation, handicapped even many of the better roads for a while. But conditions have been very rapidly improving since March, as I have discovered in many parts of the country. The recent big increase in wages this summer may counterbalance that; I am not sure, I have not seen enough of the records since July to know; it is too recent to determine. But from March to the 1st of August, at least, there has been quite a remarkable jump upward in the necessary operating revenue of many of our large systems.

Now, facing this situation, we might consider what the public can do with regard to these three classes of property. Take particularly, first, the properties that are not earning fair return and perhaps never can earn a fair return. Now, if those roads are needed from a social standpoint, in order to get people to work or to transact the ordinary business of life as highways are, and some ferries, the public may have to buy them just as it has bought toll roads. And then the question comes up, on what basis it should pay for them.

I have been very much impressed with the tendency, not exactly decidedly expressed, but the leaning, at least, of the last annual report of the Massachusetts Public Service Commission toward a liberal capitalization of their recent and prospective earnings rather than any attempt to value their physical property; in other words, taking account of what they are earning and what they can earn under any reasonable rates of fare, if they are willing to sell and operate them for the public good.

Commissioner WEHLE. On that basis, owners of the properties would not get very much, would they?

Mr. BEMIS. It would be a question of how liberally you capitalized. You might capitalize on such a rate of return and it would give them two-thirds or three-quarters of their investment; you can, if you want, give them their entire investment. But the question will be whether the community is obliged to make good all the results of improvement in the art. If any great invention displaced them, as the stagecoach was displaced by the railroad, whether we are under any obligation to recompense for those large risks is a mooted question. I think we should go part of the way in that direction, but I am rather inclined to think we should not go the full distance.

Commissioner WEHLE. But if there have not been any net earnings, how would you capitalize net earnings?

Mr. BEMIS. There have been net earnings or there may have been net earnings, but not 6 per cent; there may have been 3 per cent. Or if there have not been any earnings, then the question will arise in each community—it has to be settled locally on the condition of that property—I think something should be paid for these properties even if they are not earning. But it may be that the roads, as is apparently the case in New York City, prefer to go out of business entirely; then the only thing for the city to do is to start buses, or something of that kind, it seems to me, as they are doing there.

The CHAIRMAN. Would you favor having the public subsidize the weak line which performs a necessary public service under private control?

Mr. BEMIS. I was just coming to that; that under city purchase, of course, cities after buying would have to subsidize; they would have to support. The idea would be that they would buy them because they were important to preserve. Now, subsidizing in private hands has the difficulties that Dr. Maltbie has pointed out: The sensitiveness of the public toward subsidizing steamship lines or railroads or city utilities which they do not own. I doubt if it is going to be practical or feasible to do that. It is possible. I know there was a proposition in Des Moines lately, and I have been assisting Gen. Myers in Des Moines in regard to some matters, although I did not particularly take that up, where the city was proposing that they would have a service-at-cost plan, and when the equalizing fund fell below a certain sum, taxation should make up the balance and bring it back, but the fare should never rise above 5 cents. That was voted down, however, by a very large majority two weeks ago, in Des Moines.

There seems to be a great disposition to oppose subsidizing in any form privately managed facilities. We saw that in Congress a great deal in connection with the steamship subsidies, but it still seems to prevail.

Companies should be forced, as so many witnesses have suggested, to greater economies in the use of one-man cars, economy in the use of electricity, skip-stops, honest collection of fares, and various other matters that might be referred to. I think that a lower fare than 5 cents for short rides, which I urged in New York City recently before Commissioner Nixon, would be a very profitable thing for the companies.

Commissioner WEILLE. All lines, surface and rapid transit?

Mr. BEMIS. No; surface lines. They have to compete and generally expect traffic for short distances, short hauls. I think that keeping the present fare—I am not exactly committed to a zone system, but I think something less than 5 cents might be worth while for very short rides in our big city.

Under municipal ownership, the paving charges could be shifted, as has been suggested, and even extensions could be built, in part at least, if not wholly, by special assessments of abutting property. That again is a very difficult matter to do in the case of a privately owned railway.

Most of our largest street-railway systems, if not largely overcapitalized, can go on successfully, I believe, under their present fares, 5 cents or 7 cents, as the case may be; but if largely overcapitalized they apparently have to face bankruptcy or voluntary readjustment of their interest and rentals. I do not believe, in the present state of the public mind, there is going to be any method adopted that in the generality of cases will sustain a capitalization very much in excess of what can be shown to be the cost of the property now in use with or without depreciation according to the ability of the company in the past to handle it. And in fact, the movement is being made even in New York by the commissioner of public service to force readjustments of rentals. And in many other cases that will have to come.

Fundamental in any system of regulation or ownership is the determination of the cost of these properties now in use less depreciation from all causes. I have always believed in municipal ownership and operation of public utilities, but I dread its coming at an exorbitant valuation. I had occasion to appraise the street railways of Detroit three or four years ago and fixed the figure at about \$20,000,000. The commission thought it a fair figure at the time. It was based, of course, on the lower prices then prevailing and on the study of the investment. But in order to avoid the cost of financing, they made a proposition to the company that they would assume the outstanding bonds on the whole system, which were, in the thought of the commission, about \$23,000,000, and then the company would have the interurban roads free of debt. It was raising the price from \$20,000,000 to \$23,000,000 in order to take it over immediately with the assumption of the 5 per cent bonds. The company said that if the commission would pay for, or take over, the bonds in the treasury as well as the bonds in the hands of the general public, which meant \$1,900,000 more, or about \$25,000,000, they would sell. The commission refused that proposition and instead proposed to leave it to a local court subject only to appeal to the State court to decide the price; and that was voted down.

Now, two or three years passed and the city, for the same property, with perhaps a million or two of extensions—but justified in their

opinion, I suppose, that it would cost more to duplicate—agreed with the company to pay them \$31,500,000 which had been appraised at \$20,000,000, and which the city had agreed with the company to buy either at \$233,000,000 or at \$25,000,000; and the people voted it down.

Now, I think that vote was largely due to the distrust of any valuation based upon the reproduction theory or on any theory other than one based on the investment; which was so strongly emphasized in theory in the famous decisions of the Public Service Commission of the Second District of New York, in the Buffalo Gas Co. case, and in the electric case at Buffalo—the Cataract Electric case, which were written by Mr. Stevens when he was the chairman of that commission, although since then, I understand, he has changed his position on the subject. But the position he took was that what the courts, particularly the United States Supreme Court, were aiming at was a fair amount of property; that it is not historical cost, it is not the reproduction cost, but it is some standard of equity. But that standard, I believe as he did in those two cases, and as several of our State commissions are holding, will lean more nearly toward the investment than it will toward the reproduction theory.

Commissioner MAHON. Mr. Chairman, I have to get away to attend an important engagement. I regret to interfere with Prof. Bemis at this time—

Mr. BEMIS. I am practically through.

Commissioner MAHON. And I should like to hear what he has to say, but I have to get away. I have been requested by the commission to get the wage from our office, and that wage has come, and I have turned it over to Mr. Lauck this morning with instructions that he prepare it as requested by the commission and submit it. So that is in the hands of Mr. Lauck now. I want to let you know that I have carried out my part of the obligation. I regret to have to go at this time.

Mr. BEMIS. Mr. Mahon, I have never talked over the Detroit street-railway situation with you, but I feel sure you will agree with what I have said.

Commissioner MAHON. I agree with all you have said, so far, Professor, in that situation, and I think what you stated as to the valuation is what defeated it.

Mr. WARREN. That valuation was on the lines in the city, Prof. Bemis?

Mr. BEMIS. Yes; and then a short zone called the one-fare zone.

Mr. WARREN. But not on the whole system?

Mr. BEMIS. No. One-third of the valuation and more than half the mileage, I think, was outside the city, but we did not value that—at least, I mean I did not value it. The state commission did at another time under Prof. Cooley.

There are a few random notes that I made as I sat here this afternoon. One is that we hear a great deal about the service-at-cost plan, and I had the privilege of assisting Mayor Johnson and Mr. Baker in introducing that in Cleveland and assisting Mayor Lindsley, now commander of the American Legion, when he was mayor of Dallas, in introducing it there, although in Dallas they introduced

higher rates of return and somewhat higher figures otherwise than I had advised. But I find serious difficulties with a service-at-cost plan, although it looks so good in theory.

The CHAIRMAN. In both cases you mentioned, had you supported the service-at-cost plan?

Mr. BEMIS. Yes. The plan, as I think, works out pretty well in Cleveland. I think not so well in Dallas, where the valuations that were finally accepted, I believe, were somewhat higher than originally planned.

The great difficulty with the service-at-cost plan is in getting a good valuation to start with. The public are not yet sufficiently educated on the subject of valuation to know just what it means, and there is a great danger of fastening on the public a valuation that will be too high and which will be very difficult to get away from.

There is also danger that a service-at-cost plan will require a fare higher than the social welfare of the community may demand and which could only be gotten around by subsidizing the road or by direct municipal purchase and operation. But you are tied almost to a higher fare under a service-at-cost plan while it lasts, as in Boston to-day. I think very often we are in a situation, or would be under public management, such as Director Hines called to the attention of the Government not long ago when he thought a rise of freight and passenger charges, particularly of freight charges, of the railroad, to-day, \$300,000,000, would mean an increase of charges to the public of several times that, as the charges were passed along. He thought it might be better to have taxation bear that burden than to raise the fares. He made that in an official communication to Congress, you may remember.

But the service-at-cost plan ties one down rather closely to a fare which might, if things keep on as they have, become too high in some cases, although maybe not in all.

I think, too, that the service-at-cost plan requires, as in Cleveland it has secured, a home rule different from regulation by State commission. I think it needs to be closely in touch with the people and then it has its best chance of success, because it then tends to produce that cooperation which there has been in Cleveland between the city and the railway in effecting many economies and preventing many costly attacks on the road—in excessive pavement charges or excessive awards by juries in damage cases, and many other ways; permits for turnouts and curves and so on, which really are very beneficial often to the company, and which the city can give without much cost if it feels in a friendly attitude. But there are these difficulties of high valuation and fixed fare—a fare, I mean, fixed as to its base.

And, of course, our cities are hesitant for another reason. It seems to them to forfeit the benefits of the franchises which they are now enjoying. The moment the shoe pinches—that is where the companies are suffering from their rigid adherence to the franchise when they were gaining. When they were making a good deal of money from the franchise they were enjoying, they would not listen to a modification, and now they are suffering the penalty that the cities feel that they should not make concessions which the companies

had refused to make years ago. That may not be quite a proper position to take, but it is a very natural one.

Of course, we still have to face the question, if the cities adhere to that, of how the companies are going to get any money for extensions, which is, after all, the greatest problem perhaps before even our larger and better companies, which are earning, it may be, a fair return on the actual investment but have capitalized so much beyond that.

I do not know of any plan for issuing any underlying securities that would precede the present bonds and enable companies to finance extensions where they are, as is often the case, bonded up to the full value of the property and sometimes more. Bonds have even been issued to buy stock in consolidations.

That difficulty is going to force the roads either into reorganizations or city purchases. There may be some better method found, or some other method, but I do not see just how it can be found unless the roads are so very prosperous that they can float more securities without reorganization.

I have not observed until lately much trend towards municipal ownership of street railways in this country; but if the Seattle experiment, which apparently was undertaken with a very high valuation, and the San Francisco experiment, succeed as they seem to be doing, they will undoubtedly be followed by Toronto in a very short time; their franchise runs out very soon. And very likely we will find other experiments on a large scale; and a few of those will have a very large influence, if well managed, as the Glasgow experiment has had in England and Scotland. The trend of thought is along that direction, and I notice among the large investors, too, just as we have observed it in the case of steam railroads, being driven to it by the inability to earn under any system of financing which may be practicable.

I am inclined to think that street-railway operation by cities will succeed better than operation of gas, because it is under the public eye so completely that the poor service would be more readily detected.

At the same time I have not been urging municipal ownership of late years, but have felt that it would gradually come as the public becomes ready for it and appreciates the conditions of making it a success, and I think it is being driven ahead rapidly now by the financial situation.

I believe that the street railways do well to treat, as I think they are generally doing, with organized labor as was mentioned by Dr. Maltbie.

Reference was made by him to the fact that there should be awards for efficiency, and I think there should be, but I think they should go to the management and to the labor force rather than to capital. That some scheme under which some share in profits, as a dividend on wages and salaries, would be more effective than a larger dividend on capital directly.

Taking up that 6 per cent rate in Cleveland, many do not know that it is not 6 per cent on all the valuations; it is whatever interest is paid and 3 per cent on the stock. The bonds are only 5 per cent bonds. They are perhaps one-fourth of the valuation—a very small

proportion as compared with most cities; but still a very material element is the 5 per cent bond there, and that 6 per cent stock has been quoted right along at par, it has been selling all the way from 90 to 110, and the last I saw of it, a month ago, it was 102.

Mr. WARREN. I think that was after the 7 per cent return was referred to arbitration. My impression is it was testified to here, or that Col. Alexander told me in conversation, that the stock had been selling below par but, after the city agreed to arbitrate the question of a possibly higher return, the stock went above par.

Mr. BEMIS. I know two years ago, or a year and a half, it was selling at 97 to 98, which was the lowest I saw it go. Before that it had been selling above par.

I understand someone here has brought up the point as to whether the Cleveland experiment allowed enough for depreciation. The situation is this: The road was valued at a certain price, which was after deducting depreciation, somewhere in the neighborhood of 70 per cent of the estimated cost new.

Let us take now a typical illustration, and see how their depreciation worked out on track.

Suppose a piece of track cost, when it was new, or was estimated to have had a reproduction value new in 1909—at that time there was not a great difference between the two, prices not having risen as they have lately—let us assume that that track was estimated in the Tayler valuation to have cost, or to be worth new \$10,000, but they valued it at \$7,000 because of the depreciation. Now, it has come along to a time when it has no value above scrap. The \$7,000 has gone. It is ripped out and the new rail of the same weight, we will assume, is put in, and that that rail to-day will cost \$20,000, we will assume, just for the purposes of argument. Now, under ordinary accounting principles it is probable, and it was the intention of some of us who helped to draw the ordinance, that when the \$7,000 property was scrapped, they should take out of the depreciation reserve \$7,000, and the remaining part of the \$20,000, \$13,000, should come out of capital as additional investment; but it was ruled some years ago that the wording of the franchise was more favorable to the company and that they should consider, not the \$7,000, but the \$10,000, the reproduction cost new. So for years they have been taking out property appraised, in my illustration, at \$7,000 and, until the war, putting in property costing \$10,000, and paying for the whole \$10,000 out of the depreciation reserve. Now, however, that prices have risen, they are taking the whole \$20,000 out of the depreciation reserve, and thereby are getting a property which has, on the actual-cost basis, a value very much greater than the Tayler valuation, or the original cost new of the original property. So, to that extent, the depreciation is, you might say, being more than made good on the old track. But then there is new track, and there is new property, where it is not being made good, because it does not begin to require renewal at the start, after extensions are required, and there are no renewals there, and they are not accumulating depreciation reserve to take care of that. How far the one balances the other it is hard to say. In one respect the company is gaining and in another respect the company is losing.

Then they do not accumulate a reserve to take care of removals of the power plant, but when any power plant is discarded, they create a special reserve to wipe it off in 3 to 5 years, and they are doing that out of the earnings as well as the—what was originally 5 cents is now 6 cents or more per car-mile for regular maintenance; so that it is rather difficult to say that the company is failing to preserve its property out of its various renewals. I am inclined to think it is breaking even, if not doing better; but I realize there is room for discussion on that point. But it is not quite correct to say that it is self-evident that the company is running down. I think it is quite as easy to maintain that the company is being improved out of these various reserves.

Commissioner SWEET. That point was made by Mr. Mortimer, president of the Milwaukee company; but it occurred to me, Prof. Bemis, when he was making his discussion, that there might be a psychological benefit in the plan of Cleveland as he described it, even if they were not putting aside a sufficient reserve, in accustoming the people to rather low fares on the start.

Mr. BEMIS. Yes.

Commissioner SWEET. And that that had an educational value which would, in the long run, tend to popularize the system and keep the people contented with what they were getting. Do you think that there is anything in that?

Mr. BEMIS. Yes. It did have that influence, and it greatly cemented the feeling of good will.

Commissioner SWEET. That is it exactly.

Mr. BEMIS. But if that valuation had been a high one, there would have been great sensitiveness on the subject, and I think those good results would not have followed; but the valuation being not as low as Johnson wanted, but a good deal lower than the securities or what then would be given to it on a reproduction theory with present prices, the people have rested satisfied and felt that it was not such a very bad situation, and I think the company is pretty well satisfied, too.

Commissioner SWEET. Is the historical method of valuation that you seem to favor, based upon the actual cost at the time the various items were bought?

Mr. BEMIS. Yes; and estimated where it can not be found on the books.

Commissioner SWEET. So that in a company that had no other stock there would be substantially an agreement between the stock issues or securities of various kinds and the physical valuation of the property?

Mr. BEMIS. Yes; if it had been honestly and wisely invested, there would be no discrepancy. Of course, there might have been a failure to keep the property up. The property might not have earned sufficient to keep it up, or it might have earned an ample amount and yet paid out not only a fair dividend, but extra amounts which should have gone into renewals and extensions to meet depreciation, so that when you come to study depreciation, you might find that there was a gap, as I think is the case to-day in some of the Massachusetts companies, between their stock and bonds and the cost less depreciation. In some instances, I think—in Boston, for example—

they could have cared for that. They earned sufficient in the past to do it. In some of the country companies in the smaller towns in Massachusetts they could not.

Commissioner SWEET. Suppose a company started with overhead wires and later determined to change, perhaps at the requirement of the city, some city ordinance, and had the system as we have it here in Washington, necessitating considerable loss. How would you figure that?

Mr. BEMIS. It should be taken according to local conditions not too drastically, over a period of years. If it had just occurred, I do not think it should all be written off; but if they had had several years in which to amortize it, they should have been expected to do that. The old horse-car lines should have been amortized long ago, for example.

Commissioner SWEET. Yes; and some of the cable roads that were changed into electric roads and went through this process?

Mr. BEMIS. Yes.

I think there may be made a distinction between a wholesale change, due to a very sudden change in the art, such as might occur if we electrified the railroad terminals of New York City or of Washington, and those gradual displacements that come from ordinary improvements in the art. Those should be taken care of as they come along; but any revolutionary change could be easily spread over a series of years.

Commissioner SWEET. By your system of valuation you might vary considerably from the physical value of the property at the time?

Mr. BEMIS. Yes.

Commissioner SWEET. Upon the basis of the prices that were actually paid for material and labor?

Mr. BEMIS. Certainly. In other words, you can not have a hard and fast rule. You have got to study each local situation. I believe, however, that anything that departs very far from the actual cost of these properties, as shown by their books, or by estimates where the books are missing, together with a study of their history as financial institutions—their investment history—anything that departs far from that is not going to carry with the American people.

Commissioner SWEET. What would you do in reference to the stock and bonds issued by a company that is considerably overcapitalized, even though there may have been water in it, as we say? At the present time do you think it is necessary for a company of that kind to go through the hands of a receiver and be reorganized before it can get on a proper basis? Or is there any other way you know of to adjust it?

Mr. BEMIS. If the gap is not large, it can probably get along. If there is any very large gap, I do not see how they can get along on any alternative scheme, unless the public is willing to subsidize them. It would be very difficult to get the voters to do that, unless it could be shown that there was some special local condition which the company could not avoid—some very bad sledding, very hard luck, or something of that kind; it may have had some terrible washouts or destruction of property, which they could not replace

except by more stock and bond issues. There are such cases, more particularly with steam railroads, that is.

Commissioner SWEET. Assuming that there may be many cases where it would be necessary for the public to buy, on some basis of valuation that would be mutually satisfactory, perhaps, and own the roads, the street railways in cities—have you any objection to the plan; do you see any objection to the plan of having the municipality own the railroad and have it privately operated?

Mr. BEMIS. The greatest objection, I think, is the historical one, that that experiment was tried extensively in Great Britain for years, and always gave way, ultimately, to complete private operation.

Commissioner SWEET. To public operation, you mean?

Mr. BEMIS. I meant to public operation. The experience of Great Britain has led me to believe that that would be the situation anywhere else. You speak of a theory which was very prevalent in Great Britain for years, but it gave way to complete public operation. The difficulties are in carrying on a proper contract, and there is a hitch always between the owner and the operator.

Commissioner SWEET. Have you any data, or can you give us any information as to the relative efficiency and satisfaction of results between the privately owned and operated railroads in England and the publicly owned and operated roads of England?

Mr. BEMIS. Well, it is very difficult to make comparisons save this: The National Civic Federation, of which my friend Mr. Maltbie and I were members and on the executive committee some years ago, had engineering and accounting investigations made; there was a large fund raised, raised mostly by the public utilities themselves, and they had an equal representation in the investigation; and that report indicated that when you took any particular case you might draw very conflicting conclusions; but very remarkable was it that the entire commission of about 21 members, with one dissenting vote—that of Mr. Walton Clark, of the United Gas Improvement Co.—agreed on the proposition that the most effective weapon in the hands of a city was the right of municipal ownership, rather than any attempt at regulation. They did not go so far as to say a city should have municipal ownership, but that there should be, under proper safeguards of voting and control of bond issues, State supervision of accounting and so on—there should be the right of a city to purchase, construct, and operate at will; that that right was the best club we had found over it.

Melville Ingalls was chairman of that commission, and we had some very strong private-utility men on it, like Mr. Edgar, head of the Boston Edison; Mr. Clark, of the General Electric; as well as now President Goodenow of the Johns Hopkins; Walter Fisher, ex-Secretary of the Interior; and some others; so that we had a pretty well-balanced commission; and all but one agreed to that proposition.

The best you can say is this: That the trend in England has been toward municipal purchase and operation.

Now, you have either got to say that that was a foolish move or that it was a well-considered move; but that it has taken place without any apparent move in the other direction makes me believe that

the general judgment of the business interests of England, which largely control those cities, favored it. I have been through those cities a great many times, investigating them, and there seemed to be a general feeling that they were doing a wise thing.

Commissioner SWEET. They do not have quite as much politics in British cities as we have here, do they?

Mr. BEMIS. No.

Commissioner SWEET. I think that is all.

The CHAIRMAN. Just one or two questions.

You have been on the advisory board of the division of valuations for a number of years?

Mr. BEMIS. Yes.

The CHAIRMAN. And have had a great deal of experience in assisting in the valuation of steam railroads, as well as in valuing street-car and other properties?

Mr. BEMIS. Yes.

The CHAIRMAN. You are entirely familiar with the report of the commission in what is known as the Texas Midland and the Winston-Salem cases?

Mr. BEMIS. Well, I have read them. I would not say that I could pass a very good examination on them now. It is a year or so since I read them.

The CHAIRMAN. I do not intend to go into the details of them.

From your experience in valuing steam as well as electric railways, are you of the opinion that the same general principles of valuation apply to both?

Mr. BEMIS. Yes.

The CHAIRMAN. Do you also believe that the same general methods in getting at the quantities and the unit prices—the land values and contingent and other values—may be followed.

Mr. BEMIS. Yes.

The CHAIRMAN. Do you believe that the findings of the Interstate Commerce Commission in the Texas Midland case would be of assistance to the public as well as the utilities in determining the value of these street-railway properties?

Mr. BEMIS. Yes; but I think the commission has not followed the intention of the framers of the valuation act with respect to estimating original costs where the records were defective.

The CHAIRMAN. I understand your views upon that. Of course, they are valuing the steam railroads according to the act of Congress, and there may be some differences of opinion as to the interpretation of that act.

Mr. BEMIS. Yes.

The CHAIRMAN. And, of course, in valuing street-railroad properties, either for purchase or rate-making purposes, the States are not governed by an act defining their duties?

Mr. BEMIS. No.

The CHAIRMAN. Or designating what particular elements should be found?

Mr. BEMIS. No.

The CHAIRMAN. Just to come back again to the question: Do you believe that the principles or findings announced by the Interstate Commerce Commission in the Texas Midland and Winston-Salem

cases would be helpful in the determination of values of street-car properties?

Mr. BEMIS. Yes. I would not thereby commit myself—that is why I mentioned what I did a moment ago—that I necessarily indorse everything that was in those decisions.

The CHAIRMAN. I am not asking you to do that.

Mr. BEMIS. But I think that the decisions would be very helpful and, in the main, I would indorse them.

The CHAIRMAN. What would you think of the advisability of this commission, in its report, attaching a copy of the findings in one of those cases and simply recommending that the same be considered by the public and the utilities in determining the value of street-railway properties?

Mr. BEMIS. I think it would be very wise to introduce it with the statement that you do not necessarily, yourself, indorse it all, but that you put it in as a valuable contribution to the subject.

The CHAIRMAN. Do you believe that this commission, in the investigation which has been made, would be justified in attempting to determine the precise method of valuation or the exact principles that should be applied?

Mr. BEMIS. I think it would be proper for the commission to express its leaning toward some theory, if it so felt; that is, if it has a judgment upon the relative emphasis to be placed upon conflicting points of theory, it is well enough to express it. I do not know that that answers your question.

The CHAIRMAN. I can answer that by saying that we have taken very little evidence on valuation. It is such a tremendously large field and involves so many considerations that we thought that we might have to be in session for many months if we were to attempt to determine the principles to be applied in valuation proceedings.

Now, just one other question: You have made some reference to municipal ownership. Do you believe that that is the real solution to the electric-railway problem?

Mr. BEMIS. I think it is the ultimate solution. I would not push the thing forward until the people are ready for it. I think it will come of its own accord as time develops. I would have legislation, however, so changed, and constitutional provisions so changed that cities can finance the purchase or construction of such properties when they want to.

The CHAIRMAN. This morning Commissioner Eastman referred to the Bay State system and stated that it operated through a great many cities and villages. Under those circumstances how could municipal ownership be applied?

Mr. BEMIS. By such methods as you see applied in Chicago, in the sanitary district; in Portland, Me., in the Portland water district; and many such cases—by creating a special district or street-railway territory that may be considered a system.

It might, of course, be a very large unit: in some States it might possibly be so large as to almost be half of a State; but in many cases it would not be more than a county.

The CHAIRMAN. Where a property operates through a large territory, and through many cities and villages, would you think that ownership should be by the State, rather than by that territory which you mentioned?

Mr. BEMIS. I think that it should. The general principle should prevail that it should come as close home to the patrons of the road as possible. I imagine you can create a district much smaller than the State. You could better divide a State into a few districts than to have the State run it all.

Of course, in a great many States, especially in the West, the district need not be very much larger than the city; and the interurban roads would be a different proposition.

The CHAIRMAN. Do you believe that, from the experience that has been gained in municipal operation of electric-railway lines in this country, this commission is justified in recommending that municipal or territorial ownership is the solution of this problem?

Mr. BEMIS. Well, I should, if I were answering that frankly—as I am trying to—I should say that I would advise you to present the matter as something that you believe worthy of serious consideration, and that it will occupy a larger and larger place in the future, and should not be turned down; but you are not prepared, at this time, to do more than that.

The CHAIRMAN. That would be your recommendation?

Mr. BEMIS. Yes. I should imply a favorable attitude without directly recommending it. I would say that it has great possibilities, as the people learn how to run those things.

The CHAIRMAN. That is all.

Commissioner WEHLE. Would you say that the Texas Midland decision was the best existing expression of the historical theory in valuation?

Mr. BEMIS. No; but there have been one or two decisions of the Interstate Commerce Commission that have been made as final decisions: The Texas Midland and the Winston-Salem Southbound. So they have much of value in many respects. I do not consider them, however, as ideal illustrations, by any means, of the historical method, because the commission has not in the Texas Midland committed itself to the reproduction theory, and there are certain gaps in it.

In the Winston-Salem Southbound, they were able to get the actual costs pretty completely. They have always taken the ground that they would not estimate where they did not find the cost on the books, and I think that prevents their reports from even setting up the historical costs completely; but they got a good deal of it.

Commissioner WEHLE. In the Winston-Salem case, would you say there was a decision which did express the historical theory of valuation satisfactorily?

Mr. BEMIS. No; I should say it came nearer to it than the other, the Texas Midland. But they both are very good in certain other respects. They give a very reasonable theory of depreciation and of overheads. It is the most reasonable adaptation of the reproduction theory that has been made.

Mr. WARREN. May I interrupt just a moment, Mr. Chairman? I have to leave to take a train.

I should like to submit, and I will send them to Mr. Ogburn as soon as they are ready, an abstract of recommendations of various investigating commissions and other bodies which have been considering the street-railway problem in various parts of the country,

and which Mr. Hills, my associate, has been preparing but was not quite able to get it finished to-day. We thought it might be of use. It is merely an abstract of the recommendations.

The CHAIRMAN. We shall be very glad to have that.

Mr. WARREN. I should like also to submit through Mr. Ogburn, if I may, some wage scales. I have in mind, particularly, the one recently approved by Judge Mayer in New York for the New York surface railways, because I thought, in connection with the testimony which went in yesterday, it might be of service to the commission in seeing what would be the result of applying a minimum wage to the lowest-paid people and carrying it on up through the company.

The CHAIRMAN. That is very helpful.

Mr. WARREN. And on the question of wages, as there are a number of pretty large roads, like Philadelphia and Milwaukee and New Bedford, and, I think, New York, which are not members of the Amalgamated Association, I should like the privilege, if I can ascertain the facts, and I think I can, of submitting recent scales of wages adopted in such cities as I may learn.

Finally, I should like the privilege of filing a brief, if we can get one ready before the commission makes its report.

The CHAIRMAN. How much time would you like, Mr. Warren?

Mr. WARREN. I do not want to ask for any time, because I should not want to seem to ask the commission to delay its report. I should much rather have the report than to have it delayed for the brief.

The CHAIRMAN. Of course, we will try to expedite our conclusions as quickly as possible, and the sooner you get it in the better.

Mr. WARREN. We shall get it in just as soon as we can; but we want to make it a sort of abstract of the hearings, which seem to us to have been very valuable, so that it could be used by the members of the commission in their work.

The CHAIRMAN. Very well.

Mr. WARREN. As I understood, the question of valuation is not going to be passed upon in any definite way by the commission, as we did not introduce evidence on it. Personally, I want to thank the commission again for their uniform courtesy and patience to us of the street-railway industry in the very great amount of time we have taken.

Commissioner WEHLE. Excuse me, just a moment, but before you leave, lest there be any misunderstanding on the question of expressions by the commission in its report on the question of valuation, I think before Mr. Warren leaves I should like to hear what the chairman has to say about it; because although we did not go into the discussion of valuation here, it was my understanding that reference might be made to any previous investigation.

Mr. WARREN. We should welcome that.

Commissioner WEHLE. And that recommendations might be made by the commission.

The CHAIRMAN. The Chair believes that this commission is not in a position, from this record, to undertake to make a definite pronouncement upon the kind of a valuation which should be made or the principles which should apply. Just in what form our recommendation should be made upon that subject—and of course, one must be made—is a matter for us to dispose of in our executive sessions.

Mr. WARREN. Of course, the more fully you set out the different forms of valuation, I think the more valuable the report would be.

Commissioner WEHLE. What is your observation, Mr. Bemis, with reference to the purchase of power by traction companies?

Mr. BEMIS. In some cases they purchase from the electric-light companies, which they often own; sometimes, however, they purchase from independent companies. Of course, in Canada the Hydro-Electric Commission of Ontario is selling power quite extensively to street railways and to municipalities. That is an enterprise of very great significance.

Commissioner WEHLE. In cases where you find the traction company purchasing from a power company which is owned by the same interests as control the traction company, what general conditions, if any, have you observed with reference to prices?

Mr. BEMIS. I have not come across any particularly extravagant charges of that character. That is going on to-day in Des Moines, and I have been investigating that lately. But the charges did not seem excessive. There is a large purchase of power in Chicago by the elevated roads from the Commonwealth Edison. The two interests are practically controlled by Mr. Insull, but the price is low.

I think there is more abuse from holding companies. The theory of the holding company was that the various members of it could compare notes as to efficiency; that the central office would gather data and force each company to greater economies by showing what other companies of the syndicate were doing. But under the scheme of publicity of accounts enforced by State commissions we are getting that without the syndicate or the holding company, while the holding company is very apt to take a very considerable amount of money for a central New York office, which I find is rather difficult to justify.

Commissioner WEHLE. What recommendations, if any, would you make on those two points?

Mr. BEMIS. On what?

Commissioner WEHLE. What recommendations, if any, would you suggest should be made by the commission on those two points which you have just discussed?

Mr. BEMIS. I do not think on power you can make any recommendation except that in all cases where it occurs there should be very careful investigations by the city's agents, engineers, and accountants, as there is always a possibility of abuse. But there is a great possibility of economy in uniting the electric-light load, power load, and street railway together.

When it comes to the other matter of holding companies, I think you might express a good deal of doubt and suspicion as to their value, that whatever value they had was largely taken away by the development of publicity of accounts in the various States. About the only great advantage they seem to have now, they may help in financing somewhat, but I think they should be looked on with a good deal of doubt, and I find that quite a common view now even among accountants and engineers who are working very largely in the companies themselves.

Commissioner WEHLE. You think that each company should be a unit and should not be controlled by a holding company?

Mr. BEMIS. I think it is better so, generally speaking. Of course I do believe in the union of all the traffic transportation of a city in one company, if possible; but I think there a complete amalgamation is probably better than a holding company.

Commissioner WEHLE. But you were speaking primarily, I take it, of holding companies which hold the traction interests in several cities?

Mr. BEMIS. Yes; I was.

Commissioner WEHLE. You do not notice that these holding companies effectuate any economies in either operation or purchasing of supplies or management, do you?

Mr. BEMIS. I do not think they effectuate economies sufficient to warrant the charges they make for it.

Commissioner WEHLE. And do you find that the charges they make for what they do are a great drain on the industry and an injustice to the taxpayer and car rider, do you?

Mr. BEMIS. Well, I would say a material drain; I do not know what adjective to use. I do not consider it startling or enormous, but I consider it a material drain and a drain of importance, always to be taken into consideration.

The CHAIRMAN. Mr. Bemis, we are very much obliged to you.

Mr. BEMIS. I have enjoyed it very much, I assure you.

The CHAIRMAN. I wish the record to show that Mr. Stiles P. Jones is authorized to submit a memorandum containing his views as to the solution of this problem and that that will be made a part of the record.

Mr. OGBURN. Mr. Lawson Purdy, in accordance with the statement I made last night, has sent a very interesting statement dealing with the matter of paying for extensions by assessments on property owners, which I trust we can have read into the record.

The CHAIRMAN. That may be done.

The statement is as follows:

PAYING FOR ELECTRICAL RAILWAY EXTENSIONS BY ASSESSMENT OF PROPERTY BENEFITED.

(By Lawson Purdy.)

The problem.—Electrical railways are operating at greatly increased cost for wages and materials. Any new construction will also be made at greatly increased cost. When extensions are made or new railways built, this increase in original cost is a burden until the total cost is amortized. It is a burden that must be met out of fares.

It is charged that in the past extensions of electrical railroads have often been built where they were not needed for the benefit of persons financially interested in the railroad, who owned land that would be enhanced in value by the building of the railroad. In any event, the building of the railroad does enhance the value of some land, and the persons who receive that financial benefit have not been those who have contributed to the building of the road. It is generally true of the building of an electrical railway, as in the building of any other highway, street, or road, that if it does not enhance the value of land by at least as much as it costs it should not be built.

Cost of electric-railway extensions should be assessed upon land benefited.—For more than 100 years the principle of paying for streets and street improvements by assessment of the property benefited has been applied to greater or less degree in the United States. For a number of years past its application has been almost universal. Special assessments have been imposed on property benefited to acquire land for streets, parks, and public places to

improve and even, in some cases, to maintain streets, parks, and public places. Special assessments amount to nearly 8 per cent of the aggregate revenue of all cities of over 30,000 population in the United States. In some cities special assessments amount to over one-fifth the total revenue.

This method of paying for certain public improvements has not only the advantage of obtaining the money, and obtaining it from those who receive the financial benefit, but it has an added advantage. Real-estate owners are prone to demand public improvements that they think will benefit their property even though such improvements are premature. If such owners know that they must pay for these public improvements they are less likely to demand them in advance of real need.

This principle of obtaining money from those whose property is benefited has been applied to the building of street railroads even though the railroads were privately owned. In many cases it has been held by the United States Supreme Court that it was not contrary to the Constitution of the United States for cities to give money to railroad corporations for the building of railroads near the city (*Gelpeke v. Dubuque*, 1 Wall., 229). It seems that the only objection on constitutional grounds to using public money to build railroads, either steam or electric, would be that such use of money is not a public use, and it has been held many times that the assistance of steam-railroad corporations to build railroads is a public use. It seems certain that it would be held that to build an electric railroad where it actually can be shown that the building of the railroad enhances the value of the land and serves the community, such expenditure would be for a public use.

Great Britain is confronting the same situation that we have in the United States. In 1918, on behalf of the ministry of reconstruction, a committee presented its second report dealing with the acquisition of land for public purposes. In the course of that report, after reciting that railways are most essential in encouraging and promoting industry and development, it is stated that new railway enterprises have not been entered upon, but that if the companies "could secure some portion of the increased value created by their undertakings, they would need no further incentive to initiate extensions." The committee states that "the principle of betterment applicable in cases of undertakings promoted by the state or local authorities should also be applicable in cases of private undertakings authorized in the public interest." The committee recommends only that in the case of private promoters they should not receive more than the actual cost of the construction of the undertaking.

Any such aid to private corporations must depend upon the exercise of adequate rate-making power.

Among the advantages of paying for electrical railways by assessment, whether owned and operated by public authority or by private corporations, will be that extensions will not be constructed unless they are actually needed. They can be constructed, however, if the operating revenue is sufficient to meet operating expenses and maintenance, while the extensions could not be built if the revenue had to be sufficient not only for operating expenses and maintenance but also to pay interest and installments upon the original cost.

By pursuing the policy, wherever practicable, of building electric railways by special assessments levied upon the property benefited, capital will steadily be diminished until ultimately we may hope that the entire capital will be amortized and the railways thereafter can be run for rates sufficient and only sufficient to pay operating expenses and maintenance.

The difficulties presented by the problem of levying assessments in proportion to the benefit conferred by the building of an electrical-railway extension are no greater than the difficulties met with every day by city authorities in imposing assessments on property benefited by public improvements habitually paid for by such assessments. Through long experience, methods have been devised for meeting a great variety of such problems. Local streets are ordinarily paid for in full by the property immediately fronting on such streets. So are local sewers. Trunk sewers are paid for by all the property which will drain into the trunk. Trunk thoroughfares are paid for, as nearly as may be, by all land to be served by the particular main thoroughfare. Parks are sometimes paid for by assessment and even maintained by assessment. To determine the area of benefit is work for an experienced and intelligent man who studies the local conditions. There are no difficulties in laying assessments to pay for street railways that can not readily be overcome by competent public officials.

This plan is not offered as a solution of the existing difficulties due to the depreciated dollar. If it is possible to continue to operate electric railways at all, this plan if adopted will permit of such extension of their facilities as may be needed, and promises a continual betterment of their financial condition.

Mr. OGBURN. Also the book from the city club on the same subject. Mr. Wehle suggests that it might be well to have that read into the record also.

The CHAIRMAN. Does the pamphlet deal only with that problem?

Mr. OGBURN. Only with that problem.

The CHAIRMAN. That may be made a part of the record then.

The pamphlet is as follows:

THE CITY CLUB OF NEW YORK.

55 West Forty-fourth Street, October 2, 1908.

THE BOARD OF ESTIMATE AND APPOINTMENT
AND THE PUBLIC SERVICE COMMISSION:

DEAR SIRS: The City Club respectfully submits for your consideration the result of inquiries made through its transit bureau with relation to the feasibility of meeting the cost of future subway extensions by means of assessments on the property benefited.

The city urgently needs more rapid-transit roads. Private capital seems disinclined, at present at least, to finance the work of building. The city's borrowing power is utterly inadequate to cover the need, and will be until relief may be secured through the slow process of constitutional amendment. If the necessary lines are to be built, it seems self-evident that other methods must be considered.

The club's investigations show that in the outlying districts reached by the present subway, and to some degree the nearer sections, the value of the property served has increased to an extraordinary degree. This added value would have paid for the cost of the work several times over. While the city as a whole has benefited greatly, the scale of local benefit is naturally much greater. In our judgment, it would not only be helpful as a solution of the problem, but far more equitable to charge a proportion of the cost of constructing a rapid-transit line to the property most benefited by such construction.

The argument is elaborated, and the exact results of the club's investigation given, in the accompanying memorandum. We trust that this may have your examination, and that if the plan commends itself to your judgment the future policy of the city may be shaped accordingly.

Very respectfully yours,

HOMER FOLKS,
Chairman, Transit Committee.
HENRY C. WRIGHT,
Bureau Director.

BUILDING OF RAPID-TRANSIT LINES IN NEW YORK CITY BY ASSESSMENT UPON
PROPERTY BENEFITED.

For many years the city has deemed it just to assess upon abutting property the cost of opening streets and building sewers. The theory of such a tax upon property is that it receives almost the exclusive benefit from the construction of a street sewer adjacent to it. The question naturally arises: Does not a transit line, by the benefit that it confers, fall in the same class as new streets and sewers? If a street-railroad or rapid-transit line be extended into an undeveloped territory, is it not built primarily for the purpose of furnishing transit facilities to future residents in that section? People will buy this property primarily because it has good transit facilities, and the value placed upon it is largely based upon its accessibility. This being true and universally admitted, why should not the property thus enhanced in value by the extension to it of a transit line pay for the construction of such line, to the extent that the increased value warrants it, instead of receiving such increased value as a present from the city? This principle, in a modified and unofficial form, is operated in Berlin. The assessment is not collected by the city, but the street-

car company when extending a line to outlying territory requires the owners of the property benefited to guarantee to the company a certain return upon the cost of such extension.

To throw light upon the above question, the City Club has been making some painstaking investigations, extending over several months, of the rise in value of land along the present subway. The method of arriving at these values was as follows: Assessment values, as given by the department of taxes and assessments, were taken for the year of 1900 on vacant lots on a basis of 60 per cent of full value for the district from Seventy-ninth to the Spuyten Duyvil; 65 per cent between Central Park and Harlem River, and 60 per cent in the Bronx. These were compared with the assessment values of 1907 on a 90 per cent basis for all these districts, and in each case the full value was obtained by raising the assessment figures to 100 per cent. In the districts which were largely built up, all vacant lots were listed. Where there were few buildings, as in the extreme northern portion of Manhattan, a sufficient number of such lots were taken to show the general land values, and from there was figured the total value for this district. To ascertain the proportion of the increase in land value attributable to the building of the subway, it was necessary to deduct from the total rise what might be termed a normal rise, or the increase that would have taken place through the natural growth of the city without the added stimulus of a new transit line. The only basis of arriving at a judgment of what such a normal rise probably was is to ascertain the rise for a period of equal length under normal conditions. Accordingly the increase in value of the same land during the preceding seven years, from 1893 to 1900, was determined. It was found that values rose during this period of seven years on an average of about 50 per cent in the district on the west side below One hundred and thirty-fifth Street, and on an average of about 43 per cent from this point northward to the Spuyten Duyvil. These percentages then may be taken in these districts as the best basis ascertainable for a judgment as to the normal rise for a period of this length, and it subtracts from the rise which took place along the subway from 1900 to 1907, and should indicate the effect of the subway on land values during the latter period.

By applying this method it was discovered that the land from Seventy-ninth up to One hundredth Street and between Central Park and North River had increased, on an average, about 45 per cent, which is about the expected normal rise. In the district along the Lenox Avenue line south of the Harlem River the average increase was about 43 per cent, which would indicate the land had not increased in value due to the building of the subway. The explanation of this unexpected condition is no doubt that an elevated road already existed which gave fair service to these districts, so that the additional facilities had little effect on land value, except in the immediate vicinity of the subway stations.

The rise in land value along the Broadway branch from One hundred and tenth to One hundred and twentieth Street was much more noticeable, averaging about 70 per cent, but the locating of Columbia University at this point affected values to an extent that makes it quite impossible to arrive at any reliable conclusions as to the proportion of rise that should be attributed to the subway.

The situation from One hundred and thirty-fifth Street northward, however, is entirely different. Between One hundred and thirty-fifth Street, One hundred and fifty-fifth Street, Convent Avenue, and North River the land increased in value between 1900 and 1907 about \$17,825,000. Although the elevated road paralleled this district, yet owing to the topography of the road, it was of little service, so the subway added very materially to the transit facilities of the locality.

The district between the Harlem and North Rivers from One hundred and fifty-fifth to One hundred and seventy-eighth Streets increased in value about \$22,450,000; from One hundred and seventy-eighth to Dyckman Street, the increase was about \$19,925,000; from Dyckman Street to the Spuyten Duyvil, the increase was about \$13,100,000. The aggregate rise in this land from One hundred and thirty-fifth Street to Spuyten Duyvil was about \$69,300,000. If an estimated normal rise of \$20,100,000, based upon the rise of the previous seven years be subtracted from this, it leaves a rise of about \$49,200,000, apparently due to the building of the subway, which is 104 per cent increase on the value of 1900.

The rise in land values of the Bronx is likewise very noticeable. Taking a district along the subway extending in width about a half mile on either side, the increase in land values was somewhat as follows: From the Harlem River to Willis and Third Avenues, the rise was about \$9,200,000; from that point to Prospect Avenue, about \$22,100,000; from the latter point to Bronx Park, about \$13,500,000. The aggregate rise in land values for this district from the Harlem River to the Bronx Park was about 44,800,000. Subtracting from this an aggregate normal rise of \$13,500,000, it leaves an increase of \$31,300,000, due to the building of the subway.

Since this property has been so enhanced in value by the building of the subway by the city, could it not have contributed largely toward the expense of constructing the line and yet have reaped a good increase in addition to such assessment? As previously stated, the aggregate rise in land value above One hundred and thirty-fifth Street in Manhattan caused by the subway was \$49,200,000. The cost of building the subway from this point to Two hundred and thirtieth Street was \$7,375,000, or but 15 per cent of the actual rise caused by the new line. The property owners could have paid the entire cost of this portion of the line and yet have had a net profit on their land of 89 per cent, or an aggregate of \$41,825,000 for the district.

In the Bronx the situation was in most respects similar. The aggregate increase in land value (of a district extending about a half-mile either side of the subway), due to the building of the subway, and in excess of a normal rise of \$13,500,000, was about \$31,300,000. The cost of the line from One hundred and forty-third Street to Bronx Park was about \$5,700,000. Had the property which was benefited borne this expense through the form of an assessment, after paying such assessment, there would have remained an aggregate profit of \$25,600,000 in excess of the normal rise in value since 1900. This would be a profit of 77 per cent on that property caused by the increased transit facilities of the subway.

It will be noted that the aggregate rise in land value in Manhattan from One hundred and thirty-fifth Street to the Spuyten Duyvil, and in the Bronx, due to the building of the subway, was \$80,500,000. The cost of the entire subway from the Battery to the Spuyten Duyvil and the West Farms branch to Bronx Park was but \$43,000,000. The property benefited, in the districts above noted, could have paid this entire cost, and yet have had a net profit, due solely to its construction and operation, of over \$37,500,000. Had it paid only for the portion running through its own territory, there would have remained a profit of over \$67,425,000. In view of this fact, would it not be reasonable to require property benefited in outlying districts to pay for the cost of a rapid-transit line built to serve it?

The data gathered from the influence on land values of existing subway may be applied to provisional rapid-transit lines. Its application to the Fourth Avenue line in Brooklyn, contracts for which are under consideration, would indicate that the land along this proposed line might not greatly rise in value, owing to the fact that it parallels, at a distance of one block, an existing rapid-transit line. This assumption is based upon the fact that the building of the subway affected but very little the value of land west and north of Central Park, owing to the proximity of an elevated road which gave reasonably good service. The possibilities of an assessment plan may be best brought out by projecting a provisional line through territory largely unoccupied. The proposed extension of a rapid-transit line through Jerome Avenue in the Bronx, if built as a reinforced-concrete elevated structure, in order to make it noiseless, could be constructed for about \$2,550,000, and, judging by the effect on land values caused by the existing subway in the Bronx, where the conditions were very similar, neither territory being within easy reach of a rapid-transit line, such a new line would increase land values in the Jerome Avenue district fully \$41,550,000. If the property holders were to pay for the cost of this new line, after having paid such assessment, they would still have a profit of 90 per cent on their land as valued in 1907.

If, on the completion of the Blackwell's Island Bridge, an elevated road were to be constructed of reinforced concrete to connect with it and to extend out Jackson Avenue to Flushing, with a branch leaving this main line at DeBevoise Avenue and following that avenue to the vicinity of Berrie's Island, such a line would be about 9 miles long and would cost about \$4,500,000. It would serve approximately 9 square miles of largely unoccupied territory, the aggregate value of which at present is not less than \$57,480,000. On the basis of the rise in value caused by the subway line in the Bronx, the aggre-

gate rise of this land in Queens would be \$54,000,000. In other words, the landholders in this district could afford to pay for such new rapid-transit line and yet enjoy an aggregate profit of \$50,100,000, or a profit of 87 per cent upon the present value of their land.

This plan would largely solve the problem that confronts the public-service commission in attempting to decide between factions, each contending for a line in its particular section. The sincerity of speculators and real-estate adventurers would quickly be tested by the requirement that their petitions be accompanied by an assurance of a willingness to be assessed for the cost of the desired line.

Since territory now served by a rapid-transit line does not greatly rise in value, due to an additional rapid-transit line, it would probably be unjust to assess property adjacent to a new line in such districts. That is, a subway extending from the lower part of Manhattan to the Harlem River, or extending eastward under the East River and through the congested portions of Brooklyn could not justly be assessed wholly upon adjacent property. Such portions of new subways, if built by the city, would probably have to be paid for wholly, or in part at least, by general taxation. It is very evident that property in the vicinity of a rapid-transit line does not benefit equally; unsettled outlying territories would benefit most; territory in the vicinity of express stations would rise in value more than that adjacent to local stations. There are many conditioning factors to be considered in any attempt to lay an assessment upon property for the building of rapid-transit lines. These factors, however, are approximately ascertainable, and any judicious commission would be in a position to secure the facts as connected with the present subway, and through them would be able to lay an equitable assessment upon land according to the prospective benefit that it would secure. The legislative action conferring on the city the power needed to carry out this plan and providing for a better system of assessment and land condemnation could, no doubt, easily be passed.

The CHAIRMAN. Who is your next witness?

MR. OGBURN. The next witness is Mr. C. Oscar Beasley who, according to this telegram we have received from the chairman of the Transportation Committee of the United Business Men's Association of Philadelphia, comes to represent them.

STATEMENT OF MR. C. OSCAR BEASLEY.

The CHAIRMAN. Mr. Beasley, the commission trusts you will confine your testimony to 20 minutes. We will adjourn at 5 o'clock. The reason for saying that is that we have been in session constantly from morning until half-past 10 each night during the entire week.

MR. BEASLEY. I appreciate that, and I regret very much it is the case, especially with regard to our city. We have observed that nearly all the officials and the financiers and others affiliated with the traction interests have testified at great length, but there has been omitted the real sufferings and problems which we have in Philadelphia.

The CHAIRMAN. Right there let me say to you, so that it will remove the impression in your mind or anybody else's, that this commission has tried in every way to get the public side of this question here. We have had before us the most eminent men that this country can produce on the public as well as the private side of this question.

MR. BEASLEY. Well, I represent the United Business Men's League—I am a member of it—not as a lawyer at all, but as a citizen representing the United Business Men's League of Philadelphia, which is

composed of 75 neighborhood and improvement associations and business associations containing 21,000 members that are organized all over the city of Philadelphia, for the sole purpose of disinterestedly, conscientiously, and patriotically studying these municipal questions, not only with a view of their solution for us, but possibly assisting other communities to do the same. And it is with that voice that I appear before you to-day. We are not connected in any way, directly or indirectly, with any traction interest, and we are acting, and have been acting for the last three years, in this matter solely from the standpoint of citizens, and we are engaged now in a concrete fight before the public-service commission and before the courts to try to solve many of these very problems which have been testified to to-day so ably and so interestingly by these experts who have been here and others who are familiar with them.

In the first place, I would like to say that we are faced with a condition in Philadelphia as regards our local transportation which might be described as a continuous performance of incomplete efficiency. The present system is carrying 700,000,000 passengers per annum in a \$400,000,000 plant. They have not bought a single new car since 1913; and while the passengers have increased 66 per cent, with the exception of a few cars furnished by the Government for war purposes, there have been no additions to the system. While the passengers have increased 66 per cent, the service has decreased 3 per cent.

In the last two years it has greatly improved by reason of the fact that the officials of the Philadelphia Rapid Transit Co., the operating company, have changed their policy. Instead of antagonizing the public, they have now pursued a policy of cooperating with the public. If any complaint is made they send their head men down to the locality and talk with the people, and they change their routes, and so on, and have greatly helped the service. But they have not built a single mile of new railroad, although the population has increased at the rate of 75,000 per year during the last eight years. There has not been a mile of new track built. The city has been prevented from building its high-speed lines by reason largely of the determination of the large traction interests to see to it that we have no improvement in Philadelphia unless we consent to the perpetuation without further resistance of the frightful rentals on the watered stock and other securities of the underlying companies. That part of their stock which is paid in is drawing an excessive and outrageous percentage, running from 8 per cent, 30 per cent, 41 per cent to 71 per cent per annum, under a lease to run for 999 years.

Commissioner WEHLE. What do those percentages refer to?

Mr. BEASLEY. The amount paid in on the stock.

Commissioner WEHLE. You mean the dividend on the stock?

Mr. BEASLEY. The dividends are net. The operating company pays all taxes in addition to that, which may be levied on that underlying stock.

Commissioner WEHLE. Those are dividends you say which are made out of the rentals?

Mr. BEASLEY. Yes, sir. The company sends a check to the underlying company and they distribute that check as dividends. They

hold their annual meetings, elect their directors, keep their corporation going, buy no new cars, are at no expense of maintenance or upkeep, and yet they draw a major portion of the proceeds.

We have the reports here which I intended to show to you, but I will only refer to them briefly and I would ask the privilege of filing a little brief going into the matter a little more extensively, if you will permit me.

The CHAIRMAN. Yes.

Mr. BEASLEY. Because there are things here which I feel you should have before you.

The CHAIRMAN. You may do so.

Commissioner WEHLE. Will those be authenticated figures?

Mr. BEASLEY. Yes; I have them all here now, the reports of our transit commissioner, the reports of the company itself, the reports of our public-service commission, the reports of our supreme court, and the reports of our superior court, with the view of showing you clearly and distinctly the situation we are in and how we are trying to solve the problem, but now I can only in the most cursory way refer to them.

The practical difficulties are that we are fixed with those rentals now and the company can do nothing; they can not buy a new car, they can not make any extensions, they can do nothing for a population of 2,000,000 people. They are now receiving \$35,000,000 a year gross receipts. In 1910 their gross revenues were \$20,000,000. They have nearly doubled since 1910. Last year the operating company made \$12,000,000 net profit: after paying all the war taxes and all the increased wages and the increased cost of betterments and repairs, they made \$12,000,000 net on a 5-cent fare, a feat that is not equaled in this country to-day, and out of that \$10,000,000 of net profit they were compelled to pay \$10,000,000 off the reel to the underlying companies as rentals, simply for the franchise. Those companies were given that franchise then, a monopoly upon our highways, for nothing—not a cent was charged them for it, with the exception of a paving charge which was afterwards repealed practically; and they are receiving ten-twelfths of the net revenue. That ten-twelfths prevents the operating company from performing an efficient service, prevents us from getting any extensions, is turning our city into an apartment-house city, a cliff-dwelling city, is building up slums in our town, is punishing our laboring population with the overcrowding of cars to a degree which is painful to contemplate—all in order that these underlying companies may absorb ten-twelfths of the intelligence, of the ability and courage and money of the operating company.

I hold no brief for the company. I have fought them for 20 years, and I rejoice to say that many of the criticisms which my clients and myself have made have been recognized as sound. The operating company has \$30,000,000 paid in, upon which it gets 5 per cent dividends annually. Getting only 5 per cent, it has assumed all the bonds of the company, to whom they pay 71 per cent dividends—assumed all their bonds and assumed all their taxes. Those stockholders are the only stockholders, so far as I know, in the United States who escaped the Federal income tax. That Federal income tax that was levied upon them as individual stockholders was paid

by the operating company, so that they are drawing those enormous dividends free of any tax whatever.

Commissioner WEHLE. These leases—are they long-term leases?

Mr. BEASLEY. Nine hundred and ninety-nine years.

Commissioner WEHLE. Have you any way, as a lawyer, that you could suggest for remedying the situation?

Mr. BEASLEY. Yes; that is what I had intended to present if I had had the opportunity to present it to you.

Commissioner WEHLE. Could you outline that?

Mr. BEASLEY. Yes; I will try.

The most eminent attorneys of our city were employed some 25 or 30 years ago for the purpose of drawing these leases, for the purpose of making them impregnable to any future law.

A year ago, when I appeared before the Ways and Means Committee here in Washington asking them to tax these underlying companies, one of these distinguished lawyers sent down a brief that those leases were in the nature of ground rents, a positive, absolute, personal, vested right in the streets of Philadelphia, and that has been the theory that they have taught our supreme court and that is the theory upon which those leases were drawn—that they were contracts; that they were protected by the contract clause of the Federal Constitution; that they were protected from amendment by the contract clause of our State constitution.

On that theory millions were invested in them by estates, widows, and orphans, as they are called, although many of them have gradually sold them out now. There is no market for them now on account of the legal attacks that have been made upon them and the decision of our courts since; but I am speaking about the inception.

The first ray of light that we had was a decision of the United States Supreme Court in the Northern Utilities case, and that said this:

We can not recognize a vested right to do a manifest wrong.

That was the first break in the contract clause of our Federal Constitution—that no forms could mask fraud; that no manner of contract, *inter se*, could deprive the Commonwealth of its police power to protect the public from wrong.

The next move that was made was a decision by our supreme court about 12 years ago in the Ridge Avenue case, that no one legislature could authorize a contract that could bind a future legislature. These leases were made under authorization of acts of the assembly, and they claimed, therefore, that they had the sanctity of the Commonwealth and the approval of the Commonwealth, and that the Commonwealth had caused them to make the leases and therefore must stand by them.

But the supreme court swept that away by saying one legislature could not bind another legislature, otherwise we would have a feudal system such as William the Conqueror imposed.

That decision having been made, that one legislature could not bind another legislature, knocked out the peg on which the vested rights hung—the act of the assembly.

The next move toward getting rid of the contracts was the enunciation by our supreme court of the doctrine that the highways belonged to the Commonwealth and that it is not possible by private con-

tract to oust the Commonwealth, either in its ownership or its jurisdiction over the highways, and that all these so-called charters, instead of being vested rights, were simply licenses from the Commonwealth to use the highways for public purposes.

Commissioner WEHLE. What case was that in? What is the citation?

Mr. BEASLEY. I can give you that. I have a memorandum of it here somewhere.

The CHAIRMAN. You have that in your brief? You will quote these citations in your brief, will you not?

Mr. BEASLEY. Yes. I might just state one of them here, if I can find it readily.

Commissioner WEHLE. Never mind about that now. Do not let us take up any of your very limited time with that.

Mr. BEASLEY. We have got decisions from our supreme court that nobody can get a vested right in the highways by contract between themselves or with the municipality.

That decision has been handed down about a month ago, that contracts can not bind the Commonwealth.

We have had on file for a year a suit against these underlying companies—I have it here, and I will file it with the brief; a complaint we made against the underlying companies, asking the public-service commission to revise these leases.

The only direct decision upon the subject was the decision of the Supreme Court of Oklahoma about six months ago.

The gas company in Guthrie, Okla., leased some natural gas from a company outside of the city, to distribute the natural gas through the gas company's mains. The distributing company found out their leases were too high, that they were losing money, and they petitioned the public-service commission to reduce the amount that they were paying under this lease. The public-service commission did it. It was appealed to the Supreme Court of Oklahoma, and they said that the contract was not binding, that that lease was not binding as against the public-service commission; that it was a public matter, for the benefit of the Commonwealth, and that they could vary the lease. I have a number of other decisions from the Supreme Court of the United States along the same lines.

Now, practically, we have tried to carry out municipal ownership in Philadelphia in this way: We passed an amendment to our constitution in 1913, giving cities the right to build with their own money, and construct high-speed lines and lease them if they saw fit or run them if they saw fit.

That was passed, and under the constitutional amendment we appropriated by vote of the people \$67,000,000 in 1914, but the war coming on, this lies dormant, with the exception of \$7,000,000 with which they have nearly constructed the Frankford Elevated in Philadelphia, about 7 miles of elevated structure.

The city made a lease of those high-speed lines to the P. R. T. Co., the Philadelphia Rapid Transit Co., but we opposed that, because it provided that these watered stock rentals, at \$10,000,000 a year, should be perpetuated forever, to be paid for out of public taxation. We opposed that, and the public-service commission listened to our appeal, and notwithstanding the fact that the mayor and

the city council had made the lease and favored it, the United Business Men's Association succeeded in having it rejected. So now we have a clean bill of health, so far as that is concerned.

However, what we want to do is to get rid of this watered stock, and bring into play all the powers of the Commonwealth, of the attorney general and of the public-service commission to reduce those rentals. If they were reduced to \$5,000,000 a year, they would still get a very large percentage on the money invested; and by making a lease to the city and making a unified system of the city's lines and the present lines of the operating company, the city would have a unified system and these securities would become practically a city bond, because they would be backed up by \$100,000,000 of the city's fresh capital, linked with the new high-speed lines.

The CHAIRMAN. Are we to understand, then, that your solution involves the regulating of the rental by the public-service commission?

Mr. BEASLEY. Absolutely.

The CHAIRMAN. And the unification of lines?

Mr. BEASLEY. Yes. With municipal ownership under a lease approved by the public-service commission, which can be changed at any time.

I want to say that I have listened with very great interest to much of the testimony here to-day, and I hope that this great national commission, which is the first broad, overseeing commission that we have had on this subject, will speak with particularity and courage on these problems, and not leave them balancing and see-sawing as they are now.

The people of the United States will no longer tolerate the exploitation of themselves by capitalists of preceding generations who made these contracts without the supervision of any public-service commission or of any public authority.

The CHAIRMAN. Your time has now expired, Mr. Beasley. We thank you for your statement.

Mr. BEASLEY. May I file these paper books with my brief, containing a complete history of these cases with all of the authorities?

The CHAIRMAN. Yes. We shall be glad to have you do that.

The commission stands adjourned.

(Whereupon, at 5 o'clock p. m. the commission adjourned.)

SUMMARY OF WILCOX REPORT TO FEDERAL ELECTRIC RAILWAYS COMMISSION.

I. The street railway is an essential public industry, as shown (*a*) by its magnitude; (*b*) by its relation to the public streets; (*c*) by the fact of public regulation; and (*d*) by the present appeal for public help.

II. The witnesses for the electric railways, those for the State commissions and the municipalities and those for the general public agree in the main that the street railway as an industry is in a desperate financial condition. They also agree that a fundamental requisite for relief is the restoration of its credit, so that the new capital for continued expansion of transportation facilities will be induced to flow into the business.

III. Labor is universally recognized as a vital factor in the street-railway business, but the tendency is to treat the labor problem primarily as a problem of operating expense and efficiency, and to give little or no consideration to the human elements in it. The employing companies are interested in not paying more for labor than they have to pay, just the same as they are interested in keeping other expenses down. With them it is a question of financial results, and they sometimes fail to grasp the full value of loyalty and intelligent cooperation on the part of the men. From the public point of view quality of service and continuity of operation are of primary importance. All these things depend in a great measure upon the will of the workers, and require conditions of employment that will attract competent and reliable men and that will prevent industrial dissatisfaction and disputes, which lead to deterioration or interruption of service.

IV. A fundamental conception of the street-railway problem, therefore, will include as coordinate requirements the need for credit with which to get capital, and the need for an effective spirit of cooperation with which to enlist the continued and efficient support of labor.

V. Under normal conditions and conservative management credit would be an easy matter for the street railways because of (*a*) their steady, assured, and rapidly increasing revenue; (*b*) the conspicuous location of their property and activities; (*c*) their small need for working capital; (*d*) the fact that a depreciation reserve would be available to provide a portion of the funds needed for additions and improvements; and (*e*) the fact that refunding operations could be carried through as a matter of course, although the rate of interest paid might be either greater or less, as the condition of the market demanded.

VI. The testimony put forward on behalf of the electric railways with respect to the amount of new capital required each year in the industry was inexact and inconclusive. From the point of view of exaggeration the inexactness was partly due to a confusion of the needs of the electric railway with the needs of all utilities taken together, partly due to the use of capitalization figures, and partly

due to the adoption of a yearly average for the entire period from 1902 to 1917. Moreover, no consideration was given to the reduction of the demands for new capital on account of the abandonment of lines and the slowing down of traffic development under increased fares. On the other hand, from the point of view of conservatism, little or no consideration seems to have been given to the fact that under present price conditions a much greater amount of capital is required to perform a given amount of work, nor to the fact that in an era of high prices new capital is required in the process of making replacements, even where no extension or enlargement of facilities takes place.

VII. As a matter of fact, the amount of new capital required in the electric-railway business at the present time is not even approximately shown by the evidence. Nevertheless, it is clear from the testimony that the restoration of credit is essential to the full performance of the function of the street railway, (1) because of the increasing demands of population and traffic, requiring extensions and additions from time to time; (2) because of the continuing adjustment of the capital account to the higher price level, and (3) because of the run-down condition of many properties which demand immediate rehabilitation, for which no reserves have been accumulated. Even though rehabilitation be not considered a proper capital charge, it can be effected under existing conditions only through the use of new capital to take the place of invested capital that has been destroyed or lost.

VIII. Upon the assumption that street-railway credit is gone, our search for a remedy must begin with an analysis of the fundamental and immediate causes for its disappearance. Why, in any industry so favorably situated from the point of view of credit, has credit been lost? The causes for its disappearance must be sought in the financial policies which have been followed by the industry itself, or in the attitude of the public toward it in the process of regulation, or in changed economic conditions.

IX. From the point of view of the financial policies of the industry as they affect credit, the first thing that demands attention is the almost universal practice of initial overcapitalization, particularly in the early years of electrification. The bad ultimate effects of overcapitalization have been accentuated in many cases by the process of converting stock into guaranteed securities either through the issuance of bonds or through the assumption of rental charges in connection with the consolidation of properties, so that as time has gone on a greater proportion of the return upon the investment has taken the form of fixed charges. This policy has tended to reduce the "margin of safety" upon which private companies have to depend for new capital and to destroy the financial flexibility necessary for the preservation of solvency in a period of distress.

X. Not only by initial overcapitalization and the assumption of excessive fixed charges have the electric-railway companies pursued an unsound financial policy, but also by the fact that seldom, except through duress in the case of receiverships and reorganizations, have they written off any of the excess capital originally issued. Their policy, with few exceptions has been to swell the capital account and to perpetuate in it any items representing intangible values or "capitalized hopes" that have once gotten into it.

XI. The companies have pursued an unsound financial policy in still another respect. Not only have they been overcapitalized at the beginning and have subsequently refused or neglected to write off their excess capitalization, but they have also generally neglected to build up a depreciation reserve equal to the difference between the legitimate investment in the plant when new and its condition when it has worn down to the normally depreciated condition of an old but efficient operating property. Thus by the process of wear and tear even the legitimate initial capitalization has become inflated to the extent of the normal accrued depreciation not represented by depreciation reserves.

XII. Still further, the companies in many cases have pursued a policy of artificially maintaining credit by paying dividends when ordinary maintenance and essential replacements were neglected or deferred, with the result that the physical property, representing the capitalization, has been further impaired and is now in a condition where a complete general rehabilitation is necessary if adequate service is to be given.

XIII. In many localities the electric railways have been overbuilt from the point of view of an industry expected to be financially self-sustaining. This overbuilding has resulted from several causes: (1) The construction of competing lines in the same community; (2) the premature-extension of lines for the special benefit of tracts of real estate in which the companies or the men who controlled their policies were directly interested; (3) the construction of new lines in thin territory as a result of the ambition of unscrupulous or overoptimistic promoters to get rich quickly through the exploitation of the gullibility of the investing public; (4) the use of progressively heavier cars and heavier track construction in the equipment, extension, and rebuilding of lines. While these causes of overbuilding have their origin for the most part in policies for which the companies themselves have been responsible, the local authorities have often "made the motion" or "seconded" it as a result of their conception of public needs or personal advantage.

XIV. As a result of overcapitalization and its attendant evils, based upon the idea that the street railway was a fruitful field for speculative investment, the street-railway industry fell into the control largely of investment bankers whose profits were dependent upon the volume of securities turned out and a frequent turnover in the companies' financial arrangements. These policies led to absentee ownership of street-railway securities and the formation of holding companies for the inflation and exploitation of street-railway credit. The sound principle of simple corporate organization, direct financial responsibility, and community ownership of community enterprises was entirely lost sight of, so that the underlying support of local pride and local interest in the successful construction and operation of transportation facilities responsive to local needs was lost. Thus the companies themselves abandoned and alienated the most substantial source of ultimate credit for a public utility.

XV. From the point of view of public relations and the responsibility of the public through its governmental agencies for conditions that have helped to destroy the credit of the street railways, the first thing to be mentioned is the fixed 5-cent fare which in the earlier days was generally made a condition of street-railway franchises.

The fixed fare, which had no particular relation to the necessary cost of service, and certainly provided no flexibility for the adjustment of the fares to the changes in the cost of service, either up or down, was the corner stone of speculation in the industry at a time when a guaranteed 5-cent fare over a long period or in perpetuity was supposed to represent an opportunity for enormous profit. In urban areas the fixed fare was a temptation to speculation and overcapitalization. It aided and abetted the street-railway companies in the adoption and pursuit of the unsound financial policies above described.

XVI. As a result of the arbitrary and corrupt methods often pursued by street-railway promoters in securing franchises with the 5-cent fare provision in them, and on account of the enormous overcapitalization which street-railway promoters indulged in, the public was led to believe that the street railways, out of their use of public property as rights of way, were exploiting the public and reaping unreasonable rewards. The public, claiming the rights of partnership, invoked the taxing power as a means of diverting to the public treasury a portion of the earnings of the business, and in communities where new franchises or renewals of old franchises were sought, the granting of these "favours" was made the occasion for loading upon the companies financial burdens and obligations which it was thought would in some measure be compensatory for the value of the privileges granted.

XVII. But the public was not satisfied to use the taxing power alone. It demanded adequate service as well as a share in the profits. As the franchises granted were in most cases irrevocable, and as the street railways could not be subjected to effective competition, the public laid hold of the police power as a weapon for enforcing the obligations of monopoly and compelling the companies to extend and improve their service. Thus the companies found that, though limited to the 5-cent fare, they were not free to scamp the service at will in order to swell their profits, but could be compelled to enlarge and improve it indefinitely, at least so long as they were financially able to do so, and largely without regard to the amount of profits left for the investors.

XVIII. The public also, as a result of its observation of the evils of overcapitalization and speculation in public utilities, including the electric railways, created the public-service commissions and conferred upon them authority to regulate new issues of securities and prohibited the issuance of securities not representing new cash put into the business for capital purposes. At the same time the commissions were not authorized to reorganize the companies and cut down the capitalization already outstanding. Thus the public required a new and more conservative method of financing with respect to capital additions, without a reconstruction of the existing financial base. The companies, therefore, no longer had the advantages, precarious and unsound though they were, of the old methods of financing, while at the same time they were unable to issue new securities upon a basis independent of the inflated securities already out. The "margin of safety," within the limits of a reasonable return upon the investment, was in many cases noticeably decreased as a result of this incomplete and imperfect form of public regulation.

XIX. The causes for the decline of street-railway credit thus far enumerated have arisen out of the financial policies adopted by the street railways themselves or out of the policies of regulation adopted by the public, and so far as these policies were unsound those responsible for their adoption and continuance must share the responsibility for the present condition of street-railway credit. Still another set of causes can be found by an analysis of economic conditions.

XX. For a long time the public tried to secure the benefit of competition in the street-railway business, not recognizing that it was a monopoly by nature. But with the appeal to the police power to compel improved service, the public recognized in a more or less formal and legal way the existence of monopoly as a necessary fact. Just as this recognition was becoming general, the development of the automobile brought into the field for the first time an effective and dangerous competitor of the street railways. In other words, when the public got around to recognize the existence of monopoly in local transportation service the development of the automobile partially reestablished the condition of competition which, in theory, had just been discarded. In many communities it has been fully recognized that the two methods of local transportation can not survive on a self-sustaining basis as competitors. The inroads made by this new form of transportation upon the actual traffic and revenues of street railways in many communities and the resulting uncertainty as to the future of the electric railway reacted seriously upon the credit of the industry.

XXI. In the old days the profits of street-railway operation were dependent in large measure upon low wages, long hours, and unsatisfactory conditions of work for the employees. Gradually, as time went on, the employees, in part as a result of general public favor, became more and more organized and were in a position to demand higher wages, shorter hours, and more expensive protection and privileges from their employers.

This tendency, of course, has been greatly accentuated since the beginning of the war and as one of the results of war conditions. Nevertheless the tendency existed before the war, and the uncertainty of the labor element in its relation to the management was a factor of increasing importance in disturbing the hopes of those who had gone into the street-railway business as speculators and had capitalized the future. Disappointed hopes in the industry, even when such hopes were at the beginning illegitimate or unwarranted, had a tendency to restrict the credit of the industry and to cool the ardor of new investors to go into it.

XXII. All these forces conspiring together to impair street-railway credit would have effectively destroyed it long before the war if it had not been made so nearly indestructible by the character of the industry itself and by the enormous development of the demand for urban transportation. It is by no means surprising that the great war put the finishing touches on the job. The fundamental basis of credit at all times is security for the investment and its present and prospective net earning power. Any sudden great expansion in the cost of service that is not accompanied by a corresponding increase in revenues must adversely affect the present earning power of the investment, and if the prospect is for the permanence

or long continuance of these adverse conditions, then they result in reducing the ultimate security and the prospective earning power of the investment. The effect of the war upon general economic conditions has been to increase the cost of materials entering into street-railway construction, maintenance, and operation probably to an even greater extent than wages have increased. It is now generally expected that because of world-wide economic changes, the high price of materials, the high cost of living, and the consequent relatively high wages will continue for a considerable period, at least for a period longer than the companies can hope to survive and perform their functions without the use of credit.

XXIII. Having admitted the necessity for credit in the street-railway business and having analyzed the causes that have led to its disappearance, we come to a discussion of the question: How can credit be restored? A variety of remedies have been proposed by witnesses speaking on behalf of the electric railways, on behalf of the regulating commissions, or on behalf of the general public. It is agreed with practical unanimity that the electric railways have come to be essentially public agencies and that the function of local transportation is so vital to the welfare of every urban community as to make it a community problem. It is generally agreed that if credit can not be restored under private ownership and operation it is inevitable that public ownership and public operation, one or both, will have to come. The fear expressed by many of the witnesses that the results obtainable from public ownership and operation would be unsatisfactory from the point of view of economy and efficiency was not strong enough to make these witnesses admit that they would prefer to have the electric railways disappear rather than be owned and operated by governmental bodies as a public function.

XXIV. The testimony reflected the fundamental divergence in the economic theories and points of view of the witnesses. Many expressed confidence that under public ownership the street railways would not be economically and efficiently operated and viewed with strong aversion the possible ultimate necessity for the adoption of public ownership as a general policy. Other witnesses, taking the point of view that local transportation is an essential public function, expressed the belief that public ownership is not only inevitable, because of the inherent difficulties of continuing private ownership and the practical impossibility of restoring private credit in the business, but also because public ownership and operation is inherently logical and desirable with respect to such a function as local transportation.

XXV. There is a general agreement that the public relations of the electric-railway industry prior to the war and before the present acute crisis arose were unsatisfactory; that, in fact, the electric-railway industry got started wrong; that it got "in bad" with the public; that the cooperation of the public is essential to the full performance of electric-railway service upon a sound financial basis; and that to restore the credit of the companies and to enable them to function, an entirely new deal is required.

XXVI. The first requisite for the restoration of credit in the view, of the witnesses for the electric railways, is a readjustment of the relation between revenues and expenses so as to increase the margin

available for return on capital. Obviously this can be accomplished only (1) by an increase in revenues or (2) by a decrease in expenses.

XXVII. The electric-railway companies propose to increase their revenues first by increasing the unit fares. In this way they hope (1) to escape from the principle of the fixed fare, as embodied in the 5-cent limitation, and (2) to secure an immediate increase in earnings.

XXVIII. The proposal to increase unit fares raises two vital points: (1) The effect of straight fare increases upon revenues, and (2) the effect of straight fare increases upon the usefulness of the street railway as a public utility. As a remedy, fare increases are useless unless they provide additional revenue, and in fact they may injure credit if they indicate the inability of the electric railways to earn the full cost of service at any fare that may be charged. From the public point of view, fare increases are a failure if they result in a serious and progressive curtailment of the use of street-railway service.

XXIX. As an alternative to straight fare increases the adoption of a zone system or distance tariff is put forward by some of the witnesses as a means for raising more revenue through (1) the cultivation of short-haul traffic, and (2) the establishment of charges for long rides proportional to the cost of the service rendered. This proposal raises a fundamental question as to the relative effects of the uniform fare policy and the zone-fare policy upon the distribution of population and business and upon the development of realty values.

XXX. Another proposed measure for increasing the margin available for return on capital is the removal of special tax burdens and franchise obligations from the electric railways, leaving them either upon the same basis as other industries or giving them special exemptions on account of the importance of the function they perform and their peculiar relations to the public and the public streets. This proposal raises certain grave questions: (1) The sufficiency of the relief that could be granted in this way; (2) the legal and financial difficulties, from the point of view of the governmental bodies, in the way of giving up these sources of revenue; and (3) the political difficulty of relieving a public utility from these burdens or of granting it special exemptions while it remains in private hands.

XXXI. Still another means proposed for increasing the margin available for return upon capital is the adoption of operating economies such as (1) a rearrangement of car schedules for the elimination of duplicating or unnecessary service, excessive layovers, etc.; (2) a rerouting of cars for the elimination of useless or dead car mileage and the avoidance of street congestion and delays; (3) the skip stop for increasing speed and decreasing power consumption; (4) the training and supervision of motormen in the saving of power; (5) the use of light one-man safety cars as a means of decreasing platform expense, power consumption, accident expense, and track and car maintenance; (6) the elimination of collusive contracts for the purchase of materials and supplies or power; and (7) the abandonment of electricity as a motive power and the use of gasoline or alcohol in its place along the lines promised by Henry Ford.

XXXII. It is also proposed on behalf of the electric railways that jitney competition be curtailed or abolished, and that the street railway be given protection as a legalized monopoly in the rendering of local transportation service. This proposal raises (1) the question

as to whether or not automobile buses may under certain conditions be more economical and efficient as a means of transportation than the electric railways are, and (2) the question as to how far the public may properly go in restricting competition in order to give the electric railways under private ownership and operation a monopoly.

XXXIII. Another suggested method of enlarging electric-railway income is by the establishment of cooperative relations between the management and the employees. In this way it is contended that the interest of the employees can be enlisted in efficiency and economy and in the sale of transportation service, and the losses through "knocking down" of fares and through strikes minimized or entirely done away with.

XXXIV. The serious objection to high fares or, in the alternative, the abandonment of electric-railway service altogether in certain communities has led to the suggestion that the revenues of the street railways be supplemented out of taxation, on the ground that business men and property owners receive great benefits from electric-railway service even where they never ride on the street cars. It is the idea that these subsidies from taxation should be made to prevent the abandonment of unprofitable lines or to keep the fares down to a reasonable level on lines that could be made self-supporting with high fares. On account of constitutional difficulties in the way of subsidizing private enterprise, and on account of inherent objections to such a policy, this plan may not be practicable in some jurisdictions except under public ownership or public management.

XXXV. As a means of getting the electric-railway business upon a conservative basis, the abandonment of duplicating and unprofitable lines is suggested. This plan involves the difficulties and disadvantages inherent in a plan for taking away transit facilities from communities or portions of communities whose development and present social and industrial arrangements are largely dependent on them. It also raises a question as to where the line is to be drawn with respect to street-railway extensions. To what extent do the obligations of monopoly within a given transportation area require a symmetrical and complete development of transportation service, with little or no regard to the profitableness of individual lines?

XXXVI. On the part of the public the suggestion is made that capital in the electric-railway industry has received too great a return in the past, and that the restoration of street-railway credit requires among other things a complete reorganization of the financial structure of the companies and the scaling down of their fixed charges to a conservative basis. It is urged that bankruptcy in many cases may be absolutely necessary as a condition precedent to the restoration of credit on a sound basis.

XXXVII. The witnesses generally recognize the improbability that the credit of the electric railways can be completely restored by any one of the measures heretofore mentioned, taken by itself, and that even a combination of as many of them as are compatible with one another may not be effective for this purpose. A fundamental readjustment of the relations between the electric railways and the public is regarded as essential.

XXXVIII. There is general agreement that the first fundamental step in such a readjustment in each particular case is the determina-

tion of the amount of the investment upon which the electric railway should be permitted to earn a return. This raises a multitude of different questions as to the correct principles of valuation, as to which there are radical differences of opinion. In general, the companies claim value on the basis of reproduction cost of the physical property at the time of the determination without any deduction on account of depreciation, and with large additions for intangibles to cover superseded property and past deficiencies below a liberal rate of return from the beginning of the enterprise. In the reproduction cost, they include liberal structural overheads, together with big allowances for such items as promoter's remuneration, brokerage and preliminary expenses in the organization and development of the project. Specifically, they maintain that the purchasing power of the dollar having decreased under war conditions, the valuation should be made on the basis of the "last-minute" prices. If the historical cost method is used as an alternative to the reproduction cost method of fixing present value, the companies would include every dollar that has gone into the enterprise from the beginning, regardless of the present condition of the property, plus the capitalized services of promoters and bankers and deficiencies below a liberal return from the beginning of the enterprise, cumulated at compound interest. The public, on the other hand, inclines toward the amount of capital actually and prudently invested in existing useful property, less accrued depreciation, as the proper measure of the capital to be recognized as the basis for the proposed new relationship between the communities and the companies. Here is the big problem to be solved before any fundamental readjustment of the status of the electric railway industry can be effected.

XXXIX. The next step in the proposed readjustment is the determination of the rate of return to be allowed upon the recognized investment. It is generally admitted that under private management the rate of return must be sufficient in connection with the security offered to induce investors to put new capital into the electric-railway industry as it is required from time to time. Here we are confronted with several specific problems: (1) Shall the rate of return be fixed for a long period of years or shall it be flexible so as to adjust itself to changing market conditions? (2) Shall the same rate be allowed upon the capital already in the industry as may be required to induce new capital to flow into it? (3) Shall the rate of return be definitely limited and guaranteed, or shall a leeway be left for the encouragement of economical management? (4) Is a rate of return that will induce private capital to flow into the street-railway industry at the present time so high as to be prohibitive? The rate of return applied to the valuation determines the compensation of capital, so that the two factors must be considered together in the determination of the basis for the final result.

XI. One suggestion is that the new deal between the public and the electric railways shall merely be the removal of contractual restrictions and the transfer of all remaining local powers of regulation to the State commissions so that they can take full responsibility on behalf of the public for so regulating the industry as to keep it solvent and efficient. This plan is met by certain objections: (1) That electric-railway transportation is primarily a local function; (2) that under private management financial success is impossible

without the good will and cooperation of the people who ride and the local authorities in control of the streets: (3) that each municipality, as a matter of right and of good public policy, should determine the amount and character of the local transportation service to be rendered and the way it is to be paid for; and (4) that exclusive State regulation may interfere with the development of a policy of ultimate municipal ownership based upon contractual relations between the municipalities and the companies. Another objection to exclusive State regulation may be that it falls short of meeting the present situation where a guaranty of earning power or, at least, of power to pay the allowed return on capital is essential to the restoration of electric-railway credit.

XLII. The inherent limitations upon the security of the investment and the uncertainty that the companies will earn a fair return without a guaranty have given great impetus to the service-at-cost plan based upon contracts with the municipalities or the States, under which the companies will be practically guaranteed a fixed return upon their investment, either through a flexible system of fares, or through a fixed fare supplemented by public subsidies or otherwise. It is recognized that the service-at-cost plan as exemplified in the Cleveland street-railway settlement of 10 years ago has worked greatly to the advantage of the company in the preservation of its credit, and has been more beneficial to the public than any other plan thus far tried in this country over a considerable period of time on an important scale under private ownership. The service-at-cost plan, with all its proven merits in the Cleveland case, has not worked so well elsewhere. Its success seems to depend upon certain factors which are largely peculiar to Cleveland: (1) A conservative initial valuation and a relatively low rate of return on the investment; (2) an unusual degree of local pride and confidence in the justness of the settlement, making public and official cooperation with the company possible and effective; (3) a policy with respect to replacements that prevents the inflation of the capital account in a period of rising prices; (4) a relatively low fare to start with, so that, when costs increase, the fares will not become excessive. A general objection to the service-at-cost plan is that it is calculated to weaken the motive for efficiency and economy in operation under private management and to put upon the public regulatory authorities the responsibility for enforcing these street-railway virtues by indirect means to the same extent as they would be called upon to enforce them directly under public management. Another objection is that, even under so good a service-at-cost plan as the one in force in Cleveland, it has been deemed necessary to increase the rate of return upon capital to 7 per cent. Moreover, the Cleveland plan, after being modified from time to time in favor of the company, is tending more and more toward a perpetuation of private management and a weakening of public control, which is everywhere becoming more and more vital to the public welfare. It is to be noted also that the service-at-cost plan substitutes a semiautomatic control of rates for the continuous power of regulation by State commissions, and establishes local control of service, so that under this plan the necessary functions of the State commissions with respect to street railways are reduced nearly to the vanishing point.

XLII. The final solution advocated by many of the witnesses, and admitted by the rest as the ultimate alternative, in case their particular plans do not succeed, is public ownership and operation by the municipalities, by the States, or by specially created transportation districts. It is admitted that public ownership and operation, under adequate constitutional and statutory provisions, would be able to provide the credit necessary to enable the electric railways to continue functioning.

XLIII. We now come to the question of labor. During the war the supply of labor was short in the street-railway business, as in many other industries. It can not be said, however, that there has ever been for a prolonged period any particular difficulty in securing men to operate street railways. The condition at the present time is that the wages paid are nominally much higher than they were before the war, and that during 1919 there was an epidemic of strikes, resulting in great losses of revenue and generally in radical advances in wages, sometimes with a provision for back pay. While the National War Labor Board was in existence there was a national agency to which both parties could appeal for the arbitration of wage questions. Now that the War Labor Board has gone out of existence, no such agency will be present to meet the problems that arise as the contracts between the local divisions of the Amalgamated Association and the employing companies expire from time to time. The industry is more thoroughly unionized than it ever was before, and the men are in a stronger position by reason of the fact that a strike is not relatively so serious a matter from the public point of view as it used to be before the advent of the automobile. At the present time a pretty good sized city can get along for a few days without street-railway service, and the interruption of this service is less likely to stimulate the social disorders that in former times almost universally attended a street railway strike. It is perhaps increasingly difficult for the companies to "break" strikes. If the cost of living goes on climbing, or even continues at its present high level, it is to be expected that as their yearly contracts expire many of the unions will demand further increases in wages, and that this will drive the companies that are not already in bankruptcy closer to the verge of it, if the men's demands are granted. This may follow, irrespective of any fare increases, because it is not yet certain that during the present era of high prices, the street-railway industry as a whole can be made to pay the full cost of service that is involved in higher wages along with the high prices paid for materials and money. From the point of view of the labor problem, therefore, the present condition of the street-railway industry contains the seeds of trouble not only for the people financially interested in the industry, but also for the general public. For the latter there is the double danger of increasing cost of service on the one hand, and of paralysis of service through industrial conflicts on the other.

XLIV. Perhaps the major cause of the labor difficulty, aside from the general increase in labor costs, is the fact that heretofore in the relations between the public and the companies as fixed in the franchises, the employees have been for the most part ignored. The companies have undertaken for a consideration to perform a public function and to deliver service, and the public has had no direct relation

with the men, leaving them to be employed and discharged by the companies without any public interference. But the recognized necessity for continuous service has brought things, during the war period, to a pass where it is seen to be essential that the employees of the street-railway companies acquire a full sense of public responsibility and get away from the position of mere wage earners in private employment, with no concern as to the relations between their employers and the general public.

XLV. One of the remedies proposed is the establishment of public tribunals through which wages and the hours and conditions of labor may be fixed by public authority, coupled with the enactment of laws to prohibit and penalize strikes in the street-railway field. This remedy is generally opposed by organized labor, which regards "the right to strike," even in industries where continuity of operation is essential to public convenience, as their indefeasible ultimate guaranty of adequate wages and satisfactory conditions of work.

XLVI. Another remedy is based on the right claimed by the Amalgamated Association of Street and Electric Railway Employees to the universal recognition of the union, a living wage, and the eight-hour day, with the relations between the companies and the employees determined by contracts annually renewed, with arbitration of any differences by special boards of arbitration established from time to time in the local communities, and with the men reserving the right to strike in case the companies refuse to grant their fundamental demands or refuse to submit to arbitration any differences that may arise, or refuse to abide by the results of an arbitration.

XLVII. Another remedy proposed is to give the employees the right to participate in the management. This would change in part the present relationship between the men and their employers. Those who propose this plan advocate it on the theory that participation in management would give the men an interest in efficiency, economy, and continuity of service, and a sense of responsibility both to the public and to the investors which, as mere employees, they can not feel.

XLVIII. Another remedy proposed for the labor problem in the electric railway industry is public ownership and operation, under which the employees would become civil servants and have all the advantages and be subject to all the restrictions which inhere in that relationship.

XLIX. The street-railway problem as a whole can not be solved merely by the solution of the problem of credit and it can not be solved merely by the solution of the labor problem. Each reacts upon the other. Both must be included in a coordinate way in the final solution, and any solution arrived at must meet the fundamental requirement that the street railways exist primarily for service rather than for profits, since they have become a public function absolutely essential to the public welfare and for which the community itself must assume the ultimate and final responsibility for self-help.

L. In seeking a solution of the electric-railway problem the only possible choices are these: (1) To abandon the theory of public interest in the industry and abrogate the practice of public regulation with respect to it, leaving the electric railways to work out

their own salvation as a private speculative business enterprise; (2) to continue and perfect the theory and practice of public regulation by the complete elimination of contractual relations, at least so far as they relate to the value of the property, the rate of return to capital, the extent and quality of service to be rendered and the compensation therefor; (3) to establish a more intimate contractual relation between the companies and the public than has heretofore existed, based upon some form of the service-at-cost plan, with service controlled under most conditions by the municipalities, and fares regulated more or less automatically without the intervention of State commissions; or (4) public operation or both public operation and public ownership.

LI. Quite a number of witnesses complained of the bad effects of public regulation as it has heretofore been practiced, and it was even suggested that all restrictions be removed from the electric railways in order that they might battle to the death with their new competitor, the automobile. The idea was that only by such removal of restrictions can the ultimate relative merits of the electric railway and the gasoline motor car be tested out. The overwhelming weight of testimony, however, was clearly adverse to such a policy. To most of the witnesses it would be unthinkable that the public should "wash its hands of" the electric railways and relegate them into the position of a purely private industry.

LII. The policy of complete and exclusive State regulation, freed from the limitations imposed by municipal contracts, could hardly be carried out to its logical conclusion except on the assumption that the municipalities have no special local interest in electric railway service, and that the present status of private ownership and operation is to be continued indefinitely. Moreover, State regulation, as it has thus far been developed, holds out no adequate assurance that it will be able to restore and maintain the credit of the electric railways, or that it will be able to preserve continuity of service through a solution of the labor problem. At best, State regulation gives the industry an opportunity to earn a fair return upon the investment if the industry can be made self-sustaining from the rates. Public regulation can give no guaranty, and in an emergency like the present one is compelled gradually to withdraw the hand of control and permit the companies to do whatever seems necessary to enable them to work out of their financial difficulties.

LIII. A contractual relationship fixing the investment value of the property, and the allowed rate of return to the investors, with provisions assuring to the companies that their investment will be protected and their annual return upon it earned or paid, might have the effect of restoring the companies' credit and of enabling them to go on in the performance of their function. This solution of the problem involves the elimination of the element of risk and of chance for reward, which lie at the very foundation of private initiative, the service-at-cost plan is preeminently suited to public enterprise in which the idea of profit is entirely absent. When it takes the form of a contract between the municipality or the State and the electric railway, it is designed as a means to avoid the necessity of public ownership and operation, on the theory that private ownership and

operation are better. It is admitted on all sides that most serious evils have resulted from the treatment of the electric railways as a speculative industry, and that both from the public point of view and from the point of view of the investors, ultimate salvation lies in security. The fundamental purpose of the service-at-cost plan is to remove the speculative element, but in doing so it removes the very condition which is put forward as the chief reason for a continuation of private management in the case of an industry which is universally recognized to have become a public function.

LIV. The character of the electric-railway industry, the impossibility of leaving it to be carried on as a private business, the failure of public regulation to solve the problem advantageously either for the electric-railway companies or for the public, the inherent limitations of the service-at-cost plan, the impracticability of dealing effectively with the labor problem under private management, and the fact that the cost of capital without the support of public credit has become prohibitive, all point to the conclusion that, with respect to local transportation, public ownership and operation are an ultimate necessity. A program of public ownership and operation will not be easily carried out. A careful and prolonged consideration of the problem reveals no easy solution of it. It is clear, however, that the industry can not be put upon its feet and the public interests served except through the adoption of a definite, comprehensive, and constructive policy. No such policy has been suggested that does not have ultimate public ownership as its goal. It is, perhaps, unfortunate that the prejudice of controlling public opinion against public ownership of public utilities, and the immense vested interests in the electric railways and other utilities, have during the past erected legal, contractual, and financial barriers in the way of the adoption of this policy. Even in a crisis these barriers can not be overcome without great difficulty. In the present state of the laws governing municipal action, and in the present state of municipal finances, it is quite obvious that public ownership of the electric railways as a general program can not be effected short of a considerable period of years, unless it is brought about by a compelling emergency that brooks no delay. Whatever temporary measures may be recommended or adopted for immediate relief, it is essential that such measures shall not in any way interfere with the adoption of a program looking to the permanent solution of the problem, and that there should be no postponement of the initial steps in the work that will take the longest. For this reason, a declaration should now be made of the ultimate necessity of public ownership and operation, and public attention should now be directed toward the specific problem of legal, financial, and administrative preparation for it. It seems clear that, no matter how soon the program is initiated, the necessity for its application will arrive before the communities are fully prepared.

ARGUMENT AND BRIEF

SUBMITTED TO THE FEDERAL ELECTRIC RAILWAYS
COMMISSION ON BEHALF OF THE COMMITTEE OF ONE
HUNDRED ACTING FOR THE AMERICAN ELECTRIC
RAILWAY ASSOCIATION.

BENTLEY W. WARREN, *Counsel.*

NOVEMBER 22, 1919.

EDWIN GRUHL.

A. S. HILLS.

HARLOW C. CLARK.

TABLE OF CONTENTS.

	Page.
FOREWORD-----	2153
INTRODUCTORY STATEMENT-----	2153
ARGUMENT AND BRIEF:	
(A) Purpose in Appointment of Commission-----	2155
(B) Is Electric Railway Service Essential?-----	2156
(C) Transportation Service on Tracks Essential in American Cities-----	2157
(D) Through What Agency Should it be Conducted?-----	2158
(1) Municipal or Public Ownership and Operation-----	2158
(2) Municipal or Public Ownership and Private Operation-----	2158
(3) Private Ownership and Municipal or Public Operation-----	2159
(4) Private Ownership and Private Operation-----	2159
(E) On What Terms May Private Capital and Enterprise be Obtained-----	2160
(F) How Can Interest of Both Public and Utility be Protected-----	2162
I. HISTORICAL DEVELOPMENT OF STREET RAILWAY INDUSTRY-----	2163
(A) The Horse Car Period—1850—1890-----	2163
(B) Episode of the Cable System—1873—1898-----	2165
(C) Lack of Scientific Consideration of Relations Between Com- panies and the Public-----	2166
(1) Varieties of Street Railway Franchises-----	2166
(a) The License Form of Franchise-----	2166
(b) The Permanent or Perpetual Franchise-----	2166
(c) The Fixed Term Franchise-----	2166
(d) The Indeterminate Permit-----	2167
(D) Bargain System Between Public Officers and Utilities-----	2168
(E) Application of Electricity to Street Railway Operation-----	2169
(1) Mistaken Optimism Concerning Possible Profits-----	2169
(2) Effect of Expense Resulting From Rapid Development-----	2170
(3) Effect of Inadequacy of Horse Railroad Equipment for Electric Traction-----	2170
(4) Effect of Expenses of Compliance with Legislative Require- ments-----	2171
(F) Unification into Complete Systems of Small Units-----	2171
(G) Holding Companies-----	2173
(H) Increased Cost of <i>Electric</i> Railway Construction, Irrespective of Obsolescence-----	2174
(I) Increased Cost of Material and Labor-----	2174
(J) Increase in Taxation-----	2175
(K) Extension in Lines and Expansion of Systems-----	2176
(L) Development of Use of Automobiles and Jitneys-----	2177
(M) State Regulation and Its Effect-----	2177
II. PRESENT CONDITION OF THE INDUSTRY-----	2179
(A) Lack of Credit-----	2180
(B) Deterioration in Service-----	2181
(C) Receiverships-----	2181
(D) Disintegration of Unified Systems-----	2181
(E) Abandonment of Lines-----	2182
III. CAUSES OF PRESENT CONDITIONS-----	2182
(A) Inflexible Fares-----	2182
(B) Increased Cost of Labor-----	2183
(C) Increased Cost of Materials and Supplies-----	2184
(D) Increase in Taxes and Imposts-----	2185
(E) Decline in Purchasing Power of Fare Received-----	2186
(F) Use of Private Automobiles-----	2186
(G) Jitney Competition-----	2187

	Page.
III. CAUSES OF PRESENT CONDITIONS—Continued.	
(H) Longer Average Haul Owing to Spread of Population.....	2188
(I) Increased Use of Free Transfers.....	2188
(J) More Stringent Service Requirements.....	2189
(K) Increase of Traffic at Peak Hours.....	2189
(L) Street Congestion.....	2189
(M) Unremunerative Extensions.....	2190
(N) Public's Belief That High Cost of Living Does Not Affect Street Railways.....	2190
(O) Point of View That Industry Will Continue Anyway.....	2191
IV. FUNDAMENTALS UNDERLYING SOLUTION OF PROBLEM:	
(A) The Establishment and Maintenance of Credit.....	2191
(1) Restoration of Confidence of the Investor.....	2192
(2) Adequate Revenue.....	2194
(3) Adequate Reserves.....	2196
(4) Public Co-operation.....	2198
(B) Methods of Adjusting Revenues to Meet Expenses.....	2198
(1) Increase in Revenue.....	2199
(a) Increase in Flat Rate.....	2199
(b) Zone System of Fares.....	2201
(c) Transfer Charges.....	2203
(d) Introduction of Electric Railway Express.....	2204
(e) Elimination of Dead Heads and Other Free Service.....	2204
(2) Decrease in Cost of Operation.....	2204
(a) Elimination of Non-profitable Lines.....	2205
(b) Elimination of Special Taxes.....	2205
(c) Elimination of Imposts.....	2206
(3) Economies Through Public Co-operation.....	2207
(a) Operating Economies.....	2208
<i>First</i> , One-man Cars.....	2208
<i>Second</i> , Turn-backs.....	2208
<i>Third</i> , Skip-stops.....	2208
<i>Fourth</i> , Re-routing.....	2209
<i>Fifth</i> , Loading Devices.....	2209
<i>Sixth</i> , Trailer Operation.....	2209
<i>Seventh</i> , Honest Collection of Fares and Fare Register- ing Devices.....	2209
<i>Eighth</i> , Double-deck Cars.....	2209
<i>Ninth</i> , Lighter Cars.....	2209
<i>Tenth</i> , Keeping Street Car Tracks Clear of Traffic.....	2209
<i>Eleventh</i> , Elimination of Street Congestion Due to Parking of Motor Cars on Curb.....	2209
<i>Twelfth</i> , Assistance in Staggering School and Shopping Hours.....	2209
(b) Regulation of Vehicular Traffic.....	2209
(c) Prompt Action by Public Authorities.....	2210
(C) Plans for Regulating Relations Between Communities and pri- vately Operated Public Utilities.....	2210
(1) The Indeterminate Franchise.....	2210
(2) Regulation Through Competition.....	2210
(3) State or Local Regulation.....	2211
(4) Service at Cost Plans.....	2212
(5) Profit Sharing Plans.....	2213
(6) Public Subsidies.....	2213
(D) Public Ownership.....	2214
IDENTIFICATION OF WITNESSES.....	2215

FOREWORD.

Earliest Judicial Statement of Service at Cost Principles, 1860:

Object of grant is the public accommodation of travelers. In its exercise, grantees provide and keep up a public easement; grantees are entitled, for their outlay of capital, to reasonable certainty of compensation.

"Since horse railroads are becoming frequent in and about Boston, and are likely to become common in other parts of the Commonwealth, it is very important that the rights and duties of all persons in the community, having any relations with them, should be distinctly known and understood, in order to accomplish all the benefits, and, as far as practicable, avoid the inconveniences, arising from their use. *This is important to proprietors and grantees of the franchise, who expend their capital in providing a public accommodation, on the faith of enjoying, with reasonable certainty, the compensation in tolls and fares, which the law assures to them;* to all mayors, aldermen, selectmen, commissioners or surveyors specially appointed by law for the care and superintendence of streets and highways; to all persons, for whose accommodation in the carriage of their persons and property these ways are especially designed; and to all persons, having occasion to use the ways through or across which these horse railroad cars may have occasion to pass * * *.

"We understand that a horse railroad and cars are a modern invention, designed for the carriage of passengers, and, though not moving with the speed of steam cars, yet with the average speed of coaches, omnibuses and all carriages designed for the conveyance of persons.

"*The accommodation of travellers, of all who have occasion to use them, at certain rates of fare, is the leading object and public benefit, for which these special modes of using the highway are granted, and not the profit of the proprietors. The profit to the proprietors is a mere mode of compensating them for their outlay of capital in providing and keeping up this public easement.*"

Massachusetts Supreme Judicial Court per Shaw, C. J., in *Commonwealth vs. Temple*, 14 Gray, 60 (the italics are ours).

INTRODUCTORY STATEMENT.

Reason for the Appearance of The American Electric Railway Association Before the Commission and its Qualifications to Represent the Electric Railway Industry.

The American Electric Railway Association appears in the investigation being conducted by your Commission as the representative of member companies operating more than eighty per cent. of the total electric railway mileage of the United States, and of an additional number of non-member companies who have assisted in the collection, preparation and presentation of the testimony offered for your consideration.

The Association was organized as the American Street Railway Association in the city of Boston in 1882 and, as set forth in its constitution, has for its objects:

The discussion and recommendation of methods of construction, management and operation.

The promotion of the co-operative spirit between its members.

The encouragement of friendly relations between the public and the railways.

The acquisition of experimental, scientific and statistical knowledge relating to construction, equipment and operation, and its dissemination among member companies.

The safeguarding of the interests of electric railways.

These objects are sought to be accomplished through a parent organization, which deals with matters of policy, relations with the public and the broader and more general objects of the organization, and which maintains supervision over the activities of four affiliated associations, each of which deals with matters of particular interest to an important department of electric railway operation. These affiliated associations are: The Accountants Association, the Engineering Association, the Claims Association and the Transportation and Traffic Association.

The Association is a voluntary association. It has four classes of members, *i. e.*, Company Members, consisting of electric railway companies, and manufacturing companies dealing in electric railway supplies and apparatus; Members, consisting of individuals, copartnerships and corporations, identified with electric railway interests, and other persons, who in the opinion of the Executive Committee it is desirable should be connected with the Association; Company Section Members, consisting of the members of Company Sections of the Association, and Foreign Members, consisting of electric railway companies, operating in countries other than the United States, its possessions, Canada and Mexico. Member Companies and Foreign Members, alone of the membership have the right to vote. Company and foreign membership in the American Association carries with it membership in all of the affiliated associations.

A brief recital of some of the accomplishments of the Association will indicate that the electric railway industry of this country, as represented by the Association has not been lacking, either in foresight, or in effort to adjust itself to the evolution and development of local transportation, both as it affects the relations of the public and the companies, and as it affects the system of charges and the practical operation of the properties.

From its inception the Association has realized the importance of adjusting its relations with the public on a basis of equity and justice. In 1899, eight years before the organization of the public service commissions of Wisconsin and New York, which marked the beginning of aggressive and comprehensive State regulation, control of electric railways by State Commission was advocated upon the floor of the Association's Convention. Since 1906 the Association has had a Committee on Public Relations, which has devoted its attention to the task of readjustment.

The continuing policy of this Committee was crystallized into one of the planks of the Code of Principles adopted at the 1914 Convention of the Association, which declared that "full and frank publicity should be the policy of all transportation companies, to the end that proper information may be available to the investor and the public." In 1912, some of the officers and leaders of the Association, made a six weeks' tour of the country, speaking before the civic organizations in nearly all of the leading cities, presenting the facts of the electric railway problem and urging public co-operation in its solution. Upon the entrance of the United States into the war, the Association organized an electric railway War Board with offices in Washington and placed the entire resources of the industry at the Command of the National Government.

A glance at the index to the *Proceedings* of the American Association, covering the entire period of its existence shows that it has been alive to the various factors that have influenced electric railway development, both physical and those bearing upon its relationship to the public and its employes. In 1911, was started a study of the correct principles underlying charges for electric railway service, which culminated in the *Cost of Urban Passenger Transportation Service*, the most comprehensive and thorough study of the fare situation now in existence, prepared by Mr. F. W. Doolittle under the direction of the Committee on the Cost of Passenger Transportation Service. Relations with employes, embracing the various phases of so-called welfare work and profit sharing, as well as workmen's compensation laws have been made the subject of reports. Valuation, franchises, financing, governmental regulation and the various plans and suggestions as to municipal control have been studied. In these matters of general policy, the Association has kept in advance of the trend of the times and has led and not followed in the work of readjustment.

In the practical details of operation and management, as it relates both to economy and efficiency, the affiliated Associations have performed a valuable service both to the industry and to the public.

The Standard Classification of Accounts for electric railways, which is the basis for practically all electric railway accounting, is the joint work of the

Interstate Commerce Commission and a committee of the Accountants' Association.

The standard codes of rules for both urban and interurban operation, in effect, with local modifications, on practically all electric railways, are the work of the Transportation and Traffic Association.

The Engineering Association has created and is creating standards for apparatus and material used in electric railway operation, which have a marked influence on both costs and efficiency.

At the recent Convention of the Association, technical reports were presented upon valuation, service at cost, zone systems, methods of fare collection, one-man cars, and code of traffic principles. All these reports are available for all electric railway companies, public service commissions, municipal authorities and the public itself. This wide range of subjects shows that this organization is fulfilling its function and that the industry as represented by it is not remiss in its undoubted duty of applying to electric railway operation, the best thought, and the most careful management and foresight.

The industry as represented by the American Electric Railway Association, is before your Commission, not because it has failed to properly conduct the public service which it has undertaken to perform, but because, it is faced with conditions over which it has no control, and which can be remedied only with the assistance and co-operation of the public, whose representatives you are.

ARGUMENT AND BRIEF.

(A) Purpose in Appointment of Federal Electric Railways Commission.

To insure in the public interest a continuance of an essential service to the communities of the country.

This Commission was appointed by the President of the United States in response to a communication from the Secretaries of Commerce and Labor urging the creation of a Commission to investigate the entire electric railway problem. In their letter of May 15, 1919, the Secretaries said:

Dear Mr. President: The Electric Railway problem, to which your attention has been called on several occasions, has recently assumed such serious national proportions as to warrant the prompt attention of the Federal Government. Already fifty or more urban systems, representing a considerable percentage of the total electric railway mileage of the country, are in the hands of receivers. * * *

Other large systems are on the verge of insolvency, for the industry as a whole is virtually bankrupt. The continued shrinkage in the value of hundreds of millions of electric railway securities held by savings banks, national banks, life insurance companies and by the public at large, threatens to embarrass the nation's financial operations. Furthermore, the withdrawal of this industry's buying power, which is said to rank third in magnitude, involves the unsettlement of collateral industries, naturally entailing labor dislocation that will affect hundreds of thousands of employes. * * *

What the solution is, may, we believe, be evolved by a thorough investigation of general franchise and operating conditions in their relation to rates, including service-at-cost plans, state and municipal taxation, local paying requirements, and internal economies that may be effected.

We, therefore, propose and recommend the appointment by you of a Federal Board or Commission, whose duty it shall be to study and report upon the entire problem, in order that the State and Municipal authorities and others concerned may have the benefit of full information and of any conclusions or recommendations that may be formulated. * * *

The purpose which prompted this letter from two high officials of the Cabinet, and the action of the President in appointing your Commission, was evidently to insure, in the public interest, a continuance of an essential service to the communities of the country.

Both the recommendation for such a Commission, and its appointment, assume the necessity, and therefore the essential character, of the service rendered by this industry. It is a matter of general knowledge that the public entertains the same opinion. Nevertheless, a Commission of the importance of the Federal Electric Railways Commission, whose hearings have occupied such

prominence before the public, and whose recommendations are likely to be of far reaching consequence, must independently determine this basic point. Unless the service rendered by this industry is really essential, it is unnecessary to investigate either the causes, or to search for remedies for the desperate financial and operating conditions of the companies performing it, so graphically summarized in the letter to the President, and amplified by witness after witness appearing before the Commission.

(B) Is the Service Now Being Performed by the Electric Railways Really Essential?

The public service, at present rendered by electric railways, is the transportation of persons within our cities, and between those cities and relatively nearby suburbs, closely bound by business and social ties to the urban activities and population. The maintenance and continuous improvement and expansion of this service of transportation—by some means—is obviously essential. **The continuance of our present urban method of life and business activity is unthinkable without some cheap, convenient and reliable form of city and suburban transportation available to all the people.**

The social needs for such street transportation, and the indispensable necessity at that time of street railways (then operated by horses) to furnish it, were clearly recognized by a Massachusetts Commission of which Isaac F. Redfield was Chairman, which submitted its report in 1865 to the Massachusetts Legislature. The Commission in that report said:

From the testimony before us, and from all we know or can learn in regard to street railways, we entertain no doubt they must be regarded, as an indispensable necessity, the call for which will be likely to increase rather than diminish, in the future; and that, if properly managed, they may be made remunerative at very low rates of fare. The investments, therefore, in such enterprises may justly claim, on the part of the General Court, the inauguration, or the continuance, of such a policy in regard to them as shall render them as secure and permanent, as the nature of the property will fairly admit.

House Document No. 15, Mass. General Court of 1865.

Attention is also called to the citation in the historical review of the street railway industry in a later part of this brief, from the report in 1898 of another Massachusetts Commission, of which the late Charles Francis Adams was Chairman. We quote as follows from other parts of this last mentioned report, bearing especially upon the point now under consideration:

The Committee has no disposition to appear to exaggerate the importance of street railway developments, and the interest felt in them; but as the investigation proceeded it became apparent that not only was the whole civilized world at work on improved municipal transportation, but every considerable town in both hemispheres is acquiring experience of more or less general value in regard to it, while at the same time seeking to learn the results of experience elsewhere. * * * As a public agency the electric street railway is now fast revolutionizing the character of urban life, spreading it over a wider area and subjecting it to new influences; while entailing, in such items as paving, sewerage and police, a vastly increased municipal expense. * * *

As the modern municipalities expanded, the demand for better facilities of urban, or, as it would be termed in Europe, intra-mural, transportation, made itself increasingly felt.

No more convincing proof of the community need for street transportation of the public could be found than that furnished by the tremendous expansion of electric railway lines in this country. The census figures show that in 1890, the year in which the introduction of electricity began on a substantial basis, there were in the United States, 8,123 miles of single track. Twenty-seven years later, or in 1917, the last census year available, this single track mileage had increased to 44,835 miles. This is an increase of 500 per cent. As elsewhere pointed out, the single system serving Boston and its suburbs, more than doubled its mileage in the thirty years between 1888 and 1918. To eliminate, either suddenly or gradually, from such communities the facilities furnished by street railways, without supplying an adequate substitute system of street transportation, would be a national calamity. The consequent and necessary

congestion of population, the abandonment of suburban homes, the sacrifice of air and sunshine, the increase in vice and disease, would stagger contemplation.

(C) This Service of Street Transportation Cannot be Successfully Performed in American Cities Under the Prevailing Conditions Therein Except by Some Method Involving the Use of Tracks.

This service of street transportation has now for about twenty-five years been furnished by the electric railways. It consists of two main features; first and most fundamental, a fixed and permanent system of tramway tracks—laid for the most part in public streets—with the wheels of the passenger-vehicles adapted to the rails of the tracks; second, and of relatively lesser importance, the use of electricity, generated in central power stations, transmitted through systems of wires to electric motors attached to the cars, and furnishing their motive power.

This feature of the fixed railway is called fundamental, because it has survived all changes of motive power in street railway transportation during the last three-quarters of a century. Introduced about 1850 for improving the earlier horse-drawn omnibus service by the use of "horse-cars"—its tracks constituted the chief difference between horse-car facilities in our cities and the stages or omnibuses for which those horse-cars were rapidly substituted. Housed-in or "dummy" steam locomotives, cable cars, storage battery cars, electric trolley cars, gasoline cars, have all adopted and continued the street tracks as the best means for their passage through the streets, with the greatest comfort and least delay to their own users, and with the least danger and inconvenience to other users of the streets.

When public transportation through the streets is an acknowledged and unquestioned necessity of urban and suburban life, the question may be raised and must be considered and answered by this Commission at the threshold of its investigation. Is the street *rail* way an essential agency in furnishing this essential public necessity?

The term street railway instead of electric railway is here used advisedly—for it emphasizes the distinction between the *rail* way feature, and the *electric motive power* feature, of the utility. The electric street railway, in its broader sense of transportation of passengers in vehicles moving over rails, may be supplanted by some other agency only if there is an equally or more adequate method of using the streets for this purpose, than by maintaining the fixed tracks, as well as a cheaper, and equally reliable, motive power to take the place of electricity.

So long as it is agreed that the street *railway*—by whatever motive power operated—is essential, the whole problem of the electric street railway, addressed to this Commission is a vital one. It must be considered and, if possible, its solution must be reached. The question of electricity as its motive power is an incidental question and falls into the class of other incidental questions, like that of public or private ownership and operation, the imposition upon car riders of taxes for the relief of the general tax levy, the system of fares to be adopted, public policy respecting various kinds of franchise and tenure for privately owned street railways, the recovery of street railway credit, and other similar questions which have been discussed by various witnesses appearing before the Commission.

That tracks in the streets, that is street railways, are essential, appears not only from the experience of seventy-five years, in which the tracks have been retained for use with every new form of motive power, but equally from the testimony of substantially every witness before the Commission. Not one of the 114 experts, publicists, public officers or traction men, has seriously proposed a return to the independently operated stages or omnibuses of pre-horse-car days, moving at will over the entire surface of the street, taking their chances among other vehicles, and making a hopelessly unmanageable addition to the already over-congested traffic.

Every advocate of *public ownership* of street railways is a witness to their necessity. Not only would such ownership be improper, if not absolutely unlawful in most of our States, but the advocates of it would be unfaithful to the public welfare, unless the facilities so to be owned constitute a public necessity. Among the array of economic and transportation experts, and of public officials, the most suggestive, perhaps, in this connection, is Mayor Couzens of Detroit. Himself one of the fortunate beneficiaries of that Aladdin lamp creator of fortunes, the Ford Motor Company, possessing unusual knowledge of the extent

and possibilities of the use of jitneys and other self-propelled vehicles for street transportation, as well as of the plans of his late associate, Henry Ford, for producing a gasoline street railway car, he advocates before this Commission, as he had already repeatedly urged in the City of Detroit, the municipal ownership and operation of all the electric railways in that city. Other witnesses similarly advocated some form of public ownership of the system of public transportation, but no one of these spokesmen for public ownership suggested seeking a substitute for the street railway as a means for conducting such transportation.

Henry Ford is experimenting with a gasoline-driven motor to take the place of electricity as a motive power for street cars. Although his Ford car has been the favorite vehicle in the so-called "jitney competition," its inventor and manufacturer proposes, not an enlarged and improved type of that automobile moving at large over the streets, but a vehicle, which like the horse car, cable car, and electric car, shall itself also be operated upon the street railway track. In other words, he hopes to improve, as have his numerous predecessors, the motive power upon the street railway—but has no idea of eliminating the railway itself.

The experience of seventy-five years, the unanimous opinion of the expert witnesses and of those who are students of transportation problems, and the assumption of the necessity for tracks by inventors seeking, like Henry Ford, to improve the methods of street transportation of the public, alike demonstrate the fundamental and permanently essential feature of the RAIL way—and to the present time, of the ELECTRIC railway—to any adequate, reliable and satisfactory system for transporting the maximum number of people through the streets of our cities with the least interference with the use of these streets for other purposes of public ways.

(D) Admitting That This Public Service is Essential, Through What Agency Shou'd It Be Conducted?

Any one of the four following courses is possible :

- (1) Municipal, or public, ownership and operation.
- (2) Municipal, or public, ownership and private operation.
- (3) Private ownership and municipal, or public, operation.
- (4) Private ownership and private operation.

To the present time the electric railways in the United States, completely serving its cities, its suburban and interurban territory, and excelling in extent, in excellence of service and in provision for accelerating community growth those of any other country in the world, are the result of private enterprise, individual courage and individual genius.

They have been possible only because of the opportunity which has been given to private initiative. The development from the horse-drawn bus of the early American city to the present extensive systems is a result, not of community foresight or of community enterprise. It has been due solely to that genius for organization and that continual striving for improvement which marks the development of American industry in all lines, under this national policy.

(1) MUNICIPAL, OR PUBLIC, OWNERSHIP AND OPERATION.

This method of conducting this public service is such a recent innovation in the United States that it must be still looked upon as an experiment. With the exception of a comparatively small municipal street railway in San Francisco and the recent purchase by the City of Seattle of its system, we recall no instances of municipal ownership and operation. Certainly there are no others in important cities of the country, and of these two one is so small and the other so recent as to furnish no evidence, of real value, to other communities.

(2) MUNICIPAL, OR PUBLIC, OWNERSHIP AND PRIVATE OPERATION.

This method, as applied to an entire railway system, has not been tried in the United States. It exists in Boston with respect to the subways and tunnels, all of which, excepting the subway to Cambridge, are owned by the City and leased to the privately owned Boston Elevated Railway Company or its lessee, the West End Street Railway. The theory of such public ownership and

private operation of a street railway was a favorite one of the late Charles Francis Adams, when he was Chairman of the Massachusetts Railway Commission. Several times he publicly urged the purchase of existing tracks by the municipality in which they existed, and the municipal construction of such additional tracks as might be needed. He rested his theory upon the analogy between the tracks as a special and improved form of pavement, and the other pavement in the street, all of which, as a part of the street itself, he urged should belong to the public and be maintained by it. New York City also furnishes an example of publicly owned subways operated by a private operating company. Both in Boston and New York the tracks and other equipment, necessary to the operation of a railway in the subway, are the property of the private company.

(3) PRIVATE OWNERSHIP AND MUNICIPAL, OR PUBLIC OPERATION.

This also is a very modern method of furnishing street railway transportation. It has recently been introduced on two important systems in Massachusetts, in each case under the provisions of a special Act of the Legislature. These two systems are those respectively of the Boston Elevated and the Eastern Massachusetts (formerly the Bay State). In each case the system is administered by five public Trustees appointed by the Governor of the Commonwealth for long terms. The public operation of the Eastern Massachusetts began only on June 1, 1919. Its history and condition were described to the Commission by Mr. Homer Loring, Chairman of its Board of Trustees. The most interesting single result thus far, has been the drastic and prospectively successful method of dealing with jitney competition. Apparently believing that such competition cannot take the place of street railway service but may seriously impair its profitable continuance, the Trustees have called upon various communities to choose between an abandonment of the street railway service and the elimination of the jitney competition. Whether the public would so critically and willingly have faced this alternative if presented by a company under private management is an interesting question. That the Trustees of the Boston Elevated have increased the flat fare from five cents to ten cents does not reflect upon this method of operation. Their action has been justified by the results, for the system is now meeting its entire cost of service. The need of increased fares was generally recognized before the enactment of the special legislation and was one of the impelling causes to the substitution of public for private operation. Of the five Trustees originally appointed in June, 1918, only two are now members of the Board. Mr. M. C. Brush, who was President of the Company until the public control began and who was generally regarded as a successful street railway operator, at once resigned. His successor, J. H. Neal, has recently resigned. Both have left the street railway industry. C. D. Eumons, who was appointed General Manager by the Trustees, resigned to accept the Presidency of the street railway system in Baltimore. All these changes in the personnel have occurred in less than a year and a half.

(4) PRIVATE OWNERSHIP AND PRIVATE OPERATION.

This is the method under which, with the exception of the few instances just mentioned—and in New York, even the first subway was built by private capital—the entire street transportation industry of the United States has been developed and under which it is still largely maintained.

Whether private ownership and operation or public ownership and operation, either complete or partial, should be substituted for it, is manifestly a question of public policy and one on which those at present engaged in the industry cannot properly express any official opinion. Many careful students and patriotic citizens believe that the time is ripe for some change in the method heretofore followed. Others equally thoughtful and devoted to the notion of what they believe to be the best public interests violently oppose such a change. Under a democratic government such as is enjoyed in this country the public will decide between the two schools of thought, whenever a majority is convinced of the merits of the plan advocated by the one school or the other.

It seems proper, however, that those particularly familiar with the present serious condition of the industry should call to the attention of the Commission certain features of the situation having an immediate and material im-

portance in the consideration of this question. Speaking generally, either State or municipal ownership cannot be effected without appreciable delay. This means in the present desperate situation of the street railways serious consequences in the way of further contraction and deterioration of service. Too many companies are already in the hands of receivers, and too many are threatened by a like fate, for the public to be subjected to such consequences.

No form of public ownership is practical until a real majority of that governmental division, which it is proposed shall undertake it, has become convinced of its desirability. It was not apparent from the testimony before the Commission that such a conviction had been reached in any large number of instances. Even after a receptive state of mind may have been developed in the public, there was general agreement even among those witnesses advocating public ownership that legislation would be necessary to authorize even State ownership, and that in substantially all cases legislation and in many cases constitutional amendments would also be necessary to authorize municipalities to take over existing railways. In the latter case, action by the municipalities themselves would also be required, and we believe that no case was called to the attention of the Commission of any municipality financially able, or which could be made financially able without further legislation, to meet the heavy initial cost either to take over an existing railway system or build a new one in its place. The removal of all these legal and financial obstacles to the substitution of public for private ownership would necessarily, in nearly every case, be a matter not of months, but of years. So far, therefore, as concerns remedying the situation pointed out by the Secretaries of Commerce and Labor in their communication to the President, it is obvious that any suggestion for any form of public ownership of street railways, however attractive it may be, is today academic. The public needs an immediate improvement and extension of service. The companies, before they can render such service, need a restoration of credit, which practically none of them now enjoys. That credit cannot be restored without sufficient additional revenue to justify it and without such evidence of public intention to permit a continuance of the additional revenue as will induce investors again to risk their capital in this industry. Such immediate attention to insuring increased revenue, and satisfying investors of the permanent safety of their capital through a condition of such flexibility of rates as will not again jeopardize the revenue, need in no way militate against the ultimate realization of the object of those who advocate some form of public ownership. That public ownership can begin as well at one time as at another, provided, that in assuring sufficient revenue and sufficient protection to capital, some proper basis is adopted for a subsequent purchase of the privately owned properties. Indeed, unless this is done, it is difficult to conceive any possible way in which the confidence of investors can be revived, or the additional capital, absolutely necessary to continue the satisfactory operation of our electric railways, can be obtained.

It necessarily follows, therefore, that for several years private capital and private management must in the main be relied upon to provide this public service. From the trend of public opinion as voiced in the hearings before the Commission, and gathered from the expressions of the public press, it seems probable that there is a general public preference for a continuance of that method of furnishing this service which has hitherto introduced and developed it with such extraordinary advantage to the public in the extent of tracks and character and reliability of service.

(E) If Private Capital and Private Enterprise are Essential to the Successful Conduct of the Business, on What Terms May They be Obtained?

Of almost equal importance is a variation of this question, how can such capital and private enterprise, already enlisted in this business be *retained*? So far as capital is concerned, that already invested cannot, it is true, be recovered and devoted to more attractive undertakings. For the public, however, this is but poor consolation. Without additional capital the requisite continuance and development of service is impossible. As concerns a *retention* of private initiative and enterprise in the conduct of the business, quite apart from obtaining them for the future, the case is far different. Unless the conduct of the business is placed upon a satisfactory basis in its relation to the communities for whose accommodation it is conducted, both these features, initiative and enterprise, so essential to its success, will be lost.

Present investors, once convinced of the hopelessness of receiving fair treatment, although unable to withdraw their existing investment, will cease to interest themselves in its management, and will direct their attention to some more stable and attractive form of industry. The individuals responsible for the active management of the business, and upon whose devotion, enthusiasm, and ability, the successful results of that management must always largely depend, will seek other employment promising better appreciation and reward for their efforts. They are not tied to this business as are the investors. Not only need they make no further contribution of their vitality and ability to a business refusing to recognize what they do, but they may withdraw all the valuable features, business experience and executive ability, of their past contribution and dispose of them elsewhere. Attention has already been called to the loss of personnel in the Boston Elevated, which may have been merely a coincidence, but may also indicate such a tendency as might be expected among active men finding that they were connected with a water-logged enterprise.

Private capital and private enterprise, can neither be permanently retained, nor can the additional capital absolutely necessary to success, be obtained, unless the reward received is sufficient to attract the initiative of investors and managers essential to the development of the industry—and to attract that initiative in competition with all other industries seeking that same capital and that same managerial ability.

Transportation, constantly expanding in extent, quickly taking up and incorporating every mechanical improvement and device, always on the watch and eager to adopt every new idea, promising greater efficiency and more complete public accommodation, will cease to be obtainable—indeed can be no longer expected—if such reward to capital and initiative is restricted to a mere investment return. Such a return has, in the past, been regarded by the public, and treated by regulating administrations, both local and State, as sufficient. The industry, too, in many cases, accepted and acted upon the same mistaken idea. This joint mis-conception accounts in large measure for the present plight in which this industry and the public find themselves—toward which even under a continuance of the more normal conditions, preceding the war, they were surely drifting.

The sudden outbreak of the war revealed the true situation. The investors at any rate, have been disillusioned. The public also realize the false basis of their relation to the industry. The former will surely never again embrace the idea that investments in public transportation are to be regarded as approximating those in public securities. They have seen the moderate returns upon such investments entirely suspended, while industries in comparison with this one, regarded as hazardous, have increased their previously larger returns and steadily risen in market value.

Attention has been concentrated on the causes for this debacle. Fixed and unchangeable maximum rates of fare, permanent burdens of contributions to the public for tax levies without benefit either to the industry or its patrons, additional burdens without ability to secure additional revenue to meet them, fixed term franchises without provision either for return of investment at their end or its amortization during their life, one hundred per cent. increases in wages and supplies, or a halving in the value of the fixed fares, according to the view one takes of high prices or depreciated value of money, without public recognition of their effect upon the industry, authority, as in New York, for regulatory Commissions to order more service and equipment without authority to permit the companies to secure more revenue—all these errors in the treatment of the industry call for attention and correction. That many of them are a result of over-optimism on the part of the pioneers in the industry is true. They were too ready, because too ignorant of what the future might develop, to accept terms of franchises which were illogical and have proved incapable of longer performance. That the public was equally misled—often perhaps by the very enthusiasm of the industry itself—and sought to obtain the greatest possible consideration for their grants, is also true. These explanations do not, however, change the result. The investors will no longer invest, and the public can no longer obtain the necessary service, until the relations between them are changed. No change, it may safely be predicted, will be effective which does not assure freedom not only from a repetition of the recent experience of the industry, but also from the present unsatisfactory transportation situation both as respects the investors and the Public.

(F) Assuming that the Use of Private Capital and Private Enterprise is the Most Efficient and Economical Manner, or for the Present at any Rate is the Only Practical Method of Securing Local Transportation for Communities, how Should the Interest Both of the Public and of the Utility be Protected and What Are the Principles to be Recognized in Readjusting the Relations Between Them?

Although the opinion of Chief Justice Shaw, in the case of the Commonwealth against Temple,—cited in the foreword to this brief,—was written sixty years ago, it substantially states the fundamental principles governing the correct answer to this question.

That opinion defines, (1) The Nature of the Industry,—to provide and keep up a public easement; (2) Its Object, the accommodation of travelers; and, (3) A Profit to those who provide the capital for this object, relying upon the law's assurance of enjoying, with reasonable certainty, compensation in tolls and fares.

(1) This public easement, entrusted to an electric railway company to furnish and maintain, is inherent in the sovereign power of the State and is delegated by it and subject to resumption at its pleasure. It is an important function of the State to provide for the safe and convenient movement of its citizens from place to place. To a great extent the easement delegated to and exercised by the railway is a development of the public highway itself in which the tracks are laid. It is merely an improved method of using a highway either in connection with other uses, in the case of streets, or exclusively, in the case of private rights of way, acquired either by purchase or by eminent domain. Its most universal recognition is in the construction and maintenance of the public highways, in which the tracks are laid. Being thus a part of the public easement, it follows that the exercise of this public easement must at all times be subject to regulation and control by the State (or its governmental subdivisions, under delegation from the State) through the police power. Unless, therefore, the Public has impaired, through improvident contracts, the right to use this power, assuming such impairment to be legally possible, the essential rights of the public in regard to the industry are always safeguarded by the law and need no special consideration.

(2) The main object and public benefit, for which these special modes of using the highway are granted, is the accommodation of travelers. This principle must at all times be kept in mind, and all wise methods of dealing with the industry should be directed to realizing this object. Many illogical terms, foreign and often antagonistic to the real public object of these utilities, have been imposed merely because public authorities have not regarded that object. Efforts have been made to bargain and trade with the utility, as if it was not conducting a public easement for the benefit of travelers. Communities have sought to make of these utilities sources of municipal revenue, to add to their character of public agents in performing a public service that of collectors of a great variety of indirect taxes laid upon the car-riders,—not for the benefit of the car-riders but for the relief of other taxpayers. Not only have these indirect taxes hampered the industry but the rigid form of their imposition has been an increasing obstacle to its development. As conditions of the industry or the requirements of the public change, calling for more or different service, it is obvious that the relations between the public and the utility should be sufficiently flexible to respond to the new situation. Evidently, therefore, any rigidity of terms in the grants embodying them, preventing a prompt and effective response to constantly changing conditions, should be avoided.

(3) The proprietors of the franchise should receive with reasonable certainty, their profit, in the form of compensation through tolls and fares, for their outlay of capital in laying out and providing for this public easement. In practice this principle, so fundamental to a continuance of this public service by the outlay of private capital, has been very generally disregarded in the franchise bargaining and trading. The failure to recognize it has destroyed the confidence of investors in securities which experience has shown, have no reasonable certainty of profit. Its neglect has caused most of the present difficulties of the industry. Various phases of the application of the principle are discussed in a subsequent part of this Brief (p. 99) to which the attention of the Commission is particularly invited. Stated in more modern language, Chief Justice Shaw's principle calls for the maintenance, unimpaired, of the principal or capital investment of the utility, and of a sufficient return upon it to compensate the investors for contributing it. Both results must be effected

through adequate tolls or fares. The folly of attempting to fix those in advance and for all time is demonstrated by the experience of recent years. In an industry, of which more than half the operating expenses is the wages of labor, it is clear that revenue must fluctuate as wages go up or down; if revenue, then also tolls and fares from which alone that revenue is derived. The wages in Boston, in less than two years, have so increased as to cost more per passenger than the entire fare paid by a passenger before the public trustees increased that fare. The labor program of a minimum annual wage of \$2,000 for the lowest paid street railway employe, and a continuance of the present differential between the various classes of employes, if applied to the industry in the census year 1917, would have absorbed its entire gross receipts.

What constitutes a capital investment is not easy to determine. In Massachusetts, where all capital issues have been supervised and approved by a Commission, the actual investment as shown by the Commission's records is taken as the investment cost. Even though substantial accrued depreciation is manifest, the Commission has rightly held in several recent decisions that such depreciation should be made up by the public through rates of fare adequate for that purpose. The only exceptions recognized by that Commission are two,—one, where a utility is shown to have been guilty of such culpable or incompetent management as to constitute negligence for which the investor and not the public should suffer;—the other, where the depreciation is the result of paying unduly excessive dividends. In many jurisdictions the evidence of actual investment is not available and resort has been had to some form of valuation to determine the probable investment cost. Many different opinions as to the method of reaching such a valuation exist. As this matter stands at present the method to be pursued in any particular instance is to be decided either by the law in the particular jurisdiction in which the utility exists, or in the absence of legal direction, by such method as may be reached by agreement. It may, however, be properly pointed out that if the evidence before the Commission as to the probable indefinite continuance for many years of the present high level of prices is correct, and we recall no witness who seriously questioned its correctness, any valuation hereafter undertaken should recognize the new level of prices. This follows from the purpose for which such valuations are made.—they are made to determine the value to the community of the property devoted to providing the community with transportation. Whatever the property may have cost, it is obvious that it cannot now be replaced at such figures.

The Committee of One Hundred was prepared to introduce considerable evidence on the question of valuation and the principle that should govern it. This evidence was not introduced because of the ruling of the Commission that it was inexpedient for it to undertake to deal with such a controversial subject in the limited time at its disposal. Attention is called to this ruling by the Commission which was reiterated toward the close of the public hearings (Record for October 4th, page 6156). For the same reason it seems unprofitable to discuss in this brief these principles as it is assumed that the Commission will not include among its recommendations, any recommendation as to the method or principles which should govern the valuation of a property of a railway utility.

I.

HISTORICAL DEVELOPMENT OF THE STREET RAILWAY INDUSTRY.

The business of transporting the public through the streets of our cities has been a logical development since the latter part of the first half of the last century. That development has been continuous. Its successive steps, although of varying importance, might easily have been predicted, from time to time, by students of city needs and of inventive progress.

(A) The Horse Car Period—1850—1890.

It began with the introduction and use of stages or omnibuses drawn by horses—an obvious adaptation of the then universal system of land travel, wherever a country was sufficiently civilized to possess practicable roads connecting its different parts. These omnibuses—because of the better construction of city streets—were soon built with a greater carrying capacity, and were

designed to permit quicker ingress and egress to meet the requirements of passengers riding only short distances, than the lumbering coaches traveling long stages through the country. This earliest form of urban travel was, nevertheless, extremely primitive. It neither invited nor developed any marked riding habit. It contributed little to the growth of the cities or the development of their suburbs. It did facilitate to some extent, necessary travel, within a city, for persons to whom the time required for walking, or the cost of hiring a special vehicle, was prohibitive.

As late as 1849, it appears in the report of the famous trial of Professor Webster of the Harvard Medical School for the murder of Dr. Parkman that the accused returned from the Medical School in Boston to his home in Cambridge in "the *hourly*" omnibus between those two cities—across the Charles River from each other and with a distance of less than three miles between their city halls. According to the police officer who took the accused to the jail, they "conversed about the contemplated railroad to Cambridge." Six years later, March 26, 1856, horse cars began running at relatively frequent intervals over this route, and today Cambridge, like the other suburbs of Boston, and the many suburbs of other American cities, is practically a part of the larger city. It has been made so by the street railways—and the community of interest of these various cities with their suburbs has been made closer with each successive step in the railway development.

The invention of the steam locomotive and the construction of railroads to utilize to the maximum its tractive power, pointed the way to the earliest and by far the greatest improvement in city transportation. If the efficiency of the locomotive could be so much increased by drawing the long distance stage coach over tracks, why might not the same result follow the adoption of the same device in the streets? Applications for charters for horse-railroads soon appeared, and less than twenty years after the steam railroads began operation, the construction of street railway tracks began in various cities, and the horse drawn omnibuses began to disappear before the horse drawn cars upon those tracks. The early horse car was merely an improvement of the omnibus. But the details of the improvement—for the most part due to its running on tracks—were so attractive to the public, that the horse car largely supplanted the omnibus bumping over the pavements, as a common carrier of passengers. The public liked the greater smoothness of the rails, the greater ease and quickness of entering and leaving, and the more reliable schedules. To the owners the reduced wear and tear upon their vehicles, and the greater capacity of their horses, were matters of no small concern.

The street railway system of the country, with horses supplying the motive power, began about 1850. While of small proportions, compared with the present electric railway industry, it proved of great convenience to the public and constituted a marked advance over the omnibuses which it superseded. The operating companies were usually small, each controlling only a few miles of track making up relatively short lines. Frequently the street railway system of a city belonged to several independent companies operating their respective lines from the business centre to the outlying sections or to the nearer suburbs. The lines were built without regard to any general plan for furnishing a comprehensive scheme of transportation, and many of the later ones were projected to compete with earlier companies, involving a considerable amount of unnecessary and wasteful duplication of tracks.

In an explanation of the need of the present American Electric Railway Association, which was organized in 1882 as the American Street Railway Association, the following statistics were given to show the magnitude of the industry. They furnish an interesting basis as well for comparison with the great development of the electric railways of to-day * * *.

There are now organized and doing business in this country and Canada four hundred and fifteen street railways. These companies employ an army of about 35,000 men. They run 18,000 cars, which, with the horses attached, would make a solid line of cars reaching from Boston to Albany. More than 100,000 horses are in daily use, and calculating that the average life of a horse in street railway service is four years, it makes the consumption of horses 25,000 per year, a fact of much importance to the farmers of the country east, west, north and south. To feed this vast number of horses requires annually 150,000 tons of hay and 11,000,000 bushels of grain.

These companies own and operate over 3,000 miles of track—nearly enough to span the country from Boston to San Francisco. The whole number of passengers carried annually is over 1,212,400,000 or a number nearly equal to the entire population of the globe. The amount of capital invested in these railways exceeds \$150,000,000 with absolutely no security but the faithful and satisfactory service rendered the traveling public by the companies themselves.

These were the horse railway statistics of 1882. The 1917 Census reports 1,307 electric railway companies, 294,826 employes, 102,603 electric cars (each of more than twice the capacity of the horse-car), a consumption of 12,187,850.831 kilowatt hours of electricity generated or purchased, 44,835 miles of track, 14,506,914.573 passengers, and an invested capital of \$5,532,223,818.

Labor, and its compensation, which has proved in recent years a prolific source of difficulty in street railway operations, and, more than any other one feature of such operation, probably more than all others, has brought many companies to bankruptcy through the higher wages made necessary by the increased cost of living and the diminishing value of the currency, was not a serious operating or financial problem in the horse-car period. While the hours were long, the work arduous, and the pay low, the jobs were popular and applicants for them numerous. As recently as 1880, the pay of a conductor or driver, on what later became the Bay State Street Railway of Massachusetts, was \$1.75 a day. For this daily wage, on a typical line of that company the employes made seven round trips of an hour and thirty minutes each. This day's work was not finished until about fourteen hours after it began. Under winter snow conditions, in the Northern cities, the driver guided four horses through the traffic, the platforms were entirely open, and the cars themselves were, on most lines, unheated. As Mr. P. J. O'Brien, one of the present vice-presidents of the Amalgamated Association of Street and Electric Railway Employes, who had experience in Springfield, Mass., as a motorman, testified in a hearing before the Massachusetts Railroad Commission: "I think those were barbarous days," an opinion which was fortified by the testimony of John W. Powers, a former horse car driver who in response to the question, "Was it hard work driving horse cars in those days?", answered, "Yes, sir, it was; the weather was severe. Before they built the Stafford road barn, I had a string of eight horses and had to exchange the horses standing in the street. In winter time we had to have four, and we had to breathe and blow in those snaps. Everything was frozen up. * * * I would rather run an air brake car than drive a horse car."

(B) Episode of the Cable System—1873-1898.

In San Francisco, where the stiff grades made such an expedient particularly attractive, the moving cable system of propelling cars was first introduced in 1873. Before this, and indeed sporadically after the first construction of tracks in the streets, trial had been made of what were known as dummy-engine cars, consisting of steam locomotives boxed in so as not to frighten horses. These never attained much popularity and were never extensively used. The Redfield Commission's report to the Massachusetts Legislature in 1865 mentions its inspection and trial of such engines in Philadelphia, New York and Hoboken, and expressed some confidence in their later general substitution for horses.

The moving cable when more extensively developed some years after the first short line in San Francisco, gave real promise of revolutionizing the city street railway business, so far as motive power was concerned. The scheme consisted of an endless cable continually moving through an underground conduit and drawn over huge drums at a power station. Cars were propelled by grips, operated by the gripman of a car, tightened upon the moving cable. The car was stopped by loosing the grip and applying the brakes in the ordinary way. This innovation permitted the use of larger cars. It required considerable skill on the part of the gripman to avoid disagreeable jolts in starting the car, as the cable was always moving at full speed. Installation of the cable system was very expensive. It added to the cost of the tracks themselves, the construction of the conduit, the cables, and the power station; and the cable required frequent renewal from its continual "picking up" and release by the car grips.

Those companies which adopted the cable system, in their wish—prompted doubtless by the hope of profit also—to give their patrons the best and latest form of traction, soon found that this large additional investment had been rendered useless by the application of electricity as a motive power. The latter was speedily found to be as reliable as the cable, more flexible in permitting a wide range of speed, and more economical. Fortunately for the industry—and for the public which necessarily supports it, and must finally foot the cost of promising experiments undertaken for the public benefit—this discovery and application of electric motive power was made before the cable had largely supplanted the horses. New York, Pittsburgh, Cincinnati, Washington, San Francisco, Denver and Chicago were the principal cities in which, to a greater or less extent the cable had been installed. In Denver, it is a tradition in the industry that a cable installation costing some \$5,000,000 had been completed less than two years before the superiority of electricity was demonstrated. The cable equipment was scrapped and the investment in it rendered useless.

(C) Lack of Scientific Consideration of Relations Between Companies and the Public.

The rights or "franchises" granted to companies, to construct and operate their street railways were of various kinds. In many jurisdictions there existed an extraordinary obtuseness to the public object to be accomplished, and to the proper means to accomplish it, in authorizing this new and improved utilization of the public ways. Reference has already been made to the luminous opinion of Chief Justice Shaw of the Massachusetts Supreme Court, in *Commonwealth vs. Temple*, 14 Gray, 60. After the lapse of nearly sixty years, little can be added to what he then laid down as to the object of permitting these railways, and the principles which should be applied to their operation and control. Unfortunately, that decision was not known to the public authorities in most cases called upon to act, and even in Massachusetts, its plain common sense was often disregarded.

(1) VARIETIES OF STREET RAILWAY FRANCHISES.

Four general views of street railway franchises may easily be distinguished.

(a) *The License Form of Franchise.*

This prevails in Massachusetts, where the right to lay down tracks is called a location, is granted by the local city or town authorities, for an unlimited period, confers no property right, but like all licenses is revocable by the grantor (held in Massachusetts to be the Commonwealth acting through subordinate governmental agencies usually selectmen of towns and boards of aldermen of cities) and subject to surrender by the grantee. Its chief defect is a lack of security for the investment, now amounting in Massachusetts alone, to some \$225,000,000, in case of revocation; and its chief merits are the absence of any possible claim for property value in the franchise itself in case of revocation, and in its susceptibility to legislative regulation and control in the light of subsequent experience and change of public policy. It is an impossible form of franchise in any jurisdiction in which investors cannot, with practical certainty, rely upon the good faith of the public.

(b) *The Permanent or Perpetual Franchise.*

The best known example of this type are the older New York City surface franchises, held in *People vs. O'Brien*, 111 N. Y., 1, to constitute property of the grantees which cannot be taken from them except upon payment of damages as in the case of any other property. This kind of franchise affords ample protection to capital, unless accompanied by fare provisions which, like the character of the franchise itself—unchangeable against the objection of its owner—are absolute and unyielding to altered conditions, without the consent of the public authorities.

(c) *The Fixed Term Franchise.*

This is the form of franchise generally adopted, sometimes even prescribed by constitutional provisions, outside of New England and some other states. It contains all the defects of the perpetual franchise as against the public, and all the defects of the revocable-license franchise as against the investor. During the fixed term, the former is practically powerless, at law, to secure concessions in rates or improvements in service, and at the termination of the

term the investor is equally at the mercy of the public authorities as to recognition of his investment? In theory, this form of franchise is analogous to a lease, involving the right of the lessee to make a large investment upon leased premises (in this case the public highways) and therefore to collect sufficient rentals during the term to amortize that investment, as well as to pay an adequate return upon it, during the term of the lease. If the analogy were complete, the improvements (in this case the railway) would then become, without compensation therefor, the property of the lessor. In practice, however, neither party has acted upon this theory or incorporated in the franchise the terms which the theory would obviously suggest.

No term franchise in an American city has ever come to our attention in which the maximum charges permitted could by any possibility pay a reasonable return upon the investment and amortize any substantial part of the investment. On the contrary, the stipulated rates have always contemplated an enterprise, not terminating with the fixed term of the franchise, but continuing indefinitely beyond it, and furnishing, so far as the public authorities could foresee, only a reasonable return on the investment itself. No provision has been made for amortization. Indeed, Mr. Mote, Secretary of the Indiana Public Service Commission, commented severely on a sinking fund requirement of a mortgage on the Indianapolis Street Railway, and showed considerable pride in the Commission's insistence, in connection with re-organization of the utility, that this sinking fund should be invested in property useful for the street railway. This action completely negated the theory of the term franchise.

Similarly the grantees of such franchises have always ignored the theory. They have issued bonds without sinking fund provisions, or containing entirely inadequate provisions often maturing at or shortly before the end of the fixed term. They have made additions to the property, increased the service in response to public demands or the growth of the city, and generally handled their property in exactly the same way as if they held either a perpetual franchise, or an indeterminate permit.

Only in recent years, has the illogical nature of this franchise, and of their conduct under it, been brought home to the parties to it. With the proximate approach of the franchise's termination, agitation has arisen in some communities for a renewal only on new and far more onerous terms; with insistence, as an alternative to the acceptance of such terms, that the property of the utility had only scrap value and might be purchased on that basis. Fortunately for the investors, they are able, with equal reason, to insist, in view of their right to remove the property, even though at the sacrifice of spending most of its scrap value to effect such removal, that the community should pay *not* that scrap value, but what it would cost the community to lay down a new railway system after such removal.

These counter views, each of equal technical force, produce a deadlock such as at the present time exists in Detroit, Toledo, and some other localities. The utility makes few improvements, the public receives poor service. The investors in the particular utility property are panic stricken. Street railway investments generally, even where better franchise conditions exist, are discredited. No one benefits, and many interests are injured. Such franchises would be greatly improved in cases where, by reason either of local prejudice or constitutional provisions, some form of indeterminate permit cannot be adopted, if there were inserted a requirement either for their renewal upon reasonable terms, satisfactory to the parties or to be prescribed by some independent tribunal, such as a State Commission, or for the purchase, at the termination of the franchise, of the grantee's property upon equitable terms set out in the franchise itself. In no other way, after some recent experiences with such franchises, can reasonably prudent investors be expected again to risk their money in enterprises dependent upon such illogical tenure.

(d) *The Indeterminate Permit.*

This form of franchise has been most thoroughly developed in recent legislation in Wisconsin. It possesses the advantage of the Massachusetts license-franchise in having no fixed term. It, therefore, encourages improvement and development of the utility by the grantee of the franchise. At the same time, it reserves to the public the power at any time to take over the enterprise upon a stipulated basis. It thus protects both the investment against confiscation and the public against extortion or paying compensation for the franchise itself. Even the Massachusetts revocable license-franchise seemed to recognize in a vague way the features of the inter-determinate permit. Notwithstanding the

power to revoke the location without compensation, the earlier legislative special charters reserved to the municipalities a right to purchase—usually at the actual investment with a specified rate of return from its date, after crediting actual dividends received. The power to purchase has never been exercised, and the power to revoke has been confined to special and limited instances where the traffic or other street conditions plainly justified it, even in the opinion of the franchise owners themselves. Resort to the revocation power for the purpose of terminating a street railway company's right to conduct its business of a common carrier has never been made in Massachusetts or passed upon by the courts of that State.

While the most scientific, and the best adapted to establish and maintain the proper relations between the grantees of a street railway franchise and the public, whom those grantees should serve, the indeterminate permit has been developed so recently as never to have played any important part in the history of the street railway industry. Its earlier adoption would have prevented many conflicts and misunderstandings; but its chief claim to consideration, just now, is its possibility of proving a remedy for the present unfortunate franchise situation in many jurisdictions.

(D) Imposition of Terms, and General Indulgence in Bargains between Utilities and Public Officers, in Disregard of Legitimate Purpose of Transportation by Railways in the Street.

While the fundamental principles of different forms of street railway franchises, just described, are easily distinguished, their application has been most hap-bazard and confused. It is amazing, in any review of the history of the street railway industry of America, that an investment of between \$5,000,000,000 and \$6,000,000,000 should have been made in the easy going fashion here evidenced. Like Topsy, this industry has "just grown." The story is, at any rate, a pleasing testimony.—in these days of strange and radical suggestions that neither the public nor individuals need longer consider distinction between *meum et tuum*,—to the faith of the two generations, preceding the present one, in the sense of fair play possessed by the public generally. In no other way can such an investment, upon such a shadowy and unstable tenure, be explained. It remains to be seen, however, whether, after all, that faith was not justified, and whether those earlier investors were not as safe in trusting to that sense of fair play, as the ordinary business man is in accepting his associate's *word* as equal to his *bond*. Should the public take advantage of this faith of hundreds of thousands of investors in their fellow citizens' sense of justice, to confiscate any substantial part of this vast investment, it may well be questioned whether other more formally or technically protected investments will long be safe against the same result.

The horse-car days of the industry illustrated a loose tendency in dealing with franchises, which reached its full development with electric traction. While legislatures granted charters, or authorized franchise-contracts by municipalities, and usually prescribed more or less specific terms and restrictions upon the grantees, they often, perhaps usually, authorized the imposition of such terms or restrictions, or of additional and even inconsistent terms and restrictions, by the municipalities within whose limits the railways were to be constructed and operated. This was particularly true of states in which the limited-term franchises were customary. It was not, however, confined to those states. It is not unusual to find a general statute prescribing a portion of a street to be maintained by a street railway company, and a practice, in granting municipal franchises or locations in the same state, to require the maintenance of a greater portion of the same street. All sorts of obligations were imposed, even in very early days, upon the horse railroads. The idea seems never to have entered the heads of municipal authorities that such obligations were actually burdens and indirect taxes laid upon the car riders. Nor did they any more appreciate that rate limitations, ostensibly imposed for the benefit of the car riders, might easily become limitations upon the service and facilities to be enjoyed by the car riders themselves.

Companies have been required, under such grants by municipal authorities, to pave and maintain, not only the space occupied by their tracks, but the entire width of the street between the sidewalks, to make substantial contributions to the upkeep of bridges, to pay tolls to the municipality for each car, or for each passenger in a car, passing over a bridge or public ferry, to pay a special license fee on each car operated, to pay the salaries of traffic

policemen, to water and in more recent years to oil, the highways, to light them with electricity, to contribute heavily to the elimination of grade crossings of steam railroads, to carry various public employes, like policemen, firemen, letter carriers, free, and school children and so-called workmen (often meaning everybody choosing to ride between certain hours) at half, or some other reduced, rates, to maintain certain schedules regardless of what experience might show to be adequate, and to carry passengers at certain rates of fare for all time.

(E) Application of Electric System of Motive Power to Street Railways.

It was not until the discovery that electricity could be successfully used as a motive power for operating street cars, that the disposition to exploit the car rider for the relief of the general tax payers and as a source of public revenue, direct and indirect, reached its full development. As pointed out elsewhere in this brief, the significant feature in the introduction of each new kind of motive power for street cars has been the retention of the tracks in the streets as an essential part of any street transportation system. The cable car was operated upon such tracks as unquestioningly as were the horse cars. This was equally true of the electric car. The latter made its first commercial appearance for the carriage of passengers in the city of Richmond early in 1888. The experiment quickly proved a success, and was followed by the construction of a short line in Revere, Massachusetts, later in that same year. Soon the substitution of the electric motor for horses on existing railways, and the construction of new electric railways in hundreds of localities previously without any street railways at all, became general. By 1902, within fourteen years after the completion of the Richmond line, the single track mileage of street railways in this country had increased from 8,123 as given in 1890, to 22,576 miles. All but about one per cent. of the old horse railways had been converted into electric railways, the total investment had already risen from \$150,000,000, when the American Street Railway Association was organized in 1882, to \$2,308,282,099 in 1902.

(1) MISTAKEN OPTIMISM IN PROFITS OF ELECTRICITY AS A MOTIVE POWER.

Managers of existing street railways and the public alike made the almost fatal error of thinking that the new system of motive power contained the possibilities of a gold mine. The promoters of new companies, free from the caution and restraining influences of actual experience in street transportation, were even more optimistic in their dreams of incalculable profits. The whole situation seemed one of amazing simplicity and certainty. In place of two horses (and under snow conditions four horses), requiring the substitution of a new team at the end of four years, and eating nearly as much value of feed every year as their original cost, it was necessary only to place under the old horse car a permanent electric motor, to build a power station and to erect an overhead wire system consisting of wooden poles and a few wires, in order to move more cars at a higher speed, and carrying more passengers in a more comfortable and attractive manner. The huge stables, the army of stablemen, the constant purchases of feed, the relay stables, the danger of epizootics, could all be eliminated. A veritable El Dorado had been attained.

If the prospect intoxicated the old, and blinded the new, adventurers in the street railway industry, it equally excited the cupidity of the public officials. The former were willing to accept almost any terms and requirements, and the latter knew no limits in imposing such requirements, either to permit the adoption of the new motive power upon the existing horse railroads, or to authorize the construction of new railways. In addition to the more strictly maintenance or operating exactions, of which examples have already been given, frequently imposed during the horse-railway period, there now appeared a new crop of such burdens placed upon the car riders in the form of fixed charges consequent upon construction requirements. Grantees of franchises were obliged to widen highways, to change their grades, to build cross walks, and sometimes sidewalks with curbs, to install improved street drainage for surface water, to strengthen or even entirely rebuild bridges over railroads and streams, to provide poles of sufficient height and capacity for the free attachment of municipal wires of various kinds, to re-surface with improved and more expensive forms of paving or surface material entire highways through which tracks had been or were to be laid, to defray the cost of

eliminating grade crossings of steam railroads, and in numerous other ways greatly to add to the cost of the railway construction by outlays for municipal purposes.

Oftentimes these expenditures, although reflected in the balance sheet items of cost of roadway or overhead equipment, became at later dates undiscoverable and led to all sorts of charges of "watered stock." Unless, as was not often the case, a careful record of these items was kept, an expert, called upon to appraise a Company's property would not suspect that the highway had been cut or filled by the Company, or that a substantial portion of its present width had been paid for with the proceeds of the Company's issues of stock or bonds. Books were not kept, in those early days of electric railways, in anticipation of verifying and explaining every cost item entered in the construction accounts. With the deaths or removals of officials familiar with the facts such verification or explanation has now in many cases become impossible. Many a company has suffered from the charge of padded construction accounts because the expert's estimates of the replacement cost of the railway naturally does not include, what there is now no one to inform him was included in those accounts, the cost of various highway improvements paid for by the company.

The requirements were often so blindly described, that an inspection of the franchise terms furnishes little help to the expert. A favorite form of language was that the highway, curbs, gutters, and other details should be left by the Company in a condition satisfactory to the aldermen, city engineer, or municipal officials. The writer recalls one instance where such officials forbade a new company to begin operation, and enforced their prohibition by planting a heavy post, guarded by a town constable, between the rails, because the Company had not built a new sidewalk and stone gutter on the side of the street opposite to the side on which the track was laid. Nothing in the franchise would disclose the expenditure of the several thousand dollars in fact expended by this particular company to satisfy the officials of this particular municipality.

(2) EFFECT OF UNFORESEEN EXPENSE RESULTING FROM RAPID PROGRESS IN THE ART OF ELECTRIC TRACTION.

The first disillusionment of the electric railway pioneers came with the rapid improvements in the art of the electric industry. They speedily found that the \$3,500 electric equipment of a car, although still mechanically as efficient as when installed, must be replaced by a later, better equipment, costing half as much, but incomparably superior in reliability, flexibility and power. And this process was going on constantly, not only in car equipments, but in power stations, wire systems, bonding of tracks, and all the other appliances making up the electric railway; and it has continued to go on down to this very day. The improvements in the Art have followed one another so rapidly that it has been necessary to discard and scrap, over and over again, costly equipment, long before the expiration of its life, in order to substitute, for the public convenience, and often in response to insistent public demand, equipment better adapted to give the public the service it required. Rates of fare, rigidly fixed by franchise contracts in many cases, did not either contemplate or permit the amortization of the cost of such rapid changes, and a large part of that cost was necessarily added to the original investment. This, of course, increased fixed charges, and constantly reduced the margin of net income between gross revenue and operating expenses available for a return upon the original investment.

(3) EFFECT OF INADEQUACY OF FORMER HORSE RAILROAD AND EQUIPMENT FOR ELECTRIC TRACTION.

Another discovery soon made was the difference in the wear upon tracks, between *drawing* a light vehicle over the rails, and propelling a vehicle, heavier, even at the outset, by the added weight of the motors, over those same rails by traction. The light horse car rails soon proved utterly inadequate for the electric cars. Heavier rails had to be substituted. Even those heavier rails were found to have a definite and not long life. The almost endless length of life of the tracks with horse drawn cars, where rails had been used for thirty years or longer; and still remained in good condition, dis-

appeared under the new method of traction. Similarly the light car, drawn by horses, or even by cable soon proved unsuitable when the motive power was applied to the tracks, by friction, through motors under and attached to the car itself. It was found that both the tracks and the cars must be replaced by entirely new and heavier units. With the heavier cars, greater power house capacity was needed.

(4) ADDED EXPENSE OF COMPLIANCE WITH LEGISLATIVE REQUIREMENTS.

To all these mechanical and equipment sources of unexpected increase in expense, both in investment and operation, were added from time to time legislative requirements. The electric railways were obliged to heat their cars with electricity. This alone added about 30% to the consumption of electric power per car, requiring still further power house capacity. They were required to vestibule the cars to protect motormen and conductors from the weather; to provide a certain percentage of seating capacity in rush hours; hours of labor of trainmen were reduced by statute in some states, resulting in similar reductions by agreement in others; the rules of law applicable to claims for damages by members of the general public, and then by employes, were changed in such ways as to permit recovery of heavier verdicts against common carriers. With the introduction of Commission regulation, the railway companies were called upon to provide larger and better cars, more frequent headway, waiting rooms for passengers, a greater number of cars, more substantial track construction, and in various other ways to make unexpected Capital investments. Not infrequently public officials, in charge of building State highways, would follow up a street railway for mile after mile and require it to shift its track from one part of the highway to another, to change its grade, and to provide for the surface and sub-surface drainage.

(F) Necessity, Methods, Advantages and Risks of Unification of Small Operating Units.

The introduction of the new motive power disclosed almost immediately the desirability of unifying the control of the various previously independent lines in each city. Except in the matter of needless duplication of tracks, horse railways could be operated with as satisfactory financial results in small units as in large ones; in some respects, indeed, with even better results. Each company put into effect its own stipulated rates of fare, and undertook to furnish transportation, at those rates, only upon its own lines. Moreover, the horse railway, in the main was confined to already developed territory. The length of time required in making trips militated against the probable success of extending tracks many miles from the populous centre. The electric motive power, however, required the employment of trained engineers and larger overhead expense to utilize successfully the new mechanical and scientific appliances necessary in electric traction. Larger power stations, even in the early days when the generating units were small, involved many operating economies. Properly located stations could serve equally well the lines or portions of lines of two or more independent companies.

The desired unification, however, was not always easily obtainable. Notwithstanding the optimism of promoters and of many street railway managers, it was found that the investors in the old and financially established horse railroad companies were reluctant to provide the capital even for the initial change from the old to the new motive power. Without control of the existing railway lines in a city, the adoption of this new motive power and the extension of lines for greater distances, which almost always formed a part of the plan of supplying a more complete system of public transportation, was impossible. As old investors were generally unwilling either themselves to provide the needed additional capital, or to place their existing investment at the risk of the new experiment, equally with the new capital furnished by others, it was often found that the desired unification could be effected only by placing the old investors on some preferred basis of security.

This result was accomplished in Boston, for example, where five independent companies were acquired in 1888 by the new West End Railway Company, organized for operation by electricity, by the issue of an 8% preferred stock of an aggregate par value equal to the then issued stock of the five merged companies. Under the strict capitalization laws of Massachusetts, no bonus common stock could be issued, but somewhat the same advantage as that in-

volved in bonus stock was secured to those more venturesome persons willing to invest in the full paid common stock of the operating company, by holding out to them the prospect of large dividends. In its first four years (1889-1892), during which the electrification of the old horse railroads had been largely completed, dividends of 10% per annum were paid upon the common stock; but in 1893, the unforeseen increases in cost, earlier referred to in this brief, were becoming manifest, and the common dividend was reduced to 9%. In 1894 it fell to 7½%, in 1895 to 6½%, and in the two following years, until its lease to the Boston Elevated Railway Company in 1898, the rate was 7%.

The same reluctance of the investors in the older form of transportation to undertake the risks of the new one, and the consequent need of seeking capital among a different class of investors, was apparent in connection with the Boston Elevated undertaking. The project, in reality, involved improving the street transportation system in Boston by adding to it an elevated railway, a tunnel under the harbor, and other rapid transit facilities. The success of this project, however, depended again upon a unified control. This was effected, not by merger, as in the earlier instance just cited, but by a *lease* of the West End property to the new Elevated Company. Under the terms of the lease, the West End common stock received a guaranteed dividend of 7%. This time the hope of larger returns was indulged in by the subscribers to the Boston Elevated full paid stock. Those hopes were never realized. The highest rate of dividend ever paid by that Company, during its twenty years of operation, prior to public control, was 6% on the par value and averaged, during that period, only about 4.587% upon the Elevated common stockholders' actual investment in the property.

The experience of these Boston companies has been cited somewhat fully because, in Massachusetts, the public supervision of the issue of securities has been such as to preclude possibility of the issue of stock except for at least full par value. The experience of the Company has fully justified the conservatism, first, of the investors in the old horse railroads in permitting others to take the risk of furnishing the public with the transportation facilities made possible by the use of electricity, and again, of the latter investors, after their disappointing experience with the financial results of the new system, in permitting still another new set of investors to take the risk of providing the capital for the improved facilities furnished by the addition of Elevated and Subway lines of railway. It is a fact that today, of the three classes of stock of the Boston railway system, the best is that representing the old horse railroad investment, now selling at about 102% of its par value. The next best is that representing the investment to electrify those railroads, selling at about 88% of par, and the poorest is that representing the investment to provide Elevated and Subway lines, making of the Boston system physically, the best system of any city of its size in the world, but selling at only about 67% of its par value.

The Boston history illustrates two of the methods of unification frequently employed—mergers and leases. In nearly every large city it will be found that similar unification was necessary and was brought about by one of these methods. In jurisdictions where the laws permitted the issue of securities with greater freedom, different classes of stock were often issued in order to raise the capital necessary to accomplish the purchase of existing lines, and to furnish the funds for electrification and extension. In this way there came about the existence of so-called "bonus-stock." This usually accompanied some preferred security, either bonds or preferred stock, entitling the holder to a relatively low return of 5 or 6%, leaving the bonus or common stock to receive, as a dividend, whatever divisible income might be realized above the prior fixed return on the underlying securities. In the last analysis, this bonus stock represented in a separate security the same speculative possibility which appealed to a certain class of investors in the full paid common stock, first of the West End Railway, and later of the Boston Elevated Railway, already pointed out, and for a short time actually realized by the holders of the West End common stock. The latter hoped for, and during four years actually received, a 10% dividend on their \$100 investment. Their return would have been no greater if they had received two shares, one entitling them to a 6% dividend, and the other to whatever remained over and above that. If that method of issuing securities could have been adopted in Massachusetts, and had been, the persons, who took the risk and furnished the capital to electrify the old horse railroads, would have received, excepting in the first four years 6% on their preferred stock, and 1% per annum on their common stock. Generally speaking, it will be found that the only people who have ever made a profit out of the bonus stock issued in various parts

of the country on street railways, were those who first received it and disposed of it to other people during the few early years following electrification when, as in Boston, it looked as if the profits were going to be substantial, and before the constantly increasing costs were foreseen or understood.

(G) Holding Companies.

In many cases resort was had, in order to finance the rapid electrification and expansion of street railways, to holding companies. In some instances, the holding company was confined to the control of a single system. Oftener, however, it controlled several systems operating in different localities. In either case, it usually held, in its treasury, at least enough of the securities of each underlying or operating company to constitute a voting control. Through the sale of its own securities to the public, it financed the constantly growing need of the subsidiary companies for additional capital. At times, much criticism has been directed against these holding companies. This criticism has too little basis in fact, to justify much space in answering it. The *economic purpose* and the *legal effect* of such holding companies, whether in the form of unincorporated associations, or as chartered corporations, were well stated respectively in the following citations:

The deed appears to me to be merely a trust deed of property for investment, the investment being spread over a number of different securities, so as to enable persons who choose to invest their money in this way to avail themselves of that which, I believe, is one of the most certain things in the world: viz., what is called the doctrine of averages: that is to say, that if a large number of different independent securities of a hazardous description are held together, the loss upon some will be compensated by the gain on the others, so that a tolerably uniform average rate of interest will be obtained. The object and the legitimate object of the persons who were invited to join in this company was to have an investment of their money under such circumstances that they might look to have a high dividend, with a very considerable security for the capital which they were investing in it. I can see nothing like an attempt at evading the act or at doing anything but making investments upon a large scale, so as to obtain the benefit of the doctrine of averages.

Smith vs. Anderson, L. R., 15 Ch. D., 247.

The Massachusetts street railway corporations, in which the association own shares, issue no stock or bonds and effect no consolidations except under the supervision of this Board, and upon actual exhibit of corporate property and sworn statement of corporate financial condition. * * *

The association as such is not recognized by the Board, and the trustees who hold the stocks for it receive no other consideration than any other stockholder or group of stockholders in connection with the action of the Board in enforcing the statute relating to street railways, their operation and management.

Mass. R. R. Commission, Annual Report, Jan., 1902, p. 57.

The holding company plan facilitated a practical unification of independent companies without the delay involved in legal consolidation. By its acquisition of stock control of the old companies under a common ownership, followed by the proper corporate action of each independent unit, general electrification of all lines could be more promptly begun.

The fact was clearly demonstrated also, probably for the reason stated in the opinion of *Smith vs. Anderson*, cited above, that the proposed electrification and expansion, as well as the cost of subsequent development, could be more easily financed through the holding company. The latter usually issued its own securities to the public, using the proceeds to acquire the securities issued by the different subsidiary or controlled companies. Many an originally small property, which would have found it impossible to raise the necessary money for such an object was, through the means of the wider credit and better organization of the holding company, changed from horse railway to electric traction, and made a useful part of a comprehensive transportation system. Since the period of greatly increased operating costs, beginning with the European War, this advantage of the holding company has been of incalculable benefit to the maintenance of street railway service in many localities. The credit of the holding companies has been placed under the operating companies, and it has been found possible to meet, to some extent, the capital requirements of the latter long after their own independent credit had disappeared. Un-

doubtedly, this has been due in part to the diversified assets of the holding company. It not only avoided having all its *transportation* eggs in one basket, but it generally also avoided confining all its eggs to the single transportation variety. When, almost without exception, the transportation companies were making a hopeless financial showing, the holding company itself could make a reasonably satisfactory statement of profits through the earnings upon its other classes of investments like gas, light and power, heat and water—utilities in which the labor item was of much less importance, and in which better conditions of tenure and greater flexibility of rates prevailed, than in the case of street railways.

One effect, almost always immediate, of this unification of small independent railway units, was of great benefit to the riding public—and correspondingly of financial disadvantage to the investors. The merged or leased lines were treated as a single system—most liberal systems of transfer from one line to another were introduced—cars were rerouted without reference to the original independent ownership of the tracks included in the new rules. As a result, many two-fare collections for a ride over the lines of two formerly separate companies were reduced to one, and the aggregate earnings of the old companies were materially lessened. This burden upon the single consolidated company has become more and more pronounced as lines of the former separate companies have been extended further and further from the centre, thus doubly increasing the maximum ride on the unified system over what would have been possible, if the merged operating units had retained their original character.

(H) Increased Cost of Construction for Electric Operation—Irrespective of Obsolescence Due to Progress of the Art.

Attention has already been called to the unforeseen increases both in capitalization and in cost of operation, resulting from the progress in the art of electric transportation. This brought the companies not only face to face with obsolescence—the need of replacing much equipment before it was worn out with other equipment better adapted to public service—but it also required the renewal of many items, even if used until they were actually worn out, with similar items, but of more substantial construction and material, and representing much heavier cost. The single item of track construction will illustrate this point. The old horse railway track consisted of flat or strap rails fastened to longitudinal stringers buried in the street. The pavement between the rails was of cobblestones or, at best, of granite blocks not more than six inches deep, laid and tamped in sand. Repairs, which were seldom required, as the light horse cars drawn over this track created little damage to it, were easily and cheaply effected. Contrast with this, the cost involved, and the more skillful and better paid labor required, in the construction, repair and maintenance, of the modern electric railway track in our cities. The old iron rail, weighing from twenty-five to forty-five pounds per yard has been replaced with heavy nine-inch girder or tee steel rail, weighing from ninety to one hundred and thirty pounds per yard, laid upon eight-foot cross ties, two feet on centres, imbedded in a concrete foundation, and paved between the rails with grouted block pavement, asphalt, vitrified brick, wooden block, or such other form of expensive surface material as recent development in highway construction and the judgment of municipal authorities may have dictated.

The equipment for carrying the electric current is, of course, entirely additional to the construction requirements for horse railway operation. But the cost of this equipment itself has been greatly increased since electrification began. Companies have been called upon to replace wooden poles with iron ones. In many localities, they have been required to place underground their feed wires, carrying the electricity from the power station to be fed into the trolley wire. This change has involved the expense of building and maintaining underground conduits. In the cities of New York and Washington, they have even been required to place the trolley wire itself underground at a tremendous initial construction cost, and a continuing large maintenance cost.

(I) Increase in Operating Costs Due to Increased Cost of Material and Labor.

Another tendency, the increase in cost of labor and materials, working at an accelerating rate, and reaching, under the influence of the war, almost paralyzing proportions, has contributed to the disappointment of street rail-

way investors. This burden to the industry has become so heavy as now to threaten the public with the serious impairment and, in many cases, with the entire loss of this important public service. Evidence submitted to the Federal Commission showed that 60 companies had dismantled and junked 763 miles of track; that 38 companies, owning 257 miles, had been abandoned; that 62 companies, operating 5,912 miles, were in the hands of receivers on May 31, 1919, and that the mileage in the hands of receivers, or abandoned or dismantled, represented almost 16% of the total mileage in the country. Among the companies being operated by receivers were those serving most important communities including New York City, Brooklyn, Pittsburgh, New Orleans, Providence.

The increase in the cost of labor alone is sufficient to ruin the industry, unless corresponding increase in revenue can be obtained.

The increased cost of materials and supplies extensively used in this industry, such as coal, copper wire, steel, lumber, etc., is too well known to need elaboration. Even in the aggregate, however, the effect upon the industry of this increase in the cost of supplies and material becomes almost negligible in comparison with the effect of the increased cost of labor.

Under normal, pre-war conditions, the payroll of a street railway absorbed nearly 50% of its gross receipts. In 1912, the average maximum wage for trainmen was 27c an hour. At the present time this average has about doubled. In the larger cities and on the more important systems like Chicago, Detroit, Cleveland, New York, Philadelphia and Boston, it has more than doubled.

These tendencies had already been noted before the War. See Association's publication in 1916: "Cost of Urban Transportation Service," Doolittle, Chapter 4. The tendency is likewise shown in exhibits submitted by Welsh, Chart C-134—Cost of Labor (327); Chart 136—Cost of Materials (345).

Figures made public by the Boston Elevated Railway, whose maximum wage rate has been increased to 60c an hour, and which is now operated by the Commonwealth of Massachusetts through a board of public trustees, showed that the cost of wages per revenue passenger in December, 1917, was 2.21 cents which, in August, 1919, had increased to 5.75 cents. That company, until the public control began on July 1, 1918, was one of those limited by charter provisions to a minimum fare of five cents. Under public control the fare has been raised to ten cents and it is said to be now meeting its entire cost of service. It is not difficult to see what would have been its fate if the five cent fare restriction had been retained, or what is likely to be the fate of many other companies burdened with the same fare restrictions, imposed at a time when no one anticipated the possibility of a payroll involving a greater expense per passenger than the entire maximum fare which the company was permitted to collect from the passenger.

See also Chart C-133, Wages of Trainmen, Welsh (327-344).

In 1902, according to the census figures (Sturgis,—Exhibit,—Analysis of Electric Railway Operating Costs and Cost of Living as related to wages of Conductors and Motormen and for Trainmen (16),—wages of Conductors and Motormen amounted to \$606 per year. They had increased to \$934 per year in 1917, according to the Census figures for that year. They have, of course, very materially increased since, under the rulings of the War Labor Board,—amounting to \$1,200 per annum, with wages of 41¢ per hour. Mr. Lauck, Attorney and Expert for the Amalgamated Association of Street and Electric Railway Employees,—5637-9,—estimates that a proper minimum comfort wage should aggregate \$2,000 a year, or approximately 76¢ per hour.

Is it not apparent that any street railway, faced with such unexpected and staggering increased costs, if denied the usual relief open to every other business of making a corresponding increase in the cost of its commodity, must skimp and cut its service, neglect its proper maintenance and provision for depreciation, and even then, finally add its mileage to the nearly 6,000 miles of other companies already being operated by receivers?

(J) Increase in Taxation.

Taxation has proved an increasing burden to the street railways since the introduction of electricity as a motive power. Quite apart from the financial

burden resulting from various methods of indirect taxation already mentioned, like street maintenance, street widening, and the performance of other work in kind upon the highways, it appeared in evidence submitted to the Federal Commission that the taxes paid by this industry in 1918 represented about one-half cent for each revenue passenger. Census figures are not available respecting taxation of the industry as a whole prior to the electrification period. Such figures are, however, available for Massachusetts and may probably be taken as typical of the industry generally. In 1888, the total income of all the companies in that State was \$6,860,504. The net income above operation was \$1,287,326, from which taxes amounting to \$190,474 were deducted. The total operating revenues of all the companies for the year ending June 30, 1914, the last pre-war year, was \$39,703,706, while the net operating revenue was \$13,038,486. The taxes were \$2,461,321. In 1888, therefore, taxes amounted to 2.77% of the total operating revenues, and 14.75% of the net operating revenues, while in 1914, taxes amounted to 6.19% of the total operating revenues, and 38.85% of the net operating revenues.

(K) Extensions of Lines and Expansion of Systems.

No review of the history of this industry would be complete which failed to call attention to the great extension of lines, which began with the introduction of electric motive power, and continued uninterruptedly from that time until the outbreak of the great War. Here again reliable statistics are not available for the entire country. Massachusetts figures, however, gave as of September 30, 1888, a total mileage of 561.8 miles of single track which, on December 31, 1918, had increased to 3,095.7 miles of single track. These figures, of course, include the mileage of new companies. On the earlier date, the West End Street Railway owned 230.8 miles of single track which, thirty years later, had been increased to 428.25 miles. To this last figure should be added the 60.48 miles of surface and rapid transit track owned by the Boston Elevated, and constituting one system with the West End, making the total in 1918, 488.73 miles.

This expansion of mileage of the various companies has proved a large contributing element in the financial embarrassment which has overtaken some and threatened all, at the same time that it has proved a benefit of almost inestimable value to the communities served by the expanding companies. Its effect upon the net operating revenues was not, for a long time, foreseen. In cities like Boston with a flat five-cent rate, and this rate prevailed in most of the larger cities, this extension of lines produced a situation where finally the company was carrying so many long-haul passengers at a loss on each one as to have ultimately forced the company into the non-dividend paying class, even without the other adverse conditions already mentioned.

When an extension was first built into sparsely settled suburban territory, the additional financial burden amounted to little more than the fixed charge on the construction cost of the line. A very slight addition to rolling stock sufficed to carry the few passengers, and an infrequent schedule and a consequent low platform labor cost served all the requirements of traffic. As population increased, however, upon such a line, both the investment in rolling stock, and the operating costs, assumed substantial proportions. Worse than this in the financial results to the company, these extended lines, making available large areas of cheap outlying land, brought about a shifting of population from the congested sections of the city near the centre which had contributed vast numbers of short-haul passengers, and steadily changed these profitable passengers into unprofitable suburban residents.

Of the benefit, however, to the community of these extensions, and their effect, perhaps no better statement can be made than that contained in the report of Charles Francis Adams' Special Commission to the Massachusetts Legislature in 1898, only ten years after the introduction of electric motive power.

While the committee was conducting its investigation in Great Britain a sanitary congress, at which some 800 delegates were present, was held in Leeds, one of the cities above referred to. The eminent medical authority who presided over the sessions of this congress referred in his opening address to the distribution of urban population over a wider area as one of the most crying needs of the day. In regard to it he used the following language: "What is urgently needed in Great Britain today is,

firstly, drastic and radical legislation, by which local bodies may be able to acquire land compulsorily, on paying full compensation, for building workmen's houses, and then quick and cheap early traveling, rendering it possible for city workmen to live in the surrounding country."

So far as the work here referred to is concerned, that of distributing urban population over a wider area, with all the results, direct and indirect, therein implied, a most superficial examination will suffice to show that Massachusetts is far in advance of any portion of Europe. This has, too, in large degree been brought about in an extraordinarily short time, not by "drastic, radical legislation," such as that contemplated in Great Britain, but through the rapid and energetic expansion of the street railway system, seen in the comparative statistics just given. That in effecting this expansion much costly experimenting, not always successful, has been paid for, is undeniable; but it remains to be proved that the work, though done through private corporations, either cost them, or through them cost the community, more than from a public point of view it was worth, or a portion even of what it would cost if done in the way suggested at the Leeds Sanitary Congress. This is the other side of the account: and that the work in Massachusetts represented by the items which appear on this side was done in response to a public demand, at once outspoken and urgent, is matter of common knowledge.

(L) Effect of Development of Use of Automobiles and of So-called Jitneys.

In the year 1912 the street railway industry began to feel the effects of the increasing use of automobiles. The privately owned automobile directly affects street railway travel to a considerable, although unascertainable, extent by its use by its owner and members of his family on many occasions when otherwise they would have used the electric railway. Frequently, also, friends of the owner, and even comparative strangers, are picked up in privately owned automobiles. That the aggregate loss of traffic to street railways thus occasioned must be substantial is evident from the large number, approximately 6,000,000, of motor vehicles estimated to be now in use in this country. As shown in Mr. Storrs' statement before the Commission, the number of such vehicles, including trucks, in the single state of Massachusetts was, in 1910, only 31,360, which, on December 31, 1918, had increased to 160,486 automobiles and 33,011 trucks, a total of both kinds of vehicles of 193,497, exclusive of 12,862 motorcycles. The registration of automobiles alone in Massachusetts to November 13, of this year has been over 175,000, of trucks over 40,000, and of motorcycles over 13,000.

The more serious effect, however, upon the electric railway industry of the automobile has been its use, and still more the manner of that use, as a common carrier of passengers in competition with street cars. This competition began about 1912, and was at first entirely unregulated. Even today in some places it continues without regulation of any kind, and in many places with only partial and rather ineffective regulation. In no instance, so far as we know, has this so-called jitney carriage of passengers been subjected to obligations, as to payment of taxes, maintenance of highways, character and extent of service, and liability for accidents, under which the electric railway business has to be conducted. The portion of the street paved and maintained by the electric railway, and in winter cleared of snow at its own expense, is taken advantage of by the jitney competitor, without compensation either to the company or the municipality, and often to the serious injury of the street railway by interfering with the prompt and regular movement of its cars.

The jitneys prefer to confine themselves almost exclusively to the short-haul traffic. In Mr. Storrs' statement to the Commission, it appears that in the city of Bridgeport, Connecticut, the jitneys carry about 50½% of the passengers riding within 1½ miles of the centre, almost 60% of the passengers riding between 1½ and 2 miles from the centre, less than 45% of those riding between 2, but less than 2½ miles from the centre, and none riding more than 2½ miles from the centre of the city.

(M) Rise of State Regulation—Adverse Effects of Dual Regulation both by States and Municipalities.

Between 1900 and 1910, a movement became general in many of the states for regulation and supervision of public utilities by State Commissions. A

few states had earlier established such Commissions. Even in those cases, however, there was pretty generally, during the period mentioned, an extension of the powers and jurisdictions of these supervising bodies. Great hopes were entertained on the part of the public, and these hopes were shared to a considerable extent by those interested in the utilities themselves, of the beneficial results to follow from the system of comprehensive supervision and regulation. Generally speaking, although the jurisdiction conferred was never exactly the same in any two states, these Commissions were given power to regulate rates, to prescribe the character and extent of service, to supervise and determine the manner of keeping accounts, to permit or prevent consolidation, mergers and leases, to approve the purposes and amounts of issues of securities, to make valuations of properties, and in many other respects to supervise and control the corporate activities and the manner of conducting the particular utility business for which a company had been chartered. So far as we have knowledge, no such Commission has sought or been given any authority over wages paid by a utility, or any power to arbitrate the amount of such wages in case of a disagreement between the utility management and its employes.

The creation of these Commissions has undoubtedly been, upon the whole, beneficial both to the public and to the industry. There is no doubt that in many cases over the entire country their decisions have tended to allay public suspicion and distrust in the integrity of the existing financial structure of a utility, or to establish a new and authoritative financial basis as a result of valuation proceedings. In meeting the need for increased revenues, their decisions have also oftentimes satisfied the public as to the reasonableness of the proposed rates, which otherwise would have met far greater public opposition. They have, in many cases, furnished what almost every American demands and what, if he obtains, often satisfies him—"his day in court."

That the high hopes entertained of the benefits to follow the creation of these Commissions have been only measurably realized has been due to two main causes. In the first place, either from the unwillingness of the Legislature, or carelessness in enacting the legislation, the Commission was not given sufficient authority to constitute it a full and final tribunal in determining matters apparently placed within its jurisdiction. In some states, doubtless, constitutional provisions prevented such authority. Whatever the cause, however, the result has, in many instances, discredited the work and greatly impaired the usefulness of the Commission. It often finds itself confronted with local franchise conditions contained in franchise contracts entered into by municipalities, fixing, for the term of the franchise, rates of fare and other details of the business of the utility which it is without power to modify. The present situation in New York City is a conspicuous example of such a failure of the plan contemplated in public service regulation. Although it is a notorious fact not only to every expert and student of electric railway and rapid transit transportation, but also to most members of the public itself in that city, that the five cent maximum fare established years ago is no longer adequate, the Public Service Commissioner is powerless to authorize the action necessary to save the utilities from probable receiverships, and the municipal officials refuse to give their necessary co-operation. While perhaps the most conspicuous case, that of New York, is by no means unique, many companies are striving to continue to furnish transportation with a grossly inadequate revenue, and the public is receiving only inadequate and unsatisfactory service, because the State Commission *cannot*, and the local authorities *will not*, take the responsibility of permitting higher fares.

The effect of this lack of complete authority is noticeable also in cases of franchises which have already reached, or are rapidly approaching their expiration dates. State regulation of rates and service is a mockery both of the utility and the public served by it if the Commission has no authority relative to extending or renewing a term franchise, or to the terms upon which such extension or renewal may be made. Without this authority, even if the Commission has been given authority to disregard the franchise rates of fare, it can take no well considered position. Is it to fix rates on the basis of a reasonable return upon the investment or value of the property, and assuming that the utility is to continue indefinitely to render the service for which it was organized, or is it to fix much higher rates in order to amortize the investment during the life of the franchise upon the theory that it will not be renewed? A Commissioner with the wisdom of Solomon could not fix a fair rate in the face of such a dilemma.

While the cause just stated is by far the more serious one, there is another which has prevented State regulation from giving complete satisfaction. So far as the public transportation utilities are concerned, the effect of increased costs and other features of the industry, with the almost revolutionary results of the War upon it, have brought about a situation and required a line of action on the part of Commissions which had not been in the least anticipated. The general expectation of the public was that the main function of these Commissions, with respect to rates, was going to be to reduce them from time to time. This did not prove to be the case and even before the European War broke out, it was becoming increasingly apparent that in many cases rates of fare ought to be raised and not lowered, although comparatively few people then realized how generally this was true. Great courage is required in a Commissioner to increase rates upon such a universally used utility as an electric railway. Apart from the courage required, care and time are necessary to satisfy the public of the justice of the Commissioner's action. If the normal, pre-war conditions had continued, it is probable that the time, necessary to satisfy first the Commission, and then to enable the Commission to satisfy the public, of the need and of the amount of proposed increases in fares could, in many cases, have been taken without irreparable injury to the utility from the consequent delay in receiving relief. Under the conditions produced by the War, however, these delays have created a cumulative financial injustice to the utilities. In the matter of labor compensation alone, with yearly increases of previously unheard of percentages, usually retroactive and following one another at short periods, the relief, even when it could be and was granted by the Commissions, was usually months too late to meet the additional wage demands upon revenues. The race between wages and fares was as unequal and, for the utility, as hopeless as one between a high powered automobile and a hobbled horse.

II.

PRESENT CONDITION OF THE INDUSTRY.

While there are differences of opinion as to the cause, almost every witness before the Commission concluded that the industry is in a deplorable state.

"Financially,* the most acute problem that we have internally at this time" (Ferguson, 1664).

Present crisis one of having a street railroad at all (Bullock, 1835).

"At the present time the electric railway industry has reached a serious stage" (Edison, 2430).

Industry "in extreme danger of complete collapse and dissolution" (Tripp, 191).

Generally speaking, the electric railways of the country are dead broke (Mote, 3172).

"We find that a street railway situation similar to that in Denver is confronting practically every city in the United States. In a way we have been called upon to solve a problem that is not merely a local one, but a serious, national condition" (Report of the General Committee of Fifty-five, known as the Tramway Adjustment Committee, appointed by the Mayor of Denver, Colo., adopted May 28, 1919, 5.—Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions, 18).

"The serious condition which confronts the managers of the utility, the investors in its securities, and its patrons is not peculiar to Rhode Island or confined to the utility in question. The same condition exists, in greater or less degree, with respect to similar properties throughout the country" (Report of the Special Commission for the Investigation of the Affairs of The Rhode Island Company, March, 1918, 21.—Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions, 19).

"A summing up of the evidence presented to this Commission shows that with the exception of the 128 miles of street railway in the state out of a total of 828 miles all of the lines are either in the hands of receivers or are insolvent and must have their service to the public either partially or completely discontinued and portions of their lines abandoned and sold for junk unless substantial temporary relief is furnished through adequate

legislation by the General Assembly of 1919" (Report of the Street Railway Investigation Commission of Connecticut, April 1, 1919, 18.—Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions, 19).

(A) Lack of Credit.

The testimony of operators, publicists, bankers, and manufacturers is that lack of credit is the fundamental fact underlying the present crisis.

"The earnings are not high enough to support the credit of even a conservatively capitalized company, in many cases, and even if the earnings were better, I am still afraid that the credit would be poor, because street railways have apparently ceased to be an attractive field for private investment. The investors are afraid of street railway securities. They are afraid because of their experience in the past, and I think they are also afraid because of their fear of what may possibly happen in the future" (Eastman, 6007).

"The credit of the industry is so impaired that it can no longer finance its own enterprises on possible terms" (Jones, 5352).

"Credit is already strained beyond the elastic limit" (Doherty, 1169).

Credit of electric railways is in very poor condition (Barry, 1106).

Credit of electric railways seriously impaired (Sisson, 914).

"Generally speaking there is no market for street railways securities to-day" (Stuart, 569).

"No more capital can be obtained except in special cases" (Edison, 2430).

"Earning power being curtailed to such an extent as to destroy the ability of the Companies to obtain money or even maintain the integrity of their present securities" (Insull, 2544).

These credit conditions have resulted in an enormous shrinkage in security values,

"Taking all the street railway bond issues of the country, the shrinkage has been about 25 per cent, and considering all stock issues of the country the shrinkage has been about 75 per cent. * * * It amounts to over a billion dollars and of course a great deal of these securities are held by the banks and trust companies and insurance companies and the mass of the people" (Babson, 3111).

which, because of the investment of trust funds in electric railways securities, makes the problem

"Of nation-wide business importance—capable of having a wide spread and disastrous effect on business" (Sisson, 924).

Lack of credit has been a hindrance to the more general adoption of the service-at-cost plan in Massachusetts (Nash, 1894)—has been a hindrance to extensions and the purchase of needed equipment (Mortimer, 2335; Henry, 2024)—including such operating economies as the introduction of the one-man car (Bullock, 1876; Kellogg, 2138; Newman, 1625; Barry, 1121-1127-1149).

An overwhelming mass of figures supports these conclusions.

According to the Census returns for the year 1917 (2709), out of income of all sources \$730,108,040 gross income available for fixed charges amounted to \$231,756,691 on a total investment per books of \$5,136,441,599 or less than 4½%. Operating expenses of \$452,594,654 include only \$6,836,836 for Depreciation of retired equipment, \$6,800,348 for Depreciation of ways and structures and \$2,276,295 for Depreciation of power plant buildings and equipment, a total of \$15,913,479 or only 2.2% of income from all sources, whereas, according to competent testimony, the amount reserved for Depreciation should be at the order of 8 to 10% of gross income (Beeler, 4844). The operating expenses of \$452,594,654 moreover include \$313,748,577 for labor (Welsh, 323), representing wages of \$1,065 per annum for each of the 294,826 employees. See also Exhibit Sturgis analysis of Electric Railway Operating Costs and the Cost of Living as related to wages of Conductors, Motormen, etc. (13-18). They do not include the full force of the War Labor Board awards (Welsh, 327-344), nor a minimum return for labor which should amount to \$2,000 per annum (Lauck, 5637-9). These two factors alone, the necessity of replacements and demands of labor are ruining the industry. Too little attention has been paid to the

feature of depreciation (Cook, 4815; Beeler, 4884). Resulting increases in operating expenses have decreased the ratio of operating expenses to operating revenues from 63.8% to 72.13% in 1918 (Welsh Chart C-100, 267). This ratio has been further increased for the four months ending April 30, 1919, 76.43% (Welsh Chart C-120, 288-291). These facts are corroborated by the careful study made by Erickson based on an analysis of the operating results of thirty-five roads (2796-2803) from which he concludes "for several years in the past street railways have not as a rule been earning a fair living" (2814). They are also corroborated by results in Massachusetts under careful public regulation (188, 2887).

(B) Deterioration in Service.

Deterioration in service rapidly follows lack of credit.

"The deterioration of the properties and service of our street railways company is due to deferred maintenance and that in turn is due in part at least to deferred increases of rates" (MacLeod, 4191).

"The only way in which you can be in position to take advantage of the development of the art is to have a depreciation fund so that you can replace your property when you need and ought to replace it in the public interest; and the results I think to the public will be better, because, instead of having old, antiquated and obsolete equipment, they will have new and modern equipment which will give them better service and also give it at less cost" (Eastman, 5997).

The great questions before the railways today are getting new money, and adopting a comprehensive policy providing for a rehabilitation of the properties other than making repairs (Beeler, 4885).

(C) Receiverships.

Sixty-two companies having a mileage of 5,912 were in Receivers' hands as at May 31, 1919 (Welsh, Chart C-146, 240-245). All except 12.8 miles of the street railways in Connecticut are insolvent (Higgins, 3225). Fifteen per cent. of the electric railway mileage in Pennsylvania is affected by receivership (Ainey, 4076).

The detailed testimony of Receivers before the Commission (Fagan, 1735) and (George, 841, as to Pittsburgh), (Hedges, 1487, as to New York City), (Loring, 4779, as to Boston), (Bliss, 3394, as to Rhode Island), indicates the question is not one of return on capital investment but of meeting actual operating expenses.

(D) Disintegration of Unified Systems.

The breaking up of unified systems into component parts, with resulting disorganization of traffic and loss of the transfer privilege has already taken place in New York. To have two competitive electric railways in the heart of the City such as in Washington, has been found to be a serious evil (Kutz, 3037).

(E) Abandonment of Lines.

Welsh submits a list of sixty companies of electric railways that have been dismantled and sold as junk as at June 7, 1919, totaling 769 miles (247) and a list of thirty-eight companies that have abandoned service, totaling 257 miles (251-254). This with the mileage of the sixty-two railways in the hands of Receivers, totaling 5,912 miles (255-258), represents approximately one-sixth of the mileage of the country (245).

III.

CAUSES OF PRESENT CONDITIONS.

The causes of the present crisis in the electric railway industry have been set forth at length by the numerous witnesses appearing before the Commission. These causes cover a wide range, and may be listed as follows:

- A—Inflexible fares
- B—Increased cost of labor
- C—Increased cost of materials and supplies
- D—Increase in taxes and imposts
- E—Decline in purchasing power of fare received
- F—Use of private automobiles
- G—Jitney competition
- H—Longer average haul owing to spread of population
- I—Increased use of free transfers
- J—More stringent service requirements
- K—Increase of traffic at peak hours
- L—Street congestion
- M—Unremunerative extensions
- N—Public's belief that high cost of living does not affect street railways
- O—Point of view that industry will be continued anyway.

In addition to these causes, a few witnesses have laid stress upon factors that have, in their opinion, contributed to the present conditions of the industry, namely:

- Over-capitalization
- Payment of excessive rentals
- Over-consolidation
- Failure to provide adequate replacement reserves.

(A) Inflexible Fares.

Almost without exception the testimony of witnesses appearing before the Commission has affirmed the fact that inflexible fares have been a leading cause of the present conditions of the electric railway industry. It is only from rates collected that the income of the electric railway is derived. There is no other source of revenue. Accordingly, if expenses are increased, revenues must be increased by advancing rates. The inability of the electric railways promptly to readjust their income to meet rising costs, has brought about a large measure of the calamity which now confronts them. Flexible rates, immediately responsive to unfavorable and uncontrollable conditions, are the only safeguard of the companies, the investors, the employees, and the public.

Inflexible fares have been one of the big causes of present difficulties (Wilcox, 3557).

The principal cause—and all other causes are minor in importance—was the decreased purchasing power of the dollar, coupled with the fact that fares had been fixed either by franchise requirements or by the popular impression that the fare was standard forever at five cents (Tripp, 441, 461, 194).

Impairment of street railway credit structure has been brought about through increased operating costs coupled with a fixed unit fare (Sisson, 914-15).

The fundamental error in the establishment of our system of street railways, was the fixed five-cent fare or a fixed fare, because in all cases, it was not five cents (W. J. Clark, 678).

Rates of fare should at all times be responsive to current conditions (Ainey, 4193).

Inflation of our currency and credit has been the fundamental cause of this increased cost of living, while the fixed fares have not gone up correspondingly (Jenks, 2651-2655-2660).

In other cities than Cleveland they have adjusted their operations to a fixed rate of fare and could not make readjustments as the increase went on in their operating expenses. Their catastrophes and calamities have been precipitated until they all came at one time (Baker, 2988, 3020, 2987).

Electric railways are financially impotent, owing to their having been prevented from increasing their rates to a sufficient extent to cover in-

creased costs of operation and reasonable return on capital already invested. This condition applies to many companies throughout the entire country and is mainly responsible for the unsettled condition of the electric railway industry to-day (Hurley, 587).

See also Babson, 3074-3090; Babcock, 5539-5504-5521; Sidlo, 4629; D. C. Jackson, 4167-4169-4128, 4179; Cooke, 4940; Burr, 3823; Nixon, 3722-3724, 3735-3738; Pardee, 180-182; Loring, 4804; MacLeod, 4186; Higgins, 3228; Sprague, 2147; Kutz, 3946.

(B) Increased Cost of Labor.

One of the most important causes of the present crisis in the electric railway industry has been the great advance in the cost of labor. The scarcity of man-power precipitated by the entrance of the United States into the world conflict in 1917, coupled with the awards of the National War Labor Board, cast upon the industry a burden of increased cost, which, with inflexible rates, it could not carry. As a result a considerable percentage of the entire electric railway mileage of the country was thrown into the hands of receivers, or brought to the verge of bankruptcy.

As pointed out by W. Jett Lauck (5590-1, 5654, 5656, 5657), the principle that was established by the National War Labor Board that, irrespective of the financial conditions of the street railways, a rate of wages which was equitable should be paid, even if it put the railways into the hands of receivers—which was practically the case on some railways for which wages were established—was adopted, and the Courts have held that even if a public utility is in the hands of a receiver it has no bearing upon the matter of an equitable wage.

The most notable element in the operating expense is the item of conducting transportation. It is not only the largest item, but the one in which there has been a proportionate increase during the census years and also in the year 1918. The principal element in that is trainmen's wages (Welsh, 304).

A factor which has contributed largely to the difficulties of the situation has been the wage awards of the National War Labor Board. Probably one-half of the gross operating expenses of a railroad consists of direct labor costs, which are constantly increasing (Sisson, 920, 921, 930, 931).

The one sole trouble is increased costs of labor and material and the inability to promptly readjust the rate of fare (Bradlee, 589).

Conditions have been very rapidly improving since March. I have discovered in many parts of the country. The recent big increase in wages this summer may counterbalance that; I am not sure. Electrical railways are operating at greatly increased costs for wages and materials. Any new construction will also be made at greatly increased cost. When extensions are made or new railways built, this increase in original cost is a burden until the total cost is amortized. It is a burden that must be met out of fares (Bemis, 6120, 6163).

War aggravated the situation and brought it to a head by causing increases in wages, cost of fuel and materials (Pardee, 183, 185).

This chart shows that, comparing 1919 with 1906, there has been an increase in wage rates of about 93 per cent., the most rapid increase having occurred from 1918 to 1919 (Welsh, 328).

Conditions which created the bad situation before the war, and especially during the war, are still with us. Prices of labor and material are not declining greatly, nor are they likely to fall much as long as our supply of money and credit remains as great as is now the case (Erickson, 2813, 2814-5, 2810-15, 2801).

As to increased costs of labor and materials—well, leaving out of account any possible economies that may be involved, and that would be on the other side of it, I think it is perfectly obvious that practically all operating costs have increased in the street railroad business since the beginning of the war. Coal and wages are the two principal items (Baker, 3023, 2963-4, 3022).

The present level of wages will continue for some time—some years. I do not see any signs of decreases in wages. It seems to me that commodities are bound to remain high (Ferguson, 1676-7).

A super-essential business—the street railway—is literally begging for the right to live. The immediate reason is that the margin between income and outgo has been wiped out by the rise in costs of materials, labor, taxes and interest (Beeler, 4838, 4864, 4901).

Conditions are getting worse—wages are rising and costs of materials and supplies have not begun to decline (Bullock, 1837).

Increased fares have as a rule only partially offset increased wage and material costs (D. C. Jackson, 4125).

War prices and war wages are important causes of present conditions (Wilcox, 3576).

To the same effect see Sturgis, 5209, 5201, 5171, 5156; Sanders, 4263; Shoup, 1729-31; Babson, 3075, 3093; Mortimer, 2266, 2258, 2190-2195; Lambert, 1134; Loring, 4820; Clayton, 766; Creel, 2592-3; Joyce, 4413-31, 5794-6, 4590; Westinghouse, 2697; Cooley, 784-5; Conway, 2728-32, 2741; Schaddellee, 2489; Tingley, 1069; Ainey, 4082; Fagan, 1762-5, 1770-1; Mote, 3179, 3211, 3193-6; Nixon, 3718, 3787-8; Couzens, 3316; George, 873; Bliss, Wm. C., 3419-21, 3438, 3459; Hall, 3876; Higgins, 3242; Insull, 2545-6.

(C) Increased Cost of Materials and Supplies.

The abnormal increases in the price of materials and supplies have affected the electric railway industry just as they have affected all other industries; that is to say the "high cost of living" has reduced the purchasing power of the electric railway dollar in the same proportion that it has reduced the purchasing power of the dollar of the individual. This fact has been another cause of the present electric railway crisis, because the high prices paid have not been readily reflected in a higher price to the consumer of electric railway service; that is, the car rider. In every other industry the finished product, often of inferior quality, has been promptly marketed at a price sufficiently advanced to absorb the increased cost of manufacture. The electric railways, with rates of fare fixed by public authority, are the striking exception to this rule of economic necessity, and widespread receiverships are the result.

Witnesses appearing before the Commission have not only attributed the present condition of the industry in large part to the high cost of materials and supplies, but have also stated their belief that high prices will remain for an indefinite period.

War prices and war wages are important causes of present conditions (Wilcox, 3576).

High prices are a cause of present conditions. Prices have been steadily rising. Since 1915 they have more than doubled (Erickson, 2797-8; 3904).

The price level today is substantially double what it was before the war and is likely to remain as it is to-day (Fisher, 3842).

Among the causes of present conditions are the vast increases in the cost of coal, labor and materials (Eastman, 5993-4).

Wages and materials, generally speaking, I think, have doubled and more than doubled in the last four years (Ferguson, 1669).

Increased expenses are the result of the decreased purchasing power of currency all over the world, a condition which is more or less permanent (Tripp, 448).

"* * * at the same time the railway companies are drifting into bankruptcy, caused by the condition of war wages and cost of materials" (D. C. Jackson, 4124).

There is no indication of lower prices (for electric railway supplies) in the near future; on the contrary there are unmistakable signs of a stiffening of prices in many lines (Englund, 1197).

"I think you will find still higher costs of materials and higher costs of labor. I think we will have to reckon with them for an indefinite period of time" (Sisson, 931).

It is the opinion of the trade generally that there will not be a marked reduction in prices; instead of going down, they will be likely to go up (Barry, 1109).

To the same effect see Erickson, 2108, 2813; George, 873; Insull, 2545; Shoup, 1729-31; Bullock, 1837; Fagan, 1762; Ferguson, 1676; Baker, 3023; Babson, 3075; Mortimer, 1140; Sisson, 2258-2266; Sisson, 915; Tingley, 1069; Schaddellee, 2489; Beeler, 4838, 4901,

4890; Pardee, 183-5; Mote, 3164-5; Clayton, 766; Brad'ee, 5898; Bemis, 6163; Westinghouse, 2697; Lauck, 5484; Creed, 2552-3; Conway, 2726-7; Barry, 1095; W. C. Bliss, 3467-8, 3476; Henry, 2040; Lambert, 1130; Taft, 151; Loring, 4820; Fisher, 3840, 3908, 3859-74; Aincy, 4082; Sprague, 2178; Rosenwald, 2676; Ryan, 2677; D. P. Kingsley, 2678; Douglas, 2679; Hepburn, 2679; Armour, 2681; Forgan, 2683; Schiff, 2684; Warren, 2687.

(D) Increases in Taxes and Imposts.

One of the flagrant public abuses of the electric railways, which is regarded as a cause of present conditions, is the imposition of increasingly heavy taxes and imposts. The taxation of public service corporations has for a generation been a favorite source of revenue of federal, state and municipal governments. Since 1912 the taxes paid by electric railways have increased from \$35,000,000 to \$50,000,000. In addition to general property taxes, electric railway companies are obliged to pay corporate franchise taxes, gross revenue taxes, commutation or excise taxes, compensation taxes, license fees for cars and numerous other sorts of taxation in the different communities.

Imposts of many varieties have also been heaped upon the industry with constantly augmenting severity. These imposts include the paving of streets between and outside the rails, contributions to the construction cost of bridges, viaducts and other forms of highway designed for general public use, the payment of salaries of traffic officers, the removal of snow from the streets, sprinkling and cleaning of streets.

It is the general opinion of the witnesses who have appeared before the Commission that many of these direct and indirect taxes should be abated for the relief of the car-rider, upon whose shoulders the burden ultimately falls.

"The public * * * not only takes no interest in lightening the burdens of those who are responsible for the operation of these properties, but seems actually anxious to precipitate the final stages of what may easily develop into a national tragedy" (Cooke, 4910).

Federal taxation is too great a burden (W. C. Bliss, 3458).

Street railways should be relieved of taxes and other burdens (Babson, 3072-3).

The franchise tax law might be modified so that some companies could be relieved (Maltbie, 6087).

The elimination of the 4% gross earnings tax would probably make a 5c fare possible in Washington (Kutz, 3639).

Trolley companies should be relieved of the burden of taxation, as much, if not more, than endowed colleges or other institutions of learning (Higgins, 3228).

Municipalities should consider the possible suspension or elimination of numerous municipal charges which are really indirect taxes upon the car-riders (Babcock, 5505).

State and municipal taxation in Rhode Island totals 12½% of the gross receipts of the Rhode Island Company, and the Public Utilities Commission has recommended that all of these taxes, except the property tax and the franchise tax assessed by the State, be eliminated (C. W. Bliss, 3482).

If the city does not want municipal ownership and operation, relieve the companies of some of the municipal charges, like taxes, special percentages on gross revenue, paving burdens, etc., provided the community is to benefit in fares and improved service (Couzens, 3304-3392).

Special franchise or license taxes should be done away with, as in many cases the franchises are liabilities and not assets (Beeler, 4842.)

If the proposed wage scale results in an excessive fare, the public might meet that by remission of taxes or by granting some form of financial relief (Lauck, 5657). To the same effect see Creed, 2553-7; Storrs, 1269.

With reference to paving and other imposts, the following views were expressed:

It is an injustice to place upon the car riders the burden of paving streets which are actually used more by the owners of automobiles. This condition ought to be corrected everywhere. (Beeler, 4899).

A street railway monopoly no longer exists, now that the automobile is in the field. States and cities should not shackle the railways until they again become a monopoly. There is absolutely no moral or economic or physical reason for the paving cost (Babson, 3079-80).

A street railway company should not bear all the burden of paving. In horse car days, it was justified, but not now (Baker, 2976-7).

In view of the present plight of street railways, it is entirely desirable that paving expense should be met by the entire community, rather than by the car-riders, even though the presence of car tracks in the streets increases the paving costs and upkeep (Eastman, 6044).

The burdens of street paving, maintaining highways, bridges, etc., should be removed (Higgins, 3231).

Paving charges should be taxed upon the community as a whole (Nixon, 3767-8).

Paving taxes should be abolished; they are out of date (McFarland, 3954).

To the same effect see Loring, 4778; Joyce, 4122; Storrs, 1269; Creed, 2553-57; Mote, 3180; Babcock, 5518; Bemis, 6125; Cooke, 4935-6; Maltbie, 6086; D. C. Jackson, 4151; Ainey, 4084, 4105-6; Z. W. Bliss, 3485; W. C. Bliss, 3414, 3452; Hanson, 3293.

(E) Decline in Purchasing Power of Fare Received.

The decline in the purchasing power of the fare received has been noted by many witnesses. While this is, of course, represented by increased prices paid for labor and materials, it has been so frequently emphasized, that it is here given a special heading. The investigations of the United States Department of Labor show that the value of the dollar is today approximately 50c, as measured by the standards prevailing prior to the European War (352).

Secretary Baker (2963-4) subscribed to this statement with reference to the causes of the present electric railway crisis:

It is undoubtedly true that the income of the street railways are not sufficient, as a general rule, to pay their expenses—even their operating expenses—and that labor, which constitutes over 50% of their expenses, as a rule, is demanding and receiving very high wages. In some cases double the wages of normal times, and that all materials are exceedingly expensive as compared with pre-war prices; and *that the nickel of today has not the purchasing power of the nickel of four or five years ago*, and that in itself would cause one to look for trouble in an industry with no ability on its own part to materially increase its income.

Other witnesses commented upon the declining purchasing power of our currency as follows:

The purchasing power of the nickel has been very much reduced in the last few years (W. J. Clark, 429).

With the average purchasing power of the dollar decreased generally about 50% since 1914, it is impossible for the 2½c to buy 5c worth of transportation; that is the sum and substance of the whole situation (Sisson, 914).

The reduced purchasing power of the dollar has created this situation (Clark, 699).

The nickel of 1887 was an entirely different nickel from the one we have today, as far as purchasing power is concerned (Sprague, 2143-2180).

To the same effect see Fisher, 3840, 3908; Taft, 4-81; Tripp, 418

(F) Use of Private Automobiles.

The advent of the automobile and the rapid extension in the use of the privately owned motor car, are given as other causes of the present conditions of the electric railways of the country. In the opinion of many witnesses, the introduction of the automobile and the jitney changed the fundamental character of the electric railway industry from one of natural monopoly to one of competitive business.

Some witnesses regard the extensive use of the automobile as the chief factor in the electric railway crisis, while others place the motor propelled vehicle among the most important factors that have led to the present situation.

It is the automobile and not the war and higher costs that has put the electric railways where they are. The real difficulty with the street railway situation came with the automobile, although labor and high costs of materials are factors. In Massachusetts, there are less than 5,000 street cars and 186,600 automobiles (Babson, 3073, 3094).

The automobile and the jitney are responsible to some extent for the present situation, but they are not the sole culprits (Tripp, 474).

The privately owned automobile is one cause of the present situation. (W. C. Bliss, 3454).

Automobiles and jitneys have materially affected street railway revenues, private automobiles especially in rural and suburban sections (Higgins, 3226).

Under the competition of the automobile, there are certain mileages of track in Pennsylvania that serve no longer a real public use (Ainey, 4074).

The advent of the automobile was not foreseen, and the peak of its effect on electric railway traffic has not yet been reached (Mote, 3172).

There is no doubt whatever that automobile competition has been a very important factor in decreasing the revenue of the street railway companies all over the country, and particularly in the country districts, although it has also operated in the cities (Eastman, 5998).

The rapid development of the automobile business has had a tremendous effect upon the earnings of the electric railways throughout the country (Storrs, 1232).

Since the introduction of the automobile and the jitney, the electric railway has changed from a monopoly to a business (W. Jackson, 4640).

To the same effect see Connell, 4019; Schaddelee, 2480; Joyce, 4548; Shoup, 1729-31.

(G) Jitney Competition.

The most aggravated form of automobile competition is found in the so-called jitney or motor bus which has made large inroads into the revenues of the electric railways in almost every part of the country, and is not only an important cause of the present crisis, but presents perhaps the greatest element of uncertainty in the future development of the electric railway industry.

Witnesses appearing before the Commission have without exception given the jitney a prominent place in the electric railway problem. What has been stated above (see III [A] [6]) with reference to the use of private automobiles and their effect upon the transformation of the electric railway industry from a monopoly to a business, may be repeated here with even greater emphasis. It has been pointed out by witnesses that the jitneys should be regulated and their operating requirements made no less onerous than those imposed upon the street cars with which they are in active competition (Beeler, 4858); that higher street railway fares have been stimulated by the jitney development (Loring, 4791); that the construction of good roads and highways has made this form of competition easy and that in the city of Springfield, Mass., the jitneys take from \$200,000 to \$300,000 annually from the street railway (Eastman, 5978, 5999); that the amount of money which the jitneys have taken away from the Bay State Company in Massachusetts, is more than \$2,000,000 annually, and that the jitneys are the greatest problem in that state; that the jitney and the street railway cannot live in the same community, because competition between them is wholly unfair and unreasonable (Loring, 4791-93); that while the future of the automobile and street railway is uncertain, the street railway should be protected in its rights during the transition (Higgins, 3231); that jitney competition takes about \$12,000,000 annually from the electric railroad systems in New York and is one of the causes of the present situation (Wilcox, 3576, 3742); that jitney competition is a very serious item in New Jersey, although the jitneys are subject to certain regulations (Gillen, 3491, 3497); that public safety and the unfair competition between the jitney and the electric railways are grounds for city action (Mote, 3219).

In addition to the passenger carrying jitney, witnesses have referred to the encroachment upon electric railway revenues by the motor-truck used for the transportation of freight and to the motor-bus used for the transportation of passengers in considerable numbers. These trucks and buses are also factors in the present crisis (Shoup, 1729-31; Mote, 3173, 3220; Wilcox, 3614, 3743-50, 3619; C. Ogburn, 5945; Bauer, 4761; Pardee, 185-6; D. C. Jackson, 4151).

It is entirely wrong in principle to allow a jitney or bus service to come in and by means of unfair competition render a service inoperative that they cannot replace themselves (Beeler, 4898).

The jitney or motor bus would not be an adequate substitute for the street-car service (Mote, 3220). The motor bus should be installed where practicable, to feed the street-car lines, not to compete with them. The motor bus is not adequate except in cities of less than 100,000 (Wilcox, 3614, 3619). Motor buses can give better service in certain places (Babson, 3102). In suburban and country districts with comparatively sparse populations, the motor bus is undoubtedly the vehicle of the future (C. Ogburn, 5945).

(II) Longer Average Haul Owing to Spread of Population.

Still another cause of the present conditions of the electric railway industry is the longer average haul that the companies are giving in their efforts to keep up with the rapid spread of the population. Recent developments toward more healthful living conditions in and near our urban centers have brought about a wider distribution of the people in outlying districts. While the automobile has been a factor in this growth, the street car which has been termed the "poor man's automobile" has set the pace for this expansion. The result has been an increasing length of the average haul, and an increase in the number of unprofitable passengers. Short haul traffic, which is the profitable portion of electric railway transportation, has thus been called upon to bear a greater and greater burden. With jitney competition in the short haul areas, and a greater development of long haul traffic, without a simultaneous adaptation of the amount of fare to the length of haul, the electric railways have been obliged to carry a burden that has contributed to the present crisis. Various witnesses have emphasized this point before the Commission.

Five cents in New York carriers passengers as much as 20 miles, and passengers are sometimes handled three times between Brooklyn and New York (Nixon, 3725-3733).

It is noted throughout the country that more transportation is given for the original fare, whatever that may be, than the utility can afford to supply (Storrs, 1264).

One of the factors in the present situation is the gradual increase that has been made in the length of haul of street railways (Mortimer, 2266). Too long rides for fares less than cost are sometimes provided (Ainey, 4074).

Our present street railway service is an outgrowth of horse car service, which, naturally, dealt alone with the short haul, and the electric railway fares were chosen and fixed by habit on the basis of the horse car service. A considerable part of the street railway difficulties is due to their effort to satisfy the needs of the long haul at the expense of the needs of the short haul (D. C. Jackson, 4144, 4163, 4165).

As between the car rider and the investor, the car rider has up to the present had much the better of the bargain. A generous policy should be held toward the companies where there is reasonable evidence that the financial condition of the properties is due to the fact that the railways have been giving the public more than the railways themselves have been getting, and the public has profited by having the opportunity of riding relatively long distances for a very short fare (MacLeod, 4214-5, 4191).

The rapid increase in population is one of the causes of the present situation (Gillen, 3493).

See also Erickson, 2801; Joyce, 4516; Beeler, 4838-9.

(I) Increased Use of Free Transfers.

Another factor in the present situation has been the increased use of free transfers, with the result that the length of haul is very often out of all proportion to the cost of the transportation furnished. An objection to the free transfer in addition to the frequently excessive length of ride which it provides, is the ease with which it can be fraudulently used, so that many persons ride without the payment of any fare.

Secretary Baker, 2925-2936, expressed his views of the free transfer as follows:

"I believe that the literally free transfer is probably the worst practice, the worst difficulty that the street railroads have to deal with. The problem does not affect only street railroads, but it affects the riding public. The man who uses a fraudulent transfer does not hurt the street railroad as much as he hurts the other passengers who have to pay for carrying him."

A further burden upon the electric railways resulting from the use of free transfers, is the added cost of re-handling passengers. Commissioner Nixon in his testimony (3725) referred to handling passengers three times between Brooklyn and New York. Another witness stated that the free transfer should be retained where a flat rate is in force, but that no transfer should be given where a zone system with a low initial fare is in operation (Wileox, 3637-40).

(J) More Stringent Service Requirements.

The jurisdiction of state public service commissions and municipal authorities over the service furnished by electric railways has resulted in many instances in burdensome requirements, which the rates charged have not justified. Frequent public demands for modern equipment and the extension of electric railway service have thus added to the difficulties which the industry is now experiencing.

Owing to the increases in the length of lines and to the demands for better service, the electric railway situation has been growing worse since 1910 (Erickson, 2801).

The electric railways have been called upon to make heavy investments in rolling stock and to provide metal cars for wooden cars in furtherance of the public safety. They have also been required to replace smaller cars with larger and heavier ones, and to introduce various devices for the comfort of the passengers (Hennings, 1137, 1140, 1141).

Some extensions of lines are now being required in Indianapolis. The company has been obliged to put on pay-as-you-enter cars and to buy additional cars for lines with congested traffic. The Commission can require companies to do anything that is reasonable in the way of service (Mote, 3221).

Numerous changes in equipment of the street railways have been recommended by the Public Utilities Commission of Rhode Island (W. C. Bliss, 3114) (See also Storrs, 1250).

(K) Increase of Traffic at Peak Hours.

As a part of the urban transportation problem have come the so-called "rush hours," during which the electric railway companies are obliged to use their maximum power and equipment, to provide a sufficient number of men and to furnish additional cars and auxiliary facilities in order that reasonably adequate service may be supplied. This has resulted in added expense to the companies, and has led to serious efforts, thus far without success, to overcome the difficulties of the peak hour.

The more peaky the traffic, the higher the cost of operation. An increase or decrease in the ratio of standing to seated passengers will increase the returns or decrease the returns in substantial quantity (Mortimer, 5751-2).

See also, conclusions on cost of rush hour service, referred to by witness Mortimer, in Association's publication: "*Cost of Urban Passenger Transportation Service.*" Doolittle, Chap. 14, showing that an increase of 10% in service during rush hours, would reduce the return nearly one per cent while a uniform distribution of traffic during the 2½ hours would increase return from five to ten per cent.

As to the staggering of hours of business, so as to enable the rush hour traffic to be spread over a longer period and provide better use of equipment, see Beeler, 4855, Ole Hanson, 3293).

(L) Street Congestion.

The growth of the automobile industry has added greatly to the always present difficulties of the electric railways on account of street congestion.

Stopping and starting cars increase power consumption, retard operating schedules, and result in greater expense to the companies and in public dissatisfaction on account of delays. In our larger and rapidly growing cities, habitual street congestion has led to the enormous investment which now exists in subways and elevated structures, through the use of which rapid transportation can be furnished.

This problem has been presented to the Commission by a number of witnesses, and is given as another cause of the present conditions confronting the electric railway industry:

There is a very direct relation between speed and operating expense. The way speed is made is by better acceleration and faster braking eliminating the stops and delays, and that all has a tendency to reduce the operating ratio, for the reason that your wages are paid on the hourly basis. Practically all the income of a railway goes out on a time basis, and the receipts come in on a mileage basis. The more miles you get out of a street car, the less the operating ratio, and the less the ratio of fixed charges and everything else (Beeler, 4904).

The correction of street congestion is in the hands of the various municipalities and their co-operation in all matters pertaining to the faster operation of the cars should be secured. Traffic officers should always give precedence to street cars over all other classes of traffic, and the police should assist in keeping the tracks clear of trucks and other vehicles (Beeler, 4856-4879, 4905).

The municipalities should keep the streets free, so that the traffic will not block the cars (Wilcox, 3667).

The City of Cleveland co-operates with the railway company in keeping vehicles off the tracks (Baker, 3012).

I think you ought to point out to the public the need for co-operation on their part in loading and unloading cars, agreeing to skip-stops and proper traffic regulations (Eastman, 6004). See also Creed, 2553-7.

(M) Unremunerative Extensions.

As a part of the service requirements imposed upon electric railways, have been numerous extensions of their lines into unprofitable territory. The maintenance of these unremunerative extensions is another cause of the present situation. This phase of the question was quite fully developed before the Commission.

Extensions into rural sections develop those sections, but the volume of traffic now received is not sufficient to pay operating expenses (Higgins, 3226).

The cause of the trouble in Pittsburgh is historical. The operating problem is difficult and extensions have been somewhat overbuilt (George, 895-6).

Had we not developed beyond the area of dense population, we should not have reached the difficulties we have (Storrs, 1260).

The operation of suburban extensions by urban companies with similar methods of operation, has been a severe drain on the urban systems (MacLeod, 4182-4).

To the same effect see Erickson, 2108; Mortimer, 2266; Joyce, 4532; Eastman, 5970; Couzens, 3366.

(N) Public's Belief That High Cost of Living Does Not Affect Street Railways.

Ample testimony has been presented before the Commission to prove beyond the peradventure of a doubt that the electric railways are as much affected by the high cost of living as any other industry, or as any individual. The tables of increased prices of equipment and supplies used by the electric railways and the statistics of comparative wage scales prior to the war and since the awards of the National War Labor Board, leave nothing further to be said in support of the fact that the electric railways are sharing the burdens of the general increases in living costs.

(O) Point of View that Industry Will Continue Anyway.

In refutation of the popular idea that the electric railways will be continued anyway, it is necessary to point only to the number of miles of electric railway lines that have been junked, abandoned, or discontinued during the last few years. Nor does it require an undue stretch of the imagination to forecast the inability of the electric railways to continue to function unless their credit and borrowing power are restored. It is perhaps the thoughtless indifference of the public to the true situation, rather than any premeditated hostility to the industry, that is responsible for some measure of the street railway difficulties today.

See Welsh, 240, relating to Chart C-146.

Other References to Present Conditions.

Some testimony has been presented to the Commission to the effect that the causes of the present condition of the industry are to be found in over-capitalization, holding company organization, over-consolidation, payment of excessive rentals for franchise rights, and the failure to provide adequate depreciation.

The issues involved in the present investigation are merely confused by resorting to arguments in support of these alleged causes. The industry is faced with the problem of securing sufficient revenue to meet its operating charges, including a fair return upon a fair valuation of its property. In many instances the companies are not earning enough to pay operating expenses, regardless of any return upon the investment. As to the question of over-capitalization, it is significant to note that in Massachusetts where the State law limits the issues of securities to the value of the property, the electric railway situation is quite as acute as in any part of the country.

It has been recommended and advocated by the American Electric Railway Association that the basis of permanent adjustment of the electric railway problem be upon a fair valuation of the property (Warren, 891). This is also the basis of the various service-at-cost plans advocated by a number of witnesses. It is apparent that all questions of watered stock, excessive rentals, consolidation and bad financial management may be entirely disregarded in a solution of the problem based upon a fair valuation of the property.

Present conditions are not necessarily due to high finance but to general economic conditions (MacLeod, 4241).

The present condition of the electric railways has not been brought about by watered stock, and there is no water in public utility securities now. This country would not have been built up and there never would have been our present system of railways and public utilities if the accepted financial practice of issuing bonus stock had not been pretty general throughout the days of promotion and creation (Sisson, 986, 947-8).

With further reference to the causes of present conditions, the Commission's attention is called to an exhibit filed by the Association—"Electric Railways—Recommendations Made by Investigating Committees and Commissions" (16-20).

IV.**FUNDAMENTALS UNDERLYING SOLUTION OF THE PROBLEM.****(A) The Establishment and Maintenance of Credit.**

The credit of the electric railway industry must be established if private capital is to be used in this public service. Credit is based upon the confidence of the investor in the enterprise.

The restoration and maintenance of the credit of the electric railway industry is *sine qua non* to the employment of private capital in the public service.

"Public regulation involves public protection of credit" (Sisson, p. 765).

See also Jenks, 2651; Conway, 2761; Loring, 4807, 4815, 4808; Hurley, 587; Stuart, 487, 567, 568; Insull, 2544; Jones, 5352; Babcock, 5505-6; Eastman, 6005; Mallbie, 6072.

Many methods of reducing expenses and of assessing cost, both upon the users of the service and the general public have been suggested by witnesses appearing before the Commission. Undoubtedly, many economies can be inaugurated and it is possible that a more equitable system of charges can be installed. These reforms play an important part in the solution of the problem before you. They are not, however, fundamental, and their importance is secondary to the establishment of such basic relations between communities and private capital as will afford such security to investment as will attract the new money needed for the development of the service in pace with civic requirements.

Frederick J. MacLeod, Chairman of the Massachusetts Public Service Commission, who is opposed in principle to public ownership and operation, considers the matter of credit so important that he inclines towards public ownership because he doubts the possibility of restoring private credit. "It is this phase of the situation that has made me pessimistic as to the outlook for permanently sustaining these properties entirely through private control" (MacLeod, 423). His doubt is shared by Homer Loring, Chairman of the State Trustees, operating the Eastern Massachusetts Street Railway Co., who, in spite of his prejudice against public ownership declares that "the necessity of restoring credit is the most important argument in favor of public ownership" (Loring, 4803).

(1) RESTORATION OF CONFIDENCE OF THE INVESTOR.

The confidence of the investor in electric railway investment has been destroyed, not because of a temporary depression in the business, but by reason of the fact that the conditions surrounding the investment have been and are now such as to prohibit assurance of either its safety or adequate return.

"Street railway credit, in my opinion, can never be restored under the present system of relationship between the municipalities and the companies. It is necessary to have credit on a basis that is good not for two or three years, but for long periods * * * there must be a basis of relationship which will reasonably assure the investor that for the period for which they are to use his money, there is a reasonable assurance that he will receive a return, and that he will be protected against unforeseen and unusual things, such as this war has brought about" (Tripp, 453).

See also Taft, 11, 27; Tripp, 458, 489; Stuart, 568; Hurley, 589; Taylor, 838; Bertron, 1543; Newman, 1611; Cooley, 765; Creed, 2567; MacLeod, 4236.

The mere adjustment of fares, or even a return of prosperity to the companies, will not prove sufficient, as long as the conditions surrounding the loaning of the capital and its return are unsatisfactory.

Local transportation cannot be properly carried on, unless there is a flow of new capital into the industry. "A public service company, like an individual, or like any private business, cannot stand still. It has either to go forward or go backward. If it goes ahead it needs more money; it needs more capital all the time" (Stuart, 579).

See also Stuart, 556; Bradley, 597, 613, 614; Culkins, 1361; George, 907; Sisson, 934.

Owing to the suspension of betterments, extensions and improvements, caused first by the inability to secure new money and second, by the war-time policy of the National Government in prohibiting all new construction, except that necessary to the prosecution of the war, there is at the present time and will be for some years to come, necessity for betterments, extensions and improvements, in excess of the normal. "We have, in one sense, been living on our fat, we have been calling on our power plants, our tracks, our cars, to carry more than their normal amount of load, and we have taken chances of breakdowns and interruptions to service which, in normal times, we should not do. That means that these properties, at the present time, are below par, that they are not developed to the extent that they should be normally to handle the volume of business which they now transact. To meet that situation and to adequately serve the public we must not only meet future extensions but we must make up for what we have failed to spend in the last four years so that the demand for additional capital during the next four years, if we are to adequately serve the public, must be above normal to offset the four years which are below"

(Bradlee, 607); and again, “* * * full improvements have not been made since 1914 and 1915. They (35 typical companies) have skimped wherever they could * * *. There are a great many deferred maintenance charges to be taken care of as soon as they get on their feet again” (Erickson, 2800).

In addition, the introduction of many improvements in service, involving economy in operation and increase in traffic, involves additional capital expenditures. “The great questions before the railways to-day are: getting new money, and adopting a comprehensive policy providing for rehabilitation of the properties other than making repairs. * * * The successful companies to-day are those that have rehabilitated in the past few years” (Beeler, 4884).

“If the industry were one of expanding revenues that could command plenty of capital, I have no doubt economies could be effected by extensive reconstruction programs, but capital cannot be had under present conditions” (Bullock, 1877).

For statement as to lack of credit to finance purchase of improved apparatus and equipment see Barry, 1120, 1121; Heulings, 1149.

This need for new capital affects not only the industry as a whole, but each individual enterprise. It appears from the statement of Mr. H. G. Bradlee (598), that for a typical group of public utilities, the new capital requirements, over a range of years, has been four dollars of investment for each one dollar of increased gross revenue.

The ability of electric railways to meet increased cost of service caused by higher prices, longer rides, the inauguration and extension of transfer privileges, more stringent service requirements and improvements in comforts and conveniences, without excessive increases in fare, has been due to the possibility of raising new capital, which permitted the introduction of improved apparatus, materials and methods.

What the public requires from private enterprise enlisted in public service, is, first, capital, and second, initiative and managerial service. The price which must be paid for these is dependent upon credit, and credit varies, first, with the degree of assurance of the integrity of the investment, and second, with the degree of assurance of the return upon the investment.

See discussion of effect of State guarantees upon cost of capital, Nash, 1962; See also Foss, 2334.

Two factors control this assurance,—the legal protection afforded and the public attitude towards the investment. They are interdependent and both are essential.

By integrity of investment is meant its return undiminished to the investor at the end of the period of its public use. This integrity is assured in the first instance by the contract, agreement, franchise, or statutory law under which private enterprise undertakes to perform public service. The crux of the protection so afforded as it affects integrity of investment is term or period.

Since local transportation is a continuing need of communities, and there is not now, or in the calculable future, any prospect of transportation on rails being supplanted, the public use of the investment will terminate only when the communities themselves shall supply the investment, or shall contract with persons other than the original investors for its supply.

The term of the legal authority under which private enterprise performs local transportation service, should therefore be limited by one or other of these contingencies and by nothing else, and the investment required should be protected by provision for its return, undiminished, to the investor, upon the occurrence of either contingency.

When the limit of legal authority is fixed by specified lapse of time, and no provision is made for the return of investment, it can be protected only through the amortization during the life of the authority, of the difference between the original investment and the estimated scrap value at the expiration of the term. Such amortization is not possible, except through the fares received. The shorter the term, the larger the annual contributions from fares. Such amortization has been impossible under any rate of fare that has prevailed in the industry. “No rates of fare have ever been allowed which will amortize the value of physical property to its scrap value within the life of the determinate franchise” (Mortimer, 2341). **It may be assumed that to provide for amortization under term authority would entail a rate of fare so high as to discourage the use of the service and prevent the utility from performing its complete function.**

This principle of the amortization of investment necessary for its protection under a term franchise is recognized in the Taylor ordinance under which the Cleveland Railway Company is operated, as is the effect of such amortization upon the rate of fare. Here it is provided that if the grant, which has a life of twenty-five years, be not renewed by the city before the expiration of the first ten years of its life, the highest rate of fare permitted in the schedule shall go into effect, in order that the surplus above the cost of service shall provide for amortization of investment (Stanley, 1684). Delos F. Wilcox favors amortization under service at cost plans (3690, 3691).

An authority to perform service, limited only by purchase amply protects the community from the failure of the enterprise to provide proper service, since it makes it possible to oust the derelict performers in the only two ways which insure continuance of service, *i. e.*, by the taking over of the service by the public, or by the authorized agents of the public. Such an arrangement prevents the hiatus in the development of electric railway systems, that almost invariably accompanies the approaching end of term franchises, guards against deterioration of service during the same period and prevents the costly disturbance of the relations between communities and utilities that accompany the approach and the conduct of negotiations for franchise renewals, and insofar as it insures the return undiminished, of the original investment it bulwarks the credit of the utility. "I think the indeterminate franchise with the right to the city of acquisition and proper regulation is the only scientific form of franchise" (Baker, 2982).

This principle of protection of investment and of public interest as embodied in the indeterminate permit has also been endorsed before the Commission by Tripp, 542; Stuart, 573; Bradlee, 622; Nash, 1346; Culkins, 1377; Draper, 1452; Doherty, 1178; Bertron, 1579; Newman, 1609; Head, 1802; Creed, 2557; Higgins, 3228; Wilcox, 3690, 3691 and Sanders, 4264. See also Exhibit filed by Erickson, 2886.

A second necessary assurance of the integrity of the investment to be provided for by law is that any part of the investment represented by property worn out becoming obsolete, or being superseded in the public service, shall be made good by the public.

This means in practice that the property shall at all times be maintained through the contributions of the public in as perfect a condition as is consistent with efficient and economical operation and that in addition, there shall be reserved from earnings such an amount as will at all times equal the difference between the value of the physical property and the investment. "So I say, it is a religious duty to put into this depreciation fund as much money as is necessary to maintain the integrity of the property" (Cooley, 772).

See also Wilcox, 3506; Tripp, 528; Cooley, 769, 812; Sisson, 850, 993, 1014; Newman, 1592; Nash, 1889, 1900, 1927, 1975; Creed, 2564; Bauer, 4723; Beeler, 4839, 4844; Eastman, 5977, 5993, 5994.

The correct maintenance of an electric railway property means to the public safe, convenient and economical service. The accumulation of an adequate depreciation reserve, insures the full cost of the service being borne by those who receive it and its not being left as a charge against future patrons.

(2) ADEQUATE REVENUE.

The cost of securing private enterprise, which includes both capital and managerial ability for the public service is dependent in a large measure upon the degree to which its compensation is *assured*. If the return be actually guaranteed by communities, the credit of which is good, the cost will be lower than if it were not guaranteed; if the return be assured by some determined method of adjusting revenues to meet expenses, it will be lower than if there were no assurance, if such adjustment be automatic and not left to the determination of any individuals or set of individuals, it will be lower than if it were not automatic. It will further be effected by assurance of continuity by provision against the occurrence of periods during which return is reduced or ceases.

See Bertron, 1549; Cooley, 754; Sisson, 1006.

This assurance can be provided in varying degree by public subsidies, or by flexibility of fares, or by both. "The basis of compensation must be determined so as to provide an assured reasonable return and a rate of fare so flexible as to readily and automatically adjust itself to the cost of providing the service" (Pardee, 187).

The testimony of witnesses appearing before the Commission practically all trends to the establishment of the fact that there exists at present certain situations in which service cannot be given at any rates which permit the utility to support itself. "I doubt whether there is any system of transportation in a community of 15,000, or 20,000 people which would be self-supporting just as a commercial enterprise" (Bradlee, 643).

Whether, under such circumstances, street railway service should be provided at all, is a question of social responsibility and social service, which need not here be discussed. It is evident, however, that if it is to be provided with private capital, something more than assurance of return through an automatic and flexible system of fares is essential,—that there must in addition be provided a method of making up deficits by contributions from the public treasury. In other words that there must be a guarantee by the communities of an income sufficient, not only to pay the cost of operation, but also the return upon the investment.

It is, of course, impossible to definitely define or classify those communities in which electric railway service cannot be made self-supporting. It is certain, however, that as the risk of such a condition increases, the assurance of return decreases, and that in consequence, the cost of private enterprise in such undertakings will similarly increase.

Here, then, we encounter the principle that must govern the flow of private capital and enterprise into local transportation utilities. **The terms upon which new capital may be attracted into public utility investment are controlled by the investor. Money for this purpose is obtained in competition with other industries, and will be secured only if the conditions surrounding its investment in the public service are more attractive than those obtaining elsewhere.**

"You can make a trade with a man who already has his money invested, but you cannot make a trade of that kind with a man who is going to invest his money next year and the year after. That man will look at the situation in the street railway field and compare it with the situation in other lines of industry" (Bradlee, 615).

See also Stuari, 581; Nash, 1960; Erickson, 2813, 2818.

The impossibility of fixing in advance and for any considerable length of time, terms which will be attractive as against those provided by other investment is at once apparent. The need for flexibility in the agreements between private enterprise and the communities is plainly indicated. "* * * most of the trouble in street railway franchises has grown out of too much rigidity all along the line not only in rates of fare, but in terms and conditions" (Culkins, 1359).

"The cost of money is affected by conditions which affect all other costs. The law of supply and demand affects it primarily. * * * there will be a long period of tight money in which the demand for capital will exceed its supply" (Sisson, 912). **To provide for anything but a flexible system of determining return upon new money, is to run the risk of causing a drought of new capital with disastrous results to the communities.**

The investor being the final judge of the rate at which he will loan his funds for the public service, such rate should, in the legal authority, be allowed to be determined by the cost of money at the time it is needed.

See also Bertron, 1544.

In the case of electric railways, ability to pay return depends upon the ability to collect revenues—in other words, upon fares, so that the flexibility of return is primarily a question of the flexibility of fares.

The entire question of fares is a question of cost. Since costs will vary as conditions of operation vary, both in reference to time and to the location of the property, the attempt to fix a universal car fare, for all character of service, or for like service, under dissimilar conditions, is not economically possible, and was, from its inauguration doomed to ultimate failure. James O. Carr, former Public Service Commissioner for the Second District of New York, and for years a student of electric railway conditions, gave unqualified endorsement to this statement: "from the inception of the electric street railway, there has been a constantly increasing service without proportionate increase of remuneration" (2460). Chairman Ainey, of the Pennsylvania Commission, stated that "because of varying conditions applicable to different roads, we may have five, six, seven, eight, nine or ten cent fares, each reason-

ably and severally yielding adequate return" (4035). Secretary of War Baker, whose familiarity with the Cleveland situation, is recognized declared that "the highest point to which fares could be raised would undoubtedly be different in different communities, but there should be no mystery about it" (2973). Both Secretary Baker (2942, 3023, 3024) and Street Railroad Commissioner Sanders (4250-4251-4252) gave reasons for Cleveland's low fares, some of which were entirely unconnected with the agreement under which the property is operated and relate to geographical location and traffic characteristics.

Director of Street Railroads Culkins, of Cincinnati, stated that because transportation characteristics in Cleveland and Detroit are different from those which prevail in Cincinnati, the service in Cincinnati was bound to cost more (1425).

In Cleveland itself, where fares are determined solely on the cost of service, there have been eight different rates of fare in as many years (Stanley, 1685). The necessity of flexibility in the matter of fares is thus clearly demonstrated.

See also Mortimer, 5702; Eastman, 5977.

The far-reaching changes in conditions surrounding electric railway operation were emphasized time and time again in the testimony taken by the Commission. This process of change has been constantly taking place and found its culmination in the upheaval caused by the war. It has constantly demanded gradual readjustment, which the industry was, because of the rigid terms under which it operated, unable to make. This rigidity applied not only to rate of fare, the evils of which have been noted by so many witnesses (Wilcox, 3557). It applied equally to operating matters as exemplified in restrictive orders, franchise provisions and laws, and to rate of return. Because it restricted the full exercise of initiative and enterprise and because it made it impossible to bring price and cost into correct relation, it is the principal cause of the present state of the industry.

The credit of the electric railways cannot be established and maintained upon a stable basis unless, in the control exercised by public authorities over their affairs, there be such flexibility as will permit of the highest degree of managerial ability, and the adjustment of price to cost, both through the automatic regulation of fares and the adoption of all proper operating methods and practices. * * * * Every electric railway company should be freely accorded the right to establish such rates as are necessary to meet operating costs, including maintenance and depreciation and a reasonable return upon the capital invested. If they are to be denied this right, it is perfectly clear that no additional capital can be safely invested in electric railway securities" (Hurley, 589).

See, also, Taylor, 838; Jenks, 2664; Baker (quoting Tom L. Johnson), 2906; Kutz, 3046; Nixon, 2735-2738; Cooke, 4940; Culkins, 1369; Jackson, 4128, 4129; Babcock, 5507; Eastman, 6024.

The importance of a wide degree of latitude in the matter of the adjustment of fares to meet new conditions caused by higher price levels, should be recognized. The problem of fares is the problem of finding a rate, or rates, which will produce at the same time the maximum of riding and the maximum of revenue. This has not yet been found and its discovery can come only from experimentation. "This industry, in other words, has to organize itself, and in that process of reorganization, it has to have a chance to thresh around, to try a lot of experiments just as is being done everywhere—put in a rate and if it does not work, take it out and put another in, because it is only by these experiments that we are ever going to get the information which is necessary to work out a solution" (Conway, 2783).

See, also, Mortimer, 2337, 2339; Conway, 2753; Baker, 2974; Babson, 3072, 3073; Loring, 4804, 4781; Nash, 1919.

(3) ADEQUATE RESERVES.

The cost of money used by public utilities will decrease as the likelihood of lapses in the payment of return decreases. Halford Erickson, former Chairman of the Wisconsin Railroad Commission and an economist of note, testified that "the cost of capital in the utility field is measured not by the income basis upon which the securities are selling, but * * * by what you must have in the way of net earnings behind the securities in order that they may sell on a normal basis" (2804).

Careful investors in bonds make it a rule to require earnings, after the payment of operating expenses and taxes, of twice the amount of the fixed charges, in order that their bonds may be protected.

This protection from lapse in payment can be afforded by a combination of two methods, first the provision for the automatic fixing of fares to meet costs, and the accumulation of such a surplus or reserve as will permit the payment of return during this period of readjustment. The general endorsement of the State Commission form of regulation by witnesses before the Commission referred to on page 136 of this brief, is in many instances qualified by the objection arising from delays in Commission decisions.

See Nash, 1344; Hedges, 1529; Mortimer, 2190, 2203, 2209; Foss, 2304; Quackenbush, 2359, 2360, 2361, 2363; Sisson, 922, 1012; Tingley, 1080; Henry, 1295; Carr, 2447; Schaddelee, 2473, 2476, 2494, 2499; H. C. Clark, 2613; Jenks, 2660; Conway, 2756; Erickson, 2881.

Whatever may be the cause of such delays and however unavoidable they may be, they result in a loss of income to the companies during the period between application for increased rates and the time at which they may be granted. In an industry the returns in which are limited, this acts to deprive the investor of his just return during greater or lesser periods and so adds to the cost of capital and lessens the industry's credit.

For the establishment of credit on a basis which will attract capital at its lowest costs, fares must be automatically regulated so as to do away with such delays, and there must be further protection afforded by a sufficient reserve fund to take up the slack and insure continuity of return. As Professor Cooley so well defined them (§12) such reserves are in reality "surge" tanks, which insure an even flow of return and prevent violent agitation in the financial affairs of public utilities.

In the private operation of public utilities, the communities seek not only private funds, but that initiative, enterprise and vigilance in guarding the interests of the undertaking, which experience shows is present in greater degree than under direct public operation. It is these qualities that determine the success or failure of purely private undertakings. They have a distinct and concrete value, and if enlisted in the public service, must be given a reward. They attach to the investment and cannot be satisfactorily or profitably detached therefrom. In private business their usefulness and their degree of efficiency may be deduced from the annual balance sheet of the business. Their reward is then determined by the statement of profit and loss, and if they are to be enlisted in the public service, their reward must be similarly determined. Being necessary to the successful conduct of public utilities conducted by private enterprise, provision for their remuneration must be made in the rate of return since they should be an accompaniment of investment.

The problem presented is to secure a measure by which their reward shall be determined. Undoubtedly this is to be found in efficiency of operation. **It is not, however, apparent that at the present time efficiency of operation can be determined by the rate of fare in effect, nor by the cost of operation.** If the costs of operation and conditions of operation were stabilized, so as to permit the setting up of standards, not for the industry, which will always be impossible but for particular properties, it might be possible to base reward on either rate of fare or cost of operation. At the present time there is no prospect that standards of this kind can be created. It, therefore, seems evident that the reward must be given by an addition to the return over and above what the actual cost of the needed money may be if it were not to be accompanied by the initiative, enterprise and vigilance which is sought.

Practically, this may be arrived at by a proper division in the nature of the securities authorized as between secured debt and shares. The secured debt may be assured a fixed return while the shares may be assured a fixed return and *permitted* a higher return, the limit of such higher return to be agreed upon.

See H. C. Clark, 2590; Robinson, 5540, 5549, 5569; Maltbie, 6074.

From the principles governing the attraction of new capital into the industry, may be deduced those which should govern the investment already made in electric railway properties " * * * rates should be determined not by ancient history but by what is devoted to the public use " (Quackenbush, 2413).

The ascertainment of investment by methods governed by the right of the investor to receive back his investment undiminished, at the expiration of the period of public use, and his entitlement to a fair return for its use in the public service during the period of its investment, must be the foundation of readjustment. This determination having been made, the investment found must be accorded the same treatment as is necessary to attract new capital to the business.

(4) PUBLIC CO-OPERATION.

Legal protection of electric railway investment is inadequate unless there be recognition by both the private enterprise and the public of the mutual obligations underlying satisfactory relations between the two parties at interest. This is equally important to both the public and to the utility. Speaking from the public standpoint, Secretary Baker said to your Commission: "No street railway settlement can be successful which is not understood in its details and approved by the people" (2927). Speaking from the investors' standpoint, Francis H. Sisson, vice-president of one of the largest banks in the country, declared that "It is certain that unless there is a widespread change in public attitude towards public utilities, the security buyer will not hazard his money in such ventures" (913). "There has got to be a basic principle underlying the relation between a community which is served by an electric railway and those who are interested in this property, and that has got to be simply one of fair dealing," is the statement of Frank J. Sprague (2151).

The success of such modern systems of relations as were described before the Commission was ascribed to the co-operation that prevailed between the public and the utility. "Confidence between the people and the company is the keynote of our success," said President John J. Stanley, describing the Cleveland situation (1695). "A considerable proportion of the success of the company can be attributed to the good will of the public," said C. J. Joyce, in behalf of President T. E. Mitten, of the Philadelphia Rapid Transit Company (4551). W. C. Culkins spoke similarly for the Cincinnati plan, while Secretary Baker summed up the direct effect of public co-operation on operating costs in these words: "In the rehabilitation of property and in making of extensions and new additions to street railway properties and in the purchase of equipment the throwing away of equipment before it is really obsolete when it has simply ceased to be pleasant as a matter of taste, and all that sort of thing, that all that is wasteful adds to the general burden which in the last analysis gets back to the car rider" (2981).

See also Culkins, 1392, 1402; Hedges, 1523; Newman, 1609; Stanley, 1689; Nash, 1891-1892; Head, 1794; Schaddellee, 2491; Baker, 2938, 2966; Kutz, 5054; Higgins, 3229; Ainex, 4044; Walsh, 4303, 4304, 4305; Loring, 4824; Beeler, 4858; Cooke, 4911; Babcock, 5595.

The degree of co-operation necessary for the successful private operation of electric railways must be based,

First—upon such degree of public control and regulation as will permit of public supervision over the affairs of the utility, and,

Second—upon complete and continuing publicity as to these affairs.

It is necessary, in the first place, to establish in the public mind the proper concept of the nature of public service performed by private enterprise, and, in the second place, to keep that concept clear. This concept seems to be that the service being used by the public, *all* of its costs are paid for by the public, and that of these costs the investors are receiving no more than is necessary to secure for the public the capital which they furnish and the service which they perform.

The establishment and maintenance of this relationship between private enterprise and the public is the duty of the public authorities, and will depend in a large measure upon their devotion to their duty and their faithfulness to their oaths of office.

(B) Methods of Adjusting Revenues to Meet Expenses.

If the electric railway is to be kept going and growing it is obvious that the revenues must equal the full cost of service, including the necessary cost or return on money invested. Both ends must meet; either revenues must be increased or expenses reduced. Both methods require the permission and co-

operation of the public. The possibilities and limitations of such methods form the practical aspect of the problem which exists irrespective of whatever agency—private or public—may render the service.

(1) INCREASE IN REVENUE.

The desirable kind of increase in revenue comes from *increased patronage rather than increased fares*, as it is the volume of revenue that must meet the volume of cost of service. The methods discussed before the Commission and the experiences under each method may be summarized under suitable headings.

(a) *Increase in Flat Rate.*

An increase in the existing unit rate of fare is the obvious method of providing relief promptly. It was so recommended as the *immediate* solution by a large number of witnesses.

Taft, 6; Tripp, 542; Hurley, 588; Bradlee, 636; Cooley, 810, 820-1; George, 871, 873; Sisson, 1013; Tingley, 1092; Barry, 1128; Storrs, 1294, 1295; Hedges, 1495, 1533; Bertron, 1544; Newman, 1601; Ferguson, 1673; Shoup, 1731; Fagan, 1752; Bullock, 1833; Foss, 2300-2323, 2324; Mortimer, 2356-2357; Quackenbush, 2388-2389; Carr, 2444; Schaddelee, 2480, 2515; Insull, 2544; Creed, 2557, 2560, 2562; Clarke, 2589, 2641; McKinley, 2707; Conway, 2756, 2776, 2779, 2788; Babson, 3119-3131; Higgins, 3227; McFarland, 3910;

but recognized as *not* providing a *permanent* solution to the problem.

"Permission to increase the fare on the basis of the present relationship is entirely inadequate. That does not solve the problem. The problem is one which requires a sound basis upon which to rest, but which permits of different solutions in different localities" (Tripp, 458). (See also 475 and 488.)

Increase in fares "should be recognized as a temporary expedient pending a valuation of properties and the granting of a fair return on that valuation by some elastic, easily adjustable, automatic system, and that is what I think should be striven for" (Bertron, 1544).

"Present conditions are such that emergency relief has to be granted, * * * we will have to go through a two year experimental period. We may have to change from a flat form of fares to a distance tariff plan. In any event, if we are going to commercialize the business we have to be placed in a position where we can manufacture our product, namely, seat miles, at the lowest possible cost, and then be accorded the necessary freedom to sell those seat miles to our customers" (Mortimer, 2336, 2337).

"A simple remedy" (in the present emergency), "is to increase your flat unit of fare, and that, I think, is what the industry will have to do, * * * Whether that will solve the question is a far more serious matter" (Conway, 2776).

"The only solution is to raise rates of fare to a point where street railways can live and until some scheme of premiumizing good management and economical operation can be devised" (Doherty, 1162).

"I would recommend an increase in fare * * * to fix them up so they can keep on serving the public. That will give ample time to make investigation of the actual needs of the different companies. An increase in fare alone would be in the nature of a palliative" (Cooley, 810, 811). (See also recommendations of Secretary Baker, 3001, 3; and Wilcox, 3551.)

A summary of the cities in which fares have been increased, revised to August 9, 1919, showing the name of city, population, company operating and date of increase, filed as an exhibit by the Association (4379) shows

Cities in which fares were increased to—	Number of cities.
10c.-----	39
9c.-----	1
8c.-----	13
7c.-----	99
6c.-----	180
5c. (reduced tickets abolished)-----	50

Where fares have already been increased a corresponding increase in revenue has not developed.

Taft, 12; Tripp, 475; Clark, 718; Cooley, 817; Fox, 3153; MacLeod, 4193.

In any increase in unit price there is a point where the law of diminishing returns will set in and there will be a loss of car riders (Taylor, 839; Culkins, 1372; Ingram, 3271). This definite practical limitation is defined by Conway as follows:

Ten per cent revenue increase in raise in fare from 5c. to 6c. instead of theoretical 20% (2763). 15%-25% revenue increase in raise in fare from 5c. to 7c. (2766).

Storrs states that with an increased fare over and above six cents there is an increasing loss in patronage (1326). Secretary Baker does not believe that a minimum rate of fare much over five cents is economically justifiable because the point of maximum return is then exceeded (2989-3006). Roger Babson concludes with reference to the Bay State experience that ten cents is the point of saturation (3124). Generalization in such estimates is admittedly difficult.

Storrs, 1249; Culkins, 1401; Conway, 2767.

While the hearings were in progress the Association gathered together data, at the request of the Commission, as to the effect of increased rates of fare on passenger revenues. A detailed tabulation of all returns received from member companies, to August 9, 1919, 125 in number, was submitted as an Exhibit (4379). This Exhibit shows the monthly increase in revenue as compared with the corresponding month of the previous year. The returns generally corroborate the testimony of several witnesses that the Fall and Winter of 1918-1919 were abnormal due to the influenza epidemic, population displacement because of the war and heatless holidays. Of the total, 74 comparisons relate entirely to urban business. The remainder are returns of either inter-urban or co-mingled urban and interurban business. Of the urban companies, 33 disclose increases in revenues commensurate with increases in the rate of fare. Of these 22 are companies where the fare has been increased from five cents to six cents; nine where the fare has been increased to five cents by the elimination of tickets; one where the five cent fare has been retained but an extra fare charged in an outer zone; and one where the five cent fare has been retained but a two cent charge made for transfer. There were no instances where an increase in rate of fare over six cents has resulted in a correspondingly large increase in revenue.

For detailed accounts of the experience with increased fares in many cities see Ford, 1020, 1027, 1033; Tingley, 1051, 1054-7, 1058-64, 1067-9, 1091; Culkins, 1375-5; Pellissier, 1475-8, 1479-81; Hedges, 1507-1509; Bertron, 1542-3; Stanley, 1689; Fagan, 1750-3; Henry, 2051, 2054, 2060, 2077-9; Foss, 2292-3; Creed, 2551-6, 2572; Conway, 2763-2784; Babson, 3124.

Many of the witnesses before the Commission, however, expressed the opinion that loss of patronage results from public resentment and voiced the belief that after antagonism wears away, patronage would not suffer.

Bradlee, 636; George, 882; Sisson, 925; Doherty, 1158-60; Storrs, 1326; Newman, 1632; Schaddelee, 2514; Ford, 1033-4, 1041; Pellissier, 1477-8.

Other disadvantages cited by witnesses are that high fares encourage walking and a considerable portion of short distance riders are driven away.

Tripp, 475; Storrs, 1295; Conway, 2769; Beeler, 4869;

that jitney competition is encouraged

Storrs, 1301-1317; Pellissier, 1481; Conway, 2770; Bauer, 4747;

and that there is an absence of convenience riding

Conway, 2773.

A comprehensive summary of both advantages and disadvantages of the increase in flat rate method is contained in the Legislative Report on the Rhode

Island Company cited in the Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions (35) :

"The principal advantages of the flat increase method are: Ease of collection of fare, both passenger and conductor readily understanding the principle involved; all passengers are treated alike; no change is made in the method of identifying passengers; existing fare limits are not disturbed; it has no tendency to restrict the spread of population to outlying districts, and it does not tend to encourage congestion.

"The principal disadvantages are: increased fare of all riders alike, exaggerates discrimination against short-haul passengers, tends to decrease short riding with consequent loss of the most profitable business, tends to increase jitney competition; advance over present rate could not be less than 20%; tends to discourage extension and expansion by the utility, requires making change for all passengers or a ticket system.

"It is the opinion of your Commission that a flat increase in the present fares would not prove satisfactory, that it would exaggerate the present inequalities and would not relieve the situation to any great extent. The five-cent fare limit in most cases admits of a length of ride entirely beyond what The Company can afford to furnish, and even if the fare were raised to six cents there would still be a considerable number of passengers carried at a loss" (Report of the Special Commission for the Investigation of the Affairs of The Rhode Island Co., March, 1918, page 55).

The Association through its President and Chairman of the Committee of One Hundred, has defined a proper scheme of fares as flexible and readily and automatically adjusted to the cost of service

Pardee, 187;

and elastic, subject to prompt readjustment to meet changed conditions of finance or operation

Tripp, 478, 488.

(b) *Zone System of Fares.*

The Exhibit introduced by the Association giving a summary of the cities in which fares have been increased, to date of August 9, 1919, discloses some form of zone fare in the following number of cities:

	Number of Cities.
Citizens in which fares were increased by Zone Plan of—	
(a) First Zone 1 mile 3c.; each additional zone of 1 mile 2c.; no transfers.....	17
(b) First Zone 2 miles 5c.; next zone 1¾ miles 5c.; each additional zone of 1½ miles 5c.; 1c. charge for transfer.....	5
(c) First Zone 5c.; outside zones 2c. or 2½c.....	6
(d) 6c. Zones.....	3
(e) 5c. outside city limits zone charge.....	3
	34

The consensus of opinion of witnesses before the commission was that a flat rate charge for short and long haul is unjust and that a zone system is proper from the standpoint of equity as Secretary Baker phrases it. " * * * I think it would be very much wiser to make the people who ride 14 miles pay 10 cents than everybody who rides half a block of the 14 miles pay seven cents" (3008).

Taft, 11, 12; Tripp, 476-178, 500; Cooley, 820; Sisson, 926, 934, 936-40; Ford, 1035; Doherty, 1162; Storrs, 1313; Shoup, 1732; Sprague, 2155, 2179; Mortimer, 2336, 2357; McKinley, 2706; Conway, 2776-2780; Kutz, 3040; Babson, 3124; Wilcox, 3610, 3646-49; Ainey, 4067; Nixon, 3748; D. C. Jackson, 4171; Walter Jackson, 4668; Beeler, 4888-94; Eastman, 6021-3.

The zone system is accused of leading to centralization or congestion of population and reduction in suburban values

Clark, 679; George, 899; Babson, 3125; Nixon, 3779-80; Walsh, 4312; Bauer, 4744.

but this argument is denied as contrary to fact.

Sisson, 936-40; Ford, 1022-6; Storrs, 1321-2; Mortimer, 2269; Walter Jackson, 4670-80.

In fact in Rhode Island the effect of the zone system has been to decentralize business and boom the outlying towns even at a time when traffic was falling off (Bliss, W. C., 3440-44). The economics of the situation are well stated by Secretary Baker.

"The immediate effect undoubtedly would be to cause people to move in the tenements in the cheap fare district. The next effect of it, however, is to decrease the rental value of outlying lands and then people find they can rent for as much less out there than they could downtown as the difference in the cost of the street railroad fare, so that the effect of it is to disperse the population" (3019).

Another disadvantage feared is that of popular opposition.

Cooley, 820; Kutz, 3631; Eastman, 6023.

This led to the abolition of the territorial preference plan in Pittsburgh,—(Babeock, 5529); and public demand for modification of the zone fare collection plan in Camden (Bleakly, 5910).

There seems to be no question that unlike the flat fare the zone system stimulates short distance riding. Beeler (4888) points out that where six to eight passengers per car mile are carried in this country, fifteen to twenty are carried in London. In fact, reports from Great Britain submitted by Secretary Ogburn complain that the short haul minimum fare passengers have a tendency to drive away those desiring to ride longer distances (5923, 5933).

"There are many different kinds of zone fares. It may be that the methods employed by some companies are not as equitable to the public as they might be but the zone system and the measured service principle are universally recognized abroad and seem to be giving the very best satisfaction there on lines that are doing a much greater volume of business than the lines are in this country" (Beeler, 4894).

Difficulties abroad appear to arise from disproportionately small initial half penny zones according to the report submitted by Secretary Ogburn. This was the difficulty found by the Special Commission for the Investigation of the Affairs of the Rhode Island Company, March, 1918, (55).

"The zone system proper, that is, a continuous series of short lengths of track approximately equal to each other with a small unit fare for each length or zone is not in use in this country on any urban or interurban electric railway. This system does not lend itself readily to the conditions existing in the United States. A modification of this system, however, consisting of a *flat five cent fare* for a comparatively large thickly settled area with zones outside of this area of approximately the same length with a unit fare based on mileage is somewhat extensively used on interurban roads. The zone system without modification is in the opinion of your Commission entirely unsuited to the conditions existing in Rhode Island, and therefore will not be considered further.

"A modification of the zone system as above outlined appears to offer the best method of solving the fare problem in the present case.

"The principal advantages of this modified system are: The charge approximates service received, reduces discrimination against short rides, has considerable flexibility, reduces number of passengers carried at a loss, affects only a part of the passengers and does not tend to reduce the number of short rides.

"The principal disadvantages are: Difficulty of identification of passengers and in the collection of fares; tendency to prevent spreading of population beyond five cent fare limit and consequent congestion; inconvenience to passengers required to pay several fares, and entirely new system of fare and fare collection with which both the public and conductors are not familiar.

"It is the opinion of your Commission that a modification of the zone system along the lines above referred to will produce the best results and operate more justly to all concerned than either of the systems without modification. It is also the opinion of your Commission that no bad sociological effects will follow the application of the proposed system; that inconvenience due to the change will be reduced to a minimum and that the charge for transportation will be as nearly proportionate to the cost of the service rendered as is practicable"—Cited in Exhibit, Electric Railways—Recommendations made by Investigating Committees and Commissions (71).

The same conclusion was reached by the Connecticut Investigation Commission April 1, 1919 (28).

"It is the conviction of this Commission, and it therefore suggests, that a carefully worked out zoning system, adapted to the varying local conditions, but *using the nickel as the unit of fares* for each such zone would prove from a practical and psychological standpoint a just and satisfactory means of increasing revenue, reducing loss, decreasing discontent and would impose upon the car rider only the just requirement of paying in proportion to what he receives in service."

There is practically unanimity among those witnesses who favor recognition of the factor of distance in transportation service for this type of zone system. As Secretary Baker states:

"I have never been able to get the difficulties of the zone-system—I think if you start with the 5-cent fare, if that is the necessary fare, and you charge another cent for riding an additional mile beyond the profitable limit, it is perfectly unobjectionable.

"Divide the territory not necessarily into two 3-cent zones, but into a five and a one, or a five and a two" (3017-18).

Retaining a five-cent central zone for such an area as five cents will buy transportation is also recommended by the following witnesses:

Sisson, 1001; Storrs, 1248; Pierce, 2520; D. C. Jackson, 4174-5; Beeler, 4887.

Wilcox, 3646-49, recommends a lower minimum fare than 5c. for a shorter ride.

Opinions differ as to what local conditions make a zone system plan feasible. Walter Jackson states that "ideal places for the zone system beginning with a rate to attract present walkers are such cities as Boston, Providence, New York, Philadelphia. Cities that are not of that type are San Diego and East St. Louis" (4670). The zone system is not recommended for Pittsburgh by Receivers Fagan (1754) and George (842-6); for New York by Commissioner Nixon (3748-9), or for Boston by Senator Walsh (4314).

(c) *Transfer Charges.*

According to the tabulation summarizing the cities in which fares have been increased to date, August 9, 1919, charges for transfers are being made in the following number of cities:

Cities in which fares were increased by charge for transfer:

	Number of cities.
(a) 1c. transfer and 6c. fare.....	3
(b) 1c. transfer and 5c. fare.....	1
(c) 2c. transfer and 5c. fare.....	5
	9

A three-cent charge is made for some transfers in Philadelphia, the number of three-cent exchange points being 580, the number of free transfer points 320 (Joyce, 4511). A two-cent charge for transfer is in effect in Brooklyn, New York, where franchises do not prevent it (Nixon, 3721).

In Commissioner Nixon's opinion transfers in New York should be universal and free (3746). This is also the opinion of Mayor Couzens of Detroit (3326). Secretary Mote, of the Indiana Commission, states a preference for a six-cent fare rather than an extra charge for transfers. The claim is made that such a charge is unfair in that it makes the cost of transportation disproportionately high for a large portion of the city's population who have to change lines but ride a less distance than many others, in the report of the General Committee of Fifty-five, known as the Tramway Adjustment Committee, appointed by the Mayor of Denver, Colo., adopted May 28, 1919 (15).

Secretary Baker on the other hand states emphatically:

"I believe that the literally free transfer is probably the worst practice, the worst difficulty that the street railroads have to deal with. The problem does not affect only street railroads, but it affects the riding public. The man who uses a fraudulent transfer does not hurt the street railroad as much as he hurts the other passengers who have to pay for carrying him" (2925).

The penny transfer is perfectly satisfactory to the people. "The Company performs an extra service for the man who rides on two of its cars rather than one. It stops for him twice instead of once; identifies him twice; all of its accident hazards are multiplied by his being on cars twice instead of once. It provides extra service for him, so that the discrimination between the transfer and nontransfer is a sound discrimination" (2951, 2952).

Both sides of the question are stated by the Rhode Island Special Commission.

"There is considerable difference of opinion as to the advisability of a charge for transfers, some claiming that the free transfer unduly extends the length of ride for the original fare, and also that even if the ride is comparatively short an extra stop and start are required as well as twice the equipment used by a passenger in a continuous ride. On the other hand, if a charge is made for transfers, there is immediately a demand for through service which may be perfectly just, but which if granted would seriously interfere with economical or convenient routing. A free transfer tends to equalize the charge between different sections within the transfer limits, encourages the spreading out of the population and does not encourage congestion. There is no general rule which may be applied to all cases; each transfer question must be determined according to the peculiar circumstances relating to it"—Report of the Special Commission for the Investigation of the Affairs of The Rhode Island Company, March, 1918 (55).

Questioning of witnesses as to the effect of charges for transfers brought out the following information: A charge of one cent for transfer with rebate did not work well in Indianapolis (Mote, 3218). A one cent charge for transfer will usually yield from three per cent. to five per cent. additional revenue (Beeler, 4869). The effect of a two cent charge for a transfer in New York City on surface lines would divert much traffic to rapid transit lines (Hedges, 1506). In Washington a two cent charge for transfer within and between companies resulted in a 25 per cent. deduction in the use of transfers (Kutz, 3030).

(d) *Introduction of Electric Railway Express.*

Increase in the usefulness of present investment to the development of express and freight traffic is one of the suggestions or remedies advocated by Commissioner Eastman (6001-2). Needless to say, this proposal will require prompt co-operation of municipal authorities. Such a recommendation was made by the Street Railway Investigation Commission of Massachusetts, February 1, 1918 (Senate No. 300).

"This Commission recommends that the authority to grant permits to street railways to become common carriers of newspapers, baggage, express matter and freight, now vested in the local authorities, shall be transferred to the Public Service Commission."

See also Exhibit—"Freight Haulage on Electric Railways, A. B. Cole." See also Exhibit "Memorandum—Freight Haulage on Electric Railways, Col. Joseph C. Bonner," in general answer to the Commission's inquiry in Questionnaire No. 168: "In what manner can general freight haulage on electric railways be conducted to supply the new revenues that will meet the present financial distress of such railroads and dispose satisfactorily at the same time the question of having an equitable and satisfying rate of fare that covers every angle and interest?" which contains some startling figures on the possibilities of electric freight.

(e) *Elimination of Dead Heads and Other Free Service.*

Suggestion for the elimination of non-paying passengers contained in the recommendations made by the General Committee of Fifty-five, known as the Tramway Adjustment Committee appointed by the Mayor of Denver, Col., May 28, 1919 (cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions, p. 4).

Free service is prohibited by many general regulatory statutes. The obligation to supply such free service, however, is provided in franchises antedating such regulations.

(2) DECREASE IN COST OF OPERATION.

Being a regulated industry the electric railway is much restricted in its scope of operation and the economy with which it may render service. Its routes and minimum headway are usually fixed by franchise. Its schedules and type of operation are usually fixed by ordinance or regulation. In some juris-

dictions every detail of service, including car design, is under specific regulation. Much of its service is standby. It must supply service when needed; it cannot postpone delivery. Most of its cost of operation is for labor, which it must pay by the hour and by the day. The criticism and commendation of efficiency of management before this Commission has accordingly been in very general terms. To be sure, there is room for scientific management in the shops and in the office. The detailed operating expense statement for the industry (2709) shows how small a part of total cost these expenses comprise. Regard for safety and honesty will also yield returns but these also fall in a minor category. **By far the greater part of the cost of operation of a street railway is now beyond the control of the management.**

How, then, may operating cost be reduced? Certainly little opportunity lies in the direction of a minimum standard of comfort for labor, with its claims of a \$2,000 annual minimum wage. It must lie in the elimination of every burden and restriction that is foreign to the business.

(a) *Elimination of Non-Profitable Lines.*

It is generally recognized that the operation of suburban extensions by urban companies and similar methods of operation have a severe strain upon urban systems (MacLeod 4182-4). Crosstown lines are in the same position. They are a public convenience rather than self-sustaining parts of the transportation system.

Beeler suggests (4849) the discontinuance of such non-essential non-paying lines, especially those closely paralleled by other service, stating that they may be profitably abandoned or run as shuttle lines with one-man cars. Loring (4779) points out that the discontinuance of lines is a feature of growing importance. Secretary Baker (2996) suggests "If the railway cannot earn enough, discontinue the lines. If two lines make only enough to support one, operate one and discontinue the other, upon agreement with the people as to which."

It is only by an abandonment of lines and discontinuance of service that it is possible to ascertain the measure of the social service rendered.

Abandonment of non-paying lines has been authorized in recent decisions of public service commissions. Red Belt Line Railway Corporation, New York Public Service Commission, First District, P. U. R. 1919D-56; *re* Exeter, Hampton & Amesbury St. Ry., New Hampshire Public Service Commission, P. U. R. 1919B-251; *re* Denver & Interurban Railroad Company, Colorado Public Utilities Commission, P. U. R. 1919A-435; *re* Fresno Interurban Railway Company, California Railroad Commission, P. U. R. 1919B-684.

It should be noted that the argument for the retention of such service proceeds on social rather than economic lines.

The report of the Street Railway Investigation Commission of Connecticut, April 1, 1919, pages 26-7, points out that "If these non-paying lines are abandoned, factories and tobacco plantations already established would in many cases have to be given up and the residents along the lines would face loss in value of property and increase in cost of obtaining the necessary help and supplies. To permit such a catastrophe seems to this Commission unjustifiable. * * * In such cases the Commission believes that before such abandonment the towns most vitally interested should be given the opportunity to purchase and operate such lines before operation is stopped." (Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions, p. 27.)

The Public Utilities Commission of Connecticut in City of Hartford "Six Cent Fare Case" March, 1918, points out "It is unquestionably true that in the street railway development of Connecticut, certain remote and isolated lines and extensions were built which are not and never have been self-supporting, but which are connected with and form a part of the respondent's present system, * * * the abandonment * * * would be a very serious loss to the territory thus served, and a step backward in the general development of the State." (Docket No. 2565, p. 25—Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions, p. 29.)

(b) *Elimination of Special Taxes.*

Attention is particularly directed to the testimony and report of Professor Bullock (1811 to 1887) on the taxation of street railways. Professor Bullock

concludes that the theory that public service corporations are in possession of a valuable franchise from which they derive large profits and ought therefore to be especially taxed, is untenable as affecting regulated public utilities. This conclusion conforms to that of the Committee of the National Tax Association. Where utilities are limited to a reasonable return upon the capital investment any special taxes upon them are shifted to the public and are a mere indirect method of taxation. Professor Bullock concludes that street railways ought to be taxed like similar enterprises under normal conditions (1828) but if a serious emergency exists which cannot be effectively remedied in other ways, relief from tax burdens is desirable. "Gross receipt taxes or any other kind of tax that other property does not pay" * * * is a "departure from the principle of equal taxation" * * * "which is not consistent with the theory of equal taxation" (1829).

The total payments for taxes and other contributions amounted in 1917 to 8.67 per cent. of the gross earnings. Professor Bullock states "This percentage would be moderate in the case of a business where the gross receipts, or annual turnover, amounted to two or three times the capital investment; but it is exceedingly heavy in an industry where there is a capital investment amounting to several dollars for every dollar of annual gross receipts." Taxes both in amount and in per cent. of operating revenues for various census periods are shown by Welsh, Chart C-122 (352-358) to have steadily risen. The per cent. of operating expenses paid for taxes in 1917 amounted to 10.11%. Z. W. Bliss, Tax Commissioner for Rhode Island, states that taxes of the Rhode Island companies total 12½ per cent. of the gross receipts and that the Public Utilities Commission has recommended that all of these taxes excepting the property tax assessed by the State, should be eliminated (3482).

There is almost complete unanimity among the witnesses that special franchise or license taxes should be done away with. Babson (3084) points out that taxation of monopolies is proper but in street railways the monopoly is gone. He recommends the removal of "restrictions, taxes and various forms of persecution" (3083). Beeler (4842) points out that franchises are liabilities and not assets. The abolition of the franchise tax was recommended by the Public Utilities Commission of Rhode Island (W. C. Bliss, 3414, 3452). Kutz points out (3039) that the elimination of the four per cent. gross earnings tax will probably make a five cent fare possible in Washington. Couzens (3348-9) sees no objection to relieving the companies "of some of the municipal charges like taxes, special percentages on gross revenue, paving burdens, etc., provided the community is to benefit in fares and improved service." Higgins (3228) states that trolley companies should be relieved of the burden of taxation, as much, if not more, than endowed colleges and other institutions of learning. Many of the advocates of municipal ownership recommend the abolition of ordinary taxes and the contribution through taxation of any deficits incurred in operation.

(c) *Elimination of Imposts.*

Under this heading may be classified payments by street railways for paving, snow removal, street cleaning, bridge tolls and contribution towards the cost of construction of public highways, bridges, etc.

It is generally conceded that the burden of paving is a relic of horse-car days.

A street railway company should not bear all the burden of paving. In the horse-car days, it was justified, but not now. It should rest on abutting owners or the whole community, and not on the car riders. A street railway put into any street very greatly enhances the value of the property and I think that enhancement ought to bear the burden (Secretary Baker, 2976).

Paving charges should be taxed to the community as a whole (Nixon, 3767-8).

Paving taxes should be abolished. They are out of date (MacFarland, 3954).

Paving requirements should be modified (Z. W. Bliss, 3485).

In some instances the charging of paving costs against the railways is a burden which in the public interest should be lifted (Ainey, 4084-4105-6).

It is an injustice to place upon the car riders the burden of paving streets which are actually used more by the owners of automobiles (Beeler, 4899).

In Pittsburgh the court has relieved the receivers of the railway company from the responsibility of paving charges and the obligation of sprinkling and cleaning portions of streets has been repudiated (Babcock, 5518).

"Municipalities should consider the possible suspension or elimination of numerous municipal burdens which are really indirect taxes upon the car riders" (Babcock, 5505).

In view of the present plight of street railways, it is entirely desirable that paying expense should be met by the entire community, rather than by the car riders, even though the presence of car tracks in streets increases the paving cost and upkeep (Eastman, 6044).

The maximum burden that the companies should have to pay, is the added cost of maintaining the paving due to the presence of the rails. Company should not be relieved of all paving charges (Maltbie, 6087).

The burdens of street paving, maintaining highways, bridges, etc., should be removed (Higgins, 3231).

"There is absolutely no moral or economic or physical reason for the paving costs" (Babson, 3076).

To make a street railway pay for paving is an old foggy way of accomplishing the purpose, but to state that all such things are to be wiped out without an equivalent of some kind would be most unfortunate (Cooke, 4935-6).

"Under municipal ownership, the paving charges could be shifted, as has been suggested, and even extensions could be built, in part at least, if not wholly, by special assessments of abutting property. That, again is a very difficult matter to do in the case of a privately owned railway" (Bemis, 6125).

Not only is there substantial argument for the relief of paving charges, but several of the witnesses are strongly in favor of assessing all the cost of street railway extensions against abutting property owners. Lawson Purdy, Tax Expert of New York, points out (6164-7) that "for more than 100 years the principle of paying for streets and street improvements by assessment of the property benefited has been applied to greater or less degree in the United States"; that "the same principle has been applied to the building of steam railroads even though the railroads were privately owned"; that the advantages of so paying for extensions of electric railways would be that extensions would not be constructed unless they were actually needed; and that by pursuing the policy wherever practicable of building electric railways by special assessments levied upon the property benefited, capital would steadily be diminished until ultimately the entire capital would be amortized and the railways thereafter can be run for rates sufficient to pay operating expenses and maintenances. The City Club of New York in a submitted pamphlet (6169) recommends meeting the future cost of subway extensions by means of assessments on the property benefited. Maltbie points out (6090) that special assessments for the building of extensions of electric railways is an idea worthy of attention and that there is nothing that will develop the value of property so much as the transportation system. Kutz (3064) believes that "all pipes and conduits and everything in the streets should be owned by the city and leased only by the utilities that need them." Walter Jackson (4630) believes that the right policy exists in Cleveland where the realty people pay for the railway extensions.

The admonition of Secretary Baker is particularly timely (2980): "I think if your commission were to point out the fact that in the rehabilitation of property and in the making of extensions and new additions to street railroad properties and the purchase of equipment, throwing away equipment before it was really obsolete, when it simply has ceased to be pleasant as a matter of taste and all that sort of thing, that all of that is wasteful and adds to the general burden which in the last analysis gets back to the car rider—now that sort of counsel of prudence to economy in reconstruction and rehabilitation and use of equipment and maintenance of property would, I think, be a very helpful thing to say to a great many communities of this country."

(3) ECONOMIES THROUGH PUBLIC CO-OPERATION.

It was the consensus of opinion of those who testified upon the success of the traction situation in Cleveland, that this was occasioned through the fullest co-operation of the City officials, public and the traction utility. Judge Fielder Sanders pointed out that the success of the Cleveland plan was due in addition to the exemption from bridge taxes, paving taxes, etc., to the development of the skip-stop, fast schedules and proper equipment (4250-2). Secretary Baker pointed out that the City of Cleveland co-operates with the railway company in keeping vehicles off the track and in the introduction of alternate stops and of trailer cars (3012). Dr. Bemis pointed out that "co-operation which

there has been in Cleveland between the City and the railway has effected many economies and prevented many costly attacks on the road, in excessive pavement charges or excessive awards by juries in damage cases and many other ways; permits for turnouts and curves and so on, which really are very beneficial often to the company, and which the city can give without much cost if it feels in a friendly attitude" (6131). Mortimer pointed out that Cleveland was the first city to adopt the skip-stop generally, and today maintains the highest speed of any surface electric railway in the country (5776-7). The Exhibit—*Cost of Passenger Transportation Service*—Doolittle, introduced by the Association, gives in Chapter 24, p. 381, a record of the changes in routing, termination of lines in center of the city, designated stops, increased schedule speed, decreased accident hazard, control of traffic, short routing, etc., in Cleveland, which have resulted "largely during the administration of Commissioner Peter Witt, from a degree of co-operation between the City Council, the public and the railway, which is unique in American cities and goes far to explain the unusually low costs in the conduct of the traction business in Cleveland."

(a) *Operating economies.*

Various operating economies requiring the sanction and cooperation of public authorities, have been suggested. These may be enumerated as follows:

First, One-Man Cars.

These have been strongly recommended by various witnesses as a device for saving labor, reducing headway, power, accidents and competition, and increasing speed and riding habit.

Wilcox, 3665-9; Walter Jackson, 4650-60; MacLeod, 4225; Loring, 4805; Beeler, 4868, 4901-6; Bemis, 6124; Higgins, 3247; Mote, 3254; Eastman, 6000; Fox, 3158.

The use of one-man cars is also recommended in the report of Dr. Adam Shortt, British Columbia Elec. Ry., November 5, 1917 (40-41), and the report of the Special Commission for the Investigation of the Affairs of The Rhode Island Company, March, 1918—(Engineer's Report, 28), both of which are cited in the Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions (54). The latter report concludes:

"One-man cars for city service are now in use by more than 75 systems in the United States. Cars operated by one man have been used for many years where short stub lines were operated in connection with other lines. The new development, however, is for cars to give more frequent service, at less cost, on properly chosen city lines where traffic conditions are favorable. * * *

"The public has been accustomed for so many years to seeing two men in charge of a street car that its first impression is to deem one-man operation unsafe. As a matter of fact, one-man operation has proved more safe than two men operation where the boarding of and alighting from cars takes place on the rear platform out of the vision of the motorman. * * * With a sharing of a part of the saving by granting increased wages to the single operator enthusiastic co-operation has been met with from employes. On systems where both one man and two men operation are in effect there is a waiting list for rights to the one man operation runs. * * *

"We believe that the conditions on The Rhode Island Company warrant the introduction of one man service on a considerable number of lines."

Second, Turn-Backs.

"Short timing and turn-back service will permit the accommodation of twice as many people during the rush as where all cars are run through irrespective of the length of line" (Beeler, 4848).

Third, Skip-Stops.

Application of the skip-stop insures a quicker journey and more comfortable journey and at the same time leads to a considerable saving in power (Beeler, 4855-6).

Skip-stops have been recommended by

Sanders, 4250-2; Joyce, 4490; Bemis, 6124; Maltbie, 6088; Hanson, 3293; Eastman, 6000; and where service is frequent by Wilcox, 3667.

See also approval in following reports:

- Report of Robert P. Woods, City's Member, Board of Control, Kansas City Railways Company, Fourth Year ending July 7, 1918, 176-7.
- Report of the Special Commission for the Investigation of the Affairs of the Rhode Island Co., March, 1918, Engineer's Report, 25.
- *Report of Dr. Adam Shortt, British Columbia Elec. Ry., November 5, 1917, 41-42.
- Street Railways in the District of Columbia—65th Congress—2d Session, Senate Document No. 197, March 8, 1918, p. 63-66. Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions (67-8).

Fourth, Rerouting.

It is of the utmost importance that the lines provide the shortest, quickest and most convenient routes. Through-routing to prevent over-lapping service reduces expense and congestion (Beeler, 4848).

Rerouting has been recommended by the Public Utilities Commission of Rhode Island (W. C. Bliss, 3414) and by the Street Railway Investigation Commission of Massachusetts, February 1, 1918 (48-54—Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions (22-23).

Fifth, Loading Devices.

These have been recommended by Walter Jackson, 4646; Joyce, 4487.

Sixth, Trailer Operation.

The trailer is also a one-man car and it is light and does not add a great deal to the peak load on the power station and on lines where travel is very heavy and stops fairly long apart, the trailer operation is ideal (Beeler, 4907-8).

Seventh, Honest Collection of Fares and Fare Registering Devices.

These are recommended by Eastman, 6001; Bemis, 6124.

Eighth, Double Deck Cars.

These are recommended by Walter Jackson, 4725.

Ninth, Lighter Cars.

These are recommended by Wilcox, 3619; Eastman, 6000.

Tenth, Keeping Street Car Tracks Cleared of Traffic.

This is recommended by Wilcox, 3667; Eastman, 6004; Beeler, 4857.

Eleventh, Elimination of Street Congestion Due to Parking of Motor Cars on Curb.

This is recommended by Ole Hanson, 3293.

Twelfth, Assistance in Staggering School and Shopping Hours.

This is recommended by Ole Hanson, 3293.

(b) *Regulation of Vehicular Traffic.*

It is likewise the consensus of opinion that regulation of motor bus competition is proper, that operating requirements should be no less onerous than those imposed on street railways.

- Note, 3219-20; Babson, 3115; Higgins, 3227; Aincy, 4074; Beeler, 4857-8.

See also

- Report of the Street Railway Investigation Commission of Connecticut, April 1, 1919, 24-25.
- Report of the Street Railway Investigation Commission of Massachusetts, February 1, 1918 (48-54). Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions (22-23).

and that there is a field for the motor bus in furnishing service supplementary to the street railway.

- Walter Jackson, 4725; Wilcox, 3614; D. C. Jackson, 4147.

See also

Report of the Street Railway Investigation Commission of Massachusetts, February 1, 1918 (48-54). Cited in Exhibit—Electric Railways—Recommendations made by Investigating Committees and Commissions (22-23).

Wilcox points out (3616) that under municipal ownership jitney competition should be prohibited.

(c) *Prompt Action by Public Authorities.*

Such a practical program of rehabilitation is only possible by prompt public cooperation. Homer Loring (4804) states "unless the Commissions are urged to be broad minded about permitting experimenting in fares, I do not see how the Companies are going to find the real road to their salvation." There has been complaint that the action of regulating officials has been needlessly slow and that prompt action is essential.

Higgins, 3229; Sisson, 1012; Nash, 1344; Mortimer, 2269; Quackenbush, 2359; Schaddelee, 2476; Henry, 1995-6.

Henry L. Doherty (1169) states "We have not been hurt so much by Public Utility Commissions even where they have shown their teeth. * * * but we have often been intensely hurt by delay." Conway points out that delays may be obviated where regulatory laws such as those existing in Pennsylvania and Connecticut permit electric railways to initiate rates of fares, giving Commission full power of review (2752).

(C) Plans for Regulating the Relations Between Communities and Privately Operated Local Transportation Utilities.

A number of specific plans for the maintenance of correct relations between local transportation utilities and the public were discussed by witnesses before the Commission. Those which related to privately operated utilities were:

- 1—The indeterminate franchise.
- 2—Regulation through competition.
- 3—State control and regulation.
- 4—Community control and regulation.
- 5—"Service-at-cost" agreements.
- 6—Public participation in profits.
- 7—Public subsidies or guarantees.

(1) THE INDETERMINATE FRANCHISE.

If private enterprise is to continue in public service these various plans and theories must be considered in the light of the principles governing the establishment and maintenance of credit, as discussed under IV. (A) (page 90 and following), both as they affect the legal protection of the investment and the public attitude towards it.

As previously stated, the foundation stone of the relations between the communities and the companies must be the legal authority under which they are permitted to conduct business. Since in practically all States the localities alone have the power to permit the use of highways by electric railways, this primary authority is the franchise, grant or agreement containing the requisite permit.

The "Indeterminate" franchise or permit, provides for the termination of the authority solely upon the purchase by the community, or by a grantee of the community. It has been previously discussed in this brief (p. 36) and was generally approved by all witnesses. It is unnecessary to here discuss it further.

(2) REGULATION THROUGH COMPETITION.

The principal reason for the public control and regulation of public utilities is their monopolistic character. Competition which regulates both price and quality in other kinds of business has until recently been considered, theoretically, to have been absent so far as city transportation service was concerned. Practically, this, of course, has never been entirely true, first, because it has always been possible for a large proportion of the patrons of street railway service to walk, and second, because the competition of other forms of transportation (horse drawn vehicles, buses, hacks, in some cases steam roads) has

not been eliminated. Latterly, owing to the development of motor transport, competition of an exceedingly strenuous character has been encountered.

This competition has led to the suggestion that the control of rates and service exercised over street railway systems be entirely removed and that these utilities be allowed entire freedom of action, so that there may be a test of the comparative merits of transportation on rails and transportation on tires,—the fittest to survive (Babson, 3072-3073). It may be pointed out in connection with this proposal, that it is the almost universal testimony that both systems cannot exist at the same time,—that one or the other must eventually perish. If this is true, the survivor would either be left possessed of an unregulated monopoly, or would once more be subjected to the same regulation that now exists, but with an additional burden of debt caused by the cost of waging the competitive war proposed, which debt would be unrepresented in the actual property devoted to the public service, but upon which it would be necessary, in order to maintain the company's credit, and consequently its service, to allow a return. **Unrestricted competition has enormously increased the cost of steam railroad service. It would eventually enormously increase the cost of street railway transportation.** It is to be presumed that a method so revolutionary as that proposed by Mr. Babson, will not, if for no other reason than the unlikelihood of its general adoption, be recommended by the Commission.

(3) STATE OR LOCAL REGULATION.

Authority to regulate local transportation service, is a part of the police power which resides in the State alone. For a political subdivision of the State to exercise any part of this power requires express delegation by the State, acting through its sovereign legislature. Such delegation has in many instances been made, and may, in all instances readily be made, so that the question to be decided by this Commission in framing its recommendations, is largely one of expediency.

The arguments for State and local regulation may be thus summarized:

For State Control.—Theoretically that it is removed from the influence of community prejudice, and is certain to be exercised from a more judicial standpoint and with greater equity to both the communities and the companies; practically, it is in most instances more economical and more efficient, since the State can create a better and more comprehensive organization for regulation at less cost. State control obviates the conflict of authority between communities that is bound to obtain when utilities operate beyond the limits of a single municipality. It makes unnecessary the erection of metropolitan or public utility districts in order to secure uniform regulation.

The theory of State regulation was subscribed to by the following witnesses—Tripp, 195, with reservations 536; Stuart, 572; Storrs, 1290; W. J. Clark, 715; George, 876; Warren, for the American Electric Railway Association, 891; Sisson, 968; Ford, 1037; Tingley, 1079; Mortimer, 2208, 2255; Carr, 2441; Creed, 2564; H. C. Clark, 2607; Jenks, 2719; Conway, 2786; Erickson, 2807, 2829; Mote, 3197; Higgins, 3238; Hall, 4006; Eastman, 6025.

For Local Control.—Theoretically, that "the electric railway problem is of purely local concern," Baker (2958), and that the public which receives and pays for the service should be permitted to control and regulate it; that the cooperation between the communities and the companies, which is universally admitted to be necessary to the most economical and efficient operation, can only be secured if the public interest in matters of management and operation is kept alive by participation in the control of the company affairs and cannot be secured if control and regulation is removed to a non-local commission; that public demands for unnecessary service, extensions and improvements can be kept at a minimum only by the public's intimate knowledge of the effect of such demands upon the rate of fare, such as comes from local control, and that public assent to economical operating practices and methods may only be secured in the same way. Practically that a regulating organization devoting itself exclusively to one property is bound to be more efficient than a regulating organization the interest of which is scattered among a large number of properties.

The theory of local regulation was subscribed to by the following witnesses: Stanley, 1703; Culkins, 136; Baker, 2017, 2958; Couzens, 3332-3335; Sidlo, 4629; Babeoek, 5508.

The possibility of combining the best features of State and local regulation, through a division of powers and duties was suggested by several witnesses. Such a system already exists in Rhode Island, where, as explained by Chairman William C. Bliss, of the Rhode Island Commission, the municipalities have primary regulation of franchises, rules and regulations, routing of cars, et cetera; the companies being given the right of appeal to the State Commission. Mr. Bliss declared himself to be in favor of such a system stating his belief that "it is desirable to have local or municipal control in the first instance especially in order to offset local opposition" (3403-3410).

John A. Beeler, another witness, suggested that the State Commission might control rates, service and accounting, leaving a degree of control with the municipalities and expressed his belief that there would be no difference in effectiveness between such a plan and regulation under service at cost (4886).

See also Taft, 47.

That the answer to the question of State or local regulation depends upon the size of the community as it affects ability to provide the necessary machinery of regulation is the opinion of Mr. Morris L. Cooke, who said: "I believe in building up a strong State Commission, but where a city is large enough to retain adequate technical advice, a good many matters in connection with the regulation of local utilities ought to be in the hands of municipal authorities" (4941-4942).

(4) SERVICE AT COST PLANS.

That service should be provided at cost, is not a new principle in the regulation of public utilities. It is back of all Public Service Commission regulation and expresses the reaction from the original contractual relations between utilities and communities, under which fares were fixed and limited while return was not. The application of the term "service at cost" to recent working agreements between electric railways and communities, does not clearly describe such agreements. They are, in effect, devices for automatically and quickly adjusting price to cost and embody a theory that is to-day almost universally subscribed to by both the public and the utilities.

It is, therefore, not so much the principle back of such plans, as it is the method provided for carrying that principle out, that concerns the Commission, in its consideration of this phase of the traction problem. Among the witnesses before the Commission there was no dissent as to the service at cost principle. Such objections as were put forward were aimed at the methods provided for making the principle effective.

Some of the objections raised to service at cost plans described to the Commission were:

No sufficient guarantee of the integrity of the property (Mortimer, 2256, 5703, and following); Tingley, 1082; referring to Cleveland Plan.

No sufficient provision for flexibility in rate of return (Mortimer, 2256).

"Lack of stimulus to the operators to operate economically" (Baker, 2928), referring to Cleveland Plan.

Failure to separate renewals and maintenance into separate funds (Baker, 2930); referring to Cleveland Plan.

Insufficient power to compel extension of lines (Sanders, 4253-4258); referring to Cleveland Plan.

Lack of power to control labor situation and so prevent strikes (Sanders, 4253-4258); referring to Cleveland Plan.

Limiting of fares to be charged (Head, 1893); referring to Dallas Plan.

Some of these defects occur in particular plans, and do not exist in others. Thus, while there is no stimulus to economy, such as Mr. Secretary Baker considers desirable, in the Cleveland Plan, some provision for this is made both in the Cincinnati and Montreal plans (see pamphlet "Recent Developments in Service at Cost Franchises for Utilities"—Nash, filed with Commission) which permit of further improvement and amplification. So also the complaint as to lack of flexibility in rate of return, has to an extent been taken care of in the Youngstown plan. This is true also of complaints as to the separation of renewals and maintenance funds, the limiting of rates of fare, and the power to compel extension of lines.

It is to be supposed that the Commission, should it favor service at cost, will not attempt to outline in detail any particular form of agreement, but that it

will render its opinion as to the practicability of embodying in such an agreement, or in the statute law, provisions which will carry into effect the service at cost principle. There is nothing in the testimony which the Commission has taken to indicate that it is impracticable to accomplish such an object.

The communities desire from the companies service; the companies desire from the communities an assurance or guarantee of the integrity of their investment and of an equitable and continuing rate of return. With this as a basis and with the experience under the plans already effective, it would seem entirely possible that the details of a plan to secure to each party at interest its reasonable demands, could be readily worked out. The statement of Mr. Secretary Baker confirms this belief. "Get the Council and the Board of Directors in the same room with all of the facts and all the figures and let everybody in the community understand what they are," he advised. "I believe that any community in America, will pay cheerfully and willingly whatever rate of fare is necessary to carry people on their street railroads and to maintain good service in their communities, if they are sure they are paying only proper operating expenses, proper maintenance and a proper return on capital" (2966).

The principle embodied in the service at cost plan was subscribed to by the following witnesses: Taft, 15; Tripp, 466; Bradlee, 623; Nash, 1343; Culkins, 1421; Draper, 1450; Cooley, 819; Sisson, 967; Bertron, 1566; Stanley, 1700; Head, 1793; Bullock, 1870; H. C. Clark, 2612; Newman, 1591; Higgins, 3231; Wilcox, 3609, 3628, 3631; Nixon, 3778; McFarland, 3952; Eastman, 6030; Maltbie, 6076; D. C. Jackson, 4134, 4135; Sanders, 4246, 4247; Sidlo, 4629; Beeler, 4882; Cooke, 4926; Bemis, 6129.

(5) PROFIT SHARING PLANS.

It is the modern theory of public utility service that it should be furnished to its patrons at the lowest cost consistent with proper service. This theory eliminates any idea of profits in the usual acceptance of the term. It limits the return to the owners to the lowest rate at which private capital and private enterprise may be secured. For the community to put into its treasury to be used for any purpose not connected with the operation of the railway, any part of the revenues, except general taxes paid by all business, earned by the railway, must mulct the car rider for the benefit of the tax payer. It is indirect taxation, and should be so considered whether it is collected in the form of special taxes and imposts, not levied against ordinary business, or whether it is appropriated from surplus receipts. The fairness or wisdom of this method of securing municipal revenue, involves, as has before been pointed out, consideration of social relations which is outside the province of this brief.

It should, however, be emphasized that this enforced contribution has an appreciable effect upon rates of fare and so tends to discourage the use of electric railway service with its attendant evils. The effect of the elimination of special taxes upon operation is discussed elsewhere in the brief and it is sufficient to point out at this time, that the retention by communities of any part of the surplus earnings of electric railways, must, under a system of fares adjusted to revenue have a similar effect.

There is nothing, however, in the theory of service at cost that interdicts a division of surplus as between the operators of the service and the users of the service. For the former such division should be regarded, not as a division of profits, but as reward for the enterprise which has been before defined as a combination of initiative and vigilance. For the latter it is a reduction in rates of fare, to which, under service at cost, he is entitled. It is this theory of profit sharing which received the endorsement of many witnesses before the Commission, and which, under IV, has, in this brief, been urged as one of the bases of credit under private ownership and operation.

See Taft, 20; Tripp, 467; Cooley, 816; Sisson, 955, 957; Doherty, 1169; Mortimer, 2262; Head, 1807 and before; Jenks, 2662; Baker, 2933; Babson, 3099.

(6) PUBLIC SUBSIDIES.

The question of the subsidization of local transportation service under private ownership and operation is a question as to the extent to which the service performed benefits the community as a whole. There is a wide range of opinion among the witnesses before the Committee. On the one hand, Mr. Ralph Bauer

declared that because of the "tremendous benefits accruing from the inter-communication afforded" riders should be carried free, the communities assuming the cost of the service (4742-4748), while, on the other hand, Mr. Secretary Baker stated that in his opinion it was proper neither to provide free service nor to meet deficits in income from operation (2993-2994).

The consensus of opinion, however, seems to favor a half-way position, namely, that where and when the cost of the service provided in the most economical manner is greater than the amount possible to collect from fares, and the social need for the service is such as to demand its continuance under such circumstances, the deficit in the cost of the service should be made up by taxation.

See Storrs, 1226, 1285; Nash, 1353; W. J. Clark, 653; Taylor, 839; Bullock, 1837; Foss, 2293, 2294, 2306, 2308; H. C. Clark, 2622; Conway, 2785; Bradlee, 643; Babson, 3098; Ingram, 3271; Couzens, 3314, 3348; W. C. Bliss, 3414, 3465, 3467; Burr, 3831; MacLeod, 4222, 4223; Walsh, 4271; Walter Jackson, 4637; Loring, 4809.

(D) Public Ownership.

It is not the purpose of the Committee of One Hundred to present arguments for or against the public ownership and operation of public utilities. It regards public ownership and operation as entirely possible and subscribes to the belief that in the settlement of the present problem the basis of the protection of the public should be the established right to, at any time, and with the minimum of disturbance to the service, take over existing utilities and operate them (See discussion of "authority to do business," p.).

A discussion of the comparative merits of public and private ownership must at this time be largely academic, for the reason that the testimony presented to the Commission showed that the obstacles in the way of the adoption of public ownership were such as to indicate for most communities a delay in the readjustment of conditions which would spell ruin for the industry and for the service.

There are two phases of the public ownership situation which have a direct bearing upon its application as a remedy to correct the conditions which called the Commission into being.

The first is the legal and financial difficulties to public ownership. (It was testified that in New York State at least three years would be required before the amendments to the Constitution necessary to permit public ownership could be enacted [Quackenbush, 2380]).

The second is the state of the public mind. In this connection the actual experience of the City of Detroit is of particular interest. Frederick F. Ingram, a witness before the Commission, testified (3261 and following), that although the general principle of public ownership of the city's street railway system was adopted by the city, through the votes of its citizens, in 1910, and frequent attempts had been made to put the plan into effect, every plan so far presented had been voted down by the electorate. This, as an indication of the public attitude, is illuminating. It is emphasized by the widely divergent views on the subject expressed by the witnesses before the Commission. There is no alignment which followed the connection of the witnesses with the existing utility companies. Those who favored public ownership can be classified as follows:

Public Utility Men—Bertron, 1545.
Publicists—Foss, 2285; Ingram, 3265; Wilcox, 3577, 3586; McFarland, 3915, 3916, 3917; M. M. Jackson, 4315, 4316; Bauer, 4768.
Public Officials—Couzens, 3305; Burr, 3793; Saunders, 4265.

Those not in favor of public ownership may be thus classified:

Public Utility Men—Hedges, 1514; Sisson, 971; Storrs, 1333; Newman, 1588; Pierce, 2523.
Publicists—Cooley, 833; DeBerard, 2528, 2539; Jenks, 2656; Conway, 2785; Sidlo, 4622.
Public Officers, or Former Public Officers—Taft, 12; Culkins, 1378, 1403; Carr, 2465; Kutz, 3045; Higgins, 3228; Loring, 4813.

In addition to those who directly favored or opposed public ownership and operation, certain witnesses gave it qualified assent. These may be classified as follows:

Public Officers—Nixon, 3728 (the ultimate, not the present, solution); MacLeod, 4226 (as a means of establishing credit); Babcock, 5508 (public ownership, but private operation); Eastman, 6007, 6028 (does not fear it, but sees no reason for change).
Publicists—Hall, 4006 (only as a preventive of "high finance" and "stock jobbing"); Walsh, 4307, 4309 (for the same reason); Cooke, 4912 (as a last resort); Bemis, 6126 (but would not have Commission recommend it).

It may be assumed that this divergence of opinion among the witnesses fairly reflects the present state of public opinion throughout the United States. If this be so, then it is evident that an extensive and long-drawn-out campaign of education is necessary before the people of the United States can be brought into such an attitude towards public ownership as will make it a workable solution of the traction problem. The business of the Commission and of the Committee of One Hundred is with the immediate crisis that confronts the industry and threatens collapse of service. The ills of the situation cannot be corrected by public ownership. Private ownership and management must continue for some time and, with provisions for readily and equitably changing to public ownership and operation, should it later be desirable, the recommendations of the Commission must necessarily deal with utilities, financed with private capital and managed by private enterprise.

IDENTIFICATION OF WITNESSES.

A.

AINEY, WILLIAM D. B., Chairman, Public Service Commission of Pennsylvania.
ARMOUR, J. OGDEN, Armour & Company, Chicago, Ill.

B.

BAKER, NEWTON D., Secretary of War. Former Mayor of Cleveland; City Solicitor under Mayor Johnson; active in settlement of Cleveland situation under Tayler grant.
BABCOCK, E. V., Mayor of Pittsburg.
BARSON, ROGER, Statistician, Economist, former Director Information and Educational Service U. S. Dept. Labor.
BARRY, JOHN G., Sales Manager, General Electric Co.
BAUER, R. S., Student of electric railways matters, Lynn, Mass.
BEASLEY, C. OSCAR, Representing the United Business Men's League of Philadelphia.
BEELER, JOHN A., Former General Manager Denver Tramway Co., Electric Railway and Traffic expert.
BEMIS, EDWARD W., Economist, Rate Expert.
BERTRON, SAMUEL R., Member of firm of Bertron, Griscom & Co., New York—Bankers interested in public utility securities.
BLEAKLY, EDWIN G. C., City Counsel, Camden, N. J.
BLISS, WILLIAM C., Chairman, Public Utilities Commission of Rhode Island.
BLISS, ZENAS W., Chairman, Tax Commission of Rhode Island.
BRADLEE, H. G., President, Stone and Webster Management Corporation in charge of the management of many street railways and other public utilities.
BULLOCK, CHARLES J., Former President National Tax Association, Advisor on taxation to Massachusetts Legislature; Professor of Economics, Harvard University.
Burr, WILLIAM P., Corporation Counsel, New York City.

C.

CARR, JAMES O., Former member Public Service Commission for the Second District of New York State, previously with the General Electric Company, and a manager of utilities.
CLARK, HARLOW C., Editor AERA, American Electric Railway Association, student of electric railway economies.

- CLARK, WILLIAM J., With the General Electric Company for 32 years, pioneer in electric railway industry; member Committee of National Civic Federation appointed to study municipal ownership abroad.
- CLAYTON, W., Vice-President, San Diego Electric Railway Co., San Diego, Cal.
- COOLEY, MORTIMER E., Dean College of Engineering and Architecture University of Michigan, Valuation authority; Past President American Society of Mechanical Engineers.
- CONWAY, THOMAS, JR., Professor of Finance, Wharton School of Finance, University of Pennsylvania; Economist; Advisor to electric railway companies in the matter of fare increases.
- CONNELL, ALEXANDER T., Mayor of Scranton, Pa.
- COOKE, MORRIS LLEWELLYN, Director Public Utilities Bureau; Former Director Public Works, City of Philadelphia; Made investigation of Philadelphia situation which led to formation of City Transit Commission.
- COUZENS, JAMES, Mayor of Detroit, Mich.
- CREED, W. E., Counsel, San Francisco-Oakland Terminal Railway, Oakland, Cal.
- CULKINS, W. C., Director of Street Railroads, Cincinnati, O. Former City Treasurer, former Secretary Chamber of Commerce, Newspaper man.
- CUMMIN, GAYLORD C., Representative, Institute for Public Service; former City Engineer, Dayton, O.; former City Manager, Jackson, Mich., Grand Rapids, Mich.

D.

- DE BERARD, FREDERICK, Director of Research, Merchants' Association of New York City, Publicist.
- DELBIDGE, C. L., Secretary, Citizens Referendum League, St. Louis, Mo.
- DOHERTY, HENRY L., President Henry L. Doherty Company, and Cities Service Co., operators of public utilities.
- DRAPER, WALTER H., Vice President, Cincinnati Traction Co., Cincinnati, O.

E.

- ENGLUND, A. H., Vice President, Electric Service Supplies Co. dealers in electric railway supplies and equipment.
- EASTMAN, JOSEPH B., Member Interstate Commerce Commission; former Member Massachusetts Public Service Commission.
- EDISON, THOMAS, Inventor.
- ERICKSON, HALFORD, Member Hagenah & Erickson, Public Utility Engineers, Chicago, Ill., former Chairman Wisconsin Railroad Commission, Economist.

F.

- FAGAN, CHARLES H., Receiver, Pittsburgh Railways Co., Lawyer.
- FERGUSON, CAREY, Business Agent, Detroit Division, A. A. of S. and E. R. A.
- FERGUSON, HOMER L., President, Chamber of Commerce of the United States, President, Newport News Shipbuilding and Dry Dock Co., Newport News, Va.
- FISHER, IRVING, Professor of Economics, Yale University monetary authority.
- FORD, A. H., Vice President and General Manager, Cumberland County Power and Light Co., Portland, Me.
- FORGAN, JAMES B., President, First National Bank, Chicago, Ill.
- FOSS, EUGENE N., Former Governor of Massachusetts; Manufacturer.
- FOX, JOHN P., Transit Expert; Student.

G.

- GEORGE, WILLIAM D., Receiver Pittsburg Railways Co., engaged in real estate business.
- GILLEN, CHARLES P., Mayor of Newark, N. J.

H.

- HALL, THOMAS L., Chairman Nebraska State Railway Commission.
- HANSON, OLE, Mayor of Seattle, Wash.
- HEDGES, JOB E., Receiver, New York Railways Co., Lawyer; Publicist.
- HEAD, W. B., Vice President, The Dallas Railway Co., Dallas, Texas.
- HEPBURN, A. BARTON, President, Chase National Bank, N. Y. City.

- HENRY, CHARLES L., President, Indianapolis and Cincinnati Traction Co., Indianapolis, Ind., pioneer in interurban electric railway construction and operation, former President, American Electric Railway Association; Lawyer and former Member of Congress.
- HEULINGS, WILLIAM H., JR., Vice President, J. G. Brill Company. Manufacturers of cars.
- HIGGINS, RICHARD T., Chairman, Connecticut Public Utilities Commission.
- HURLEY, EDWARD H., Chairman, United States Shipping Board.

I.

- INGRAM, F. F., Manufacturer, former member, Electric Light Commission, Detroit, Mich.
- INSULL, SAMUEL, Prominent public utility financier and operator, Trustee Chicago Elevated Railroads, President Middle West Utilities Co., President, American Public Service Co., Chicago, Ill.

J.

- JACKSON, DUGALD C., Professor of Electrical Engineering, Massachusetts Institute of Technology, electric railway expert; Author with David J. McGrath of *Street Railway Fares*.
- JACKSON, M. M., Lawyer, appeared as representative of James L. Key, Mayor of Atlanta.
- JACKSON, WALTER, Writer on Electric Railway Subjects; made for *Electric Railway Journal*, investigation of fare systems in Great Britain and Ireland.
- JENKS, JEREMIAH W., Economist, publicist; Advisor to United States Government; Financial advisor to Chinese Republic.
- JONES, STILES P., Newspaper writer, former Secretary, Municipal Voters League of Minneapolis; Expert for A. A. of S. and E. R. E.
- JOYCE, C. J., Formerly connected with Pennsylvania State Public Service Commission. Representing T. E. Mitten, President, Philadelphia Rapid Transit Co.

K.

- KELLOGG, CHARLES W., Engineer, connected with Stone and Webster, Chairman Committee on One Man Cars, American Electric Railway Transportation and Traffic Association.
- KINGSLEY, DARWIN P., President, New York Life Insurance Co.
- KUTZ, Lieut. Col. CHAS. W., Army Officer, Chairman Public Utilities Commission of District of Columbia.

L.

- LAMBERT, MYLES B., Assistant Manager Railway Dept. Westinghouse Electric and Mfg. Company.
- LAUCK, W. JETT, Economist, Advisor to Amalgamated Association of Street and Electric Ry. Employees, Former Secretary National War Labor Board.
- LORING, HOMER, Chairman, Board of State Trustees, Operating Eastern Massachusetts Street Railway Co., has previously made exhaustive investigation of street railway affairs.

M.

- MACLEOD, FREDERICK J., Chairman, Massachusetts Public Service Commission.
- MACFARLAND, GREENVILLE S., Lawyer, Boston.
- McKINLEY, WILLIAM B., President, Illinois Traction System, Member of Congress.
- MAGNUSSEN, LEIFUR, Economist, Bureau of Labor Statistics United States Department of Labor.
- MALTBIE, MILO R., Economist, franchise expert; former member New York Public Service Commission First District.
- MORTIMER, J. D., President, The North American Co., operators of electric railways.
- MOTE, CARL H., Secretary, Indiana Public Service Commission.

N.

- NASH, LUTHER R., Engineer and Writer, member of Staff of Stone and Webster for 24 years. Student of Service at Cost plans, and author of *Some Recent Developments in Service at Cost Franchises for Utilities*.
- NEWMAN, J. K., Banker, Engineer, Public Utility operator. Associated at one time or another with numerous street railway properties including those in New Orleans, St. Louis and Birmingham.
- NIXON, LEWIS, Commissioner in charge of regulation, First District Public Service Commission, New York.

O.

- OGBURN, CHARLTON W., Executive Secretary, Federal Electric Railways Commission.
- OGBURN, WILLIAM, Professor of Economics, Columbia University.

P.

- PARDEE, J. H., President, American Electric Railway Association; President, J. G. White Management Corporation.
- PELLISSIER, LOUIS, President, Holyoke Street Railway Co., Holyoke, Mass.; General Manager, Northampton Street Railway Co., Northampton, Mass.
- PIERCE, HENRY J., Former President, International Railway Co., Buffalo, New York; Netherlands Tramways Corporation, The Hague, Holland.
- PURDY, LAWSON, Tax expert, former Commissioner of Taxes, New York City.

Q.

- QUACKENBUSH, JAMES L., General Attorney, Interborough Rapid Transit Co., New York City, Former Corporation Counsel of Buffalo, N. Y.

R.

- RHEA, WILLIAM M., Financial Secretary, Division 268, A. A. of S. and E. R. E.
- ROBINSON, CHARLES K., Special City Solicitor, Pittsburgh.
- ROSENWALD, JULIUS, President, Sears, Roebuck & Co.
- RYAN, JOHN D., President, Anaconda Copper Co.

S.

- SANDERS, FIELDER, Street Railway Commissioner, Cleveland, O.
- SCHLADELEE, RICHARD, Vice-President and General Manager, United Light and Railway Co., Grand Rapids, Mich., operators of many public utilities including electric railways.
- SCHIFF, JACOB H., Kuhn, Loeb and Co., Bankers, New York City.
- SHOUP, PAUL, President, Pacific Electric Railway Co., Los Angeles, Cal.
- SIDLO, THOMAS L., Lawyer, Cleveland, O., former law partner Secretary Baker, student of electric railway situation.
- SISSON, FRANCIS H., Vice-President, Guaranty Trust Co., New York City.
- SMITH, GEORGE W., Actuary, Association of Life Insurance Presidents.
- SPRAGUE, FRANK J., Inventor and pioneer in electric railway construction; built first commercially successful electric railway; inventor multiple unit control; member Naval Advisory Board; Graduate United States Naval Academy.
- STANLEY, JOHN J., President, Cleveland Railway Co., Cleveland, O.; former President American Electric Railway Association.
- STUART, HAROLD L., President, Halsey, Stuart & Co., investment bankers, handling electric railway securities.
- STORRS, L. S., President, The Connecticut Company, New Haven, Conn., operating street railways in practically all large Connecticut cities.
- STURGIS, ARTHUR, Electrical Engineer, Expert for A. A. of S. and E. R. E.

T.

- TAFT, WILLIAM HOWARD, Former President of the United States; former Joint Chairman, National War Labor Board.

- TAYLOR, A. MERRITT, President, Philadelphia and Westchester Traction Co., former Transit Commissioner of City of Philadelphia, recently Manager Division Passenger Transportation & Housing, U. S. Shipping Board.
- THOMPSON, J. S., Vice-President, American Brakeshoe and Foundry Co., manufacturers of brake shoes.
- TINGLEY, C. L. S., Vice-President, American Railways Co., Philadelphia, which controls many public utilities.
- TRIPP, GUY E., Chairman, Committee of One Hundred, American Electric Railway Association; Chairman, Board of Directors, Westinghouse Electric and Mfg. Co.; recently Brigadier General in Ordnance Department, United States Army; formerly engineer, Stone and Webster; officer of many street railways; Director of Interborough Rapid-Transit Co.; has participated in the reorganization of several electric railway systems.

W.

- WALSH, JOHN J., State Senator, Massachusetts.
- WARREN, BENTLEY W., Counsel, Committee of One Hundred, American Electric Railway Association.
- WELSH, JAMES W., Special Engineer, American Electric Railway Association; formerly engineer with Pittsburgh Railways Co.; transportation engineer, Emergency Fleet Corporation.
- WESTINGHOUSE, H. H., President, Westinghouse Traction Brake Co.; President, Westinghouse Air Brake Co.
- WILCOX, DELOS F., Valuation Expert; former Water Supply Commissioner for New York City.

TABLES AND CHARTS PRESENTED BY THE AMERICAN ELECTRIC RAILWAY ASSOCIATION AND REFERRED TO IN THE TESTIMONY OF J. W. WELSH, VOLUME I.

[American Electric Railway Association, office of the secretary, 8 West Fortieth Street, New York, N. Y., June 27, 1919.]

Statement of income accounts and operating expenses of 345 companies. Income account for 12 months ending Dec. 31, 1918, compared with the 12 months ending Dec. 31, 1917.

Items follow Standard Classification of Accounts, Interstate Commerce Commission.	12 months ended Dec. 31, 1918.	12 months ended Dec. 31, 1917.	Increase or decrease, 1918 over 1917.	
			Amount.	Per cent.
Railway operating revenues (201).....	\$590,710,837	\$554,674,718	\$35,036,119	6.50
Railway operating expenses (213).....	\$426,082,146	\$361,315,721	\$64,766,425	17.93
Net operating revenue.....	\$164,628,691	\$193,358,997	¹ \$28,730,306	¹ 14.86
Net revenue from auxiliary operations (202 minus 214).....	\$16,917,673	\$15,563,861	\$1,353,812	8.70
Taxes railway operation (215).....	\$38,669,011	\$35,750,567	\$2,918,444	8.16
Operating income.....	\$142,877,353	\$173,172,291	¹ \$30,294,938	¹ 17.49
Nonoperating income (203 to 212).....	\$14,487,720	\$11,001,832	\$3,485,888	31.68
Gross income or loss.....	\$157,365,073	\$184,174,123	¹ \$26,809,050	¹ 14.56
Deductions from gross income (216 to 225).....	\$146,652,347	\$142,373,728	\$4,278,619	3.01
Net income or loss.....	\$10,712,726	\$41,800,395	¹ \$31,087,669	¹ 174.37
Total car mileage operated.....	1,654,319,023	1,722,369,093	¹ 68,050,070	¹ 3.95
Total passengers carried.....	11,969,256,764	12,187,434,043	¹ 218,177,279	1.79
Total miles of single track.....	32,570.21	32,476.64	93.57	0.29
Operating ratio.....	72.13 per cent.	63.14 per cent.		

¹ Decrease.

[American Electric Railway Association, 8 West Fortieth Street, New York City, July 8, 1919.]

CHART C-101.—*Growth of electric railways. (Based on United States census reports.)*

Year.	Source.	Miles of line.	Miles of single track.	Number of employees.	Number of passenger cars.
1890.....	(1)	5,783.47	8,123.02	70,764	32,505
1902.....	(1)	16,645.34	22,576.99	140,769	60,290
1907.....	(2)	25,547.19	34,381.51	221,429	70,016
1912.....	(2)	30,437.86	41,064.82	282,461	76,162
1917.....	(2)	32,547.58	44,835.37	294,826	79,914
1918.....	(2)	.....	44,949.50	.....	.....

¹ United States census reports, 1912, Table 4, page 184.

² Data sheet No. 186 (estimated).

² Advance report, Table 5.

Average per cent increase per year over previous census.

Year.	Miles of line.	Miles of single track.	Number of employees.	Number of passenger cars.
1902.....	15.6	14.8	8.2	7.1
1907.....	10.7	10.5	11.4	3.2
1912.....	3.8	3.9	5.5	1.8
1917.....	1.4	1.8	0.9	1.0
1918.....	.....	0.3	.....	.....

[American Electric Railway Association, 8 West Fortieth Street, New York City, July 8, 1919.]

(CHART C-102.—*Electric Railway traffic. (Based on United States Census Reports.)*)

	1890	1902	1907
Revenue car miles.....	¹ 383, 178, 085	² 1, 141, 430, 466	³ 1, 617, 731, 300
Average per cent increase per year over prior census.....		16.5	8.2
Riding habit.....	⁴ 32	⁴ 61	⁴ 85
Average per cent increase over prior census.....		90.6	39.2
Total passengers carried.....	⁵ ⁶ 2, 023, 010, 202	⁷ 5, 836, 615, 296	⁸ 9, 533, 080, 766
Average per cent increase per year over prior census.....		15.7	12.7
Revenue passengers.....	⁶ ⁶ 2, 023, 010, 202	⁷ 4, 774, 211, 904	⁸ 7, 411, 114, 508
Average per cent increase per year over prior census.....		11.3	11.2
Revenue passengers per car mile.....		² 4.26	³ 4.70
Average per cent increase per year over prior census.....			2.1

	1912	1917	1918
Revenue car miles.....	³ 1, 921, 620, 074	² 2, 130, 801, 530	³ 2, 051, 355, 569
Average per cent increase per year over prior census.....	3.7	2.2	^{6a} 4.1
Riding habit.....	⁴ 100	109	(¹)
Average per cent increase over prior census.....	17.6	9.0	
Total passengers carried.....	³ 12, 135, 341, 716	³ 14, 506, 914, 573	³ 14, 243, 415, 830
Average per cent increase per year over prior census.....	5.4	3.9	^{6a} 1.8
Revenue passengers.....	³ 9, 515, 554, 667	³ 11, 391, 660, 462	³ , ⁹ 11, 107, 864, 347
Average per cent increase per year over prior census.....	5.6	3.6	^{6a} 1.7
Revenue passengers per car mile.....	³ 5.06	³ 5.41	
Average per cent increase per year over prior census.....	1.5	1.4	

¹ U. S. C., 1907, page 33, text.² U. S. C., 1912, Table 156, page 293.³ Advance Report, Table 5.⁴ U. S. Census Reports, Advance Report, Table 11.⁵ Transfer and free passenger: not noted.^{6a} Decrease.⁶ U. S. C., 1902, Table 1, page 6.⁷ U. S. C., 1912, Table 156, page 292.⁸ Data Sheet No. 186 (est.).⁹ Estimated as 78 per cent of total passengers as estimated by American Electric Railway Association for 1918 census. Rates of revenue to total passengers (78 per cent) found to be practically constant for years 1917, 1912, and 1907.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

(CHART C-103.—*Income accounts of electric railways. (Based on United States Census Reports.)*)

	1902	1907	1912	1917	1918
Net operating revenue.....	¹ \$105, 241, 420	² \$155, 755, 655	² \$217, 295, 588	² \$228, 898, 958	³ \$192, 615, 567
Deductions from income.....	164, 516, 154	⁴ 118, 339, 114	⁴ 149, 895, 307	⁴ 175, 305, 761	³ 180, 382, 390
Net income.....	130, 596, 977	⁴ 40, 340, 286	⁴ 68, 139, 889	⁴ 56, 450, 930	³ 20, 183, 413
Taxes.....	113, 078, 899	⁴ 19, 755, 602	⁴ 35, 027, 965	⁴ 45, 756, 695	³ 49, 495, 354
Net revenue auxiliary operations.....		² 11, 122, 951	² 17, 319, 760	² 28, 331, 470	² 39, 790, 165

¹ United States Census Report 1912, Table 5, p. 186.² Advance Report Table 5, less Advance Report Table 162.³ Data sheet No. 185 (estimated).⁴ Advance Report Table 5.

[American Electric Railway Association, 8 West Fortieth Street, New York City, July 9, 1919.]

CHART C-107.—Riding habit. (Based on United States Census Reports.)

	Revenue passengers per inhabitant.	Number of revenue passengers carried.	Increase in revenue passengers per inhabitant over prior census.	Source.
1890.....	32	2,023,010,202	.....	(1)
1902.....	61	4,774,211,904	29	(1)
1907.....	85	7,441,114,508	24	(1)
1912.....	100	9,545,554,667	15	(1)
1917.....	109	11,301,660,462	9	(1)
1918.....	² 105	³ 11,107,894,347	43	

¹ Advance Report Table 11.

² Number of revenue passengers 1918 (above) divided by estimated population of United States July 1 1918.

³ Data sheet No. 185 (estimated).

⁴ Revenue passengers per inhabitant 1917 less 1918 (above).

[American Electric Railways Association, 8 West Fortieth Street, New York City.]

CHART C-110.—Operating revenues and expenses. (Based on United States Census Reports.)

	1890	1902	1907	1912	1917	1918
Taxes.....	¹ \$3,308,190	² \$13,078,899	³ \$19,755,602	³ \$35,027,965	³ \$45,756,695	⁴ \$49,496,334
Railway operating revenue.....	⁵ 90,617,211	² 247,553,999	³ 400,896,034	³ 535,996,122	³ 650,149,806	⁴ 691,131,682
Railway operating expense.....	¹ 62,011,185	² 140,123,844	³ 245,140,379	⁵ 318,700,534	⁶ 421,250,838	⁴ 498,516,115
Net operating revenue.....	^{1,2} 28,606,026	³ 107,430,155	^{3,6} 155,755,655	^{3,6} 217,295,588	^{3,6} 228,898,968	⁴ 192,615,567
Operating ratio.....	⁷ 68.4	^{2,2} 56.6 (Base.)	^{3,6} 61.1 (Base.)	^{3,6} 39.5 (Base.)	^{3,6} 64.9 (Base.)	⁴ 72.13 (Base.)

¹ United States Census, 1902, page 11, table 6.

² United States Census, 1912, page 186, table 5.

³ Advance report, table 5.

⁴ Estimate of 1918 Census for 345 companies, data sheet 185.

⁵ United States Census, 1902, page 10, text receipt and expenditures.

⁶ Advance report, table 162.

⁷ United States Census, 1912, page 6, table 1.

⁸ United States Census, 1912, page 311, table 162.

[American Electric Railways Association, 8 West Fortieth Street, New York City.]

CHART C-111.—Revenues and expenses of electric railways. (Based on United States Census Reports.)

	Cents per car mile.				
	1902	1907	1912	1917	1918
Railway operating revenue.....	1 21.63	1, 2 24.78	1, 2 27.89	2, 3 30.39	4 33.60
Railway operating expense.....	1, 3 12.25	1, 5 15.15	1, 5 16.51	2, 5 19.69	4 24.28
Net operating revenue.....	1, 3 9.38	1, 2, 5 9.63	1, 2, 5 11.30	2, 3, 5 10.70	4 9.39
Taxes.....	1, 2 1.20	1, 2 1.22	1, 2 1.82	2, 3 2.11	4 2.11

NOTE.—The above figures are based on the following sources:

¹ United States Census, 1912, page 186, table 5.

² Advance report, table 5.

³ United States Census, 1912, page 311, table 162.

⁴ Estimate of 1918 Census for 345 companies, data sheet 186.

⁵ Advance Report, table 162.

⁶ United States Census, Typed Advance Summary, released April 21, 1919

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-120.—*Income accounts in cents per car mile of electric railways based on average of monthly reports to American Electric Railway Association.*

	1916	1917	1918	1919, Jan. to Apr.
Operating revenue.....	29.43	30.87	34.00	37.63
Operating expenses.....	17.66	20.06	24.50	28.76
Net operating revenue.....	11.77	10.81	9.50	8.87
Taxes.....			2.45	2.49
Operating income.....			7.05	6.38
Operating ratio.....	60.01	64.98	72.08	76.43

1919 estimated on basis of 4 months.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-122.—*Taxes of electric railways. (Based on United States Census Reports.)*

[Chart No. 122, United States Census Table 113, p. 254, 1912.]

Item.	1902	1907	1912	1917	1918
Taxes (total).....	\$13,678,899	\$19,775,602	\$35,027,965	\$45,756,695	\$49,496,334
On real and personal property.....	\$1,835,542	\$1,464,616	\$15,658,249	\$21,804,619	.....
On earnings, capital, and other.....	\$7,243,357	\$10,310,986	\$19,369,726	\$23,952,076	.....
Per cent of operating expenses.....	9.19	7.87	10.55	10.11	9.93

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART NO. 126.—*Net operating revenue per mile of track by classes of electric railways. (Based on United States Census reports.)*

	Net operating revenue per mile of track.			
	Elevated and subway.	Class A.	Class B.	Class C.
1902.....		\$9,025	\$3,408	\$1,443
1907.....	\$42,879	8,032	3,053	1,712
1912.....	53,727	8,592	3,420	1,835
1917.....	51,485	7,893	3,461	1,877

NOTE.—All above figures were taken directly from 1912 Census Table No. 120, page 253, with exception of those duplicated below, together with figures used in calculating same and source of figures used.

NOTE.—Figures in parentheses shown below are Census table numbers giving source of information, taken from the 1917 Advance Sheets, the numbers corresponding to similar numbers of 1912 census.

	Net operating revenue.	Miles of track	Net operating revenue per mile of track
Subway and elevated:			
1902.....			
1907.....	\$18,745,029 (90)	437.16 (153)	\$42,879
1912.....	28,625,860 (90)	532.80 (153)	53,727
1917.....	36,867,482 (90)	716.08 (153)	51,485
Class A, 1917.....	205,743,068 (85)	26.065 (53)	7,893
Class B, 1917.....	35,507,354 (85)	10.259 (53)	3,461
Class C, 1917.....	15,979,986 (85)	8.512 (53)	1,877

[American Electric Railways Association, 8 West Fortieth Street, New York City.]

CHART No. 129.—*Net income per mile of track, by classes of electric railways. (Based on United States Census reports.)*

NET INCOME PER MILE OF TRACK.

	1902	1907	1912	1917
Elevated and subway.....		\$12,969	\$17,326	\$16,843
Class A.....	\$2,575	1,780	2,508	1,821
Class B.....	1,134	858	1,132	646
Class C.....	364	520	373	277

NET INCOME (TABLE 85—1912 AND 1917 CENSUS).

	1902	1907	1912	1917
Elevated and subway.....		\$5,669,738	\$9,231,121	\$12,060,843
Class A.....	\$21,666,551	27,707,790	53,442,502	47,466,872
Class B.....	5,566,946	7,207,076	10,927,455	6,623,496
Class C.....	3,364,380	5,425,420	3,769,932	2,360,562

MILES OF TRACK (TABLES 53 AND 153—1917 AND 1912).

	1902	1907	1912	1917
Elevated and subway.....		437.16	532.80	716.08
Class A.....	8,414.31	15,564.34	21,305.99	26,064.85
Class B.....	4,909.88	8,396.00	9,652.09	10,258.75
Class C.....	9,252.80	10,443.22	10,106.74	8,511.77

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

Surplus of electric railways, dollars per mile of track, by class.

[United States Census Report for 1912, page 237, chart 85, page 216 chart 53 report of 1917, chart 85, chart 53, chart 30, chart 153.]

VALUES PLOTTED ON CHART.

	1902	1907	1912	1917
Surplus per mile of track.....	\$651	\$403	\$401	\$180
Surplus per mile of elevated and subway.....		3,799	1,316	2,756
Surplus per mile of Class A.....	1,128	442	629	364
Surplus per mile of Class B.....	656	391	271	64
Surplus per mile of Class C.....	216	355	45	85

BASIS ON WHICH FIGURES ON CHART ARE DERIVED.

	1902	1907	1912	1917
Surplus.....	\$14,714,867	\$13,885,554	\$16,489,772	\$8,113,495
Surplus elevated and subway.....		1,669,858	701,485	1,974,112
Surplus Class A.....	9,492,215	6,887,970	13,408,414	9,502,032
Surplus Class B.....	3,223,867	3,285,763	2,617,943	659,329
Surplus Class C.....	1,998,785	3,711,821	463,415	729,208
Miles of track.....	22,576.99	34,403.56	41,064.82	44,835.37
Miles of elevated and subway.....		437.16	532.80	716.08
Miles of Class A.....	8,414.31	15,564.34	21,305.99	26,064.85
Miles of Class B.....	4,909.88	8,396.00	9,652.09	10,258.75
Miles of Class C.....	9,252.80	10,443.22	10,106.74	8,511.77

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-132.—Paving and "other imposts" and taxes for all electric railways of the United States, based on replies from 214 companies (D. S. 182) and Census Reports.

	1912	1913	1914	1915
Taxes.....	\$35,027,965	(\$38,780,938)	(\$41,139,955)	(\$40,761,536)
Paving and other imposts.....	(15,058,414)	(21,372,414)	(21,536,481)	(20,412,519)
Total.....	40,086,379	60,153,352	62,676,436	61,204,105
Gross earnings.....	585,930,517	(640,857,949)	(647,350,574)	(636,719,681)
Taxes of per cent of gross earnings.....	5.93	6.05	6.36	6.40
Paving and other imposts per cent of gross earnings.....	2.57	3.33	3.32	3.21

	1916	1917	1918
Taxes.....	(\$43,633,034)	\$45,756,695	(\$49,496,334)
Paving and other imposts.....	(18,472,989)	(17,522,593)	(16,065,000)
Total.....	62,106,923	63,279,288	65,561,334
Gross earnings.....	(688,968,612)	(730,108,040)	(765,000,000)
Taxes of per cent of gross earnings.....	6.33	6.27	6.47
Paving and other imposts per cent of gross earnings.....	2.63	2.40	2.10

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-133.—Trainmen's wages.

[Based on wages paid by approximately 60 companies having over 100 miles of track each. Values given show per cent increase in wages for each year over wages paid in 1906 as reported by companies to American Electric Railway Association.]

Year.	Rate per hour.	Per cent.	Year.	Rate per hour.	Per cent.
1906.....	23.03	100.00	1913.....	27.74	120.45
1907.....	24.11	104.69	1914.....	28.14	122.23
1908.....	24.75	107.47	1915.....	28.62	124.27
1909.....	24.57	106.69	1916.....	29.25	127.01
1910.....	25.85	112.24	1917.....	31.57	137.09
1911.....	26.10	113.33	1918.....	33.92	147.29
1912.....	26.89	116.76	1919.....	44.43	192.92

NOTE.—The rate per hour is the average rate of all companies reporting based on that paid to men oldest in the service

American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART No. 134.—Cost of labor. Ratio of salaries and wages to railway operating expense. (Based on United States Census reports.)

	Railway operating expense.	Salaries and wages.	Per cent salaries and wages is of railway operating expenses.
1917.....	\$421,250,838	\$267,240,362	63.4
1912.....	318,700,534	200,890,939	63.0
1907.....	245,140,379	150,991,099	61.6
1902.....	140,123,844	88,210,165	63.0
1918.....	298,516,115	313,748,577	62.9

Source of information: Tables 5 and 162 of the 1917 Advance Reports and the 1912 book of the Census Bureau.

[American Electric Railway Association, 9 West Fortieth Street, New York City.]

CHART 136.—*Cost of materials. Detailed figures showing total deductions for obtaining cost of materials and supplies.*

	Railway operating expense.	Total deductions.	Cost of materials and supplies.	Salaries and wages.	Purchased power.
1917.....	\$452,591,654	\$347,981,239	\$104,613,415	\$267,240,362	¹ \$37,757,963
1912.....	332,896,356	257,624,800	75,271,556	200,890,939	24,696,647
1907.....	251,309,252	181,283,831	67,025,413	150,991,099	12,342,258
1902.....	142,312,597	103,501,364	38,811,232	85,210,165	3,871,513

	Insurance.	Injuries and damages (three-fourths of total).	Total rents (tracks, facilities, and equipment).	Stationery and printing.	Depreciation of ways and structures.	Depreciation of equipment.
1917.....	\$3,101,407	\$17,807,473	\$7,152,823	¹ \$1,284,000	\$6,800,348	\$8,836,863
1912.....	3,151,576	15,530,970	4,873,359	1,105,422	3,705,511	3,670,376
1907.....	3,137,071	13,632,229	3,342,615	838,562	.....	.....
1902.....	2,080,875	7,046,659	¹ 1,795,766	493,331	.....	.....

¹ See notes for each respective item on sheet accompanying this.

[American Electric Railway Association, 9 West Fortieth Street, New York City.]

CHART 136.—*Cost of materials. (Based on United States Census Reports.)*

	Cost of materials and supplies.	Ratio of cost of materials and supplies to operating expense.	Increase in cost of materials and supplies over prior census.
1917.....	\$104,613,415	<i>Per cent.</i>	<i>Per cent.</i>
1912.....	75,271,556	23.12	38.9
1907.....	67,025,413	26.67	12.3
1902.....	38,811,232	27.23	72.7

NOTE.—Above information collected from census figures as follows:

1. Operating expense figures from Table 2, 1917, and Table 5, 1912.
2. Cost of materials and supplies considered as that portion of the operating expense remaining after deduction of following items:
 - (a) Salaries and wages, Table 2, 1917, and Table 5, 1912.
 - (b) Purchased power, Table 104, 1912, and Advance Sheet for 1917 corresponding to Table 163 for 1912. Figure used for 1917 is difference between "Power purchased and exchanged" and credit entry for same item. This apparently taken into account for other years in Table 104 in 1912 book.
 - (c) Insurance, same source as item (b).
 - (d) Injuries and damages, same source as item (b), used three-fourths of amounts given as representing other items than materials and supplies.
 - (e) Total rents, same source as item (b) except year 1902 where for "rent of equipment" (which was not reported separately) 0.288 per cent of total of operating expense was used which was percentage for 1907 given in 1912 book. (1907 book figures differ.)
 - (f) Stationery and printing, Table 104, 1912, except for year 1917 where this item was probably included in general expenses under general and miscellaneous. Therefore estimated for 1917 as 2 per cent of general and miscellaneous, which was percentage for all other years.
 - (g) Depreciation of ways and structures, same as item (b) except no data for 1907 or 1902.
 - (h) Depreciation of equipment, same as item (b) except no data for 1907 or 1902.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART 138.—*Economics in operation.*

Year.	Revenue car miles per passenger car.	Revenue car miles per mile of track.	Revenue passengers per passenger car
1890.....	1 11,788	1 47,172	1 62,208
1902.....	1 18,982	2 50,701	1 79,187
1907.....	2 23,105	2 47,053	2 106,277
1912.....	2 25,231	2 46,796	2 125,332
1917.....	2 26,776	2 47,726	2 141,460
1918.....	* 26,241	* 44,930	* 142,048

¹ United States Census, 1902, page 6, Table 1.

² United States Census, 1912, page 186, Table 5.

³ Advance report, Table 5.

⁴ Estimate of capital, etc., 1918, based on Data Sheet 191, American Electric Railway Association.

[American Electric Railway Association, 8 West Fortieth Street, New York City. July 8, 1919.]

CHART C-141.—*Increase in use of automobiles in Massachusetts. (Report of special commission on motor vehicles.)*

Year.	Autos.	Trucks.	Autos and trucks.	Motor cycles.	Source of information.
1903.....	3,241			502	Report of Special Commission on Motor Vehicles, January, 1919, page 109. Special commission designated under provisions of chapter 72 of the Resolves of 1918.
1904.....	3,772			489	
1905.....	4,889			533	
1906.....	6,572			665	
1907.....	7,733			832	
1908.....	18,066			1,922	
1909.....	23,971			2,394	
1910.....	31,360			3,358	
1911.....	38,907			3,658	
1912.....	50,132			5,034	
1913.....	62,660			7,127	
1914.....	77,246			8,161	
1915 ¹	90,580	12,053	102,633	9,520	
1916.....	118,615	18,194	136,809	10,713	
1917.....	147,310	26,964	174,275	11,065	
1918.....	160,486	33,011	193,497	12,862	

¹ This is the first year trucks were registered separately from pleasure cars.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART 143.—*Growth in the extent of receiverships. (As reported in the Electric Railway Journal for Jan. 4, 1919.)*

Year.	Single track.	Year.	Single track.
	<i>Miles.</i>		<i>Miles.</i>
1909.....	558	1914.....	362
1910.....	697	1915.....	1,152
1911.....	519	1916.....	359
1912.....	374	1917.....	1,177
1913.....	343	1918.....	2,108

Values for miles of track are cumulative each year, including amounts for previous years.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART 144.—Total cost of service compared with operating revenues. (Based on United States Census Report.)

[References: United States Census of 1912, page 308, Table 161; page 236, Table 81; page 250, Table 111; page 318, Table 164. United States Census of 1917, Photostat print No. 160.]

	1902	1907	1912
Operating revenue.....	\$217,533,999	\$118,157,858	\$567,511,704
Operating expenses.....	143,312,597	251,300,252	332,896,356
Taxes.....	13,978,899	1,755,602	35,027,965
Operating expenses plus taxes.....	155,391,496	271,064,851	367,924,321
Cost of construction of road and equipment.....	2,167,634,077	3,637,068,708	4,506,653,292
6 per cent of cost of construction of road and equipment.....	130,058,045	218,260,122	275,793,798
7 per cent of cost of construction of road and equipment.....	151,734,385	254,636,809	321,739,430
8 per cent of cost of construction of road and equipment.....	173,410,726	291,013,496	367,725,063
Operating expenses, including taxes plus 6 per cent on construction of road and equipment.....	285,449,511	489,324,876	643,718,119
Operating expenses, including taxes plus 7 per cent on construction of road and equipment.....	207,125,881	525,701,663	689,688,751
Operating expense, including taxes plus 8 per cent on construction of road and equipment.....	328,802,222	562,078,350	735,649,384
Deficit for 6 per cent returns on construction of road and equipment.....	37,895,542	71,137,118	76,206,415
Deficit for 7 per cent returns on construction of road and equipment.....	59,571,882	107,513,405	122,172,047
Deficit for 8 per cent returns on construction of roads and equipment.....	81,248,223	143,890,492	168,137,680

	1917	1918
Operating revenue.....	\$709,825,042	\$1,011,131,682
Operating expenses.....	452,594,144	1,555,493,060
Taxes.....	45,706,695	19,490,334
Operating expenses plus taxes.....	498,300,839	1,574,983,394
Cost of construction of road and equipment.....	5,136,441,589	24,979,574,674
6 per cent of cost of construction of road and equipment.....	308,164,496	1,498,774,480
7 per cent of cost of construction of road and equipment.....	359,560,911	1,743,570,227
8 per cent of cost of construction of road and equipment.....	410,915,328	1,988,564,974
Operating expenses, including taxes plus 6 per cent on construction of road and equipment.....	806,465,335	1,773,758,874
Operating expenses, including taxes plus 7 per cent on construction of road and equipment.....	857,866,746	1,902,529,621
Operating expenses, including taxes plus 8 per cent on construction of road and equipment.....	909,268,163	1,993,325,368
Deficit for 6 per cent returns on construction of road and equipment.....	166,690,753	192,602,192
Deficit for 7 per cent returns on construction of road and equipment.....	118,077,168	242,997,939
Deficit for 8 per cent returns on construction of road and equipment.....	192,111,573	292,193,686

¹ Estimated from 1918 estimate (215 companies, D. S. No. 146) of railway operating expenses, increasing latter in same ratio as ratio of similar figures in 1917.

² Road and equipment estimated as same percentage of total capitalization (1918 estimate, U. S. No. 191) as same figure bore to total capitalization in 1917.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-145.—Power generated and capacity of generating and subsidiary equipment. (Based on United States Census Report of 1912.)

[Page 196, Table 17.]

	1902	1907	1912	1917
Kilowatt capacity (kw.).....	898,302	1,723,116	2,508,066	2,924,779
Subsidiary equipment (kw.).....	160,053	942,232	1,037,200	2,339,333
Power generated (kw.).....	2,261,484,397	4,759,130,100	6,052,699,008	7,240,502,789

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-146.—Number of receiverships, abandonments, and lines junked. (In effect as of May 31, 1919, based on electric railway journals.)

	Number of companies.	Single track.
Receiverships.....	62	Miles, 5,912
Lines dismantled and junked.....	61	791
Abandonments.....	38	257

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

Growth of automobile industry—Total number of vehicles in the United States.

	Passenger cars.	Commercial cars.	Total motor vehicles.	Population.	Number of persons per pleasure car.	Number of families per pleasure car.	Remarks.
Dec. 31, 1914.....	1,574,431	136,907	1,711,338	98,781,321	62	16	Figures based on separate registrations of commercial cars in 16 States and estimates of number of commercial cars by Secretaries of States in 5 States.
Dec. 31, 1915.....	2,240,229	205,435	2,445,664	100,769,318	74	11	
Dec. 31, 1916.....	3,213,031	301,321	3,514,352	102,917,312	31	8	
Dec. 31, 1917.....	4,643,381	412,478	5,055,859	103,435,306	22	6	
Dec. 1, 1918.....	5,352,350	593,092	5,945,442	105,253,300	19	5	
Dec. 31, 1918, total motor vehicles.....			6,116,817				

Source of information: "Facts and Figures by and for the Automobile Industry," published by National Automobile Chamber of Commerce, April, 1919.

[American Electric Railway Association, 8 West Fortieth Street, New York City.]

CHART C-154.—Net income of operating electric railways, including 1918 estimate of dividends and surplus.

	1902	1907	1912	1917	1918
Capital stock.....	\$982,969,070	\$1,543,269,002	\$1,957,300,119	\$2,008,151,013	\$2,003,662,251
Net income.....	\$31,506,977	\$40,340,286	\$68,189,889	\$56,450,930	\$20,183,413
Dividends.....	\$15,882,110	\$26,454,732	\$51,650,117	\$48,337,435	\$32,800,000
Surplus.....	\$14,714,867	\$13,885,554	\$16,489,772	\$8,113,495	\$12,416,587
Rate of return, net income on capital stock.....	3.11	2.61	2.64	2.81	1.01

1 United States census, 1912, p. 186, Table 5.

2 Advance Report, Table 5.

3 Data Sheet 191.

4 United States Census, 1912, p. 302, Table 158.

5 Data Sheet 185.

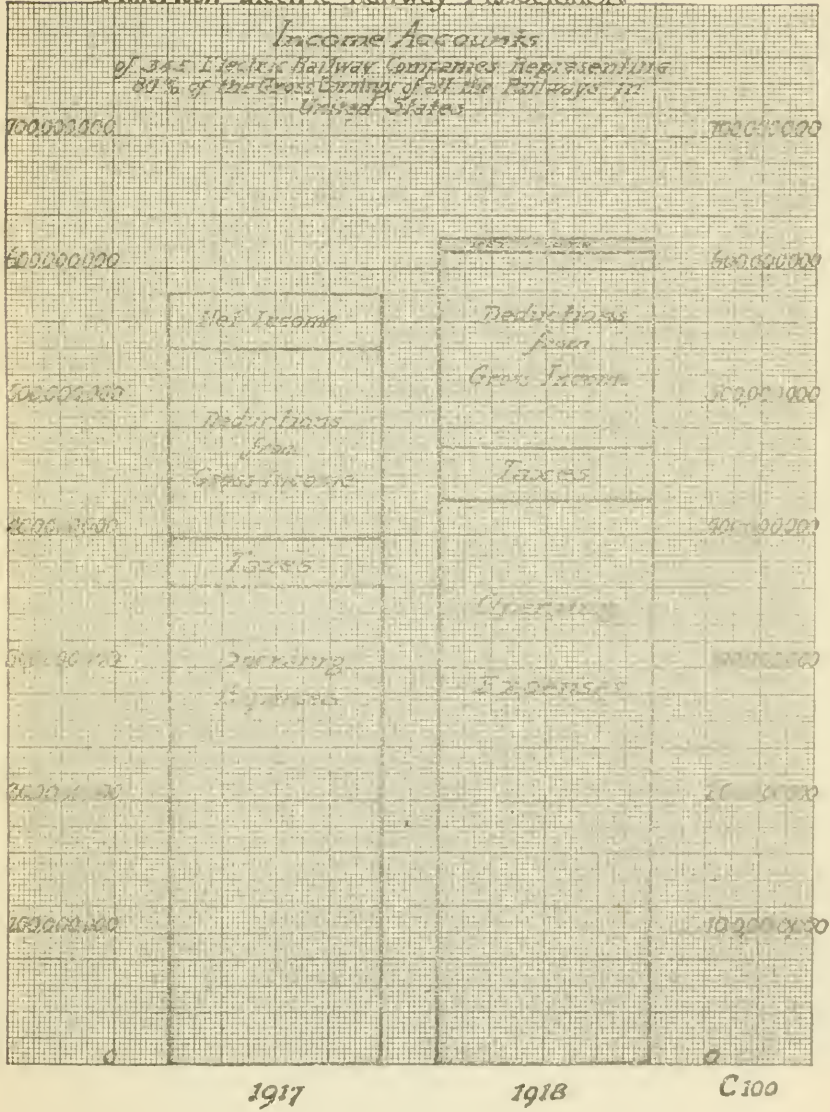
6 Based on United States census, 1912, p. 223, Table 59.

7 Based on Advance Report, Table 5.

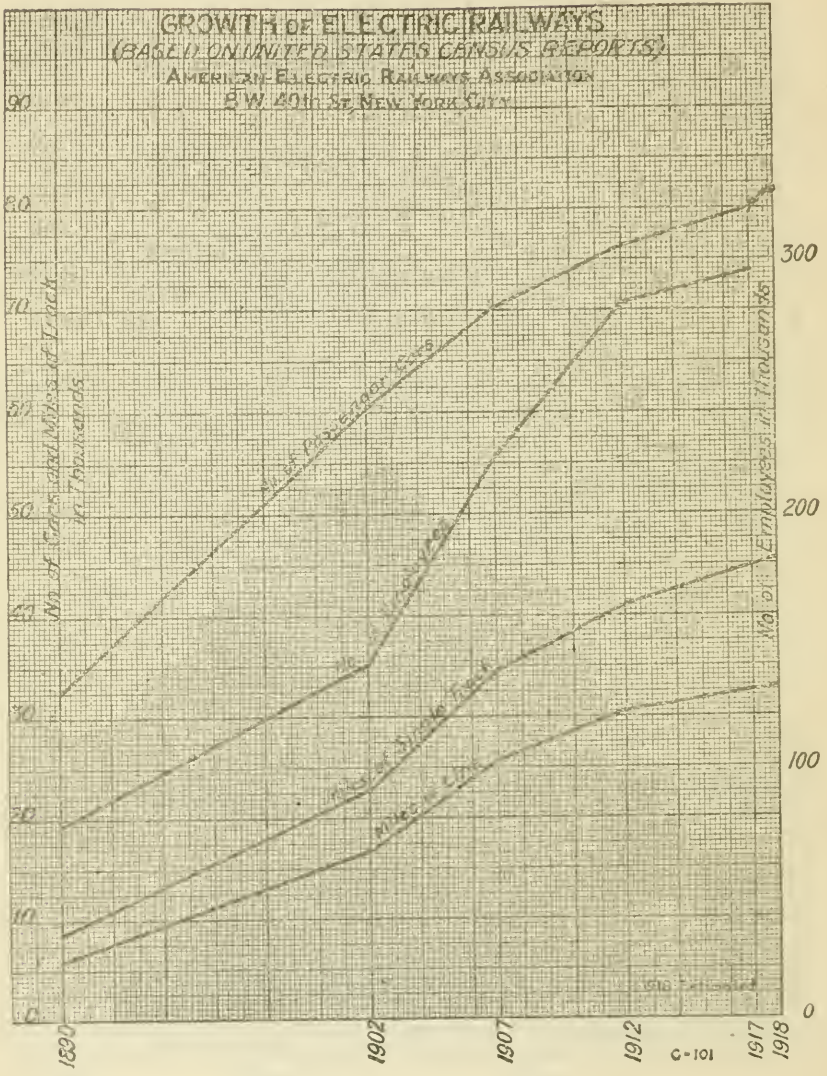
8 Deficit.

American Electric Railway Association

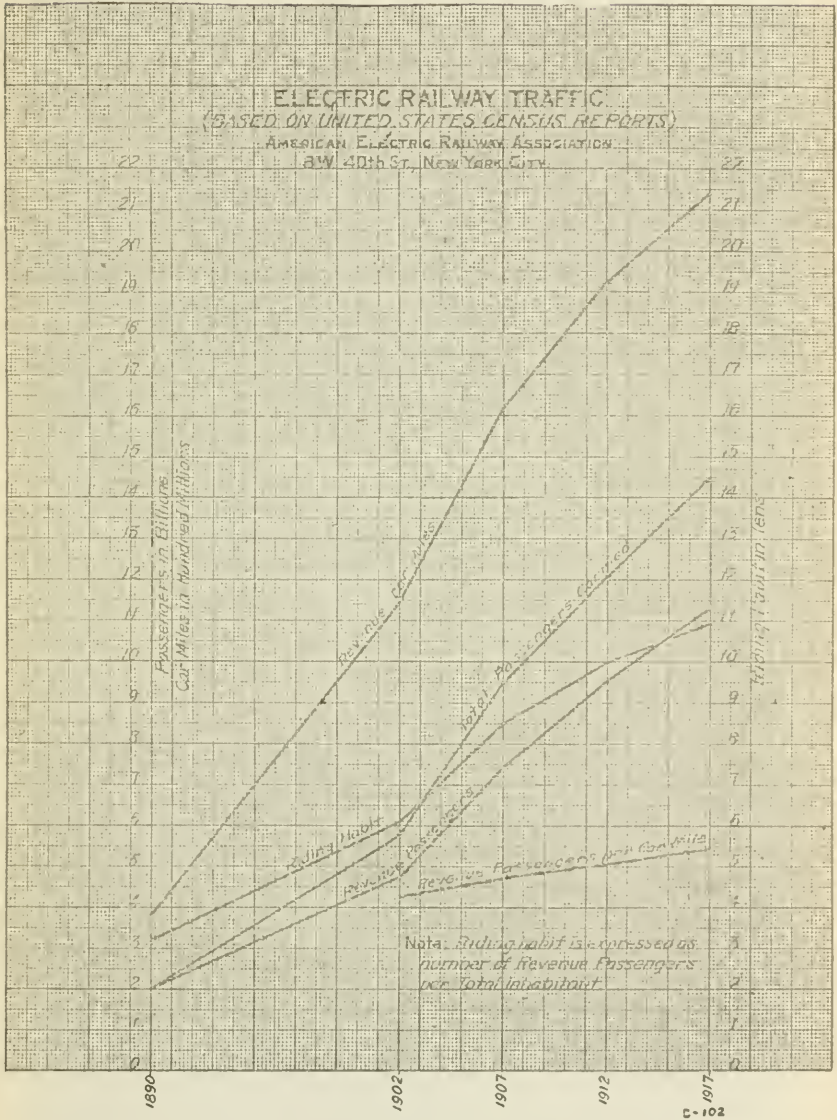
*Income Accounts
of 345 Electric Railway Companies representing
81% of the Gross Earnings of all the Railways in
United States*

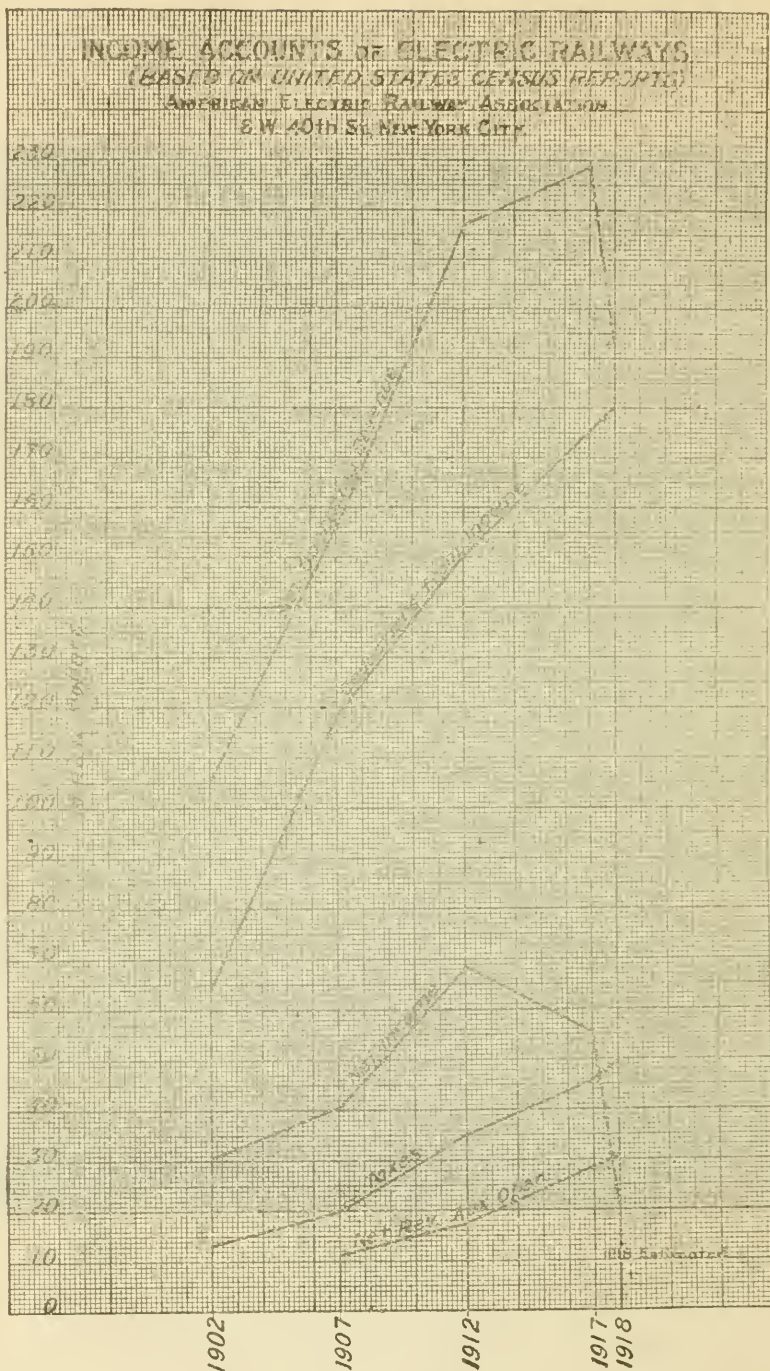


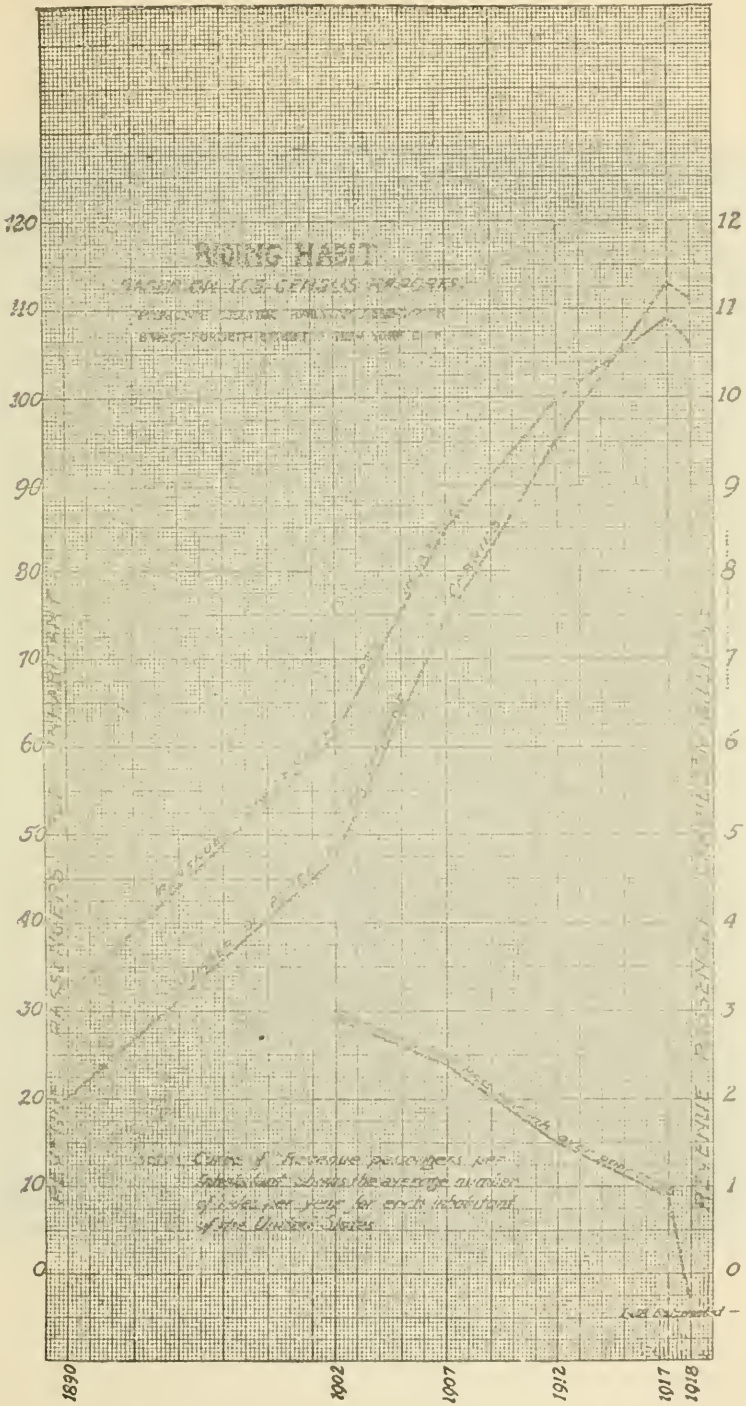
ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

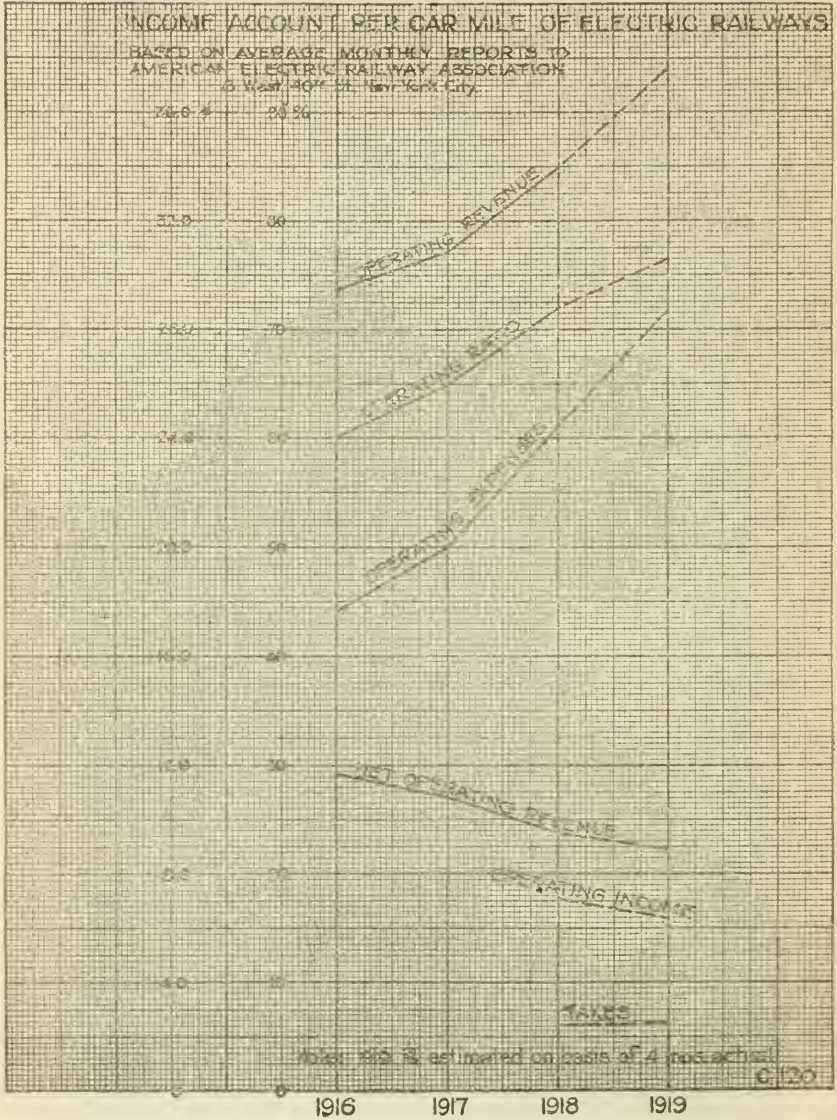


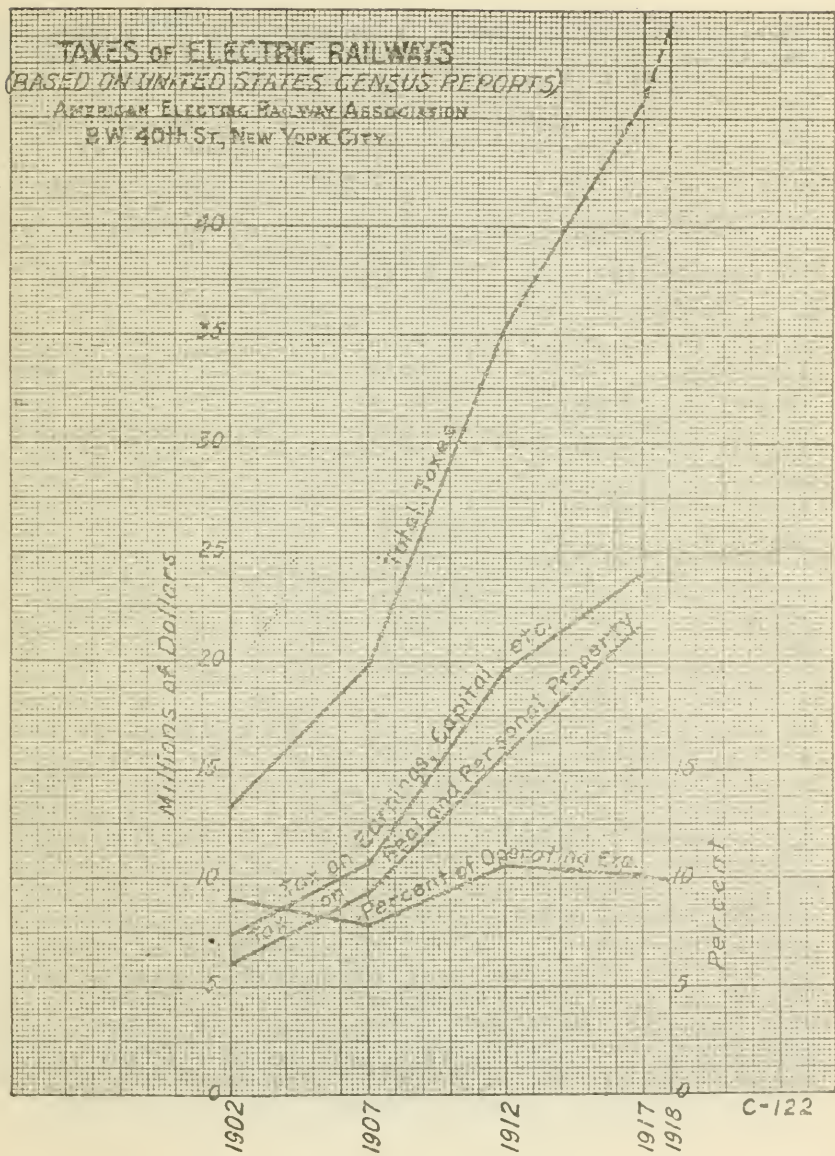
1918 C-101



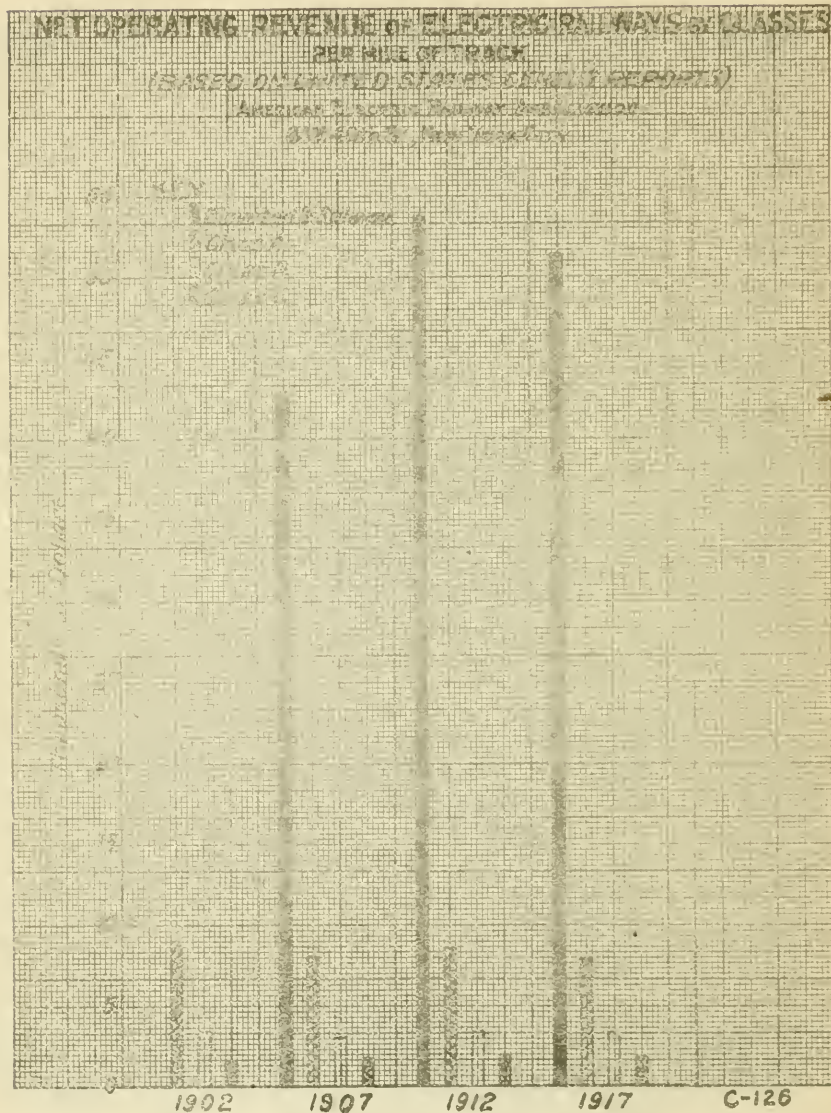




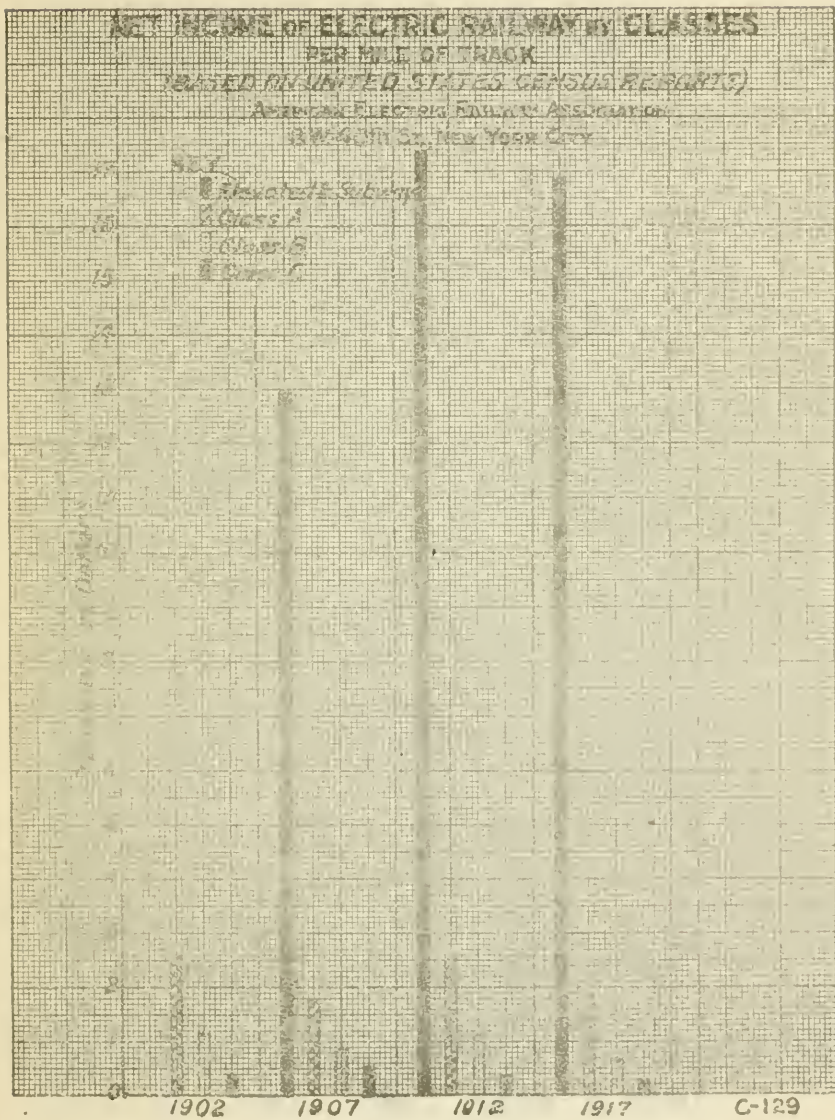


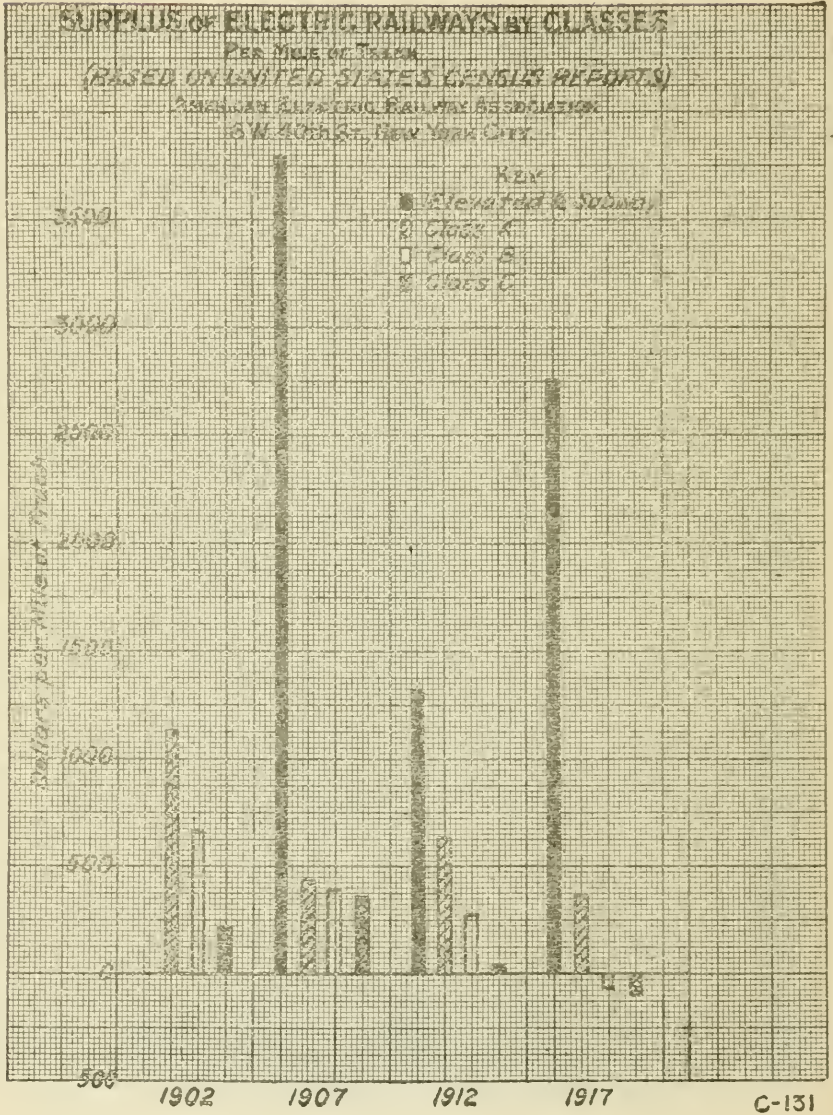


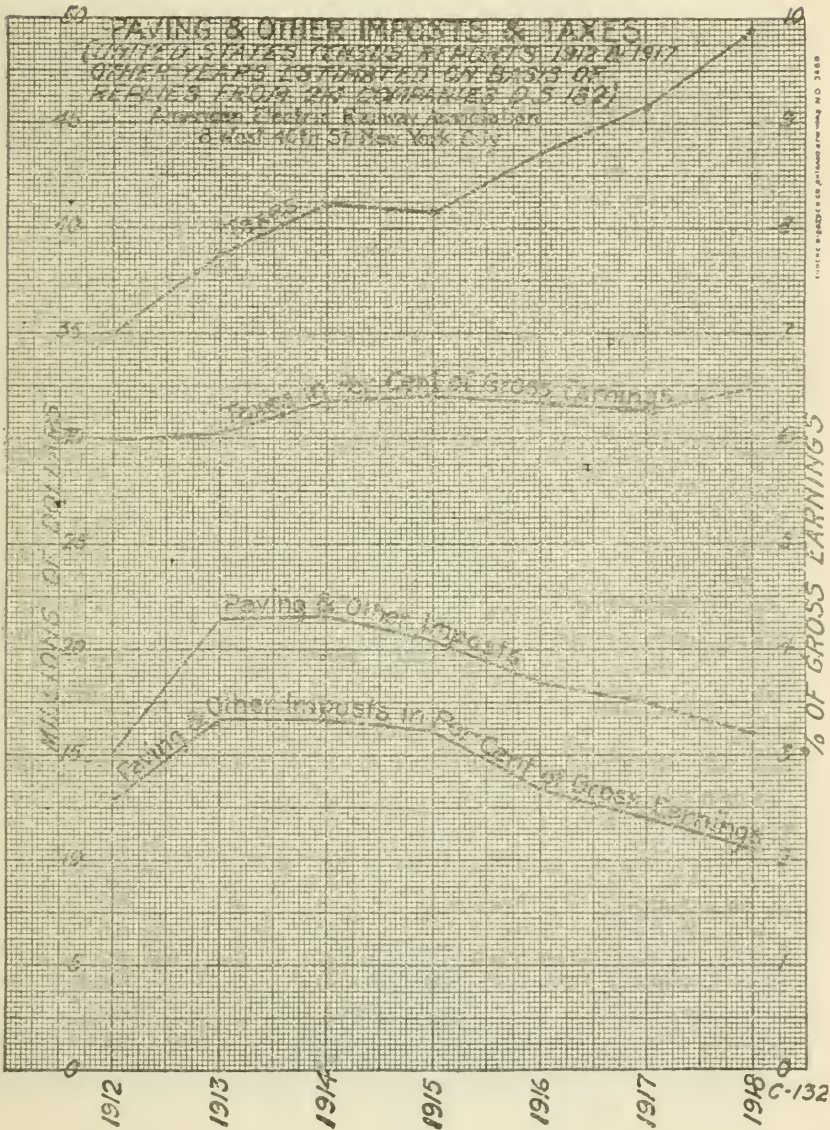
L. B. RAY, 1918, U.S. GOVERNMENT PRINTING OFFICE, NO. 2548

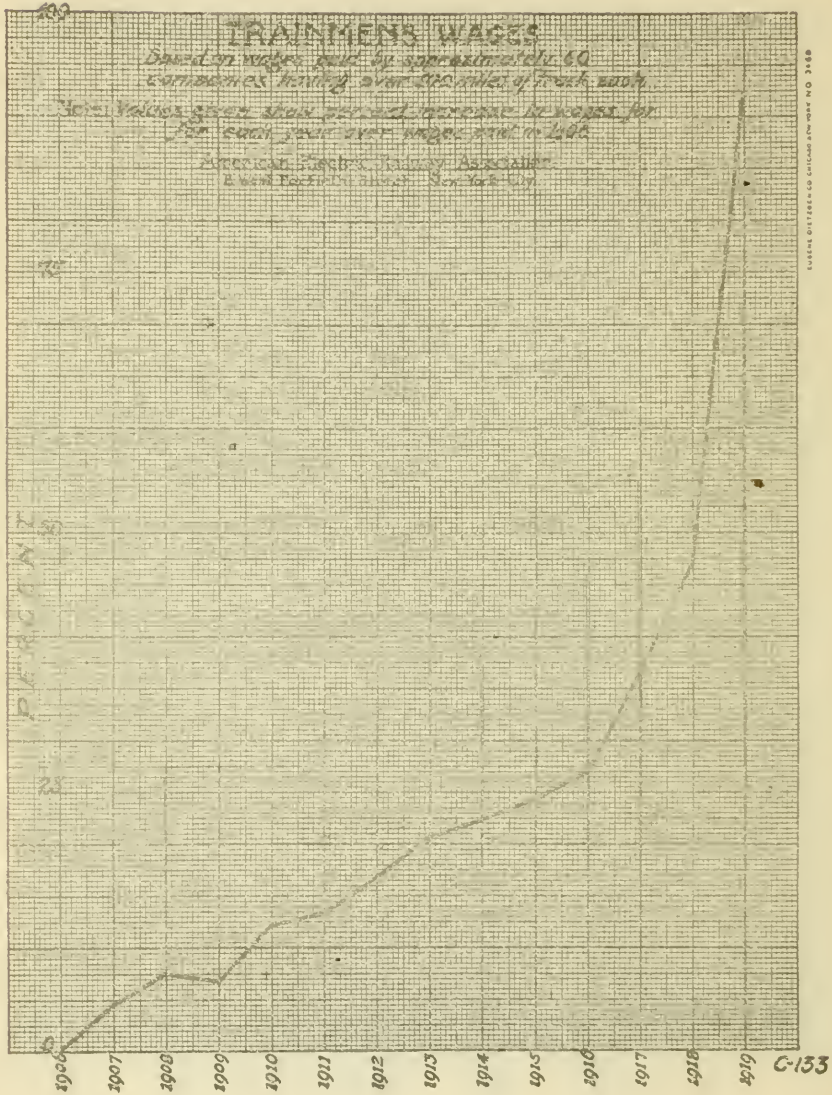


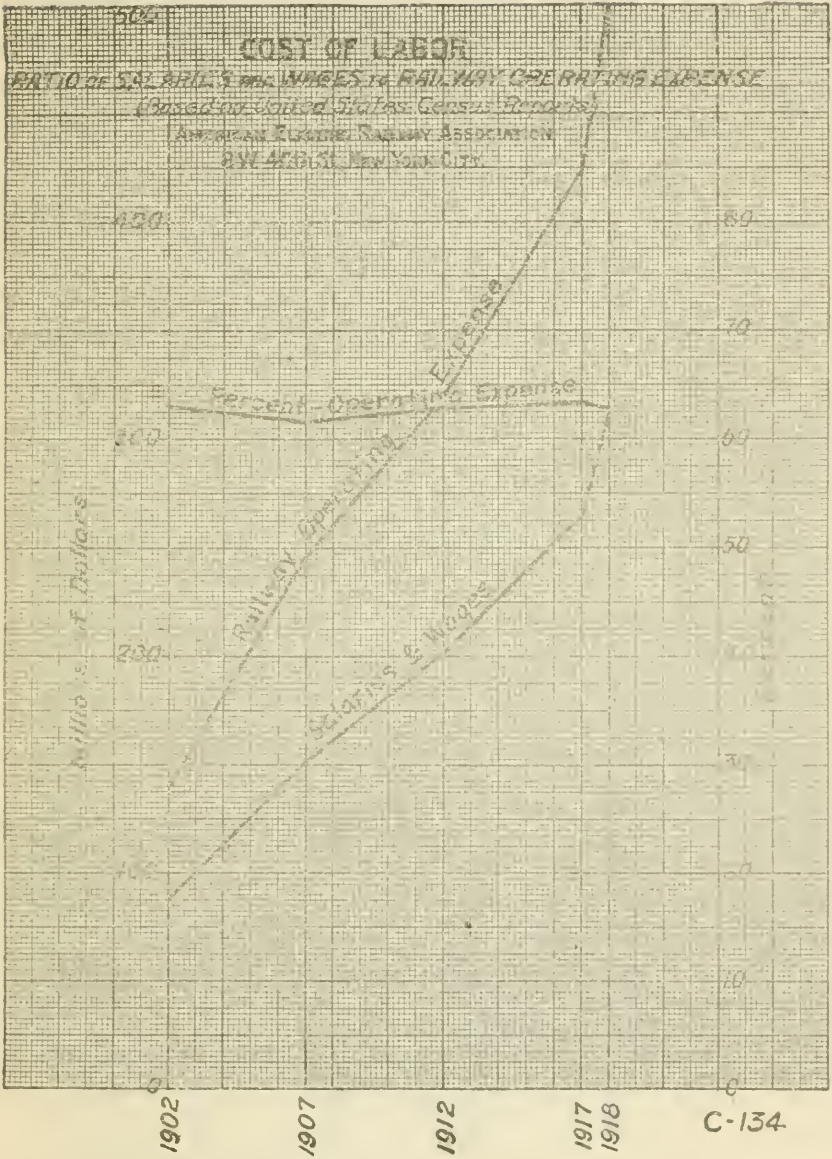
U.S. GOVERNMENT PRINTING OFFICE: 1918

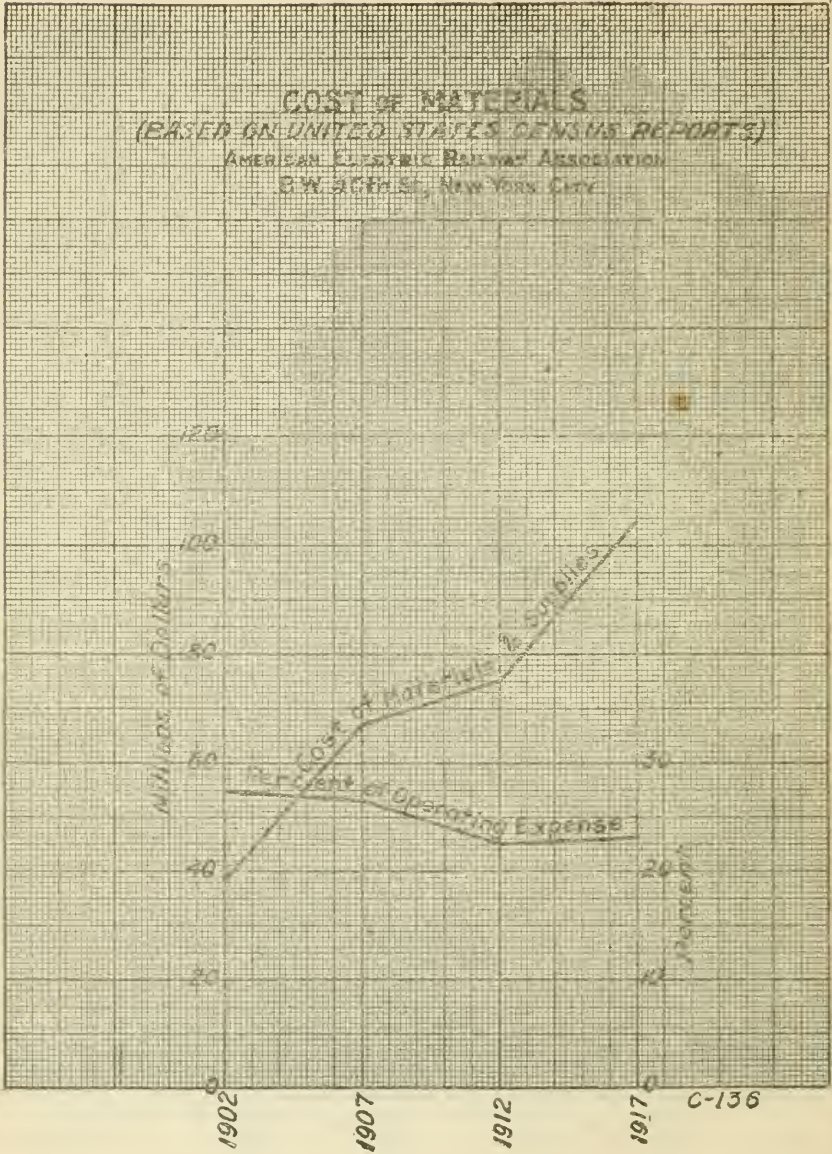


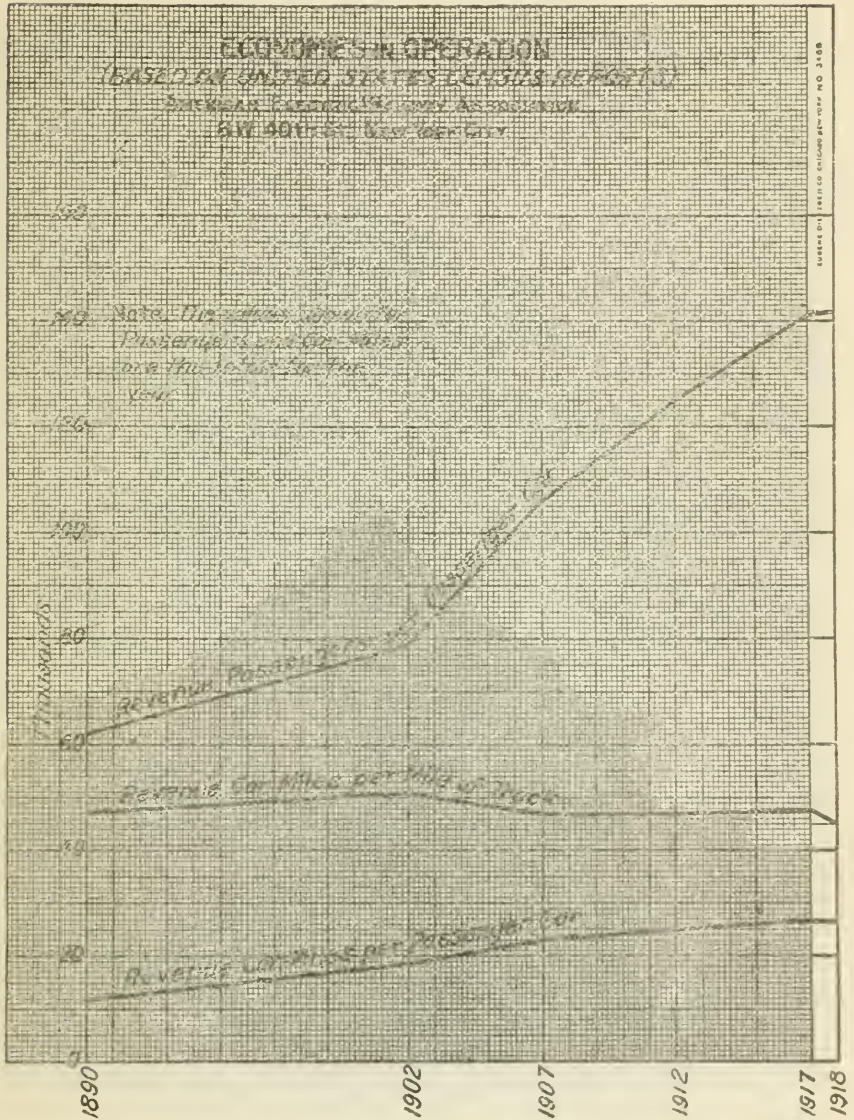


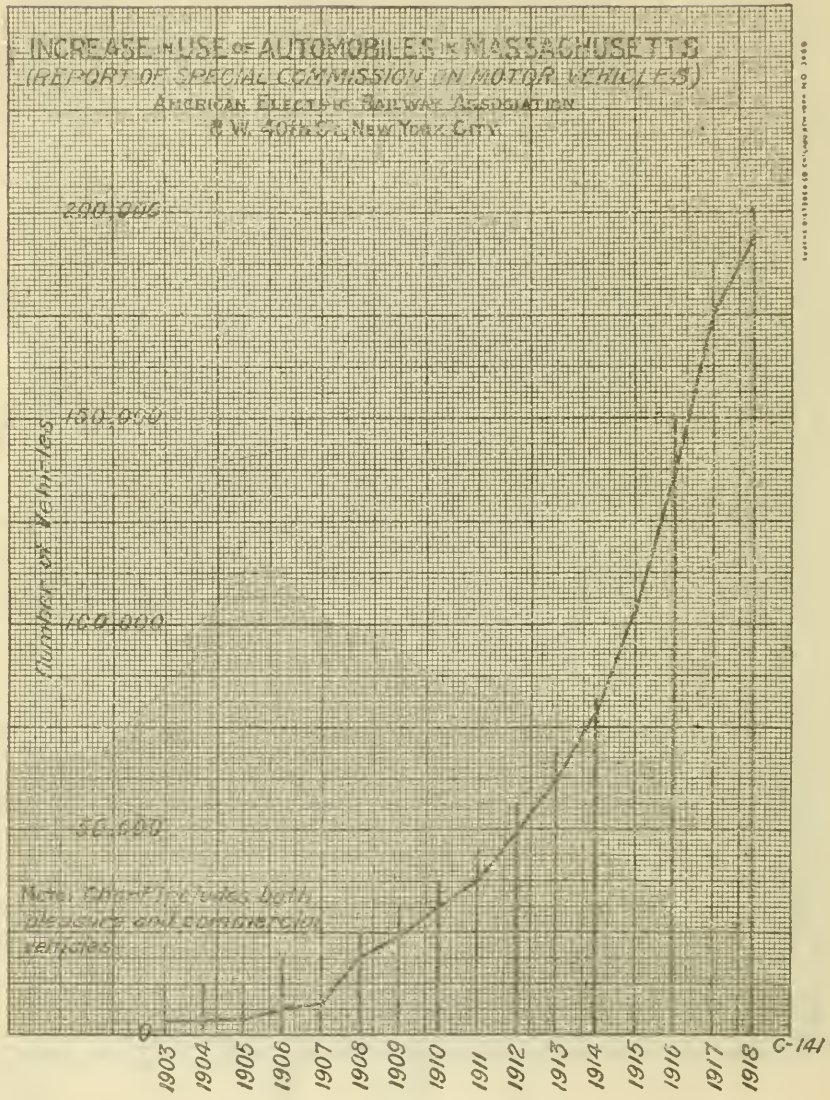




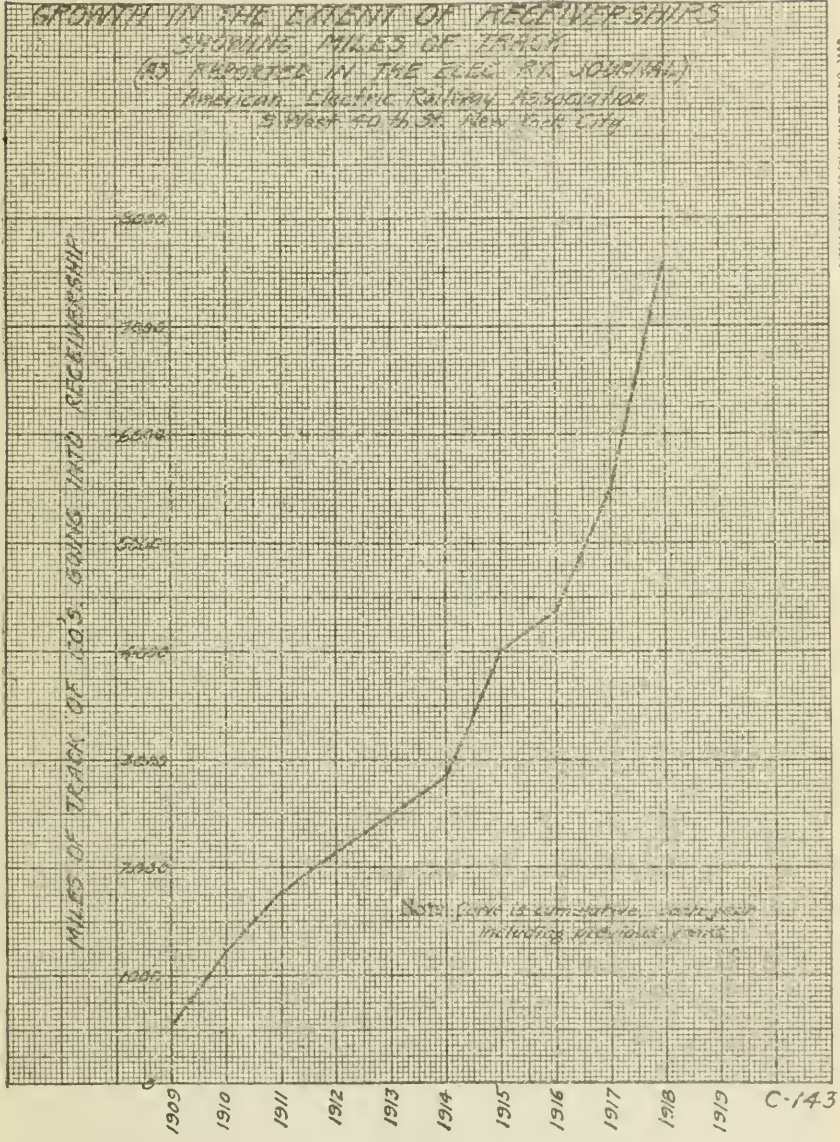


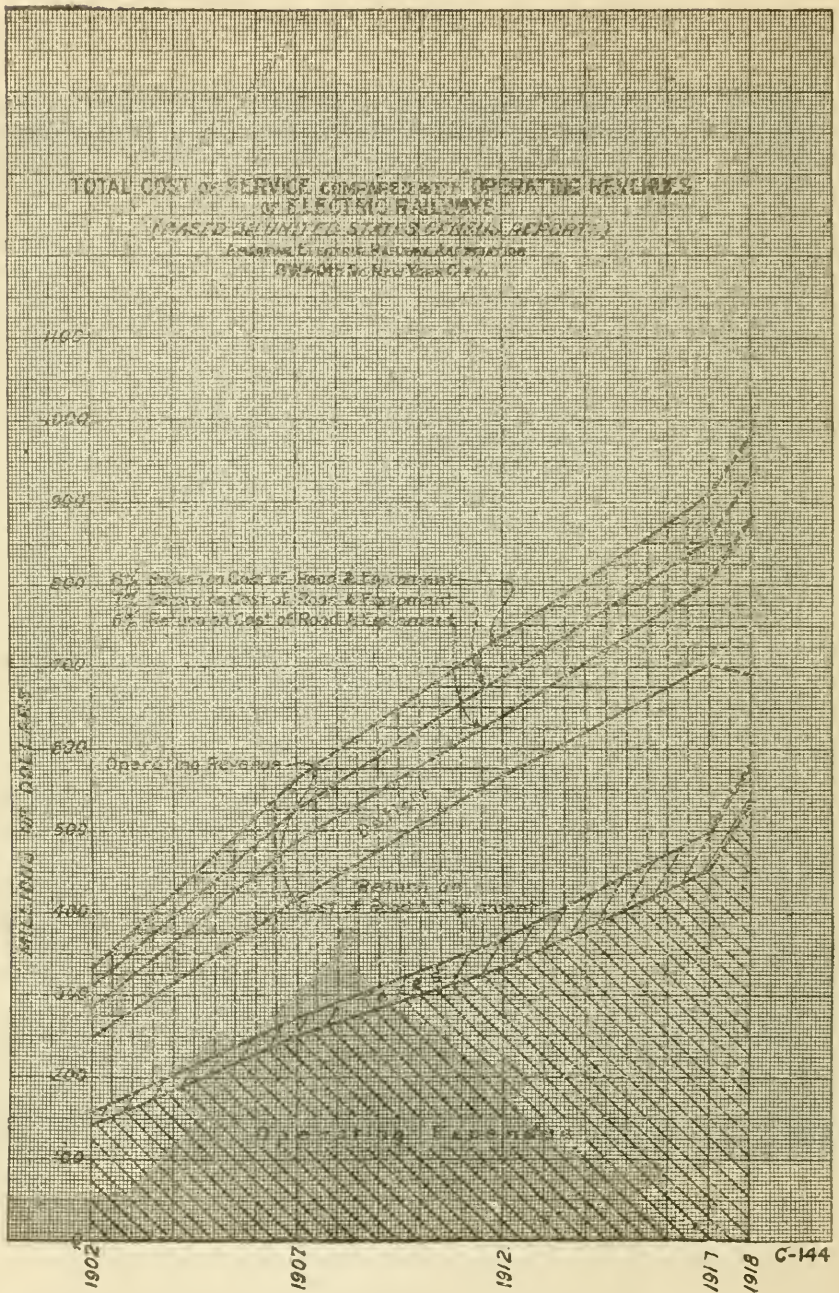


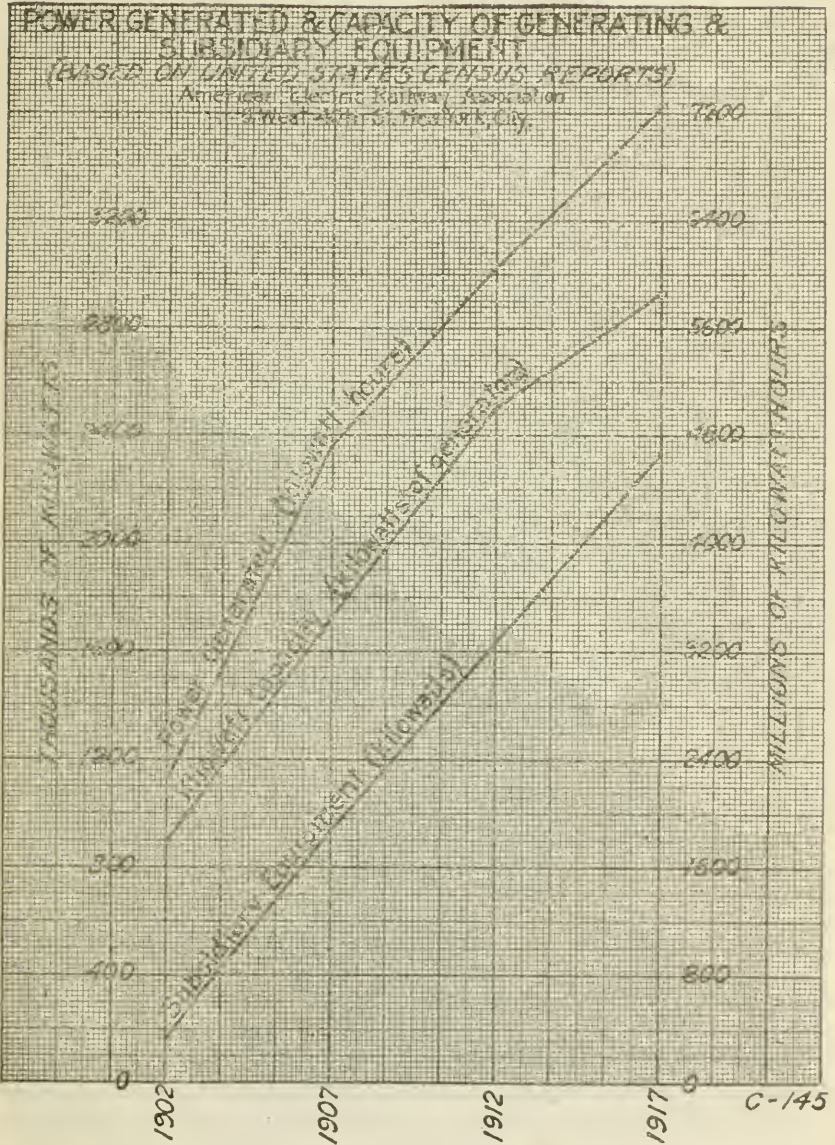


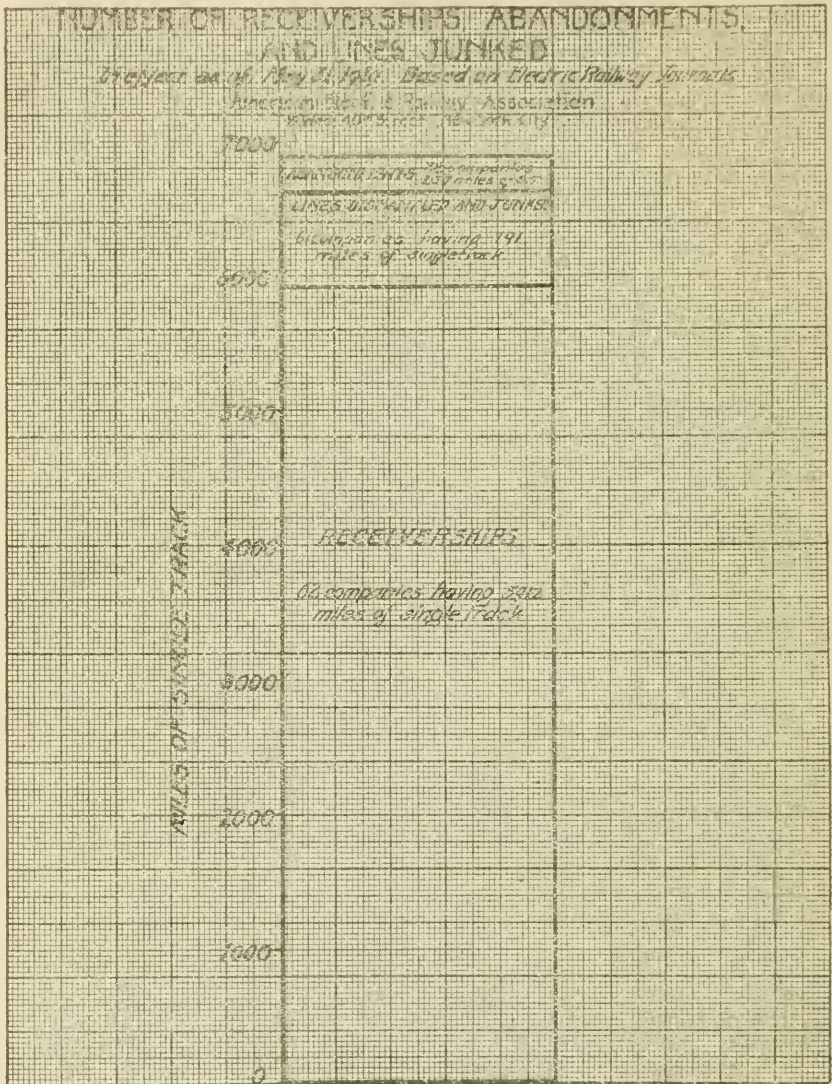


GRAPH BY THE BUREAU OF STATISTICS, U.S. DEPARTMENT OF COMMERCE

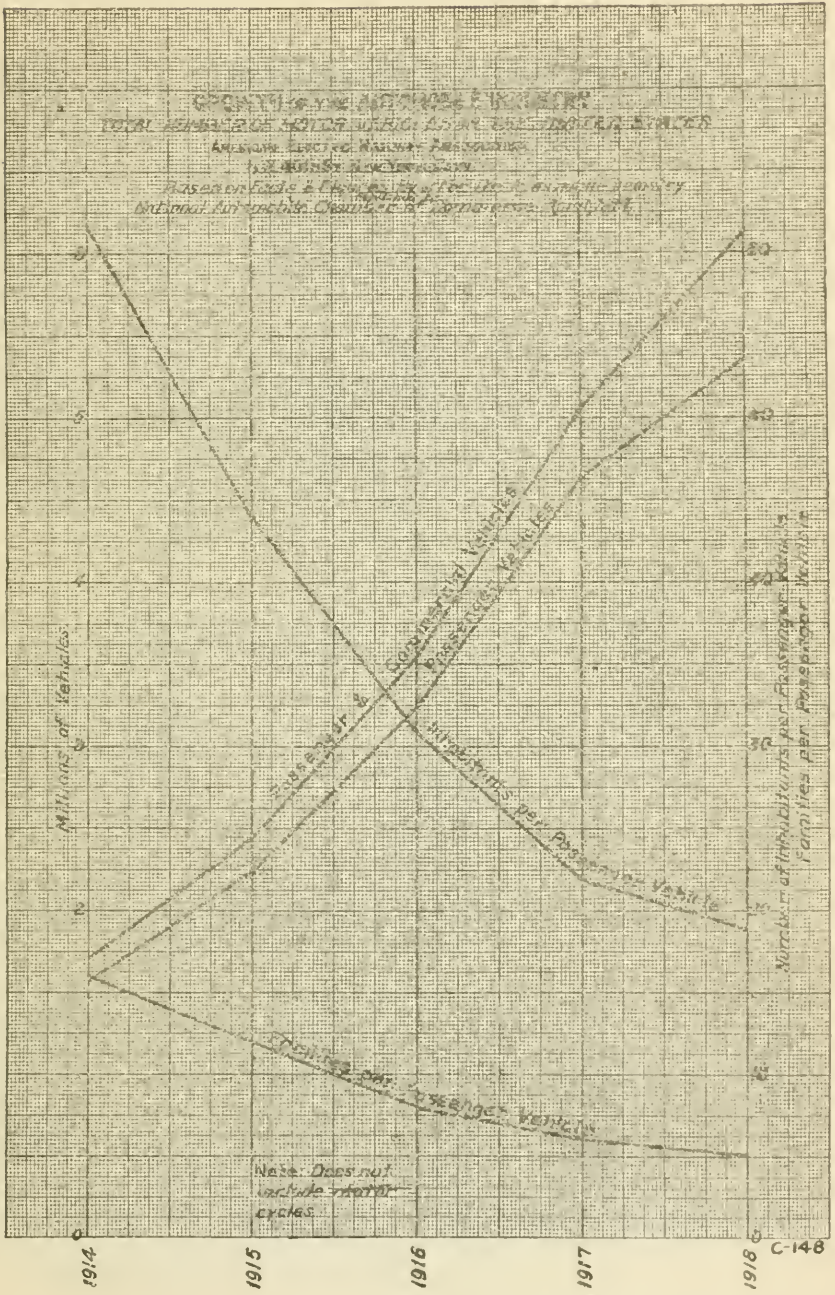




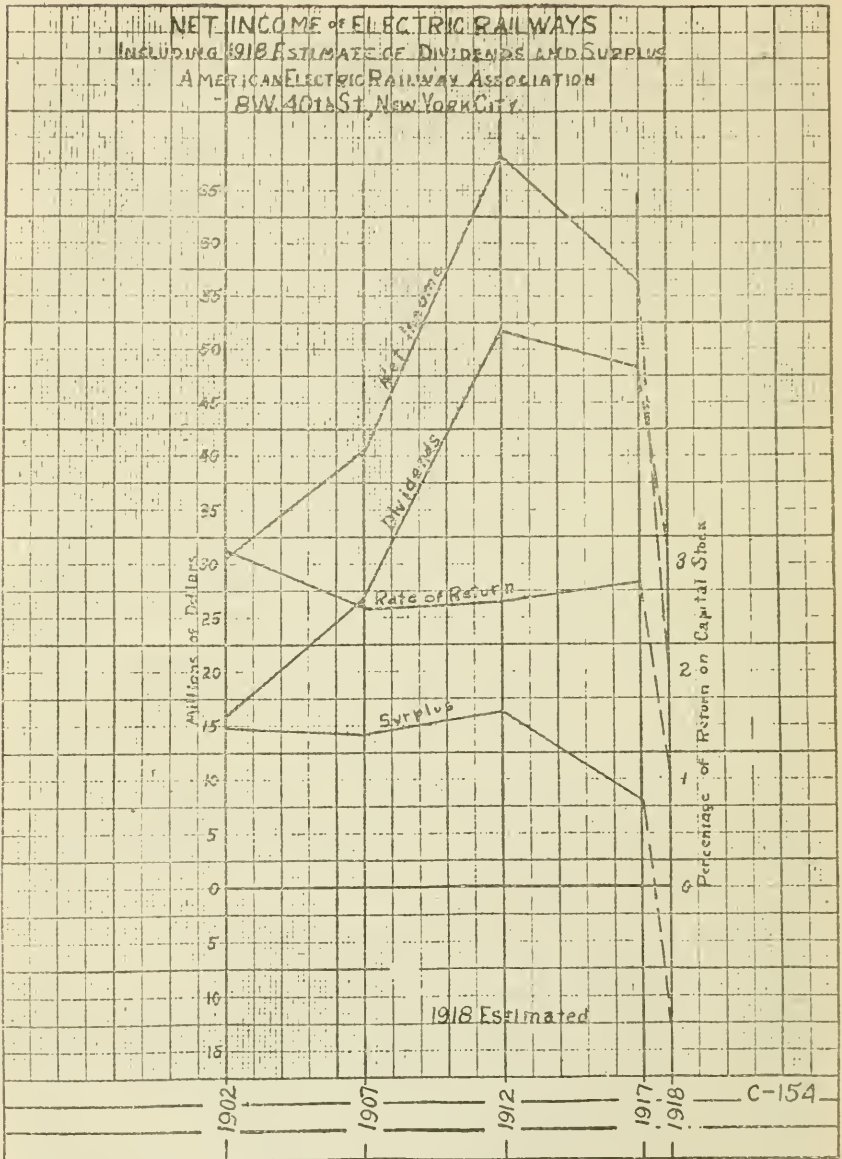




UNITED STATES GOVERNMENT PRINTING OFFICE: 1935



U. S. GOVERNMENT PRINTING OFFICE: 1918



In his contract with the Commission for the investigation of the electric-railway industry the Executive Secretary obtained much of the information used by the Commission by means of a comprehensive questionnaire consisting of 174 questions, sent to every city in the United States where there is an electric-railway company, either city or interurban, and addressed to the electric railways themselves, to the mayors of the cities, chambers of commerce, and boards of trade, central labor unions, and also to all of the State public utility commissions.

This questionnaire brought forth a vast amount of information relating to financial data for 10 years back, wages, fares, taxes, franchise conditions, traffic figures, details of operation, theories of regulation, and history of public relationships.

Mr. Ogburn analyzed and tabulated the data produced by this questionnaire and submitted it in condensed form to the members of the Commission for their use in the formulation of their report.

QUESTIONNAIRE ON ELECTRIC RAILWAY SITUATION.

FEDERAL ELECTRIC RAILWAYS COMMISSION,
Washington, D. C.

DEAR SIR: The Federal Electric Railways Commission, appointed by the President of the United States to investigate the condition of the electric-railway industry of America, asks you to aid it in obtaining the data necessary for compiling a report to the President.

The commission is conducting this investigation with an appropriation of only \$10,000. The commissioners are serving without compensation. In order to perform their work they must seek the aid of those who are interested. Already a fine public spirit has actuated many leading citizens of America to come to Washington at their own expense and testify before the commission, giving it the benefit of their views. We believe that this same public spirit can be appealed to in order to obtain more detailed information relative to the transportation questions in each community. The commission is not making a study of any local traction problem per se, and of course makes no recommendation relative to any locality; but it does wish to make a study of each electric railway, urban and interurban, in the United States and its relation to the communities served, because of the bearing each local situation has on the problem, and because a report to the President would be incomplete without such a study.

May we not ask, therefore, that you supply us with as much information as possible concerning the street railways in your city and vicinity? We have asked a number of questions in order to direct your attention to the lines of inquiry we are making, and we should appreciate very greatly your answering categorically each question, following for your answers the numbering used in the questionnaire, and adding to your answers any information dealing with any phase of the subject which you think ought to be brought to the attention of the commission. If you are unable to answer all, answer as many questions as possible. This questionnaire is being sent to the public-utilities commissions, the mayors, the chambers of commerce, the central labor unions, and the railways in every city where there is an electric railway.

Will you try to have your answer mailed to us within a week after the receipt of this questionnaire? The commission must complete its report during the month of October. It is therefore necessary to have this data as promptly as possible.

Appreciating your kindness and cooperation,

Very truly, yours,

CHARLES E. ELMQUIST, *Chairman.*
CHARLTON OGBURN, *Executive Secretary.*

QUESTIONNAIRE ON ELECTRIC RAILWAY SITUATION.

NOTE.—The following questions are based upon the assumption that there is one unified transportation system in your city. If there are two or more such systems, separate and distinct, will you treat each system separately in your answers?

I. ORGANIZATION AND CAPITALIZATION.

1. What is the name of the electric railway serving your community? If more than one, give names of all, including surface lines, elevated lines, and subway lines.
2. Is the system made up of several companies consolidated into one?
3. Will you state briefly (a) the development of the street-railway system in your community, giving the names of the companies going to make it up, when organized and when electrified (if originally steam or horse cars); (b) what consolidations were effected and by whom, and the dates of such consolidations; (c) the securities outstanding on the underlying companies; (d) the securities outstanding on the holding companies; (e) whether underlying companies were sold to present companies and at what purchase price or whether leased and at what annual rental; (f) the original cost of the separate and combined systems?
4. What is the number of communities served?
5. If the railway is one single company—not made up of consolidations—give the amount of outstanding stock and bonds and classes thereof.
6. Was the construction work of any of this system done by separate contracting companies? If so, were the owners of the street railway financially interested in such contracting company?
7. In whom does the stock control of the system rest?
8. Has the public-utility commission of your State or the municipality ever made an appraisal of the value of the transportation system of your city? Has there been an agreed valuation as in Cleveland, Seattle, etc.? What relation does that total valuation bear to the total securities outstanding?

-
9. What is the amount, if any, of watered stock in your system? How can this be shown?
 10. At what discount, if any, were the bonds sold? At what discount was the stock sold? What stock, if any, was given as a bonus with the bonds?
 11. When was the last stock issued, and the price at which sold?
 12. If a holding company, as lessee, leased the lines which are owned by other companies, what is the basis of the rentals paid? What income on the appraised value of the lines is represented by these rentals?

II. OPERATION.

NOTE.—Questions 13 to 16 are asked only of the railways themselves.

13. Will you give the last annual statement of the total operating expenses, gross revenue, and the net income, showing allowances for depreciation, taxes, interest, dividends, and surplus? Will you give same figures for past 10 years?
14. What is the total mileage of the system? What is the number of revenue passengers per car-mile? What is the total population served? What is the total area of the city?
15. Does the company sell electric power? If so, what proportion of its income is derived therefrom, and what proportion of its total expenditures is incurred therein?
16. Does the company sell gas? If so, what proportion of its income is derived therefrom, and what proportion of its total expenditures is incurred therein?
17. If the company has a power department, at what rate per kilowatt-hour is power furnished its transportation department?
18. What sums annually have been set aside and expended for past 10 years for maintenance, depreciation, and obsolescence?
19. Is the service regulated by a State commission or by the municipality? Are there complaints about overcrowling of cars, infrequency of headway, etc., or is the service generally satisfactory?
20. What economies of operation have been installed within the past several years?

III. FARES.

21. What is the present rate of fare?
22. Is the fare fixed by franchise?

23. Has the State commission authority to establish maximum fares?
24. What changes, if any, have occurred in the rate of fare, and when?
25. Has the company sought to increase its fare since the beginning of the European war in 1914?
26. What reasons were given for making the request for an increased fare?
27. How did the public look upon the application for increased fares?
28. If the fare has been increased, what has been the effect on the traffic?
29. What effect has an increased fare had upon the operating revenues of the company?
30. If there has been a fare increase, by what authority was it allowed? (If by the decision of a State commission or of a court, please give exact reference, and if possible an abstract of the decision.)
31. Was the increase in fare based upon a valuation of the property?
32. What methods must be pursued in your State to effect a change of fare?
33. Has there been a case where either the court or the State public-utility commission has upheld it or has set aside a franchise or a legislative enactment under which the rate of fare was fixed? If so, please give reference or copy of decision.
34. Is a zone fare charged either within the city or on suburban or inter-urban lines? If so, what is the zone fare and the length of the zones, and when inaugurated?
35. If a zone-fare plan has been recently inaugurated, has such a system had any noticeable effect on suburban development?
36. If there has been a change in the rate of zone fare, please give the present rate and the former rate, the present length of zone and the former length of zone.
37. What is the method of collecting and auditing zone fares?
38. Should the street-car rider pay the same fare regardless of the distance he rides? Please give reasons for your answer.
39. Should fares be fixed by the franchise for a definite term or be subject to adjustment to meet changing needs and conditions?
40. How many transfer points are on the system? Give the number where transfers are issued free, and the number where transfers are charged for, and the charge made.
41. Does the company issue a transfer on a transfer? Is it free or for what charge?
42. If there is more than one company, are free transfers issued from the lines of one company to those of another? If not, what charge is made?

IV. WAGES.

NOTE.—Questions 43 to 54 inclusive are asked only of the railways.

43. What is the rate of wage per hour now paid to the motormen and conductors?
44. Give approximately the average rate of wage per hour now paid to employees other than motormen and conductors in the various classifications.
45. What is the average daily wage of the various classifications of miscellaneous employees?
46. What is the average daily wage of motormen and conductors?
47. What was the hourly rate of wage paid to motormen and conductors in 1914?
48. By what average percentage have the wages of miscellaneous employees been increased since 1914?
49. What is the total annual pay roll of the company?
50. What percentage of the fare goes to labor at present?
51. What was it in 1914?
52. Was the present wage scale fixed by the National War Labor Board?
53. What rate is paid for overtime? What is the percentage of overtime worked?
54. Has the increase in wages kept pace with or exceeded the increase in the cost of living?

NOTE.—Increase in cost of living is estimated by the Bureau of Labor Statistics, Department of Labor, at an average of from 75 to 80 per cent since Jan. 1, 1915.

55. Are the employees organized into a local of the Amalgamated Association of Street and Electric Railway Employees of America?
56. Does the company recognize and deal with its organized employees?
57. If the company has a contract with its employees, do both sides live up to the contract?
58. Is there a proper spirit of cooperation between the company and its employees?

V. TAXES.

NOTE.—Questions 59 to 64 are asked only of the railway companies themselves.

59. Give annual State tax paid by the system for the past 10 years. On what basis was the tax estimated?

60. Give the annual taxes paid to the city for the past 10 years. Separate into various kinds.

61. What Federal taxes are paid?

62. Please list the other State, county, or municipal requirements for (a) paving and extent of this requirement—whether between tracks only, or outside of tracks also, and if the latter, state number of feet of paving required; (b) bridge assessments of tolls; (c) cleaning streets; (d) snow and ice removal from surface other than tracks; (e) free transportation of public employees.

63. How do total taxes paid by the company compare with the total taxes paid by other businesses and by owners of real estate?

64. Is the street railway taxed on the basis on which other interests are taxed?

65. Is the taxation of the street railway based upon income or money invested, or both?

66. What should be the basis, in your opinion, on which the street railway is taxed by the municipality?

67. To what extent should the State tax the street railway?

68. To what extent should a company not earning any return at all upon the investment be taxed?

69. To what extent should a company not earning anything on the investment above interest on bonds be taxed?

70. Would you favor remitting company's taxes to make up an operating deficit?

VI. FRANCHISES.

71. Please furnish us with a copy of the franchise under which the street railway operates or give the substance of such franchise.

72. Where is the power to grant franchises lodged?

73. What are the requirements as to approval of franchise by the people? (a) When the present grants were made? (b) At the present time?

74. When do the present franchise or franchises expire and when were they granted?

75. What are the provisions regarding forfeiture?

76. What are the provisions for renewal?

77. Is the right to purchase reserved by the municipality? At what intervals? Upon what terms?

78. What basis of value for purchase by municipality should be used where the franchise has expired?

79. Is the exclusive right of operation within prescribed territory conferred?

80. Is the company under this franchise protected from competition?

81. Are there any restrictions upon the acquisitions of competing companies?

82. How may routes and lines be changed?

83. If adjacent territory is annexed by the city, is the franchise automatically extended to cover this territory?

84. Can extensions of lines be compelled by the city or State commission? Is a new franchise required for each extension?

85. If the fare is fixed by the franchise, does it extend to new lines built in territory annexed by the city after franchise was granted?

86. Are there any restrictions in the franchise upon the rate of return on the company's investment or value?

87. What control, if any, is exercised over issuance of securities?

88. What provisions, if any, are there relative to the sharing of profits with the municipality?

89. Is a franchise tax required?

90. How is rate of fare fixed?

91. If the franchise provides for what is known as the service-at-cost plan, please give details, what charges are allowed in making up items of cost, the order thereof, and a statement as full as possible of the plan of such service-at-cost franchise.

92. How may fares be changed under such service-at-cost plan?

93. Should such contract establish a maximum and minimum charge? Should it establish a certain return on investment or value which is not subject to change during life of contract, or should the question be opened at stated periods?

94. Do you favor a service-at-cost plan? Give reasons for your answer.

95. Do you favor a franchise for a term of years, or an indeterminate franchise? If you favor an indeterminate franchise, what general conditions should be incorporated as to rates, regulations, purchase, amendments, etc.?

VII. ECONOMIES OF OPERATION.

NOTE.—Questions 96 to 108 and questions 110 to 114 are asked only of the railways themselves.

96. Is the "skip-stop" plan in force on any part of the system?
97. What was the average distance on a typical route between stops before the change to the skip-stop plan? What is it now?
98. What percentage of stops has been eliminated?
99. Why was the skip-stop plan inaugurated and when?
100. Is the public content with the skip-stop plan?
101. Has the company abandoned the skip-stop plan?
102. What benefits were obtained from the skip-stop plan?
103. What economies in shop operations have been put into effect?
104. Has the company one-man cars in operation? If so, how many?
105. What is the total number of cars operated?
106. What is the average weight of the ordinary cars on the system?
107. What is the average weight of the one-man cars?
108. Were the one-man cars converted from the former type or are they of the Birney or other safety type?
109. What benefits have been derived from the operation of one-man cars and has the public been satisfied with their use? Have the trainmen been satisfied with their use?
110. Does the operator of a one-man car receive a higher wage than the regular motorman and conductor, and if so, how much?
111. What is the consumption of power per car-mile with the Birney car as compared with other types?
112. Have schedules been increased on lines using one-man cars? If so, to what extent?
113. How have earnings been affected by the use of one-man cars?
114. What is the estimated life of the light one-man car?
115. How have accidents been affected by the use of one-man cars?
116. How are fares collected and audited on one-man cars?
117. Do you favor an extension of the use of one-man cars?
118. What other economies of operation have been put into effect or are being considered? Have damage claims been reduced in recent years?

VIII. INTERURBAN LINES.

119. Give the names of any interurban lines entering your city, and compare the service rendered by such lines with service rendered by steam lines.
120. Compare the service of interurban lines with the service rendered by automobiles and auto trucks.
121. Does such an interurban line have to meet automobile competition and if so to what extent, both in passenger and freight?
122. What is the fare charged on the interurban line?
123. What is the fare charged by automobiles, automobile trucks, and steam lines?
124. What is the total mileage of the interurban line and the total population served?
125. What size and type of car is used?
126. Are trains with more than one car operated?
127. Are sleeping cars carried?
128. What wages are paid the trainmen?
129. How do these wages compare with the wages paid on steam lines?
130. Are these interurban lines owned or affiliated with any steam line?
131. Are they used as a feeder for any steam line?
132. Do they carry baggage, express, and freight on city streets?
133. Do any of these interurban lines run into or through two or more States?

IX. GENERAL.

134. What is the financial condition of the street-railway system in your city?
135. How has this been shown?
136. Is the financial condition of this system such that an impairment of service or abandonment is threatened? How would such impairment of service or abandonment affect the social and business life of the community?

137. If, by reason of the financial condition of the street-railway system in your city, the public is threatened with an impairment or abandonment of service, and the owners with a loss of earnings upon the investment, what solution of the problem do you advise?

138. What shrinkage, if any, has there been in the market value of the stocks of the company since the maximum market value was reached? Of the bonds of the company?

139. Is the company in the hands of a receiver?

140. If so, what occasioned the appointment of a receiver?

141. What is the total mileage being operated by the receiver?

142. Has the operation of any lines been abandoned? If so, what mileage?

143. What are the annual capital requirements of the company?

144. Where does the company obtain the funds for these requirements?

145. What interest does the company have to pay for borrowed money? (a) On bonds? (b) On short-term notes?

146. Develop kind and extent of competition, where it exists, and whether it is growing or decreasing. What effect did increase of fare have upon it?

147. Can jitney or other form of conveyance be a real substitute for street-car?

148. Is the loss of earnings by the company attributable to automobile or "jitney" competition? If so, are jitneys subject to the same regulation that is imposed upon the street-railway companies? If not, to what extent are jitneys regulated and by what authority?

149. Has the system unprofitable lines and extensions?

150. Should such lines be discontinued or the service thereon reduced?

151. Should car riders pay an increased fare on profitable lines to help support unprofitable lines?

152. Do the company and its employees cooperate sufficiently, in your opinion, in the prevention of strikes and disruption of service to the public?

153. Is the attitude of the public toward the company antagonistic?

154. If so, for what reason?

155. Is it due to a belief that the public has been accorded unfair treatment through poor service, overcrowding of cars, etc., or is it due to a belief that the company is earning large amounts of money to which it is not entitled?

156. Has it been due to any participation which the company has taken in the politics of the community?

157. Is it due to a belief that the company has paid dividends on large amounts of watered stock?

158. Should the car rider bear the entire cost of the service rendered by the company or does the public generally derive sufficient benefit from the presence of the street-railway company in the city to bear part of this cost?

159. Do you favor remitting taxes and assessments, including items for paving, removal of snow and ice, etc., if necessary to maintain a low fare?

160. Is there a trend of sentiment in your community toward municipal ownership?

161. How strong is this sentiment?

162. Do you favor municipal ownership and operation of the transportation system in your city or private ownership and operation?

163. Give reasons for your answer.

164. If you favor municipal ownership and operation, do you think it should be extended to suburban lines outside the corporate limits?

165. What should be the relationship of the community to the street railway and of the street railway to the community?

166. To what extent should the State regulate the service, operation, extensions, abandonments, rates, accounting, and expenditure of municipally or privately owned lines? Give reasons for your answer.

167. To what extent should the Federal Government regulate the service, operation, extension, abandonment, rates, accounting, and expenditures of street-railway companies? Give reasons for your answer.

168. What do you consider to be an ideal system for the regulation of the companies? Should it be (a) exclusively by the municipality; (b) exclusively by the State; (c) cooperation between the municipality and the State?

Example: City to control service, operation, extensions, abandonment, rates, accounting, and expenditure, subject to an appeal taken by interested parties to the State commission, either party reserving the right to appeal from the commission to a court.

Example: City and State to have precisely the same jurisdiction to investigate and determine question upon complaint or upon their own motion, but with the knowledge that an appeal can be taken from any action of the municipality to the State commission.

169. To what extent and under what conditions should the State commission fix the value of the property?

170. Where an electric-railway company operates between two or more municipalities, should the State commission have any different power than over a company which operates exclusively within a municipality?

171. To what extent should the municipality regulate the lines which extend beyond its domain? To what extent should the State regulate the lines which extend beyond its domain?

172. Is it good public policy to have several municipalities and the State commission exercising jurisdiction over one company?

Example: In New Jersey a single company operates in and between 146 municipalities.

173. Do you believe that the cost of securing expert service over question of operation, rates, and accounting is so large that small municipalities should be able to secure better and more intelligent regulation by the State commission?

174. If the street-railway company is operating under difficulties in your municipality, please give the cause and suggest the remedy. Go into detail.

REPORT OF THE FEDERAL ELECTRIC RAILWAYS COMMISSION

The PRESIDENT OF THE UNITED STATES.

SIR: The Federal Electric Railways Commission begs leave to present the following report.

This Commission was appointed by you in response to a suggestion outlining the need of such a commission in the following letter from two members of your Cabinet, the Secretary of Commerce and the Secretary of Labor:

WASHINGTON, D. C., *May 15, 1919.*

DEAR MR. PRESIDENT: The electric-railway problem to which your attention has been called on several occasions has recently assumed such serious national proportions as to warrant the prompt attention of the Federal Government. Already 50 or more urban systems, representing a considerable percentage of the total electric-railway mileage of the country, are in the hands of receivers. The communities affected are among the most important—New York, Providence, Buffalo, New Orleans, Denver, St. Louis, Birmingham, Montgomery, Pittsburgh, Memphis, Fort Wayne, Des Moines, St. Paul, Spokane, Chattanooga.

Other large systems are on the verge of insolvency, for the industry as a whole is virtually bankrupt. The continued shrinkage in the value of hundreds of millions of electric-railway securities held by savings banks, national banks, life-insurance companies, and by the public at large threatens to embarrass the Nation's financial operations. Furthermore, the withdrawal of this industry's buying power, which is said to rank third in magnitude, involves the unsettlement of collateral industries, naturally entailing labor dislocation that will affect hundreds of thousands of employees.

The return to normal conditions is being hampered and the efforts of the Government to avert strained conditions in finance, labor, and commerce are being less fruitful of satisfactory results than should be expected, if some solution of the electric-railway problem were in view.

What the solution is may, we believe, be evolved by a thorough investigation of general franchise and operating conditions in their relation to rates, including service-at-cost plans, State and municipal taxation, local paving requirements, and internal economies that may be effected.

We therefore propose and recommend the appointment by you of a Federal board or commission, whose duty it shall be to study and report upon the entire problem, in order that the State and municipal authorities and others concerned may have the benefit of full information and of any conclusions or recommendations that may be formulated. Such a study will, in our opinion, exert a helpful and constructive force in this critical period of the industry's existence and will aid in the readjustment. If you would make such an appointment before June 30 your contingency fund could be used to defray the expenses, which would be about \$10,000.

The National Association of State Commissioners has always invited Federal aid in this matter and the recent conference of governors and mayors adopted a resolution recommending Federal consideration of the problem of preventing the financial disaster threatening this industry.

We propose that such a commission shall be made up of one representative of each of the following groups: Treasury Department or War Finance Corporation, Department of Commerce, Department of Labor, National Association of State Commissioners, American Cities League of Mayors, Amalgamated Association of Street and Electric Railway Employees, American Electric Railway Association, Investment Bankers' Association of America.

We respectfully urge your authorization for such a commission, to be followed by your formal proclamation upon the selection of the personnel.

Cordially, yours,

WILLIAM C. REDFIELD,
Secretary of Commerce.
W. B. WILSON,
Secretary of Labor.

The Commission appointed by you on the 31st day of May, 1919, consisted of the following members, who were to serve and have served thereon without compensation:

Charles E. Elmquist, president and general solicitor of the National Association of Railway and Utilities Commissioners.

Edwin F. Sweet, Assistant Secretary of Commerce, representing the Department of Commerce.

Philip H. Gadsden, representing the American Electric Railway Association.

Royal Meeker, Commissioner of Labor Statistics, Department of Labor, representing that department.

Louis B. Wehle, General Counsel of the War Finance Corporation, representing the Treasury Department.

Charles W. Beall, of Harris, Forbes & Co., New York, bankers, representing the Investment Bankers' Association of America.

William D. Mahon, president of Amalgamated Association of Street and Electric Railway Employees of America, representing that association.

George L. Baker, mayor of Portland, Oreg., representing the American Cities League of Mayors.

The Commission met on June 4, 1919, in Washington, D. C., and organized by electing Charles E. Elmquist as chairman and Edwin F. Sweet as vice chairman, and subsequently appointed Charlton Ogburn as its executive secretary. At its first meeting the Commission announced that it would attempt to determine the general principles which should govern the regulation, operation, and service of electric railways, but that the Commission was without authority to hear and determine specific local controversies, and that it would not undertake in any way to encroach upon the functions of State commissions or of municipal authorities; that the purpose of the Commission was rather to investigate and study the condition of the electric railway industry, including franchises, rates, taxation, and assessments, economics of operation, public relations, regulation, etc.

The Commission gathered its testimony mainly in two ways: First, by public hearings, at which 95 witnesses testified in person and 21 others sent prepared statements; second, by a series of questionnaires sent to every city in which there is a street or interurban railway, addressed to the electric railways, the mayors, chambers of commerce, and the central labor unions, and also to all of the State public utility commissions.

The first public hearing was held in New York on June 19, 1919. The next hearing was held in Washington on July 15, lasting two weeks, during which time the witnesses on behalf of the electric railways presented evidence under the direction of the committee of one hundred of the American Electric Railway Association. The next hearing was in Washington beginning August 11, and lasted one week, testimony being offered on behalf of the public, chiefly by representatives of the municipalities and all State public utility commissions. At the last hearing held in Washington, beginning September 29, and lasting one week, testimony was offered by further witnesses representing the public and by witnesses on behalf of labor, represented by the Amalgamated Association of Street and Electric Railway Employees of America. All of these hearings ran

through day and night sessions, beginning at 10 a. m. and usually continuing until 10 or 11 p. m., and totaling one month.

Among the witnesses were ex-President William H. Taft, Secretary of War Newton D. Baker, leading bankers, railway managers, economists, mayors, public utility experts, and State public utility commissioners.

The testimony taken embraces 6,195 pages of typewritten transcript.

Three separate questionnaires were later sent out. The first was general, dealing with all phases of the situation. The last two were special, seeking traffic figures, month by month, for the past three years—that is, as to the number of revenue passengers, amount of passenger revenue, fare charges, and any occurrences affecting traffic, such as strikes, influenza epidemic, and the like.

At the conclusion of the final public hearing the Commission engaged the services of Dr. Delos F. Wilcox to aid in analyzing the testimony gathered and to make suggestions to the Commission with reference to its report. Dr. Wilcox made a very comprehensive analysis of the evidence, containing 823 pages of matter. The Commission regrets that it can not publish this analysis with the proceedings, since it represents a complete and masterful study of the whole electric railway problem. Printed with the evidence, however, is a summary of the Wilcox report, prepared by him. The answers to the questionnaires resulted in bringing to the attention of the Commission a great mass of information. All the evidence, exhibits, analysis of Dr. Wilcox, and tabulated summaries of information found in the answers to the questionnaires have been considered by this Commission.

The final meeting of the Commission was held in Washington July 22 to 27, 1920, inclusive, for the purpose of formulating this report.

Owing to the divergent representation of its personnel, this unanimous report of the Commission necessarily represents decided concessions by some of its individual members.

A complete report of the testimony will be printed, together with this report, and will be placed in the Congressional Library in Washington and other leading libraries in the country, with all regulatory commissions, and with the mayors of the leading cities of the United States.

For convenience, we wish, before proceeding to our discussion, to state our principal conclusions and recommendations, which are as follows:

SECTION I.

CONCLUSIONS AND RECOMMENDATIONS.

I. The electric railway furnishing transportation upon rails is an essential public utility and should have the sympathetic understanding and cooperation of the public if it is to continue to perform a useful public service.

II. The electric railway has been and will continue to be a public utility, subject to public control as to the extent and character of the service it renders and as to the rates it charges for such service.

III. It is of the highest importance that both the total cost of the service and the cost to the individuals who use it shall be kept as low as possible without injustice to those who take part in producing it.

IV. The electric railway industry as it now exists is without financial credit and is not properly performing its public function.

V. This condition is the result of early financial mismanagement and economic causes accentuated by existing high-price levels of labor and materials, and of the failure of the uniform unit fare of 5 cents prescribed either by statute or by local franchise ordinances or contracts to provide the necessary revenues to pay operating costs and to maintain the property upon a reasonable basis.

VI. The industry can be restored to a normal basis only by the introduction of economies in operation, improving the tracks, equipment, and service, and assuring a reasonable return upon the fair value of its property used in the public service when honestly and efficiently managed.

VII. The electric railways must expand to meet the growing needs of their communities; therefore, the first essential is to restore credit in order to obtain necessary new capital for the extension and improvement of service.

VIII. Restoration of credit involves a readjustment of relations which will remove public antagonism, provide public cooperation, and insure to the investor the integrity of his investment and a fair rate of return thereon.

IX. Effective public cooperation should be exercised by eliminating, in so far as it is practicable, special assessments for sprinkling, paving, and for the construction and maintenance of bridges which are used by the public for highway purposes.

X. Extensions into new territory resulting in special benefits to the property in that vicinity should be paid for by assessments on such property in proportion to the benefits received, and the amount of such assessment should not be added to the physical value of the corporate property.

XI. The great increase in the use of private automobiles, the jitney, and motor busses has introduced a serious although not a fatal, competition to the electric railway. These forms of public motor conveyance when operated as public carriers should properly be subject to equivalent regulatory provisions.

XII. The full cooperation of labor is essential to the highest prosperity and the usefulness of the industry. The employees engaged in this occupation should have a living wage and humane hours of labor and working conditions. They should have the right to deal collectively with their employers, through committees or representatives of their own selection. All labor disputes should be settled voluntarily or by arbitration, and the award of such a board should be final and binding upon both parties. It is intolerable that the transportation service of a city should be subject to occasional paralysis, whether by strikes or by lockouts.

XIII. A private industry should not be subsidized by public funds unless it is imperatively necessary for the preservation of an essential service, and then only as an emergency measure.

XIV. Unless the usefulness of the electric railways is to be sacrificed public control must be flexible enough to enable them to secure

sufficient revenues to pay the entire cost of the service rendered, including the necessary cost of both capital and labor.

XV. There can be no satisfactory solution of the electric-railway problem which does not include the fair valuation of the property employed in the public service, and where that is done the companies should voluntarily reduce any excessive capitalization to the basis of such value.

XVI. There is no insuperable objection to a large, wide-open city having exclusive jurisdiction over the rates and services of public utilities.

XVII. The necessity for scientific and successful regulation of systems, whether large or small, and especially those which operate through several cities and villages and in rural territory, leads to the conclusion that local regulation should generally be subject to the superior authority of the State, whether as a matter of original jurisdiction or through the medium of appeal.

XVIII. Cost-of-service contracts are in the experimental stage, but where tried they seem to have secured a fair return upon capital, established credit, and effected reasonably satisfactory public service. Such contracts may safely be entered into where the public right eventually to acquire the property is safeguarded.

XIX. The right of the public to own and operate public utilities should be recognized, and legal obstacles in the way of its exercise should be removed.

XX. While eventually it might become expedient for the public to own and operate electric railways, there is nothing in the experience thus far obtained in this country that will justify the assertion that it will result in better or cheaper service than privately operated utilities could afford if properly regulated.

XXI. Public ownership and operation of local transportation systems, whether or not it be considered ultimately desirable, is now, because of constitutional and statutory prohibitions, financial and legal obstacles, the present degree of responsibility of our local governments, and the state of public opinion, practicable in so few instances, that private ownership and operation must as a general rule be continued for an extended period.

XXII. If the reforms incident to public regulation which we suggest in this report should not result in making private ownership satisfactory to the public, such reforms should at least enable public ownership to be established upon a just and equitable basis.

SECTION II.

THE STREET RAILWAY IS AN ESSENTIAL INDUSTRY.

The electric railway industry at present is a factor of essential importance in the urban life and, to a scarcely less extent, in inter-urban relations of the country.

The experience of 75 years, the unanimous opinion of expert witnesses, and of those who are students of transportation problems, and the assumption of the necessity for tracks by inventors working to improve the methods of street transportation alike demonstrate the fundamental and permanently essential nature of the railway—and to the present time of the electric railway—as the most nearly ade-

quate, reliable, and satisfactory system available for transporting the maximum number of people through the streets of our cities with the least interference with the use of these streets for other purposes of public ways.

The Bureau of Census Reports for the year 1917 show the net capitalization as of December 31, 1917, to be \$4,869,962,096, which makes this industry one-fourth as important as the steam railroads of the country in point of capitalization. The total mileage in 1917 was 44,835. The net capitalization per mile of track is \$109,065. The total revenue for 1917 from railway operations was approximately \$650,000,000. These statistics do not include the electrified portions of steam railroads engaged in suburban service. Approximately 40 per cent of the mileage is suburban in character.

The number of people with whom the electric railways come into daily contact is shown by the fact that in the year 1917 they carried a total of 11,304,660,462 revenue passengers and 3,202,254,111 transfer and free passengers, as compared with a total of 1,066,638,474 revenue passengers carried by the steam roads.

In spite of the immense development of the automobile industry the demand for electric railway transportation has increased at a rapid rate. It is estimated that on December 31, 1917, there were 4,643,481 passenger automobiles and that two-thirds of the development of that industry was subsequent to 1912, but the number of revenue passengers carried by the electric railways was approximately 1,800,000,000 more in 1917 than in 1912. During the year ended June 30, 1919, the total number of revenue passengers carried by the local transportation lines of New York City was 2,079,942,604, as compared with 1,402,417,642 carried during the year ended June 30, 1909, an increase of more than 46 per cent in 10 years. On the basis of the estimated population served the number of revenue rides per capita in New York City in 1909 was 304 and in 1919, 370—an increase of nearly 22 per cent in the riding habit.

In this connection Mr. Henry G. Bradlee, president of the Stone & Webster Corporation, stated in a letter dated October 1, 1919, as follows:

It would appear that something has been and is still stimulating the street railway business; possibly the automobiles themselves have helped in this direction. People may be acquiring to a greater extent than ever before the riding habit and may be more and more inclined to move about and spend less time in their own home or with their own neighbors. The moving picture is probably also a factor in the situation, but whatever may be the cause, the facts seem pretty clear that the demand for transportation service is still growing apace. This fact, I think, is generally not understood; in fact, I am free to confess that we ourselves were surprised to see the extent of the increased demand for service.

In 1917 the number of employees was 294,826, and it is estimated that the total number of people who were directly and conveniently accessible to electric railway service is about 80,000,000 at the present time. The electric railways have overflowed municipal boundaries and now include a network of interurban lines in many portions of the country, but the fact still remains that the industry is primarily a street railway with its principal function the transportation of passengers within the limits of municipalities.

While the electric railway industry is essentially local, it has certain national characteristics. Its difficulties can not be regarded simply as the isolated problem of a local system repeated hundreds

of times all over the country in varied forms and degrees, each problem being independent of all the others. On the contrary, although a local traction system may be separated by hundreds of miles from its nearest neighbor, it is in other ways inseparably connected with all of the others. As a purchaser in the equipment markets of other States it competes with other companies. Its demands for labor and its scales of wages are necessarily felt at once by traction systems everywhere. In procuring its capital its officers have been generally compelled to market its securities to a large extent in other States, among investors who are particularly interested in such classes of investment. The close industrial and financial interdependence of the hundreds of physically unrelated local traction systems, the millions of dollars of capital placed by thousands of investors in plants which manufacture electric traction equipment, and the five billions of electric traction bonds and stocks to be found scattered all over the country in banks, insurance company reserves, and in private investment, translate the many local problems into a national problem.

SECTION III.

FINANCIAL CONDITION OF THE ELECTRIC RAILWAY INDUSTRY.

The investigation demonstrates that the financial condition of the electric railway industry is acute, and that to a very great extent it is not properly performing its public functions.

The record in this case shows that on May 31, 1919, there were 62 companies, having a mileage of 5,912, in receivership, that 60 companies had dismantled and junked altogether 534 miles of railway, and that 38 companies together had abandoned 257 miles of track. Since that date and up to July 1, 1920, there have been 56 additional companies, having a mileage of 1,908, which have been thrown into receivership.

The capitalization of the industry, according to the 1917 census report, is represented by \$3,058,377,167 in bonds and \$2,473,846,651 of stock. For the year 1917 the net income of operating companies was \$56,450,930, representing an average rate of return of 2.81 per cent upon the capital stock. In 1918 the evidence shows the net income was reduced to \$20,183,413, which represents a return of only 1 per cent. As a whole, there has been some improvement in the industry since the commencement of these hearings, due to the fact that there has been an increase in the car-riding habit since demobilization, and in a great many instances the fare has been increased beyond 5 cents. In spite of this slight improvement, however, the condition of the industry at the present time is serious. A great many companies are unable properly to maintain their track and equipment and to perform efficient public service, to secure funds with which to purchase new equipment, to build necessary improvements and extensions, or to refund maturing obligations.

A large number of factors have contributed to the present plight of the electric railway industry. These may be mentioned:

(a) They were not conservatively financed in their early years, and have not since made good their overcapitalization, except to a limited extent, otherwise than through the process of bankruptcy and reorganization. In the early days the promoters of electric-

railway properties believed that long-term franchises with a 5-cent fare would be permanently profitable. Large sums of money were required to develop the business. In many cases the promoters issued bonus stock to represent their hopes and expectations. This bonus stock did not represent money, service, or property, and added nothing to the value of the plant. As a result of this practice, there are many cases where the existing capitalization exceeds the investment in the plant or the value thereof.

(b) Neglect to amortize this excess capitalization.

(c) Failure to amortize the normal accrued depreciation.

(d) Payment of unearned dividends and neglect of ordinary maintenance.

(e) Overbuilding into unprofitable territory or to promote real-estate enterprises, involved sometimes with political improprieties.

(f) A uniform 5-cent fare, which established a constant rate to apply during variable cost periods. This contract fare has been a source of irritation, resulting in litigation. During normal times many communities sought to have the fare reduced below the contract price. The companies insisted upon adhering to the contract, and they were sustained by the courts. During the recent high-cost period many companies have applied for an increase in fare to enable them to meet operating expenses and fixed charges. In many cases communities undertook to prevent the increase beyond the contract rate. Under the decisions of the Supreme Court of the United States and of the highest courts of a number of States, it is now established that a franchise provision naming a certain rate of fare creates no vested right in any car rider but that such fare can be properly changed by appropriate legislation and substituted by a higher charge.

As indicative of the fact that the 5-cent fare has not been adequate during the war period, we need only to call attention to the fact that on July 1, 1920, increased fares have been allowed in over 500 selected cities; 10-cent fares have been allowed in 69; 9-cent fares in two cities; 8-cent in 30 cities; 7-cent with 1-cent charge for transfers in 26 cities; 7-cent zones in 6 cities; 7-cent in 145 cities; 6-cent zones, with 2-cent transfer charge, in 10 cities; 6-cent for two zones, with 2-cent per zone thereafter, in 13 cities; 6 cents for each two zones in 4 cities; 6 cents cash fare in some cases in 149 cities; 5-cent zones and elimination of reduced rate ticket in 50 cities.

Boston has a 10-cent fare. Chicago, Washington, Cincinnati, Kansas City, Youngstown, and other large cities are on an 8-cent basis.

It would seem that so long as the railways depend upon earning power, and earning power depends upon passenger revenue, the fixed uniform fare is a broken reed for the industry or for the community to lean upon. Perhaps the general sentiment of the electric railways is best expressed by the evidence of Gen. Guy Tripp before this Commission, as follows:

We were all living in a fool's paradise in the street railway business when we suddenly woke up—when the war woke us up—to find that no business which can not increase its revenues under any conditions can live or is sound.

Conversely, it may be said that no community should bind itself by contract or otherwise to continue, after normal conditions have been restored, a rate which might be found reasonable during this abnormal period.

(g) Limited franchises which impair credit and toward the expiration of the franchise result in neglect of the maintenance of the property.

(h) Special taxation and franchise obligations, having particular reference to street paving, street sprinkling, construction and maintenance of bridges used by the general public, general taxation, etc.

The American Electric Railway Association introduced a chart which showed that the total amount of taxes levied against the properties in 1917 amounted to \$45,756,695, of which taxes on real and personal property was \$21,804,619, and on earnings, capital, and other taxes \$23,952,076, representing 10.11 per cent of the operating expenses. In 1902 the ratio of taxes to operating expenses was 9.19 per cent. It is thus seen that there is only a small increase in the ratio of expense for this item since last year.

For the period from 1913 to 1918 the expenditures for all taxes, including paving and other imposts, has ranged from \$60,000,000 to \$65,000,000, corresponding to 10 per cent of the operating revenues. The ratio varies very materially among the different plants.

The evidence on behalf of the companies therefore shows that on the basis of the 5-cent fare the taxes represent about one-half of a cent in the nickel which the car rider has been paying, and that they thus contribute materially to the necessity for fare increases. The argument has been made with considerable force that the car rider should be required to pay for service alone; that he should not, through his car fare, be required to pay for supporting the city's schools, its almshouses and other city institutions. It is contended that the company should be required to pay in taxes to the city only such an amount as would reimburse the city for its actual cost due to the presence of the street railway; and that such a plan of taxation alone would be consistent with the idea that the car fare should be based upon the real cost of rendering the actual service of transportation.

Although there is much force in this idea, and it should be borne in mind by all who are interested in street railway problems, we do not think the time is ripe for recommending its general adoption. The heavy taxation to which the companies are now subject came into being during the period of their prosperity and at a time when they were still essentially private concerns, relatively free from regulation. It was natural that their properties should be taxed in no less degree than the properties of other private corporations.

When a company comes to subject itself to such a comprehensive regulation as renders its property in effect a public instrumentality, then tax exemption begins to be in order. This course has indeed been followed in Cleveland, where as an incident to the passing of the properties under the Taylor plan of municipal regulation they came to be exempted in large measure from taxation. To the extent that it may become possible in any community under similar conditions to exempt street railway property from taxation, the rider's car fare will come more nearly to represent the actual cost of rendering the service of transportation—in itself a desirable result. But it would seem that the status of the company as a public agency should be well assured before such exemption should be attempted.

(i) *Automobile and jitney competition.*—For several years prior to the war, and to an increasing extent throughout the war period and up to the present time, the automobile has proven to be a serious competitor of the electric railways rendering local transportation service. Jitneys and automobile buses operating as common carriers have been able in some cases, through the absence of sufficient public regulation, to engage in unfair and destructive competition with the electric railways for the most profitable part of urban passenger traffic. Strong as this competition has been, however, the electric railway industry as a whole has shown a very substantial increase in the riding habit. The operation of jitney buses as common carriers is much more restricted than the operation of private automobiles, but the jitneys have had a definite and intensive effect upon the street railway situation in particular communities, for the reason that they have engaged in direct and in some respects destructive competition with the street cars as public carriers. The experience of numerous communities, even before the extraordinary conditions growing out of the war, made it clear that unrestricted jitney operation, though more or less temporary and precarious in character, threatens the service, credit and solvency of the street railways.

(j) *Holding companies and banker control.*—About 75 per cent of the public utilities of the country are held, in whole or in part, by so-called "holding companies," which are responsible for their operation. This financing is done in large part through the securities of the parent company, which securities are supported by the securities of the various operating companies. This frequently gives an element of strength to the securities of the parent company which a single localized operating company could not in all cases present. If it were not for the supporting strength of these parent companies, many of the individual operating companies would have gone under before January 1, 1918.

Through these holding companies the electric railways threaten to become a banker-controlled industry. Those who have the ultimate say in matters of street railway policy from the point of view of investors have been dependent for their profits and their power upon the volume of securities outstanding and the frequency with which these securities have been exchanged or refunded. Holding companies in many instances have been responsible for overcapitalization and have insisted upon drawing from the underlying companies every possible cent that could be secured in order to make a showing on these inflated securities. Hon. Joseph B. Eastman, at present a member of the Interstate Commerce Commission, discussed the question as follows:

In the third place a factor of weakness, I think, was the control of the companies in many instances by holding companies organized in the form of voluntary associations, or, to use a more technical term, express trusts. Although the stock and bonds of the street railway companies themselves were issued under public supervision, these voluntary associations which corralled all their stock were subject to no regulation whatever and issued shares upon an inflated basis, and that had the result of accentuating the desire to draw every possible drop of income out of the underlying companies that could be secured in order to support earnings upon the inflated shares of these voluntary associations.

Through this system of financing and management the utilities have been largely controlled by persons living distant from the

community affected by a particular electric railway, whose prime consideration has been to secure a return upon the property. This "absentee" management and control has not been successful in bringing about the proper spirit of cooperation between the local managers, employees, and the public. Since the electric railway companies come into immediate daily contact with large numbers of people, it is of the utmost importance that the industry should gain and hold the respect, confidence, and good will of its patrons. If the local public should invest its money in the stock and bonds of its local utilities there would be an improvement in the relations now existing between the corporation and the public.

(k) *Use of regulatory power to compel more and better service.*—Through the exercise of this power the companies have been required in many instances to improve their standards of service and equipment; to equip cars with vestibules for the protection of the motor-men; and to give better heating, lighting, and ventilation for the comfort and convenience of the passengers. They have also been obliged to install safety devices and make stops at frequent intervals. The exercise of the regulatory power of States and municipalities has undoubtedly added to the cost of the service.

(l) *Underlying companies and leased lines.*—Consolidations have been brought about through the unification of a number of separate corporations which owned and maintained lines of track within the same city. In many cases consolidations were made upon the condition that these companies should be guaranteed a certain rate of return or fixed sum, which represented a high percentage yield upon the investment. The returns thus secured have been a frequent source of irritation, induced by a feeling that these underlying companies are being paid more than a reasonable return upon the value of their property. Your Commission believes that excessive payments to the underlying companies by the operating company have greatly diminished the net operating revenue, and that there can be no satisfactory solution of the street railway problem in such communities until the system has been valued as a whole, and the accounts so kept that the public may know that the rate of fare paid yields no more than fair return upon the value of such property.

(m) *Increasing demands of labor.*—The wages of street-railway labor prior to the war were generally insufficient from the viewpoint of a living wage, and the increases in wages that have taken place since the beginning of the war period have not on the average been as great as the increase in the cost of living.

At the time of our entry into the war, the average wages of motor-men and conductors for companies of 100 miles and over were approximately 31.5 cents per hour. Since the war there has been a rapid increase in the wages of employees. The National War Labor Board by its awards in the year 1916 established the normal wages for this class of service in different cities, varying from 38 to 48 cents per hour, increasing wages 23½ per cent. The awards of the board mark the beginning of the rapidly increasing wages in this class of employment. An exhibit filed by the Amalgamated Association of Street and Electric Railway Employees of America shows the wages for conductors in the principal cities of the United States and Canada as of January 1, 1920. For convenience the exhibit is published as an exhibit attached to this report.

Since that date, new contracts have been agreed to which substantially increase the wages in a number of cities.

(n) *The war and the dollar.*—The conditions which have been here enumerated tended to break down the credit and stability of the electric-railway industry. The increases in prices of labor and materials entering into the construction, maintenance, and operation of electric railways during the war period have corresponded with the increases in the prices of general commodities and in the wages of labor in all industries. Operating costs became so high that in many cases the revenues were not sufficient to pay even the current expenses of operation. Material and equipment prices reached abnormal heights. The increase over 1915 in railway motors and car equipment show 87 per cent; locomotives, 87 per cent; rotary converters, 75 per cent; transformers, 70 per cent; switchboards, 100 per cent; motor generator sets 95 per cent; turbines, 100 per cent; pig iron, 106 per cent; steel plates, 141 per cent; copper, 58 per cent; steel castings, 220 per cent; coke, 35 per cent; coal, approximately, 100 per cent; asbestos material (which is largely used), 560 per cent; other insulating materials, 125 per cent; magnetic sheet steel, 280 per cent; labor from 85 per cent to 90 per cent.

(o) *Cost of new money.*—The destruction of capital incident to the World War and the unprecedented demand of the Government and industries for money, resulted in largely increasing the interest rate for loans. More attractive loans are now absorbing money available for investment, leaving the electric railways where, even with credit restored, they would have to compete in the money market with prosperous and unregulated enterprises.

These factors, and more particularly the increase in wages, fuel, material, and supplies, during and since the war period, have brought the electric railway industry to the point where in many instances it may be forced to abandon public service, and, in most cases, to a point where it will be unable to secure new capital to enable it to refund maturing obligations, secure new equipment, and to make necessary extensions and improvements unless some solution of the situation can be found.

SECTION IV.

EMERGENCY RELIEF.

The evidence in this case shows that the State regulating commission and in a large number of cases the local tribunals have recognized that it has been necessary to grant emergency relief to secure to the communities the service of the electric railways.

With commendable initiative and oftentimes against a hostile public sentiment, the regulating officers have granted temporary increases in the fares without undertaking to determine the value of the plants or make a long and exhaustive investigation. Very little, if any, criticism was made to us against State regulating commissions for their treatment of these utilities during the war period. The most serious difficulties were met with in communities where the charge was fixed by franchises, and the State authorities were without jurisdiction to regulate fares. During a war or other abnormal periods it would seem to be the duty of the State and municipal

officers to deal promptly with petitions for increased fares and to afford such relief as will enable the street railway to serve the public and maintain its track and equipment in proper operating condition. The public always pays for a run-down plant, either through inferior service or higher charges. The first essential is service to the public. Due recognition of this fact will secure to the investor a safe return upon his investment and to the public uninterrupted operation.

SECTION V.

CREDIT AND COOPERATION ARE THE COORDINATE NEEDS OF THE ELECTRIC RAILWAY.

It is clear from this record that the two serious needs in the electric railway situation to-day are its need of credit and its need of cooperation between the public and the utility.

Credit will enable the electric railways to rehabilitate themselves, to adjust their capital accounts, and to meet the prices of normal replacements which are now upon higher price levels. The cooperation of labor will enable them to render continuous and popular service, to effect operating economies, and to get into their treasuries the full amount of revenue collected from the riding public. First-class credit and the full cooperation of their employees, if properly utilized in rendering adequate public service, would give the electric railways a well-nigh impregnable position in their relations to the public and tend to disarm and overcome the prevailing antagonism against them. With capital and labor performing their respective parts freely and well, restrictive regulation would be unpopular, and the demand for the substitution of public ownership and operation for private management would shrink into relative insignificance. The test of private ownership and management lies in the solution of these two problems of credit and cooperation. These problems must be solved, and if no solution is practicable under present ownership and control, then the only course open is the complete transformation of the electric railway industry into a governmental business. Each member of this Commission believes that credit can be secured and private operation maintained under public supervision.

Unless the confidence of the investor in the securities of the companies furnishing this essential public service be restored the public itself must in some way assume the burden of supplying the funds necessary for their continuance. To a degree unknown to private business enterprises, which to a certain extent are able to finance capital expenditures from earnings, the electric railways are dependent upon new investment—new capital—for the extension, improvement, and betterment of the service which they perform. Communities need and are constantly demanding additional local transportation facilities. They require large sums of money, which can only come from those with savings to invest. When the flow of new capital ceases, when the confidence of the investor in the ability of the enterprise to safeguard the integrity of the investment and to insure a fair return thereon ceases, new capital is unobtainable and the utility can no longer serve the purpose for which it was created.

This condition is now present. Lack of confidence in electric railway investment exists to-day to a degree which has caused a

partial paralysis, is working havoc with the finances of the companies, and is depriving the public of the service to an alarming extent.

For rehabilitation and improvements and extensions which are vitally needed to meet the requirements of every growing community new capital at once and in large amounts is imperatively required, and until the force of circumstances convinces those with capital at their disposal that investment in electric railway securities affords safety and a fair return it can not be obtained.

So far as the requirements in normal times are concerned, certain characteristics of the electric railways and certain conditions under which they operate tend to make their credit almost unlimited. In the first place, they have enjoyed a monopoly of the most convenient form of local transportation during a period of rapid industrial development and of rapid increase in urban population. They have a continuous and immediate market for their "goods." They sell transportation as it is produced. While electric railway traffic fluctuates somewhat from year to year, according to the number of passengers and the prosperity that prevails, and fluctuates somewhat from season to season, from week to week, and from day to day, these fluctuations are relatively unimportant. The business of transportation goes on every day in the year. Under normal conditions the credit of the electric-railway business is its relatively small need for "fluid" or working capital. In this respect it occupies a position more independent than that of any other utility or any other private industry. It does a cash business. Almost 100 per cent of its revenues are collected in advance, through the sale of tickets or at the time the service is rendered; from the collection of fares in the cars. Money flows into its coffers day by day in a relatively even stream. Before it pays the wages of its employees, the salaries of its officers, the claims resulting from injuries and damages, the rentals for the use of property, the interest and dividends on its investment, or its taxes, it has already collected from its patrons in cash full compensation for the service rendered. It does not send out bills.

The increase in revenues of the electric railways is a product of three lines of expansion. These are the increase in urban population, the increase in the riding habit, and the increase in the rate of fare. The gross operating revenues of the electric railways grew from \$247,000,000 in 1902 into \$630,000,000 in 1917—an increase of 163 per cent. For a number of years, particularly during the first decade of the century, there was a strong tendency toward fare reductions in many urban communities, but the evidence shows that for the country at large the total amount of electric railway operating revenues increased by a much greater per cent than the number of revenue passengers during the 15 years ended with 1917. Since the latter date there has been a strong upward tendency in street railway fares. Statistics covering 75 per cent of the electric railway traffic of the country indicate an increase of nearly 14 per cent in the average fare paid from 1917 to 1919, and an increase of about 22 per cent in passenger earnings during this two-year period.

Without a doubt the enjoyment by the electric-railway industry of a steady inflow of revenue of rapidly increasing volume, assured by the most fundamental conditions of modern life and the strongly developed habits of the people, is extremely favorable to credit. In what other industry could investment be made with greater assurance

of security and continued earning power? The tracks for the most part are in the public streets where everybody can see them. The operation of the cars is most conspicuous. It would be hard to find another industry where the investment is completely visible to all and so freely observed by the entire population. If publicity of operation is a guaranty against the waste and disappearance of capital, then the position of the electric railway, where everybody can observe it every day, is surely conducive to the development and retention of credit. From this viewpoint how different is a street-railway investment from an investment in mining stock or in the fruit lands of the far West, or even in manufacturing enterprises in one's home city? The capital stock of electric railways does not require to be refunded, and under sound financial and regulating policies the proportion of stocks to bonds outstanding would undoubtedly be much greater than is shown to have been the case. Under such conditions refunding difficulties would be about negligible.

The record is not clear as to the amount of new money which may be required year by year, but a very conservative estimate places the figures at between \$175,000,000 and \$200,000,000 per annum, to be used in replacements, refunding obligations, extensions, and improvements.

For the purpose of restoring credit, it seems to be the general impression of all witnesses that the first necessity is for the industry to put into effect such economies of operation as will enable it to give good service at the lowest cost. Generally speaking, this can be done by the elimination of deadheads and other free service, the abandonment of non-profitable lines, and, where practicable, the substitution of one-man cars for heavier equipment, the modification of special taxes or provisions for paving, snow removal, street closing, tolls, contributions toward the cost of public highways, bridges, etc., reduction of such rentals and power rates as may on investigation prove excessive, the cooperation with the public in developing faster schedules and installing skip stops at convenient places, rerouting of cars, the use of trailer cars, keeping street car tracks clear of traffic and other congestion, due to parking of motor cars on curbs, and the regulation of vehicular traffic. Much can also be done toward reduction in the cost of operation by developing the proper spirit of cooperation with employees. All of the matters herein suggested properly come under the head of good management and regulation and in some cases would entail legislation, but in our judgment they do not wholly solve the street car problem, or invite needed capital into the industry. During the past two years efforts have been made to meet the difficulty by increasing fares. In many cases this has helped to tide them over a difficult period, but it has not stimulated the confidence of the investor in the integrity of the industry. New capital is not flowing in that direction.

An effort has also been made in a number of communities to increase the short-haul riding habit as well as the revenues by the introduction of the zone system for fares. This system has proven generally successful in some of the European countries, but it has met with varying success in the United States. Fundamentally the theory of the zone system is logical. It is that a passenger pays for what he gets. Under the present flat fare charge, the short-haul rider is paying for a service given to the long-haul rider.

The original failure of the electric railways to vary their rates of fare for transportation service, based upon the length of the ride, as services in all other lines of business are sold, is, in our judgment, one of the contributing factors to their present financial condition. The electric-railway industry is the only public utility which, as an industry, has consistently adhered to a flat basis. Steam and suburban roads charge on a distance basis. Gas, power, electric, and water power companies, generally, make their rates upon a measured basis, subject to a minimum charge per month and the telephone company grade all toll messages on a mileage basis, while observing in most cases a flat rate per month for local service. Whether or not under present conditions it would be to the interest of a community to introduce a zone system of fares, instead of the present flat fare system, is a question which we think should be decided by the community itself, having reference to the social problems involved.

SECTION VI.

LABOR ON STREET RAILWAYS.

The labor policies of the electric street railways will in the future be of great importance as an element in the restoration and the permanent maintenance of their credit. The full cooperation of labor is essential to the highest prosperity and usefulness of the industry. This is particularly true because in the case of the street railways the employees who immediately handle the service come into direct contact with the people who consume that service.

The evidence before this Commission shows that in the past the suspension of service, due either to strikes or lockouts, has been costly to both the employees and to the operating company, but the loss occasioned to those two groups has been secondary to the damage wrought to the public interest. The conditions which recurrently bring about such interruptions of service should be treated at their roots. The employees engaged in this occupation should have a living wage and humane hours of labor and working conditions. They should have the right to deal collectively with their employers through committees or representatives of their own selection. In all contracts and working agreements made between them and the employing companies there should be arbitration provisions under which all labor disputes which can not be voluntarily settled shall be submitted to boards of arbitration composed of disinterested persons. The award of such a board of arbitration should be final and binding upon both parties to the controversy; for it is intolerable that the transportation service of a city should be subject to occasional paralysis, whether by strikes or by lockouts. It would seem that public authorities could well interest themselves in the formulation of such plans and rules for the arbitration of labor disputes under these contracts as will secure justice to both parties and as will assure continuity of service in so far as that may be possible of achievement.

But the full cooperation of labor in the street-railway industry will not have been brought about alone by the recognition of the right of collective bargaining which we have just been urging. Such recognition is but a foundation for full cooperation. The actual work of insuring it must come from the employees themselves to whom the

right of collective bargaining is thus given. For that right carries with it a duty. It would seem to be the duty of the organization which bargains for the individual worker to interest itself actively and unremittingly in his delivering to the company his best strength and intelligence.

This Commission thinks that where the street-railway worker has the right of collective bargaining the public has the right to expect that the organization or association representing him will not only procure his wage, but will also continuously stimulate his whole-hearted constructive cooperation with the company and his effective service to the public.

SECTION VII.

VALUATION.

It is the law that utilities are entitled to a fair return upon the value of their property used in public service at the time of the inquiry. The methods for finding fair value are in dispute. No permanent solution of the electric railway question can be found in the absence of a finding of value for rate-making purposes. This applies to commission form of regulation, cost-of-service contracts, or public ownership and operation. The public should know what it is paying for, and this question can not be settled without knowing what the property is worth.

Although some evidence was introduced before this Commission on the subject of valuation, the Commission discouraged the introduction of testimony upon this question mainly because such testimony, no matter over how many weeks or months it might be extended, would have been but a fragmentary duplication of material already available in the official records of the Interstate Commerce Commission. Pursuant to an amendment of the Act to Regulate Commerce, approved March 1, 1913, which amendment is known as the Valuation Act, the Interstate Commerce Commission has during the past seven years been engaged in valuing the steam railroads, telegraph, and long-distance telephone companies in the United States. In connection with this work it has carried on a most extensive investigation into the subject of valuation for rate-making purposes, in the course of which investigation the carriers have been represented by a conference committee of 50, assisted by able lawyers, accountants, and engineers, while the public has been represented by the State public utility commissioners, their counsel, and by the General Counsel of the Interstate Commerce Commission. Every theory and principle of valuation has been fully and ably discussed, argued, and briefed.

On July 31, 1918, the Interstate Commerce Commission submitted its report in Valuation Docket No. 2, Texas Midland Railway. This report contains a full discussion of the different theories of valuation considered, the method employed by the Commission in assembling all the essential data, and discussion of the requirements of the Valuation Act, and the findings of the Commission upon most of the disputed questions. Subsequent decisions were made in the case of the Winston-Salem Southbound, Alabama, Birmingham & Atlantic, and Kansas City Southern Railroads. We are informed that decisions affecting many of the other railroads will be made during the present year.

The first requirement of the Valuation Act is for finding of original cost. The Commission is reporting original cost as fully as it possibly can be obtained from the best available evidence in each particular case. In its valuation proceedings it has been earnestly contended that the cost of reproduction new as of the date of inquiry should be taken to be the value of the property. Others have contended with equal earnestness that the value of the property should be limited to the original cost, as this item represents the money which has been actually invested by the stockholders and bondholders in the property. The rapid increase in the cost of labor, supplies, and material during and subsequent to the war period seems to have served as a peculiarly vivid indication that the original cost is a primary factor in finding value for rate-making purposes.

In our opinion, the decisions of the Interstate Commerce Commission, based upon long experience and investigation, will in large measure settle the standards of valuation. For this reason we suggest that municipalities and States which may be engaged, by arbitration or otherwise, in fixing the values of electric railways, should familiarize themselves with the practice, experience, and decisions of the Interstate Commerce Commission in these valuation cases.

The valuation, when once fixed as the basis for the financial return of the company, should logically come to affect the amount of capitalization. No matter what may be the plan of operation or of public regulation under which the company is working, if its financial credit is to be strengthened through just and stable arrangements with a friendly public, it should, in the judgment of this Commission, voluntarily reduce any excessive capitalization to conform to such valuation as may have been determined upon.

SECTION VIII.

PRESERVATION OF RECORDS.

We would particularly urge public officials and officers of the electric railways to cooperate seriously in the protection and preservation of all corporate, financial, and cost records.

Service-at-cost plans have been recently rejected by popular vote, largely on the issue of valuation, in Chicago, Denver, and Minneapolis. The public, justly or unjustly, has become so suspicious of the electric-railway companies that it may be expected to reject any service-at-cost or public ownership question submitted to popular vote, no matter how fairly the plan may be formulated, if it is not thoroughly convinced that the capital item has been fairly and honestly arrived at. The failure of a company to preserve its records may in the end hurt its stockholders more than it may the public.

SECTION IX.

AUTOMOBILE, JITNEY, AND MOTOR BUS.

The automobile and jitney bus are facts. Jitney competition began about 1912, and was at first entirely unregulated. Even today in some places it continues without regulation of any kind, and in many places with only partial and inefficient regulation. In no instance, so far as this record shows, has this so-called jitney

carriage of passengers been subjected to obligations as to the payment of taxes, maintenance of highways, character and extent of service, and financial responsibility for accidents under which the electric railway business is being conducted. The portion of the street paved and maintained by the electric railway, and in winter cleared of snow at its own expense, is taken advantage of by the jitney competitor without compensation either to the company or to the municipality, and often to the serious injury of the street railway by interfering with the prompt and regular movements of its cars. The jitneys prefer to confine themselves almost exclusively to the short-haul traffic. It appears that in the city of Bridgeport the jitneys carry about 50 per cent of the passengers riding within $1\frac{1}{4}$ miles of the center of the city; almost 69 per cent of the passengers riding between $1\frac{1}{4}$ and 2 miles from the center; a fraction less than 45 per cent of those riding between 2 and $2\frac{3}{4}$ miles from the center; and none riding more than $2\frac{3}{4}$ miles from the center of the city.

The question from the point of view of the street-railway service is, What, if anything, is to be done about them? The public, through its governmental agencies, would not concern itself with the effects of this competition if it were not that local transportation is recognized to be an essential public service. So far as private automobiles are concerned, although they undoubtedly have their effect upon the extent to which people make use of the street cars, they are even now less important than human legs as competitors of the electric railways, and it is not deemed to be consonant with the theory of American institutions and government that the free movement of private citizens by their own means of locomotion should be restricted in order to compel them to make use of public vehicles, whether the latter be operated by private agencies or directly by the Government. All that could be properly done in this direction would be to compel the private vehicle using the public highways to pay license fees or taxes proportionate to the burdens they place upon the highways, as compared with the burden placed upon the highways by the street cars.

While there is some diversity of opinion as to the permanency of the electric railway industry, in view of the improvements which are being made in the use of gasoline and electric power machines, the opinion appears to be nearly unanimous that the electric railway operating on tracks is the most efficient means of furnishing local transportation service in the urban centers. The future of the gasoline public conveyance in urban transportation is entirely unreckonable. Great strides have been made and greater strides will doubtless yet be made in its use. Local public authority would indeed be exercising a dangerous power in unduly restricting the use of new inventions for public transportation at a time when in nearly every large city the physical task, even for an electric railway well equipped, of carrying the public in decent comfort is becoming so formidable. If jitneys and automobile buses acting as common carriers were subject to regulation by State commissions and were required to procure a certificate of public convenience and necessity before establishing a route or undertaking to render public service, the motor vehicles would be prevented from entering into active competition with street car service unless the latter is shown to be wholly inadequate.

That street-railway service and jitney service can not permanently exist and pay their own way in competition with each other under

any ordinary urban conditions seems to be well established by experience and by the conditions inherent in local transportation service, but the belief is general that the motor bus may properly be used to supplement the service rendered by the street cars. The motor bus may be used to render a sort of supplementary service, such as the service now rendered on Fifth Avenue and certain other high-grade residential streets in New York City by the Fifth Avenue Coach Co., or the buses may be operated on other independent routes merely as feeders to the street railway system to take care of traffic in partially developed territory in advance of the time when street railway tracks can be laid with reasonable assurance that the investment will be self-sustaining.

Undoubtedly, the whole matter of the control or abolishment of jitney competition may be summed up in a few words. All transportation service is for the public. Jitneys and automobile buses can not be repressed merely for the sake of compelling people to ride on the street cars, particularly if the car fares are higher than the jitney fares and the car service less convenient than the jitney service. However, it is clearly in the public interest that all common carriers engaged in local transportation service should be required to render adequate and safe service, and that local transportation facilities should be developed in the most economical and effective way from the point of view of the community. Unnecessary and destructive competition ought not to be permitted, and the community at large should conserve the established facility that still is and promises to continue for an indefinite period the principal means of local transportation. The problem in a considerable measure is a local one, but in every case it should be solved with intelligent regard to the permanent interests and obligations of the community. If the street railways are to be allowed the benefits of even a qualified monopoly, they should be required to fulfill their obligations. They must render service that is adequate and convenient at rates that are attractive. The community can afford to go a long way to preserve street-railway service, and the efficient regulation of jitney and motor bus competition will aid considerably in restoring the confidence of investors in the future of the electric-railway industry and in increasing their gross and net revenues.

SECTION X.

DEPRECIATION.

The electric railways should adopt the policy of setting aside a depreciation fund with which to take care of replacements and thus preserve the integrity of their investment. It would have a very wholesome effect upon credit. Such has not been the practice in the past. Deferred maintenance has accumulated to an alarming extent during the war period.

Generally speaking, regulating commissions have the power to prescribe methods of accounting and to establish the amount of the depreciation fund. This practice should be observed, and its adoption will improve the situation of the industry and be greatly in the interest of the public welfare.

SECTION XI.

EXTENSIONS SHOULD BE PAID FOR BY ASSESSMENTS ON OUTLYING PROPERTY BENEFITED.

Your Commission would urge that in every community, where and to such extent as may be practicable, consideration be given to the advisability of requiring extensions and rapid transit systems of subway and elevated to be paid for, not out of new capital invested through the medium of bonds or stock, which means for all time an added burden upon the car rider, but from special taxes assessed against the owners of property in the district the value of which is enhanced by such extensions.

This would not be a new principle; it would be merely the application of an old principle. The American property owner has been accustomed to contributing out of the increase in value of his property to the cost of building streets and other public improvements. The principle is peculiarly applicable to improvements of city transportation systems, because of the enormous increases in real estate values created when new extensions open up new territory or when the creation of rapid-transit facilities make outlying territory more available.

The City Club of New York, in 1908, a few years after the extension of the New York subway from One hundred and thirty-fifth to Two hundred and thirtieth Streets, in Manhattan, had been built at a cost of \$7,375,000, made an authoritative study of new real estate values created by that extension in the district lying between One hundred and thirty-fifth and Two hundred and thirtieth Streets. After deducting \$20,000,000 as a liberal estimate, based upon studies of parallel situations, of the natural increase in property values in that district which would have taken place without the subway extension, it was found that the increase in values clearly brought about by the subway extensions was \$49,200,000, an amount upward of seven times the cost of the improvements. The property in the district enjoyed an increase in value of 104 per cent. If, by assessment, it had borne the entire cost of the extension in the district, it would have still retained a new profit on the value of the land of \$9 per cent, or an aggregate of \$41,825,000 for the district. The Manhattan extension just referred to, together with The Bronx extension beyond One hundred and thirty-fifth Street, cost \$13,075,000. These two extensions directly created, in a limited area lying near those extensions, new land values solely due to the extensions of \$80,500,000. Let it be borne in mind that the cost of the entire subway system from the Battery to Two hundred and thirtieth Street in Manhattan and to Bronx Park was about \$43,000,000.

In Philadelphia recent estimates of improvements in land values expected from rapid-transit projects in contemplation have been equally enlightening. Similar results would be certainly obtained in many other cities by studies similar to that made by the City Club of New York.

Is it not in accordance with the laws of economic justice, then, that the landowner, as such, should share his benefit of increased land value with the public? Instead of the cost, \$7,375,000, of the Manhattan extension being borne by the owners of the land in the newly served territory, it was capitalized and translated into an annual charge of \$350,000 or more, a burden which had to be borne out

of the car fares and which to-day helps to intensify the financial predicament in which the company finds itself. If the public pays out of its fares for the cost of maintaining and operating the line which will bring the outlying landowners such enrichment, should the latter not share with the public out of that enrichment, depending upon the degree in which he is benefited, by paying for or by helping to pay for the initial cost of construction of the line? That such a solution is just is rather significantly shown by the fact that in a number of cities landowners in outlying districts have offered spontaneously to contribute large sums to the company to assist it in constructing certain extensions. The present predicament of the street-railway companies is in many places partly due to overbuilding, a fault traceable to political or business pressures exerted by speculators in suburban lands who had little or no financial responsibility in connection with the street-railway extensions which they caused to be built for their immediate benefit. This action of the suburban landowners of certain cities, on the other hand, is a significant expression of enlightened self-interest and a sound, constructive recognition of a fundamental principle of justice. The establishment of that principle by law, whether by changes in city ordinances, State statutes, or State constitutions, should, in our opinion, not be delayed. This thought is especially recommended to the attention of a number of communities which are now facing the necessity of extensions or rapid-transit improvements.

Three points in this connection should be briefly touched upon:

First. The amount of the assessment on any owner would probably have to become fixed by an appraisal sometime after the construction of the improvement, and the owner should be given the option of paying his assessment in installments over a course of years. Consequently the actual first financing of the extension might have to be by the city.

Second. It will doubtless be urged by some that such a system for building extensions would lead to municipal ownership. On the contrary, it seems to us that if properly administered it could, by reducing the acuteness of the fare question, serve with much force to offset the pressure for municipal ownership.

Third. As to the problems incident to allowing a private company, for a nominal rent and in return for undertakings as to repair and maintenance, to take over or use public property, similar problems incident to similar arrangements have already been ably and effectively handled in Boston and a number of other cities under State or municipal regulation in connection with subways and other structures.

If objection to the employment of such principle in constructing extensions be made upon the ground that public officers and landowners along the line of the proposed extension are thus given the power to veto such extension, let it be remembered that the problem of extensions is not only a serious financial problem, but is also essentially and finally a long-range social problem. The development of a city's street railways should be guided primarily not by the fortuitous financial expediences of a small group of bankers or real estate operators. It should be guided by the foresight and vision of those who are officially responsible for planning the city's growth and life, in terms of its water supply, its light, its streets, its sewers, its schools, its parks, its playgrounds, its civic centers, its night amusements,

its community life, its libraries, its hospitals. It should be guided by those whose public duty it is to be interested in the health and happiness of the average city toiler and his family of growing children.

The call for municipal ownership to-day does not all emanate from dissatisfaction with the service in a narrow sense as riding facilities. It is largely an expression of feeling on the part of many that the street railway, instead of helping to make conditions bearable, is contributing to making them unbearable; that it is not, with the functions and powers which it exercises, accomplishing what it might accomplish to reduce the abnormalities of city life. While areas within the city remain undeveloped and unserved by adequate transportation, toiling thousands find themselves dragged out miles farther, not to green lawns and spaces, but to a repetition of the same ugly congestion that they know in the city. The time will come when employers and educators will be forced to take cognizance of the impairment in working efficiency caused by such inconveniences as are suffered by the traveling public to-day. The time is approaching when cities will find it necessary to extend their street railways not on the basis of new property values or the earnings of any single line of rails, but on the basis, primarily, of what will be most consistent with the public health and public economy.

These motives are strongly at work underneath our situation to-day. The public's control over stock issues, service, routes, extensions, etc., is needed to-day not only in order that as part of a plan for restoring the credit of the street railways the community's interest may be protected by the guarantee of efficient management, but also because the city of to-day is taking a more conscious, constructive interest in the city of to-morrow. That interest can be recognized and cared for under private operation if the public authorities have the suggested controls. If such controls do not come into effective existence, then one of the strongest forces making for municipal ownership will continue to exert an increasing influence.

Your Commission trusts that this principle of paying wholly or in part for the construction of extensions out of special taxation of benefited property will be seriously studied and adopted where possible. It seems fundamentally sound. While its adoption presents legal difficulties, as has the adoption of many another newly recognized industrial-economic relation, it holds great promise for reducing the financial problems incident to public transportation.

SECTION XII.

RATE OF RETURN.

It is an axiom that property devoted to the public use should secure a fair rate of return. Where money is represented by bonds the return is a part of the contract and is not changed during the life of the contract. Where capital is represented by stock, the rate of return may vary according to the operating or financial conditions, and naturally it should compare favorably with the income upon other classes of investment. The undisputed testimony proves that the rate must be certain as well as reasonable to attract capital and that the absence of either of these essentials will frighten the investor away. It may be a lamentable fact, but it is nevertheless true, that

most of the electric railways are obliged to go to markets outside of their territory to secure new capital; and under existing circumstances the investor is no longer willing to place his money in speculative properties. The experience during the war period has taught investors that a fixed franchise fare fails to meet the requirements of the industry and there is no dissent from the suggestion that such a fixed fare is a relic of a bygone age. There are certain conspicuous examples of an adherence to a contract fare which may be referred to, but they do not affect our conclusion that the rate of fare must be subject to prompt revision according to the needs of the particular property.

SECTION XIII.

REGULATION OF PUBLIC UTILITIES.

The foundation stone of the relations between communities and the companies must be the local authority under which they are permitted to conduct business. Since practically in all States the local government alone has the power to permit the use of highways by electric railways, the primary authority is the franchise grant or agreement containing the permit. Franchises are of varying terms and conditions. Until recently the franchises were generally limited to a certain number of years, but now it seems to be the settled conviction that such contracts are inherently imperfect. A reserve fund set aside during the term to take care of the property at the expiration of the franchise would result in increased charges for services; and, upon the other hand, the failure to take care of the investment in this way leaves the company at the will and caprice of the public. Instances have been referred to in this record where the railways are having difficulty in securing new franchises, while in some communities there seems to be a disposition to take over the property for junk values. Under these conditions it is natural for the company to neglect maintenance and give poor service. From the evidence it appears that there will be difficulty hereafter in securing new capital for properties that are governed by such franchises.

The undisputed testimony favors an indeterminate franchise by which the company is permitted to operate subject to the right of the public to take over the property by paying its value or agreed price. Such contracts protect both the investment against confiscation and the public against extortion by providing for payment of just compensation for the use of the property. The indeterminate franchise has been most thoroughly developed in the State of Wisconsin, and it has been recognized in the District of Columbia, and the States of Indiana and Massachusetts. Its earlier adoption by other States and communities would have prevented many conflicts and misunderstandings. We believe that this form of franchise should receive the favorable consideration of the public.

Prior to 1907 the regulation of electric railways was principally confined to the municipalities. The history of this industry is replete with examples where municipal corruption has resulted from this control. The street railway is, however, essentially a local institution and it can not permanently prosper unless it has the confidence and cooperation of the public which it serves.

Since 1907 many States have taken over the control and regulation of this service and the communities within those States have been

deprived of all jurisdiction. While the evidence shows that exclusive State control is preferable to exclusive municipal control, yet there appears to be a happy middle ground by which the municipalities may exercise control of the things that are peculiarly within their province, and the State retain jurisdiction over all other matters and also exercise supervision over the action of the local tribunals. No general rule would fit all cases.

We have street railways which do not extend beyond the limits of a city, others where two or more systems operate in the same city, while frequently a single company operates in, through, and between a large number of cities and villages. In New Jersey one system serves practically the whole State, and the same condition exists in Connecticut. Manifestly no rule of thumb can apply to these different conditions. The tendency is to extend the mileage and service of street railways and to unite different companies under one management, and as our cities and villages grow and the rural country becomes more populous and prosperous these electric railways will extend their lines to meet the growing demands. Under such conditions safety, efficiency, and economy will be promoted by extending to a superior regulatory board the control of the practices, rules, regulations, security issues, the system of accounts, and the charges to be paid for the service.

Effective local control is well-nigh impossible where a single company spreads out over an entire section of the State and this condition even constitutes a serious obstacle to municipal ownership. Where the street railway company operates wholly within one city there can be no insuperable objection to exclusive municipal control, when the people are ready and willing to exercise it. Secretary Baker testified upon this point as follows:

Because I think the responsibility for the management of its own affairs is the greatest educational influence that the city of Cleveland has. The fact that the people of the city had studied and grasped and solved an intricate and complicated problem like the street-railway problem has made them a more self-conscious and a stronger, more virile people than they were before that problem was put up to them; and I should be very sorry indeed to see the responsibility for their own affairs in as intimate and important matter as street-railway service taken away and transferred to a State agency.

Cleveland has made a more extensive study of the electric railway problem than any other city in the country. Intelligent regulation can not be secured without the assistance of expert operative, statistical, and engineering departments, and these are expensive items in any municipal budget.

In some respects uniformity is not only desirable but essential. This applies to the control of security issues, to accounting, the study and determination of depreciation and the control of such funds, fixing reasonable maintenance standards and their enforcement, and the methods and principles to be employed in valuing properties, either for rate making, capitalization, condemnation, or purchase. In a general way, the rules and principles which may be applied to the electric railway industry will be found available for other utilities, such as telephone, electric light, heating, power, and gas and water companies. In our judgment the State public service commissions should determine finally these matters, subject, of course, to an appeal to the courts where they err in judgment or transgress the law.

Regulation by municipalities should be subject to an appeal to the State public service commission, thus bringing to bear upon the question involved the judgment of a body of men somewhat aloof from local influences. This would place the final authority in the State, and surely the communities, which are but subdivisions of the State, should prefer to submit their cause to a State tribunal in preference to a court, which rarely, if ever, has any regulating experience.

Theoretically, State control is removed from the influence of community prejudices. It certainly exercises its functions with a more judicial attitude, and with greater equity to both the communities and the companies; probably it is in most instances more economical and more efficient, since the State can create a better and more comprehensive organization for regulation at less cost. State control obviates conflict of authority between communities that is bound to obtain when utilities operate beyond the limits of a single municipality. It makes unnecessary the erection of metropolitan or public utility districts in order to secure uniform regulation, and it also results in a large saving to single communities which would otherwise be obliged to maintain its expert departments to perform this service.

The possibility of combining the best features of State and local regulation through a division of powers and duties was suggested by several witnesses and has been carefully considered by this Commission. It would seem to be desirable to leave to the communities, at least in the first instance, the determination of such questions as the assignments of streets upon which the railways may operate, questions involving speed, stops, schedules, rerouting of cars, and service during peak hours and otherwise, the extension of tracks, rate of fare, and the securing of certain statistical information where such information does not directly interfere with the accounting rules which have been prescribed by the State. Under these conditions the cities would be compelled to take a direct interest in the transportation business, leading to a more wholesome cooperation between the public and the railways. We believe this principle is worth trying, because it places the initial regulating responsibility upon the community, thus leaving the way open for sympathetic understanding and cooperation between the public and the industry, without which the industry can not survive, and yet places the final responsibility upon the State, which is best equipped to determine the questions involved in a sane, consistent, and impartial manner.

In a number of States commissions now have complete authority over all questions. There should be no change if the people are satisfied with that policy. It has unquestionably worked well in most of these States. We do, however, desire to emphasize our belief that any form of regulation will fail of its purpose if it does not secure public cooperation in the conduct of the utility. Our study of conditions as they exist in the principal cities of the country has shown that unless the public is in sympathy with the purposes of the management and lends assistance in their achievement, neither efficient nor economical service is possible. Cooperation can not be obtained unless the public be informed as to all phases of the electric railway problem—financial, economical, and operating—and will not be continued unless the process and information is continued. This psychological factor involves a continuing task of undoubted magnitude, but whatever the regulatory authority may be, and however

great the difficulties, the duty involved must be performed if the relations of the public and these highly essential utilities are to be maintained upon a basis that will insure proper service.

The electric railway problems admit of a satisfactory solution once the elements that compose them are made known and the process of ordinary economic and business common sense are applied. The duty of both the public authorities and those who control the electric railway enterprises of the country is plainly indicated. The time has come for a permanent and satisfactory settlement of the traction question. The interests of both the public and the companies lie so exactly parallel in almost every respect that there ought not to be any serious difficulty in arriving at a solution if both parties approach the subject in a proper spirit.

SECTION XIV.

SERVICE-AT-COST PLANS.

The electric railways have responded to the improvements in the arts and sciences, and it may also be said that the science of regulation has fairly kept pace with the requirements of public service and the growth of the industry. Franchises have been the result of experiment. The contract fare established an unsound rate basis, and in some instances commissions were slow to reach conclusions in rate cases. Investors lost confidence in the electric-railway business. It was thought that a contract must be evolved which would meet all the requirements of the industry as well as of the public. Thus came the cost-of-service contract. It has worked well in Cleveland during the most difficult period in the history of the industry. It seems to have worked fairly well in the other cities where it has been tried out, and to justify the following statement made by Secretary Baker:

I believe that any community in America will pay cheerfully and willingly whatever rate of fare is necessary to carry the people on their street railroads, and to maintain good service in their communities, if they are sure that they are paying only proper operating expenses, proper maintenance, and a proper return on capital.

Practically all of the witnesses for the electric-railway industry favored service-at-cost franchises. That service should be provided at cost is not a new principle in the regulation of public utilities. It is back of all public service commission regulation, and expresses the reaction from the original contractual relations between utilities and communities, under which fares were fixed and limited, while return was not. The application of the term "service at cost" in recent working agreements between the electric railways and the cities of Cleveland, Cincinnati, Dallas, Montreal, and to a limited extent the city of Boston, does not clearly describe such agreements. They are, in effect, devices for automatically and quickly adjusting price to cost. It is, therefore, not so much the principle back of such plans as it is the method provided for carrying that principle out that concerns the Commission in this phase of the traction problem. Without going into unnecessary detail, it will suffice to state that the main features of the contract are:

- (a) Fair valuation of the property.
- (b) Capitalization to conform thereto.
- (c) Agreed return upon capital.

(d) Public control of capital issues, and, to a certain extent, over expenditures.

(e) Public supervision over management, operation, and service.

(f) Automatic changes of rates, to meet fluctuating economic conditions, and to insure a proper return on the value.

(g) Private operation, subject to the right of the municipality to purchase the property at its value, or upon an agreed price.

(h) Reduction of taxes and assessments.

The service-at-cost contract is still in its experimental stage, and naturally a number of criticisms have been made of it. These have been considered, but with the limited experience under this contract we believe that the criticisms are more theoretical than real. If these defects prove to be substantial and result in unduly increasing the cost of service, they can be removed by improved regulation, but if they can not finally be avoided, then it would seem that the public has ample protection in the contract's purchase provisions.

Generally speaking, the main criticism of this form of contract is that it tends toward inefficiency and uneconomic operation; that it contains no provision for the control of strikes, or uninterrupted service; and that labor and management may cooperatively increase the cost of operation to the point where the public may be unduly burdened.

From the point of view of credit restoration, the outstanding advantage of this contract is that rates are automatically adjusted to meet changing operating conditions. We are inclined to think that the assurance of an automatic adjustment of fare will do more than anything else to restore the confidence of the investor in these properties. Public confidence will be immeasurably strengthened through the valuation of the properties, because the figure that is established constitutes the basis of the return to the investor, and fixes at least the minimum price which the public will be obliged to pay if, at some future time, it should decide to purchase and operate the property. When the value is thus fixed, there can be no further dispute as to capitalization or excessive profits, because the people will know just what they are paying for. The controlling element in its favor is the restoration of public confidence in the corporation, due to the removal of those elements of friction which have so frequently engaged the attention of the public. It might also be said that to a certain extent it removes the railways from the idea of speculative gain, and places them upon a common-sense business basis where the people pay for the service they get, and where the opportunity for large profits no longer exists, since economies and lower operating costs are reflected in reduced charges for service. When the contract is once established, the opportunity for municipal corruption is reduced to the minimum.

We strongly recommend the principles of the service-at-cost contract, not as the only solution, but as one means of solving a very difficult problem.

In cases where the electric railways operate in more than one municipality and between different municipalities, such service-at-cost contracts can properly, in our judgment, be made only with the public-service commission, and in such cases the provisions of the contract should apply in any particular community to the system as a whole rather than to its individual parts.

SECTION XV.

PUBLIC OWNERSHIP AND OPERATION.

It is urged by many that public regulation of the street railways has failed, and that the properties should be taken over by the municipalities or the State. Dr. Delos F. Wilcox concluded his able and interesting analysis of the testimony given in this connection with that suggestion. Some members of the Commission individually feel that eventually municipal ownership might prove generally desirable and that there may, perhaps, be communities in the United States in which on account of the responsibility of the local government and the acuteness of the present conditions, municipal ownership should be resorted to. The experience of Boston, San Francisco, and Seattle are being watched with great interest, but they have not continued long enough to justify any conclusion as to the relative merits of public as against private operation. The Commission is unanimous on this point: That there has not been sufficient experience with public ownership and operation of street railways in this country to enable us to recommend it as a permanent solution of this problem. In some of the foreign countries it has apparently worked well. We do not believe under present conditions that this method of operation would be successful in most of the cities of the United States to-day.

Aside from the serious question whether municipalities as at present organized can operate electric railways as efficiently and satisfactorily as private enterprises, our conviction upon this subject is based upon the great political difficulties which would have to be overcome, such as constitutional amendment, legislation, and the fiscal burdens incident to the purchase by cities of great public utilities, and upon the further fact that in many sections of the country the lines of the railway extend through many cities and villages and into rural territory. It is assumed, however, that these latter difficulties could be mastered by a community thoroughly awakened to the necessity for such a change.

We are certain that much can be accomplished by private initiative, stimulated and aided by thorough public regulation; that the final solution could, in many communities, be found under private management, and that in any event, the reforms which have been urged by the Commission should be instituted, since those reforms would serve to place the relations between the street railway and the public upon a more just and equitable basis.

CONCLUSION.

We have conceived the scope of this inquiry to be to ascertain, first, the actual financial and service conditions of the electric railways of the United States at the present time; second, the causes which have contributed to such conditions; third, what readjustments of the relations between the electric railways and the communities which they serve must be brought about in order to restore the confidence of the public and to put the companies upon such a financial basis for the future as will enable them to render continuous and efficient service to their respective communities.

We have not entered into a minute discussion of the different franchise provisions throughout the country, nor have we under-

taken to suggest any details which should be incorporated into any new contract, but have preferred to confine ourselves to suggesting the broad outlines of such new relations.

The Commission is not pessimistic as to the future. The electric-railway problem admits of a satisfactory solution, once the elements that compose it are made known and the principles of ordinary economic and business common sense are applied.

The duty both of the public authorities and of those who control the electric-railway enterprises of the country is plainly indicated. The time has come for stable and satisfactory settlements of traction difficulties.

The Commission can go no further than to point out the principles upon which readjustment should be based. The task is really that of the State and local authorities upon the one hand, and of the companies upon the other. Failure to rehabilitate the industry and the service is possible only if those upon whom the responsibility rests fail to undertake the work or pursue it in a spirit that makes settlement possible.

Respectfully submitted this 28th day of July, 1920.

CHARLES E. ELMQUIST, *Chairman.*
EDWIN F. SWEET, *Vice Chairman.*
P. H. GADSDEN.
W. D. MAHON.
ROYAL MEEKER.
C. W. BEALL.
LOUIS B. WEHLE.
GEORGE L. BAKER.

INDEX-DIGEST

TO

TRANSCRIPT OF PROCEEDINGS OF FEDERAL ELECTRIC RAILWAYS COMMISSION.

JULY 15, 1919, TO OCTOBER 4, 1919.

	Page.
Abandonment by electric railways of:	
Extensions, improvidently built, advisability of.....	336
Lines—	
Bay State Street Railway Co., by public trustees of.....	1640, 1660
Effect upon property values.....	452
New York City, in, criticized.....	2045
Statistics of.....	85, 88
Unprofitable, refusal to permit, criticized.....	885
Service—	
Conditions under which should be undertaken.....	1666
Legality of, by receiver in Massachusetts upheld.....	437
Unremunerative, as measure of emergency relief favored.....	303, 437, 816
Subsidies, desirability of public to avoid necessity of.....	346, 445, 417
<i>See also</i> Subsidies.	
Accident prevention, control of electric-railway employees over, appreciable..	789
Accounting, electric-railway:	
Control of, by State commissions favored.....	898, 1226, 1240
Cost keeping—	
Lack of, by electric railways deplored.....	1694, 1699
Model system of, on Pennsylvania Central.....	1694, 1699
Need of, for efficient management.....	1694, 1699
<i>Aera</i> , use of, as an exhibit.....	100, 102, 927
Agreements, <i>see</i> Contracts; franchises.	
Ainey, William D. B., statement of.....	1384
Air brakes, increase in price of.....	934
Aircraft, possible competitor of electric railways.....	759
Albany, N. Y., electric-railway situation in, satisfactory following increase in fare.....	1384
Altoona & Logan Valley Electric Railway Co.....	371
Amalgamated Association of Street & Electric Railway Employees of America:	
Contract of, with electric railways, written favored by and adhered to....	1733
Contracts with electric railways, arbitration of wage disputes provided for in.....	1765
Evidence submitted by, in presenting labor side of electric-railway problem, outline of.....	1731
Jurisdiction of, in electric-railway industry, extent of.....	1936
Labor program urged by, for inclusion in recommendations of Federal Electric Railways Commission.. 1896, 1897, 1928, 1936, 1937, 1938, 1956	1893
Problem of electric railways, main features of, as seen by.....	1958, 1960
Productivity and efficiency of members, efforts of, to increase.....	1965
Strikes, not subject to call by American Federation of Labor in case of sympathetic.....	1891
Solution of electric-railway problem, suggestions put forward by, leading toward.....	1562, 1567, 2036
American Electric Railway Association:	
Activities of, in calling attention of members to possible economies in operation and improvements in art.....	2036
Attitude of, toward possible undesirable financial practices occurring in the industry.....	1689
Banking control of, alleged, and of other public-utility associations, criticized.....	1689

	Page.
American Electric Railway Association—Continued.	
Bureau of fare research of, studies in cost of electric-railway service conducted by.....	1970
Evidence submitted by, to Federal Electric Railways Commission in presenting railway side of question.....	623
Charts, statistical, etc., on.....	70, 73
Exhibit comparing value and capitalization of 26 companies.....	1505, 2012
Principles, code of, issued by.....	2036, 2054
Criticism of.....	1690
American Railways Co., effect of fare increases on revenues of subsidiaries of..	365
Amortization of:	
Capital out of earnings, a condition upon which depends approval of indeterminate permit.....	1268
Capital account of electric railways, desirability of, pointed out.....	1229
Debt of electric railway in Detroit, failure to effect, prior to expiration of franchise criticized.....	1145, 1164
Discount on securities, favored.....	1230
Investment in electric railways in United States—	
Benefit to municipalities from.....	1261
Effort to effect, lack of, even under public regulation.....	1204
Fares, effect upon, in Glasgow.....	1263
Purchase price under service-at-cost franchise, provision for.....	1240
Securities, under short-term franchise, should be provided for.....	940
<i>See also</i> Depreciation; Obsolescence; Sinking fund.	
Arbitration, compulsory, of:	
Labor disputes in electric-railway field.....	783, 1290, 1297, 1298, 1299, 1588, 1765
<i>See also</i> Collective bargaining; Labor.	
Service-at-cost franchise in Cleveland, disputes under.....	1004, 1006, 1026
<i>See also</i> Cost of service.	
Armour, J. Ogden, statement of.....	929
Assessment of property benefited by electric railways to pay for:	
Cost of construction of.....	1716, 2126
Extensions and improvements made by—	
Advocated.....	1562, 1677, 1923, 2099, 2124
Insufficient to pay entirely for.....	1972
Methods of levying, outlined.....	1925, 2100
<i>See also</i> Land values; Real estate.	
Association of Life Insurance Presidents, statement of actuary of.....	422
Atlanta, Ga.:	
Capitalization, excessive, of public utilities in, charged.....	1482, 1488, 1492, 1500
Dividends, payment of, by utility on, though no reserve for depreciation set up criticized.....	1484
Electric-railway situation in.....	1481
Leases made by operating company in, criticized.....	1487
Municipal ownership of public utilities in, advocated.....	1498, 1500
Results of operation of electric railway in.....	1489
Valuation of public utilities in.....	1483, 1492, 1506
<i>See also</i> Georgia.	
Australia, zone system of fares in use by electric railways in.....	1601, 1602
Automobile:	
Competition of, with electric railways.....	423, 462, 464, 936
Cause of present electric-railway situation.....	65,
139, 159, 609, 1054, 1056, 1061, 1108, 1186, 1229, 2059	
Effect of, upon electric railways.....	424, 1089, 1108, 2066
Not driving electric railway out of business.....	2038, 2039
Of private cars least responsible for present electric-railway troubles.....	860, 993
Paving, failure to pay for use of, by.....	158, 425
Stimulant, possible of electric-railway traffic through acquisition by public of desire for speed.....	860, 2039
Substitute, possible, for electric railway—	
Not one.....	144, 585, 759, 1129
Thought possible.....	1121, 1127, 1625, 1628, 1633
Use of, on electric-railway track, possibility of.....	217
<i>See also</i> Gasoline; Jitney; Motor vehicle.	
Babcock, E. V., statement of.....	1898
Babson, R. W., statement of.....	1053
Baker, Newton D., statement of.....	995

	Page.
Balance sheet of electric railways, <i>see</i> Statistics.	
Baltimore, Md., overcapitalization of United Railways & Electric Co., of, alleged.....	1850
Banker control of—	
Electric railways condemned.....	1622, 1629
Public-utility associations condemned.....	1689
<i>See also</i> Finance.	
Bankruptcy of electric railways, tendency toward, because of decreased purchasing power of nickel and fixed fare.....	147
<i>See also</i> Finance; Receivership; Reorganization.	
Barry, J. G., statement of.....	380
Bauer, R. S., statement of.....	1622
Bay State Street Railway Co., Massachusetts:	
Capitalization, excessive, of, alleged.....	1852, 1854
Condition of, discussed.....	1622, 1631
Cost of service, regulation of fares on basis of.....	1640, 1641, 2063
Errors and evils incident to growth and development of.....	1622, 1623, 1631
Fares—	
Unsatisfactory results from changes in rates of.....	1642, 1650, 1657
Ten-cent rate of, less satisfactory results from than from 7 cents.....	1448
Jitney competition with, greatest problem of.....	1644, 1645
One-man cars, use of, by, to increase frequency of service rendered.....	1649
Public trustees, operation of, by.....	1442, 1639, 2063
Abandonment of lines by.....	1640, 1660
Depreciation, accumulation of reserve for, by.....	1641, 1642, 1654
Districts, operation through medium of.....	1640, 1641
Fares—	
Experimentation of, with monthly and other reduced-rate tickets.....	1647
Regulation of, on service-at-cost basis.....	1640, 1641, 2063
Public, confidence of, being regained by.....	1644, 1658
Subsidies, provision for public, to avoid abandonment of unprofitable lines by.....	1640, 1641, 1651, 1652
Working capital furnished to, by State.....	1640, 1654
Weakness of, in necessity of urban divisions supporting unprofitable country lines.....	2056, 2057, 2073
Zone system, unsatisfactory results from use of, by.....	1627, 2062, 2063
Beasley, O. C., statement of.....	2129
Beeler, J. A., statement of.....	1661
Bemis, E. W., statement of.....	2105
Berkshire Street Railway Co., Massachusetts, statement of President L. S. Storrs.....	422
Berlin, Germany, results of electric-railway operation in.....	1074
Bertron, S. G., statement of.....	537
Billing through and interline of express matter.....	430
Birmingham Railway, Light & Power Co., Alabama, cause of receivership of, questioned.....	2018
Birney safety car, <i>see</i> One-man car.	
Bleakley, E. G. C., statement of.....	2042
Bliss, William C., statement of.....	1166
Bliss, Z. W., statement of.....	1195
Block signals, installation of, ordered on Indiana interurbans.....	1089
Blue Hill Street Railway Co., Massachusetts, situation with regard to.....	215
Boards of directors of electric railways, <i>see</i> Management.	
Bonds of electric railways, <i>see</i> Securities of electric railways.	
Bonus stock, issuance of, <i>see</i> Securities of electric railways.	
Boston gas plan or London sliding scale of rate of return and rates.....	1063
Boston Elevated Railway Co., Massachusetts:	
Cause of present financial difficulties of, overstimulation of rapid-transit development.....	1453, 1455, 2058, 2059
Cost of service, <i>see</i> Boston Elevated, public trustee control of.	
Depreciation, failure to provide an adequate reserve for, in past, criticized.....	1983
Fare situation.....	658
Ten-cent rate of—	
Not a solution of the situation.....	1237, 1442
Results from, disappointing.....	960, 963
Results from, exceedingly satisfactory.....	1644, 1648

Boston Elevated Railway Co., Massachusetts—Continued.

	Page.
Labor employed by—	
Cost of platform, effect upon, of reduction in number of working hours per day from 9 to 8.....	1775, 1776
Proportion of operating expenses paid to.....	1506
Localities served by.....	1033
Public trustees, operation of, by, described or discussed.....	341, 350, 352, 1055, 1355, 1442, 1453, 2063
Cost-of-service feature not favored.....	1026, 1055, 1063, 1073
Depreciation, amount set aside by, for, not considered excessive.....	1684
Efficiency and economy, lack of, in operation by.....	1625
Maintenance, tremendously increased expenditures for, by.....	1356, 1443
Results of operation under.....	1506, 1649, 1651
Rehabilitation program of, criticized as not safe-guarding interests of public.....	1444, 1453
Subsidies, provision for temporary, public to make up possible deficits..	1442
Rentals paid by to West End Ry. Co.....	2079
Return, method adopted by, to safeguard after expiration of period of public control.....	1468
Ride, increase in length of, possible for one fare on lines of.....	841, 852
Situation with regard to, unsatisfactory.....	1220, 1355
Transfers, early charge for, by.....	844
Zone system, adoption of, by, opposed.....	1467
<i>See also</i> Massachusetts.	
Bradlee, H. G., statement of.....	201, 2037
Bridge tolls or tax, <i>see</i>	
Bridgeport, Conn., analysis of jitney competition with electric railway in.....	427
<i>See also</i> Connecticut.	
Brooklyn Rapid Transit Co., New York:	
Capitalization, excessive, of, claimed.....	1305, 1318
Dividends, distribution of large and nonaccumulation of surplus by condemned.....	1278, 1282
Labor troubles of.....	1278, 1287, 1317
Leases of underlying companies, unprofitable terms of, condemned.....	1316
Profits made by, since 1913, estimate of.....	1305, 1318
Transfers, rehearing of order permitting charge for.....	2045
<i>See also</i> New York.	
Budget, family, <i>see</i> Cost of living; Standard of living.	
Buffalo, N. Y., situation with regard to increase in electric-railway fares in...	541, 1313
Bullock, C. J., statement of.....	637
Burdens, illogical, imposed upon electric railways, elimination of, <i>see</i> Imposts; Paving; Taxation.	
Burr, William P., statement of.....	1303, 2044
Bus, motor, <i>see</i> Automobile; Jitney; Motor bus.	
Business, relation of Government to.....	919
California, electric-railway situation in.....	262, 608, 884
<i>See also</i> San Francisco.	
Camden, N. J., <i>see</i> New Jersey: Public Service Railway.	
Canada, <i>see</i> Hydroelectric development.	
Capital:	
Account, necessity of keeping down.....	1021
Additional, needed by electric railways—	
Ability to obtain the crucial question.....	1454, 1678, 2114
Beyond amount which can be obtained locally.....	537
Conditions under which may be obtained.....	539, 542, 975, 2068
Cost-of-service plan.....	328, 345, 348
Fares, flexibility of.....	65, 200
Investment, safety of.....	897, 1245, 1438
Public ownership.....	209, 1454, 2069, 2114
<i>See also</i> Public ownership.	
Return, certainty of a fair.....	65, 209, 348, 656, 859, 863, 897, 915, 956, 1245, 1438, 1900
Constantly required and essential.....	188, 197, 202, 206, 207, 225, 313, 656, 956, 1454, 1900
Difficulty of obtaining.....	81, 193, 842, 978, 1454, 1678, 2114
Inability to attract, causes for.....	808, 882, 925, 939, 2091, 2114
Lack of, cause of uneconomical conditions in industry.....	81, 658, 1451

Capital—Continued.

	Page.
Cost of, to electric railways	315, 545, 971, 975, 977
Cheap, benefit of, through determination and security of investment....	1229
Determined by factors more or less independent of price levels....	1334, 1335
Factors affecting	315
How measured	971
Under private ownership and existing conditions practically prohibi- tive.....	1233
Under public ownership, ability to obtain on better terms, an argu- ment for.....	806, 1049, 1157
<i>See also</i> Public ownership.	
Under service-at-cost franchise.....	328, 345, 348, 675, 684, 781, 1245, 1588
<i>See also</i> Cost of service.	
Expenditures, authorization of, by regulatory commissions recommended.	781
Federal Electric Railways Commission should make clear essential need of adjusting conditions so that necessary supplies of can be secured.	2068
Integrity of, lack of, under some service-at-cost franchises.....	780
Loans of municipal, to public utilities provided for under municipal-guar- anty law of Wisconsin.....	782
Rights of invested, fundamental, as seen from labor point of view.....	1894
Turnover of, slow in electric-railway industry as compared with mercantile field.....	1421
Value, reduction of through construction of electric-railway improvements by assessing property benefited.....	1562
<i>See also</i> Credit; Money; Return.	
Capital Traction Co., Washington, D. C., <i>see</i> Washington, D. C.	
Capitalization:	
Bonus stock, issuance of.....	219, 327, 338
Cleveland Railway Co., of—	
Early excessive, of, a problem.....	996, 997
Present sound.....	1008, 1010
Reduction in prior to adoption of service-at-cost franchise by.....	1000
Comparison of value of 26 electric railways as fixed by valuation.....	1505, 2012
Control of, by regulatory commissions favored.....	1112, 1113, 1226, 1240, 2059
<i>See also</i> Regulation; Securities	
Discount on securities, inclusion of, as part of permanent....	172, 1205, 1863, 1866
Excessive or overcapitalization of electric railways.....	137, 141, 199, 540, 562
Absorption of, through careful management, possibility of.....	1695
Absorption of past productive efficiency of employees by, changed.	1731, 1887
Absorption of gains in revenue by, believed detrimental to interests of employees and public and claimed.....	1731, 1847, 1853, 1874, 1886
Basis of, the fixed 5-cent fare.....	1222
Cause of present electric-railway difficulties —	
Claimed.....	920, 1095, 1199, 1203, 1213, 1263, 2107, 2109, 2111
Denied.....	341
Cause of inability to obtain new capital.....	2091, 2114
Cause of public prejudice against electric railways because of belief in existence of.....	154, 304, 906, 1401, 1844, 1859, 1910
Cause of public unwillingness to pay increased fares because of belief in existence of.....	1017, 1386, 1406, 1412
Claimed or hinted at.....	1203, 1205, 1214, 1221, 1639, 1714, 1842, 1813, 1852, 1856, 1872, 2064
Atlanta, Ga., of utilities in.....	1482, 1488, 1192, 1500
Bay State Street Railway Co., Massachusetts.....	1642, 1852, 1854
Brooklyn Rapid Transit Co., New York.....	1305, 1318
Chicago surface lines.....	1847
Danbury & Bethel Street Railway, Connecticut.....	1110
Detroit United Railway, Michigan.....	1141
Indiana, most of electric railways in.....	1086, 1088, 1096
Indianapolis Street Railway Co., Indiana.....	1850
Lincoln, Nebr.....	1360
New Orleans, La.....	566
New York Railways Co., New York.....	1304, 1315
Omaha, Nebr.....	1369
Philadelphia Rapid Transit Co., of underlying companies of.....	1576, 1579, 1581, 2130
Pittsburgh Railways Co., Pennsylvania.....	620, 623, 1848

Capitalization—Continued.

Excessive or overcapitalization of electric railways—Continued.

	Page.
Claimed or hinted at—Continued.	
Public Service Railway Co., New Jersey.....	1215, 1845
Rhode Island Co., Rhode Island.....	1851
Scranton Railway Co.....	1214, 1378
United Railroads of San Francisco, Calif.....	1851, 1854
United Railways & Electric Co of Baltimore, Md.....	1850
United Railways Company of St. Louis, Mo.	1708, 1722, 1725, 1728, 1849
Denied.....	813
Interborough Rapid Transit Co., New York.....	826
Massachusetts, electric railways in.....	647, 660, 1437
Elimination of—	
Difficulty of effecting.....	1204, 1263, 1267
How effected in Indiana.....	1086, 1087
Only through public purchase.....	1264
Not necessarily indicated by decrease in net per dollar of income since 1902.....	1790
Recommended in connection with service-at-cost plans.....	558, 573
Urged.....	575, 577, 805, 806, 1389, 1390, 1928, 2010, 2111
Evil effects of.....	1886, 1928
Justified.....	141, 257
Methods and forms of.....	1843, 1860, 1871, 1876
Motive for, in desire of insiders to get rich quick.....	1858
Origin of, possible.....	1864
Pennsylvania, situation with regard to, of electric railways in.....	1400
Questioned, propriety of basing claims of existence of, upon differences between capitalization and valuations, even where letter official.....	1861, 1868
Relation between and wages of electric-railway employees asserted to exist.....	1871, 1886, 1887
Return, fair, objection to payment of, on, even where stock held by innocent investor.....	1391, 1406, 1412
Solution of electric-railway problem, relation to—	
Always confronts in any attempt at.....	1213
Makes difficult reaching of.....	1219
Methods of disposing in reaching.....	1694
No one which will perpetuate, will be stable.....	2034
Reduction thought necessary to a.....	2111, 2117
Value, must know true.....	1009
Valuation, physical, as means of eliminating prejudice existing because of belief in excessive.....	1401
Of earnings—	
As basis of purchase.....	2110
By early promoter of electric railways.....	554
Of earning power of franchises, criticized.....	1008, 1248
Increase in, due to paving and other municipal requirements.....	909
Investment out of earnings, propriety of.....	272, 333, 338, 342
Ratio of taxes to net, for census years.....	932
Renewals and replacements no longer possible.....	559, 561
Statistics of, for year 1890, location of.....	228
Solution, importance of correct, to employees and public.....	1860
Value of electric railways does not at present equal.....	333
<i>See also</i> Capital; Finance; Investment; Receivership; Reorganization; Valuation.	
Cars, electric-railway:	
Building of, upon basis of intensive use for a few years, advocated.....	1600
Causes of changes in.....	296
Double-deck, advisability of use of.....	465, 933-934
Equipment, superiority of, in Cleveland.....	1008
Investment in, causes for heavy.....	396
Obsolescence of.....	396, 397
One-man type, <i>see</i> One-man car.	
P-A-Y-E type.....	396, 1089, 1118
Price of, causes for increase in.....	397
Seating capacity, use of, with larger but not greater weight by Philadelphia Rapid Transit Co.....	1577

	Page.
Cars, electric railway—Continued.	
Size of, use of large in past on an infrequent headway criticized.....	1599-1600
Standardization of—	
Advocated.....	400, 1666, 1676
Hindered by requirements of local authorities.....	401
Trailers, use of, advocated.....	2067
Trust certificates, use of, by General Electric Co. in selling new equip- ment.....	400, 390, 391
Type of, improvement in.....	935
Causes of present unsatisfactory condition of electric railways..	63, 65, 860, 1074, 1191, 1194, 1221, 1222, 1266, 1395, 1429, 1438, 1590, 1662, 1675
Capital, need of additional, <i>see</i> Capital.	
Capitalization, excessive, <i>see</i> Capitalization.	
Cost of labor, increased—	
Not the cause.....	1731, 1887
The cause.....	949
Cost of operation, increased (labor, materials, etc.)... .	64, 199, 315, 321, 530, 538, 555, 568, 586, 608, 943, 969, 973, 974, 1186, 1191, 1195, 1229, 1284, 1304, 1416, 1420, 1456, 1590, 1662, 2039, 2064
Credit situation, <i>see</i> Credit.	
Depreciation, failure to provide for, <i>see</i> Depreciation.	
Extensions, unwise.....	309, 433, 437, 784, 1108, 1435, 2056
Fares, inability to increase rates of .	63, 147, 199, 315, 538, 919, 1204, 1222, 1285, 2039
<i>See also</i> Fares.	
Finances, mismanagement of.	920, 1203, 1213, 1304, 1390, 1731, 1843, 1887, 2064
<i>See also</i> Finances of electric railways.	
Fixed charges, high.....	1074
Franchises, provisions of, <i>see</i> Fares; Franchises.	
In various localities—	
California, increased costs.....	608
Chicago elevated railways, increased costs.....	882
Massachusetts, overbuilding of lines.....	1435, 2056
New York City.....	1285, 1304
Pittsburgh, Pa.....	309, 620
Rhode Island Co., Rhode Island.....	1175, 1181, 1186, 1192
San Francisco-Oakland Terminal Railways, California.....	884
Money, depreciation in purchasing power of... .	143, 147, 316, 763, 1323, 1330, 1335
Motor-vehicle competition, publicly and privately owned, <i>see</i> Automobile; Jitney; Motor vehicle.	
National War Labor Board, wage awards of.....	318, 1188
Denied.....	1889
Public, hostility of.....	1222, 2089
Ride, increase in length of.....	784, 969, 970, 974
Taxation, increased.....	608, 885, 1186, 1188, 1191
War, conditions never satisfactory and merely aggravated by.....	64, 944, 1062, 1416, 1420, 1690
Census of street railways for 1890, location of.....	228
Central Electric Railway Association, map of territory covered by, referred to..	696
Charts submitted by American Electric Railway Association, <i>see</i> American Electric Railway Association.	
Chicago, Ill.:	
Capitalization of electric-railway franchises in, condemned.....	1248
Contract with city, attempt of electric railways to amend.....	1225
Current, electric, propriety of rate paid by electric railways for.....	2022, 2024
Motor-bus operation in, not profitable.....	1616, 1617
Plan of solution of electric-railway problem.....	280
Chicago Elevated Railways, Illinois, situation with regard to.....	882
Chicago surface lines, Illinois:	
Overcapitalization of.....	1847
Value of.....	2013
Cincinnati, Ohio:	
Cost-of-service plan of electric-railway operation in use in, discussed. .	344, 472, 498
Adoption of, history of.....	472, 490, 509
Approved, if certain amendments made.....	505, 506
Budget plan of determining expenses.....	474
Capital, inability to induce new.....	491, 492
Control, municipal over company under.....	475, 480, 485

Cincinnati, Ohio—Continued.

	Page.
Cost-of-service plan of electric-railway operation in use in—Continued.	
Depreciation, provision for.....	482
Employees, efficiency of.....	483, 509
Essentials of.....	473
Fares, effect of increase in, on revenues.....	477, 488, 511
Incentive to efficient operation under.....	474, 494, 1916, 1921
Municipal ownership, sentiment for.....	479
Public sentiment toward.....	478, 484, 487, 491, 496, 511
Regulation by State commission, powers of, under.....	482, 486
Reserve fund, operation of.....	493, 494
Return on stock under.....	493, 504, 511
Securities, issuance of, under.....	482
Value of property upon which plan based.....	487, 4920
Wages paid employees.....	483
Jitney competition with electric railway in, lack of.....	491
Cities in the United States:	
Comparison with European cities in facilities afforded by electric railways.....	436, 1262
Physical characteristics of, different from those of European cities.....	1421, 1422
Superior development of area of, made possible by electric railway extensions.....	436, 438
City Club of New York, N. Y., report of, upon advisability of rapid transit construction, by assessment of property benefited.....	2099, 2126, 2129
Clark, H. C., statement of.....	791
Clark, William J., statement of.....	135, 228
Clayton, William, statement of.....	262
Cleveland, Ohio, cost-of-service plan of electric railway operation in use in:	
Adoption of, events leading up to.....	995
Applicability of, to other localities.....	1290, 1985, 1999
Approved.....	1007, 1062, 1073, 1261
Arbitration of disputes under.....	1094, 1006, 1026
Changes in, desired by company.....	596, 1461
Control, municipal, over company.....	594, 601, 1007
Cooperation with company of public and city officials.....	596, 1032, 1996, 1997-1999
Criticism of.....	376, 377, 1971, 1974, 1986, 1993
Defects of.....	1460, 1462
Depreciation, lack of requirement for reserve out of current earnings.....	1971, 1972, 1974, 1977, 1986, 1993
Extensions, irability to force needed.....	1460, 1463
Investment, lack of security of.....	1973, 1975
Incentive to efficient operation, lack of.....	602, 1004, 1005, 1015, 1920, 1923, 1926
Labor difficulties, inability of city to prevent and control.....	1460, 1462
Deficit, operating, under.....	593
Depreciation reserve under—	
Adequacy of.....	1971, 1972, 1975, 1977, 1985, 1993, 2115
Details of.....	590, 1000
Discussion of.....	590, 1276
Employees—	
Attitude of, toward.....	1760, 1763
Efficiency of, under.....	599
Extensions under.....	595, 606, 1008, 1460, 1463
Fares under—	
Effect of increased, in riding.....	603, 1759
Low, made possible by concessions of city and reduction in capitalization.....	607, 1759
Reduction in recent.....	1458
Features, essential, of plan.....	590, 599, 600, 1000, 1007
Franchise.....	592
Capitalization of, unexpired.....	1008, 1248
Length of term of, practically an indeterminate.....	1022, 1464
Provisions of changed.....	597
Incentive to efficient operation, lack of.....	602, 608, 1004, 1005, 1015, 1920, 1923, 1926
Investment, security of, under, questioned.....	1245, 1973, 1975
Maintenance and depreciation fund, operation of.....	601, 1985
Management, extravagant, impossible.....	600, 601
Municipal ownership, relation to.....	1011, 1464
Popularity of.....	905, 1003

Cleveland, Ohio—Continued.	Page.
Purchase by city provided for.....	600
Regulation by State commission, place of, in scheme.....	598
Return, sufficiency of present rate of.....	597,
603, 608, 1230, 1246, 1461, 1973, 1989, 2103, 2114	
Schedules, control of, by city and effect upon working conditions of train-	
men.....	1760, 1765
Service under—	
Being rendered at less than cost.....	1971, 1974, 1986, 1993
Standards of, comparatively lower than in Wisconsin.....	1987
Solution of present electric railway problem, favored as.....	1290, 1299
Speed, high schedule of electric railway cars under.....	1686, 1991, 1992
Success of plan—	
Affirmed.....	1459
Causes of.....	1003,
1007 on, 1357, 1458, 1459, 1464, 1679, 1685, 1687, 1753, 1754, 2116	
Questioned.....	1971
Taxation, special, such as paving, etc., elimination of.....	606, 1459, 1464
Traffic, density of.....	607, 1008
Valuation.....	591, 1009
Goff-Johnson appraisal.....	1000
Low initial.....	1008, 1357, 1459, 1464, 2116
Taylor appraisal.....	1000
Wages, of electric-railway trainmen, adjustment of, under.....	1761, 1765
<i>See also</i> Cleveland Railway Co.; Cost of service.	
Cleveland Railway Co., Cleveland, Ohio:	
Efforts of, to force concessions from city during recent labor difficulty..	1461, 1766
Fares, comparison of rates of, in effect in 1914 and 1919.....	1758
Improvements, made by, how paid for.....	1978, 1985
Labor employed by—	
Turnover, large, claimed.....	1757
Wages of electric-railway trainmen, comparisons of, with those paid in	
Detroit and Philadelphia.....	2003
Rates paid.....	1746, 1753
Working conditions of electric-railway trainmen.....	1749, 1752, 1753, 1754
Maintenance allowance, conclusions of C. N. Duffy in arbitration regard-	
ing.....	1975, 1985
Securities of, local ownership of, and its value.....	595, 1587
Statistics, operating and traffic, comparison of, with Milwaukee and Phila-	
delphia.....	1989
<i>See also</i> Cleveland, Ohio.	
Coal:	
Cost of, increased as cause of difficulties of Rhode Island Co., Rhode	
Island.....	1191, 1195
Price of, in Indiana comparatively low.....	1096, 1103
Coinage, revision of, as an aid to electric railways.....	325, 1032, 1590
Collection of fares:	
British method of, not favored.....	1025
Faulty, had considerable effect on electric-railway revenue in Indianapo-	
lis, Ind.....	1118
Loss in, importance of reducing to a minimum.....	1258, 1261
Mechanical devices for, none used in Philadelphia, Pa.....	1558
Rooke fare register, merits of.....	1261
Zone system, with—	
Difficulties of—	
Encountered by Public Service Railway Co. of New Jersey in	
introducing.....	1610, 1612, 1619, 2042
Partly responsible for nonintroduction of, in large cities in United	
States.....	1432
Method of—	
Adopted by Public Service Railway Co. of New Jersey.....	1119
Used in Great Britain.....	1610
<i>See also</i> Fares; Zone system.	
Collective bargaining:	
Advocated as method of avoiding strikes in public-utility field.....	1297, 1373
Method of, adopted by Philadelphia Rapid Transit Co., Pennsylvania.....	1521,
1533, 1551	
Indorsement of, by National War Labor Board.....	1511, 1520, 1524, 1877

Collective bargaining—Continued.	
Through union labor auspices—	Page.
Desirability of.....	1938
Other systems futile.....	1880-1881, 1936, 1938, 1956, 1962, 1999
Principle, one urged for inclusion in any recommendations of the Federal Electric Railways Commission.....	1896, 1935
<i>See also</i> Amalgamated Association; Arbitration; Labor.	
Competition between electric railways operating in same city undesirable....	1038, 1041, 1044, 1051, 1296
Competition with electric railways:	
Favored as means of public protection.....	1053
Increased and encouraged by increase in electric-railway rates of fare....	1205
Lack of, former, a demoralizing tendency.....	1590
Opposed to.....	1229, 1242
<i>See also</i> Automobile; Jitney; Monopoly; Motor vehicle; Necessity; for electric-railway service; Steam railroads; Substitutes for electric railroads.	
Condemnation of electric-railway property, process.....	1238-1239, 1281
Public ownership through.....	1140, 1143, 1238
Use of, to force necessary consolidations.....	1235
<i>See also</i> Purchase of electric railways by public.	
Condition of electric-railway industry, present unsatisfactory.....	63, 66, 67, 86, 128, 842, 847, 882, 978, 1088, 1662, 1731, 1843, 1887
Confiscation of electric railways, what constitutes.....	1141, 1163
Congestion of population, <i>see</i> Population; zone system of fares.	
Congestion of transportation, great in New York City, but unprofitable....	1299, 1301
Connecticut:	
Electric-railway situation in.....	1107
Fares, right of electric railways to initiate changes in.....	952, 1109, 1116
Jitney competition with electric railways in.....	427, 428, 959, 1108-09, 1114
<i>See also</i> Jitneys.	
Connecticut Co., Connecticut:	
Cost of service of Massachusetts, application of to a possibility.....	1117
Express matter, carrying of, by.....	429
Jitney competition with, effect of, upon results from increased fares.....	959
<i>See also</i> Jitney.	
One-man cars, use of, by satisfactory.....	461, 1115
Situation with regard to.....	422, 1107, 1110, 1111
Connell, A. T., statement of.....	1377
Consolidation of electric railways:	
Evils resulting from.....	1221, 1435, 2057, 2073
In any one city, of all operating there, desirable.....	1296
New York City, operating in, favored.....	1077, 1079, 1284, 1290
Construction, cost of electric railway, <i>see</i> Cost of.	
Construction of electric-railway lines through assessment of properly benefited, <i>see</i> Assessment.	
Contingencies, <i>see</i> Valuation.	
Contingencies, reserve for:	
Advocated.....	888
Provision for, in New York law.....	834
Contracts:	
Between electric railways and municipalities, control of State regulatory commissions over.....	1224, 1228, 1392
Between electric railways and Amalgamated Association of Street & Electric Railway employees, <i>see</i> Amalgamated Association.	
Evil effects of monetary inflation on all involved in any form of, including electric railways.....	1319, 1330, 1334
<i>See also</i> Franchises.	
Contributions, public, to electric railways, <i>see</i> Subsidies.	
Control, public, of electric railways, <i>see</i> Regulation.	
Conway, T., jr., statement of.....	941
Cooke, M. L., statement of.....	1087
Cooley, Mortimer E., statement of.....	247
Cooperation of public with electric railways, <i>see</i> Public.	
Cooperative plan adopted by Philadelphia Rapid Transit Co., Pennsylvania, in solving its labor problem, <i>see</i> Philadelphia Rapid Transit Co.	

	Page.
Corruption:	
Of public officials by public utilities.....	154,
242, 244, 450, 854, 1010, 1030, 1346, 1709.	1723
In public utility industry, conduct of.....	792, 798, 799
<i>See also</i> Capitalization; Finance; Management.	
Cost accounting, <i>see</i> Accounting.	
Cost of capital, <i>see</i> Capital.	
Cost of cars, electric-railway, causes for increase in.....	397
<i>See also</i> Cars.	
Cost of construction, electric-railway, increase in, discussed.....	439
Cost of development and promotion, <i>see</i> Valuation.	
Cost of equipment, early electric-railway, high and cause of seemingly excessive capitalization.....	141
Cost of Labor, <i>see</i> Labor.	
Cost of living:	
Analysis of, and of cost of electric-railway operation as related to wages of electric-railway trainmen.....	1768
Increase in, during war and since—	
Cause of increased cost of labor, not the.....	1872, 1885, 1952
Discussed.....	1796, 1799, 1800, 1801
Family budget, effect upon of.....	1801
More rapid than increase in wages of electric-railway trainmen....	1790, 1791
Taken care of by increase in wages.....	1194
Public ownership and operation of transportation agencies will tend to reduce.....	1344
Studies in made by United States Bureau of Labor Statistics described...	1796
<i>See also</i> Labor; Standard of living; Wages.	
Cost of operation of electric railways:	
Analysis of present, on typical road.....	1662, 1672
Analysis of, and of cost of living as related to wages of electric railway trainmen.....	1768
<i>See also</i> Wages.	
Cost of platform labor not a determining factor in.....	1882, 1952
<i>See also</i> Labor.	
Increases in, in recent years.....	64,
104, 209, 602, 752, 797, 943, 1036, 1385, 1539	
Cause of present deplorable condition of electric railways, <i>see</i> Causes.	
Fares, increase in rates of, necessity of to meet.....	582, 1156, 1390
<i>See also</i> Fares.	
Public fails to realize extent of.....	947
<i>See also</i> Public.	
Still rising.....	714, 781, 969, 974
<i>See also</i> Costs; Prices.	
Low per passenger, claimed.....	1704, 1711
Reduction in, possibilities of,	
Claimed, through—	
Economies, further.....	1592
<i>See also</i> Economy.	
Public cooperation.....	1898
<i>See also</i> Public.	
Doubted.....	161, 1290
Schedule speed, effect of higher, in diminishing, in Cleveland.....	1990, 1992
Cost of service of electric railways:	
During rush hours much greater than during nonrush hours.....	803, 1970, 1998
Importance of it being kept as low as possible.....	914
Per ride per passenger, increase in.....	968, 974
Studies in, by bureau of fare research of the American Electric Railway Association.....	1970
Cost of service franchise, electric railway:	
Advantages of—	
Automatic adjustment of fares.....	467, 471, 663, 685
<i>See also</i> Cost of service, fares.	
Credit, restoration of.....	598, 1566
<i>See also</i> Credit.	
Return, certainty of.....	598, 689-70, 915

	Page.
Cost of service franchise, electric railway—Continued.	
Approved or favored.....	194, 211, 546, 656, 898, 905, 1240, 1357, 1416, 1419, 1587, 1900, 1906, 1912
Arbitration of fairness of provisions of, after adoption of plan not favored..	2102
Automatic adjustment of fares under, delay incident to putting into effect..	990
<i>See also</i> Cost of service, fares.	
Barometer fund, a fundamental feature.....	662, 1921
Budget method favored.....	665
Capital value or rate base, <i>see</i> Cost of service, value.	
Cities in which being considered.....	946
Control-supervision under.....	181, 244
Essential feature of.....	664
Extent of.....	1247, 1462, 1587, 2094
Local, favored.....	2113
Local with State combined.....	468, 985
State, favored.....	467, 598, 664, 675-6, 985, 1228, 1240, 1247, 1420
Cost, elements of, universally recognized.....	665
Defects and disadvantages of, discussed.....	328, 350, 756, 1006, 1147, 1460, 2102, 2103, 2112, 2113
Denver, Colo., considered for.....	2011
Disapproved.....	1055, 1062, 1073, 1109, 1112, 1516, 1572, 1625, 1692
Discussed.....	164, 334, 1913, 1920
Efficiency and economy under, possible methods of developing.....	1698
Extensions, construction of under.....	1460, 1462
Fares, under—	
Automatic regulation of, under versus regulation by State commis- sions.....	376, 406, 467, 472, 563, 663, 670, 685, 780, 898, 905-6, 984, 988, 990, 1270
Maximum and minimum rates of should not be rigid.....	598, 673
Prohibitive, likelihood of being established considered a disadvan- tage.....	781, 1109, 1112, 2113
Rates of, should depend upon local conditions.....	692
Features essential of.....	466
Automatic adjustment of rate of fare.....	670, 685
<i>See also</i> Cost-of-service, fares.	
Barometer fund.....	662, 1921
Indeterminate franchise term.....	1346
Purchase by municipality, right of.....	513, 665, 1247, 1270
Supervision, public.....	664
Value, capital, or purchase price to be determined at time plan becomes effective.....	68, 665, 670, 1094, 1240, 1248, 1913, 2103, 2112, 2116
Franchise, form of, under.....	183, 468, 671
Incentive to efficient operation under.....	474, 494, 498, 501, 602, 631, 1003, 1005, 1014, 1063, 1147, 1148, 1256, 1463 1692, 1698, 1900, 1906, 1912, 1914, 1916, 1918, 1919, 1923, 1926, 1932
Kansas City plan, contrasted with.....	192
Labor, control by municipalities of wages and working conditions of elec- tric railway, favored.....	1458, 1915, 1918, 1919
Modifications of proposed.....	690
Maintenance and replacement fund, provision for.....	666, 667
Mortgage bonds, financing through, made unnecessary by.....	1587
Municipal operation favored as cure for defects of private under.....	1464
New Brunswick plan described.....	1063, 1073
Philadelphia, Pa., provision for, in rapid-transit franchise of, discussed...	470
Pittsburgh, Pa., being considered for.....	301
Public ownership, relation between, and.....	500, 511, 1010, 1152, 1156-1157, 1234, 1247, 1256
Public sentiment toward.....	487, 664, 1006, 1460, 2078
Purchase by city—	
Amortization of price favored.....	1240
An essential feature of.....	513, 634, 665
Provision for.....	1247, 1270
Return, adequacy of rate of, under, and desirability of a fixed rate of.....	328, 345, 348, 672, 675, 680, 684, 1246, 1418, 1419, 1463, 1588, 1926
Salaries of executives under, limitation upon.....	196
Securities, relative value of various, under.....	198
Service, where community is to control quantity and quality of, under, it should pay its costs through whatever rate of fare necessary....	1587

	Page.
Cost of service franchise, electric railway—Continued.	
Sliding scale of rates and return, desirability of.....	669,
	686, 1463, 1915, 1916-1917, 1922
Solution of electric-railway problem, a means of..	156, 279, 280, 281, 311, 689, 1677
Taxation, elimination of special.....	470, 657, 908, 909, 912, 1915
Value of property, importance of a fair, as basis of.....	468,
	665, 670, 1094, 1210, 1248, 1913, 2103, 2112, 2116
Value, capital, how fixed.....	468
<i>See also</i> Capital; Capitalization; Cincinnati; Cleveland; Dallas; Franchise; Massachusetts; Montreal; Solution.	
Cost of supplies used by electric railways, <i>see</i> Supplies.	
"Cost of urban passenger transportation service," by F. W. Doolittle, referred to.....	1970, 1974, 1987
Cost-plus basis of electric-railway operation.....	404
Costs, permanency of present high, <i>see</i> Prices.	
Couzens, James, statement of.....	1134
Credit inflation primary cause of upheaval of prices during war.....	1328
Credit of electric railways:	
Car-trust certificates, use of, by General Electric Co.....	390, 391, 400
Causes for impairment of.....	315, 538, 543, 1843, 1846, 1866
Command of, by.....	151, 153
Lack of, by, at present.....	389, 538, 543, 1650, 1656, 1843, 1846, 1866
Disadvantages of.....	664, 707, 709, 1451
Loss of, fear of the disclosure of unsatisfactory finances kept electric railways in Massachusetts from asking for increased fares in past.....	1437, 1446
Need of, essential.....	193, 583
Obsolescence, less likelihood of, in future electric-railway development should invite.....	2162
Reestablishment of, possible means of effecting, through—	
Cost of service franchise.....	211, 507
<i>See also</i> Cost of service.	
Public control and operation through trustees.....	1651, 1653
Public ownership.....	1451, 1454, 1651, 2069, 2081
<i>See also</i> Public ownership.	
Reorganization of finances.....	574, 575, 577, 2081
<i>See also</i> Finances.	
Revenue, additional.....	829, 860
<i>See also</i> Fares; Revenue.	
Reserves, necessity of, to maintain.....	889
Stability of, effect upon, of public right to purchase under indeterminate franchise.....	907
<i>See also</i> Purchase.	
Use of private in endeavoring to obtain additional capital needed.....	2068
<i>See also</i> Capital; Capitalization; Finances.	
Credit, utilization of, to make possible public ownership and operation of electric railways.....	1237, 1247
Creed, W. E., statement of.....	883
Culkins, W. C., statement of.....	471
Current, electric:	
Direct versus alternating, use of.....	143, 758
Price paid for by certain electric railways for power bought largely involved in solution of their problem.....	2019, 2024, 2030
Rates, high in United States as compared with low in Canada under hydroelectric development.....	2015, 2033
<i>See also</i> Hydroelectric.	
Dallas Railway Co., Texas, cost-of-service plan of electric-railway operation in use in.....	628
Adoption of, history of.....	628
Control by municipality.....	630
Cooperation of city with company.....	631
Cost of operation, increased a drawback to success.....	632
Earnings, disposition of.....	630
Extensions, need of.....	632
Fare, maximum fixed, considered a defect.....	631, 635
Franchise, indeterminate.....	634
Incentive to efficient operation, the London sliding scale used.....	631
Jitney competition eliminated by city.....	634

Dallas Railway Co., Texas, in use in—Continued.	Page.
Purchase by city provided for.....	634
Return, rate of varies with rate of fare.....	631
Securities, issuance of not controlled.....	630
Value of property, compromise as result of valuation.....	629
Danbury & Bethel Street Railway Co., Massachusetts, abandonment of service by receiver of permitted.....	43.
De Berard, F., statement of.....	87½
Deficits of privately operated electric railways, desirability of public subsidies to cover.....	46.
<i>See also</i> Subsidies.	
Delbridge, C. L., statement of.....	170
Denver, Colo., service-at-cost ordinance proposed for electric railway in.....	2011
Density of traffic, <i>see</i> Traffic.	
Depreciation:	
Allowance for by electric railways.....	106, 175, 263, 265
Adequate, urged.....	200, 263, 558, 559, 888, 1507, 1576, 1664, 1674-1675, 2065
Change in due to change in regulatory commission personal undesirable.....	774
Compulsory—	
More so in Great Britain than in United States.....	1984
Advocated for United States and with public supervision of.....	565, 2065
Inadequate in past.....	1204, 1437, 1438, 1689
Inadequacy of, in past a cause of present weakness of industry.....	1984, 2058, 2059, 2092
Boston Elevated Railway Co., Massachusetts, provision for, by public trustees operating, not considered excessive.....	1684
Bay State Street Railway Co., Massachusetts, must be changed by public trustees operating.....	1641, 1642, 1654
Cost-of-service franchise, provision for, under—	
Cincinnati plan.....	482
Cleveland plan, sufficiency of under—	
Criticized.....	1971, 1972, 1974, 1977, 1985, 1993
Defended.....	2115
Inadequacy of, under some, to care for future replacements criticized.....	780
Reserve for existing renewals but not for theoretical depreciation or unforeseen obsolescence recommended.....	667, 677, 692
Detroit United Railway Co., Michigan, recent increases in allowance for, by Earnings, provision for, out of current required under indeterminate franchise.....	1142 1983
Earnings of electric railways, past insufficient to permit provision for.....	1675
Federal Electric Railways Commission should point out necessity of electric railways making larger provision for.....	2065
Method of caring for, proper.....	810
Necessity for, explained.....	2065
Obsolescence, through.....	137, 141, 228, 394
Philadelphia Railroad Co., Pennsylvania, sufficiency of allowance for, made by—	
Criticized.....	1993
Defended.....	2007
Reserve for—	
Creation of, ordered in Lincoln, Nebr., by regulatory commission.....	1366
Establishment of, not favored.....	1721
San Francisco, Calif., discussion of, by city engineer and argument against reduction of allowance for, by municipal railway.....	1507
Valuation—	
Allowance for, in.....	2105
Ignoring of functional, in, wrong.....	936
Rate of, used in Milwaukee cases.....	767
<i>See also</i> Obsolescence; Valuation.	
Depreciation of money, <i>see</i> Money.	
Des Moines, Iowa, proposed public subsidy to privately controlled electric railway in, defeated by voters.....	2110
Detroit, Mich.:	
Automobile as substitute for electric railway favored in.....	1121, 1127
Electric-railway situation in.....	1120, 1135
Electric-railway transportation not believed absolutely essential for.....	1131, 1127

	Page.
Detroit, Mich.—Continued.	
Motor-bus operation in, contemplated	1620
Municipal ownership of electric railway in	1275
Favored and reasons therefor	1120, 1121, 1124, 1133, 1143, 1153
Methods of obtaining, possible, discussed	1139-1141, 1143, 1162
Nonadoption of and reasons therefor	1129, 1136, 1163, 2111
Regulation of public utilities in, home rule in matter of, favored	1120, 1144, 1146, 1149
<i>See also</i> Detroit United Railway Co., Michigan.	
Detroit United Railway Co., Detroit, Mich.:	
Amortization of debt before expiration of franchise should have been provided for	1145, 1164
Capitalization, feeling that there is excessive, of	1141
Depreciation fund, recent increase in, by, objected to	1142
Express and freight, carrying of, by, on city lines objected to	1122
A convenience	1123
Fares, abrogation of low, opposed	1121, 1138
Franchises of—	
Essential, have expired	1128
Proposals defeated	1135
Situation with regard to	1139
Interurban lines of, relative profitability of, as against city lines	1122, 1139, 1159
Hours of labor of platform men employed by and compensation therefor ..	1735, 1738-1739, 1743, 1745-1746, 2003
Public, reasons for hostility of, to	1141-1152
Revenue, arbitration of need of additional, by	1141-1142
Transfers, charge for, by, opposed	1142
Value of, as result of various valuations discussed	2013
<i>See also</i> Detroit, Mich.	
Development costs, <i>see</i> Valuation.	
Development of electric railways, <i>see</i> History of; Growth of.	
Directors of electric railways, representation of employees and public on boards of, <i>see</i> Management.	
Discontinuance of service by electric railways, <i>see</i> Abandonment of; Service.	
Discounts on securities, <i>see</i> Securities.	
Distribution of securities of electric railway, <i>see</i> Securities.	
District of Columbia, <i>see</i> Washington, D. C.	
Districts, establishment of public utility, for purposes of ownership and operation:	
Bay State Street Railway, Massachusetts, operated through medium of ...	1640
Favored to permit public ownership where purely municipal impracticable	802, 1231, 1237, 1247, 1265, 1631, 1635, 2076, 2120
Pittsburgh Railways Co., Pennsylvania, public ownership of, through medium of, for Pittsburgh	1912, 1924
Dividends, public control over amount to be distributed favored	1282
Dolerty, H. L., statement of	402
Loolittle, F. W., studies of, in cost of urban passenger transportation service ..	1970, 1974, 1987
Double-deck cars, <i>see</i> Cars.	
Douglas, W. L., statement of	929
Draper, Walter A., statement of	498
Duluth, Minn., use of double-deck cars in	934
Earnings of electric railways:	
Investment out of	166, 272, 275, 333, 338, 342, 973
Must be sufficient to yield reasonable returns	975
Original, honest investment, fair basis for	161
Percentage increase in, on Stone & Webster properties	204
<i>See also</i> Income revenues.	
Eastern Massachusetts Railway Co., <i>see</i> Bay State Street Railway Co., Massachusetts.	
Eastman, Joseph B., statement of	2055
Economy in electric railway operation:	
Capital, lack of cause of uneconomical conditions in the industry ...	81, 658, 1451
Cost-of-service plan in connection with	512, 1459
<i>See also</i> Cost of service.	
Discussed	123
<i>See also</i> Economy, possible means of.	

	Page.
Economy in electric railway operation—Continued.	
Fares, all possible means of, should be exhausted before attempting to increase.....	1256, 1318, 1568, 1673, 2067
Greater—	
Need of, urged.....	2110
No further possible.....	161, 170, 764, 895
Importance of, pointed out.....	1396, 1664, 1671
Incentive toward—	
Destroyed by present attitude of regulatory commissions.....	862
Return, need of allowing sufficient, as one.....	857
Lack of, belief in existence of.....	1074, 1386, 1496
Public support, necessity of, to make introduction of possible.....	1531
Possible means of, discussed.....	1090, 1115, 1179, 1187, 1259, 1592, 1664-1674
Alternating current, possible use of.....	443
Equipment, standardization of.....	400
Gasoline versus electricity.....	247
<i>See also</i> Gasoline.	
Intercorporate complexities, expensive, elimination of.....	1395
One-man car, use of.....	1593
<i>See also</i> One-man car.	
Philadelphia R. T. Co., means adopted by, of promoting....	1536, 1538, 1539
<i>See also</i> Philadelphia R. T. Co.	
Power in, use of.....	215, 239, 1593, 1667, 2067
<i>See also</i> Power.	
<i>See also</i> Efficiency; Improvements in the art; Incentive; Management; Skip-stop; Traffic regulation, etc.	
Edison, Thomas A., statement of.....	842
Education of public, need of, as an aid to solution of electric-railway problem, <i>see</i> Public.	
Efficiency of:	
Capital employed by electric railways, increase in, since 1902.....	1789
Electric-railway industry, increase in.....	1782
Electric-railway trainmen, increase in.....	1515, 1534, 1731, 1776, 1781-1782, 1846, 1853, 1887, 1928, 1957-1959, 1960, 1964
<i>See also</i> Labor.	
Operation of electric railways—	
Basis of any successful program for rehabilitation of electric railways..	1692, 1697
Cost-of-service plan, under, through giving municipalities a share in operating control.....	1462
<i>See also</i> Cost of service.	
Incentive toward, need of.....	923, 1003, 1005, 1014, 2093
<i>See also</i> Incentive.	
Initiative for, should rest with electric railways.....	1395
Necessity of greater.....	1674, 1688, 1732
Public ownership under, will be just as good as under private.....	792
Receivership under.....	196
<i>See also</i> Economy; Improvement in art; Management.	
Efficiency and economy of operation of electric railways:	
American Electric Railway Association, activities of, in furthering.....	1561, 1567, 2036
Federal Electric Railways Commission should point out to owners and managers need of enterprise in these directions.....	2067
Importance of.....	1398, 1590
Methods of increasing, possible.....	2067
Philadelphia Rapid Transit Co., means adopted by, for promoting (co-operative plan).....	1396
<i>See also</i> Philadelphia Rapid Transit Co., Pennsylvania.	
Public confidence need of, to make introduction of methods of, successful.	2098
<i>See also</i> Public.	
Reward for, should go to management and labor rather than to capital....	2114
Sharing of results of, with employees of Philadelphia Rapid Transit Co. under cooperative plan.....	1518, 1533
<i>See also</i> Philadelphia Rapid Transit Co.	
<i>See also</i> Economy; Efficiency; Improvements in the art; Incentive, Management.	
Eight-hour day, introduction of, in the electric-railway industry, <i>see</i> Labor; Working conditions.	

	Page.
Electric railways:	
By no means a dying institution.....	2037, 2628
Facilities afforded by, to cities, <i>see</i> Cities.	
Future of.....	759, 1059
Growth and development of, <i>see</i> Growth and development.	
History of, <i>see</i> History of.	
Importance of, in any community, <i>see</i> Necessity for electric-railway service.	
Problem of, <i>see</i> Problem; Solution: Small, statement on behalf of.....	882
Responsibility of, to employees and public, need of keener.....	786
Situation with regard to present—	
Critical, pointed out and discussed.....	581,
645, 653, 852, 898, 969, 973, 990, 1107-1108, 1116, 1660	
<i>See also</i> Condition of electric railways; Finances of electric railways.	
Electric Service Supplies Co., statement and tables filed by A. H. England..	416
Electrification of street railways in United States:	
Occasion of high finance.....	1203, 1211
Resulted in extension of length of ride for 5-cent fare.....	843, 852
Employees of electric railways:	
Allocation of, between railway and power departments.....	72
Number of, larger in proportion to income than in any other public utility..	72
Statistics of, discussion of.....	71
<i>See also</i> Labor.	
Engineering, subordination of member of profession to financial interests in public utility field criticized.....	1690
English tramway conditions, <i>see</i> Great Britain.	
England, A. H., statement of.....	416
Equipment, modern, standardized rolling stock essential to electric railways..	1663
<i>See also</i> Cars.	
Erickson, Halford, statement of.....	867
Expenses, operating, of electric railways, <i>see</i> Cost of operation; Operating expenses.	
Express and freight, carrying of, by electric railways:	
Connecticut Co., Connecticut.....	429
Detroit United Railway Co., Michigan, by—	
Convenience, even if not cheaper method.....	1123
Switching of, in public streets by, resented.....	1122
Interurbans—	
Business done by and benefit to community from.....	702
Hostile attitude toward, of American Railway Express Co. complained of.....	705, 727
Revenue, possibilities of increasing through.....	465, 718, 1564, 2095
Extensions of electric railway lines:	
Assessment of property benefited to pay for, <i>see</i> Assessment.	
Cause of present deplorable condition of electric railways, unwise as, <i>see</i> Causes.	
Cities in United States, made possible superior development of.....	436, 438
Cleveland, Ohio, prudently made in.....	1008
<i>See also</i> Cleveland.	
Contracted for by municipalities with public utilities under municipal-guaranty law of Wisconsin.....	782
Control of construction of.....	306, 336
Local control, with right of appeal to State commission.....	1098, 1228
State commission control.....	435, 447, 783
Early made upon initiative of electric railways.....	854
Earnings, out of.....	275
<i>See also</i> Earnings.	
Effect of complying with requests for.....	433
Lack of a hindrance to further growth of cities.....	709
Motor-bus operation of needed, suggested.....	1614
Municipal ownership of roadbed to permit more easy and quick construction of, needed.....	1010, 1043, 1045, 1048
Population, relation between congestion of.	
<i>See also</i> Population.	
Real estate, development of speculative ventures in, through construction of unnecessary.....	347, 1008, 1206, 1212, 1358, 1622
Facilities, comparison of, afforded to American and European cities by electric railways.....	436
<i>See also</i> Cities.	

	Page.
Fagan, Charles A., statement of.....	610
Family budget, <i>see</i> Cost of living; Standard of living.	
Fares, electric-railway:	
Automatic adjustment of.....	376,
406, 467, 471, 563, 663, 670, 685, 780, 898, 905, 906, 984, 988, 990, 1044, 1270	
Basis of, some fair proportion to service rendered.....	1396
Capitalization, relation of to.....	1222, 2009, 2111
<i>See also</i> Capitalization.	
Changes in, right of electric railways to—	
Experiment with.....	954, 962, 965, 1644, 1649
Initiate.....	952, 965, 1109
Collection of, <i>see</i> Collection.	
Cost-of-service plan, under, <i>see</i> Cost of service.	
Decrease in, effect of, upon riding.....	869
Depreciation, desirability of rate-fixing policy making adequate provision for.....	888
Federal Electric Railways Commission, attitude of, on question, <i>see</i> Federal Electric Railways Commission.	
Fixed rates of—	
Basis of overcapitalization.....	1222
Effect of, upon electric-railway credit and income.....	151, 153
Originally considered a great asset.....	1222
Solution, not the ultimate.....	1714
Flat rate of—	
Dangers of, in connection with real estate development.....	1206, 1212
Policy in United States has been for such fare with free transfers..	1205, 1249
Population, relation to distribution of.....	231, 1206, 1288, 1294, 1469
Retention of—	
Not favored.....	1682
Subsidies, through public.....	802, 1026, 1466, 1468, 1469, 1470
<i>See also</i> Subsidies.	
Rapid transit lines, favored for.....	1241
Zone system as an alternative, <i>see</i> Zone system.	
Flexible rates of, favored.....	65, 68, 318, 898, 905, 996, 1222, 1229, 1283, 1284, 1408, 1423, 1442, 1714, 1905, 2075
Franchises, limitations in, upon.....	541, 724, 837, 842, 1108, 1222, 1248, 1417
<i>See also</i> Causes; Franchise.	
Haul, length of, relation to, <i>see</i> Haul.	
Imposts and burdens, elimination of to keep down rates.....	882, 910, 952
<i>See also</i> Imposts.	
Increase in rates of—	
Coinage, relation of, to.....	1590
Delays incidental to obtaining.....	701, 723, 848
<i>See also</i> Regulation.	
Economies in operation rather than.....	1256, 1318, 1568, 1673, 2067
Effects, social and economic of.....	1183, 1185
Effectiveness of, factors controlling.....	365, 959, 961
Favored, as measure of relief, even if only temporary one.....	199, 278, 282, 302, 304, 351, 609, 645, 797, 804, 860, 872, 882, 897, 900, 915, 936, 947, 990, 991, 1029, 1053, 1055, 1064, 1070, 1108, 1156, 1334, 1340, 1390, 1648
Granted by regulatory bodies.....	361, 899, 927, 946, 1437, 1439, 1445, 1504
Haul, effect of length of upon results from.....	957, 1644, 1648
Inability to obtain as cause of present deplorable electric-railway situation, <i>see</i> Causes.	
Jitney competition—	
Effect of upon results to be obtained from.....	958, 959, 1114
Stimulated by.....	426, 451, 516, 959, 1186, 1243, 1255, 1644
Limitations of.....	955, 1019, 1094, 1102, 1123, 1182, 1190
Methods of and results to be obtained therefrom.....	1673
Power to grant, <i>see</i> Regulation.	
Proposals for, recent.....	918
Public attitude toward.....	357, 376, 449, 451, 488, 515, 519, 536, 557, 558, 560, 594, 654, 663, 724, 798, 868, 873, 888, 919, 1016, 1083, 1184, 1386, 1406, 1412, 1416, 1417, 1657, 1759
<i>See also</i> Public, attitude of.	

Fares, electric-railway—Continued.	
Increase in rates of—Continued.	Page.
Reduced rates to frequent or off-peak users in connection with.....	1397, 1613, 1647
Results from—	
Factors affecting.....	957, 959, 1114, 1644, 1648, 1673
Satisfactory, considered.....	720, 727, 871, 1094, 1644, 1648
Six-cent rate.....	433, 956
Seven-cent rate.....	957, 959
Ten-cent rate.....	658, 960, 962, 1220, 1440, 1447, 1625, 1643, 1644, 1648, 1650, 1680, 1909
Unsatisfactory, considered.....	433, 457, 950, 962, 1082, 1089, 1175, 1178, 1182, 1220, 1439, 1441, 1447, 1448, 1625, 1643, 1650, 2062, 2069, 2094
Revenue, effect upon, of.....	354, 356, 359, 365-367, 370-371, 432, 460, 477, 515, 539, 1504, 1657, 1909
Doubtful, considered.....	432, 433, 612, 615-616, 809, 1899
Fluctuations in, not wholly due to readjustment of fares.....	1439
Generalization regarding, dangerous.....	957
Limitations and possibilities of.....	956, 1019, 1094, 1102, 1123, 1182, 1190
Satisfactory, considered.....	319, 322, 380, 403, 816
Unsatisfactory, considered.....	1600, 1642, 1650, 1656
<i>See also</i> Revenues.	
Riding habit, effect upon, of.....	159, 216, 246, 290, 350, 354, 356, 359, 365, 403, 432, 460, 603, 654, 664
Diminution of, as a result of—	
Follows.....	612, 615, 794, 809, 1380, 1397, 1431, 1441, 1634, 1642-1643, 1650, 1656-1657
Less noticeable when increase automatic.....	664
Menace, a serious, to company and community.....	1397, 1450
Nature of, temporary.....	2039
None results.....	379, 884
Short-haul traffic particularly affected.....	516, 959, 1206, 1600, 1673
Solution, not one, of, the present electric-railway problem.....	153, 159, 941, 961, 1071, 1181, 1182, 1190, 1220, 1235, 1439, 1441, 1448, 1534
Suburban communities, growth of, not influenced by.....	785
Transfers, charge for, not favored as against increase in flat rate.....	526, 1039, 1100, 1105
Zone system, establishment of, rather than an increase in flat rate of, favored.....	1031, 1034
<i>See also</i> Zone system.	
Interurbans, rates of, charged by.....	700, 1086
Low rates of—	
Abrogation of, in Detroit resented by public.....	1120
Essential.....	495, 910, 1410
Initial, as means of stimulating short-haul and off-peak traffic.....	1081, 1084, 1204, 1207, 1210, 1210, 1251, 1564, 2095, 2110
Success of.....	1080
Lowering of rates of—	
Favored.....	1079, 1080
Former refusal of electric railways to consent to, because of franchise provisions reacting against them now.....	2089
Results from, in Keene, N. H.....	2041
Mileage system of, for cities not favored for United States.....	1431, 1432
Nominal, under public ownership.....	1123, 1125
<i>See also</i> Free electric-railway service.	
Rates of—	
Two-cent per mile fare low, repeal of, in Indiana and Michigan....	870, 1086
Three-cent fare—	
Cleveland, history of, in.....	995
Detroit, increased to 5 cents.....	1141
Public Service Railway, initial fare under zone system.....	1119
Five-cent fare—	
Adequacy of present.....	562, 1024, 1030, 1095, 1096, 1138
Cleveland, reasons for, in.....	1007
Philadelphia, reasons for, in.....	1394, 1396, 1553, 1559, 1567, 2003
History of, in New York State.....	853
Profitableness of, early, not as great as thought.....	561, 569, 607, 1437, 1445-6

Fares, electric-railway—Continued.

Rates of—Continued.

Five-cent fare—Continued.

Retention of, favored..... 802, 873-4, 1466, 1468-9, 1470, 1679, 1680

See also Subsidies.

Value of, present diminished..... 1334

Six-cent fare—

Chicago, insufficient to offset increased cost of operation..... 882

Grand Rapids, how obtained in..... 868

Results from..... 433, 956

Seven-cent fare, results from..... 957, 959

Ten-cent fare—

Results from..... 658, 940,

962 3, 1220, 1236, 1440, 1447, 1625, 1643, 1644, 1648, 1650, 1681, 1909

Where charged..... 951

Reasonableness of, depends on local conditions..... 1971, 1989

Reduced rates of, to frequent users or to attract off-peak traffic favored..... 937,

1397, 1613, 1647

Situation with regard to, in various localities, *see under each locality.*Sliding scale of, *see* Fares, automatic adjustment of.

Stability of, schemes to maintain..... 888, 1257

Steam railroad, low suburban, competition of, with..... 715

Subsidies, public, rather than too high a rate of..... 1231, 1240, 1247, 1449

See also Subsidies.

Wages of employees, relation to, of..... 1953

Zone system of, *see* Zone system.*See also* Cost of service: Franchise regulation: Relief; Solution; Tickets;

Transfers: Zone system, etc.

Federal Electric Railways Commission:

Aid of, sought in putting into effect a cost-of-service franchise for Denver,
Colo..... 2011

Appointment of, reasons for..... 63, 68

Assessment of property benefited to pay for electric-railway extensions,
should call attention to this method..... 2099

Capitalization, advisability of investigating, of individual companies..... 180

Costs, can perform signal service in getting public to understand extent to
which, have increased..... 947Depreciation, should point out necessity of electric railways making larger
provision for..... 2065

Electric-railway problem, suggested presentation of, by..... 2064

Electric-railway situation, should call attention of public to seriousness of..... 557,
882, 898, 1398, 1660

Fares, recommendation by, urging increase in, favored..... 882, 888

Not favored..... 1266

Finances of electric railways, mismanagement of—

Recommendations of, should cover prevention of future..... 1928

Report of, should not gloss over past..... 2064

Franchises, desirability of recommending a standard form of, for electric
railways..... 182

Functions of, discussed..... 176, 180

Educational, largely so..... 1174

Evolve plan for temporary and then permanent relief to electric
railways..... 408

Recommend public ownership..... 801, 1358

Tell regulatory bodies to aid public utilities and do it quickly..... 836

Labor, electric-railway—

Living wage to electric-railway employees, should consider and create
in its recommendations principle of..... 1889, 1890, 1928Principles affecting rights of, urged for inclusion in any recommen-
dations of, leading toward rehabilitation of electric-railway
industry..... 1895, 1896, 1898, 1928, 1935

Unionization of, not justified in recommending..... 1942

Motor-vehicle competition, should point out effect of, upon electric
railways..... 2066, 2068

Public—

Antagonism of, to electric railways, greatest obstacle to putting into
effective operation constructive suggestions it may make..... 1688

Federal Electric Railway Commission—Continued.

	Page.
Public—Continued.	
Relations between, and electric railways should recommend plan for readjusting.....	882
Sentiment of, toward public utilities, should attempt to make more favorable.....	63, 532, 898
Public ownership of electric railways—	
Should favor without directly recommending.....	2121
Should not make report which could be used as an argument against.....	1499
Should recommend as only means of solution.....	801, 1353
Study of its workings in United States and Canada being made for..	2010
Receivership, should call attention to fact that in many instances it is not in interest of public or investors to prevent.....	1266
Recommendations of, <i>see</i> Federal Electric Railway Commission, labor.	
Resolution of present electric-railway problem—	
Recommendations of, will prove helpful in arriving at.....	1293
Should recommend, with just guaranties to labor and capital in mind, a practical scheme of.....	1894, 1937
Statements made before, <i>see</i> Statements.	
Taxation, should recommend elimination of unequal.....	654
Traffic regulation, should point out need of proper.....	2068
Troubles, present, of electric railways, should call attention to fact that they are in past result of old causes which still survive.....	1266
Valuation, advisability of it calling attention to principles of, used by Interstate Commerce Commission in Texas-Midland cases..	2120, 2121
Federal Government, intervention of, in matters of wages, prices, taxes, etc., as cause of increased cost of operation of Rhode Island Co., Rhode Island.....	1191, 1194
Ferguson, Carey, statement of.....	1733
Ferguson, H. L., statement of.....	580
Fifth Avenue Bus Co., New York.....	1286, 1618
<i>See also</i> New York City.	
Finances of electric railways:	
Basis of—	
Reorganization which will place on sound, only means of overcoming hostility of public to roads.....	1222
Rotten in United States while financial policy of British tramways conservative and constructive.....	1203
Condition of, present unsatisfactory—	
Due to past mismanagement of.....	1731, 1843, 1887
Never very good.....	973
Not due to increased exactions of electric-railway labor.....	1731, 1882, 1885, 1887, 1889
<i>See also</i> Condition of electric railways; Causes; Electric-railway situation.	
Holding company control, effect upon of considered undesirable.....	2014, 2030
<i>See also</i> Holding companies.	
Intercorporate complexities, expensive, a difficulty which confronts some electric railways and which condemned.....	1395
Lincoln, Nebr., manipulation of in connection with development of electric-railway system in pointed out.....	1360, 1368, 1371
Management of, past faulty—	
Cause of present unsatisfactory financial condition of electric railways.....	920, 1203, 1213, 1303, 1390, 1732, 1735, 1887, 2064
Credit of electric railways, has impaired.....	1843, 1866
Discussion of.....	1812
Effects, evil, of, pointed out.....	1841, 1878, 1923
Federal Electric Railways Commission should not in its report gloss over.....	2064
Necessity of employment by electric railways of more efficient methods of.....	1674, 1887, 1923
Massachusetts, stability of, in, impaired by overproduction.....	1435
National War Labor Board, wage awards of, not cause of impairment of..	1889
Rehabilitation of, labor policy recommended by Amalgamated Association contingent upon.....	1938, 1956
Reorganization of, as means of restoring credit.....	574, 575, 577, 2069
<i>See also</i> Reorganization.	

	Page.
Finances of electric railways—Continued.	
Weakness in, where exists effects of increased costs, etc., most heavily felt.	1390
<i>See also</i> Capital; Capitalization; Credit, etc.	
Financing:	
Method of, used by city of Seattle in purchasing electric railway.	1238
Mortgage indebtedness, through, condemned.	1587
Necessary to obtain public ownership of public utilities.	805, 808, 1237, 1247
<i>See also</i> Public ownership.	
Problem of electric railways one of, and of management.	1678
Profits in electric-railway industry made through.	1688
<i>See also</i> Capital; Capitalization; Credit, etc.	
Fisher, Irving, statement of.	1319
Fixed charges, high, of electric railways in United States as compared with Europe.	1074
Ford, A. H., statement of.	353
Forest City Railroad Co., Cleveland, Ohio, referred to.	998
<i>See also</i> Cleveland.	
Forgan, J. B., statement of.	930
Foss, E. N., statement of.	791
Fox, J. P., statement of.	1073
Franchise, electric-railway:	
Asset, no longer one but now a liability.	1248
California, situation with regard to, in.	886
Capitalization of.	1008, 1248
Cincinnati, Ohio, cost of service, type of, in, <i>see</i> Cincinnati, Ohio.	
Cleveland, Ohio, cost of service, type of, in, <i>see</i> Cleveland, Ohio.	
Cost of service, type of, <i>see</i> Cost of service.	
Dallas, Tex., cost of service, type of, in, <i>see</i> Dallas, Tex.	
Detroit, Mich., situation with regard to, in.	1128, 1139
<i>See also</i> Detroit, Mich.	
Form of, desirability of standard.	182, 443, 1014
Early difficulties in obtaining.	854
<i>See also</i> Corruption.	
Expired, situation where expiration of, has occurred but electric railway still operating, discussed.	1248
Indeterminate, <i>see</i> Franchise, term of.	
Indiana, situation with regard to, in, discussed.	1092
Kansas City Railway Co., type of, granted to, discussed.	190
Limitations in, upon—	
Methods of doing business by interurbans complained of.	711
Rates of fare—	
Cause of present unsatisfactory condition of electric railways.	1222
<i>See also</i> Causes; Fares.	
Elimination of favored.	541, 1108
Modification of existing to permit increases in—	
Favored.	723, 837, 842
Opposed.	1248
Power of regulatory bodies to modify existing, <i>see</i> Regulation.	
New York, N. Y., situation with regard to, in.	532, 1282, 1313, 1315
Old system of, between electric railways and municipalities unsatisfactory.	68
Philadelphia Rapid Transit Co., Pa., provisions of, under which, operates.	1542, 1543, 1546
Provisions of—	
Electric railways and cities equally at fault in introducing into, inflexible, drastic, and impracticable.	1416, 1417
Moral effect of relieving electric railways from, would be bad.	1091
<i>See also</i> Imposts; Paving; Taxation.	
Taxation of—	
In California, a burden upon electric railways.	884, 885, 894
Value of, for purposes of.	160
Term of, length of—	
Indeterminate form—	
Cleveland, Ohio, device adopted in, to obtain practically such a form.	1022, 1464
Depreciation reserve out of current earnings required by.	1983
Favored.	183, 195, 410, 468, 479, 506, 553, 563, 671, 886, 898, 907, 917, 924, 1022, 1092, 1108, 1268

Franchise, electric-railway—Continued.	
Term of, length of—Continued.	
Indeterminate form—Continued.	Page
Approval qualified.....	1022, 1268
Purchase by municipality usually provided for under. . . .	195, 468, 1022
Limited form—	
Approved.....	924, 926, 939
Disapproved.....	211, 907
Perpetual form, opposed.....	924
<i>See also</i> Contracts; Fares; Ordinances; Regulation.	
Free electric-railway service, rendering of by publicly owned and operated roads suggested and discussed.....	1161, 1626, 1628, 1631, 1635, 1706, 1711, 1714, 1716, 1726, 2081, 2087
Freight, carrying of, by electric railways, <i>see</i> Express and freight.	
Future of electric-railway industry, discussed.....	723, 1059
Gasoline:	
Car operated by, possible use of, on street-railway tracks.....	638
Electricity versus relative economy for transportation purposes of the two.	638
Engine operated by, reasons for belief in superiority of, over electric-railway car.....	1625, 1628, 1633
<i>See also</i> Automobile; Jitney; Motor vehicle.	
General Electric Co., electric railway supplies sold by:	
Amount of, prior, during, and after war.....	384
Prices of, increase in.....	380
Profits on, prior and during war.....	383
George, W. D., statement of.....	289
Georgia:	
Current, electric, high rates for, in criticized.....	2015, 2033
Hydroelectric development in, poor as compared with Canada.....	1494
Georgia Railway & Electric Co., valuation of.....	2014
Georgia Railway & Power Co., overcapitalization of.....	2034, 2035
<i>See also</i> Atlanta, Ga.	
Germany, efficiency of public operation of railroads in.....	1345, 1347
Gillen, Charles P., statement of.....	1198
Glasgow, <i>see</i> Great Britain.	
Government, relation of, to business.....	918
Grand Rapids, Mich., electric-railway situation in, which resulted in the charging of a 6-cent fare.....	868
Great Britain, electric tramways in:	
Comparison of with American systems.....	230, 436
Depreciation reserves, setting up of, by.....	1204, 1984
Fares, charged by.....	1430
Collection of, British method not favored.....	1025
Increase in.....	1263, 2046, 2050, 2053
Tickets, use of unlimited-ride, on London underground.....	1613
Zone system in use in by.....	1205, 1251, 1601
Collection of fares under.....	1610
Concessions to suburbanites under.....	1602
Congestion of population as result of, claimed.....	2046, 2047
Denied.....	1604
Increased fares, experience with, under.....	809
Low initial fares under, development of short-haul traffic through. . . .	1204, 1207, 1210, 1251, 1601, 2096
Financial policy of, conservative, constructive.....	1202, 1203, 1204, 1210
Glasgow—	
Congestion of population in, no connection between and zone system of fares.....	1604
Fares, decrease in, has resulted each time in increased revenues.....	1263
Financial success of electrified system in.....	1203, 1263
Investment, amortization of in completed.....	1263
Municipal tramway statistics, comparison of, with those of Public Service Railway Co. of New Jersey.....	1206
Investment, reasons for low capital.....	230
Motor buses, use of by.....	1242, 1615, 1617
Public ownership of—	
Comparison of, with privately owned roads.....	1614, 2118
Employees, relative treatment of, under, as compared with private ownership.....	1351

Great Britain, electric railways in—Continued.

	Page.
Public ownership of—Continued.	
Predominates.....	1262
Profitability of roads under.....	2046, 2047, 2052, 20 3
Results of satisfactory.....	1202, 1203, 1495, 1497
Trend towards.....	2118
Situation with regard to.....	2016-2054
Track mileage, smaller in British cities as compared with American, explained.....	1262
Traffic, development of, through low fares.....	1204, 1207, 1210, 1251, 1601, 2036
Wages paid tramway labor.....	1211
Growth and development of electric railways.....	70,
80, 135, 228, 313, 433, 439, 554, 562, 750, 843, 852, 935, 973	
<i>See also</i> History of electric railways.	
Guaranteed return, <i>see</i> Cost of service; Return.	
Hall, Thomas L., statement of.....	1359
Hampton Roads, electric-railway situation in, considered.....	581
Hansen, Ole, statement of.....	1131
Haul, length of:	
Effect of, upon results obtained from increased fares.....	957, 1644, 1648
Favored for flat fare.....	1911, 1912
Increase in.....	784, 785, 843, 852, 879, 936, 969, 970, 974
Long and unprofitable left to electric railways by jitneys.....	427
Relation of to rate of fare.....	159
Short, <i>see</i> Traffic.	
Zone system, relation of, to.....	320, 323, 875
<i>See also</i> Fares; Riding Habit; Traffic; Zone system.	
Head, W. B., statement of.....	626
Headway, shorter, as method of increasing traffic.....	1607, 1670, 1676
Hedges, Job. E., statement of.....	519
Henry, Charles L.....	696
Hepburn, A. B., statement of.....	929
Heulings, Wm. H., jr., statement of.....	395
Higgins, Richard T., statement of.....	1107
History of electric railways.....	697, 765, 1423
Atlanta, Ga.....	1481
Bay State, Street, Railway Co., Massachusetts.....	1622
Cleveland, Ohio., <i>see</i> Cleveland, Ohio.	
Detroit, Mich.....	1135
Lincoln, Nebr.....	1359
Massachusetts.....	1435
New York City.....	1303
New York State.....	853
Philadelphia, Pa.....	1513, 1548
<i>See also</i> Growth and development of electric railways.	
Holding company control of public utilities condemned and elimination of urged. 1204, 1270, 1313, 1395, 1446, 1843, 2014, 2030, 2036, 2058, 2075, 2123	
Holyoke Street Railway Co., Massachusetts.....	514, 2073
<i>See also</i> Massachusetts.	
Home rule of public utilities, strong sentiment throughout the country in favor of.....	903
<i>See also</i> Regulation.	
Hours of labor of electric-railway trainmen, <i>see</i> Labor; Working conditions.	
Huntington case, decision of New York Public Service Commission in.....	845
Hurley, E. N., statement of.....	199
Hydroelectric development.....	237, 1494, 2015, 2034
Illinois Public Utilities Commission, failure of, to grant electric-railways increases in rates of fare, criticized.....	858, 864
Imposts and burdens upon electric railways:	
Elimination, permanent or temporary, of illogical, urged.....	454,
609, 882, 887, 910, 952, 1053, 1069, 1108, 1109, 1398, 1403, 1915, 2097	
Reasons for, original.....	1223
<i>See also</i> Paving; Taxation.	
Improvements, electric railway:	
Assessments of property benefited to pay for, <i>see</i> Assessment.	
Retarded during war period.....	205
<i>See also</i> Extensions.	

	Page.
Improvements in the art of electric railways:	
Maximum nearly reached.....	756
Necessity of making all possible, to keep up with rising cost of operation..	1592
<i>See also Economy; Efficiency, etc.</i>	
Incentive to economical and efficient electric-railway operation:	
Cost-of-service plan, under. <i>see</i> Cost of service.	
Destroyed by present attitude of regulatory commissions.....	862
London sliding scale, as one.....	404, 631, 669, 686, 1063
Need of.....	923, 1003, 1005, 1014, 2093
Principle of, better than London sliding scale.....	669, 686
Return, sufficiency of, as one.....	897, 923
Should go to management and labor rather than to capital.....	1463.
	1916, 1918-1919, 2114
Income account of electric railways:	
Comparison of, for 1917 and 1918.....	92
Discussion of.....	123
Income of electric railways, net:	
Discussion of.....	127
Effect upon, of increases in wages of electric-railway trainmen, almost none.	1784
Per mile of track.....	131
<i>See also Earnings; Revenues of electric railways.</i>	
Indeterminate franchise, <i>see</i> Franchise.	
Index numbers, use of, discussed.....	1320, 1321, 1337
Indiana, electric-railway situation in.....	1086
Automobile competition.....	1089, 1105
Capitalization, excessive.....	1086, 1088, 1096
Cars, increase in revenue through installation of P.-A.-Y.-E. type.....	1118
Economies suggested.....	1090
Fares—	
Increases in rates of, on interurbans.....	1086
Rates of, charged.....	1095, 1096
Results from increases.....	1089, 1094
Franchise situation.....	1092
Labor situation in, good.....	1091, 1097, 1104
Management, poor: condemned.....	1089
One-man cars, use of, approved.....	1118
Public Service Commission of—	
Limitation upon power of, to fix rates, none.....	1095
Work of, defended.....	1088
Receivership of electric railways, only one in State.....	1095
Relief, emergency, provision for granting.....	1092
Taxation, relief from, not favored.....	1091
Transfers, charge for, not favored.....	1100
Wrecks, disastrous effect of, upon interurbans.....	1089
Zone system, use of, not favored.....	1100, 1102
Indianapolis Street Railway Co., Indiana, overcapitalization of.....	1850
Industrial disputes in electric railway industry, <i>see</i> Arbitration; Collective bargaining; Labor; Strikes.	
Industrial securities, <i>see</i> Securities.	
Inflation of currency and credit as cause of increase in price level.....	919, 1323, 1328
<i>See also Money.</i>	
Ingram, F. F., statement of.....	1119
Insull, Samuel, statement of.....	881
Insurance:	
Extent of investment by life companies in securities of electric railways..	421
Savings in, affected by Philadelphia Rapid Transit Co. in matters of fire....	1539
Interborough Rapid Transit Co., New York, N. Y.:	
Dividends earned by, since 1901.....	1316
Fare, increase in, denial of, to.....	819, 826, 828, 835
History and present condition of.....	822
Interborough-Consolidated Co., the holding company of, finances of, discussed.....	831
Manhattan Elevated situation.....	1284
Profitability of.....	1311, 1316
Receivership of, threatened, discussed.....	827, 830, 1279
Statement with regard to, of G. E. Tripp.....	132
Strike of employees of, alleged to be part of campaign for increased fares..	2044
<i>See also New York.</i>	

	Page.
Incorporate complexities, expensive, condemned.....	1395
Intermittency of employment, methods of avoiding.....	1701
Interstate Commerce Commission, principles of valuation adopted by in Texas-Midland case applicable to electric railways.....	2119, 2121
Interurban electric railways:	
Benefits derived by public from.....	699, 702, 708, 711
Condition, difficulties, and usefulness of.....	696, 1099
Control by regulatory commissions over.....	699, 724
Costs of operation of, increasing.....	714
Credit, lack of, by, a hindrance.....	707
Depreciation, earnings of, insufficient to care for.....	721
Fares, increases in rates of—	
Allowed by commissions.....	700, 1086
Delay incidental to obtaining.....	701
Effect of.....	717, 720, 727, 1089, 1094
Franchise limitations frequently a hindrance.....	711
Freight business done by.....	702
History of.....	697
Importance of.....	699, 702, 708
Massachusetts, lines in merely appendages to city systems.....	1436
Methods, operating of.....	698
Motor-truck competition with.....	706, 712, 714
Municipal restrictions on.....	706
Origin of, in Argentina.....	229
Possibilities of.....	717
Railroad Administration, attitude of, toward.....	705, 727, 728
Statistics of.....	699
Steam-railroad competition with.....	715
<i>See also</i> Indiana.	
Investment in electric railways:	
Additional, constantly needed.....	202, 206, 207
<i>See also</i> Capital.	
Amortization of, no effect toward being made even under public regulation.....	1204
Determination of.....	162, 164, 172, 174, 177, 178, 405
<i>See also</i> Valuation.	
Earnings out of.....	166, 272, 275, 333, 338, 342
Increase in, per passenger.....	971, 1423, 1425
Integrity of, necessity and means of securing permanent.....	1229
Relation between and earnings.....	973
Rolling stock, causes for heavy, in.....	395
Security of—	
Command of, low, fixed rate of return through.....	1229
Lack of examination of, by average investor commented upon.....	1446, 1453, 1455
Should be nonspeculative.....	1228, 1229
Investor in electric-railway securities, small; largest holder and greatest sufferer at present time.....	155, 185, 189
J. G. Brill Co., amount of business done by, with electric railways.....	399
Jackson, D. C., statement of.....	1416
Jackson, Marion M., statement of.....	1481, 2014
Jackson, Walter.....	1589
Jenks, J. W.....	918, 939
Jitney bus:	
Advantages of, over electric railways.....	1425
Competition of, with electric railways.....	759, 936
Cause of present unsatisfactory electric-railway situation.....	65, 139, 159, 608, 1054, 1056, 1061, 1108, 1186, 1228, 2058
Effect of, injurious.....	426, 714, 723, 781, 1243, 1255, 1644
Elimination of—	
Attempts at, denounced.....	1714
Possible only through good electric-railway service at a low fare..	1242, 1398, 1429, 1591, 1792
Urged.....	966
Fares, electric-railway, effect of, upon results from increases in.....	958, 959
<i>See also</i> Fares.	

Jitney bus—Continued.

	Page.
Competition of, with electric railways—Continued.	
Favored as means of protecting public interest.....	1053
Federal Electric Railways Commission should point out great danger of encouraging.....	2068
In various localities—	
Bay State Street Railway Co., Massachusetts greatest problem of.	1644, 1660
California, cause of trouble in.....	608
Cincinnati, Ohio, unsuccessful in.....	491
Cleveland, Ohio, none in.....	1008
Connecticut.....	427, 428, 959, 1108, 1109, 1114
Dallas, Tex., eliminated in, under cost-of-service franchise.....	634
Indiana, not under State commission regulation in.....	1105
Kenosha, Wis., serious effect of, on electric railway in, until eliminated.....	781
Newark, N. J., injurious effect of, on electric railway in.....	1198, 1199, 1201, 1243, 1255
New York City.....	1286, 1289, 1302
Philadelphia, Pa., practically none.....	1558
Pittsburgh, Pa.....	313
Rhode Island, regulation of, in, urged.....	1187
One-man car as means of fighting.....	570, 730, 738, 1594, 1685
Public ownership of electric railways, would probably be prohibited under.....	1242
Regulation of—	
Advocated.....	428, 714, 723, 867, 1064, 1108, 1109, 1114, 1187, 1398, 1428
Frequently ineffective.....	426
Useless unless supported by public sentiment.....	1277
Stimulated by increases in electric-railway fare.....	426, 451, 516, 959, 1186, 1243, 1255, 1644
Success of, reasons for, apparent.....	223, 226, 427, 428
Statistics of traffic carried by, as compared with that carried by electric railways.....	428
Substitute for electric railway—	
Not a one.....	428, 1083, 1106, 1423, 1426, 1427, 1625, 1628, 1633, 1634, 1647
Thought possible under certain conditions.....	1058, 1059
<i>See also</i> Automobile; Gasoline; Motor vehicle.	
Johnson, Tom.....	995
<i>See also</i> Cleveland.	
Joint light, power, and electric-railway operation, public entitled to some of benefits of.....	2015, 2019, 2030, 2034
Jones, Stiles P., statement of.....	1841, 2012
Joyce, C. J., statement of.....	1513, 2002
Junk, electric railways sold for.....	84, 87
Kansas City, Mo., resolution of Central Labor Union of, regarding nonrecognition by Kansas City Railways Co. of union labor.....	1384
Kansas City Railways Co., Missouri:	
Capitalization of unexpired franchises of, condemned.....	1248
Situation with regard to.....	187
Value of, as determined by Arnold appraisal questioned.....	2014
Keene, N. H., results from reduction in fare.....	2041
Kellogg, Charles W., statement of.....	729
Kenosha, Wis., electric-railway situation in, discussed.....	781, 814
Kingsley, Darwin P., statement of.....	929
Kutz, Charles W., statement of.....	1037
Labor, electric-railway:	
Accident prevention, control over, of, appreciable.....	789
Arbitration of disputes, <i>see</i> Arbitration.	
Capitalization, excessive, effect of, upon.....	1853, 1859, 1874, 1886
<i>See also</i> Capitalization.	
Collective bargaining, <i>see</i> Collective bargaining.	
Compensation of, inadequate, prior to war.....	917
Control of wages and working conditions of, a public function.....	1232, 1272, 1460, 1915, 1918-1919, 2000
Cooperation, need of, between employees and companies.....	1940, 2067

Labor, electric-railway—Continued.

Cost of—	Page.
Increase in—	
Cause of present deplorable electric-railway situation.....	1887
<i>See also</i> Causes.	
Importance of.....	269
Proportionately has not advanced as much as other costs.....	1731
Situation with regard to.....	64, 65, 107, 108, 269, 321, 588-589, 608-609, 610, 624, 633, 658, 714, 767, 769, 863, 884, 943, 1457
Prices, relation to, of.....	382, 386, 398, 421, 928-931, 1915, 1922, 1952
Proportion to total operating cost.....	64, 65, 109, 568, 943, 1192, 1506
Reduction of—	
Means of, suggested.....	1600, 2067
Possibility of, unlikely.....	199, 394
Relative, in Great Britain and United States.....	1210
Stability of, importance of.....	949
<i>See also</i> Costs.	
Demands of, controlling factor in electric-railway situation.....	948
Disputes of, with electric railways.....	
Compulsory settlement of.....	783, 1290, 1297-1298, 1299, 1588, 1765
Method of settling adopted in Wisconsin.....	2000
Strike as method of settling not favored.....	1186, 1194, 1198, 1272, 1290, 1297, 1299
<i>See also</i> Collective bargaining.	
Efficiency of, <i>see</i> Labor, trainmen.	
Eight-hour day in the electric-railway industry.....	954, 1739, 1897, 1936
Initiative of, practically not utilized.....	1700
Intermittency of employment, methods of avoiding.....	1701
Kenosha, Wis., strike in.....	781
Management participation in of.....	788, 1015, 1027, 1700, 2068
<i>See also</i> Management.	
Milwaukee Electric Railways & Light Co., relations of, with its employees (Mutual Benefit Association).....	775, 1999
National War Labor Board, awards of, <i>see</i> National War Labor Board.	
One-man cars, objections of, to introduction and use of, refuted.....	1598
Philadelphia Rapid Transit Co., relations of, with employees (cooperative plan).....	1513
<i>See also</i> Philadelphia Rapid Transit Co.	
Problem of.....	786, 1588, 1695, 1699
Public ownership will promote better relations between and management.....	1350
Public sentiment as a controlling agency over.....	1298, 1474
Productivity of, <i>see</i> Labor, trainmen.	
Profit sharing in electric-railway industry.....	787, 1588, 1966, 1967
Rights of, outlined.....	1895-6, 1898, 1928, 1935, 1941
Situation with regard to.....	1091, 1097, 1113, 1278, 1287, 1289
Strikes, <i>see</i> Labor, disputes of with electric railways.	
Trainmen—	
Efficiency of.....	1515, 1534, 1731, 1776, 1781, 1782, 1846, 1853, 1857, 1928, 1957, 1959-60, 1964
Injurious effects of work of.....	2035
Skilled occupation, whether work of, is.....	1742
Statistics, comparative of.....	1776, 1780, 1781
Turnover of.....	389, 950, 1519, 1550, 1570, 1702, 1757
Type of, importance of attracting efficient and courteous.....	1971
Unionization of—	
Concepts, underlying, of the organized-labor movement.....	1956
Extent of under Amalgamated Association auspices.....	1935
Recognition of organized... ..	1232, 1272, 1317, 1527, 1533, 1535, 1942, 2068, 2098
<i>See also</i> Arbitration; Amalgamated Association: Collective bargaining; Cost of living; Employees; Standard of living; Statistics; Wages; Working conditions.	
Labor statistics, studies of United States Bureau of, in the cost of living.....	1796
<i>See also</i> Cost of living.	
Lambert, M. B., statement of.....	393
Land values:	
Assessment of those benefited to pay for electric-railway improvements, <i>see</i> Assessment.	

	Page.
Land values—Continued.	
Taxation of those benefited to make up deficits in electric-railway operation produced by nominal fares under public ownership	1123, 1125, 1133, 1156
<i>See also</i> Real estate.	
Lauck, W. J., statement of	1731, 1877, 1927
Layovers, importance of eliminating excessive	1665
League of Nations, rights of labor as embodied in proposed covenant for	1895, 1977
Leases made by electric railways with underlying companies, onerous:	
Atlanta, Ga.	1487
Discussed and criticized	1395, 2009, 2078
New York Railways Co., New York	149, 167, 1232, 1235, 1306, 1309, 1311, 2111
Philadelphia Rapid Transit Co., Pennsylvania	1864, 2079, 2130, 2131
Pittsburgh Railways Co., Pennsylvania	1898
Public Service Railway Co., New Jersey	1846
Legislation, additional needed to—	
Make possible entering into cost-of-service contracts with right of purchase by municipality	1240, 1247
Make possible public ownership and operation of electric railways	1237
Obtain increases in fares	1070
Obtain public utility condemnation law	1238
Lincoln, Nebr., electric-railway situation in, discussed	1359, 1365, 1371
Lines, electric-railway, unprofitable, public support of	346, 347
Living wage, <i>see</i> Wages.	
Load factor of electric railways	81, 1423
<i>See also</i> Traffic.	
Load, peak, <i>see</i> Traffic.	
Local ownership of stock of electric railways favored	1587
<i>See also</i> Securities.	
Local public improvement costs, electric railways should be relieved from	320
London sliding scale	404, 631, 669, 686, 1063
Loring, Homer, statement of	1639
Lynn, Mass., congestion of population in, due to adoption of zone system of fares by electric railway serving	1627
<i>See also</i> Bay State Street Railway Co., Massachusetts.	
MacFarland, G. S., statement of	1341
McKinley, William B., statement of	934
MacLeod, F. J., statement	1435
Maine:	
Fare increases on various electric railways in	361
Public Utilities Commission of, power of	360
Portland Street Railway Co., situation with regard to	363
Maintenance of electric-railway property:	
Amount which should be set aside for	269, 270, 1684
Importance of proper	2067
Lack of, by electric railways in Massachusetts	646, 653
Magnuson, L., statement of	1832
Maltbie, Milo R., statement of	2088
Management of electric railways:	
In Connecticut, approved	1150
Efficiency of—	
Capitalization, possibility of absorbing excessive, through careful	1695
Cost keeping, impossible without	1693, 1699
Defended	326, 1567, 1589
Incentive toward, <i>see</i> Incentive.	
Lack of	123, 920, 1406, 1421
Question of, not one of personal opinion	1695
Static, must not be, to maintain	1697
Faulty of finances, <i>see</i> Capitalization; Finances.	
Indiana, poor, in, condemned	1039
Participation of employees and public in	158, 788, 916, 1015, 1027, 1700, 2068
Philadelphia Rapid Transit Co., Pennsylvania, an illustration of efficient, considered	1394, 1396, 1693
Pittsburgh Railways Co., Pennsylvania, efficiency of, defended	300, 309
Questioned	611, 620
Problem of electric railways, one of	1678

	Page
Management of electric railways—Continued.	
Rhode Island Co., Rhode Island, approved.....	1181
<i>See also</i> Economy; Efficiency.	
Massachusetts, electric railways in:	
Abandonment of electric railways in.....	645, 794, 1441
Assessments per \$1,000 valuation needed to keep electric railways insolvent.....	425, 432
Blue Hill Street Railway Co., situation with regard to.....	215
Capitalization, sound, of electric railways in.....	646, 1437, 1852, 1872, 2059
Causes of present unsatisfactory condition of.....	1435, 1456, 2056-2058
Condition of, unsatisfactory, discussed.....	645, 653, 793-794, 801, 1423, 1435, 1438, 1465, 2056, 2060
Consolidation of city with suburban lines unfortunate.....	1436, 2057, 2073
Cost-of-service plan adopted by legislature of—	
Bay State Street Railway Co. and Boston Elevated Co., as applied to, with public-trustee feature..	793, 1055, 1062, 1073, 1640-1641, 1661, 2063
Credit, lack of, by electric railways reason for nonadoption of.....	664
Condemned as a failure.....	793
Described and discussed.....	1442, 2063
Favored by newspapers.....	654, 656
Jurisdiction under, State commission has sole.....	467
Return, guaranty of, by State under.....	689
Depreciation reserves, failure to provide, in the past..	1437, 1438, 1983, 2058-2060
Development of street, electric, and subway transportation, pioneer State in.....	1435
Extensions, construction of, to develop real-estate ventures condemned...	1622
Fares—	
Control over, State commission has unlimited.....	514
Five-cent rate of—	
Argument for preservation of basic, through State subsidies to cover possible deficits.....	1465-1466, 1468-1469, 1470
Profitableness, lack of, even in past.....	1436-1437, 1445-1446
Increase in—	
Electric railways formerly unwilling to ask for, for fear of injur- ing credit.....	1437, 1446
Granted to almost every electric railway in.....	1437, 1439, 1445
Movement for, begun in 1914.....	2060
Public attitude toward.....	654
Results from, unsatisfactory.....	1439-1440, 1441, 1448, 2062
“Fifty-fifty” bill providing public subsidies.....	1652
Holding company control of roads in criticized.....	2058, 2075
Labor, increased cost of.....	1457
Lynn, situation with regard to.....	1627
Motor-vehicle competition with.....	423, 2058, 2066
<i>See also</i> Automobile; Jitney; Motor vehicle.	
Northampton Street Railway Co., fare situation.....	524
Overbuilding of lines, particularly in country districts, a source of weak- ness of.....	1435, 2056
Power plants, municipal, law forbidding sale of current by, to electric railways.....	2031
Public operation of, through lease in.....	1452
Public ownership of, in—	
Form of, would have to be State rather than municipal.....	2076
Predicted.....	794, 901
Public purchase of, provision for, at end of period of public-trustee control.	1656
Public trustees, operation by, of—	
Bay State Street Railway Co. and Boston Elevated.....	1442
<i>See also</i> Bay State and Boston Elevated.	
Regulation of, public.....	1054, 1414, 1472, 2060, 2076
Revenue of, distribution of, by sources.....	431
Securities, position of, in.....	1067
Special commission on electric-railway situation, discussion of, report of..	1465
Springfield Street Railway Co.....	1074, 1083
Statistics, financial and operating, of.....	66, 200, 992
Subsidies, public provision for.....	219, 445, 447, 689, 1062, 1441, 1442, 1452, 1466, 1468, 1469, 1470, 1640, 1631, 1654
Union Street Railway Co., ability of, to operate on 5-cent fare.....	2057, 2073

Massachusetts, electric railways in—Continued.	
Zone system of fares in use in, by—	Page.
Bay State Street Railway Co.....	2062
Failure of, to produce results desired.....	2062, 2088
Holyoke.....	2062
Springfield.....	1440, 2062, 2072
<i>See also</i> Bay State Street Railway Co.; Boston Elevated.	
Materials, increase in cost of, as cause of present deplorable condition of electric railways, <i>see</i> Causes; Costs; Prices; Supplies.	
Merchants Association of New York, opposed to public ownership of public utilities.....	876
Michigan, repeal of interurban 2-cent per mile fare, law of.....	869
Mileage system of fares probably not desirable for American cities.....	1431, 1432
<i>See also</i> Fares, Zone system.	
Milwaukee Electric Railway & Light Co., Wis.:	
City officials, hostile attitude of, toward.....	1996
Cost of operation, saving in, that could be effected through adoption of higher schedule speed by.....	1990, 1992
Depreciation, rate of, used by.....	767
Fares, efforts to obtain increased.....	767, 768, 769
Labor—	
Cost of increased.....	767
Relations of, with company (Mutual Benefit Association).....	1999
Strike of employees.....	769
Wages, control of, by Wisconsin Railroad Commission.....	771
Publicity campaign of.....	771
Regulation, experimental ground for, of electric railways in Wisconsin and United States.....	765
Statistics, operating.....	777, 779
Comparison of, with similar data for Cleveland and Philadelphia.....	1989
Zone system of fares in use by.....	766, 1608
<i>See also</i> Wisconsin.	
Minimum wage, <i>see</i> Cost of living; Standard of living; Wages.	
Minneapolis, Minn.:	
Cars, use of double-deck, in.....	933
Valuation of electric railway in.....	1867
Mitten, T. E., statement of.....	1513, 2002
Money:	
Cost of, present increase in and probability of its retention.....	1418
<i>See also</i> Capital.	
Inflation of, due to war—	
Cause of increase in price level.....	1323
Evils of.....	1330
Purchasing power of, depreciation in—	
Cause of present deplorable electric-railway situation, one.....	143, 147, 149, 316, 763, 1323, 1330, 1335
Discussed.....	1319
Importance of.....	1337
Return, effect upon.....	173, 271, 1332, 1334
Stability of—	
Importance of.....	1336, 1337, 1340
Index numbers, use of, to obtain.....	1337
Monopoly:	
Difficultly faced by electric railways because of necessity of changing point of view from that of one to that of a business.....	1590
Electric railway, few in a positive sense enjoy.....	955, 1055, 1056
Regulation of, in public-utility field, favored.....	1051, 1054, 1055
Taxation of, favored.....	1058
Transportation systems in each community favored.....	1899
<i>See also</i> Competition.	
Montreal, Canada, cost-of-service franchise adopted in.....	1256, 1270
Fares, under—	
Limitation on rates of, none.....	1256
Stability of, provision for.....	1257
Incentive to efficient operation under, an advance on others.....	1257
Mortimer, J. D., statement of.....	764, 1966
Mote, C. H., statement of.....	1086, 1118

Motor vehicles:

	Page.
Bus operation—	
Chicago, not considered profitable in	1616, 1617
Detroit, contemplated in	1620
Electric railways, use by; of buses as feeders favored	1241, 1592, 1614
New York City, in	1286, 1618, 2045
One-man car favored as against	1685
Tramways in Great Britain, by	1687
Regulation of, to place on same basis with electric railways favored	444.
	451, 454, 460, 714, 723
Statistics of	423, 424, 443
Substitute for electric railways—	
Favored as	1625, 1628, 1633
Not favored	445, 464, 1243, 1451, 1616, 1620, 1673, 1674
Truck operation in competition with electric railways	429, 706, 712
<i>See also</i> Automobile; Competition; Gasoline; Jitney.	
Multiple unit system of train control	753
Municipal development, relation of electric-railway transportation to	1230-1231,
	1237-1265
Municipal-guaranty law of Wisconsin	782
Municipal ownership of electric railways:	
Advantages of	209, 540, 1157
Argument for	821
Capital, ability to obtain new, needed and at a lower rate of interest an argument for	209, 540, 1157
Cost-of-service plan of operation as against	500, 1010, 1152, 1156, 1157
<i>See also</i> Cost-of-Service.	
Deficits, possible, to be met by taxation	1138, 1155-1156, 1161
Delay incident to adoption, <i>see</i> Municipal ownership, feasibility of.	
Detroit, Mich., situation with regard to, in	1120, 1121, 1124, 1126, 1127, 1129,
	1135, 1136-1137, 1143, 1157, 1274, 2111
Discussed	233, 235
District ownership for Pittsburgh, Pa.	1912, 1924
<i>See also</i> Districts.	
Fare, nominal, under suggested	1123, 1124
Favored	540, 548, 830, 1135, 1152, 1158, 1237
Feasibility of, from legal point of view doubted	556, 781, 1281
Great Britain, success of, in	1202, 1203, 1262
Issue, a dead	233, 235
Method of obtaining through condemnation	1140, 1143, 1238
Mistake to have, where not wanted or understood by community	1006
Movement for, effect of guaranteed return upon	463
New York, N. Y., situation in	528, 1281, 1291, 1304, 1316, 1318
Objections to,	
Discounted	548
Discussed	549, 885, 1153
Opposed	874, 921, 1044, 1586
Philadelphia, Pa., situation in	2133, 2134
Private operation under, favored	1049, 1900, 1912, 1918
<i>See also</i> Private operation of electric railways.	
Purchase by municipality under indeterminate franchise	195, 468
<i>See also</i> Purchase.	
Regulation, powers of, State commissions under	1240
Roadbed only, of	1040, 1043, 1045, 1048, 1052
San Francisco, Calif., success of city lines in	1159, 1203, 1507
Seattle, Wash., events leading up to and results of operation, etc.	1131, 1133, 1238
Sentiment for	1275, 1404, 1464, 1498, 1500
Solution of present electric-railway problem—	
Favored as	287, 1138, 1158, 1161, 1481, 1493, 1498, 1500, 2120
Not favored as	68, 155
State ownership as against	802, 1103
<i>See also</i> Districts.	
Ultimately will come	1281, 1289, 1291
United States, in	341, 946
<i>See also</i> Private operation and ownership; Public operation and ownership.	
Municipal Traction Co.	999
<i>See also</i> Cleveland.	

	Page.
Municipalities, hostile attitude of, toward electric-railway fare increase.....	848
<i>See also</i> Cities.	
Nash, Luther R., statement of.....	466, 662
National Civic Federation, report of committee of, on success of public ownership and operation of public utilities in Great Britain.....	2118
National Electric Light Association:	
Alleged banking control of, and of other public-utility associations criticized	1689
Individual membership requirements of, criticized.....	1691
National War Labor Board:	
Detroit United Railways Co., rates of wages paid electric-railway trainmen by, under award of.....	1745, 1746
Philadelphia Rapid Transit Co., indorsement of cooperative plan of, by..	1514, 1520, 1524, 1877
Principle of an equitable wage irrespective of financial ability of electric railways to pay, established by.....	1930
Wage awards of, affecting electric railway employees—	
Cause of present electric-railway difficulties.....	318, 1188, 1192
Denied.....	1889
Discussed.....	1792
Effects of.....	944, 945, 1773
Scales of wages established by.....	1512
Summary of.....	111
Necessity for transportation service rendered by electric railways:	
Affirmed and pointed out.....	62, 65, 199, 472, 534, 538, 542, 584, 586, 688, 699, 702, 708, 717, 723, 793, 860, 877, 896, 975, 1108, 1180, 1233, 1243, 1246, 1384, 1415, 1421, 1674, 1681, 1902, 2038, 2064, 2070
Questioned.....	1120, 1121, 1127
<i>See also</i> Automobile; Gasoline; jitney; Motor vehicle.	
Nebraska:	
Municipal ownership, sentiment for, in.....	1376
Wages of utility employees, State commission can control.....	1372
<i>See also</i> Lincoln, Nebr.; Omaha, Nebr.	
Newark, N. J., electric-railway situation in, discussed.....	1198
<i>See also</i> New Jersey; Public Service Railway.	
New Brunswick cost-of-service plan.....	1063, 1073
New Hampshire, law of exempting public utilities from taxation.....	883
New Jersey:	
Overconsolidation of electric railway lines in, evils of.....	1221
Public Utility Commission of, methods and personnel of.....	377
<i>See also</i> Newark N. J.; Public Service Railway Co.	
New Orleans, La., electric-railway situation in, discussed.....	565
Newport News, <i>see</i> Hampton Roads.	
New York, N. Y., city of:	
Abandonment of lines by electric railways in.....	1283, 2045
Amortization of investment in subways, benefit to from.....	1269
Assessment of property benefited to pay for rapid transit extensions advocated.....	2099, 2126
Capitalization, excessive of surface lines in.....	1263
Causes of present difficulty of electric railways in.....	1263, 1284, 1303
Condemnation of electric-railway property in, use of process of discussed.....	1235, 1281
Consolidation of electric railways in, necessity of.....	524, 527, 1077, 1079, 1235, 1290, 1296
Cost of construction of electric railways in, high.....	169
Cost of service, use of Cleveland plan for, with modification favored.....	1290
Electric-railway situation in.....	819, 1234, 1277, 1312, 2044
Fares, electric railway, in—	
Eight-cent rate of for all roads operating in city urged.....	828, 835
Five-cent rate—	
Retention of, favored.....	1312
Sufficiency of, under normal conditions affirmed.....	1288
Flat rate of, necessity for retaining.....	1287, 1294, 1297, 1299, 1301
Flexible rate of, favored.....	1283, 1284
Increased—	
Denial of, by city authorities.....	826, 827
Difficulty of granting to one and not to all other companies operating in.....	1285, 1290, 1296, 1312, 2096

New York, N. Y., city of—Continued.	
Fares, electric railway, in—Continued.	
Increased—Continued.	Page.
Effect of, probable.....	835
Power to grant, questioned and discussed.....	335, 829, 1313, 1315, 2044
Solution of electric-railway difficulties in, a means of, doubted... ..	1235, 1318, 1618
Lower rate of than 5 cents for short ride advocated as means of traffic stimulation.....	2095, 2110
Situation with regard to.....	819
Zone system of, advisability of introduction of.....	1299, 1618
Franchise, situation with regard to modification of.....	839, 1279, 1282, 1288, 1299, 1313, 1315
History of surface lines in.....	1303
Holding companies, elimination of favored by city administration.....	1317
Labor situation in, as affecting electric railways..	524, 1278, 1287, 1289, 1297, 1302
Leases, modification of existing, with underlying electric railways, essentially.....	1282, 1285
Manhattan Elevated, situation with regard to.....	1284
Metropolitan Street Railway Co., losses sustained by small investors through reorganization of.....	2092
Motor-bus operation in.....	1286, 1289, 1302, 1618, 2045
Municipal ownership of electric railways, city authorities favor.....	830, 1304, 1316, 1318
New York & North Shore Traction Co., attempt by to adopt zone system of fare in violation of franchise.....	2044
One-man cars, possible use of, in.....	2097
Population, necessity of preventing and reducing congestion of.....	877, 1287, 1294, 1315
Public, exploitation of through public utilities.....	1844
Rapid transit, in—	
Assessment of property benefited to pay for.....	2099, 2126
<i>See also</i> Assessment.	
Dual system contracts criticized.....	1234, 1279
Fares, flat rate of, favored for.....	1241
History and present condition of.....	822, 877
Real estate, effect upon of.....	2099, 2126
<i>See also</i> Rapid transit.	
Receivership of electric railways in, danger of.....	147, 519, 827, 830, 1277, 1279
Regulation, conflict between local and State bodies regarding power to grant fare increases to electric railways in.....	335, 817, 818, 821, 828, 1313, 1315, 2044
<i>See also</i> Regulation.	
Ride, increase in length of, possible for one fare in.....	879, 1287
Solution of electric-railway difficulties in.....	524, 527, 529, 1236, 1282, 1284, 1285, 1292, 1312
Taxation of electric railways in, elimination of, not a solution.....	1292
Traffic—	
Development of short-haul by electric railways in through adoption of a less than 5 cent fare.....	2095, 2110
Movement of, by electric railways the great problem.....	1289
Transfers, electric railway—	
Charge for, granted to electric railways.....	520, 1279
Universal, free, favored.....	1287
Valuation, necessity of a definite and unquestioned, of electric railways in.....	1282, 1286, 1291, 1306, 1318
<i>See also</i> Brooklyn Rapid Transit Co., New York; Interborough Rapid Transit Co., New York; New York Railways Co., New York; New York, State of.	
New York Railways Co., New York:	
Capitalization, excessive, of, claimed.....	1304, 1318
Cars, use of double-deck, by.....	934
Fares, increase in—	
Desired, rather, than a charge for transfers.....	526, 527, 529
Effect of, upon revenues and riding, probable.....	526, 836
Franchise, uniform, a solution of difficulties of.....	528
History of.....	147

New York Railway Co., New York—Continued.

Leases of underlying companies of—	Page.
Modification of, providing for a reduction of rentals paid, etc.....	1282, 1285, 1309, 1311
Nature of, perpetual.....	1309
Rentals paid under, excessive.....	167, 521, 524, 1306, 1310
Municipal ownership of.....	529
Profits of, since 1913, estimated.....	1304, 1318
Public attitude toward.....	521, 527
Receivership of.....	147, 519
Situation with regard to.....	147, 819, 820, 1303, 1312
Statistics, operating, of.....	1309
Transfers—	
Charge for.....	520, 1279
Discontinuance of certain.....	2045
Valuation of.....	833
Wages paid employees, increase in.....	524
<i>See also</i> Brooklyn Rapid Transit Co., New York; Interborough Rapid Transit Co., New York; New York, State of.	
New York, State of:	
Public Service Commission of, right of to modify existing electric-railway franchises and increase fares.....	839, 844
Special Committee to obtain additional revenue for electric railways in, work of.....	942
Surplus, State law providing for accumulation of.....	834
<i>See also</i> Brooklyn Rapid Transit Co.; Interborough Rapid Transit Co., New York, N. Y.; New York Railways Co., New York.	
Newman, J. K., statement of.....	553
Nixon, Lewis, statement of.....	1277
Northampton Street Railway Co., Massachusetts, electric railway situation in..	514
Obsolescence, electric railway:	
Allowance for, should be included in value for return.....	873
Cause, possible, of differences between capitalization and valuation... ..	1862
Discussed.....	137, 141, 175, 177, 228, 266, 667, 678, 692, 752
Failure to provide for, criticized.....	1689
Future a very much less factor in railroad development.....	758, 763
Reserve for, should not be based on physical life of equipment.....	394
<i>See also</i> Depreciation.	
Obsolescence of the electric railway, claimed.....	1625, 1628, 1633
Obsolescence of electric-railway cars.....	396, 397
Ogburn, Charlton, analysis of electric railway situation in Great Britain made by.....	2046
Ogburn, William F., statement of.....	5220
Omaha, Nebr., electric railways in:	
Capitalization, excessive, of, charged.....	1369
Electric railway situation in.....	1369
Fare increase granted to.....	1371
Valuation of, contested.....	1369
One-man or safety car, use of, by electric railways:	
Accident reduction with.....	738, 1595
Advantages of.....	747, 1594, 1671, 1672
Approved and favored.....	462, 609, 658, 695, 706, 750, 937, 1115, 1118, 1593, 2067
Birney type of.....	730, 739
Cause of electric-railway car obsolescence.....	397
Cities, size of, in which operated to greatest advantage.....	734, 882
Collection of fares, difficulties in connection with.....	736
Companies manufacturing.....	748
Congested districts, in.....	695, 734, 1259, 1261, 1684, 1686
Discussed.....	730
Duplication of equipment with.....	732, 746
Economies of.....	731
Employees', attitude of, toward.....	735, 749, 1118
Essential features of.....	730
Failure to more widely introduce and use, reasons for—	
Capital, lack of.....	658, 749
Refuted.....	1597, 1599
Interurbans, utilization by, discounted.....	745

One-man or safety car, use of, by electric railways—Continued.	Page.
Jitney competition, as a means of fighting.....	570, 730, 738, 1594, 1685
Obstacles to utilization of.....	170, 373, 512
Opposition to, in Kenosha, Wis.....	781
Public attitude toward.....	736
Results from use of, in Terre Haute, Ind., satisfactory, discussed.....	1594
Rush-hour traffic, use of, in connection with.....	695, 732, 1684, 1686
Standardization of, as means of reducing cost of.....	400
Statistics of, use of.....	731
Traffic development through frequent service with.....	1600, 1649, 1672
Zone system of fares, use of, in connection with.....	574, 695, 703, 1612, 1650
Operation, <i>See</i> Cost of; Economy; Efficiency, etc.	
Operating expenses of electric railways, by detailed accounts, for 1917.....	938
<i>See also</i> Cost of operation.	
Operating ratio of electric railways, comparison of.....	93, 95, 1787
Ordinances, <i>See</i> Contracts; Franchises.	
Over-building of electric railways in United States due to influence of speculative real-estate interests, condemned.....	1206, 1212
<i>See also</i> Real Estate.	
Over-capitalization, <i>see</i> Capitalization.	
Over-consolidation, <i>see</i> Consolidation.	
Pardee, J. H., statement of.....	62, 882
Paving obligation imposed upon electric railways:	
Cleveland, Ohio, none in, under cost-of-service franchise.....	606
Cost of, paid by car riders.....	425, 1409, 1516
Discussion of.....	119, 644
Justice of—	
Defended.....	911, 912, 1040, 1381
Denied, considered a burden.....	440,
657, 799, 937, 1049, 1054, 1056, 1197, 1292, 1295, 1358, 1683	
Municipal ownership of roadbed with private operation of railway as method of obviating difficulty.....	1040, 1043, 1045, 1048, 1050, 1052
Relief of, from.....	153,
157, 158, 284, 444, 571, 609, 644, 652, 707, 712, 816, 873-874, 884, 894, 941, 1020, 1021, 1054, 1056, 1173, 1179, 1186, 1292, 1296, 1358, 1516	
Favored with qualifications.....	1091, 1402, 1696, 2082, 2098
Granted by Federal court to Pittsburgh Railway Co.....	611, 1904
Not favored.....	1381
Not a solution of electric-railway problem.....	153
Statistics of.....	425
Texas, required by State law in.....	627
<i>See also</i> Imposts; Taxation.	
Pay-as-you-enter cars, use of, by electric railways as means of increasing revenues.....	396, 1089, 1115, 1118
<i>See also</i> Cars.	
Peak-load traffic, <i>see</i> Traffic.	
Pellissier, L., statement of.....	514
Pennsylvania:	
Capitalization, excessive, of electric railways in, situation with regard to..	1400
Fares, electric-railway—	
Changes in, right of companies to initiate.....	952, 965
Increase in, situation with regard to.....	1399
Municipal ownership, no pronounced sentiment, for in.....	1404
Operating condition of electric railways in, good.....	1400
Public Service Commission of, methods, personnel, and powers of.....	377,
1392, 1401, 1905	
Receiverships of electric railways in, small number of.....	1393, 1399
<i>See also</i> Philadelphia; Pittsburgh; Scranton.	
Pennsylvania Central, model cost-accounting system developed by.....	1693, 1699
Philadelphia, Pa.:	
Electric-railway situation in.....	1513, 1548, 2129
History of electric railways in.....	1513, 1548
Municipal ownership of unified electric-railway lines in, favored.....	2134
Rapid-transit situation in.....	470, 1547, 1562, 2133
Real estate values, enormous increase in, due to rapid-transit development.	1548,
1562, 2004	
United Business Men's League of, aims of and work of.....	2129
<i>See also</i> Pennsylvania; Philadelphia Rapid Transit Co.	

	Page-
Philadelphia Rapid Transit Co., Pa.:	
Audit of accounts of, yearly, by city.....	1544, 1546
Capital, new invested by, in extensions and improvements since 1910.....	1541
Capitalization, excessive, of underlying companies of—	
Absorbed in past through careful management.....	1695
Existence of, suspected.....	1556, 1578-1579, 1581, 2130
Cars, type of, used.....	1577
City authorities, relations with.....	1542
Collections of fares, no mechanical devices used as employees trusted.....	1558
Cooperative plan adopted by—	
Amendment of in 1918.....	1520, 1552
Benefits from, felt in all departments.....	1554
Cause of ability to operate at present on 5-cent fare doubted.....	1971
<i>See also Philadelphia Rapid Transit Co., fares.</i>	
Collective bargaining feature of.....	1521, 1533, 1551
Criticized from labor point of view.....	1877, 1880, 1936, 1938, 1956
Details of.....	1521, 1522, 1551, 1558
Indorsement of by National War Labor Board—	
Claimed.....	1514, 1520, 1524
Denied.....	1877
Origin and history of.....	1527, 1529, 1533, 1535
Profit sharing under.....	1518, 1533
Results satisfactory, secured under.....	1513, 1518, 1527, 1533
Turnover of labor, small under.....	1519, 1550, 1570
Wages, adjustment of, under.....	1394, 1398, 1525, 1552, 1574
Cost of operation, increase in.....	1541
Depreciation and maintenance allowance of, sufficiency of—	
Criticized.....	1990, 1993, 1994
Defended.....	1576, 2007
Economies, operating, means of promoting, adopted by.....	1536
Extensions, alleged failure to build and buy new cars criticized.....	2130
Fares—	
Ability to operate successfully on present rates of, discussed.....	1394, 1396, 1554, 1559, 1567, 1679, 1885, 1939, 1956, 1971, 1994, 2003, 2131
Increase in present rates of, not sought.....	1568
Rates of present, 5 cents cash, some free transfers and some 3-cent transfers.....	1517, 1542, 1544, 1553, 1554
Fire insurance, savings effected in matters of.....	1539
Franchise of, provisions of.....	1542, 1543, 1546
History of.....	1513, 1549
Jitney competition with, practically none.....	1558
Freight and express business done by, comparatively insignificant.....	1564
Labor—	
Extra men, average earnings of.....	2007
Hours of labor of trainmen, comparison of with Detroit data.....	2003
Strike of trainmen, failure of attempts to cause.....	1520
Solution of problem of, satisfactory.....	1513, 1519, 1527
Wages paid by, to trainmen—	
Comparison of, with data for Cleveland and Detroit.....	2057
Rates of, for 1910 and 1919 compared.....	1541
Leases of underlying companies of, <i>see Philadelphia Rapid Transit Co., underlying.</i>	
Management of, Stofesbury-Mitten—	
Ability of, to operate successfully at present on 5 cent fare, discussed.....	1394, 1396, 1554, 1559, 1567, 1679, 1885, 1939, 1956, 1971, 1994, 2003, 2131
Cost of, not increased in proportion to increase in other costs.....	1541
Efficiency of, praised.....	1679, 1693
Events leading up to.....	1535
Relations between, and employees and public, cordial.....	1532
Results of, satisfactory—	
Cause of, in confidence between employees and managements.....	1515, 1534
Discussed and outlined.....	1513, 1518, 1533, 1535, 1569, 1658, 1660
Not necessarily obtainable elsewhere through application of same methods.....	1566
Success of, questioned.....	1885, 1939, 1943, 1971, 1989, 1990, 1991, 1996
Newspaper support of.....	1531

	Page.
Philadelphia Rapid Transit Co., Pa.—Continued.	
Population, alleged favorable distribution of from, operating point of view.....	1995, 2005
Public, policy of cooperation with.....	2130
Publicity, methods of, adopted by.....	1531
Purchase by city, right of, reserved in 1907 franchise effective at its expiration.....	1544
Rapid-transit lines, municipally owned, lease of to, opposed.....	1547, 2133
Rehabilitation of, by Stotesbury-Mitten management.....	1518, 1533, 1535
Rerouting of cars, satisfactory results from.....	1536
Ride, length of possible, for 5-cent fare.....	2005
Safety-first campaign of.....	1539
Skip-stop, use of, by.....	1538
Statistics, operating of—	
Comparison of, with data for Cleveland and Milwaukee.....	1989
Income accounts.....	1516, 1541
Traffic, development of, by through publicity and salesmanship by employees.....	1514, 1532, 1534, 1559, 1569
Trainmen, reasons for decrease in number of.....	1967, 1969
Transfers—	
Charge for, discussed.....	1412, 1544, 1553, 1567
Free facilities extended by, not as extensive as in Cleveland or Milwaukee.....	1991
Statistics of.....	2004
Underlying companies of—	
Capitalization, excessive, of.....	1556, 1578, 1579, 1581, 1588, 2130
Leases of, providing for high rentals, etc., condemned. 1864–1865, 2130, 2131	
Relief, possible legal, from onerous terms of leases of.....	2079, 2131
Value of present, exceeds capitalization, claimed.....	1580, 1583
<i>See also</i> Pennsylvania; Philadelphia.	
Pierce, Henry J., statement of.....	872
Pittsburgh Railways Co., Pennsylvania:	
Capitalization, excessive, of.....	620, 1848, 1910
Cars, use of double-deck, by.....	932
Causes of present difficulties of—	
Cost of operation, increased.....	619
Extensions, overbuilding of.....	309
City officials, attitude of, toward.....	622
Cost-of-service plan of operation considered for.....	301, 1916
Economies, operating, under receivership of.....	300
Fares—	
Changes in, right of Pennsylvania Public Service Commission to make, irrespective of franchise provisions, being tested in the courts..	1905
Five-cent fare, not permitted by topographical conditions of city.....	1559
Increase in—	
Further needed.....	615, 616
Public attitude toward.....	619
Results from.....	290, 612, 617, 1909
Urged as a permanent solution of problem.....	302, 304
Rates of, charged.....	289, 310
Sufficiency of present 10-cent rate of.....	1910, 1913
Zone system, use of modified—	
Discussed.....	612, 617
Results from, unsatisfactory.....	1404, 1908
Imposts, such as paving upon.....	294, 612, 624
Jitney competition with.....	313
Labor, employed by—	
Costs of, increased.....	614
Troubles.....	614, 1902
Wages paid to, rates of.....	293
Management, efficiency of.....	611, 620
Municipal ownership of, through establishment of a metropolitan district for purpose.....	1912, 1924
Paving requirements, relief from, granted by Federal court.....	1905
Public, opposition of, toward.....	1910
Regulation of, local versus State.....	302
Situation with regard to.....	289, 610, 1394, 1898
Statistics, operating, of.....	291, 611

Pittsburgh Railways Co., Pennsylvania—Continued.

	Page.
Solution of difficulties of—	
Fares, increased.....	301, 304
Service, abandonment of.....	303
Taxes paid by.....	293
Underlying companies of—	
History of and terms upon which operated.....	296
Temporary character of leases of and evils therefrom:.....	618, 1898
Unified system with single corporation favored.....	624, 1898
Valuation of, importance of a fair.....	299, 620, 621, 1902, 1910
<i>See also</i> Pennsylvania.	
Population:	
Congestion of—	
Fare, effect of flat rate of, upon.....	231, 1206, 1288, 1294
<i>See also</i> Zone system of fares.	
New York City, efforts to remedy in.....	877, 1288, 1294
Prevented by electric railways.....	437, 445, 458, 576
Prevention of, discussed.....	877, 1315, 1486
Density of, in various United States cities compared.....	2006
Distribution of, alleged favorable from electric railway point of view, in	
Philadelphia.....	1995, 2005
Increase in, of that served by subsidiaries of Stone & Webster.....	2038, 2040
Urban, per mile of track, in Great Britain and United States.....	436
Portland Railway, Light & Power Co., Oregon, valuation of.....	2013
Portland Street Railway Co., Maine, situation with regard to.....	354, 363
Power:	
Generation of, by electric railways.....	80, 91, 224, 225, 931, 1667
Houses, growth in size and importance of.....	935
Purchase of, by electric railways.....	91, 108-109, 215, 239, 931, 2123
Sale of, by electric railways for light and power purposes, various phases of.....	72, 82, 704, 932, 1481
Stations, cost and efficiency of.....	237
Use of, by electric railways, possible economies in.....	215, 1593, 1596, 1667, 2067
Preferentials and companies in dual-system contracts in New York City, public criticism of.....	1279
<i>See also</i> New York, N. Y.	
Preliminary expenses, consideration of, in valuation. <i>See</i> Valuation.	
Prices:	
Behavior of, before and after various wars, discussed.....	1321
Increased as cause of present deplorable electric railway situation. <i>See</i> Causes.	
Level of—	
Capital, interest upon, determined by factors more or less independent of.....	1334, 1335
Constantly changing.....	1321, 1323
Increase in, extent of.....	1320
Measure of, index numbers as.....	127
Present high—	
Causes of.....	1323, 1328, 1882, 1885, 1916
Decrease in, not a solution of electric-railway problem.....	1061
Effect of, upon electric railways.....	65, 1086
Permanence of, will continue for some time to come.....	65, 301, 417, 421, 530, 646, 863, 927-931, 934, 953, 1290, 1323, 1340
Upheaval of, due to credit inflation.....	1328
Wholesale, of commodities as reported by United States Bureau of Labor Statistics.....	116
Private operation of electric railways:	
Condemned and abuses of pointed out.....	1234, 1342, 1344, 1356
Discussed under municipal or public ownership.....	799, 924, 1048, 1900, 1912, 2084, 2117
Private ownership of electric railways:	
Failure of.....	791, 800, 1234, 1481
Private operation and disadvantages of under Cleveland cost-of-service plan.....	1460, 1462, 1464
Public operation and—	
Experimented with in Massachusetts.....	344, 1442, 1452, 1625, 1610, 1659
Favored.....	1353, 1358, 1464, 1650, 1651, 1653
<i>See also</i> Bay State Street Railway Co.; Boston Elevated; Massachusetts.	

	Page
Problem of electric railways, present:	
Complicated by factors absent in European cities.....	1421, 1422
Features of, main, as seen by Amalgamated Association of Street & Electric Railway Employees.....	1893
Federal Electric Railways Commission, suggested presentation by, of... <i>See also</i> Federal Electric Railways Commission.	2664
Finances and management, one of.....	167
Local one, essentially a.....	1006, 1013, 1567, 1577, 1619, 2064, 2105
Psychological one, to an extent, a.....	1386, 1401
Several, not one.....	1385, 1388, 1401
Social one.....	1135, 1137, 1155, 1161, 1352, 1627, 1631, 1681
Solution of, obstacles to..... <i>See also</i> Relief; Remedies; Solution.	1688
Statement of, necessity of clear, definite and simple.....	1387-1388, 1406
Outline of.....	1229, 1454, 1893, 2105
Vital one in every municipality, a.....	1047
World-wide one, a.....	1319, 1330, 1335
Proceedings of:	
July 15, 1919.....	62-145
July 16, 1919.....	145-227
July 17, 1919.....	228-314
July 18, 1919.....	314-416
July 21, 1919.....	416-514
July 22, 1919.....	514-637
July 23, 1919.....	637-764
July 24, 1919.....	764-881
July 25, 1919.....	881-995
August 11, 1919.....	995-1085
August 12, 1919.....	1086-1171
August 13, 1919.....	1179-1277
August 14, 1919.....	1277-1384
August 15, 1919.....	1384-1513
September 29, 1919.....	1513-1621
September 30, 1919.....	1621-1731
October 1, 1919.....	1731-1841
October 2, 1919.....	1841-1947
October 3, 1919.....	1947-2055
October 4, 1919.....	2055-2134
Productivity of electric-railway trainmen.....	1515, 1534, 1731, 1776, 1781-1782, 1846, 1853, 1887, 1928, 1957, 1959, 1960, 1964
<i>See also</i> Labor.	
Profit, electric-railway industry should be conducted primarily for service rather than for.....	1228, 1230, 1294
Profit sharing by electric railways. with—	
Labor.....	787, 1588, 1966-1967
Municipalities.....	280, 331, 332, 782, 923, 1234
Profits of electric railways:	
Early excessive, claimed.....	1705, 1711
Denied.....	1704
Made through financing.....	1688
Public belief in enormous, how reached.....	555
Profits of promotion of electric railways.....	199, 719
Promotion costs and profits, <i>see</i> Profits; Valuation.	
Property values, assessment of increased to pay for electric railway improve- ments, <i>see</i> Assessment.	
<i>See also</i> Land Values; Real Estate.	
Providence, R. I., <i>see</i> Rhode Island.	
Psychological factors entering electric railway operation.....	1987, 1997
Public:	
Antagonism of, toward electric railways—	
Method of overcoming.....	1222
Obstacle to solution of problem.....	1222, 1688, 1859
Reasons for.....	154, 199, 240, 495, 854, 1152, 1199, 1222, 1688, 1692, 1844, 1859, 1910
Approval of, necessary to success of any electric-railway settlement plan..	1003
Attitude of, toward increased fares:	
Favorable—	
Essential to success.....	357, 449, 451, 560, 888, 1397
Exists.....	515, 518, 724, 868
Methods used to obtain.....	357

Public—Continued.

	Page.
Attitude of, toward increased fares—Continued.	
Immaterial, so far as results are concerned.....	515
Opposition toward, increases.....	654, 798, 873, 1184, 1416, 1657
Less with automatic method.....	376, 594, 663, 1759
Not likely because of desire not to physically inconvenience itself.....	536
Reasons for.....	1083, 1386, 1406, 1412
Reduced to a minimum by a knowledge of facts involved.....	488,
	557, 558, 560, 888, 919, 1016, 1759
Benefits derived by, from electric railways.....	753
Characteristics of American, personal and psychological, an additional source of difficulty in reaching a solution of electric-railway problem.....	1422
Conclusions of, as to the enormous profitableness of electric railways, how reached.....	555
Confidence of, in electric railway industry—	
Lack of, reasons for.....	2088
Methods of regaining.....	304
Necessity for.....	2098
Cooperation of, with electric railways—	
Discussed.....	154
Essential to their well-being.....	64, 65, 411, 527, 687, 863, 1047, 1116, 1388, 1392, 1459, 1460, 1464, 1530, 1569, 1668, 1996-1998
Interurbans have it.....	725
Methods adopted by Philadelphia Rapid Transit Co. to secure.....	1531
Need of, Federal Electric Railways Commission should point out.....	2068
Education of, necessity of, to meet present unfortunate electric-railway situation.....	63, 322, 453, 1007, 1017, 1029, 1658
Failure of, to realize extent of increase in cost of electric railway operation.....	947
Federal Electric Railway Commission; facts presented by, will be believed.....	557
<i>See also</i> Federal Electric Railways Commission.	
Impression held by, regarding existence of overcapitalization in electric railway industry, importance of dispelling.....	405
Interest of, in electric railway situation paramount.....	63, 687, 837, 1894, 1954
Interests of, injured by absorption of electric railway revenue through overcapitalization.....	1180, 1191
Joint light, power, and electric railway operation, entitled to some of bene- fits of.....	2018, 2019, 2030, 2034
Misled by self-appointed advisors.....	849
Opposition of, to electric railways, reasons for—	
Detroit United Railway Co.....	1152
Pittsburgh Railways Co.....	1910
Public Service Railway Co.....	1199
Realization by, of present electric railway situation, importance of bring- ing about.....	327, 1660
Relations of, with—	
Electric railways.....	154
Basis of, never economic and satisfactory.....	64
Importance of satisfactory.....	157, 200, 1397
Means of obtaining satisfactory cost-of-service plan.....	211, 664
Plan for readjusting should be recommended by Federal Electric Railways Commission.....	882
Employees of electric railways, importance of cordial.....	1671
Representation of, in the management of electric railways.....	158,
	788, 916, 933, 1027, 1700, 2068
Return on watered stock now held by innocent investors, payment of, by, not favored.....	1393
Satisfaction of, with Cleveland cost-of-service franchise.....	905, 1003
Sentiment of—	
Controlling agency upon demands of electric-railway labor and main- tenance by it of contracts.....	1298, 1474
Effect upon, of conclusions and recommendations of Federal Electric Railways Commission.....	63, 898
Jitney regulation, useless unless supported by.....	1242

Public—Continued.

Sentiment of—Continued.	
Toward electric railways—	Page.
Cost-of-service plan.....	478, 484, 487, 490, 491
Importance of favorable.....	532-533, 1470, 1656, 1658
Public ownership of, favorable.....	1273
Public contributions to electric railways, <i>see</i> Subsidies.	
Public control of electric railways, <i>see</i> Regulation.	
Public functions, should not be performed for private profit.....	13-12
Public officials, corruption of by public utilities.....	154,
242, 244, 450, 854, 1010, 1030, 1316, 1709, 1723	
Public operation of electric railways under private ownership, <i>see</i> Private ownership of electric railways.	
Public ownership of electric railways:	
Advantages of.....	793, 798, 1244, 1345, 1348, 1350, 1376, 2071
Argument for.....	791, 808, 1233, 1364, 1345, 1346-1347, 1495,
1497, 1629, 1633, 2014, 2017, 2033, 2035, 2077	
Capital, ability to obtain new needed, and at a lower rate of interest an argument for.....	209, 539, 805, 1048, 1157, 1233,
1451, 1454, 1478, 1651, 2069, 2081, 2084, 2114	
Capitalization, excessive, elimination of only through purchase for.....	1264
Condemnation as method of obtaining.....	1140, 1143, 1233
Cost-of-service plan of electric-railway operation as against.....	479,
488, 503, 1234, 1247	
<i>See also</i> Cost of service.	
Credit, electric railway, relation of to, <i>see</i> Credit.	
Delay incidental to adoption.....	800, 805, 824
Discussion of.....	2114
District ownership where purely municipal impracticable.....	802,
1237, 1247, 1631, 1635, 2076, 2120	
Employees, relative treatment of under, as against private.....	1350
Fares, sufficient to pay for service at cost, favored under.....	2082
Favored.....	791, 799, 800, 801, 830, 1233, 1237, 1247, 1264, 1265,
1342, 1346, 2014, 2017, 2033, 2035, 2077, 2109, 2111	
Free electric-railway service under.....	1161,
1626, 1629, 1631, 1706, 1711, 1714, 1726, 2081, 2087	
Great Britain, situation with regard to in.....	2118
<i>See also</i> Great Britain.	
Inevitable.....	1265, 1281, 1289, 1291, 1478
Jitneys, would probably be not permitted to operate under.....	1242
Kenosha, Wis., considered for.....	782
Legislation, additional, necessary to bring about.....	1237
Methods of financing used in Seattle to bring about.....	1238
Objections to—	
Discounted.....	791, 794, 1262, 1344, 2070, 2084, 2086
Discussed.....	336, 339, 855, 880, 1108
Obstacles to its adoption—	
Financial.....	805
Legal.....	806, 1353
Question of price, determination.....	2083
Opposed.....	336, 463, 876, 964, 1652, 1688, 1698, 2077
Private operation under.....	799, 924, 1234, 1356, 2071, 2084, 2117
<i>See also</i> Private operation.	
Purchase, through, <i>see</i> Purchase of electric railways.	
Recommendation for, insufficient evidence in United States upon which to base.....	2077
Referendum, public, favored prior to adoption of.....	2071, 2083
Solution of electric railway problem.....	1229, 2070, 2077, 2084
Favored as.....	791, 801, 1233, 1353, 1358, 1451,
1454, 1688, 1698, 2014, 2017, 2033, 2035	
Opposed.....	315
Sentiment toward, in United States believed favorable.....	1273
State operation, cities in which.....	946
State ownership as against municipal.....	802, 2076
<i>See also</i> Districts.	
Steam railroad situation in United States not a fair test of.....	827, 842
Valuation, exorbitant, fear of it being used as basis of.....	2111
<i>See also</i> Municipal ownership; Private ownership.	

	Page.
Public Service Railway Co., Newark, N. J.:	
Capitalization, excessive.....	1199, 1214, 1845
Fares—	
Increase in, effect of, upon revenues and riding....	426, 957, 1243, 1255, 1634
Zone system of, providing for 3 cents initial rate adopted by—	
Collection difficulties encountered with.....	1610, 1612, 1619
Discussion of.....	962, 1119, 1198, 1252, 1608, 1619
Failure of, causes of.....	1608, 2042
Jitney competition with—	
Discussed.....	1198, 1199, 1201
Increase in, following increase in electric-railway fares.....	426, 1243, 1255
Injurious effect of, upon electric-railway revenues.....	1243, 1255
Public attitude toward, hostile, due to poor service furnished.....	1199
Situation with regard to, in city of Newark.....	1198
Statistics, operating of, comparison of, with similar data for Glasgow Municipal Tramways.....	1206
Underlying companies of, payment of excessive rentals to.....	1846
Valuation of.....	1202, 1215
Public support of electric railways, <i>see</i> Subsidies.	
Public-trustee plan of electric railways operation in use in Massachusetts, <i>see</i> Bay State Street Railway Co.; Boston Elevated Railway Co.; Massachusetts.	
Public utility, what constitutes.....	1352
Publicity:	
Full, importance of, on part of electric railways in meeting present unsatisfactory situation.....	1018, 1185, 1387, 1406, 1412, 1997, 2090
Methods of, employed by Philadelphia Rapid Transit Co.....	1514, 1531, 1532, 1534, 1569
Propaganda of public-utility interests, alleged, criticized.....	1689
Puget Sound Traction, Light & Power Co., Seattle, Wash., purchase of electric lines from, by city of Seattle.....	1131
<i>See also</i> Seattle.	
Purchase of electric railways by public:	
Advocated and reasons for.....	1629, 1633
Contracts, provision for, in—	
Approval of, by State commissions favored.....	1240, 1247
New, favored.....	1698
Cost-of-service franchise, under—	
Essential feature of.....	468, 513, 599, 634, 665, 1240, 1247, 1270
Provision for, in Cleveland franchise criticized.....	1972
Earnings, capitalization of, as basis of.....	2109
Financing of.....	805, 1238
Franchise, under—	
Expired.....	1249
Indeterminate, provision for, usually coupled with.....	195, 468, 1022
Legislation necessary to make possible.....	1238
Opposed because of excessive capitalization, etc.....	1714, 1726
Massachusetts, provision for, at end of period of public-trustee control of certain electric railways in.....	1656
Price or fair value as basis of:	
Amortization of, favored.....	1240
Determination of.....	181, 468, 665, 898, 907, 1249, 2083
Stability of electric railways, effect upon, of right to.....	907
Terms of.....	1451, 2109
<i>See also</i> Condemnation; Valuation.	
Purchasing power of money, <i>see</i> Money.	
Purdy, Lawson, statement of.....	2124
Quackenbush, J. L., statement of.....	817
Quimby case, decision of New York Court of Appeals in.....	1313
Quincy, Mass., <i>see</i> Bay State Street Railway Co.	
Railroad competition, steam.....	715, 887, 891, 893, 1086, 1099, 1176
Rann case, decision of New York Court of Appeals in.....	1313
Rapid-transit lines:	
Boston, Mass., situation with regard to, in.....	1453, 1455, 2058
Construction of, through assessment of property benefited.....	2126
<i>See also</i> Assessment.	

	Page.
Rapid-transit lines—Continued.	
Earnings and finances of, discussed.....	129, 131, 132
Fare, uniform flat rate of, favored for.....	1241
Freight and express, transportation of, by, at night considered.....	1564
New York, N. Y., situation with regard to, in.....	822, 877, 1234, 1279, 2126
Overbuilding of, in Boston a source of weakness of electric railway in....	1453: 1455, 2058
Philadelphia, Pa., situation with regard to, in.....	470, 1547-8, 1562, 2133
Real-estate values, increase in, as a result of construction of.....	1548, 1562, 2004, 2099, 2126
Rate of fare, electric railway, <i>see</i> Fares.	
Rate of return, <i>see</i> Return.	
Ratio, operating of electric railways, increase in.....	93, 95, 1787
Rea, William M., statement of.....	1748
Reading Transit & Light Co., Reading, Pa., situation with regard to.....	1074
Real estate:	
Assessment of, benefited, to pay for electric-railway improvements, <i>see</i> Assessment.	
Development of speculative ventures in, through construction of electric- railway extensions.....	348, 1008, 1206, 1212, 1359, 1622
Value of—	
Effect upon, probable, of change in United States from flat rate of electric-railway fares to a zone system.....	1603
Increase in, due to advent of electric-railway lines, surface and rapid transit.....	438, 911, 1548, 1562, 2004, 2099, 2126
Rebate slips, use of, in connection with fare changes initiated by electric rail- ways.....	952
Receiverships of electric railways:	
Connecticut, large proportion of electric railways in, under.....	1107, 1110
Control of, by State regulatory commissions.....	1267
Desirability of, as a method of financial reorganization.....	1263, 1266, 1695
Efficiency of operation under.....	196, 542
Indiana, only one electric railway in, under.....	1095
New York City, danger of, in.....	147, 519, 827, 830, 1277, 1279
Pennsylvania, small proportion of electric railways in, under.....	1393, 1399
Pittsburgh, Pa., situation with regard to, in.....	300, 610
Rhode Island, situation with regard to, in.....	1167, 1175
Statistics of.....	83, 84
Referendum votes on electric-railway settlements, desirability of.....	1023, 1029, 2071, 2083
Regulation of electric railways, public, by State commissions or otherwise:	
Accounting of, favored.....	898, 1226, 1240
Bonds, selling qualities of, effect upon, of.....	186
Capital expenditures, authorization of, favored.....	781
Capitalization, control over, favored.....	1112, 1113
<i>See also</i> Securities.	
Cause of present electric-railway difficulties.....	63, 1054, 1222, 1224, 1393
Commission, State regulatory—	
Criticized.....	817, 859, 861, 862
Delays incident to work of.....	375, 376, 407, 467, 701, 723, 772, 784, 818, 847, 848, 850, 858, 864, 867, 900, 922, 1088, 1104
Defended.....	850
Methods of work, personnel, etc.—	
California.....	890
Maine.....	360
Pennsylvania.....	377
Rhode Island.....	1168
Political influences affecting.....	851, 855, 866
Contracts with municipalities, approval of, by State commissions.....	1224, 1228, 1392
Cost-of-service franchise—	
Contracts providing for, should be subject to approval by State com- missions.....	1240, 1247
Fares, adjustment of, under, automatic <i>vs.</i> State commission control....	467, 507, 563, 780, 905, 906, 1270

See also Fares

Regulations of electric railways, etc.—Continued.

	Page.
Cost-of-service franchise—Continued.	
Regulation, public, under, place of State commissions in scheme.....	467, 469, 482, 486, 664, 675, 780, 1223, 1240, 1420
<i>See also</i> Cost of service.	
Defects of present system of.....	351
Defense of.....	855
Difficulties incident to.....	978
Districts, public utility, establishment of for purposes.....	1231, 1237, 1265
Dividends, of.....	1488
Effective, prerequisites to.....	817, 1374, 1401
Elimination of, favored.....	1055, 1056
Extensions, construction of, control over.....	306, 783, 1098
Failure of.....	67, 791, 800, 859, 861, 1053, 1061, 1233
Fares—	
Adjustment of, automatic versus State commission.....	467, 507, 563, 780, 905, 906, 984, 988, 990, 1044, 1270
Changes in power of companies to initiate.....	892, 952, 965, 1109
Increase in, power of State commissions to order irrespective of franchise provisions.....	199, 351, 405, 515, 798, 828, 839, 844, 846, 884, 885, 864, 1070, 1095, 1112, 1227, 1313, 1315, 1392, 1905, 2044
Favored.....	68, 307, 773, 855, 1414
Finances, of reorganization of.....	892, 1267
Form of control, State versus local—	
Discussed.....	181, 243, 244, 664, 675, 901, 903, 1009, 1013, 1222, 1414, 2076
Joint State and local control.....	469, 901, 916, 987, 1013, 1098, 1144, 1149, 1169, 1171, 1172, 1225, 1228, 1900, 1906
Local control.....	902, 1012, 1120, 1144, 1149, 1170, 1227, 1292
State control.....	194, 302, 335, 561, 888, 902, 903, 941, 965, 978, 981, 982, 985, 986, 1097, 1101, 1108, 1112, 1172, 1173, 1226, 1240, 1375, 1420, 1472, 1698
Hazards of.....	773
History of.....	765
Holding companies, of.....	1204
Interurbans, of.....	699, 706, 724
Jitneys, of.....	714, 723, 1064, 1068, 1242
<i>See also</i> Jitneys.	
Labor disputes in electric-railway industry, control over, in Wisconsin.....	783
Leases of underlying companies, control over.....	1282, 1285
Legislation providing for, worthless without enforcement.....	982, 986
Massachusetts, situation with regard to, in.....	1468, 1473, 2060, 2063
<i>See also</i> Massachusetts.	
Monopolies, favored.....	1054, 1055
New York, situation with regard to, in.....	335, 817
<i>See also</i> New York.	
Public ownership versus State commission control.....	855, 1233, 1234, 1264, 1265, 1500, 1688, 1698
Publicly owned roads, State commission control over.....	1240
Relief, emergency, provision for, under.....	840, 842, 1092
Return, rate of, control over determination of.....	781, 1244
Securities, issuance of.....	221, 307, 574, 891, 892
<i>See also</i> Securities.	
Service rendered, of.....	846, 898
Substitutes for, jitney competition as a.....	1053
Valuations, function of, making control over, who should have.....	904, 1009, 1227, 1240
Wages of employees, control over.....	625, 770, 1181, 1186, 1232, 1272, 2000
Wisconsin, municipal guarantee law of.....	782
<i>See also</i> topics mentioned above as they appear in the index.	
Rehabilitation of electric railways, cost of, should be kept down.....	1021
Relief to electric railways:	
Delays incident to granting, injurious.....	850
<i>See also</i> Regulation.	
Emergency—	
Facilities for affording, many States have.....	817
Franchise provisions, irrespective of, in Indiana.....	1092
Dividends, would not be used to pay.....	848

	Page.
Relief to electric railways—Continued.	
Financial, extended by Government agencies during war as war measure.	1930, 1934
Immediate, advocated and discussed.....	408, 531, 535, 540, 542, 847, 849, 882, 884, 886, 888, 895, 897, 898, 900, 915, 990, 991, 1057, 1107, 1108, 1894
Measures of, suggested and discussed—	
Economies in operation, further.....	895, 1256
Fares, increase in.....	404, 535, 540, 542, 882, 886, 888, 895, 897, 900, 915, 990, 991, 1029, 1069, 1179, 1191, 1256
Subsidies, public.....	1191
Taxation, direct and indirect, elimination or remission of.....	816, 883, 1057, 1069, 1899, 1904
Transfers, charge for.....	1279
Suggestions for—	
Applicable to small as well as to large roads.....	882
Lack of equitable or confidence-inspiring method of putting into effect, deplored.....	1692
Temporary.....	847, 1029, 1107
<i>See also</i> Problem; Solution.	
Remedies for present electric-railway situation, <i>see</i> Relief; Solution.	
Renewals and replacement, capitalization of, no longer possible.....	559, 562
<i>See also</i> Depreciation.	
Rentals, excessive, paid by electric railways to leased companies, <i>see</i> Leases.	
Reorganization of electric-railway finances:	
Control of, by regulatory commissions advocated.....	892, 1267
Discussion of various phases of.....	219, 1074, 1077, 1086, 1357, 2064, 2079, 2093
Favored.....	574, 575, 577, 1266, 2069, 2114
<i>See also</i> Capitalization; Finances, etc.	
Replacements, <i>see</i> Renewals.	
Requirements, local, <i>see</i> Imposts; Paving; Taxation.	
Return, rate of, paid by electric railways:	
Ability to earn any, at present doubted.....	847
Basis for, what constitutes.....	161, 164, 221, 227, 333, 338, 342, 468
Calculation of, needed, method of.....	924
Certainty of a fair, in order to attract new capital, etc., importance of.....	65, 209, 656, 897, 914, 1229, 1245, 1900
Adequacy of, past and present.....	128, 140, 2105, 2108
Discussed and importance of, pointed out.....	65, 202, 209, 656, 859, 863, 897, 956, 978, 1438, 1900
What constitutes.....	192, 197, 328, 334, 348, 349, 772, 873, 975, 1229, 1244, 1245, 1586, 1973, 1988, 2114
Cleveland Railway Co., Cleveland, Ohio, situation with regard to.....	1229, 1245, 1973, 1988, 2114
Cost-of-service franchise, under:	
Adequacy of.....	328, 345, 348, 1229, 1245, 1973, 1988, 2114
Capital value as basis for.....	468
Certainty of, greater.....	915
Fixed rate of, desirability of both for old and new capital.....	672, 680, 681, 781, 1005, 1014, 1463, 1588, 1926
Guaranty of.....	328, 334, 345, 348, 689, 1246, 1247
Variations in, as an incentive to efficiency of operation.....	474, 494, 498, 501, 1005, 1014
Elasticity of.....	279, 1229, 1418
Factors affecting.....	272, 677, 1229, 1334, 1335, 1340, 1970, 1988
Guaranty of.....	328, 334, 345, 348, 350, 352, 463, 689, 782, 1246, 1247
Money, depreciation in purchasing power of, effect of, upon.....	173, 271, 1332, 1334
Permanency of, when fixed by regulatory bodies.....	774, 781
Public ownership, lower rate of, probable under.....	806, 1048
Watered stock, payment of return on opposed.....	1391
<i>See also</i> Capitalization; Valuation, etc.	
Revenue, electric railway:	
Absorption of, through fictitious capitalization or improper management condemned.....	1731, 1846, 1853, 1874, 1886
Adequate, need of, imperative.....	524, 829, 860, 884, 886, 955, 1342, 1384, 1899
Cost-of-service franchise, defect of, in inability to collect sufficient, under any system of fares that can be devised.....	781

	Page
Revenue, electric railway—Continued.	
Express and freight, carrying of, as a possible source of.....	465, 718, 1564, 2095
Fares, effect of increase in, upon, <i>see</i> Fares.	
Flexibility in, need of.....	1229
Fluctuations in, causes of.....	1439
Increase in—	
Efforts to obtain as a stimulant to jitney competition.....	426
Methods of obtaining, possible—	
Economies in operation.....	1568
Express and freight, carrying of.....	465, 718, 1564, 2095
Fare increases, <i>see</i> Fares.	
Riding, stimulation of.....	1568, 1669, 1676, 2095
Zone system of fares.....	1109, 1600
Need of, immediate.....	829, 860, 884, 886, 888, 1342, 1384
Insufficiency of, as cause of present electric-railway difficulties.....	1438
Losses in, due to poor fare collection methods.....	1218
Operating—	
Comparison of, with wages of electric-railway trainmen per car mile, etc.....	1783
Net, per mile of track.....	129
Per capita, increase in, of Stone and Webster companies.....	2038, 2040
Sources of, distribution by.....	431
<i>See also</i> Earnings; Income; Relief; Solution, etc.	
Rhode Island:	
Electric-railway situation in.....	1166, 1171, 1174
Public Utilities Commission of, the work, personnel, etc.....	1168
Regulation, joint local and State in.....	1169, 1172
Special commission to investigate Rhode Island Co., report and recommendations of, discussed.....	1166, 1168, 1173
Taxation, system of in criticised.....	1195, 1196
<i>See also</i> Rhode Island Co.	
Rhode Island Co., R. I.:	
Capitalization of, excessive.....	1151
Causes of difficulties.....	1175, 1181, 1186, 1188, 1191-1192, 1194
Cost of operation of, increase.....	1191, 1194
Economies in operation urged upon.....	1179, 1187
Fares—	
Charged by.....	1167, 1176
Increase in—	
Not a solution.....	1181
Recommended.....	1179, 1186
Results from, unsatisfactory.....	1175, 1178, 1182
Zone system of, adopted by.....	1174, 1176
Effects of, social, etc.....	1183, 1185
Results from, financial.....	1181-1182
Jitney and automobile competition with.....	1186
Management of, approved.....	1181
National War Labor Board, awards of.....	1188, 1192
Paving obligations imposed upon.....	1197
Receivership of.....	1167, 1175
Situation with regard to.....	1166, 1171, 1174
Solution of problems of, fare increase not a.....	1181
Steam railroad competition with.....	1176
Taxation of, relief from favored.....	1179, 1186, 1196, 1197
Transfers, charge for by.....	1182
Wages paid by, to employees, situation with regard to.....	1175,
	1181, 1188, 1192, 1193
Richmond, Va., development of first commercially successful electric railway in United States in.....	752
Ride, electric-railway:	
Cost of, per passenger, increase in.....	968, 974
Length of, <i>see</i> Haul, length of.	
Riding habit, electric-railway:	
Automobile as a stimulant of.....	860, 2038
Discouragement of, by high fares deplored.....	1657
Discussion of.....	73, 76, 77, 78

Riding habit, electric railway—Continued.

	Page.
Fares—	
Decreased, effect of, upon.....	869
Increased, effect of, upon, <i>see</i> Fares.	
Influences other than, affecting.....	860, 957, 2038
Low, effect of upon.....	1899
Zone system of, effect of upon.....	1600
Increase in—	
Affecting Stone & Webster Co.....	2040
Claimed for.....	673, 1790
Methods of obtaining, possible.....	1569, 1595, 1600, 1658, 1670, 1672, 1676
Possibilities of, during nonpeak hours overlooked.....	1592
Philadelphia Rapid Transit Co. has benefited from.....	1559
Sign of, public approbation of service rendered.....	1595
Roadbed, electric-railway:	
Public ownership of, with private operation, favored.....	1040, 1042, 1043, 1045, 1048, 1050, 1052
Taxation of, local, should be abolished.....	1042
Robinson, Charles, statement of.....	1913
Rolling stock, electric-railway, <i>see</i> Cars.	
Rooke fare register, merits of.....	1261
Rosenwald, J., statement of.....	928
Routing of electric-railway cars:	
Importance of proper.....	1665
Rerouting—	
Philadelphia Rapid Transit Co., by satisfactory results from.....	1536
Providence, R. I., urged for.....	1179, 1187
Rush-hour traffic, electric-railway, <i>see</i> Traffic.	
Ryan, J. D., statement of.....	928
Safety:	
Campaigns to promote, use of, by Philadelphia Rapid Transit Co.....	1539
Car, <i>see</i> One-man car.	
Control over, by electric-railway employees.....	789
St. Louis, Mo.:	
Electric-railway situation in.....	555, 563-564, 1709, 1715, 1722, 1724
Free electric-railway service proposed for.....	1716
Municipally owned and operated electric railway in.....	1718
Public officials, corruption of, by traction interests alleged.....	1715
Referendum petition for repeal of extension of electric railway franchise in, destruction of.....	1717
<i>See also</i> United Railways Co. of St. Louis, Mo.	
Salaries of electric-railway executives, limitation upon, under cost-of-service franchise.....	196
<i>See also</i> Wages.	
Salesmanship, use of, by trainmen of Philadelphia Rapid Transit Co. to cultivate riding.....	1514, 1532, 1534
San Diego Electric Railway Co., San Diego, Calif., situation with regard to....	262
San Francisco, Calif.:	
Holding-company control of public utilities in.....	2021
Municipal Railway of—	
Depreciation allowance, discussion of by city engineer, and argument against its reduction.....	1507-1508
Experiment in municipal ownership and operation of electric railways, first important in United States.....	1203
Fare, ability of, to operate on a 5-cent rate of.....	1507
Motor busses, use of, by, as feeders.....	1242
Origin of.....	1856
Results of.....	1159
United Railroads of, overcapitalization of.....	1851, 1854
San Francisco-Oakland Terminal Railways, Calif., situation with regard to...	884
Sanders, Fielder, statement of.....	1457
Schaddelee, R., statement of.....	857
Schedule speed, electric railway, discussion of.....	1668, 1676, 1685, 1990, 1992
Schedules, electric railway, importance of correct.....	1664, 1676
Schenectady Railway Co., Schenectady, N. Y., extension of length of ride on, possible for a 5-cent fare.....	843, 852
Schiff, J. H.....	930

Scranton Railway Co., Scranton, Pa.:	Page.
Capitalization of, excessive.....	1213, 1377, 1378
Fares charged by, increase in.....	1379
Return upon capital paid by since 1906.....	1378
Situation with regard to.....	365, 1377, 1379
Valuation of.....	1383
Scrap value, valuation term.....	230
Seattle, Wash.:	
Electric-railway situation in.....	1131
Minimum comfort budget used in electric-railway arbitration proceedings in	1826
Municipal ownership of electric railways in—	
Events leading up to.....	1131
Fare, rate of, charged under.....	1497
Financing of.....	1238
Ordinance providing for.....	1133
Results of operation under.....	1133
Securities of electric railways:	
Bonds, mortgage, elimination of favored.....	1587
Bonus stock, issuance of.....	219, 327, 338
Character of.....	677
Discount on.....	171, 1230, 1862, 1866
Distribution of, extent of .. 185, 190, 201, 212, 319, 320, 346, 421, 537, 544, 1505, 2014	
Dividends on public control over amount distributed, favored.....	1282
Franchises, short-term, effect of upon.....	925, 939
Issuance of, control of regulatory commissions over.....	221,
307, 574, 888, 891, 1204, 1226, 1240	1587
Local ownership of, favored.....	543, 545, 1067, 2092
Market for, lack of.....	1332, 1334
Money, depreciation of, effect of on.....	1587
Mortgage bonds, elimination of favored.....	219, 574, 575, 577
Readjustment of.....	328, 345, 348, 493, 504, 1418
Return on.....	
<i>See also</i> Return.	
Sale of, conditions upon which can be effected.....	186, 345, 975
Speculation in, condemned.....	793, 2093
Stock—	
Bonus, issuance of.....	219, 327, 338
Common, treatment of holders of.....	578
Value of—	
Relative, of senior and junior issues under cost of service.....	198
Shrinkage in.....	152, 316, 1066
“Watering” of, should stop.....	304
Yield on, statistics of.....	317
<i>See also</i> Capitalization; Finance; Reorganization; etc.	
Service, electric-railway:	
Abandonment of, <i>see</i> Abandonment.	
At cost, not favored.....	889
<i>See also</i> Cost of service; Cost-of-service franchise.	
Continued, should be guaranteed and industrial disputes in the industry	
settled without strikes.....	1229, 1232
Control of, local favored.....	1007, 1227, 1587
<i>See also</i> Regulation.	
Cost of, <i>see</i> Cost of service.	
Economies, possible, in, <i>see</i> Economics.	
Efficiency of, <i>see</i> Efficiency.	
Extensions in, retarded during war.....	205
Free, rendering of by publicly owned and operated roads.....	1161,
1626, 1629, 1631, 1635, 1706, 1711, 1714, 1716, 1726, 2081, 2087	784, 1607, 2096
Frequency of, importance of.....	916, 1059, 1072, 1384, 1404, 1592
Good, importance of, etc.....	1594, 1664, 2067
Improvements in.....	63
Inability to furnish.....	843, 852, 853
Increase in that rendered without proportional increase in fare.....	1199
Poor, cause of public resentment.....	1228, 1230, 1294
Profitableness of should not control quality and quantity of.....	1070
Reduction in as means of relief to roads opposed.....	1068
Regulation of by regulatory bodies.....	
<i>See also</i> Regulation.	

	Page.
Service, electric-railway—Continued.	
Rush-hour, cost of greater.....	803, 1970, 1988
Standards of, discussed.....	1987
Tremendous, given New York City.....	1294, 1302
Shanghai, China, results from lowered fares in, satisfactory.....	1080
Shoup, Paul, statement of.....	608
Sidlo, Thomas L., statement of.....	1585
Signals, block, installation of ordered on Indiana interurbans.....	1089
Sinking fund, desirability of establishment of by electric railways.....	1582
<i>See also</i> Amortization.	
Sinking-fund charges, unreasonable, prohibited in Indiana.....	1687
Sisson, F. H., statement of.....	314
Skip-stop method of electric-railway operation.....	1259, 1376, 1538, 1668, 2067, 2098
Sliding scale of fares. <i>see</i> Fares.	
Small electric railways, statement on behalf of.....	882
Smith, George W., statement of.....	421
Solution of present electric-railway problem:	
Abandonment of unprofitable lines as a means of.....	437, 449, 816
Automatically adjustable system of operation as a means of.....	539, 541, 780, 897
<i>See also</i> Cost of Service; Fares.	
Capitalization, excessive, an obstacle to, <i>see</i> Capitalization.	
Competition, regulation of as a means of.....	449, 721, 723, 1108, 1117
Cooperation between public utilities and regulatory bodies essential to.....	687, 760, 863
Cost-of-service plan of operation as a means of—	
Favored.....	156, 404, 495, 496, 505, 506, 548, 557, 558, 563, 598, 606, 688, 760, 985, 1237, 1270, 1290, 1299
Opposed.....	279, 280, 282, 328
Discussed.....	155, 164, 281
Districts, public utility, establishment of, for purposes of ownership and operation as a.....	1231, 1238, 1265
Economics in operation, further, as a.....	404, 1318, 1451, 1664, 1673
Education, popular, as a means of.....	533, 1007, 1185
Efficiency in operation.....	1516, 1693, 1697, 2093
Essentials to a.....	687, 760, 863, 1185, 1516, 1586, 1664, 1910
European operating methods, not a.....	1422
Fare—	
Decrease in, as a.....	1079, 1080
Fixed rate of, elimination of, as a.....	153, 406, 507, 723
Increase in, as a—	
Doubted.....	357, 449, 451, 941, 961, 1181, 1190, 1220, 1318, 1439, 1441, 1448, 1514, 1561, 1625
Favored.....	199, 278, 301, 304, 319, 322, 379, 527, 529, 535, 539, 542, 587, 609, 645, 828, 835, 872, 919, 936, 954, 961-962, 1053, 1064, 1108, 1117, 1334, 1340, 1648, 1673, 2039
Public support necessary to make effective.....	357, 449, 451, 1220
Temporary expedient only.....	351, 404, 540, 587, 804, 860
Stability of, creation of reserve to produce, as a.....	888
Zone system of, <i>see</i> Solution; Zone system.	
Federal Electric Railways Commission, relation of, to, <i>see</i> Federal Electric Railways Commission.	
Finances, reorganization of, as a.....	557, 1078, 1894, 1937
Franchise, short, mutually advantageous and easily changeable, necessity of, to a.....	1696
Imposts, elimination of, <i>see</i> Solution, taxation.	
Investment, assurance of security of, and a return on, as a means of.....	209
Jitney competition as an aid to a.....	1053, 1055, 1064
Labor question, solution of, necessity of, to a.....	950
Legislative enactments not based on economic laws not a.....	1449
Methods of arriving at, discussed.....	1589, 1674
Money, stability of, essential to a.....	1336, 1337, 1340
Municipal ownership, <i>see</i> Solution, public ownership.	
Obstacles to.....	1688
<i>See also</i> Capitalization, excessive.	
One-man car, use of, as a.....	609, 749, 936
Permanent, basis of, what constitutes.....	1016, 1228
Power, cost of, relation of, to.....	239, 2019, 2024, 2030

Solution of present electric-railway problem—Continued.	Page.
Profit-sharing with municipalities as a	281, 331
Public ownership as a—	
Alternative, an.	155, 209, 286, 874, 964
Doubted	315, 556, 874, 964
Favored	540, 548, 791, 801, 1123, 1125, 1138, 1140, 1143, 1152, 1155-1156, 1161, 1233, 1237, 1264-1265, 1304, 1318, 1353, 1451, 1454, 1481, 1494, 1498, 1500, 1626, 1629, 1631, 1635, 1688, 1698, 1706, 1711, 1714, 1726, 1900, 1912, 1918, 1920, 2014, 2017, 2033, 2035, 2109, 2120
Public sentiment, favorable, importance of, in reaching a	357, 449, 451, 507, 533, 687, 863, 1007, 1220
Publicity, full, importance of, in reaching a	539, 1185, 1997
Regulation by State commissions with local cooperation not considered one	1144, 1146, 1149
Return, stability of, as an aid to	781
Revenue, increase in, necessary to reach a	530, 560, 688, 764, 829, 1342, 1534, 1561
Social one	1135, 1137, 1157, 1161, 1623, 1631
Service rendered, decrease in, as a	433, 437, 860
Subsidies, public, as a means of	438, 449, 646, 653, 1123, 1125, 1138, 1155, 1161, 1449, 1465
Suggestions leading toward a, constructive, lack of, on part of electric rail- ways, criticized	1386, 1406
Taxation, direct and indirect, relief from, as a	284, 609, 643, 646, 652-653, 721, 723, 816, 873, 875-876, 1117, 1150, 1156, 1292, 1673
Transfers, charge for, not a	526
Uniform, none possible	808, 1006, 1013, 1385, 1388, 1401
Value, determination of a fair, necessity of, to a	408, 1586, 1910
Wages of employees, control over, by regulatory bodies determining rates of fare, necessity of, to a	1181, 1186
Zone system of fares, introduction of, as a means of	320, 323, 456, 574, 609, 816, 873, 936, 962, 1237
<i>See also</i> Condition of electric railways; Electric-railway situation; Problem of electric railways; Relief to electric railways. <i>Also the various topics discussed above under the general heading "Solution."</i>	
Speculation, securities of public utilities must cease to be the object of	793, 2093
Speed of electric railway cars, discussed	1668, 1676, 1685, 1990, 1992
Sprague, Frank J., statement of	750, 1083
Springfield Street Railway Co., Springfield, Mass., situation with regard to	1074
<i>See also</i> Massachusetts.	
Standard of living:	
Carfare, expenditure for, in per cent of total expenditures in family budget	1802, 1810
Inadequacy of, in prewar days claimed	1803
Income, relation between, and amount of food bought	1822
Levels of, various, discussed	1810
"Bare subsistence" budget, or minimum wage	1803, 1808, 1811, 1826, 1829-1830
"Minimum comfort budget"	1812-1813, 1825-1826, 1827, 1830
Living wage to electric-railway employees and to others, theory of, argued	1889
<i>See also</i> Cost of living; Labor; Wages.	
Standardization of electric-railway equipment	400
Stanley, John J., statement of	589
Statements of witnesses appearing before the Federal Electric Railways Com- mission, in order of appearance:	
Pardee, John H.	62-66
Warren, Bentley W.	66-67
Tripp, Guy E.	67-70
Welsh, James W.	70-135
Clark, William J.	135-145
Tripp, Guy E.	146-184
Stuart, H. L.	184-199
Hurley, E. N.	199-200
Warren, Bentley W.	200-201
Bradlee, Henry G.	201-227
Clark, William J.	228-247
Cooley, Mortimer E.	247-262
Clayton W.	262-263

Statements of witnesses, etc.—Continued.

	Page.
Cooley, Mortimer E.....	263-288
Taylor, A. Merritt.....	288-289
George, William D.....	289-314
Sisson, Francis H.....	314-353
Ford, A. H.....	353-364
Tingley, C. L. S.....	364-380
Barry, John G.....	380-393
Lambert, M. B.....	393-395
Heulings, William H., jr.....	395-402
Doherty, Henry L.....	402-416
Englund, A. H.....	416-420
Thompson, J. S.....	420-421
Smith, George W.....	421
Storrs, L. S.....	422-466
Nash, L. R.....	466-471
Culkins, W. C.....	471-498
Draper, Walter A.....	498-513
Pellissier, Louis.....	514-519
Hedges, Job E.....	519-537
Bertron, S. R.....	537-553
Newman, J. K.....	553-580
Ferguson, Homer L.....	580-589
Stanley, John J.....	589-608
Shoup, Paul.....	608-609
Fagan, Charles A.....	610-626
Head, William B.....	626-637
Bullock, Charles J.....	637-662
Nash, L. R.....	662-696
Henry, Charles L.....	696-729
Kellogg, Charles W.....	729-750
Sprague, F. J.....	750-764
Mortimer, J. D.....	764-790
Foss, Eugene N.....	791-805
Quackenbush, James L.....	817-842
Edison, Thomas A.....	842-843
Carr, James O.....	843-857
Schaddellee, Richard.....	857-872
Pierce, Henry J.....	872-875
De Berard, Frederick.....	875-881
Insull, Samuel.....	881-882
Pardee, John H.....	882-883
Creed, W. E.....	883-896
Clark, H. C.....	896-918
Jenks, J. W.....	918-926
Rosenwald, Julius.....	928
Ryan, John D.....	928
Kingsley, Darwin P.....	928-929
Douglas, W. L.....	929
Hepburn, A. Barton.....	929
Armour, J. Ogden.....	929-930
Forgan, James B.....	930
Schiff, Jacob H.....	930
Westinghouse, H. H.....	934
McKinley, Wm. B.....	934-937
Jenks, J. W.....	939-941
Conway, Thos., jr.....	941-967
Erickson, Halford.....	967-995
Baker, Newton D.....	995-1037
Kutz, Chas. W.....	1037-1053
Babson, Roger W.....	1053-1073
Fox, John P.....	1073-1086
Mote, Carl H.....	1086-1107
Higgins, Richard T.....	1107-1118
Mote, Carl H.....	1118-1120
Ingram, F. F.....	1120-1131
Hansen, Ole.....	1131-1134

Statements of witnesses, etc.—Continued.

	Page.
Couzens, James.....	1134-1166
Bliss, Wm. C.....	1166-1195
Bliss, Zenas W.....	1195-1198
Gillen, Charles P.....	1198-1202
Wilcox, Delos F.....	1202-1277
Nixon, Lewis.....	1277-1303
Burr, Wm. P.....	1303-1319
Fisher, Irving.....	1319-1341
MacFarland, G. S.....	1342-1359
Hall, Thos. L.....	1359-1377
Connell, A. T.....	1377-1383
Ainey, Wm. D. B.....	1384-1413
Jackson, D. C.....	1413-1435
MacLeod, Fred J.....	1435-1458
Sanders, Fielder.....	1458-1465
Walsh, J. J.....	1465-1481
Jackson, M. M.....	1481-1504
Joyce, C. J.....	1513-1585
Sidlo, Thomas L.....	1585-1589
Jackson, Walter.....	1589-1621
Bauer, R. S.....	1622-1639
Loring, H.....	1639-1661
Beeler, John A.....	1661-1687
Cooke, M. L.....	1687-1703
Delbridge, C. L.....	1703-1731
Lauck, W. J.....	1731-1733
Ferguson, Carey.....	1733-1748
Rea, Wm. M.....	1748-1767
Sturgis, Arthur.....	1767-1795
Ogburn, Wm. F.....	1795-1832
Magnusson, Leifur.....	1832-1841
Jones, S. P.....	1841-1877
Lauck, W. J.....	1877-1898
Babcock, E. V.....	1898-1913
Robinson, Charles K.....	1913-1927
Lauck, W. J.....	1927-1969
Mortimer, J. D.....	1970-2002
Joyce, C. J.....	2002-2008
United Business Men's Association of Philadelphia.....	2009-2010
Jones, S. P.....	2012-2014
Jackson, M. M.....	2014-2035
Bradlee, H. G.....	2037-2041
Bleakley, E. G. C.....	2042-2043
Burr, William P.....	2043-2045
Ogburn, Charlton.....	2046-2054
Eastman, J. B.....	2055-2088
Maltbie, Milo R.....	2088-2105
Bemis, E. W.....	2105-2124
Purdy, Lawson.....	2124-2126
Beasley, O. C.....	2129-2134
Statistics:	
Abandonment of electric railway lines.....	84-87
Bonds, electric railway and industrial, yields on.....	317
Employees of electric railways.....	71
Fare increases by electric railways.....	927, 946, 1504
Financial and operating of electric railways—	
Glasgow Municipal Tramways compared with Public Service Railway Co. of New Jersey.....	1206
Milwaukee Electric Railway & Light Co., under commission regula- tion.....	777
Massachusetts electric railways.....	200, 992
New York Railways Co.....	1309
Philadelphia Rapid Transit Co.....	1541
Comparison of, with Cleveland and Milwaukee data.....	1989, 2003
Texas electric railways.....	209, 633
Growth of electric railways.....	70, 80

Statistics—Continued.	Page.
Interurban electric railways.....	699
Jitney competition with Public Service Ry. Co. of New Jersey.....	1243
Motor vehicles.....	423-4, 443
Operating of electric railways—	
Balance sheet for.....	673, 937
Income accounts.....	92, 123
Net income.....	127, 131
Operating expenses.....	104, 938
Operating ratio.....	93, 95
Operating revenues and expenses.....	95, 99
Operating revenue net, per mile of track.....	131
Power, generated and purchased by electric railways.....	80, 91, 931
Prices, wholesale, of commodities.....	116
Receiverships of electric railways.....	83, 84, 89
Return, rate of, for various census years.....	128
Securities, electrical railway, distribution of.....	1505
Supplies and materials used by electric railways.....	114, 380, 388, 393, 397, 416
Taxes paid by electric railways.....	117, 119, 639, 649, 932
Traffic of electric railways.....	73, 76
Wages paid electric railway employees.....	111, 1193, 1504, 1768, 1832
<i>See also topics mentioned above as they appear in the index.</i>	
Steam railroad competition with electric railways....	715, 887, 891, 893, 1086, 1099, 1176
Stimulus to efficient electric railway operation, <i>see</i> Incentive.	
Stock, electric railway, <i>see</i> Capitalization; Finance; Securities.	
Stone & Webster, operating and other statistics of electric railway, railway subsidiaries of.....	203, 2037
Stops made by electric railway cars, <i>see</i> Skip-stop.	
Storrs, L. S., statement of.....	422
Strikes in electric railway industry, <i>see</i> Arbitration; Collective bargaining; Labor.	
Stuart, H. L., statement of.....	184
Sturgis, A., statement of.....	1767
Subsidies, public, to electric railways:	
Abandonment, to avoid.....	346, 445, 447
<i>See also</i> Subsidies, unprofitable lines.	
Cost-of-service franchise, under.....	470, 1240, 1246, 1247
Dangers of.....	1474
Desirability of, should more efficient means of transportation be found....	463
Fares, extremely high, to avoid.....	655, 798,
802, 1026, 1138, 1155, 1161, 1231, 1240, 1247, 1449, 1466,	
1468-9, 1470, 2071	
Massachusetts, provision for, in, as an aid to railways.....	219,
689, 1032, 1441-2, 1452, 1466, 1468-70, 1640, 1651, 1654	
Privately owned and operated, desirability of, doubted. 464, 964, 1590, 2080, 2110	
Publicly owned and operated, favored to.....	793,
798, 803, 1123, 1125, 1138, 1155-6, 1161-2, 1238, 2071, 2109, 2110	
Relief, as a measure of.....	246, 445, 458, 1191
Unprofitable lines, socially desirable to maintain operation of.....	219,
346, 646, 653, 1026, 1640, 1651, 1654	
<i>See also</i> Taxation, etc.	
Substitutes for electric railways.....	760, 1121, 1127, 1180
<i>See also</i> Automobile; Competition; Gasoline; Jitney; Motor vehicle; Necessity for electric-railway service; Steam railroads.	
Supervision, public, of electric railways, <i>see</i> Regulation.	
Supplies used by electric railways:	
Amount sold prior to and during war period.....	384, 393
Cost of, increased.....	114, 380, 382, 386, 393, 398, 416, 420, 421
Profits on, prior to and during war.....	383
Surplus, accumulation of, by electric railways and its division.....	167, 834, 1282
Taxation of:	
Electric railways—	
Car rider pays.....	444, 642, 650, 910, 1028, 1900, 1904
Discussion of.....	160, 638, 647
Fare, relation to, of.....	645, 652, 873, 882, 910, 951, 1267
Federal, relief from.....	645, 652, 1188

Taxation of—Continued.

	Page.
Electric railways—Continued.	
Federal Electric Railways Commission, recommendations by, that unequal, be done away with, suggested.....	654
Franchise, of.....	161, 470, 473, 497, 642, 650, 1182, 1186
Heavy, nature of.....	640, 649, 656, 884, 894, 908
Income, of net instead of gross, favored where there are two competing electric railways in a city.....	1072
Kinds of, enumerated.....	638, 647
Methods of, existing.....	638, 647
New Hampshire law relating to exemption from.....	660, 883
Principles which should govern.....	641, 649
Reasons for.....	650, 1028, 1223
Relief from, temporary or permanent—	
Discussed.....	284, 571, 651, 653, 660, 1050, 1053
Difficulties encountered in attempting.....	654, 721, 1223
Favored.....	609, 643, 651, 653, 721, 723, 873, 882, 898, 908, 951, 1053, 1055, 1057, 1064, 1108, 1117, 1150, 1156, 1173, 1179, 1186, 1188, 1267, 1292, 1663, 1899, 1904
Opposed, except as a last resort.....	1091
Solution of present electric-railway situation, not a.....	153, 652, 1292
Rhode Island, system of, in, discussed and reforms urged.....	1195
Roadbed of, opposed.....	1042
Special, such as bridge tax, paving tax, etc., discussed.....	325, 441, 444, 606, 607, 611, 639, 644, 647, 650, 657, 721, 898, 908, 1173, 1196, 1223, 1267, 1459, 1663
Statistics of, discussed.....	96, 97, 117, 119, 639, 649, 932
<i>See also</i> Imposts; Paving.	
Monopolies, of, favored.....	1058
Properly benefited by electric-railway improvements, of, to pay for them. <i>see</i> Assessment.	
Public, support of electric railways, under public ownership through.....	794, 798, 803, 1626, 1629, 1631, 1632, 1635, 1706, 1711, 1714, 1726
Publicly owned utilities.....	660
Taylor, R. W., judge of Federal court of Cleveland, referred to in connection with Cleveland cost-of-service franchise.....	1000
Taylor, A. M., statement of.....	288
Tendency of electric railways since 1914 discussed.....	147
Terre Haute, Ind., successful results obtained from use of one-man cars in....	1629
Testimony before Federal Electric Railways Commission, <i>see</i> Statements.	
Thompson, J. S., statement of.....	420
Tickets, sale by electric railways of commutation and strips of, advocated.....	2042
<i>See also</i> Fares.	
Tingley, C. J. S., statement of.....	364
Toledo, Ohio, electric-railway situation in, discussed.....	405
Track, electric-railway in Detroit, disposition of, on lines whose franchises have expired.....	1140, 1143, 1162
Track and roadway, improvement in type of, since early days.....	935
Traffic:	
Congestion of, in large cities a reason for undesirability of jitney bus as a substitute for electric railway.....	1426-1427
Electric railway, passenger—	
Density of.....	1008, 1430
Development of—	
Discussed.....	2067
Great Britain, in.....	1204, 1207, 1210, 1251
Frequent service, as a means of.....	1675, 2084
Low fares as a means of.....	1079-1081, 1204, 1207, 1210, 1240, 1251, 1613, 1675, 2095, 2110
Zone system of fares, as a means of.....	1608
Fares, effect of changes in, upon.....	1441, 1657
<i>See also</i> Fares.	
Load factor.....	81, 1079
New York City.....	1289, 1299, 1301

Traffic—Continued.

Electric railway, passenger—Continued.	
Peak-load type of—	Page.
Diminution of, possibilities of.....	161
Expensive to carry.....	81, 936
Leveling of through low fares for off-peak....	1079, 1080, 1081, 1240, 1613
Short-haul type of—	
Development of through low fares and frequent service.....	1675, 2095, 2096, 2110
Discussed.....	1429, 1673, 1674
Statistics of.....	73, 76
Studies of, as basis for rerouting of cars, etc.....	1436, 1437
Regulation of, importance of proper.....	885, 1668, 1676, 2068
<i>See also</i> Riding habit.	
Trailers, use of, advocated as means of reducing labor cost.....	2067
<i>See also</i> Cars.	
Transfers, electric railway:	
Abolition of, recommended.....	873
Abuses in connection with use of.....	1250
Charge for—	
Boston, formerly made in.....	844
Cleveland, with rebate feature in.....	1002, 1011
Fare increase favored as against.....	526, 1039, 1100, 1105, 1279, 1287
New York City, situation with regard to, in.....	151, 526, 819
Opposed.....	1141, 1250
Philadelphia, situation with regard to, in.....	1412, 1518, 1542, 1544, 1553, 1567
Rebates in connection with.....	1002, 1250
Rhode Island Co., by.....	1182
Washington, D. C., situation with regard to, in.....	1038
Free, desirability of.....	1003, 1249, 1252
History of.....	438
Origin of.....	1250
Zone system of fares, necessity in connection with.....	1249
<i>See also</i> Fares.	
Transportation areas or districts as a means of public ownership and operation of electric railways, <i>see</i> Districts.	
Tripp, G. E., statement of.....	66, 132, 146
Turnover of labor, <i>see</i> Labor.	
Trustees, public, operation of electric railway by, <i>see</i> Bay State Street Railway Co.; Boston Elevated; Massachusetts; Public operation.	
Union Street Railway Co., New Bedford, Mass., ability of, to operate on a 5-cent fare.....	2057, 2073
United Business Men's Association of Philadelphia, Pa., statement of.....	2009
United Railroads of San Francisco, Calif., capitalization of, excessive.....	1851, 1854
<i>See also</i> San Francisco.	
United Railways Co. of St. Louis, Mo.:	
Capitalization, excessive, of.....	1708, 1722, 1724, 1728, 1849
Situation with regard to.....	555, 563, 564, 1709, 1722, 1724, 1725
Value of.....	2013
<i>See also</i> St. Louis, Mo.	
United States Bureau of Labor Statistics, studies of cost of living by.....	1796
Unprofitable lines, electric railway, public support of, to avoid abandonment..	346, 347
<i>See also</i> Subsidies.	
Valuation of electric railways:	
Basis of—	
Discussed.....	161, 172, 174, 177, 179, 221, 227, 249, 265, 270, 288, 338, 873, 1239, 1264, 1913
Factors involved—	
Bonus stock, return upon.....	338
Depreciation, functional.....	936
Development costs.....	200, 251, 253, 255, 257, 260, 261, 267, 573, 577
Earnings, improvements and extensions out of.....	274
Franchises, allowance for.....	591
Money, cost of.....	259
Obsolescence, allowance for.....	266, 283, 873
Promotion profits.....	259
Historical method.....	832, 2105, 2111, 2116

Valuation of electric railways—Continued.

Basis of—Continued

Localities, used in various—

Page.

Cleveland, Ohio.....	591, 1000, 1459
Kansas City Railways case.....	190
Lincoln, Nebr.....	1368, 1371
Massachusetts.....	660, 2069
Milwaukee, Wis.....	765, 766, 815
Minneapolis, Minn.....	1867
New York, N. Y.....	833, 1304, 1318
Omaha, Nebr.....	1369
Pittsburgh, Pa.....	1903
Public Service Railway Co. of New Jersey.....	1200, 1215, 1219
Reproduction method of.....	255, 573, 577, 815, 1516, 2105, 2111, 2116
Capitalization, relation of, to.....	333, 1504, 1858, 1861-1862, 2012
Conservative, would wipe out marginal interest now in control.....	1219
Control of process of, State versus local.....	806, 1009, 1227, 1240
Cost of service, in connection with.....	468, 486, 665, 1094, 1459, 1913, 2103
Delays incident to.....	407
Discussed.....	161, 249, 252
Excessive, claims of.....	1692, 1694, 2089, 2105, 2108
Factors involved, <i>see</i> Valuation, basis of.	
Fare changes, necessity of determination of value as a basis of.....	407-408, 849, 864, 1086, 1098, 1105, 1110, 1111, 1401
Interstate Commerce Commission, principles adopted by, in the Texas-Midland case, applicability of, to electric railways....	1264, 2119, 2121
Methods of, <i>see</i> Valuation, basis of.	
Money, effect of depreciated purchasing power of, on value.....	271
Necessity of and importance of a fair, pointed out.....	222, 539, 541, 781, 898, 903, 1009, 1218, 1282, 1286, 1291, 1306, 1318, 1374, 1401, 1483, 1492, 1506, 1586, 1910, 2111
Principles of, <i>see</i> Valuation, basis of.	
Public ownership, importance of a fair value as basis of.....	2111
Purchase of electric railways by public, relation of, to... 181. 1248-1249, 1264, 1714	
"Scrap value".....	230
Shifting of value through change in regulatory commission personnel criticized.....	773
<i>See also</i> Capitalization; Regulation.	
Wages paid to labor in electric-railway industry:	
Ability of electric-railway companies to pay not considered a determining factor in establishing rates of.....	1930, 1952, 1955
Adjustment of, methods used in—	
Cleveland, Ohio.....	1761, 1765
Philadelphia, Pa.....	1394, 1396, 1524, 1552, 1574
Analysis of cost of electric-railway operation and cost of living as related to.....	1768
Capitalization, excessive, of electric railways, relation between and....	1871, 1886
Cost of operation, wages of trainmen not a determining factor in.....	1787, 1882, 1885, 1952
Factors affecting.....	786, 1930
Great Britain, rates of, paid electric-railway labor in, as compared with prevailing rates in United States.....	1211
High rates of, in other industries than electric-railway industry, effect of upon prices.....	928
Increase in—	
Cause of present electric-railway difficulties.....	1175, 1181, 1186, 1192, 1194
Comparison with increases in cost of living.....	1194, 1768, 1790-1791
Demands for, made by electric-railway trainmen in 1919.....	1504
Discussed.....	104, 105, 107, 269, 935, 944, 945
Effect of, on—	
Labor cost of electric railways.....	1782
Net income of electric railways.....	1784
Granted in Indiana from results of increased fares.....	1091, 1097, 1101
Occupational groups in United States which have had a 100 per cent increase since 1914.....	1837
Recent numerous increases denied.....	1838
Smallness of, claimed.....	1787, 1788, 1834, 1837
Indiana, lower rates of, in, than elsewhere.....	1097, 1101, 1104

Wages paid to labor in electric-railway industry—Continued.

	Page.
Living wage—	
Effects, possible, of adoption of theory of, by electric railways....	1952, 1953
Efficiency of labor, possible increased, resulting from.....	1933
Fluctuation of, with cost of living, desirability of.....	1930
Inadequacy of past and present wage rates.....	1826, 1830, 1888, 1891
Urged for adoption on electric railways.....	1889-1890, 1896, 1928-1929, 1930, 1933, 1951-1952, 1955
What constitutes.....	1827, 1892, 1893, 1929, 1947
<i>See also</i> Standard of living.	
Minimum wage, <i>see</i> Standard of living; Wages, living.	
National War Labor Board, awards of, increasing rates of wages in electric-railway industry discussed.....	111, 152, 318, 613, 944-945, 1188, 1512, 1746, 1792, 1889
New York City, lower scale of, in, as compared with other cities explained... .	1302
Rates of, paid by electric railways.....	111, 1193, 1504, 1541, 1832, 1834, 1835, 1837, 1948, 1950, 2003, 2007
Regulation of, by State commissions favored.....	625, 1181, 1186, 1372, 1462
Welsh, John J., statement of.....	1465
Warren, B. W., statement of.....	65, 200
Washington, State of, <i>see</i> Seattle.	
Washington, D. C.:	
Capital Traction Co., situation with regard to.....	1037, 1679, 2012
Electric-railway situation in.....	1037, 1679, 1680
Transfers, charge for, in.....	1038, 1039
Washington Railway & Electric Co., situation with regard to.....	1037
Zone system of fares, unpopularity of proposal to establish in... .	1039, 1042, 1051
Water power development, <i>see</i> Hydroelectric development.	
'Watered' stock, <i>see</i> Capitalization.	
Welfare work done by Cooperative Welfare Association of Philadelphia Rapid Transit Co.....	1522, 1558
Welsh, James W., statement of.....	69
Westinghouse, H. H., statement of.....	934
Westinghouse Electric & Manufacturing Co., increase in prices of electric railway supplies sold by.....	393
Wilcox, Delos F., statement of.....	1202
Wilksburg case, decision of Pennsylvania Public Service Commission in....	1392
Wilmington & Philadelphia Traction Co., Delaware, situation with regard to..	367
Wisconsin:	
Industrial disputes in public utility field, method of settling adopted in....	2000
Municipal-guaranty law of.....	782
Regulation of electric railways in.....	765
<i>See also</i> Milwaukee, Wis.	
Working conditions of labor in electric railway industry:	
Arduousness of without corresponding compensation claimed.....	1734, 1738, 1749, 1754
Cleveland, Ohio, of electric railway trainmen in—	
Extra men, condition of.....	1752, 1754
Hours of labor and compensation therefor.....	1749, 1753
Schedules, control of, by street railway commissioner and difficulties therefrom.....	1757, 1760, 1763, 1765
Detroit, Mich., of electric-railway trainmen in, hours of labor and compensation therefor.....	1735, 1739, 1743, 1745, 1746
Eight-hour day, demand for, on part of electric railway trainmen, etc.....	954, 1739, 1775, 1776, 1897, 1936
Philadelphia Rapid Transit Co., hours of labor of electric railway trainmen employed by, as compared with Detroit conditions.....	2003
<i>See also</i> Labor; Wages, etc.	
Zone system of electric-railway fares:	
Collection of fares under, <i>see</i> Collection of fares.	
Discussed.....	324, 347, 404, 456, 1109, 1183
Effect of on—	
Industry, tendency to decentralize.....	1183, 1300, 1911
Population, distribution of, <i>see</i> Zone system, population.	
Revenues, means of increasing.....	1109, 1600

Zone system of electric-railway fares—Continued.	Page.
Experience with, in various localities—	
Australia.....	1601
Bay State Street Railway Co., Mass.....	1649
Cincinnati, Ohio, considered for.....	496
Great Britain.....	809, 1205, 1251, 1601
Massachusetts.....	1440, 1649, 2062, 2088
Milwaukee, Wis.....	766
New York City, considered for.....	1287, 1294, 1297, 1299
Pittsburgh, Pa.....	289, 617, 1908
Portland, Me.....	355
Public Service Railway Co. of N. J....	1119, 1198, 1252, 1608, 1619, 2042, 2043
Rhode Island Co., Rhode Island.....	1174, 1176, 1181, 1182
Springfield, Mass.....	1440
Fares, rates of, under—	
Basis of.....	1396
Increase in through shortening length of zones.....	515, 517, 873, 875
Increased, in Great Britain, experience with.....	809
Low initial rates of, advisability of.....	1119, 1198, 1205, 1240, 1251-2, 1431, 1601, 1608, 1612, 1619, 2043
Suburban territory, in.....	785, 1602, 1683
Favored, though with some qualifications.....	159, 282, 320, 323, 574, 609, 775, 764, 816, 936, 961-2, 1025, 1031, 1035, 1042, 1051, 1672, 1100, 1102, 1100, 1240, 1241, 1287, 1288, 1294, 1297, 1299, 1404, 1431, 1612, 1618, 1682, 2074, 2075
Mileage system of fares probably not desirable for American cities....	1431, 1432
One-man cars, use of, in connection with. <i>See</i> One-man cars.	
Objections to.....	231, 301, 310, 325, 456, 617, 1025, 1035, 1072, 1100, 1102, 1432, 1467, 1479, 1627, 1908, 2042
Population, congestion of, resulting from introduction and use of—	
Claimed.....	232, 301, 310, 311, 325, 456, 1025, 1100, 1467, 1479, 1627
Denied.....	459, 785, 1160, 1206, 1433, 1601
Public attitude toward.....	168, 1039, 1042, 1051
Real estate values, effect upon, of.....	1603
Revenues, increase in, as result of adoption of.....	1109, 1600
Solution of present electric railway problem, a means of.....	282, 962, 1682
Success of, prerequisites to.....	1607
Transfers, use of, in connection with.....	1249



UNIVERSITY OF CALIFORNIA LIBRARY
Los Angeles

This book is DUE on the last date stamped below.

SEP 2 1976

RENEWAL ~~LD URL~~ SEP 16 1974
LD URL

SEP 18 1976

REC'D LD-URL

SEP 27 1978

DEC 28 1976

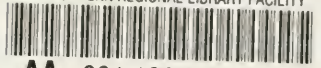
QL REC'D LD-URL
APR 19 1989

APR 20 1989



3 1158 01338 4572

UC SOUTHERN REGIONAL LIBRARY FACILITY



AA 001 108 352 4

